Ref. No.: ACC/ENV/CUD- MoEFCC/03-25/01 **Date: 11.03.2025**

To

The Member Secretary – EAC (Non-Coal Mining),
Ministry of Environment, Forest & Climate Change
Govt. of India, Indira Paryavaran Bhavan,
Jorbag Road, Aliganj, New Delhi – 110003

Subject: Proposed Kadapa Limestone Mine (ML Area: 997.08 ha) with Proposed Limestone Production of 7.0 million TPA, Sub grade 2.5 million TPA, (ROM: 9.5 million TPA), Top Soil: 0.012 million TPA & Over Burden 0.9 million TPA (Total excavation 10.412 million TPA) at Villages Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollaapalle, G. Uppalapadu of Mylavaram Mandal, District (YSR) Kadapa, (Andhra Pradesh) by M/s ACC Ltd.- **Reg. Submission of ADS Reply**

Ref: 1. MoEFCC File No: J-11015/133/2012-IA-II (M) & Proposal No: IA/AP/MIN/30237/2012
2. Minutes of 12th EAC (Non-Coal Mining) held during November 23 – 25, 2016
3. Additional Details Sought by MoEFCC on 21.02.2025

Respected Sir,

With reference to the aforesaid subject and ref., we would like to bring into your kind notice that the technical presentation for EC was held in 12th EAC (Non-Coal Mining) meeting on 23.11.2016. After technical presentation, Additional details sought by MoEFCC on 07.12.2016, 11.01.2017, 09.02.2017, 14.03.2017, 09.09.2017 & 01.02.2025 which was met vide our reply dated 02.01.2017, 12.01.2017, 24.02.2017, 11.08.2017, 24.01.2025 & 07.02.2025 respectively.
Again, Additional Details were sought by MoEFCC on 21.02.2025. Point wise reply of ADS is enclosed as **Annexure 1.**

We request your good self to kindly consider our case in up-coming EAC Meeting and grant us the Environmental Clearance at the earliest.

For ACC Limited

Sanjay Prasad
(Authorized Signatory)

Enclosure: as above

ACC Limited
Registered Office:
Cement House
121, Maharshi Karve Road
Mumbai–400020
Maharashtra, India
Ph +91 22-4159 3321
www.acclimited.com

CIN: L26940MH1936PLC002515

Annexure 1

ADS Reply

S. No	***Point***	***Reply***
1.	Project Proponent has stated that due to issue in uploading of complete ADS reply due to size constraints annexures of EIA report can be checked through given link. However, the Google link could not be opened.	Complete EIA/EMP Report was submitted with ADS Reply on 07.02.2025 with google drive link for annexures of EIA report However, complete EIA/EMP Report is enclosed herewith as ~~**Annexure I**~~ (Pdf page no 789)
2.	PP should submit the complete EIA- EMP report along with all annexures, plates, surface plans, sections etc	
3.	PP should submit the legible copy of valid mine plan.	Legible copy of valid mine plan is enclosed as **Annexure II** (Pdf page no 790 to 926)
4.	Earlier the consultant was M/s Vimta Labs and at present the consultant is J.M EnviroNet Pvt Ltd. PP should submit a certificate/undertaking specifying the new consultant J.M. EnviroNet Pvt. Ltd. is taking the ownership of the complete EIA-EMP report including all the lab test reports, monitoring data, etc.	Undertaking from ACC limited and Environment Consultant, M/s. JM EnviroNet Pvt Limited is Annexed with EIA/EMP report also enclosed herewith as ~~**Annexure III & IV**~~ respectively I (Pdf page no 927 to 928)

FINAL ENVIRONMENTAL IMPACT ASSESSMENT REPORT

&

ENVIRONMENTAL MANAGEMENT PLAN

For

Proposed Kadapa Limestone Mine

(ML Area: 997.08 ha)

with Proposed Limestone Production of 7.0 million TPA, Sub grade 2.5 million TPA, (ROM: 9.5 million TPA), Top Soil: 0.012 million TPA & Over Burden 0.9 million TPA (Total excavation 10.412 million TPA)

At

Villages Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollaapalle, G. Uppalapadu of Mylavaram Mandal, District (YSR) Kadapa, (Andhra Pradesh)

Baseline Study Period: Summer Season (March to May, 2024)

Public Hearing Date: 20.10.2016

APPLICANT

ACC

M/s. ACC Limited

Adani Corporate House,
Shantigram, Near Vaishno Devi Circle,
SG Highway, Khodiyar,
Ahmedabad 382 421,
Gujarat, India

EIA CONSULTANT

JM

J.M. EnviroNet Pvt. Ltd.

(Registered EIA Consultant Organization from NABET-QCI)
Certificate No.:NABET/EIA/2326/RA 0308 valid upto 7th August, 2026
Emaar Digital Greens, Tower – B, Unit No. 1517,
Golf Course Ext. Road, Sector – 61, Gurugram (Haryana) – 122 011
E-mail: jmenviron@hotmail.com
NABL Approved Lab: JM EnviroLab Pvt. Ltd.
(Certificate No.:TC-6821)

adani
Cement

ACC

Undertaking

I, Sanjay Prasad (Authorized Signatory & Head Environment) of ACC Limited give this undertaking to the effect that the ToRs prescribed by MoEFCC, New Delhi vide letter no. J-11015/133/2012-IA-II (M) dated 30.12.2012 and Validity extension of ToR issued vide letter no J-11015/133/2012-IA.II (M) dated 30.11.2015 for "Proposed Kadapa Limestone Mine (ML Area: 997.08 ha) with Proposed Limestone Production of 7.0 million TPA, Sub grade 2.5 million TPA, (ROM: 9.5 million TPA), Top Soil: 0.012 million TPA & Over Burden 0.9 million TPA (Total excavation 10.412 million TPA) at Villages Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollaapalle, G. Uppalapadu of Mylavaram Mandal, District (YSR) Kadapa, (Andhra Pradesh) by M/s ACC Ltd" have been complied with, and the data submitted is factually correct. We further certify that we have reviewed the EIA report and take full responsibility and ownership of the contents presented in the EIA report by J.M. EnviroNet Pvt. Ltd. Instructions as per MoEF&CC vide O.M. No. J-11013/41/2006-IA. II (I) dated 4th August, 2009 has been followed in the preparation of this EIA Report.

Date: 17.01.2025
Place: Ahmedabad

For M/s. ACC Cement Limited

Sanjay Prasad
(Head Environment & Authorized Signatory)

ACC Limited
Cement House,
121, Maharshi Karve Road,
Mumbai 400 020, India
www.acclimited.com

Declaration of Association in the EIA

MoEFCC File. No.: J-11015/133/2012-IA.II (M)

Declaration by the Experts contributing to the EIA of Proposed Kadapa Limestone Mine (ML Area: 997.08 ha) with Proposed Limestone Production of 7.0 million TPA, Sub grade 2.5 million TPA, (ROM: 9.5 million TPA), Top Soil: 0.012 million TPA & Over Burden 0.9 million TPA (Total excavation 10.412 million TPA) at Villages Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollaapalle, G. Uppalapadu of Mylavaram Mandal, District (YSR) Kadapa, (Andhra Pradesh) by M/s ACC Ltd.

I, hereby, certify that I was a part of the EIA team in the following capacity that developed the ab ove EIA.

JM File No.: JMEPL/JM 2467/ACC Mine/Final EIA/Jan., 2025/Final Revision no. 1(Copies no 0)

	Name	Period of involvement	Signature and Date
EIA Coordinators:	Mr. Bhana Ram Jat	February, 2024 to till date	
Contact information:	Emaar Digital Greens, Tower - B, Unit No. 1517, Golf Course Ext. Road, Sector - 61, Gurugram (Haryana) - 122 011, Email: jmenviron@hotmail.com		

Functional Area Experts:

S. No.	Functional areas	Name of the Expert/s		Involvement (Period and task**)	Signature & Date
1	LU	FAE	Ms. Geetanjali Saini	February, 2024 to till date	
2	AQ	FAE	Ms. Ekta Arora	February, 2024 to till date	
4	AP	FAE	Mr. Bhana Ram Jat	February, 2024 to till date	
6	WP	FAE	Dr. Sunita Lakhiwal	February, 2024 to till date	
8	EB	FAE	Mr. Akshay Kumar	February, 2024 to till date	
10	SE	FAE	Ms. Geetanjali Saini	February, 2024 to till date	
11	NV	FAE	Ms. Nisha Sharma	February, 2024 to till date	
13	RH	FAE	Mr. S.C. Jain	February, 2024 to till date	
14	HG	FAE	Mr. Vijay Kumar	February, 2024 to till date	
16	Geo	FAE	Mr. Vijay Kumar	February, 2024 to till date	
18	SC	FAE	Dr. Jitendra Yadav	February, 2024 to till date	
20	SHW	FAE	Mr. Khem Shankar Gour	February, 2024 to till date	

**One TM against each FAE may be shown*

Declaration of Association in the EIA

***Please attach additional sheet if required*

Declaration by the Head of the accredited consultant organization/ authorized person

I, Dr. Deepa Taneja, Managing Director, of J.M. EnviroNet Pvt. Ltd., hereby, confirm that the above-mentioned experts prepared an EIA/EMP Report for Proposed Kadapa Limestone Mine (ML Area: 997.08 ha) with Proposed Limestone Production of 7.0 million TPA, Sub grade 2.5 million TPA, (ROM: 9.5 million TPA), Top Soil: 0.012 million TPA & Over Burden 0.9 million TPA (Total excavation 10.412 million TPA) at Villages Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollaapalle, G. Uppalapadu of Mylavaram Mandal, District (YSR) Kadapa, (Andhra Pradesh) by M/s ACC Ltd.

I also confirm that the consultant organization shall be fully accountable for any mis-leading information mentioned in this statement.

Signature:	Deepa Taneja
Name:	**Dr. Deepa Taneja**
Designation:	**Managing Director**
Name of the EIA consultant organization:	**J.M. EnviroNet Pvt. Ltd.**
NABET Certificate No.	**NABET/EIA/2326/RA 0308 Valid up to August 07, 2026**

Undertaking

We, J.M. EnviroNet Pvt. Ltd., JMEPL, Emaar Digital Greens, Tower - B, Unit No. 1517, Golf Course Ext. Road, Sector-61, Gurugram (Haryana) - 122 011, Environmental Consultants of ACC Limited for their Proposed Kadapa Limestone Mine (ML Area: 997.08 ha) with Proposed Limestone Production of 7.0 million TPA, Sub grade 2.5 million TPA, (ROM: 9.5 million TPA), Top Soil: 0.012 million TPA & Over Burden 0.9 million TPA (Total excavation 10.412 million TPA) at Villages Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollaapalle, G. Uppalapadu of Mylavaram Mandal, District (YSR) Kadapa, (Andhra Pradesh) give this undertaking to the effect that this Final EIA/EMP Report has been prepared as per the ToRs prescribed by MoEFCC, New Delhi vide letter no. J-11015/133/2012-IA-II (M) dated 30.12.2012 and Validity extension of ToR issued vide letter no J-11015/133/2012-IA.II (M) dated 30.11.2015 & as per data/ details provided by Project Proponent and the data submitted are factually correct.

Date: 17.01.2025

Place: Gurugram

For & behalf of J.M EnviroNet Pvt. Ltd.

Deepa Taneja

Dr. Deepa Taneja

Managing Director

Certificate of Plagiarism check

Title of EIA Report	Proposed Kadapa Limestone Mine (ML Area: 997.08 ha) with Proposed Limestone Production of 7.0 million TPA, Sub grade 2.5 million TPA, (ROM: 9.5 million TPA), Top Soil: 0.012 million TPA & Over Burden 0.9 million TPA (Total excavation 10.412 million TPA) at Villages Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollaapalle, G. Uppalapadu of Mylavaram Mandal, District (YSR) Kadapa, (Andhra Pradesh).
Name of Accredited Organization	J.M. EnviroNet Pvt. Ltd.
Unique Identification Number	**Project** – J-11015/133/2012-IA-II (M) **Consultant** - NABET/EIA/23-26/RA 0308 dated 29.11.2023
Name of EIA Co-ordinator (EC)	Mr. Bhana Ram Jat
Name of the software	Paid plagiarism software –Plagiarism Checker X https://plagiarismcheckerx.com/
Date of check	17.01.2025
Time of check	5:55 pm

Declaration by the Head of the accredited consultant organization/authorized person

I hereby certify that this EIA report has been evaluated using online software viz., Plagiarism Checker X (https://plagiarismcheckerx.com/). The report produced has been analysed by the system and based on it, I certify that the EIA Report produced in accordance with good scientific practice.

Date and Sign of EIA Co-ordinator:

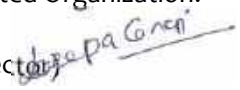


Name: Bhana Ram Jat

Designation: EIA Coordinator & FAE

Date and sign of Head of Accredited Organization:

Dr. Deepa Taneja (Managing Director)



Name of the EIA consultant organization: J.M. EnviroNet Pvt. Ltd.

NABET Certificate No. & Issue Date: NABET/EIA/2326/RA 0308 dated 29.11.2023 Valid up to August 07, 2026

Plagiarism Checker X - Report

Originality Assessment

20%

Overall Similarity

Date: Jan 17, 2025 (05:55 PM)
Matches: 18445 / 94005 words
Sources: 194

Remarks: High similarity detected, please make the necessary changes to improve the writing.

Verify Report:
Scan this QR Code

INDEX

S. NO.	PARTICULAR	PAGE NO.
A.	FINAL EIA / EMP REPORT	1- 261
B.	TOR AMENDMENT LETTER, TOR LETTER AND COMPLIANCE	1-23
1.	TOR AMENDMENT LETTER	1-2
2.	TOR LETTER	3-9
3.	TOR COMPLIANCE	10- 23
CHAPTER – 1	INTRODUCTION	24- 29
CHAPTER – 2	PROJECT DESCRIPTION	30- 55
CHAPTER – 3	DESCRIPTION OF THE ENVIRONMENT	56- 132
CHAPTER – 4	ANTICIPATED ENVIRONMENTAL IMPACTS & MITIGATION MEASURES	133- 187
CHAPTER – 5	ANALYSIS OF ALTERNATIVES	188
CHAPTER – 6	ENVIRONMENTAL MONITORING PROGRAM	189- 194
CHAPTER – 7	ADDITIONAL STUDIES	195-229
CHAPTER – 8	PROJECT BENEFITS	230- 240
-CHAPTER – 9	ENVIRONMENTAL COST BENEFIT ANALYSIS	241
CHAPTER – 10	ENVIRONMENTAL MANAGEMENT PLAN	242- 250
CHAPTER – 11	SUMMARY & CONCLUSION	251- 259
CHAPTER – 12	DISCLOSURE OF CONSULTANTS ENGAGED	260- 261
ANNEXURE 1	LETTER OF INTENT (LOI)	262 - 264
ANNEXURE 2	MINING LEASE DEED	265 - 399
ANNEXURE 3	MINING PLAN APPROVAL LETTER	400 - 401
ANNEXURE 4	NOC FOR NO FOREST LAND	402
ANNEXURE 5	AUTHENTICATED LOCATION MAP	403
ANNEXURE 6	AUTHENTICATED LIST FLORA FAUNA AND WLCP	404 - 480
ANNEXURE 7	DETAILED AAQM TABLE	481 - 498
ANNEXURE 8	BASELINE PHOTOGRAPHS	499 - 504
ANNEXURE 9	BASELINE RESULT DURING 2013	505 - 516
ANNEXURE 10	HYDRO-GEOLOGICAL STUDY REPORT	517 - 572
ANNEXURE 11	R&R REPORT	573 - 651
ANNEXURE 12	CORPORATE ENVIRONMENT POLICY	652
ANNEXURE 13	NABET CERTIFICATE	653
ANNEXURE 14	TEST ANALYSIS CERTIFICATE	654 - 661
ANNEXURE 15	UNDERTAKING NO LITIGATION	662
ANNEXURE 16	PH PROCEEDING	663 - 757
ANNEXURE 17A	SURFACE PLAN	758
ANNEXURE 17B	SURFACE GEOLOGICAL PLAN & SECTION	759 - 762
ANNEXURE 17C	CONCEPTUAL PLAN	763 – 764
ANNEXURE 18	ADDITIONAL INFORMATION	765 - 766

CONTENTS

S. NO.	PARTICULAR	PAGE NO.
CHAPTER-1	**INTRODUCTION**	**24- 29**
1.1	PURPOSE OF THE REPORT	24
1.2	IDENTIFICATION OF PROJECT AND PROJECT PROPONENT	25
1.2.1	IDENTIFICATION OF THE PROJECT	25
1.2.2	INTRODUCTION OF THE PROJECT PROPONENT	26
1.3	BRIEF DESCRIPTION OF NATURE, SIZE, LOCATION OF THE PROJECT AND ITS IMPORTANCE TO THE COUNTRY, REGION	27
1.3.1	BRIEF DESCRIPTION OF NATURE, SIZE, LOCATION OF PROJECT	27
1.3.2	PROJECT IMPORTANCE TO THE COUNTRY AND REGION	28
1.4	SCOPE OF THE STUDY AS PER TERMS OF REFERENCE (ToR) (DETAILS OF THE REGULATORY SCOPING CARRRIED OUT)	28
CHAPTER–2	**PROJECT DESCRIPTION**	**30- 55**
2.1	TYPE OF THE PROJECT	30
2.2	NEED FOR THE PROJECT	30
2.3	LOCATION OF THE PROJECT	30
2.3.1	LOCATION MAP (GENERAL & SPECIFIC)	31
2.3.2	SHOWING GEOLOGY AND GEOMORPHOLOGY OF THE MINE SITE WITH CORNER CORDINATES	32
2.3.3	PROJECT SITE LAYOUT	35
2.3.4	SALIENT FEATURES OF THE LEASE AREA	35
2.3.5	PROJECT SITE PHOTOGRAPHS	36
2.4	SIZE OR MAGNITUDE OF OPERATION	36
2.4.1	ASSOCIATED ACTIVITIES/ FACILITIES PROPOSED	37
2.5	STATUS OF STATUTORY CLEARANCES, PERMISSIONS, NO OBJECTION CERTIFICATES, CONSENTS	37
2.6	PROPOSED SCHEDULE FOR APPROVAL AND IMPLEMENTATION	38
2.6.1	APPROVAL	38
2.6.2	IMPLEMENTATION	39
2.7	TECHNOLOGY AND PROCESS DESCRIPTION	39
2..7.1	BASIC REQUIREMENTS FOR THE PROJECT	39
2.7.1.1	WATER REQUIREMENT	40
2.7.1.2	POWER REQUIREMENT	40
2.7.1.3	RAW MATERIAL/ FUEL REQUIREMENT	40
2.7.1.4	MANPOWER REQUIREMENT	41
2.7.1.5	EXTENT OF MECHANIZATION	42
2.7.2	GEOLOGY OF THE AREA	42
2.7.2.1	REGIONAL GEOLOGY	42
2.7.2.2	LOCAL GEOLOGY	44
2.7.3	DETAILS OF MINING	45

S. NO.	PARTICULAR	PAGE NO.
2.7.3.1	EXPLORATION CARRIED OUT IN THE AREA	45
2.7.3.2	EXPLORATION TO BE CARRIED OUT IN THE AREA	46
2.7.3.3	ESTIMATION OF RESERVES	46
2.7.3.4	ANTICIPATED LIFE OF MINE	47
2.7.3.5	USE OF MINERAL	47
2.7.4	PROCESS DESCRIPTION	47
2.7.5	YEAR WISE PRODUCTION AND EXCAVATION DETAILS	49
2.8	TOP SOIL/ WASTE GENERATION AND MANAGEMENT	51
2.9	CONCEPTUAL MINING PLAN	52
2.10	DESCRIPTION OF MITIGATION MEASURES	53
2.10	ASSESSMENT OF NEW AND TESTED TECHNOLOGY FOR THE RISK OF TECHNOLOGICAL FAILURE	55
CHAPTER–3	**DESCRIPTION OF THE ENVIRONMENT**	**56- 132**
3.1	INTRODUCTION	56
3.2	STUDY AREA AT A GLANCE	56
3.3	STUDY PERIOD	59
3.4	ENVIRONMENTAL COMPONENTS	59
3.5	ESTABLISHMENT OF BASELINE FOR VALUED ENVIRONMENTAL COMPONENTS	59
3.5.1	INSTRUMENTS USED FOR ENVIRONMENTAL BASELINE DATA COLLECTION	63
3.6	LAND USE LAND COVER STUDY	64
3.6.1	DATA USED	64
3.6.2	METHODOLOGY	64
3.6.3	LAND USE LAND COVER	70
3.6.4	INTERPRETATION OF THE LULC DATA	72
3.7	SEISMICITY & FLOOD HAZARD ZONATION OF THE AREA	73
3.8	FLOOD HAZARD ZONATION OF THE AREA	75
3.9	TOPOGRAPHY & DRAINAGE PATTERN	76
3.10	CLIMATE AND RAINFALL	77
3.11	METEOROLOGY	78
3.12	MICRO-METEOROLOGY CONDITION AT SITE	79
3.13	AMBIENT AIR ENVIRONMENT	82
3.13.1	MINERALOGICAL COMPOSITION FOR RSPM	90
3.13.2	NATIONAL AMBIENT AIR QUALITY STANDARDS	91
3.14	NOISE ENVIRONMENT	93
3.14.1	OBSERVATIONS, INTERPRETATION & CONCLUSION FOR SUMMER SEASON (MARCH, 2024 TO MAY, 2024)	97
3.15	WATER ENVIRONMENT	97
3.15.1	SURFACE WATER QUALITY	97
3.15.2	GROUND WATER QUALITY	99
3.16	SOIL ENVIRONMENT	105

S. NO.	PARTICULAR	PAGE NO.
3.17	BIOLOGICAL ENVIRONMENT	112
3.18	SOCIO-ECONOMIC ENVIRONMENT	119
3.18.1	INTRODUCTION	119
3.19	CONCLUSION	132
CHAPTER–4	**ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES**	**133- 187**
4.1	INTRODUCTION	133
4.2	METHODOLOGY OF IMPACT ASSESSMENT	133
4.3	BASIS OF IMPACT ASSESSMENT	134
4.4	INTERACTION MATRIX	136
4.5	ENVIRONMENTAL IMPACT ASSESSMENT & MITIGATION MEASURES	139
4.5.1	IMPACT ON AIR QUALITY AND MITIGATION MEASURES	139
4.5.1.1	AIR POLLUTION DUE TO LIMESTONE MINING PROJECT	140
4.5.1.2	AMBIENT AIR QUALITY IMPACT PREDICTION MODELING	140
4.5.1.3	EMISSION RATE AS PER MATERIAL HANDLED	140
4.5.1.4	MODELING PROCEDURE	142
4.5.1.5	METEOROLOGICAL DATA/INPUT PARAMETERS FOR AERMOD	142
4.5.1.6	AMBIENT AIR QUALITY STANDARDS	143
4.5.1.7	PRESENTATION OF RESULTS	143
4.5.1.8	SAFEGUARD/MITIGATION MEASURES	149
4.5.1.9	IMAPCT EVALUATION	149
4.5.2	IMPACT OF NOISE/VIBRATIONS & MITIGATION MAESURES	150
4.5.2.1	IMPACT OF NOISE ON WORKING ENVIRONMENT	150
4.5.2.2	MITIGATION MEASURES TO REDUCE NOISE LEVEL	154
4.5.2.3	IMPACT EVALUATION OF NOISE	154
4.5.2.4	IMPACT OF VIBRATION DUE TO BLASTING	155
4.5.5.5	IMPACT SIGNIFICANCE OF GROUND VIBRATIONS	157
4.5.3	IMPACT ON WATER ENVIRONMENT & ITS MITIGATION MEASURES	157
4.5.3.1	IMPACT ON SURFACE WATER & MITIGATION MEASURES	157
4.5.3.2	IMPACT ON GROUND WATER & MITIGATION MEASURES	158
4.5.3.3	WASTE WATER MANAGEMENT	159
4.5.3.4	WATER CONSERVATION MEASURES	159
4.5.3.5	IMPACT EVALUATION	159
4.5.4	IMPACT ON SOIL/LAND USE & MITIGATION MEASURES	160
4.5.4.1	LAND USE PATTERN	161
4.5.4.2	IDENTIFICATION OF IMPACTS ON LAND USE PATTERN DUE TO THE MINING ACTIVITY	161
4.5.4.3	IMPACT SIGNIFICANCE	167
4.5.5	SOCIO-ECONOMIC ENVIRONMENT	167
4.5.5.1	POSITIVE IMPACTS	167
4.5.5.2	ADVERSE SOCIAL IMPACT	169

S. NO.	PARTICULAR	PAGE NO.
4.5.5.3	MITIGATION MEASURES	169
4.5.6	PUBLIC HEALTH IMPLICATION	170
4.5.6.1	IMPACT EVALUATION	170
4.5.7	IMPACT ON LOCAL TRANSPORT INFRASTRUCTURE	171
4.5.7.1	MEASURES FOR TRANSPORTATION	171
4.5.7.2	IMPACT EVALUATION	172
4.5.8	IMPACT ON BIOLOGICAL ENVIRONMENT	172
4.5.8.1	IMPACT ON FLORA & FAUNA	172
4.5.8.2	QUANTIFICATION OF IMPACT ON BIOLOGICAL ENVIRONMENT V/S MITIGATION MATRIX	173
4.5.8.3	GREENBELT DEVELOPMENT	176
4.5.8.4	GENERAL GUIDELINES FOR GREENBELT DEVELOPMENT	177
4.5.8.5	IMPACT EVALUATION	178
4.5.9	AWARENESS CAMPAIGN & TRAINING PROGRAMMES	179
4.5.10	OCCUPATIONAL HEALTH & SAFETY HAZARD	180
4.5.10.1	OCCUPATIONAL HEALTH HAZARD AT MINE SITE	180
4.5.10.2	IMPLEMENTATION OF OCCUPATIONAL HEALTH AND SAFETY MEASURES	181
4.5.10.3	PRE-PLACEMENT & PERIODICAL MEDICAL EXAMINATION SCHEDULE	182
4.6	IRREVERSABLE AND IRREVERTABLE COMMITMENTS OF ENVIRONMENTALS COMPONENTS	187
4.7	CONCLUSION	187
CHAPTER-5	**ANALYSIS OF ALTERNATIVES (TECHNOLOGY & SITE)**	**188**
5.1	GENERAL	188
5.2	ANALYSIS OF SITE	188
5.3	ANALYSIS OF TECHNOLOGY	188
5.4	CONCLUSION	188
CHAPTER–6	**ENVIRONMENTAL MONITORING PROGRAMME**	**189- 194**
6.1	INTRODUCTION	189
6.2	FORMATION OF ENVIRONMENTAL MANAGEMENT CELL (EMC)	189
6.2.1	RESPONSIBILITIES OF EMC	189
6.3	MEASUREMENT METHODLOGIES	190
6.3.1	INSTRUMENTS TO BE USED	190
6.3.2	MONITORING PROGRAMME	190
6.3.3	MONITORING SCHEDULE	191
6.3.4	METHODOLOGY ADOPTED	191
6.3.5	LOCATIONS OF MONITORING STATIONS	193
6.4	DATA ANALYSIS	193
6.5	REPORTING SCHEDULE	193

S. NO.	PARTICULAR	PAGE NO.
6.6	CORRECTIVE AND PREVENTIVE ACTION PLAN FOR NON-COMPLIANCE/NON-CONFORMANCES	194
6.7	DETAILED BUDGET	194
CHAPTER–7	**ADDITIONAL STUDIES**	**195-229**
7.1	INTRODUCTION	195
7.2	PUBLIC CONSULTATION	195
7.2.1	PUBLIC HEARING NOTICE PUBLISHED IN THE TIMES OF INDIA AND DAINIK NAVJYOTI	196
7.2.2	PHOTOGRAPHS OF PUBLIC HEARING	197
7.2.3	PUBLIC HEARING ACTION PLAN	198
7.3	HYDRO-GEOLOGICAL STUDY & RAINWATER HARVESTING PLAN	203
7.4	RISK ASSESSMENT AND DISASTER MANAGEMENT PLAN	204
7.4.1	DEFINITION	204
7.4.2	SCOPE	204
7.4.3	OBJECTIVE	204
7.4.4	IDENTIFICATION OF HAZARDS	207
7.4.5	CAUSES OF HAZARD	216
7.4.6	RISK MITIGATION MEASURES	217
7.4.7	OBJECTIVE OF DISASTER MANAGEMENT PLAN	218
7.4.8	EMERGENCY ORGANIZATION	218
7.4.8.1	KEY PERSONNEL AND THEIR RESPONSIBILITY	221
7.4.8.2	RISK ASSESSMENT	222
7.4.8.3	QUICK EVACUATION, AMELIORATIVE MEASURES FOR EMERGENCY PLAN	223
7.4.8.4	THE CAPABILITY OF LESSEE TO MEET SUCH EVENTUALLY	223
7.4.8.5	ACTION IN EMERGENCY	224
7.4.8.6	IDENTIFICATION AND REPORTING SYSTEM	224
7.4.8.7	SITE RESTORATION	225
7.4.8.8	PRECAUTIONS	225
7.4.8.9	POST DISASTER ANALYSIS AND EVALUATION	225
7.4.9	OFF-SITE EMERGENCY PLANNING	226
7.4.9.1	INTRODUCTION	226
7.4.9.2	ASPECTS INCLUDED IN AN OFF-SITE EMERGENCY PLAN	226
7.4.9.3	ROLE OF MAJOR HAZARD MANAGEMENT	227
7.4.9.4	ROLE OF THE EMERGENCY COORDINATING OFFICER	227
7.4.9.5	ROLE OF THE LOCAL AUTHORITY	227
7.4.9.6	ROLE OF THE POLICE	228
7.4.9.7	ROLE OF THE FIRE AUTHORITIES	228
7.4.9.8	ROLE OF THE HEALTH AUTHORITIES	228
7.4.9.9	ROLES OF THE GOVERNMENT SAFETY AUTHORITY	228
7.4.10	CARE AND MAINTENANCE DURING TEMPORARY DISCONTINUANCE	228

S. NO.	PARTICULAR	PAGE NO.
7.5	REHABILITATION & RESETTLEMENT	229
CHAPTER–8	**PROJECT BENEFITS**	**230- 240**
8.1	INTRODUCTION	230
8.2	PROJECT BENEFITS	230
8.3	ENVIRONMENTAL BENEFITS	231
8.4	EMPLOYMENT POTENTIAL: SKILLED, SEMI-SKILLED & UN-SKILLED	231
8.5	ECONOMIC BENEFITS	231
8.6	SOCIAL BENEFITS	232
8.6.1	PROPSOED PLAN FOR SOCIO ECONOMIC DEVELOPMENT	236
8.6	CONCLUSION	240
CHAPTER–9	**ENVIRONMENTAL COST BENEFIT ANALYSIS**	**241**
9.1	ENVIRONMENTAL COST BENEFIT ANALYSIS	241
CHAPTER – 10	**ENVIRONMENT MANAGEMENT PLAN**	**242- 250**
10.1	INTRODUCTION	242
10.2	PURPOSE OF EMP	242
10.3	ELEMENTS OF EMP	243
10.4	CORPORATE ENVIRONMENT POLICY (CEP)	243
10.5	FORMATION OF ENVIRONMENTAL MANAGEMENTAL CELL (EMC)	243
10.5.1	RESPONSIBILITIES OF EMC	244
10.6	CORPORATE ENVIRONMENTAL AUDITING	245
10.7	PERSONS RESPONSIBLE FOR IMPLEMENTATION OF EMP	246
10.8	DETAILED BUDGET FOR EMP	249
CHAPTER–11	**SUMMARY & CONCLUSION**	**251- 259**
11.1	INTRODUCTION	251
11.2	PROJECT DETAILS	251
11.3	MINING DETAILS	253
11.4	DESCRIPTION OF THE ENVIRONMENT	253
11.5	ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES	255
11.6	ANALYSIS OF ALTERNATIVES (TECHNOLOGY & SITE)	256
11.7	POST PROJECT ENVIRONMENTAL MONITORING PROGRAMME	257
11.8	ADDITIONAL STUDIES	257
11.8.1	HYDRO-GEOLOGICAL STUDY	257
11.8.2	BIOLOGICAL ENVIRONMENT	257
11.8.3	RESETTLEMENT & REHABILITATION	258
11.9	PROJECT BENEFITS	258
11.10	ENVIRONMENT MANAGEMENT PLAN	258
11.11	CONCLUSION	259

S. NO.	PARTICULAR	PAGE NO.
CHAPTER–12	**DISCLOSURE OF CONSULTANT ENGAGED**	**260- 261**
12.1	DISCLOSURE OF CONSULTANT ENGAGED	260

LIST OF TABLES

S. NO.	PARTICULAR	PAGE NO.
1.1	STATUS OF PROPOSAL FOR ENVIRONMENT CLEARANCE	26
1.2	BRIEF DESCRIPTION OF THE PROJECT	27
2.1	ACQUISITION STATUS OF PRIVATE LAND (IN HA)	35
2.2	SIZE OR MAGNITUDE OF OPERATION	36
2.3	STATUS OF STATUTORY CLEARANCES, PERMISSIONS, NO OBJECTION CERTIFICATES AND CONSENTS	37
2.4	PROPOSED SCHEDULE FOR APPROVAL	38
2.5	WATER REQUIREMENT	39
2.6	WASTE WATER MANAGEMENT	40
2.7	DETAILS OF RAW MATERIAL / FUEL REQUIREMENT	40
2.8	DIESEL CONSUMPTION	40
2.9	EMPLOYMENT POTENTIAL	41
2.10	MANPOWER REQUIRED FOR ENVIRONMENT MANAGEMENT CELL	41
2.11	TOTAL MACHINERY & EQUIPMENT REQUIRED FOR MINING	42
2.12	MINERAL LIMESTONE RESOURCES/ RESERVES AS PER UNFC (IN MILLION TONNES)	46
2.13	DRILLING PARAMETERS	48
2.14	MINING DETAILS	48
2.15	PIT WISE WORKING DETAILS	49
2.16	FIRST FIVE YEAR WORKING DETAILS IN PIT NO 8	49
2.17	TENTATIVE EXCAVATION DETAILS FOR PLAN PERIOD (IN MILLION TONNES)	49
2.18	YEAR WISE EXCAVATION SCHEDULE TILL LIFE OF MINE (MILLION TONNES)	50
2.19	TOP SOIL AND OVER BURDEN GENERATION AND MANAGEMENT	51
2.20	POST MINING LAND USE OF CORE ZONE	53
3.1	ENVIRONMENTAL SETTING DETAILS	56
3.2	INDUSTRIES FALLING IN THE STUDY AREA	59
3.3 (A)	BASELINE DATA COLLECTION SUMMER SEASON (MARCH TO MAY, 2013)	60
3.3 (B)	BASELINE DATA COLLECTION SUMMER SEASON (MARCH TO MAY, 2024)	62
3.4	LAND USE LAND COVER DETAILS OF CORE AREA	72
3.5	LAND USE LAND COVER DETAILS OF STUDY AREA	72
3.6	SEISMIC ZONES IN INDIA	73
3.7	AVERAGE ANNUAL RAINFALL DATA FOR LAST 10 YEARS	78
3.8	MICRO-METEOROLOGY AT SITE	80
3.9	DETAILS OF TEST PROCEDURES	83

S. NO.	PARTICULAR	PAGE NO.
3.10	COMPOSITE LOCATIONS OF AMBIENT AIR QUALITY MONITORING STATIONS	85
3.11	AMBIENT AIR QUALITY MONITORING RESULTS	88
3.12	AMBIENT AIR QUALITY MONITORING RESULTS	89
3.13	NATIONAL AMBIENT AIR QUALITY STANDARDS	92
3.14	COMPOSITE LOCATIONS OF AMBIENT NOISE MONITORING STATIONS	94
3.15	AMBIENT NOISE LEVEL MONITORING RESULTS	96
3.16	CPCB NOISE STANDARDS	96
3.17	COMPOSITE LOCATION OF SURFACE WATER QUALITY MONITORING	98
3.18	COMPOSITE LOCATIONS OF GROUND WATER STATION	100
3.19	GROUND WATER ANALYSIS	102
3.20	LOCATIONS OF SOIL SAMPLING STATIONS	106
3.21	SOIL ANALYSIS	108
3.22	STANDARD SOIL CLASSIFICATION	110
3.23	INVENTORY OF FLORAL DIVERSITY IN BUFFER ZONE AND CORE ZONE OF PLANT SITE BASED ON ACTUAL SIGHTING, BASED ON INPUTS FROM LOCALS AND PERUSED FROM SECONDARY DATA	112
3.24	INVENTORY OF FAUNAL DIVERSITY IN BUFFER & CORE ZONE OF PLANT SITE BASED ON ACTUAL SIGHTING, BASED ON INPUTS FROM LOCALS AND PERUSED FROM SECONDARY DATA	114
3.25	DEMOGRAPHIC PROFILE	120
3.26	VILLAGE WISE DEMOGRAPHIC PROFILE OF THE STUDY AREA	122
3.27	ZONE WISE DEMOGRAPHICAL PROFILE OF STUDY AREA	124
3.28	SUMMARY OF VULNERABLE GROUP IN THE STUDY AREA	125
3.29	LITERACY RATE OF SURVEYED VILLAGES	126
3.30	WORKING POPULATION OF THE STUDY AREA	127
3.31	EDUCATIONAL FACILITIES IN THE STUDY AREA	128
3.32	HEALTH FACILITIES IN THE STUDY AREA	129
4.1	IMPACT CHARACTERISTICS	134
4.2	SIGNIFICANCE OF IMPACT	135
4.3	IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF ENVIRONMENTAL COMPONENTS	136
4.4	INTERACTION MATRIX	137
4.5	LIKELY IMPACTED RESOURCES / RECEPTORS	139
4.6	TOTAL HANDLING FOR IMPACT ASSESSMENT	140
4.7	EMISSION RATE AND LOAD AS PER MATERIAL HANDLED FOR KADAPA LIMESTONE MINE	141
4.8	EMISSION RATE AS PER MATERIAL HANDLED FOR KADAPA LIMESTONE MINE	141
4.9	EMISSION RATE AS PER MATERIAL HANDLED (FOR CRUSHING ACTIVITY)	141
4.10	STACK EMISSION DETAILS OF PROPOSED CEMENT PLANT	142
4.11	AMBIENT AIR QUALITY STANDARDS	143

S. NO.	PARTICULAR	PAGE NO.
4.12	CUMULATIVE GLC DUE TO FOR INTEGRATED CEMENT PLANT, CAPTIVE MINES AND VEHICULAR TRANSPORTATION	143
4.13	PEAK INCREMENTAL GLC DUE TO PROPOSED PROJECT (INCLUDING TRANSPORTATION) UNDER WORST CONDITION	143
4.14	IMPACT EVALUATION FOR AMBIENT AIR QUALITY	150
4.15	NOISE GENERATION DUE TO DRILLING	151
4.16	NOISE GENERATION DUE TO EXCAVATION, LOADING AND TRANSPORTATION	151
4.17	IMPACT EVALUATION FOR NOISE	155
4.18	PERMISSIBLE PEAK PARTICLE VELOCITY (MM/S)	156
4.19	IMPACT EVALUATION TO DETERMINE THE BLAST INDUCED GROUND VIBRATIONS	158
4.20	IMPACT EVALUATION FOR WATER ENVIRONMENT	161
4.21	STAGE WISE LAND USE PATTERN (IN HA)	162
4.22	IMPACT EVALUATION TO DETERMINE THE SIGNIFICANCE (LAND USE – DURING OPERATION PHASE)	168
4.23	IMPACT EVALUATION TO DETERMINE THE SIGNIFICANCE (SOCIO ECONOMIC ENVIRONMENT)	172
4.24	IMPACT EVALUATION FOR TRANSPORTATION INFRASTRUCTURE	173
4.25	QUANTIFICATION OF IMPACT ON BIOLOGICAL ENVIRONMENT V/S MITIGATION MATRIX	174
4.26	PLANTATION SCHEDULE	178
4.27	IMPACT EVALUATION FOR BIOLOGICAL RESOURCES	179
4.28	ACTIVITIES /AWARENESS CAMPAIGN FOR ENVIRONMENTAL ISSUES	180
4.29	PRACTICAL TRAINING BEING/TO BE IMPARTED TO ENVIRONMENTA ENGINEERS	180
4.30	PRACTICAL TRAINING BEING/TO BE IMPARTED TO MINING ENGINEERS & GEOLOGISTS	180
4.31	SCHEDULE OF OCCUPATIONAL HEALTH & SURVEY	185
6.1	POST PROJECT MONITORING	191
6.2	POST PROJECT MONITORING PROGRAMME	191
6.3	LOCATIONS OF MONITORING STATIONS	193
7.1	PUBLIC HEARING DETAILS IN BRIEF	195
7.2	PUBLIC HEARING ACTION PLAN OF VERBAL COMMENTS/ ISSUES RECEIVED DURING PUBLIC HEARING	198
7.3	PROPOSED PHYSICAL TARGETS FOR ADDRESSING ISSUES OF DURING PUBLIC HEARING AS PER MOEF&CC, OM DATED 30.09.2020 & 20.10.2020	200
7.4	ENTERPRISE SOCIAL COMMITMENT / CER FOR PHASE – 1 (BUDGET RS IN CRORE)	201
7.5	ENTERPRISE SOCIAL COMMITMENT / CER FOR PHASE – 2 (BUDGET RS IN CRORE)	202
7.6	HAZARD IDENTIFICATION & MITIGATION MEASURES AS SUGGESTED	208
8.1	ECONOMIC BENEFITS OF THE PROJECT	232
8.2	SKILL DEVELOPMENT PROGRAMME (ACC DISHA) (PHASE - I)	237
8.3	SKILL DEVELOPMENT PROGRAMME (ACC DISHA) (PHASE - II)	238

S. NO.	PARTICULAR	PAGE NO.
10.1	ROLE & RESPONSIBILITIES OF MANPOWER DEPLOYED/ TO BE DEPLOYED	246
10.2	EMP COST BREAKUP FOR THE PROPOSED PROJECT	249
11.1	PROJECT DETAILS	251
11.2	MINING DETAILS	253
11.3	POST PROJECT MONITORING	257

LIST OF FIGURES

S. NO.	PARTICULAR	PAGE NO.
2.1	LOCATION MAP (SHOWING GENERAL AS WELL AS SPECIFIC LOCATION OF THE ML AREA)	31
2.2	MAP SHOWING GEOLOGY WITH CORNER COORDINATE OF THE MINE SITE	32
2.3	MAP SHOWING GEOMORPHOLOGY OF THE MINE SITE AND 10 KM OF STUDY AREA	33
2.4	MAP SHOWING GEOLOGY OF THE MINE SITE AND 10 KM OF STUDY AREA	34
2.5	MINE SITE PHOTOGRAPHS	36
2.6	WATER BALANCE FLOW CHART	39
2.7	FLOW CHART FOR MINING PROCESS	47
3.1	MAP SHOWING ENVIRONMENTAL SETTINGS OF THE 10 KM RADIUS FROM THE MINE SITE	58
3.2	SATELLITE IMAGE OF MINING LEASE AREA	66
3.3	SATELLITE IMAGE OF STUDY AREA	67
3.4	LAND USE LAND COVER MAP OF THE MINING LEASE AREA	70
3.5	LAND USE LAND COVER MAP OF THE STUDY AREA	71
3.6	GSHAP HAZARD MAP FOR ANDHRA PRADESH	73
3.7	SEISMIC ZONE MAP	74
3.8	FLOOD HAZARD ZONATION MAP OF THE AREA	76
3.9(a)	WINDROSE DIAGRAM FOR BASELINE PERIOD	79
3.9(b)	WINDROSE DIAGRAM FOR ANNUAL WIND PATTERN	79
3.10	WIND ROSE DIAGRAM FOR *SUMMER SEASON* (MARCH TO MAY, 2022)	81
3.11	KEY PLAN SHOWING AMBIENT AIR QUALITY MONITORING LOCATIONS	87
3.12	KEY PLAN SHOWING AMBIENT NOISE LEVEL MONITORING LOCATIONS	95
3.13	KEY PLAN SHOWING GROUND WATER SAMPLING LOCATIONS	101
3.14	KEY PLAN SHOWING GROUND WATER SAMPLING LOCATIONS	107
3.15	POPULATION DISTRIBUTION	124
3.16	VULNERABLE GROUPS	125
3.17	GENDER WISE LITERACY RATE IN THE STUDY AREA	126
3.18	WORKING FORCE IN THE STUDY AREA	127
3.19	EDUCATION FACILITIES IN THE STUDY AREA	129
3.20	HEALTHCARE FACILITY DISTRIBUTION	130
4.1 (a)	ISOPLETH SHOWING THE INCREMENTAL GLCS OF PM2.5 DUE TO INTEGRATED CEMENT PLANT, CAPTIVE LIMESTONE MINE AND VEHICULAR TRANSPORTATION	144

4.1 (b)	ISOPLETH SHOWING THE INCREMENTAL GLCS OF PM10 DUE TO INTEGRATED CEMENT PLANT, CAPTIVE LIMESTONE MINE AND VEHICULAR TRANSPORTATION	145
4.1 (c)	ISOPLETH SHOWING THE INCREMENTAL GLCS OF SO_2 DUE TO INTEGRATED CEMENT PLANT, CAPTIVE LIMESTONE MINE AND VEHICULAR TRANSPORTATION	146
4.1 (d)	ISOPLETH SHOWING THE INCREMENTAL GLCS OF NOX DUE TO INTEGRATED CEMENT PLANT, CAPTIVE LIMESTONE MINE AND VEHICULAR TRANSPORTATION	147
4.1 (e)	ISOPLETH SHOWING THE INCREMENTAL GLCS OF PM IN WORST CASE	148
4.2	NOISE DISPERSION TREND AROUND THE MINE	153
7.1	IDENTIFICATION OF HAZARDS IN OPENCAST MINE	216
7.2	ORGANIZATION FOR DEALING WITH EMERGENCY SITUATION	219
10.1	ORGANISATIONAL STRUCTURE OF EMC	244

ABBREVIATIONS

AAQ	:	Ambient Air Quality
AAQM	:	Ambient Air Quality Monitoring
AAQS	:	Ambient Air Quality Standards
AIS & LUS	:	All India Soil and Land Use Survey
AMSL	:	Above Mean Sea Level
ANFO	:	Ammonium Nitrate Fuel Oil
bgl	:	Below Ground Level
CWC	:	Central Water Commission
CPP	:	Captive Power Plant
CPCB	:	Central Pollution Control Board
CSR	:	Corporate Social Responsibility
CEP	:	Corporate Environment Policy
CGWA	:	Central Ground Water Authority
DGMS	:	Directorate General Of Mines Safety
DMG	:	Department Of Mines And Geology
DTH	:	Down The Hole
DCF	:	Deputy Conservator Of Forest
DMF	:	District Mineral Fund
EMS	:	Environment Management System
ECO	:	Emergency Coordinating Officer
EAC	:	Expert Appraisal Committee
EC	:	Environmental Clearance
EIA	:	Environmental Impact Assessment
EMC	:	Environment Management Cell
EMP	:	Environmental Management Plan
ESE	:	East of South East
ENE	:	East of North East
EPA	:	Environmental Protection Act
EPO	:	Emergency planning officer
FMCG	:	Fast Moving Consumer Goods
FPS	:	Fine Particulate Sampler
FCC	:	False Color Composite
Govt.	:	Government
GCP	:	Ground Control Points
GLC	:	Ground Level Concentration
GOI	:	Government Of India
GPS	:	Global Positioning System
GSI	:	Geological Survey Of India
ha	:	Hectare
HEMM	:	Heavy Earth Moving Machinery
HFL	:	Highest Flood Level
HP	:	Horse Power
HOD	:	Head Of Department
IB	:	Inter Burden
IBM	:	Indian Bureau of Mines
IMD	:	India Meteorological Department
IS	:	Indian Standards

ISO	:	International Organization Of Standardization
KW	:	Kilo Watt
KLD	:	Kilo Litre Per Day
LU/LC	:	Land Use / Land Cover
ML	:	Local Magnitude
MT	:	Million Tonne
MOEFCC	:	Ministry Of Environment, Forest And Climate Change
M.M.R	:	Metalliferous Mines Regulation
mRL	:	Meter Reduced Level
MSL	:	Mean Sea Level
Mw	:	Moment Magnitude
MW	:	Mega Watt
N	:	North
NH	:	National Highway
NNW	:	North Of North East
NW	:	North West
NAAQS	:	National Ambient Air Quality Standards
NABET	:	National Accreditation Board for Education & Training
NABL	:	National Accreditation Board for Testing and Calibration Laboratories
NOC	:	No Objection Certificate
NH	:	National Highway
NGO	:	Non Governmental Organization
NONEL		Non Electric
NRSA	:	National Remote Sensing Agency
NRSC	:	National Remote Sensing Centre
OB	:	Over Burden
OHS	:	Occupational Health and Safety
OSHA	:	Occupational Safety and Health Administration
PFR	:	Pre-Feasibility Report
pH	:	Potential of Hydrogen
PHCs	:	Public Health Centers
PM	:	Particulate Matter
PPE	:	Personal Protective Equipment
PPV	:	Peak Particle Velocity
QCI	:	Quality Council of India
RSPM	:	Respirable Suspended Particulate Matter
ROM	:	Run Of Mine
RCC	:	Reinforced Concrete Cement
RDS	:	Respirable Dust Sampler
SSE	:	South Of South East
SOB	:	Soft Over Burden
SW	:	South West
SC	:	Scheduled Caste
SHE	:	Safety, Health & Environment
SIA	:	Social Impact Assessment
SOI	:	Survey of India
SPCB	:	State Pollution Control Board
SPM	:	Suspended Particulate Matter

ST	:	Scheduled Tribe
STP	:	Sewage Treatment Plant
TDS	:	Total Dissolved Solids
TAMRA	:	Transparency Auction Monitoring And Resource Augmentation
ToR	:	Terms of Reference
TPA	:	Tones Per Annum
TPD	:	Tones Per Day
TW	:	Tube Well
UNFC	:	United Nations Framework Classification
VT	:	Vocational Training
RF	:	Reserve Forest
PF	:	Protected Forest
$\mu g/m^3$	:	Micro gram per meter cube
µm	:	Micro Meter
dia.	:	diameter
CuM	:	Cubic meter
dB	:	Decibel
gm/sec	:	Gram per second
gm/cc	:	Gram per cubic meter
hr/day	:	Hour per day
kg	:	Kilogram
Kg/hr	:	Kilogram per hour
Kg/ha	:	Kilogram per hectare
km	:	Kilometer
m	:	Meter
mg/l	:	Milligram per Litre
mm	:	Millimeter
Sq.km	:	Square Kilometer
t/hr	:	Tonnes per hour



ToR Amendment Letter

By Speed Post

No. J-11015/133/2012-IA.II(M)
Government of India
Ministry of Environment, Forests & Climate Change
Impact Assessment Division

3rd Floor, Vayu Wing,
Indira Paryavaran Bhawan,
Jorbagh Road, Aliganj,
New Delhi-110 003
E-mail: sridhar-mef@nic.in
Tele: 011-24695304

Dated: 30th November, 2015

To

M/s ACC Ltd.
Connaught Place,
313 Bund Garden Road,
Pune, Maharashtra-411001

Subject: Captive Limestone Mining Project of M/s ACC Ltd. Village Gollapalli, Mylavaram Mandalam, District Kadapa (YSR), Andhra Pradesh (997.08 ha)-Extension of validity of TOR regarding.

Sir,

The Proposal of TOR was issued to M/s ACC Ltd., vide letter of even no. dated 30.10.2012 for undertaking detailed EIA study for the purpose of obtaining environmental clearance in accordance with the provisions of the EIA Notification, 2006.

2. The proposal is for amendment of TOR of Captive Limestone Mining production for 7.0MTPA (M.L. area 997.08 ha) located at Village Gollapalli, Vaddirala, G. Uppalapadu , Dhannawada, Chinna Venturla, Bestavemula, Mylavaram Mandalam, District Kadapa (YSR), Andhra Pradesh. The proposed integrated Cement Plant latitude and longitude of the site is N 14° 58'06" to 14° 59'51" & E 78° 16' 50" to 78° 18' 38" and the proposed limestone Mine N 14° 59'20" to 15° 00'10" & E 78° 13' 55" to 78° 18' 08" . The mine lease area is 997.08 ha which is reserved forests Dhodiyan RF: 8.0KM, SW and Malamidikambala Dinne RF:14.0KM, SW.

3. Mine working will be opencast mechanized involving drilling and blasting. Life of mine is 50 years. Ultimate working depth will be 166msl. Water requirement is estimated as 60 kld, which will be obtained from mine pit. The TOR for mining project was issued vide letter dated J-11015/133/2012-IA.II(M) dated 30th October 2012. The PP requested for the extension of validity TOR it was informed by the PP that application for extension was made on 27.08.2014, however could not be processed.

4. The proposal for extension of validity of TOR was considered by the Expert Appraisal Committee in its meeting held during October 26-28, 2015. The PP requested for extension of validity of TOR and also submitted the EIA/EMP Report. The proposal was considered by the EAC meeting for extension of validity of TOR. The Committee recommended extension of validity of TOR as per MoEF circular no. No. J-11013/41/2006.IA.II(I) dated 07.11.2014 from 30.10.2012 to 29.10.2016. The aforesaid circular dated 07.11.2014 provides for outer limit of four years for the validity of TOR.

5. The matter was examined in the Ministry and as per O.M. no. J-11013/41/2006.IA.II(I)(part) dated 07.11.2014 the extension of the validity of TOR is hereby granted for one year from 30.10.2015 to 29.10.2016. No further extension will be granted.

6. This issues with the approval of the Competent Authority.

(Dr. U. Sridharan)
Scientist 'F'

Copy to:

i. **The Secretary,** Ministry of Mines, Government of India Shastri Bhawan, New Delhi.
ii. **The Secretary,** Department of Environment, Government of Andhra Pradesh, Hyderabad.
iii. **The Secretary,** Department of Forests, Government of Andhra Pradesh, Hyderabad.
iv. **The Secretary,** Department of Mines and Geology, Government of Andhra Pradesh, Hyderabad.
v. **The Secretary,** Department of Industries and Commerce (M-III), Govt of Andhra Pradesh, Hyderabad.
vi. **The Additional Principal Chief Conservator of Forests (C),** Ministry of Environment, Forest and Climate Change, Regional Office (SEZ), Ist and IInd Floor, Handloom Export Promotion Council, 34, Cathedral Garden Road, Nungambakkam, Chennai – 34
vii. **The Chairman,** Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
viii. **The Chairman,** Andhra Pradesh State Pollution Control Board, Paryavaran Bhawan, A-3 Industrial Estate, Sanath Nagar, Hyderabad - 500 018
ix. **The Member Secretary,** Central Ground Water Authority, A2, W- 3 Curzon Road Barracks, K.G. Marg, New Delhi-110001.
x. **The Controller General,** Indian Bureau of Mines, Indira Bhavan, Civil Lines, Nagpur- 440 001.
xi. **The District Collector,** Kadapa District, Government of Andhra Pradesh.
xii. Guard File.

(Dr. U. Sridharan)
Scientist 'F'

ToR Letter

By Speed Post

No. J-11015/133/2012-IA.II (M)
Government of India
Ministry of Environment & Forests
****

751, Paryavaran Bhavan,
C.G.O. Complex, Lodi Road,
New Delhi-110 003
Telefax: 011-24364067
Dated the 30th October, 2012

To

M/s. ACC Ltd.
Regional Office-South & West
"Cannaught Place"
Unit No.313, Third Floor
Bund Garden Road
Pune-411001
Maharashtra (India)

Subject: Captive Limestone Mining Project of M/s ACC Ltd., Village Gollapalli, Mylavaram Mandalam, District Kadapa (YSR), Andhra Pradesh (997.08 ha)- Prescribing of TOR- Regarding.

With reference to your letter dated 10th April, 2012 along with the Form-I and Pre-feasibility report along with CD for opening of new mine for production of 7.00 million TPA of limestone. The mine will be captive to their Cement plant which is nearby. Mine lease area is 997.08 ha. No forestland is involved. No NP/WLS is reported within 10 km. Mine working will be opencast mechanized involving drilling and blasting. Life of mine is 50 years. Ultimate working depth will be 166msl. Ground water level is at 150 msl. Transportation will be by closed conveyor to the crusher and from crusher to cement plant by conveyor. Water requirement is estimated as 60 kld, which will be obtained from mine pit.

2. Based on the information furnished and presentation made before the Expert Appraisal Committee (EAC) for mining projects during its Meeting held on July 25-27, 2012, the following TORs are prescribed:-

1) A copy of the document in support of the fact that the proponent is the

rightful lessee of the mine should be given.

2) All documents including approved mine plan, EIA and public hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management and mining technology and should be in the name of the lessee.

3) All corner coordinates of the mine lease area superimposed on High Resolution Imagery/topo sheet should be provided.

4) Does the company have a well laid down Environment Policy approved by its Board of Directors? If so, it may be detailed in the EIA report.

5) Does the Environment Policy prescribe for standard operating process/ procedures to bring into focus any infringement / deviation / violation of the environmental or forest norms / conditions? If so, it may be detailed in the EIA.

6) What is the hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the EC conditions. Details of this system may be given.

7) Does the company have a system of reporting of non compliances / violations of environmental norms to the Board of Directors of the company and / or shareholders or stakeholders at large? This reporting mechanism should be detailed in the EIA report.

8) The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc should be for the life of the mine / lease period.

9) Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary and national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated.

10) Land use plan of the mine lease area should be prepared to encompass pre-operational, operational and post operational phases and submitted.

11) Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Tiger/Elephant Reserves (existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, if any, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above should be obtained from the State Wildlife Department/ Chief Wildlife Warden under the Wildlife (Protection) Act, 1972 and copy furnished.

12) A detailed biological study for the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, duly authenticated, separately for core and buffer zone

should be furnished based on primary field survey clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.

13) Impact, if any, of change of land use should be given.

14) R&R plan / compensation details for the project affected people should be furnished. While preparing the R&R plan, the National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs / STs and other weaker sections, need based sample survey, family-wise, should be undertaken to assess their requirement and action programmes prepared accordingly integrating the sectoral programme of line departments of the State Government.

15) One season (non-monsoon) primary baseline data on ambient air quality (PM_{10}, SO_2 and NOx), water quality, noise level, soil and flora and fauna shall be collected and the AAQ data so collected presented date-wise in the EIA and EMP report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10 particularly for free silica should be given.

16) Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.

17) The water requirement for the project, its availability and source to be furnished. A detailed water balance should also be provided. Fresh water requirement for the project should be indicated.

18) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the project should be provided.

19) Details of water conservation measures proposed to be adopted in the project should be given.

20) Impact of the project on the water quality both surface and groundwater should be assessed and necessary safeguard measures, if any required should be provided.

21) Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed hydro geological study should be undertaken and report furnished. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.

22) Details of any stream, seasonal or otherwise, passing through lease area and modification / diversion proposed, if any and the impact of the same on the hydrology should be brought out.

23) Details of rainwater harvesting proposed, if any, in the project should be provided.

24) Information on site elevation, working depth, groundwater table etc. should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.

25) Quantity of solid waste generation to be estimated and details for its disposal and management should be provided. The quantity, volumes and methodology planned for removal and utilisation (preferably concurrently) of top soil should be indicated. Details of backfilling proposed, if any, should also be given. It may be clearly indicated that out of the total waste generated during the mine life, how much quantity would be backfilled and how much quantity would be disposed off in the form of external dump (number of dumps, their height, terraces etc. to be brought out).

26) The reclamation plan, post mine land use and progressive greenbelt development plan shall be prepared in tabular form (prescribed format) and submitted.

27) Impact on local transport infrastructure due to the project should be indicated. Projected increase in truck traffic as a result of the project in the present road network (including those outside the project area) should be worked out, indicating whether it is capable of handling the increased load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered.

28) Details of the infrastructure facilities to be provided for the mine workers should be included in the EIA report.

29) Conceptual post mining land use and Reclamation and Rehabilitation of mined

out area (with plans and with adequate number of sections) should be given in the EIA report.

30) Phase-wise plan of greenbelt development, plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given.

31) Occupational health impact of project should be anticipated and preventive measures initiated. Details in this regard should be provided. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP.

32) Public health implication of the project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocation.

33) Measures of socio economic significance and influence to the local community proposed to be provided by project proponent should be indicated. As far as possible, quantitative dimensions may be given with time frame for implementation.

34) Detailed environmental management plan to mitigate the environmental impacts which, should inter-alia also include the impact due to change of land use, due to loss of agricultural land and grazing land, if any, occupational health impacts besides other impacts of the projects.

35) Public hearing points raised and commitment of the project proponent on the same along with time bound action plan to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.

36) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the project should be given.

37) The cost of the project (capital cost and recurring cost) as well as the cost towards implementation of EMP should clearly be spelt out.

4. Besides the above, the below mentioned general points should also be followed:-

a) A note confirming compliance of the TOR, with cross referencing of the relevant sections / pages of the EIA report should be provided.

b) All documents may be properly referenced with index and continuous page numbering.

c) Where data are presented in the report especially in tables, the period in which the data were collected and the sources should be indicated.

d) Where the documents provided are in a language other than English, an English translation should be provided.

e) The Questionnaire for environmental appraisal of mining projects as prescribed by the Ministry shall also be filled and submitted.

f) Approved mine plan along with copy of the approval letter for the proposed capacity should also be submitted.

g) While preparing the EIA report, the instructions for the proponents and instructions for the consultants issued by MoEF vide O.M. No. J-11013/41/2006-IA.II (I) dated 4th August, 2009, which are available on the website of this Ministry should also be followed.

h) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the F.R for securing the TOR) should be brought to the attention of MoEF with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.

5. The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.

6. The prescribed TORs would be valid for a period of two years for submission of the EIA/EMP reports, as per the O.M. No. J-11013/41/2006-IA.II (I) dated 22.3.2010.

7. After preparing the draft EIA (as per the generic structure prescribed in Appendix-III of the EIA Notification, 2006) covering the above mentioned issues, the proponent will get the public hearing conducted and take further necessary action for obtaining environmental clearance in accordance with the procedure prescribed under the EIA Notification, 2006.

(Dr. Saroj)
Director

COPY TO:

1. The Secretary, Ministry of Mines, Government of India Shastri Bhawan, New Delhi.
2. Secretary, Department of Environment, Government of Andhra Pradesh, Hyderabad.
3. Secretary, Department of Forests, Government of Andhra Pradesh, Hyderabad.

4. Secretary, Department of Mines and Geology, Government of Andhra Pradesh, Hyderabad.
5. Secretary, Department of Industries and Commerce (M-III), Govt of Andhra Pradesh, Hyderabad.
6. Chief Conservator of Forests, Regional Office (SZ), Kendriya Sadan, 4th Floor E&F, Wings 17th Main Road, 1 Block, Koramangala, Bangalore-560 034.
7. Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
8. Chairman, Andhra Pradesh State Pollution Control Board, Paryavaran Bhawan, A-3 Industrial Estate, Sanath Nagar, Hyderabad - 500 018
9. Member Secretary, Central Ground Water Authority, A2, W- 3 Curzon Road Barracks, K.G. Marg, New Delhi-110001.
10. Controller General, Indian Bureau of Mines, Indira Bhavan, Civil Lines, Nagpur- 440 001.
11. District Collector, Kadapa District, Government of Andhra Pradesh.
12. EI Division, Ministry of Environment & Forests, Paryavaran Bhawan, New Delhi.
13. Monitoring File.
14. Guard File.
15. Record File.

(Dr. Saroj)
Director

TOR COMPLIANCE

Point wise compliance of ToR Letter issued by MoEF&CC, New Delhi vide letter no. J-11015/133/2012-IA.II (M) dated 30.10.2012 and Validity extension of ToR letter no J-11015/133/2012-IA.II (M) dated 30.11.2015 for Proposed Kadapa Limestone Mine (ML Area: 997.08 ha) with Proposed Limestone Production of 7.0 million TPA, Sub grade 2.5 million TPA, (ROM: 9.5 million TPA), Top Soil: 0.012 million TPA & Over Burden 0.9 million TPA (Total excavation 10.412 million TPA) at Villages Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollaapalle, G. Uppalapadu of Mylavaram Mandal, District (YSR) Kadapa, (Andhra Pradesh) of M/s. ACC Limited.

<table>
<tr><th>S. No.</th><th colspan="3">ToR Point</th><th colspan="2">Compliance</th><th>Ref in Final EIA / EMP</th></tr>
<tr><td>1.</td><td colspan="3">A copy of the document in support of the fact that the proponent is rightful lessee of the mine should be given.</td><td colspan="2">Mine is in favor of M/s. ACC Ltd. Letter of Intent has been granted for grant of Mining lease with conditions for Limestone (under major mineral) in villages Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle and G.Uppalapadu in Mylavaram Mandal, District Kadapa(YSR) in Andhra Pradesh over an area of 997.08 ha. in favour of M/s. ACC Limited Vide Govt. of Andhra Pradesh memo bearing number MEMO 16073/M.III (1)/2006-1 dated 22.06.2010
Mining lease has been granted by State Govt on 15.11.2023 and executed on 14.05.2024
Same information has been incorporated in this Final EIA/ EMP report.</td><td>Chapter 1, Para 1.2.1 C, Page 25

Annexure 1</td></tr>
<tr><td rowspan="5">2.</td><td colspan="3">All documents including approved mine plan, EIA and Public hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.</td><td colspan="3">All documents including approved mine plan, Public Hearing, EIA Report are consistent and in the name of M/s. ACC Cement Ltd.</td></tr>
<tr><td>S. No.</td><td>Particulars</td><td>Description</td><td>Ref. in EIA / EMP Report</td><td>Ref. in Mine Plan</td><td>Ref in PH Proceedings</td></tr>
<tr><td>1.</td><td>Mine Lease Area</td><td>997.08 ha</td><td>Chapter 1, Table 1.3</td><td>Page no 1</td><td>Page no 1</td></tr>
<tr><td>2</td><td>Production Capacity</td><td>Proposed Limestone Production Capacity 7.00 million TPA</td><td>Chapter 1, Table 1.3</td><td>Page no 44</td><td>Page no 1</td></tr>
<tr><td>3.</td><td>Waste Generation & Management</td><td>At conceptual stage total 39.50 million tonnes Overburden will be</td><td>Chapter-2, table 2.23</td><td>Page no 49 - 50</td><td>-</td></tr>
</table>

			generated, out of which 34.50 million tonnes of waste will be backfilled over an area of 146.50 ha up to a depth of 25 m, same will be rehabilitated with plantation. Remaining 4.45 million tonnes of waste will be dumped along the mine lease boundary to form bunds			
	4.	Mining Technology	Fully Mechanized Opencast Mining Method	Chapter 2, Table 2.20	Page 36	-
3.	All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/ toposheet, topographic sheet, geomorphology and geology of the area should be provided.			Map showing Mining Lease Area with Geographical corner coordinates, Geomorphology and Geology of the area, superimposed on SOI Toposheet has been prepared and incorporated in this Final EIA/EMP Report. The study area comprises Open Scrub/Waste Land (45.58 %), Agriculture land (39.83 %), Vegetation/Plantation (8.54 %), Forest (2.19 %), Surface water Bodies (1.21%), Settlement (0.84 %), Solar panels (0.73%), Road (0.72 %), Mine Quarry (0.24%) and Industry (0.12%). Land use / land cover map of the study area is given in this Final EIA/EMP Report.	Chapter 3, Para 3.6, Page 64 to 72
4.	Does the Company has a well laid down Environment Policy approved by its Board of Directors? if so, it may be detailed in the EIA Report.			Yes, the company has well laid down Environment Policy adopted by the Board of Directors of M/s Ambuja Cements Limited. Information of the same is given in this Final EIA/EMP report.	Chapter 10, Para 104, Page 243 ***Annexure 12***
5.	Does the Environment Policy prescribed for standard operating process/procedures to bring focus any infringement /deviation /violation of the environmental or forest norms /conditions. If so, it may be detailed in EIA.			Corporate Environment Policy (CEP) of ACC Ltd. is incorporated in this Final EIA/EMP Report.	Chapter 10, Para 104, Page 243 ***Annexure 12***

6.	What is the hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions. Details of this system may be given.	The hierarchical system or administrative order of the company to deal with the environmental issues and for ensuring compliance with the EC conditions etc. has been given in Environmental Policy of the company. Same information is given in this Final EIA/EMP Report.	Chapter 10, Para 104, Page 243 ***Annexure 12***
7.	Does the company have system of reporting of non-compliances /violations of environmental norms to the Board of Directors of the Company and /or shareholders or stake holders at large? This reporting mechanism should be detailed in EIA Report.	Yes, the company have system of reporting of non-compliances /violations of environmental norms to the Board of Directors of the Company. The hierarchical system or administrative order of the company to deal with the environmental issues and for ensuring compliance with the EC conditions etc. has been given in Corporate Environmental Policy of the company. Information of the same is given in this Draft EIA/EMP report.	Chapter 10, Para 104, Page 243 ***Annexure 12***
8.	The study area will comprise of 10km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.	The study area comprises of 10 km radius zone around the mining lease periphery. Map showing study area has been incorporated in this EIA/EMP report. Life of mine will be 50 years. At conceptual stage total 39.50 million tonnes Overburden will be generated, out of which 34.50 million tonnes of waste will be backfilled over an area of 146.50 ha up to a depth of 25 m, same will be rehabilitated with plantation. Remaining 4.45 million tonnes of waste will be dumped along the mine lease boundary to form bunds. Same information is given in this Final EIA/EMP Report.	Chapter 3, Figure 3.1, Page 58 Chapter 2, Para 2.8, Page 51 to 52
9.	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated.	Land use Land cover map of the study area showing present land use pattern & also, delineating forest area, agriculture land, water bodies, human settlements and other ecological features etc. has been prepared & incorporated in this Final EIA/EMP Report. The study area comprises Open Scrub/Waste Land (45.58 %), Agriculture land (39.83 %), Vegetation/Plantation (8.54 %), Forest (2.19 %),	

		Surface water Bodies (1.21%), Settlement (0.84 %), Solar panels (0.73%), Road (0.72 %), Mine Quarry (0.24%) and Industry (0.12%). There is no Wildlife Sanctuary, National Park, Biosphere Reserves, Reserved Forest, Protected Forest and Migratory Routes of fauna exists within 10 km radius of lease area. Same information is given in this Final EIA/EMP Report.	Chapter 3, Para 3.6, Page 64 to 72
10.	Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted.	Land use plan of the mine lease area in pre-operational, operational and post operational phases is included in this Final EIA/EMP Report. Same information is given in this Final EIA/EMP Report.	Chapter 4, Table 4.21, Page 161
11.	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Tiger/Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the State Wildlife Department/Chief Wildlife Warden under the wildlife (Protection Act), 1972 and copy furnished.	No National Park, Wild Life Sanctuary, Biosphere Reserves, Wildlife corridors, Tiger/Elephant Reserves, etc exist within 10 km radius study area. Authenticated location map has been received from State Forest Department on 16.01.2025. However, detailed biological study of the study area has been conducted, and as per the Wildlife (Protection) Amendment Act, 2022 total 16 schedule – I species viz. Four horned Antelope, Asiatic Wild Dog, Bonnet Macaque, Sambar, Sloth Bear, Indian Grey Mongoose, Small Indian Civet, Masked Palm Civet, Golden Jackel, Bengal Monitor Lizard, Indian Star Tortoise, Indian rat snake, Checkered Keeback, Grey Junglefowl, Shikra, Indian Peafowl Indian Species were found in the study area of the proposed project sites. Conservation plan for schedule I species has been prepared and approved from Principal Chief Conservator of Forests (WL) & Chief Wildlife Warden, A.P. over an amount of Rs. 10.67 Crore for 10 years vide letter No 21034/3/2024/WL-2 dated 16.01.2025. Same information is given in this Final EIA/EMP Report.	Chapter 3, Para 3.17, Page 112 to 119 **Annexure 5 & 6**

12.	A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey indicating the Schedule of the fauna present. In case of any scheduled- I fauna found in the study area, the necessary plan for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.	Detailed biological study of the study area has been conducted, and as per the Wildlife (Protection) Amendment Act, 2022 total 16 schedule – I species viz. Four horned Antelope, Asiatic Wild Dog, Bonnet Macaque, Sambar, Sloth Bear, Indian Grey Mongoose, Small Indian Civet, Masked Palm Civet, Golden Jackel, Bengal Monitor Lizard, Indian Star Tortoise, Indian rat snake, Checkered Keeback, Grey Junglefowl, Shikra, Indian Peafowl Indian Species were found in the study area of the proposed project sites. Conservation plan for schedule I species has been prepared and approved from Principal Chief Conservator of Forests (WL) & Chief Wildlife Warden, A.P. over an amount of Rs. 10.67 Crore for 10 years vide letter No 21034/3/2024/WL-2 dated 16.01.2025. Same information is given in this Final EIA/EMP Report.	Chapter 3, Para 3.17, Page 112 to 119 **Annexure 6**
13.	Impact if any, of change of land use should be given.	As per approved mining plan out of the total Mining Lease area i.e. 997.08 ha, total excavated area will be 707.1 ha, out of which 390.6 ha will be converted into water reservoir and 146.5 ha will be backfilled area and 170.0 Ha area will be used for storage of sub grade. 9.5 ha area will be under waste dump outside excavated area. The other infrastructure like Workshop, Admin Building & Road exists in 2.90 ha area. The remaining 247.58 ha area will be left undisturbed at the end of life of mine. Conceptual Plan showing change of land use is given in this Final EIA/EMP Report.	Chapter 2, Para 2.9, Page 52 to 53 **Annexure 17C**
14.	R&R Plan /compensation details for the Project Affected People (PAP) should be furnished. While preparing the R & R Plan, National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections, need-based sample survey, family -wise, should be under taken to assess their requirements, and action programmes prepared accordingly, integrating the	The total mining lease area is 997.08 ha which falls into Villages Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollaapalle, G. Uppalapadu of Mandal: Mylayara, District: Kadapa (YSR), Andhra Pradesh. Out of total lease area 10.35 ha is government land and 986.74 ha is private land. Out of total private land of 986.47	Chapter 7, Para 7.5, Page 229

	sectorial programmes of line departments of the State Government.	ha, an area of 681.47 ha is under possession of the company. Detailed R&R plan has been prepared and same information is given in this Final EIA/EMP Report.	**Annexure 11**
15.	One season (non-monsoon) primary baseline data on ambient air quality (PM10, Sox, Nox), water quality, noise level, soil and flora and fauna shall be collected presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the predominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.	One season (non-monsoon) primary baseline data for ambient air quality, (as per CPCB quality Notification, 2009), water quality, noise level, soil and flora & fauna has been collected during Pre-monsoon Season (March to May, 2024). Details regarding the same have been incorporated in this Final EIA/EMP Report. Detailed AAQM data of sampling locations are enclosed with this Final EIA/EMP Report. Site-specific meteorological data has been recorded. The dominant wind direction is from South East direction. Location of the monitoring stations were selected keeping in view the pre- dominant downwind direction and location of the sensitive receptors and also that they represent whole of the study area. One location has been selected in downwind direction at 500 m from the lease boundary. Details of the same are given in this Final EIA/EMP Report. The Free Silica Report for mineral composition of PM10 is submitted with this Final EIA/EMP Report.	Chapter 3, Para 3.11 (Page 78) to Para 3.17 (Page 119) Chapter 3, Table 3.10, Page 85 Chapter 3, Para 3.13.1, Page 90 to 91
16.	Air quality modelling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modelling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind rose showing pre-dominant wind direction may also be indicated on the map.	Air quality modeling has been carried out using AERMOD Version 10.2 for prediction of impact of the proposed mining activity on the air quality of the study area. The air quality contours are shown on map indicating location of the mine site, sensitive receptors, etc. The wind rose showing pre-dominant wind direction has been indicated on the map. Details of same is given in this Final EIA/EMP Report.	Chapter 4, Para 4.5.1, Page 139 to 149
17.	The water requirement for the Project, its availability and source to be furnished. A detailed water balance	Total water requirement for the project will be 60 KLD for domestic & other use, green belt & dust	

	should also be provided. Fresh water requirement of the project should be indicated.	suppression of the mines. The water will be met from rainwater accumulated in mine pit form local vendors till the development of mine sump. Detailed water balance is given in this EIA/EMP Report. Same Information given in this Final EIA/EMP Report.	Chapter 2, Para 2.7.1.1, Page 39
18.	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.	There is no withdraw of ground water in this project. Total 60 KLD water required for the entire project. The water will be met from rainwater accumulated in mine pit form local vendors till the development of mine sump. Same information is given in this Final EIA/EMP Report.	Chapter 2, Para 2.7.1.1, Page 39
19.	Details of water conservation measures proposed to be adopted in the project should be given.	Waste water generated from workshop, floor washing and domestic which will be very less as the mine will operate in two shifts. Waste water from workshop will be treated using oil–water separator and treated water will be used in plantation watering, spraying on the haulage roads and mineral and waste for dumps suppression & vehicle washing. At the conceptual Stage 390.6 ha area of total excavated area will be converted into water reservoir which will enhance the water level of the area. Other Water conservation measures are given in this Final EIA/EMP report.	Chapter 4, Para 4.5.3.4, Page 159
20.	Impact of the project on water quality both surface and ground water should be assessed and necessary safeguard measures, in any required should be provided.	Two Canals are passing through the lease area. GNSS Canal (Galeru Nagari Sujala Sravanthi Canal) is flowing in west side within the mining lease and SRBC (Srisailam Right Bank Canal) is flowing in east portion witing the lease area. In addition to this, One pond is also present within the mine lease. Pond is located in South west of lease area near to GNSS canal. Canal will not be disturbed due to mining activity. 50 m safety zone will be maintained from both the side of canal and plantation will be done within the safety zone.	

		Water table in the area is in range of 25 m to 25.4 m bgl (During pre-monsoon) and 21.5 m to 23.1 m bgl (during post monsoon). Mining will be done in 9 number of pits and deepest working will be in pit no 4 up to 55 m (166 m RL). Water table will be intersected during mining and necessary permission will be obtained from CGWA prior intersection of ground water table. Detailed Hydrogeological Study Report has been prepared given in this Final EIA/EMP Report. Impact of the project on the quality, both surface and ground water, have been assessed and necessary safeguard measures have been given in this Final EIA/EMP report.	Chapter 4, Para 4.5.3, Page 157 to 159
21.	Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working bench will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.	Water table in the area is in range of 25 m to 25.4 m bgl (During pre-monsoon) and 21.5 m to 23.1 m bgl (during post monsoon). Mining will be done in 9 number of pits and deepest working will be in pit no 4 up to 55 m (166 m RL). Water table will be intersected during mining and necessary permission will be obtained from CGWA prior intersection of ground water table. Detailed Hydrogeological Study Report has been prepared given in this Final EIA/EMP Report.	Chapter 4, Para 4.5.3.2, Page 158 to 159 **Annexure 10**
22.	Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.	Two Canals are passing through the lease area. GNSS Canal (Galeru Nagari Sujala Sravanthi Canal) is flowing in west side within the mining lease and SRBC (Srisailam Right Bank Canal) is flowing in east portion witing the lease area. In addition to this, One pond is also present within the mine lease. Pond is located in South west of lease area near to GNSS canal. Canal will not be disturbed due to mining activity. 50 m safety zone will be maintained from both the side of canal and plantation will be done within the safety zone. Same information is given in this Final EIA/EMP Report.	Chapter 4, Para 4.5.3.1, Page 157

<table>
<tr><td>23.</td><td>Details of rain water harvesting proposed, if any, in the project should be provided.</td><td>At the conceptual Stage, 390.6 ha area of total excavated area will be converted into water reservoir which will enhance the water level of the area.
Same information is given in this Final EIA/EMP Report.</td><td>Chapter 4, Para 4.5.3.2, Page 158 to 159</td></tr>
<tr><td>24.</td><td>Information on site elevation, working dept, ground water table etc. should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.</td><td><table><tr><td>Elevation range</td><td>204 m AMSL to 226 m AMSL</td></tr><tr><td>Ultimate working depth</td><td>17 to 55 m (166 m AMSL)</td></tr><tr><td>Groundwater Table</td><td>Pre-Monsoon: 25 m to 25.4 m bgl
Post Monsoon: 21.5 m to 23.1 m bgl</td></tr></table>Schematic diagram showing all mining details (i.e., Elevation range, General Ground Level, Ultimate Working Depth and Water Table etc.) has been submitted with this Final EIA/EMP Report.</td><td>Chapter 4, Para 4.5.3.2, Page 158 to 159</td></tr>
<tr><td>25.</td><td>Quantity of solid waste generated to be as limited and details of its disposal and management should be provided. The quantity volumes and methodology planned for removal and utilization (preferably concurrently of Top Soil should be indicated. Details of backfilling proposed if any, should also be given. It may be clearly indicated that out of the total waste generated during the mine life, how much quantity would be backfilled and how much quantity would be disposed off in term of external dump number of dump, terrace etc. to be bought out.</td><td><u>Top Soil:</u> Total 0.50 million tons top soil will be generated at conceptual stage. First two years there will be no utilization of topsoil and after that the top soil will be utilized for plantation in the backfilled areas.
<u>Over Burden:</u> At conceptual stage total 39.50 million tonnes Overburden will be generated, out of which 34.50 million tonnes of waste will be backfilled over an area of 146.50 ha up to a depth of 25 m, same will be rehabilitated with plantation. Remaining 4.45 million tonnes of waste will be dumped along the mine lease boundary to form bunds.
<u>Sub Grade:</u> At conceptual stage total 96.0 million tones subgrade will be generated which will be dumped into mined out pit over an area of 170.0 ha up to a depth of 25 m with terracing.
This sub grade is not suitable for cement manufacture directly. However, the utility of this by beneficiation may result in conversation of mineral.</td><td>Chapter 2, Para 2.8, Page 51 to 52</td></tr>
</table>

		Same information is given in this Final EIA/EMP Report.	
26.	The reclamation plan, Post mining land use and progressive greenbelt development plan shall be prepared in tabular format are submitted.	Reclamation plan & Post mining Land use and Progressive greenbelt development plan has been prepared in tabular format and given in this Final EIA/EMP Report.	Chapter 2, Para 2.9, Page 52 to 53
27.	Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered.	The transportation of limestone from the working faces of mine to the crusher (located at cement Plant) will be carried out by 50 to 60 tones capacity dumpers through haul road. Thus, no road will be used for transportation of mineral, it will not have any impact on the local traffic. Same information is given in this Final EIA/EMP Report	Chapter 4, Para 4.5.7, Page 171 to 172
28.	Details of the infrastructure facilities to be provided for the mine workers should be included in the EIA Report.	This is a proposed mine and all the necessary infrastructure such as Mine office, workshop building, explosive magazine & diesel storage facility, rest shelters, canteen, DG set building for backup, roads, weigh bridge, electrical substation etc. are proposed to be establish within the mining lease area. Details of the same are given in this Final EIA/ EMP Report.	Chapter 2, Para 2.4.1, Page 37
29.	Conceptual Post Mining Land use and reclamation and rehabilitation of mined out area (with plan and with adequate number of section) should be given in the EIA Report.	As per approved mining plan out of the total Mining Lease area i.e. 997.08 ha, total excavated area will be 707.1 ha, out of which 390.6 ha will be converted into water reservoir and 146.5 ha will be backfilled area and 170.0 Ha area will be used for storage of sub grade. 9.5 ha area will be under waste dump outside excavated area. The other infrastructure like Workshop, Admin Building & Road exists in 2.90 ha area. The remaining 247.58 ha area will be left undisturbed at the end of life of mine. Same information is given in this Final EIA/EMP Report.	Chapter 2, Para 2.9, Page 52 to 53
30.	Phase-wise plan of Greenbelt development plantation and compensatory afforestation should be charted clearly indicating the area to be covered	Total area under greenbelt (7.5 m lease periphery) is estimated as 16.50 ha and remaining	

	under plantation and the species to be planted. The details of plantation already done should be given.	13.50 ha will be under safety zone of road and canal which will also be completed within 5 years. Total area under plantation to be covered till life of mine is 156 ha (9.5 ha on outside waste dump area + 146.5 ha on backfilled area). Local and fruit bearing species will be planted after consultation with local forest officer and as per CPCB Guideline. Density of plantation would be 2500 trees / ha. Phase-wise plan of Greenbelt development plantation is incorporated in this Final EIA/EMP Report.	Chapter 4, Para 4.5.7.3, Page 176 to 178
31.	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures initiated. Details in this regard should be provided. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP.	Occupational Health impacts of the Project have been anticipated and the proposed preventive measures have been given. Details of pre-placement medical examination and periodical medical examination schedules have been incorporated in this Final EIA/EMP report.	Chapter 4, Para 4.5.9, Page 180 to 186
32.	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.	Public health implications of the project and related activities for the population in the impact zone have been evaluated and common prevailing diseases in the area were identified. Air quality modeling has been done. Regular Ambient air quality monitoring, noise monitoring & water quality analysis will be carried out. Mining will be carried out as per the provisions outlined in mining plan approved by IBM as well as by abiding to the guidelines of DGMS. Controlled blasting will be adopted. Greenbelt will be developed along the 7.5 m width of ML periphery. Efforts will be made to improve the hygiene, sanitation, education and infrastructure of the nearby villagers. Same information is given in this Final EIA/EMP Report.	Chapter 4, Para 4.5.6, Page 170
33.	Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.	Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent has been addressed in this Final EIA/EMP Report.	Chapter 8, Para 8.6, Page 232 to 239

34.	Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia also include the impacts of change of land use due to, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts of the Project.	Detailed Environmental Management Plan along with occupational health impacts for this project has been incorporated in this EIA/EMP Report. The total mining lease area is 997.08 ha out of which 10.35 ha is government land and 986.74 ha is private land. Proper mitigative measures for protection of agricultural land will be taken during mining practices. No grazing land involved in the mining lease area. Same information is given in this Final EIA/EMP Report	Chapter 4, Para 4.5.4.2, Page 163 to 164
35.	Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.	Public hearing for the said project was conducted on 20.10.2016 near Project Site under chairmanship of Shri K.V. Satyanarayana, I.A.S (Kadapa [Y.S.R] District Collector); Action Plan with budgetary provisions to implement the same has been prepared and given in this Final EIA/EMP Report.	Chapter 7, Para 7.2, Page 195 to 202
36.	Details of litigation pending against the project, if any, with direction/order passed by any Court of Law against the Project should be given.	There is no litigation pending against this project.	
37.	The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.	Total cost of the Project is Rs: 433.738 Crore Cost for Environment Protection for the Project: • Cost for Environment Protection Measures - Rs. 3.84 Crore • Cost for Wildlife Conservation Plan: Rs. 5.67 Crore • Cost for physical target for public hearing: Rs. 1.35 Crore • Recurring cost - Rs. 0.180 Crore / Annum	Chapter 10, table 10.2, Page 249
4.	Beside the above, the below mentioned general points should also be followed:		
a.	A note confirming compliance of ToR with cross referencing of the relevant section /pages of the EIA Report should be provided.	Complied with	-
b.	All documents may be properly referenced with index and continuous page numbering	Complied with	
c.	Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.	Complied with	-

d.	Where the documents provided are in a language other than English, an English translation should be provided.	Complied with	
e.	The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.	Complied with	-
f.	While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF vide O.M. No. J-11013/41/2006-IA.II (I) dated 4th August, 2009,which are available on the website of this Ministry, should be followed.	Instructions issued by MoEF&CC vide O.M. No. J-11013/41/2006-IA.II (I) dated 4th August, 2009, have been followed.	-
g.	Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.	Noted and complied with	-
5.	The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.	Surface Plan, geological plan along with sections are given in this Draft EIA/EMP Report.	***Annexure 17A, B & C***

***

CHAPTER - 1

INTRODUCTION

1.1 PURPOSE OF THE REPORT

M/s. ACC Limited is proposing a Kadapa Limestone Mine (ML Area: 997.08 ha) with limestone production capacity of 7.0 Million TPA at Villages: Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollaapalle, G. Uppalapadu of Mandal: Mylavaram, District: Kadapa (YSR), Andhra Pradesh.

ACC was granted a prospecting license over an area of 997.08 ha in revenue Villages of Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle, G.Uppalapadu, Madhapuram, Kallutla and Nawabpeta in Mylavaram Mandal of Kadapa district in Andhra Pradesh State 23.08.2000. To delineate the limestone bearing areas, which could be applied under Mining Lease, ACC carried out a preliminary geological investigation during 10.04.2002 and 10.07.2002. On the basis of this exploration, ACC applied for a Mining Lease in the area over an extent of 997.08 ha vide application dated 03.07.2002.

Letter of Intent has been granted for grant of Mining lease with conditions for Limestone (under major mineral) in villages Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle and G.Uppalapadu in Mylavaram Mandal, District Kadapa (YSR) in Andhra Pradesh over an area of 997.08 ha. in favour of M/s. ACC Limited Vide Govt. of Andhra Pradesh memo bearing number MEMO 16073/M.III (1)/2006-1 dated 22.06.2010.

This report is prepared as per ToRs letter issued by MoEF&CC, New Delhi vide letter no. J-11015/133/2012-IA. II (M) dated 30.10.2012. The issued ToR was valid only for 2 years from 30.10.2012 to 29.10.2014 for the submission of the EIA/EMP. Proposal for ToR validity extension submitted on 27.08.2014 by M/s. ACC Ltd to MoEF&CC, New Delhi and the same has been issued on 30.11.2015 as per circular no. J-11013/41/2006-IA. II (I) dated 07.11.2014 valid from 30.10.2012 to 29.10.2016 for submission of EIA Report. The aforesaid circular dated 07.11.2014 provides for outer limit of four years for the validity of ToR.

The Baseline data for the environmental studies has been collected during Pre-Monsoon Season (March to May, 2013) by the Vimta Labs Ltd. to carry out the Environment Impact Assessment study for the Proposed Limestone Mining Project. As the Baseline Data has been 3-year-old; therefore, in compliance of MoEF&CC OM vide F. No. IA3-22/10/2022-IA.III [E177258] dated 08.06.2022 one season fresh baseline study has been re-conducted during Pre-Monsoon Season (March, to May, 2024) by the JM EnviroLab Pvt Ltd.

The main purpose of the EIA report is to provide a coherent statement of the potential impacts of a proposal and the measures that can be taken to eliminate, reduce and remedy them. It contains essential information for:

- The proponent to implement the proposal in an environmentally and socially responsible way;
- The responsible authority to make an informed decision on the proposal, including the terms and conditions that must be attached to an approval or authorization;

- ❖ The project proponent to understand the mitigation measures suggested and earmark proper resources & budget for the impacts envisaged; and
- ❖ The public to understand the proposal and its likely impacts on people and the environment.

1.2 IDENTIFICATION OF PROJECT & PROJECT PROPONENT

1.2.1 IDENTIFICATION OF THE PROJECT

A. PROPOSED PROJECT

ACC, India's leading cement producer, visualized the emerging market opportunities, had drawn up a plan to expand its productive capacity in a phased manner. As a part of this plan, few of the projects such New Wadi Plant in Karnataka, capacity expansions at Gagal, Himachal Pradesh are already completed. As a strategic decision, the management has decided to increase its market share in SW region covering southern states.

Based on the market surveys carried out and the availability of limestone deposits, the present site, i.e. near Gollapalle in Kadapa district is selected as the most suitable for fulfilment of limestone requirements of proposed 5.0 Million Tons per Annum (million TPA) cement clinkering plant at Kadapa. It is expected with the implementation of this project, the growing demand of 8% of the southern states can be partly met by ACC.

Looking into this, M/s. ACC Limited is proposing a Kadapa Limestone Mine (ML Area: 997.08 ha) with Proposed Limestone Production of 7.0 million TPA, Sub grade 2.5 million TPA, (ROM: 9.5 million TPA), Top Soil: 0.012 million TPA & Over Burden 0.9 million TPA (Total excavation 10.412 million TPA) at Villages Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollaapalle, G. Uppalapadu of Mylavaram Mandal, District (YSR) Kadapa, (Andhra Pradesh).

The proposed limestone mine will be a captive mine to cater the limestone requirement of 5.0 million Tons per Annum cement clinkering plant at Kadapa.

The major raw material (i.e. limestone) requirement for the cement plant will be met from the 7.0 Million TPA this captive limestone mine.

B. SCREENING CATEGORY

As per EIA Notification dated 14th September, 2006 and its subsequent amendments, the project falls under Category "A" (>250 Ha) Project or Activity 1(a) – 3 "Mining of Mineral" of Schedule.

C. MINING LEASE STATUS

- ❖ Letter of Intent has been granted for grant of Mining lease with conditions for Limestone (under major mineral) in villages Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle and G.Uppalapadu in Mylavaram Mandal, District Kadapa(YSR) in Andhra Pradesh over an area of 997.08 ha. in favour of M/s. ACC Limited Vide Govt. of Andhra Pradesh memo bearing number MEMO 16073/M.III (1)/2006-1 dated 22.06.2010. Copy of same is enclosed as **Annexure 1**
- ❖ Mining lease has been granted by State Govt on 15.11.2023 and executed on 14.05.2024. Copy of Mining lease deed is enclosed as **Annexure 2**

D. STATUS OF APPROVAL OF MINING PLAN

Mining Plan along with Progressive Mine Closure Plan for ML area of 997.08 Ha was approved by IBM vide letter No. MP/AP/CDP/LST-229-SZ/958 dated 26.12.2011. A Copy of the approval letter is enclosed as ***Annexure - 3.***

E. STATUS OF PROPOSED PROJECT FOR ENVIRONMENT CLEARANCE

The chronology of the project activities undertaken so far with respect to the process of getting Environment clearance are as given in the table below-

Table - 1.1

Status of proposal for Environment clearance

S. No.	Project Activity	Date/Duration
1.	Application for ToR submitted to MoEFCC, New Delhi	10th April, 2012
2.	ToR Letter issued by MoEF&CC, New Delhi	30th Oct., 2012
3.	Baseline Monitoring & Data Collection	Pre-Monsoon Season (March, to May, 2013)
4.	Application for ToR letter validity extension submitted to MoEF&CC, New Delhi	27th Aug., 2014
5.	Extension in the validity of ToR letter issued on	30th Nov., 2015
6.	Public Hearing Conducted on	20th Oct., 2016
7.	Submission of Final EIA/EMP Report to MOEFCC	23rd Oct., 2016
8.	Final Technical presentation held in 12th EAC meeting of Non-Coal Mining Sector	23rd to 25th Nov. 2016
9.	Additional Details Sought (ADS) by the Expert Appraisal Committee	07th Dec., 2016
10.	ADS Reply submission to MoEF&CC	2nd Jan., 2017
11.	Additional Details Sought (ADS) by the Expert Appraisal Committee	11th Jan., 2017
12.	ADS Reply submission to MoEF&CC	12th Jan., 2017
13.	Additional Details Sought (ADS) by the Expert Appraisal Committee	9th Feb., 2017
14.	ADS Reply submission to MoEF&CC	24th Feb., 2017
15.	Additional Details Sought (ADS) by the Expert Appraisal Committee	14th March 2017
16.	ADS Reply submission to MoEF&CC	11th Aug., 20117
17.	Additional Details Sought (ADS) by the Expert Appraisal Committee	09thSept., 2017
18.	Fresh Baseline Monitoring & Data Collection	Pre-Monsoon Season (March to May, 2024)

1.2.2 INTRODUCTION OF PROJECT PROPONENT

- ACC Limited ("ACC", "the Company") is a leading player in the Indian building materials space, with a pan-India manufacturing and marketing presence.
- With 16 cement plants across 12 states with a total installed cement capacity of 38.55 MTPA (Million Tonne Per Annum) ("MTPA") and 85+ ready mix concrete plants across 17 states, a vast

distribution network of 50,000+ dealers & retailers and a countrywide spread of sales offices, it contributes tremendously to the landscape of the country.

- For over 80 years, ACC has been synonymous with cement, establishing its reputation as a pioneer organization that consistently sets new benchmarks in research and innovative product development. ACC was among the first Indian companies to include commitment to environmental protection as one of its corporate objectives. Since inception, ACC has integrated commitment into all activities of our value chain, from mining to sales to promoting the use of alternative fuels and resources, resulting in one of the lowest carbon footprints in the cement industry.
- In 2022, ACC became a part of Adani Group - the largest and fastest-growing portfolio of diversified sustainable businesses.

1.3 BRIEF DESCRIPTION OF NATURE, SIZE, LOCATION OF THE PROJECT AND ITS IMPORTANCE TO THE COUNTRY, REGION

1.3.1 BRIEF DESCRIPTION OF NATURE, SIZE & LOCATION OF PROJECT

The brief description of the nature, size and location of the project has been given in table below: -

Table - 1.2

Brief description of the project

S. No.	Particulars	Details
A.	**Nature of the Project**	Proposed Opencast Limestone Mining Project
B.	**Size of the Project**	
1.	Mining Lease Area	997.08 ha
2.	Total Excavation	➢ Limestone: 7.0 million TPA ➢ Sub grade: 2.5 million TPA ➢ ROM: 7.25 million TPA ➢ Top Soil: 0.012 million TPA ➢ Over Burden: 0.90 million TPA ➢ Total excavation: 10.412 million TPA
C.	**Location Details**	
1.	Villages	Dhannavada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle, G.Uppalapadu
2.	Mandal	Mylavaram
3.	District	Kadapa (YSR)
4.	State	Andhra Pradesh
5.	Latitude & Longitude	Latitude: 14°59'20" N to 15°00'10" N Longitude: 78°13'55" E to 78°18'08" E
6.	Toposheet No. of the Study area	D44A8(57I/8), D44A4(57I/4), D44G1(57J/1), D44G5(57J/5)

Source: *Pre-Feasibility Report*

1.3.2 PROJECT IMPORTANCE TO THE COUNTRY AND REGION

ACC Limited has proposed to put up a new cement plant (Clinkerisation) of 5.00 million TPA in the area in planned manner. The first plant of 2.5 million TPA (3.5 million TPA Limestone) clinkerisation is proposed to be set up within 3 years of ML execution followed by another line of 2.5 million TPA (3.5 million TPA Limestone) in next 5 years of commissioning of first unit. The major raw material, Limestone requirement for the plant will be met from the Mining Lease under discussion. Being a virgin land at present, lots of developmental and infrastructural jobs are to be started in advance before actual production starts.

The cement demand in the country is going at the rate 9-10% (Compound Average Growth rate (CAGR)). Particularly in the southern states, due to a no. of major infra-structural projects planned by State/Central Governments and also rapid growth of industries, the demand is likely to be higher than average for the country. Considering the proximity of the project site to all the three major metros, Hyderabad, Bangalore and Chennai and neighbouring states of Tamil Nadu and Karnataka, the growing demand can be met with less transportation costs of cement.

From the market analysis data, it is evident that the states of Tamil Nadu, Kerala, Karnataka, will continue to show an above average growth of demand.

Because of limited limestone deposits in Tamil Nadu and Kerala, the creation of additional capacities in Southern states has to be in Andhra Pradesh and Karnataka. Kadapa district being nearer to both Tamil Nadu and Karnataka states, the selected plant location is ideal for growing markets especially Tamil Nadu. Further, proximity to the Krishnapatnam port is ideal for export of cement/Clinker to neighbouring countries in future.

1.4 SCOPE OF THE STUDY AS PER TERMS OF REFERENCE (ToR) (DETAILS OF THE REGULATORY SCOPING CARRRIED OUT)

Scope of this study covers all the points given in the Terms of Reference (ToR) prescribed by the MoEFCC, as given along with this Final EIA/ EMP Report. The regulatory scoping of the project as per the ToR has been covered and mentioned in "Point wise compliance of ToR" on Page no. 1 to 7 of this Final EIA/EMP Report.

The scope of this study broadly includes:

- Conducting literature review and to collect data relevant to the study area;
- Field sampling of environmental attributes at various representative locations in the study area to establish the baseline environmental status;
- To identify the ambient air quality levels in the mine area and study area;
- To predict incremental levels of pollutants in the study area due to the mining activities;
- To evaluate the predicted impacts on the various environmental attributes in the study area by using scientifically developed and widely accepted environmental impact assessment methodologies;
- To prepare an Environment Management Plan (EMP) outlining the measures for improving the environmental quality and scope for future expansions for environmentally sustainable development; and
- To identify critical environmental attributes required to be monitored.

The data generated from various studies for the EIA/EMP is presented and discussed in following chapters of this report prepared as per Appendix - III of the EIA Notification, 2006.

Chapters	Description
Chapter - 1	Introduction
Chapter - 2	Project Description
Chapter - 3	Description of the Environment
Chapter - 4	Anticipated Environmental Impacts and Mitigation Measures
Chapter - 5	Analysis of Alternatives (Technology & Site)
Chapter - 6	Environmental Monitoring Plan
Chapter - 7	Additional Studies
Chapter - 8	Project Benefits
Chapter - 9	Environment Cost Benefit Analysis
Chapter - 10	Environment Management Plan
Chapter - 11	Summary & Conclusion
Chapter - 12	Disclosure of Consultants Engaged



CHAPTER - 2

PROJECT DESCRIPTION

2.1 TYPE OF THE PROJECT

This is a proposed opencast limestone mining project. As mentioned in the previous chapter, the project is falls under Category "A" (lease area is >250 ha), Project or Activity 1(a) – 3 for "Mining of Mineral" having (ML Area: 997.08 ha) with Limestone Production Capacity 7.0 Million TPA at Villages: Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollaapalle, G. Uppalapadu of Mandal: Mylayara, District: Kadapa (YSR), Andhra Pradesh. It is a captive mine and excavated limestone will be used for cement manufacturing in the interlinked Proposed integrated cement plant of the company.

The proposed limestone mine is 100% mechanized opencast mining project. Conventional mining system with shovel dumper combination of mining technology will be adopted. The sequence of operations will be dozing, drilling, blasting, loading and transportation of ore.

This chapter addresses the details of the proposed limestone mine in context with processes, utilities and services, infra-structural facilities, machinery and pollution control equipment and sources of pollution and proposed mitigation measures.

2.2 NEED FOR THE PROJECT

M/s ACC Limited has proposed to set up a new cement plant (Clinkerization) of 5.0 million TPA in the area in planned manner. The major raw material, Limestone requirement for the plant will be met from this mine. Being a virgin land at present, lots of developmental and infrastructural jobs are to be started in advance before actual production starts. In the southern states, due to a number of major infra-structural projects planned by State/Central Governments and also rapid growth of industries, the demand is likely to be higher than average for the country. Considering the proximity of the project site to all the three major metros, Hyderabad, Bangalore and Chennai and neighboring states of Tamil Nadu and Karnataka, the growing demand can be met with less transportation costs of cement. From the market analysis data, it is evident that the states of Tamil Nadu, Kerala, Karnataka, will continue to show an above average growth of demand. Because of limited limestone deposits in Tamil Nadu and Kerala, the creation of additional capacities in Southern states has to be in Andhra Pradesh and Karnataka. Kadapa district being nearer to both Tamil Nadu and Karnataka states, the selected plant location is ideal for growing markets especially Tamil Nadu., ACC proposed 7.0 million TPA Limestone Mine with ML area of 997.08 ha at Mylavaram Mandal of Kadapa (YSR) District, Andhra Pradesh, to cater the need of limestone requirement for the proposed cement plant.

2.3 LOCATION OF THE PROJECT

The mine site is located at Villages Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollaapalle, G. Uppalapadu of Mandal: Mylayara, District: Kadapa (YSR), Andhra Pradesh. The maps showing general location, specific location (Mine Lease boundary) along with geographical coordinates, geology & geomorphology of the mine site has been given in the following sections:

2.3.1 LOCATION MAP (GENERAL AND SPECIFIC)

The map showing general as well as specific location of the Mine site is as given below:

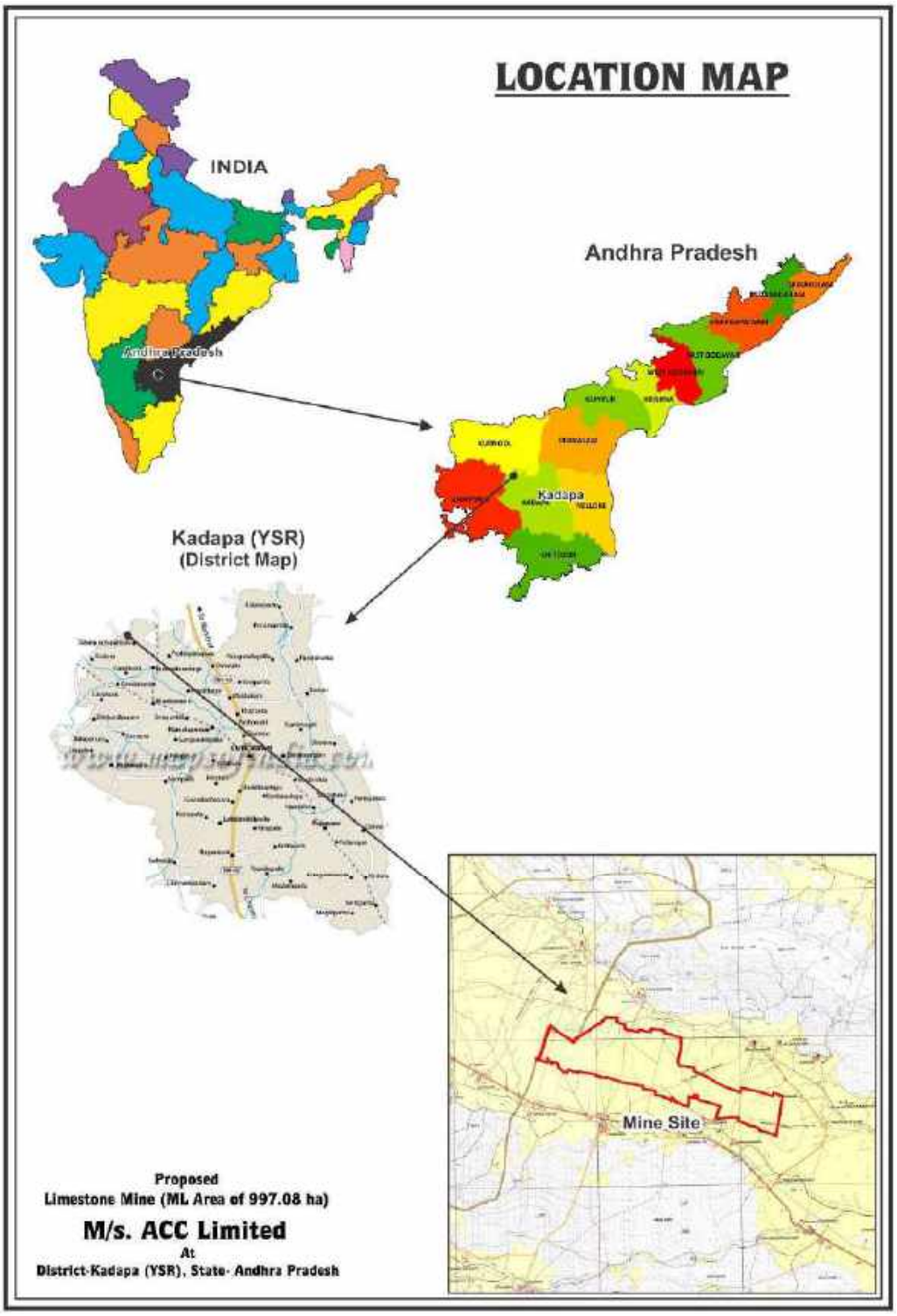


Figure 2.1 Location Map (Showing General as well as Specific Location of the ML Area)

2.3.2 MAP SHOWING GEOLOGY AND GEOMORPHOLOGY OF THE MINE SITE WITH CORNER COORDINATES

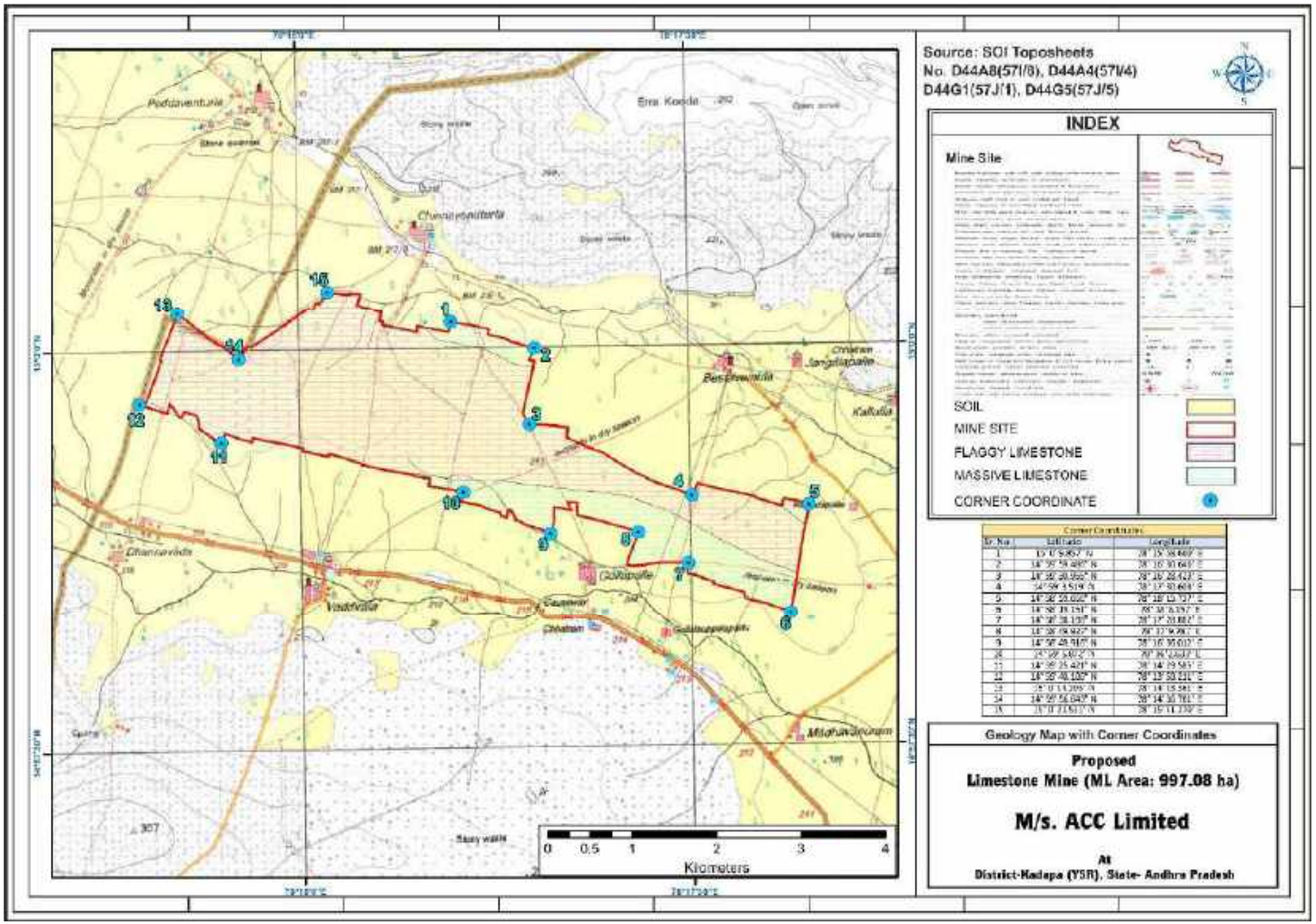


Figure 2.2 Map showing Geology with corner coordinate of the Mine Site

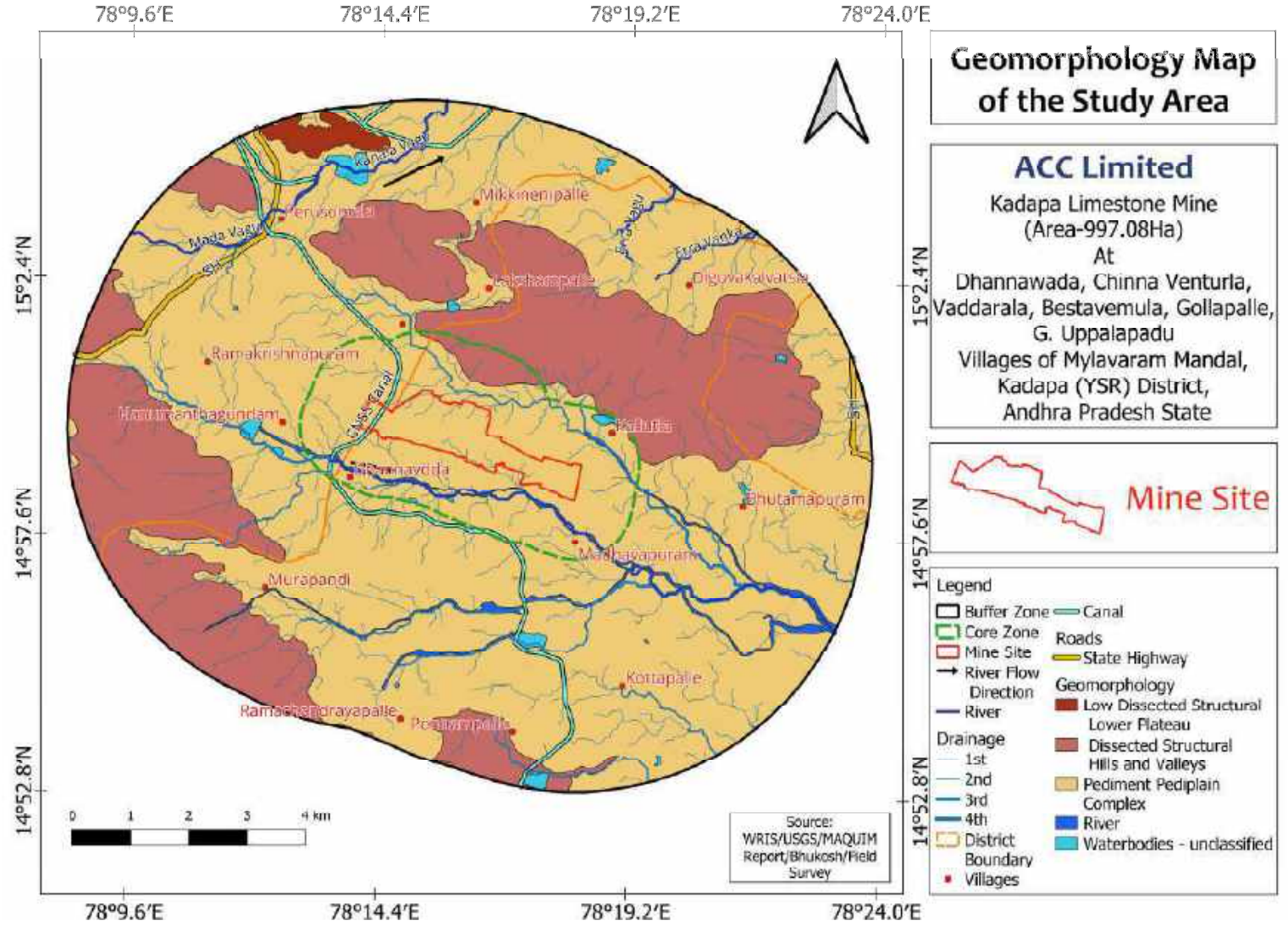


Figure 2.3 Map showing Geomorphology of the Mine Site and 10 km of Study Area

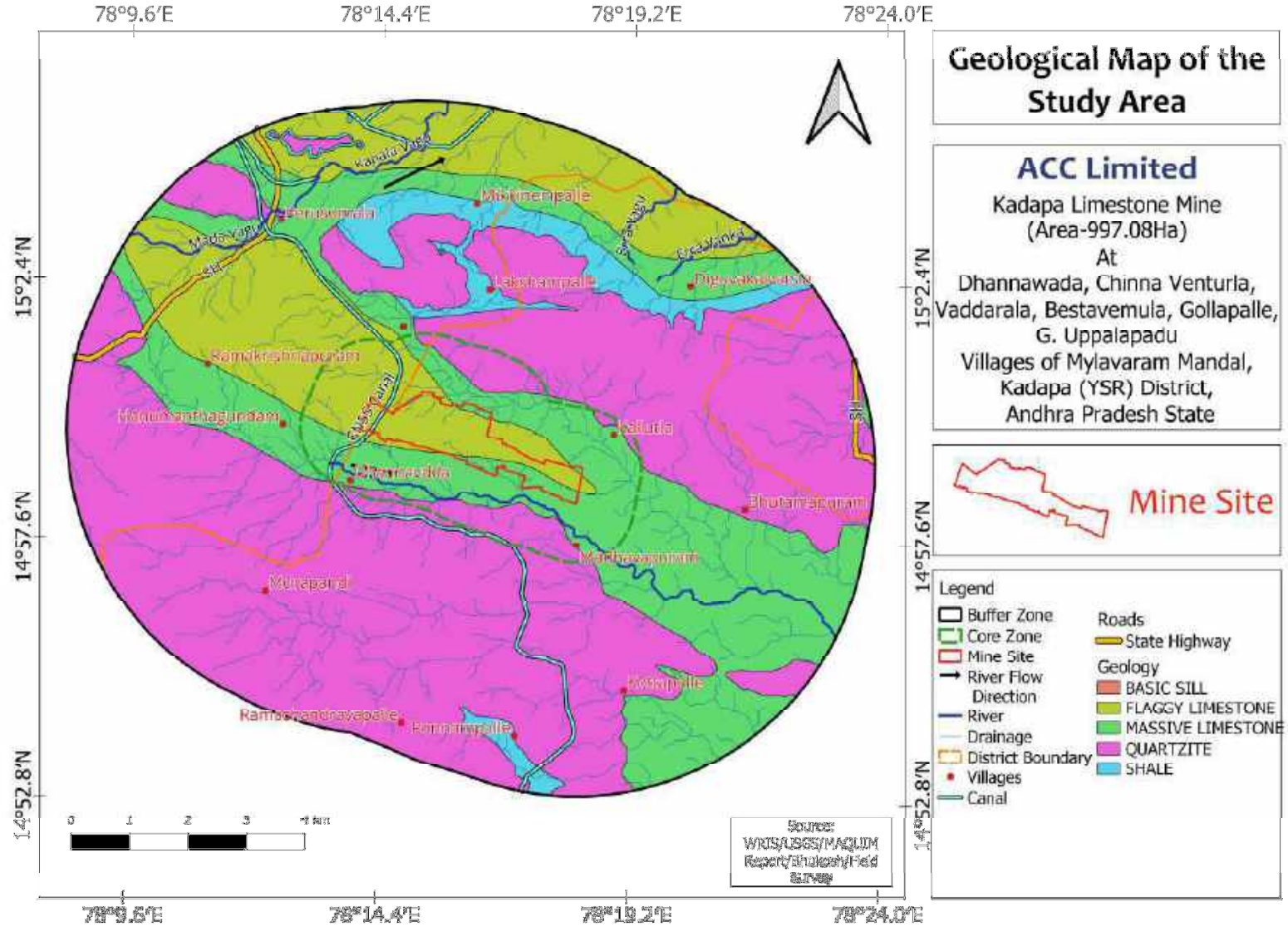


Figure 2.4 Map showing Geology of the Mine Site and 10 km of Study Area

2.3.3 PROJECT SITE LAYOUT

A. Land Details

The total mining lease area is 997.08 ha which falls into Villages Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollaapalle, G. Uppalapadu of Mandal: Mylayara, District: Kadapa (YSR), Andhra Pradesh. Out of total lease area 10.35 ha is government land and 986.74 ha is private land. Village wise details of private land acquisition status is as under:

Table - 2.1

Acquisition status of Private land (In ha)

S No.	Village	Total land Pvt	Land already Purchased	Balance land to be purchased
1	Dhannawada	69.6	0	69.6
2	Vaddarala	94.88	58.99	35.89
3	Chinna Venturla	438.29	248.49	189.8
4	Bestavemula	103.77	103.77	0
5	Gollapalle	189.83	184.62	5.21
6	G.Uppalapadu	90.37	85.6	4.77
Total		986.74	681.47	305.27

As mentioned above, total mining lease area is 997.08 ha, out of which 681.47 ha land is in under possession of ACC Ltd. No forest land falls within the lease area. Certificate from State Forest Department has been obtained vide letter No 105/2016 dated 11.11.2024. Copy of same is enclosed as **Annexure 4** with this EIA/EMP Report

2.3.4 SALIENT FEATURES OF THE LEASE AREA

Decription of the site features:

A. Water Body: Two canals are present within the lesase lease. GNSS canal is present in west portion of lease with total length of 1.80 km and another SRBC canal is present in East portion of lease. As of now SRBC Canal is Defunkt. Furthemeore, 500 m of Safety Zones will be left in along sides of the both canals.

B. Roads & Cart Tracks: One road and some cart tracks are passing through the mining lease area. 50 m of safety zone will be left in both sides of road and cart tracks.

C. Electric Line: Hightention Line is aslo present in the east portion of the lease. 50 m safety zone will be left in both sides of HT line.

D. Cement Plant: One proposed cement plant is partially falls within the lease. This cement plant is of M/s. ACC Ltd. Company has proposed an integrated cement plant, part of which is come within minin glease area towards SE direction.

All above said mine site features of core zone m shown in Surface Plan & copy of Surface Plan is enclosed as ***Annexure – 17a.***

2.3.5 PROJECT SITE PHOTOGRAPHS



HT Line within the Lease



Raod Within the Lease



Mine Site at South East Corner of Lease

Figure 2.5: Mine Site Photographs

2.4 SIZE OR MAGNITUDE OF OPERATION

In this proposed project, the production capacity of limestone will be 7.0 Million TPA along with Limestone Mine (ML Area – 997.08 ha). Total cost of the project is Rs. 433.738 Crore. Capital cost for Environment Protection measures is Rs. 3.84 Crore and recurring cost for the EMP is Rs 0.18 Lakh/ Annum.

Table - 2.2

Size or Magnitude of Operation

S. No.	Particulars	Details
1.	Area	997.08 ha
2.	Total Geological Reserves & Resources	647.1 million Tonnes
3.	Mineable Reserves	6.11 million Tonnes
4.	Limestone Production Capacity	7.0 million TPA
5.	Life of Mine	50 Years
6.	Method of Mining	Fully Mechanized opencast mining method
7.	Man Power (Nos.)	106 Persons
8.	Total Cost of the Project	Rs 433.738 Crores
9.	Water Requirement	60 KLD
10.	Power Requirement	1 MW

2.4.1 ASSOCIATED ACTIVITIES/FACILITIES PROPOSED

Infrastructure facilities and site services must be established near and around the mine area to facilitate limestone production. These services include power supply, telecommunication, transport roads, track lines, an ANFO mixing shed, an explosive magazine, and a mine office. Ensuring these services are available is essential for the smooth and efficient operation of the mine and plant.

- **First Aid Room :** The mine will have a well-equipped first aid room of sufficient size, complete with statutory equipment. This room will provide necessary free medicines and medical aids. Additionally, an ambulance van will be available on-site for emergencies.
- **Canteen:** A canteen with modern amenities will be provided at the mine site for the employees. In this canteen, items will be sold at subsidized rates.
- **Rest Shelter:** There will be separate rest shelters at the quarry office building complex with electricity, fan cooling drinking water etc.
- **Drinking water :** Water cooler will be provided for providing drinkable water.
- **Washrooms :** There will be adequate provision of washrooms in the quarry office building complex and quarry premises, ensuring proper sanitation.
- **Vocational Training centres:** Vocational training centres will be provided for the mining workers at the quarry complex building complex. Models and charts will be provided along with the modern training facilities.
- **Lighting arrangements :** Adequate lighting Arrangements is to be provided at quarry faces, roads, garages, dumps and other working areas.
- **Workshops, garages and store:** A well-equipped store and workshop will be established near the quarry office building to store spares, tools, and lubricants. This facility will handle all types of repair and maintenance for HEMM and other mining machinery.
- **Water supply:** Water will be used for the dust Suppression, afforestation and equipment washing in workshops etc.

2.5 STATUS OF STATUTORY CLEARANCES, PERMISSIONS, NO OBJECTION CERTIFICATES, CONSENTS

The proposed mining project will be implemented after obtaining all the statutory clearances and consents from the concerned authorities. Proposed schedule for obtaining Clearances and consents for the mining project is given as under:

Table - 2.3

Status of Statutory Clearances, Permissions, No Objection Certificates and Consents

S. No.	Particulars	Date/Details
A. Mining Lease Status		
1.	Grant of Mining Lease by State Government	Letter of Intent has been granted for grant of Mining lease vide MEMO 16073/M.III (1)/2006-1 dated 22.06.2010. Copy of LOI is enclosed as **Annexure 1**
		Mining lease has been granted by State Govt on 15.11.2023 and executed on 14.05.2024. Copy of Mining lease deed is enclosed as **Annexure 2**

B. Mining Plan Status		
2.	Mining Plan along with Progressive Mine Closure Plan for ML area of 997.08 Ha was approved by IBM.	Approved vide letter no vide letter No. MP/AP/CDP/LST-229-SZ/958 dated 26.12.2011. **Annexure 3**
C. No Objection Certificates		
3.	NOC for withdrawal of Ground water	NOC from CGWA will be taken before starting of mining operations.
4.	No Forest Land within Mining lease	Certificate from State Forest Department has been obtained vide letter No 105/2016 dated 11.11.2024. Copy of letter is enclosed as **Annexure 4**
5.	➢ Authentication of Location Map showing National Park, Wildlife sanctuaries, wildlife corridors, Tiger reserves within 10 km radius study area. ➢ Authentication of list of flora and fauna for study area.	There is no National Park, Wild Life Sanctuary, Biosphere Reserves, Wildlife corridors, Tiger/Elephant Reserves, etc exist within 10 km radius study area. Authenticated location map has been received from State Forest Department on 16.01.2025. Copy of same is enclosed as **Annexure 5.** Conservation plan for 16 schedule I species has been prepared and approved from Principal Chief Conservator of Forests (WL) & Chief Wildlife Warden, A.P. over an amount of Rs. 10.67 Crore for 10 years vide letter No 21034/3/2024/WL-2 dated 16.01.2025. Copy of authenticated list of flora and fauna with location map and wildlife conservation plan for Schedule I species is enclosed as **Annexure 6.**

2.6 PROPOSED SCHEDULE FOR APPROVAL AND IMPLEMENTATION

The proposed schedule for approval of the proposed project is given as under:

2.6.1 APPROVAL

Table - 2.4

Proposed Schedule for Approval

S. No.	Activity description	Status
1.	Application (For ToR) submission to MoEF&CC	Completed
2.	Technical prestation (for ToR) in EAC, Non-Coal Mining	Completed
3.	ToR Letter issuance by MoEF&CC	Completed
4.	Submission of PH Documents to APPCB for Public Hearing	Completed
5.	Conduction of Public Hearing	Completed
6.	Submission of Final EIA/EMP Report to MoEF&CC	Completed
7.	Consideration for EC by EAC (Non-Coal Mining)	Within 30 days
8.	Recommendation of EAC to MOEF&CC	Within 45 days
9.	Grant of EC by MOEF&CC	Within 30 days

Proposed schedule has been prepared as per EIA Notification, 2006

Note: Application was submitted to MoEF&CC on 10.04.2012, ToR was granted on 30.10.2012, Furthermore, extension letter in ToR validity issued on 07.11.2014 from 30.10.2012 to 29.10.2016, Public hearing was conducted on 20.10.2016. After the conduction of Public Hearing the Final EIA/EMP report submitted to MoEF&CC on 23.10.2016, ADS were raised by the Expert Appraisal Committee on proposal. Date wise details of ADS raised by the Expert Appraisal Committee and replies submitted by proponent are given in Chapter 1.

2.6.2 IMPLEMENTATION

Implementation of the project will be done in accordance with the existing Acts and Rules applicable on mining operations as well as in accordance with any Acts/ Rules/ Guidelines issued by Central/ State Government from time to time. Implementation of the project will be done as per Mining Plan and Progressive Mine Closure Plan approved by Indian Bureau of Mines including the following activities:

- Exploration
- Increased Mine Development & Production

2.7 TECHNOLOGY & PROCESS DESCRIPTION

2.7.1 BASIC REQUIREMENTS FOR THE PROJECT

The project requirements such as water, power, man-power, fuel, machinery with source of supply are described in the sections below.

2.7.1.1 WATER REQUIREMENT

Total water requirement for the project will be 60 KLD for domestic & other use, green belt & dust suppression of the mines. The water will be met from rainwater accumulated in mine pit and form local vendors till the development of mine sump.

Table - 2.5

Water Requirement

S. No.	Particulars	Requirement per day (KLD)
1.	Drinking	5
2.	Dust Suppression	35
3.	Mine operation	10
4.	Greenbelt development	10
Total		**60**

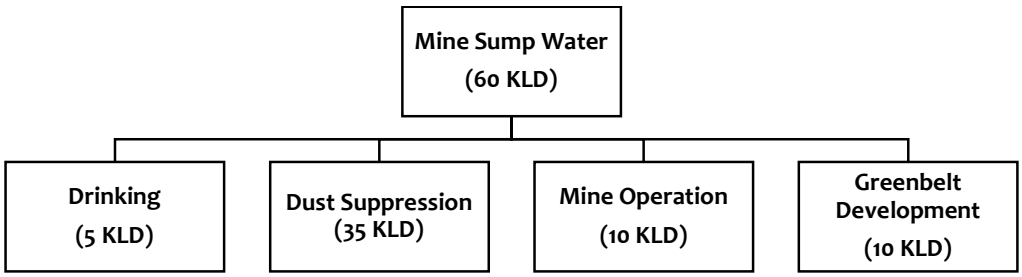


Figure 2.6: Water Balance Flow Chart

Table - 2.6

Waste Water Management

S. No.	Type/ Source	Quantity of waste water generated	Treatment capacity	Treatment method	Mode of disposal	Quantity of treated water used in Recycling/Reuse
1.	Mine operation, Workshop & Washing	8 KLD	15 KLD	Oil and Grease separator	Pipeline	Nil
2.	Domestic	2 KLD	5 KLD	Soak pit via septic tank	Pipeline	Nil

2.7.1.2 POWER REQUIREMENT

Total power requirement for the proposed mining project is 1.0 MW which will be sourced from proposed Captive Power Plant of the Cement Plant.

2.7.1.3 RAW MATERIAL/ FUEL REQUIREMENT

Details of Raw Material Requirement is given as below:

Table - 2.7

Details of Raw Material / Fuel Requirement

S. No.	Particular	Detail
1.	Raw Material/ Fuel	HSD
2.	Quantity (tons per Annum)	6000
3.	Source	Open Source
4.	Mode of Transport	Road
5.	Distance of Source from Project Site	10 km

Table - 2.8

Diesel Consumption

S. No.	Year	Specific Diesel Consumption (L/ton)
1.	First Year	0.50
2.	Second Year	0.50
3.	Third Year	0.50
4.	Fourth Year	0.50
5.	Fifth Year onwards	0.40

Steps to be adopted for reduction in HSD consumption:

- ACC will be adopting latest technology to reduce fuel consumption in transportation.
- Optimum utilization of HEMM.
- Using new fuel efficient HEMM in phased manner.
- Productivity enhancement of HEMM through training of HEOs.
- Proper maintenance of HEMM will be done.
- Road and ramp condition will be maintained regularly.

- Shovel to be operated in good fragment blast.
- Dumper idle time to be reduced by proper supervision.
- Checking of equipment efficiency by maintenance personnels.
- Deployment of diesel bowser for fuel filling at site of operation.
- Periodic benchmarking to measure and identify best-practices within the group companies or across other similar mining units.

2.7.1.4 MANPOWER REQUIREMENT

Total manpower requirement for this proposed Limestone mine will be 106 persons. Unskilled /semi-skilled/ manpower will be sourced from the local area and skilled manpower will be sourced from outside. Preference will be given to the locals as per their eligibility.

Table - 2.9

Employment Potential

S. No.	Description	Employment Potential for 3.5 MTPA production Capacity	Employment Potential for 7.0 MTPA production Capacity
(A) Manager / Staff			
1	Manager	1	1
2	Mining Engineer	1	1
3	Assistant Manager	2	2
4	Mines Foreman	5	5
5	Mechanical engineer	1	1
6	Engineer	2	2
7	Geologist	1	1
(B) Total Staff Strength		**13**	**13**
8	Skilled workmen	35	77
9	Semi-Skilled workmen	4	5
10	Unskilled workmen	10	11
(C) Total Workmen		**50**	**93**
Total (A + B)		**62**	**106**

Source: *Approved Modified Mining Plan along with Progressive Mine Closure Plan, pg. no. 67*

Table - 2.10

Manpower Required for Environment Management Cell

S. No.	Designation	Requirement
1.	Manager – Environment	01
2.	Officer – Environment	01
3.	Horticulturist	01
4.	Civil Engineer	01
5.	Mechanical Maintenance Engineer	01

Manpower for EMC is already included in Total manpower requirement of the project.

2.7.1.5 EXTENT OF MECHANIZATION

The mining operation will be fully mechanized. For operations like drilling, excavating and hauling HEMM viz. Drill machines, hydraulic excavator and dumpers will be used. The equipment are selected considering the factors like desired output, availability, utilization, scale of operations, type of material, size of deposit, topography, geological features, safety requirements, environmental considerations, capital requirements and availability of equipment and spares from indigenous sources. The machinery & equipment which will be required for mining operation are as follows:

Table - 2.11

Total Machinery & Equipment Required for Mining

S. No.	Equipment (Make)	Capacity/Size	Equipment (in Nos.) for 3.5 MTPA production Capacity	Equipment (in Nos.) for 7.0 MTPA production Capacity
1.	Hydraulic Shovel	7.0 Cu. m	3	5
2.	Hydraulic Shovel	4.0 Cu. m	1	1
3.	Hydraulic back hoe and rock breaker	4.0 Cu. m	1	1
4.	Dumper	50/60 Tonns	12	24
5.	Hydraulic Drill	115 mm	2	3
6.	Pay loader	6.0 Cu. m	1	2
7.	Dozer	-	1	1
8.	Explosive van	10 Tonnes	1	1
9.	Water Tanker	20 KL	1	1
10.	Diesel Tanker	3KL	1	1
11.	Mobile Service Van	-	1	1
12.	Pickup van	-	1	1

Source: *Approved Modified Mining Plan along with Progressive Mine Closure Plan, pg no. 32*

2.7.2 GEOLOGY OF THE AREA

2.7.2.1 REGIONAL GEOLOGY

Sedimentary rocks found in the northwestern part of Kadapa district belong to the Kurnool Group. The limestone and other rock formations occurring in the area belong to Kurnool Formations of Indian Stratigraphy sequence. These formations are younger than rocks of the Kadapa Basin and are well preserved in the Kadapa Basin.

The Kadapa basin extends from Nagari in the south up to Amaravati in the north east over a length of about 440 km. with width ranging from 80 to 145 km. encompassing an area of about 44000 sq. km. Kadapa and associated younger Kurnool occupy a unique position in Indian Stratigraphy because of economic interest and hence have been the subject of studies for more than seven

decades. Kurnool Group of rocks is found confined to two small areas within Kadapa basin one in the area between Kadapa and Kurnool and another in the area West of Amaravati. The later is also referred to as the Palnad.

In general, the Kurnool rocks overlie rocks belonging to the Kadapa. The Kadapa are in turn deposited over the Archaean basement. These rocks are believed to be of Proterozoic age; equivalent to early Vindhyan rocks. The Kurnool rocks comprise limestone, shale and sandstones. Unlike the rocks of Kadapa group, which are associated with intrusives and are slightly disturbed, the younger Kurnool group are free from intrusives and are structurally undisturbed.

Bruce Foote first studied the area and subsequently W. King gave a detailed account of the stratigraphic sequence of the formations. Later, the Geological Survey of India (GSI) carried out systematic mapping of the region and confirmed the stratigraphy, which was established earlier with minor changes.

The regional stratigraphic sequence of rocks is shown in the below:

	Recent	: Soil and Alluvium
	Post-Kurnool	: Quartz/Calcite/Baryte veins
Kurnool Group	Kundair Formation	: Nandyal Shales
	Panyam Formation	: Pinnacled Quartzites
	Jammalamadugu Formation	: Auk Shales
		: Narji Limestone
	Banaganapalli Formation	: Sandstone
---------- UNCONFORMITY ----------		
Kadapa Group		Gandipet Quartzites
Archaean	Granites and granitic gneisses traversed by dolerite dykes & quartz veins	

The limestone deposit under consideration belongs to the Narji Limestone of Jammalamadugu Formation and is seen to extend from Nalgonda in the NE up to Kadapa in the SW. The limestone deposits occur in Dondapadu and Wadapalli in Nalgonda District, Dachepalli and Sitarampuram in Guntur District, Panyam, Koilkuntla and Banaganapalli in Kurnool District and Jammalamadugu and Kamalapuram in Kadapa District. Archean granite and Genessis occupy the edge of main Kadaps Basin all the way from the southeast to the northeast in acurate shape and present uncomfortable contact with the overlying sedimentary rock.

Quartzites are hard and compact but gritty in nature. They are traceable all along the boundary of the basin overlying the archean rocks. Shales are purple coloured and show horizontal to gently dipping beds. These shales are sandwiched between the overlying limestone and underlying quartzites.

Limestone outcrops are in shades of grey, off white and green and exhibit fine-grained texture, hard as well as compact in nature with thin shale partings. The Narji Limestone is thick bedded, occasionally flaggy and occurs in shades of dark grey to light grey in colour. The quality of limestone deteriotes at places depending upon the predominace of shale cartings and interstitial clay. Limestone uneven weathering pattern due to the presence of calcareous material. The general strike of the beds varies around NNW – SSE and dip gently towards east. Locally sharp changes in strike direction are also seen due to board warpings. All the members off Kurnool group generally

exhibits very gentle centrolinal dips varying between 2 to 10 degree indicating deposition in sediments in a basin like depression.

2.7.2.2 LOCAL GEOLOGY

The geological in the area belongs to the Narji Limestone of Jammalamadugu Formation in Kurnool groups as mentioned earlier. Locally sharp changes in strike direction are also seen due to broad warping. Thick soil covers entire area and only at places limestone scree could be seen in the cultivated lands. However the core samples do not indicates any major geologically disturbed zone and fine grained in nature. The local geological succession as observed from the boreholes core samples in the area could be described as given below:

Lithology	Thickness(in m)	
	Min	Max
Overburden Soil	1.0	6.0
Grey Flaggy Limestone	2.6	20.5
Dark Grey Limestone	8.5	31.0
Light Grey Limestone	1.0	6.5
Quartzite/ Sandstone	0.5	Not bottomed

Quartzite

This is the oldest unit identified in geological mapping and all the boreholes drilled were terminated after touching this litho unit. Outside the area, quartzite is well exposed in the south. The quartzite is greyish white in colour, hard in nature and typical quality of this litho unit would be as under:-

TC%	CaCO3%	MgCO3%	SiO2%	Al2O3%	Fe2O3%	CaO%	MgO%	LOI%
2.5	0.9	1.3	96.3	0.6	0.8	0.9	0.3	1.7

Light Grey Limestone

Light grey limestone overites quartzite and the contact between these two is sharp. Limestone could be distinguished by its colour and texture easily and is grey to light grey in colour. Fine grained, hard and compact in nature. Thickness as observed from the core samples is found to be extremely variable and the contact with overlying dark grey limestone is gradational. Being high in $CaCO_3$ content the typically quality of this litho until would be as under:

TC%	CaCO3%	MgCO3%	SiO2%	Al2O3%	Fe2O3%	CaO%	MgO%	LOI%
88.8	85.7	2.6	8.8	0.1	0.4	48.7	1.3	36.7

Dark Grey Limestone

The dark grey limestone overites light grey limestone and as the name signifies is dark grey in colour, fine grained had and compact in nature from the core samples it has been observed that the thickness of dark grey massive limestone is maximum towards west in comparison to east this could mainly be attributed to higher elevation of surface topography. It this limestone this veins of calcite occur frequently and the same increases with depth. At places, the limestone appears to be silicious thereby the $CaCO_3$ content is relatively low.

TC%	CaCO3%	MgCO3%	SiO2%	Al2O3%	Fe2O3%	CaO%	MgO%	LOI%
85.2	82.5	2.3	11.1	1.2	0.6	<7.0	0.9	37.6

Grey Flaggy Limestone

A variant of dark grey limestone . grey flaggy limestone overlies dark grey limestone. Being the youngest of all the limestone units is confined to higher elevation mostly in the western part of the lease. The limestone is grey in colour with the thin layer of shale parting. But these shale parting and bands cannot be mines separately with mechanized mining and hence contribution of these shale parting in the reserves estimated for grey flaggy limestone has not been constructed. Typical quality of this limestone was observed from the analysis given below:

TC%	CaCO3%	MgCO3%	SiO2%	Al2O3%	Fe2O3%	CaO%	MgO%	LOI%
76.2	73.9	1.9	24.6	3.6	2.0	36.7	0.8	30.5

Overburden Soil

Entire area is covered with over burden soil. The thickness varies from 1.0 m to nearly 6m at places. The typical sample of overburden soil would analyse as below :

TC%	CaCO3%	MgCO3%	SiO2%	Al2O3%	Fe2O3%	CaO%	MgO%	LOI%
26.5	23.7	2.7	41.6	11.1	6.3	13.7	1.9	23.2

2.7.3 DETAILS OF MINING

2.7.3.1 EXPLORATION CARRIED OUT IN THE AREA

Total 22 boreholes have been drilled in the entire lease area at 800 x 800 and 800 x 400 grid interval. With total 730 metreage. Based on the data collected, it was found that the deposit is simple, low dipping and consistent in quality. Details of exploration carried out is given in below mentioned table:

Sr. No.	Borehole No.	Depth (m)
1.	C/8/1	52
2.	C/8/2	33.5
3.	C/16/1	44.5
4.	C/16/2	59
5.	C/16/3	41
6.	C/24/1	38.5
7.	C/24/2	43
8.	C/24/3	44.5
9.	C/24/4	26
10.	C/32/1	42
11.	C/32/7	50
12.	C/32/3	35
13.	C/44/1	34
14.	C/44/2	19
15.	C/44/3	25
16.	C/52/1	26
17.	C/52/2	12.5
18.	C/64/1	24

19.	C/64/2	19
20.	C/72/1	24
21.	C/72/2	25.5
22.	C/72/3	12
Total Metreage		**730**

2.7.3.2 EXPLORATION TO BE CARRIED OUT IN THE AREA

Detailed exploration is proposed with 150 x 150 m grid interval in the entire lease area. Details of the proposed exploration are given as below:

S. No.	Year	Total No. of Borehole	Proposed Depth	Total Metreage	Grid Interval
1.	Ist Year	82	30	2460	150 × 150 m
2.	IInd Year	85	30	2550	150 × 150 m
3.	IIIrd Year	90	30	2700	150 × 150 m
4.	IVth Year	84	30	2620	150 × 150 m
5.	Vth Year	87	30	2610	150 × 150 m

2.7.3.3 ESTIMATION OF RESERVES

As per Mining Plan, total mineable reserves are 6.11 million Tonnes of cement grade whereas total Geological Resources are 647.11 million Tonnes. Details of Geological reserves as per UNFC classification is given in below table.

Table - 2.12

Mineral Limestone Resources/ Reserves as per UNFC (In Million Tonnes)

	Classification	UNFC Code	Limestone	Grade	
A	**Total Mineral Reserves**				
1	Proved Mineral Reserve	111	0.22	CaO: 47 to 48% MgO: 0.9 to 1.3%	Light Grey Limestone
2	Probable Mineral Reserve	121 & 122	5.89		Dark & Light Grey Limestone
B	**Total Remaining Resources**				
1	Feasibility Mineral Resource	211	0.00	-	-
2	Prefeasibility mineral Resource	221 & 222	0.00	-	-
3	Measured Mineral Resource	331	0.00	-	-
4	Indicated Mineral Resource	332	0.00	-	-
5	Inferred Mineral Resource	333	0.00	-	-
6	Reconnaissance Mineral Resource	334	641.0	CaO- 36 to 47% MgO – 0.8 to 1.3 %	Dark, Light & Flaggy Limestone
Total Mineral Resources (A+B)			**647.11**	-	-

Source: *Approved Modified Mining Plan along with Progressive Mine Closure Plan, pg. no. 27*

Detailed Exploration will be done during 1st and 2nd year of Mining Plan

2.7.3.4 ANTICIPATED LIFE OF MINE

Expected Reserves after Exploration will be 388.266 million tonnes and Reserves Block in benches, roads etc are 258.844 million tonnes. Life of mine estimated as 50 years.

2.7.3.5 USE OF MINERAL

The limestone mined out from the leasehold area will fulfil the requirement of limestone of its proposed integrated cement plant located at Mylavaram Mandal, Kadapa (YSR) District, Andhra Pradesh State.

2.7.4 PROCESS DESCRIPTION

i. PROPOSED METHOD OF MINING

Mining will be done by fully opencast mechanized method. All operations of mining will be done by deployment of Heavy Earth Moving Machineries (HEMM) for deep hole drilling, excavation, loading & transport. All these mining activities will be conducted in such a way to ensure maximum mineral conservation and minimum environmental degradation.

Flow chart for mining process is as given below:

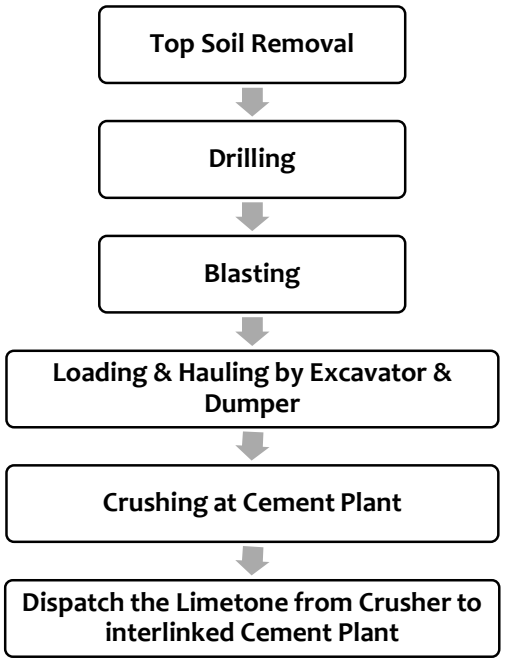


Figure: 2.7: Flow chart for mining process

a) Top Soil Removal

Top soil cover is soft in nature and will be removed by dozer and then stacked separately in non-mineralized zone. This stacked top soil will be simultaneously used for plantation and greenbelt development.

b) Drilling

Since the limestone is hard and compact, drilling is required to break the rock. Blast holes of 115 mm dia. to be drilled with hole burden of 3 to 4 m and spacing of 4 to 6 m. The parameters for drilling are given below:

Table - 2.13

Drilling Parameters

S. No.	Particular	Units	Details
1	Diameter of Hole	mm	115
2	Depth	m	8 to 12
3	Spacing	m	4-6
4	Burden	m	3-4

Source: *Approved Modified Mining Plan along with Progressive Mine Closure Plan*

c) Blasting

The blast hole will be changed with ANFO and slurry explosive (booster charge). NONEL for will be used to control ground vibration, noise and fly rocks. No secondary blasting will be envisaged in this mine. Rock breaker will be deployed for breaking of oversized boulders generated during blasting.

d) Loading and Hauling

Loading is proposed to be with excavator having bucket capacity of 4 & 7 cu. m and limestone will be transported from mine face to crusher by dumper of 50 to 60 Tones capacity.

e) Crushing

A Crusher is proposed within the proposed cement plant premises. Capacity of the crusher will be of 1500 TPH and the feeding size of the crusher will be 1500 mm.

f) Transportation

After crushing, limestone will be transported from crusher to cement plant. Limestone will be transported to its interlinked Cement Plant via covered belt conveyor.

Table - 2.14

Mining Details

S. No.	Particulars	Details
1.	Mining Method	Fully Mechanized Opencast Mining Method
2.	Total Geological Resources	647.11 million tonnes
3.	Mineable reserves	6.11 million Tonnes
4.	Life of Mine	50 years
5.	Bench Height	8 - 12 m
6.	Bench Width	30 m
7.	No of benches	5 - 12 Nos.
8.	Overall pit slope	60°s
9.	Elevation Range	204 to 226 m AMSL
10.	Depth of water table	Pre-Monsoon: 25 m to 25.4 m bgl Post Monsoon: 21.5 m to 23.1 m bgl
11.	Ultimate working depth	17 to 55 m (166 m AMSL)
12.	Stripping Ratio	1: 0.09 (T: T)
13.	Number of Working days	290

S. No.	Particulars	Details
14.	Number of Working Shifts	02

Source: *Approved Mining Plan with Progressive Mine Closure Plan*

Mining will be done in total 9 no of pits. Pit wise mine working is given below:

Table - 2.15

Pit wise working details

Pit No	Perimeter (m)	Area (Ha)	Top RL (M)	Bottom RL (M)	Ultimate depth (m)
1	3600	53.70	221	176	45
2	1800	14.80	221	186	35
3	1990	15.60	217	175	42
4	4913	113.80	221	**166**	**55**
5	7163	292.70	217	176	41
6	3087	43.00	210	193	17
7	1282	8.00	213	183	30
8	2949	57.00	211	184	27
9	4583	108.50	207	183	24
Total	31367	707.10			

Source: *Approved Mining Plan with Progressive Mine Closure Plan*

During first five year, mine working will be confined to quarry number 8 only. The details of quarry in each year as per production plans are given below:

Table - 2.16

First five year working details in Pit no 8

Year	Quarry No	Perimeter (m)	Area (Ha)	Top RL (M)	Bottom RL (M)	Ultimate depth (m)
1st	8	-	-	207	-	-
2nd	8	1340	9.28	208	206	2.0
3rd	8	1250	6.05	209	198	11.0
4th	8	1150	3.55	210	195	1.5
5th	8	1150	4.35	210	193	17.0

Source: *Approved Mining Plan with Progressive Mine Closure Plan*

Schematic diagram showing all mining details (i.e. Elevation range, General Ground Level, Ultimate Working Depth and Water Table etc.) is given in Hydrogeological report enclosed as **Annexure 10.**

2.7.5 YEAR WISE PRODUCTION & EXCAVATION DETAILS

Table - 2.17

Tentative Excavation Details for plan period (In million tonnes)

Year	Total Excavation	Limestone	Sub grade	Top Soil	Overburden
I year	0.005	0	0	0.005	0
II year	0.215	0	0	0.015	0.2

III Year	0.385	0.1	0	0.01	0.275
IV Year	0.612	0.4	0	0.012	0.2
V year	3.762	3.5	0	0.012	0.25
Total	**4.979**	**0.054**	**0.925**	**4.000**	**0.925**

Source *- Approved Modified Mining Plan along with Progressive Mine Closure Plan*

8th year onwards, limestone production capacity will be 7.0 million TPA. Total excavation for 7.0 million tonnes limestone production will be 10.412 million TPA (Limestone: 7.0 million TPA, Sub grade 2.5 million TPA + Top Soil: 0.012 million TPA + OB: 0.9 million TPA)

Table - 2.18

Year wise excavation schedule till life of Mine (Million tonnes)

Year	Total excavation	Limestone	Sub grade	Top Soil	Overburden
1	0.005	0	0	0.005	0
2	0.215	0	0	0.015	0.2
3	0.385	0.1	0	0.01	0.275
4	0.612	0.4	0	0.012	0.2
5	3.762	3.5	0	0.012	0.25
6	5.462	5.0	0.05	0.012	0.4
7	6.612	6.0	0.1	0.012	0.5
8	10.412	7.0	2.5	0.012	0.9
9	10.412	7.0	2.5	0.012	0.9
10	10.412	7.0	2.5	0.012	0.9
11	10.412	7.0	2.5	0.012	0.9
12	10.412	7.0	2.5	0.012	0.9
13	10.412	7.0	2.5	0.012	0.9
14	10.412	7.0	2.5	0.012	0.9
15	10.412	7.0	2.5	0.012	0.9
16	10.412	7.0	2.5	0.012	0.9
17	10.412	7.0	2.5	0.012	0.9
18	10.412	7.0	2.5	0.012	0.9
19	10.412	7.0	2.5	0.012	0.9
20	10.412	7.0	2.5	0.012	0.9
21	10.312	7.0	2.4	0.012	0.9
22	10.312	7.0	2.4	0.012	0.9
23	10.312	7.0	2.4	0.012	0.9
24	10.312	7.0	2.4	0.012	0.9
25	10.312	7.0	2.4	0.012	0.9
26	10.312	7.0	2.4	0.012	0.9
27	10.312	7.0	2.4	0.012	0.9
28	10.312	7.0	2.4	0.012	0.9
29	10.312	7.0	2.4	0.012	0.9
30	10.312	7.0	2.4	0.012	0.9
31	9.912	7.0	2	0.012	0.9

Year	Total excavation	Limestone	Sub grade	Top Soil	Overburden
32	9.912	7.0	2	0.012	0.9
33	9.912	7.0	2	0.012	0.9
34	9.912	7.0	2	0.012	0.9
35	9.912	7.0	2	0.012	0.9
36	9.912	7.0	2	0.012	0.9
37	9.912	7.0	2	0.012	0.9
38	9.912	7.0	2	0.012	0.9
39	9.912	7.0	2	0.012	0.9
40	9.912	7.0	2	0.012	0.9
41	9.912	7.0	2	0.012	0.9
42	9.902	7.0	2	0.002	0.9
43	9.902	7.0	2	0.002	0.9
44	9.902	7.0	2	0.002	0.9
45	9.902	7.0	2	0.002	0.9
46	9.902	7.0	2	0.002	0.9
47	9.901	7.0	2	0.001	0.9
48	9.776	7.0	2	0.001	0.775
49	9.701	7.0	2	0.001	0.7
50	9.051	7.0	1.35	0.001	0.7
Conceptual	**452.5**	**316**	**96**	**0.5**	**40**

2.8 TOP SOIL AND SOLID WASTE GENERATION & MANAGEMENT

Table - 2.19

Top Soil and Over Burden Generation and Management

<table>
<tr><td>1</td><td colspan="2">Top Soil generation & Management</td></tr>
<tr><td>A</td><td>Plan Period</td><td>Total Top soil generated during the plan period will be 0.0540 million TPA. The topsoil will be appropriately stacked at a designated dump site located in the NNE direction of the mining lease area.
<table>
<tr><th rowspan="2">S. No.</th><th rowspan="2">Year</th><th rowspan="2">Top Soil Scrapped Area (Ha)</th><th colspan="3">Top Soil (Million Tonnes)</th></tr>
<tr><th>Generated</th><th>Utilized</th><th>Preserved</th></tr>
<tr><td>1.</td><td>I year</td><td>2.20</td><td>0.005</td><td>-</td><td>0.005</td></tr>
<tr><td>2.</td><td>II year</td><td>6.80</td><td>0.015</td><td>-</td><td>0.015</td></tr>
<tr><td>3.</td><td>III year</td><td>4.60</td><td>0.01</td><td>0.00032</td><td>0.00967</td></tr>
<tr><td>4.</td><td>IV year</td><td>5.30</td><td>0.012</td><td>0.00032</td><td>0.01167</td></tr>
<tr><td>5.</td><td>V year</td><td>5.30</td><td>0.012</td><td>0.00032</td><td>0.01167</td></tr>
</table></td></tr>
<tr><td>B</td><td>Conceptual stage</td><td>Total 0.50 million tons top soil will be generated at conceptual stage. First two years there will be no utilization of topsoil and after that the top soil will be utilized for plantation in the backfilled areas.</td></tr>
</table>

<table>
<tr><td>2.</td><td colspan="2">Over burden generation & Management</td></tr>
<tr><td>A.</td><td>Since inception of Mine</td><td>This is a greenfield project.</td></tr>
<tr><td>B.</td><td>Plan Period</td><td>In the first five years total of 0.925 million tonnes of over burden will be generated and dumped over an area of 9.92 ha inside the mining lease area.
<table>
<tr><th>S. No.</th><th>Year</th><th>Overburden (MTPA)</th><th>Area (Ha)</th><th>Bottom RL (m)</th><th>Top RL (m)</th><th>Height (m)</th></tr>
<tr><td>1.</td><td>I year</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>2.</td><td>II year</td><td>0.200</td><td>2.0</td><td>205</td><td>211</td><td>6</td></tr>
<tr><td>3.</td><td>III year</td><td>0.275</td><td>2.64</td><td>206</td><td>212</td><td>6</td></tr>
<tr><td>4.</td><td>IV year</td><td>0.200</td><td>2.05</td><td>207</td><td>213</td><td>6</td></tr>
<tr><td>5.</td><td>V year</td><td>0.250</td><td>2.63</td><td>208</td><td>214</td><td>6</td></tr>
<tr><td colspan="2">Total</td><td>0.925</td><td>9.32</td><td>-</td><td>-</td><td>-</td></tr>
</table>
Out of 9.32 ha of waste dump, 6.69 ha will be stabilized with plantation.</td></tr>
<tr><td>C</td><td>Conceptual stage</td><td>➢ At conceptual stage total 39.50 million tones Overburden will be generated, out of which 34.50 million tonnes of waste will be backfilled over an area of 146.50 ha up to a depth of 25 m, same will be rehabilitated with plantation.
➢ Remaining 4.45 million tonnes of waste will be dumped along the mine lease boundary to form bunds.
➢ The dimension of bunds will be 7.5 m width and 3 meters height. Plantation on these bunds will be done to create a green belt along the mine boundary.</td></tr>
<tr><td>3.</td><td colspan="2">Sub Grade generation & Management</td></tr>
<tr><td>A.</td><td>Plan Period</td><td>There is no any generation of subgrade during the plan period.</td></tr>
<tr><td>B.</td><td>Conceptual stage</td><td>At conceptual stage total 96.0 million tones subgrade will be generated which will be dumped into mined out pit over an area of 170.0 ha up to a depth of 25 m with terracing.
This sub grade is not suitable for cement manufacture directly. However, the utility of this by beneficiation may result in conversation of mineral.</td></tr>
</table>

2.9 CONCEPTUAL MINING PLAN

As per approved mining plan out of the total Mining Lease area i.e. 997.08 ha, total excavated area will be 707.1 ha, out of which 390.6 ha will be converted into water reservoir and 146.5 ha will be backfilled area and 170.0 Ha area will be used for storage of sub grade. 9.5 ha area will be under waste dump outside excavated area. The other infrastructure like Workshop, Admin Building & Road exists in 2.90 ha area. The remaining 247.58 ha area will be left undisturbed at the end of life of mine. Present approved Conceptual Plan has been enclosed as ***Annexure 17C***. Post Mining Land Use and Reclamation Area (ha) of the proposed mine is given in table below:

Table - 2.20

Post Mining Land Use of Core Zone

S. No.	Description	Land Use (In Ha.)					
		Plantation	Water Body	Public Use	Undisturbed	Other Use	Total
1.	a. Excavation (Water Reservoir)	-	390.6	-	-	-	707.1
	b. Reclaimed Excavated area (Backfilled)	146.5	-	-	-	-	
	c. Mineral storage (Sub Grade mineral- Flaggy Limestone Dump Area)		-	-	-	170.0	
2.	Area under Infrastructure (Workshop, Admin Building & Roads)	-	-	2.90	-	-	2.90
3.	Outside Dump Area	9.5	-	-	-	-	9.5
4.	Greenbelt on 7.5 m lease periphery and safety zone of Road	30.0	-	-	-	-	30.0
5.	Undisturbed Area	-	-	-	247.58	-	247.58
	Total	**186.0**	**390.6**	**2.90**	**247.58**	**170.0**	**997.08**

Source: *Approved Review of Mining Plan along with Progressive Mine Closure Plan*

2.10 DESCRIPTION OF MITIGATION MEASURES

The mitigation measures given in this section are for management of the emissions (particulate or gaseous), Noise pollution, wastewater & surface run-off generated from the mining operations to meet the environmental standards and environmental operating conditions are as follows:

A. AIR QUALITY MANAGEMENT

Drilling

- The drilling machines will be equipped with wet drilling arrangements to prevent dust from getting air borne.

Blasting

- Controlled blasting will be adopted and optimum use of explosive energy helps in reducing the air pollution.
- Blasting will be done in most scientific manner by use of non-electric ignition system, use of millisecond delay detonators and optimizing the blasting parameters to control & prevent the dust to get air borne and to control the fly rock.
- Rock breaker will be used to avoid secondary blasting.
- Water spray on blasted muck pile before dozing/loading to control dust generation.

Loading & Transportation

- Dumpers will not be overloaded to avoid any spillage of loaded materials.

- 1 Water Tankers (20 KL) will be provided for water sprinkling on haul roads, loading, and unloading.
- Operator cabins of major HEMM equipment will be closed to minimize dust exposure of the operators.
- Green belt and plantation will be done within the mining lease area.
- Personal protective equipment will be provided to workers/employees working in the area and adequate training will be provided on safety and health aspect.
- Regular Ambient Air Quality Monitoring will be carried out.
- Proper maintenance of the HEMMs & transportation vehicles will be done.
- Vehicular emissions will be kept under norms.

B. NOISE MANAGEMENT

Drilling

- Drilling with sharp drill bits to achieve optimum drilling performance and to reduce noise generation at source will be adopted.
- Personal protective equipment i.e. earplugs in drilling & in high noise area will be provided to workers/employees working in the area.

Blasting

- Controlled blasting will be carried out to minimize vibration.
- The frequency of blasting will be optimized too, by adopting multi-row blasting using NONEL.
- Rock breaker will be used to avoid secondary blasting.
- The ground vibrations will be monitored for each and every blast and induced ground vibration study will be carried out through authenticated agency.
- Proper maintenance, oiling and greasing of machines at regular intervals will be done to reduce generation of noise.
- Explosives charge per hole and per delay will be maintained as per DGMS guidelines.
- Vibrations and noise generated by blasting will be monitored regularly.

Transportation

- Adequate silencers in HEMMs will be provided to reduce generation of noise.
- The prime mover's/ diesel engines will be properly designed and maintained.
- The operator's cabin will be safe guarded with proper enclosures to reduce the noise levels.
- Development of Green belt/plantation in and around the lease area will be developed.
- All Mine employees will be provided with necessary PPE's.
- Periodical monitoring of noise will be done.
- For Diesel generator set acoustic enclosure/ acoustic treatment will be provided and by proper maintenance.

C. WATER MANAGEMENT

Waste Water

- Domestic Waste water generated from the office toilets will be disposed of in soak pit via septic tank.
- Automatic lubrication system will be provided in the workshop to check spillage of lubricants.
- Waste water generated from the work shop will be used for dust suppression after oil and grease separation.

Surface Run-off

- Two canal is present within the lesase lease. GNSS canal is present in west portion of lease with total length of 1.80 km and another SRBC canal is present in East portion of lease. Safety zone of 50 m safety zone will be left in both side of canal.
- Elevation of mining lease area is ranging from 204 m AMSL to 226 m AMSL with General ground level of 215 m AMSL. Ultimate working depth will be 55 m bgl. Depth to water table during Pre-Monsoon: 25 m to 25.4 m bgl and during Post Monsoon: 21.5 m to 23.1 m bgl level in the lease area. Hence, groundwater table will be intersection by mine workings. Necessary permission will be taken before intersecting the ground water table.
- Garland drains & Retaining Walls will be constructed around the dump to protect the surface runoff.
- Regular monitoring of water quality will be carried out.

D. GREENBELT/ PLANTATION

- Total area under greenbelt (7.5 m lease periphery) is estimated as 16.50 ha and remaining 13.50 ha will be under safety zone of road and canal which will also be completed within 5 years.
- Total area under plantation to be covered till life of mine is 156 ha (9.5 ha on outside waste dump area + 146.5 ha on backfilled area).
- Local and fruit bearing species will be planted after consultation with local forest officer and as per CPCB Guideline.
- Density of plantation would be 2500 trees / ha.

2.11 ASSESSMENT OF NEW & TESTED TECHNOLOGY FOR THE RISK OF TECHNOLOGICAL FAILURE

From the nature and extent of the deposit, the reserves and the quality have been proved with adequate degree of reliability. Considering the type of mineralization, opencast mechanized method is the most feasible method for mining in this mining lease area. It is also a matter of fact that the mining machineries are rapidly changing with time and therefore, the Project Proponent would act fast to adopt more advanced equipment and automation for safe and environment friendly mining technology in the years to come.

CHAPTER - 3

DESCRIPTION OF THE ENVIRONMENT

3.1 INTRODUCTION

The present environment of the core and buffer zone of this mining area is crucial to comprehense the impact of various project activities on environment. The awareness of present-day environment is also helpful in planning of environment management and planning of mitigation measures. To assess the dimensions of the study area and describe relevant physical, biological, and socio-economic conditions, including any changes anticipated before the project development. Also takes into account current and proposed development activities within the project area. Data should be relevant to conditions about project location, nature, operation, or mitigatory measures.

The relevant information and data (both primary and secondary) were collected in core as well as buffer zone (10 km distance from the Mine Lease boundary) during Pre-Monsoon Season (March to May, 2013) by the Vimta Labs Ltd. Analysis results done by Vimta lab is enclosed as **Annexure 9.**

Now in compliance to the MoEFCC OM dated 8th June, 2022, a fresh baseline data has been collected during Pre-Monsoon/Summer Season (March, to May, 2024) by the JMEPL in accordance with the guidelines of MoEF&CC for undertaking EIA Studies and for preparation of EIA/EMP report. The section indicates the accuracy, reliability, and sources of the pollution.

3.2 STUDY AREA AT A GLANCE

Study Area: The study area considered is an area of 10 km radius (aerial distance) from the mine site. The area of Mine site (within ML boundary) is considered as core zone and rest of the study area around core zone is known as buffer zone. Mine site is located in at Villages -Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollaapalle, G. Uppalapadu of Mandal: Mylayara, District: Kadapa (YSR), Andhra Pradesh.

- **Core Area:** 997.08 ha
- **Buffer Area:** 51002.01 ha (within 10 Km radius from Core Area)

The major environmental settings of the study area (w.r.t.the mining lease) are as given in the table below -

Table - 3.1

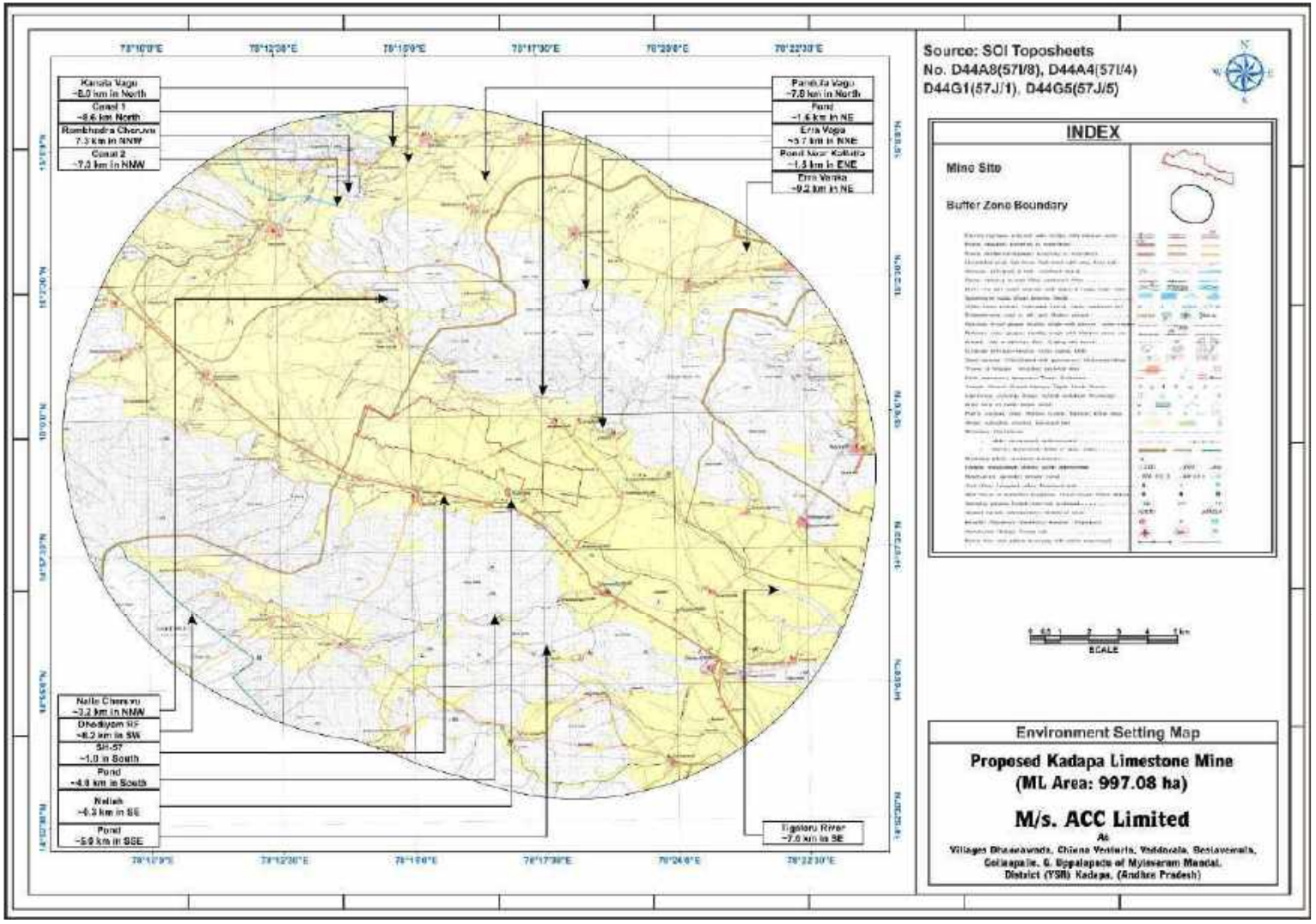
Environmental Setting Details

S. No.	Particulars	**Details** *(With approx. aerial distance & direction from the nearest mine boundary)*
1.	Nearest Village	Regdapalle (~ 0.43 km in East direction)
2.	School	MPPS Lakshmipalli (~0.4 km in North direction)
3.	Nearest Town	Jammalamadugu (~ 17.0 km SE direction)
4.	Nearest National / State Highway	SH- 57 (~0.80 km in South direction)
5.	Nearest Railway station	➢ S. Uppalapadu (~12 km in SE direction)

S. No.	Particulars	**Details** *(With approx. aerial distance & direction from the nearest mine boundary)*
		➢ Jammalamadugu Railway Station (~18.0 km in SE direction)
6.	Nearest Airport	➢ Kadapa Airport (~70.0 km in SE direction) ➢ Kurnool Airport (~80.0 km in North direction) ➢ Tirupati Airport (~200.0 km in SE direction)
7.	National Parks, Wildlife Sanctuaries, Biosphere Reserves, within 10 km radius	No National Parks, Wildlife Sanctuaries, Biosphere Reserves, within 10 km radius.
8.	Reserve Forests (RF) / Protected Forest (PF) within 10 km radius	Dhodiyam RF (~8.2 km in SW direction)
9.	River / Water Body (within 10 km radius)	➢ SRBC Canal (Inside the mining lease area) ➢ GNSS Canal (Inside the Mining lease area) ➢ Kanala Vagu (~8.0 km in North direction) ➢ Canal (~8.6 km in North direction) ➢ Rambhadra Cheruvu (~7.3 km in NNW direction) ➢ Canal (~7.0 km in NNW direction) ➢ Nalla Cheruvu (~3.2 km in NNW direction) ➢ Pond (~4.0 km in South direction) ➢ Nallha (~0.23 km in South direction) ➢ Pond (~4.3 km in SSE direction) ➢ Pandula Vagu (~7.8km in North direction) ➢ Pond (~1.6km in NE direction) ➢ Erra Vagu (~5.7 km in NNE direction) ➢ Pond Near kallutla (~1.5 km in ENE direction) ➢ Erra Vanka (~9.2 km in NE direction)
10.	Seismic Zone	Zone – II (Low Damage Risk Zone) as per IS:1893 (Part-1) 2002

Source: SOI Toposheet & Google Earth Pro

The map showing environmental settings within 10 km from the mine site is given on the next page:



Source: SOI Toposheet

Figure 3.1: Map Showing Environmental Settings of 10 km radius from the Mine Site

List of major operational industries/mines within 10 km radius of the mine site (i.e., study area) is given below:

Table - 3.2

Industries/Mines falling in the Study Area

S. No.	Name of the Industry	Type of Industry	Approx. Distance and direction from mine site
1.	Dalmia Cement (Bharat) Limited	Cement Plant	5.0 km
2.	Navabpet Talamanchipatanam Limestone Mine (Dalmia Cement (Bharat) Limited)	Mine	2.3 km

Source: Field Survey and Google Earth

3.3 STUDY PERIOD

The relevant information and data (both primary and secondary) were collected in core as well as buffer zone (10 km distance from the mining lease) during Pre-Monsoon Season (March to May, 2013).As the baseline data was 3-year-old hence expired; therefore, in compliance to the MoEF&CC OM dated 8th June, 2022 a fresh composite baseline study (Plant and Mine) has been conducted during Pre-Monsoon Season (March to May, 2024) in accordance with the guidelines for preparation of EIA studies in order to assess the impacts of the proposed project on existing physical, biological, and social environment.

3.4 ENVIRONMENTAL COMPONENTS

Information on the following components / parameters was collected to understand the existing scenario of the core and buffer area:

1. Land (including Geology, Topography, Land Use & Land Cover etc.)
2. Meteorology
3. Air Environment
4. Noise Environment
5. Water Environment (Ground & Surface water) including Hydrogeology
6. Soil Environment
7. Biological Environment
8. Socio-economic Environment

3.5 ESTABLISHMENT OF BASELINE FOR VALUED ENVIRONMENTAL COMPONENTS

Baseline data was collected for the existing mine for monitoring using various environmental components / parameters in the core as well as buffer zone during the study period i.e., during Pre-Monsoon Season (March to May, 2013). As the baseline data was 3-year-old hence expired; therefore, in compliance to the MoEF&CC OM dated 8th June, 2022 a fresh composite baseline study (Plant and Mine) has been conducted during Pre-Monsoon Season (March to May, 2024) details of which are given in Table - 3.3.

Sampling, preservation, transportation/storage, and analysis of samples was carried out by a NABL accredited & MoEF&CC approved Environmental Laboratory namely J.M. EnviroLab Pvt. Ltd. during

Pre-Monsoon Season (March to May, 2024) under the supervision of EIA Coordinator and respective concerned Functional Area Experts involved in the project.

Table - 3.3 (A)

Baseline Data Collection

Summer Season (March to May, 2013)

Sr. No.	Environmental Component	Sampling Locations	Sampling Parameters	Total Sampling Period	Sampling Frequency	Detection Limit	Methodogy
1	Meteorology	One central location	Temperature, Wind Speed and Wind Direction	3 months	Hourly	WS: +/-0.02 m/sec WD: +/- 3 degrees Temp: +/- 0.2 oC	The meteorology parameters were recorded using automatic micro-meteorological equipment consisting of Thermometer, Anemometer and Wind vane. Review of secondary data collected from IMD station at Kadapa.
			Rainfall	3 months	Daily	Rainfall: 0.2 mm	Rainfall was recorded every morning at 0830 hours
			Relative Humidity, Cloud Cover	3 months	Hourly	RH: +/- 3%	Humidity recorded using wet and dry thermometer and psycometric charts on hourly basis.
2.	Ambient Air Quality	12 locations	As per NAAQS 2009	Two days per week for 13 weeks	24 hourly	PM10: 5 µg/m^3 PM2.5: 5 µg/m^3 SO2: 4 µg/m^3 NOx: 10 µg/m^3 CO: 50 µg/m^3 O3: 2 µg/m^3 NH3:20.0 µg/m^3 C6H6:0.001 µg/m^3 BaP:0.01 µg/m^3 As; 0.001 µg/m^3 Ni: 0.001 µg/m^3 Pb: 0.001 µg/m^3 Hg: 0.001 µg/m^3	Gravimetric method for PM10 and PM2.5. Modified West & Gaeke method for SO2 (IS-5182 part-II 1969) using Tetrachloro mercurate 0.01 N absorbing solution. Jacob-Hochheiser method (IS-5182 part-IV 1975) for NOX using Sodium Arsenate absorbing solution of 0.01 N absorbing solution. CO was measured by GC method. O3 was measure by spectrophotometer.

3.	Water Quality	13 locations 4 - Surface water 9 - Ground water	As per IS: 10500-2012	Grab sampling	Once in study period	EC: +/-0.1 us/cm TSS/TDS: 0.5 mg/l O&G: 0.1 mg/l DO: 0.5 mg/l BOD: 2 mg/l COD: 0.5 mg/l Ca, Mg, Na, K: 0.1 mg/l Alkalinity, PO4, SO4, Cl, NO3: 0.1 mg/l Coliform: 1 MPN	As per APHA methods. The conductivity, temperature was analyzed at site laboratory and rest of the parameters were analyzed at VIMTA's Central Laboratory at Hyderabad.
			Heavy metals (As, Hg, Pb, Cd, Cr-6, Total Cr, Cu, Zn, Se, Fe)	Grab sampling		0.001 mg/l	
4	Noise	12 locations	Leq	Hourly readings for 24 hours	Once in study period	SPL: 0.1 dB(A)	Integrated on hourly basis
5	Soil	12 locations	Soil Profile, Chemical Constituents, Suitability for agriculture growth	Composite sample up to 90 cm depth	Once in study period	C: ± 0.1 Ps/cm N, P, K: 0.1 mg/kg	analysis was carried out as per Soil Chemical analysis by ML Jackson
6	Terrestrial Ecology	Total study area	Flora and fauna	Field observations	Once in study period	-	Through field visits and collected secondary data. Count and quadrate method
7	Demography And Socioeconomic aspects	Total study area	Demographic profile	-	-	-	Through field visits and secondary information sources like National Informatic Center, Delhi and Census operation division
8	Land Use	Total study area	Trend of land use change for different categories	-	-	-	hrough field visits and secondary information of IRS, LISS P6 satellite imagery data sources like National Informatic Center, Delhi

9	Geology	Total study area	Geological history	-	-	-	Secondary information sources (Geological survey of India and Central Ground Water Board, Delhi)
10	Hydrogeology (Surface and ground)	Total study area	Drainage pattern, nature of streams, aquifer characteristics, recharge and discharge areas	-	-	-	Secondary information sources like (Geological survey of India and Central Ground Water Board)

Source: Final EIA/EMP Report made by Vimta Labs.

Table - 3.3 (B)
Baseline Data Collection
Summer Season (March to May, 2024)

S. No.	Environmental component	Primary data				Secondary data
		Parameters	Frequency	Monitoring locations	Methodology	
1.	Land	Land use and land cover	Once in a season	Study area	Field survey	Satellite image from NRSC, Hyderabad
		Soil	Once in a season	10	As per IS 2720/USDA	-
2.	Meteorology	Temperature, Relative Humidity, Wind Speed, Wind Direction	Hourly	01	--	IMD book (Climatological normals 1991 - 2020)
3.	Air	PM10, PM2.5, SO_2 and NO_2	(24 hourly), twice a week	13	CPCB Guidelines /NAAQS/IS 5182	-
		O_3, Pb, CO, NH_3, C_6H_6, BaP, As, Ni	Once in a season			
4.	Noise	Equivalent noise levels in dB (A)	Once in a season (day & night time)	11	CPCB Guidelines /IS 9989	-
5.	Surface Water	Parameters as per IS 10500:2012	Once in a season	07	IS 10500-2012	-
6.	Ground Water/Drinking water		Once in a season	10		-

S. No.	Environmental component	Primary data				Secondary data
		Parameters	Frequency	Monitoring locations	Methodology	
7.	Biological Environment	Flora and fauna	Once in a season	Study area	Quadrate method/ random sampling	-
8.	Socio - Economic Environment	Socio - Economic status	Once in a season	Study area	Field survey through questionnaire, focused group discussion and random sampling	• Census data, 2011 • List of prevailing diseases from Public Health Centre • List of villages where public health centre is set up • List of schools • Map of Tehsil • Details on socio-economic developmental activities undertaken

Source:JM Envirolab Pvt Lab.

3.5.1 INSTRUMENTS USED FOR ENVIRONMENTAL BASELINE DATA COLLECTION

Dust samplers of Envirotech instruments were used by Vimta Lab for monitoring PM10 (<10 microns), PM2.5 and gaseous pollutants like SO2 and NOx. Glass tubes were deployed for collection of grab samples of carbon monoxide. Gas Chromatography techniques have been used for the estimation of CO.

Meanwhile, JMEPL were used the following instruments at the site for environmental baseline data collection work.

1. Respirable Dust Sampler with attachment for gaseous Pollutants, Envirotech APM 460
2. Fine Particulate Sampler (FPS), APM 550
3. Sound Level Meter, Model Envirotech SLM - 100
4. Digital D.O. Meter Model, 831 E (CPCB Kit)
5. Weather Monitoring Station, Model Enviro WM 271
6. Global Positioning System (GPS).

The collected samples of air, water, noise and soil as given in above section were collected from the representative sampling points. The primary data covering the details such as type of vegetation/ various agricultural crops, no. of forest, type of habitation, their occupation type, existing infrastructure and communication/ medical facilities were also collected by the site visit team through interaction with a large number of local inhabitants from the study area and also with different government departments for preparation of additional studies such as Land use Land cover study; Biological Environment, Socio-economic study etc.

Based on the primary and secondary data obtained from the 10 km radius buffer area and the core area, the Analysis, Interpretation and Conclusion of the baseline conditions within the core zone and buffer zone is given in below sections.

3.6 LAND USE / LAND COVER STUDY

Land use aspects of eco-system play important roles for identifying sensitive issues, if any, and taking appropriate actions for maintaining the ecological balance in the development of the region. The objectives of land use studies are to determine the present land use pattern, to analyze the impacts on land use due to plant activities in the study area and to give recommendations for optimizing the future land use pattern vis-à-vis. growth of plant activities in the study area and its associated impacts.

Remote sensing satellite imageries were collected and interpreted for the 10 km radius study area for analyzing the land use pattern of the study area. Based on the satellite data land use/ land cover maps have been prepared by Vimta lab, in same way JMEPL is also prepared land use/ land cover maps. Methodology, data used, maps and Intrepitation of land use and land cover map are discussed below:

3.6.1 DATA USED

Current vintage data of Indian Remote Sensing Satellite RESOURCESAT – 2A digital FCC (False Color Composite) has been used for preparation of Land use/ Land cover thematic map of study area.

Satellite image has been procured from National Remote Sensing Centre, Hyderabad. Survey of India toposheet as a reference map on 1:50,000 scale has been used for preparation of base layer data like road, rail network and villages for geo-referencing of satellite image.

S. No.	Particulars	Details
1.	Satellite Image	RESOURCESAT-2A
2.	Vintage Date	03 April, 2024
3.	Satellite Data Source	NRSC, Hyderabad
4.	SOI Toposheets No	D44A8(57I/8), D44A4(57I/4), D44G1(57J/1), D44G5(57J/5)
5.	Software Used	Earth Resources Data Analysis System (ERDAS) Imagine 9.2 & 14

Satellite Image (FCC) for the Mining Lease area and 10 km radius study area is given in Figure - 3.2 and 3.3 respectively.

3.6.2 METHODOLOGY

- Preliminary / primary data collection of the study area
    - Satellite data procurement from NRSC, Hyderabad
- Secondary data collection from authorized bodies
    - Survey of India Toposheet (SOI)
    - Cadastral / Khasra map
    - GPS Coordinates of Mine Lease Boundary

- Mining Maps approved by IBM

- Processing of satellite data using ERDAS Imagine 9.2 and to prepare the Land use and Land cover maps (e.g. Forest, agriculture, settlements, wasteland, water bodies etc.) by digital image processing (DIP) technique.
  - Geo - Referencing of the Survey of India Toposheet
  - Geo - Referencing of satellite Imagery with the help of Geo-Referenced Toposheets
  - Geo - Referenced Khasara Maps
  - Enhancement of the Satellite Imagery
  - Base Map layer creation (Roads, Railway, Village Names and others Secondary data etc.)
  - Data analysis and Classification using Digital interpretation techniques.
  - Ground truth studies or field Verification.
  - Error fixing / Reclassification
  - Final Map Generation

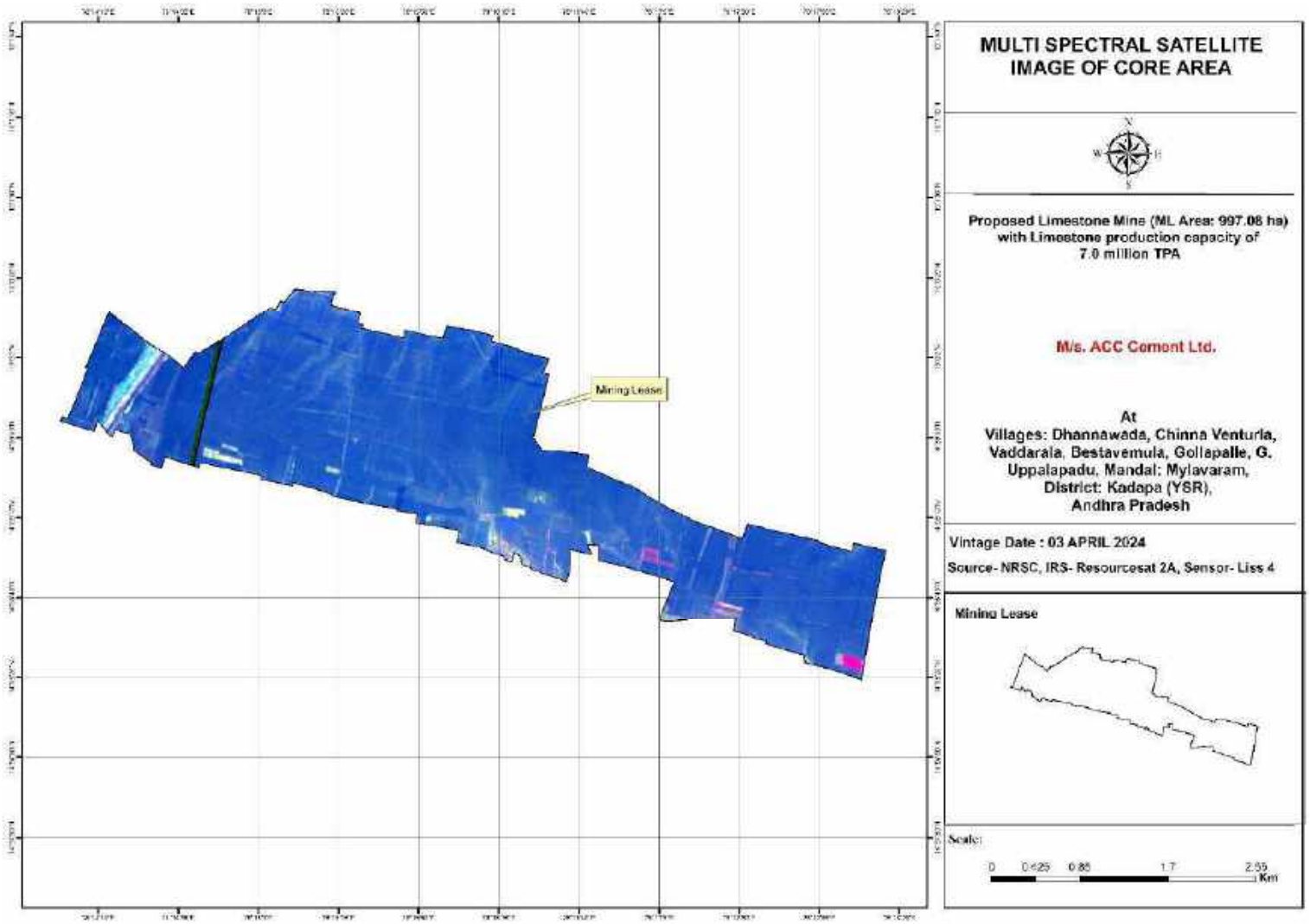


Figure: 3.2 Satellite Image of Mining Lease Area

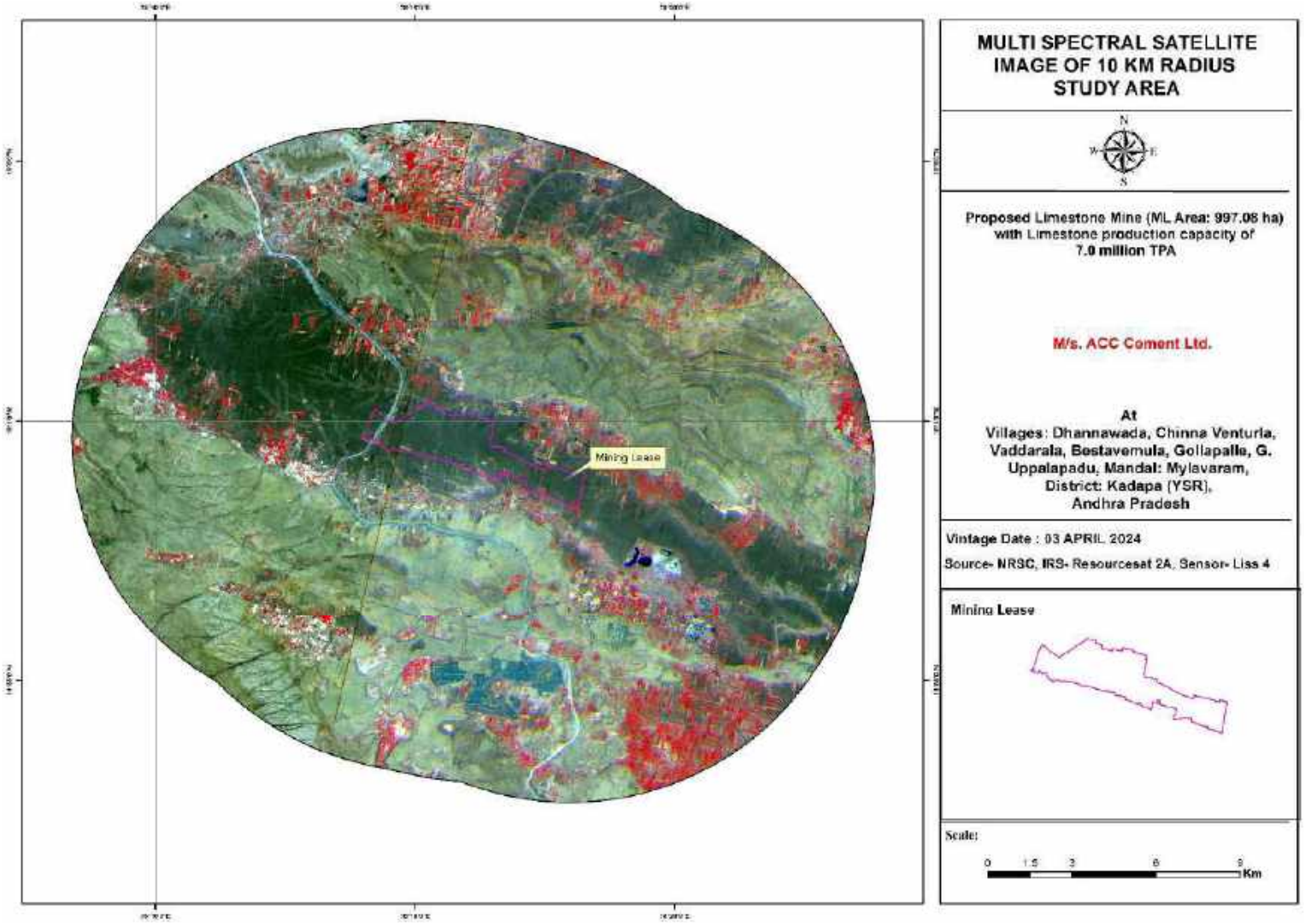


Figure: 3.3 Satellite Image of Study Area

Land Use and Land Cover Classes - There are the following LULC Classes: -

Water Bodies, Crop land, Fallow Land, Human Settlement, Industrial Area, Mine Quarry, Scrub Land, Plantation, Railway Line, Road Network, Forest Land, Stony Waste Land, Open Land etc. as per NRSC Guideline.

Definitions of LULC Classes

*(**Source**- National Remote Sensing Center Guideline)*

Agriculture Land: These are the lands primarily used for farming and for production of food crops, fiber, and other commercial and horticultural crops. It includes land under crops (Irrigated and non-irrigated, Fallow, Plantation etc.)

Crop Land: These are the areas with standing crop as on date of satellite overpass. Cropped areas appear in bright red to red in color with varying shape and size in a contiguous to non-contiguous pattern. Three cropping seasons exist in India viz., Kharif (June/July-September/October), Rabi (November-December-February-march) and Zaid (April-May).

Open Scrub Land: Scrub is a vegetation found in regions with less than 100 cms of rainfall. Therefore, it indicates a dry region.

Open Land: It refers to non-built-up land with no, or with insignificant, vegetation cover.

Stony waste Land: A large area usually in arid/semi arid regions where the finer sand/soil has blown away leaving a surface covered with boulders, stones and pebbles.

Generation and analysis of data

- ***Geo-referencing of the Survey of India Toposheet***

  Downloaded SOI Toposheets were geo-reffered in geographic lat/long projection system with the help of ERDAS imagine software and re-project in UTM WGS 84 with respective zone.

- ***Enhancement of Satellite Image***

  Satellite data is composed of substantial noise and haze errors due to various environmental factors, which affect the amount of reflectance (information) that can be deciphered. Since mapping of satellite images is based on spectral signatures, it is necessary to normalize the redundant values into near true values. This process of deriving true reflectance values is known as normalization. This enhances interpretability of the satellite image thereby facilitating better identification of land features viewed on satellite imagery. Histogram equalization and radiometric correction has been used for satellite image enhancement.

- ***Base Map Layer Creation***

  Base map has been prepared using Survey of India Toposheet as a reference map on 1:50000 scale. In base layer linear and point feature like road, rail, canal, village location and other secondary information have been created in vector data format with the help of ArcGIS Software.

- ***Data Analysis and Classification Using Digital Interpretation Technique***

  Image interpretation is the process of identifying objects or conditions in images and determining their meaning or significance. Satellite imageries are composed of array of grid,

each grid have a numeric value that is known as digital number. Smallest unit of this grid is known as a pixel that captures reflectance of ground features represented in terms of Digital number, which represent a specific land feature.

Using image classification technique, the satellite data is converted into thematic information map based on the user's knowledge about the ground area.

Hybrid technique has been used i.e. visual interpretation and digital image processing for identification of different land use and vegetation cover classes based on spectral signature of geographic feature. Spectral signature represents various land use classes. Based on the Interpretation key and Spectral signature, entire satellite imagery is classified in different classes like Water Bodies, Crop land, Fallow Land, Human Settlement, Industrial Area, Mine Quarry, Scrub Land, Plantation, Railway Line, Road Network, Forest Land, Stony Waste Land, Open Land etc.

- ***Ground Data Collection and Verification***

  Ground truth/ field verification is an important component in mapping and its validation exercise. Utmost care and planning is required for collecting ground data and verification. To facilitate a good ground truthing exercise the following steps were followed:

  - Identifying and listing all the doubtful areas for the ground verification and referring all such areas with respect to the toposheet to know their geographical location and accessibility on the ground.
  - Field traverse plan was prepared to cover maximum doubtful areas in the field in such a way that each traverse covers, as many land use and land cover classes as possible, apart from the doubtful areas.
  - Sufficient numbers of points were covered for each Land Use Class as required for quality checking as well as accuracy assessment.

- ***Error Fixing / Reclassification***

  Reclassification of Land Use classes was done on the basis of data collected / verified during ground truthing.

- ***Final Map Generation***

  Final maps are generated for the core area as well as Buffer area. 3 Pixels are Filtered using Clump and Eliminate Process after ensuring to maintain crucial classes of importance. Base map layers are overlaid on the classified raster data and then thematic maps are generated on the layout consisting of Project name, legend, source of data, Index map, scale bar and North arrow.

3.6.3 LAND USE / LAND COVER

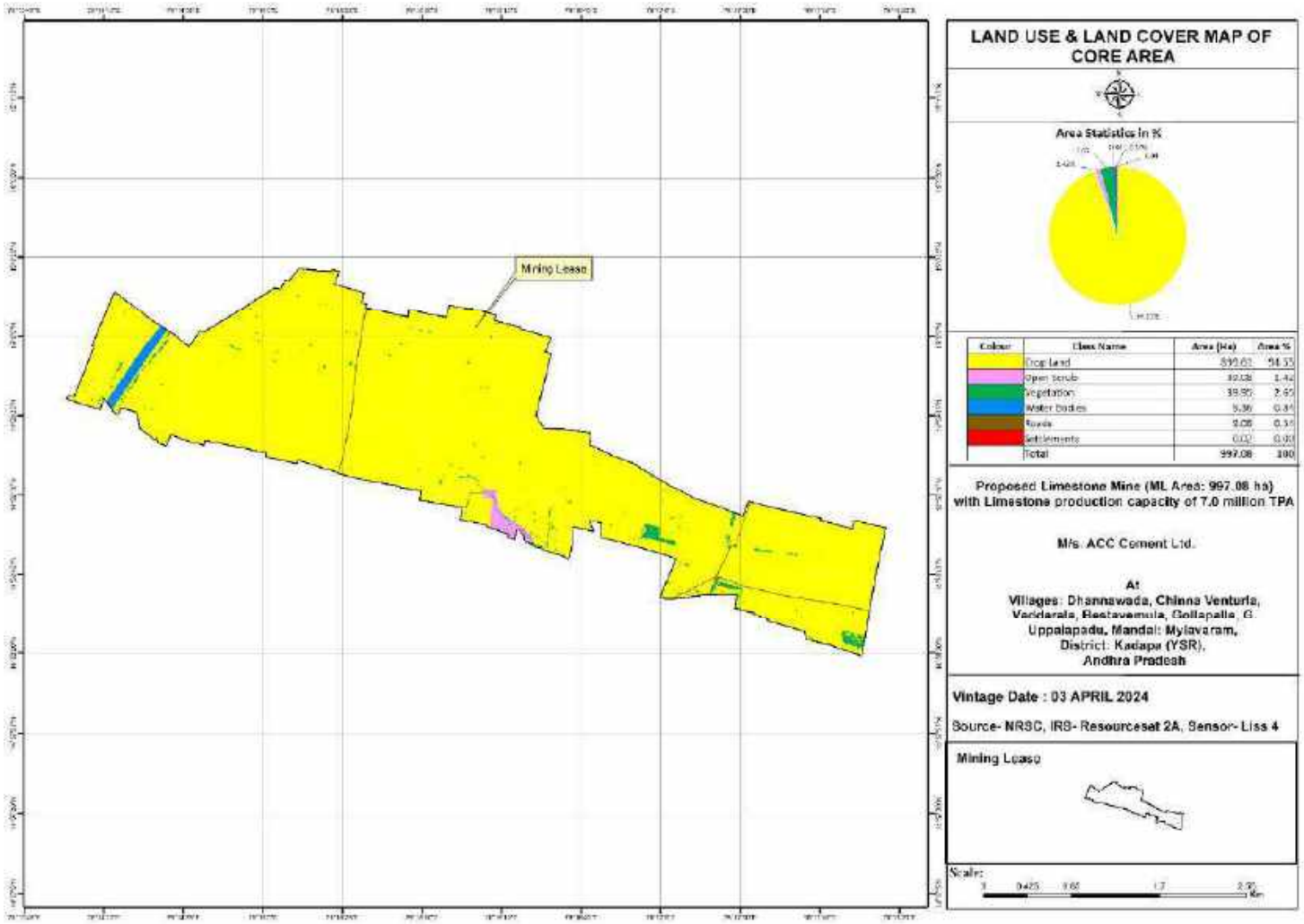


Figure: 3.4 Land Use / Land Cover Map of the Mining Lease Area

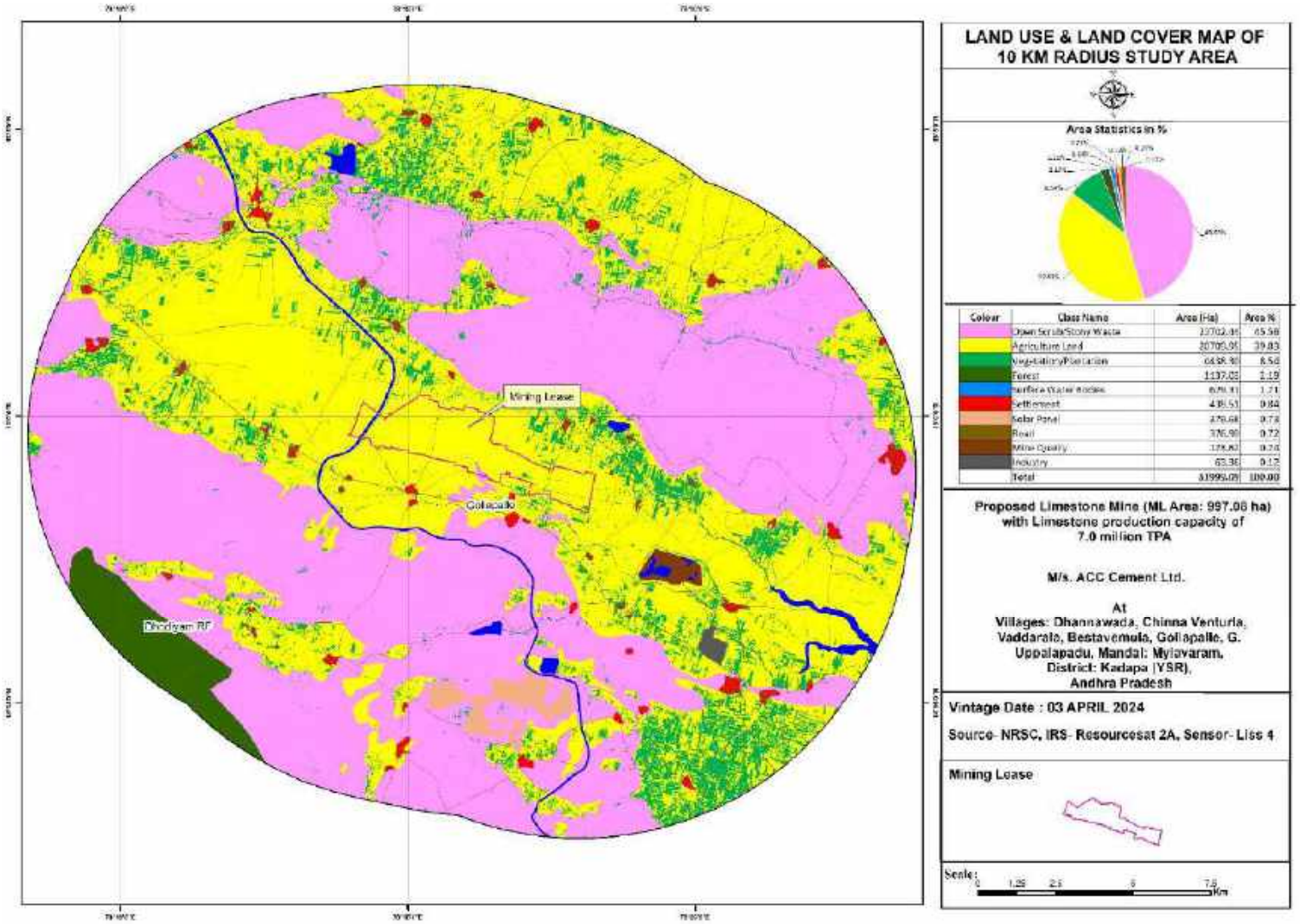


Figure: 3.5 Land Use / Land Cover Map of the Study Area

The land use and land cover details of the Core area are given in Table - 3.4

Table - 3.4

Land Use and Land Cover Details of Core Area

S. No.	Legend	Area (in ha)	Area (in %)
1.	Crop Land	899.61	94.55
2.	Open Scrub	39.08	1.42
3.	Vegetation	39.95	2.65
4.	Water Bodies	9.36	0.84
5.	Roads	9.06	0.54
6.	Settlements	0.02	0.00
Total		**997.08**	**100**

Source: *LU/LC Map for Core Zone*

The land use and land cover details of the Study area are given in Table - 3.5

Table - 3.5

Land Use and Land Cover Details of Study Area

S. No.	Legend	Area (in ha)	Area (in %)
1.	Open Scrub/ Waste Land	23702.44	45.58
2.	Agriculture Land	20709.95	39.83
3.	Vegetation/ Plantation	4438.30	8.54
4.	Forest	1137.03	2.19
5.	Surface water Bodies	629.31	1.21
6.	Settlement	438.51	0.84
7.	Solar Panels	379.68	0.73
8.	Road	376.90	0.72
9.	Mine Quarry	123.62	0.24
10.	Industry	63.36	0.12
Total		**51999.09**	**100**

Source: *LU/LC Map for Buffer Zone*

3.6.4 INTERPRETATION OF THE LULC DATA

- The study area comprises Open Scrub/Waste Land (45.58 %), Agriculture land (39.83 %), Vegetation/Plantation (8.54 %), Forest (2.19 %), Surface water Bodies (1.21%), Settelment (0.84 %), Solar panels (0.73%), Road (0.72 %), Mine Quarry (0.24%) and Industry (0.12%).
- According to the LULC data the agricultural land is present at percentage of 39.83% and so it can be termed the habitation/ Survival of the people living in the area is dependent on Agriculture.
- Different preventive measures for the emission which will occur from the mining activity will be taken to prevent the water bodies, forest and the livelihood present near mine site.
- Mine quarries and solar panels are observed within 10 km radius of the lease area.

3.7 SEISMICITY AND FLOOD HAZARD ZONATION OF THE AREA

Seismicity of the Area

Bureau of Indian Standards [IS - 1893 (Part - 1): 2002], has grouped the country into four seismic zones viz. Zone - II, III, IV and V. Of these, Zone - V is the most seismically active region, while Zone - II is the least. The Modified Mercalli Intensity (MMI) scale, which measures the impact of the earthquakes on the surface of the earth, broadly associated with various zones is as follows:

Table - 3.6

Seismic Zones in India

S. No.	Seismic Zone	Risk	Intensity on MMI Scale
1.	Zone - II	Low Risk Zone	VI & below
2.	Zone - III	Moderate Risk Zone	VII
3.	Zone - IV	High Risk Zone	VIII
4.	Zone - V	Very High-Risk Zone	IX & above

Source: IMD & NIDM

The Andhra Pradesh State falls in a region of low Seismic hazard zone with the exception being moderate hazard in few areas of the state. It mainly lies in Zones II and III. The proposed plant site as well as 10 km study area lies in Zone-II which is low damage Risk Zone as per Seismic Zoning Map of India, updated by "Vulnerability Atlas - 3rd Edition (updated on 2nd March, 2019); Peer Group, Ministry of Health (MoH) and UPA; based on digitized data of SOI, GOI; Seismic Zones of India Map, IS 1893 - 2002, BIS, GOI, Seismic tectonic Atlas of India and its environs, GIS, GOI"

Seismic Zoning Map of Andra Pradesh State & Seismic Zoning Map of India showing the proposed plant site is given in Figure 3.7 (a) & 3.7 (b)

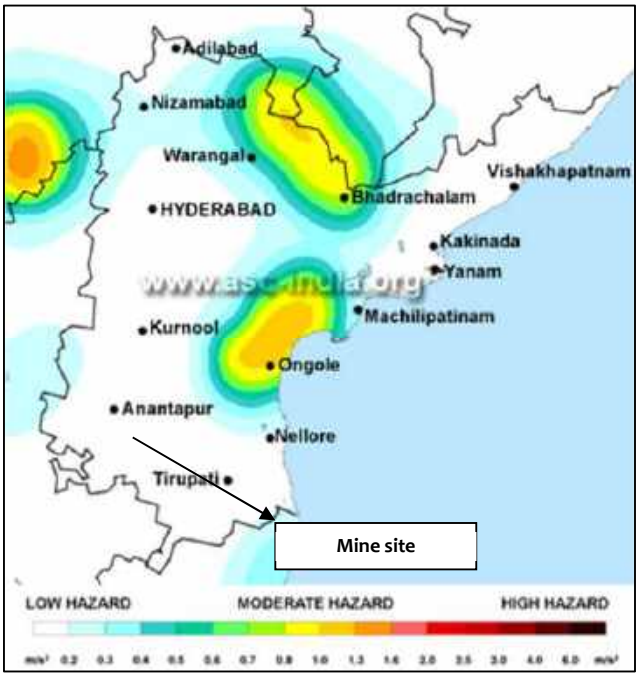


Figure 3.6: GSHAP Hazard map for Andhra Pradesh

Seismic Zoning Map of India showing the existing mine site is given in Figure - 3.7

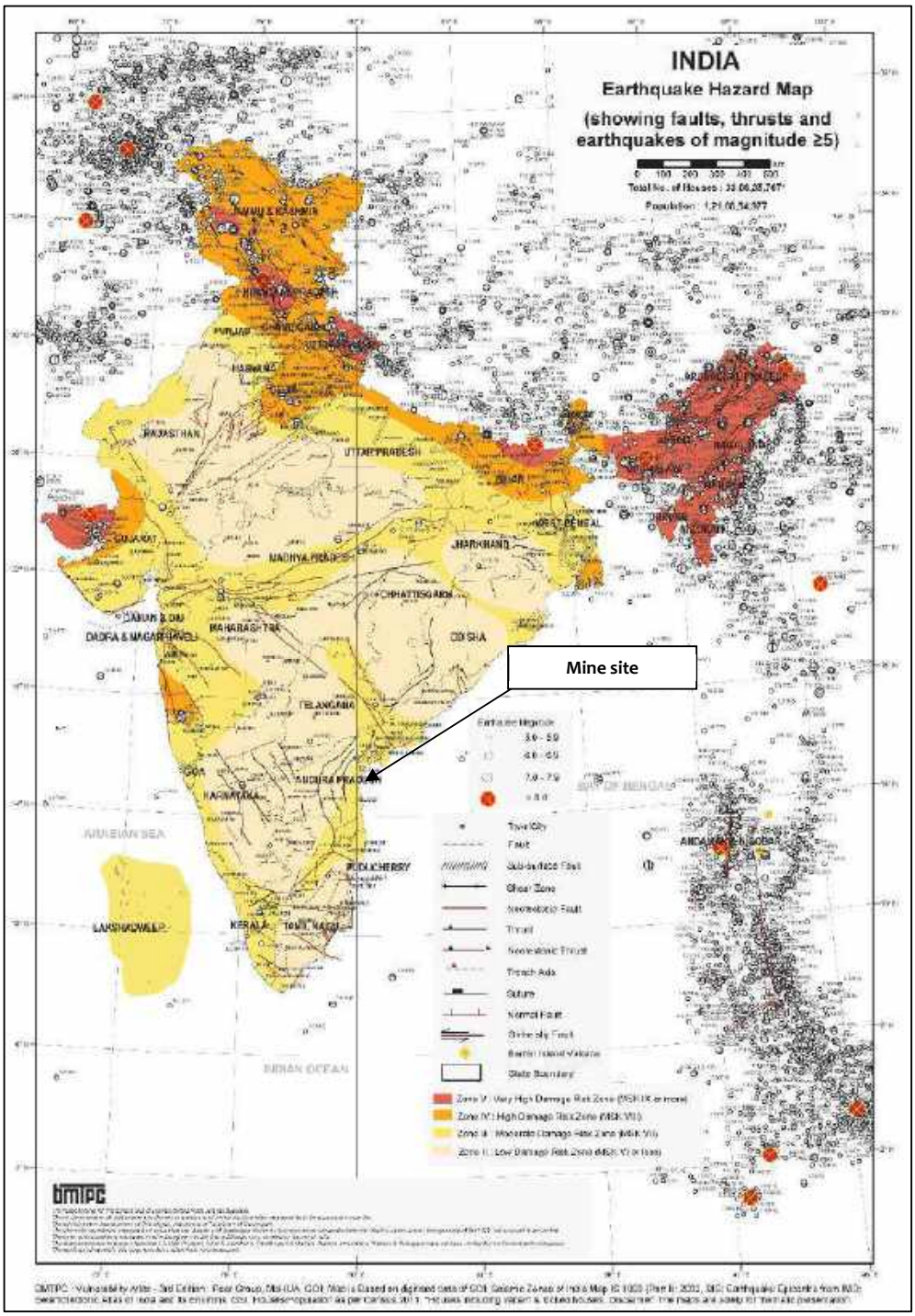


Figure 3.7: Seismic Zone Map

Conclusion: The existing mine site as well as 10 km study area lies in Zone-II Low Damage Risk Zone of Seismic Zoning Map of India, as per "BMTPC: updated by Vulnerability Atlas - 3rd Edition (updated on 2nd March, 2019); Peer Group, Ministry of Health (MoH) and UPA; based on digitized data of SOI,

GOI; Seismic Zones of India Map, IS 1893 – 2002, BIS, GOI, Seismic tectonic Atlas of India and its environs, GIS, GOI".

3.8 FLOOD HAZARD ZONATION OF THE AREA

The project site does not fall into the area which is "liable to flood" as per the "BMTPC: Vulnerability Atlas - 3rd Edition (updated on 2nd March, 2019); Peer Group, Ministry of Housing (MoH) and UPA (Urban Poverty Alleviation); based on digitized data of SOI, GOI; Census of India 2011; Flood Atlas (1987), Task Force Report (2004), C.W.C., GOI. Flood Hazard Zonation Map of India showing the existing mine site is given in Figure - 3.8.

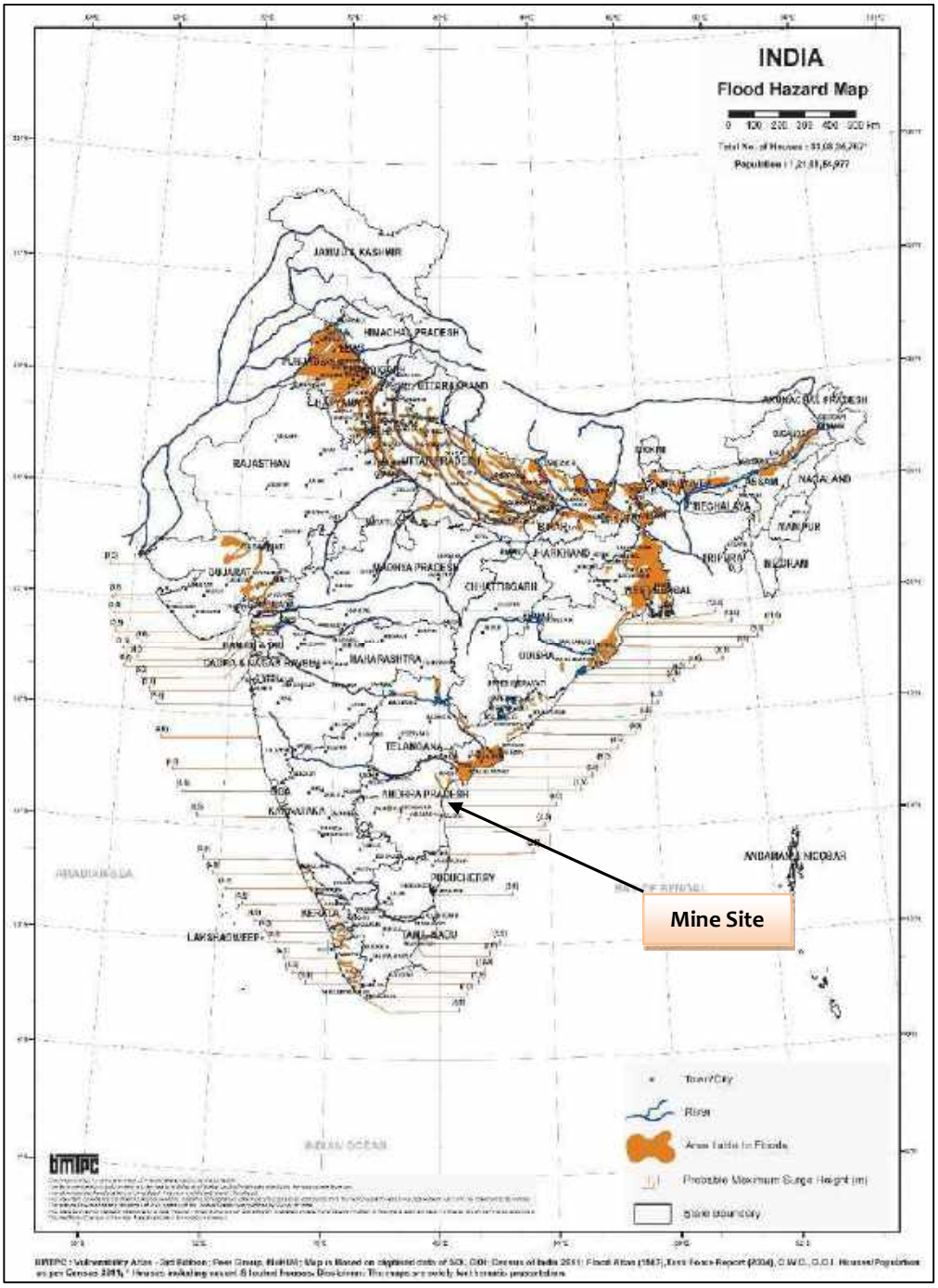


Figure 3.8: Flood Hazard Zonation Map of the Area

3.9 TOPOGRAPHY & DRAINAGE PATTERN

Topography

The area exhibits gently undulating topography in the central and western parts and gentle to moderately steep slopes towards northern and eastern flanks. Vaddarala village in the Western part is situated at a higher elevation (226.0 m) as compared to eastern part of the area. The highest and

lowest contour level in the area is 226 m, 204 m respectively located in the west and eastern side of the mining lease respectively.

Drainage

The study area (buffer zone-10 km radius area from lease boundary) falls in Penner River basin. The Penner (also Pennar or Penneru) is a major river of southern India which originates on the hills of Nandidrug in Kolar district of Karnataka state, and runs 560 km north and east through the state of Andhra Pradesh to empty into the Bay of Bengal. The watershed of the Penner and its tributaries cover part of the southern Deccan plateau, including most of the Rayalaseema region of Andhra Pradesh and part of Karnataka.

The upper watershed of the Penner includes Kadapa district, central and eastern Anantapur district, the southern part of Kurnool district, northwestern Chittoor district. The main tributaries of the Penner are the Jayamangali, Kunderu and Sagileru from the north, and the Chitrabvati, Papaghni and Cheyyeru from the south. The Penner then flows east through a gap in the Eastern Ghats enters in to the plains of Coastal Andhra, where it empties into the Bay of Bengal 15 km east of Nellore at a place called Ootukuru.

Drainage Pattern

The buffer zone is having dendritic drainage Pattern a major part of drainage has been harnessed by constructing irrigation projects, tanks and anicuts. Whatever runoff is produced by the average annual rainfall of 604 mm in the buffer zone, major part goes as surface runoff after meeting the evapo-transpiration losses and a part percolate to the zone of saturation.

Where few streams of first order originate near the northern and southern border of the project area. The catchment areas of these streams originating inside the project area is small and these streams carry limited surface runoff during therains. GNSS canal (Galeru Nagari Sujala Sravanthi) is passing through thewestern side of the project area. Northern and southern sides of the project areaare bounded by two nalas (Vagu), i.e. Pala Vagu (northern side) and RallavankaVagu (southern side). The upstream catchment areas of both Vagu (nala) are disturbed by huge height of dumps of deep excavated GNSS canal.

3.10 CLIMATE AND RAINFALL

The climate of Andhra Pradesh Varies from tropical Wet and dry to semi-arid. Pre- Monsoon Season in the state extend from March to June, When the moisture level is quite high. The district covered under coastal belt of the state has a slightly higher temperature than other part of the state. The average annual temperature for past 10 years varies from 43.7 to 14.9. The climate of the State is majorly influenced by the South-West Monsoon, whereas one third also experience North- East Monsoon. The annual average rainfall in the area or past 10 years is 842.77 mm where October is the wettest month of the year. Winter is from October to February. Winters are pleasant with low temperatures (13°C) and less humidity.

Rainfall pattern during last 10 years for Kadapa district is presented in Table 3.7.

Table - 3.7

Average Annual Rainfall Data for last 10 years

Years	Rainfall (mm)
2014	475.78
2015	1174.03
2016	561.82
2017	869.08
2018	412.74
2019	761.2
2020	1276.66
2021	1290.49
2022	933.56
2023	672.3

Source: WRIS

Conclusion: The rainfall record of last 10 years of District Kadapa indicates that rainfall varied between minimum of 475.78 mm in year 2014 to maximum of 1290.49 mm in year 2021 and with an average of 842.77 mm per annum

3.11 METEOROLOGY

Meteorology plays a vital role in determining the transport and diffusion pattern of air pollutants released into the atmosphere. The principal variables include horizontal convective transport (average wind speed and direction), vertical convective transport (atmospheric stability) and topography of the area.

Meteorological characteristics of an area are very much important in assessing possible environmental impacts and in preparing environmental management plan. Meteorological factors are time dependent and changes with respect to time thus meaningful interpretation can be drawn only from long-term reliable data. For collecting the baseline data, understanding of the meteorological conditions at the project site is done through recorded data of India Meteorological Department (IMD) (1981-2010). The prime importance of understanding the factor wind speed/wind direction from the IMD data was to determine the baseline monitoring sites for air with respect to the direction of the dominant meteorological factor. Wind rose diagram of IMD data used is given in Figure - 3.9.

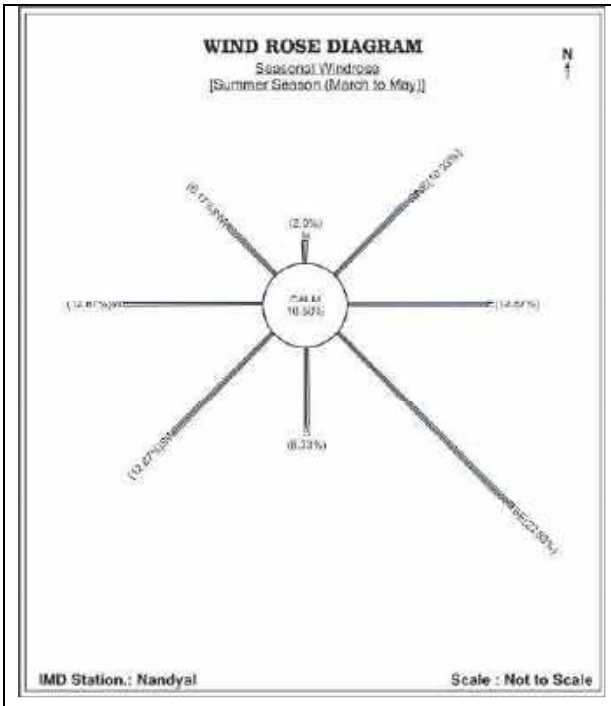


Figure 3.9(a): Windrose Diagram for Baseline period

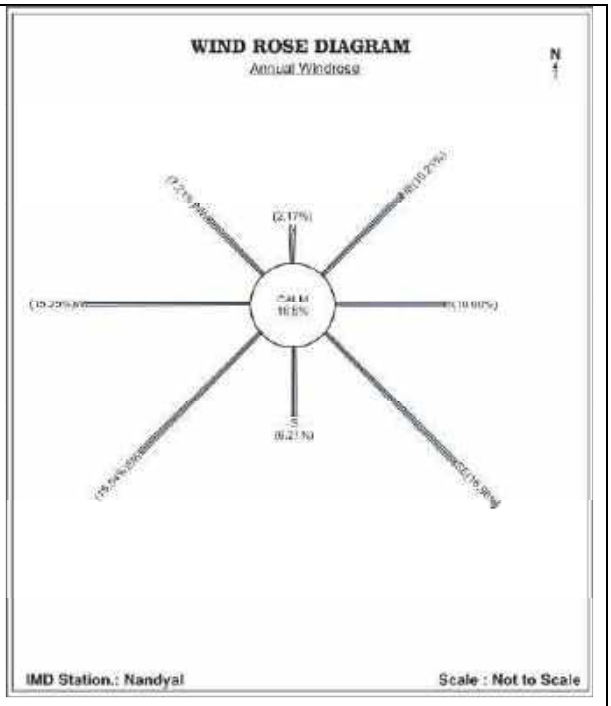


Figure 3.9(b): Windrose Diagram for Annual Wind Pattern

Source: *Climatological Normals 1991 – 2020*

Conclusion: The nearest IMD station from the mine site is Nandyal located at approx. 65 Km in NNE direction. The dominant wind direction during the summer season was from South East. Thus, one of the criteria for site selection for assessing the ambient air quality within the 10 km radius from the project site is that sampling is done in the upwind and downwind of the dominant wind direction.

3.12 MICRO-METEOROLOGY CONDITION AT SITE

Meteorological station was set-up at project site to record surface meteorological parameter during Summer Season *(March to May, 2013)* and due to the expiry of earlier conducted baseline study; a fresh baseline has been conducted during Summer Season *(March to May, 2024)*.

Theoretically, meteorological parameters such as Temperature, Humidity, wind speed/ wind direction and Rainfall are the basic parameter which helps in determining the ambient environment quality of the area. Thus, Primary data for the Wind speed /wind direction, Temperature and Humidity was recorded during the study period. Based on the collected meteorological data, relative percentage frequencies of different wind directions and speed were calculated and plotted as a wind rose diagram as given in Figure 3.10. The percentage calculated for all parameters wind speed, wind direction, rainfall, temperature can influence the Quality, dispersion and movement of the pollutant thereby helps in the determining the Impacts caused by the proposed plant activity.

Wind Rose Diagram showing the wind pattern during the study period is shown in Figure - 3.10. Summary of the micro-meteorology condition near to the site is given in Table - 3.8.

Table - 3.8
Micro-Meteorology at Site
Study Period: Summer Season (March, 2024 to May, 2024)

Month	Temperature (°C)		Relative Humidity (%)		Wind Speed (m / sec.)	
	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum
March, 2024	40.9	27.6	57	38	4.4	0.1
April, 2024	41.5	30.5	58	41	5.3	0.2
May, 2024	42.1	36.4	60	43	5.8	0.4

Source: Meteorological Station at Site

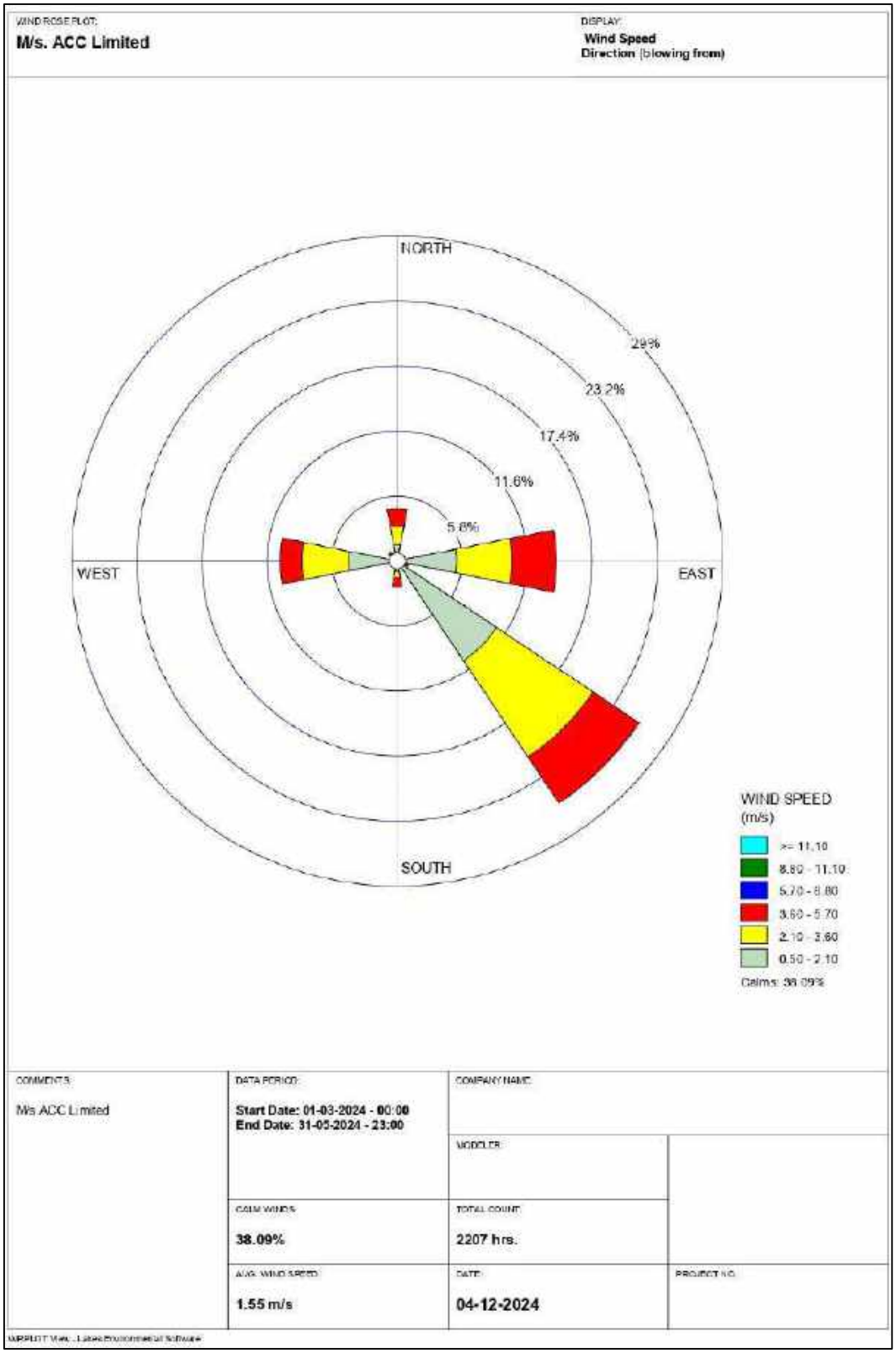


Figure 3.10: Wind Rose Diagram for *Summer Season* (March to May, 2024)

3.13 AMBIENT AIR ENVIRONMENT

The baseline study was conducted during the Summer Season (March, 2013 to May, 2013) by earlier consultant Vimta Labs Ltd. as the baseline data was 3-year-old & hence expired; therefore, in compliance to the MoEF&CC OM dated 08th June, 2022 a fresh baseline study has been conducted during Summer Season (March, 2024 to May, 2024).

Summary of Ambient Air Quality Monitoring (Summer Season March, 2013 to May, 2013)

The observed values for PM2.5 vary between 19.1 µg/m3 near village Bestavemula to 23.6 µg/m3 at Nakkavanipalle and PM10 is found to be 28.3 µg/m3 at Kondsunkesula to 42.5 µg/m3 at Vaddirala. As far as the gaseous pollutants SO2 and NO2 are concerned, the concentrations of SO2 and NO2 were found to be in range of 8.1 to 13.8 µg/m3 and 10.4 to 16.7 µg/m3 respectively. CO concentration was observed to be 204 µg/m3 and 445 µg/m3. Also, Benzene, BaP, As, Ni, Pb, Ozone, Ammonia has monitored in the study area.

Details of Ambient Air Quality Monitoring (Summer Season - March, 2024 to May, 2024)

The ambient air quality depends upon the nearby emission sources, micro meteorological conditions and the background concentration of specific pollutants. Samples were collected from the 10 km study area to observe the ambient air quality conditions throughout the region. It helps in providing a data base for evaluation of the anticipated impacts in the 10 km radius study area by the activities of both sites. It will also be useful in ascertaining the quality of air environment in conformity to standards of the ambient air quality during operation phase of both the projects.

Monitoring Parameters

The samples were collected for the following air quality determinants:

- Sulphur Dioxide (SOx)
- Nitrogen Dioxide (NO2)
- Particulate Matter (PM10 and PM2.5)
- Carbon Monoxide (CO)

Analytical methods prescribed by CPCB & approved Indian Standard methods were used for carrying out air quality monitoring.

Methodology

The methodology adopted for monitoring is given below in Table 3.9

Table - 3.9

Details of Test Procedures

S. No.	Parameter	Test Method Specification against which tests are performed	Range of testing	Limit of detection	Equipment used for monitoring	
					Equipment required for Sampling	Equipment required for Analysis
1.	Sulphur Dioxide (SO_2)	IS: 5182, (P-2), 2001 Reaffirmed 2017	5 µg/m³ to 1050 µg/m³	4 µg/m³	Respirable dust sampler/Low flow Pump	UV spectrophotometer
2.	Nitrogen Dioxide (NO_2)	IS: 5182, (P-6), 2006 Reaffirmed 2017	5 µg/m³ to 750 µg/m³	6 µg/m³	Respirable dust sampler/Low flow Pump	UV spectrophotometer
3.	Particulate Matter (PM_{10})	IS: 5182, (P-23), 2006 Reaffirmed 2017	10 µg/m³ to 1000 µg/m³	10 µg/m³	Respirable dust sampler,	Desiccator, high accuracy weighing balance
4.	Particulate Matter ($PM_{2.5}$)	IS: 5182, (P-24), 2019	10 µg/m³ to 500 µg/m³	10 µg/m³	Fine Particulate sampler	Desiccator, high accuracy weighing balance
5.	Carbon Monoxide (CO)	IS: 5182, (P-10), 1999 Reaffirmed 2014	0.5 mg/m³ to 50 mg/m³	0.5 mg/m³	Sampling in Tedlar Bag with low flow pump	Gas chromatography with detector (FID)
8.	Arsenic	IS:5182 (Part-22) 2004 Reaffirmed 2014/CPCB Guidelines	0.5 ng/m³ to 100 ng/m³	0.5 ng/m³	Respirable dust sampler with EPM filter paper	Atomic absorption spectroscopy
10.	Lead	IS:5182 (Part-22) 2004 Reaffirmed 2014	0.02 µg/m³ to 50 µg/m³	0.02 µg/m³	Respirable dust sampler with EPM filter paper	Atomic absorption spectroscopy
11.	Chromium	IS:5182 (Part-22) 2004 Reaffirmed 2014/CPCB Guidelines	0.5 ng/m³ to 100 ng/m³	0.5 ng/m³	Respirable dust sampler with EPM filter paper	Atomic absorption spectroscopy
12.	Mercury	IS:5182 (Part-22) 2004 Reaffirmed 2014/CPCB Guidelines	0.5 ng/m³ to 100 ng/m³	0.5 ng/m³	Respirable dust sampler with EPM filter paper	Atomic absorption spectroscopy

Protocol Used: CPCB Guidelines/IS-5182
RDS: Respirable Dust Sampler
FPS: Fine Particulate Sampler

Monitoring Schedule

Ambient Air quality monitoring has been carried out at 13 locations for 24 hours PM_{10}, $PM_{2.5}$, SO_x, NO_x, and CO with frequency of twice a week for three months (26 observations for one location).

Sampling Locations

Sampling locations in the downwind and upwind direction were selected for AAQ Monitoring keeping in view the pre-dominant wind direction prevailing in the area during the study period and as per the IMD data.

It can be observed from the wind rose diagram {Figure - 3.10} of the fresh baseline that the dominant wind direction during Summer Season (March to May, 2024) is from South East.

Villages / locations have been selected in the downwind direction as well as in the upwind direction for AAQ monitoring from proposed site.

Monitoring stations selected for Ambient Air Quality Monitoring during the study period are given in Table - 3.10 and shown in Figure - 3.11.

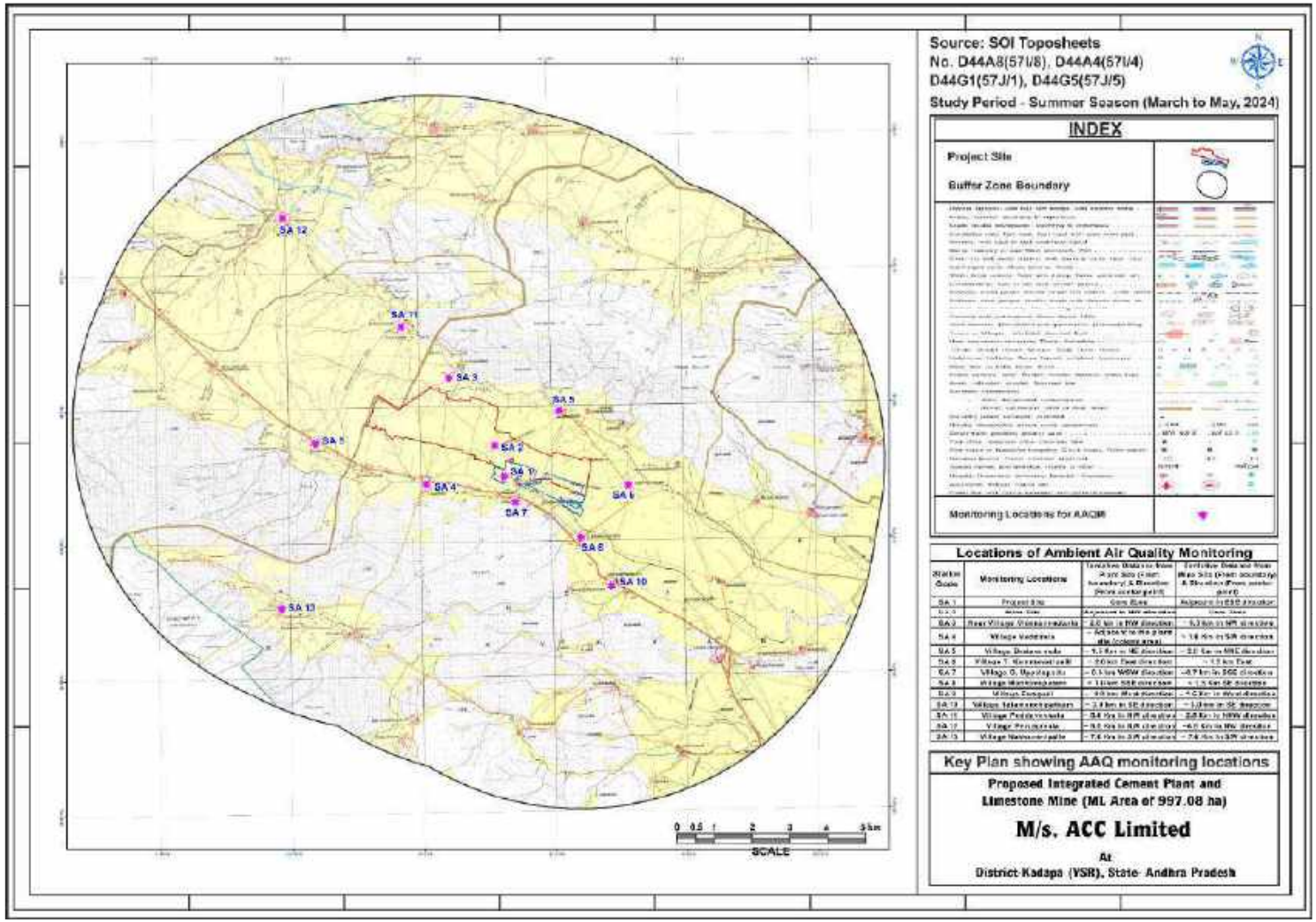
Table - 3.10

Composite Locations of Ambient Air Quality Monitoring Stations for Summer season (March, 2024 to May, 2024)

S. No.	Monitoring Stations	Distance and direction from Mine Site			Distance and direction from the Plant site		
		Distance	Direction	Selection Criteria	Distance	Direction	Selection Criteria
1.	Plant Site	Adjacent	ESE	Cement Plant Site	Core Zone	North	Core area
2.	Mine Site	Core Zone	-	Core area	Adjacent	NW	• Mine site
3.	Near Village Chinnavenuturla	~0.5 km	NW	Downwind of dominant wind direction (Seasonal and annual)	~ 2.80 km	NW	• Downwind of Dominant Wind Direction (Seasonal and Annual)
4.	Village Vaddirala	~1. 0 km	SW	• Downwind to the cross wind of the dominant Wind direction • Nearby Habitation • Near SH - 57	~ Adjacent to the plant site (colony area)	-	• Downwind to the cross wind of the dominant wind direction • Near SH - 57 • Nearest habitation to the colony of proposed plant
5.	Village Bestavemula	~2.0 km	NNE	• Nearby Habitation to the mine site • Downwind to the cross wind of the dominant Wind direction	~ 1.5 Km	NE	• Downwind to the 2nd dominant direction • Downwind to the cross wind of the dominant wind direction • Nearby Habitation
6.	Village T. Kammavaripalli	~1.5 km	East	• Nearby Habitation • Downwind to the 3rd dominant Wind direction (Seasonal and annual)	~ 2.0 km	East	• Downwind to the 3rd dominant wind direction (Seasonal & Annual)
7.	Village G. Uppalapadu	~0.7 km	SSE	• Near SH-57	~600 m	WSW	• Near SH - 57 • Nearby Habitation to the proposed plant site & truck parking area
8.	Village Madhavapuram	1.5 km	SE	• Upwind to dominant wind direction • Nearby Habitation to the proposed plant site	~ 1.0 km	SSE	• Upwind to the dominant wind • Nearby Habitation to the proposed plant site

S. No.	Monitoring Stations	Distance and direction from Mine Site			Distance and direction from the Plant site		
		Distance	**Direction**	**Selection Criteria**	**Distance**	**Direction**	**Selection Criteria**
9.	Village Erragudi	~1.5 km	West	• Upwind of the 2nd dominant wind direction • Near SH-57 • Habitation in the study area	~ 4.0 km	West	• Near SH - 57 • Habitation in Study Area
10.	Village Talamanchipatnam	~3.0 km	SE	• Near SH-57 • Upwind to dominant wind direction	~ 3.0 km	SE	• Near SH – 57 • Upwind to the dominant wind direction
11.	Village Peddaventurla	~2.5 km	NNW	• Downwind to dominant wind direction	~ 5.0 Km	NW	• Downwind to the dominant wind direction
12.	Village Perusomula	~6.5 km	NW	• Downwind to dominant wind direction • Dense Habitation & Nearby 2-3 Villages in close proximity	~ 9.5 Km	NW	• Downwind to the dominant wind direction • Dense habitation & nearby 2-3 villages in close proximity.
13.	Village Nakkavanipalle	~7.0 km	SW	• Near RF • Upwind of 2nd Dominant Wind Direction	~ 7.0 Km	SW	• Near RF • Upwind of 2nd Dominant Wind direction

Source: SOI Toposheet



Source: SOI Toposheet

Figure 3.11: Key Plan showing Ambient Air Quality Monitoring Locations

Ambient Air Quality Monitoring

Table - 3.11 & 3.12 shows the maximum & minimum concentration of the air pollutants monitored at different locations (as mentioned in Table - 3.10) during the study period. All 26 observations of pollutants for each location are detailed in Ambient Air Quality Monitoring Tables enclosed as ***Annexure - 7*** along with this report.

Table - 3.11
Ambient Air Quality Monitoring Results
Study Period: Pre- Monsoon (March to May, 2024)

(Unit in µg/m^3)

S. No.	Monitoring Location	$PM_{2.5}$ (µg/m^3)		PM_{10} (µg/m^3)		NO_2 (µg/m^3)		SO_2 (µg/m^3)		CO (mg/m^3)		PAH (ng/m3)
		Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	
SA 1	Project Site	28.0	20.8	50.2	36.4	12.3	9.5	6.8	4.3	BDL	BDL	BDL
SA 2	Mine Site	27.8	20.1	51.9	38.0	11.0	8.9	6.6	4.2	BDL	BDL	BDL
SA 3	Near Village Chinnavenuturla	34.9	24.7	59.2	48.2	17.9	11.3	8.6	5.9	BDL	BDL	BDL
SA 4	Village Vaddirala	39.2	30.8	71.3	59.0	20.3	15.7	11.7	8.0	BDL	BDL	BDL
SA 5	Village Bestavemula	33.3	24.4	58.3	46.8	17.8	10.3	7.5	5.4	BDL	BDL	BDL
SA 6	Village T. Kammavaripalli	32.9	24.0	56.4	42.0	16.5	9.7	7.0	4.6	BDL	BDL	BDL
SA 7	Village G. Uppalapadu	36.9	29.5	67.6	54.7	18.0	14.1	8.0	5.9	BDL	BDL	BDL
SA 8	Village Madhavapuram	33.5	24.0	55.0	44.1	15.6	9.9	7.0	4.9	BDL	BDL	BDL
SA 9	Village Erragudi	35.4	27.6	62.0	49.0	16.6	11.2	9.0	6.0	BDL	BDL	BDL
SA 10	Village Talamanchipatnam	31.3	25.9	58.9	46.2	15.9	9.8	7.7	5.0	BDL	BDL	BDL
SA 11	Village Peddaventurla	36.5	30.0	68.1	55.8	18.0	13.4	9.0	6.2	BDL	BDL	BDL
SA 12	Village Perusomula	41.8	34.8	76.5	62.5	22.2	17.9	11.2	8.3	0.67	0.56	BDL
SA 13	Village Nakkavanipalle	33.2	25.1	60.2	47.7	14.8	8.9	7.6	4.1	BDL	BDL	BDL
NAAQS*		**60**		**100**		**80**		**80**		**4 (DL 0.5)**		

Source: Ambient Air Quality Monitoring

**NAAQS - National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 16.11.2009*

BDL - Below Detectable Limit, Detection Limit of CO = 0.5 mg/m^3, Detection Limit of PAH = 1.0 mg/m^3

Table - 3.12

Ambient Air Quality Monitoring Results

Study Period: Summer Season (March to May, 2024)

S. No.	Sampling Location	Parameters								
		Benzo (a) pyrene (ng/m3)	Ozone (µg/m³)		Lead (µg/m³)	Ammonia (µg/m³)		Benzene (µg/m³)	Arsenic (ng/m³)	Nickel (ng/m3)
		Max.	Max.	Min.	Max.	Max.	Min.	Max.	Max.	Max.
1.	Project Site	BDL	10.6	5.1	BDL	13.2	7.8	BDL	BDL	BDL
2.	Mine Site	BDL	9.9	5.2	BDL	12.3	7.1	BDL	BDL	BDL
3.	Near Village Chinnavenuturla	BDL	13.2	8.4	BDL	25.0	14.4	BDL	BDL	BDL
4.	Village Vaddirala	BDL	17.0	10.7	BDL	30.3	19.1	BDL	BDL	BDL
5.	Village Bestavemula	BDL	12.7	7.1	BDL	16.6	9.3	BDL	BDL	BDL
6.	Village T. Kammavaripalli	BDL	9.1	4.0	BDL	13.2	6.7	BDL	BDL	BDL
7.	Village G. Uppalapadu	BDL	15.4	9.6	BDL	24.3	14.0	BDL	BDL	BDL
8.	Village Madhavapuram	BDL	11.7	6.3	BDL	17.0	10.0	BDL	BDL	BDL
9.	Village Erragudi	BDL	15.2	9.1	BDL	23.2	14.1	BDL	BDL	BDL
10.	Village Talamanchipatnam	BDL	10.3	5.4	BDL	19.7	13.3	BDL	BDL	BDL
11.	Village Peddaventurla	BDL	18.2	7.3	BDL	24.9	15.0	BDL	BDL	BDL
12.	Village Perusomula	BDL	25.6	17.7	BDL	38.8	21.7	BDL	BDL	BDL
13.	Village Nakkavanipalle	BDL	9.9	4.1	BDL	19.3	8.0	BDL	BDL	BDL
Detection Limit		**0.5**	**1.0**		**0.02**	**1.0**		**1.0**	**0.5**	**1.0**
NAAQS*		**1**	**180**		**6**	**400**		**5**	**1.0**	**20**

Source: Ambient Air Quality Monitoring Results from JM EnviroLab Pvt. Ltd.

**NAAQS - National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 16.11.2009*

Observations

- The concentrations of PM10 and PM2.5 for all 13 AAQM stations were found between 36.4 µg/m³ at Project site to 76.5 µg/m³ at Perusomula and 20.1 µg/m³ near Mine site to 41.8 µg/m³ at Perusomula, respectively and were found to be well within the prescribed limits.
- As far as the gaseous pollutants SO2 and NOx are concerned, the prescribed CPCB limit of 80 µg/m³ has never surpassed at any station. The concentrations of SO2 and NO2 were found to be in range of of 4.1 to 11.7 µg/m³ and 8.9 to 22.2 µg/m³ respectively.
- The CO concentration was observed to be BDL at various stations, it was observed maximum at Perusomula (0.67 mg/m³).
- The concentration of PAH was observed Below Detection Limit at all sampling locations.
- The baseline air quality conditions of the region are majorly associated with the type of anthropogenic activities, cement & mine industries located within the area and dependent on the prevailing natural weather conditions of the area. Based on the primary and secondary data collection the ambient air quality monitoring results were analyzed and observed that the

anthropogenic source of air pollution within the 10 km study area are mainly due to point sources, line sources and area sources.

Interpretation & Conclusion

The baseline air Quality conditions of the region are majorly associated with the type of anthropogenic activities taking place within the area and the same is dependent on the prevailing natural weather conditions of the area. Based on the primary and secondary data collection, the ambient air quality monitoring results were analyzed and it was observed that the anthropogenic source of air pollution within the 10 km study area are mainly due to point sources and line sources. The major cause for the point sources, line sources and area sources within the 10 km radius of study area are follows:

- ***Point source:*** Presence of Large, Medium and Small-Scale Industrial activities such as Cement Plant etc.
- ***Line Source:*** Movement of heavy-duty vehicles used for raw material and finished product transportation for the located Industries. Movement of the private and public vehicles / as well as tractors and trolley movement for agricultural and construction activities.
- ***Area sources:*** Incomplete combustion practice for domestic/cooking/ heating at few villages. The concentration of the dust pollutants (i.e., PM2.5 & PM10) and gaseous pollutants (i.e., Sox and NOx) assessed is found maximum at Village Perusomula and at Village Vaddirala. The reason for the higher value near to the above-mentioned location is due to the presence of comparatively dense habitation and its human activities such as construction and heavy-duty vehicular movement. Presence of SH-57, roads of the town are another reason for this increased concentration of pollutants as it increases the dust load due to vehicular movement in the nearby surroundings. Based on the present scenario, it can be predicted that the area could be more impacted due to the proposed project. Proper mitigation measures will be adopted by the company to reduce the same.

3.13.1 MINERALOGICAL COMPOSITION FOR RSPM

RSPM is "defined as the component of inhaled respirable dust small enough to reach the pulmonary or alveolar region of the lung".

Classification of RSPM

Classification	Type of particles	Size of the particles
PM_{10}	Inhalable particles	≤ 10µm
$PM_{2.5}$	Fine particles	≤ 2.5µm

- The mineralogical composition of RSPM may have Calcite, Dolomite, Vaterite, Aragonite Minerals (Calcite Minerals) or Actinolite or Tremolite (Magnesium minerals) and Free Silica.

Chemical Characterization of RSPM

S. No.	IONS	Units	CONCENTRATION
1.	Free Silica (SiO_2)	%	1.75
2.	Calcium (Ca)	µg/m³	48.24
3.	Magnesium (Mg)	µg/m³	7.14
4.	Iron (Fe)	µg/m³	35.10
5.	Aluminium (Al)	µg/m³	2.23
6.	Sodium (Na)	µg/m³	7.00
7.	Potassium (K)	µg/m³	3.64
8.	Manganese (Mn)	µg/m³	11.08
9.	Chromium (Cr)	µg/m³	2.30
10.	Nickel (Ni)	µg/m³	BDL (DL 1,0)
11.	Zinc (Zn)	µg/m³	BDL (DL 1.0)
12.	Copper (Cu)	µg/m³	1.42
13.	Cobalt (Co)	µg/m³	BDL (DL 1.0)
14.	Lead (Pb)	µg/m³	BDL (DL 1.0)
15.	Mercury (Hg)	µg/m³	BDL (DL 1.0)
16.	Cadmium (Cd)	µg/m³	BDL (DL 1.0)

Analysis of Poly-Aromatic Hydrocarbons (PAH) in SPM

- Over the past years, PAHs have been found to be ubiquitous constituents of urban airborne particles and have become a major health concern mainly due to their well-known carcinogenic and mutagenic properties. PAHs are formed during incomplete combustion of organic materials such as fossil fuels, coke and woods. Residence time and removal mechanisms of PAHs in the atmosphere depend on their distribution among the particle size fractions.
- PAHs are emitted from combustion sources and are thus emitted to atmosphere in gas phase or in fine particles. After the entrance to atmosphere, they are cold and they unite or get adsorbed into small particles. These processes lead PAHs in higher concentrations to fine particles. PAHs analysis was also done during the study period for all the air sampling stations but has been found Below Detection Limit.

3.13.2 NATIONAL AMBIENT AIR QUALITY STANDARDS

Table - 3.13 shows the NAAQS prescribed by CPCB.

Table - 3.13

National Ambient Air Quality Standards

S. No.	Pollutant	Time Weighted Average	Concentration in Ambient Air		Met 8/+*5-40d of Measurement
			Industrial Area, Residential Rural and Other Areas	Ecologically Sensitive Area (Notified by Central Govt.)	
1	Sulphur Dioxide (SO_2), µg/m³	Annual Average * 24 hours **	50 80	20 80	1. Improved West and Gaeke Method. 2. Ultraviolet fluorescence.
2	Oxides of Nitrogen as NO_2, µg/m³	Annual Average * 24 hours **	40 80	30 80	1. Modified Jacob andHochheiser (Na-Arsenite) Method. 2. Chemiluminescence (Gas phase).
3	Particulate Matter (size less than 10 µm) or PM_{10}, µg/m³	Annual Average * 24 Hours **	60 100	60 100	1. Gravimetric, 2. TOEM, 3. Beta attenuation.
4	Particulate Matter (size less than 2.5 µm) or $PM_{2.5}$, µg/m³	Annual Average* 24 Hours **	40 60	40 60	1. Gravimetric, 2. TOEM, 3. Beta attenuation.
5	Ozone (O_3), µg/m³	8 Hours ** 1 Hours *	100 180	100 180	1. UV Photometric, 2. Chemilminescence, 3. Chemical Method.
6	Lead (Pb), µg/m³	Annual Average * 24 Hours **	0.50 1.0	0.50 1.0	1. AAS/ICP Method after sampling on EPM 2000 or equivalent filter paper. 2. ED-XRF using Teflon filter.
7	Carbon Monoxide (CO), mg/m³	8 Hours** 1 Hours	02 04	02 04	1. Non-Depressive Infrared (NDIR) 2. Spectroscopy.
8	Ammonia (NH_3), µg/m³	Annual Average* 24 hours **	100 400	100 400	1. Chemiluminescence (Gas phase). 2. Indophenol blue method.
9	Benzene (C_6H_6), µg/m³	Annual Average*	05	05	1. Gas Chromatography based continuous analyzer, 2. Adsorption and Desorption followed by GC analysis.
10	Benzo (α) Pyrene (BaP)- Particulate Phase only, ng/m³	Annual Average*	01	01	Solvent extraction followed by HPLC'GC analysis.
11	Arsenic (As), ng/m³	Annual Average*	06	06	AAS/ICP Method after sampling on EPM 2000 or equivalent filter paper.
12	Nickel (Ni), ng/m³	Annual Average*	20	20	AAS/ICP Method after sampling on EPM 2000 or equivalent filter paper.

* Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.

** 24 hourly or 08 hourly or 01 hourly monitored values, as applicable, shall be complied with 98% of the time in a year. 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

3.14 NOISE ENVIRONMENT

The baseline study was conducted during the Summer Season (March., 2013 to May., 2013) by erlier consultant Vimta Labs Ltd. as the baseline data was 3-year-old & hence expired; therefore, in compliance to the MoEF&CC OM dated 08th June, 2022 a fresh baseline study has been conducted during Summer Season (March, 2024 to May, 2024).

Summary of earlier Noise Quality Monitoring (Summer Season - March, 2013 to May, 2013)

The maximum noise level of 49.1 dB (A) was observed at Vaddirala and the minimum noise level of 40.4 dB (A) was observed at Kondsunkesul. It is observed that the day time noise levels are in accordance to the prescribed limit of 55 dB (A) for Residential and 65 dB (A) for Commercial areas. The maximum noise level of 44.3 dB (A) was observed at Vaddirala and the minimum noise level of 40.4 dB (A) was observed at Kondsunkesula. It has been found that the night time noise levels are in accordance with prescribed limit of 55 dB (A) for Commercial and the standard limit of 45 dB (A) for Residential.

Details of Fresh Noise Quality Monitoring (Summer Season - March, 2024 to May, 2024)

Any unwanted sound that interferes with speech communication, causes annoyance, distracts from work, and disturbs sleep, thus deteriorating quality of human environment can be defined as noise.

Source of Noise

There are several sources of noise in the 10 km radius of study area, which contribute to the local noise level of the area. Ambient noise sources in the vicinity of the plant and mine site include the noise from traffic on road, human activities in villages and agricultural fields.

Ambient Noise Level

In order to know the baseline noise levels, in and around the proposed plant site and mine site, noise levels were measured at site and villages in the study area.

Sampling Schedule

The sampling was done during day time and night time once in the study period.

Sampling Locations

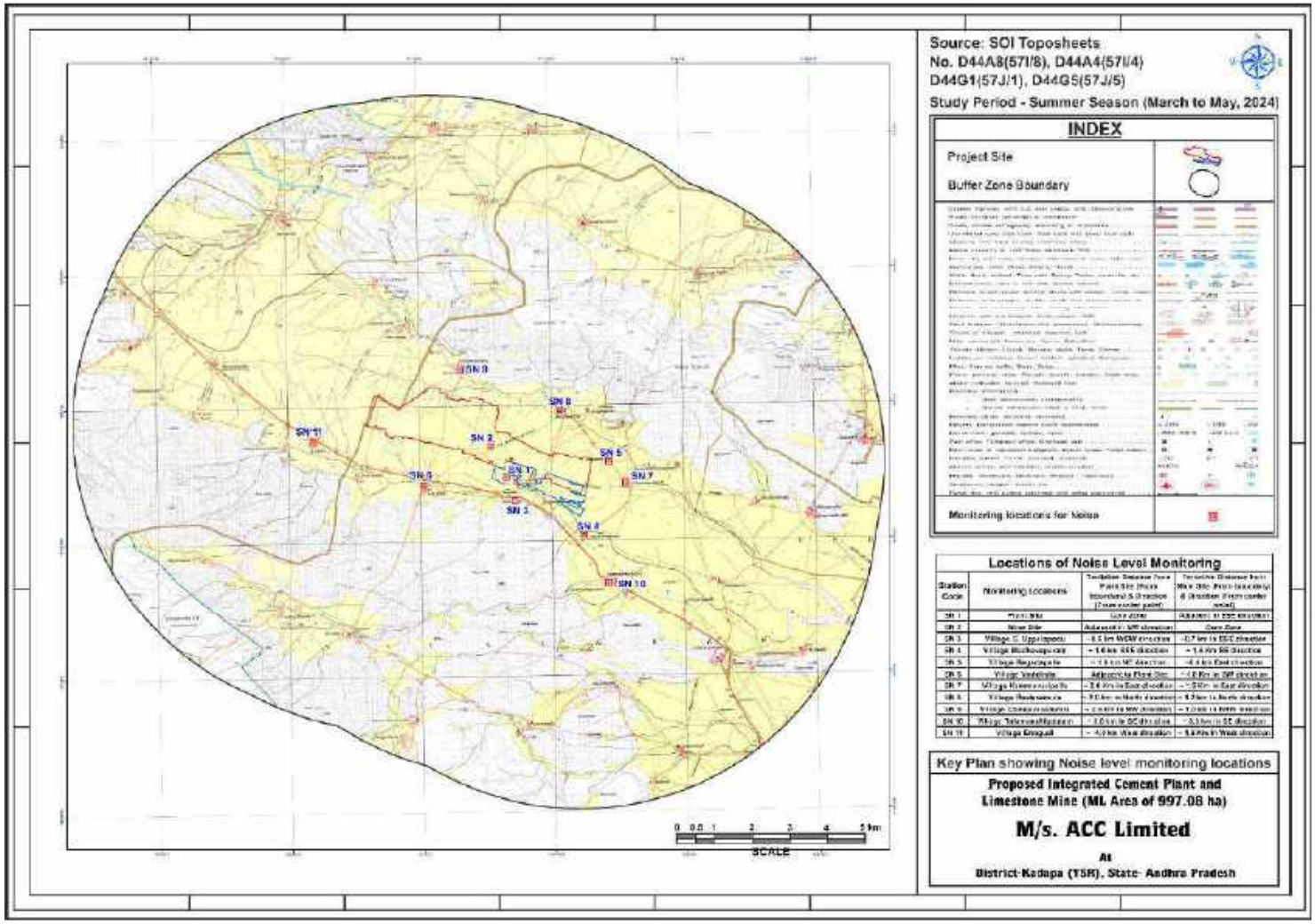
Locations / stations selected for noise level monitoring are given in Table - 3.14 and shown in Figure - 3.12.

Table - 3.14

Composite Locations of Ambient Noise Monitoring Stations: Summer Season

(March, 2024 to May, 2024)

S. No.	Monitoring Stations	Distance and direction from Plant Site		Distance and direction from the Mine site	
		Distance	Direction	Distance	Direction
1.	Plant Site	Core Zone	-	Adjacent	ESE
2.	Mine Site	Adjacent	NW	Core Zone	-
3.	Village G. Uppalapdu	~ 0.6 km	WSW	~0.7 km	SSE
4.	Village Madhavapuram	~1.0 km	SSE	~1.5km	SE
5.	Village Regdapalle	~1.0 km	NE	~0.4 km	East
6.	Village vaddirala	Adjacent	-	~1.0 km	SW
7.	Village Kammavaripalle	~2.0 km	East	~1.5 km	East
8.	Village Bestavemula	~ 2.0 km	North	~1.2 km	North
9.	Village Chinnavenuturala	~4.5 km	NW	~1.0 km	NNW
10	Village Talamanchipatnam	~3.0 km	SE	~3.0 km	SE
11	Village Erragudi	~4.0 km	West	~1.5 km	West



Source: SOI Toposheet

Figure 3.12: Key Plan showing Ambient Noise Level Monitoring Locations

Ambient Noise Level Monitoring

For Ambient noise levels monitoring, hourly dataset is collected for all the monitoring stations and Leq. of the same is calculated. Ambient noise levels monitoring results monitored at different locations (as mentioned in Table -3.14) during the study period, and results are given in Table - 3.15.

Table - 3.15

Ambient Noise Level Monitoring Results

Study Period: Pre-Monsoon Season (March to May 2024)

S. No.	Monitoring Locations	Noise Level dB Leq (A)			
		Day Time (6:00 am to 10:00 pm)		Night Time (10:00 pm to 6:00 am)	
		Result	Prescribed limit	Result	Prescribed limit
SN1	Plant Site	48.1	75.0	37.8	70.0
SN2	Mine Site	47.5	75.0	37.7	70.0
SN3	Village G. Uppalapdu	51.4	55.0	40.5	45.0
SN4	Village Madhavapuram	50.5	55.0	40.1	45.0
SN5	Village Regdapalle	50.7	55.0	40.6	45.0
SN6	Village vaddirala	52.6	55.0	42.5	45.0
SN7	Village Kammavaripalle	50.3	55.0	40.2	55.0
SN8	Village Bestavemula	51.8	55.0	41.7	45.0
SN9	Village Chinnavenuturala	53.1	55.0	42.5	45.0
SN10	Village Talamanchipatnam	50.1	55.0	39.8	45.0
SN11	Village Erragudi	53.9	55.0	42.6	45.0

Source: Ambient Noise Quality Monitoring

CPCB Noise Standards are given in Table - 3.16.

Table - 3.16

CPCB Noise Standards

Area Code	Category of Area	Limits in Leq. dB (A)	
		Day Time (06.00 am - 10.00 pm)	Night Time (10.00 pm - 6.00 am)
(A)	Industrial Area	75	70
(B)	Commercial Area	65	55
(C)	Residential Area	55	45
(D)	Silence Zone	50	40

1. Day Time is from 6.00 AM to 10.00 PM.

2. Night Time is reckoned between 10.00 PM to 6.00 AM.

*3. Silence **Zone** is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, loudspeaker and bursting of crackers is banned in these zones.*

Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply.

***Source:** Central Pollution Control Board Norms*

3.14.1 OBSERVATIONS, INTERPRETATION & CONCLUSION FOR SUMMER SEASON (MARCH, 2024 TO MAY, 2024)

- Ambient noise levels were measured at 11 locations in and around the project site during the day and night time.
- Noise levels vary from 47.5 Leq dB (A) near Mine site to 53.9 Leq dB (A) at Village Erragudi during day time and from 37.7 Leq dB (A) at Mine Site to 42.6 Leq dB (A) at Erragudi during night time.
- The noise level monitoring for the study period was done considering the maximum residential area, the commercial area and around the small and medium scale industries.
- Within the 10 km radius of study area the noise levels at the sampling locations are under the prescribed limits as defined by the CPCB.
- During the implementation phase of the project, a minor increase in noise levels near to the plant site will be observed which will be temporary. The noise level after commencement of the plant will remain confined within plant boundary. In order to mitigate the anticipated impacts, adequate mitigation measure will be adopted to reduce the noise impacts. Details of the mitigation measures by M/s. ACC Limited are incorporated in the Chapter- 4 & 10 of Final EIA/EMP report.

3.15 WATER ENVIRONMENT

The baseline study was conducted during the Summer Season (March, 2013 to May, 2013) by earlier consultant Vimta Labs Ltd. as the baseline data was 3-year-old & hence expired; therefore, in compliance to the MoEF&CC OM dated 08th June, 2022 a fresh baseline study has been conducted during Summer Season (March, 2024 to May, 2024).

The water resources in the study area were divided into two categories for getting ideal upshot of baseline status of water quality of the study area. The two major water resources are categorized as follows:

- Surface water resources: Streams, Nallah, Ponds, River, Canals.
- Ground water resources: Bore-wells, Tube well, open well, Hand pumps and Tap water

3.15.1 SURFACE WATER QUALITY

Surface Water Quality (Summer Season March, 2013 to May, 2013)

As rivers, streams and lakes in the study area are seasonal; surface water was not available for sampling during study period i.e summer season 2013.

Surface Water Quality (Summer Season March, 2024 to May, 2024)

There are 7 major surface water bodies present within 10 km radius of both the plant site and mine site.

SAMPLING SCHEDULE

The surface water sampling was done during once in the study period.

SAMPLING LOCATIONS

Monitoring station selected for surface water quality monitoring during the study period is given in Table - 3.17.

Table - 3.17

Composite Location of Surface water Quality Monitoring Locations for Study Period: Summer Season (March, 2024 to May, 2024)

S. No.	Monitoring Stations	Distance and direction from Plant Site		Distance and direction from the Mine site	
		Distance	Direction	Distance	Direction
1.	Nallah	Passing thorugh the project site	-	~ 0.6 km in SSE	
2.	Canal	Adjacent	-	Passing through Mine site	-
3.	Pond 1	~ 3.0 km	NNE	~ 2 km	NE
4.	Pond near Kallutla	~ 2.5 km	ENE	~ 1.5 km	ENE
5.	Nalla Cheruvu	~ 6 km	NNW	~ 3.5 km	NNW
6.	Pond 2	~ 4 km	South	~ 5 km	South
7.	Pond 3	~ 4.4 km	SSE	~ 5 km	SSE

Source: SOI Toposheets

Surface Water Monitoring

Surface water sample was not collected as all the water bodies were found dry during the study period

3.15.2 GROUND WATER QUALITY

Summary of Ground water Quality (Summer Season March, 2013 to May, 2013)

The analysis results of ground water samples showed the pH in range of 7.2-7.8 which are with the specified standard limits of 6.5 to 8.5. Colour and turbidity of the samples ranged from 2-4 Hazens and 3-5 NTU respectively. Electrical conductivity of the samples ranged from 182 - 1923 µS/cm. The maximum value was observed at Mines lease (GW7), and where as the minimum value was observed at Padla Village (GW4). The total hardness of the samples ranged from 51-480 mg/l. The maximum value was observed in Nawabpeta (GW7) and whereas the minimum value observed at Plant Site (GW4). Whereas the total hardness values are as per the prescribed limits of 300 mg/l. Calcium and Magnesium concentrations ranged from 14.4-119.4 mg/l and 3.7-45.5 mg/l respectively. The Total Dissolved solids of the samples ranged from 120-1290 mg/l. The maximum TDS was observed at Nawabpeta (GW7), and where as the minimum value observed at Plant site (GW4) location. The TDS values are within desirable limits 600 mg/l, except in two samples where the values were higher but also within the stipulated 2000 mg/l in case of absence of alternate source. Chlorides and Sulphates concentrations at all the locations ranged in between 22.1-340 mg/l and 12.1-237.7 mg/l respectively. Fluoride concentrations are ranging in between 0.6 – 0.9 mg/l and are found to be within the permissible limits. Similarly, Nitrates are also found to be ranging in between 5.8 - 25.4 mg/l which shows all the samples were within the standard limits only, as 45 mg/l. Iron concentrations in ground waters varied from 0.03-0.11 mg/l. Zinc levels varied from 0.03-0.12 mg/l respectively. Aluminium concentration in ground water ranged from <0.01-0.02 mg/l which are within the limits stipulated. Bacteriological studies revealed the absence of E. coli in ground water samples. The Total Coliform counts is nil in all the samples against the standard limit of 10 MPN/100 ml.

Details of Ground Water Quality (Summer Season March, 2024 to May, 2024)

The sources of potable water in the area are storage tanks, bore-wells and tube-wells. The quality of ground water was studied by collecting 9 water samples from the available water resources in and around the proposed plant site and mine site.

Sampling Schedule

The ground water sampling was done during once in the study period. Analytical methods prescribed by APHA & approved Indian Standard methods were used for carrying out ground water quality monitoring.

Sampling Locations

Details of ground water sampling locations their distance and directions are given in Table - 3.18 & shown in Figure - 3.13. The ground water monitoring results are given in Table 3.19.

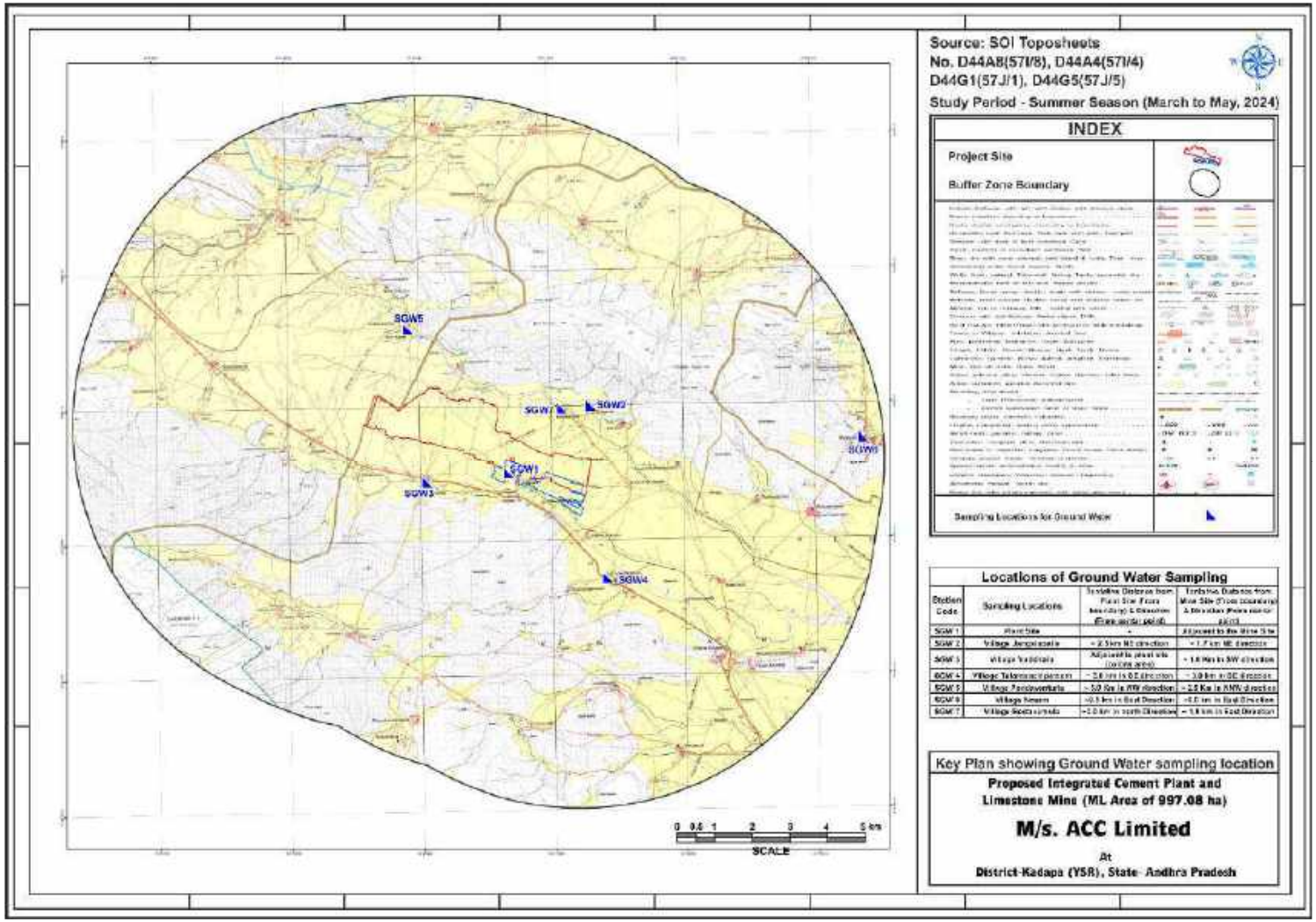
Table - 3.18

Composite Locations of Ground Water station

Study Period: Summer Season (March, 2024 to May, 2024)

S. No.	Monitoring Stations	Distance and direction from Plant Site		Distance and direction from the Mine Site	
		Distance	Direction	Distance	Direction
1.	Plant Site	Core area	-	Adjacent	-
2.	Village Ped Daventurla	~ 5.9 km	NW	~ 2.7 km	NNW
3.	Village Jangalapalle	~ 2.5 km	NE	~ 1.70 km	NE
4.	Village Talamanchipatnam	~ 3.0 km	SE	~ 3.0 km	SE
5.	Village Vaddirala	Adjacent	-	~ 1.0 km	SW
6.	Nosam	~ 9.5 km	East	~ 9.4 km	East
7.	Village Dobbundapalle	~ 4.7 km	SE	~ 5.1 km	SE
8.	Village Bestavemula	~ 2.0 km	North	~1.2 km	North
9.	Village Malamidkambaladinne	~ 10.9 km	SSW	~ 11.6 km	South

Source: SOI Toposheet



Source: SOI Toposheet

Figure 3.13: Key Plan showing Ground water sampling Locations

Table - 3.19
Ground Water Analysis
Study Period: Pre-Monsoon Season (March to May, 2024)

S. No.	Parameters	Unit	Near Plant Site	Village Ped Daventurla	Village Jangalapalle	Village Talamanchipatnam	Village Vaddirala	Nosam	Dobbundapalle	Bestavemula	Malamidkambaladinne	Requirement (Acceptable Limit)	Permissible limit (Max.)
1.	pH (at 25°C)	-	7.47	7.38	7.60	7.56	7.78	7.50	7.44	7.64	7.55	6.5-8.5	No Relaxation
2.	Colour	Hazen Unit	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	5	15
3.	Turbidity	NTU	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	1	5
4.	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5.	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
6.	Total Hardness as $CaCO_3$	mg/l	478.7	398.2	693.2	357.6	736.4	278.3	283.1	535.0	239.17	200	600
7.	Calcium as Ca	mg/l	112.6	85.66	196.84	97.55	202.3	60.61	51.63	139.2	41.74	75	200
8.	Alkalinity as $CaCO_3$	mg/l	321.1	310.7	310.8	236.0	585.9	195.7	196	270.7	185.6	200	600
9.	Chloride as Cl	mg/l	247.6	137.29	386.3	167.0	434.5	119.63	165.16	287.8	104.81	250	1000
10.	Cyanide as CN	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	0.05	No Relaxation
11.	Magnesium as Mg	mg/l	47.9	44.72	48.85	27.63	56.04	30.8	37.42	45.43	32.76	30	100
12.	Total Dissolved Solids	mg/l	986	678.0	1162.0	645.0	1582	524.0	567.0	883	475.0	500	2000
13.	Sulphate as SO_4	mg/l	130.3	76.59	108.3	55.2	149.4	67.56	40.38	91.2	48.23	200	400
14.	Fluoride as F	mg/l	0.63	0.28	0.73	0.63	0.76	0.16	0.43	0.52	0.36	1.0	1.5
15.	Nitrate as NO_3-N	mg/l	22.86	9.95	19.68	12.05	27.6	6.24	6.47	10.37	8.19	45	No Relaxation
16.	Iron as Fe	mg/l	BDL(DL 0.02)	BDL(DL 0.02)	0.06	0.07	0.11	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	1.0	No Relaxation
17.	Aluminium as Al	mg/l	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	0.03	0.2
18.	Boron	mg/l	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.03)	BDL (DL 0.20)	0.50	2.4
19.	Phenolic Compounds	mg/l	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	0.001	0.002

S. No.	Parameters	Unit	Near Plant Site	Village Ped Daventurla	Village Jangalapalle	Village Talamanchipatnam	Village Vaddirala	Nosam	Dobbundapalle	Bestavemula	Malamidkambaladinne	Requirement (Acceptable Limit)	Permissible limit (Max.)
20.	Anionic Detergents as MBAS	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	0.2	1
21.	Hexa Chromium as Cr^{+6}	mg/l	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	--	--
22.	Chromium as Cr	mg/l	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	0.05	No Relaxation
23.	Zinc as Zn	mg/l	0.06	0.09	0.03	0.07	0.10	0.08	0.04	0.08	0.11	5	15
24.	Copper as Cu	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	0.05	1.5
25.	Manganese as Mn	mg/l	BDL (DL 0.01)	0.12	0.16	BDL(DL 0.01)	0.30	BDL(DL 0.01)	0.33	0.23	BDL(DL 0.01)	0.1	0.3
26.	Cadmium as Cd	mg/l	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	0.003	No Relaxation
27.	Lead as Pb	mg/l	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)	0.01	No Relaxation
28.	Arsenic as As	mg/l	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002	BDL (DL 0.002)	0.01	No Relaxation
29.	Mercury as Hg	mg/l	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	0.001	No Relaxation
30.	Sodium as Na	mg/l	155.0	85.0	140.0	80.0	280.0	70.0	87.0	108.0	70.0	--	--
31.	Potassium as K	mg/l	9.0	6.0	8.0	20.0	11.0	5.0	4.0	9.0	3.0	--	--
32.	Phosphate as PO_4	mg/l	BDL(DL 0.02)	BDL(DL 0.02)	BDL(DL 0.02)	BDL(DL 0.02)	BDL(DL 0.02)	BDL(DL 0.02)	BDL(DL 0.02)	BDL (DL 0.02)	BDL(DL 0.02)	--	--
33.	Nickel	mg/l	BDL(DL 0.005)	BDL(DL 0.005)	BDL(DL 0.005)	BDL(DL 0.005)	BDL(DL 0.005)	BDL(DL 0.005)	BDL(DL 0.005)	BDL(DL 0.005)	BDL(DL 0.005)	0.02	No Relaxation
34.	Conductivity	µS/cm	1490.0	1014.0	1720.0	970.0	2407.0	793.0	870.0	1318.0	714.0	--	--
35.	Total Suspended Solid	mg/l	BDL(DL 1.0)	BDL (DL 1.0)	BDL(DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL(DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	--	--

BDL - Below Detectable Limit; DL - Detection Level;

Note: Ground water quality was also analyzed for Aluminum, Cyanide, Phenolic Compounds, Anionic Detergents as MBAS, Chromium as Cr, Hexa Chromium as Cr+6, Copper, Boron , Cadmium, Lead, Selenium, Arsenic, Mercury, Nickel, Total Coliforms& E-coli etc. and were found below detection limit.

Observation:

- The physico - chemical quality of groundwater was compared with drinking water standard (IS: 10500- 2012).
- The pH of the ground water at the sampled locations were observed to be vary from minimum (7.38) at Village Ped Daventurla to maximum (7.78) at Village Vaddirala indicating the water samples have a pH quality slightly alkaline in nature. The pH at the project site was observed to be 7.47 respectively.
- The color and turbidity were found to be BDL (DL 5.0) and BDL (DL 1.0) respectively at all the sampled locations. The odour and taste were found agreeable at all sampling locations.
- The observed value of the ground water quality indicators varies from: Total hardness as $CaCO_3$ (239.17 mg/l at Malamidkambaladinne to 736.4 mg/l at Village Vaddirala); Alkalinity as $CaCO_3$ (185.6 mg/l at Malamidkambaladinne to 585.9 mg/l at Village Vaddirala); Total Dissolved Solids (475 mg/l at Malamidkambaladinne to 1582 mg/l at Village Vaddirala).
- The concentration of chloride varies from 104.81 mg/l at Malamidkambaladinne to 434.5 mg/l at Village Vaddirala and Sulphate from 40.38 mg/l at Dobbudapalle to 149.4 mg/l at Village Vaddirala, Magnesium varies from 27.63 mg/l at Village Talamanchipatnam to 56.04 mg/l at Village Vaddirala; Calcium as Ca varies from 41.74 mg/l at Malamidkambaladinne to 202.3 mg/l at Village Vaddirala; Iron varies from 0.06 mg/l at Village Jangalapalle to 0.11 mg/l at Village Vaddirala; Fluoride varies from 0.16 mg/l at Nosam to 0.76 mg/l at Village Vaddirala.
- Ground water quality was also analyzed for Cyanide as (CN), Aluminium as (Al), Phenolic Compounds, Anionic Detergents as (MBAS), Hexa Chromium as (Cr^{+6}), Chromium as (Cr), Zinc as (Zn), Copper as (Cu), Manganese as (Mn), Cadmium as (Cd), Lead as (Pb), Arsenic as (As) are reported to be their Below detection limit at all the sampled locations.

Interpretation:

Groundwater pollution is usually traced back to four main origins: Industrial, domestic and agriculture. The type of contaminant is carried out by the aquifers and results in the ground water pollution. Ground water is generally a good source of drinking water thus the physico-chemical quality of groundwater was compared with drinking water standard (IS: 10500- 2015). The location considered for the water analysis includes the area near to the residential area, agricultural area, industrial area and commercial area. As observed during the analysis, the values of few indicators (Alkalinity, TDS, etc.) were above the acceptable limits but were found below the permissible limits and total hardness is slightly more than the permissible limits. As observed during the primary survey, other mining area and industries are located within the 10 km study area which resulted in deterioration of ground water quality values. The study area mainly comprises of agriculture land which uses fertilizers, herbicides pesticides, and canal water for irrigation. Nearby area of the project site consists of open land which is mainly agricultural land. Thus, it can be concluded, that small scale/ medium industrial activities and domestic and agriculture activities are contributing for the ground water Quality values above the acceptable limits. The chemical relationship shows that water samples have TSS below detection limit (DL 1.0) therefore the colour and turbidity were found to be BDL (DL 1.0) and BDL (DL 1.0) respectively at all the locations.

Conclusion:

From the above study and discussions, it can be concluded that ground water quality in the study area is within the permissible limits as per the drinking water standards (IS: 10500-2012). Therefore, the ground water available within the study area is fit for consumption. The proposed project will be utilizing ground water for various plant activities & for drinking & domestic purpose in plant & colony. However, the manufacturing process will be based on the dry process thus no discharge of waste water is envisaged from the proposed project. Also, various adequate mitigative measures along will be adopted by the M/s. ACC Limited to maintain the quality of ground water. The company has proposed rain water harvesting & ground water recharge structures to increase ground water recharge and the details are incorporated in the Chapter - 4 & 10 of Final EIA/EMP report.

3.16 SOIL ENVIRONMENT

The baseline study was conducted during the Summer Season (March., 2013 to May., 2013) by earlier consultant Vimta Labs Ltd. as the baseline data was 3-year-old & hence expired; therefore, in compliance to the MoEF&CC OM dated 08th June, 2022 a fresh baseline study has been conducted during Summer Season (March., 2024 to May., 2024).

Soil Quality Analysis (Summer Season March 2013, to May, 2013)

It has been observed that the texture of soil is Sandy clay in the study area. The pH of the soil indicates that the soil is moderately alkaline in nature. The Electrical conductivity was recorded as 130-273 µS /cm and the Organic Carbon content in the study area was observed as 0.11 to 1.14 %, which shows that the soil has less to more than sufficient OC. Available potassium was observed as 126 kg/ha to 226 kg/ha in the study region indicating that the soil falls under less to medium category. Available Nitrogen was observed as 44 Kg/ha to 58 kg/ha. Based on the above values the soil falls under less to less category. Available phosphorous was observed as 46 kg/ha to 62 kg/ha in the study region. It shows the soil falls under medium to on an average sufficient category.

Soil Quality and Characteristics:

The information on soil quality has been gathered by collecting data from various secondary sources and supplemented by collection and analysis of soil samples from representative locations.

In order to assess the base line characteristics of the soil profile of the nearby areas from the proposed project, the samples were analyzed for key and chemical parameters.

The sampling locations were finalized with the following considerations:

- To enable information on baseline characteristics and,
- To determine the anticipated impact of proposed Plant operation activities on soil characteristics.

Sampling Schedule

Representative soil samples were collected from 10 different specified locations within the study area from the plant site and mine site. Standard procedures were followed for the sampling and analysis of physico-chemical parameters.

Sampling Locations

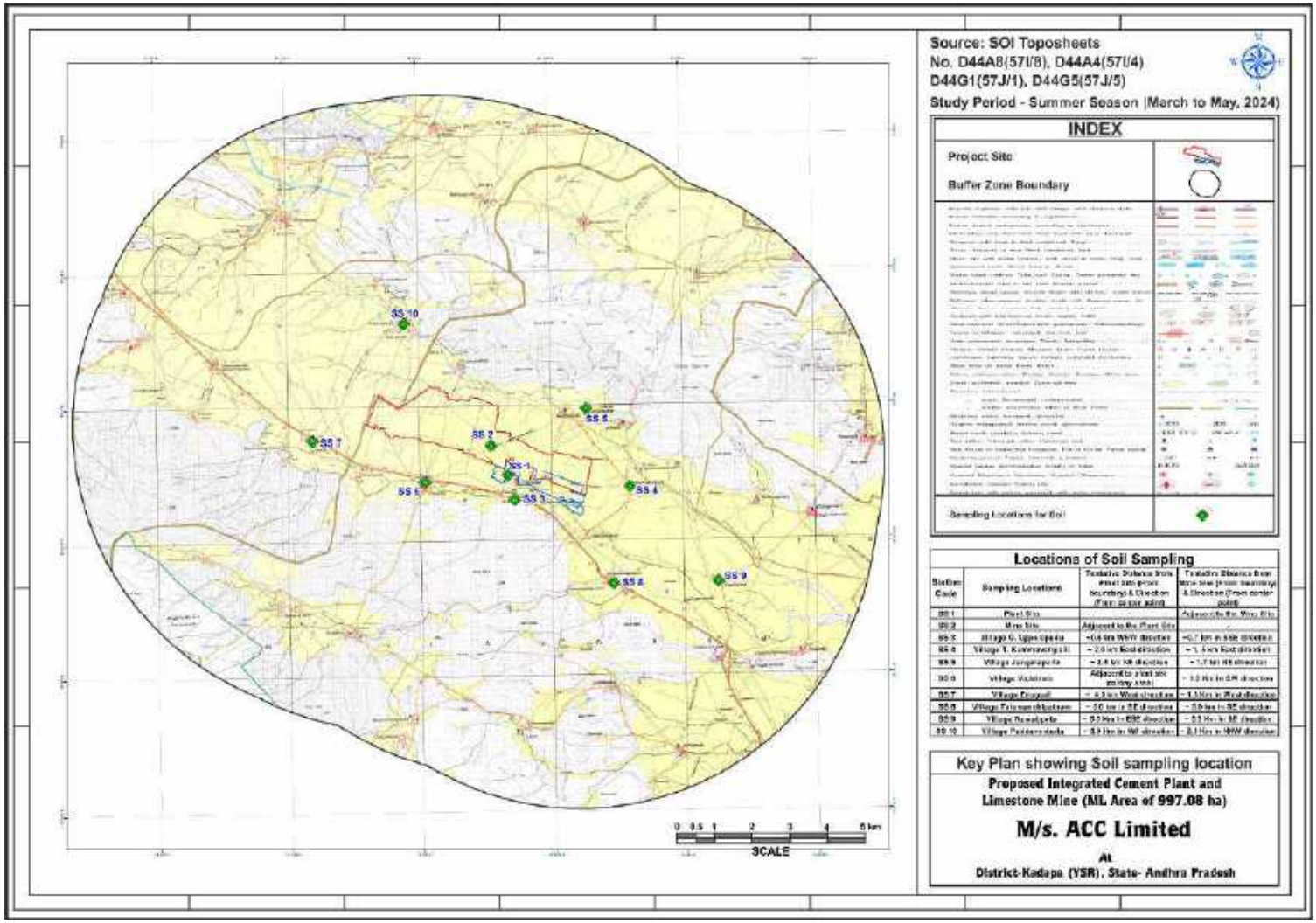
Details of Location of soil sampling stations along with the direction are given in Table - 3.20 and Figure: 3.14 and soil analysis results are given in Table - 3.21.

Table - 3.20

Locations of Soil Sampling Stations

Study Period: Pre-Monsoon Season (March to May 2024)

Station Code	Sampling Location	Distance & direction from Plant Site	Distance & direction from Mine Site
S1	Plant Site	-	Adjacent to the Mine site
S2	Mine site	Adjacent to the Plant	-
S3	Village G. Uppalapadu	600 m in WSW direction	~ 0.7 km in SSE direction
S4	Village T. Kammavaripalli	~ 2.0 km in East direction	~ 1.5 km in East direction
S5	Village Jangalapalle	~ 2.5 km in NE direction	~ 1.7 km in NE direction
S6	Village Vaddirala	Adjacent to plant site	~ 1.0 km in SW direction
S7	Village Erragudi	~ 4.0 km in West direction	~ 1.5 km in West direction
S8	Village Talamanchipatnam	3.0 km in SE direction	~ 3.0 km in SE direction
S9	Village Nawabpeta	~ 5.5 km in ESE direction	~ 5.5 km in SE direction
S10	Village -Peddaventurla	~ 5.0 km in NW direction	~ 2.5 km in NNW direction



Source: SOI Toposheet

Figure 3.14: Key Plan showing Soil sampling Locations

Table - 3.21

Soil Analysis Study Period: Pre-Monsoon Season (March to May 2024)

S. No.	Parameters	Unit	Sampling Locations									
			Plant Site	Mine Site	Village- G. Uppalapadu	Village-T. Kammavaripalli	Village - Jangalapalle	Village- Erragudi	Village- Talamanchipatnam	Village- Nawabpeta	Village- Peddaventurla	Village - Vaddirala
1.	pH (at 25°C) (1:2.5 soil water sus.)	-	8.22	8.19	8.09	8.16	8.17	8.00	8.63	8.25	8.58	8.36
2.	Conductivity (1:2 soil water sus)	mS/cm	0.40	0.56	0.36	0.31	0.63	0.45	0.34	0.41	0.37	0.49
3.	Soil Texture	-	Sandy Clay	Sandy Loam	Sandy Loam	Sandy Loam	Loam	Sandy Loam	Silty Loam	Silty Clay	Silty Clay	Silty Clay
4.	Sand	%	51.0	58.0	60.0	57.0	42.0	62.0	20.0	6.0	9.0	7.0
5.	Silt	%	10.0	29.0	26.0	30.0	46.0	28.0	74.0	52.0	51.0	52.0
6.	Clay	%	39.0	13.0	14.0	13.0	12.0	10.0	6.0	42.0	40.0	41.0
7.	Colour	-	Dull Yellowish Brown	Dull Yellowish Brown	Dull Yellowish Brown	Dull Yellowish Brown	Dull Yellowish Brown	Dull Yellowish Brown	Dull Yellowish Brown	Grayish Brown	Light Gray	Dull Yellowish Gray
8.	Water Holding Capacity	%	31.37	28.60	27.85	27.72	32.63	30.15	34.48	33.03	33.49	36.43
9.	Porosity	%	38.58	36.90	36.51	37.0	37.79	38.10	38.98	41.27	42.13	42.91
10.	Bulk Density	gm/cc	1.56	1.59	1.60	1.60	1.58	1.56	1.55	1.48	1.47	1.45
11.	Chloride	mg/kg	703.04	766.32	685.0	518.85	685.16	528.24	483.63	473.88	455.28	606.83
12.	Calcium	mg/kg	4583.69	4346.28	4920.45	5267.12	4098.00	4704.08	4403.79	3653.65	4153.06	4969.93
13.	Sodium	mg/kg	263.37	243.56	249.34	204.20	190.46	233.40	207.16	158.69	211.41	242.09
14.	Potassium	kg/hec	591.96	300.63	312.44	511.33	410.95	467.67	512.59	544.36	578.86	489.56
15.	Organic Matter	%	0.78	0.82	0.84	0.55	0.62	0.88	0.65	0.62	0.58	0.77
16.	Magnesium as Mg	mg/kg	881.17	561.64	691.56	780.06	917.93	634.30	657.59	650.14	873.91	659.46
17.	Available Nitrogen as N	kg/hec	208.57	193.97	227.54	174.02	186.53	281.30	218.15	224.23	199.61	318.18

S. No.	Parameters	Unit	Sampling Locations									
			Plant Site	Mine Site	Village- G. Uppalapadu	Village-T. Kammavaripalli	Village - Jangalapalle	Village- Erragudi	Village- Talamanchipatnam	Village- Nawabpeta	Village- Peddaventurla	Village - Vaddirala
18.	Available Phosphorus	kg/hec	19.46	16.03	11.55	13.26	8.93	27.36	13.58	17.25	23.88	37.76
19.	Zinc as Zn	mg/kg	27.17	30.40	25.39	24.53	34.12	42.07	25.16	22.63	29.63	24.35
20.	Manganese as Mn	mg/kg	388.34	388.30	298.83	256.78	313.90	390.13	285.52	245.75	280.72	377.95
21.	Chromium as Cr	mg/kg	15.49	19.61	13.67	11.63	8.77	17.73	20.33	16.5	20.61	24.09
22.	Lead as Pb	mg/kg	20.99	21.57	16.60	6.78	16.57	28.69	22.26	21.37	31.41	34.81
23.	Cadmium as Cd	mg/kg	BDL(DL-5.0)	BDL (DL 5.0)	BDL (DL 5.0)	BDL (DL 5.0)	BDL(DL-5.0)	BDL(DL-5.0)	BDL (DL 5.0)	BDL (DL 5.0)	BDL (DL 5.0)	BDL(DL-5.0)
24.	Copper as Cu	mg/kg	23.24	13.73	21.48	24.88	17.29	21.55	18.07	16.80	15.70	13.64
25.	Organic Carbon	%	0.45	0.48	0.49	0.32	0.36	0.51	0.38	0.36	0.34	0.45
26.	SAR Value	-	0.93	0.92	0.88	0.69	0.70	0.85	0.77	0.64	0.78	0.86

Source: Soil Analysis Report

Observation:

The physico-chemical soil Quality was compared and analyzed using the standard soil classification given by IARI.

Table - 3.22

Standard Soil Classification

S. No.	Parameters	Classification
1.	pH	<4.5 extremely acidic 4.51 - 5.0 very strong acidic 5.01 - 5.5 strongly acidic 5.51 - 6.0 moderately acidic 6.1 - 6.5 slightly acidic 6.51 - 7.3 Neutral 7.31 - 7.8 slightly alkaline 7.81 - 8.5 moderately alkaline 8.51 - 9.0 strongly alkaline >9.0 Very strongly alkaline
2.	Salinity Electrical Conductivity (mho/cm)	Up to 1.0 average 1-2 harmful to germination 2-3 harmful to crops
3.	Nitrogen (kg/ha)	Up to 50 very less 51 - 100 less 110 - 150 good 151 - 3 00 better > 300 sufficient
4.	Phosphorus (kg/ha)	Up to 15 very less 15 - 30 less 31 - 50 medium 51 - 65 on average sufficient 66 - 80 sufficient >80 more than sufficient
5.	Potassium (kg/ha)	0 - 120 very less 120 - 180 less 180 - 240 medium 241 - 300 average 301 - 360 better >360 more than sufficient

Source: *Indian Agricultural Research Institute Handbook.*

Observation, Interpretation & Conclusion for Summer Season (March 2024 to May, 2024):

- The pH of the soil samples varies from 8.0 at Village Erragudi to 8.63 at village Talamanchipatnam which indicates the soil samples are moderately alkaline in nature.
- The texture of the soil samples majorly consists of Sandy Loam to Silty.
- The soil samples majorly exhibit Dull Yellowish Brown, Grayish Brown and Light Gray color at all the sampled villages.
- The indicator such as organic matter varies from 0.55% at village T. Kammavaripalli to 0.88% at Village Erragudi and Organic carbon varies from 0.32% at village Village T. Kammavaripalli to 0.51% at Village Erragudi. The Water holding capacity varies from 27.72% at Village T. Kammavaripalli to 36.43% at Village Vaddirala.
- Examined six essential nutrients required for an ideal plant growth are Nitrogen, Phosphorus, Potassium, Magnesium, Sulfur and calcium. Nitrogen ranged between 174.02 kg/ha at VillageT. Kammavaripalli to 318.18 kg/ha Village – Jangalapalle, Phosphorous ranged between 8.93 kg/ha at Village Jangalapalle to 37.76 kg/ha Village – Jangalapalle, Potassium (300.63 kg/ha at Mine Site to 591.96 kg/ha at Plant site), Magnesium (561.64 mg/kg at Mine Site to 917.93 mg/kg at Village Jangalapalle, Calcium (3653.65 mg/kg at Village Nawabpeta n to 5267.12 mg/kg at Village T. Kammavaripalli and Sodium (158.69 mg/kg at Village Nawabpeta to 263.37 mg/kg at Plant site).
- The SAR value was observed under the limits at all the sampling locations with minimum value of 0.64 at village Nawabpeta to maximum value of 0.93 at plant site.

Interpretation

Soil pollution is mainly generated by the anthropogenic activities. Within the 10 km study area, majority of the sampled location have a good quality and fertile soil. As per the *Indian Agricultural Research Institute Handbook* the pH property of all the soil samples is found to be slightly to moderately alkaline in nature which is an optimal range for the various commercial crops. The texture of the soil samples majorly consists of Sandy loam, which favors air circulation, drainage and fertility of the soil. The samples have more than sufficient percentage of organic carbon & the samples have an optimum content of organic matter which is suitable for the plant growth. Chloride is generally mentioned as a hydrological & chemically inert substance. Chloride concentration in soil generally shows the salinity of soil. As observed, the essential nutrients within the soil of the sampled villages, Nitrogen content was observed to be present in the better quantity, where the values for phosphorus and potassium were found to be of the medium range.

Conclusion

From the above study and discussions, it can be concluded that soil quality in the study area is fertile and is suitable for the agricultural activities. The proposed project will not be discharging any effluent by the plant operation activities which can result in the contamination of the nearby soil. Only the contamination of soil by fugitive emission through the transportation activities is majorly envisaged but various adequate mitigative measures will be adopted by M/s. ACC Limited and the details are incorporated in the Chapter- 4 & 10 of Final EIA/EMP report.

3.17 BIOLOGICAL ENVIRONMENT

Biological environment includes the Habitat (Place where the organism lives) and natural surroundings of all species (living organism species) of the particular area.

The biological study was undertaken as a part of the EIA study report to understand the present status of ecosystem prevailing in the study area and to study the floristic and faunal diversity of the terrestrial and aquatic environment of the study area within the 10 km radius of the proposed plant site. Studies on various aspects of ecosystem play an important role in identifying sensitive issues for under taking appropriate action to mitigate the impact, if required.

Some of the information was gathered from the local habitants. All the collected data were classified to interpret the impact of pollution on the flora and fauna of that region. Survey of the wild plants as well as cultivated crop plants was made and all the available information was recorded. Night survey was also conducted with the help of spotlight to record nocturnal animals, birds and reptiles.

Secondary data on flora and fauna, cropping patterns etc. were also collected from available literatures, internet, forest department and revenue department.

The List of flora and Fauna in the 10 km radius from the proposed plant and mine site as well including the core zone is mentioned in the list below:

Table No. - 3.23

Inventory of floral diversity in Buffer zone and Core Zone of Plant Site

Based on Actual Sighting, based on inputs from locals and Perused from Secondary Data

S.NO	FAMILY	COMMON NAME	SCIENTIFIC NAME	TYPE
1	Combretaceae	Arjun	Terminalia arjuna	Tree
2	Myrtaceae	Black plum	Syzycium cumini	Tree
3	Rutaceae	Wood tree apple	Limonia acidissima	Tree
4	Fabaceae	Rose wood	Dalbergia latilofia	Tree
5	Mimosoideae	Robber thorn	Vachellia horrida	Tree
6	Fabaceae	Black locust	Robinia pseudoacacia	Tree
7	Maivceae	Potia	Thespesia populnea	Tree
8	Leguminosae	Anjan	Hardwicka binnata	Tree
9	Euphorbiaceae	White catamaran	Givotia moluccana	Tree
10	Malvceae	Dhaman	Grewia tilifolia	Tree
11	Fabaceae	Acacia sandra	Pterocarpus Santalinus	Tree
12	Myrtaceae	Cambi gum		Tree
13	Fabaceae	Bidi leaf	Bauhinia racemosa	Tree
14	Fabaceae	Golden shower	Cassia fistula	Tree
15	Rubiaceae	Bur flower tree	Neolamarckia kadamba	Tree

S.NO	FAMILY	COMMON NAME	SCIENTIFIC NAME	TYPE
16	Malvceae	Cotton tree	Bombax ceiba	Tree
17	Fabaceae	Acacia sandra	Senegalia catechu	Tree
18	Rutaceae	East Indian satin wood	Chloroxylon swietenia	Tree
19	Celastraceae	Thorny staff	Meytenus senegalensis	Tree
20	Lamiaceae	Goda	Vitex peducularis	Tree
21	Rubiaceae	kommi	Chomelia asiatica	Tree
22	Rharnnaceae	Indian jujube	Ziziphus mauritiana	Shrub
23	Verbenaceae	Common lantana	Lantana camara	Shrub
24	Acanthaceae	Porcupine flower	Barleria prionitis	Shrub
25	Rharnnaceae	Jackal jujube	Zizyphus oenoplea	Shrub
26	Sapindaceae	Common hop bush	Dodonaea viscosa	Shrub
27	Dacrymycetaceae	Gumdrop	Ziziphus obutusifolia	Shrub
28	Rubiaceae	Gummy gardenia	Gardenia gumnnifera	Shrub
29	Apocynaceae	Christ's thorn (kalivi)	Carrissa carandus	Shrub
30	Rharnnaceae	Jhar beri	Zizyphus nummularia _	Shrub
31	Rharnnaceae	Kath ber	Ziziphus xylopyrus	Shrub
32	Amaranthaceae	Thorny amaranth	Amaranthus spinoses	Herb
33	Amaranthaceae	Mountainknot grass	Aerva lanata	Herb
34	Nyctaginaceae	Spreading hogweed	Boerhavia diffusa	Herb
35	Asteraceae	Tridax daisy	Tridax procumbens	Herb
36	Acalyphimae	Indian acalpha	Acalypha indica	Herb
37	Euphorbiaceae	Jungle tulsi	Ocimum gratissimum	Herb
38	Convolvulaceae	Hedge bindweeds	Calystegia sepium	Herb
39	Asteraceae	False golden asters	Heterotheca villosa	Herb
40	Dogbanes	Indian sarsaparilla	Hemisdescus indicus	Herb

Source: Forest Working Plan, Field Survey, District Forest Survey Reports
Abbreviations: LC: Least Concern, NA: Not assessed, DD: Data Deficient, VU: Vulnerable, NT: Near Threatened, EN: Endangered
(+) Shows: Presence of the species and (-) Shows: Absence of the species

Analysis of Flora

Within the Core and buffer zone of proposed project site, a total of 21 species of trees, 10 species of Shrubs, 9 species of Herbs were recorded and observed within the studied area based on primary observation as well as based on information collected from the secondary data.

Table No. - 3.24

Inventory of faunal diversity in Buffer & Core Zone of Plant Site

Based on Actual Sighting, based on inputs from locals and Perused from Secondary Data

CLASS: MAMMALIA

S. No	Family	Common Name	IUCN Status	Wildlife Protection Act 2022
1	Sciuridae	Three striped palm squirrels	LC	Schedule II
2	Bovidae	Four horned Antelope	VU	Schedule I
3	Canidae	Asiatic Wild Dog	EN	Schedule I
4	Cercopithecida	Bonnet Macaque	VU	Schedule I
5	Cervidae	Spotted Deer	LC	Schedule II
6	Cervidae	Sambar	VU	Schedule I
7	Eupleridae	Indian grey Mongoose	LC	Schedule I
8	Leporids	Black Naped Hare	LC	Schedule II
9	Ursidae	Sloth Bear	LC	Schedule I
10	Suidae	Indian Wild Boar	LC	Schedule II
1 l	Viverridae	Small Indian Civet	LC	Schedule I
12	Viverridae	Masked Palm Civet	LC	Schedule I
13	Canidae	Golden Jackel	LC	Schedule II
14	Funambulus palmarum	Indian Palm Squirrel	LC	Not listed
15	Mus musculus	House Mouse	LC	Not listed
16	Golunda ellioti	Indian Bush Rat	LC	Not listed
17	Rattus rattus	House Rat or Black Rat	LC	Not listed
18	Pipistrellus coromandra	Indian Pipistrelle	LC	Not listed
19	Pipistrellus tenuis	Indian Pygmy Bat	LC	Not listed
20	Pipistrellus eeylonicus	Kelaart's Pipistrelle	LC	Not listed
CLASS: REPTILIA				
1	Colubridae	Daudin's Bronze back	LC	Schedule II
2	Colubridac	Bengal Monitor Lizard	NT	Schedule I
3	Agarnidae	Changeable Garden Lizard	LC	Not listed
4	Testudinidae	Indian Star Tortoise	VU	Schedule I
5	Scincidae	Common Dotted Garden skink	LC	Not listed
6	Colubridae	Indian rat snake	LC	Schedule I
7	Colubridae	Checkered Keeback	LC	Schedule I
8	Colubridac	Buff-striped keel	LC	Schedule II
CLASS-AMPHIBIANS				
1	Bufonidae	Common Indian Toad	LC	Not listed

S. No	Family	Common Name	IUCN Status	Wildlife Protection Act 2022
2	Dicrogloss idae	Indian pond frog	LC	Schedule II
3	Dicrogloss idae	Indian Bull frog	LC	Schedule II
4	Dicrogloss idae	Indian skittering Frog	LC	Schedule II
5	Bufonidae	Ferguson's toad	LC	Not listed
6	Bufonidae	Marbeled toad	LC	Not listed
7	Mycrolt did ae	Ornate-narrow mouthed frog.	LC	Not listed

Avi Fauna

S. No.	Family	Common name	IUCN status	Wildlife Protection Act
1	Ardeidae	Indian Pond Heron	LC	Schedule II
2	Ardeidae	Cattle Egret	LC	Schedule II
3	Ciconiidae	Painted Stork Mycteria	NT	Schedule II
4	Accipitridae	Shikra	LC	Schedule I
5	Accipitridae	Black-winged Kite	LC	Schedule II
6	Accipitridae	Black Kite	LC	Schedule II
7	Phasianidae	Grey Francolin	LC	schedule II
8	Phasianidae	Grey Junglefowl	LC	schedule I
9	Phasianidae	Indian Peafowl	LC	Schedule I
10	Phasianidae	Red Spurfowl	LC	Schedule II
11	Turnicidae	Yellow-legged Buttonquail	LC	Schedule II
12	Rallidae	White-breasted waterhen	LC	Schedule II
13	Burhinidae	Indian thick knee	LC	Schedule II
14	Charadriidae	Red-wattled Lapwing	LC	Schedule II
15	Columbidae	Eurasian Collared Dove	LC	Schedule II
16	Columbidae	Laughing Dove	LC	Schedule II
17	Columbidae	Spotted Dove	LC	Schedule II
18	Psittaculidae	Rose-ringed Parakeet	LC	Schedule II
19	Cuculidae	Greater Coucal	LC	Schedule II
20	Cuculidae	Asian Koel	LC	Schedule II
21	Cuculidae	Common Hawk-Cuckoo	LC	Schedule II
22	Cuculidae	Blue-faced Malkoha	LC	Schedule II
23	Dicruridae	Greater-Racket Tailed Drongo	LC	Schedule II
24	Strigidae	Spotted Owlet	LC	Schedule II

S. No.	Family	Common name	IUCN status	Wildlife Protection Act
25	Caprirnulgidae	Common Indian Nightjar	LC	Schedule II
26	Apodidae	Asian Palm Swift	LC	Schedule II
27	Alcedinidae	White-throated Kingfisher	LC	Schedule II
28	Meropidae	Green Bee-eater	LC	Schedule II
29	Coraciidae	Indian Roller	LC	Schedule II
30	Upupidae	Common Hoopoe	LC	Schedule II
31	Flucerotidae	Indian Grey Hornbill	LC	Schedule II
32	Picidae	Lesser Goldnback Woodpecker	LC	Schedule II
33	Hirundinidae	Barn Swallow	LC	Schedule II
34	Motacillidae	Paddy-field pipit	LC	Schedule II
35	Motacillidae	White-browed wagtail	LC	Schedule II
36	Vangidae	Common Woodshrikc	LC	Schedule II
37	Monarchidae	Indian Paradise- flycatcher	LC	Schedule II
38	Rhipiduridac	White-browed Fantail	LC	Schedule II
39	Pycnonotidae	Red-vented Bulbul	LC	Schedule II
40	Pycnonotidac	Red-whiskered Bulbul	LC	Schedule II
41	Pycnonotidae	White-browed Bulbul	LC	Schedule II
42	Aegithinidae	Common bra	LC	Schedule II
43	Laniidae	Bay-backed Shrike	LC	Schedule II
44	Laniidae	Long-tailed Shrike	LC	Schedule II
45	Muscicapidae	Oriental Magpie-Robin	LC	Schedule II
46	Muscicapidae	Pied Bushchat	LC	Schedule II
47	Muscicapidae	Indian Robin	I,C:	Schedule II
48	Muscicapidae	Asian Brown Flycatcher	LC	Schedule II
49	Leiothrichidae	Jungle Babbler	LC	Schedule II
50	Leiothrichidae	Large Grey Babbler	LC	Schedule II
51	Leiothrichidae	Yellow-billed Babbler	LC	Schedule II
52	Cisticolidae	Ashy Prinia	LC	Schedule II
53	Cisticolidae	Jungle Prinia	LC	Schedule II
54	Cisticolidae	Common Tailorbird	LC	Schedule II
55	Nectariniidae	Purple Sunbird	LC	Schedule II
56	Nectariniidae	Purple-rumped Sunbird	LC	Schedule II
57	Dicaeidae	Pale-billed Flowerpecker	LC	Schedule II

S. No.	Family	Common name	IUCN status	Wildlife Protection Act
58	Oriolidae	Indian Golden Oriole	LC	Schedule II
59	Dicruridae	Black Drongo	LC	Schedule II
60	Dicruridae	Ashy Drongo	LC	Schedule II
61	Dicniridae	White-bellied Drongo	LC	Schedule II
62	Corvidae	Jungle Crow	LC	Schedule II
63	Corvidae	House Crow	LC	Schedule II
64	Corvidae	Rufous	LC	Schedule II
65	Sturnidae	Treepie Common Myna	LC	Schedule II
66	Ploceidae	[lava Weaver	LC	Schedule II

CLASS: BUTTERFLIES

S. No	Family	Scientific Name	Common Name	IUC N Status	Wildlife Protection Act 2022
1	Papilionidae	Graphiurn agamemnon	Tailed Jay	LC	
2	Papilionidae	Graphium Boson	Common Jay	LC	
3	Papilionidae	Pachliopta aristolochioe	Common Rose	LC	
4	Papilionidae	Pochliopto hector	Crimson Rose	LC	Schedule II
5	Papilionidae	Popilio polymnestor	Blue Mormon	LC	
6	Papilionidae	Papllio palytes	Common Mormon	LC	
7	Papilionidae	Papilio crino	Common banded Peacock	LC	Schedule II
8	Papilionidae	Princeps demoleus	Lime Butterfly	-	
9	Papilionidae	Graphium sarpedon	Common bluebottle	LC	Schedule II
10	Papilionidae	Chilasor clytia	Common mime	-	
11	Pieridae	Cotopsilia crocale	Common Emigrant	-	
12	Pieridae	Catopsilia pyranthe	Mottled emigrant	NE	
13	Pieridae	Colotis eucharis	Plain orange tip	EN	
14	Pieridae	Cepora 17 erissa	Common gull	EN	-
15	Pieridae	Delius eucharis	Common Jezbel	-	
16	Pieridae	Eurema hecabe	Common grass yellow	-	
17	Pieridae	Valeria valeria artais	Common Wanderer	-	
18	Pieridae	Eurerna brigitta	Small grass yellow	LC	
19	Pieridae	lxias pyrene	Yellow orange tip	-	
20	Pieridae	Eurema blanda	Three spot grass yellow	-	

S. No	Family	Scientific Name	Common Name	IUC N Status	Wildlife Protection Act 2022
21	Pieridae	Ccit-opsilla Pomona	Lemon emigrant	-	
22	Nyrnphalidae	Danaus chrysippus	Plain tiger	LC	
23	Nymphalidae	Dunaus genutia	Striped Tiger (Common Tiger)	-	
24	Nymphalida	Euploea core	Common crow	LC	
25	Nymphalidae	Melantis leda	Common evening brown	-	
26	Nymphalidae	Ariadne merione	Common castor	-	
27	Nyrnphalidae	Neptishylas	Common sailer	-	
28	Nymphalidae	Bybila ilithyla	Joker	-	
29	Nymphalidae	Hypolirnnas bolina	Great egg fly	-	
30	Nymphalidae	Hypolomnas misippus	Danaid egg fly	LC	Schedule II
31	Nyrnphalidae	Junonia lemonias	Lemon pansy	-	
32	Nymphalidae	Junanio orithyla	Blue pansy	LC	
33	Nymphalidae	Junonion iphito	Chocolate pansy	NE	
34	Nymphalidae.	Junania almanac	Peacock pansy	LC	
35	Nymphalidae	Acraea terpsicore	Tawny coster	-	
36	Nymphalidae	Melantis phedima	Dark evening brown	-	

Analysis of Flora and Fauna

Flora: Within the Core and buffer zone of proposed project site, a total of 21 species of trees, 10 species of Shrubs, 9 species of Herbs were recorded and observed within the studied area based on primary observation as well as based on information collected from the secondary data.

Fauna: Among faunal diversity, within the 10 km radius of buffer zone, 20 species of mammals, 8 species of reptiles & 7 species of amphibians, 66 species of Avi fauna and 36 species of Butterfly were reported in 10 km radius of project sites.

16 schedule – I species viz. Four horned Antelope, Asiatic Wild Dog, Bonnet Macaque, Sambar, Sloth Bear, Indian Grey Mongoose, Small Indian Civet, Masked Palm Civet, Golden Jackel, Bengal Monitor Lizard, Indian Star Tortoise, Indian rat snake, Checkered Keeback, Grey Junglefowl, Shikra, Indian Peafowl Indian Species were found in the study area of the proposed project site as per the Primary & Secondary Survey done by Greentech Solutions.

Conservation plan for schedule I species has been prepared and approved from Principal Chief Conservator of Forests (WL) & Chief Wildlife Warden, A.P. over an amount of Rs. 10.67 Crore for 10

years vide letter No 21034/3/2024/WL-2 dated 16.01.2025. Copy of approved conservation plan is enclosed as ***Annexure - 6*** along with this Final EIA/EMP report.

3.18 SOCIO - ECONOMIC ENVIRONMENT

3.18.1 INTRODCUTION

An essential part of environmental study is socio-economic environment incorporating various facts related to socio-economic conditions in the area, which deals with the total environment. The Socio-economic study includes demographic structure of the area, provision of basic amenities viz., housing, education, health and medical services, occupation, water supply, sanitation, communication, transportation, prevailing diseases pattern as well as feature of aesthetic significance such as temples, historical monuments etc. at the baseline level. This baseline assessment helps in visualizing and predicting the possible impact depending upon the nature and magnitude of the project.

Socio-economic study of an area provides a good opportunity to assess the socio-economic conditions of an area. This study may possibly facilitate a change in living and social standards of the area around the project. It can undoubtedly be said that this plant will provide some direct and indirect employment and facilitate in improving the infrastructural facilities and standards of living of the area.

The fabrics of socio-economic changes are so complicated that this study would seem to be extremely limited, almost superficial and at times subjective in nature. More thorough and quantified socio-economic study will undoubtedly require vastly longer time and resources, and is, therefore, beyond the scope of the present EIA study. This EIA will give a reasonably clear picture of the socio-economic conditions prevailing in the study area.

Objectives of the Study

The objective of this socio-economic study is as follows:

- To identify the current socio-economic condition within the 10 km study area by understanding the determinants such as education, health, sanitation, water, employment transportation and communication, electrification and livelihood.
- To identify the basic needs of the nearby villages within the 10 km of study area.
- To contribute in the development and growth based on the identified needs of the nearby areas using practical strategic interventions under the CSR activities.
- To provide the employment and improved living standards.

Scope of Work

To study the socio-economic environment of the 10 km study area.

- Data collection through primary field survey and collate it with the secondary sources.
- Identification and prediction of possible impacts from the proposed project.
- Providing solutions and Mitigation measures.
- Developing Action plan for implementation based on the mitigation measures.

Methodology

- ***Collection of Data***

Data for this project was collected from primary sources like Household survey, Personal Interview, Group Discussion in community meetings etc. and secondary sources like Government department, Census 2011, District Census Handbook, Maps, Literature research etc. JMEPL conducted the socio-economic baseline survey using a survey team of Field Assistants and a Supervisor apprising them about the project area and relevant documents.

The Survey was conducted using Simple Random Sampling method with a well-structured questionnaire prepared enabling subjects to reply appropriately. The questionnaires were designed to suit the subjects considering their rural background enabling them to furnish correct information and data to the extent possible. Primary data has been collected at village level, household level by questionnaires and focused group discussions.

The study area for the field survey has been divided into three major segments namely Primary Zone (0 - 3 km), Secondary Zone (3 - 7 km) and Outer Zone (7 - 10 km).

- ***Presentation of Data & Analysis***

The data collected were presented in a suitable, concise form i.e., tabular or diagrammatic or graphic form for further analysis. These tabulated data were interpreted and analyzed with the help of various qualitative techniques and ideographic approaches.

Background Information of the Area

Andra Pradesh is a state in on the Southern coastal region of India with a population of 5.27 crores.

Andhra Pradesh's eastern boundary is a 600-mile (970-km) coastline along the Bay of Benga. After Gujarat, it features India's second-longest coastline. The capital is Amaravati near the south-eastern border. Agriculture engages majority of the population in the State.

The capital is Amaravati near the south-eastern border. Agriculture engages majority of the population in the State.YSR District (formerly known as Kadapa District), lies in the south-central part of Andhra Pradesh. it has three revenue divisions and 36 mandals. Socio-Economic Profile of the Study area is given in Table - 3.25.

Demographic Profile

Study area is the region within 10 km radius of the proposed project. The habitations are spread across 36 Villages. The population as per 2011 Census records is 70,693 (for 10 km radius) and there are 7,06,204 households residing. The village - wise demographic features of the study area as per area classification are given in Table - 3.26

Table - 3.25

Demographic Profile

Particular	India	YSR District	Study Area
Area (in sq. km.)	3,287,263	15,359	321.29
No. of Households	249454252	7,06,204	17,586
Population	1210569573	28.82,469	70,693
Male	623121843	14,51777	35,353

Particular	India	YSR District	Study Area
Female	587447730	14,30,692	35,340
Scheduled Tribes	104281034	75,886	11,437
Scheduled Castes	201378086	4,65,794	1409
Literacy Rate	72.99%	67.88%	60.4%
Sex Ratio (Females per 1000 Males)	943	984	1000

***Source**: Census of India, 2011*

Baseline Data and Analysis

The socio-economic study has been conducted on the basis of questionnaires prepared including demographic, educational, medical & health, occupational, agriculture & cropping pattern, basic amenities and religious rituals details. The primary study was conducted within 10 km radius study area from the project site. The study area was categorized on the basis of the distance of the village from the project site. First zone was identified from 0-3 km radius area, Second zone in 3-7 km and outer zone 7-10 km radius area from the project site. Information was collected from Sarpanch, Gram sevak, Doctors, ANM, Aanganwadikaryakarta, school teachers and other recognized persons of the area. To ensure the accuracy of the primary data collected, information collected from all villages was cross checked from census 2011 of YSR district (Andra Pradesh).

Base line data are collected and prepared by conducting a survey by Team Members. 25 villages have been included in buffer zone for this project and keeping that in view, the socio-economic condition of the project area has been analyzed. Secondary data has been used from census 2011 and collected data from NGOs. On the basis of questionnaires prepared including demography, education, medical & health, occupation, agriculture & cropping pattern, basic amenities and religious rituals details, the primary study was conducted within 10 km radius study area from the proposed Plant and Mine site. The study area (buffer zone) was categorized on the basis of the distance of the villages from the project site of M/s. ACC Limited

The village - wise demographic features of the study area as per area classification are given in Table 3.26 below:

To understand the socio-demographic profile of the 10 km study area, village wise distribution has been done based on the below given determinants:

1. Number of Household
2. Number and type of Population
3. Sex Ration
4. Literacy rate
5. Number and type of workers and non-workers.

Table. 3.26

Village Wise Demographic Profile of the Study Area

S. No.	Name	No. Of House Hold	Total Population	T. Male	T. Female	Sex ratio	SC population	ST Population	Total Pop (-06)	M_Pop (-06)	F_Pop (-06)	Lit. Rate	Male LR	Female LR	Working Population	Main worker	Marginal Worker	Non Working
0 - 3 km																		
1	Gollapalle	162	604	299	305	1020	174	0	541	259	282	65.1	77.2	53.9	337	329	8	267
2	Vaddirala	325	1356	672	684	1018	149	4	1178	577	601	58.5	67.8	49.6	789	735	54	567
3	Madhavapuram	100	370	181	189	1044	9	0	333	166	167	66.7	80.1	53.3	216	209	7	154
4	Talamanchipatnam	233	854	434	420	968	290	44	762	380	382	62.6	74.5	50.8	502	418	84	352
5	Kamavaripalle	373	1473	728	745	1023	230	0	1284	631	653	60.4	71.6	49.5	803	747	56	670
6	Ayyavari Kambala Dinne	97	370	182	188	1033	4	0	330	161	169	49.7	60.9	39.1	231	220	11	139
7	Kallutla	204	843	421	422	1002	68	0	742	371	371	58.2	74.1	42.3	598	421	177	245
8	Janganapalle	654	2558	1299	1259	969	346	0	2273	1148	1125	59.6	71.6	47.4	1473	1268	205	1085
9	Golla Uppalapadu	44	166	89	77	865	0	0	149	78	71	72.5	85.9	57.7	97	78	19	69
10	Bestavemulla	309	1250	611	639	1046	252	0	1110	543	567	62.6	75.0	50.8	743	614	129	507
11	Kona Annathapuram	74	261	132	129	977	0	251	221	111	110	65.2	77.5	52.7	153	149	4	108
Sub-Total		2575	10105	5048	5057	1002	1522	299	8923	4425	4498	61.9	74.2	49.7	5942	5188	754	4163
3-7 km																		
12	Dugga Palle	41	145	71	74	1042	0	0	128	63	65	60.9	74.6	47.7	82	82	0	63
13	Nawabpet	323	1267	604	663	1098	2	6	1132	541	591	51.0	64.9	38.2	748	742	6	519
14	Bhutamapuram	141	531	260	271	1042	0	0	475	233	242	61.5	76.4	47.1	299	296	3	232
15	Chinna Komerla	1025	3791	1903	1888	992	287	0	3317	1662	1655	59.5	73.2	45.7	2012	1788	224	1779
16	Murapandi	291	1203	623	580	931	488	169	1029	527	502	48.4	62.8	33.3	814	689	125	389
17	Kothapalle	2456	9857	4916	4941	1005	1156	442	8782	4361	4421	68.4	78.9	58.0	4168	3751	417	5689
18	Janganapalle	654	2558	1299	1259	969	346	0	2273	1148	1125	59.6	71.6	47.4	1473	1268	205	1085
19	Chinnaventhurla	154	666	352	314	892	132	6	588	304	284	62.6	73.4	51.1	405	367	38	261

S. No.	Name	No. Of House Hold	Total Population	T. Male	T. Female	Sex ratio	SC population	ST Population	Total Pop (-06)	M_Pop (-06)	F_Pop (-06)	Lit. Rate	Male LR	Female LR	Working Population	Main worker	Marginal Worker	Non Working
20	Erragudi	300	1191	600	591	985	157	27	1094	556	538	59.5	71.8	46.8	635	631	4	556
21	Peddaventhurla	464	1918	952	966	1015	233	0	1747	861	886	63.0	78.2	48.3	1084	1073	11	834
22	Dhannavada	232	851	421	430	1021	55	21	744	368	376	62.5	74.2	51.1	477	380	97	374
Sub-Total		6081	23978	12001	11977	998	2856	671	21309	10624	10685	59.7	72.7	46.8	12197	11067	1130	11781
7 - 10 km																		
23	Nossam	1373	5750	2888	2862	991	1294	70	5107	2553	2554	66.8	79.4	54.3	3198	3020	178	2552
24	Bheemagundam	279	1078	528	550	1042	81	0	985	478	507	61.6	70.5	53.3	620	613	7	458
25	Ramchandryapple	260	951	491	460	937	140	52	840	437	403	49.9	62.0	36.7	542	407	135	409
26	Dhodium	354	1426	734	692	943	82	2	1274	645	629	48.6	62.3	34.5	972	855	117	454
27	Nakkavanipalle	55	204	103	101	981	0	0	186	93	93	72.0	82.8	61.3	121	104	17	83
28	Hanumanthagundam	198	862	425	437	1028	4	6	761	373	388	52.2	64.3	40.5	492	491	1	370
29	Mikkinenipalle	167	664	325	339	1043	0	0	589	289	300	53.8	68.5	39.7	457	455	2	207
30	Mitamanipalle	1079	4253	2138	2115	989	1537	4	3693	1847	1846	59.6	73.6	45.6	2284	1688	596	1969
31	Kamavaripalle	373	1473	728	745	1023	230	0	1284	631	653	60.4	71.6	49.5	803	747	56	670
32	Ponnampalle	348	1372	705	667	946	197	5	1184	602	582	56.7	68.8	44.2	816	215	603	554
33	Kondasunkesula	506	2099	1024	1075	1050	241	0	1908	925	983	59.6	72.6	47.4	1313	960	353	786
34	Diguva Kalvatala	415	1521	765	756	988	385	0	1343	676	667	55.5	70.6	40.2	1169	747	422	352
35	Thorrivemula	667	2639	1329	1310	986	253	100	2311	1151	1160	58.8	71.8	46.0	1621	1256	365	1018
36	Nagireddipalle	2856	12318	6121	6197	1012	2615	200	10843	5378	5465	79.3	88.5	70.2	4055	3409	646	8263
Sub-Total		8930	36610	18304	18306	1000	7059	439	32308	16078	16230	59.6	72.0	47.4	18463	14967	3498	18145
Grand-Total		17586	70693	35353	35340	1000	11437	1409	62540	31127	31413	60.4	73.0	48.0	36602	31222	5382	34089

Source: Census of India, 2011

- **Population Distribution and Composition of the Study area**

The population as per 2011 Census records is 70693 (for 10 km radius buffer zone). Total no. of household is 2575, 6081 and 8930 respectively, in primary, secondary and outer zone. Sex ratio is 1002, 998 and 1000 (females per 1000 males) observed in primary, secondary and outer zone respectively. SC population distribution is 1522, 2856 and 7059 respectively in primary, secondary and outer zone. ST population distribution is 299, 671 and 439 respectively in primary, secondary and outer zone respectively. Demographic profile of study area is given in the Table 3.27 below:

TABLE - 3.27

Zone Wise Demographical Profile of Study Area

Zone	No. of Villages	Total Household	Total Population	Total Male Population	Total Female Population	Sex Ratio
Primary Zone (0 - 3 Km)	11	2575	10105	5048	5057	1002
Secondary Zone (3 - 7 Km)	11	6081	23978	12001	11977	998
Outer Zone (7 - 10 Km)	14	8930	36610	18304	18306	1000
Study Area (0-10 km)	36	17586	70693	35353	35340	1000

***Source**: Census of India, 2011*

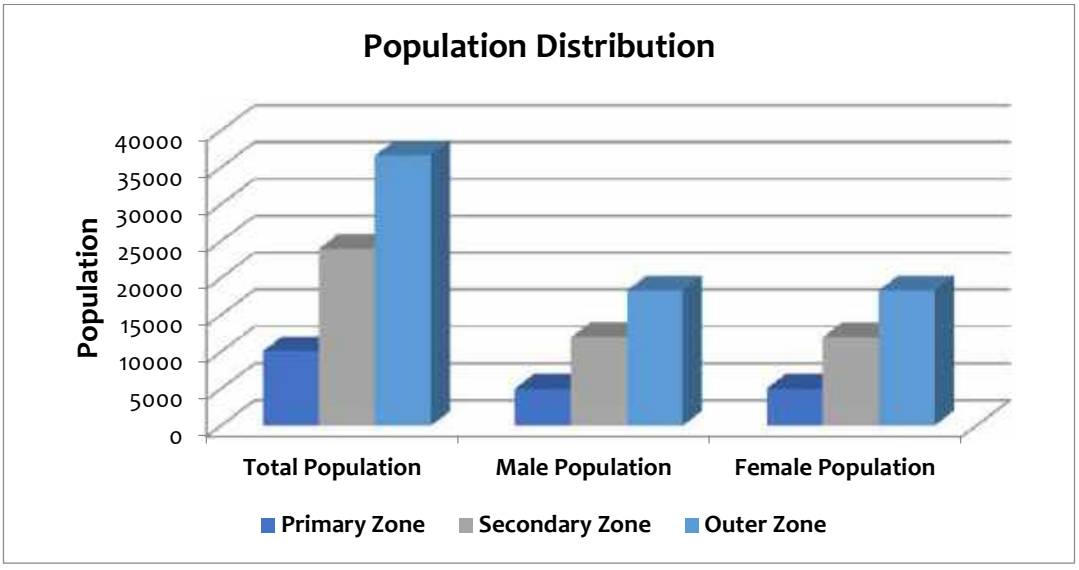


Figure 3.15: Population Distribution

As per analysis of the primary data & secondary data the distribution of population varies from place to place. Highest population recorded is in Nagireddipalle whereas population varies on another village. As per census data the Sex Ratio is good in all villages in the study area. In various villages, ratio of females is higher than male population. This indicates that in these villages people have positive view about female.

- **Vulnerable Groups**

While developing an Action Plan, it is very important to identify the population which falls under the marginalized and vulnerable groups and special attention has to be given towards these groups

while making action plans. Special provisions should be made for them. In the overview of villages, schedule caste (S.C.) population is 46.25 %, Schedule Tribe (ST) population is 6.96% (See Table 3.28).

Table - 3.28
Summary of Vulnerable Group in the Study area

Zone	No. of Villages	Total Household	Total Population	SC Population	ST Population	Others Population
Primary Zone (0 - 3 Km)	11	2575	10105	1522	299	8,882
Secondary Zone (3 - 7 Km)	11	6081	23978	2856	671	20,451
Outer Zone (7 - 10 Km)	14	8930	36610	7059	439	29112
Study Area (0-10 Km)	**36**	**17586**	**70693**	**11437**	**1409**	**58,445**

Source: *Census of India, 2011*

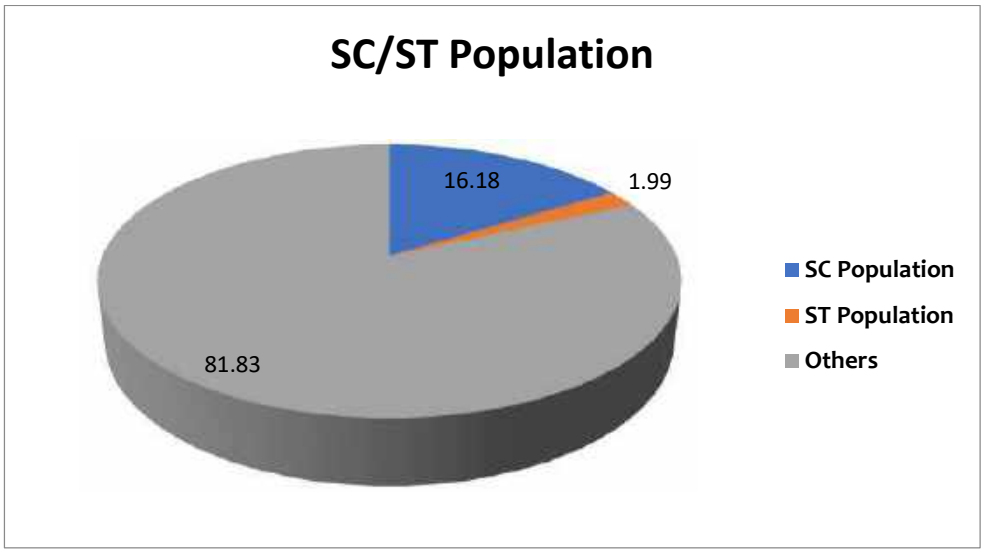


Figure 3.16: Vulnerable groups

- **Literacy Rate Distribution**

Literacy is the ability to read and write one's own name and further for knowledge and interest, write coherently, and think critically about the written word. The analysis of the literacy levels is done in the study area. The 10 km radius study area demonstrates a literacy rate of 60.4 % as per census 2011. The male literacy rate works out to be 73.0% whereas the female literacy rate, which is an important indicator for social change, is observed to be 48.0% in the study area. This indicates that the education facilities in the villages are good but there isneed to be aware as the female literacy as it is very important for our society and from the survey it is clear that the literacy rate of female is average comparison to male.

Table - 3.29
Literacy Rate of Surveyed Villages

Zone	No. of Villages	Total Literate Population	No. of Male Literate	No. of Female Literate	Total Literacy Rate (%)	Male Literacy Rate (%)	Female Literacy Rate (%)
Primary Zone (0 - 3 Km)	11	5413	3214	2199	61.9	74.2	49.7
Secondary Zone (3 - 7 km)	11	13363	7955	5408	59.7	72.7	46.8
Outer Zone (7 - 10 Km)	14	21392	12513	8879	59.6	72.0	47.4
Study Area (0-10 Km)	**36**	**40168**	**23682**	**16486**	**60.4**	**73.0**	**48.0**

Source: *Census of India, 2011*

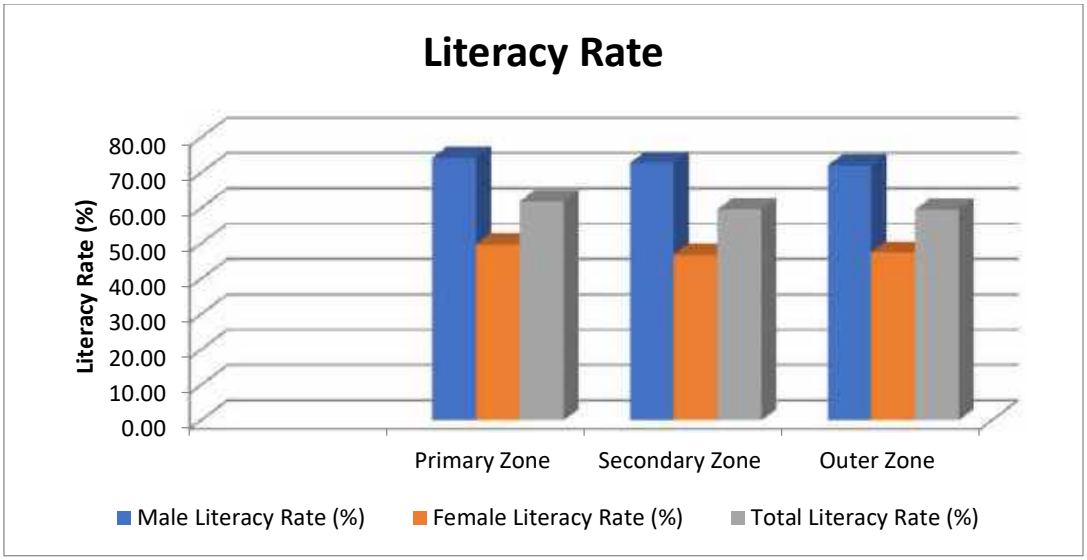


Figure 3.17: Gender Wise Literacy Rate in the Study Area

- **Economic Activities**

The economy is defined by the occupational pattern and income level of the people in the area. The occupational structure of residents is studied with reference to work category. The population is divided occupation wise into three categories, viz., main workers, marginal workers and non-workers. The workers include cultivators, agricultural laborers, those engaged in household industry and other services.

The marginal workers are those workers who are engaged in some work for a period of less than 180 days during the reference year. The non-workers include those engaged in unpaid household duties, students, retired persons, dependents, beggars, vagrants etc. besides institutional inmates or all other non-workers who do not fall under the above categories.

Table - 3.30

Working Population of the Study Area

Zone	No. of Villages	Total Workers	Main Workers	Marginal Worker	Non-Worker
Primary Zone (0 - 3 Km)	11	5942	5188	754	4163
Secondary Zone (3 - 7 Km)	11	12197	11067	1130	11781
Outer Zone (7- 10 Km)	14	18463	14967	3498	18145
Study Area (0-10 Km)	**36**	**36602**	**31222**	**5382**	**34089**

Source: *Census of India, 2011*

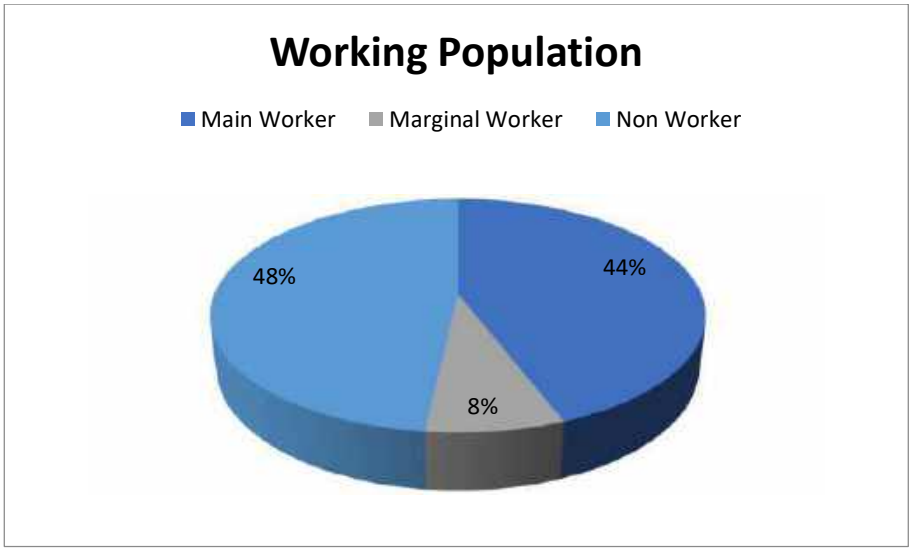


Figure 3.18: Working Force in the Study Area

- ***Occupation Structure***
  - Occupational structure of study area households suggests that most of people are engaged in unorganized sector.
  - They either work as cultivators or agricultural labors or work at small scale manufacturing units such as cement industries, household industry, while few perform self-employed business.
  - Most of the family members in a household are also involved as cultivators and agricultural labors.
  - Proposed cement project would aim to give most of these people employment opportunity to earn decent living.
  - Presence of various industry and portable local businesses in the region, most of them also do not prefer to migrate to other parts of state or country. They work at various household industry or work as agricultural labors and cultivators.

Basic Amenities

In all villages, basic facilities as road, school, drinking water, electricity, public transport etc. are available except some villages. Major Facilties like education, health centres, maternity clinic, TB clinic, veterinary hospitals, medical shops, etc. are available at village Tengli.No Mobile Health

Centres, Medical facilities, banks, Power repair shop and motor cycle repair shop, Pharmacy and Medical shops are available in most of the villages. Communication facilities are less than average. Radio and newspaper are available in the area. Village is connected by the electricity but the supply is not proper. Developing programs i.e. (Self Help Group, Development of women and children in rural area, Integrated Rural Development Program) are being carried out. There are Aganbari center in all villages. Taking everything into account, the basic amenities in the study area is not satisfactory and it needs to be improved. Facilities suggested by the villagers during the survey are Employment, Transport, Education facilities, Agriculture awareness programme, Bank facility, Electricity etc.

A. Education facilities

Education and learning are one of the most important processes in today's society. Education is not just restricted to teaching a person the basic academics, say computers, mathematics, geography or history, education is a much larger term. It is really a means to discover new things which we don't know about and increase our knowledge. Government has provided educational facilities in each village instead some villages do not have school facility. According to surveyed village Primary Schools are available in every village and Middle, Secondary and Senior Secondary School (depend on population size) are available in few of the villages. We observed from the survey that people have to go far away from the villages for colleges and schooling. For higher education people have to migrate to the bigger cities. Educational and literacy details were collected during study period from concerned Schools and Gram Panchayat offices and we observed lack of Education. After analysing the literacy rate from census data, we found that literacy rate is not good. Details of the literacy rate in the study area are given the Table 3.31. The available educational structure for the population in the case study area is mentioned in the table below.

Table - 3.31

Educational Facilities in the Study Area

Particular	No. of Villages	Primary School	Middle School	Secondary School	Degree Colleges (Arts & Science)
Primary Zone (0 - 3 km)	11	8	1	0	0
Secondary Zone (3 - 7 km)	11	17	4	2	0
Outer Zone (7 - 10 km)	14	21	5	2	0
Sub - Total	**36**	46	10	4	0

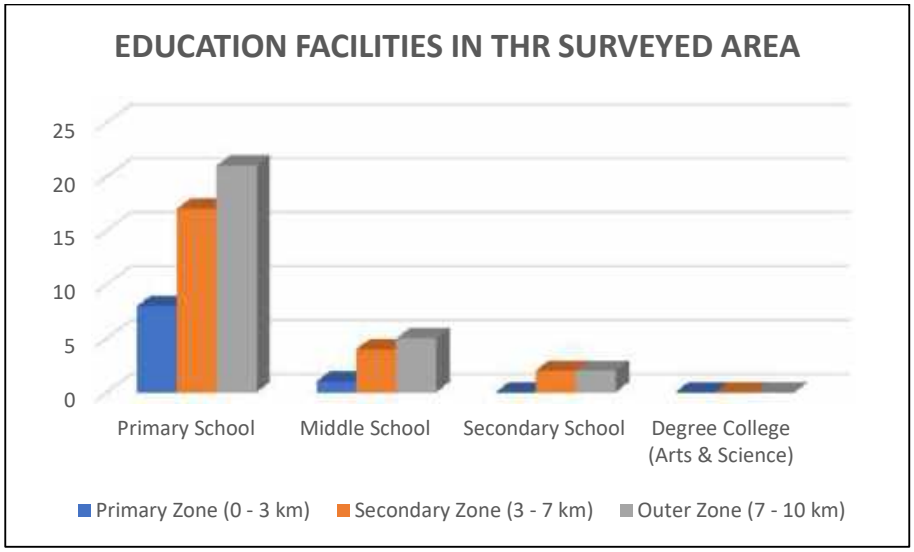


Figure 3.19: Education facilities in the study area

B. HEALTH FACILITIES

Health is a premier asset of human capital which is an important factor for growth of any economy. It is a source of human welfare. Health and nutrition play a major role for developing a healthy society as it impacts the productivity of a person.

The healthcare facilities in the study area consisted of Primary Health Centre, Primary Health Sub-Centre's; Maternity and Child Welfare Centre; Dispensaries and a Hospital of Alternative Medicine. Sub-Centres and Primary Health Centres are available only in very few villages. The findings from the case study of the 10 km radius study area indicates that medical facilities are needed to be improved by the Government as satisfactory facilities are not available for any medical emergencies. Patients have to move to Cities for any serious illness.

Table - 3.32

Health Facilities in the Study Area

Particular	No. of Villages	Primary Health Centre	Primary Health Sub Centre	Veterinary
Primary Zone (0 - 3 km)	11	1	1	1
Secondary Zone (3 - 7 km)	11	0	1	0
Outer Zone (7 - 10 km)	14	2	5	2
Sub - Total	**36**	**03**	**07**	**03**

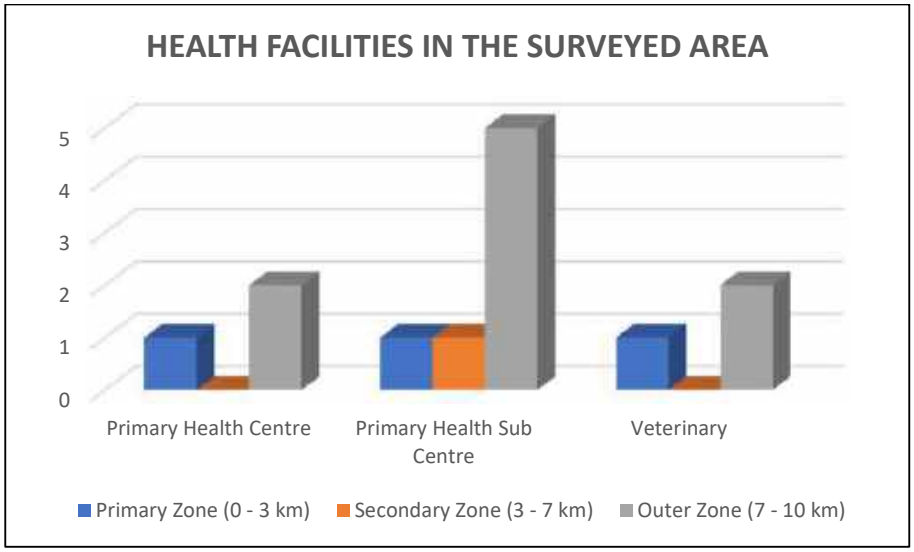


Figure 3.20: Healthcare facility distribution

C. Other Infrastructure Facilities

Electrification in the Area

The source of electricity is fulfilled by the Government. Most of the villages are electrified. The Electricity supply is on average 12-20 hours and even 24 hours in few villages.

Drinking Water Facilities

During the primary survey it has been noticed that the requirement of drinking water is being fulfilled by Public borewells and tankers. More than 80% of the villagers are availing drinking water facilities generally from ground water wells, Tube well/Bore wells or Hand pumps. The drinking water sources are domestic taps, bore well and hand pump. Mostly in the month of March, April, May, June and July the villagers face the drinking water problems.

Needs Identification

- Need to develop conveyance and transport facilities.
- Required Internet and computer technology for better communication system.
- Need of awareness for professional courses and career management plan.
- Need of improvement in public infrastructure facilities.
- Camp for providing knowledge of Government schemes and loan or subsidies for agriculture.
- Training Programmes for Agriculture related new technologies.
- Awareness program should be conducted to make the population aware to get education and better treatment for livelihood.
- Health care center and ambulance facility can be provided to make the population get easy medical facilities.

Conclusion and Discussion

The socio-economic study of the study area on the basis of surveyed villages gives clear picture of its population, average household size, literacy rate, sex ratio etc. Based on the data collected for socio-economic status of the study area, following inferences could be drawn:

- As far as the literacy rate is concerned the study area does not have satisfactory level (60.4%), which is lower than the district literacy rate (67.88%). As per the 2011 Census of India, the male literacy rate, i.e., the percentage of literate males in the study area works out to be 73.0% whereas the female literacy rate which is an important indicator for the social change is observed to be 48.0%. The difference observed indicates that there is a need for social development in the region.
- The Percentage of total working population and non-working population is 51.75 % and 48.22 % respectively in the study area. The analysis revealed that the percentage of working population is higher than non - working population. A major portion of working age people are not ideal workers because of limited sectors in which they are engaged with less training and non-awareness of latest sectors in which maybe they can better off than traditional work.
- The agriculture is main source of income within the region but productivity majorly depends upon the rainfall.
- The villages are well supplied with the drinking water facilities with presence of hand pumps, tap water and bore wells. The people face scarcity of water during summer.
- As observed by the survey, the area has an average medical facility, thus region still requires improvement in the medical conditions such as improvement in the immediate medical mobility services and health equipments etc.
- The study area has a moderate road network, which includes state highway, major district roads and other roads.
- The socio-economic analysis of the study area shows that in terms of education and health facilities, the area is average developed. The overall socio-economic status of the target population is below average in terms of female literacy, work participation rate etc. More attention and care should be taken so that the needs and demand of the population of the influence area be minimized and can get more exposure to modern facilities of education, health, skill development and development for a bright future.

Recommendations and Suggestion

- Education Awareness program to be conducted to make the population aware and better treatment for livelihood.
- Vocational training session to be organized to provide self-employment to the women and unemployment youth.
- Routinely various medical health camps to be organized.
- Natural Resource Management and Environmental Conservation.
- On the basis of qualification and skills local youths to be employed.
- Long term and short-term employments to be generated.

Basic amenities and facilities will be made available to the people and there will be proper maintenance of the facilities already provided by the government. In the study area, various CSR activities will be conducted by M/s. ACC Limited.

3.19 CONCLUSION

To predict and evaluate the impacts of the proposed project on the surrounding area, it is vital to assess the baseline status of the environmental quality in the vicinity of the site. The environment baseline study was conducted by both collecting Primary and Secondary data collections during the Summer Season (March, 2024 to May, 2024). Due to the expiry of earlier conducted baseline study; a fresh baseline was conducted during Summer Season (March, 2024 to May, 2024).

The baseline study was conducted considering the abiotic factors such as air, water, soil, land. It was found that the parameters monitored for air, noise, water, soil were well within the limits as per the prescribed standards by CPCB. Apart from monitoring, LU-LC study was also conducted using primary and secondary sources which revealed that majority of the study area is occupied by the agricultural land. Socio-Economic Survey was also conducted during the study period which revealed that area further require improvement in the Economy and Infrastructure Development of the area.

CHAPTER–4

ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

4.1 INTRODUCTION

The environmental parameters likely to be affected by mining are related to many factors, i.e. physical, social, economic, agriculture and aesthetic. Opencast mining involves drilling, blasting, excavation, loading, transportation, unloading etc. Excavated limestone will be loaded by hydraulic excavators into the dumpers for onward dispatch to the crusher (for limestone) located at plant site and dump (for waste and soil). Crushed limestone will be used in the interlinked proposed Cement Plant of M/s. ACC Cement.

The operations may impact environment of the area in various ways such as excavation of mineral, change of landscape, flora and fauna of the area, surface drainage and change in air, water and soil quality & noise level mostly localized to the mine area while for purpose of development and economic upliftment of people, there is need for establishment of mining industries as the area is rich in mineral resources, these are environment friendly.

Prediction of impacts is the most important component in the Environment Impact Assessment studies. Therefore, it is essential to assess the impact of mining on different environmental and socio-economic parameters for all mining operations so that abatement measures could be planned in advance for minimizing the impacts, wherever feasible.

The likely impacts on different environmental parameters due to the mine site location, possible accidents, mine design, development, operations & final closure of this mining project are discussed below:

4.2 METHODOLOGY OF IMPACT ASSESSMENT

The impact assessment has been undertaken following a systematic process that identifies, predicts and evaluates the impacts the project could have on aspects of the physical, biological, social/ socio-economic and cultural environment and identifies measures that the project will take to avoid, minimize/reduce, mitigate, offset or compensate for adverse impacts; and to enhance positive impacts, where practicable. The stages of the impact assessment process comprise of the following:

- ***Impact identification:*** To identify the potential impact of the project on the various environmental parameters.
- ***Impact prediction:*** To determine what could potentially happen to resources/receptors as a consequence of the project and its associated activities.
- ***Impact evaluation:*** To evaluate the significance of the predicted impacts by considering their magnitude and likelihood of occurrence, and the sensitivity, value and/or importance of the affected resources/ receptors.
- ***Impact mitigation:*** To identify appropriate and justified measures to mitigate negative impacts and enhance positive impacts.

4.3 BASIS OF IMPACT ASSESSMENT

The impacts of the proposed project have been assessed on the basis of their characteristics i.e. nature, type, extent, duration, intensity & frequency and its significance.

Characteristics of Impacts

The impact is described in terms of its characteristics such as nature, type etc. Impact characteristics are given in Table - 4.1.

Table - 4.1

Impact Characteristics

Characteristic	Classification	Description
Nature	Positive impact	When impact is considered to represent improvement to baseline or introduce a new positive factor/change.
	Negative impact	When impact is considered to represent adverse change from the baseline or introduce a new undesirable factor/change.
	Neutral	When there is no impact to represent any change from the baseline and not introducing any new factor/change.
Type	Direct impact	Resulting from a direct interaction between a project activity and the receiving environment / receptors.
	Indirect impact	Resulting from other activities that happened as a consequence of the project.
	Cumulative impact	Impacts that act together with other impacts (including those from concurrent or planned future third-party activities) to affect the same resources and/or receptors as the Project.
Extent	Project Area	When impact due to the project related activities is restricted within the premises of project area i.e. core zone.
	Local	When impact due to the project related activities is restricted within the immediate surroundings i.e. upto 3 km radius.
	Zonal	When impact due to the project related activities is restricted within the study area i.e. up to 10 km radius.
	Regional	When an impact due to the project activity extends within as well as beyond 10 km radius.
Duration	Short - term	When the impact is usually temporary or last for a short time or will have an effect soon rather than in the distant future.
	Long- term	When impact would occur during the development of the project and either takes a long time or lasts a long time or cause a permanent change in the affected receptor/resource.
Intensity	Low	When resulting in slight changes of prevailing baseline conditions and quality of existing physical environment is good. Ecological environments as well as human receptors are not likely to be affected due to the proposed project activity.

Characteristic	Classification	Description
	Medium	When resulting in changes of prevailing baseline conditions which are within the benchmark norms and quality of existing physical environment shows some signs of stress. Ecological environment as well as human receptors could be sensitive to change in quality of prevailing baseline condition, but human receptors retain an ability to adapt to change.
	High	When resulting in changes of prevailing baseline conditions which are exceeding the benchmark norms and quality of existing physical environment is already under stress. Ecological environment as well as human receptors would be impacted to the larger extent and the ability of human receptors to adapt to changes would be undermined.
Frequency	Remote (R)	When resulting in remote or one-off chance of an event due to an activity on a receptor/ resource.
	Occasional (O)	When an impact due to an activity is occurring intermittently from time to time on a receptor/resource.
	Periodic (P)	When an impact due to an activity is resulting on periodic basis for a week or a month on a resource/receptor.
	Continuous (C)	When an impact due to an activity is continuously resulting on a resource/receptor.

Significance of Impacts

Impacts are described in terms of 'significance'. Significance is a function of the magnitude & sensitivity / importance of the impact.

Classification of impact significance is given in Table - 4.2.

Table - 4.2

Significance of Impact

Significance	Description
Insignificant	Negligible impact or where a resource or receptor (including people) will not be affected in any way by a particular activity, or the predicted effect is deemed to be 'negligible' or 'imperceptible' or is indistinguishable from natural background variations.
Minor	Where an effect will be experienced, but the impact is well within accepted standards/guidelines with or without mitigation.
Moderate	Where an effect will be experienced and the impact is within accepted standards/guidelines with mitigation.
Major	Impact where an accepted limit or standard may be exceeded or the impact occur to the highly valued/sensitive resource/receptors.

Irreversible and Irretrievable commitments of environmental components

Determining the irreversible and irretrievable commitments of the resources is one of the major stages of impact evaluation, which gives an understanding about the potential impacts that are likely to affect future generations of the area and facilitates for adoption of proper mitigation measure regarding the same.

Table - 4.3

Irreversible and Irretrievable commitments of environmental components

Commitment of resources	Description
Irreversible	Irreversible commitment of resources refers to the impact or loss of the resources that cannot be recovered or reversed. Irreversible is a term that describes the loss of future options. It applies primarily to the impacts of use of nonrenewable resources or to those factors that are renewable only over long periods of time.
Irretrievable	Irretrievable is a term that applies to the loss of production, harvest, or use of natural resources. Irretrievable commitment of resources may be considered as the loss of resources as a result of change (both reversible & irreversible) due to any project activity that cannot be regained or recovered.

4.4 INTERACTION MATRIX

The interaction matrix enables a methodical identification of the potential interactions each project activity may have on the range of resources/receptors within the Area of Influence for the Project.

The interaction matrix for the project activities and likely impacted resources/receptors is presented in Table-4.4 which covers potential interactions, regardless of probability of occurrence. The matrix consists of a list of resources/ receptors that could be affected against a list of project activities.

Entries in the matrix cells are tick marked to indicate whether:

- An interaction is not reasonably expected (blank);
- The interaction is reasonably possible and may lead to potential impact (tick marked).

Table - 4.4

Interaction Matrix

S. No.	Project Activity / Likely Impacted Resources / Receptors	*Land Acquisition*				Mine development & Process				*Reclamation and Greenbelt/plantation*			*Miscellaneous*		
		Acquiring land	Displacement of households	Displacement of occupation	Rehabilitation & Resettlement of PAFs	Site Clearing within the project area and leveling of site (removal of vegetation, structures etc.), Storage of soil	Mining Operation (excavation with Drilling, blasting)	Loading and unloading of mined out material	Transportation of limestone through Dumpers to Crusher Plant	Dump formation (terracing, construction of garland drains & retaining walls)	Reclamation of mined out pits by backfilling and development of water bodies	Greenbelt Development and maintaining greenbelt of 7.5 m statutory barrier & Plantation on backfilled area	Workshop for HEMM maintenance in mine.	Meeting points of workers/ employees i.e. Rest shelter, canteen	Handling of high explosive in magazine & AN storage shed and fuel
A.	**Physical**														
1.	Air					√	√	√	√	√	√	√			
2.	Noise & Vibration					√	√	√	√	√		√	√	√	
3.	Land Use					√	√			√	√	√			
4.	Topography					√	√	√		√	√				
5.	Geology						√				√				
6.	Drainage Pattern						√			√	√				
7.	Surface Water										√				
8.	Ground Water						√		√		√	√	√	√	
9.	Soil					√	√	√		√	√	√			
B.	**Biological**														
1.	Flora					√	√			√	√	√			

2.	Fauna					√	√				√	√			
3.	NP/WLS/BR/reserves/Forests etc.														
C.	**Social / Socio-Economic**														
1.	Demography	√		√	√										
2.	Physical Displacement														
3.	Land Use (w.r.t. Population influx)						√				√				
4.	Habitation				√						√				
5.	Economy & Livelihood	√		√	√	√	√				√				
6.	Social & Cultural Structure				√									√	
7.	Infrastructure & Public Services					√					√				
8.	Public Health						√					√			
9.	Agriculture	√		√	√	√	√								
10.	Transport Infrastructure						√				√				
D.	**Occupational Health**														
1.	Injury					√	√	√	√		√		√		√
2.	Health						√	√							√
3.	Non - routine risk						√								√
	Legends		Show no interactions is reasonably expected							√		Show interactions reasonably possible with one of the outcomes may lead to potential impact			

According to the interactions identified between project activities and resource/receptors as described in the above table, it is evident that the following aspects are likely to have impact due to the mining project (table - 4.5) and therefore, to be considered for Impact Assessment:

Table - 4.5

Impacted Resources / Receptors

S. No.	Likely Impacted Resources / Receptors	
A.	**Physical**	Air Quality
		Noise Level, ground vibrations
		Water environment (Surface & Ground water)
		Soil Environment
		Land Use
		Geology &Topography
B.	**Biological environment**	Flora
		Fauna
C.	**Socio economic environment**	Habitation & Demography
		Physical Displacement
		Land use (w.r.t. population influx)
		Economy & Livelihood
		Social & Cultural Structure
		Infrastructure & Public Services
		Public Health
		Agriculture
		Transport Infrastructure
D.	**Occupation Health & Safety**	Injury
		Health
		Non-Routine Risk

Source: *Interaction Matrix*

The impacts of mining on various environmental parameters were assessed and are given below:

4.5 ENVIRONMENTAL IMPACT ASSESSMENT & MITIGATION MEASURES

The activities involve in the proposal may impact the environment in various ways such as degradation of land, dust generation, deterioration of water and soil quality, affecting the biological and socio-economic environment of the area. The impacts of mining on various environmental parameters were assessed and are given below:

4.5.1 IMPACT ON AIR QUALITY & MITIGATION MEASURES

The Proposed project includes various mining operations involving development of benches, excavation, drilling, blasting, loading, unloading, transportation of material etc. These operations generally result in generation of dust and thereby pose health hazards. However, adequate control measures will be provided at every stage of operation to reduce fugitive dust emissions.

4.5.1.1 POLLUTION DUE TO LIMESTONE MINING PROJECT

(i) **Gaseous Pollution**

Gaseous pollutants (SO_2, NO_2) are anticipated from blasting operations and movement of machineries like excavator, loaders, dumpers, tippers & other vehicles; while generation of pollutants during blasting is instantaneous & momentary.

(ii) **Particulate Matter**

The generation of dust is anticipated from various mining activities like drilling, blasting, excavation, loading, transportation, unloading, and other mining related activities.

4.5.1.2 AMBIENT AIR QUALITY IMPACT PREDICTION MODELING

Impact Prediction is an important part of Environmental Impact Assessment Study. There are various techniques available to predict the impacts. Mathematical modelling is an established and accepted technique for the same. The present study has evaluated the impact on surrounding air quality for the propose limestone mine with Limestone Production Capacity from 7.0 million TPA with total excavation 10.412 million TPA as given below:

Table - 4.6

Total handling for Impact Assessment

S. No.	Particular	Million TPA	Normative (290 days)		Peak Stage (270 days)	
			TPD	TPH (16 hrs @ 8hrs)	TPD	TPH (16 hrs @ 8 hrs)
1.	Limestone	7.00	24138	1509	25926	1621
2.	Sub grade	2.50	8621	539	9260	579
3.	Top Soil	0.012	42	3.0	45	3.0
4.	Over burden	0.90	3104	194	3334	209
Total Excavation		**10.412**	**35905**	**2245**	**38565**	**2412**

***At Peak Stage**

In case of heavy rainfall/shut down/break down/major maintenance in crusher, there may be a shortfall in production; to cover up this short fall, company will aim to maintain production at up to 20% of the daily capacity & meanwhile in that period development work - removal of over burden etc. considered at 20% maximum as compared to daily capacity & same will be dispatched to end users. However, the annual production will remain same i.e. 7.0 million of Limestone.

After considering the 20% maximum the Limestone production per day will be 25926 tonnes & Over Burden will be 3334 tonnes; thus, total handling will be 38565 tonnes/day.

4.5.1.3 EMISSION RATE AS PER MATERIAL HANDLED

The emissions in the present case have been computed using empirical factor given in "Indian Mining and Engineering Journal". Emission rate and pollution load due to each activity has been calculated and given below:

Table - 4.7

Emission rate and load as per material handled for Kadapa Limestone Mine

S. No.	Activity	Category of Source	Emission Rate		Emission Load	
			Values	Unit	Kg/day	Contribution
1.	Drilling	Point	1.15338	g/s	49.83	1.58
2.	Limestone	Point	0.54883	g/s	23.71	0.75
3.	OB/IB Loading	Point	0.63285	g/s	27.34	0.87
4.	Haul Road	Line	0.025058	g/s/m	2706.23	86.03
5.	Limestone Unloading	Point	0.191812	g/s	8.29	0.26
6.	OB/IB Unloading	Point	0.245968	g/s	10.63	0.34
7.	Exposed Pit surface	Area	3.4964E-05	g/s/m^2	0.30209	0.00960
8.	Exposed OB dump	Area	7.7782E-05	g/s/m^2	319.21743	10.14827
Total SPM Load (kg/day)					3145.53	**100%**
SPM Emission (g/s)					72.81	

Table - 4.8

Emission rate as per material handled for Kadapa Limestone Mine

S. No.	Activity	Emission Rate
1.	SPM Emission (kg/day)	3145.53
2.	SPM Emission (g/s)	72.81
Uncontrolled		
3.	PM_{10} Emission Rate @50 % of SPM	36.41
4.	$PM_{2.5}$ Emission Rate @ 40% of PM_{10}	14.56
Controlled (80%)		
5.	PM_{10} Emission Rate @80 % efficient mitigations measures	7.28
6.	$PM_{2.5}$ Emission Rate @80 % efficient mitigations measures	2.91

S. No.	Activity	Emission Rate	
		gm/sec	Kg/day
1.	SO_2 Emission Rate	1.63	64.60
2.	NO2 Emission Rate	1.27	50.49

Table - 4.9

Emission rate as per material handled (For crushing activity)

Stack attached to	Stack No.	Height from ground level (m)	Internal Diameter (Top) (m)	Emission Rate of Particulate Matter (g/sec)			Exit Velocity (m/sec)
				PM10	NO_2	SO_2	
Proposed Crusher (1500 TPH)	1	40	1.90	0.70	0.62	1.28	9.50

Table - 4.10

Stack Emission Details of Proposed Cement Plant

Stack attached to	Height from ground level (m)	Internal Diameter (Top) (m)	PM1	PM2.5	SO_2	NO_x	CO	Temp. of Exhaust Gases (^oC)	Exit Velocity (m/sec)	Volumetric Flow (m^3/hr)
			Emission Rate (g/s)							
Raw Mill & Kiln Bag House - 1	152	5.2	4.04	2.696	8.47	10.83	135.0	240	18	1415000
Coal Mill Bag House - 1	60	1.6	0.70	0.472	NA	NA	-	120	30	190000
Clinker Cooler-ESP - 1	60	4.3	3.43	2.288	NA	NA	-	275	28	1282000
Cement Mill (VRM) Bag House - Unit -I	50	4.0	3.39	2.264	NA	NA	-	120	27	910000
ESP of Boiler - I (50 MW)	40	2.3	0.80	0.536	2.28	2.91	21.65	140	22	226880
Raw Mill & Kiln Bag House - 2	152	5.2	4.04	2.696	8.47	10.83	135.0	240	18	1415000
Coal Mill Bag House - 2	60	1.6	0.70	0.472	NA	NA	-	120	30	190000
Clinker Cooler ESP - 2	60	4.3	3.43	2.288	NA	NA	-	275	28	128200
Cement Mill - (VRM) Bag House - Unit- II	50	4.0	3.39	2.264	NA	NA	-	120	27	910000
ESP of Boiler - II (50 MW)	40	2.3	0.80	0.536	2.28	2.91	21.65	140	22	226880

4.5.1.4 MODELING PROCEDURE

Prediction of incremental ground level concentrations (GLC's) due to Proposed Limestone Mine has been made by AERMOD version 10.2 as per CPCB guidelines. It is US-EPA approved model for prediction of the air quality. The model uses rural dispersion and regulatory default options as per guidelines on air quality models (PROBES/70/1997-1998). For this study, uniform polar receptors have been assumed. The model is capable for area source, line source and volume source modelling. Meteorological inputs required are hourly wind speed and direction, ambient temperature, stability class and mixing height.

4.5.1.5 METEOROLOGICAL DATA/INPUT PARAMETERS FOR AERMOD

Data recorded at the weather monitoring station are wind speed, direction and temperature at one-hour interval during Pre-Monsoon Season (March to May, 2024) has been used as meteorological input.

4.5.1.6 AMBIENT AIR QUALITY STANDARDS

Ambient air quality standards promulgated by National Ambient Air Quality Standards for different areas are as follows:

Table - 4.11

Ambient Air Quality Standards

Area	Time Weighted Average	Concentration (µg/m³)			
		PM_{10}	$PM_{2.5}$	SO_2	NO_2
Industrial Area, Residential	Annual Average *	60	40	50	40
Rural and Other Areas	24 hours **	100	60	80	80
Ecologically Sensitive Area	Annual Average *	60	40	20	30
(Notified by Central Govt.)	24 hours **	100	60	80	80

4.5.1.7 PRESENTATION OF RESULTS

In the present case, model simulations have been carried out for proposed mining to obtain an optimum description of variations in concentration over the site in 10 km radius covering 16 directions.

Table - 4.12

Cumulative GLC due to for Integrated Cement Plant, captive mines and vehicular transportation

Particular	Concentration (µg/m³)			Approx. Distance in km	CPCB NAAQS Standards (µg/m³)
	Baseline	Incremental	Resultant		
$PM_{2.5}$	28.0	1.95	29.95	Within Mining Lease boundary	60
PM_{10}	50.2	2.93	53.13	Within Mining Lease boundary	100
SO_2	6.8	3.37	10.17	Within the Plant Boundary	80
NO_x	12.3	3.99	16.29	Within the Plant Boundary	80

- Cumulative maximum GLC due to Integrated Cement Plant, captive mines and vehicular transportation for PM10 for is found to be 2.93 µg/m3. {Figure 4.1(a)}.
- Cumulative maximum GLC due to Integrated Cement Plant, captive mines and vehicular transportation for PM2.5 is found to be 1.95 µg/m3 {Figure 4.1(b)}.
- Cumulative maximum GLC due to Integrated Cement Plant, captive mines and vehicular transportation for SO2 is found to be 3.37 µg/m3 {Figure 4.1(c)}.
- Cumulative maximum GLC due to Integrated Cement Plant, captive mines and vehicular transportation for NO_x is found to be 3.99 µg/m³ {Figure 4.1(d)}.

Table 4.13: Peak Incremental GLC due to Proposed Project (including transportation) Under worst condition

S. No.	Particular	Concentration (µg/m³) PM under Worst case
1.	Monitored Maximum concentrations	50.2
2.	Predicted incremental Maximum concentrations under normal Conditions	3325
3.	Resultant Maximum concentrations	3375.2
4.	NAAQS (dated 2009)	80
5.	Distance & Direction	Within Plant Boundary

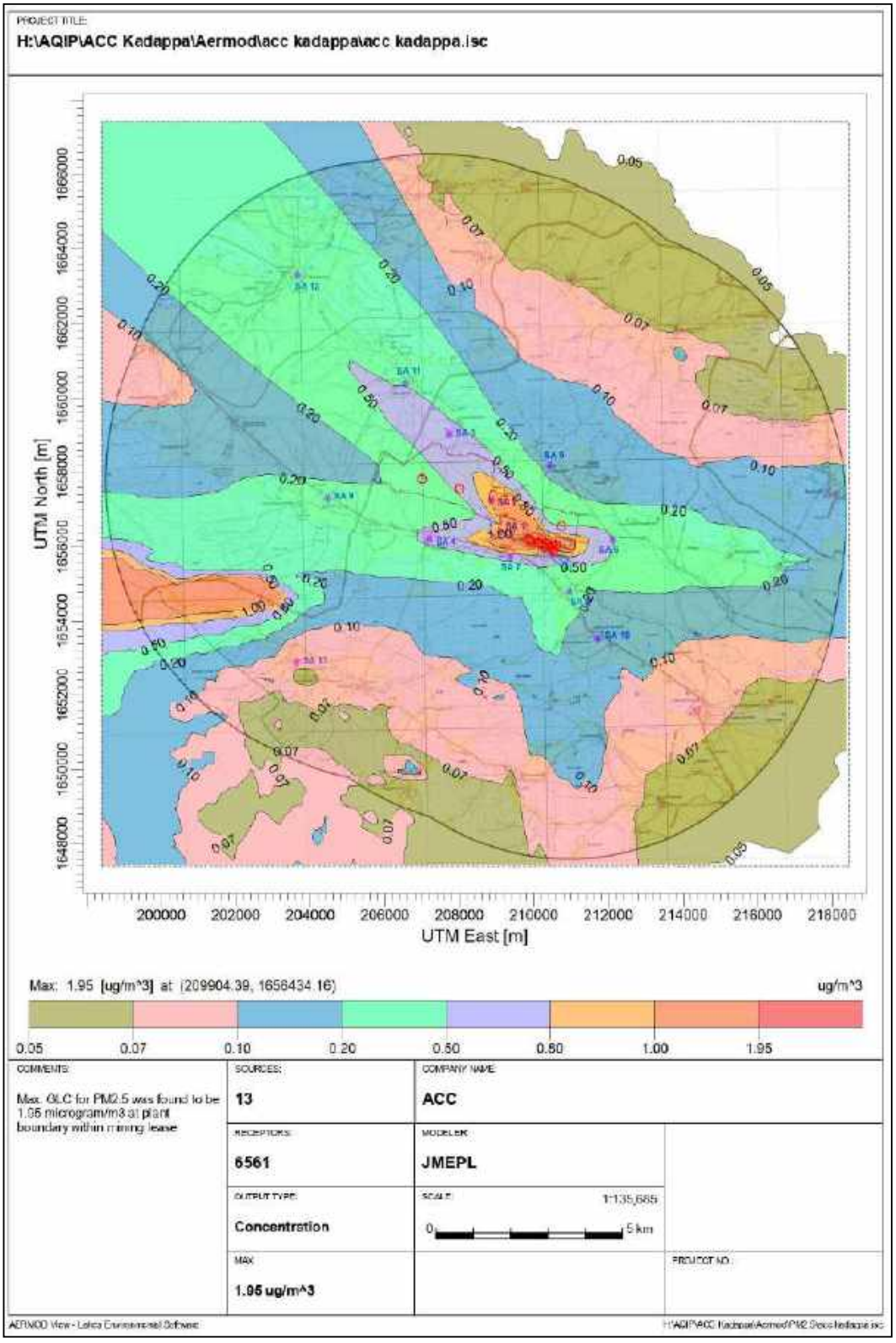


Figure 4.1 (a): Isopleth showing the incremental GLCs of $PM_{2.5}$ due to Integrated Cement Plant, Captive Limestone Mine and Vehicular Transportation

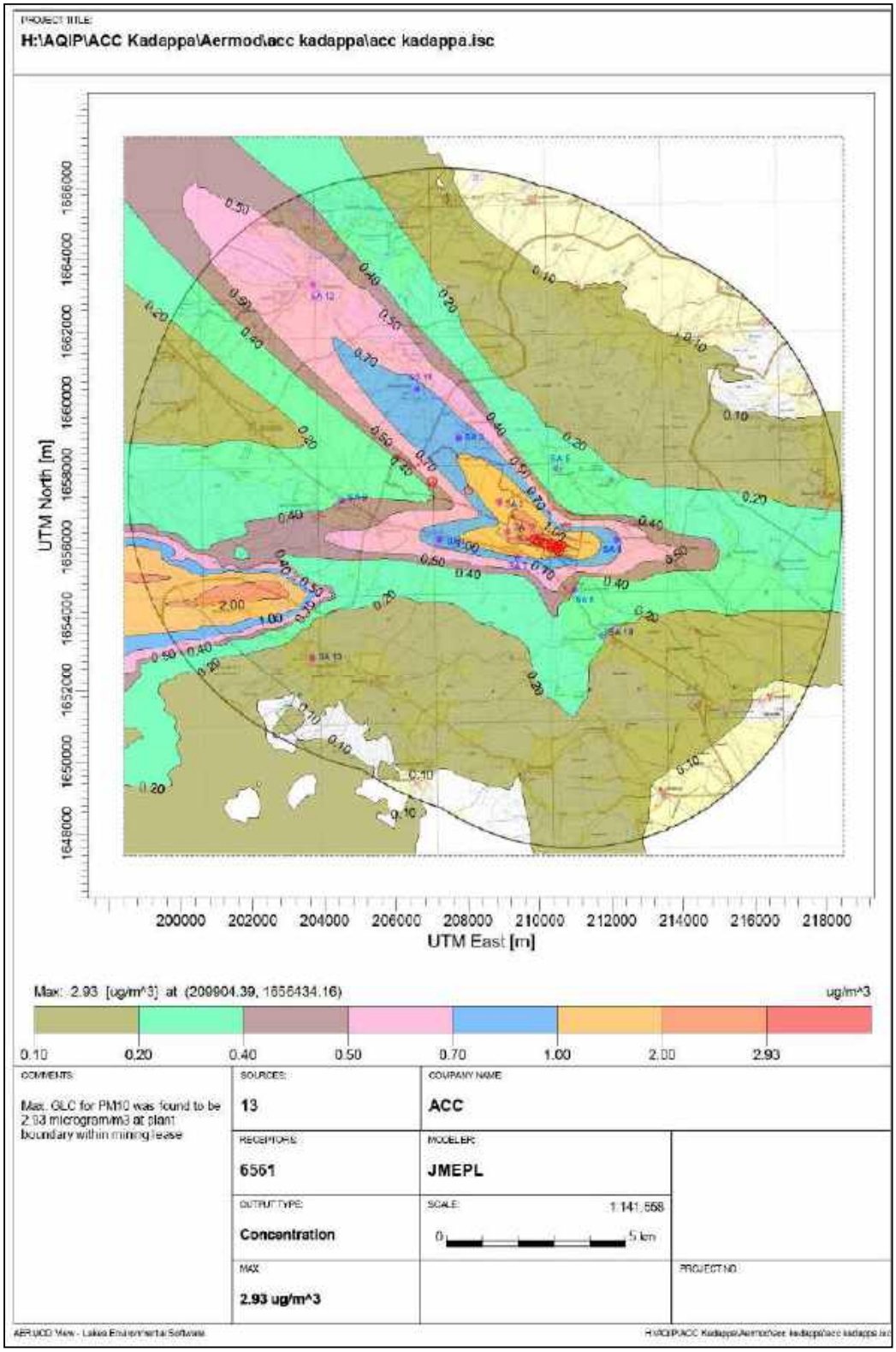


Figure 4.1 (b): Isopleth showing the incremental GLCs of PM_{10} due to Integrated Cement Plant, Captive Limestone Mine and Vehicular Transportation

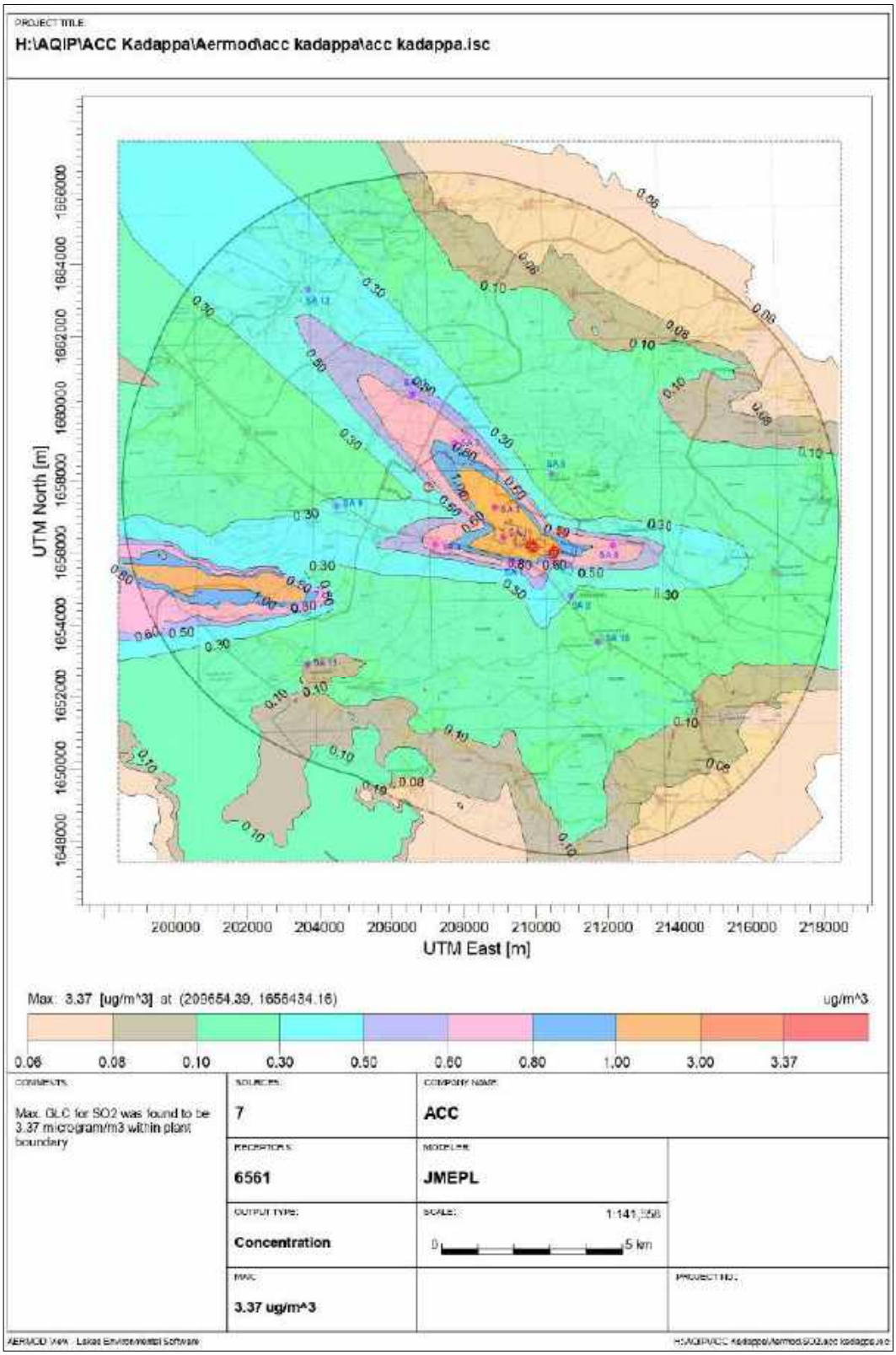


Figure 4.1 (c): Isopleth showing the incremental GLCs of SO_2 due to Integrated Cement Plant, Captive Limestone Mine and Vehicular Transportation

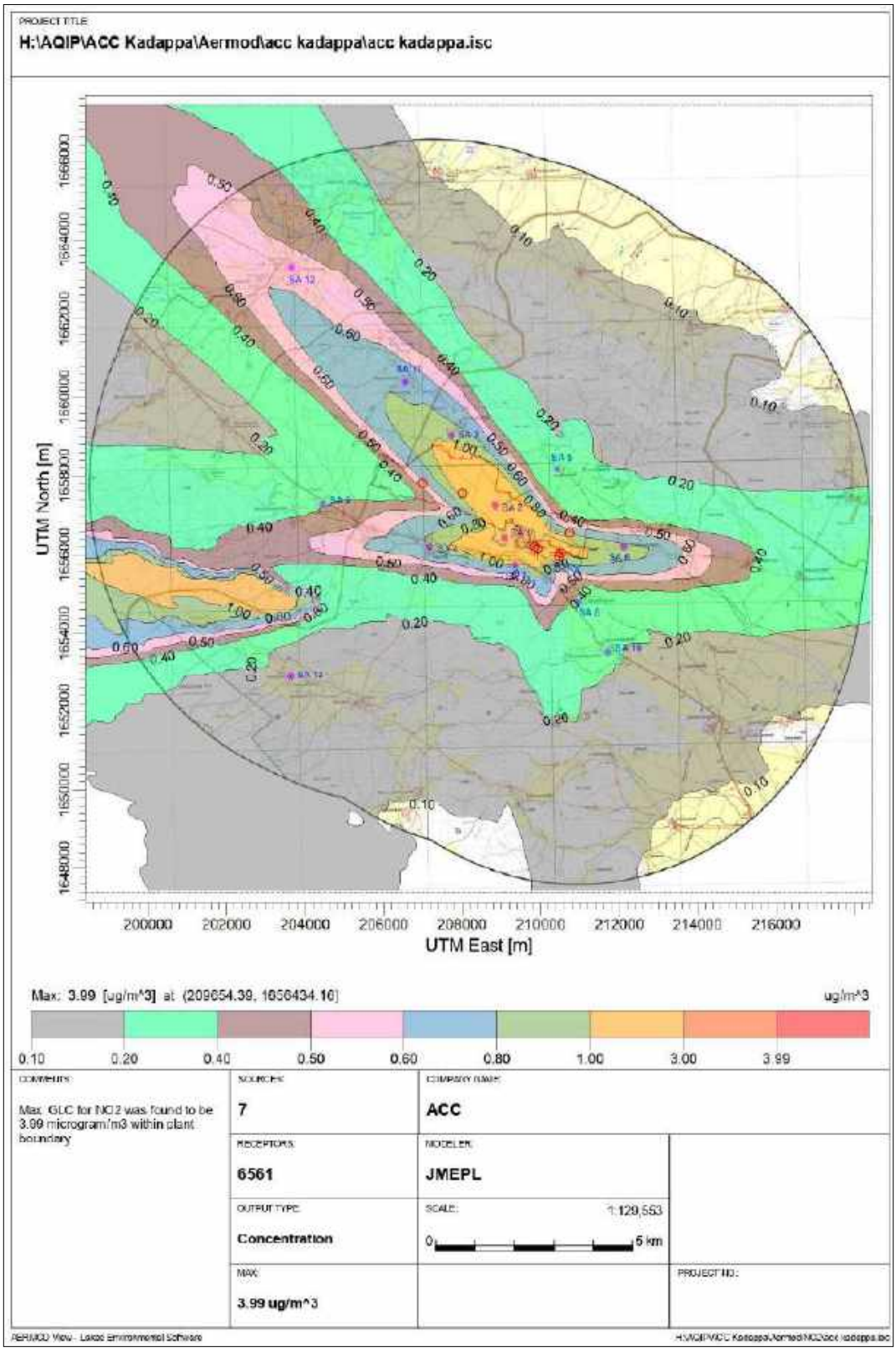


Figure 4.1(d): Isopleth showing the incremental GLCs of NO_x due to Integrated Cement Plant, Captive Limestone Mine and Vehicular Transportation

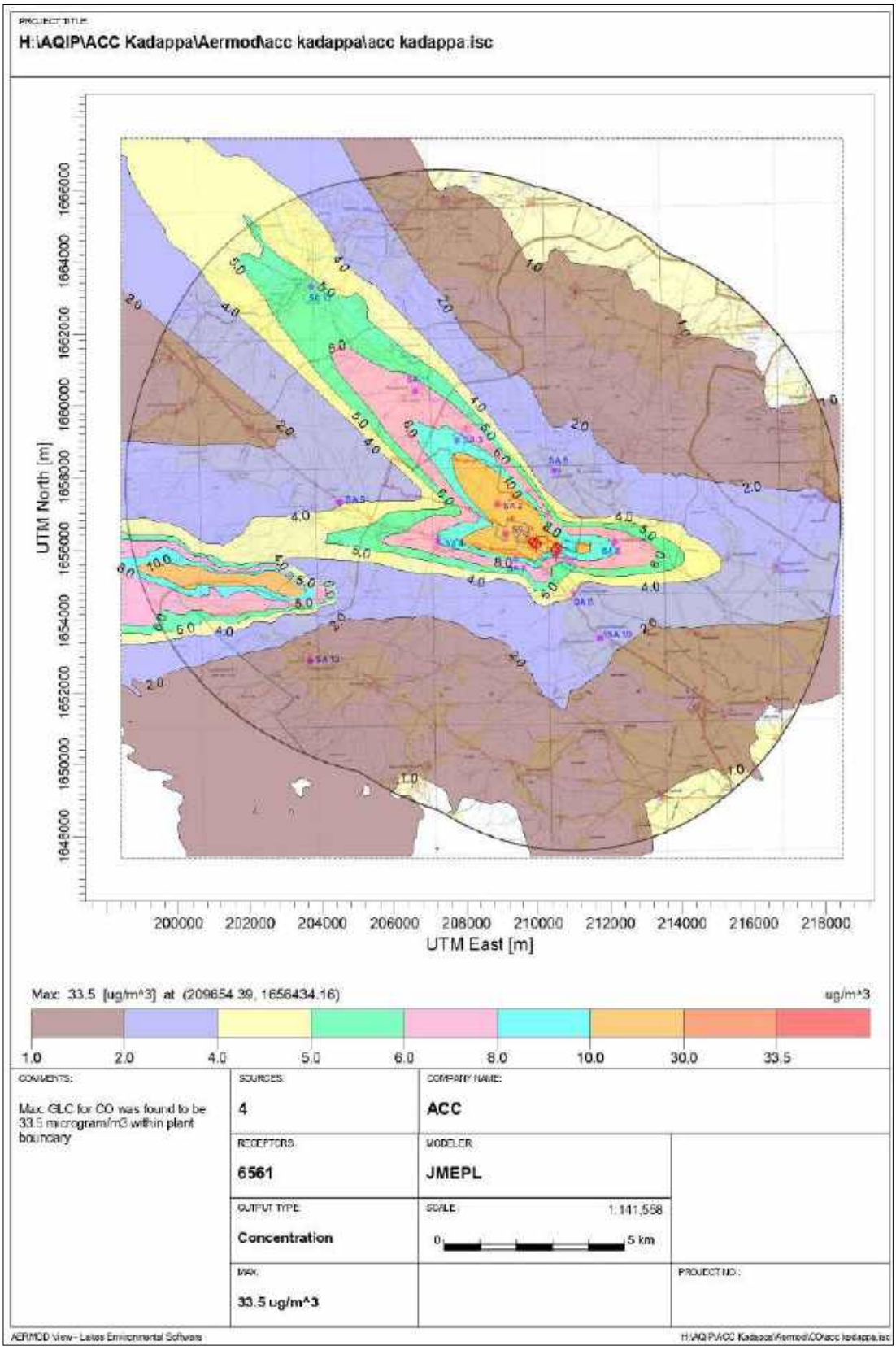


Figure 4.1 (e): Isopleth showing the incremental GLCs of PM in worst case

4.5.1.8 SAFEGUARD/MITIGATION MEASURES

Following mitigation measures will be adopted to mitigate air pollution generated due to the mining activities:

- Drilling machines will be equipped with wet drilling arrangements as well as dust collection system.
- Controlled Blasting will be adopted and optimum use of explosive energy help in reducing the air pollution.
- Rock breaker will be used in place of secondary blasting for breaking over size boulders.
- Regular water sprinkling on haulage/quarry roads, blasted material (Muck Pile) & for loading and unloading to arrest dust from becoming air borne.
- Speed limit will be optimized enforced to reduce airborne fugitive dust from vehicular traffic.
- Regular maintenance (preventive as well as scheduled maintenance), oiling and greasing of HEMMs & vehicles will be done to minimize gaseous pollutants.
- Development of green belt/plantation around lease boundary, roads, safety zone & backfilled area to trap fugitive dust and other places to control the air pollution.
- Personal Protective Equipment's like dust masks will be provided to mine workers.
- The ambient Air Quality Monitoring will be done in the core as well as buffer zone of the ML area.
- Fugitive emission monitoring of HEMMs & transport vehicles will be carried out regularly and corrective actions will be taken.

4.5.1.9 IMPACT EVALUATION

Ambient Air Quality monitoring results are given in Chapter 3 of this EIA/EMP Report. From the results of modelling, it is evident that baseline AAQ results when added in the predicted incremental value, the resultant GLC concentrations were found well within the prescribed norms. Impact evaluation is given in table below.

Table - 4.14

Impact Evaluation for Ambient Air Quality

Impact Evaluation Element	Change of Air Quality due to the proposed mining project.			
Potential Effect/ Concern	Impact on health of humans and nearby biological/ecological receptors due to line and point sources of air emissions including fugitive dust emissions during Limestone mining activities from the proposed project.			
Characteristics of Impacts				
Nature	Positive		***Negative***	Neutral
			√	
Type	***Direct***	Indirect	Cumulative	
	√			
Extent	***Project Area***	***Local***	Zonal	Regional
		√		
Duration	Short – term		Long- term	
			√	

Intensity	Low		***Medium***	High
			√	
Frequency	Remote (R)	Occasional (O)	Periodic (P)	**Continuous (C)**
				√
Significance of Impact				
Significance	Insignificant	Minor	**Moderate**	Major
			√	

4.5.2 IMPACT OF NOISE / VIBRATIONS & MITIGATION MEASURES

4.5.2.1 IMPACT OF NOISE ON WORKING ENVIRONMENT

With the mining operations for mine development, deployment of mining machineries, drilling blasting, excavation, loading and transportation of limestone, it is imperative that noise levels would increase. However, the expected noise levels are not likely to have any adverse effect from the occupational health point of view.

1. Noise Generated due to Drilling, Excavation & Transportation

Various mining activities i.e. drilling, excavation and transportation will increase the noise level in surrounding environment. The drilling operations in the mine will be carried out by hydraulic drills. In addition to the drillers hydraulic shovels are also expected to be in operation. The noise levels in the working environment will be maintained within the standards prescribed by MMR, 1961 (Cir. Tech. 18/1975). Noise levels expected at 1m distance are given below

Table: 4.15

Noise generation due to Drilling

S. No.	Name of Equipment	Noise Level dB(A)
1.	Hydraulic drills	86.0
2.	Shovel	89.0

Generated noise will be in the range of 86.0 to 89.0 dB(A). The noise levels in the working environment are compared with the standards prescribed by Occupational Safety and Health Administration (OSHA) which in-turn are being enforced by Government of India through Model rules framed under the Factories Act. These standards were established with the emphasis on reducing the hearing loss. It should be noted that each shift being of 8 hr duration, equivalent noise level exposure during the shift is 90 dB (A). It is observed for the above table the noise generated due to drilling are within the safety limit of 90 dB (A) for 8 hr exposure.

Table: 4.16

Noise generation due to Excavation, Loading and Transportation

S. No.	Name of Equipment	Noise Level dB(A)
1.	Crusher Located at cement plant (Outside crusher cabin at drive end of LC)	100
2.	Crusher Located at cement plant (Inside cabin, Door Open)	86
3.	Near Drill Machine (when hole collar drilling)	104
4.	Drill Machine- 1 (after 3 m drilling)	103
5.	Near Dumper (at full race)	92
6.	Terex Dumper (at full race)	94

7.	Near haul road while dumpers are plying	88
8.	Dozer (when dozing)	102
9.	Hydraullic shovel	85

2. Recommended Noise Standards

Based on the recent ILO Code of practice the following standards and guidelines are provisionally recommended for attainment. as far as practicable:

A warning limit value of 85 dB(A) may be set as the level below which very little risk to an unprotected ear, of hearing impairment exists for an eight-hour exposure.

The danger limit value shall be 90 dB(A), above which the danger of hearing impairment and deafness may result from an unprotected ear: provided that during emergencies, or because of unforeseen technical reasons, a worker may be temporarily authorized to exceed the daily dose, but only if on the next day he recuperates so that the maximum weekly dose does not exceed the value specified above.

A worker should not be allowed to enter in area where the noise level is 115 dB(A) or more without appropriate ear protection.

Personal protective equipment (PPEs) shall be worn, if there are single isolated outbursts of noise which can go above 130 dB(A) Impulse or 120 dB(A) 'Fast'.

No worker shall be allowed to enter an area where the noise level exceeds 140 dB(A).

The normal range of hearing of a healthy young person extends from approximately 20 Hz to 20 KHz. Human ear is most sensitive to sound between 2 kHz and 5 kHz and less sensitive at higher and lower frequency. In terms of sound pressure level (SPL) audible sound ranges from the threshold of hearing at 0 dB (A) to the threshold of pain which can be over 130 dB(A).

***Source**: MMR, 1961 (Cir. Tech. 18/1975)*

3. Noise Generated due to Blasting

Noise generated from blasting is for a short duration and is instantaneous. Noise of blast is site specific and depends on type, quantity and strength of explosives, dimensions of drill holes and degree of compaction of explosive in the blast holes. The noise levels tend to decrease significantly with distance. The impact of noise will be restricted to mining activity area only, as plantation/ greenbelt will be developed around the mine which restricts the propagation of noise. The blast vibration will be minimized by controlling the charge per delay and utilizing non-electric delay methods. Vibration levels will be monitored and controlled at specific distances. No secondary blasting will occur; instead, a hydraulic rock breaker will be used.

4. Methodology & Interpretation

Noise Dispersion Modelling

The noise generation from the mining activities will be from various sources, which may originate from various locations. For the purpose of noise dispersion, it is assumed that all the noise generating sources from the quarry as one source. Hence, total noise from drilling, excavation, transportation, loading, and crushing will be equal to 99.4 dB (A). The dispersion of this noise is computed by using the model.

Mathematical Model for Sound Wave Propagation During Operation

For an approximate estimation of dispersion of noise in the ambient from the source point, a standard mathematical model for sound wave propagation is used. The sound pressure level generated by noise sources decreases with increasing distance from the source due to wave divergence. An additional decrease in sound pressure level with distance from the source is expected due to atmospheric effect or its interaction with objects in the transmission path. For hemispherical sound wave propagation through homogenous loss free medium, one can estimate noise levels at various locations, due to different sources using model based on first principles, as per the following equation:

$$Lp_2 = Lp_1 - 20 \text{ Log } (r_2 / r_1) \quad \ldots\ldots(1)$$

Where Lp_2 and Lp_1 area Sound Pressure Levels (SPLs) at points located at distances r_2 and r_1 from the source. The combined effect of all the sources then can be determined at various locations by the following equation.

$$Lp_{(Total)} = 10 \text{ Log } (10^{(Lp1/10)} + 10^{(Lp2/10)} + 10^{(Lp3/10)} \ldots\ldots\ldots) \quad \ldots\ldots(2)$$

Where, Lp1, Lp2 and Lp3 are noise pressure levels at a point due to different sources.

Based on the above equations a user-friendly model has been developed. The details of the model are as follows:

- Maximum number of sources is limited to 200;
- Noise levels can be predicted at any distance specified from the source;
- Model is designed to take flat or undulating terrain;
- Coordinates of the sources in meters;
- Maximum and Minimum levels are calculated by the model;
- Output of the model in the form of isopleths; and
- Environmental attenuation factors and machine corrections have not been incorporated in the model but corrections are made for the measured Leq levels.

Input to the model

From the noise sources in the proposed mines, co-ordinates have been defined with respect to the northern part of the mine. For convenience of the contours, 100 m grid scale is chosen. An attempt has been made to predict the noise levels at the boundary of the proposed mining site. Coordinates X and Y are taken as input to the model is correlated with grid size and scale (1:100 m). Thus, the centre of the mining area is defined as 0,0 coordinates. The input to the model has been taken as the cumulative noise of noise generating sources.

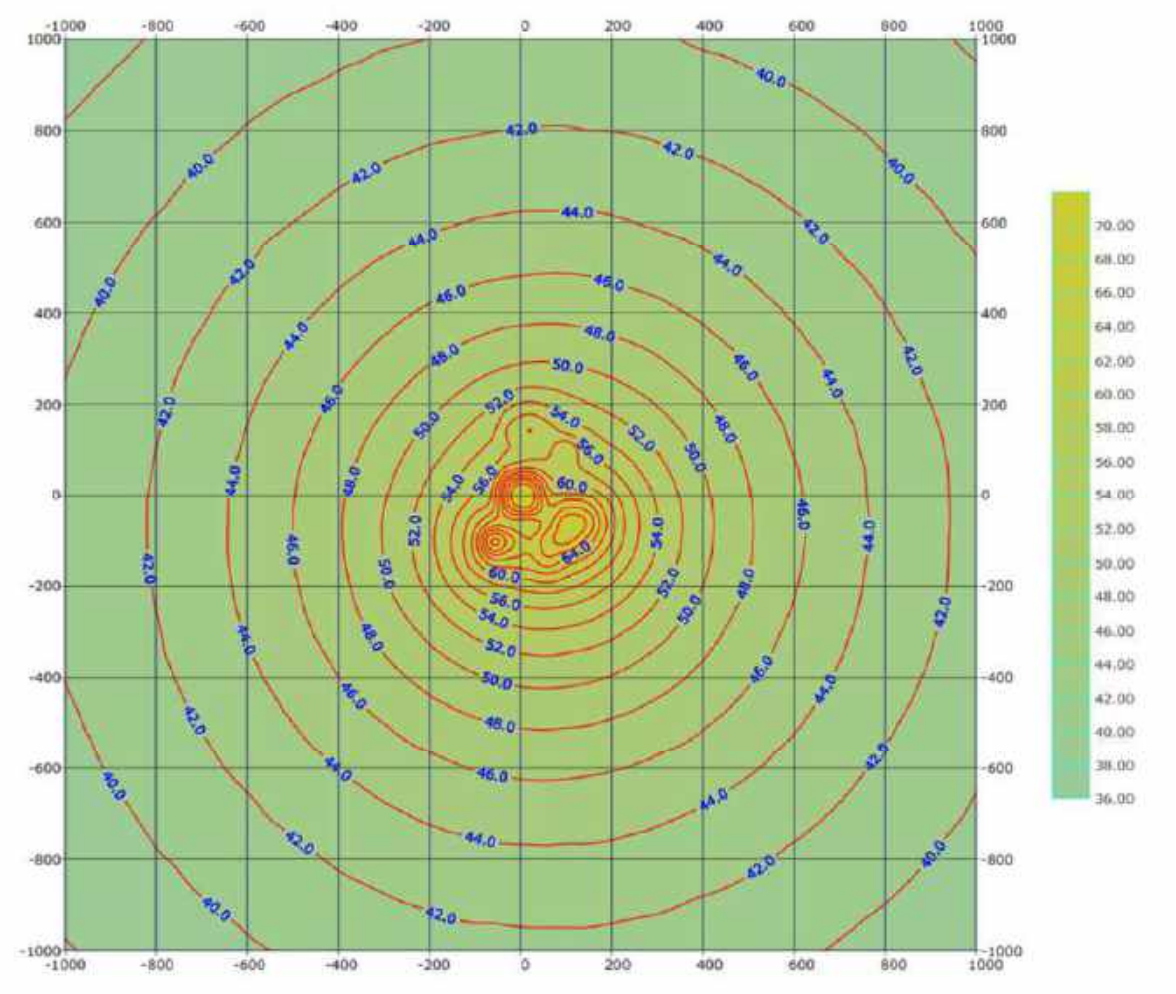


Fig . 4.2 Noise Dispersion trend around the mine

5. Noise Impact Analysis on Community

Baseline noise level in the study area varied from 47.5 to 53.9 Leq dB(A) during day time and from 37.7 to 42.6 Leq dB(A)during night time. The predicted noise levels indicate that there will be no significant increment to the ambient noise levels.

Maximum noise levels during day time as well as night time were observed at 53.9 Leq dB(A) at Village Erragudi. Whereas, the minimum noise level was found at proposed mine site; as there is no major source of noise pollution.

In summary, it can be stated that the impact on the present noise levels due to proposed mining operations will be restricted to the work zone areas only. The impact on the ambient noise levels is not felt at the settlement areas due to masking effect with the existing noise levels. Hence, the noise levels impact due to proposed mining operations on community will be insignificant.

Result/Interpretation

- The model reflects noise levels due to operation of HEMMs viz. drills, hydraulic excavators, dumpers, tippers, water tankers and other medium sized vehicles within mine.

- Blasting has not been considered as it occurs for a very short duration and is temporary in nature. Therefore, the prediction has been carried out based on the operation of above HEMMs.

The highest predicted levels of generated noise will be within the mining lease area and are well within the prescribed standards.

4.5.2.2 MITIGATION MEASURES TO REDUCE AMBIENT NOISE LEVEL

- Drilling with sharp drill bits to achieve optimum drilling performance and to reduce noise generation at source will be adopted.
- Controlled blasting will be carried out to minimize vibration.
- Proper stemming of blast holes will be done.
- The frequency of blasting will be optimized too, by adopting multi-row blasting using NONEL.
- Rock breaker will be used to avoid secondary blasting.
- The ground vibrations will be monitored for each and every blast and induced ground vibration study will be carried out through authenticated agency.
- Proper maintenance, oiling and greasing of machines at regular intervals will be done to reduce generation of noise.
- Personal protective equipment i.e. earplugs/ ear muffs in drilling & in high noise area will be used.
- Explosives charge per hole and per delay will be maintained as per DGMS guidelines.
- Vibrations and noise generated by blasting will be monitored regularly.
- Periodical monitoring of noise will be done.
- Greenbelt will be developed around the periphery of the mine to attenuate noise and massive plantation within the lease area.

4.5.2.3 IMPACT EVALUATION OF NOISE

Ambient Noise Level monitoring results are given in Chapter 3 of this Final EIA/EMP report. From this it is evident that results are well within the prescribed norms. Impact evaluation is given in table below.

Table - 4.17

Impact Evaluation for Noise

Impact Evaluation Element	Change of Noise Level due to the proposed project.			
Potential Effect/ Concern	Impact on health of humans and biological factors/receptors due to noise generated due to mining activities during day and night time and also on occupational health of the workers exposed to noise			
Characteristics of Impacts				
Nature	Positive		***Negative***	Neutral
			√	
Type	***Direct***	Indirect	Cumulative	
	√			
Extent	***Project Area***	*Local*	Zonal	Regional

	√			
Duration	Short – term		Long- term	
	√			
Intensity	Low		***Medium***	High
			√	
Frequency	Remote (R)	Occasional (O)	**Periodic (P)**	Continuous (C)
			√	
Significance of Impact				
Significance	Insignificant	Minor	**Moderate**	Major
			√	

4.5.2.4 IMPACT OF VIBRATION DUE TO BLASTING

Ground vibration, fly rock, noise, dust and fumes are the deleterious effects of blasting operation on environment. The explosive energy sets up a seismic wave in the ground, which can cause significant damage to structures and disturbance to human occupants.

When an explosive charge is fired inside the blast hole, it is converted into hot gases, which exert intense pressure on the blast hole walls. High intensity shock waves propagate radially in all directions and cause the rock particles to oscillate. This oscillation is felt as ground vibration. Blasting, in addition to easing the hard strata, generates ground vibrations and instantaneous noise. Ground vibration from mine blasting is expressed by amplitude, frequency and duration of blast. The variables, which influence ground vibrations, are controllable and non-controllable. The non-controllable variables include general surface terrain, type and depth of overburden. Similarly, the controllable variables include type of explosives, charge per delay, delay interval, direction of blast progression, burden, spacing, specific charge and coupling ratio.

The oscillation of rock particles is called Particle Velocity and its value is called Peak Particle velocity (PPV), which is measured in millimeters per second. The standards for safe limit of PPV are established by Director General of Mines Safety for safe level criteria through Circular No. 7 dated 29/8/1997. The safe level criteria PPV as mentioned in Circular No. 7 of DGMS is presented below:

Table - 4.18

Permissible Peak Particle Velocity (mm/s)

S. No.	Type of Structure	Dominant Excitation Frequency (Hz)		
		< 8 Hz	8 - 25 Hz	> 25 Hz
A)	**Buildings/structures not belonging to the owner**			
1.	Domestic houses/structures (Kachcha brick and cement)	5	10	15
2.	Industrial Buildings (RCC and framed structures)	10	20	25
3.	Objects of historical importance and sensitive structure	2	5	10
B)	**Buildings belonging to the owner with limited life span**			
1.	Domestic houses/structures (Kachcha brick and cement)	10	15	25
2.	Industrial buildings (RCC and framed structures)	15	25	50

Source: *DGMS Circular No. 7 dated 29.8.1997*

Peak particle velocity has inversely proportional relation with distance. As the distance increases the PPV value is likely to decrease. As this is an existing Limestone Mining Project the PPV due to vibration and air over pressure was well within the limit and concluded that there is no danger to any structure due to blasting in the mine.

By adopting controlled blasting, the problems will be greatly minimized at mines. The impacts are also minimized by choosing proper detonating system, optimizing total charge and charge/delay. Noiseless trunk delays to minimize the noise due to air blast, non-electric (NONEL) system of blasting for true bottom hole initiation, muffling mats to arrest the dust and fly rock will be adopted. Hence, the impact due to ground vibration will be significantly reduced. Furthermore, following mitigation measures will be adopted to combat the ground vibrations due to blasting:

(A) Vibration due to Machines

- Proper maintenance, oiling and greasing of machines at regular intervals reduced generation of vibration due to machines.
- Machines will be operated by trained operators.

(B) Ground Vibration due to Blasting

- Ground vibrations will not affect the structures in the vicinity of ML area as controlled blasting will be done within the standards prescribed by DGMS.
- Blasting will be performed strictly as per the Regulation of MMR, 1961.
- Explosives charge per hole and per delay will be maintained as per DGMS guidelines.
- NONEL and bottom hole initiation system with optimal charge per delay will be used to reduce the noise level, vibrations and fly rocks.
- Peak particle velocity or ground vibrations for safety of nearby structures and residential buildings should be well within 12.5 mm/s.
- Detonating fuse, if used, should be covered at least with 150 mm thick cover of sand or drill cuttings.
- Blasting will be carried out only during day time as during the night time the sound intensity becomes higher.
- Blasting should not be carried out when strong winds are blowing towards the inhabited areas.
- Every blast will be monitored to ascertain the impact of blasting on nearby habitation and dwelling units.
- Proper design of blast with correct spacing, burden & optimum charge/delay.
- Supervision of drilling and blasting operations to ensure blast design geometry as per planning.
- Effective stemming of the explosives will be done in the drill holes.

By adopting controlled blasting, the problems will be greatly minimized and the impacts are also will be minimized by choosing proper detonating system, optimizing total charge and charge/delay.

4.5.2.5 IMPACT SIGNIFICANCE OF GROUND VIBRATIONS

Table - 4.19

Impact Evaluation to determine the blast induced Ground Vibrations

Impact Evaluation Element	Blast induced Ground Vibrations due to the proposed project.			
Potential Effect/ Concern	Impact on buildings and other structures and on the workers involved in the blasting process			
Characteristics of Impacts				
Nature	Positive		***Negative***	Neutral
			√	
Type	***Direct***	Indirect	Cumulative	
	√			
Extent	*Project Area*	***Local***	Zonal	Regional
		√		
Duration	Short – term		Long- term	
	√			
Intensity	Low		***Medium***	High
			√	
Frequency	Remote (R)	Occasional (O)	**Periodic (P)**	Continuous (C)
			√	
Significance of Impact				
Significance	Insignificant	**Minor**	Moderate	Major
		√		

4.5.3 IMPACT ON WATER ENVIRONMENT & MITIGATION MEASURES

4.5.3.1 IMPACT ON SURFACE WATER & MITIGATION MEASURES

Core Zone: Two Canals are passing through the lease area. GNSS Canal (Galeru Nagari Sujala Sravanthi Canal) is flowing in west side within the mining lease and SRBC (Srisailam Right Bank Canal) is flowing in east portion witing the lease area. In addition to this, One pond is also present within the mine lease. Pond is located in South west of lease area near to GNSS canal.

Buffer Zone: Seasonal water bodies are present in the study area Viz. Pandula Vagu (~7.8 km in North direction), Kanala Vagu (~8.0 km in North direction), Tigaleru River (~7.6 km in South East direction), Rambhadra Cheruvu (~7.3 km in NNW direction), Erra Vagu (~5.7 in NNE direction), Erra Vanka (~9.2 km in NE direction), Besides these some small water bodies are also exists within 10 km radius study area. These water bodies are distantly located from the mine site; hence no major impacts are anticipated.

Possible Impact

- Surface runoff from the mining will result in increase in suspended solids during heavy precipitation and turbidity may increase.
- Fugitive emission due to mining can degrade the water quality of water body.

Protective Measures

Canal will not be disturbed due to mining activity. 50 m safety zone will be maintained from both the side of canal and plantation will be done within the safety zone. Following protective measures will be adopted to control the surface run-off:

- Retaining wall & garland drains will be constructed around the dumps and at strategic points of quarries. The surface run-off from the OB dumps is guided through sedimentation ponds and garland drains to the surface water course. It will prevent eroded material from reaching the main drainage/water course of the region and provide a dependable surface water source for irrigation purposes.
- Check Dams will be constructed within the mining lease. De-silting of following check dams will be done on regular basis.
- No extraction of surface water and no discharge of mining water is envisaged into nearby water bodies.
- Over bridge will be constructed for transportation from one pit to another
- Mining and transportation activities are not planned towards the water bodies and shall be away from water bodies.
- Periodical clearing of silt accumulation in drains and monitoring of water of garland drains will be done on regular basis.
- Regular monitoring of surface water quality will be carried out.

4.5.3.2 IMPACT ON GROUND WATER & MITIGATION MEASURES

There will be impact on ground water by following ways:

1. **Ground water pollution by toxic substances:** Ground water pollution can take place only if the mining rejects contain toxic substances, which get leached by the precipitation of water and percolate to the ground water table thus polluting it. Any nearby wells or other sources of water can be rendered unfit for drinking and even for industrial use. The mineral limestone and associated rocks do not contain any toxic substance. Therefore, there is no significant impact of mining activities on any source of water and its quality.
2. **Ground water withdrawal:** Total water requirement for this mine will be 60 KLD which will be met by the utilizing water stored in the mine pit water reservoir and form local vendors till the development of mine sump. No ground water or surface water will be used.
3. **Ground water intersection due to mining activity:** The groundwater in the area occurs in unconfined or water table conditions. In general, depth to water table is a dynamic phenomenon which may vary with space and time. Elevation of mining lease area is ranging from 204 m ASML to 226 m ASML. Water table in the area is in range of 25 m to 25.4 m bgl (During pre-monsoon) and 21.5 m to 23.1 m bgl (during post monsoon)**.** Mining will be done in 9 number of pits and deepest working will be in pit no 4 up to 55 m (166 m RL). Water table will be intersected during mining and necessary permission will be obtained from CGWA prior intersection of ground water table. Detailed Hydrogeological Study Report has been prepared and enclosed with this Final EIA/EMP Report as ***Annexure 10.***

Particulars	Details
Site Elevation	204 to 226 m AMSL
General Ground Level	215 m AMSL
Working depth at the end of plan period	193 m RL (22 m bgl)
Working depth during Conceptual Period	166 m RL (55 m bgl)
Ground Water Level of Mine Site	Pre-Monsoon: 25 m to 25.4 m bgl Post Monsoon: 21.5 m to 23.1 m bgl

4.5.3.3 WASTE WATER MANAGEMENT

- 2 KLD domestic Waste water generated from the office toilets will be disposed of in soak pit via septic tank.
- Automatic lubrication system will be provided in the workshop to check spillage of lubricants.
- 8 KLD waste water generated from the work shop will be used for dust suppression after oil and grease separation.
- Periodical monitoring of ground water quality & water level in core and buffer zone will be carried out.

4.5.3.4 WATER CONSERVATION MEASURES

- Retaining wall & garland drains will be constructed around the dumps and at strategic points of quarries. The surface run-off from the OB dumps is guided through sedimentation ponds and garland drains to the surface water course
- Waste water from workshop will be treated using oil–water separator and treated water will be used in plantation watering, spraying on the haulage roads and mineral and waste for dumps suppression & vehicle washing.
- Permanent water sprinklers will be installed along main haul roads.
- Use of wetting agents is recommended to reduce water consumption.
- Rain water harvesting techniques will be implemented for conservation of water. This technique recharges the ground water level of the area.
- At conceptual stage, 390.6 ha area will be converted into water reservoir which will serve as recharge pit. Water Reservoir may also be used as pisciculture, ecotourism purpose etc.
- Construction of fencing and bund along the periphery of the reservoir at conceptual stage.
- Safety sign boards placed on the bunds. Regular monitoring of Ground water level & its quality will be carried out.
- After the fulfillment of its mine requirements remaining water will be used to fulfil water requirement of the Cement Plant.

4.5.3.5 IMPACT EVALUATION

Impact evaluation is given in table below.

Table - 4.20

Impact Evaluation for Water Environment

Impact Evaluation Element	Change in the water environment (quantity as well as quality of Surface and Ground water) due to proposed Limestone Mining Project.		
Potential Effect/ Concern	Increase in water availability in the area due to development of water reservoir and catch drains in the mine area.		
Characteristics of Impacts			
Nature	***Positive***	Negative	Neutral
	√		

4.5.4 IMPACT ON SOIL / LAND USE & MITIGATION MEASURES

Generation and Management of Top Soil

The topsoil to be generated from the proposed limestone mine during plan period will be 54,000 tons. There is a limited fertile top soil (About 6 inches) which will be removed and used for plantation and greenbelt development within the mine lease area. The topsoil will be scrapped and stacked properly in NNE direction within the mining lease area. The stacked top soil will be utilized after 2 years and used for the plantation in the backfilled area.

Impact

No major impact on soil of the study area is envisaged due to mining activities, as mining process neither involves any wet mineral beneficiation process or any chemical mineral beneficiation process. Fugitive dust of mining area will mainly be confined within ML area and will not impact soil of buffer zone. Further, dust in mining area is of neutral nature and does not contain toxic elements which may impact soil. Greenbelt area shall be developed in 7.5 m safety barrier all around the ML and this will help to contain fugitive dust within ML area itself.

By adopting efficient dust suppression measures, the contamination of dust with soil will be avoided. Following measures are/will be taken to reduce the impact of mining on adjacent land with reference to run off, soil erosion and loss of top soil:

Run Off

- Garland drain having siltation pits will be provided at the toe of the dumps, to channelize the runoff water from dumps into the water reservoir.
- To control the surface run-offs, Retaining Wall around waste dump will be constructed.

Soil Erosion

- The increased green cover will substantially prevent soil erosion.
- At conceptual stage, Total 30.0 area will be developed as greenbelt and total 156 ha area covered under plantation on Reclaimed Excavated area (Backfilled) and waste Dump Area.

Soil Conservation Measures

The following control measures to prevent soil erosion and wash-off from freshly excavated benches and dumps will be adopted:

- Garland drains & series of check dams will be made all around the mine and dumps for prevention of land slide/side fall and siltation etc.

- Earthen banks will be provided on the non-operating side of soil dumps to arrest wash off. It is proposed to do mulching and simultaneously planting leguminous plants and grasses, to arrest and prevent erosion and sliding of dump slopes and also to improve the quality.
- The inactive dump slopes are provided with bushes, grass, shrubs and trees to prevent soil erosion after applying top soil.
- Retention wall will be provided at the foot of the soil dumps.
- Fugitive dust of mining area will mainly be confined within mine area and will not impact soil of buffer zone.
- Green belt & plantation will be developed which will substantially help to prevent the soil erosion and will also help in replenishing the carbon pool, flow of nitrogen and exchange of nutrients etc.

4.5.4.1 LAND USE PATTERN

Land use plan of the mining lease area during pre-operational, operational & post-operational is given in table below:

Table - 4.21

Stage Wise Land Use Pattern (in ha)

S. No.	Land Use Category	Pre-operational (Present)	Operational (At the end of 5th year)	Post Operational (At Conceptual Stage)
1.	Total Excavated Area	-	23.23	707.10
	Excavated area (Backfilled with OB)	-	-	146.50
	Excavated area (Backfilled with sub grade)	-	-	170.0
	Water Reservoir	-	-	390.6
2.	Storage of top soil	-	0.58	-
3.	Overburden Dump	-	9.32	9.50
4.	Infrastructure (Workshop, Administrative Building etc.)	-	1.50	1.50
5.	Greenbelt on 7.5 m lease periphery and safety zone of Road	-	30.0	30.0
6.	Undisturbed Area	997.08	932.45	248.98
	Total	997.08	997.08	997.08

Source: *Approved Mining Plan with Progressive Mine Closure Plan.*

4.5.4.2 IDENTIFICATION OF IMPACTS ON LAND USE PATTERN DUE TO THE MINING ACTIVITY

I. IMPACT ON CORE ZONE

This is a proposed limestone mining project. The total mining lease area is 997.08 ha, out of which 987.72 ha is Private land, 9.36 ha is Government waste land which spread in villages namely Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollaapalle, G. Uppalapadu of Mandal: Mylayara, District: Kadapa (YSR), Andhra Pradesh.

1. **Impact and Mitigation measures on Land use:**

- Land use of the lease area will alter due to mining activities such as formation of pits, built up areas of office, workshop, crusher, greenbelt, water reservoir etc.
- As per approved mining plan out of the total Mining Lease area i.e. 997.08 ha, total excavated area will be 707.1 ha, out of which 390.6 ha will be converted into water reservoir and 146.5 ha will be backfilled area and 170.0 Ha area will be used for storage of sub grade. 9.5 ha area will be under waste dump outside excavated area. The other infrastructure like Workshop, Admin Building & Road exists in 2.90 ha area. The remaining 247.58 ha area will be left undisturbed at the end of life of mine.
- The active mining area and the waste dump areas will be biologically reclaimed to protect soil erosion at the abandoning stage of mine Care will be taken to disturb minimum vegetation. Adequate compensatory afforestation in lieu of forest land will be done.

2. **Impact and Mitigation measures on surface site feature:**

A. Habitation: No any habitation is present within the mining lease area. So, no impacts are anticipated.

B. Water Body: Two canal is present within the lesase lease. GNSS canal is present in west portion of lease with total length of 1.80 km and another SRBC canal is present in East portion of lease Safety zone of 50 m safety zone will be left in both side of canal. Same is also discussed in para no. 4.5.3.1.

C. Roads and Cart tracks:

- One paved road and some cart tracks are passing through the mining lease area. Road and cart tracks are present within the mining lease area will not be disturbed at any stage of mining.
- 45 m of safety barrier will be left in both side of the Roads which will be covered by plantation.
- Lighting arrangement along the roads will be done to enhance safety for vehicle operators and pedestrians.
- Blasting will be done during the day time and road will be closed before the blasting. Clear and timely notifications to all personnel working in the area prior to blasting activities will be provide.
- Audible and visual warning signals, such as sirens or flashing lights, will be implemented to alert personnel of impending blasts.
- Blast monitoring system will be implemented to monitor the ground vibration.
- Security Guards will be posted on the crossing area during transportation hours to avoid any accidents.
- Fencing & Safety sign boards will be placed.

D. Impact on Electric line and Mitigations Measures

- One High Tension Line passing through the lease area. 50 m safety barriers will be left in both sides of HT line and same will not be disturbed at any stage of mining.

- Regular inspections will be done of High-tension lines before, during, and after mining activities to assess their condition and ensure continued safety and integrity.
- Comprehensive training will be provided to all personnel involved in mining operations regarding the location of electric lines, potential hazards, and safety protocols to prevent accidents or incidents involving the lines.
- An emergency response plan will be developed and implemented. Risk management plan is also prepared and enclosed in this EIA Report.

II. IMPACT ON BUFFER ZONE

Mining activity will be confined to the mineralized zone and proper pollution control measures will be adopted to restrict the pollution load within the active zone in order to prevent any negative impact on nearby areas. Measures will be taken to control the pollutants within active mine area. Land use of study area may be impacted by way of Water Bodies, agriculture land, habitation and forests etc, which are described below:

A. IMPACT ON WATER BODIES

Water bodies of the study area may be impacted due to increase in suspended solids due to soil run-off during heavy precipitation due to loosen soil. Water quality like turbidity may be change due to direct run off. Impact and mitigation measures on water bodies has been addressed in detail in Para No 4.5.3.1.

B. IMPACT ON AGRICULTURE LAND AND MITIGATION MEASURES

Mining lease is surrounded by agriculture land in all the direction. Seasonal Cash Crop like groundnut, Pulses etc. are grown in that area. To reduce the impact of mining on nearby agriculture fields, following mitigation measures will be taken:

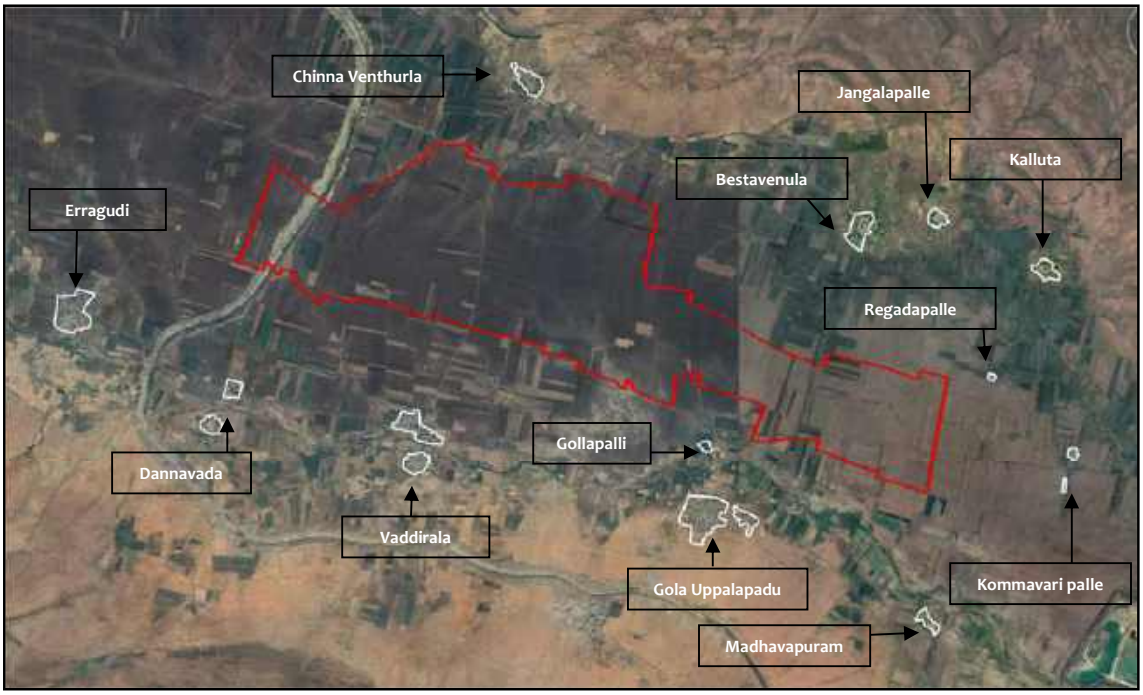
- Mining activity will be confined to the mineralized zone and pollution control measures will be adopted to restrict the pollution load within the active zone in order to prevent any negative impact on nearby areas.
- In order to reduce dust pollution in the surrounding, 156.0 ha Backfilled and OB dump area will be covered with plantation along with the periphery of the mining lease area and safety zone on road (30 ha) and the rest of the pit will convert into a water reservoir i.e., 390.60 ha
- Fugitive dust emissions from all sources shall be controlled regularly, Water spraying on haul roads, loading, unloading and transfer points shall be provided and maintained.
- Rainwater harvesting practices will be encouraged which will lead to ground water recharge and ultimately increased productivity in the study area.
- One tanker mounted of 20 KL capacity will be established for water sprinkling for roads & for mining activities.
- Surplus water may be supplied to farmers for increasing agriculture practice
- Transportation will be done by dumpers via haul roads within the mine lease area to Crusher.

- Awareness for new methodologies of agricultural practices viz. mixed farming, crop rotation and agricultural cropping pattern suitable for the study area also will be carried out under to increase the agricultural productivity of the study area.
- Ambient Air Quality Monitoring, Fugitive dust emission monitoring and Personal Dust Monitoring will be done.

C. IMPACT ON HABITATION LAND AND MITIGATION MEASURES

Total Mining lease area is 997.08 ha which falls in villages Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollaapalle, G. Uppalapadu of Mandal: Mylayara, District: Kadapa (YSR), Andhra Pradesh. There are many small villages are present around the mining lease area. Distance of nearest habitation w.r.t mining lease area is given in below mentioned table and Google Earth Image of same is also attached below:

S. No.	Village Name	Distance and direction from mining lease	Distance form UPL
1.	Gollapalli	~0.42 km in SE Direction	~0.7 km South Direction
2.	Regadapalle	~0.44 km in ESE Direction	~0.5 km ESE Direction
3.	Gola Uppalapadu	~0.75 km in SSE Direction	~1.1 km in SSE Direction
4.	Vaddirala	~0.85 km in SW Direction	~0.99 km in SW Direction
5.	Chinna Venthurla	~0.85 km in NNW Direction	~0.99 km in NNW Direction
6.	Bestavenula	~1.15 km in ENE Direction	~1.2 km in NW Direction
7.	Dannavada	~1.2 km in WSW Direction	~1.27 km in SW Direction
8.	Madhavapuram	1.24 km in SE Direction	1.27 km in SSE Direction
9.	Kommavari palle	1.43 km in ESE Direction	1.45 km in East Direction
10.	Kalluta	1.47 km in East Direction	1.48 km in NE Direction
11.	Erragudi	1.58 km in West Direction	~2.2 km in WSW Direction
12.	Jangalapalle	1.60 km in ENE Direction	1.67 km in North Direction



In addition to this, there are three schools, nearby to the mine. Details are given below:

S. No	Particulars	Details (With Approx. distance)		
1.	Name of school	MPPS Lakshmipalli	MPPS G Uppalapadu	Mpps Jangam Colony Vaddirala
2.	Distance & direction from Mine Boundary	~0.35 km in North Direction	~1.20 km in SSE Direction	~ 1.26 km in WSW Direction
3.	Distance & direction from UPL	~0.38 km in North Direction	~1.25 km in SSE Direction	~ 1.74 km in SW Direction
4.	Category of school	Primary	Primary	Primary
5.	Type of School	Co-Educational	Co-Educational	Co-Educational
6.	Medium	Telugu	English	English
7.	Building status	Government	Government	Government
8.	No of Class room	2	2	1
9.	Playground	Yes	Yes	Yes
10.	Toilet	Yes	Yes	Yes
11.	Drinking water	Yes	Yes	Yes
12.	Solar Panel	No	No	No
13.	Electrictiy	Yes	Yes	Yes
14.	Internet	Yes	Yes	Yes
16.	No. of Staff	2	1	2

Protection Plan for Nearby Habitation & school

- As per the micro-meteorological data, pre-dominant wind direction was observed from South East which mean wind is blowing from South East to North West. Nearest Habitation from mining lease is Gollapalli which located at 0.42 km in SE direction. hence, same will not be impacted whereas Habitation of Village Chinna Venthurla falls in NNW direction which will be ~1.0 km from ultimate pit limit.
- Mining will be carried out as per the provisions outlined in mining plan approved by Indian Bureau of Mines (IBM) as well as by abiding to the guidelines of Director General Mines Safety (DGMS) and Conditions mentioned in DGMS guidelines will be followed strictly.
- Controlled blasting will be adopted and optimum use of explosive energy will be made by optimizing explosive charge per hole and per delay. NONEL and bottom hole initiation system will be used to control ground vibrations, noise & fly rocks.
- All precautions while approaching within 300 meters from the place of blasting will be taken to ensure no flying fragments are thrown near habitation.
- The drilling, charging, stemming and blasting operations will be carried out under direct personal supervision of Manager/Asst. Manager. He maintains records of blasting parameters for every blast. Only blasting foreman who is fully trained in controlled blasting will be deputed for blasting operations.
- Main haulage road in the mine will be provided with permanent water sprinklers and other roads shall be regularly wetted with water tankers fitted with sprinklers.

- All measures will be adopted to control fugitive dust emission during mining operation and to ensure no impact on nearby habitats.
- Ambient Air Quality will be maintained within the prescribed standards by adopting the mitigation measures as described in section 4.5.3.7 of this Chapter.
- Ambient Air Quality & Noise Level will be monitored regularly in nearest villages.

Mitigative measures for the nearby habitation in compliance of Ministry's O.M. No. Z-11013/57/2014- IA. II (M) dated 29.10.2014:

- Best Mining Practices will be adopted for the given mining conditions.
- Check dams, retaining walls /structures. Garland drains and settling ponds will be provided in the mining area to arrest the wash-off with rain water in catchment area.
- The natural water bodies and /or streams which are flowing in and around the village have not been disturbed.
- A provision for regular monitoring of water table in open dug wells located in village and by establishing Piezometer has been incorporated to ascertain the impact of mining over ground water table and to plan mitigative measures.
- Biological clock of the villagers will not be disturbed by orienting the flood lights/ masks away from the village and keeping the noise levels within the prescribed limits for day and night hours so that it does not affect the health in villages located close to mining operations. Regular health surveillance will be undertaken.
- For conducting blasting for mining operations, proper vibration studies will be carried out well before approaching such habitats or other buildings to evaluate the zone of influence and impact of blasting on the neighbourhood. Within 500 m of such sites vulnerable to blasting vibrations, avoidance of use of explosives and adoptions of alternative means for mineral extraction will be practiced wherever practicable. Blasting will be done within the permissible distance from habitation as permitted by DGMS.
- Provision of monitoring of each blast will be made so that the impact of blasting on nearby habitation and dwelling units could be ascertained.
- Main haulage road in the mine will be provided with permanent water sprinklers and other roads will be regularly wetted with water tankers fitted with sprinklers.
- It will be ensured that the productivity of agricultural crops is not affected due to mining operations.
- No road movement will be undertaken in existing village road network without appropriately increasing the carrying capacity of such roads.
- Alteration or re-routing of foot paths, cart roads and village infrastructure / public utilities or roads is not required therefore, no impact is envisaged on the same.
- Socio economic development of the neighbourhood habitats will be planned based on the need-based survey and will be executed as per the recommendation of the plan.
- R&R plan/ Compensation details for the Project Affected Families (PAFs) will be prepared keeping in view relevant State/ National Rehabilitation & Resettlement policy. In respect of SC/ST and other weaker sections of the society in the study area, a need-based sample survey, family-wise has also been undertaken to assess their requirement and action programme prepared and documented in the R&R report.

4.5.4.3 IMPACT SIGNIFICANCE

Table - 4.22

Impact Evaluation to determine the Significance

(Land use – During Operation Phase)

Impact Evaluation Element	Change in the land use due to mine development & operation			
Potential Effect/ Concern	Change in the land use of part of core zone from forest land/agriculture land/waste land to mining activities due to Limestone mine development & operational activities			
Characteristics of Impacts				
Nature	**Positive***		Negative	Neutral
	√			
Type	***Direct***	Indirect	Cumulative	
	√			
Extent	***Project Area***	***Local***	Zonal	Regional
		√		
Duration	Short – term		Long- term	
			√	
Intensity	Low		***Medium***	High
			√	
Frequency	Remote (R)	Occasional (O)	Periodic (P)	Continuous (C)
				√
Significance of Impact				
Significance	Insignificant	Minor	**Moderate**	Major
			√	

**Change in land use due to the mining activity at the conceptual stage will be positive as the land use of the mine area will be converted from agricultural and waste land to water reservoir, plantation area, public use area etc.*

4.5.5 SOCIO – ECONOMIC ENVIRONMENT

The study examines the demographic, social, and economic impact of the proposed mining project in the study area. Notably, the project is located far from any human settlements, with all villages situated at a considerable distance from the mining area. The potential impact on socio-economic environment due to this mining project is given in following heads.

4.5.5.1 POSITIVE IMPACTS

Employment

Direct and indirect employment opportunities will be generated during mining operation and other allied activities. Employment to be generated by M/s. ACC Limited will provide a safe working environment for workers. Preference for employment will be given to the locals as per their requirement & eligibility. This will help in improving the financial resources and business opportunities of the surrounding population. The manpower required for the proposed project is 62. Beside this, there is a huge potential for indirect employment opportunities such as drivers, repair shops etc. which can be availed by local people. The proposed mines will help to improving

the financial resources of the surrounding population by way of petty trade, micro enterprises, transport companies and employment opportunities in auxiliary units. The project is expected to encourage the setting up of various utility services and petty trade benefiting people around the mining area. Direct employment opportunities will also be generated in project, besides indirect and ancillary employment opportunities. Local people will be given preference for employment under semi-skilled and un-skilled categories. Thus, the people in and around the mine area are indirectly will be benefited both socially and economically. The proposed mining activities will provide employment to persons of different skills and trades. The local population is the largest group among these employees. The employment potential ameliorates economic conditions of these families directly and provide employment to many other families indirectly who are involved in business and service-oriented activities. This in-turn will improve the socio-economic conditions of the area.

Community Skills Development

The local community will be benefited from the training programmes that will be instituted by ACC Limited to enable the community labour force to work for their livelihood/self-growth. This training will improve their skill sets that will not only benefit ACC Limited but also the community at large during and after the project life.

Improved Standard of Living

Employment opportunities created by the project and skill development activities carried out under CSR, will increase income of local community and therefore improve the overall standard of living in the area. Presently, livelihood depends on agriculture, forest produce & industry in the nearby area. After the implementation of this mine, employment opportunities will be generated which will further helps in improving the economic status & living standard of people.

Economic Exposure and Development

Implementation of the project will make opportunities for sustainable livelihood, better infrastructure facilities and services available to the people. This will expose and introduce the local population to factors of economic development including the banking system, financial services and credit and investment schemes. The exposure will enable community members to invest their income and prevent dependency or living a life with a view of "tomorrow will take care of itself".

Impact on Civic Amenities

The impact of the proposed limestone project on the civic amenities will be positive. With improved transportation facilities, educational facilities and other recreational facilities etc. there will be improvement in civic amenities. Due to the commissioning of proposed limestone mining project will provide social benefits to the surrounding population in the form of development of roads, communication facilities, transportation, marketing, banking, postal services and health facilities directly or indirectly. The civic amenities expected to be developed due to proposed mining project.

Population Growth

Preference will be given to suitable local people in employment. Hence the project does not aim to contribute significantly in the population influx & only marginal population influx is designated for the proposed project. However, persons from distant places may be accommodated nearby Mine is negligible. The proposed mining operations may have an impact on the population growth as it

would provide considerable employment to the families in the nearby villages. About 50% employees from outside may take up jobs in the proposed mines and with immigration of their families, an increase in the population is anticipated.

Education Aspects

The literacy rate of the project area is expected to be improve due to expected changes in socio-economic development area. The development of this project is expected to improve the education facility in the study area. Presently the literacy rate of project study area is 52.15% which very low comparing to national and state literacy rate.

4.5.5.2 ADVERSE SOCIAL IMPACT

Health Impacts

The project of this nature may trigger health impacts through increased dust population influx which might introduces new diseases in the area and put pressure on sanitation facilities.

Noise and Vibration

The process of mining will entail drilling, blasting, excavation and transportation. These activities generate noise and vibration. The impact of noise and vibration from the epicentre of these activities could have effects on the population living around these areas. The excessive vibration could lead to damages of the structures and therefore safe mining operation including controlled blasting is necessary for such projects to minimize adverse impact.

Livelihood Change

The project will attract the more able-bodied persons i.e. comparatively skilled persons from the community which in turn will lead to reduced labour availability in other sectors of the economy including agricultural, labour-intensive jobs etc.

Population Growth

This project will not have any substantial impact on the population growth. The proposed project will generate employment opportunities for the people of nearby villages rendering positive impact on the area on the whole. However, mitigation measures for the project will prevent any negative impact on health of villagers, population growth and livelihood change.

4.5.5.3 MITIGATION MEASURES

Mitigation of Health Impacts

As mentioned in 4.5.1, the predicted incremental GLCs for various air pollutants will be restricted within the mine area and the impacts will be negligible on the nearby villages after implementation of all mitigation measures. Awareness programmes on health hazards will be conducted to create awareness amongst the employees as well as the local population. It is also planned to focus on infrastructure improvement of the existing PHCs and SHCs of the nearby area. The health issues can be monitored and addressed in this manner. The health issues will be monitored and addressed. Development of greenbelt/plantation will also act as bio-filters.

Health Care Facilities

Proper health care facilities will be provided to the employees of the limestone mine along with their families. The medical facilities in form of primary medical camps will also be extended to local people in the nearby areas under socio-economic development/CSR activities.

Managing Loss of Livelihood and Income

To cushion the local population against impacts of mine closure, adequate advance intimation will be given to employees and contractors to allow them to source alternative opportunities.

4.5.6 PUBLIC HEALTH IMPLICATION

The most common diseases in the region are Viral fever, common cold and cough, stomach disorder etc. which are prevalent amongst the villagers. None of these can be related to the project and allied activities of the project. However, Proper Preventive/control measures will be taken by the company to reduce the impact of mining activities on public health and to improve the public health of the area so that adequate treatment can be given.

The following are some of the significant points for consideration under public health:

- As per the micro-meteorological data, pre-dominant wind direction was observed from South East which mean wind is blowing from South East to North Waste. Nearest Habitation from mining lease is Gollapalli which located at 0.42 km in SE direction. hence, same will not be impacted whereas Habitation of Village Chinna Venthurla falls in NNW direction which will be ~1.0 km from ultimate pit limit
- To control the same impact of mining all adequate protection measures will be adopted with advanced techniques; like exploring the possibility to use the electrical equipment's, use of controlled blasting practices, development of greenbelt/plantation, water sprinkling on haul road so that same not be impacted.
- Peak particle velocity monitoring will be done in mine site and for nearest habitations
- Regular Ambient air quality monitoring, noise monitoring & water quality analysis will be carried out.
- Employees when inducted will be medically examined. Further, they also be medically examined at periodical interval.
- Efforts will be made to improve the hygiene, sanitation, education and infrastructure of the nearby villagers under CSR activities.
- Proper Sanitation facilities will be provided to the mine workers organizing camps such as family planning camp, free medical checkup camp, eye camp, pulse polio camp etc.
- Organizing vaccination programs such as Hepatitis-B vaccination, typhoid vaccination, MMR vaccination.
- Construction of toilets in Schools, Public Place etc.
- Company is regular doing work under health and sanitation and also same will be continue in future also.

4.5.6.1 IMPACT EVALUATION

Impact significance is given in Table below:

Table - 4.23

Impact Evaluation to determine the Significance

(Socio economic Environment)

Impact Evaluation Element	Impact on socio economics due to the proposed mining project.			
Potential Effect/ Concern	loss of land, Improvements in socio economic conditions of the settlement falling within mine and nearby villages			
Characteristics of Impacts				
Nature	Positive		***Negative***	Neutral
	√			
Type	***Direct***	Indirect	Cumulative	
	√	√		
Extent	***Project Area***	*Local*	Zonal	Regional
		√	√	√
Duration	Short – term		Long- term	
			√	
Intensity	Low		***Medium***	High
			√	
Frequency	Remote (R)	Occasional (O)	Periodic (P)	Continuous (C)
				√
Significance of Impact				
Significance	Insignificant	Minor	**Moderate**	Major
				√

4.5.7 IMPACT ON LOCAL TRANSPORT INFRASTRUCTURE

Total Limestone Handling in the mine will be 35905 TPD. A Crusher is proposed within the proposed cement plant premises. Capacity of the crusher will be of 1500 TPH and the feeding size of the crusher will be 1500 mm. Blasted limestone will be from mine face to crusher (proposed in cement plant) by dumper of 50 to 60 Tones capacity via haul roads. After crushing, limestone will be transported from crusher to cement plant. Limestone will be transported to its interlinked Cement Plant via covered belt conveyor.

No public road will be used for transportation of limestone from mine to the cement plant. Therefore, there will not have any adverse impact on transport infrastructure in the region. Beside this, for smooth operation and transport of cement unit, existing haul roads and other infra-structure will be strengthened which will have overall positive impact.

4.5.7.1 MEASURES FOR TRANSPORTATION

Necessary mitigation measures will be adopted. The same are given as under:

- Limestone transportation to the crusher via dumpers through mine haul roads without any use of the public roads.
- Regular water sprinkling on mine haul roads during transportation and also at transfer points.
- Vehicles with PUC Certificate will be used.

- Overloading will be avoided both in mine and for cement evacuation.
- Un- necessary blowing of horn will be avoided.
- The speed of heavy duty vehicles will be kept low on the adjacent village road and also near to the densely populated areas
- Proper maintenance, oiling and greasing of vehicles will be done.
- Greenbelt and Plantation along ML boundary, roads, dump and infra-structure facilities.

4.5.7.2 IMPACT EVALUATION

Table - 4.24

Impact Evaluation for Transportation Infrastructure

Impact Evaluation Element	No change in traffic density due to transportation of mineral as transportation will be done by covered conveyor belt from crusher to the cement Plant			
Potential Effect/ Concern	There is/will be no load on traffic density as transportation of mineral from crusher to the Cement Plant via covered conveyor belt			
Characteristics of Impacts				
Nature	Positive		***Negative***	Neutral
				√
Type	***Direct***	Indirect	Cumulative	
			√	
Extent	*Project Area*	*Local*	**Zonal**	Regional
	√	√	√	√
Duration	**Short – term**		Long- term	
	√			
Intensity	Low		***Medium***	High
	√			
Frequency	Remote (R)	Occasional (O)	Periodic (P)	Continuous (C)
				√
Significance of Impact				
Significance	Insignificant	Minor	**Moderate**	Major
	√			

4.5.8 IMPACT ON BIOLOGICAL ENVIRONMENT

Habitat loss, degradation and fragmentation are important causes of extinctions of species-population. The main cause of degradation and depletion of forests and wildlife are the human activity (anthropogenic pressure). Population explosion, over exploitation of forest resources, urbanization, unscientific management, encroachment of forest land, illicit felling, lack of regeneration of forests and outdated laws are major factors responsible for the degradation and depletion of forests.

4.5.8.1 IMPACT ON FLORA AND FAUNA

The Mining Lease area does not cover any Forest land. No National Park, Wild Life Sanctuary, Biosphere Reserves, Wildlife corridors, Tiger/Elephant Reserves, etc exist within 10 km radius study

area. There is only one reserved forest i.e., Dhodhiyan Reserve Forest (~8.0 km in SW direction) fall within 10 Km radius study area.

However, detailed biological study of the study area has been conducted, and as per the Wildlife (Protection) Amendment Act, 2022 total 16 schedule – I species viz. Four horned Antelope, Asiatic Wild Dog, Bonnet Macaque, Sambar, Sloth Bear, Indian Grey Mongoose, Small Indian Civet, Masked Palm Civet, Golden Jackel, Bengal Monitor Lizard, Indian Star Tortoise, Indian rat snake, Checkered Keeback, Grey Junglefowl, Shikra, Indian Peafowl Indian Species were found in the study area of the proposed project sites. Conservation plan for schedule I species has been prepared and approved from Principal Chief Conservator of Forests (WL) & Chief Wildlife Warden, A.P. over an amount of Rs. 10.67 Crore for 10 years vide letter No 21034/3/2024/WL-2 dated 16.01.2025.

4.5.8.2 QUANTIFICATION OF IMPACT ON BIOLOGICAL ENVIRONMENT VS MITIGATION MATRIX

Table - 4.25

Quantification of Impact on Biological Environment v/s Mitigation Matrix

S. No.	Parameters	Impact	Mitigation
1.	**Direct Impact**	• Loss of woodlands, low-lying grasslands/fallow fields and agricultural lands; • Damage to various habitats including fishponds and marshes; • Fragmentation of habitats. • Landscape connectivity disruption due to site fencing prevents movement of larger & middle-sized mammals • Dust deposition on vegetation; noise and other disturbance to birds and other wild animals.	• No loss of habitat, as proposed mining project site does not locate in any designated forest land. • No habitat was observed in study area. • The 10 km radius study area (buffer area) has 1 RFs which is ~8.0 km away from the Mine lease area. • However, the buffer area is populated. But, during mining operation, there is a likelihood of increase in dust and noise levels, which will be controlled by water spraying and/or development of thick green belt around the mine boundary for effective green barrier.
2.	**Indirect Impact**	• Occurs as a result of the activity, i.e., all the potential impacts that do not manifest immediately with the activity or which occur at a different place as a result of the activity, • Example: Invasion of alien weed species.	• Native plants species as per CPCB guidelines, and as per Bio-geographic zones of India will be selected in greenbelt and plantation programme. • No exotic species will be used. • Fugitive emission, noise generation will be minimized at maximum level for the control of

		• Vegetation damage due to industrial pollutants may have secondary effects on associated fauna like insects & birds.	adverse impact on insects & birds, which is better pollinators in our Ecosystem. No effluent waste water will be generated and released during mining activity.
3.	**Cumulative Impact**	Result from the incremental impact of the activity when added to the impacts of other activities • It may occur from the collective impacts of individual minor activities over a period of time and may include both direct & indirect impacts. Example: Impact of SO_2, NO_X & Ozone (secondary pollutant) will be generated from Diesel operated Vehicle HEMM's like excavator, dumper, loader & other vehicles in combination on agricultural productivity / vegetation near Mine site.	• No cumulative impact may be generated due to limestone deposit. But, after implementation of project, we will control the fugitive emission at dust prone area at maximum level by water sprinkling, greenbelt on 7.5 m periphery and gaseous emission from transportation activity will be controlled by regular maintenance of HEMM with silencers, PUC certificates etc., so that pollutant cannot disperse on nearby agricultural field/ nearby vegetation.
4.	**Mine Development**	Activities like project location, site clearance, excavation, site formation; dredging, dumping / transportation of habitats with spoil, construction of riprap protected embankments, trampling, etc. • Permanent Loss of Habitat: Fragmentation: Habitats isolated in patches due to project location. • Increased Fragmentation: Habitats isolated in patches due to project location. • Habitat damage: Habitats damaged due to loss and disturbance of plant communities and listed plant species & invasion of alien species. • Industrial Pollutants: Dust, Particulate Matter (PM_{10} & PM_2) & gases generated during construction may affect human	• No loss of wildlife habitat, as no forest area is falling in core zone. • No habitat will be fragmented from the mining project activity. • No loss of plant communities and no planting of exotic species, only indigenous plants species will be planted. • Properly maintained construction equipment and vehicles having Pollution Under Control (PUC) certificate will be deployed during the project to restrict the exhaust emission. Fugitive dust emissions will be prevented by water sprinkling on roads and mining site. • In addition to the above, dust emissions will also be generated from mining activity of

		beings, plants, animals & habitats nearby. • Disturbance to Wildlife: Noise / blasting operations during construction and disturbance by construction workers may impact sensitive animal species. The severity of disturbance depends on: • Intensity, duration & frequency, • distance from the source; • the sensitivity of affected species; and • Availability of alternative habitats nearby. Soil Erosion: Soil disturbance & loss of vegetation cover, through surface runoff & wind, causing siltation of drainage channels & loss of wetland habitats/low-lying grass/fallow lands. Silt deposition in water bodies & associated wetlands leading to increased turbidity (reduced light penetration) & eutrophication leading to loss of Aquatic / wetland macrophytes. Oxygen depletion & impoverishment of fish and other aquatic animals.	construction materials (aggregates and sand). To prevent this, over burden and topsoil, excavated area will be aligned properly with stabilized slopes. • Limestone is very hard and can be broken only drilling & blasting, however, Controlled blasting will be carried out. Also, no secondary blasting will be taken and in case of boulder generation, rock breaker will be used. • Garland drain, check dams will be provided for control of soil erosion. • Greenbelt will be developed around the mine boundary for effective green barrier. • No water body parameter will be disturbed due to mining activity as no water body is falling in core zone.
5.	**Operation & Maintenance Stage Impact**	The level of impact varies on the habitats & species present and the type of project / activity. Such as invasion of exotic species, disturbance to wildlife & reduction of its movement, reduction of genetic diversity and population viability, alteration of ecological flow paths. • Induced by chemical alterations (contamination of air, soil and water) and physical alterations	• Greenbelt will be developed all along boundary to reduce dust and noise pollution. • No exotic species will be planted. • No waste water will be discharged outside the mine site. ZLD concept will be used. • Proper source level abatement will be done for Air pollution (Particulate & gaseous).

		(changes in the water flow, light, temperature, etc.). • Larger Ecological Barrier – Road transport corridors. De-silting river vis-a-vis increase in drainage may change the water regime of river side marshes, permanent marshes may change in to seasonal marshes with reduced area and decreased wetland biota.	• No ecological barrier for wildlife movement will be created due to separate road. • No drainage will be disturbed for water regime.
During operation phase of Limestone, therefore, Magnitude of Impact will be at local level of low intensity as proper mitigation measures will be taken care of.			

4.5.8.3 GREEN BELT DEVELOPMENT

With rapid industrialization and consequent deleterious impact of pollutants on environment, values of environmental protection offered by trees are becoming clear. Trees are very suitable for detecting, recognizing and monitoring air pollution effects. Monitoring of biological effects of air pollutant by the use of plants as indicators has been applied on local, regional and national scale. Trees function as sinks of air pollutants, besides their bio-esthetical values, owing to its large surface area. Annual need of oxygen for one person is met by 150 m^2 of leaf surface i.e. 30-40 m^2 of greenery. So, it is necessary to develop green belt in and around the polluted site with suitable species to combat the air pollution effectively. The plantation development not only functions as foreground and background landscape features resulting in harmonizing and amalgamating the physical structures of the mines with surrounding environment, but also acts as pollution sink as indicated above. Thus, implementation of afforestation program is of paramount importance. In addition to augmenting present vegetation, it will also check soil erosion, make the ecosystem more complex and functionally, stable and make the climate more conducive.

Plantation Programme

- Total area under greenbelt (7.5 m lease periphery) is estimated as 16.50 ha and remaining 13.50 ha will be under safety zone of road and canal which will also be completed within 5 years.
- Total area under plantation to be covered till life of mine is 156 ha (9.5 ha on outside waste dump area + 146.5 ha on backfilled area).
- Local and fruit bearing species will be planted after consultation with local forest officer and as per CPCB Guideline.
- Density of plantation would be 2500 trees / ha.

Table: 4.26

Plantation Schedule

Year	Green belt on 7.5 m lease periphery		Safety zone of road and canal		OB Dump		Backfilled Area		Total	
	Area (ha)	Trees	Area (ha)	Trees	Area (ha)	Trees	Area (ha)	Trees	Area (ha)	Trees
1st	3.47	8675	-	-	-	-	-	-	3.47	8675
2nd	3.26	8150	3.00	7500	-	-	-	-	6.26	15650
3rd	3.48	8700	3.50	8750	2.00	5000	-	-	8.98	22450
4th	3.09	7725	3.50	8750	2.64	6600	-	-	9.23	23075
5th	3.20	8000	3.50	8750	2.05	5125	-	-	8.75	21875
6th Year onwards	-	-	-	-	2.81	7025	146.50	366250	149.31	373275
Total	**16.50**	**41250**	**13.50**	**33750**	**7.50**	**23750**	**146.50**	**366250**	**186**	**464000**

The suggested species for future plantation are given in below mentioned table:

Sr. No.	Tree Species	Utility	Other Remarks
1	*Tectona grandis*	Fuel, timber	DS
2	*Albizzia sp.*	Fodder, fuel	DR, HGR
3	*Delonix regia*	Fuel	DS, HGR
4	*Azadirachta indicate*	Fodder, timber	DS, DR
5	*Peltoforrum ferrusinum*	Fuel, timber	DR, HGR
6	*Bauhinia variegate*	Fodder, fuel	DR, HGR
7	*Dalbergia sisoo*	Fuel, timber	Dr, HGR
8	*Cassia fistula*	Fuel, timber	DS, HGR
9	*Pongamia pinnata*	Timber, fuel	HGR
10	*Achras sapota*	Fodder, Timber	HGR
11	*Sapindus emerginatus*	Fodder	HGR
12	*Ficus religiosa*	Fodder	DS
13	*Eugenia jmbolina*	Timber	HGR
14	*Leuceana leucocephala*	Fodder, fuel	HGR
15	*Tamarindus indica*	Timber	DR
16	*Zizyphus sp.*	Fodder, fuel	DS, DR, HGR

Note: DS: Direct Seeding Possible, DR: Drought Resistant, HGR: High Growth Rate

4.5.8.4 GENERAL GUIDELINES FOR GREENBELT DEVELOPMENT

Vegetation covers in and around the mine workings generally helps in:

- Control of dust.
- Reducing noise.
- Stabilizing erodible slopes to minimize pollution.
- Ground Water Recharge.

- Enhancement of aesthetic value.

I. Native plant species will be planted in consultation with DFO.
II. Trees growing up to 5 m or more in height with large canopy cover & leaf area will be planted around the installation.
III. Plantation of trees will be done along in safety barriers and mine lease.
IV. Since tree trunks are normally devoid of foliage (up to 3m), it is appropriate to have shrubbery in form of such trees to give coverage to trunk portion of these trees.
V. Fast growing trees with thick perennial foliage will be grown, as it takes many years for trees to grow to their full height.
VI. In order to facilitate the proper growth of vegetation, limited measures involving preparation of seedbed with suitable number of fertilizers and treatment with mulches will be taken. The topsoil has been used for green belt development / plantation.

The following characteristics have been taken into consideration while selecting plant species for green belt development and tree plantation.

I. Local, indigenous and drought resistant species.
II. Fast growing and tall trees.
III. Perennial and evergreen.
IV. Thick canopy cover.
V. Stratified layers of Plantation to prevent lateral pollution dispersion.
VI. The trees will be selected so as to maintain regional ecological balance and conform to soil and hydrological conditions.
VII. Plantation will be done as per guidelines.

4.5.8.5 IMPACT EVALUATION

Table - 4.27

Impact Evaluation for Biological Resources

Impact Evaluation Element	Change in the biological resources of the area due to mine development & operation and generation of emissions.			
Potential Effect/ Concern	Loss of habitat, Impact on health of biological receptors due to area and line sources of air emissions including fugitive dust emissions during mine development & operation activities.			
Characteristics of Impacts				
Nature	Positive		***Negative***	Neutral
			√	
Type	***Direct***	Indirect	Cumulative	
		√		
Extent	*Project Area*	*Local*	Zonal	Regional
	√			
Duration	Short – term		**Long- term**	
			√	
Intensity	**Low**		*Medium*	High
	√			

Frequency	Remote (R)	Occasional (O)	Periodic (P)	**Continuous (C)**
				√
Significance of Impact				
Significance	**Insignificant**	Minor	Moderate	Major
	√			

4.5.9 AWARENESS CAMPAIGN & TRAINING PROGRAMMES

Table - 4.28

ACTIVITIES /AWARENESS CAMPAIGN FOR ENVIRONMENTAL ISSUES

Environment & Pollution Control	
S. No.	**Awareness topic**
1.	General awareness about Air Pollution, Water Pollution, Noise pollution, land pollution etc. and their impact of environment
2.	General awareness about environment & its importance for human being and other creatures
3.	Environmental laws and regulations
4.	Conservation of Natural Resources
5.	Water conservation & Water harvesting
6.	Plantation and its importance
7.	GHG emission its impacts on the environment & life on earth
8.	Land degradation and how to prevent it
9.	Efficient waste management & its utilization

Table - 4.29

PRACTICAL TRAINING BEING/TO BE IMPARTED TO ENVIRONMENTAL ENGINEERS

S. No.	**Training Topics**
1.	Air Pollution Control & monitoring equipment
2.	Water sampling
3.	Noise level measurement
4.	Greenbelt development
5.	Waste management
6.	Legal & other requirements applicable for Limestone mine
7.	Compliance evaluation and monitoring
8.	Statutory compliance and reporting

Table - 4.30

PRACTICAL TRAINING BEING/TO BE IMPARTED TO MINING ENGINEERS & GEOLOGISTS

S. No.	**Training Topics**
1.	Knowledge of environment, Forest and mining laws
2.	Safe & environment friendly mining operations
3.	Mine planning & Sustainable Mining practices
4.	Maintenance planning for mining equipment

5.	Mineral & Energy conservation
6.	Efficient utilization of natural resources
7.	Identification and management of Environmental impacts of various mining activities
8.	Waste dump management
9.	Soil management
10.	Greenbelt Development - selection of species, area to be developed, ensuring maximum survival rate etc.
11.	Impact of various types of pollutants on human health and effective management of pollution
12.	Occupational Health Surveillance
13.	Logistics / lead distance optimization
14.	Chemistry of various minerals present in mines
15.	Star ratings of mines
16.	Skill development for Effective communication with stakeholders
17.	Increasing productivity without affective environment, health and safety

4.5.10 OCCUPATIONAL HEALTH & SAFETY HAZARD

Occupational health and safety (OHS) is a multidisciplinary field concerned with the safety, health and welfare of people at work. The goal of occupational safety and health programs includes fostering a safe and healthy work environment. OHS may also protect co-workers, family members, employers, customers, and many others who might be affected by the workplace environment.

Occupational Health & Safety is based on the following three aspects:

- Hazard identification
- Risk assessment
- Determination of applicable controls

A Hazard Identification and Risk (HIRA) analysis is a systematic way to identify and analyze hazards to determine their scope, impact and the vulnerability of the built environment to such hazards and its purpose is to ensure that there is a formal process for hazard identification, risk assessment and control to effectively manage hazards that may occur within the workplaces.

The following are some OH &S initiatives at ACC:

- OH&S brochures, signages, posters and mailers used extensively
- Monthly Safety Gate Meetings held at all plants.
- Safety Audit and Housekeeping Audits carried out annually
- Safety Professionals meets twice a year to discuss and share knowledge Safety Statistics and implementation of safety measures at each unit.
- Safety Observation Tours (SOT) conducted weekly by all line managers
- Safety committee meeting is conducted monthly chaired by Director Plant.

4.5.10.1 OCCUPATIONAL HEALTH HAZARD AT MINE SITE

Excessive dust, noise and vibration are the chief health hazards for the miners besides physical hazards as detailed below:

A. Exposure to Dust

Exposure to fine particulates is associated with work in most of the dust-generating stages notably from mineral handling and transportation. Workers with long term exposure to fine particulate dust are at risk of pneumoconiosis, emphysema, bronchitis, and fibrosis.

B. Noise and Vibration Exposure

HEMM operation and transportation will be the main sources of noise and vibrations. Control of noise emissions includes the use of silencers, noise barriers, and personal hearing protection (ear plugs/muffs).

C. Physical Hazards

Injuries during project operation are typically related to slips and falls; contact with falling / moving objects; and lifting / over-exertion. Other injuries may occur due to contact with, or capture in, moving machinery (e.g. dump trucks, belt conveyors, front loaders) etc. Other hazard includes effect of mechanization on fatigue of machinery operators.

4.5.10.2 IMPLEMENTATION OF OCCUPATIONAL HEALTH & SAFETY MEASURES

Occupational Health and Safety measures result in improving the conditions under which workers are employed it improves not only their physical efficiency but also provides protection to their life. ACC Limited will be adopting the following safety measures:

- The company has proposed a well- equipped dispensary to provide medical facilities to its workers.
- IME and PME will be carried out at regular intervals.
- Continuous monitoring for compliance of SOPs.
- Pit Safety Committee will be formed and recommendations given by committee will be implemented.
- Suitable measures for publicity and propaganda for safety and occupational health will be implemented like posters, safety films, etc.
- Awareness for safety & occupational health will be implemented like posters, safety films, etc.
- Drug and alcohol awareness program and counseling.
- Stress management and counseling.
- Safety clauses in contract order.
- To depute dedicated safety team.
- Pre-employment Medical check-up for fitness as per standards in Form P-1 of Mines Rules 1955.
- Periodical medical examination as per Mines Rule 1955 and standards laid down in Form P.
- The persons working in dusty environment will be examined every year as per the DGMS circular No. 01 of 21.01.2010.
- All employees will undergo medical examination as per the recommendation of 10th National conference of safety in mines.
- Besides that, to avoid any adverse effect on the health of workers due to various pollutants, sufficient measures relating to safety and health will also be practiced.
- Provision of rest shelters for mine workers with amenities like drinking water etc.
- Training of employees for use of safety appliances and first aid in vocational training center.
- Removal of unsafe conditions and prevention of unsafe acts.

- Detailed analysis of each and every incident.
- Periodic inspection by internal and external safety experts.
- Celebrations of various safety events for awareness.
- An effective and clearly audible means of giving warning, in case of fire, to every person will be provided at the site. A free passage–way giving access to each means of escape in case of fire will be maintained for the use of all workers.
- Regular maintenance and testing of all equipment as per manufacturers guidelines.
- Close surveillance of the factors in working environment and work practices which may affect environment and worker's health.
- Working of mine will be done as per approved mining plan and environmental plans.
- Operator cabins in all items of major HEMM equipment will be enclosed.
- Dust emission control system such as water sprinkling, green belt development
- All safety measures will be taken which includes the use of safety appliances such as:
  - ✓ Mask for protection from dust (DGMS approved design, dust free disposable facial mask as per IS: 9473)
  - ✓ Industrial Safety helmets
  - ✓ Crash helmets
  - ✓ Face shield with replacement acrylic vision
  - ✓ Zero power goggles with cut type filters on both sides and blue color glasses
  - ✓ Welders' equipment for eye and face protection
  - ✓ Ear muffs
  - ✓ Self-contained breathing apparatus
  - ✓ Leather apron
  - ✓ Safety belt / line man's safety belt
  - ✓ Leather hand gloves
  - ✓ Canvas cum leather hand gloves with leather palm
  - ✓ Industrial safety shoes with steel toe
  - ✓ Electrical safety shoes without steel toe and gum boots
  - ✓ Protective clothing etc.
- Availability of Medical facilities and First Aid Room equipped with first aid boxes.
- Conduction of internal audits and evaluation of legal compliance.

In order to ensure adequate implementation of the OHS measures suggested, ACC limited will adhere to the pre & periodical medical examination program. Details of the same are given as under.

4.5.10.3 PRE-PLACEMENT & PERIODICAL MEDICAL EXAMINATION SCHEDULE

Ideally, the pre-employment medical examination (also referred to as a pre-placement examination) strives to place and maintain employees in an occupational environment adapted to their physiological and psychological capacities. The goal of the pre-employment examination is to determine whether an individual is fit to perform his or her job without risk to himself or others. This is also conceptualized within the practice of occupational medicine – it is assumed that the examiner is required to have detailed knowledge of both working and health conditions.

Parameters to be monitored

New employees when taken are thoroughly medically examined under initial medical examination and thereafter during continuation of employment; the periodic medical examination will be done suggested by DGMS. The medical examination includes the following parameters -

- Height, weight, body mass index (BMI)
- Stress and fatigue due to excessive exposure to heat
- Skin problems (allergic contact dermatitis, chrome ulcer, lead poisoning, hyperpigmentation, warts, moles, et
- Cardiovascular examination (heart check, blood pressure, pulse)
- Psychosocial hazards (behavioural changes, aggression, hostility, depression, alcoholism, drug addiction, absenteeism, hypertension, peptic ulcer, diabetes, diabetes, heart disorders, etc
- Full musculoskeletal examination including comprehensive range of movement
- Examination for hernia and other abdominal abnormalities
- Urine examination for diabetes or kidney / bladder disorders
- Respiratory examination
- Vision assessment including color blindness
- Medical fitness to work in mines
- Medical examination of drivers
- Drug and alcohol testing instant or Laboratory
- Spirometry - (Lung Function Test)
- Audiometry (Hearing Test)
- Urine testing
- Vision tests, color vision
- ECG
- CXR (Chest Radiograph)
- Complete Blood Count
- Strength and mobility screening
- Regular Awareness campaign amongst stuff/ working about AIDS/ Dengue/Malaria

ACC Limited will create hospital and dispensary within the lease area having modern diagnostic, pathological and treatment. Mobile medical facilities and ambulance will be available in hospital. Besides this, medical check-up camps will be organized in the villages.

The medical records of the employees will be maintained. Under initial vocational training, the workers will be given training related to all safety and health aspects pertaining to their vocation and thereafter, special training courses/ awareness programme for Malaria eradication, STDs and health effects on exposure to mineral dust will be organized regularly for employed persons as well as for nearby villagers. Refresher training will also be arranged as per statutes

Table – 4.31
Schedule of Occupational Health & Survey

S. No.	Activity relating to Occupational Health & Survey as per ILO / DGMS guidelines	Frequency (as applicable)	Implementing Agency
1.	➢ Framing of Mine specific Health & safety Policy as per Mines Act and Rules. ➢ Awareness regarding policy with strict enforcement. ➢ Inclusion of Policy's details in Tender documents ➢ Periodic Review of Policy	Awareness – Once in 3 months Review – Once in a year	Top Management, Mine's Manager and Procurement Cell
2.	➢ Adoption of ILO/ ISO 45001 based Health & Safety management system and proper formulation and implementation of the same in totality. ➢ Allocation of necessary resources for implementation of the control measures identified by the risk assessment process.	Risk assessment – quarterly Review of risks and resource allocation - once in a year	Initial gap analysis and implementation by an external expert agency and subsequent routine system maintenance by In-house team
3.	Necessary training of all employees of Mines shall be organized with the help of experts for optimal adoption of health & safety management system.	Once in a year	External expert agencies and in-house team
4.	Suitable clauses shall be included in tender document stating how the risk arising to men and material from the mining operations to be done by the contractors.	-	Mine's Manager & Procurement Cell
5.	It will be ensured that contractors are familiar with the relevant parts of the statutes, health and safety management system and are provided with such information prior to commencing work.	Regular activity	Mine's Manager & Procurement Cell
6.	All persons deployed in mine must undergo vocational training	Once in 3 years	Internal/ External faculties
7.	Biometric system of check-in & check-out system of attendance associated with suitable software shall be introduced in the mine for time management.	-	Mine's manager & HR Deptt
8.	The persons working in dusty environment will be examined for Pneumoconiosis/ Silicosis as per the DGMS circular No. 01 of 21.01.2010.	every year	Qualified Medical Officer trained in Occupational Health
9.	Implementation of project specific comprehensive Hearing Conservation Program covering the aspects of monitoring, testing, evaluation and protection of noise.	-	External /Internal medical experts
10.	Medical Examination of employees/ workmen - All regular employees working in the mine will undergo medical examination as per the recommendation of 10th National conference of safety in mines.		

a)	Pre-employment medical examination with a view to place and maintain employees in an occupational environment adapted to their physiological and psychological capacities so to perform his or her job without risk to himself or others.	Prior to joining	Qualified Medical Officer trained in Occupational Health
b)	Medical examination of employees engaged in driving/ HEMM operation jobs shall be tested for eye refraction test	at least once in a year	
c)	Employees exposed to ionizing radiation shall be tested for blood count.	at least once in a year	
d)	Routine stool test for persons engaged in handling of food and stemming preparation with sputum for AFB (Acid Fast Bacilli)	Once in six months	
e)	➢ New employees when taken are thoroughly medically examined under initial medical examination and thereafter during continuation of employment. ➢ The periodic medical examination will be done as per guidelines of DGMS ➢ The medical records of the employees will be maintained. ➢ Under initial vocational training, the workers will be given training related to all safety and health aspects pertaining to their vocation.	Periodical Medical examination: Age of workers < 45 years: After every 5 years Age of workers > 45 years: After every 3 years	Qualified Medical Officers trained in Occupational Health
11.	Necessary facilities for monitoring the environmental parameters in respect of dust (Particulate Matter) and Gaseous emissions shall be provided at mines and regular monitoring shall be carried out at specified intervals	Twice in a week at 3 locations	Environment Manager / 3rd party approved agencies
12.	Noise mapping of various workplaces in the mine premises based on the various machines being used in concerned mines along with personal noise dosimetry of individual workmen exposed to noise level above 85 dB(A). {Regulation 182 of MMR, 1961 under the Mines Act, 1952.}	Noise dosimetry – once in six months	Through National Institute of Miners' Health (NIMH)
13.	Monitoring and measurement of workplace noise levels	Once in a day	In-house
14.	Vibration studies of various mining machineries before their introduction in mining operation as per ISO 2631:1997 (Part 1) Standards. (DGMS circular no. Cir. Tech. 18/1975 Vibration limits 7.1 and 7.2)	Once in a year	Through National Institute of Miners' Health (NIMH)
15.	Portability test of drinking water supplied to the mine employees irrespective of its source.	Quarterly as per IS:10500 – 2012	NABL accredited lab

16.	Monitoring and measurement of workplace dust conc. by means of real time dust monitors (Regulation 124 of MMR 1961)	➢ Static monitoring – once in six months (if the conc. exceeds 50% or 75% of the allowable limits, the frequency will be once in 3 months and once in a month respectively ➢ Measurements shall also be carried on immediately upon the commissioning of any plant, equipment or machinery or upon the introduction or alteration of any new work practice that is likely to bring about any substantial change in the level of airborne respirable dust.	Once in a year by NIMH and routine monitoring by in-house trained person or through 3rd party accredited agency
17.	Operator's Seat in the Vehicle/HEMMs TO be ergonomically designed for driver's comfort and ergonomical assessment of all latest machines before their introduction into mining operation as per ISO standards.	Once in a year for existing fleet	Through National Institute of Miners' Health (NIMH)

Frequency of Medical Examination

a. Pre-Placement Medical examination: Prior to joining

b. Periodical Medical examination:

- Age of workers < 45 years: After every 5 years
- Age of workers > 45 years: After every 3 years

Budget for implementation of Occupational Health & safety measures & medical examination has been given in the table below:

4.6 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF ENVIRONMENTAL COMPONENTS

Irreversible commitment of environmental components for the proposed mining project will include Land use, Topography, Geology, Soil, Human Settlement, Agriculture for mine lease area. There will be no irretrievable commitment of environmental components for the said project. ACC Limited will put efforts to carry out mining practices in sustainable manner during their tenure of operations.

4.7 CONCLUSION

As discussed above, it is safe to say that the project will not likely to cause any significant impact on the environment. Adequate preventive measures are will be adopted for development of limestone mine to contain various pollutants generated due to the mining project within permissible limits. Continuous development of Greenbelt/Plantation in mined out and around the mining boundary will minimize the environment pollution and improve the aesthetic beauty. Also, the development of water reservoir and afforestation will remain useful for local community.

CHAPTER - 5

ANALYSIS OF ALTERNATIVES (TECHNOLOGY & SITE)

5.1 GENERAL

Analysis of alternative site helps in selection of best possible site for the project. On one hand it helps to closeness to the existing infrastructure and on other hand it also helps to minimize the impact of project on environment.

5.2 ANALYSIS OF SITE

Letter of Intent has been granted for grant of Mining lease with conditions for Limestone (under major mineral) in villages Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle and G.Uppalapadu in Mylavaram Mandal, District Kadapa (YSR) in Andhra Pradesh over an area of 997.08 ha. in favour of M/s. ACC Limited Vide Govt. of Andhra Pradesh memo bearing number MEMO 16073/M.III (1)/2006-1 dated 22.06.2010.

5.3 ANALYSIS OF TECHNOLOGY

Mining will be done by fully opencast mechanized method. All operations of mining will be done by deployment of Heavy Earth Moving Machineries deep hole drilling, excavation, loading, hauling & transportation to ensure maximum mineral conservation and minimum environmental degradation.

Since the limestone is hard and compact, drilling is required to break the rock. Blast holes of 115 mm dia. to be drilled with hole burden of 3 to 4 m and spacing of 4 to 6 m. The blast hole will be changed with ANFO and slurry explosive (booster charge). NONEL for will be used to control ground vibration, noise and fly rocks. No secondary blasting will be envisaged in this mine. Rock breaker will be deployed for breaking of oversized boulders generated during blasting. Limestone will be transported from mine face to crusher by dumper of 50 to 60 Tones capacity as crusher is located at plant site. After crushing, Limestone will be transported to its interlinked Cement Plant via covered belt conveyor.

5.4 CONCLUSION

In case of Mining projects alternate site selection is not necessary as the mining is site specific and the area in which mining will be carried out has been adequately proved for presence of mineral. The Site is also having good infrastructural facilities for access and development. The mineral will be mined at this mine will be of captive use for manufacturing of cement at the proposed interlinked Cement Plant. Mining will be done as per approved Mining Plan along with Progressive Mine Closure Plan by Indian Bureau of Mines (IBM) vide their letter dated 26.12.2011.

CHAPTER - 6

ENVIRONMENTAL MONITORING PROGRAMME

6.1 INTRODUCTION

Post Project Monitoring is an essential part to check the impact of project related activity. Hence monitoring of various environmental parameters will be carried out on a regular basis to ascertain the following.

- Status of Pollution within the mine site and in its vicinity.
- To generate data for predictive or corrective purpose in respect of pollution.
- To examine the efficiency of pollution control system adopted at the site.
- To assess environmental impacts.

Monitoring will be carried out at the site as per the norms of CPCB and Indian Standards.

6.2 FORMATION OF ENVIRONMENTAL MANAGEMENT CELL (EMC)

In order to maintain the environmental quality within the standards, regular monitoring of various environmental components is necessary. M/s. ACC Ltd. has a full-fledged Environmental Management Cell (EMC) for environmental monitoring and pollution control. The EMC team takes care of pollution monitoring aspects and implementation of control measures.

A group of qualified and efficient engineers with technicians deputed for maintenance, up keeping and monitoring of the pollution control equipment, to keep them in working at the best of their efficiencies. The Organizational structure of EMC is given in Section 10.5 Chapter - 10 of this Final EIA/ EMP Report.

6.2.1 RESPONSIBILITIES OF EMC

The responsibilities of the EMC include the following:

- Environmental monitoring of the core and buffer zone and evaluation of results. Keeping of records to track the surrounding environment quality status.
- Procurement and Commissioning of Pollution Control Monitoring Equipment.
- Specification and regulation of maintenance schedules for Pollution Control Equipment.
- Ensuring that prescribed standards are maintained.
- Ensuring optimum water usage.
- Implementation of the mitigation measures suggested in EIA/ EMP Report.
- Ensuring greenbelt development/plantation & its maintenance.
- Compliance with guidelines and statutory requirements.
- Coordination with statutory bodies, functional groups of the unit, Corporate Project/ Environment & Engineering department etc.
- Interaction with engineering & operation team for implementation of any modification programmes intended to improve the availability/ efficiency of pollution control devices/ systems.
- Carry out proactive environmental studies and observe all precautions necessary to avert disasters and emergencies in the mining observations as well as nearby areas.

- Regular environmental review and performance appraisal (Internal) and organizing Environmental / Energy and Water Audits by independent agencies/ 3rd party agencies.
- Coordination with the vendors dealing in waste supplies and disposal
- Ensuring that the waste handling and disposal will be carried out as per prescribed conditions
- Conducting regular training programmes on various environmental requirements especially sustainable development, climate change, environmental monitoring etc.
- Reporting of compliances and non–compliances (if any) to management and other stakeholders.
- Implementation of socio-welfare programmes for economic upliftment.
- Implementation of the Environmental Management Plan and assessment of effectiveness of the same.
- To provide periodic health check-up of workers.

6.3 MEASUREMENT METHODOLOGIES

6.3.1 INSTRUMENTS USED/TO BE USED

The following instruments will be used for data collection work in the monitoring schedule:

1. Respirable Dust Sampler (RDS)
2. Fine Particulate Smapler (FPS)
3. Dry and Wet Bulb Thermometer
4. Sound Level Meter
5. Meteorological Station
6. Water Level Indicator/ Piezometer digital water level recorder
7. Global Positioning System (GPS)
8. Blastmate / Minimate for Blast Ground Vibration Monitoring
9. Non-Depressive Infrared (NDIR) Spectroscopy
10. Spectrophotometer
11. pH meter
12. TDS / Conductivity meter
13. Turbidity Meter

In addition to the above instruments, data of land use, vegetation and agricultural crops to be collected by the field team by meeting with a large number of local inhabitants in the study area and different government departments/ agencies.

6.3.2 MONITORING PROGRAMME

The post project Monitoring will include details of any major/ minor impact in the core zone and area within buffer zone for the following parameters:

- Micro - Meteorological data
- Ambient Air Quality Monitoring
- Water quality and level Monitoring
- Noise Level Monitoring
- Ground Vibration Monitoring
- Stack Monitoring

- Medical Check-up of the employees

6.3.3 MONITORING SCHEDULE

Details of the Environmental Monitoring schedule, which will be undertaken for various environmental components, are detailed below:

Table - 6.1

Post Project Monitoring

S. No.	DESCRIPTION	FREQUENCY OF MONITORING
1.	Micro-Meteorological Data	Hourly
2.	Ambient Air Quality Monitoring	Twice in a week and Online CAAQMS
3.	Ground Water Quality & Level Monitoring	Quarterly
4.	Surface Water Monitoring	Seasonal
5.	Noise Level Monitoring	Fortnight
6.	Ground Vibration Monitoring	On every blast
7.	Medical Checkup of employees	3 to 5 Year Interval ➢ Age of workers <45 years: After every 5 years ➢ Age of workers >45 years: After every 3 years

Source: *Standard EC Conditions*

6.3.4 METHODOLOGY ADOPTED

Post project monitoring in will be carried out as per conditions stipulated in Environmental Clearance Letter issued by MoEFCC, Consent issued by APPCB well as according to CPCB guidelines. The mine site is considered as core zone and the area lying within 10 km radius from the mine site is considered as buffer zone where some impacts may be observed on physical and biological environment. In the Buffer zone slight impact may be observed and that too is occasional. However, monitoring stations will be installed within the mine & in nearby habitation to monitor the Ambient Air Quality.

Table below represents the existing monitoring program. Same is proposed to be continued after the expansion.

Table - 6.2

Post Project Monitoring Programme

Attributes	Sampling		Measurement Method	Test Procedure
	Network	Frequency		
A. Micro-Meteorology				
Temperature, Relative Humidity, Wind Speed, Wind Direction, Rain fall	Minimum 1 at project site	Regularly in one season by Weather Monitoring Station	-	-
B. Air Environment				
Pollutants • PM_{10}	4 locations in the study area (core	As per Revised National Ambient Air Quality	Gravimetric method	-
• $PM_{2.5}$			Gravimetric method	-

• SO_2	zone and buffer zone)	Standards (NAAQS) vide MoEF&CC circular, dated 16.11.2009	EPA Modified West & Gaeke method	Absorption in Potassium Tetra Chloromercurate followed by Colorimetric estimation using P-Rosaniline hydrochloride and Formaldehyde (IS: 5182 Part: II).
• NO_2			Jacob & Hochheiser modified (NaOH-NaAsO2) Method	Absorption in dill NaOH and then estimated colorimetrically with sulphanilamide and N (I-Nepthyle) Ethylene diamine Dihydrochloride and Hydrogen Peroxide (CPCB Method).
C. Water Environment				
pH, Turbidity, Colour, Odour, Taste, TDS, Total Hardness, Calcium hardness, Magnesium hardness, Chloride, Fluoride, Sulphate, Nitrates, Alkaliity, Iron, Copper, Manganese, Mercury, Cadmium, Selenium, Arsenic, Cyanide, Lead, Zinc, Chromium, Aluminum, Boron, Phenolic compounds	6 locations in the study area (core zone and buffer zone)	Quarterly	As per IS: 10500 - 2012	Samples for water quality should be collected and analyzed as per: IS: 2488 (Part 1-5) methods for sampling and testing of Industrial effluents Standard methods for examination of water and wastewater analysis published by American Public Health Association.
D. Noise				
Noise levels at Day & night time	10 locations in the study area (core zone & buffer zone)	Quarterly	As per CPCB norms / As per circular no. Tech. 18 of 1975 and 5 of 1990	As per CPCB norms / As per DGMS norms
E. Ground Vibration				
Vibration monitoring on every blast	1 location in the core zone	On every blast	As per DGMS Record	

F. Medical Checkup of Employee				
Pre-Placement Medical examination & Periodical Medical examination		Pre-Placement Medical examination: Prior to joining Periodical Medical examination: Age of workers < 45 years: After every 5 years Age of workers > 45 years: After every 3 years		

Besides above, monitoring of greenbelt/ plantation in terms of percentage of survival of plants and community development programme will be done.

6.3.5 LOCATIONS OF MONITORING STATIONS

The location of the AAQ monitoring stations were selected on the basis of prevailing meteorological conditions of the area like; Wind Direction & Wind Speed, Relative Humidity, Temperature, pressure and rainfall. 4 AAQM stations are selected to assess the ambient air quality of the area. Noise level is also to be measured in core area as well as study area. Water & Soil monitoring locations are decided on the basis of general slope of the area & drainage pattern. Locations for the post project monitoring are as under.

Table - 6.3

Locations of Monitoring Stations

S. No.	Description	Location
1.	Ambient Air Quality	As per conditions mentioned in Standard EC/CTO/locations decided by APPCB
2.	Noise Level Monitoring	
3.	Water Level & Quality	
4.	Vibration Monitoring	

6.4 DATA ANALYSIS

Monitoring data analysis is will be done as per CPCB guidelines by laboratory approved under EPA, 1986 & will be submitted to concerned authority specified in Environment Clearance Letter issued by MoEFCC & Consent issued by APPCB on regular basis.

6.5 REPORTING SCHEDULE

Environmental Monitoring Program (EMP) will be designed considering conditions stipulated in the Environmental Clearance issued by the MoEF&CC, New Delhi & consent to establish and operate by Andhra Pradesh Pollution Control Board (APPCB).

Six monthly compliance reports will be submitted on regular basis to IRO, MoEF&CC IRO, Vijayawada by 1st of June and 1st of December.

Quarterly compliance Report & for conditions stipulated in Consent to Operate will be submitted to APPCB on regular basis. Annual compliance Report for conditions stipulated in NOC will be submitted to CGWA. Annual Environmental Statement Report will be submitted to concern Regulatory Authorities.

6.6 CORRECTIVE AND PREVENTIVE ACTION PLAN FOR NON–COMPLIANCE / NON-CONFORMANCES

The company has a well laid down process for identification & prevention of non - Conformances. In the eventuality of any non-compliance/ non-conformances, it is addressed on priority through mid - course corrective action plan along with appropriate recording & reporting to stake-holders in line with the company policy duly adopted by the board.

The company has detailed the process for identification of non-Conformances and address these through mid-course corrective action plan. The measures include:

- To identify non-compliance/ non- conformances.
- To record noncompliance/ non-conformances.
- To evaluate the non-compliance/ non-conformation, to determine specific corrective and preventive action.
- To identify senior responsible person of EMC to address the non-compliance/non-conformances.
- To review the corrective actions by the senior Management for effective implementation.
- Reporting of any statutory non-compliance if any, to board and other stakeholders at regular interval as per Corporate Environment Policy.

6.7 DETAILED BUDGET

As environmental protection will be monitored and implemented by a centralized environmental management cell, the fiscal estimates have been arrived for the mining activity, which is discussed below:

S. No.	Particular	Total Cost (Rs. In Crore)
1.	Project Cost	433.738
Cost for EMP		
2.	Cost for Environment Protection Measures	3.84
	Cost for Wildlife Conservation Plan	5.67
	Cost for physical target for public hearing	1.35
	Capital Cost	10.24
	Recurring Cost for EMP	0.180

CHAPTER - 7

ADDITIONAL STUDIES

7.1 INTRODUCTION

As per EIA Notification dated 14th September, 2006, as amended time to time, Ministry of Environment, Forest & Climate Change (MoEF&CC), New Delhi has suggested Terms of Reference (ToRs) for the preparation of the Environmental Impact Assessment (EIA) Report and Environmental Management Plan (EMP) vide letter no. J-11015/133/2012-IA.II (M) dated 30.10.2012.

The following Additional Studies were carried out in reference to the Terms of References:

1. Public Consultation
2. Hydro-geological Study & Rain Water Harvesting Plan
3. Risk Assessment & Disaster Management Plan
4. Resettlement & Rehabilitation

7.2 PUBLIC CONSULTATION

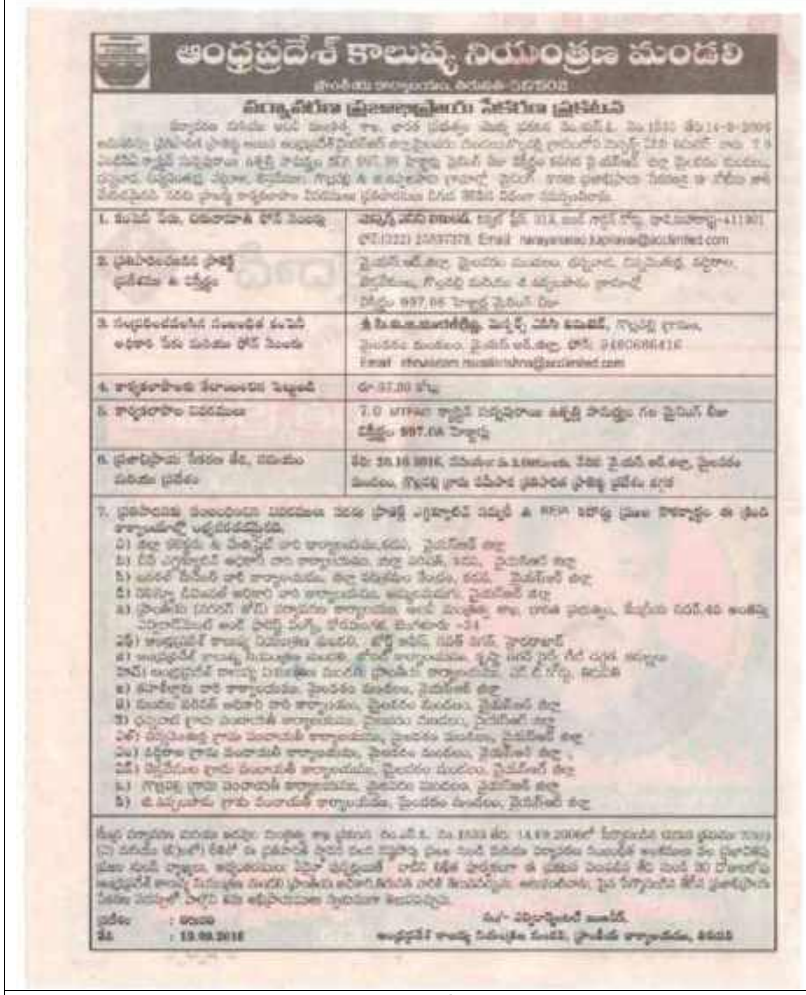
Public hearing for the said project was conducted on 20.10.2016. Details of the Public hearing proceedings are appended herewith as **Annexure 16**

Table - 7.1

Public Hearing Details in Brief

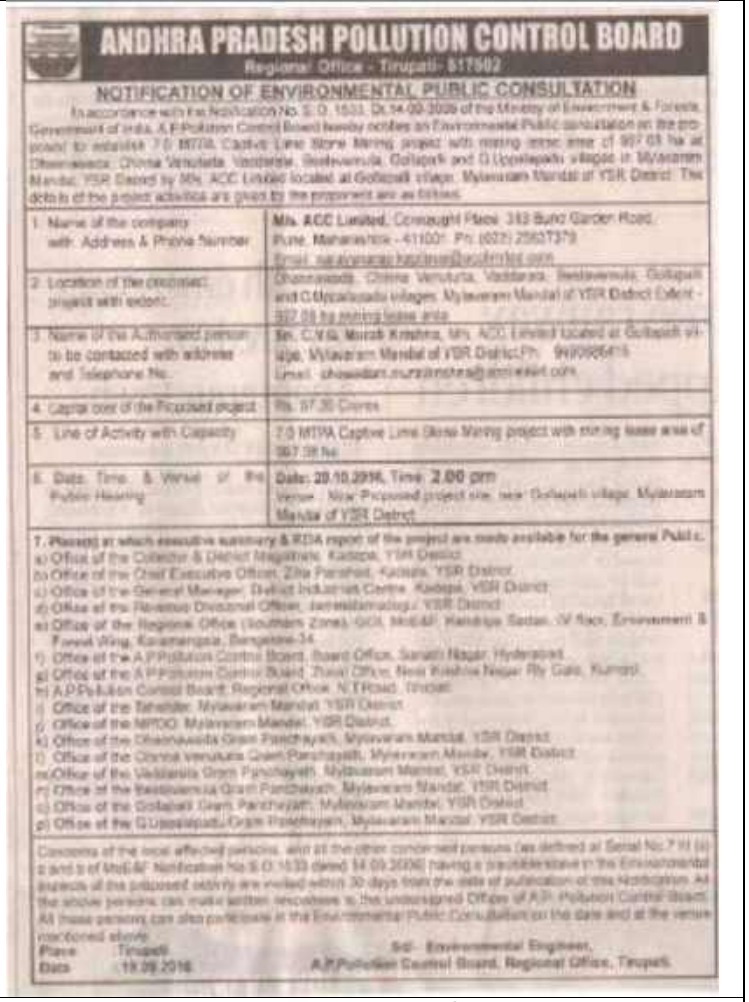
S. No.	Particular	Description
1.	Name of newspapers & Date of Advertisement	➢ Sakshi in Telugu Language on 19.09.2016 ➢ The Indian Express in English language on 19.09.2016
2.	Date/ Time of Public Hearing	20.10.2016 at 02:00 PM
3.	Venue	Near Project Site
4.	Members	➢ Shri K.V. Satyanarayana, I.A.S (Kadapa [Y.S.R] District Collector); ➢ Shri A. Narendra Babu, Env. Engineer, APPCB Regional Office.

7.2.1 PUBLIC HEARING NOTICE PUBLISHED IN THE TIMES OF INDIA AND DAINIK NAVJYOTI



ఆంధ్రప్రదేశ్ కాలుష్య నియంత్రణ మండలి

Sakshi dated 19th Sept 2016



ANDHRA PRADESH POLLUTION CONTROL BOARD

Regional Office - Tirupati- 517502

NOTIFICATION OF ENVIRONMENTAL PUBLIC CONSULTATION

1. Name of the company with Address & Phone Number	M/s. ACC Limited, Connaught Place 183 Bund Garden Road, Pune, Maharashtra - 411001. Ph: (022) 25657379
2. Location of the proposed project with extent	Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalli and G.Uppalapadu villages, Mylavaram Mandal of YSR District Extent - 997.08 ha mining lease area
3. Name of the Authorized person to be contacted with address and Telephone No.	Mr. C.V.G. Murali Krishna, M/s. ACC Limited located at Gollapalli village, Mylavaram Mandal of YSR District Ph: 9490956415
4. Capital cost of the Proposed project	Rs. 97.35 Crores
5. Line of Activity with Capacity	7.0 MTPA Captive Lime Stone Mining project with mining lease area of 997.08 ha.
6. Date, Time & Venue of the Public Hearing	Date: 29.10.2016, Time: 2.00 pm Venue: New Proposed project site, near Gollapalli village, Mylavaram Mandal of YSR District

7. Place(s) at which executive summary & EIA report of the project are made available for the general Public:

a) Office of the Collector & District Magistrate, Kadapa, YSR District
b) Office of the Chief Executive Officer, Zilla Parishad, Kadapa, YSR District
c) Office of the General Manager, District Industrial Centre, Kadapa, YSR District
d) Office of the Revenue Divisional Officer, Jammalamadugu, YSR District
e) Office of the Regional Office (Southern Zone), GOI, MoEF, Kendriya Sadan, IV floor, Environment & Forest Wing, Koramangala, Bangalore-34
f) Office of the A.P.Pollution Control Board, Board Office, Saraiti Nagar, Hyderabad
g) Office of the A.P.Pollution Control Board, Zonal Office, Near Krishna Nagar Fly Gate, Kurnool
h) A.P.Pollution Control Board, Regional Office, N.T.Road, Tirupati
i) Office of the Tahsildar, Mylavaram Mandal, YSR District
j) Office of the MPDO, Mylavaram Mandal, YSR District
k) Office of the Dhannawada Gram Panchayath, Mylavaram Mandal, YSR District
l) Office of the Chinna Venturla Gram Panchayath, Mylavaram Mandal, YSR District
m) Office of the Vaddarala Gram Panchayath, Mylavaram Mandal, YSR District
n) Office of the Bestavemula Gram Panchayath, Mylavaram Mandal, YSR District
o) Office of the Gollapalli Gram Panchayath, Mylavaram Mandal, YSR District
p) Office of the G.Uppalapadu Gram Panchayath, Mylavaram Mandal, YSR District

Concerns of the local affected persons, and all the other concerned persons (as defined at Serial No.7 (i) (a) and (b) of MoEF Notification No.S.O.1533 dated 14.09.2006) having a possible stake in the Environmental aspects of the proposed activity are invited within 30 days from the date of publication of this Notification. All the above persons can make written representations to the undersigned Officer of A.P. Pollution Control Board. All these persons can also participate in the Environmental Public Consultation on the date and at the venue mentioned above.

Place: Tirupati
Date: 19.09.2016

Sd/- Environmental Engineer,
A.P.Pollution Control Board, Regional Office, Tirupati.

The Times of India dated 19th Sept 2016

7.2.2 PHOTOGRAPHS OF PUBLIC HEARING









7.2.3 PUBLIC HEARING ACTION PLAN

Table - 7.2

Public Hearing Action Plan of Verbal Comments/ Issues Received During Public Hearing

S. No.	Presenter's name	Comments, brief description of the issues	Resolution proposals by the Project Management
1.	Smt. G. Venkata Lakshmi W/o. Sri Chandra Sekhar r/o Gollapalli	She Opined that none of the speakers spoke earlier have not brought the main demand of the surrounding farmers to the notice of the public hearing panel and demanded the management to solve the issue on priority basis.	ACC Limited committed to working closely with the farmers. Thank you for your patience and understanding.
2.	Sri Kota Lakshmi Reddy r/o Chinna Vedurla	He requested to the management to provide proper jobs to the local people, education, medical facilities and also to construct check dams to increase the ground water table.	Priority in employment will be given to local youth based on their eligibility and as per the requirements of Company also efforts will be made under CSR program to enhance the skill / competence level of eligible members to increase their employability level and job opportunities in other organizations. Company will be proposed to provide the computers (20 nos.) & Printer, Projector, other accessories, drinking water coolers in nearby three Schools. Company will be planning for Setup of Public Library by providing Furniture & Books. Company will also commit to do work in field of healthcare. Preventive Health check-up camps and distribution of free Medicine, medical infrastructure facilities will be provided in nearby area by ACC Ltd. Furthermore, company also planning to construct the Rainwater Harvesting Structures in the nearby area.

S. No.	Presenter's name	Comments, brief description of the issues	Resolution proposals by the Project Management
			In addition to this, at conceptual stage, 390.6 ha area will be converted into water reservoir which will serve as recharge pit. Efforts will be made to share the water harvested in mines with the nearby communities.
3.	Sri Nandyala Venkata Lakshmaiah r/o S.G. Uppalapadu	He has requested the District Collector, for taking the responsibility of fulfilling the assurances made by the management of M/s ACC Cement Ltd.,	Company committed to assure that all necessary steps will be taken to address the concerns raised.
4.	Sri Pamileti r/oVaddiralla	He expressed his un-happiness on filing cases against the farmers for demanding additional compensation. He requested the management to issue proper compensation to the surrounding farmers.	Police case was filed by the local police based on Village Revenue Officer, T M Patnam complaint against the mob for obstructing the Duties of Govt Officials, during the PH, held on 9th Sept. 2016. The District Collector has announced from the Dias that the Police cases against the local villagers will be written off with the immediate effect and Company also assure for the additional compensation.
5.	Sri. Y. Chenna Kesava Reddy r/o T. Sunkesula, an NGO	He requested to the management to fulfill all promises made by them during land alienation and also requested to take thorough responsibility on the issues of the public.	Company understands the importance of fulfilling the promises made during the land alienation process. ACC is committed to the response given to the public hearing points, which is duly singed by Director as a part of questionnaire and submitted to the MoEF&CC.

Physical target of an amount of Rs. 1.35 Crore has been earmarked under EMP based on issues raised during public hearing has been prepared and same is given below:

Table 7.3

Proposed Physical targets for addressing issues of during public hearing as per MoEF&CC, OM dated 30.09.2020 & 20.10.2020

S. No.	Physical Targets	Budget (in Rs. Lakhs)			
		I Year	II Year	III Year	Total
1	**Infrastructure Development**				
a	Rainwater Harvesting Structures in Villages Ragdapalle, Golapalle, Chinna Ventrula	-	10	10	20
b	Street solar Light at Road side in Chinna Ventrula, Vaddirala (40 units)	8	-	-	8
c	02 Nos. of Community Hall development in Gollapalli & Ragdapalle	14	14	-	28
	Sub Total	**22**	**24**	**10**	**56**
2	**Education Support**				
a	Installation of drinking water coolers in Schools in Village Dhannavada, G. Uppalapadu, Chinna Ventrula (03 nos.)	3	-	-	3
b	Computers (20 nos.) & Printer, Projector, other accessories, etc. in Village Dhannavada, G. Uppalapadu, Chinna Ventrula (Total 3 School) (03 nos.)	-	10	10	20
c	Setup of Public Library by providing Furniture (100 nos. chair and table) & Books (500 books) in Village G. Upplapadu	-	6	-	6
d	Distribution of Sports Kits in in Village Dhannavada, G. Uppalapadu, Chinna Ventrula (Total 3 School) (03 nos.)	6	-	-	6
	Sub Total	**9**	**16**	**10**	**35**
3	**Sustainable Livelihood Projects**				
a	Training on Skill Development Activities like Plumbing, Electrician, Fitter, Heavy vehicle Drivers, HEMM Operators, etc.	3	3	3	9
b	Distribution of Modern Agricultural Equipment to the farmers of village Kamavarippalle, Kalluta, Jangalapalle, Bestavemula	3	3	3	9
	Sub Total	**6**	**6**	**6**	**18**
4	**Health Care Support.**				
a	Preventive Health check-up camps and distribution of free Medicine	3	3	2	8
b	Provide medical infrastructure facilities	6	5	2	13

c	Health Awareness camps for Silicosis Patients	2	1	2	5
	Sub Total	**11**	**9**	**6**	**27**
Grand Total		**48**	**55**	**32**	**135**

In addition to above, company has earmarked an amount of Rs. 355 Crore over a period of 10 years in two phases as per below:

Table 7.4

Enterprise Social Commitment / CER for Phase – 1 (Budget Rs in Crore)

Interventions	Total Budget	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year	8th Year	9th Year	10th year
ACC Vidya Utkarsh - Improving Quality and Reach of Education	**55.20**	3.31	5.52	6.62	7.18	7.73	6.62	6.07	4.42	3.86	3.86
ACC DISHA - Skill Development of Youth and Placement	**18.40**	1.10	1.84	2.21	2.39	2.58	2.21	2.02	1.47	1.29	1.29
ACC LEISA - Low External Input for Sustainable Agriculture	**18.40**	1.10	1.84	2.21	2.39	2.58	2.21	2.02	1.47	1.29	1.29
ACC Swawlamban - Women Empowerment through SHGs and facilitating Micro Enterprises	**36.80**	2.21	3.68	4.42	4.78	5.15	4.42	4.05	2.94	2.58	2.58
ACC Arogyam - Enhancement of health and wellbeing	**9.20**	0.55	0.92	1.10	1.20	1.29	1.10	1.01	0.74	0.64	0.64
ACC Sampoorn Swachchata - Promote hygiene, ODF environment and safe disposal of waste	**18.40**	1.10	1.84	2.21	2.39	2.58	2.21	2.02	1.47	1.29	1.29
ACC Sanrakshit Paryavaran - Sustainability of resources for posterity	**18.40**	1.10	1.84	2.21	2.39	2.58	2.21	2.02	1.47	1.29	1.29
ACC Drona - Promotion of local Sports, Arts and Culture	**9.20**	0.55	0.92	1.10	1.20	1.29	1.10	1.01	0.74	0.64	0.64

Total	**184.00**	**11.04**	**18.40**	**22.08**	**23.92**	**25.76**	**22.08**	**20.24**	**14.72**	**12.88**	**12.88**

Table 7.5

Enterprise Social Commitment / CER for Phase – 2 (Budget Rs in Crore)

Interventions	Total Budget	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year	8th Year	9th Year	10th Year
ACC Vidya Utkarsh - Improving Quality and Reach of Education	**51.30**	3.08	5.13	6.16	6.67	7.18	6.16	5.64	4.10	3.59	3.59
ACC DISHA - Skill Development of Youth and Placement	**17.10**	1.03	1.71	2.05	2.22	2.39	2.05	1.88	1.37	1.20	1.20
ACC LEISA - Low External Input for Sustainable Agriculture	**17.10**	1.03	1.71	2.05	2.22	2.39	2.05	1.88	1.37	1.20	1.20
ACC Swawlamban - Women Empowerment through SHGs and facilitating Micro Enterprises	**34.20**	2.05	3.42	4.10	4.45	4.79	4.10	3.76	2.74	2.39	2.39
ACC Arogyam - Enhancement of health and wellbeing	**8.55**	0.51	0.86	1.03	1.11	1.20	1.03	0.94	0.68	0.60	0.60
ACC Sampoorn Swachchata - Promote hygiene, ODF environment and safe disposal of waste	**17.10**	1.03	1.71	2.05	2.22	2.39	2.05	1.88	1.37	1.20	1.20
ACC Sanrakshit Paryavaran - Sustainability of resources for posterity	**17.10**	1.03	1.71	2.05	2.22	2.39	2.05	1.88	1.37	1.20	1.20
ACC Drona - Promotion of local Sports, Arts and Culture	**8.55**	0.51	0.86	1.03	1.11	1.20	1.03	0.94	0.68	0.60	0.60
Total	**171.00**	**10.26**	**17.10**	**20.52**	**22.23**	**23.94**	**20.52**	**18.81**	**13.68**	**11.97**	**11.97**

7.3 HYDRO - GEOLOGICAL STUDY & RAINWATER HARVESTING PLAN

SCOPE OF WORK

1. To analyze physiographic conditions of the study area with the help of field observations, GPS readings, Survey of India (SOI) toposheets and Satellite images.
2. To observe hydrogeological conditions and study of aquifer system of the area i.e. in Core and 10 km Buffer Zone.
3. To work out quantitative as well as qualitative variations in groundwater with respect to aerial extent and to find out water balance.
4. To observe surface water features and their impact on groundwater balance.
5. To ascertain the impact of proposed limestone mine on groundwater conditions of the surrounding area.
6. To work out scope of Rainwater harvesting within the limestone mine and design suitable recharge system to the extent possible within the lease area.
7. To suggest ways and means of creating artificial recharge to negate adverse impact on groundwater regime and their impact on groundwater regime of the area.
8. To prepare detailed Hydro-geological Report and Rainwater Harvesting Plan.

METHODOLOGY

Following methodology has been adopted for hydro-geological investigation in the area:

1. Physiographic studies of the proposed limestone mine area and its surroundings with the help of latest Google images, site visit, GPS survey etc. which helps in determining physiographic gradient.
2. Secondary data collection i.e., climate and rainfall, soil and topography, geology, drainage etc. for interpretation.
3. Detailed hydro-geological survey in core and buffer zone including geology, types of aquifers and their hydraulic parameters governing the groundwater regime of the area, depth to water level, groundwater quality, water abstraction structures and their discharge, surface water bodies, drainage pattern, major irrigation sources and their potential etc.
4. Pumping test to determine aquifer parameters in order to evaluate subsurface water availability of the area so that required quantity of groundwater can be extracted from the area in long term.
5. Groundwater resources evaluation based on the norms recommended by Groundwater Estimation Committee (GEC), 2009.
6. Evaluation of present groundwater scenario as well as future course of action for protecting the natural environment.
7. Scope of Rainwater Harvesting from runoff generated in open area of limestone mine depending upon average annual rainfall and its intensity, recharge capacity of the aquifers & the design considerations.

Summary

Elevation of mining lease area is ranging from 204 m AMSL to 226 m AMSL with General ground level of 215 m AMSL. The water table in the area is at 330 m AMSL. Depth of water table in pre-monsoon season is 21.4 m to 50.5 m bgl and in post Monsson Season 17.5 m to 47.4 m bgl in the

lease area. At conceptual stage, ultimate working depth will be 55 m bgl. Hence, groundwater table will be intersection by mine workings. Necessary permission will be taken before intersecting the ground water table. Rain water harvesting techniques will be implemented for conservation of water. This technique recharges the ground water level of the area.

At conceptual stage, total excavated area will be 707.1 ha, out of which 390.6 ha will be converted into water reservoir which will serve as recharge pit. The rainwater falling directly into the mine pits will be stored and used for plantation & dust suppression. Hydro-geological study report is enclosed as **Annexure 10** with this Final EIA/EMP Report

7.4 RISK ASSESSMENT AND DISASTER MANAGEMENT PLAN

7.4.1 DEFINITION

A major emergency in a work is one which has the potential to cause serious injury or loss of life. It may cause extensive damage to property and serious disruption both inside and outside the work. It would normally require the assistance of emergency services to handle it effectively.

Emergency may be caused by a number of different factors; it will normally manifest itself in two basic forms viz fire, explosion or toxic release.

7.4.2 SCOPE

An important element of mitigation is emergency planning i.e. recognizing that accidents are possible, assessing the consequences of such accidents and deciding on the emergency procedures, both on site and off site that needs to be implemented in the event of an emergency. Emergency planning is just one aspect of safety and cannot be considered in isolation.

7.4.3 OBJECTIVE

The objective of onsite disaster management plan for the captive mine is to be in a state of perpetual readiness through training and development to immediately control and arrest any emergency situation so as to avert a full-fledged disaster and the consequence of human and property damage and in the event of a disaster still occurring, to manage the same so that the risk of the damage to life and property is minimized. ACC Limited has made a document elaborating the procedure for Emergency Preparedness & Responses. The overall objectives of the emergency plan are:

- To localize the emergency and, if possible eliminate it; and
- To minimize the effect of the accident on people and property.
- Elimination of hazards by local/supervisory personnel and minimizing effects include rendering first aid, evacuation, hospitalization, rehabilitation.
- To seek help from outside sources, if required.
- Notice/information to authorities.

It is a hard rock area and as such no serious disaster is foreseen. However, accidents cannot be ruled out in the mine. High risk accidents are not anticipated in the area because the mining is not hazardous. Mining operations are being/may be carried out by taking all the safety measures, but there is always some element of danger or risk in it. Due to deployment of heavy machineries and

largescale workings, there may be few chances of accident likely to occur for this, Safety Engineer's regular inspection required will be undertaken. Following risks are anticipated:

- Failure of benches
- Fall of machinery/ person from benches
- Failure of transport machinery
- Heavy rainfall resulting in inundation of mine
- Accidents due to blasting/explosives
- Accidents due to fire
- From Electric line through the area

Natural and Mining hazards may occur during normal operation. Which are as follows:

A. Natural Hazard

- Land Slides
- Flash floods
- Damage of life and property
- Disruption of road & telecommunication facilities
- Lightening

B. Mining Hazard

- Accident due to explosives
- Accident due to heavy mining equipment;
- Sabotage in case of magazine

In order to take care of above hazard/disasters, the following control measures will be adopted:

- All safety precautions and provisions of Mine Act,1952, metalliferous Mines
- Regulation, 1961 and Mines Rules,1955 will be strictly followed during all mining operations;
- Entry of unauthorized persons will be prohibited;
- Firefighting and first-aid provisions in the mines office complex and mining area;
- Provisions of all the safety appliances such as safety boot, helmets, goggles etc. will be made available to the employees and regular check for their use;
- Training and refresher courses for all the employees working in hazardous premises; Under Mines vocational training rules all employees of mines shall have to undergo the training at a regular interval;
- Working of mine, as per approved plans and regularly updating the mine plans;
- Cleaning of mine faces will be regularly done;
- Handling of explosives, charging and blasting will be carried out by competent persons only;
- Provision of magazine at a safe place with fencing and necessary security arrangement;
- Regular maintenance and testing of all mining equipment as per manufacturer's guidelines;
- Suppression of dust on the haulage roads;
- Adequate safety equipment will be provided at explosive magazine; and
- Increasing the awareness of safety and disaster through competitions, posters and other similar drives.

Standard operating procedures are will be made and enforced in case of emergency. To overcome this for provisions of Reg. 119 of M.M.R 1961 is applied.

a) For Electric line, a safety barrier of 45m on either side of electric line will be left in the lease area.

b) If there is danger of falling of live wire during working, then no machinery will be allowed to remain or pass through safety barrier.

1. Inundation

a) For risk of inundation during the heavy rains there is a chance of flood for few days and due to surface water in the open pit, provisions of M.M.R. 1961 reg. 127 apply.

b) The working in bench form is made on a sloping ground and bottom most bench is provided with a sump to collect water which is directly pumped out to surface.

c) Floor control room has been established in case of danger of inundation. H.F.L. has been marked in the area on a pillar. If water level reaches 0.5 m below HFL mark then all men and machinery will be withdrawn from the pit and work should be stopped until water recedes to a safe level.

d) In rainy season when there is danger of inrush of water in the pit, mining work will be carried out on upper-level benches only.

2. **In case of short circuit of electric line and fire caused due to this mishap, sand bucket and fire extinguishers is provided and maintained**.

The salient features are elaborated as below:

- Emergency Response Organization
- Communication System
- Action on the site
- Facilities available at site
- Medical treatment for injured personnel

Elimination requires well planned process/technology and its effective implementation, so that such situation should either not arise or if it comes, a pre warning is received for timely action in built or by preparedness for zeroing the effects.

Minimizing the effects may include prompt action, rescue, first aid, and evacuation, firefighting and also passing on information promptly to people living nearby.

Methodology of Risk assessment:

- Collection of information & identification of hazard
- Classify their severity and probability of occurrence
- Identification of exposed risks
- Assess the risk and risk rating based on
    1. **Probability**
    2. **Exposure**
    3. **Consequence**
        - ✓ **Prioritization of the risks**
        - ✓ **Implementation of control measures**
        - ✓ **Monitoring risk assessment**
        - ✓ **Evaluation and correction**

Risk assessment is mainly based on the environmental impact of various parameters.

i. Land Contamination

The potential for contamination during operation of ML area site is Inter-burden and reject dumps which is regarded as to contaminate land. However very little waste is likely to be generated which is utilized for road maintenance and hence no waste dump will be available. As far as top soil is concerned, entire top soil has been excavated since the inception of the mine and it has been used for greenbelt development/plantation.

ii. Aquatic Toxicity

The risk assessment in aquatic toxicity system is based on the total metal concentration in various chemical form or oxidation state. Limestone and the associated rocks do not contain appreciable concentration of toxic elements.

iii. Acid Mine Drainage

The mining of limestone does not involve any processing operation by using chemicals. Hence there is no risk at the ML area site with regard to control of acid mine drainage.

iv. Human Health

During Environment Impact Assessment study, it is found that the toxicity is nil. Hence there is no risk involved to human health due to the proposed mining operation.

Factors of risks involved due to human induced activities in connection with mining operations are 1) Removal of Inter-burden and rejects 2) Drilling 3) Blasting 4) Excavation of ore and 5) Transportation of ore.

Other factors due to natural activities are:

1) Fire

2) Water inundation

3) Electricity and

4) Natural calamities

7.4.4 IDENTIFICATION OF HAZARDS

Major hazards due to the proposed project have been identified & mitigation measures are suggested. Details are given in the table as under:

Table - 7.6

Hazard Identification & Mitigation Measures as suggested

S No.	Mining Activity	Occupational Hazard	Potential ill health/ Injury	Preventive Measures	Control measures
1	**Exploration**	Dust generation	Silicosis, respiratory problems & eye infections	-	• Wet drilling • Providing Dust mask & goggles
		Smoke	Lung infection	-	• Providing Dust Mask.
		Flying of Drill Chips	Eye injury	-	• rubber pads at drill machines • Providing Safety goggles
		Run over person due to Uncontrolled Movement of Excavator	Fatality	-	• Use of Safety shoes • Company has developed and implemented HEMM safety standards. • No person will be allowed to go in influence zone of HEMM while in operation.
		Toppling of Machine	Fatality	-	• Levelling of surface before movement of machine. • Use of Helmet & shoes
		Bursting of hose		-	• Regular pipe checking, • helmet and shoes.
		Operational hazard (manual rod changing)	Muscular pain, Ergonomics	-	• Surface shouldn't be wet to avoid slipping. • Use of Helmet
2	**Dozing**	Vibration	Numbness, Raynaud disease	-	• Ergonomics cabin and operator seat • cabins mounted on rubber pads
		Noise	Irritation	-	Providing Ear Plug

S No.	Mining Activity	Occupational Hazard	Potential ill health/ Injury	Preventive Measures	Control measures
		Dust generation	Silicosis, respiratory problems & eye infections	-	• Control of dust at the point of generation • Use of dust Mask.
		Fall of bauxite during operation	Injury to person	-	• Provide Safety Helmets • Proper training to handle face dressing.
		Slip from wooden stair	Injury to body parts of persons	-	• Use of good quality stair • Provide Safety Helmets
		Falling from wooden stair	Injury to body parts of persons	-	• Use of good quality stair • Provide Safety Helmets
		Breakage of wooden stair	Injury to body parts of persons	-	• Use of good quality stair • Provide Safety Helmets
3	**Drilling**	Dust generation	Breathing uneasiness, Lung & eye infection, Silicosis	• Safety of employees during blasting operation and maintenance of mining equipment should be taken care as per Mine Regulations, 1961 and Circulars of DGMS.	• Wet drilling / Bag filter • Providing Dust masks & goggles
		Noise	Hearing loss, irritation, headache, Loss of appetite	• Noise level Survey	• Acoustic cabins for operators. • Proper maintenance & operation of machine • Operation only on even ground. • Providing ear muffs/ear plugs
		Bursting of hose pipes	Fatality	-	• Daily checking of hose pipes • Replace worn hose pipes.
		Vibration	Numbness, Raynaud disease	-	• Ergonomically designed cabin • Proper maintenance of machine

S No.	Mining Activity	Occupational Hazard	Potential ill health/ Injury	Preventive Measures	Control measures
					• operation only on level ground
		Operation Hazard (manual rod changing)	Muscular pain, Ergonomics	-	• Training to operators and use of proper tools. • Providing helmets, safety goggles and safety shoes.
4	**Collapse of benches**	Operation Hazard	Injury to person, fatality		• The slopes of benches has not/will not be more than 80° from the horizontal and width of benches will maintain 6 m. • No loose stone or debris shall be allowed to remain within a distance of 3 m from the edge or side of the excavation
5	**Fall of workers from high benches**	Operation Hazard	Injury to person, fatality		• The quarry faces will be suitable benched as per Regulation 106 of MMR 1961. • The top of every opencast working shall be kept security fenced. • Every entrance from a roadway in the mine temporarily discontinued will be provided with a fence, barrier or gate to prevent any unauthorized entry
6	**ANFO Mixing**	Skin Contact	Contact disease	• Compliance with code of practice specified by DGMS for ANFO Mixing and its uses.	• Providing Gloves • Fire-Extinguisher
		Pre-mature explosion	Fatality		
		Fire	Injury to person		
7	**Storage, handling &**	Premature Explosion and Fire	Fatality	Handling of explosive materials is to be taken care of as per the Metalliferous Mines	• Fire extinguisher • Conducting mock drills at regular interval • PPE's like gloves, shoes etc

S No.	Mining Activity	Occupational Hazard	Potential ill health/ Injury	Preventive Measures	Control measures
	transport of explosives	Skin Contact	Burn injury, contact disease	Regulations, 1961 and Circulars of DGMS	• Providing Hand gloves
		Toppling of explosive van	Fatality		• Proper maintenance and regular monitoring of machines
8	**Blasting**	Fly rock	Disabling injury, loss of body parts & fatality	• Safety of employees during blasting operation and maintenance of mining equipment should be taken care as per Metalliferous Mines Regulations, 1961 and Circulars of DGMS. • Control of dust at generation point through water spraying	• Blasting carried only after evacuating area of 520 m radius from blast site. • Proper Blast design • Muffle Blasting • Remove loose boulder from bench • Use of delay detonators relay, • Providing Safety Helmets
		Ground Vibration	Damage to property, injury	-	• Proper Blast design • Use of delay detonators relay
		Noise	Noise Induced Hearing Loss, irritation, headache, loss of appetite	• Noise level Survey	• covering of detonating fuse with sand, • use good stemming material use of delay detonators relay Proper Blast design • Providing ear plug
		Release of toxic gases	Lung infection, discomfort	• Use of good quality of explosive.	• mixing of ammonium nitrate & fuel oil in proper ratio • Providing dust mask
		Premature Blast	Disabling injury/ loss of body parts & fatality	-	• Restrict use of mobile phone & radio etc near the blasting site.

S No.	Mining Activity	Occupational Hazard	Potential ill health/ Injury	Preventive Measures	Control measures
		Misfire	Disabling injury/ loss of body parts & fatality		• Training to deal with misfire according to regulation 167
9	**Operation of Excavator in Mines**	Noise	Noise Induced Hearing Loss, irritation, headache, stress	-	• Proper maintenance & operation of machine. • Providing ear plug, ear muffs
		Fire in HEMM	Burn injury, fatality	-	• automatic detection & suppression system • Provision of Fire Extinguisher • daily checking of electrical system
		Heat	Discomfort, stress	• Proper Ventilation	• Thermal barriers • Provision of cool drinking water • Rest shelters • Showers
		Dust generation	Silicosis, respiratory problems & eye infections	• Operation and Maintenance of Tippers.	• Dust suppression on haul roads through water sprinkling • Providing dust mask
		Cabin Vibrations	Numbness, Raynaud disease	• Standard protocol for evaluation of vibration level in HEMMs	• Ergonomically designed seats and operation and controls • Proper maintenance & operation of machine.
		Slipping from stairs	Body injury	-	• Good House Keeping
		Toppling of excavator	Fatality	-	• Operation only on firm ground
		Run over person due to Movement of Excavator	Fatality	-	• Audio-Visual Alarm & following proper Signal codes
		Operating system failure	Disabling injury/loss of body parts & fatality	• Training & awareness Programmes	• Regular Maintenance
10	**Diesel storage**	Fire	body injury	-	• Fire extinguisher

S No.	Mining Activity	Occupational Hazard	Potential ill health/ Injury	Preventive Measures	Control measures
		Leakage of oils	Wastage, skin infection	-	• Maintenance & monitoring of machines
		Fire	Burn injury	Source of fire near diesel generator should be avoided	use of Fire Extinguisher
		Electric Shock	Fatality	-	• Use of hand Gloves
		Slipping due to oil slippage	Injury	Good housekeeping.	• Use of Safety Shoes
11	**Unloading of diesel**	Falling of drums	Injury	-	• Diesel tanker with bowser is provided for filling diesel to HEMM
12	**Air Filling on Tyres, Opening Fitting of tyres**	Bursting of Tyres	Injury to eyes	-	• checking of pressure gauge properly. • Use of safety goggles
		Slipping of tools	Injury to person	-	• Careful usage of tools. • Use of Safety shoes & helmets
13	**Loading of limestone**	Falling of limestone, buckets	Injury to person	-	• Provide Safety shoes & safety helmets.
		Slipping & breaking of tools	Injury to person	-	
14	**Transportation with Dumpers**	Material spillage	Injury to person	-	• Suitable loading profile ensuring proper condition of dumper
		Collision	Fatality	-	• Follow traffic rules • Competent Driver
		Jerks & Vibration	Numbness, Raynaud disease	• Ergonomically designed Cabin	• Proper cushion of Operator Seat • Mounting of Cabins on Rubber Pads
		Dust generation	Silicosis, respiratory problems & eye infections	• Construction and Maintenance of pakka haul roads	• Spraying of Water on haul roads
		Brake fail	Fatality / injury	-	• Daily checking of brake system • follow maintenance schedule as manufacturer manual

S No.	Mining Activity	Occupational Hazard	Potential ill health/ Injury	Preventive Measures	Control measures
		Run Over on persons	Fatality / injury	-	• Follow traffic rules
		Steering fail	Fatality / injury	-	• Daily checking of steering system • Follow maintenance schedule as manufacturer manual
		Bursting of front tyre	Fatality / injury	• Use of Good conditions tyres	• Daily checking of tyre condition & Pressure.
		Reversing Dumpers	Fatality / injury	-	• Authorized driver • Audio visual alarm • Spotter when reversing • Rear view Camera
15	**Movement and Operation of vehicle other than dumpers**	Dust generation	Silicosis, respiratory problems & eye infections	-	• Spraying of Water on haul roads • Provide dust masks
		Brake fail	Fatality	• Compliance with operating instructions	• Daily checking of brake system • Provision of break fail alarm system and alternate break.
		Toppling of Vehicle	Fatality	-	• Competent Driver • operation only on firm ground.
		Run Over on persons	Fatality	-	• Follow traffic rules
		Steering fail	Fatality	• Follow maintenance schedule as manufacture manual	• Daily checking of steering system
		Collision	Fatality	-	• Follow traffic rules • Competent Driver • Providing Steel belt

S No.	Mining Activity	Occupational Hazard	Potential ill health/ Injury	Preventive Measures	Control measures
		Bursting of front tyre	Fatality	• Use of Good conditions tyres only,	• daily checking of tyre condition & Pressure
		Reversing vehicle	Fatality	-	• Audio visual alarm • authorized driver • Spotter when reversing.
16	**Disaster due to surface fire**		Burn injury, fatality	Sufficient numbers of fire extinguishers will be installed at selected locations on surface like fuel stations, workshop / garage and stores etc.	• No inflammable material shall be placed stored except in a fire proof receptacle. • No person shall place or permit to throw any naked light or lamp on or near any combustible material. • As per Regulation 121 of MMR 1961 adequate supply of sand or incombustible dust or sufficient portable fire extinguishers shall be provided at every entrance to the mine or at every place where inflammable material is stored.

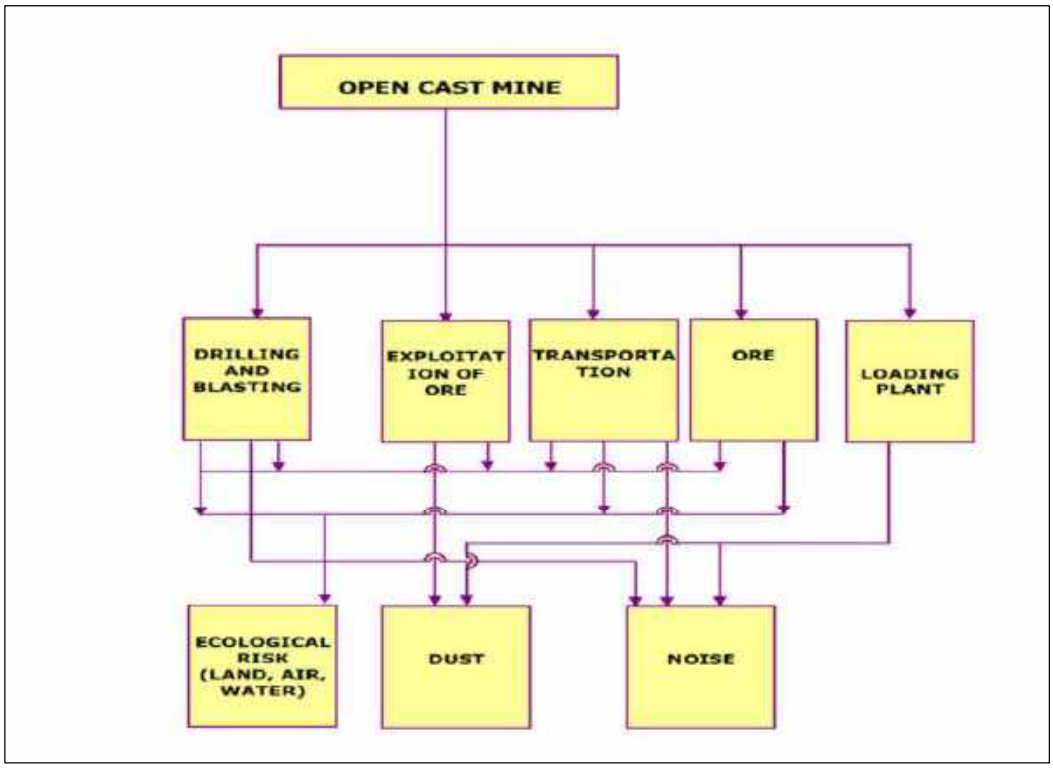


Fig.7.1 Identification of hazards in opencast mine

7.4.5 CAUSES OF HAZARDS

- Blasting: Most of the accidents from blasting occur due to the projectiles, as they may sometimes go even beyond the danger zone, mainly due to overcharging of the shot-holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Vibrations also lead to displacement of adjoining areas. Dust and noise are also problems commonly encountered during blasting operations.
- Overburden: The overburden dumps may cause landslides. High overburden dumps created at the quarry edge may cause sliding of the overburden dump or may cause failure of the pit slope due to excessive loading, thereby causing loss of life and property. Siltation of surface water may also cause run-off from overburden dumps.
- Heavy Machinery: Most of the accidents during operation of dumpers, excavators and dozers and other heavy vehicles are often attributable to mechanical failures and human errors.
- Storage of Explosives: At present lessee does not have a magazine / licensed storage space. Within due course of time, an explosive magazine will be built.
- Fuel Storage: Most of the HEMM will operate on diesel. However, no major storage is envisaged at the ML area. A diesel bouser is provided for the crawler mounted machines operating in the mine.
- Water Logging: The rainwater would flow down the slope of the hills and also along the natural streams. Thus, no water is likely to accumulate in the course of mining operations. Hence no pumping arrangements are envisaged.

7.4.6 RISK MITIGATION MEASURES

In order to take care of the risks identified above, the following mitigating measures will be taken in the mine area:

Fire in Diesel Tanks / Vehicles

Sufficient fire extinguishers will be installed at selected locations on surface like Mine office, Electrical Sub-stations, Workshop, Garage, Diesel Depot, Magazine, etc. Besides, sufficient number of water hydrants with sufficient hose pipes will be made available in the surface for fire protection.

Surface Subsidence

Mining operation will be carried out strictly as per the approved Mining Plan, the height and width of bench and the slope of the benches will be maintained as per the approved plan. Visual checks of the inclined bench surface will be carried out on routine basis to see for cracks, fissures, water seepage, etc. In case any cracks are observed it will be attended to for stabilization.

Blasting

To ensure safe blasting following measures will be adopted:

- The use of Non electric system of initiation of the blast holes by using Excel detonators and connectors. It ensures bottom hole initiation of the explosive charge, thereby reducing the ground vibration and fly rock problem.
- Use of ground vibration and air blast monitoring instrument to monitor the blasts. The instrument revels efficiency of the blasting activity.
- Complete evacuation of the area falling within 300m of the blast site by sounding siren and by sending guards to avoid any exposure of the human beings and other animals to the danger associated with blasting.
- All the blast shall be carefully planned and executed under proper supervision and ensure effective utilization of the explosives only for breaking of the rocks.

  No secondary blasting will be done. All the big boulders will be broken using Hydraulic Rock Breaker, thereby eliminating the risk of flying fragments associated with secondary blasting.

Heavy Earth Moving Machineries

All the accidental scenarios due to HEMM will be minimized ensuring following mitigation measures:

- Good condition of the brake system by proper checking & testing;
- Apply emergency steering;
- Provide training to drivers for safe operation of equipment;
- Ensure that rear view mirrors are provided;
- Use audio visual alarm;
- Provide spotter; and
- Provide mirrors at the curve edge of roads.

Sabotage of Explosives

Suitable explosives van duly licensed by the Controller of Explosives will be utilized for daily transportation of explosives from originating point to mine site. The area is not prone to any subversive activities by antisocial elements. The schedule of movement of explosive van is randomly scheduled and kept secret. The storage, transportation and use of explosives are carried out with

complete safety, in accordance with the Indian Explosive Act & Rules, 1883. The entire magazine area is fenced by high chain links with barked wire at top. Security guards are provided for surveillance of the area around magazines. The storage and maintenance of stock records for all the magazines is done by an authorized magazine in-charge under the guidance of blasting engineer. The magazine is kept under lock and key and guarded by security person round the clock. Necessary foolproof arrangement are made for transportation of detonators in separate vehicles to the blasting site.

7.4.7 OBJECTIVE OF DISASTER MANAGEMENT PLAN

- The disaster management plan is aimed to ensure safety of human life property and production of environment. Following are the objective of the disaster management plan.
- First aid in case of injury.
- Rescue operation and provision of adequate medical facilities to the injured.
- Safety of the human life in the buffer zone if needed.
- Protecting and minimizing damage to property and the environment.
- Initially restrict and ultimately bring the incident under control.
- Identify any dead.
- Inform to the administration, DGMS and statutory persons as per Rules.

7.4.8 EMERGENCY ORGANIZATION

An emergency organization is set up which is led by the First-class Mines Manager. He organizes a team of responsible and statutory personnels under him for controlling the incidence.

(a) Emergency Communication

Whoever notices an accident, disaster or emergency situation etc. would inform immediately to the Mines Manager. When any accident resulting in serious bodily injury to any person or in loss of life occurs in a mine, the Mines Manger shall inspect the site of accident as soon as possible and have an enquiry into the cause of and circumstances attending the accident. The result of such enquiry with plan of the site of the accident showing details will be recorded in a bound pages book kept for the purpose. The Manager performs such other duties as have been prescribed in that behalf under the Mines Act 1952 and MMR.

(b) Emergency Facilities

Stretchers and general first aid materials for dealing with fire burns etc. will be maintained in the medical centre as well as in the emergency control room. A medical practitioner has been appointed for the mine's workers. Beside this medical personal, medical facilities in the area will be created & updated. An ambulance with driver will be ensured and maintained to transport injured or affected persons. At the end of an emergency, the Mines Manager orders an all clear signal.

(c) Disaster Management

- All safety precautions and provisions of Mines Act-52, MMR 1961 and Mines Rules-55 will be strictly followed in all mining operations.
- Avoidance of danger as per Regulation 117 and general precautions and safety as per Regulation 118 and 181 of MMR 1961 will be observed.

- Mining operations will be done under supervision of qualified and statutory personnel as per MMR 1961 and MCDR 2017.
- Mine working will be done as per approved Mining Plan following provisions of MCDR 2017 and Regulation 106, 110, 111 & 115 of MMR 1961.
- General and surface precautions against fire i.e. precautions and provision of firefighting equipment will be taken as per Regulation 119 of MMR 1961.
- Entry of unauthorized persons will be prohibited.
- Provisions of all the safety applications and protective wears such as safety boot, helmets, goggles, hand gloves, ear muffs, etc. as per Regulation 182 will be made available to the employees and regularly checked for their use.
- Cleaning of mine faces will be regularly done.
- Handling of explosive, charging and blasting will be carried out by competent persons only as per MMR.
- Provision of magazine at a safe place with fencing and necessary security arrangement.
- Adequate safety equipment provided at explosive magazine.
- Regular maintenance and testing of all mining equipments as per manufacturer's guidelines.
- Increasing the awareness of safety and disaster through proper training of mining staff.
- The haul roads will be kept sufficiently wide to ensure free and safe movement with proper alignment and gradient.
- Medical appliances / specified First Aid box as per Section 21 of Mines Act 1952 will be maintained in the mine office. The Mine Manager and other qualified persons renders first aid to injure if needed.

Organisation Dealing with emergency

There is an organization exist for dealing with the emergency situations. The emergency organization is headed by emergency leader called Site Main Controller (SMC) who is mine manager. In his absence senior most person available at the mine are the emergency leader till arrival of mine manager. There are two teams for taking care of emergency situation- Firefighting team and Rescue team. A tele-communication network and wireless shall connect Site Emergency Control Room (SECR) to control various departments of the mine, fire station and neighboring industrial units/mines.

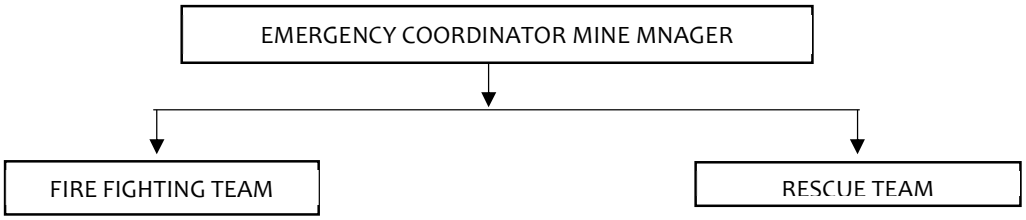


Fig. 7.2 Organization for Dealing with Emergency Situation

Structure of the Disaster Management Plan

1) **Out Line of Disaster Management Plan**

The purpose of disaster management plan is to restore the normalcy for early resumption of mining operation due to an unexpected, sudden occurrence resulting to an abnormality in the course of mining activity leading to a serious danger to workers or any machinery or the environment.

2) **System of Communication**

An internal communication system will be provided for the department head and to their line of command with telephone facility. Telephone nos and addresses of adjoining mines, rescue station, police station, fire service station, local hospital, electricity supply agency and standing consultative committee members are provided.

3) **Consultative Committee**

A standing consultative committee will be formed under the Mines Manager. The members consists of safety officer / medical officer / Asst. manager/ public relation officer/ Foreman/ and environmental engineer.

4) **Facilities & Accommodation**

Accommodation and facilities for medical centre, rescue room and for various working groups will be provided.

5) **First Aid & Medical Facilities**

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

6) **Stores and Equipment**

A detailed list of equipment available, its type & capacity and items reserved for emergency will be made available.

7) **Transport Services**

A well-defined transport control system is provided to deal with the situation.

8) **Functions of Public Relations Group**

To make a cordial relation with government officials and other social service organization and working groups. To liaise with representatives of the mine to ameliorate, the situation of panic, tension, sentiments, grievances and misgivings created by any disaster. To ameliorate the injured, survivors and family members of the affected persons are provided all the material with required arrangements including, moral support and establishing contact with relatives of victims. This will be made immediately.

9) **Security**: Manning of security posts

10) **Catering & Refreshment**: Arrangement will be made for the victims, rescue teams and others.

7.4.8.1 KEY PERSONNEL AND THEIR RESPONSIBILITY

The appointment of all the key personnel i.e., Site Controller, Accident Controller/Communication Officer, Primary Controller and Liaison Officer are taken up and intimated to DGMS and other concerned authorities as per statute. The responsibilities of onsite Disaster Management Plan key personnel are elaborated as follows:

(i) Site Controller

The Site Controller has an overall responsibility for controlling the incident/ accident and directing the personnel.

- To prepare a foolproof plan for control of accidents like landslides, subsidence, flood, fire and other natural calamities
- To inform statutory bodies of the State and Central Government.
- To inform Communication Officer about the emergency, Control Centre and assembly point.
- To provide all assistance and call for Fire Squad, Security Officer and other services required for removing/ control of danger.
- To ensure that all necessary personnel assemble at assembly point.
- Make arrangements for medical treatment to the personnel injured.

(ii) Accident Controller

- Mock rehearsal of management plan prepared for accident.
- To withdraw men/ machines from the affected area with priority for safety of personnel, minimize damage to the machines, environment and loss of material.
- To act as an accident controller to all the later arrived.
- To make a report based on the facts and figures and submit to the Site Controller.
- To communicate with the Site in-charge and make arrangements for transportation of the injured personnel.

(iii) Primary Controller

- To inform the Accident Controller/ shift In-charge from the nearest means of communication about the location and the nature of accident.
- To assist in clearing any obstruction in relief of accident. To carry out all instructions of Accident Controller.
- To provide first aid treatment and communicate with the Shift in charge.

(iv) Search and rescue team

- Group of people trained and equipped to carryout rescue operation of trapped personnel.
- The people trained in first aid and firefighting shall be included in search and rescue team.

(v) Emergency Security Controller

- Emergency Security Controller shall be senior most security person located at main gate office and directing the outside agencies (e.g. fire brigade, police, DM, Civil/Defence representatives and media men etc.

(vi) Shift Medical Officer

- He shall be a doctor/trained compounder at the first aid center/medical center of mine.

7.4.8.2 RISK ASSESSMENT

Risk assessment with respect to high accidents like landslides, flood, inundation, fire seismic activities, etc. is as under:

Landslides- The topography of Lease area and its adjoining area has slightly undulating topography. The deposit is compact, hard & massive with gentle dipping. Mining activities will be carried out with proper designing of pit slope for slope stability. The ultimate slope will be maintained below <45° for slope stability hence insignificant chance of landslide due to the failure of mining benches. No inter-burden or reject burden dump will be there in period of PMCP expect protective bunds along boundary of applied area.

Flood- As per the "Vulnerability Atlas – 2nd Edition; Peer Group, MoH & UPA; based on digitized data of SOI, GOI, Flood Atlas, Task Force Report, C.W.C., GOI" the mining lease area does not fall under "area liable to flood". The average annual rainfall in area is of 764 mm.

Inundation-Not applicable as mining is will be carried out by opencast method.

Fire-It is a likely/common hazard associated with working of diesel powered HEMM in mines. The sources of fire in mines could be source of ignition such as high temperature, electrical short circuiting, welding and cutting operations in vicinity of flammable materials like diesel, hydraulic oil, transmission oil, lubricant & grease. Poor quality of maintenance of spares like hoses, electrical parts etc and poor housekeeping. For prevention of fire, measures are being/will be taken are as under-

- Mining machines will be maintained leakage free to obviate occurrence of fire.
- Due care will be taken in maintenance of electric wiring to avoid short-circuiting.
- Exhaust pipes of HEMM have to be covered with insulation, non-inflammable material.
- Good housekeeping practices will be adopted in oil room and working area.
- Auto and portable fire extinguishers will be provided on all equipment.

Seismic activities: Many parts of the Indian subcontinent have historically high Seismicity. Seven catastrophic earthquakes of magnitude greater than 8 (Richter scale) have occurred in the Western, Northern and Eastern parts of India and adjacent countries in the past 100 years of history. By contrast, peninsular India is relatively less seismic, having suffered only infrequent earthquakes of moderate strength.

Stratigraphic point of view the area is quite old and is technically stable for any seismic activity to take place. The seismic zoning map shows the contours joining locations of equal expected peak accelerations in rock expressed in percentage. The Limestone Mine lease area lies in Zone-II of Seismic Zoning Map, which is moderate seismic risk by national standards. Based on above by and large the area is seismically safe.

No tailing dam exists within the lease area or proposed in future as no mineral processing / beneficiation is planned.

7.4.8.3 QUICK EVACUATION, AMELIORATIVE MEASURES FOR EMERGENCY PLAN

Objective

To deal with accidents efficiently and quickly.

Line of Action

Any person, who notices any explosion or accident, should immediately take steps to give warning by suitable means and at the same time take necessary action for withdrawal of men from the site. He will also inform the Mines Owner and other officials without any delay.

Duties of Mine Official: The Mine officials receiving the warning will forthwith inform to team member and take actions for quick evacuation, ameliorative measures at site. Inform to senior management and statutory bodies.

Duties of Head of Department (Safety): Worked in close coordination with the other team members for defensive, systematic & structured process.

Duties of Head of Department (Security): Responsible to depute the security guard at site, barricaded the area, control to entry of unauthorized person at site/nuisance event etc. and for providing transport vehicle at site.

Duties of Head of Department (Employees Relation): Coordination with local authority for statutory obligation or any assistance will be required by local authorities.

Duties of Head of Department (Electrical): Responsible for cutting off power supply and make lighting arrangement for working in night or any assistance regarding electricity.

Duties of Chief Medical Officer, (Hospital): Responsible for making arrangement for medical aid for person.

Duties of Fire Supervisor: On receiving warning, the team will reach the site of fire and depending on its nature, class and extent will take steps to extinguish it and rescue persons if involved in fire.

7.4.8.4 THE CAPABILITY OF LESSEE TO MEET SUCH EVENTUALLY

The details of capability of lessee to meet such eventuality are as under

Communication facility available:

Communication facilities like telephone mobile phones, email etc. will be available to communicate with the people at working sites.

Alarm System:

For raising alarm, hooters have been located at suitable locations.

Fire Brigade:

A well-equipped common fire brigade & sufficient nos of fire extinguisher with trained firefighting personnel for mine. Beside this, mining personnel are also trained to tackle emergency situations like immediate evacuation of man and machine, operating fire-fighting equipment, giving first aid etc.

Security: Company has got its own security personnel capable of acting in emergency situation.

First Aid Facility: First aid training will be imparted to mining personnel at regular interval. First aid Stations has been established at appropriate locations.

Emergency Control System: In emergency persons to be contacted, location for assembly, telephone numbers for contact, roles and responsibility of persons etc. have been specified. Emergency telephone numbers are displayed at mine site.

7.4.8.5 ACTION IN EMERGENCY

If any emergency like fire arises in the mine; one immediately informs Security Supervisor and inform the key personnel and act as detailed above followed by blowing the Alarm. The emergency alarm has wailing sound for two minutes on hearing telephone or alarm; the key personnel will act as per responsibilities. The procedure for all emergency situations as mentioned above would be same.

Fire Extinguishers at Different Locations

The name of site and type of fire extinguishers are given below

Name of the site	Type of extinguisher
Electrical equipment, power panels, control rooms and pump house	CO_2 type, foam type, dry chemical powder type
Mine Office	Dry chemical type, foam type

7.4.8.6 IDENTIFICATION AND REPORTING SYSTEM

When any near miss takes place same it should be brought to the notice of the supervisor and also to the concerned Departmental Head and the Safety Department. Then the respective department head report it to the ACC Near Miss Reporting Server (NMRS). Near Miss Reporting Box shall be kept at prominent places with Reporting Format so that no near miss incident can be missed. The Safety Department Head investigate the same incident along with the floor supervisor and corrective measures shall be taken as soon as possible. For near miss of critical nature Departmental Head along with Safety Head shall do the investigation and corrective action shall be taken. In the departmental safety meeting learning's from the previous near miss shall be discussed. To promote the Near Miss reporting system, Highest and Best near miss reporting person are awarded during the monthly safety gate meeting.

Cause Analysis of the Near Miss Incident and SOT Format

S. No	Cause Analysis of the near miss incident	Percent
1.	Poor housekeeping/ disorderly housekeeping	To be filled by ACC, after operation
2.	Operating equipment without authority	
3.	Failure to adhere to warning signal/ alarm	
4.	Failure of securing himself adequately	
5.	Inadequate warning system	
6.	Congestion	
7.	Defective tools, equipment or material	
8.	Failure to follow procedures	

9.	Failure to use PPE	
10.	Using equipment improperly	
11.	Improper lifting	
12.	Improper placement	
13.	Inadequate guards or barriers	
14.	Traffic congestion at workplace	
15.	Operating at improper speed	

7.4.8.7 SITE RESTORATION

The incident controller will check the areas thoroughly for possible hazards such as toxic fumes or live wires after emergency and will inform site controller accordingly.

The key personnel meet to evaluate their individuals and overall performance in responding to situation after the emergency is over. The review determines:

- Effectiveness of emergency response plan.
- Mine crew performance.
- Need for updating or revision the emergency response plan.
- Suitable arrangement for restarting the work.
- Evaluation and control of efficient arising out of mitigating measures like foam discharge & overflow of oil in water.
- Rehabilitate evacuated area.
- Adopt measures to prevent similar recurrence.

7.4.8.8 PRECAUTIONS

To avoid all these disasters at working place and to minimize their effects following precautions will be taken and arrangement will be made at the working place.

(i) Periodical maintenance of mine machineries.
(ii) The persons will be trained properly to handle the situation.
(iii) Detailed warning system, implementation procedure, emergency control center will be maintained at the mine with names of trained persons.
(iv) Details and availability of heavy machinery, fire-fighting equipment will be made available at the site.
(v) Proper arrangements will be made for treatment of injured person, if any.
(vi) All the safety equipment will be made available in the mine.

7.4.8.9 POST DISASTER ANALYSIS AND EVALUATION

When the emergency is over, the team carry out a detailed analysis of cause of accident/occurrence, evaluate the influence of various factors and find out the procedures to minimize them in future. At the same time adequacy of disaster management plan has been evaluated and shortcomings have been rectified to improve the plan.

7.4.9 OFF-SITE EMERGENCY PLANNING

7.4.9.1 INTRODUCTION

The off-site emergency plan is an integral part of any hazard control system. It is based on those accidents identified by the works management, which could affect people and the environment outside the works. Thus, the off-site plan follows logically from the analysis that took place to provide the basis for the on-site plan and the two plans should, therefore, complement each other. The key feature of a good off-site emergency plan is flexibility in its application to emergencies other than those specifically included in the formation of the plan. The roles of the various parties that may be involved in the implementation of an off-site plan are described below. The responsibility for the off-site plan is likely to rest either with the works management or with the local authority.

Either way, the plan must identify an emergency coordinating officer who would take overall command of the off-site activities. As with the on-site plan, an emergency control center is required within which the emergency coordinating officer can operate. An early decision is required in many cases on the advice to be given to people living "within range" of the accident – in particular whether they should evacuate or told to go indoors. Consideration of evacuation may include the following factors:

a. In the case of a major fire but without explosion risk (e.g. an oil storage tank), only houses close to the fire are likely to need evacuation, although a severe smoke hazard may require this to be reviewed periodically.

b. But if the fire escalates it might be necessary to evacuate people nearby, but only if there is time; if insufficient time exists, people would be advised to stay indoors and shield themselves from the fire while measures are taken by those outside to douse fire.

7.4.9.2 ASPECTS INCLUDED IN AN OFF-SITE EMERGENCY PLAN

Some of the aspects that are included in off-site emergency plan are as follows:

a) Organization

Details of command structure, warning systems, implementation procedures, emergency control centres, name and appointments of incident controller, site main controller, their deputies and other key personnel.

b) Communications

Identification of personnel involved, communication centre, call signs, network, list of telephone numbers.

c) Special Emergency Equipment

Details of availability and location of heavy lifting gear, bulldozers, specified fire-fighting equipment, fireboats.

d) Voluntary Organizations

Details of organizers, telephone numbers, resources, etc.

e) Meteorological information

Arrangements for obtaining details of weather conditions prevailing at the time and weather forecasts will be made.

f) Humanitarian Arrangements

Transport, evacuation centres, emergency feeding, treatment of injured, first aid, ambulances, temporary mortuaries.

g) Public Information

Arrangements for: -

(i) Dealing with the media-press office

(ii) Informing relatives, etc.

h) Assessment

Arrangements for: -

(i) Collecting information on the causes of the emergency

(ii) Reviewing the efficiency and effectiveness of all aspects of the emergency plan.

7.4.9.3 ROLES OF MAJOR HAZARD MANAGEMENTS

Where the local authority has the organization to formulate the plan, the role of management in off-site emergency planning is to establish liaison with those preparing the plans and to provide information appropriate to such plans. This includes a description of possible on-site accidents with potential for off-site harm, together with their consequences and an indication of the relative likelihood of the accidents.

Advice is provided by works managements to all the outside organizations which may become involved in handling the emergency off-site and they have to get familiarized with some of the technical aspects of the works activities, e.g. emergency services, medical departments, etc.

7.4.9.4 ROLE OF THE EMERGENCY COORDINATING OFFICER

The various emergency services are coordinated by an Emergency Coordinating Officer (ECO) who is likely to be a senior police officer but, depending on the circumstances, could be a senior fire officer. The ECO liaise closely with the site main controller. Again, depending on local arrangements, for very severe incidents with major or prolonged off-site consequences, the external control may pass to a senior local authority administrator or even an administrator appointed by the Central or State Government.

7.4.9.5 ROLE OF THE LOCAL AUTHORITY

Following facilities are available at surrounding localities:

Fire Station is at Jammalamadugu which is Approx. 17.5 km away from ML area.

Government Hospital Vaddirala is approx. 1.5 Km away from the ML Area

Police Station at Talamanchipatnam (~3.0 km)

In some places the duty to prepare the off-site plan lies with the local authorities. They have appointed an emergency planning officer (EPO) to carry out all this duty as part of the EPO's roles

in preparing for a whole range of different emergencies within the local authority area. The EPO is need to obtain the information to provide the basis for the plan.

Rehearsals for off-site plans are important for the same reasons as on-site plans needs to be organized by the EPO.

7.4.9.6 ROLE OF THE POLICE

The police normally assume the overall control of an emergency, with a senior officer designated as emergency coordinating officer. Formal duties of the police during an emergency include protecting life and property and controlling traffic movements. The functions include controlling bystanders, evacuating the public, identifying the dead and dealing with casualties and informing relatives of dead or injured.

7.4.9.7 ROLE OF THE FIRE AUTHORITIES

The control of a fire is normally the responsibility of the senior fire brigade officer who would take over the handling of the fire from the site incident controller on arrival at the site. The senior fire brigade officer also have a similar responsibility for other events. Fire authorities having major hazard works in their area is familiarize themselves with the location on site of all stores of flammable materials, water and foam supply points and fire-fighting equipment.

7.4.9.8 ROLE OF THE HEALTH AUTHORITIES

Health authorities, including doctors, surgeons, hospitals, ambulances and so on, have a vital part to play following a major accident and they form an integral part of any emergency plan.

For major fires, injuries are the result of the effects of thermal radiation to a varying degree and the knowledge and experience to handle this in all, but extreme, cases may be generally available in most hospitals.

7.4.9.9 ROLES OF THE GOVERNMENT SAFETY AUTHORITY

The Inspectors of Director General of Mines Safety may want to satisfy themselves that the organization responsible for including the off-site plan has made adequate arrangements for handling emergencies of all types including major emergencies.

In the event of an accident, local arrangements regarding the role of the factory inspector is apply. In the aftermath, factory inspectors may wish to ensure that the affected areas are rehabilitated safely.

7.4.10 CARE AND MAINTENANCE DURING TEMPORARY DISCONTINUANCE

When the mine will be temporarily discontinued due to any unforeseen circumstances, the following care and maintenance will be carried out.

- Notice of temporary discontinuance of work in mine is given to the Controller General, Controller of Mines and the Regional Controller of Mines, IBM, DGMS & DMG, State Govt. officials under Rule 24 of MCDR 1988 and Reg. 6 of MMR 1961 respectively
- All mining machineries to be shifted to a safe place.
- Entrance to the mines or part of the mines to be discontinued is fenced off as per DGMS Circular and security Guards are posted for the safety and to restrict any unauthorized entry to the area.

- Competent persons inspect the area regularly.
- Air, water and other environmental monitoring to be carried out.
- Greenbelt/Plantation is taken care of on a regular basis.
- All rules and regulations are being followed in case of any temporary discontinuance of mine.

7.5 RESETTLEMENT & REHABILITATION

The total mining lease area is 997.08 ha which falls into villages Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollaapalle, G. Uppalapadu of Mandal: Mylayara, District: Kadapa (YSR), Andhra Pradesh. Out of total lease area 10.35 ha is government land and 986.74 ha is private land. Out of the total private land, 681.47 ha land is under possession and remaining land to be acquire. Total budget for R&R is estimated as Rs. 298.648 Crore. Detailed R&R Action Plan has been prepared and same is enclosed as ***Annexure 11.***

CHAPTER - 8

PROJECT BENEFITS

8.1 INTRODUCTION

M/s. ACC Limited is proposing a Kadapa Limestone Mine (ML Area: 997.80 ha) with limestone production capacity of 7.0 Million TPA at Villages: Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollaapalle, G. Uppalapadu of Mandal: Mylavaram, District: Kadapa (YSR), Andhra Pradesh.

ACC limited believes holistic socioeconomic development of the local community is the need of the hour. It truly believes that a company's prosperity is linked with that of its neighbouring communities.

OVERVIEW OF THE COMPANY

The cement demand in the country is going at the rate 9-10% Compound Annualized Growth Rate (CAGR) particularly in the eastern states, due to various infrastructural projects planned by State/Central Governments and also due to rapid growth of industries, the demand is likely to be higher than average for the country. Keeping this in view ACC has proposed to set up integrated cement plant to meet the market demand of cement. Therefore, to fulfill the Limestone requirement of the plant captive limestone mines has been proposed. The main benefit envisaged from the project is that the natural resource and skilled manpower available in Andhra Pradesh State will be utilized to produce Cement in the State itself. This will give a boost to the socio-economic status of Andhra Pradesh by way of direct and indirect taxes, employment and infrastructure development. Proposed integrated cement plant will result in considerable growth of stimulating the industrial and commercial activities in the state. Small and medium scale industries may be further developed as a consequence. In operation phase, the proposed integrated plant would require significant workforce of non-technical and technical persons. Migration of persons with better education and professional experience will result in increase of population and literacy in the surrounding villages. ACC will encourage formation of Self-Help Group by the surrounding villagers. The social development scheme includes construction of community centres and schools, maintaining roads, rain shelters, providing drinking water facility to the nearby villages, making toilets in schools and for community, providing free medical camps, providing scholarships to bright students and sportsperson, etc. Income generating schemes that will be implemented for upliftment of poor sections of the society includes vocational training in the field of bee keeping, mushroom cultivation, growing fruits and vegetables, development of fodder farms, etc.

8.2 PROJECT BENEFITS

Project benefits are attributed in various ways as under:

1) Environment Benefits
2) Employment Potential: Skilled, Semi-skilled & Un-skilled

3) Economic Benefits
4) Social Benefits

The company is conscious of its obligations to society at large & has demonstrated through various activities undertaken at its operating units.

8.3 ENVIRONMENTAL BENEFITS

As per approved mining plan out of the total Mining Lease area i.e. 997.08 ha, total excavated area will be 707.1 ha, out of which 390.6 ha will be converted into water reservoir, and 146.5 ha will be backfilled area and 170.0 Ha area will be used for storage of sub grade.

Total area under greenbelt (7.5 m lease periphery) is estimated as 16.50 ha and remaining 13.50 ha will be under safety zone of road and canal which will also be completed within 5 years. Total area under plantation to be covered till life of mine is 156 ha (9.5 ha on outside waste dump area + 146.5 ha on backfilled area). Local and fruit bearing species will be planted after consultation with local forest officer and as per CPCB Guideline.

8.4 EMPLOYMENT POTENTIAL: SKILLED, SEMI-SKILLED & UN-SKILLED

Total man power requirement for the proposed project will be 62 persons. Highly skilled, Unskilled/ Semi–Skilled manpower will be employed and Preference will be given to the locals as per their requirement & eligibility. The limestone after excavation transported to the crusher.

Apart from the above, various indirect employment opportunities are envisaged by way of transportation, workshops, petty contractors; shopkeepers throughout the state and in its marketing regions.

Mining activities also result in numerous indirect employment avenues for the people such as truck owners, drivers, repair shops, tea–stalls etc. The ratio of direct to indirect employment in the mining sector is 1:10 i.e. for every job created in the mining sector, another jobs (indirect employment) are created along the supply chain.

The Company is organizing vocational training, entrepreneur development programmes for the locals including women members and is providing advice for starting suitable small scale industry.

The employment of local people in primary and secondary sectors of project shall upgrade the prosperity of the region. These will in-turn improves the socioeconomic conditions of the area. This project is expected to yield a positive impact on the socio-economic environment of the region. It helps in sustainable development of this area including further development of physical infrastructural facilities.

8.5 ECONOMIC BENEFITS

The Mining sector is one of the important sectors in India's economy. The proposed project will contribute additional revenue to the State and Central Govt. in the form of royalty, Cess and other taxes etc.

Proposed mine shall be contributing around Rs. 73.92 Crore every year to the State and Central Govt. exchequer by way of mining revenue (Royalty, DMF, NMET etc).

The project will help in improving the socio-economic status of the near-by villages by generating direct or indirect employment opportunities. The project will also induce the development of ancillary and related small-scale industries in the adjoining areas.

Job opportunities to the local people will improve the earning and spending capacity of the people. The people in area will be able to utilize improved facilities with regard to education, health care, hygiene, recreational opportunities, small business opportunities etc.

With the development in and around the area, there will be supporting facilities/ infrastructure eventually leading to the development of the area. The Socio-Economic status of the area will improve with the implementation of various development programs under Pradhan Mantri Khanij Kshetra Kalyan Yojana (PMKKKY) for welfare of the areas and people affected by mining related operations, using the funds generated by District Mineral Foundations (DMFs). DMF will be utilized by local administration for the development of socio-economic infrastructure and well-being of the local population.

Table - 8.1

Economic Benefits of the Project

S.N.	Description	Revenue generation/Tonne (In INR)	Revenue generation/Annum (In Crores)
1.	Royalty	80.00	56
2.	District Mineral Foundation (@30% of Royalty)	24.00	16.8
3.	National Mineral Exploration Trust (@2% of Royalty)	1.60	1.12
Total		**105.6**	**73.92**

Revenue generation per year based on production @ 7.0 million TPA (@ INR 73.92 Crore/Annum)

Increment of revenue to the State & Central exchequer from the interlinked cement plant is also envisaged. In addition, various rural development initiatives for the upliftment of the nearby communities have regularly been undertaken since past many years. The details of expenditure for CSR activities from the Phase I is given below in the table 8.2.

This proposed project will also boost the economy of the area by creating direct & indirect jobs for locals. There will be a positive cumulative impact of the project on the economy.

8.6 SOCIAL BENEFITS

Proposed project will result in growth of the surrounding areas by increased direct and indirect employment opportunities in the region including ancillary development and supporting infrastructure. Besides this, Royalty and other taxes are additional benefit, particularly in the form of contribution to the District Mineral Foundation fund (DMF), National Mineral Exploration Trust etc. would be additional benefits and will be utilized by local administration for the development of socio-economic infrastructure and well-being of the local population.

Company's CSR Vision

1) Generation of employment and improved standard of living;
2) Establishment of small and medium scale engineering ancillaries,
3) Increased revenue to the state by way of royalty, taxes and duties; and

4) Superior communication and transport facilities etc.

Promotion of Social and Economic Status

M/s. ACC Limited will carry out various socio-economic development activities which will contribute substantially to the overall economy and social development of the area. The beneficial aspects of the proposed projects on the socio-economic environment of the area are in the areas of employment, service, trade, commerce, public utility, literacy, social awareness, health care facilities, recreation etc.

The company has planned to supplement the existing governmental programs among the local population. Environmental awareness will be created among people by organizing awareness camps. Developmental activities will be carried out keeping sustainable development in mind.

The socio-economic development plan for the proposed project has been customized and extended to the nearby villages of mine site. The company will propose plans to supplement the existing governmental programs among the local population while partnering with government agencies, NGOs, local Panchayats for implementation.

ACC would immediately carry out a detailed Needs Assessment of the surrounding villages for pre operation CSR activities through participatory rural appraisal method and get a CSR intervention plan as per the prioritization of needs by the community. ACCs CSR portfolio would include intervention projects on Livelihood, Education, Health & Sanitation, Community Environment, Promotion of local sports, arts and culture.

Area of Operation: The company is will be carrying out the CSR activities in the nearby areas/villages.

Details of some CSR Projects activities undertaken by the company are given below:

Projects to cover under ACC Vidya Utkarsh or Education theme

- Support for Quality Education in schools of the villages
- Support for competitive exams preparation
- Advanced computer education
- Spoken English classes
- Career counselling and guidance
- Computer Aided Education
- Provide desk and benches to schools
- School bags and stationery for students
- Construction of toilets at Schools
- Merit scholarships

Projects to covered under ACC Disha or Livelihood - Youth Employability Theme

- 4-wheeler Driving Training to youth
- License Support to Auto Drivers
- Two Wheelers Mechanic Training
- AC/Fridge Repair training to un employed youth

- Rural Electrification training
- Basic Computer skills to Un employed youth
- Budget will be drawn from Broad CSR Plan for the Project Period

Projects to covered under ACC LEISA or Livelihood for Farmers Theme

- Formation of RMG (Rythu Mitra Group/Farmers Group) and its capacity building
- Approach Road to Jangalapalli
- Dairy Development
- Crop intensification
- Multi cropping
- NPM/Bio fertiliser practices
- Support for hybrid plants/improved variety of Seeds
- Mushroom Cultivation Training
- Connect with GKVK/ICRISAT
- Honey bee keeping training
- Formation of Farmer Producer Company

Projects to covered under ACC Swawlamban Project or Livelihood for Community Women

- Support for Dairy Development
- Support for sheep rearing
- Support for Gottery
- Support for Poultry
- Tailoring training to Women
- EDP Support
- Agarbathi making and packing - Cycle Agarbathi
- Exposure Visits to Apparel Park
- Capacity Building of MS/VO/SHGs
- Exposure on Best Practices
- Book Writing training to SHGs

Projects to covered under ACC Arogyam Project or Health for Community Women

- PHC - Vaddirala strengthening through PPP model
- Awareness camps and IEC activities of Health
- Conducting Health checkup camps in Villages
- Work together with PHC
- Support for NRHM and National program s
- Multi-speciality Health camps
- Mother and child health support
- Support for Anganwadi Centres

It will be covered under ACC Sanrakshit Paryavaran or Community Environment Development theme

- Avenue Plantation
- Plantation on fields
- Barren Hill Afforestation
- Environment protection initiatives
- Agro forestry promotion
- Block plantation (Home based and field based)
- Rain water harvesting structures for ground water recharge
- Soil and moisture conservation
- De-siltation of surface tanks
- Water harvesting structures
- Construction of check dams
- Dried bore well recharging
- 3 pond in the village

It will be covered under ACC Sampoorn Swachchata Project or Sanitation in Community Area theme

- Support for ODF villages
- Construction of CC approach roads
- Solid waste Management at villages
- Water turfs and washing plot farms
- RO water plants at villages

It will be covered under ACC Drona project i.e. promotion of Local Sports, Art and Culture theme

- Coaching to local youth for sports
- Organize mandal level tournaments (Cricket/ Khokho/ Kabbadi/Shuttle cock)
- Participation of Dist./state/National level
- Schools supported by sports material/infra
- Association with sports club/federation/Academy
- Support for cultural activities
- Conduct Games and sports at School/village levels.

Report on on-going CSR Activities at Kadapa Project

The ongoing CSR activities include the following:

- Skill development trainings and livelihoods promotion;
- Women empowerment;
- Infrastructure Development;
- Activities on Health and Environment Protection;
- Activities on Education; and
- Improvement of Rural Sports.

8.6.1 PROPOSED ACTION PLAN FOR SOCIO-ECONOMIC DEVELOPMENT

The socio-economic activities will be implemented based on the community priorities. The areas where the development is required will be identified through Socio-economic study and considered. This approach will strengthen the groups, empower the members and will develop a high sense of ownership.

The details of Budgetary Allocation for the activities for development of nearby areas on the basis of the issues to be raised during the Public Hearing and the Action Plan for implementation of the same has been incorporated in the Final EIA/EMP Report.

The funds allocated will be spent for various Socio-Economic development activities proposed to be undertaken in the study area with a priority to villages falling in the impact zone, which may be further extended to other villages depending on budget and requirement.

Details of Expenditure to be done by the company under EMP activities in phase I & II is given in Chapter 7 of Final EIA /EMP Report. Company has a proposal of Rs 35.5 crore over a period of 10 years to be spent under skill development programme in two phase as per below:

Table No. 8.2

Skill Development Programme (ACC DISHA) (Phase - I)

S. No	Particulars	Details	Cost (in crores)
1.	Programme Design & Development	• Curriculum development, Enhancement of qualifications, skills, knowledge, and behaviour and to ensure that the training provided meets the needs of the industry. • Spoken English course in the locality with the help of a graduate teacher. • Providing coaching for competitive examinations for NEET / JEE.	2.5
2.	Infrastructure & Facilities	• Infrastructure development, including construction or renovation of physical training centres. • Construction/ renovation of boundary walls, construction of separate toilets for boys & girls, drinking water facility. • Installation of smart classes in the Government schools to promote Digital education and development of an e-learning platform for delivering theoretical training. • Development of libraries in nearby Govt. Schools in consultation with Gram Panchayat/concerned authorities.	4.4
3.	Training Programs to villagers	• Training programs to specific needs within the construction industry, addressing both skilled and unskilled workers. • Give workers basic skill training in areas including material handling, safety procedures, and the use of simple tools. • Provide computer training to the unemployed youth.	2.5
3.	Training & Facilitators	• Hiring of trainers who are certified in the relevant sectors. • Hiring of SMEs for specialized knowledge and expert training delivery in sectors where deeper expertise is required. • Ongoing professional development programs for trainers to keep them updated with the latest industry trends.	3.5
4.	Training Materials & Resources	Distribution of Textbooks, stationary, sports kits, e-learning contents to the students.	1.0

S. No	Particulars	Details	Cost (in crores)
5.	Assessment & Certification	• Creating and putting into practice a system for evaluating students' proficiency in both theoretical and practical areas. This includes exam creation, practical assessments, and online evaluation. • Establishing systems for monitoring and assessing each student's development to make sure they fulfil the requirements for certification.	2.5
6.	Placement & Post-Training Support	• Organizing internships with affiliated groups. • Mentorship, and funding resources for facilitating Micro Enterprises.	2
Total Cost			**18.40**

Table No. 8.3

Skill Development Programme (ACC DISHA) (Phase - II)

S. No	Particulars	Details	Cost (in crores)
1.	Programme Design & Development	• Curriculum development, Enhancement of qualifications, skills, knowledge, and behaviour and to ensure that the training provided meets the needs of the industry. • Spoken English course in the locality with the help of a graduate teacher. • Providing coaching for competitive examinations for NEET / JEE.	2.0
2.	Infrastructure & Facilities	• Infrastructure development, including construction or renovation of physical training centres. • Construction/ renovation of boundary walls, construction of separate toilets for boys & girls, drinking water facility. • Installation of smart classes in the Government schools to promote Digital education and development of an e-learning platform for delivering theoretical training. • Development of libraries in nearby Govt. Schools in consultation with Gram Panchayat/concerned authorities.	3.5

S. No	Particulars	Details	Cost (in crores)
3.	Training Programs to villagers	• Training programs to specific needs within the construction industry, addressing both skilled and unskilled workers. • Give workers basic skill training in areas including material handling, safety procedures, and the use of simple tools. • Provide computer training to the unemployed youth.	2.5
3.	Training & Facilitators	• Hiring of trainers who are certified in the relevant sectors. • Hiring of SMEs for specialized knowledge and expert training delivery in sectors where deeper expertise is required. • Ongoing professional development programs for trainers to keep them updated with the latest industry trends.	3.1
4.	Training Materials & Resources	Distribution of Textbooks, stationary, sports kits, e-learning contents to the students.	1.0
5.	Assessment & Certification	• Creating and putting into practice a system for evaluating students' proficiency in both theoretical and practical areas. This includes exam creation, practical assessments, and online evaluation. • Establishing systems for monitoring and assessing each student's development to make sure they fulfil the requirements for certification.	3.0
6.	Placement & Post-Training Support	• Organizing internships with affiliated groups. • Mentorship, and funding resources for facilitating Micro Enterprises.	2
Total Cost			**17.10**

8.7 CONCLUSION

ACC Limited recognizes CSR activities as their social responsibility. The project activity and the management will provide assistance for the development of public amenities in the region. The mine management will recruit semi-skilled & unskilled eligible workers from the nearby villages depending upon requirement in the mines and the eligibility, qualification and experience of local persons.

The overall effect will result in higher standard of living viz. better education, improved health and sanitation facilities, housing and acquisition of consumer durables. Housing, transport, medical, educational and other civic amenities will get improved in the future. This is envisaged as a major positive benefit.



CHAPTER - 9

ENVIRONMENTAL COST BENEFIT ANALYSIS

9.1 ENVIRONMENTAL COST BENEFIT ANALYSIS

As per EIA Notification dated 14th Sept, 2006, the Chapter on the 'Environmental Cost Benefit Analysis' is applicable only, if the same is recommended at the Scoping stage.

As per the ToR issued by MoEF&CC, New Delhi vide letter no. J-11015/133/2012-IA.II (M) dated 30.10.2012. for the mining project activity, 'Environmental Cost Benefit Analysis' is not required.

CHAPTER - 10

ENVIRONMENTAL MANAGEMENT PLAN

10.1 INTRODUCTION

The environmental management plan (EMP) is required to minimize adverse environmental impacts by implementing suggested mitigation measures with timelines and responsibilities during the project life cycle.

EMP consists of a set of mitigation, management and institutional measures to be taken up during implementation and operation of a project to eliminate adverse environmental impacts or reduce them to an acceptable level. The mitigation measures are recommended in order to synchronize the economic development of the project area with the environmental protection of the region. The construction phase impacts are mostly short term, restricted to the core zone and not envisaged on the larger scale. In the operational phase, the environmental impacts are due to continuous operation of the project; hence, the emphasis in the Environment Management Plan (EMP) is to minimize such impacts.

The Chapter 4 of this Final EIA/EMP Report dealt with environmental impacts of this project and proposed mitigative measures to minimize adverse impacts as well as to improve the existing environment quality. This chapter mainly discusses the administrative aspects of ensuring that mitigative measures are implemented and their effectiveness is monitored after approval of EMP. It comprises of Corporate Environment Policy (CEP) of company, establishment of an Environment Management Cell (EMC) and developing mechanism of reporting of non-compliances, if any to company board, conduct root cause analysis of non-compliances and propose appropriate mitigation measures to ensure avoidance of adverse Penal action arising out of environment and other statutory regulation.

Good practices of EMP will be ensured to keep all the environmental parameters of the project w.r.t. air, water quality, soil, biological diversity of the area socio economic improvement, biological diversity of the area within statutory limits and sustainable manner.

10.2 PURPOSE OF EMP

- To control emission and waste minimization and proper disposal of waste so as to meet statutory requirement.
- To support & implement best technology to achieve environmental standards.
- Judicious use of natural resources and water.
- To ensure good working condition for safety, welfare and good health of the work force.
- Ensure effective operation of all control measures.
- Vigilance towards probable disasters and accidents.
- Monitoring of cumulative and long-term impacts.
- To reduce accident hazards.
- Allocation of funds for environment management supplies.
- To promote greenbelt development & Plantation Programme.
- Continuous development and search for innovative technologies for better environment.

10.3 ELEMENTS OF EMP

EMP includes four major elements: -

1. **Planning**: This includes identification of environmental impacts, legal requirement, commitments and policies, setting environmental objectives and environment, health, safety and social compliance requirements;
2. **Implementation**: This comprises of resources available for the project, accountability of employees , contractors and documentation of measures to be taken;
3. **Checking (Measurement & Evaluation):** This includes regular inspection, audits, monitoring corrective actions and record keeping ; and
4. **Management Review**: Actions are taken to continually improve the environment, health, safety, and social performance of the organization.

The following Policy & programs have been developed to ensure proper implementation of EMP for the proposed mining project:

- Formulating Corporate Environment Policy (CEP)
- Formation of Environment Management Cell (EMC)
- Greenbelt Development/plantation programme
- Occupational Health and Safety
- Budgeting of Environmental mitigation measures

10.4 CORPORATE ENVIRONMENT POLICY (CEP)

The importance of environmental management has been recognized by M/s. ACC Limited and company has taken necessary steps to identify environmental aspects and mitigate those aspects which generate pollution at the site, respond to impacts of its own population and also in the peripheral areas. It has adopted a two-pronged strategy to abate pollution as given below:

- Provision of state of the air pollution control equipment at the design stage itself through clean technology initiatives.
- By developing a strong monitoring and inspection setup for statutory compliances.

Company has well laid Corporate Environmental Policy adopted by Board of Directors indicating clear framework to become Environmentally Sustainable organization. The hierarchical system or administrative order of the company to deal with the environmental issues and for ensuring compliance with the conditions stipulated in various clearances like EC Conditions etc. have been given in the Environmental Policy of the company.

10.5 FORMATION OF ENVIRONMENTAL MANAGEMENT CELL (EMC)

In order to maintain the environmental quality, regular inspections, audits & monitoring of various environmental components is necessary. M/s. ACC Limited has a full-fledged Environmental Management Cell (EMC) for environmental monitoring and control. The EMC team will be responsible for pollution monitoring aspects and implementation of control measures as discussed in Chapter 2 & 4 of this Final EIA/EMP Report.

A group of qualified and efficient engineers with technicians will be deputed for maintenance, up keeping and monitoring the pollution control equipment, to keep them in working mode at the best of their efficiencies. The Organizational structure of EMC is given below:

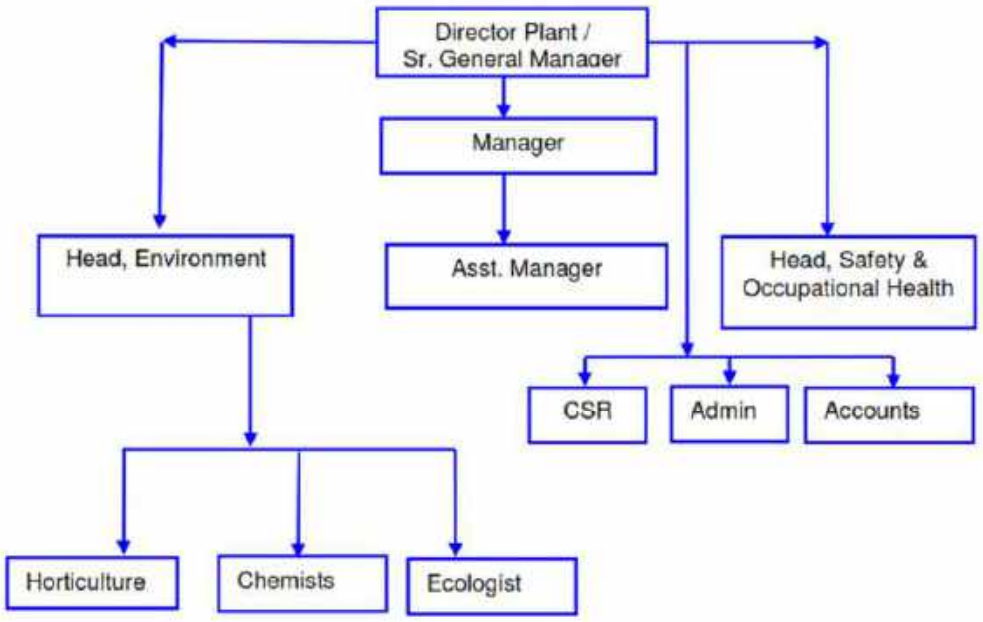


Figure: 10.1 Organisational Structure of EMC

Detailed Corporate Environment Policy along with organizational structure of EMC is enclosed as ***Annexure 12*** along with this Final EIA/ EMP Report.

10.5.1 RESPONSIBILITIES OF EMC

The EMC oversees and implement the various functions to ensure that environmental status of the area remains within the statutory standard of MoEF&CC and APPCB. The responsibilities of the EMC include the following:

- Environmental monitoring of the core and buffer zone.
- Environmental monitoring of the core and buffer zone and evaluation of results. Keeping of records to track the surrounding environment quality status.
- Procurement and commissioning of Pollution Control/Monitoring Equipment.
- Specification and regulation of maintenance schedules for pollution control equipment.
- Ensuring that prescribed standards are maintained.
- Ensuring optimum water usage.
- Implementation of the mitigation measures suggested in EIA/EMP Report.
- Ensuring greenbelt development/plantation & its maintenance.
- Compliance with guidelines and statutory requirements.
- Coordination with statutory bodies, functional groups of the unit, Corporate Project/Environment & Engineering department etc.

- Interaction with engineering & operation team for implementation of any modification programmes intended to improve the availability / efficiency of pollution control devices / systems.
- Carry out proactive environmental studies and observe all precautions necessary to avert disasters and emergencies in the mining observations as well as nearby areas.
- Regular environmental review and performance appraisal (Internal) and organizing Environmental Audits by independent agencies/ 3rd party agencies.
- Coordination with the vendors dealing in waste supplies and disposal.
- Ensuring that the waste handling and disposal is carried out as per prescribed conditions.
- Conducting regular training programmes on various environmental requirements especially sustainable development, climate change, environmental monitoring etc.
- Reporting of compliances and non - compliances (if any) to management and other stakeholders.
- Implementation of socio-welfare programmes for economic upliftment.
- Implementation of the Environmental Management Plan and assessment of effectiveness of the same.
- To provide periodic health check-up of workers.

The EMC also co-ordinates with other departments like Occupational Health, Safety Management, Project Engineering, Horticulture, Water Supply Department etc. and also do the liaison work with external agencies like State & Central Pollution Control Boards as well as other related departments. EMC send six monthly progress reports in the prescribed format, as per the prevailing practice to concerned agencies. Any new regulations considered by State/ Central Pollution Control Board for the Industry shall be taken care of by EMC of the plant. Also, half yearly compliance reports are sent to MoEF&CC as per the guidelines.

10.6 CORPORATE ENVIRONMENTAL AUDITING

Independent Audit/ evaluation of working of the Policy will be done by the Internal Auditor at least once a year and report the same to the Chief Financial Officer and Whole Time Director, being designated by the Board of Directors as responsible Director for the preparation and implementation of the Corporate Environmental Policy. It is imperative for the Head of business /occupier to ensure avoidance of adverse penal action arising out of Environment and other statutory regulation. Therefore, third party Corporate Environment Compliance Audit (CECA) is conduct to assess and quantify the environmental performance/compliance of the project with following scope:

- To check any major or minor non-compliances/non-conformities occurring in respect of the statutory clearances
- To check with the compliance status of the conditions stipulated in the Environment Clearance letter/Consent to Operate/other statutory permissions
- Evaluation of performance of OHS Policy Implementation
- Verify selected parameters and methods for internal ACC policies and established environmental performance levels

- Conduct root cause analysis of non-compliances/deviation and propose appropriate mitigation measures prioritizing the findings as high, medium or low based on potential risk to the organization.

10.7 PERSONS RESPONSIBLE FOR IMPLEMENTATION OF EMP

Manpower Required for Environment Management Cell is given in Table 2.8 of Chapter - 2.

Details of persons responsible for implementation of EMP along with their role/ responsibilities are given in table below:

Table - 10.1

Role & Responsibilities of Manpower deployed/ to be deployed

S. No.	Designation	Role/ Responsibilities
1.	**Mines Manager**	➢ Responsible for discharging duties as Mines Manager as per Mines Act 1952, MMR 1961, Mines Rules 1955, MCDR 2017 and various circulars issued by regulatory authorities from time to time. ➢ Create awareness on potential environmental aspects & occupational hazards & risk. ➢ Ensure judicious use of all natural resources including energy, minerals, water etc. ➢ Ensure environment friendly operations with a view to keep the emissions/ effluents within the prescribed norms. ➢ To Identify and comply with the applicable Statutory & Regulatory requirements. ➢ To identify, control and reduce the EHS hazards and risks. ➢ Training Need Assessment of Employees for effective implementation of the EMP ➢ Incident controller in case of any emergency. ➢ To plan for new equipment, minor modification etc. for betterment of plant (i.e., Quality improvement, reduction of environmental impact & OHS Risk etc.) in consultation with Operations Head. ➢ To ensure effective & continuous operation of pollution control & Safety equipment ➢ Responsible to ensure quality of stacker feed limestone as per process requirement. ➢ Overall environmental performance of the Mines. ➢ Liaison with statutory / regulatory bodies. ➢ To ensure effective implementation & adherence to QEHS Criterion at their sub-contracted activities. ➢ Ensure the EMP is implemented and is effective. Assist the Environment Manager with regulatory authorities and/or community consultation (i.e. complaints).
2.	**Manager Environment**	➢ Establish, implement and maintain the EMP as stipulated. ➢ Ensure that all the applicable environmental parameters are regularly

		monitored and measured as per defined interval and reports submitted to the concerned regulatory authorities. ➢ Ensure that the environmental objectives and targets are established and achieved. ➢ Review and evaluate EMP to ensure that the same is consistent with EMP of ACC Cement. ➢ Liaise with regulators and other agencies as required in unison with the Mines Manager for effective implementation of the EMP. ➢ Regular communication with PAF/ nearby community and establish a feedback system. ➢ Implement appropriate management programs to achieve the management objectives and goals. ➢ Assist operational staff with respect to clarifying or improving existing practices / procedures or adding more stringent requirements / controls) ➢ Ensure that any change in any of the activities/ equipment/ processes are duly evaluated in order to ensure No increase in or introduction of new environmental risks or impacts. ➢ Undertake HSE Manager role in case of an emergency with a potential to degrade environment and/or human health and safety. ➢ Ensure that the requirements of the EMP and related management programs have been addressed in all contractor environmental management documentation. ➢ Undertake regular audits (appoint an appropriately qualified external auditor) for evaluating the environmental performance of the mine.
3.	**Environmental Officer**	➢ Undertake routine environment monitoring as per schedule ➢ Daily inspection of the premises, preparing inspection reports ➢ Checking of emission/ noise levels of mining equipment ➢ Ensure that regular water sprinkling is done on the haul roads and around waste dumps for effective control of fugitive emissions ➢ Supervising the overall progress of environmental management programs put in place and ensuring they adhere to all applicable regulations. ➢ Prepare and submit regular reports to concerned authorities ➢ Assist horticulturist in developing greenbelt in mining premises in line with stipulated guidelines ➢ Assist mining engineers in implementing best waste management practices ➢ Coordinate with mining and other concerned engineers for effective implementation of the EMP
4.	**Horticulturist**	➢ Planning for plantation and greenbelt development is mining area ➢ Take assistance from local forest department regarding selection of species for plantation ➢ Ensure regular watering of saplings is done as per schedule ➢ Ensure optimum survival of saplings

		➢ Development of lawns and gardens around office and other areas ➢ Ensure regular maintenance of saplings planted in mining area
5.	**Civil Engineer**	➢ Construction and maintenance of storm water drains, catch drains, siltation ponds etc. ➢ Construction and maintenance of rainwater harvesting structures within and outside mining area ➢ Provide adequate fencing to safeguard saplings from stray animals ➢ Regular maintenance of soak pits and septic tanks for effective disposal of domestic waste
6.	**Mechanical Maintenance Engineer**	➢ Daily inspection of mining machineries ➢ Regular maintenance of equipment as per OEM recommendations ➢ Keeping maintenance logs ➢ Regular monitoring of fuel consumption of vehicles and coordination with suppliers/ OEM if the fuel consumption exceeds the committed values. ➢ Ensure that the mining machineries conform to the applicable environmental norms ➢ Ensure that the emission/noise levels from the mining machineries do not exceed the permissible levels
7.	**E&I Engineer**	➢ Ensure electrical supply in mining area for operation of monitoring and measuring instruments ➢ Troubleshooting, maintenance and periodic calibration of environmental monitoring equipment ➢ Maintain appropriate inventory of spares
8.	**Asst. Mines Manager**	➢ Carrying out responsibilities as specified in the Mines Act, Regulations and Rules. ➢ Assisting Manager Mines in running the mine and in the absence of Mines Manager, Assistant Manager shall have the same responsibility, discharge the same duties and be subject to the same liabilities as the manager, but not so as to exempt the manager their form. ➢ Ensuring that all work is carried out in accordance with the provision of the Act and regulations, rules, bye laws made under. ➢ Implementing the Short term / Long term mine planning of Mines. ➢ Preparing & Submitting data required for budget proposal. ➢ Identifying the legal requirements and ensure compliance in respect of all tasks & operations. ➢ Forwarding necessary returns to statutory bodies in time. ➢ Obtaining all necessary statutory permissions. ➢ Ensuring renewal of necessary licenses and permits. ➢ Planning and coordination for Environment and Safety protection measures. ➢ Qualitative and Quantitative limestone feeding to plant. ➢ Ensuring implementation of SOPs, emergency preparedness & emergency response.

		➢ Checking all reports, registers and other records; countersign the same with date.

10.8 DETAILED BUDGET FOR EMP

The budget for implementation of the pollution control & impact mitigation measures for Existing Project and suggested for this Proposed Project is given as under:

Table - 10.2

EMP Cost Breakup for the Proposed Project

S. No.	Particular	Total Cost (Rs. In Crore)
1.	Project Cost	433.738
Cost for EMP		
2.	Cost for Environment Protection Measures	3.84
	Cost for Wildlife Conservation Plan	5.67
	Cost for physical target for public hearing	1.35
	Capital Cost	10.24
	Recurring Cost for EMP	0.180

The detailed Break-up of Proposed Cost for Environment Protection is given below in the following tables

S. No	Particulars	Capital Cost (Rs. In Lacs)	Recurring Cost/Annum (Rs. In Lacs)
1	Two no. of high-efficiency nozzle mounted water tanker for water sprinkling on haul roads.	70.0	5.0
2	Installation of Water Sprinkler System	1.5	0.25
3	Greenbelt and plantation on 186 ha with 464000 number of trees	116	4.64
4	Provision of underpass within the lease to cross of road	28	0.50
5	Construction of garland drain (total length 840m) with siltation pit at the toe of the temporary dumps during plan period	3.1	0.31
6	Construction of retaining wall (length 885 m) at the toe of dump to prevent the entry of surface run off of dump.	2.6	0.26
7	One no. of Rainwater Harvesting structure	10	0.50
8	Construction of septic tank & soak pit	1.5	0.10
9	Ambient Air Quality Monitoring Station & Installation of AAQMS Station Stand (Online)	120	3
10	Workshop Waste Water Quality Analysis (monthly)	0	0.5
11	Providing Ear muffs/earplugs to workers in high noise area	0	0.3
12	Work Place Air and Noise Monitoring	0	1.5
13	Peak Particle Velocity monitoring (Vibration monitoring)	3.5	0.5

14	Installation of 1 nos of piezometer along the periphery.	0.5	0.2
15	Controlled Blasting study	12.00	_
16	Slope stability study	10.00	_
17	Fencing around the mined area (length 18.11 km)	4.47	0.44
	Total	**383.17**	**18.0**

CHAPTER - 11

SUMMARY & CONCLUSION

11.1 INTRODUCTION

M/s. ACC Limited is proposing a Kadapa Limestone Mine (ML Area: 997.80 ha) with Limestone production capacity of 7.0 Million TPA at Villages: Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollaapalle, G. Uppalapadu of Mandal: Mylavaram, District: Kadapa (YSR), Andhra Pradesh.

As per EIA Notification dated 14th September, 2006 as amended from time to time, the project falls under Category "A" (>250 ha), Project or Activity 1(a) (3) for Mining of Mineral.

JUSTIFICATION FOR THE PROJECT

M/s ACC Limited has proposed to set up a new cement plant (Clinkerization) of 5.0 Million TPA in the area in phased manner. The major raw material, Limestone requirement for the plant will be met from this mine. Being a virgin land at present, lots of developmental and infrastructural jobs are to be started in advance before actual production starts. In the southern states, due to a number of major infra-structural projects planned by State/Central Governments and also rapid growth of industries, the demand is likely to be higher than average for the country. Considering the proximity of the project site to all the three major metros, Hyderabad, Bangalore and Chennai and neighboring states of Tamil Nadu and Karnataka, the growing demand can be met with less transportation costs of cement. From the market analysis data, it is evident that the states of Tamil Nadu, Kerala, Karnataka, will continue to show an above average growth of demand. Because of limited limestone deposits in Tamil Nadu and Kerala, the creation of additional capacities in Southern states has to be in Andhra Pradesh and Karnataka. Kadapa district being nearer to both Tamil Nadu and Karnataka states, the selected plant location is ideal for growing markets especially Tamil Nadu. Hence, ACC proposed 7.0 Million TPA Limestone Mine with ML area of 997.08 ha at Mylavaram Mandal of Kadapa (YSR) District, Andhra Pradesh, to cater the need of limestone requirement for the proposed cement plant.

11.2 PROJECT DETAILS

Table - 11.1

Project Details

S. No.	Particulars	Details
A.	**Nature of the Project**	Proposed Opencast Limestone Mining Project
B.	**Size of the Project**	
1.	Mining Lease area	997.08 ha
2.	Proposal	Limestone Production Capacity: 7.0 million TPA
C.	**Project Location**	
1.	Villages	Dhannavada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle, G.Uppalapadu
2.	Tehsil	Mylavaram
3.	District	Kadapa (YSR)

S. No.	Particulars	Details
4.	State	Andhra Pradesh
5.	Latitude & Longitude	Latitude: 14°59'20" N to 15°00'10" N Longitude: 78°13'55" E to 78°18'08" E
6.	Toposheet No.	D44A8(57I/8), D44A4(57I/4), D44G1(57J/1), D44G5(57J/5)
D.	**Environmental Setting Details** *(with approx. aerial distance & direction from the mining lease boundary)*	
1.	Nearest Villages	Regdapalle (~ 0.43 km in East direction)
2.	Schools	MPPS Lakshmipalli (~0.4 km in North direction)
3.	Nearest Town	Jammalamadugu (~ 17.0 km SE direction)
4.	Nearest National / State Highway	SH- 57 (~0.80 km in South direction)
5.	Nearest Railway station	➢ S. Uppalapadu (~11.9 km in SE direction) ➢ Jammalamadugu Railway Station (~18.0 km in SE direction)
6.	Nearest Airport	➢ Kadapa Airport (~70.0 km in SE direction) ➢ Kurnool Airport (~80.0 km in North direction) Tirupati Airport (~200.0 km in SE direction)
7.	National Parks, Wildlife Sanctuaries, Biosphere Reserves, within 10 km radius	No National Parks, Wildlife Sanctuaries, Biosphere Reserves, within 10 km radius.
8.	Reserve Forests (RF) / Protected Forest (PF) within 10 km radius	Dhodiyam RF (~8.2 km in SW direction)
9.	River / Water Body (within 10 km radius)	➢ SRBC Canal (Inside the mining lease area) ➢ GNSS Canal (Inside the Mining lease area) ➢ Kanala Vagu (~8.0 km in North direction) ➢ Canal (~8.6 km in North direction) ➢ Rambhadra Cheruvu (~7.3 km in NNW direction) ➢ Canal (~7.0 km in NNW direction) ➢ Nalla Cheruvu (~3.2 km in NNW direction) ➢ Pond (~4.0 km in South direction) ➢ Nallha (~0.23 km in South direction) ➢ Pond (~4.3 km in SSE direction) ➢ Pandula Vagu (~7.8km in North direction) ➢ Pond (~1.6km in NE direction) ➢ Erra Vagu (~5.7 km in NNE direction) ➢ Pond Near kallutla (~1.5 km in ENE direction) ➢ Erra Vanka (~9.2 km in NE direction)
10.	Seismic Zone	Zone – II (Low Damage Risk Zone) as per IS:1893 (Part-1) 2002
D.	**Cost Details**	
1.	Total Project Cost	Rs. 437.768 crores

S. No.	Particulars	Details
2.	Cost for Environment Protection Measures	Capital Cost: Rs 3.840 crore Recurring Cost: Rs 0.180 crore

Source: *Site Visit & Approved Mining Plan.*

11.3 MINING DETAILS

Table - 11.2

Mining Details

S. No.	Particulars	Details
1.	Mining Method	Fully Mechanized Opencast Mining Method
2.	Total Geological Resources	647.11 million tonnes
3.	Mineable reserves	6.11 million Tonnes
4.	Life of Mine	50 years
5.	Bench Height	8 - 12 m
6.	Bench Width	30 m
7.	No of benches	5 - 12 Nos.
8.	Overall pit slope	60°s
9.	Elevation Range	204 to 226 m AMSL
10.	Depth of water table	Pre-Monsoon: 25 m to 25.4 m bgl Post Monsoon: 21.5 m to 23.1 m bgl
11.	Ultimate working depth	17 to 55 m (166 m AMSL)
12.	Stripping Ratio	1: 0.13 (T: T)
13.	Number of Working days	290
14.	Number of Working Shifts	02

Source: *Approved Mining Plan with Progressive Mine Closure Plan*

11.4 DESCRIPTION OF THE ENVIRONMENT

The baseline study was conducted during the Summer Season (March, 2013 to May, 2013) by earlier consultant Vimta Labs Ltd. as the baseline data was 3 years old & hence expired; therefore, in compliance to the MoEFCC OM dated 8th June, 2022 a fresh baseline study has been conducted during Post - Monsoon Season (March, 2024 to May, 2024) in the study area covering an area of 10 km radius from the proposed project site in accordance with the guidelines of MoEF&CC.

Ambient Air Quality

Ambient Air Quality Monitoring reveals that the concentrations of PM2.5 and PM10 for all the 13 AAQM stations were found between 20.1 to 41.8 µg/m3 and 36.4 to 76.5 µg/m3 respectively. As far as the gaseous pollutants SO2 and NO2 are concerned, the prescribed CPCB limit of 80 µg/m3 has never surpassed at any station. The concentrations of SO2and NO2were found to be in range of 4.1 to 11.7 µg/m3 and 8.9 to 22.2 µg/m3 respectively. The Concentration of CO is found BDL at all monitoring locations except Village Perusomula.

Noise Quality Levels

Ambient noise levels were measured at 11 locations around the mine site. Noise levels varied from 47.5 to 53.9 Leq dB (A) during day time and from 37.7 to 42.5 Leq dB(A) during night time.

From the above study and discussions, it can be concluded that noise levels in the study area are well within the prescribed limits as prescribed by the CPCB.

Maximum noise levels during day time and during night time were observed at Village Chinnavenuturala due to various anthropogenic activities. Whereas, the minimum noise levels were found at Mine site.

Surface Water Quality

During the baseline study, seven water bodies were found and all the water bodies and all the water bodies were dry.

Ground Water Quality

The pH of the water samples ranged from 7.38 to 7.78 indicating slightly alkaline nature; and maximum pH was recorded at the Village - Vaddirala. The colour and turbidity were BDL, and odour and taste were agreeable at all sampling locations. The values of total hardness (239.17 to 736.4 mg/l), alkalinity (185.6 to 585.9 mg/l) and total dissolved solids (475 to 1582 mg/l) were low; however, maximum Hardness, total dissolved solids and maximum alkalinity were found in the sample of Village Vaddirala.The concentration of chloride was found to be (104.81 to 434.5 mg/l) and sulphates (40.38 to 149.4 mg/l). The concentrations of other micro and macro nutrients were also at low level i.e. nitrate (6.24 to 27.6 mg/l), calcium (41.74 to 202.3 mg/l), magnesium (27.63 to 56.04 mg/l), and iron (0.06 to 0.11 mg/l). The fluoride (0.16 too.76 mg/l) concentration is at optimum level which prevents dental health problems of the consumers. Ground water quality was also analyzed for Cyanide as (CN), Aluminium as (Al), Phenolic Compounds, Anionic Detergents as (MBAS), Hexa Chromium as (Cr+6), Chromium as (Cr), Zinc as (Zn), Copper as (Cu), Boron , Cadmium as (Cd), Lead as (Pb), Arsenic as (As), Mercury as (Hg), Phosphate as (PO4), Nickel, Total Suspended Solid (TSS) are reported to be their Below detection limit at all the sampled locations.

Soil Quality

The pH of the soil samples varies from 8.0 at Village Erragudi to 8.63 at the village Talamanchipatnam which indicates the soil samples are moderately alkaline in nature.The texture of the soil samples majorly consists of Sandy Loam to Silty. The soil samples majorly exhibit Dull Yellowish Brown, Grayish Brown and Light Gray color at all the sampled villages. The indicator such as organic matter varies from 0.55 % to 0.88 % and Organic carbon varies from 0.32 % to 0.51 %. The Water holding capacity varies from 27.72 % at T. Kammavaripalli to 36.43 % at Vaddirala. Examined six essential nutrients required for an ideal plant growth are Nitrogen, Phosphorus, Potassium, Magnesium, Sulfur and calcium. Nitrogen ranged between 174.02 kg/ha at VillageT. Kammavaripalli to 318.18 kg/ha Village – Jangalapalle, Phosphorous ranged between 8.93 kg/ha at Village Jangalapalle to 37.76 kg/ha Village – Jangalapalle, Potassium (300.63 kg/ha at Mine Site to 591.96 kg/ha at Plant site), Magnesium (561.64 mg/kg at Mine Site to 917.93 mg/kg at Village Jangalapalle, Calcium (3653.65 mg/kg at Village Nawabpeta n to 5267.12 mg/kg at Village T.

Kammavaripalli and Sodium (158.69 mg/kg at Village Nawabpeta to 263.37mg/kg at Plant site). The SAR value was observed under the limits at all the sampling locations with maximum value of 0.93 at Plant Site to minimum value 0.64 at Village Nawabpeta.

11.5 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

On Air Environment

The Proposed project includes various mining operations involving development of benches, excavation, drilling, blasting, loading, unloading, transportation of material etc. These operations generally result in generation of dust and thereby pose health hazards. However, adequate control measures will be provided at every stage of operation to reduce fugitive dust emissions. Gaseous pollutants (SO_2, NO_2) are anticipated from blasting operations and movement of machineries like excavator, loaders, dumpers, tippers & other vehicles; while generation of pollutants during blasting is instantaneous & momentary. The generation of dust is anticipated from various mining activities like drilling, blasting, excavation, loading, transportation, unloading, and other mining related activities.

Proper mitigation measures will be taken like controlled blasting, wet drilling arrangements as well as dust collection system for drilling equipment, water sprinkling before drilling, blasting & during transport activities and development of greenbelt/plantation area to control fugitive emissions. To avoid secondary blasting rock breaker will be used. Better maintenance of equipment also helps to reduce such emissions. Development of green belt/plantation around lease boundary, roads, safety zone & backfilled area to trap fugitive dust and other places to control the air pollution.

Water Environment

Surface Water

In the Coore zone Two Canals are passing through the lease area. GNSS Canal (Galeru Nagari Sujala Sravanthi Canal) is flowing in west side within the mining lease and SRBC (Srisailam Right Bank Canal) is flowing in east portion witing the lease area. in addition to this, One pond is also present within the mine lease. Pond is located in South west of lease area near to GNSS canal. In the Buffer zone Seasonal water bodies are present in the study area Viz. Pandula Vagu (~7.8 km in North direction), Kanala Vagu (~8.0 km in North direction), Tigaleru River (~7.6 km in South East direction), Rambhadra Cheruvu (~7.3 km in NNW direction), Erra Vagu (~5.7 in NNE direction), Erra Vanka (~9.2 km in NE direction). The mineral limestone and associated rocks do not contain any toxic substance. These water bodies are distantly located from the mine site Therefore, there is no significant impact of mining activities on quality of surface and ground water.

Ground Water

Mine working will not intersect ground water table during the plan period and at the conceptual stage, ultimate working depth will be 55 m bgl. Depth to water table during Pre-Monsoon: 25 m to 25.4 m bgl and during Post Monsoon: 21.5 m to 23.1 m bgl level in the lease area. Hence, the ground water will be intersected. Permission form Central Ground Water Authority will be taken before intersection of ground water table.

Impact due to Noise & Vibration

Due to Mining Activities

Major noise generating sources of the mining activity are drilling, blasting and HEMM movement used for transportation of limestone.

All DGMS guidelines will be followed to reduce the impact of blasting on the nearest habitation. HEMMs equipped with acoustic cabins will be provided for the operators. Controlled blasting techniques through proper blast design and explosive selection will be used to reduce the vibrations to a greater extent. Hydraulic rock breaker will be used in place of secondary blasting. PPEs like earplugs/earmuffs will be provided to mine workers. HEMMs equipped with acoustic cabins will be provided for the operators. Proper maintenance, oiling and greasing of HEMMs will be done. Development of green belt/plantation along the mining lease boundary and mining activity help in reducing noise level.

Impact on Land Environment

Land use of the lease area will alter due to mining activities such as formation of pits, built up areas of office, workshop, crusher, greenbelt, water reservoir etc.

As per approved mining plan out of the total Mining Lease area i.e. 997.08 ha, total excavated area will be 707.1 ha, out of which 390.6 ha will be converted into water reservoir and 146.5 ha will be backfilled area and 170.0 Ha area will be used for storage of sub grade. 9.5 ha area will be under waste dump outside excavated area. The other infrastructure like Workshop, Admin Building & Road exists in 2.90 ha area. The remaining 247.58 ha area will be left undisturbed at the end of life of mine.

The active mining area and the waste dump areas will be biologically reclaimed to protect soil erosion at the abandoning stage of mine Care will be taken to disturb minimum vegetation. Adequate compensatory afforestation in lieu of forest land will be done.

Solid Waste Management

Total Top soil generated during the plan period will be 0.0540 million tonnes. The topsoil will be appropriately stacked at a designated dump site located in the NNE direction of the mining lease area. First two years there will be no utilization of topsoil and in further years the top soil will be utilized for afforestation in the backfilled areas.

In the first five years total of 925000 tonnes of over burden will be generated and dumped in to the proposed dumping area inside the mining lease area. & later on, it will be reclaimed by backfilling & rehabilitated by plantation/re-grassing.

11.6 ANALYSIS OF ALTERNATIVES (TECHNOLOGY & SITE)

- Letter of Intent has been granted for grant of Mining lease with conditions for Limestone (under major mineral) in villages Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle and G.Uppalapadu in Mylavaram Mandal, District Kadapa(YSR) in Andhra Pradesh over an area of 997.08 ha. in favour of M/s. ACC Limited Vide Govt. of Andhra Pradesh memo bearing number MEMO 16073/M.III (1)/2006-1 dated 22.06. 2010.

- Mining will be done by fully opencast mechanized method. All operations of mining will be done by deployment of Heavy Earth Moving Machineries deep hole drilling, excavation, loading, hauling & transportation to ensure maximum mineral conservation and minimum environmental degradation.
- In case of Mining projects alternate site selection is not necessary as the mining is site specific and the area in which mining will be carried out has been adequately proved for presence of mineral.

11.7 POST PROJECT ENVIRONMENTAL MONITORING PROGRAMME

Table - 11.3

Post Project Monitoring

S. No.	DESCRIPTION	FREQUENCY OF MONITORING
1.	Micro - Meteorological Data	Hourly
2.	Ambient Air Quality Monitoring	Twice in a week and Online CAAQMS
3.	Ground Water Quality & Level Monitoring	Quarterly
4.	Surface Water Monitoring	Seasonal
5.	Noise Level Monitoring	Fortnight
6.	Ground Vibration Monitoring	On every blast
7.	Crusher Stack Monitoring	Monthly
8.	Medical Checkup of employees	3 to 5 Year Interval ➢ Age of workers <45 years: After every 5 years ➢ Age of workers >45 years: After every 3 years

11.8 ADDITIONAL STUDIES

Additional Studies i.e. Hydro-Geological Study and Rain Water Harvesting Plan, Biological Study Report, Rehabilitation and Resettlement Plan, Land use/Land Cover maps by Satellite Imagery, Socio-economic Study are covered with this Final EIA/EMP Report as per the Terms of Reference granted by MoEF&CC, New Delhi vide letter no. J-11015/133/2012-IA.II (M) dated 30.10.2012 in favor of M/s. ACC Limited.

11.8.1 HYDRO - GEOLOGICAL STUDY

Total water requirement for the project will be 60 KLD for domestic & other use, green belt & dust suppression of the mines. The water will be met from rainwater accumulated in mine pit.

Mine working will not intersect ground water table during the plan period and at the conceptual stage, ultimate working depth will be 55 m bgl. Depth to water table during Pre-Monsoon: 25 m to 25.4 m bgl and during Post Monsoon: 21.5 m to 23.1 m bgl level in the lease area. Hence, the ground water will be intersected. Permission form Central Ground Water Authority will be taken before intersection of ground water table.

11.8.2 BIOLOGICAL ENVIRONMENT

Flora: During the survey, an inventory was created of the various plant groups was discovered in the study region. In the Study area,187 plant species from 69 families were identified. Among

them 38 trees, 22 shrubs, 54 herbs, 10 grasses, 45 aquatic plants as well as 10 climber species have been recorded in the study area based on primary observation as well as based on information collected from the secondary data. The dominant family in the project area is Fabaceae, which has 18 species, followed by Poaceae, which has 15 species.

Fauna: 16 schedule – I species viz. Four horned Antelope, Asiatic Wild Dog, Bonnet Macaque, Sambar, Sloth Bear, Indian Grey Mongoose, Small Indian Civet, Masked Palm Civet, Golden Jackel, Bengal Monitor Lizard, Indian Star Tortoise, Indian rat snake, Checkered Keelback, Grey Junglefowl, Shikra, Indian Peafowl Indian Species were found in the study area of the proposed project sites

11.8.3 RESETTLEMENT & REHABILITATION

The total mining lease area is 997.08 ha which falls into villages Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollaapalle, G. Uppalapadu of Mandal: Mylayara, District: Kadapa (YSR), Andhra Pradesh. Out of total lease area 10.35 ha is government land and 986.74 ha is private land. Out of the total private land, 681.47 ha land is under possession and remaining land to be acquired.

Total budget for R&R is estimated as Rs. 298.648 Crore

11.9 PROJECT BENEFITS

Total direct employment after the will be about 62 persons. Preference will be given to the locals as per their requirement & eligibility. Apart from the above, various indirect employment opportunities are envisaged by way of transportation, workshops, petty contractors; shopkeepers, throughout the state and in its marketing regions.

The mine shall be contributing around Rs 73.92 Crore every year to the State and Central Govt. exchequer by way of mining revenue (Royalty, DMF, NMET etc.) with its expanded capacity.

The project activity is helping in meeting the growing demand of cement & hence help in the economic growth of the country. The mine will be contributing to the State & Central Govt. exchequers. The Public Hearing for the proposed Project has been conducted on 20th October 2016 and time bound action plan for the same and budgetary allocation for the activities to be done are given in Chapter - 7 of this Final EIA/ EMP Report.

In future also, the company has been making/continues to make its sincere efforts towards the development of nearby areas including the issues/suggestions received during public hearing. It is helpful in the development of basic needs of the local area like education, Health & family welfare, women empowerment, Natural resource management, water conservation, Infrastructure Development etc. It has resulted in growth of the surrounding areas by increasing direct and indirect employment opportunities in the region including ancillary development, overall improvement in Human Development Index and supporting infrastructure.

11.10 ENVIRONMENT MANAGEMENT PLAN

M/s. ACC Limited has a full-fledged Environmental Management Cell (EMC) for environmental monitoring and control. The roles and responsibilities of various personnel, who manage, perform and verify the activities having effect on environment and/or OH & S have been fixed by the Top

Management. Total cost of the project is Rs. 437.768 Crore. Capital cost for Environment Protection measures is Rs. 3.840 crore and recurring cost for the EMP is Rs 0.180 crore/Annum is also envisaged for the proposed project.

11.11 CONCLUSION

The EIA/ EMP study has been prepared in compliance of ToR issued by MoEF&CC. Baseline data of land, air, water, noise, biological and socio-economic environment was duly assessed by conducting field investigation as well as by having an access to the available secondary information. The prediction of impacts was identified & evaluated and EMP is suggested to mitigate the environmental concerns arising from the proposed project.

The proposed project will prove beneficial to the local people as direct and indirect employment opportunity will be generated. There will be increase in revenue generation to the government by way of royalty, excise and government taxes etc. Further improvement in various area takes place like infrastructure education, roads, availability of drinking water, medical facilities in adjacent villages. There will be an increase in earnings of local villagers, as they get employment in the limestone mine, which ultimately resulted in better standard of living of the villagers. There is no significant pollution of air, water, soil and noise. Regular monitoring of all the components of environment will be done. Increased social welfare measures will be taken by the company is bringing development in the nearby villages.



CHAPTER - 12

DISCLOSURE OF CONSULTANTS ENGAGED

12.1 DISCLOSURE OF CONSULTANTS ENGAGED

This Final EIA/EMP Report has been prepared by J.M. EnviroNet Pvt. Ltd. (JMEPL). JMEPL is one of the companies of JM Group, established in the year 1993. 'JM' in the name of the Company is derived from the name of 'Lord Shiva' - the Temple of 'Jharkhand Mahadev' (JM). The Temple is located at Queens Road, Vaishali Nagar, Jaipur.

The Registered office of JMEPL is at Jaipur Centre, 403, 4th Floor, B2 Bypass, Tonk Road, Jaipur, 302018 (Rajasthan). Its Delhi-NCR Corporate office is at Emaar Digital Greens, Tower - B, Unit No. 1517, Golf Course Ext. Road, Sector - 61, Gurugram (Haryana) - 122011.

J.M. EnviroNet Pvt. Ltd. is accredited with ISO-9001: 2015 for EIA Division. EIA Division is also approved by National Accreditation Board for Education & Training (NABET) formerly NRBPT (Quality Council of India), Certificate no. NABET /EIA/2326/RA 0308, dated 29th Nov., 2023 which is valid up to 07th Aug., 2026.

JMEPL is offering Environmental Consultancy Services in various sectors viz Industrial Projects / Chemical Industries / Cement Plants / Thermal Power Plants / Mining Projects/ Coal Washery Projects/ Real Estate Projects / Distilleries / Steel Plants/Mineral Beneficiation plants etc.

In the Mining sector, JMEPL have covered mines of minerals viz. Limestone, Bauxite, Chromite, Coal, Zinc Ore, Copper ore, Gypsum, Soapstone, Iron & Manganese ore, Clay, Silica Sand, Marble, Khanda, Gitti, boulders, Feldspar, Quartz, lignite, magnesite and minor mineral etc.

JMEPL has a highly qualified team of Functional Area Experts (FAE). As Faculty Heads of the EIA Division, company has Retd. General Managers of the Reputed Cement Companies, Ex-Head EIA Division of big Business Group, STP & ETP Designing Experts, Retd. Mining & Geology Experts with vast experience in their respective fields.

JM Group's business is spread over 22 States viz. Andhra Pradesh, Kerala, Gujarat, Maharashtra, Orissa, Tamil Nadu, Goa, Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Delhi, Rajasthan, Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Assam, West Bengal, Karnataka, Jharkhand, Bihar & Uttarakhand.

The JM Group has its own Environmental Laboratory i.e., JM Envirolab Pvt. Ltd. Gurugram (Haryana) approved under EPA (Environment Protection Act) by the Ministry of Environment & Forests, Govt. of India, New Delhi and by the National Accreditation Board for Testing and Calibration Laboratories, Govt. of India (NABL accredited Laboratory: - TC-6821).

Besides this, MoEF&CC and NABL approved Environmental Laboratory of JM Group is also providing Analytical Laboratory Services of various elements and environmental parameters.

Annual monitoring as per MoEF&CC/ CPCB/ SPCB guidelines, Risk Assessment and Disaster Management Plan, consultancy for Rain Water Harvesting Plan, detailed Hydro-geological Study, preparation of Environmental Statement Reports (Environmental Clearance Compliance Conditions) and Statutory Mining Plan etc. are amongst the various other consultancy services offered by the Company.



GOVERNMENT OF ANDHRA PRADESH
INDUSTRIES AND COMMERCE (M-III) DEPARTMENT

MEMO.NO.16073/M.III(1)/2006-1 DATED 22-06-2010

Indian Bureau of Mines
Govt. of India

SUB:- Mines & Minerals - Mining Lease for Cement Grade limestone over an extent of 997.080 Hectares (2463.83 acres) in certain Sy.Nos of Dhanawada, Chinnaventurla, Vaddirala, Bestavemula, Gollapalli and G.Uppalapadu Villages of Mylavaram Mandal, Kadapa District for a period of 20 years in favour of M/s.ACC Limited – Approved Mining Plan – Called for – Reg.

REF:- 1.Mining Lease application of M/s.ACC Limited dt.03-07-2002.
2.From the Director of Mines & Geology, Hyderabad File No.25242/R5(2)/2006, Dt.26-10-2006 & 27-6-2008.

***

In the reference 1st cited, M/s.A.C.C.Limited have filed an application for grant of Mining Lease for Limestone, Shale, Clay and Sand Stone, in certain Survey Numbers, over an extent of 997.08 Hectares (2463.83 Acres) of Channavada, Chinaventurla, Vaddarala, Bestavemula, Gollapalle, G.Uppalapadu Villages of Mylavaram Mandal, Kadapa District for a period of 30 years.

2. In the reference 2nd cited, the Director of Mines & Geology, Hyderabad has stated that the Government vide G.O.Ms.No.354, dt.3-7-2000 have granted a Prospecting Licence for Limestone over an extent of 21.27 Sq.Kms in the subject area for a period of 2 years infavour of M/s.ACC Limited and the licence deed was executed on 23-08-2000 and it was inforce upto 22-8-2002. After completion of Prospecting operations M/s.ACC Limited have applied for Mining Lease in the area over an extent of 997.080 Hectares vide their application dt.3-7-2002. They have also submitted Prospecting Report, Project Report for setting up Cement Plant in Kadapa District. The DMG has stated that the applied area has been inspected by the Asst.Director of Mines and Geology, Kadapa and he has stated that the applied area is situated at a distance of 20 KM towards north and NNW of Jammalamadugu town and can be approached by a jeepable road from Jammalamadugu. The area is covered under S.O.I Toposheet Nos.57J/1 and 57J/5. The topography of the subject area is almost gentle and flat. General slope is towards east. Further stated that the representative of M/s.ACC Limited, who has accompanied the Asst.Geologist during the inspection has shown the ore drilled points of Bore Holes in the subject area, which are 17 in number and marked in the key plan submitted by them, along with their investigation report on the prospecting operations carried out in the subject area. They have reported that the local geological succession as observed from the bore holes drilled in the area. The succession is clearly shown the typical geological section prepared by them. According to their estimation based on the data availiable, there are 216 million tonnes of dark gray limestone, which is proved, would be available in the subject area. The total carbonates in this is always more than 80% and average is around 83% for all practical purposes it is chemical grade Limestone.

3. The Director of Mines & Geology, Hyderabad further stated that the applied area has been surveyed by the surveyor, O/o. The ADMGM, Kadapa. After survey and demarcation, the area has come to 2463.83 acres or 997.080 Hectares in Dhannawada, Chinnaventurla, Vaddirala, Bestavemula, Gollapalli and G.Uppalapadu Village. There are no other applications pending over this area and not overlapping this area in any applications filed, granted, leased out. The applicant has given consent to take surveyed area of 997.080 Hectares. The Mandal Revenue Officer, Mylavaram Mandal, Kadapa District has given NOC for Mining Lease infavour of M/s.ACC Limited over an extent of 997.080 Hectares in Dhannawada, Chinnaventurla, Vaddirala, Bestavemula, Collapalli and

SHISHIR GAUR
Valid upto 6th Dec. 14

G.Uppalpadu villages of Mylavaram Mandal, Kadapa District. M/s.ACC Limited have also submitted the project report for setting up Cement plant in Kadapa District, Andhra Pradesh.

4. Finally, the Director of Mines & Geology, Hyderabad has requested the Government to consider for grant of Mining Lease for Cement Grade limestone over an extent of 997.080 Hectares(2463.83 acres) in certain Sy.Nos of Dhanawada, Chinnaventurla, Vaddirala, Bestavemula, Gollapalli and G.Uppalapadu villages of Mylavaram Mandal, Kadapa District for a period of 20 years infavour of M/s.ACC Limited, subject to issue of a notice to the applicant for submission of AMP under Rule 22(4) of M.C.Rules, 1960 and also subject to consent for Establishment (CFE) from the A.P.Pollution Control Board and Environmental Clearance from the Government of India under Environmental impact Assessment as per S.O.60(E), dated:27.01.1994.

5. After careful examination of the matter, Government hereby propose to grant of Mining Lease for Cement Grade limestone over an extent of 997.080 Hectares (2463.83 acres) in certain Sy.Nos of Dhanawada, Chinnaventurla, Vaddirala, Bestavemula, Gollapalli and G.Uppalapadu Villages of Mylavaram Mandal, Kadapa District for a period of 20 years infavour of M/s.ACC Limited, subject to submission of AMP under rule 22(4) of M.C.Rules, 1960 and also subject to consent for Establishment (CFE) form the A.P.Pollution Control Board and Enviornmental Clearance form the Government of India under Environmental impact Assessment as per S.O.1533, 14-9-2006, further subject to establish Cement Factory within 3 years from the date of grant of Mining Lease since the same is stated for captive purpose.

6. Accordingly, M/s.A.C.C.Limited are requested to submit the Mining Plan approved by the Indian Bureau of Mines through the Director of Mines & Geology for the above area as per the Act & Rules referred to above, together with CFE from the APPCB a Environmental Clearance from the Government of India within a period of 6 months from the date of receipt of this memo. They are also informed that if they fail to submit the approved mining plan within the stipulated period it will be presumed that they are not interested in their Mining Lease application and further action will be taken based on the material available with the Government. They are also advised to submit the Sketch of the area referred in para-5 above jointly signed by the Revenue Dept., Mines & Geology Dept., and the applicant duly showing the permanent reference points and coordinates for demarcation on the ground.

7. The Director of Mines & Geology, Hyderabad shall take necessary further action in the matter accordingly.

RANJEEV R. ACHARYA,
PRINCIPAL SECRETARY TO GOVERNMENT.

To
M/s.Associated Cement Companies Limited,
'Cement House', 121, Maharshi Karve Road,
Mumbai – 400021 (By RPAD)
The Director of Mines & Geology, Hyderabad (w.e.file)
Copy to: The Zonal Joint Director of Mines & Geology, Kadapa.
The Asst.Director of Mines & Geology, Kadapa.
SP//SCs.

125

//FORWARDED:: BY ORDER//

GOVERNMENT OF ANDHRA PRADESH
PROCEEDINGS OF THE DIRECTOR OF MINES AND GEOLOGY::HYDERABAD
(PRESENT SRI B.R.V.SUSHEEL KUMAR, DIRECTOR BE. (MINING)

Proceedings.No. 25242/R5-2/2002 Date: 9.7.2011.

Sub:- Mines and Minerals – Mining Lease application for Limestone (CML) over an extent of 997,080 Hectares in S.No. various Survey numbers Dhannavada, Chinnaventurla, Veddalur, Bestvemula, Gollapalli, G.Uppalapadu Village, Mylavaram Mandal, Kadapa District – Application of M/s. ACC Limited – extension of time for submission of Approved Mining plan – accorded – orders – issued – Reg.

Ref:- 1. G.o.Ms.no. 220 Ind & Com Department, dated 8.6.1993.
2. Govt.Memo.No. 16073/M.III(1)/2006-11 Ind & Com (M.III) Department dated 22.06.2010.
3. Lr.No.6.12.2010 From M/s. ACC Limited.
4. T.O.Proc.No.25242/R5-2/2002, dated 07.01.2011.
5. Lr.dated 31.05.2011 from M/s. Acc Limited.

******

Through the reference 1st cited, the Government has requested the applicant company to submit the Approved Mining Plan within a period of six months from the date of receipt of the memo. Further through reference 4th cited, 1st extension time to submit the Approved Mining Plan accorded as requested in reference 3rd cited.

In the circumstances explained by M/s. ACC Limited through the reference 5th cited, the 2nd extension of time is hereby accorded for a period of six months from 23.06.2010 to 22.12.2011 infavour of M/s. ACC Limited. Further the applicant company is requested to submit the Approved Mining Plan on or before 22.12.2011 and there of no further extension of time will be granted if they fail to submit the Approved Mining Plan within the extended period.

Sd/- B.R.V.SUSHEEL KUMAR,
DIRECTOR OF MINES AND GEOLOGY

//ATTESTED//

For DIRECTOR OF MINES AND GEOLOGY

To,
M/s. Associated Cement Company Limited,
"Cement House"
121, Maharshi Karve Raod,
Mumbai – 400 021 ------- (BYRPAD)

Copy submitted to the Secretary to Government Industries and Commerce (M.III) Department for favour of information.

Copy to Indian Bureau of Mines, Hyderabad.
Copy to Zonal Joint Director of Mines and Geology, Kadapa.
Copy to the Assistant Director of Mines and Geology, Yerraguntla.

Fm.7.7.7.2011.

SHISHIR GAUR
RQP/NCP/325/2004/A

INDIA NON JUDICIAL

Government of Andhra Pradesh

IN-AP85874673564324W

e-Stamp

Annexure 2_Mining lease deed

Certificate No.	:	IN-AP85874673564324W
Certificate Issued Date	:	10-May-2024 12:51 PM
Account Reference	:	NEWIMPACC (SV)/ ap18034804/ AP-CDP/ AP-JLD/aplakbhau
DDO Code	:	12042308001 SRO JAMMALAMADUGU
Unique Doc. Reference	:	SUBIN-APAP18034804605266868952W
Purchased by	:	ACC LIMITED
Description of Document	:	Article 31 Lease
Property Description	:	LEASE AGREEMENT
Consideration Price (Rs.)	:	0 (Zero)
First Party	:	ACC LIMITED
Second Party	:	Not Applicable
Paid By (For Whom)	:	ACC LIMITED
Stamp Duty Amount(Rs.)	:	100 (One Hundred only)

Please write or type below this line

FORM K

MODEL FORM OF MINING LEASE
(See rule 31)

THIS INDENTURE made this ..14.. day of ..May..20..24..between the Governor of Andhra Pradesh/the President of India (hereinafter referred to as the 'State Government' which expression shall where the context so admits be deemed to include the successors and assigns) of the one part and **Shri Abhijit Chattopadhyay** S/o **Hiranmoy Chattopadhyay,** Head Geology & Mining, **ACC Limited, Adani Corporate House, Adani Shatigaram, Ahmedabad.**

When the lessee is a registered company

ACC Limited (Name of company) a company registered under Indian Companies Act 1913(Act When the under which incorporated) and having its registered office at Adani Corporate House, Shantigram, SG Highway, Khodiyar, Gandhinagar, Ahmedabad 382421 through Shri Abhijit Chattopadhyay S/o Hiranmoy Chattopadhyay Head Geology & Mining, ACC Limited, Adani Corporate House, Adani Shatigaram, Ahmedabad(Address) registered (hereinafter referred to as "the lessee" which company expression shall where the context so admits be deemed to include its successors and permitted assigns), of the other part.

VOID VOID VOID

Statutory Alert:
1. The authenticity of this Stamp certificate should be verified at 'www.shcilestamp.com' or using e-Stamp Mobile App of Stock Holding. Any discrepancy in the details on this Certificate and as available on the website / Mobile App renders it invalid.
2. The onus of checking the legitimacy is on the users of the certificate.
3. In case of any discrepancy please inform the Competent Authority.

(2)

Sheet 1-(

Sheet Endorsement

Digitally Signed by:
Name:S.VIDYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Presentation Endorsement

Presented in the Office of the Joint Sub-Registrar, JAMMALAMADUGU along with the Photographs & Thumb Impressions as required Under Section 32-A of Registration Act, 1908 and fee of Rs. 0/- paid between the hours of 6PM and 7PM on the 14th day of May, 2024

Execution admitted by (Details of all Executants/Claimants under Sec 32A):

Aadhar Details	FingerPrint	Sign

LE-1 -1 Aadhaar No: XXXXXXXX5591



Name
Abhijit Chattopadhyay [R] For Acc Limited

Relation

Address
A/1403 Vasundhara Kanakia Space Vasant Vihar Glady Alwares Road Thane



Digitally Signed by:
Name:Abhijit Chattopadhyay
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:24:14 I

LR-1 -1 Aadhaar No: XXXXXXXX2717



Name
Pagadala Venkateswara Reddy [R] District Mines &Geology Officer Kadapa

Relation
P China Konda Reddy

Address
5-008 Kanigiri Kothapeta Prakasam



Digitally Signed by:
Name:Pagadala Venkateswa
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:22:59 I

Generated On:14/05/2024 18:12:43

OFFICE OF THE SEAL OF JAMMALAMADUGU JOINT SUBREGISTRAR

WHEREAS THE lessee/lessees has/have applied to the State Government in accordance with the Mineral Concession Rules, 1960 (hereinafter referred to as the said Rules) for a mining lease for Limestone in respect of the lands described in Part I of the Schedule here under written and has/have deposited with the State Government the sum of Rs 10,000/- as security and the sum of Rs 1000/- for meeting the preliminary expenses for a mining lease and WHEREAS the Central Government has approved the grant of lease.

WITNESSETH that in consideration of the rents and royalties, covenants and agreements by and in these presents and the Schedule hereunder written reserved and contained and on the part of the lessee/lessees to be paid observed and performed, the State Government (with the approval of the Central Government)1 hereby grants and demises unto lessee/lessees.

All those the mines beds/veins seams of Limestone (here state the mineral or minerals) (hereinafter and in the Schedule referred to as the said minerals) situated lying and being in or under the lands which are referred to in Part I of the said Schedule, together with the liberties, powers and privileges to be exercised or enjoyed in connection herewith which are mentioned in Part II of the said Schedule subject to the restrictions and conditions as to the exercise and enjoyment of such liberties, powers and privileges which are mentioned in Part III of the said Schedule EXCEPT and reserving out of this demise unto the State Government the liberties, powers and privileges mentioned in Part IV of the said Schedule TO HOLD the premises hereby granted and demised unto the lessee/lessees from the ..14th.....day.May..... 2021..... for the term of 50 years thence next ensuing YIELDING AND PAYING therefore unto the State Government the several rents and royalties mentioned in Part V of the said Schedule at the respective times therein specified subject to the provisions contained in Part VI of the said Schedule and the lessee/lessees hereby covenants/ covenant with the State Government as in Part VII of the said Schedule is expressed and the State Government hereby covenants with the lessee/lessees as in Part VIII of the said Schedule as expressed AND it is hereby mutually agreed between the parties hereto as in Part IX of the said Schedule is expressed

IN WITNESS WHEREOF these presents have been executed in manner hereunder appearing the day and year first above written.

The Schedule above referred to.

PART I

THE AREA OF THIS LEASE

Location and area of the lease:-

All that tract of lands situated at ***Dhannawada, Chinnaventurla, Vaddirala, Bestavemula, Gollapalli and G. Uppalapadu*** (Description of area or areas) 997.08Hec. In (Pargana) in

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Authorised Signatory

(4)

Sheet Endorsement

Sheet 2-67

Digitally Signed by:
Name:S.VIJAYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Identified by Witness

Aadhar Details	FingerPrint	Sign

WT - 1 Aadhaar No: XXXXXXXX0387



Name
Jyothi Venkatarami Reddy

Address
1/20-D Bapanapalle Bapanapalle Cuddapah



Digitally Signed by:
Name:Jyothi Venkatarami R
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:25:09 I

WT - 2 Aadhaar No: XXXXXXXX5034



Name
Vaddirala Govinda Raju

Address
2-35a vaddirala post vaddirala Cuddapah



Digitally Signed by:
Name:Vaddirala Govinda R
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:25:42 I

Date:
14/05/2024 18:12:43

JOINT SUBREGISTRAR, JAMMALAMADUGU

Digitally Signed by:
Name:S.VIJAYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

Generated On:14/05/2024 18:12:43

OFFICE OF The Seal of JAMMALAMADUGU

Mylavaram Mandal the Registration District of YSR Kadapa Sub-District Jammalamadugu and Thana Thalamanthipatnam bearing Cadestral survey Nos part of 57 I/4, 57 I/8, 57 J/1, 57 J/5 containing an area of 997.08 Hectares(2463.83 acres) or thereabouts delineated on the plan hereto annexed and thereon coloured and bounded as follows:-

On the North by : Khasara No of Bestavemula Village - 9,10,44,68,69,70,112,113,114, 137,138, 141,142,143,160,161,162,163,164, 172,173,174,175,176 etc. & Chinna venturla Village 1,2,3,4,12,13, 45,46,47,48,49,50,52,53,54,55, 149,151,157, 216,189, 469,470, 741 etc.

On the South by : Dhannawada village-24,26,27,29,30,35,36,37,102,103,104, Vaddirala village-13,14,19,31,32,35,36,37,38,39,40, 44, 60, 63,64, 65,66, 93,105,117, 146,152 etc Gollapalle village-8,13,41,42,46,71,72,133,135,137, Uppalapadu village -29,30, 36,48,67,73,74,77,78,128,129,130,132,139,140,144,145,167 etc.

On the East by : Kallutla Village 29,30,31,32,33,34,35,37,38, 104,105 etc

And

On the West by : Chinna venturla village -390,396,397,405,408,409 etc,

hereinafter referred to as "the said lands".(Refer Land Schedule attached)

PART II

Liberties, powers and privileges to be exercised and enjoyed by the lessee/ lessees subject to the restrictions and conditions in Part III.

To enter upon land and search for, win, work, etc.

1. Liberty and power at all times during the term hereby demised to enter upon the said lands and to search for mine, bore, dig, drill for, win, work, dress, process, convert, carry away and dispose of the said mineral/minerals.

   To sink, drive and make pits, shafts and inclines etc.: -

2. Liberty and power for or in connection with any of the purposes mentioned in this part to sink drive make maintain and use in the said lands and pits shafts inclines drifts levels waterways airways and other works (and to use maintain deepen or extent any existing works of the like nature in the said lands).

   To bring and use machinery equipment etc.:

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Authorised Signatory

(6)

Sheet Endorsement

Digitally Signed by: S.VIDYASAGAR RED
Name:S.VIDYASAGAR RED
Location:JAMMALAMADUGU
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

Sheet 3-67

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

JOINT SUBREGISTRAR, JAMMALAMADUGU

Desc	Cash Receipt Details In the Form of					
	Online	Stamp Papers	Challanu/s 41 of IS Act	Cash	Stock Holding	Total
SD	66901803	100	0	0	0	66901903
TD		0				0
RF	2230902	0	0	0	0	2230902
UC	2000	0	0	0	0	2000
TOT	69134705	100	0	0	0	69134805

NOTE: TD:Transfer Duty, SD:Stamp Duty, RF:Registration Fee ,UC:=User Charges, TOT:Total, Desc:Description

Rs. 66901803/- towards Stamp Duty including T.D under Section 41 of I.S. Act, 1899 and Rs. 2230902/- towards Registration Fees on the chargeable value of Rs. 2230060084/- was paid by the party through ONLINE No , 81066873012024, 81066777322024, 81068341742024, 81066900902024 dated ,14-MAY-24,14-MAY-24,14-MAY-24,14-MAY-24

Digitally Signed by: S.VIDYASAGAR RED
Name:S.VIDYASAGAR RED
Location:JAMMALAMADUGU
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

Date:

14th day of May, 2024

JOINT SUBREGISTRAR, JAMMALAMADUGU

Digitally Signed by: S.VIDYASAGAR RED
Name:S.VIDYASAGAR RED
Location:JAMMALAMADUGU
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

Generated On:14/05/2024 18:12:43

OFFICE OF The Seal of JAMMALAMADUGU

3. Liberty and power for or in connection with any of the purposes mentioned in this part to erect, construct, maintain and use on or under the said lands any engines, machinery, plant, dressing floors, furnaces, coke ovens, brick-kilns, workshops, store- houses, bungalows, godowns, sheds, and other buildings and other works and conveniences of the like nature on or under the said lands.

To make roads and ways etc. and use existing roads and ways:

4. Liberty and power for or in connection with any of the purposes mentioned in this part to make any tramways, railways, roads, aircraft landing grounds and other ways in or over the said lands and to use maintain and go, and repass with or without horses, cattle, wagons, aircrafts, locomotives, or other vehicles over the same (or any existing tramways roads and other ways in or over the said lands) on such conditions as may be agreed to.

To get building and road materials, etc.:

5. Liberty and power for or in connection with any of the purposes mentioned in this part to quarry and get stone gravel and other building and road materials and clay and to use and employ the same and to manufacture such clay into bricks or tiles and to use such bricks or tiles but to sell any such material bricks or tiles.

To use water from streams etc:-

6. Liberty and power for or in connection with any of the purpose mentioned in this part but subject to the right of any existing or future lessees and with the written permission of Deputy Commissioner/Collector to appropriate and use water from any streams water-courses, springs or other sources in or upon the said lands and to divert step up or dam any such stream or water course and collect or impound any such water and to make construct and maintain any water course culverts, drains or reservoirs but not as so to deprive any cultivated lands, villages, buildings or watering places for livestock of a reasonable supply of water as before accustomed nor in any way to foul or pollute any stream or springs. Provided that the lessee/lessees shall not interfere with the navigation in any navigable stream nor shall divert such stream without the previous written permission of the State Government.

To use land for stacking, heaping, depositing purposes:-

7. Liberty and power to enter upon and use a sufficient part of -the surface of the said lands for the purpose of stacking, heaping, storing or depositing therein any produce of

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

(8)

Sheet 4-(1)

Sheet Endorsement

Digitally Signed by:
Name:S.VIDYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

Book No: 1 CS No / Year: 7059 / 2024 Doct No / Year: 5986 / 2024

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Certification of Registration

Registered as document no. 5986 of 2024 of Book-1 and assigned the identification number 1 - 1103 - 5986 - 2024 for Scanning on 14-MAY-24.

Digitally Signed by:
Name:S.VIDYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

Registering Officer
JAMMALAMADUGU

S.VIDYASAGAR REDDY

OFFICE OF The Seal of JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

the mines or works carried on and any tools, equipment, earth and materials and substances dug or raised under the liberties and powers mentioned in this part.

Beneficiation and conveying away of production:-

8. (a) Liberty and power to enter upon and use a sufficient part of the said lands to beneficiate any ore produced from the said lands and to carry away such beneficiated ore.

To make coke (to be used in case of coal only):

(b) Liberty and power upon the said lands to convert into coke any coal or coal dust produced from the said lands and to carry away such coke

To clear brushwood and to fell and utilise trees, etc.:

9. Liberty and power for or in connection with any of the purposes mentioned in this part and subject to the existing rights of others and save as provided in clause 3 of Part III of this Schedule to clear undergrowth and brushwood and to fell and utilise any trees or timber standing or found on the said lands provided that the State Government may ask the lessee/lessees to pay for any trees or timber felled and utilised, by him/them at the rates specified by the Deputy Commissioner/Collector or the State Government.

PART III

Restrictions and Conditions as to the exercise of the Liberties, Powers and Privileges in Part-II.

No building etc. upon certain places:-

1. No building or thing shall be erected, set up or placed and no surface operations shall be carried on in or upon any public pleasure ground, burning or burial ground or place held sacred by any class of persons or any house or village site, public road or other place which the State Government may determine as public ground nor in such a manner as to injure or prejudicially effect any buildings works property or rights of other persons and no land will be used for surface operations which is already occupied by persons other than the State Government for works or purposes not included in this lease. The lessee/lessees shall not also interfere with any right of way, well or tank.

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

(10)

Sheet 5-E

Sheet Endorsement

Digitally Signed by:
Name:S VIDYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF
JAMMALAMADUGU

Permission for surface operations in a land not already in use:-

2. Before using for surface operations any land which has not already been used for such operations, the lessee/lessees shall give to Deputy Commissioner/Collector of the District two calendar months previous notice in writing specifying the name or other description of the situation and the extent of the land proposed to be so used and the purpose for which the same is required and the said land shall not be so used if objection is issued by the Deputy Commissioner/Collector within two months after the receipt by him of such notice unless the objections so stated shall on reference to the State Government be annulled or waived.

To cut trees in unreserved lands:

3. The lessee/lessees shall not without the express sanction of the Deputy Commissioner/Collector cut down or injure any timber or trees on the said lands but may without such sanction clear away any brushwood or undergrowth which interferes with any operations authorised by these presents. The Deputy Commissioner/Collector or the State Government may require the lessee/lessees to pay for any trees or timber felled and utilised by him/them at the rates specified by the Deputy Commissioner/Collector of the District

To enter upon reserved forests:

4. Notwithstanding anything in this Schedule contained the lessee/lessees shall not enter upon any reserved forest included in the said lands without previous sanction in writing of the District Forest Officer nor fell, cut and use any timber or trees without obtaining the sanction in writing of that Officer nor otherwise than in accordance with such conditions as the State Government may prescribe

No mining operations within 50 metres of public works etc.:-

5. The lessee/lessees shall not work or carry on or allow to be worked or carried on any mining operations at or to any point within a distance of 50 metres from any railway line except with the previous written permission of the Railway Administration concerned or under or beneath any rope way or any ropeway trestle or station, except under and in accordance with the written permission of the authority owning the ropeway or from any reservoir, canal or other public works such as public roads and buildings or inhabited site except with the previous written permission of the

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

Sheet Endorsement

Digitally Signed by:
Name:S.VIJAYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF The Seal of JAMMALAMADUGU Joint Subregistrar Office

Deputy Commissioner/Collector or any other officer authorised by the State Government in this behalf and otherwise than in accordance with such instructions, restrictions and conditions either general or special which may be attached to such permission. The said distance of 50 metres shall be measured in the case of railway, reservoir or canal horizontally from the outer toe of the bank or the outer edge of the cutting as the case may be and in case of a building horizontally from the plinth thereof. In the case of village roads no working shall be carried on within a distance of 10 metres of the outer edge of the cutting except with the previous permission of the Deputy Commissioner/Collector or any other officer duly authorised by the State Government in this behalf and otherwise than in accordance with such directions, restrictions and additions, either general or special, which may be attached to such permission.

Explanation:- For the purposes of this clause the expression 'Railway Administration' shall have the same meaning as it is defined to have in the Indian Railways Act. 1890, by clause (6) of section 3 of that Act. 'Public Road' shall mean a road which has been constructed by artificially surfaced as distinct from a track resulting from repeated use. Village road will include any track shown in the Revenue record as village road.

Facilities for adjoining Government licences and leases:

6. The lessee/lessees shall allow existing and future holders of Government licences or leases over any land which is comprised in or adjoins or is reached by the land held by the lessee/lessees reasonable facilities of access thereto:

   PROVIDED THAT no substantial hindrance or interference shall be caused by such holders of licences or leases to the operations of the lessee/lessees under these presents and fair compensation (as may be mutually agreed upon or in the event of disagreement as may be decided by the State Government) shall be made to the lessee/lessees for loss or damage sustained by the lessee/lessees by reason of the exercise of this liberty

PART IV

Liberties, Powers and Privileges reserved to the State Government

To work other minerals:

1. Liberty and power for the State Government, or to any lessee or persons authorised by it in that behalf to enter into and upon the said lands and to search for, win, work, dig, get, raise, dress, process, convert and carry away minerals other than the said minerals and any other substances and for those purposes to sink, drive, make erect, construct, maintain and use such pits,

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Authorised Signatory

(14)

Sheet Endorsement

Sheet 67

Digitally Signed by:
Name:S.VIDYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

Book No: 1 CS No / Year: **7659 / 2024** Doct No / Year: **5986 / 2024**

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF The Seal of JAMMALAMADUGU Joint Subregistrar Office

shafts,inclines, drifts, levels and other lines, waterways, airways, water courses, drains, reservoirs, engines, machinery, plant, buildings, canals, tramways, railways, roadways and other works and conveniences as may be deemed necessary or convenient.

PROVIDED THAT in the exercise of such liberty and power no substantial hindrance or interference shall be caused to or with the liberties, powers and privileges of the lessee/lessees under these presents and that fair compensation (as may be mutually agreed upon or in the event of disagreement as may be decided by the State Government) shall be made to the lessee/lessees for all loss or damage sustained by the lessee/lessees by reason or in consequence of the exercise of such liberty and power.

To make railways and roads: -

2. Liberty and power for the State Government or any lessee or person authorised by it in that behalf to enter into and upon the said lands and to make upon over or through the same any railways, tramways, roadways or pipelines for any purpose other than those mentioned in Part II of these presents and to get from the said lands, stones, gravel, earth and other materials for making, maintaining and repairing such railways, tramways and roads or any existing railways and roads and to and repass at all times with or without horses, cattle or other animals, carts, wagons, carriages, locomotives or other vehicles over or along any such railways, tramways, road lines and other ways for all purposes and as occasion may require, provided that in the exercise of such liberty and power by such other lessee or person no substantial hindrance or interference shall be caused to or with the liberties, powers and privileges of the lessee/lessees under these presents and that fair compensation as may be mutually agreed upon or in the event of disagreement as may be decided by the State Government shall be made to the lessee/lessees for all loss or damage substantial hindrance or interference shall be caused to or with the exercise by such lessee or person of such liberty and power

PART V

Rents and royalties reserved by this lease

To pay dead rent or royalty whichever is higher: -

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

(16)

Sheet Endorsement

Sheet 8-67

Book No: 1 CS No / Year: **7659 / 2024** Doct No / Year: **5986 / 2024**

Digitally Signed by:
Name:S.VIDYASAGAR RED
Location:JAMMALAMADU
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF The Seal of JAMMALAMADUGU Joint Subregistrar Office

1.The lessee shall pay, for every year except the first year of the lease, dead rent as specified in clause 2 of this Part:

Provided that, where the holder of such mining lease becomes liable under section 9 of the Act, to pay royalty for any mineral removed or consumed by him or by his agent, manager, employee, contractor or sub-lessee from the leased area, he shall be liable to pay either such royalty or the dead rent in respect of that area, whichever is higher.

Rate and mode of payment of dead rent.-

3. Subject to the provisions of clause 1 of this Part, during the subsistence of the lease, the lessee/lessees shall pay to the State Government annual dead rent for the lands demised and described in Part I of this Schedule at the rate for the time being specified in the Third Schedule to the Act, in such manner as may be specified in this behalf by the State Government.

Payment of surface rent, and water rate:-

4. The lessee/lessees shall pay rent and water rate to the State Government in respect of all parts of the surface of the said lands which shall from time to time be occupied or used by the lessee/lessees under the authority of these presents at the rate of Rs as per Govt . rate respectively per annum per hectare of the area so occupied or used and so in proportion for any area less than a hectare during the period from the commencement of such occupation or used until the area shall cease to be so occupied or used and shall as far as possible restore the surface land so used to its original condition. Surface rent and water rate shall be paid as hereinbefore detailed in clause 2 : PROVIDED THAT NO such rent/water rate shall be payable in respect of the occupation and use of the area comprised in any roads or ways to which the public have full right of access.

PART VI

Provisions relating to the rents and royalties

Rent and royalties to be free from deduction etc.:-

1. The rent, water rate and royalties mentioned in Part V of this Schedule shall be paid free from any deductions the the State Government at and such manner as the Government may prescribe.
   PROVIDE ALWAYS AND it is here by agreed that the balance standing to the credit of the lessee/lessees on account of the deposit made by him/them as a

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Authorised Signatory

(18)

Sheet Endorsement

Sheet 9-67

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S.VIJAYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF The Seal of JAMMALAMADUGU Joint Subregistrar Office

licensee/licensees over an area which include the said lands shall be retained and accepted by the State Government in satisfaction of the rents and royalties mentioned in Part V until they reach that amount

Mode of Communication of royalty :

2. For the purpose of computing the said royalties the lessee/lessees shall keep a correct account of them mineral/minerals produced and despatched. The accounts as well as the weight of the mineral/minerals in stock or in the process of export may be checked by an officer authorized by the Central or State Government. Here specify the mode of arriving at sale price/prices at pits mouth of mineral/minerals.

Course of actions if rents and royalties are not paid in time :

3. Should any rent, royalty or other sums due to the State Government under the terms and conditions of these presents be not paid by the lessee/lessees within the prescribed time the same, together with simple interest due thereon at the rate of twenty four percent per annum may be recovered on a certificate of such officer as may be specified by the State Government by general ore special order, in the same manner as an arrear of land revenue.

PART VII

The Covenants of the Lessee/Lessees

Lessee to pay rents and royalities, taxes etc.

1. The lessee/lessees shall pay the rent, water rate and royalties reserved by this lease at such times and in the manner provided in PARTS V and VI of these presents and shall also pay and discharge all taxes, rates, assessments and impositions whatsoever being in the nature of public demands which shall from time to time be charged, assessed or imposed by the authority of the Central and State Governments upon or in respect of the premises and works of the lessee/lessees in common with other premises and works of a like nature except demands for land revenues

To maintain and keep boundary marks in good order:-

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Authorised Signatory

(20)

Sheet Endorsement

Sheet 10-67

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S.VIDYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF JAMMALAMADUGU

2. The lessee/lessees shall at his/their own expense erect and at all times maintain and keep in repair boundary marks and pillars according to the demarcation to be shown in the plan annexed to this lease. Such marks and pillars shall be sufficiently clear of the shrubs and other obstructions as to allow easy identification.

To commence operations within two years and work in a workman-like manner:-

3. The lessee/lessees shall commence operation within two years from the date of execution of the lease and shall thereafter at all times during the continuance of his lease search for, win, work and develop, the said minerals without voluntary intermission in a skilful and workman-like manner and as prescribed under clause 12 hereinafter without doing or permitting to be done any unnecessary or avoidable damage to the surface of the said lands or the crops buildings structures or other property thereon. For the purposes of this clause operations shall include the erection of machinery, laying of a tramway or construction of a road in connection with the mine.

To indemnify Government against all claims:-

4. The lessee/lessees shall make and pay such reasonable satisfaction and compensation as may be assessed by lawful authority in accordance with the law force on the subject for all damage, injury or disturbance which may be done by him/them in exercise of the powers granted by this lease and shall indemnify and keep indemnified fully and completely the State Government against all claims which may be made by any person or persons in respect of any such damage, injury or disturbance and all costs and expenses in connection therewith.

To secure and keep in good condition pits, shafts, etc.:-

5. The lessee/lessees shall during the subsistence of this lease well and sufficiently secure and keep open with timber or other durable means all pits, shafts and workings that may be made or used in the said lands and make and maintain sufficient fences to the satisfaction of the State Government round every such pit, shaft or working whether the same is abandoned or not and shall during the same period keep all workings in the said lands except such as may be abandoned accessible free from water and foul air as far as possible.

To strengthen and support the mine to necessary extent: -

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

(22)

Sheet 11-67

Sheet Endorsement

Digitally Signed by:
Name:S.VIDYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF JAMMALAMADUGU

6. The lessee/lessees shall strengthen and support to the satisfaction of the Railway Administration concerned or the State Government, as the case may be any part of the mine which in its opinion requires such strengthening or support for the safety of any railway, reservoir, canal, road and any other public works or structures.

To allow inspection of workings: -

7. The lessee/lessees shall allow any officer authorised by the Central Government or the State Government in that behalf to enter upon the premises including any building, excavation or land comprised in the lease for the purpose of inspecting, examining, surveying, prospecting and making plans thereof sampling and collecting any data and the lessee/lessees shall with proper person employed by the lessee/lessees and acquainted with the mines and work effectually assist such officer, agents, servants and workmen in conducting every such inspection and shall afford them all facilities, information connected with the working of the mines which they may reasonably require and also shall and will conform to and observe all orders and regulations which the Central and State Governments as the result of such inspection or otherwise may, from time to time, see fit to impose.

To report accident:-

8. The lessee/lessees shall without delay send to the Deputy Commissioner/ Collector a report of any accident causing death or serious bodily injury or serious injury to property or seriously affecting or endangering life or property which may occur in the course of the operations under this lease.

To report discovery of other minerals:-

9. The lessee/lessees shall report to the State Government the discovery in the leased area of any mineral not specified in the lease within sixty days of such discovery along with full particulars of the nature and position of each such find. If any mineral not specified in the lease is discovered in the leased area, the lessee/lessees shall not win and dispose of such mineral unless such mineral is included in the lease or a separate lease is obtained therefor.

To keep records and accounts regarding production and employees etc.:-

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

(24)

Sheet Endorsement

Sheet 12-67

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S.VIJAYASAGAR REDD
Location:JAMMALAMADUGU
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF JAMMALAMADUGU

10. The lessee/lessees shall at all time during the said term keep or cause to be kept at an office to be situated upon or near the said lands correct and intelligible books of accounts which shall contain accurate entries showing from time to time:-

(1) Quantity and quality of the said mineral/minerals realised from the said lands.

(2) Quantity of the various qualities of ores beneficiated or converted (for example coal converted into coke).

(3) Quantities of the various qualities of the said mineral/minerals sold and exported separately.

(4) Quantities of the various qualities of the said mineral/minerals otherwise disposed of and the manner and purpose of such disposal.

(5) The prices and all other particulars of all sales of said mineral/minerals.

(6) The number of persons employed in the mines or works or upon the said lands specifying nationality, qualifications and pay of the technical personnel.

(7) Such other facts particulars and circumstances as the Central or the State Governments may from time to time require and shall also furnish free of charge to such officers and at such times as the Central and State Governments may appoint true and correct abstract of all or any such books of accounts and such information and returns to all or any of the matters aforesaid as the State Government may prescribe and shall at all reasonable times allow such officers as the Central Government or State Government shall in that behalf appoint to enter into and have free access to the said officers for the purpose of examining and inspecting the said books of accounts, plans and records and to make copies thereof and make extracts therefrom.

To maintain plans, etc:-

11. The lessee/lessees shall at all times during the said term maintain at the mine office correct intelligible up-to-date and complete plans and sections of the mines in the said lands. They shall show all the operations, and workings and all the trenches, pits and drillings made by him/them in the course of

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

(26)

Sheet Endorsement

Sheet 1 of 67

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S.VIDYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF The seal of JAMMALAMADUGU

operations carried on by him/them under the lease, faults and other disturbances encountered and geological data and all such plans and sections shall be amended and filled up by and from actual surveys to be made for that purpose at the end of twelve months or any period specified from time to time and the lessee/lessees shall furnish free of charge to the Central and State Governments true and correct copies of such plans and sections whenever required. Accurate records of all trenches, pits and drillings shall show: -

(a) The subsoil and strata through which they pass.

(b) Any mineral encountered.

(c) Any other matter of interest and all data required by the Central and State Governments, from time to time.

The lessee/lessees shall allow any officer of the Central or the State Government, authorised in this behalf by the Central Government, to inspect the same at all reasonable times. He/they shall also supply when asked for by the State Government/the Coal Controller the Director General, Geological Survey of India, the Controller General, Indian Bureau of Mines a composite plan of the area showing thickness dip, inclination, etc. of all the seams as also the quantity of reserves quality-wise

11A. The lessee shall pay a wage not less than the minimum wage prescribed by the Central or State Government from time to time.

11B. The lessee shall comply with provisions of the Mines Act, 1952 and the rules made thereunder.

11C. The lessee shall take measures for the protection of environment like planting of trees, reclamation of land, use of pollution control devices; and such other measures as may be prescribed by the Central or State Government, from time to time, at his own expense.

11D. The lessee shall pay compensation to the occupier of the land on the date and in the manner laid down in these rules.

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

(28)

Sheet Endorsement

Sheet 1 of 67

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S.VIJAYASAGAR REDD
Location:JAMMALAMADUGU
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF
The Seal of
JAMMALAMADUGU
Joint Subregistrar
Office

11E. The lessee shall, in the matter of employment, give preference to the tribals and to the persons who become displaced-because of the taking up of mining operations.

Act 67 of 1957:-

12.The lessee/lessees shall be bound by such rules as may be issued from time to time by the Government of India under section 18 of the Mines and Minerals (Development and Regulation) Act, 1957 (Act 67 of 1957) and shall not carry on mining or other operations under the said lease in any way other than as prescribed under these rules.

To provide weighing machine:-

13.Unless specifically exempted by the State Government the lessee/lessees shall provide and at all times keep at or near the pit head or each of the pit heads at which the said minerals shall be brought to bank a properly constructed and efficient weighing machine and shall weigh or cause to be weighed thereon all the said minerals, from time to time, brought to bank, sold, exported and converted and also the converted products and shall at the close of each day cause the total weights, ascertained by such means of the said minerals, ores products raised, sold, exported and converted during the previous twenty- four hours to be entered in the aforesaid books of accounts. The lessee/lessees shall permit the State Government at all times during the said term to employ any person or persons to be present at the weighing of the said minerals as aforesaid and to keep accounts thereof and to check the accounts kept by the lessee/lessees. The lessee/lessees shall give 15 days previous notice in writing to the Deputy Commissioner/Collector of every such measuring or weighing in order that he or some officer on his behalf may be present thereat.

To allow test of weighing machine:-

14. The lessee/lessees shall allow any person or persons appointed in that behalf by the State Government at any time or times during the said term to examine and test every weighing machine to be provided and kept as aforesaid and the weights used therewith in order to ascertain whether the same respectively are

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

(30)

Sheet 15-67

Sheet Endorsement

Digitally Signed by:
Name:S.YEDUTASAGAR RED
Location:JAMMALAMADU
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF The Joint Sub Registrar JAMMALAMADUGU

correct and in good repair and order and if upon any such examination or testing any such weighing machine or weights shall be found incorrect or out of repair or order the State Government may require that the same be adjusted, repaired and put in order by and at the expense of the lessee/lessees and if such requisition be not complied with within fourteen days after the same shall have been made, the State Government may cause such weighing machine or weights to be adjusted, repaired, and put in order and the expense of so doing shall be paid by the lessee/lessees to the State Government on demand and if upon any such examination or testing as aforesaid any error shall be discovered in any weighing machine or weights to the prejudice of the State Government such error shall be regarded as having existed for three calendar months, previous to the discovery thereof or from the last occasion of so examining and testing the same weighing machine and weights in case such occasion be within such period of three months and the said rent and royalty shall be paid and accounted for accordingly.

To pay compensation for injury of third parties:-

15. The lessee/lessees shall make and pay reasonable satisfaction and compensation for all damage, injury or disturbance or person or property which may be done by or on the part of lessee/lessees in exercise of the liberties and power granted by these presents and shall at all times save harmless and keep indemnified the State Government from and against all suits. claims and demands which may be brought or made by any person or persons in respect of any such damage, injury or disturbance

Not to obstruct working of other minerals:-

16. The lessee/lessees will exercise the liberties and powers hereby granted in such a manner as to offer no unnecessary or reasonably avoidable obstruction or interruption to the development and working within the said lands of any minerals not included in this lease and shall at all times afford to the Central and State Government and to the holders of prospecting licences or mining leases in respect of any such minerals or any minerals within any land adjacent to the said lands as the case may be reasonable means of access and safe and convenient passage upon and across the said lands to such minerals for the purpose of getting working, developing and carrying away the same provided that the lessee/lessees shall receive reasonable compensation for any damage or injury which he/they may sustain by reason or in consequence of the use of such passage by such lessees or holders of prospecting licences.

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

32

Sheet Endorsement

Sheet 16-67

Digitally Signed by:
Name:S.VIDYASAGAR RED
Location:JAMMALAMADU
Reason:endorsementSign
Date:Tue May 14 18:36:13 I

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF
JAMMALAMADUGU

Transfer of lease:-

17.(1) The lessee/lessees shall not, without the previous consent in writing of the State Government, Omitted

(a) assign, sublet, mortgage, or in any other manner, transfer the mining lease, or any right, title or interest therein, or

(b) enter into or make any arrangement, contract or understanding whereby the lessee/lessees will or may be directly or indirectly financed to a substantial extent by, or under which the lessee's operations or undertakings will or may be substantially controlled by, any person or body of persons other than the lessee/lessees:

Provided that the State Government shall not give its written consent unless-

(a) the lessee has furnished an affidavit along with his application for transfer of the mining lease specifying therein the amount that he has already taken or proposes to take as consideration from the transferee;

(b) the transfer of the mining lease is to be made to a person or body directly undertaking mining operations.

(2) Without prejudice to the above provisions the lessee/lessees may, subject to the conditions specified in the proviso to Rule 35 of said Rules, transfer this lease or any right, title or interest therein, to a person who has filed an affidavit stating that he has filed up-to-date income tax returns, paid income tax assessed on him and paid the income tax on the basis of selfassessment as provided in the Income Tax Act, 1961 (43 of 1961), on payment of five hundred rupees to the State Government:

Provided that the lessee/lessees shall make available to the transferee the original or certified copies of all plans of abandoned workings in the area and in a belt 65 metres wide surrounding it.

Provided further that where the mortgagee is an Institution or a Bank or a Corporation specified in Schedule V, it shall not be necessary for any such Institution or Bank or Corporation to meet with the requirement relating to income tax and the said valid clearance certificate

(3) The State Government, may by order in writing, determine the lease at any time if the lessee/lessees has/have in the opinion of the State Government,

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Authorised Signatory

(34)

Sheet Endorsement

Sheet 17-67

Digitally Signed by:
Name:S.VIDYASAGAR REDDY
Location:JAMMALAMADUGU
Reason:endorsementSign
Date:Tue May 14 18:26:13 IST

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF The Joint Sub-Registrar Office JAMMALAMADUGU

committed a breach of any of the above provisions or has/have transferred the lease or any right, title or interest therein otherwise than in accordance with clause (2) :

Provided that no such order shall be made without giving the lessee/lessees a reasonable opportunity of stating his/their case.

Not to be financed or controlled by a Trust, Corporation, Firm or person:-

18.The lease shall not be controlled and the lessee/lessees shall not allow themselves to be controlled by any Trust, Syndicate, Corporation, Firm or person except with the written consent of the Central Government. The lessee/lessees shall not enter into or make any arrangement compact or understanding whereby the lessee/lessees will or may be directly or indirectly financed by or under which the lessee's/lessees' operations or undertakings will or may be carried on directly or indirectly by or for the benefit of or subject to the control of any Trust, Syndicate, Corporation, Firm or person unless with the written sanction given prior to such arrangement compact or understanding being entered into or made of the Central Government and any or every such arrangement compact or understanding as aforesaid (entered into or made with such sanction as aforesaid) shall only be entered into or made and shall always be subject to an express condition binding upon the other party or parties thereto that on the occasion of a state of emergency of which the President of India in his discretion shall be the sole judge it shall be terminable if so required in writing by the State Government and shall in the event of any such requisition being made be forthwith thereafter determined by the lessee/lessees accordingly.

Lessee shall deposit any additional amount necessary:-

19. Whenever the security deposit of Rs.2,000 / 1,000 or any part thereof or any further sum hereafter deposited with the State Government in replenishment thereof shall be forfeited or applied by the Central or State Government pursuant to the power in hereinafter declared in that behalf the lessee/lessees shall deposit with the State Government such further sum as may be sufficient with the unappropriated part thereof to bring the amount in deposit with the State Government up to the sum of Rs. 1,000 / 500.

Delivery of workings in good order to State Governments after determination of lease:

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

(36)

Sheet Endorsement

Sheet 18-67

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S.VIDYASAGAR [illegible]
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF The Seal of JAMMALAMADUGU Joint Subregistrar Office

20.The lessee/lessees shall at the expiration or sooner determination of the said term or any renewal thereof deliver up to the State Government all mines, pits, shafts, inclines, drifts, levels, water ways, airways and other works now existing or hereafter to be sunk or made on or under the said lands except such as have been abandoned with the sanction of the State Government and in any ordinary and fair course of working all engines, machinery, plant, buildings, structures, other works and conveniences which at the commencement of the said term were upon or under the said lands and all such machinery set up by the lessee/lessees below ground which cannot be removed without causing injury to the mines or works under the said lands (except such of the same as may with the sanction of the State Government have become disused) and all buildings and structures of bricks or stone erected by the lessee/lessees above ground level in good repair order and condition and fit in all respects for further working of the said mines and the said minerals.

Right of pre-emption:-

21 .(a) The State Government shall from time to time and all times during the said term have the right (to be exercised by notice in writing to the lessee/lessees) of pre-emption of the said minerals (and all products thereof) lying in or upon the said lands hereby demised or elsewhere under the control of the lessee/lessees and the lessee/lessees shall with all possible expedition deliver all minerals or products or minerals purchased by the State Government under the power conferred by this provision in the quantities at the times in manner and at the place specified in the notice exercising the said right.

(b) Should the right of pre-emption conferred by this present provision be exercised and a vessel chartered to carry the minerals or products thereof procured on behalf of the State Government or the Central Government be detained on demurrage at the port of loading the lessee/lessees shall pay the amount due for demurrage according to the terms of the charter party of such vessel unless the State Government shall be satisfied that the delay, is due to causes beyond the control of the lessee/lessees.

(c) The price to be paid for all minerals or products of minerals taken in pre-emption by the State Government in exercise of the right hereby conferred shall be the fair market price prevailing at the time of pre-emption PROVIDED THAT in order to assist in arriving at the said fair market price the lessee/lessees shall if so required furnish to the State Government for the confidential information of the Government, particularly of the quantities, descriptions and prices of the said

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Authorised Signatory

(38)

Sheet Endorsement

Sheet 19-67

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S.VIDYASAGAR REDD
Location:JAMMALAMADUGU
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF The Seal of JAMMALAMADUGU

minerals or products thereof sold to other customers and of charters entered into for freight, for carriage of the same and shall produce to such officer or officers as may be directed by the State Government original or authenticated copies of contracts and charter parties entered into for the sale or freightage of such minerals or products

(d) In the event of the existence of a state of war or emergency (of which existence and President of India shall be the sole judge and a notification to this effect in the Gazette of India shall be conclusive proof), the State Government with the consent of the Central Government shall from time to time and all times during the said term have the right (to be exercised by a notice in writing to the lessee/lessees forthwith take possession and control of the works plant machinery and premises of the lessee/lessees on or in connection with the said lands or operations under this lease and during such possession or control the lessee/lessees shall conform to and obey all directions given by or on behalf of the Central Government or State Government regarding the use or employment of such works, plants, premises and minerals: PROVIDED THAT fair compensation which shall be determined in default of agreement by the State Government shall be paid to the lessee/lessees for all loss or damage sustained by him/them by reason or in consequence of the exercise of the powers conferred by this clause and PROVIDED ALSO that the exercise of such powers shall not determine the said term hereby granted or affect the terms and provisions of these presents further than may be necessary to give effect to the provisions of this clause.

Employment of foreign national:-

22. The lessee/lessees shall not employ, in connection with the mining operations any person who is not an Indian national except with the previous approval of the Central Government.

Recovery of expenses incurred by the State Government:-

23. If any of the works or matters which in accordance with the covenants in that behalf hereinbefore contained are to be carried or performed by the lessee/lessees be not so carried out or performed within the time specified in that behalf, the State Government may cause the same to be carried out or performed and the lessee/lessees shall pay the State Government on demand all expenses which shall be incurred in such carrying out or performance of the same and the decision of the State Government as to such expenses shall be final.

District Mines & Geology Officer
KADAPA, Y.S.R. District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

(40)

Sheet Endorsement

Sheet 20-67

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S.VIDYASAGAR RAO
Location:JAMMALAMADUGU
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF The Seal of JAMMALAMADUGU

Furnishing of geophysical data:-

24. The lessee/lessees shall furnish:

(a) all geophysical data relating to mining fields, or engineering and ground Water surveys, such as anomaly maps, sections, plans, structures, contour maps, logging, collected by him/them during the course of mining operations to the DirectorGeneral, Geological Survey of India, Calcutta.

(b) all information pertaining to investigations of radioactive minerals collected by him/them during course of mining operations to the Secretary, Department of Atomic Energy, New Delhi.

Data or information referred to above shall be furnished every year reckoned from the date of commencement of the period of the mining lease

PART VIII

The Covenants of the State Government

Lessee/lessees may hold and enjoy rights quietly:-

1. The lessee/lessees paying the rents, water rate and royalties hereby reserved and observing and performing all the covenants and agreements herein contained and on the part of the lessee/lessees to be observed and performed shall and may quietly hold and enjoy the rights and premises hereby demised for and during the term hereby granted without any unlawful interruption from or by the State Government, or any person rightfully claiming under it.

Acquisition of land of third parties and compensation thereof :-

2. If in accordance with the provision of clause 4 of Part VII of this Schedule the lessee/lessees shall offer to pay to an occupier of the surface of any part of the said lands compensation for any damage or injury which may arise from the proposed operations of the lessee/lessees and the said occupier shall refuse his consent to the exercise of the right and powers reserved to the State Government and demised to the lessee/lessees by these presents and the lessee/lessees shall report the matter to the State Government and shall deposit with it the amount offered as compensation and if the Central/State Government is satisfied that the amount of compensation offered is fair and reasonable or if it is not so satisfied and the lessee/lessees shall have deposited with it such further amount as the State and Central Government shall consider fair and reasonable the State Government shall order the occupier to allow the lessee/lessees to enter the land and to carry out such

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

42

Sheet Endorsement

Sheet 21-67

Digitally Signed by:
Name:S.VIJAYASAGAR R...
Location:JAMMALAMADU(
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF The Sub-Registrar JAMMALAMADUGU Joint Sub-registrar Office

operations as may be necessary for the purpose of this lease. In assessing the amount of such compensation the State Government shall be guided by the principles of the Land Acquisition Act.

To renew:-

3. The mining lease is renewable in terms of the provisions of the Act and the rules made thereunder.

Provided that the State Government may for reasons to be recorded in writing reduce the area applied for.

If the lease is in respect of minerals specified in the First Schedule to the Act, renewal will be subject to the prior approval of the Central Government.

If the lessee/lessees be desirous of taking a renewed lease of the premises hereby demised or of any parts of them for a further term from the expiration of the term hereby granted and is otherwise eligible, they shall prior to expiration of the last mentioned term give to the State Government twelve calendar months previous notice in writing and shall pay the rent, rates and royalties hereby reserved and shall observe and perform the several covenants and agreements herein contained and on the part of the lessee/lessees to be observed and performed up to the expiration of the term hereby granted. The State Government on receipt of application for renewal, shall consider it in accordance with the provisions of the Act and the rules made thereunder and shall pass orders as it deems fit. If renewal is granted, the State Government will at the expense of the lessee/lessees and upon his executing and delivering to the State Government if required a counterpart thereof execute and deliver to the lessee/lessees a renewed lease of the said premises or part thereof for the further term of ..... years at such rents, rates and royalties and on such terms and subject to such rents, rates and royalties and on such terms and subject to such covenants and agreements, including this present covenant to renew as shall be in accordance with the Mineral Concession Rules, 1960, applicable to Limestone (name of minerals) on the day next following the expiration of the term hereby granted.

Liberty to determine the lease:-

4. The lessee/lessees may at any time determine this lease by giving not less than 12 calendar months notice in writing to the State Government or to such officer, or authority as the State Government may specify in this behalf and upon the expiration of such notice provided that the lessee/lessees shall upon such expiration render and pay all rents, water rates, royalties, compensation for damages and other moneys which may then be due and payable under these presents to the lessor or any other person or persons and shall deliver these presents to the State Government then this lease and the said term and the liberties, powers and privileges hereby granted shall

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

(44)

Sheet Endorsement

Digitally Signed by:
Name:S VIJAYASAGAR [illegible]
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:15 I

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF
The Seal of
JAMMALAMADUGU
Joint Sub-Registrar Office

absolutely cease and determine but without prejudice to any right or remedy of the lessor in respect of any breach of any of the covenants or agreements contained in these presents.

4A. The State Government may on an application made by the lessee permit him to surrender one or more minerals from his lease which is for a group of minerals on the ground that deposits of that mineral have since exhausted or depleted to such an extent that it is no longer possible to work the mineral economically, subject to the condition that the lessee-

(a) Makes an application for such surrender of mineral at least six months before the intended date of surrender; and

b) Gives an undertaking that he will not cause any hindrance in the working of the mineral surrendered by any other person who is subsequently granted a mining lease for that mineral

Refund of security deposits:-

5. On such date as the State Government may elect within 12 calendar months after the determination of this lease or of any renewal thereof, the amount of the security deposit paid in respect of this lease and then remaining in deposit with the State Government and not required to be applied to any of the purposes mentioned in this lease shall be refunded to the lessee/lessees. No interest shall run on the security deposit.

PART IX

General Provisions

Obstructions to inspection :-

1. In case the lessee/lessees or his/their transferee/assignee does/do not allow entry or inspection by the officers authorised by the Central or State Government under clauses (i), (j) or (1) of sub-rule (1) of rule 27 of said Rules, the State Government shall give notice in writing to the lessee/lessees requiring him/them to show cause within such time as may be specified in the notice why the lease should not be determined and his/their security deposit forfeited; and if the lessee/lessees fails/fail to show cause within the aforesaid time to the satisfaction of the State Government, the State Government may determine the lease and forfeit the whole or part of the security deposit.

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

(46)

Sheet Endorsement

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S.VIJAYASAGAR [illegible]
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF The Seal of JAMMALAMADUGU Joint Subregistrar Office JOINT SUBREGISTRAR

Penalty in case of default in payment of royalty and breach of covenants:-

2. If the lessee/lessees or his / their transferee or assignee makes/make any default in payment of rent or water rate or royalty as required by section 9 of the Act or commits a breach of any of the conditions and convenants other than those referred to in covenant 1 above, the State Government shall give notice to the lessee/lessees requiring him/them to pay the rent, water rate, royalty or remedy the breach, as the case may be, within sixty days from the date of receipt of the notice and if the rent, water rate and royalty are not paid or the breach is not remedied within such period, the State Government without prejudice to any proceedings that may be taken against him/them, determine the lease and forfeit the whole or part of the security deposit.

Penalty for repeated breaches of covenants:-

3. In cases of repeated breaches of covenants and agreements by the lessee/ lessees for which notice has been given by the State Government in accordance with clauses (1) and (2) aforementioned on earlier occasion, the State Government without giving any further notice, may impose such penalty not exceeding twice the amount of annual dead rent specified in clause 2, Part V.

Failure to fulfil the terms of leases due to "Force Majeure":-

4. Failure on the part of the lessee/lessees to fulfil any of the terms and conditions of this lease shall not give the Central or State Government any claim against the lessee/lessees or be deemed a breach of this lease, in so far as such failure is considered by the said Government to arise from force majeure, and if through force majeure the fulfilment by the lessee/lessees of any of the terms and conditions of this lease be delayed, the period of such delay shall be added to the period fixed by this lease. In this clause the expression "Force Majeure" means act of God, war, insurrection, riot, civil commotion, strike, earth quake, tide, storm, tidal wave, flood, lightning, explosion, fire, earthquake and any other happening which the lessee/lessees could not reasonably prevent or control.

Lessee/lessees to remove his/their properties on the expiry of lease:-

5. The lessee/lessees having first paid discharged rents, rates and royalties payable by virtue of these presents may at the expiration or sooner determination of the said term or within six calendar months thereafter (unless the lease shall be determined under clauses 1 and 2 of this Part and in that case at any time not less than three calendar months nor more than six calendar months after such determination) take down and remove for his/their own benefit all or any 1 [ore mineral excavated during the currency

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

(48)

Sheet Endorsement

Sheet 24-67

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S.VIDYASAGAR [illegible]
Location:JAMMALAMADUGU
Reason:endorsementSign
Date:Tue May 14 18:26:15 I

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF
JAMMALAMADUGU

of lease] engines, machinery, plant, buildings structures, tramways, railways and other works, erections and conveniences which may have been erected, set up or placed by the lessee/lessees in or upon the said lands and which the lessee/lessees is/are not bound to deliver to the State Government under clause 20 of Part VII of this Schedule and which the State Government shall not desire to purchase

Forfeiture of property left more than six months after determination of lease: -

6. If at the end of six calendar months after the expiration or sooner determination of the said term under the provision contained in clause 4 of Part VIII of this Schedule become effective there shall remain in or upon the said land any 2 [ore or mineral] engines, machinery, plant, buildings structures, tramways, railways and other work, erections and conveniences or other property which are not required by the lessee/lessees in connection with operations in any other lands hold by him/them under prospecting licence or mining lease the same shall if not removed by the lessee/lessees within one calendar month after notice in writing requiring their removal has been given to lessee/lessees by the State Government be deemed to become the property of the State Government and may be sold or disposed of in such manner as the State Government shall deem fit without liability to pay any compensation or to account to the lessee/lessees in respect thereof.

Notices: -

7. Every notice by these presents required to be given to the lessee/lessees shall be given in writing to such person resident on the said lands as the lessee/lessees may appoint for the purpose of receiving such notices and if there shall have been no such appointment then every such notice shall be sent to the lessee/lessees by registered post addressed to the lessee/lessees at the address recorded in this lease or at such other address in India as the lessee/lessees may from time to time in writing to the State Government designate for the receipt of notices and every such service shall be deemed to be proper and valid service upon the lessee/lessees and shall not be questioned or challenged by him/them.

Immunity of State Government from liability to pay compensation:-

8. If in any event the orders of the State Government are revised, reviewed or cancelled by the Central Government in pursuance of proceedings under Chapter VII of the Mineral Concession Rules, 1960, the lessee/lessees shall not be entitled to compensation for any loss sustained by the lessee/lessees in exercise of the powers and privileges conferred upon him/them by these presents

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

Sheet Endorsement

Digitally Signed by:
Name:S.VIJAYASAGAR K...
Location:JAMMALAMADU...
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF The Joint Sub-Registrar JAMMALAMADUGU

(51)

8A. The lease is executed at Sub-Register, Jammalamadugu town of the State of Andhra Pradesh (name of the State) and subject to the provision of Article 226 of the Constitution of India, it is hereby agreed upon by the lessee and the lessor that in the event of any dispute in relation to the area and lease, condition of lease, the dues realisable under the lease and in respect of all matters touching the relationship of the lessee and the lessor, the suits (or appeals) shall be filed in the civil courts at Jammalamadugu (name of the city) and it is hereby expressly agreed that neither party shall be competent to file a suit or bring any action or file any petition at any place other than the courts named above.

9. For this purpose stamp duty paid is Rs 6, 69,01,803/-

IN WITNESS WHEREOF these presents have been executed in the manner hereunder appearing the day and year first above written.

Signed by

District Mines & Geology Officer

YSR Kadapa

Signature of Power of Attorney Holder

On behalf of ACC Limited

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

(52)

Sheet 26-67

Sheet Endorsement

Digitally Signed by:
Name: S VIJAYASAGAR RED
Location: JAMMALAMADUGU
Reason: endorsementSign
Date: Tue May 14 18:26:13 I

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF The Seal of JAMMALAMADUGU

(53)

For and on behalf of the Governor of Andhra Pradesh/President of India in the presence of

District Mines & Geology Officer
KADAPA, Y.S.R.District.

Witness



1. Signature
   Name Ramesh s/o. Venkata Reddy
   Designation
   Address Bogavapalle.

2. Signature
   Name V. Govinda Raju
   Designation s/o V. Govindu
   Address Vaddirala (V)

Prepared by. Pavan Kumar Nadimpalli
S/o N Kumaraswamy Reddy
Ahmedabad.

(54)

Sheet 27-67

Sheet Endorsement

Digitally Signed by:
Name:S.VIJAYASAGAR R...
Location:JAMMALAMADUGU
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF
The Seal of
JAMMALAMADUGU
Joint Subregistrar Office

(55)

Government of India



Pagadala Venkateswar Reddy
DOB: 01/06/1962
MALE

District Mines & Geology Officer
KADAPA, Y.S.R.District.

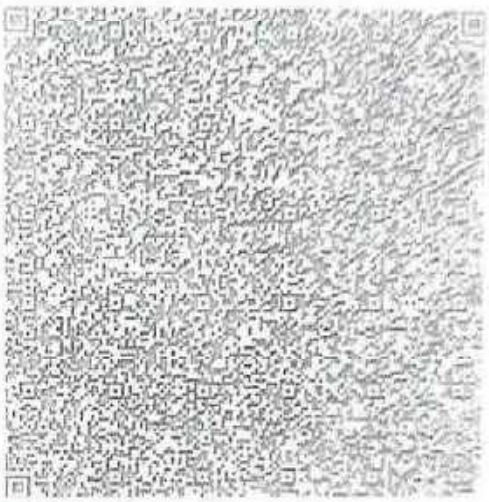
2828 4874 2717

VID : 9106 6042 6372 7707

నా ఆధార్, నా గుర్తింపు

Unique Identification Authority of India

Address:
C/O: P Konda Reddy, 5-000, KOTHAPETA,
BESIDE NETHAJI JUNIOR COLLEGE, Kanigiri,
Prakasam,
Andhra Pradesh - 523230



2828 4874 2717

VID : 9106 6042 6372 7707

help@uidai.gov.in www.uidai.gov.in

For AEC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Authorised Signatory

District Mines & Geology Officer
KADAPA, Y.S.R.District.

(56)

Sheet 28-67

Sheet Endorsement

Digitally Signed by:
Name:S.VIJAYASAGAR RED
Location:JAMMALAMADUGU
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF JAMMALAMADUGU

(57)

आयकर विभाग
INCOME TAX DEPARTMENT

भारत सरकार
GOVT. OF INDIA

P VENKATESWARA REDDY
KONDA REDDY PAGADALA
01/06/1962
Permanent
AKBPP0349Q



Signature

District Mines & Geology Officer
KADAPA, Y.S.R.District.

96/1861073

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

Deputy Director of Mines & Geology
KADAPA, Y.S.R. DISTRICT.

(58)

Sheet Endorsement

Sheet 29-67

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S.VIJAYASAGAR RED
Location:JAMMALAM. (JU
Reason:endorsementSign
Date:Tue May 14 18:26:13 1

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF THE SEAL OF JAMMALAMADUGU

59





For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

(6D)

Sheet 30-67

Sheet Endorsement

Digitally Signed by:
Name:S.VIDYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF The Joint Sub Registrar JAMMALAMADUGU

(61)


आयकर विभाग
INCOME TAX DEPARTMENT
भारत सरकार
GOVT. OF INDIA
ACC LIMITED
01/08/1936
Permanent Account Number
AAACT1507C

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

(62)

Sheet Endorsement

Sheet 31-67

Digitally Signed by:
Name:S VIJAYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

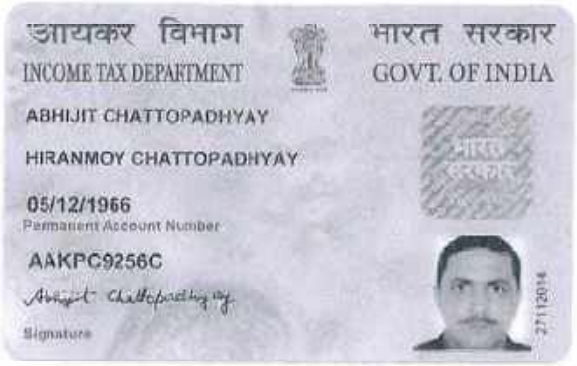
Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF The Joint Sub-Registrar JAMMALAMADUGU

(63)



आयकर विभाग
INCOME TAX DEPARTMENT
भारत सरकार
GOVT. OF INDIA

ABHIJIT CHATTOPADHYAY

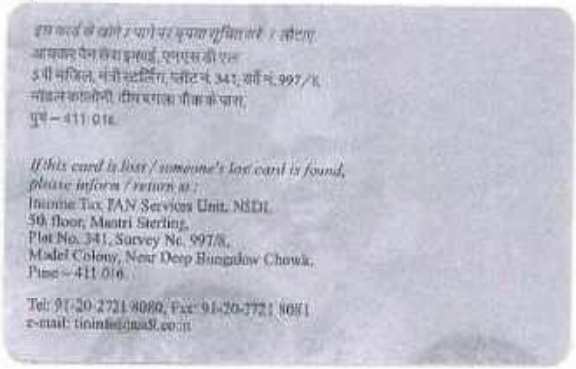
HIRANMOY CHATTOPADHYAY

05/12/1966
Permanent Account Number

AAKPC9256C

Signature

27/12/2014



If this card is lost / someone's lost card is found, please inform / return to :
Income Tax PAN Services Unit, NSDL
5th floor, Mantri Sterling,
Plot No. 341, Survey No. 997/8,
Model Colony, Near Deep Bungalow Chowk,
Pune - 411 016.

Tel: 91-20-2721 8080, Fax: 91-20-2721 8081
e-mail: tininfo@nsdl.co.in

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

Sheet Endorsement

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S.VIDYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF The Seal of JAMMALAMADUGU

	SUMMARY OF KHASRA DETAILS Annexure 7		
S.No	VILLAGE NAME	AREA	
		(IN ACRES)	(IN HECTARES)
1	Dhannawada	171.98	69.6
2	Vaddarala	236.56	95.73
3	Chinna Venturla	1098.32	444.48
4	Bestavemula	256.41	103.77
5	Gollapalle	469.07	189.83
6	G.Uppalapadu	231.49	93.68
	TOTAL AREA	2463.83	997.08

119 249.372 25 A

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

(66)

Sheet Endorsement

Sheet 33 of 67

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S.VIJAYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF The Seal of JAMMALAMADUGU

Mining Lease area over an extent of 997.08 Hectares(2463.63 acres) of ACC Limited				
Village : Dhannavada (171.98 acres, 69.6 Hectares)				
Sr No	d Khasara I	New Khasara No	Area Acres	Owner as per 7/12
1	1-1	Not Applicable	1.47	Private Land
2	1-2	Not Applicable	1.47	Private Land
3	1-3	Not Applicable	1.47	Private Land
4	2-1	Not Applicable	2.67	Private Land
5	2-2	Not Applicable	2.67	Private Land
6	3A	Not Applicable	1.61	Private Land
7	3B	Not Applicable	1.61	Private Land
8	4A	Not Applicable	1.71	Private Land
9	4C	Not Applicable	0.86	Private Land
10	5-1	Not Applicable	2.11	Private Land
11	5-2	Not Applicable	4.29	Private Land
12	5-3	Not Applicable	1.5	Private Land
13	5-3A	Not Applicable	1.05	Private Land
14	5-4	Not Applicable	2.14	Private Land
15	5-4A	Not Applicable	2.15	Private Land
16	6A	Not Applicable	3.67	Private Land
17	6B	Not Applicable	3.67	Private Land
18	7-1	Not Applicable	1.21	Private Land
19	7-2	Not Applicable	1.16	Private Land
20	7-3	Not Applicable	1.21	Private Land
21	8-1	Not Applicable	1.58	Private Land
22	8-2	Not Applicable	0.4	Private Land
23	8-3	Not Applicable	0.74	Private Land
24	8-4	Not Applicable	0.36	Private Land
25	9-1	Not Applicable	1.15	Private Land
26	9-2	Not Applicable	0.66	Private Land
27	9-3	Not Applicable	1.13	Private Land
28	10-1	Not Applicable	1.6	Private Land
29	10-2	Not Applicable	1.64	Private Land
30	11-1	Not Applicable	2.38	Private Land
31	11-2	Not Applicable	0.84	Private Land
32	12	Not Applicable	2.49	Private Land
33	13	Not Applicable	5	Private Land
34	14A	Not Applicable	0.75	Private Land
35	14B	Not Applicable	3	Private Land
36	15-1	Not Applicable	2.41	Private Land
37	15-2	Not Applicable	3	Private Land
38	15-2A	Not Applicable	0.6	Private Land
39	16/1	Not Applicable	0.7	Private Land
40	16-2	Not Applicable	1.64	Private Land
41	17/2C	Not Applicable	0.69	Private Land
42	17-1p1	Not Applicable	0.4	Private Land
43	17-1p2	Not Applicable	1	Private Land
44	17-1p3	Not Applicable	1	Private Land
45	17-1p4	Not Applicable	3	Private Land
46	17-1p5	Not Applicable	0.38	Private Land
47	17-2A	Not Applicable	0.69	Private Land

For ACC Limited
Abhijit Chattopadhyay Head- Geology & Mining

District Mines & Geology Officer
KADAPA, Y.S.R.District.

Abhijit Chattopadhyay
Authorised Signatory

(68)

Sheet Endorsement

Sheet 34-1

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name: S. VIJAYASAGAR RED
Location: JAMMALAMADUGU
Reason: endorsementSign
Date: Tue May 14 18:26:13 I

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF JAMMALAMADUGU

48	17-2B	Not Applicable	3.21	Private Land
49	19-1	Not Applicable	3.81	Private Land
50	19-2	Not Applicable	2.27	Private Land
51	20A	Not Applicable	1.8	Private Land
52	20B	Not Applicable	0.9	Private Land
53	20C	Not Applicable	0.9	Private Land
54	21-1A	Not Applicable	0.44	Private Land
55	21-1B	Not Applicable	0.88	Private Land
56	21-1C	Not Applicable	0.44	Private Land
57	21-2A	Not Applicable	0.79	Private Land
58	21-2B	Not Applicable	0.79	Private Land
59	22-1A	Not Applicable	0.55	Private Land
60	22-1B	Not Applicable	0.55	Private Land
61	22-2B	Not Applicable	0.555	Private Land
62	22-3A	Not Applicable	0.55	Private Land
63	22-3B	Not Applicable	0.55	Private Land
64	23-1	Not Applicable	1.77	Private Land
65	106	Not Applicable	2.28	Private Land
66	107-1	Not Applicable	1.38	Private Land
67	107-2	Not Applicable	1.39	Private Land
68	108A	Not Applicable	1.72	Private Land
69	108D	Not Applicable	3.14	Private Land
70	108B	Not Applicable	2.18	Private Land
71	108C	Not Applicable	1.89	Private Land
72	109	Not Applicable	3	Private Land
73	110B	Not Applicable	0.11	Private Land
74	110C	Not Applicable	2.72	Private Land
75	110-c	Not Applicable	1.3	Private Land
76	111-1B	Not Applicable	0.9	Private Land
77	112-1	Not Applicable	0.46	Private Land
78	112-1A	Not Applicable	1.52	Private Land
79	112-1B	Not Applicable	0.4	Private Land
80	112-2A	Not Applicable	1.01	Private Land
81	112-2B	Not Applicable	0.64	Private Land
82	112-3	Not Applicable	1.92	Private Land
83	113-1	Not Applicable	1.34	Private Land
84	113-2	Not Applicable	0.7	Private Land
85	114A	Not Applicable	2.18	Private Land
86	114B	Not Applicable	0.02	Private Land
87	115C	Not Applicable	1.515	Private Land
88	115A	Not Applicable	2.69	Private Land
89	115B	Not Applicable	2.69	Private Land
90	116	Not Applicable	3.42	Private Land
91	117A	Not Applicable	1.56	Private Land
92	117B	Not Applicable	1.56	Private Land
93	118A	Not Applicable	2.51	Private Land
94	118B	Not Applicable	2.51	Private Land
95	119	Not Applicable	5.02	Private Land
96	120	Not Applicable	5.84	Private Land
97	122	Not Applicable	1.25	Private Land

District Mines & Geology Officer
KADAPA, Y.S.R. District.

For Accredited
Abhijit Chatterjee Ahuja, Head- Geology & Mining
Authorised Signatory

(70)

Sheet Endorsement

Sheet 55-67

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S.VIJAYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF
The Asst. of
JAMMALAMADUGU
Joint Subregistrar
Office

(71)

98	122	Not Applicable	2.5	Private Land
99	123	Not Applicable	3.8	Private Land
100	124-A	Not Applicable	1.51	Private Land
101	124-B	Not Applicable	1.52	Private Land
102	114	Not Applicable	0.2	Private Land
		Total Area(Acres)	171.98	
			171.98	

832383.2

102

171.98

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

(72)

Sheet Endorsement

Sheet 36-67

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S VIDYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF
JAMMALAMADUGU

Mining Lease area over an extent of 997.08 Hectares(2463.63 acres) of ACC Limited				
Village : Vaddirala (236.56 acres, 95.73 Hectares)				
Sr No	Old Khasara No	New Khasara No	Area Acres	Owner as per 7/12
1	1	Not Applicable	2.16	ACC Limited
2	2A	Not Applicable	0.98	ACC Limited
3	2-B	Not Applicable	0.98	ACC Limited
4	3A	Not Applicable	1.01	ACC Limited
5	3-B	Not Applicable	1.02	ACC Limited
6	4-1	Not Applicable	2	ACC Limited
7	4-2	Not Applicable	4.6	ACC Limited
8	5-1	Not Applicable	2.08	ACC Limited
9	5-2A	Not Applicable	2	ACC Limited
10	5-2B	Not Applicable	1.99	ACC Limited
11	6	Not Applicable	2.34	Private Land
12	7	Not Applicable	2.34	ACC Limited
13	8	Not Applicable	2.22	ACC Limited
14	9-1	Not Applicable	1.6	ACC Limited
15	9-2	Not Applicable	1.29	ACC Limited
16	10-1	Not Applicable	1.13	ACC Limited
17	10-2	Not Applicable	2.1	ACC Limited
18	11	Not Applicable	3.6	ACC Limited
19	12	Not Applicable	3.43	ACC Limited
20	17	Not Applicable	0.35	Road
21	18/1	Not Applicable	0.22	ACC Limited
22	18/2	Not Applicable	0.85	ACC Limited
23	45A1	Not Applicable	1.5	ACC Limited
24	45-A2	Not Applicable	0.51	Private Land
25	45-B	Not Applicable	1.5	ACC Limited
26	46A	Not Applicable	1.09	ACC Limited
27	46-B	Not Applicable	1.29	ACC Limited
28	47/1	Not Applicable	2.06	ACC Limited
29	47/2	Not Applicable	2.44	ACC Limited
30	48A	Not Applicable	3.38	ACC Limited
31	48-B	Not Applicable	3	ACC Limited
32	49	Not Applicable	2.5	ACC Limited
33	50	Not Applicable	2.91	ACC Limited
34	51	Not Applicable	4.51	ACC Limited
35	52	Not Applicable	0.55	ACC Limited
36	53	Not Applicable	3.23	ACC Limited
37	54/1	Not Applicable	6.91	ACC Limited
38	54/2	Not Applicable	0.44	ACC Limited
39	54/3	Not Applicable	0.29	ACC Limited
40	55	Not Applicable	4.22	Private Land
41	56	Not Applicable	4.61	ACC Limited
42	57/1	Not Applicable	3.14	ACC Limited
43	57/2	Not Applicable	0.85	ACC Limited
44	57/3	Not Applicable	2.51	Private Land
45	58/1	Not Applicable	2.2	Private Land
46	58/2	Not Applicable	2.16	Private Land
47	59	Not Applicable	5.44	Private Land

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Authorised Signatory



74

Sheet Endorsement

Digitally Signed by:
Name:S.VIDYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsement/Sign
Date:Tue May 14 18:26:13 I

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

JOINT SUBREGISTRAR,
JAMMALAMADUGU



Generated On:14/05/2024 18:12:43



48	84	Not Applicable	0.5	Road
49	94/1	Not Applicable	1.34	ACC Limited
50	94/2	Not Applicable	1.36	ACC Limited
51	94/3	Not Applicable	1.23	ACC Limited
52	94/4	Not Applicable	1.38	ACC Limited
53	94/5	Not Applicable	2.9	ACC Limited
54	95/1	Not Applicable	1.41	ACC Limited
55	95/2	Not Applicable	1.36	ACC Limited
56	95-3	Not Applicable	1.26	Private Land
57	96/1	Not Applicable	1.96	ACC Limited
58	96/2	Not Applicable	1.8	ACC Limited
59	97	Not Applicable	3.83	Private Land
60	98/1	Not Applicable	0.41	Private Land
61	98/2	Not Applicable	0.45	Private Land
62	98/3	Not Applicable	0.86	Private Land
63	99	Not Applicable	1.64	Private Land
64	100/1	Not Applicable	0.85	ACC Limited
65	100/2	Not Applicable	0.74	ACC Limited
66	101/1	Not Applicable	0.69	ACC Limited
67	101/2	Not Applicable	0.68	ACC Limited
68	102	Not Applicable	1.22	Private Land
69	103/1	Not Applicable	0.29	Private Land
70	103/2	Not Applicable	0.3	Private Land
71	103/3	Not Applicable	0.6	Private Land
72	104/1	Not Applicable	0.8	ACC Limited
73	104/2	Not Applicable	0.74	ACC Limited
74	104/3	Not Applicable	0.67	ACC Limited
75	118	Not Applicable	3.74	Private Land
76	118A	Not Applicable	2	Private Land
77	118-B	Not Applicable	1.74	ACC Limited
78	119/1A	Not Applicable	0.44	Private Land
79	119/1B	Not Applicable	1.74	Private Land
80	119/2	Not Applicable	2.74	Private Land
81	119/3A	Not Applicable	1.15	Private Land
82	119/4A	Not Applicable	0.32	ACC Limited
83	119/3B	Not Applicable	1.07	ACC Limited
84	119/4B	Not Applicable	2	Private Land
85	120/1A	Not Applicable	4.12	ACC Limited
86	120/2	Not Applicable	1.57	Private Land
87	120-1B	Not Applicable	4.12	ACC Limited
88	121/1	Not Applicable	0.86	ACC Limited
89	121/2	Not Applicable	1.46	Private Land
90	122	Not Applicable	4.41	ACC Limited
91	123	Not Applicable	0.09	Private Land
92	124	Not Applicable	0.2	Private Land
93	125/1A	Not Applicable	0.06	Private Land
94	125/2A	Not Applicable	0.05	Private Land
95	125-1B	Not Applicable	0.05	Private Land
96	125-2B	Not Applicable	0.04	Private Land
97	126-A	Not Applicable	0.15	Private Land

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

(76)

Sheet Endorsement

Sheet 3 of 7

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S.VIDYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF THE SUB REGISTRAR JAMMALAMADUGU

98	126-B	Not Applicable	0.15	Private Land
99	127/1A	Not Applicable	0.09	Private Land
100	127/2A	Not Applicable	0.08	Private Land
101	127-1B	Not Applicable	0.1	Private Land
102	127-2B	Not Applicable	0.09	Private Land
103	128A	Not Applicable	0.34	Private Land
104	128-B	Not Applicable	0.33	Private Land
105	129	Not Applicable	1.2	Private Land
106	130A	Not Applicable	2.15	Private Land
107	130-B	Not Applicable	2.15	Private Land
108	131A	Not Applicable	2.72	Private Land
109	131-B	Not Applicable	2.72	Private Land
110	132/1A	Not Applicable	0.88	Private Land
111	132/2A	Not Applicable	0.85	Private Land
112	132-1B	Not Applicable	0.88	Private Land
113	132-2B	Not Applicable	0.85	Private Land
114	133A	Not Applicable	1.89	Private Land
115	133-B	Not Applicable	1.89	Private Land
116	134/1A	Not Applicable	0.63	Private Land
117	134/2A	Not Applicable	1.24	Private Land
118	134-1B	Not Applicable	0.63	Private Land
119	134-2B	Not Applicable	1.24	Private Land
120	135A	Not Applicable	4.35	Private Land
121	135-B	Not Applicable	3	Private Land
122	136A	Not Applicable	2.8	Private Land
123	136-B	Not Applicable	1.51	Private Land
124	136-C	Not Applicable	2.84	ACC Limited
125	137	Not Applicable	2.48	ACC Limited
126	138	Not Applicable	1.62	ACC Limited
127	139/1	Not Applicable	1.56	ACC Limited
128	139/2	Not Applicable	2.27	ACC Limited
129	140/1	Not Applicable	0.76	ACC Limited
130	140/2	Not Applicable	1.5	ACC Limited
131	140/3	Not Applicable	0.76	ACC Limited
132	141	Not Applicable	2.13	ACC Limited
133	142A	Not Applicable	1.52	ACC Limited
134	142-B	Not Applicable	3.5	ACC Limited
135	143	Not Applicable	2.5	ACC Limited
136	144/1	Not Applicable	2.16	ACC Limited
137	144-2	Not Applicable	2.84	Private Land
138	144-2D	Not Applicable	0.66	Private Land
139	144-2C	Not Applicable	1.32	Private Land
140	145-A	Not Applicable	1	ACC Limited
141	145-B	Not Applicable	1.46	ACC Limited
			236.56	

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

(78)

Sheet Endorsement

Sheet 3 of 67

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S.VIDYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF
JAMMALAMADUGU

Mining Lease area over an extent of 997.08 Hectares(2463.63 acres) of ACC Limited				
Village : Chinna Venturala (1098.32 acres, 444.48 Hectares)				
r No	Old Khasara No	New Khasara No	Area Acres	Owner as per 7/12
1	14-A	Not Applicable	3.72	Private Land
2	14-B	Not Applicable	6.74	ACC Limited
3	15	Not Applicable	0.91	ACC Limited
4	16-1	Not Applicable	1.14	ACC Limited
5	16-2	Not Applicable	0.12	ACC Limited
6	16-3	Not Applicable	0.06	ACC Limited
7	17-1	Not Applicable	1.98	ACC Limited
8	17-2	Not Applicable	1.36	ACC Limited
9	18-1	Not Applicable	0.57	Private Land
10	18-2	Not Applicable	0.6	Private Land
11	18-3	Not Applicable	0.6	Private Land
12	18-4	Not Applicable	0.6	Private Land
13	18-5	Not Applicable	1.18	ACC Limited
14	18-6	Not Applicable	0.62	ACC Limited
15	18-7	Not Applicable	0.62	ACC Limited
16	19-1	Not Applicable	0.66	ACC Limited
17	19-2	Not Applicable	0.61	Private Land
18	19-3	Not Applicable	0.62	ACC Limited
19	19-4	Not Applicable	0.52	ACC Limited
20	19-5	Not Applicable	1	ACC Limited
21	19-6	Not Applicable	0.42	ACC Limited
22	19-7	Not Applicable	0.42	ACC Limited
23	20-1	Not Applicable	1.46	ACC Limited
24	20-2A	Not Applicable	0.91	ACC Limited
25	20-2B	Not Applicable	2.63	ACC Limited
26	21	Not Applicable	4.58	Private Land
27	22	Not Applicable	1.41	Road
28	23	Not Applicable	0.44	Private Land
29	24-A	Not Applicable	0.36	ACC Limited
30	24-B	Not Applicable	0.36	Private Land
31	25-A	Not Applicable	9.52	ACC Limited
32	25-B	Not Applicable	1.06	Private Land
33	26	Not Applicable	3.2	ACC Limited
34	27	Not Applicable	7.31	ACC Limited
35	28-1	Not Applicable	1.68	ACC Limited
36	28-2	Not Applicable	3.48	ACC Limited
37	28-3	Not Applicable	2.35	ACC Limited
38	28-4	Not Applicable	13.15	ACC Limited
39	28-5	Not Applicable	4.23	Private Land
40	28-6	Not Applicable	1.88	ACC Limited
41	28-7	Not Applicable	1.75	ACC Limited
42	29	Not Applicable	6.03	ACC Limited
43	30	Not Applicable	5.75	ACC Limited
44	31-1	Not Applicable	2.82	ACC Limited
45	31-2	Not Applicable	1.04	ACC Limited
46	31-3	Not Applicable	3.9	ACC Limited
47	32-1	Not Applicable	0.74	ACC Limited

District Mines & Geology Office
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

(80)

Sheet Endorsement

Sheet 67

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name: S VIDYASAGAR RED
Location: JAMMALAMADUG
Reason: endorsementSign
Date: Tue May 14 18:26:131

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF JAMMALAMADUGU

48	32-2	Not Applicable	0.52	ACC Limited
49	33-1	Not Applicable	0.33	Private Land
50	33-2	Not Applicable	0.34	Private Land
51	33-3	Not Applicable	0.42	ACC Limited
52	33-4	Not Applicable	0.38	Private Land
53	33-5	Not Applicable	0.66	ACC Limited
54	33-6	Not Applicable	0.22	ACC Limited
55	33-7	Not Applicable	0.29	ACC Limited
56	33-8	Not Applicable	0.16	ACC Limited
57	33-9	Not Applicable	0.1	ACC Limited
58	34-1	Not Applicable	0.22	ACC Limited
59	34-2A	Not Applicable	0.12	ACC Limited
60	34-2B	Not Applicable	0.53	ACC Limited
61	35	Not Applicable	0.25	Private Land
62	36	Not Applicable	0.06	AWD
63	37-1	Not Applicable	2.62	ACC Limited
64	37-2	Not Applicable	2.68	ACC Limited
65	39	Not Applicable	3.96	Private Land
66	40	Not Applicable	3.19	ACC Limited
67	41	Not Applicable	3.1	ACC Limited
68	42	Not Applicable	7.13	ACC Limited
69	43-A	Not Applicable	1.69	ACC Limited
70	43-B	Not Applicable	1.69	ACC Limited
71	44	Not Applicable	4.51	ACC Limited
72	150	Not Applicable	2.59	ACC Limited
73	190	Not Applicable	1.14	Private Land
74	191	Not Applicable	1.25	ACC Limited
75	192	Not Applicable	3.19	ACC Limited
76	193-1	Not Applicable	2.64	Private Land
77	193-2	Not Applicable	1.34	Private Land
78	193-3	Not Applicable	1.38	Private Land
79	194P1	Not Applicable	0.84	Private Land
80	194P2	Not Applicable	2.34	Private Land
81	195-1	Not Applicable	1.5	ACC Limited
82	195-2	Not Applicable	1.42	Private Land
83	196	Not Applicable	3.03	ACC Limited
84	197-1	Not Applicable	1.58	Private Land
85	197-2	Not Applicable	1.56	Private Land
86	198-1	Not Applicable	2.36	Private Land
87	198-2	Not Applicable	2.36	Private Land
88	198-3A	Not Applicable	2.36	Private Land
89	198-3B	Not Applicable	1.51	Private Land
90	198-4	Not Applicable	1.98	Private Land
91	199-1	Not Applicable	3	ACC Limited
92	199-2	Not Applicable	2.02	Private Land
93	200	Not Applicable	2.53	ACC Limited
94	201	Not Applicable	1.24	ACC Limited
95	202	Not Applicable	1.73	ACC Limited
96	203-1	Not Applicable	1	ACC Limited
97	203-2	Not Applicable	1.35	ACC Limited

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head - Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

Sheet Endorsement

Sheet 67

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S.VIDYASAGAR RED
Location:JAMMALAMADU
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF
The Seal of
JAMMALAMADUGU
Joint Subregistrar Office

98	203-3	Not Applicable	3.46	ACC Limited
99	203-4	Not Applicable	2.39	ACC Limited
100	204-1	Not Applicable	2.18	ACC Limited
101	204-2	Not Applicable	2	ACC Limited
102	204-3A	Not Applicable	3	ACC Limited
103	204-3B	Not Applicable	1.06	Private Land
104	205-A	Not Applicable	2.08	ACC Limited
105	205-B	Not Applicable	1.41	Private Land
106	206	Not Applicable	3.38	ACC Limited
107	207-1	Not Applicable	1.96	Private Land
108	207-2	Not Applicable	1.34	Private Land
109	207-2A	Not Applicable	0.17	Private Land
110	208-1	Not Applicable	4.91	ACC Limited
111	208-2	Not Applicable	1.74	Private Land
112	209	Not Applicable	1.83	ACC Limited
113	210	Not Applicable	1.81	Private Land
114	211	Not Applicable	1.84	Private Land
115	212	Not Applicable	1.71	Private Land
116	213	Not Applicable	2.28	Private Land
117	214-1	Not Applicable	0.64	ACC Limited
118	214-2	Not Applicable	0.62	Private Land
119	214-3	Not Applicable	0.61	Private Land
120	214-3A	Not Applicable	0.1	Private Land
121	215-1	Not Applicable	1.36	Private Land
122	215-1A	Not Applicable	1.33	Private Land
123	215-2	Not Applicable	1.26	Private Land
124	215-3	Not Applicable	1.19	Private Land
125	218-1	Not Applicable	3.54	ACC Limited
126	218-2	Not Applicable	1.65	ACC Limited
127	218-3	Not Applicable	1.97	ACC Limited
128	218-4	Not Applicable	1.51	ACC Limited
129	218-5	Not Applicable	1.79	ACC Limited
130	218-6	Not Applicable	0.14	Private Land
131	219	Not Applicable	0.12	Road
132	220-1	Not Applicable	2.15	ACC Limited
133	220-2	Not Applicable	0.44	ACC Limited
134	221-1	Not Applicable	0.39	ACC Limited
135	221-2	Not Applicable	0.39	ACC Limited
136	222	Not Applicable	0.06	ACC Limited
137	223-1	Not Applicable	1.98	ACC Limited
138	223-2	Not Applicable	0.88	Private Land
139	224	Not Applicable	0.23	Road
140	225	Not Applicable	3.78	Private Land
141	226	Not Applicable	1.5	Private Land
142	227	Not Applicable	1.82	Private Land
143	228	Not Applicable	0.3	Private Land
144	229-1	Not Applicable	1.3	Private Land
145	229-2	Not Applicable	1.3	Private Land
146	230	Not Applicable	2.14	Private Land
147	231	Not Applicable	3.38	Private Land

District Mines & Geology Officer
KADAPA, Y.S.R.District.

Abhijit Chattopadhyay, Head- Geology & Mining
Authorised Signatory

(84)

Sheet Endorsement

Sheet 4 of 7

Digitally Signed by:
Name:S.VIJAYASAGAR REDD
Location:JAMMALAMADUGU
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

Book No: 1 CS No / Year: 7559 / 2024 Doct No / Year: 5986 / 2024

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF THE SUB REGISTRAR
JAMMALAMADUGU
Joint Subregistrar Office

148	232	Not Applicable	0.97	Private Land
149	233-1	Not Applicable	4.36	ACC Limited
150	233-2	Not Applicable	1.97	ACC Limited
151	234	Not Applicable	2.04	Private Land
152	235	Not Applicable	2.12	Private Land
153	236-1	Not Applicable	0.085	ACC Limited
154	236-2	Not Applicable	3.135	Private Land
155	237-1	Not Applicable	1.595	ACC Limited
156	237-2	Not Applicable	1.595	ACC Limited
157	237-3	Not Applicable	1.595	Private Land
158	238-1A	Not Applicable	0.46	ACC Limited
159	238-1B	Not Applicable	0.46	ACC Limited
160	238-1C	Not Applicable	0.46	Private Land
161	238-2	Not Applicable	1.72	ACC Limited
162	238-3A	Not Applicable	0.44	ACC Limited
163	238-3B	Not Applicable	0.44	ACC Limited
164	238-3C	Not Applicable	0.44	Private Land
165	239	Not Applicable	13.7	ACC Limited
166	240	Not Applicable	3.09	ACC Limited
167	241	Not Applicable	4.29	Private Land
168	242	Not Applicable	3.57	ACC Limited
169	243	Not Applicable	9.37	ACC Limited
170	244	Not Applicable	5.69	ACC Limited
171	245	Not Applicable	7.7	ACC Limited
172	246-1	Not Applicable	1.95	ACC Limited
173	246-2	Not Applicable	1.95	ACC Limited
174	247	Not Applicable	3.98	ACC Limited
175	248-1	Not Applicable	1.8	ACC Limited
176	248-2	Not Applicable	2.24	ACC Limited
177	249	Not Applicable	4.22	ACC Limited
178	250	Not Applicable	3.29	Private Land
179	251-1	Not Applicable	2.02	Private Land
180	251-2	Not Applicable	10.11	Private Land
181	252-1	Not Applicable	3.06	Private Land
182	252-2	Not Applicable	1.01	ACC Limited
183	253-1	Not Applicable	1.95	Private Land
184	253-2	Not Applicable	1.21	ACC Limited
185	253-3	Not Applicable	5.5	ACC Limited
186	253-4	Not Applicable	3.75	ACC Limited
187	253-5A	Not Applicable	2.77	Private Land
188	253-5B	Not Applicable	2.77	Private Land
189	253-6	Not Applicable	2.78	Private Land
190	254-1	Not Applicable	1.96	ACC Limited
191	254-2	Not Applicable	1.74	ACC Limited
192	255	Not Applicable	3.5	Private Land
193	256-1	Not Applicable	2.16	ACC Limited
194	256-2	Not Applicable	1.83	ACC Limited
195	257	Not Applicable	3.92	ACC Limited
196	258-1	Not Applicable	1.64	ACC Limited
197	258-2	Not Applicable	0.83	ACC Limited

District Mines & Geology Officer
KADAPA, Y.S.R.District.

Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

(86)

Sheet Endorsement

Sheet 67

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S.VIDYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF THE SUB REGISTRAR JAMMALAMADUGU

198	258-3	Not Applicable	0.84	ACC Limited
199	258-4	Not Applicable	1.52	ACC Limited
200	258-5	Not Applicable	1.53	ACC Limited
201	259-1	Not Applicable	3.2	ACC Limited
202	259-2	Not Applicable	3.3	ACC Limited
203	259-3	Not Applicable	3.22	ACC Limited
204	260	Not Applicable	8.01	ACC Limited
205	261-1	Not Applicable	3.74	Private Land
206	261-2	Not Applicable	2.55	Private Land
207	261-3	Not Applicable	2.55	ACC Limited
208	261-4	Not Applicable	1.66	Private Land
209	261-5	Not Applicable	9.3	ACC Limited
210	261-6	Not Applicable	5.76	ACC Limited
211	261-7	Not Applicable	3.73	Private Land
212	261-8	Not Applicable	0.99	Private Land
213	261-9	Not Applicable	2.81	Private Land
214	262-1	Not Applicable	1.64	Private Land
215	262-2A	Not Applicable	1.07	Private Land
216	262-2B	Not Applicable	1.07	Private Land
217	262-2C	Not Applicable	1.08	Private Land
218	263-A	Not Applicable	1.07	Private Land
219	263-B	Not Applicable	0.48	Private Land
220	263-C	Not Applicable	0.86	Private Land
221	264-A	Not Applicable	0.47	Private Land
222	264-B	Not Applicable	0.93	Private Land
223	264-C	Not Applicable	0.93	Private Land
224	265-1A	Not Applicable	1.11	Private Land
225	265-1B	Not Applicable	2.25	Private Land
226	265-2	Not Applicable	3.76	Private Land
227	265-3	Not Applicable	1.1	Private Land
228	265-4	Not Applicable	1.19	Private Land
229	265-5	Not Applicable	0.74	Private Land
230	266-1	Not Applicable	1.94	Private Land
231	266-2	Not Applicable	0.94	Private Land
232	266-3	Not Applicable	0.94	Private Land
233	267-1A	Not Applicable	0.68	Private Land
234	267-1B	Not Applicable	0.51	Private Land
235	267-2A	Not Applicable	2.5	Private Land
236	267-2B	Not Applicable	0.32	Private Land
237	268-1	Not Applicable	0.82	Private Land
238	268-2	Not Applicable	2.96	Private Land
239	269-1	Not Applicable	1.84	ACC Limited
240	269-2	Not Applicable	2.09	ACC Limited
241	270	Not Applicable	3.9	ACC Limited
242	271	Not Applicable	8.84	Private Land
243	272	Not Applicable	2.76	Private Land
244	273	Not Applicable	2.46	Private Land
245	274	Not Applicable	1.74	Private Land
246	275	Not Applicable	2.38	ACC Limited
247	276	Not Applicable	2.42	ACC Limited

For ACC Limited
Abhijit Chattopadhyay
Geology & Mining

District Mines & Geology Officer
KADAPA, Y.S.R.District.

Authorised Signatory

88

Sheet Endorsement

Sheet 44 of 47

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name: S. VIDYASAGAR RED
Location: JAMMALAMADUG
Reason: endorsementSign
Date: Tue May 14 18:26:13 I

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF JAMMALAMADUGU

248	277	Not Applicable	3.63	ACC Limited
249	278	Not Applicable	2.27	Private Land
250	279	Not Applicable	2.41	Private Land
251	280	Not Applicable	5.06	Private Land
252	280/1	Not Applicable	2.53	Private Land
253	280-A	Not Applicable	2.52	Private Land
254	281	Not Applicable	2.68	ACC Limited
255	282	Not Applicable	4.56	ACC Limited
256	283/1A	Not Applicable	0.52	Private Land
257	283-1	Not Applicable	1.03	Private Land
258	283-1A	Not Applicable	0.52	Private Land
259	283-2	Not Applicable	4.73	Private Land
260	284	Not Applicable	1.38	Private Land
261	285	Not Applicable	4.29	Private Land
262	286	Not Applicable	2.16	ACC Limited
263	287	Not Applicable	2.15	ACC Limited
264	288	Not Applicable	2.94	ACC Limited
265	289	Not Applicable	3.03	ACC Limited
266	290-1	Not Applicable	1.48	Private Land
267	290-2	Not Applicable	3.08	Private Land
268	291	Not Applicable	13.356	ACC Limited
269	292	Not Applicable	4.405	Private Land
270	292/A	Not Applicable	4.405	Private Land
271	293	Not Applicable	3.39	ACC Limited
272	294-A	Not Applicable	0.64	ACC Limited
273	295	Not Applicable	1.54	ACC Limited
274	296	Not Applicable	1.72	ACC Limited
275	297	Not Applicable	0.9	Private Land
276	298-1	Not Applicable	1.22	ACC Limited
277	298-2	Not Applicable	1.18	ACC Limited
278	299-1	Not Applicable	4.36	Private Land
279	299-2	Not Applicable	4.5	ACC Limited
280	300	Not Applicable	3.6	ACC Limited
281	301	Not Applicable	1.92	ACC Limited
282	302	Not Applicable	2.05	Private Land
283	303p1	Not Applicable	3.37	Private Land
284	303p2	Not Applicable	3.37	Private Land
285	303p3	Not Applicable	2.83	Private Land
286	304-1	Not Applicable	3.23	ACC Limited
287	304-2	Not Applicable	0.08	ACC Limited
288	304-3	Not Applicable	2.82	ACC Limited
289	305	Not Applicable	2.85	ACC Limited
290	306	Not Applicable	2.91	ACC Limited
291	307	Not Applicable	4.32	ACC Limited
292	308-1A	Not Applicable	1	Private Land
293	308-1B	Not Applicable	1.02	ACC Limited
294	308-2	Not Applicable	1.82	ACC Limited
295	309-1	Not Applicable	3.75	ACC Limited
296	309-2	Not Applicable	4.02	ACC Limited
297	310-1	Not Applicable	3.9	Private Land

For ACC Limited
Abhijit Chatterjee, Head- Geology & Mining
Authorised Signatory

District Mines & Geology Officer
KADAPA, Y.S.R.District.

(90)

Sheet Endorsement

Sheet 45-67

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S.VIDYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF JAMMALAMADUGU

298	310-2	Not Applicable	3.89	Private Land
299	311	Not Applicable	0.03	Private Land
300	312	Not Applicable	0.07	Private Land
301	313	Not Applicable	0.13	Private Land
302	314	Not Applicable	0.18	ACC Limited
303	315	Not Applicable	8.89	ACC Limited
304	316	Not Applicable	2.56	ACC Limited
305	317	Not Applicable	2.4	ACC Limited
306	318	Not Applicable	4.29	ACC Limited
307	319-A	Not Applicable	2.195	Private Land
308	319-B	Not Applicable	2.195	ACC Limited
309	320	Not Applicable	4.11	Private Land
310	321-1A	Not Applicable	0.43	ACC Limited
311	321-1B	Not Applicable	0.43	Private Land
312	321-2B	Not Applicable	0.44	Private Land
313	321-2A	Not Applicable	0.44	Private Land
314	321-3A	Not Applicable	0.435	Private Land
315	321-3B	Not Applicable	0.435	ACC Limited
316	322-1	Not Applicable	0.94	ACC Limited
317	322-2	Not Applicable	0.94	ACC Limited
318	322-3	Not Applicable	1.88	Private Land
319	323-A	Not Applicable	1.97	ACC Limited
320	323-B	Not Applicable	1.98	Private Land
321	324	Not Applicable	3.06	Private Land
322	325	Not Applicable	2.49	Private Land
323	326-1	Not Applicable	3.02	ACC Limited
324	326-2	Not Applicable	7.91	ACC Limited
325	327-1	Not Applicable	0.94	ACC Limited
326	327-2	Not Applicable	1.91	ACC Limited
327	328-1	Not Applicable	0.82	ACC Limited
328	328-2	Not Applicable	1.73	ACC Limited
329	329	Not Applicable	3.54	ACC Limited
330	330-1	Not Applicable	2.53	ACC Limited
331	330-2	Not Applicable	2.525	ACC Limited
332	331-1	Not Applicable	4.77	ACC Limited
333	331-2	Not Applicable	5.53	ACC Limited
334	332	Not Applicable	0.07	Road
335	333	Not Applicable	0.2	Private Land
336	334-1	Not Applicable	2.7	Private Land
337	334-2	Not Applicable	2.76	ACC Limited
338	335	Not Applicable	1.74	Road
339	336	Not Applicable	1.74	Private Land
340	337	Not Applicable	0.21	Road
341	338-1	Not Applicable	1.14	Private Land
342	338-2	Not Applicable	0.2	Private Land
343	339-1A	Not Applicable	0.54	Private Land
344	339-1B	Not Applicable	0.34	Private Land
345	339-1C	Not Applicable	0.55	Private Land
346	339-2	Not Applicable	1.76	Private Land
347	340-1A	Not Applicable	1.41	Private Land

For ACC Limited
Abhijit Chattopadhyay Head- Geology & Mining
Authorised Signatory

District Mines & Geology Officer
KADAPA, Y.S.R.District.

(92)

Sheet Endorsement

Sheet No: 67

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S.VIDYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF The Seal of JAMMALAMADUGU

348	340-1B	Not Applicable	0.23	Private Land
349	340-2A	Not Applicable	0.42	Private Land
350	340-2B	Not Applicable	0.06	Private Land
351	340-4A	Not Applicable	0.49	Private Land
352	341-1	Not Applicable	2.64	ACC Limited
353	341-2	Not Applicable	2.91	Private Land
354	341-3E	Not Applicable	0.77	Private Land
355	341-3A	Not Applicable	1.04	Private Land
356	341-3D	Not Applicable	0.83	Private Land
357	341-3B	Not Applicable	2.1	Private Land
358	341-3F	Not Applicable	1.77	Private Land
359	341-3C	Not Applicable	4.5	Private Land
360	341-4A	Not Applicable	0.49	Private Land
361	341-4B	Not Applicable	0.24	Private Land
362	341-5	Not Applicable	1.59	Private Land
363	341-6	Not Applicable	1.62	Private Land
364	342	Not Applicable	8.56	ACC Limited
365	343-1	Not Applicable	3.09	ACC Limited
366	343-2	Not Applicable	1.61	ACC Limited
367	344	Not Applicable	2.15	ACC Limited
368	345	Not Applicable	1.51	ACC Limited
369	346	Not Applicable	2.59	ACC Limited
370	347-1	Not Applicable	1.66	ACC Limited
371	347-2	Not Applicable	1.56	ACC Limited
372	347-3	Not Applicable	1.6	ACC Limited
373	347-4A	Not Applicable	0.568	ACC Limited
374	347-4B	Not Applicable	0.558	ACC Limited
375	347-4C	Not Applicable	0.558	ACC Limited
376	345-5A	Not Applicable	0.87	ACC Limited
377	347-5A2	Not Applicable	0.86	ACC Limited
378	347-5A3	Not Applicable	0.86	ACC Limited
379	347-5B	Not Applicable	1.21	ACC Limited
380	347-6A	Not Applicable	1.15	ACC Limited
381	347-6B	Not Applicable	1.13	ACC Limited
382	347-7	Not Applicable	2.38	ACC Limited
383	347-8	Not Applicable	1.48	Private Land
384	348-1	Not Applicable	1.57	ACC Limited
385	348-2	Not Applicable	3.38	ACC Limited
386	348-3	Not Applicable	1.53	ACC Limited
387	349-1B	Not Applicable	4.9	ACC Limited
388	349-2	Not Applicable	6.12	ACC Limited
389	349-3	Not Applicable	0.44	ACC Limited
390	349-4	Not Applicable	1.02	ACC Limited
391	350-1	Not Applicable	1.85	ACC Limited
392	350-2	Not Applicable	2.058	ACC Limited
393	351-1	Not Applicable	0.92	ACC Limited
394	351-1B	Not Applicable	0.2	Private Land
395	351-2A	Not Applicable	0.52	ACC Limited
396	351-2B	Not Applicable	0.2	Private Land
397	351-3	Not Applicable	0.83	ACC Limited

For ACC Limited
Abhijit Chattopadhyay Head- Geology & Mining

District Mines & Geology Officer
KADAPA, Y.S.R.District.

Abhijit Chattopadhyay
Authorised Signatory

(94)

Sheet Endorsement

Sheet 7

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S.VIDYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF The Seal of JAMMALAMADUGU Joint Subregistrar Office

398	352-1A	Not Applicable	0.13	Private Land
399	352-1B	Not Applicable	0.11	Private Land
400	352-2A	Not Applicable	0.29	Private Land
401	352-2B	Not Applicable	0.34	Private Land
402	353-1	Not Applicable	0.01	Private Land
403	353-2	Not Applicable	0.27	Private Land
404	354	Not Applicable	0.81	Road
405	355-1	Not Applicable	0.49	Private Land
406	355-2	Not Applicable	0.13	Private Land
407	355-2A	Not Applicable	3.01	Private Land
408	355-3	Not Applicable	2.38	Private Land
409	356-1A	Not Applicable	0.09	Private Land
410	356-1B	Not Applicable	0.09	Private Land
411	356-2	Not Applicable	2.63	Private Land
412	357-1A	Not Applicable	2.04	Private Land
413	357-1B	Not Applicable	2.04	Private Land
414	357-2	Not Applicable	0.24	Private Land
415	358	Not Applicable	0.6	Road
416	359	Not Applicable	0.5	Private Land
417	360-1	Not Applicable	7.71	Private Land
418	260-2	Not Applicable	2.2	Private Land
419	361	Not Applicable	5.5	Private Land
420	362	Not Applicable	5.87	Private Land
421	363	Not Applicable	2.18	Private Land
422	364	Not Applicable	3.08	Private Land
423	365	Not Applicable	1.81	Private Land
424	366-1A	Not Applicable	1.065	Private Land
425	366-1B	Not Applicable	1.065	Private Land
426	366-2	Not Applicable	2.13	Private Land
427	367	Not Applicable	0.48	Private Land
428	368-1	Not Applicable	4.8	Private Land
429	368-2	Not Applicable	0.56	Private Land
430	369	Not Applicable	2.92	Private Land
431	370-1	Not Applicable	1.6	Private Land
432	370-2	Not Applicable	2.48	Private Land
433	370-3	Not Applicable	2.42	Private Land
434	371-1A	Not Applicable	0.78	Private Land
435	371-1B	Not Applicable	0.9	Private Land
436	371-2A	Not Applicable	1.54	Private Land
437	371-2B1	Not Applicable	0.9	Private Land
438	371-2B2	Not Applicable	0.68	Private Land
439	372-1	Not Applicable	3.7	Private Land
440	372-2	Not Applicable	1.76	Private Land
441	372-3	Not Applicable	1.72	Private Land
442	373-1	Not Applicable	2.7	Private Land
443	373-2A	Not Applicable	1.96	Private Land
444	373-2B	Not Applicable	0.21	ACC Limited
445	374-1A	Not Applicable	2.44	ACC Limited
446	374-1B	Not Applicable	0.5	Private Land
447	374-2	Not Applicable	1.12	ACC Limited

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

(96)

Sheet 43-67

Sheet Endorsement

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S VIDYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF The Seal of JAMMALAMADUGU

448	375-1	Not Applicable	1.72	ACC Limited
449	375-2	Not Applicable	1.85	ACC Limited
450	375-3B	Not Applicable	1.29	ACC Limited
451	375-3C	Not Applicable	0.65	ACC Limited
452	375-4B	Not Applicable	1.29	ACC Limited
453	375-4C	Not Applicable	0.64	ACC Limited
454	365-5A2	Not Applicable	1.43	ACC Limited
455	365-5A3	Not Applicable	0.71	ACC Limited
456	375-5B	Not Applicable	1.25	ACC Limited
457	375-6A	Not Applicable	1.17	ACC Limited
458	375-6B	Not Applicable	1.17	ACC Limited
459	375-7	Not Applicable	2.42	Private Land
460	375-8	Not Applicable	1.88	Private Land
461	375-9	Not Applicable	0.44	Private Land
462	376	Not Applicable	8.29	ACC Limited
463	377-1	Not Applicable	2.4	Private Land
464	377-2A	Not Applicable	2.32	ACC Limited
465	377-2B	Not Applicable	2.32	Private Land
466	377-3	Not Applicable	2.28	ACC Limited
467	378-1	Not Applicable	0.05	ACC Limited
468	378-2	Not Applicable	0.04	ACC Limited
469	378-3	Not Applicable	0.07	ACC Limited
470	378-4	Not Applicable	0.21	ACC Limited
471	378-5	Not Applicable	0.64	ACC Limited
472	379-1	Not Applicable	0.42	ACC Limited
473	379-2	Not Applicable	0.49	ACC Limited
474	380-1	Not Applicable	0.2	ACC Limited
475	380-2	Not Applicable	0.6	ACC Limited
476	380-3	Not Applicable	0.42	ACC Limited
477	381	Not Applicable	2.43	ACC Limited
478	382	Not Applicable	3.15	ACC Limited
479	383-1	Not Applicable	0.16	ACC Limited
480	383-2	Not Applicable	1.2	ACC Limited
481	383-3	Not Applicable	1.26	ACC Limited
482	384-1	Not Applicable	1.3	ACC Limited
483	384-2	Not Applicable	1.44	ACC Limited
484	385-1A	Not Applicable	3	Private Land
485	385-1B	Not Applicable	1.1	Private Land
486	385-2	Not Applicable	4.16	ACC Limited
487	385-2c	Not Applicable	1.36	ACC Limited
488	385-3	Not Applicable	0.92	ACC Limited
489	385-4	Not Applicable	0.98	ACC Limited
490	385-5	Not Applicable	1.67	ACC Limited
491	385-6	Not Applicable	3.21	ACC Limited
492	386	Not Applicable	0.772	ACC Limited
493	387	Not Applicable	4.73	ACC Limited
494	388	Not Applicable	0.6	Road
495	401	Not Applicable	4.07	Private Land
496	402-A	Not Applicable	0.57	Private Land
497	402-B	Not Applicable	0.56	Private Land

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

(98)

Sheet 42-67

Sheet Endorsement

Digitally Signed by:
Name:S. VIJAYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF JAMMALAMADUGU

498	403/1B	Not Applicable	1.96	Private Land
499	403-A	Not Applicable	3.91	Private Land
500	403-B	Not Applicable	1.96	Private Land
501	404	Not Applicable	0.83	ACC Limited
502	407-1	Not Applicable	2.74	Private Land
503	408	Not Applicable	6	Private Land
504	409	Not Applicable	0.2	Private Land
505	410-A	Not Applicable	1.49	ACC Limited
506	410-B	Not Applicable	1.48	ACC Limited
507	410-C	Not Applicable	1.49	ACC Limited
508	456-2A	Not Applicable	3.19	Private Land
509	456-2B	Not Applicable	3.43	ACC Limited
510	456-3A	Not Applicable	2.83	ACC Limited
511	456-3B	Not Applicable	0.5	ACC Limited
512	456-3C	Not Applicable	0.5	ACC Limited
513	457	Not Applicable	0.07	ACC Limited
514	458	Not Applicable	1.68	ACC Limited
515	459	Not Applicable	0.34	Road
516	460-1A	Not Applicable	2.08	ACC Limited
517	460-1B	Not Applicable	4	ACC Limited
518	460-1C	Not Applicable	6.32	Private Land
519	460-2A	Not Applicable	10.61	Private Land
520	460-2B	Not Applicable	0.89	Private Land
521	461-1	Not Applicable	1.66	Private Land
522	461-2	Not Applicable	1.64	Private Land
523	462-A	Not Applicable	1.96	Private Land
524	462-B	Not Applicable	0.83	Private Land
525	463-A	Not Applicable	1.96	Private Land
526	463-B	Not Applicable	1.13	Private Land
527	464-1	Not Applicable	2.04	Private Land
528	464-2	Not Applicable	1.81	Private Land
529	465	Not Applicable	3.66	ACC Limited
530	466	Not Applicable	4.28	ACC Limited
531	467	Not Applicable	0.49	ACC Limited
532	468-1	Not Applicable	0.22	ACC Limited
533	468-2	Not Applicable	0.15	ACC Limited
		Total Area(Acres):	1098.32	

5315868-8

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

District Mines & Geology Officer
KADAPA, Y.S.R.District.

(100)

Sheet 50-67

Sheet Endorsement

Digitally Signed by:
Name:S VIDYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF
JAMMALAMADUGU

Mining Lease area over an extent of 997.08 Hectares(2463.63 acres) of ACC Limited				
Village : Bestavemula (256.41 acres, 103.77 Hectares)				
Sr No	Old Khasara No	New Khasara No	Area Acres	Owner as per 7/12
1	1	Not Applicable	4.25	ACC Limited
2	2	Not Applicable	2.33	ACC Limited
3	3	Not Applicable	1.39	ACC Limited
4	4-A	Not Applicable	4.1	ACC Limited
5	4-B	Not Applicable	1	ACC Limited
6	5	Not Applicable	2.84	ACC Limited
7	6	Not Applicable	2.68	ACC Limited
8	7	Not Applicable	3.78	ACC Limited
9	8/2	Not Applicable	0.12	ACC Limited
10	8/3	Not Applicable	1.33	ACC Limited
11	8-1	Not Applicable	0.18	ACC Limited
12	45	Not Applicable	2.47	ACC Limited
13	46	Not Applicable	3.56	ACC Limited
14	47	Not Applicable	1	ACC Limited
15	48/1	Not Applicable	0.35	ACC Limited
16	48/2	Not Applicable	0.41	ACC Limited
17	49/1	Not Applicable	2.13	ACC Limited
18	49/2	Not Applicable	2.43	ACC Limited
19	50/1	Not Applicable	3.23	ACC Limited
20	50/2	Not Applicable	3.69	ACC Limited
21	50/3	Not Applicable	5.24	ACC Limited
22	51/1	Not Applicable	3.49	ACC Limited
23	51/2	Not Applicable	3.29	ACC Limited
24	52/1A	Not Applicable	1.98	ACC Limited
25	52/1B	Not Applicable	2	ACC Limited
26	52/1C	Not Applicable	1.88	ACC Limited
27	52/1D	Not Applicable	3.96	ACC Limited
28	52/2	Not Applicable	4.86	ACC Limited
29	52/3	Not Applicable	4.82	ACC Limited
30	53	Not Applicable	3.14	ACC Limited
31	54/1	Not Applicable	1.74	ACC Limited
32	54/2	Not Applicable	1.58	ACC Limited
33	55	Not Applicable	4.57	ACC Limited
34	56	Not Applicable	4.11	ACC Limited
35	57	Not Applicable	4.98	ACC Limited
36	58	Not Applicable	4.51	ACC Limited
37	59	Not Applicable	4.23	ACC Limited
38	60	Not Applicable	4.07	ACC Limited
39	61	Not Applicable	6.53	ACC Limited
40	62	Not Applicable	5.93	ACC Limited
41	63/1	Not Applicable	1.56	ACC Limited
42	63/2	Not Applicable	0.84	ACC Limited
43	63/3	Not Applicable	0.78	ACC Limited
44	63/4	Not Applicable	3.1	ACC Limited
45	64/1	Not Applicable	2.82	ACC Limited
46	64/2	Not Applicable	1.9	ACC Limited
47	64/3	Not Applicable	0.88	ACC Limited

For ACC Limited
Abhijit Chakraborty, Head-Geology & Mining
Authorised Signatory

District Mines & Geology Officer
KADAPA, Y.S.R.District.

Sheet Endorsement

Book No: **1** CS No / Year: **7659 / 2024** Doct No / Year: **5986 / 2024**

Digitally Signed by:
Name: S VIJAYASAGAR RED
Location: JAMMALAMADUG
Reason: endorsementSign
Date: Tue May 14 18:26:13 I

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF The Seal of JAMMALAMADUGU Joint Subregistrar

48	65/1	Not Applicable	2.88	ACC Limited
49	65/2	Not Applicable	3.08	ACC Limited
50	65/3A	Not Applicable	1.73	ACC Limited
51	65/3B	Not Applicable	1.73	ACC Limited
52	65/4	Not Applicable	3.28	ACC Limited
53	65/5	Not Applicable	3.08	ACC Limited
54	65/6	Not Applicable	3	ACC Limited
55	66/1A	Not Applicable	2.86	ACC Limited
56	66/1B	Not Applicable	2.87	ACC Limited
57	66/2A	Not Applicable	3.23	ACC Limited
58	66/2B	Not Applicable	3.22	ACC Limited
59	66/3	Not Applicable	3.05	ACC Limited
60	66/4	Not Applicable	2.95	ACC Limited
61	67/1	Not Applicable	2.86	ACC Limited
62	67/2	Not Applicable	3.06	ACC Limited
63	67/3A	Not Applicable	1.54	ACC Limited
64	67/3B	Not Applicable	1.54	ACC Limited
65	67/4	Not Applicable	2.98	ACC Limited
66	68/4	Not Applicable	0.41	ACC Limited
67	103/1	Not Applicable	2.3	ACC Limited
68	103/2	Not Applicable	2.2	ACC Limited
69	103/3	Not Applicable	4.3	ACC Limited
70	104	Not Applicable	6.46	ACC Limited
71	105	Not Applicable	4.95	ACC Limited
72	106	Not Applicable	2.82	ACC Limited
73	107	Not Applicable	2.49	ACC Limited
74	108/1	Not Applicable	1.62	ACC Limited
75	108/2	Not Applicable	1.58	ACC Limited
76	109	Not Applicable	5.95	ACC Limited
77	110/1	Not Applicable	2.6	ACC Limited
78	110/2	Not Applicable	2.64	ACC Limited
79	110/3	Not Applicable	2.4	ACC Limited
80	110/4A	Not Applicable	3	ACC Limited
81	110/4B	Not Applicable	2.8	ACC Limited
82	110/5	Not Applicable	1.3	ACC Limited
83	110/6	Not Applicable	1.3	ACC Limited
84	110/7	Not Applicable	2.7	ACC Limited
85	111	Not Applicable	21.59	ACC Limited
		Total Area(Acres)	256.41	

1241-02

124/02 9.4

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

104

Sheet 5 of 7

Sheet Endorsement

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S.VIJAYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF JAMMALAMADUGU

105

Mining Lease area over an extent of 997.08 Hectares(2463.63 acres) of ACC Limited				
Village : Gollapalle (469.07 acres, 189.83 Hectares)				
Sr No	Old Khasara No	New Khasara No	Area Acres	Owner as per 7/12
1	1-1	Not Applicable	3.06	ACC Limited
2	1-2A	Not Applicable	1.36	ACC Limited
3	1-2B	Not Applicable	1.36	ACC Limited
4	2A	Not Applicable	2	ACC Limited
5	2B	Not Applicable	2.87	ACC Limited
6	2C	Not Applicable	4	ACC Limited
7	2D	Not Applicable	2	ACC Limited
8	3-1	Not Applicable	1.56	ACC Limited
9	3-2A	Not Applicable	1.48	ACC Limited
10	3-3	Not Applicable	5.61	ACC Limited
11	4-1	Not Applicable	3.29	ACC Limited
12	4-2A	Not Applicable	1.62	ACC Limited
13	4-2B	Not Applicable	1.62	ACC Limited
14	5-1	Not Applicable	3.26	ACC Limited
15	5-2	Not Applicable	3.06	ACC Limited
16	6A	Not Applicable	4.38	ACC Limited
17	6B	Not Applicable	4.25	ACC Limited
18	6C	Not Applicable	5.28	ACC Limited
19	7-1A	Not Applicable	1.12	ACC Limited
20	7-1B	Not Applicable	1.13	ACC Limited
21	7-2	Not Applicable	1.01	ACC Limited
22	7-3A	Not Applicable	0.58	ACC Limited
23	7-3B	Not Applicable	0.58	ACC Limited
24	7-4A	Not Applicable	0.09	ACC Limited
25	7-4B	Not Applicable	0.09	ACC Limited
26	7-4C	Not Applicable	0.09	ACC Limited
27	7-5A	Not Applicable	1.74	ACC Limited
28	7-5B	Not Applicable	1.74	ACC Limited
29	7-6	Not Applicable	2.37	ACC Limited
30	7-7A	Not Applicable	3	ACC Limited
31	7-7B	Not Applicable	3	ACC Limited
32	14A	Not Applicable	4.44	ACC Limited
33	14B	Not Applicable	4.43	ACC Limited
34	15-1A	Not Applicable	0.35	ACC Limited
35	15-1B	Not Applicable	0.35	ACC Limited
36	15-1C	Not Applicable	0.36	ACC Limited
37	15-2A	Not Applicable	0.02	ACC Limited
38	15-2B	Not Applicable	0.02	ACC Limited
39	15-3A	Not Applicable	0.05	ACC Limited
40	15-3B	Not Applicable	0.05	ACC Limited
41	15-3C	Not Applicable	0.05	ACC Limited
42	15-4A	Not Applicable	0.94	ACC Limited
43	15-4B	Not Applicable	0.95	ACC Limited
44	15-4C	Not Applicable	0.95	ACC Limited
45	15-5A	Not Applicable	2.56	ACC Limited
46	15-5B	Not Applicable	0.75	ACC Limited
47	16-1A	Not Applicable	1.13	ACC Limited

For ACC Limited
Chattopadhyay, Head- Geo...
Authorised Signatory

District Mines & Geology Officer
KADAPA, Y.S.R.District.

106

Sheet Endorsement

Sheet 53-67

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S VIDYASAGAR RED
Location:JAMMALAMADU
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF The Seal of JAMMALAMADUGU

48	16-1B	Not Applicable	1.12	ACC Limited
49	16-2	Not Applicable	1.28	ACC Limited
50	16-3	Not Applicable	3.71	ACC Limited
51	17-1	Not Applicable	2.44	ACC Limited
52	17-3	Not Applicable	1.06	ACC Limited
53	17-4A	Not Applicable	0.24	ACC Limited
54	17-4B	Not Applicable	0.23	ACC Limited
55	17-5A	Not Applicable	0.53	ACC Limited
56	17-5B	Not Applicable	0.53	ACC Limited
57	17-7	Not Applicable	0.37	ACC Limited
58	18-1A	Not Applicable	1	ACC Limited
59	18-1D	Not Applicable	1	ACC Limited
60	18-1B	Not Applicable	1.23	ACC Limited
61	18-1C	Not Applicable	1	ACC Limited
62	18-2	Not Applicable	4.18	ACC Limited
63	18-3	Not Applicable	1.26	ACC Limited
64	18-4	Not Applicable	1.68	ACC Limited
65	18-5	Not Applicable	1.28	ACC Limited
66	19-1A	Not Applicable	1	ACC Limited
67	19-1B	Not Applicable	3.2	ACC Limited
68	19-2	Not Applicable	3.88	ACC Limited
69	20-1A	Not Applicable	1.92	ACC Limited
70	20-1B	Not Applicable	1.91	ACC Limited
71	20-2	Not Applicable	1.83	ACC Limited
72	20-3	Not Applicable	2	ACC Limited
73	21-1A	Not Applicable	1.85	ACC Limited
74	21-1B	Not Applicable	1.86	ACC Limited
75	21-2	Not Applicable	2.08	ACC Limited
76	21-3	Not Applicable	0.2	ACC Limited
77	21-4	Not Applicable	1.78	ACC Limited
78	22-1	Not Applicable	0.49	ACC Limited
79	22-10	Not Applicable	1.06	ACC Limited
80	22-11	Not Applicable	1.19	ACC Limited
81	22-12	Not Applicable	0.69	ACC Limited
82	22-13	Not Applicable	1.11	ACC Limited
83	22-14	Not Applicable	0.67	ACC Limited
84	22-15	Not Applicable	1.11	ACC Limited
85	22-2	Not Applicable	0.44	ACC Limited
86	22-3	Not Applicable	0.25	ACC Limited
87	22-4	Not Applicable	0.12	ACC Limited
88	22-5	Not Applicable	0.02	ACC Limited
89	22-7	Not Applicable	0.69	ACC Limited
90	22-8	Not Applicable	0.89	ACC Limited
91	22-9	Not Applicable	0.96	ACC Limited
92	23-1	Not Applicable	5.09	ACC Limited
93	23-2	Not Applicable	0.05	ACC Limited
94	23-3	Not Applicable	0.15	ACC Limited
95	24-1	Not Applicable	2.74	ACC Limited
96	24-2	Not Applicable	0.91	ACC Limited
97	24-3	Not Applicable	3.95	ACC Limited

For ACC Limited
Abhijit Chattopadhyay
Authorised Signatory

District Mines & Geology Officer
KADAPA, Y.S.R.District.

108

Sheet Endorsement

Sheet 54-C

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S.VIJAYASAGAR REDD
Location:JAMMALAMADUGU
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF The Seal of JAMMALAMADUGU Joint Subregistrar Office

98	25	Not Applicable	6.35	ACC Limited
99	26-1	Not Applicable	3.41	ACC Limited
100	26-2A	Not Applicable	1.68	ACC Limited
101	26-2B	Not Applicable	1.68	ACC Limited
102	27-1A	Not Applicable	0.445	ACC Limited
103	27-1B	Not Applicable	0.45	ACC Limited
104	27-2A	Not Applicable	0.06	ACC Limited
105	27-2B	Not Applicable	0.06	ACC Limited
106	27-3A	Not Applicable	4.72	ACC Limited
107	27-3B	Not Applicable	4.71	ACC Limited
108	28	Not Applicable	4	Private Land
109	28-P	Not Applicable	2.23	Private Land
110	28-P1	Not Applicable	2	Private Land
111	29-1	Not Applicable	3.36	ACC Limited
112	29-2	Not Applicable	5.26	ACC Limited
113	29-3	Not Applicable	0.1	ACC Limited
114	29-4	Not Applicable	0.3	ACC Limited
115	29-5	Not Applicable	0.12	ACC Limited
116	29-6	Not Applicable	0.94	ACC Limited
117	30-1	Not Applicable	1.56	ACC Limited
118	30-2	Not Applicable	1.14	ACC Limited
119	30-3A	Not Applicable	0.08	ACC Limited
120	30-3B	Not Applicable	0.07	ACC Limited
121	30-4A	Not Applicable	1.38	ACC Limited
122	30-4B	Not Applicable	4.03	ACC Limited
123	30-5	Not Applicable	0.23	ACC Limited
124	31-1	Not Applicable	0.02	ACC Limited
125	31-10	Not Applicable	0.59	ACC Limited
126	31-11	Not Applicable	1.09	ACC Limited
127	31-2	Not Applicable	0.02	ACC Limited
128	31-3	Not Applicable	1.28	ACC Limited
129	31-4	Not Applicable	1.36	ACC Limited
130	31-5	Not Applicable	1.16	ACC Limited
131	31-6	Not Applicable	0.47	ACC Limited
132	31-7A	Not Applicable	0.02	ACC Limited
133	31-7B	Not Applicable	0.01	ACC Limited
134	31-8A	Not Applicable	0.05	ACC Limited
135	31-8B	Not Applicable	0.05	ACC Limited
136	31-8C	Not Applicable	0.05	ACC Limited
137	31-9	Not Applicable	0.05	ACC Limited
138	32-1	Not Applicable	2.35	ACC Limited
139	32-2	Not Applicable	0.52	ACC Limited
140	32-3	Not Applicable	0.27	ACC Limited
141	32-4	Not Applicable	0.37	ACC Limited
142	32-5	Not Applicable	2.42	ACC Limited
143	33-1	Not Applicable	2.13	ACC Limited
144	33-10	Not Applicable	0.47	ACC Limited
145	33-2	Not Applicable	0.57	ACC Limited
146	33-3	Not Applicable	0.15	ACC Limited
147	33-4	Not Applicable	0.2	ACC Limited

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head - Geology & Mines
Abhijit Chattopadhyay
Authorised Signatory

110

Sheet Endorsement

Sheet 66-67

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S VIJAYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:131

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF The Seal of JAMMALAMADUGU Joint Sub-Registrar Office

148	33-5	Not Applicable	1.63	ACC Limited
149	33-6	Not Applicable	2.57	ACC Limited
150	33-7	Not Applicable	1.28	ACC Limited
151	33-8	Not Applicable	0.4	ACC Limited
152	33-9	Not Applicable	0.12	ACC Limited
153	34-1	Not Applicable	1.88	ACC Limited
154	34-2	Not Applicable	1.51	ACC Limited
155	34-3	Not Applicable	1.58	ACC Limited
156	34-4	Not Applicable	1.16	ACC Limited
157	34-5	Not Applicable	1.66	ACC Limited
158	35	Not Applicable	3.63	ACC Limited
159	36	Not Applicable	6	ACC Limited
160	37	Not Applicable	5.61	ACC Limited
161	38-1	Not Applicable	3.58	ACC Limited
162	38-2	Not Applicable	1.38	ACC Limited
163	38-3	Not Applicable	1.66	ACC Limited
164	38-4A	Not Applicable	0.07	ACC Limited
165	38-4B	Not Applicable	0.08	ACC Limited
166	39	Not Applicable	3.34	ACC Limited
167	40-1	Not Applicable	2.08	ACC Limited
168	40-2	Not Applicable	2.4	ACC Limited
169	47-1	Not Applicable	2.32	ACC Limited
170	47-2	Not Applicable	3.48	ACC Limited
171	47-3	Not Applicable	2.77	ACC Limited
172	47-4	Not Applicable	2.77	ACC Limited
173	48-1	Not Applicable	5.91	ACC Limited
174	48-2	Not Applicable	0.32	ACC Limited
175	48-3	Not Applicable	1.88	ACC Limited
176	49-1	Not Applicable	0.89	ACC Limited
177	49-2	Not Applicable	2.13	ACC Limited
178	49-3	Not Applicable	0.25	ACC Limited
179	49-4	Not Applicable	4.79	ACC Limited
180	50-1	Not Applicable	0.17	ACC Limited
181	50-2	Not Applicable	0.07	ACC Limited
182	50-3	Not Applicable	5.36	ACC Limited
183	50-4	Not Applicable	4.74	ACC Limited
184	51-1	Not Applicable	4.32	ACC Limited
185	51-2	Not Applicable	0.2	ACC Limited
186	51-3	Not Applicable	1.78	ACC Limited
187	52-1A	Not Applicable	5.1	ACC Limited
188	52-1D	Not Applicable	2.81	ACC Limited
189	52-1B	Not Applicable	1.21	ACC Limited
190	52-1C	Not Applicable	1.41	ACC Limited
191	53-1	Not Applicable	1.14	ACC Limited
192	53-2	Not Applicable	1.09	ACC Limited
193	53-3	Not Applicable	1.98	ACC Limited
194	53-4	Not Applicable	2.35	ACC Limited
195	53-5	Not Applicable	2.37	ACC Limited
196	54-1	Not Applicable	4.7	ACC Limited
197	54-2	Not Applicable	5.19	ACC Limited

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay
Authorised Signatory

(112)

Sheet Endorsement

Sheet 57

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S.VIDYASAGAR RED
Location:JAMMALAMADU
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF The Seal of JAMMALAMADUGU Joint Subregistrar Office

198	55-1	Not Applicable	1.66	ACC Limited
199	55-2	Not Applicable	1.98	ACC Limited
200	55-3	Not Applicable	3.61	ACC Limited
201	56-1	Not Applicable	4.05	ACC Limited
202	56-2	Not Applicable	3.95	ACC Limited
203	57	Not Applicable	6.5	ACC Limited
204	58-1A	Not Applicable	0.48	ACC Limited
205	58-1B	Not Applicable	0.47	ACC Limited
206	58-1C	Not Applicable	0.48	ACC Limited
207	58-2	Not Applicable	1.16	ACC Limited
208	58-3	Not Applicable	0.35	ACC Limited
209	58-4	Not Applicable	4.5	ACC Limited
210	58-5A	Not Applicable	0.71	ACC Limited
211	58-5B	Not Applicable	0.71	ACC Limited
212	58-5C	Not Applicable	0.71	ACC Limited
213	58-6	Not Applicable	2.35	ACC Limited
214	59	Not Applicable	6.42	ACC Limited
215	60	Not Applicable	5.51	ACC Limited
216	61-1	Not Applicable	2.97	ACC Limited
217	61-2	Not Applicable	2.87	ACC Limited
218	62-1	Not Applicable	0.47	ACC Limited
219	62-10	Not Applicable	2.62	ACC Limited
220	62-11	Not Applicable	1.73	ACC Limited
221	62-2	Not Applicable	0.3	ACC Limited
222	62-3	Not Applicable	0.15	ACC Limited
223	62-4	Not Applicable	0.2	ACC Limited
224	62-5	Not Applicable	0.02	ACC Limited
225	62-6	Not Applicable	0.2	ACC Limited
226	62-7	Not Applicable	2.3	ACC Limited
227	62-8	Not Applicable	2.15	ACC Limited
228	62-9	Not Applicable	1.75	ACC Limited
229	63	Not Applicable	4.74	ACC Limited
230	64-1	Not Applicable	2.82	ACC Limited
231	64-2	Not Applicable	2.79	ACC Limited
232	65-1	Not Applicable	3.04	ACC Limited
233	65-2	Not Applicable	0.02	ACC Limited
234	66-1	Not Applicable	9.02	ACC Limited
235	66-2	Not Applicable	0.15	ACC Limited
236	66-3	Not Applicable	0.52	ACC Limited
237	67-1	Not Applicable	2.79	ACC Limited
238	67-2	Not Applicable	2.55	ACC Limited
239	67-3	Not Applicable	0.1	ACC Limited
240	67-4	Not Applicable	0.44	ACC Limited
241	67-5	Not Applicable	0.64	ACC Limited
242	68-1	Not Applicable	2.74	ACC Limited
243	68-2	Not Applicable	2.45	ACC Limited
244	68-3	Not Applicable	2.5	ACC Limited
245	69-1	Not Applicable	0.02	ACC Limited
246	69-2	Not Applicable	9.61	ACC Limited
247	70	Not Applicable	0.4	Private Land

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & ...
Abhijit Chattopadhyay
Authorised Signatory

114

Sheet Endorsement

Sheet 1 of 67

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S VIJAYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF The Seal of JAMMALAMADUGU

248	70-2	Not Applicable	4.37	Private Land
249	71-1	Not Applicable	2.87	ACC Limited
250	71-2	Not Applicable	2.405	ACC Limited
251	71-3	Not Applicable	3.61	ACC Limited
252	136	Not Applicable	0.79	ACC Limited
253	137-1	Not Applicable	1.58	ACC Limited
254	137-2	Not Applicable	2.15	ACC Limited
255	137-3	Not Applicable	0.89	ACC Limited
256	137-4	Not Applicable	0.35	ACC Limited
		Total Area(Acres)	469.07	

2270298.8

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

(116)

Sheet Endorsement

Sheet 33-67

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S VIDYASAGAR RED
Location:JAMMALAMADU
Reason:endorsementSign
Date:Tue May 14 18:26:131

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF The Seal of JAMMALAMADUGU

G. Uppalapadu (117)

Mining Lease area over an extent of 997.08 Hectares(2463.63 acres) of ACC Limited				
Village : G. Uppalapadu (231.49 acres, 93.68 Hectares)				
Sr No	Old Khasara No	New Khasara No	Area Acres	Owner as per 7/12
1	1/1			ACC Limited
2	1/2	5	5.63	ACC Limited
3	15	1	7.46	ACC Limited
4	54	10	1.26	ACC Limited
5	10			ACC Limited
6	11			ACC Limited
7	12			ACC Limited
8	13/1			ACC Limited
9	13/2			ACC Limited
10	14/1			ACC Limited
11	14/2			ACC Limited
12	14/3			ACC Limited
13	14/4			ACC Limited
14	5/1			ACC Limited
15	5/2			ACC Limited
16	6			ACC Limited
17	7/1			ACC Limited
18	7/2			ACC Limited
19	7/3			ACC Limited
20	8/1			ACC Limited
21	8/2A			ACC Limited
22	8/2B			ACC Limited
23	9/1			ACC Limited
24	9/2	2	49.74	ACC Limited
25	5/3	3	3.14	Private Land
26	2			ACC Limited
27	3			ACC Limited
28	4			ACC Limited
29	5/4	4	18.78	ACC Limited
30	55	11	1.12	ACC Limited
31	56/1			ACC Limited
32	56/2			ACC Limited
33	57/1			ACC Limited
34	57/2A			ACC Limited
35	57/2B			ACC Limited
36	58	14	5.19	ACC Limited
37	59/1			ACC Limited
38	59/2	15	9.9	ACC Limited
39	61-A	19	2.71	ACC Limited
40	63/1			ACC Limited
41	63/2	20	6.34	ACC Limited
42	64/1			ACC Limited
43	64/2	21	7.26	ACC Limited
44	65	22	4.38	ACC Limited
45	143			ACC Limited
46	50			ACC Limited
47	51	35	13.08	ACC Limited

For ACC Limi...
Abhijit Chattopadhyay
Authorised Signatory

District Mines & Geology Officer
KADAPA, Y.S.R.District.

(118)

Sheet Endorsement

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S.VIJAYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF The Seal of JAMMALAMADUGU Joint Sub-Registrar

48	52	36	6.41	ACC Limited
49	39			ACC Limited
50	40	38	1.37	ACC Limited
51	41	39	0.46	ACC Limited
52	37			ACC Limited
53	38	40	9.28	ACC Limited
54	20			ACC Limited
55	21			ACC Limited
56	22			ACC Limited
57	23			ACC Limited
58	24	41	16.3	ACC Limited
59	18/2			Private Land
60	19/1	42	2.75	Private Land
61	18/1	43	0.46	ACC Limited
62	17	44	3.99	ACC Limited
63	25			ACC Limited
64	26	45	20.42	ACC Limited
65	27			ACC Limited
66	28-A	46	7.67	ACC Limited
67	28-B	47	2.58	Private Land
68	49	56	6.09	ACC Limited
69	19/2	350	1.37	ACC Limited
70	61-2	374	3.31	SRBC
71	61-3	375	1.69	ACC Limited
72	60/1			ACC Limited
73	60/2	377	1.23	ACC Limited
74	131/1			ACC Limited
75	131/2			ACC Limited
76	141/1			ACC Limited
77	141/2A			ACC Limited
78	141/2B			ACC Limited
79	142/1			ACC Limited
80	142/2	34	10.12	ACC Limited
		Total Area(Acres) :	231.49	
			231.49	

11204/11-6

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limite
Abhijit Chattopadhyay, Head- Ge & Mining
Abhijit Chattopadhyay
Authoris

(120)

Sheet Endorsement

Sheet 6 of 7

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S.VIDYASAGAR RED
Location:JAMMALAMADU
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF The Seal of JAMMALAMADUGU Joint Subregistrar Office

(121)

भारतीय गैर न्यायिक

भारत INDIA

रु. 500 FIVE HUNDRED RUPEES

पाँच सौ रुपये Rs. 500

सत्यमेव जयते

INDIA NON JUDICIAL

महाराष्ट्र MAHARASHTRA © 2021 © BL 26



प्रधान मुद्रांक कार्यालय, मुंबई
प.मु.वि.क. ८०००००२
15 MAR 2022
L
प्रभारी अधिकारी

POWER OF ATTORNEY

ACC LIMITED, a company incorporated under the Indian Companies Act 1913 and having its Registered Office at Cement House, 121, Maharshi Karve Road, Mumbai 400 020, hereinafter called "the Company" (which expression shall unless repugnant to the context or meaning thereof be deemed to include its successors and permitted assigns) hereby nominates, constitutes and appoints ABHIJIT CHATTOPADHYAY, (hereinafter referred to as the "Attorney"), who is currently designated as Head - GeoMining and posted at the Company's office in Thane, Maharashtra, so long as he is in the employment of the Company as In Charge of its GeoMining function, by whatever designation he may be called, to be the true and lawful Attorney of the Company to do all or any of the following acts, deeds, matters and things within the ambit of his authority to perform as the In Charge of GeoMining function, on behalf of the Company and in its name:

For ACC Limited
Abhijit Chattopadhyay, Head Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

District Mines & Geology Officer
KADAPA, Y.S.R.District.

GOVERNMENT OF INDIA * NOTARY * REGD. NO. 9125 PARASHURAM S. GUJAR MUMBAI

Abhijit Chattopadhyay

122

Sheet Endorsement

Sheet 61-67

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S.VIJAYASAGAR REDDY
Location:JAMMALAMADUGU
Reason:endorsementSign
Date:Tue May 14 18:26:13 IST

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF The Seal of JAMMALAMADUGU Joint Subregistrar

नमुना परिशिष्ट-१ Annexure - I

फक्त प्रतिज्ञापत्रासाठी Only for Affidavit (UT)

ACC Limited

मुद्रांक विक्रेता यांचा गाव Cement House, 121, Maharshi Karve Road, Mumbai - 400 020.

मुद्रांक विक्रेता यांच्याकडे दाखविली पत्ता _____ दिनांक _____

मुद्रांक विक्रेत्याकडील नोंद वही अनु. क्रमांक _____

मुद्रांक विक्रेत्याची सही

परवानाधारक मुद्रांक विक्रेत्याची सही

मुद्रांक विक्रेत्याचे नाव/पत्ता : श्री. अशोक रघुनाथ कदम

परवाना क्रमांक : ८०००००३

मुद्रांक विक्रीचे नाव/पत्ता : श्री. अशोक रघुनाथ कदम, आनंद भुवन, प्लॉट, मुंबई-४०० ०८९.

२१०, शहिद भगत सिंग रोड, राजलक्ष्मी २/५५,

शासकीय कार्यालयासाठी/न्यायालयासाठी/महानगरपालिका क्षेत्र कार्यक्षेत्रासाठी मुद्रांक

खरेदीची आवश्यकता नाही. (मुद्रांक अधिनियम दि. ०१/०७/२००१ नुसार

यात खरेदीसाठी अपवादात्मक तरतूद) त्यामुळे त्यास मुद्रांक खरेदी

परवानाधारक मुद्रांक विक्रेत्याची सही

परवानाधारक मुद्रांक विक्रेत्याचे बोधचिन्हाक अही.

For ACC Limited
Abhijit Chattopadhyay
Authorised Signatory

District Mines & Geology Officer
KADAPA, Y.S.R.District.

17 MAR 2022

17 MAR 2022

000591

(124)

Sheet Endorsement

Sheet 62-67

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S.VIJAYASAGAR REDDY
Location:JAMMALAMADUGU
Reason:endorsementSign
Date:Tue May 14 18:26:13 IST

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF The Seal of JAMMALAMADUGU

1. To make applications, correspondence and / or to execute and submit various forms, documents, certificates, writings etc. to the concerned government department(s) and to obtain Digital Signature Certificate on behalf of the Company and in its name.

2. To act as the authorised signatory / contact person of the Company, in its name and on its behalf, in the e - auction process of non coal mineral blocks on MSTC Limited's (MSTC) on line platform and to perform all such acts, deeds, matters and things as are necessary or required in connection with or incidental to participation in such e - auction process in response to the relevant scheme document(s), sign, execute and submit all the documents either physically or through affixation of digital signature and to generally deal with MSTC in all matters in connection with or relating to or arising out of the Company's bid for the non coal mineral blocks.

3. To appear for and on behalf of the Company and represent the Company before any officer in the Ministry of Mines, various related Departments / Directorates of Mines and Geology, Indian Bureau of Mines, Geological Survey of India Federation of Indian Mineral Industries (FIMI), various Mining Companies and any and all authorities constituted under various Mining and Geology related legislations and to sign and present various documents, statements, applications, bonds, writings, forms etc. as may be required by such Authorities.

4. To sign and present applications to Government or Statutory Authority for, acquiring Mining Leases and Surface Leases and / or for their renewal and to and to execute such, Mining Leases, Surface Leases etc., and to present them for registration before the appropriate authority and comply with various formalities as may be required under the relevant statutes and to get these documents duly registered.

5. In delegation of authority and subject to the required corporate approvals, to enter into and sign various tenders/ bids / contracts/ agreements / MoUs / writings/ documents etc. with various persons / vendors/ suppliers / contractors etc. for sale / purchase of various goods / services or for any other purposes that may be required by the Company for carrying on its business as per the approved budget and the policy of the Company from time to time in a most beneficial manner.

6. And generally, to do, execute and perform all and every other such acts, deeds, matters and things as shall be requisite or expedient according to the law for the more effectual fulfilment or any of the power and duties hereinbefore mentioned.

7. And the Company do hereby agrees to ratify and confirm whatsoever the said Attorney shall lawfully do or cause to be done by virtue of these presents.

Subject to the above, this Power of Attorney is valid for a period of 2 (two) years from the date of its execution or till the Attorney separates from the employment of the Company whichever is earlier.

For ACC

Abhijit chattopadhyay

Authorised Signatory

District Mines & Geology Officer
KADAPA, Y.S.R.District.

Abhijit chattopadhyay

126

Sheet Endorsement

Sheet: 63-67

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S.VIDYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:131

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF The Seal of JAMMALAMADUGU Sub-Registrar Office

IN WITNESS WHEREOF, ACC LIMITED has executed these presents at Mumbai on this 16th day of JUNE, 2022

THE COMMON SEAL of ACC Limited Was hereunto affixed pursuant to the Resolution passed by the Board of Directors of the Company on 17th day of October 2017.

1. Yatin Malhotra

And

2. Rajiv Kumar Choubey

Authorised Signatories of the Company.

For ACC L
Abhijit Chattopadhya, ... Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

The signature of Abhijit Chattopadhyay is attested below.







Abhijit Chattopadhyay
SIGNATURE OF ABHIJIT CHATTOPADHYAY

SIGNATURE ATTESTED BY

Yatin Malhotra
Chief Financial Officer

Rajiv Kumar Choubey
Chief Legal Officer

District Mines & Geology Officer
KADAPA, Y.S.R.District.

BEFORE ME

P. S. GUJAR 16/6
ADVOCATE & NOTARY
UNION OF INDIA
GREATER MUMBAI
REGD NO 9125

(128)

Sheet Endorsement

Sh ... 54-67

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S.VIDYASAGAR RED
Location:JAMMALAMADU
Reason:endorsementSign
Date:Tue May 14 18:26:131

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF The Seal of JAMMALAMADUGU Joint Subregistrar Office

(129)

GOVERNMENT OF ANDHRA PRADESH
ABSTRACT

-17647
17 NOV 2023

MINES & MINERALS - Major Minerals - Grant of Mining Lease for Lime Stone (CG) over an extent of 997.08 Hectares (2463.83 Acres) in various survey numbers of Dhannawada, Chinnaventurla, Vaddirala, Bestavemula, Gollapalli and G.Uppalapadu Villages, Mylavaram Mandal, YSR Kadapa District for 50 years for Captive purpose in favour of M/s Associated Cement Companies Limited - Orders - Issued.

==========

INDUSTRIES & COMMERCE (M.III) DEPARTMENT

G.O.Ms.No.121 Dated:15/11/2023

Read the following:

1. Govt. Memo No.16073/M.III(1)/2006-1, dt.22.06.2010.
2. From the Director of Mines & Geology, A.P., Vijayawada Lr.No.25242/D12-2/2002, dt.09.11.2022.
3. From the DM&G, A.P., Vijayawada Single File No.25242/D12-2/2002, dt.22.11.2022.
4. Govt.Lr.No:INC01-MG0MAJM/19/2022/M.III, dt:24.11.2022.
5. Lr.No:25242/D12-2/2002, Dt:07.12.2022 of the DM&G, A.P addressed to Mahesh Agarwal law Associates.
6. From the DM&G, A.P., Lr.No:25242/D12-2/2002, Dt:07.06.2023.
7. Govt.Lr.No:INC01-MG0MAJM/19/2022/M.III, dt:29.08.2023.
8. From the LAG, A.P., Lr.No:447/2023(Opinion No:96/2023), dt:22.09.2023.
9. From the DM&G, AP single file bearing Comp No:1902344, dt:31.10.2023

ORDER:

In the Memo 1st read above, Government have proposed in principle(LoI) to grant of Mining Lease for Limestone (CG) over an extent of 997.08 Hectares (2463.83 Acres) in various Survey numbers of Dhannawada, Chinnaventurla, Vaddirala, Bestavemula, Gollapalli and G.Uppalapadu Villages, Mylavaram Mandal, (YSR)Kadapa District for a period of 20 years in favour of M/s. Associated Cement Companies Ltd., (ACC Ltd), subject to submission of AMP approved by the Indian Bureau of Mines along with CFE from APPCB and EC from the GoI within a period of 6 months and subject to establishing Cement Factory within 3 years from the date of grant of Mining Lease since the same is for captive purpose. The period was extended up to 22.06.2012 for submission of statutory clearances. M/s ACCL has stated that Mining Plan approved by IBM on 26.12.2011 was submitted on 10.04.2012 and requested to grant the lease.

2. While the matter stood thus, Government of India amended MM(D&R) Act, 1957 called "the Mines & Minerals (Development & Regulation) Amendment Act, 2015 which came into force on 12.01.2015" wherein section 10 of the MM(D&R) Act was also amended which deals with grant of leases for prospecting license holder pending as on date of amendment. In the meantime, the applicant company has filed W.P.No.2607/2017 before the Hon'ble High Court of AP for not granting ML in their favour even after submitting the AMP and the Hon'ble

District Mines & Geology Officer
KADAPA, Y.S.R.District.

P.T.O.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

130

High Court ordered that "in the facts of the present case, status-quo obtaining with regard to grant of mining lease in favour of any 3rd parties, be maintained." The WP is pending before the Hon'ble High Court.

Sheet Endorsement Sheet 65 57
Digitally Signed by S VIJAYASAGAR REDDY
Name:S VIJAYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:13 I
Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024
JOINT SUBREGISTRAR, JAMMALAMADUGU

3. Subsequently, Government of India amended again the MM (D&R) Act, 1957 called the Mines & Minerals (Development & Regulation) Amendment Act, 2021 which came in to force on 28.03.2021, wherein Section 10(A) of the MM(D&R) Act was further amended. Later, the DM&G, AP., vide Letter 2nd read above and e-file 3rd read above, while referring to the Provisions in Section 10 (A) (2) (b) & (c) of the amended Act, the clarification contained in the Lr.No.7/1/2016-M.IV, dt.23.11.2016, and the Notification, dt.04.01.2017 issued by MoM, GoI, has stated that M/s.ACCL is fulfilling all conditions under the Act and entitled for grant of Mining Lease. Accordingly, M/s.ACCL made several Representations to State Govt. prior to the sunset date of 11.01.2017 stating that it has met all conditions under this clause and requested for grant of the said ML.

4. Keeping in view the request of DM&G, AP., appropriate legal opinion was sought. The DM&G, AP., vide letter 6th read above, has furnished the legal opinion, wherein it is specified, among other things, that M/s ACCL's vested right to get a Mining Lease under Section 10(A)(2) (b) and (c) of the MM(D&R) Act and execution thereof stood crystalized prior to the 2021 Amendment Act which cannot be taken away by the 2021 Amendment Act and therefore, the Company is eligible for being granted the subject Mining Lease and the same should be executed in its favour. The Learned Advocate General, AP., vide letter 8th read above, has also confirmed that the above legal opinion is in accordance with law laid down by the Hon'ble SCI as reflected in the said opinion.

5. In the e-file 9th read above, the DM&G, AP., while furnishing notarized affidavit of M/s ACC Limited affirming oath that the company undertakes to withdraw the Writ Petition No:2607/2017 filed by them after execution of the Mining Lease in their favour, has recommended the Government to grant the said Mining lease.

6. Government, after careful examination of the above facts and circumstances of the case and in due consideration of the legal opinion rendered vide letters 6th and 8th read above, and recommendation of the Director of Mines & Geology, AP., hereby grant Mining lease for Lime Stone (CG) over an extent of 997.08 Hectares (2463.83 Acres) in various survey numbers of Dhannawada, Chinnaventurla, Vaddirala, Bestavemula, Gollapalli and G.Uppalapadu Villages, Mylavaram Mandal, YSR Kadapa District for a period of 50 years for captive purpose in favour of M/s ACC Limited under Section 10 (A) (2) (b) & (c) read with Section 8 (A) (2) of MM (D&R) Act, 2015 and rule 8 (2) of Minerals (Other than Atomic and Hydrocarbons Energy Minerals) Concession Rules, 2016, subject to satisfaction of all other terms and conditions laid down under MM(D&R) Act, Mineral (OA&HCEM) Concession Rules, 2016 & standing instructions and guidelines issued by the GoI and State Government from time to time, and subject to withdrawal of WP No:2607/2017 by the lessee company as promised in the affidavit or any other order of the Hon'ble Courts and...

Generated On:14/05/2024 18:12:43

District Mines & Geology Officer
KADAPA, Y.S.R. Dist.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay
Signatory

JAMMALAMADUGU

(131)

subject to following conditions:

I. The grantee shall pay the rates of royalty, dead rent, surface rent, water charges and cess etc., as applicable as per rates fixed by GoI/State Government from time to time.
II. The grantee should execute the lease deed within the time limit specified under MMDR(Amendment) Act, 2015.
III. The grantee shall establish a cement plant within a period of 3 (three) years from the date of grant orders, otherwise the lease will be cancelled.
IV. The grantee should obtain consent for Operation (CFO) before starting Mining Operations.
V. The grantee should pay necessary deposit of amount as prescribed under the existing rules before the lease is actually executed.

7. This Grant is liable for cancellation, if it is found at later date that it was grossly inequitable or was made under a mistake of fact or owing to misrepresentation or fraud in excess of authority.

8. The Director of Mines & Geology, Government of A.P., shall take necessary further action accordingly, after satisfying himself that the grantee fulfils all the required terms and conditions as stipulated in the matter.

(BY ORDER AND IN THE NAME OF THE GOVERNOR OF ANDHRA PRADESH)

GOPAL KRISHNA DWIVEDI
SPECIAL CHIEF SECRETARY TO GOVERNMENT (MINES)

To
The Director of Mines & Geology, Ibrahimpatnam, NTR District (w.e.file).
M/s Associated Cement Companies Limited, ACC Thane Complex, LBS Marg, Thane- 400 604.
Copy to:
The Secretary to Govt. of India, Ministry of Mines, SastryBhavan, New Delhi.
The Controller General, Indian Bureau of Mines, Indira Bhavan, Civil Lines, Nagpur
The Director General, Mines Safety, Dhanbad, Jharkand.
The Regional Controller of Mines, Koti, Hyderabad.
The OSD to Minister(M&G)
SF/SCs.

//FORWARDED BY ORDER//

SECTION OFFICER

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay

132

Sheet Endorsement

Sheet 66-6

Book No: 1 CS No / Year: 7659 / 2024 Doct No / Year: 5986 / 2024

Digitally Signed by:
Name:S.VIDYASAGAR RED
Location:JAMMALAMADUG
Reason:endorsementSign
Date:Tue May 14 18:26:13 I

JOINT SUBREGISTRAR,
JAMMALAMADUGU

Generated On:14/05/2024 18:12:43

OFFICE OF JAMMALAMADUGU

133

REVENUE DEPARTMENT

From
Sri Vijay Rama Raju V, I.A.S.,
District Collector,
Y.S.R. District,
Kadapa - 516 004.

To
The Deputy Director, Mines & Geology,
Kadapa.

Ref. No. E1/628/2024, Dated:03.05.2024.

Sir,

Sub: Mines & Minerals - Y.S.R District - Mylavaram Mandal - Mining lease held by M/s Associated Cement Companies Limited (ACC Limited) for Limestone over an extent of 2463.83 AC in various Sy.Nos. of Dhannavada, Chinnaventurla, Vaddirala, Bestavemula, Gollapalle and G. Upplapadu Villages of Mylavaram Mandal - Deemed to have been granted for 50 years as per section 8-A(5) of MMDR amendment act, 2015 - Fixing the adjunction of Stamp duty - particulars furnished - Regarding.

Ref:-1.The Revenue Divisional Officer, Jammalamadugu,
Ref. No. A3/560/2022, dated: 14.03.2024.
2. This Office Ref. No. E1/628/2024, dated: 30.03.2024.
3.The Revenue Divisional Officer, Jammalamadugu,
Ref. No. A3/560/2022, dated: 23.04.2024.

***

I invite your attention to the reference 1st cited, wherein, the Revenue Divisional Officer, Jammalamadugu has submitted that, the details of Stamp duty and registration fee pertaining to the lands held by M/s Associated Cement Companies Limited (ACC Limited) over an extent of 2463.83 acres of patta lands situated in Dhannavada, Chinnaventurla, Vaddirala, Bestavemula, Gollapalle and G. Upplapadu Villages of Mylavaram Mandal for taking further action in the matter.

In this connection, in the reference 2nd cited, the Revenue Divisional Officer, Jammalamadugu has been requested to calculate the market value of the subject lands for fixing the Stamp duty (3% of Market Value) as per the procedure.

Accordingly, in the reference 3rd cited, the Revenue Divisional Officer, Jammalamadugu has submitted that, the Tahsildar, Mylavaram has reported that, the market value of the subject lands as per the procedure and calculated the market value fixing the stamp duty (3% of Market Value) situated in Dhannavada, Chinnaventhurla, Vaddirala, Besthavemula, Gollapalle and G.Uppalapadu Villages of Mylavaram Mandal as detailed below.

Sl.No	Village Name	Extent in Acres	Basic Value as per SRO	Total land value may be payable per acre	Total Market value in Rs.	Toatal Stamp duty @ 3% in Rs.	Total Registration Fee 0.1%
1	Dannawada	171.98	165000	700903.00	120541298	3616239	3616
2	Vaddarala	236.56	400000	1426085.00	337354668	10120640	10121
3	Chinna Venthurla	1098.32	165000	463650.00	509236068	15277082	15277
4	Besthavemula	256.41	308000	780085.00	200021595	6000648	6001
5	Gollapalle	469.07	308000	2054290.00	963605810	28908174	28908
6	G. Uppalapadu	231.49	165000	428963.00	99300645	2979019	2979
	Total Area	2463.83		Total	2230060084	66901802	66902

FOR ACC LIMITED
Abhijit Chattopadhyay, Head- Geology & Mining
Abhijit Chattopadhyay
Authorised Signatory

District Mines & Geology Office
KADAPA, Y.S.R.District.

134

Sheet Endorsement

Book No: 1 CS No / Year: 7659/ 2024 Doc No / Year: 3986 / 2024 Sheet 67-67

Further, the Revenue Divisional Officer, Jammalamadugu has submitted that, ~~Stamp Duty 3% of Market Value Rs.66901803/-~~ (Rupees Six Crores Sixty Nine Lakhs One Thousand Eight Hundred and Three Only) and Registration fee 0.1% of Stamp Duty Rs.66902/- (Rupees Sixty Six Thousand Nine Hundred and Two Only) particulars are fixed as above pertaining to the above lands held by M/S Associated Cement Companies Limited (ACC Limited) over an extent of Ac 2463.83 Cents of Patta lands situated in Dhannavada, Chinnaventurla, Vaddirala, Bestavemula, Gollapalle and G.Uppalapadu Villages of Mylavaram Mandal for taking further action.

Document Verified By
Name: S.PRADEEP KUMAR REDDY
Designation: JOINT SUBREGISTRAR, JAMMALAMADUGU
Date: Tue May 14 18:26:13 IST 2024

JOINT SUBREGISTRAR,
JAMMALAMADUGU

In view of the above, I send herewith the report of the Revenue Divisional Officer, Jammalamadugu and the Tahsildar, Mylavaram for taking necessary action as deemed fit in the matter. Further, the District Mining Officer is requested to contact Revenue Divisional Officer, Jammalamadugu for any further information.

Yours faithfully,
Sd/- Vijay Ram Raju V.,
District Collector,
Y.S.R. District.

//t.c.b.o//

Superintendent 03/05/24

3/5/24 EY

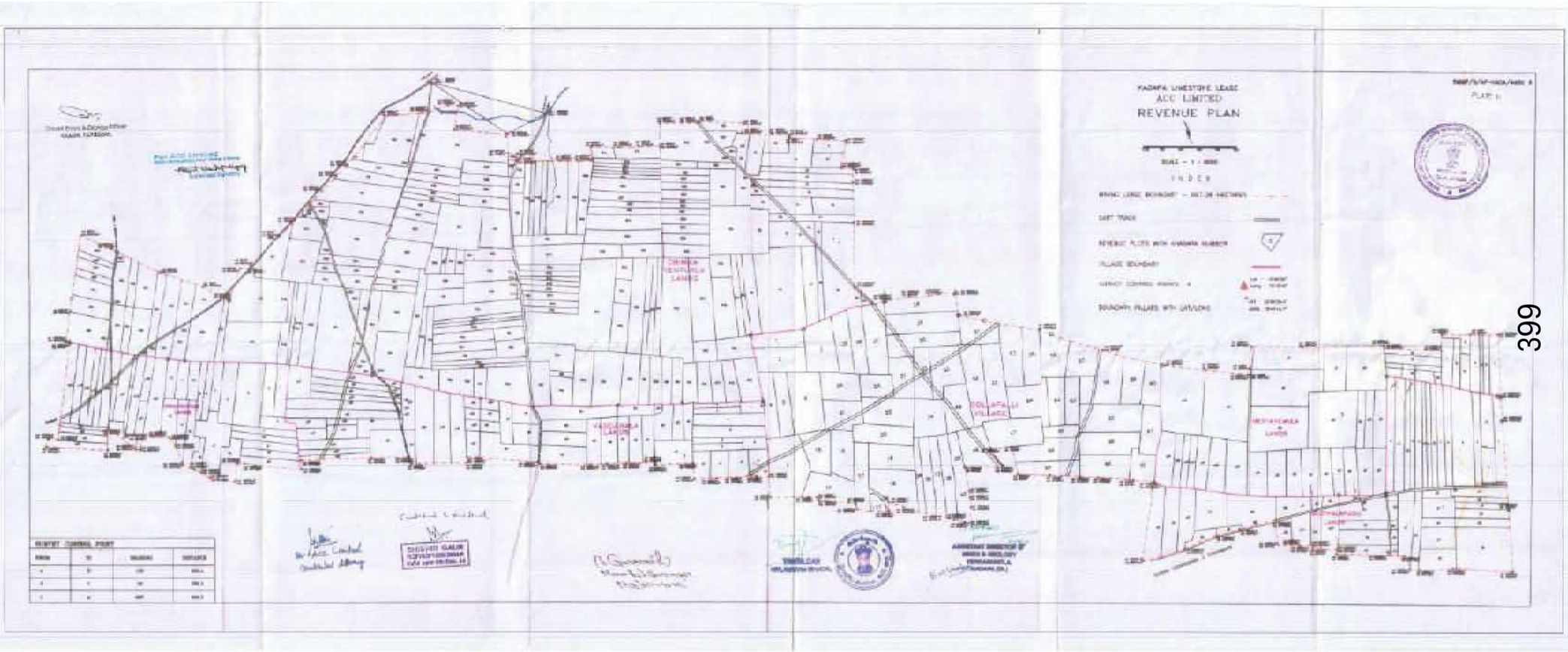
Copy to the Revenue Divisional Officer, Jammalamadugu for information.

District Mines & Geology Officer
KADAPA, Y.S.R.District.

For ACC Limited
Abhijit Chattopadhyay Head Geology & Mines
Abhijit Chattopadhyay
Authorised Signatory

Generated On:14/05/2024 18:12:43

OFFICE OF The Sub-Registrar JAMMALAMADUGU Joint Sub-Registrar Office


KADAPA LIMESTONE LEASE
ACC LIMITED
REVENUE PLAN
INDEX
399

Annexure 3_Mining Plan approval letter

भारत सरकार/ GOVERNMENT OF INDIA
खान मंत्रालय/ MINISTRY OF MINES
भारतीय खान ब्यूरो/ INDIAN BUREAU OF MINES
खान नियंत्रक (दक्षिण आंचल) का कार्यालय
OFFICE OF THE CONTROLLER OF MINES (SOUTH ZONE)

Telegram: MINESBURO
FAX: (080) 23373287
Tel: (080) 23373287/ 23375366-67
E-mail: zo.bangalore@ibm.gov.in
29, Industrial Suburb, II Stage,
Tumkur Road, Goraguntapalaya,
Yeswanthpur,
Bangalore- 560 022

No. MP/AP/CDP/LST-229-SZ 1958 **Date: 26.12.2011**

To,
Shri M.K.Mehta,
Head-Mining Support, (Raw Materials & Mines Planning),
ACC Limited, Acc Thane Complex,
LBS Marg, Teen Haath Naka,
Thane (W), Maharashtra-400 604.

Sub: Approval of Mining Plan (including Progressive Mine Closure Plan) in respect of your Kadapa Limestone Deposit over an extent of 997.08ha, situated in Dhanawada, Chinaventurla, Vaddirala, Bestavemula, Gollapalle, G.Uppalapadu, villages of Mylavaram Mandal of Kadapa district, Andhra Pradesh State submitted under Rule 22(4) of MCR, 1960, for grant of mining lease.

Ref: Your letter No. RMMP/KDP/2011/8 dated 17.10.2011 submitting the final copies of Mining Plan including Progressive Mine Closure Plan and Ltr No. RMMP/KDP/2011/14 dated 30.11.2011.

Sir,

In exercise of the power conferred by the clause (b) of subsection (2) of section 5 of Mines and Minerals (Development & Regulation) Act, 1957, read with Government of India order No.S.O.445 (E) dated 28.04.1987, I hereby approve the aforesaid Mining Plan (including Progressive Mine Closure Plan). This approval is subject to the following conditions:

1. This Mining Plan (including Progressive Mine Closure Plan) is approved without prejudice to any other law applicable to the area from time to time whether made by the Central Government, State Government or any other authority.

2. The Mining Plan (including Progressive Mine Closure Plan) is approved without prejudice to any order or direction from any court of competent jurisdiction.

3. It is also clarified that the approval of your aforesaid Mining Plan (including Progressive Mine Closure Plan) does not in any way imply the approval of the Government in terms of any other provision of the Mines and Minerals (Development & Regulation) Act, 1957, or the rules framed there under and any other law.

4. It is further clarified that the approval of the Mining Plan (including Progressive Mine Closure Plan) is subject to the provision of Forest (Conservation) Act, 1980, Forest Conservation Rules, 2003 and other relevant statutes, orders and guidelines as may be applicable to the lease area from time to time.

5. Provisions of the Mines Act, 1952 and Rule & Regulations made there under including submission of notice of opening, appointment of manager and other statutory officials as required by the Mines Act, 1952 shall be complied with.

6. The execution of the Mining Plan (including Progressive Mine Closure Plan) shall be subjected to vacation of prohibitory orders/ notices, if any.

7. A copy of EIA/ EMP report, approved by MOEF, New Delhi, should be submitted to this office as well as to the Regional Controller of Mines, Indian Bureau of Mines, Hyderabad, within one month of approval along with a copy of their approval letter.

8. If anything is found to be concealed as required by the Mines Act in the contents of Mining Plan and the proposal for rectification has not been made, the approval shall be deemed to have been withdrawn with immediate effect, further at any stage, if it is observed that the information furnished in the document are incorrect or misrepresent facts, the approval of the document shall be revoked with immediate effect.

9. This approval of the Mining Plan (including Progressive Mine Closure Plan) is subject to the condition that the lessee should furnish Financial Assurance of Rs. 13,13,250/- (rupees thirteen lakhs thirteen thousand two hundred fifty only) as required under rule 23F(3) of MCDR 1988 to the Regional Controller of Mines, Indian Bureau of Mines, Hyderabad, before execution of the Mining Lease

10. The Environment Monitoring Cell of the Company shall continue monitoring ambient air quality, dust fall rate, water quality, soil sample analysis and noise level measurements on various stations established for the purpose both in the core zone and buffer zone as per Dept. of Environment guidelines and keeping in view CCOM's Circular No.3/92 season-wise every year by engaging the services, preferably of an Environmental laboratory approved by MOEF/ CPCB. The data so generated shall be maintained in a bound paged register kept for the purpose and the same shall be made available to the inspecting officer on demand.

11. A yearly report should be submitted before 1st July of every year setting forth the extent of protective and rehabilitative works carried out as envisaged in the approved Mine Closure Plan.

12. This department does not undertake any responsibility regarding fixing of boundary pillars on the ground & correctness of the boundaries of the lease area shown on the ground with reference to lease map & other plans furnished by the applicant/lessee.

13. In case the mining lease falls within a radius of 10 kms of National Park/ sanctuary, recommendations of NBWL have to be obtained as per the Order of Hon'ble Supreme Court in I.A.No 460/2004.

14. The contents of Circular No 2/2010 issued by the Chief Controller of Mines, Indian Bureau of Mines, Nagpur vide his letter No- 11013/3/MP/90-CCOM VOL-VII dated 06.04.2010 shall be complied with, within a period of six months from the date of approval of this document failing which the approval shall be deemed to have been withdrawn.

15. A copy of the Mining Lease Deed should be submitted to this office as well as to the Regional Controller of Mines, Indian Bureau of Mines, Hyderabad, within a period of 30 days from the date of execution of the Lease.

16. The Mining Plan is approved for proposals as applicable from the date of approval/ commencement of Mining Operations for the mining activities to be carried out within the area applied for grant of mining lease.

Yours faithfully,

26/12/11

(R.K.SINHA)
खान नियंत्रक (द.आं.)
Controller of Mines (SZ)

Encls: Two copies of approved Mining Plan
(Including Progressive Mine Closure Plan).

Copy for kind information to:

1. Sri Shishir Gour, Manager & RQP, M/s. Raw Materials & Mines Planning, ACC ltd., ACC Thane Complex, LBS Marg, Near Teen Haath Naka, Thane (W)- 400 607
2. The Chief Controller of Mines, Indian Bureau of Mines, Nagpur- 440 001.
3. The Director, Department of Mines & Geology, Government of Andhra Pradesh, B.K.R.K. Bhavan, 8th Floor, Tank Bund Road, Hyderabad- 500 029 with a request that lease should not be executed unless a written statement is obtained from Regional Controller of Mines, Indian Bureau of Mines, Hyderabad, to the effect that the Financial Assurance has been furnished by the applicant.
4. The Director of Mines Safety, Directorate General of Mines Safety, Hyderabad Region No.2, APHB Complex, Gruha Kalpa, Block II, M. J. Road, Nampally, Hyderabad, PIN- 500 001, **along with a copy of approved Mining Plan (including Progressive Mine Closure Plan).**
5. The Regional Controller of Mines, Indian Bureau of Mines, Kendriya Sadan, Sultan Bazar, Koti, Hyderabad-500 095, **along with a copy of approved Mining Plan (including Progressive Mine Closure Plan).**

(R.K.SINHA)
खान नियंत्रक (द.आं.)
Controller of Mines (SZ)

Annexure 4_NOC for no forest land

GOVERNMENT OF ANDHRA PRADESH
FOREST DEPARTMENT

From
Sri S. Ashok Kumar Yadav,
Forest Range Officer,
MUDDANUR.

To
Sri Sanjay Prasad,,
ACC Limited,
Cement House,
121, Maharshi Karve Road,
Mumbai - 400 020.

Rc.No.105/2016 dt. 11.11.2024

Sir,

Sub : Forest Dept. - ACC Integrated Cement Plant and Limestone Mine (ML at District Kadapa (YSR) State - Andhra Pradesh - Reg. - Certificate for No forest land in the proposed area - Reg.

Ref : (1) DFO, YSR (T) Division, Kadapa Rc.No.3064/2024/ A15 dt. 16.09.2024

(2) Tahsildar, Mylavaram Mandal Ref.No.A/170/2024 dt. 24.10.2024

-o0o-

In obedience to the reference 1st cited, I have addressed a letter to the Tahsildar, Mylavaram for obtaining the revenue records applied by the ACC Cement for establishing the ACC Integrated Cement Plant and Lime Stone Mine (ML Area of 997.08 ha) at Gollapalli village of Mylavaram Mandal.

In this connection the Tahsildar, Mylavaram has supplied the duly signed RSR copies for survey numbers to this office and the Tahsildar, Mylavaram has issued a letter that the survey numbers are classified as Patta Lands. As per the Tahsildar, Mylavaram Mandal supplied RSR copies of the proposed Limestone Mine and plant verified and found that ***there is no Forest area falls in the proposed project area i.e. Lime stone and Plant.***

Yours faithfully,

Encl : As Above

Forest Range Officer, 11.11.24
Muddanur.

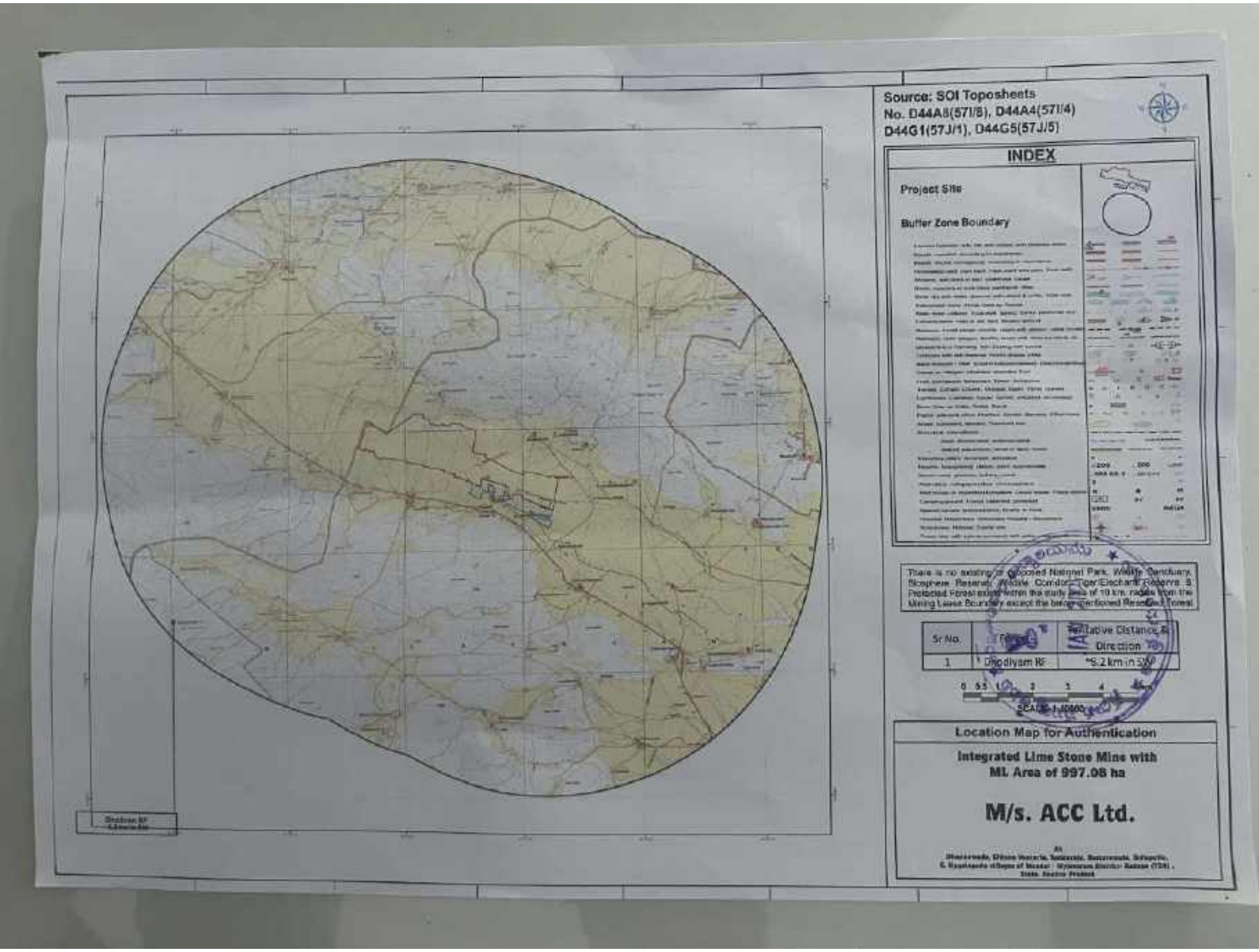
Copy submitted to the District Forest Officer, YSR (T) Division, Kadapa for favour of information.

Copy submitted to the Sub Divisional Forest Officer, Proddatur for favour of information.

FOREST RANGE OFFICER,
MUDDANUR. 11.11.24

D:\ACC Cements.doc

Annexure 5_Authenticated location Map



Annexure 6_Authenticated list flora fauna and Wildlife conservation plan

GOVERNMENT OF ANDHRA PRADESH
FOREST DEPARTMENT

Ref.No.21034/3/2024/WL-2 Dated:**16-01-2025.**	Office of the Prl.Chief Conservator of Forests & Head of Forest Force, Andhra Pradesh, Mangalagiri.

Sri Ajaya Kumar Naik,I.F.S,
Prl.Chief Conservator of Forests(WL) &
Chief Wildlife Warden, A.P.

****

Sub:-	APFD – Wildlife – M/s.ACC Limited - Integrated Cement Plant and Limestone Mine (997.08 Ha.) at Kadapa District – Proposal for approval of Wildlife Conservation Plan and authenticated list of flora and fauna – Wildlife Mitigative Plan for Schedule -I fauna – Approved - Reg.
Ref:-	1. From the Authorized signatory i.e., M/s.ACC Limited, F.No.ACC/KDP/ FOREST/12-24/01, dated 11.12.2024. 2. PCCF(WL) & CWLW, A.P, Mangalagiri Ref.No.21034/3/2024/WL-2, dated 12.12.2024. 3. Conservator of Forests, Kurnool Circle Rc.No.4049/2024-TO, dt.27.12.2024 along with remarks of the DFO, YSR Kadapa.

***

In the reference 1st cited, Authorized signatory i.e., M/s.ACC Limited has submitted Wildlife Conservation Plan as per conditions stipulated by the Government of India vide GoI, MoEF & (IA Division) F.No.J-11011/265/2012-IA II(I), dated 2.02.2013 in favour of M/s.ACC Limited Kadapa with a financial outlay of Rs.1067.00 lakhs for Integrated Cement Plant and Limestone Mining area(997.08 ha). The details are as follows.

1. The study area of 10 km radius for establishment of ACC cement plant and limestone mine at Kadapa district is part of the Comp.No.5 of Dhodium RF i around the project buffer area.
2. As mentioned in the Plan, (16) Schedule-I Species as per the Wildlife (Protection) Act, 1972 and amended in 2022 are identified in the study area like Four horned Antelope, Asiatic Wild dog, Bonnet Macaque, Sloth Bear, Indian Gray mongoose etc.,
3. The Budgetary proposals for 10 years from 2025-26 to 2034-35 in the plan are as follows.

S. no.	Management intervention in the core area	Estimated cost (Rs.in lakh)	Implementing Agency
1	Conservation plan for Schedule – I animals:	567.00	State Forest Department
2	Development of greenbelt in plant area.	200.00	M/s ACC Cement
3	Development of greenbelt in surrounding villages of M/s ACC Cement Plant.	200.00	M/s ACC Cement

4	Stabilization of nallah banks and SMC works in the plant area.	100.00	M/s ACC Cement
	Total	**1067.00**	

Under the circumstances reported by the Conservator of Forests, Kurnool and District Forest Officer, Kadapa, the Wildlife Conservation Plan along with list of flora & fauna and Location Map are hereby approved with following conditions.

a. The User Agency is requested to deposit an amount of Rs. 567.00 lakhs in the AP Forest Department Wildlife Fund account which is to be implemented by the State Forest Department ,

Name of the account	AP Forest Department Wildlife Fund
Name of the Bank	Indian Bank, Mangalagiri Branch
Account No.	7936728731
IFSC Code	IDIB000B030

b. The cost of works components and year wise break-up shall be modified at any time by the Chief Wildlife Warden, Andhra Pradesh basing on the requirement.
c. The Conservator of Forests, Kurnool and District Forest Officer, Kadapa are requested to submit on site location details for the various habitat improvement and other works proposed to be taken up, prior to commencement of the works.

AJAYA KUMAR NAIK
Prl.Chief Conservator of Forests(WL) &
Chief Wildlife Warden

To
The Authorized Signatory, M/s. ACC Ltd., Cement House, Churchgate, Mumbai city, 400020, Maharashtra – India. (sanjay.prasad@adani.com)

Copy submitted to the Government of India, Ministry of Environment & Forests & (IA Division), New Delhi with reference to remarks indicated against point No.58 in the letter F.No.J-11011/265/2012-IA II(I), dated 02.02.2013.

Copy to the Conservator of Forests, Kurnool for information and necessary action.

Copy to the District/Divisional Forest Officer, YSR Kadapa for information and necessary action.

WILDLIFE MITIGATION PLAN FOR SCHEDULE-I SPECIES



October - November 2024

M/s ACC CEMENTS Ltd., YSR Kadapa

PROJECT DETAILS:

INTEGRATED CEMENT PLANT & LIMESTONE MINE



TABLE OF CONTENTS

PROJECT INTRODUCTION	1
STATUS OF THE PROJECT	12
BIOLOGICAL DIVERSITY	31
CONSERVATION VALUE OF THE FAUNA	40
ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATIVE MEASURES	45
WILDLIFE CONSERVATION MEASURES IN THE STUDY AREA	56
FINANCIAL PROJECTIONS	67
REFERENCES	73

CHAPTER I: INTRODUCTION

i. BRIEF NOTE ABOUT THE PROJECT AND ITS UTILITY

A. INTEGRATED CEMENT PROJECT

ACC Limited is proposing a Proposed 5.0 MTPA integrated cement clinkerisation plant, 8.0 MTPA cement grinding unit, 100 MW Captive power plant, 25 MW WHRS and 7.0 MTPA captive lime stone mine with mining lease area of 997.08 ha. At Gollapalli Village, Myalavaram Mandalam of Kadappa (YSR) District, Andhra Pradesh.

B. PROPOSED LIMESTONE MINE

To fulfill the limestone requirement of this Integrated Cement Plant, ACC has also Proposed 7.0 MTPA Limestone Mine in ML Area of 997.08 ha at Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle, G. Uppalapadu Villages of Mylavaram Mandal, Kadapa (YSR) District, Andhra Pradesh State.

ii. IDENTIFICATION OF PROJECT PROPONENT

The ACC Limited (ACC) is the oldest and one of the largest cement producers in India with annual production capacity of more than 30 million tonnes per annum (MTPA). ACC was granted a prospecting license over an area of 997.08 Ha in revenue villages of Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle, G.Uppalapadu, Madhapuram, Kallutla and Nawabpeta in Mylavaram Mandal of Kadapa district in Andhra Pradesh State. ACC Limited has been granted Letter of Intent for grant of Mining lease with conditions for Limestone (under major mineral) in villages Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle and G. Uppalapadu in Mylavaram Mandal, District Kadapa (YSR) in Andhra Pradesh over an area of 997.08 ha. Vide Govt. of Andhra Pradesh memo bearing number MEMO 16073/M.III (1)/2006-1 dated 22.06. 2010.

To delineate the limestone bearing areas, which could be applied under Mining Lease, ACC carried out a preliminary geological investigation during 10th April 2002 and 10 July 2002. The execution of the Mining Lease needs to be done in the stipulated time. As per the state government order, to execute the Mining Lease, Mining Plan and Progressive Mine Closure Plan are required to be prepared and approved and hence Mining Plan including Mine Closure Plan is being submitted

for approval under rule 22(4) of MCR, 1960. Prior to grant of mining lease under discussion, there does not exist any mining lease granted/executed in favor of ACC Limited in the state of Andhra Pradesh. The area of the mining lease is 997.08 Ha in villages Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle and G.Uppalapadu in Mylavaram mandal, District Kadapa in Andhra Pradesh and it is to be executed after approval of the Mining plan).

iii. PROJECT PROPOSAL

A. INTEGRATED CEMENT PROJECT

The project deals with the proposed integrated cement plant complex of clinkerization capacity of 5.0 MTPA i.e. Phase-I (2.5 MTPA) and Phase-II (2.5 MTPA), cement Grinding Unit of 8.0 MTPA i.e. phase-I (4.0 MTPA) & Phase-II (4.0 MTPA) and captive power plant of 100 MW i.e. Phase-I (50 MW) and Phase-II (50 MW) Power along with WHRS of 25 MW in phase manner. The limestone requirement of the proposed cement plant will be met from captive limestone mine located adjacent to the plant. ACC has been granted the mining lease spread over an area of 997.08 ha by the Government of Andhra Pradesh, Department of mines and geology. Production capacities of the proposed project are given in bellow:

CAPACITIES OF THE PROPOSED PROJECT

Sl. No.	Parameter	Description
1	Location	Gollapalli village of Mylavaram mandal, Kadapa (YSR) district, Andhra Pradesh
2	Clinker production	5 MTPA (Phase-I & Phase-II)
3	Cement Grinding Unit	8 MTPA (Phase-I & Phase-II)
4	Captive Power Generation	100 MW (Phase-I & Phase-II)
5	WHRS	25 MW (Phase-I & Phase-II)
6	Cement Plant Process	Calcination, preheater/proclaimer, rotary kiln with glass bag house, grate cooler & ESP
7	CPP Process	CFBC boiler technology with bag filters & ESP
8	Water requirement and Source	7750 m³/day (Combined for Phase I and Phase II) Initially ground water sources later mine pit water by rain harvesting
	Optimized water balance	2650 m³/day (Combined for Phase I and Phase II) Initially water will be sourced from ground water sources by bore holes, once the mine pits are formed and water is filled in these pits by rain harvesting
9	Land Requirement	275.028 ha (680.229 acres including township) for two Phases
	Optimized Land Area	187.1 ha (Colony proposal dropped)
10	Land Type	Unirrigated (Patta and waste land)
11	Power requirement and source	125 MW Source: CPP (100 MW), WHRS (25 MW) & State Grid Power Supply
12	Manpower requirement	499 persons (additional contract labour for auxiliary services)
13	**Project Cost**	Rs. 7100 Crores (Phase-I & Phase-II)

SALIENT FEATURES OF INTEGRATED CEMENT PLANT

Sl. No.	Parameter	Phase-I	Phase-II	Total
1	Plant capacity	2.5 MTPA Clinker, 4.0 MTPA Cement, 50 MW CPP	2.5 MTPA Clinker, 4.0 MTPA Cement, 50 MW CPP	**5.0 MTPA Clinker, 8.0 MTPA Cement, 100 MW CPP**
2	Auxiliary fuel	**Coal, Petcoke & AFR**		
3	Land Requirement (plant, colony & CPP)	**187.10 ha**		
4	Water Requirement and Source (plant, colony & CPP)	3875 m^3/day, Ground water sources by bore holes	3875 m^3/day, Ground water sources by bore holes	**7750 m^3/day, Ground water sources by bore holes**
	Optimized water requirement	1325 m^3/day, Ground water sources by bore holes	1325 m^3/day, Ground water sources by bore holes	**2650 m^3/day, Ground water sources by bore holes**
5	Power requirement	62.5 MW	62.5 MW	**125 MW**
6	**Source**	**Captive Power Plant, WHRS & State Grid**		

SALIENT FEATURES OF CAPTIVE POWER PLANT

Sl. No.	Parameter	Phase-I	Phase-II	Total
1	CPP Capacity	50 MW (based on Coal Fired Boilers)	50 MW (based on Coal Fired Boilers)	**100 MW (based on Coal Fired Boilers)**
2	Land Requirement (plant, colony & CPP)	**Total Project Area: 187.10 ha**		
3	Water requirement and source	450 m^3/day which will be Ground water sources by bore holes	450 m^3/day which will be Ground water sources by bore holes	**450 m^3/day which will be Ground water sources by bore holes**
4	Fuel	Coal: 0.485 MTPA from Singereni Collieries Limited (SCCL) by road/rail	Coal: 0.485 MTPA from Singereni Collieries Limited (SCCL) by road/rail	**Coal: 0.97 MTPA from Singereni Collieries Limited (SCCL) by road/rail**
	A	Gross calorific value	**Coal: <3800 Kcal/kg**	
	B	Ash content	**Coal: 40% (max)**	
	C	Sulphur content	**Coal: 0.5% (max)**	
5	Solid waste generation	**Ash from CPP will be 100% utilized in cement plant**		
6	Noise levels	**Equipment will be designed to conform to prescribed noise levels [(<85 dB(A)]**		
7	**Firefighting system**	**Adequate firefighting systems as per Tariff Advisory Committee (TAC), OISD and NFPA guidelines will be provided**		

B. PROPOSED LIMESTONE MINE

Based on the market surveys carried out and the availability of limestone deposits in the Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle, G. Uppalapadu villages, i.e. near Gollapalle village in Kadapa district is selected as the most suitable for setting up a 2.5 Million Tons per Annum (MTPA) cement clinkering plant in Phase-I and expand it to 5.0 MTPA in Phase-II. It is expected with the implementation of this project, the growing demand of 8% of the southern states can be partly met by ACC. The proposed 7.0 MTPA captive mine is to meet the limestone requirement of proposed integrated cement plan.

MINING DETAILS

Sl. No.	Description	Details
1	Name of the mine lease	**ACC Kadapa Lime Stone Mine**
2	Extent of mine lease (ML) area	**997.08 ha**
3	Location & co-ordinates	**Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle, G. Uppalapadu villages, near Gollapalle, Mylavaram Mandalam of Kadapa (YSR) District, Andhra Pradesh Latitude: 14°58'11" N to 15°00'15" N; Longitude: 78°14'01" E to 78°18'32" E**
4	Elevation MSL	**200 m**
5	Type of ML area	**Private land**
6	Mine Capacity	**7.0 MTPA limestone production**
7	Expected life of mine	**Limestone - 50 years**
8	Method of mining	**Open cast method using Shovel dumper combination and fully mechanised with deep hole blasting**
9	Total Resources and Reserves	**Limestone - 647.1 million tonnes**
10	Mineable reserves	**Limestone - 6.11 million tonnes**
11	Overburden and Top Soil thickness	**1-6 m**
12	Top Soil Quantity	**54,000 tonnes (first five years)**
13	Over Burden Quantity	**925,000 tonnes (first five years)**
14	Safety zone	**7.5 m around ML boundary**
15	Working hours	**2 shifts per day of 8 hours in 330 days of operation per year**
16	Number of benches (limestone)	**5-12 nos.**
17	Maximum bench height	**8-12 m**

18	Ultimate depth of mine	**55 m**
19	Bench Width	**30 m**
20	Working bench angle	**>45° with horizontal**
21	Overall final pit slope	**60° to the horizontal**
22	Water requirement	**60 m³ per day**
23	Power requirement	**1 MW**
24	Source of power	**CPP of Cement Plant**
25	Manpower requirement	**62 persons**
26	Transport of OB	**Dumpers of capacity 50 T/60 T**
27	**Project Cost**	**57.30 Crores**

iv. NEED FOR THE PROJECT

India is developing at a growth rate of about 7 % GDP. To meet the requirement of industrial, infrastructural, residential construction activities of the southern part of India, ACC is intending to setup the Cement clinkerisation plant, cement grinding unit and Captive Power Plant in Andhra Pradesh. To cater to the requirement of clinker plant, ACC is planning to open the captive mines in Adjacent (ML Area-997.08 ha) with production capacity of 7.0 MTPA. The cement demand in the country is going at CAGR (Compound Average Growth Rate) 9-10%. Particularly in the southern state, due to number of major infrastructure projects planned by state/central government and also rapid growth of industries. The demand is likely to be higher than average for the country.

Considering the priority of the project site to all the three major metro cities - Hyderabad, Bangalore and Chennai and neighboring state of Tamilnadu and Karnataka The growth demand can be met with the transportation cost of cement Based on the market surveys carried out and the availability of limestone deposits in the Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle, G. Uppalapadu villages, i.e. near Gollapalle village in Kadapa district is selected as the most suitable for setting up a 2.5 Million Tons per Annum (MTPA) cement clinkering plant in Phase-I and expand it to 5.0 MTPA in Phase-II. It is expected with the implementation of this project, the growing demand of 8% of the southern states can be partly met by ACC. The proposed 7.0 MTPA captive mine is to meet the limestone requirement of proposed integrated cement plant.

SALIENT FEATURES OF THE PROJECTS

S. No.	PARTICULARS	DETAILS OF INTEGRATED CEMENT PLANT	DETAILS OF PROPOSED MINE
A.	Nature of the Project	Greenfield Project	Proposed Opencast Conventional Mechanized Limestone Mining Project
B.	Size of the Project	• Clinker: 5 MTPA (Phase-I & Phase-II) • Cement: 8 MTPA (Phase-I & Phase-II) • CPP: 100 MW (Phase-I & Phase-II) • WHRS: 25 MW (Phase-I & Phase-II)	• ML Area: 997.08 Ha. • Limestone Production Capacity: 7.0 Million TPA
C.	Location Details		
	Village	Gollapalle	Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle and Uppalapadu
	Mandal	Mylavaram	Mylavaram
	District	Kadapa	Kadapa
	State	Andhra Pradesh	Andhra Pradesh
	GPS Coordinates		
	Latitude	14057'56.36" N to 14058'58.08" N	Latitude: 14°59'20" N to 15°00'10" N
	Longitude	78016'21.07" E to 78018'07.46" E	Longitude: 78°13'55" E to 78°18'08" E
	Toposheet No.	D44A8(57I/8), D44A4(57I/4), D44G1(57J/1)1, D44G5(57J/5)	
D.	Area Details		
	Total Project Area	187.1 ha	997.08 ha
	Greenbelt / (ha)	The total plant area is 187.1 ha, out of which ~42.65 % of the total area i.e., ~79.8 ha has been earmarked to be developed as greenbelt development & plantation. The propose greenbelt development & plantation area will be developed in upcoming 5 years with 2,26,900 numbers of trees	At conceptual stage total excavated area will be 707.10 ha, out of which 146.5 ha will be backfilled which will be reclaimed by plantation and 390.6 ha will be converted into water reservoir. Total greenbelt/plantation will be done on 186 ha area, in which green belt will be done on 30 ha area on 7.5 m safety zone

		with density of plantation is 2500 trees per ha. Native & fruits bearing species, medical value types will be planted as per CPCB guidelines in consultation with DFO.	of lease boundary and Plantation will be done on 156 ha area on above waste dump.
E	**Cost details** Total Cost of the Proposed Project	Rs. 7100 Crores (Phase-I & Phase-II)	Rs. 57.30 Crores
	Cost for Environment Management Plan	Phase-I • Capital Cost: Rs 362 Crores • Recurring Cost: Rs.3.1 Crores / annum Phase-II • Capital Cost: Rs 336 Crores • Recurring Cost: Rs. 2.9 Crores / annum	Capital Cost: Rs. 5.0 Crores

ENVIRONMENTAL SETTINGS OF THE AREAS

(WITH APPROXIMATE AERIAL DISTANCE AND DIRECTION FROM THE NEAREST PROJECT BOUNDARY)

S. NO.	PARTICULARS	DETAILS
1.	Nearest Village	Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle and G. Uppalapadu
2.	Mandal	Mylavaram
3.	District	Kadapa
4.	State	Andhra Pradesh
5.	Elevation	200 m above mean sea level
6.	Nearest National / State Highway	State highway (~0.8 km, in South direction)
7.	Nearest Railway Station	Nossam Railway station (~9.8 km, in East direction)
8.	Nearest Airport	• Kadapa (~70 km, in SE direction) • Tirupathi (~200 km, in SE direction)
9.	National Parks, Wildlife Sanctuaries, Biosphere Reserves, Reserve / Protected Forests within 10 km radius	• No National Park, Biosphere Reserve and Wildlife Sanctuary falls within 10 km radius the study area.
10.	Reserved and protected forests	• Dhodiyan RF (~8.0 km, in south west direction)
11.	River/Water Body within 10 km radius	• Tigaleru River (~6.5 km, SE)
12.	**Seismic Zone**	• Zone - II [as per IS 1893 (Part-I): 2002]

v. STUDY AREA AT A GLANCE

Study Area: The study area includes project areas and an area of 10 km radius (aerial distance) from the project site. The area of project site is considered as core zone of plant and mine site and rest of the study area within 10 km radius is buffer zone.

Plant Area : 187.1 ha

Mine Lease Area : 997.08 ha.

vi. SCOPE OF WORK AND OBJECTIVES WILDLIFE CONSERVATION PLAN

As per direction under ToR, Preparation of Wildlife Conservation Plan for Schedule- I Species is mandatory. The objective of this plan is to address and alleviate the adverse effects caused by industrial activities and various other contributing factors. The 'Wildlife Conservation Plan' recognizes the rich biodiversity within the designated WCP area, which extends up to a 10-kilometer radius surrounding the core site, known as the buffer area. Collectively, these

areas are referred to as the 'Wildlife Conservation Plan (WCP) area'. This comprehensive plan encompasses the assessment of habitat conditions, ecological dynamics, and the diverse range of plant and animal species within the study area. There are various factors which tremendously affects the ecological systems such as urbanization, industrialization, illicit felling of trees, poaching, diseases, drought etc., which result in destruction of wildlife habitats (land, water, food), which further causes delimitation effect on the population of wildlife animals and degradation of the forest. To mitigate the impacts of plant and mine related activities and other factors, Wildlife Conservation Plan for Schedule- I Species is necessary.

CHAPTER-II: PROJECT AND STUDY AREA

2.0 DETAILS OF THE STUDY AREA:

Study Area: The study area includes project areas and an area of 10 km radius (aerial distance) from the project site. The area of project site is considered as core zone of plant and mine site and rest of the study area within 10 km radius is buffer zone.

- Plant Area: 187.1 ha
- Mine Lease Area: 997.08 ha.
- Buffer Zone: 52068 ha.

2.1 DETAILS OF INTEGRATED CEMENT PLANT:

The total area acquired for the proposed integrated cement plant & CPP is about 275.028 ha. The proposed plant site is gently with undulating topography in the central and Western parts and gentle to moderately steep slopes towards northern and eastern flanks. Plant area break-up is given below:

PLANT AREA BREAK-UP

S. No.	Particulars	Area (ha)	Area (%)
i	Plant and Machinery	46.8	25.01
ii	Railway line and wagon tippler	7.7	4.12
iii	WHRS Area	1	0.53
iv	Road & Paved area	12.7	6.80
v	Greenbelt development /plantation area	79.8	42.65
vi	Open area for Future Expansion	29.7	15.87
vii	Truck Parking	9.4	5.02
Total Project area		**187.10**	**100**

There is no existing infrastructure at the site; as it is a proposed Greenfield project.

SITE FEATURES

Present land use of the proposed project site is agriculture land, which will be used for industrial purpose after its conversion into Industrial land use. No Forest land is involved in the project area.

There are no settlements within the proposed project area and thus rehabilitation and resettlement (R&R) issues are not involved. The present land use of the proposed plant area comprises 187.1 ha of private land. Predominantly barren land and partly single crop rainfed agriculture land. ACC has already acquired the entire land required for the proposed cement plant complex and CPP.

2.2 DETAILS OF PROPOSED MINE LEASE:

The total area acquired for mining of limestone is about 997.08 ha for which approval have been obtained from Andhra Pradesh government. The present landuse of mine lease area is given.

No forest land is involved in the ML area. Further, No existence of national Parks, Sanctuaries, Biosphere reserves, Migratory Corridors of Wildlife Animal, Ramsar Site tiger/Elephant Reserve (existing as well as proposed) within 10 Km radius of the proposed project area.

Breakup of Mining lease area (Village wise)

Sl. No.	Name of the village	Classification-wise Extent of lands in Hectares(Revenue classification within brackets) (ha)							Total
		Forest	Agricultural		Culturable Waste (Govt. Tharisu)	Not available for cultivation			
			Irrigated (Patta/ Wet) (ha)	Unirrigated (Patta Dry) (ha)		Common Facility (Govt. Poramboke) (ha)	Earmarked for Housing (Govt. Natham) (ha)		
1	Dhannavada	Nil	Nil	69.69	Nil	1.4	Nil		**71.09**
2	Vaddarala	Nil	Nil	95.99	Nil	0.83	Nil		**96.82**
3	Chinna Venturla	Nil	Nil	441.51	0.66	3.95	Nil		**446.12**
4	Bestavemula	Nil	Nil	103.77	Nil	Nil	Nil		**103.77**
5	Gollapalle	Nil	Nil	183.15	Nil	1.93	Nil		**185.08**
6	G. Uppalapadu	Nil	Nil	93.63	Nil	0.59	Nil		**94.22**
Total		Nil	Nil	987.73	0.66	8.7	Nil		997.09

2.3 SALIENT FEATURES OF THE LEASE AREA: Description of the site features:

A. **Water Body:** Two canals are present within the lease lease. GNSS canal is present in west portion of lease with total length of 1.80 km and another SRBC canal is present in East portion of lease. As of now SRBC Canal is Defunct. Furthermore, 500 m of Safety Zones will be left in along sides of the both canals.

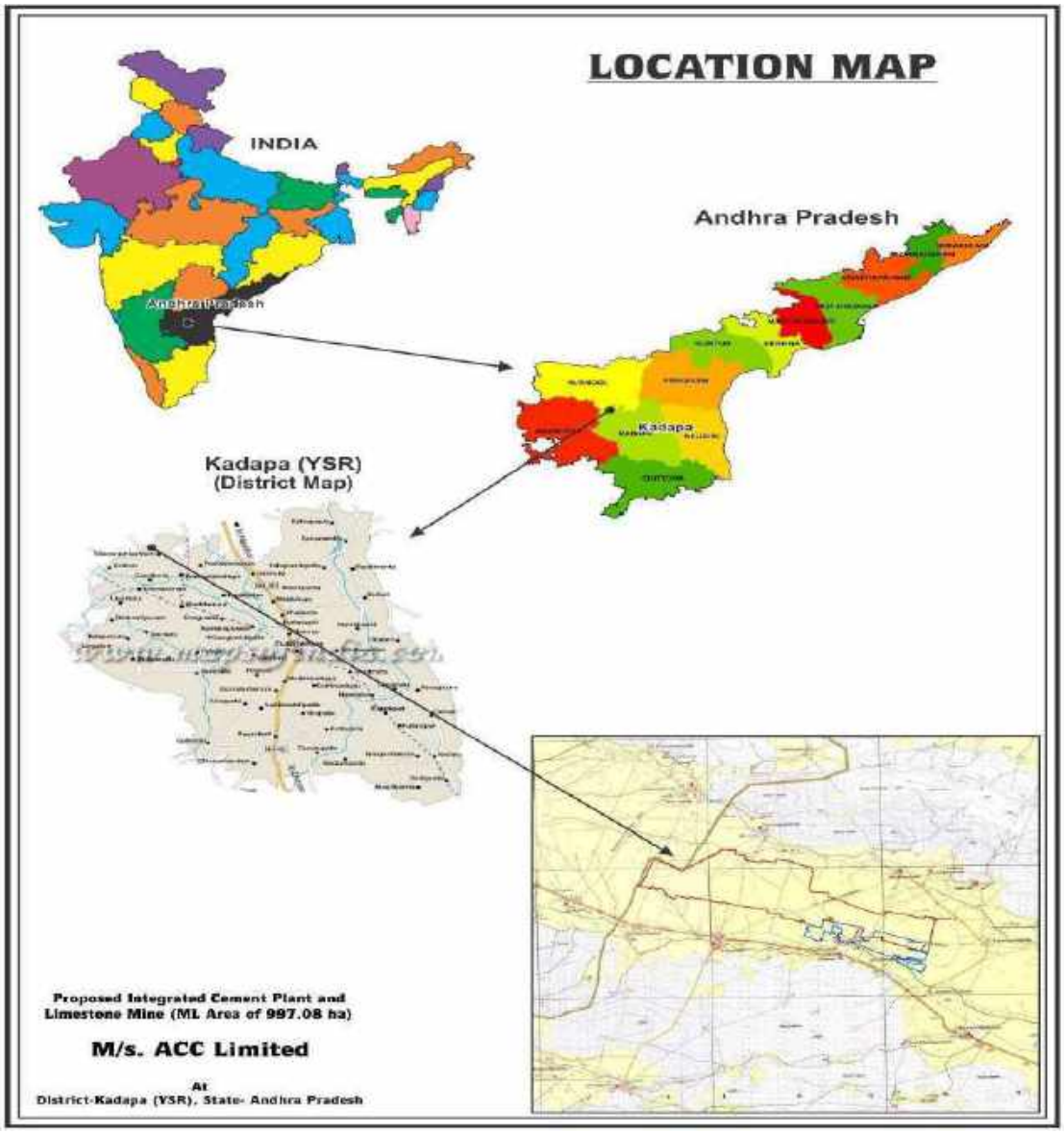
B. **Roads & Cart Tracks:** One road and some cart tracks are passing through the mining lease area. 50 m of safety zone will be left in both sides of road and cart tracks.

C. **Electric Line:** Hightention Line is also present in the east portion of the lease. 50 m safety zone will be left in both sides of HT line.

D. **Cement Plant:** One proposed cement plant is partially falls within the lease. This cement plant is of M/s. ACC Ltd. Company has proposed an integrated cement plant, part of which is come within mining lease area towards SE direction.

2.4 SITE VISIT PHOTOGRAPHS





DESCRIPTION OF FOREST AND HABITAT CONDITION, WILDLIFE SCENARIO OF THE STUDY AREA:

Andhra Pradesh, located in the southeastern part of India, is endowed with a diverse range of forests that contribute significantly to its ecological and economic landscape. The state's forests are characterized by a variety of ecosystems, each supporting unique flora and fauna. Here's an overview of the forests in Andhra Pradesh:

A. Types of Forests

1. **Tropical Moist Deciduous Forests**:

- **Location**: Found primarily in the Eastern Ghats and coastal regions.
- **Flora**: These forests are dominated by species like teak, sal, and bamboo, along with a variety of shrubs and herbs.
- **Fauna**: Common wildlife includes elephants, tigers, leopards, deer, and various bird species.

2. **Tropical Dry Deciduous Forests**:
   - **Location**: Spread across the Rayalaseema region and parts of the Eastern Ghats.
   - **Flora**: Trees such as neem, tamarind, and banyan are prevalent. These forests also have a mix of grassland and thorny shrubs.
   - **Fauna**: Wildlife includes blackbucks, chinkaras, and a variety of reptiles and birds.
3. **Tropical Thorn Forests**:
   - **Location**: Found in arid regions, particularly in the southern parts of Andhra Pradesh.
   - **Flora**: Characterized by hardy, thorny species like acacia, cacti, and euphorbias.
   - **Fauna**: Species adapted to arid conditions, including desert foxes, hyenas, and various lizards.
4. **Mangrove Forests**:
   - **Location**: Coastal areas, especially around the Godavari and Krishna river deltas.
   - **Flora**: Mangrove species such as Avicennia, Rhizophora, and Bruguiera.
   - **Fauna**: Rich in aquatic life, including fish, crabs, and various bird species like herons and kingfishers.

B. Ecological Significance

- **Biodiversity Hotspots**: The forests of Andhra Pradesh are part of the Eastern Ghats, which are recognized as a biodiversity hotspot. They provide habitat to a myriad of plant and animal species, some of which are endemic and endangered.
- **Watershed Protection**: The forests play a crucial role in protecting the watersheds of major rivers like the Godavari, Krishna, and Penna. They help in soil conservation, groundwater recharge, and maintaining the hydrological balance.

C. Economic Importance

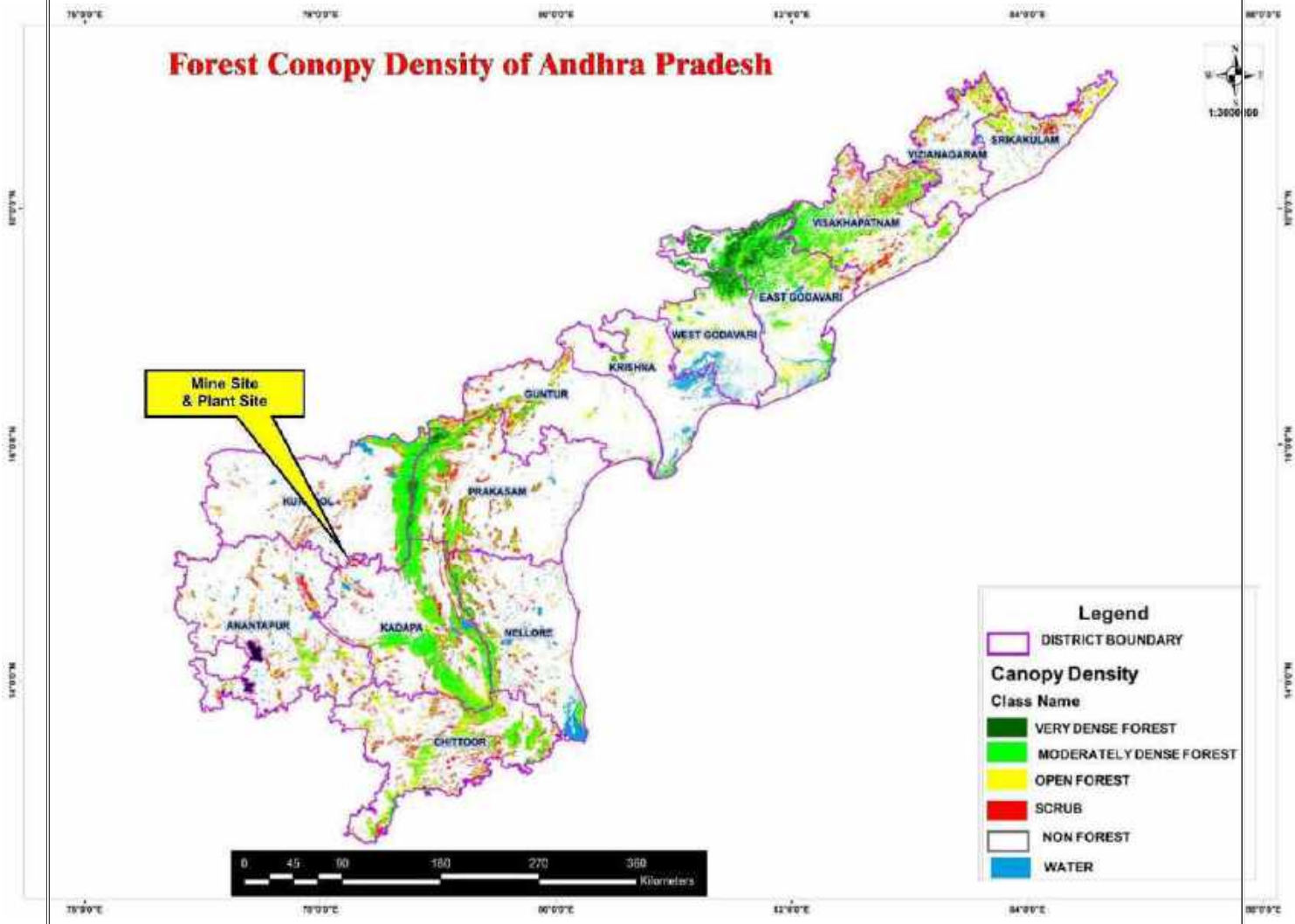
- **Forest Products**: The forests are a source of timber, bamboo, medicinal plants, and non-timber forest products like honey, resin, and fruits, which support local livelihoods.
- **Tourism**: Andhra Pradesh's forests are a major attraction for eco-tourism and wildlife tourism. Protected areas like the Papikonda National Park, Sri Venkateswara National Park, and Nagarjunsagar-Srisailam Tiger Reserve draw many visitors.

D. Conservation Efforts

- **Protected Areas**: The state has several protected areas, including national parks, wildlife sanctuaries, and biosphere reserves aimed at conserving its rich biodiversity.
- **Afforestation Programs**: Various afforestation and reforestation initiatives are undertaken to restore degraded forest areas and increase green cover.
- **Community Involvement**: Programs involving local communities in forest management and conservation efforts are crucial in maintaining the ecological balance and ensuring sustainable use of forest resources.

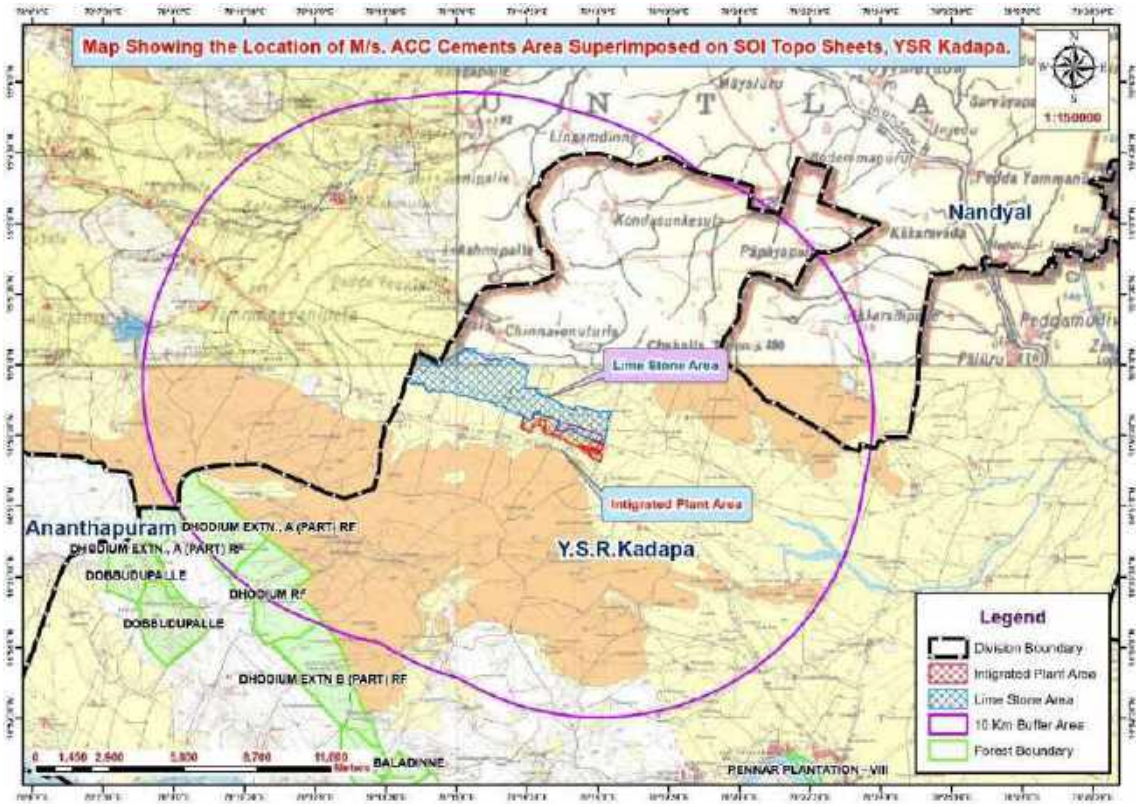
E. Challenges

- **Deforestation**: Ongoing deforestation due to agricultural expansion, urbanization, and industrial activities poses a significant threat to the forests.
- **Wildlife Poaching**: Illegal hunting and poaching of wildlife remain serious issues, impacting the state's biodiversity.
- **Climate Change**: Changing climatic conditions are affecting forest ecosystems, leading to shifts in vegetation patterns and impacting wildlife habitats.



FOREST CLASS DETAILS OF STATE (Andhra Pradesh) AND DISTRICT (Kadapa (YSR))

S. No.	Forest Class	Area (in Sq. Km.)	
		Andhra Pradesh	Kadapa (YSR)
1.	Very Dense Forest (VDF)	1994.28	**40.0**
2.	Moderate Dense Forest (MDF)	13928.75	**2708.24**
3.	Open Forest Cover (OF)	13861.27	**1627.79**
	Total Forest Cover	29784.3	**4376.03**
4.	**Scrub Forest (SF)**	**8276.09**	**28.49**



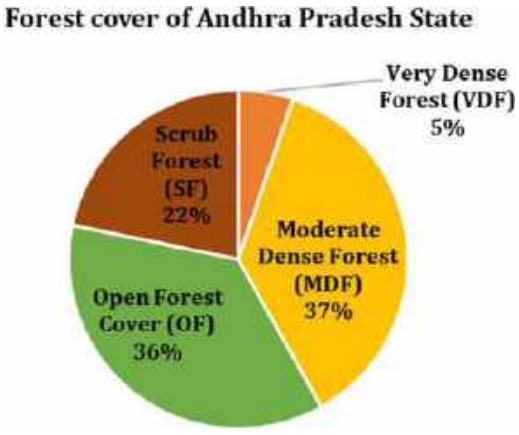


Figure 11 Forest cover of Andhra Pradesh State

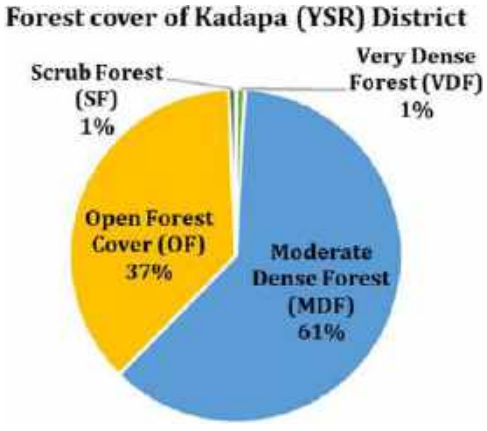


Figure 12 Forest cover of Kadapa (YSR) District

2.5 MOVEMENT OF WILDLIFE IN THE DISTRICT AND STUDY AREA

Kadapa district in Andhra Pradesh hosts diverse habitats that support significant wildlife populations. The movement patterns of wildlife in this region are influenced by seasonal changes, habitat availability, and human activities. Comprehensive data on these movements, gathered from various studies and reports, can inform effective conservation and management strategies.

Buffer zone consists of wild mammals like Nilgai (*Boselaphus tragocamelus*), Common langur (*Presbytis entellus*), Rat (*Rattus rattus*), Grey musk shrew (*Suncus* murinus). Presence of some common bats were also noticed.

Home Range: Varies from 1 to 78 square kilometers depending on species and habitat quality. **Daily Movement:** Generally, ranges from 0.5 to 15 kilometers. Nocturnal species like leopards and sloth bears travel extensively at night, while diurnal species like deer move during the day.

Seasonal Movement: Increased during dry seasons as animals seek water sources. Some species, such as deer, may also migrate to areas with better grazing opportunities during monsoon seasons.

2.6 HUMAN-WILDLIFE CONFLICT (HWC):

Human-wildlife conflict (HWC) is an issue in India. The district's rich biodiversity and expanding human activities often result in conflicts that affect both wildlife and human communities. Understanding the nature, causes, and consequences of these conflicts is essential for developing effective mitigation strategies.

Human-Wildlife Conflict (HWC) is a significant issue in Andhra Pradesh, including the Kadapa district. The conflicts mainly involve elephants, bears, and wild boars, and have resulted in human casualties and injuries. Here are some key points regarding HWC in Kadapa, AP:

- **Casualties and Injuries**: The National Crime Records Bureau's 'Accidental Deaths and Suicides' data revealed that there were 31 people killed by animals in Andhra Pradesh in 2018, 25 human casualties in 2019, and 32 people killed in 2020. The state has been recording at least 30 human casualties in conflicts with wildlife annually for the last few years.
- **Elephants and Bears**: Elephants and bears are reported to be the biggest killers in some districts of the state, including Kadapa[1]. The movement of wild elephants

from the Koundinya wildlife sanctuary into human habitations has become a regular phenomenon, contributing to the conflict[1].

- **Shrinking Forest Cover**: The reduction of forest cover in parts of the state has increased man- animal conflict and resulted in casualties on both sides. This is often due to the assignment of forest land for various purposes, leading to habitat fragmentation.
- **Response Teams**: Plans are being made to form response teams with locals to deal with the rising man-animal conflicts in some districts. These teams will rush to the spot upon receiving an emergency call to neutralize the situation.

2.7 STUDY AREA PROFILE

The study area for preparation of wildlife conservation plan considered as 10 km surrounding from the proposed plant and mine site.

2.8 EXISTING CROPPING PATTERN OF THE STUDY AREA

Cropping pattern means the proportion of area under various crops at a point of time. The crop statistics published by the Governments are used to denote the cropping patterns. Cropping pattern is, however, a dynamic concept as it changes over space and time. The cropping patterns of a region are closely influenced by the geo-climatic, socio-cultural, economic, historical and political factors. The physical environment (physiographic, climate, soils and water) imposes limits on the growth and distribution of plants and animals. Depending on the terrain, slope, temperature, amount and reliability of rainfall, soils and availability of water for irrigation, the cropping patterns vary from region to region.

The cropping pattern in **Kadapa (YSR) district**, located in **Andhra Pradesh, India**, is influenced by the soil types and climatic conditions.

Soil Types:

- Kadapa district mainly has **red and black soils** ranging from poor to fertile soils.
- **Red soils** occupy **53%** of the cultivated area and are mostly situated in L. R. Palli, Rayachoty, Rajampet, Pulivendla, and Kodur Mandals. These soils have a **low nutrient status**.
- **Black corson soil lands** cover **24%**, while **black soil** covers **19%** of the cultivated area. These black soils are generally associated with clay content and are located in Muddanur, Jammalamadugu, Proddatur, Mydukur, Pulivendla, and Kamalapuram Mandals.
- Other soil types include **sandy soil lands** (4%) and **sand soil lands** (25%).

Major Agricultural Crops:

- The net cropped area in Kadapa district is **4.08 lakh hectares**, with annual crops grown on **3.97 lakh hectares**.
- The **pre-dominant crop** is **rainfed Groundnut**, which accounts for **52%** of the annual cropped area.
- **Commercial crops** are grown on **5%** of the annual cropped area.
- **Pulses** account for **3%** of the cropped area.
- The area under **food crops** is **0.99 lakh hectares** (25% of the cropped area), while the area under **non-food crops** is **2.97 lakh hectares**.

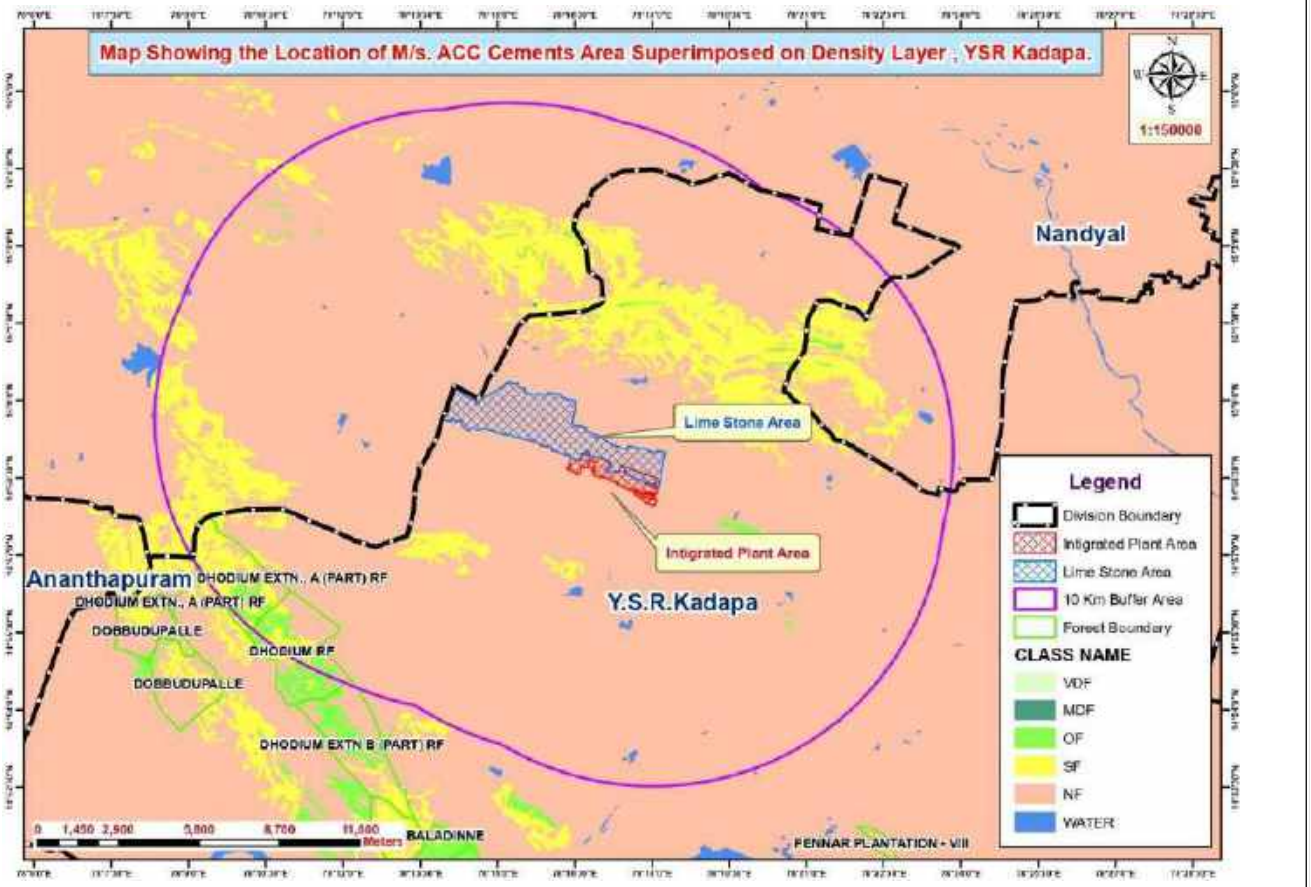
2.9 LANDUSE LANDCOVER OF STUDY AREA

The physical setting of study area shows a contrast of immense dimensions and reveals a variety of landscapes influenced by relief, climate, vegetation and economic use by man.

The land use and land cover details of the buffer zone are given in table below:

LAND USE / LAND COVER DETAILS OF BUFFER ZONE

X	Legend	Buffer Zone		Core Zone	
		Area (in ha)	**Area (in %)**	**Area (in ha)**	Area (in %)
1.	Open Scrub/Stony Waste	23702.44	45.58	67.31	**3.48**
2.	Agriculture Land	20709.95	39.83	1573.22	**81.33**
3.	Vegetation/Plantation	4438.30	8.54	35.27	**1.82**
4.	Forest	1137.03	2.19	-	**-**
5.	Surface Water Bodies	629.31	1.21	29.23	**1.51**
6.	Settlement	438.51	0.84	0.02	**0.00**
7.	Solar Panel	379.68	0.73	-	**-**
8.	Road	376.90	0.72	229.43	**11.86**
9.	Mine Quarry	123.62	0.24	-	**-**
10.	Industry	63.36	0.12	-	**-**
Total		51999.09	100.0	1934.48	100.00



COMPOSITE FCC MAP OF STUDY AREA

2.10 Climate:

YSR Kadapa has a tropical wet and dry climate characterized by very high temperatures. It has a record of reaching more than 50 degrees Celsius. Summers are especially uncomfortable with hot and humid climate. During this time temperatures range from a minimum of 34 °C and can rise up to a maximum of 40 °C. Humidity is around 75% during the summer months. The region, monsoon season brings substantial rain to the area. YSR Kadapa gets rainfall from both the South west monsoon as well as North-west monsoon June to October is usually the monsoon. Winters are comparatively milder and the temperatures are lower after the onset of the monsoons. During this time the temperatures range from a maximum of 25 °C and can rise up to a maximum of 35 °C. Humidity is much lower during the winter season. Winter season is the best time to visit the place. The rainfall in the southern area ranges from 700 mm to 800 mm.

2.10.1 Temperature

A. **Summer (March to June)**

- **Daytime Temperatures:** During the summer months, Kadapa experiences extremely high temperatures. Daytime temperatures often exceed 40°C (104°F), with average highs ranging from 35°C to 45°C (95°F to 113°F).
- **Nighttime Temperatures:** Even at night, temperatures can remain quite warm, often staying above 25°C (77°F).
- **Heat Waves:** It is not uncommon for the region to experience heat waves during this period, with temperatures occasionally reaching 45°C (113°F) or higher.

B. **Monsoon (July to September)**

- **Daytime Temperatures:** The onset of the monsoon season brings some relief from the intense heat of summer. Daytime temperatures typically range between 30°C and 35°C (86°F to 95°F).
- **Nighttime Temperatures:** Nighttime temperatures during the monsoon are generally cooler,

  ranging from 20°C to 25°C (68°F to 77°F).
- **Cloud Cover:** Increased cloud cover during the monsoon season helps in reducing daytime temperatures.

C. **Post-Monsoon (October to November)**

- **Daytime Temperatures:** Post-monsoon temperatures begin to drop, with daytime highs ranging between 28°C and 33°C (82°F to 91°F).
- **Nighttime Temperatures:** Night temperatures range from 18°C to 23°C (64°F to 73°F).

D. **Winter (December to February)**

- **Daytime Temperatures:** Winter temperatures are mild and pleasant, with daytime highs between 25°C and 30°C (77°F to 86°F).
- **Nighttime Temperatures:** Nights can be significantly cooler, with temperatures dropping to between 10°C and 15°C (50°F to 59°F), and occasionally falling below 10°C (50°F).

2.10.2 Rainfall

A. **Monsoon Season (July to September)**

- **Average Rainfall:** The southwest monsoon brings the majority of the annual rainfall to Kadapa. The average annual rainfall during this period is about 700-800 mm.
- **Rainfall Intensity:** Rainfall can be intense, often occurring in heavy downpours that can cause temporary flooding and waterlogging.

B. **Post-Monsoon (October to November)**

- **Northeast Monsoon:** The northeast monsoon contributes additional rainfall to the region, especially in the months of October and November.
- **Rainfall Amount:** The post-monsoon rainfall is usually less intense compared to the southwest monsoon, but it still significantly adds to the annual precipitation.

C. **Dry Season (December to June)**

- **Limited Rainfall:** The period from December to June sees very little rainfall. December to February **is the driest part of the year, with occasional light showers in March and April.**

2.10.3 Humidity

- **Summer- Low Humidity:** Humidity levels during the summer are relatively low, typically ranging between 20% and 40%. However, the high temperatures can make the weather feel more oppressive.
- **Monsoon- High Humidity:** Humidity levels rise significantly during the

monsoon season, often exceeding 70%. The combination of high humidity and warm temperatures can make the weather feel quite sticky and uncomfortable.

- **Winter- Moderate Humidity:** Humidity levels drop during the winter months, ranging from 30% to 50%. This makes the climate feel more comfortable and less oppressive compared to the summer and **monsoon seasons.**

2.10.4 Winds

- **Southwest** Monsoon Winds
- **Wind Pattern:** During the monsoon season, the region experiences winds from the southwest. These winds bring moisture-laden air from the Arabian Sea, resulting in heavy rainfall.
- **Northeast** Monsoon Winds
- **Post-Monsoon Winds:** In the post-monsoon period, winds shift to come from the northeast. These winds also bring moisture, contributing to the rainfall in October and November.

2.10.5 Overall Climate Summary

- Hot Semi-Arid Climate: Kadapa's climate can be classified as hot semi-arid, characterized by high temperatures and moderate to low annual rainfall.
- Seasonal Variations: The region experiences significant seasonal variations, with extremely hot summers, a monsoon season with substantial rainfall, and mild winters.
- Best Time to Visit: The most comfortable time to visit Kadapa is during the winter months from November to February when temperatures are milder and humidity levels are lower.

2.11 NDVI (Normalized Difference Vegetation Index)

This study aims to assess the potential environmental impacts on vegetation using the Normalized Difference Vegetation Index (NDVI). As a widely utilized remote sensing technique, NDVI provides valuable insights into vegetation health and density by analyzing the difference in reflectance between near-infrared and visible red light. By conducting an NDVI analysis, this study seeks to evaluate the current vegetation coverage and health within the proposed project area, identify areas of potential ecological importance, and anticipate any changes or disturbances to the vegetation caused by the development

activities associated with the cement plant and limestone mine.

Interpretation: -

NDVI, or Normalized Difference Vegetation Index, is a commonly used vegetation index in remote sensing. It is used to quantify vegetation greenness and is useful in understanding vegetation density and assessing changes in plant health.

- NDVI values close to +1 indicate dense, healthy vegetation. This is because healthy vegetation absorbs most of the visible light (like red) for photosynthesis, while reflecting a large portion of near-infrared light. So, a high NDVI indicates strong reflectance in the NIR band and low reflectance in the red band.
- These areas typically represent forests, agricultural fields, or areas with a lot of lush vegetation.
- NDVI values close to -1 or 0 indicate little to no vegetation. This could be barren land, water bodies, or urban areas where there's minimal vegetation to reflect near-infrared light.
- Built-up areas, roads, rocks, and water bodies usually exhibit low NDVI values.
- Negative NDVI values are theoretically possible but rare. They usually indicate water bodies or man-made features like roads, which absorb more near-infrared light than they reflect in the red band.

NDVI values of core area

S. No.	Area	Value
1.	Mine site	**0.0754816 to 0.262225**
2.	**Plant area**	**0.027098 to 0.376541**

NDVI values of study area

S. No.	Area	Value
1.	**Study area**	**-0.139538 to 0.498418**

As, values of NDVI in study and core zone area is very low, this indicates little or no vegetation. They can be roads, rocks and water bodies. NDVI values clarifies that as there is no major vegetation around plant and mine site so there is no huge loss to vegetation or habitation.

NORMALIZED DIFFERENCE VEGETATION INDEX OF PROJECT SITES

2.12 DESCRIPTION OF FLORA AND FAUNA OF THE WCP AREA SHOWING THE DETAILS OR ENDEMIC, THREATENED AND SCHEDULED SPECIES

Understanding these impacts is vital for developing effective mitigation strategies that aim to minimize harm to biodiversity and promote ecological resilience. This report focuses on the assessment of biodiversity within 10 km radius study area of the project site and explores the potential impacts arising from the project activities. Furthermore, it aims to propose mitigation measures that can help conserve and protect biodiversity, ensuring the sustainable coexistence of the cement and mine project and the surrounding natural environment.

Objectives of the Study

The primary objective of the current study is to conduct an observation, documentation, and evaluation of the environmental impact within a 10 km radius study area of the project site. The survey conducted also focuses on describing the terrestrial and aquatic flora and fauna, with particular emphasis on identifying and studying Rare, Endangered, and Threatened species in the study area.

The present study was undertaken with the following objectives:

i. To Carry out Primary field survey of flora and fauna and ecologically sensitive natural habitats in the study area.
ii. To understand the spectrum of domesticated and wild biodiversity of the study area.
iii. To study the likely impacts of the proposed project on the local biodiversity, and to suggest mitigation measure, if required, for threatened biota.
iv. To assess the nature and distribution of vegetation (Terrestrial and Aquatic) in and around the plant area.
v. To enumerate Endemic, Rare, Endangered and Threatened (RET Species), separately for core and buffer area, based on primary field surveys and clearly indicating the Schedule of fauna present as per Wildlife Protection Act, 1972 and amendment in Wildlife (Protection) Amendment Act, 2022. In case any Scheduled- I fauna occur in the study area, the conservation plan along with budgetary provisions for their conservation is to be prepared in consultation with the State Forest and Wildlife Department.

2.13 STUDY OF FLORA & FAUNA

To conduct a thorough study of the flora and fauna in the designated area, we embarked on several field visits, meticulously documenting our findings in a qualitative

checklist. To ensure the accuracy and comprehensiveness of our study, consulted a wide range of primary and secondary sources, including the Forest Working Plan and local experts.

The present study was carried out in steps as mentioned below:

a. Floral Study

i. Our comprehensive survey of the flora in the project area was conducted through extensive fieldwork. The study was conducted and the plant species were meticulously identified with the aid of available literature, consultations with the forest department, and local experts from the study area.

ii. To ensure the accuracy of our survey, we employed a combination of ocular assessment and visual encounter surveys in both the core and buffer zones of the study area.

iii. Following our thorough fieldwork in both the core and buffer zonesd, we compiled a detailed floral inventory, encompassing a comprehensive list of all plants in the study area and their respective habitats.

iv. In addition to documenting the plant species, we also took note of the animal communities present in the study area. This allowed us to gain a holistic understanding of the ecological dynamics at play within the region.

b. Survey and Sampling of Plant Species Diversity

i. The site selection process for our study involved careful consideration of multiple criteria. Meanwhile, the buffer study area extends up to 10 km radius from the proposed project site.

ii. To gain a comprehensive understanding of the surrounding environment, wind rose diagrams of study area for understating the wind patterns in the vicinity.

iii. Survey methodology involved detailed observations of topography, land use, vegetation patterns, and more. We conducted thorough inventorying of different species by examining natural vegetation, road-side plantations, and non-forest areas such as agricultural fields, village waste land, and other plain areas.

iv. In order to systematically study both herbaceous and woody vegetation, standardized methods of vegetation analysis, such as Quadrate sampling has been used. To determine the composition and richness of the vegetation in a detailed and accurate manner.

c. Estimation of Fanatic Components

i. A comprehensive survey of the fauna inhabiting the area was conducted using a combination of trekking and vehicular transect methods to identify various animal

groups, including butterflies, insects, birds, reptiles, amphibians, and mammals. Standard monographs were used to accurately identify the fauna.

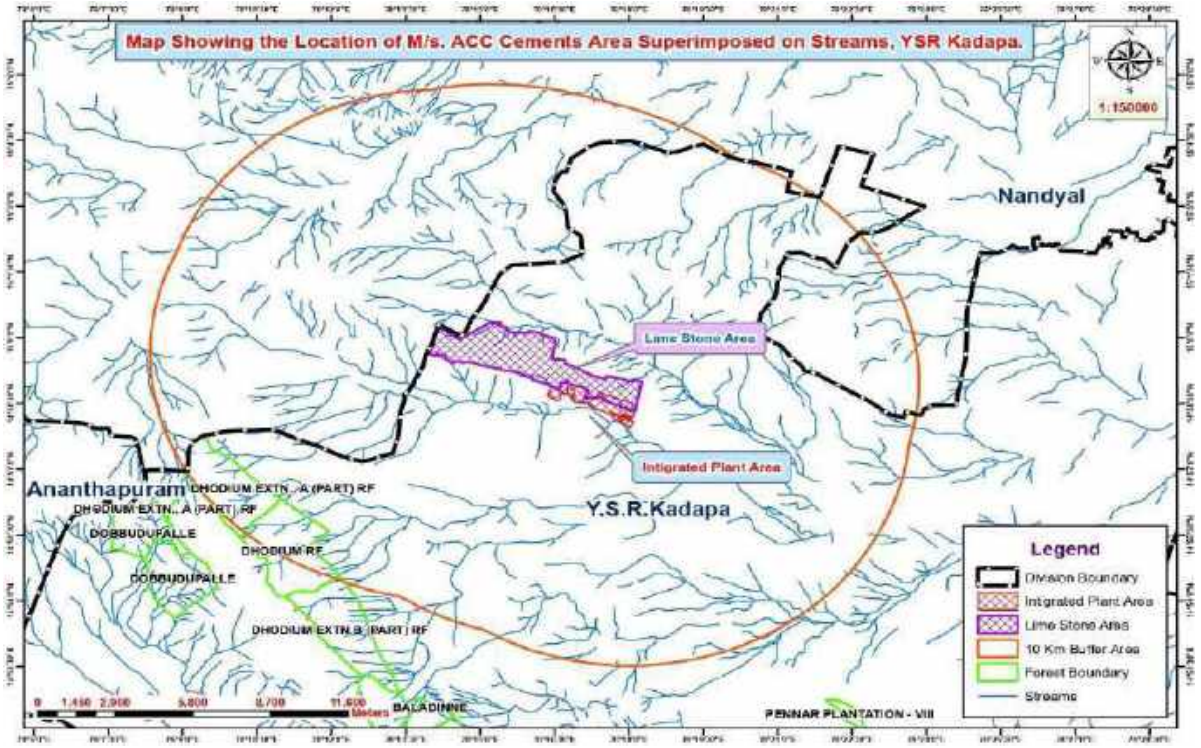
ii. To study the avifauna diversity, the Visual Encounter Survey (VES) technique was employed during the morning (between 5:30 and 9:30 a.m.) and evening (between 4:30 and 7:00 p.m.) hours, when bird activity is at its peak. If there

iii. Species of mammals, reptiles, amphibians, and others were recorded using various techniques, such as calls, droppings, burrows, pug marks, indirect species-specific evidence, and by inquiring with local people. Actual sightings were also recorded.

iv. A survey was conducted during the period just before dusk until 10:30 p.m. to study nocturnal animals. The light trap method was used to determine insect diversity.

v. A trekking route map was prepared for the study of biological diversity through ground survey.

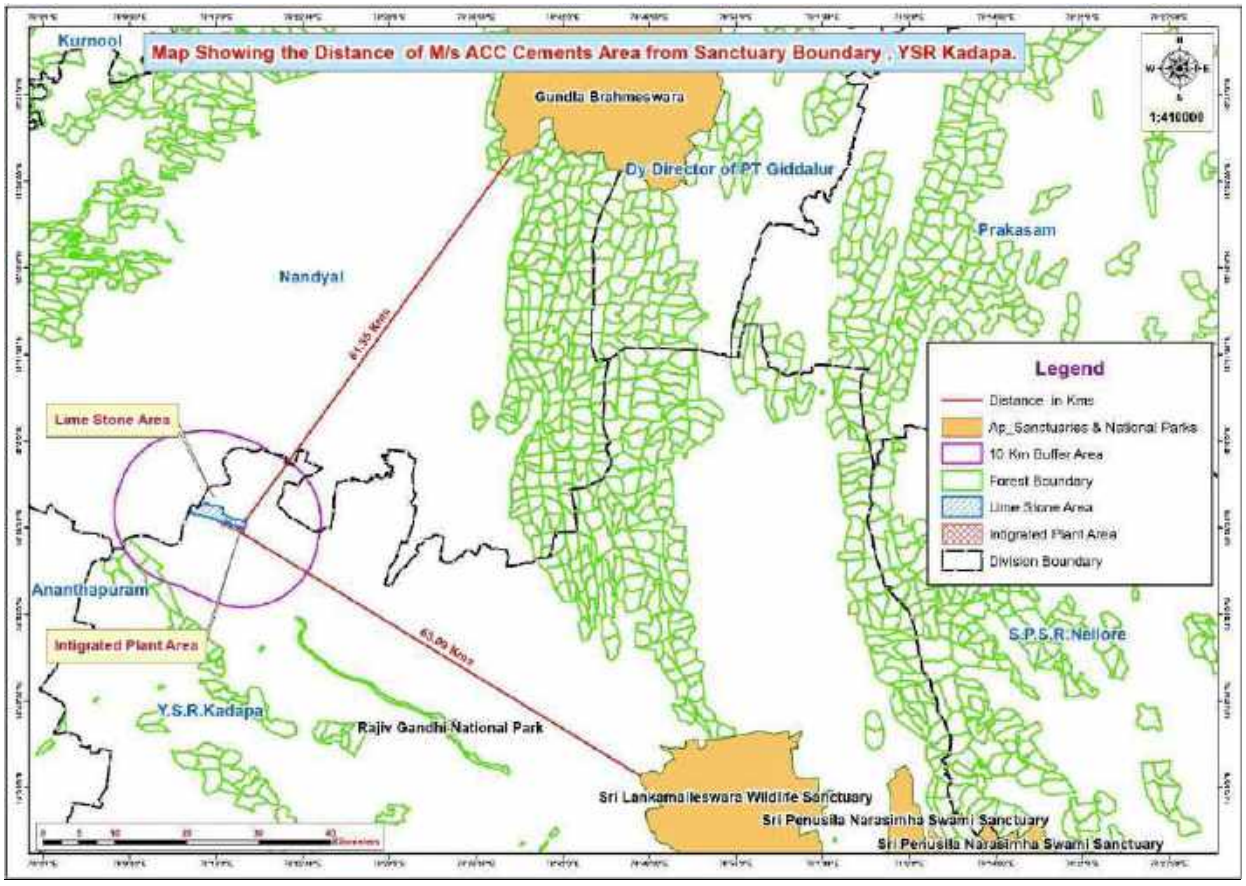
vi. A photo documentation of all the floral and faunal species, along with the cropping patterns, was meticulously carried out.



CHAPTER 3

3.1 BIOLOGICAL DIVERSITY:

Biological Diversity encompasses all species of plants, animals and microorganisms and the ecosystem and ecological processes of which they are parts. It covers even hydrological, geological, and terrestrial systems. Biodiversity is a synonym for the variety and variability of all life forms on this earth. Biodiversity consists of diversity among the wealth of species, diversity within species (variety, genetic variability), and ecosystem diversity. The main strategy for conserving biodiversity had been through protection of viable areas of habitats and eco-systems.



Floral Diversity -

Within the Core and buffer zone of proposed project site, a total of 60 species of trees, 46 species of Shrubs, 60 species of Herbs, 18 species of climbers, 13 types of grasses and 45 aquatic species were recorded and observed within the studied area based on primary observation as well as based on information collected from the secondary data.

Faunal Diversity-

Among faunal diversity, within the 10 km radius of buffer zone, 10 species of mammals, 11 species of reptiles & amphibians and 15 species of Butterfly & Arthropods were recorded whereas in core zone, 07 species of mammalian, 6 species of reptiles & amphibian's and 8 species Butterfly & Arthropods of were recorded and observed within the 10 km study area. Among avifauna (Birds), 90 species were recorded in buffer zone and 11 species were recorded in core zone.

In Aquatic Species diversity, 17 species of fishes, 8 species of Aquatic Arthropods and 3 species of Mollusca were reported in 10 km radius of project sites.

Now, subsequent to the implementation of The Wildlife (Protection) Amendment Act, 2022 dated 19th Dec., 2022 which came into force from 1st April, 2023 as per the MoEF&CC Notification vide S.O. 1394(E) dated 22nd March 2023, there are sixteen listed faunal species present within 10 km radius study area, are now classified as Schedule – I species.

FLORA:

S.NO	FAMILY	COMMON NAME	SCIENTIFIC NAME	TYPE
1	Combretaceae	Arjun	Terminalia arjuna	Tree
2	Myrtaceae	Black plum	Syzycium cumini	Tree
3	Rutaceae	Wood tree apple	Limonia acidissima	Tree
4	Fabaceae	Rose wood	Dalbergia latilofia	Tree
5	Mimosoideae	Robber thorn	Vachellia horrida	Tree
6	Fabaceae	Black locust	Robinia pseudoacacia	Tree
7	Maivceae	Potia	Thespesia populnea	Tree
8	Leguminosae	Anjan	Hardwicka binnata	Tree
9	Euphorbiaceae	White catamaran	Givotia moluccana	Tree
10	Malvceae	Dhaman	Grewia tilifolia	Tree
11	Fabaceae	Acacia sandra	Pterocarpus Santalinus	Tree
12	Myrtaceae	Cambi gum		Tree
13	Fabaceae	Bidi leaf	Bauhinia racemosa	Tree

14	Fabaceae	Golden shower	Cassia fistula	Tree
15	Rubiaceae	Bur flower tree	Neolamarckia kadamba	Tree
16	Malvceae	Cotton tree	Bombax ceiba	Tree
17	Fabaceae	Acacia sandra	Senegalia catechu	Tree
18	Rutaceae	East Indian satin wood	Chloroxylon swietenia	Tree
19	Celastraceae	Thorny staff	Meytenus senegalensis	Tree
20	Lamiaceae	Goda	Vitex peducularis	Tree
21	Rubiaceae	kommi	Chomelia asiatica	Tree
22	Rharnnaceae	Indian jujube	Ziziphus mauritiana	Shrub
23	Verbenaceae	Common lantana	Lantana camara	Shrub
24	Acanthaceae	Porcupine flower	Barleria prionitis	Shrub
25	Rharnnaceae	Jackal jujube	Zizyphus oenoplea	Shrub
26	Sapindaceae	Common hop bush	Dodonaea viscosa	Shrub
27	Dacrymycetaceae	Gumdrop	Ziziphus obutusifolia	Shrub
28	Rubiaceae	Gummy gardenia	Gardenia gumnnifera	Shrub
29	Apocynaceae	Christ's thorn (kalivi)	Carrissa carandus	Shrub
30	Rharnnaceae	Jhar beri	Zizyphus nummularia _	Shrub
31	Rharnnaceae	Kath ber	Ziziphus xylopyrus	Shrub
32	Amaranthaceae	Thorny amaranth	Amaranthus spinoses	Herb
33	Amaranthaceae	Mountainknot grass	Aerva lanata	Herb
34	Nyctaginaceae	Spreading hogweed	Boerhavia diffusa	Herb
35	Asteraceae	Tridax daisy	Tridax procumbens	Herb
36	Acalyphimae	Indian acalpha	Acalypha indica	Herb
37	Euphorbiaceae	Jungle tulsi	Ocimum gratissimum	Herb
38	Convolvulaceae	Hedge bindweeds	Calystegia sepium	Herb
39	Asteraceae	False golden asters	Heterotheca villosa	Herb
40	Dogbanes	Indian sarsaparilla	Hemisdescus indicus	Herb

CLASS: MAMMALIA

Sl. no	Family	Common Name	IUCN Status	Wildlife Protection Act 2022
1	Sciuridae	Three striped palm squirrels	LC	Schedule II
2	Bovidae	Four horned Antelope	VU	Schedule I
3	Canidae	Asiatic Wild Dog	EN	Schedule I
4	Cercopithecida	Bonnet Macaque	VU	Schedule I
5	Cervidae	Spotted Deer	LC	Schedule II
6	Cervidae	Sambar	VU	Schedule I
7	Eupleridae	Indian grey Mongoose	LC	Schedule I
8	Leporids	Black Naped Hare	LC	Schedule II
9	Ursidae	Sloth Bear	LC	Schedule I
10	Suidae	Indian Wild Boar	LC	Schedule II
1 I	Viverridae	Small Indian Civet	LC	Schedule I
12	Viverridae	Masked Palm Civet	LC	Schedule I
13	Canidae	Golden Jackel	LC	Schedule I
14	Funambulus palmarum	Indian Palm Squirrel	LC	Not listed
15	Mus musculus	House Mouse	LC	Not listed
16	Golunda ellioti	Indian Bush Rat	LC	Not listed
17	Rattus rattus	House Rat or Black Rat	LC	Not listed
18	Pipistrellus coromandra	Indian Pipistrelle	LC	Not listed
19	Pipistrellus tenuis	Indian Pygmy Bat	LC	Not listed
20	Pipistrellus eeylonicus	Kelaart's Pipistrelle	LC	Not listed

CLASS: REPTILIA

1	Colubridae	Daudin's Bronze back	Dench-elaphis tristis	LC	Schedule II
2	Colubridac	Bengal Monitor Lizard	Varanus bengalensis	NT	Schedule I
3	Agarnidae	Changeable Garden Lizard	Calotes versieolor	LC	Not listed
4	Testudinid ae	Indian Star Tortoise	Geoehelane elegans	VU	Schedule I
5	Scincidae	Common Dotted Garden skink	Livgasonia punctata	LC	Not listed
6	Colubridae	Indian rat snake	Ptyas mucosa	LC	Schedule I
7	Colubridae	Checkered Keeback	Fowlea piseator	LC	Schedule I
8	Colubridac	Buff-striped keel	Amphiesma Stolatum	LC	Schedule II

CLASS-AMPHIBIANS

1	Bufonidae	Common Indian Toad	Duttaphrynus melanostietus	LC	Not listed
2	Dicrogloss idae	Indian pond frog	Euphlyclis hexadaaylus	LC	Schedule II
3	Dicrogloss idae	Indian Bull frog	Hoplobatrachus tigerinus	LC	Schedule II
4	Dicrogloss idae	Indian skittering Frog	Euphlycius cyanophylyctus	LC	Schedule II
5	Bufonidae	Ferguson's toad	Duttaphrynus Scaber	LC	Not listed
6	Bufonidae	Marbeled toad	Duttaphrynus stotnaticus	LC	Not listed
7	Mycroltdid ae	Ornate-narrow mouthed frog.	Microhyla ornata	LC	Not listed

CLASS: AVIAN FAUNA

Sl no	Family	Common name	IUCN status	Wildlife Protection Act
1	Ardeidae	Indian Pond Heron	LC	Schedule II
2	Ardeidae	Cattle Egret	LC	Schedule II
3	Ciconiidae	Painted Stork Mycteria	NT	Schedule II
4	Accipitridae	Shikra	LC	Schedule I
5	Accipitridae	Black-winged Kite	LC	Schedule II
6	Accipitridae	Black Kite	LC	Schedule II
7	Phasianidae	Grey Francolin	LC	schedule II
8	Phasianidae	Grey Junglefowl	LC	schedule I
9	Phasianidae	Indian Peafowl	LC	Schedule I
10	Phasianidae	Red Spurfowl	LC	Schedule II
11	Turnicidae	Yellow-legged Buttonquail	LC	Schedule II
12	Rallidae	White-breasted waterhen	LC	Schedule II
13	Burhinidae	Indian thick knee	LC	Schedule II
14	Charadriidae	Red-wattled Lapwing	LC	Schedule II
15	Columbidae	Eurasian Collared Dove	LC	Schedule II
16	Columbidae	Laughing Dove	LC	Schedule II
17	Columbidae	Spotted Dove	LC	Schedule II
18	Psittaculidae	Rose-ringed Parakeet	LC	Schedule II
19	Cuculidae	Greater Coucal	LC	Schedule II
20	Cuculidae	Asian Koel	LC	Schedule II
21	Cuculidae	Common Hawk-Cuckoo	LC	Schedule II
22	Cuculidae	Blue-faced Malkoha	LC	Schedule II
23	Dicruridae	Greater-Racket Tailed Drongo	LC	Schedule II
24	Strigidae	Spotted Owlet	LC	Schedule I
25	Caprirnulgidae	Common Indian Nightjar	LC	Schedule II
26	Apodidae	Asian Palm Swift	LC	Schedule II
27	Alcedinidae	White-throated Kingfisher	LC	Schedule II
28	Meropidae	Green Bee-eater	LC	Schedule II
29	Coraciidae	Indian Roller	LC	Schedule II
30	Upupidae	Common Hoopoe	LC	Schedule II
31	Flucerotidae	Indian Grey Hornbill	LC	Schedule I
32	Picidae	Lesser Goldnback Woodpecker	LC	Schedule II
33	Hirundinidae	Barn Swallow	LC	Schedule II
34	Motacillidae	Paddy-field pipit	LC	Schedule II
35	Motacillidae	White-browed wagtail	LC	Schedule II
36	Vangidae	Common Woodshrikc	LC	Schedule II

37	Monarchidae	Indian Paradise- flycatcher	LC	Schedule II
38	Rhipiduridac	White-browed Fantail	LC	Schedule Il
39	Pycnonotidae	Red-vented Bulbul	LC	Schedule Il
40	Pycnonotidac	Red-whiskered Bulbul	LC	Schedule II
41	Pycnonotidae	White-browed Bulbul	LC	Schedule II
42	Aegithinidae	Common bra	LC	Schedule II
43	Laniidae	Bay-backed Shrike	LC	Schedule II
44	Laniidae	Long-tailed Shrike	LC	Schedule Il
45	Muscicapidae	Oriental Magpie-Robin	LC	Schedule II
46	Muscicapidae	Pied Bushchat	LC	Schedule II
47	Muscicapidae	Indian Robin	I,C:	Schedule II
48	Muscicapidae	Asian Brown Flycatcher	LC	Schedule II
49	Leiothrichidae	Jungle Babbler	LC	Schedule II
50	Leiothrichidae	Large Grey Babbler	LC	Schedule II
51	Leiothrichidae	Yellow-billed Babbler	LC	Schedule II
52	Cisticolidae	Ashy Prinia	LC	Schedule II
53	Cisticolidae	Jungle Prinia	LC	Schedule II
54	Cisticolidae	Common Tailorbird	LC	Schedule II
55	Nectariniidae	Purple Sunbird	LC	Schedule II
56	Nectariniidae	Purple-rumped Sunbird	LC	Schedule II
57	Dicaeidae	Pale-billed Flowerpecker	LC	Schedule II
58	Oriolidae	Indian Golden Oriole	LC	Schedule II
59	Dicruridae	Black Drongo	LC	Schedule II
60	Dicruridae	Ashy Drongo	LC	Schedule II
61	Dicniridae	White-bellied Drongo	LC	Schedule II
62	Corvidae	Jungle Crow	LC	Schedule II
63	Corvidae	House Crow	LC	Schedule II
64	Corvidae	Rufous	LC	Schedule II
65	Sturnidae	Treepie Common Myna	LC	Schedule II
66	Ploceidae	[lava Weaver	LC	Schedule II

CLASS: BUTTERFLIES

SL. no	Family	Scientific Name	Common Name	IUC N Status	Wildlife Protection Act 2022
1	Papilionidae	Graphiurn agamemnon	Tailed Jay	LC	
2	Papilionidae	Graphium Boson	Common Jay	LC	
3	Papilionidae	Pachliopta aristolochioe	Common Rose	LC	
4	Papilionidae	Pochliopto hector	Crimson Rose	LC	Schedule II
5	Papilionidae	Popilio polymnestor	Blue Mormon	LC	
6	Papilionidae	Papllio palytes	Common Mormon	LC	
7	Papilionidae	Papilio crino	Common banded Peacock	LC	Schedule II
8	Papilionidae	Princeps demoleus	Lime Butterfly	-	
9	Papilionidae	Graphium .sarpedon	Common bluebottle	LC	Schedule II
10	Papilionidae	Chilasor clytia	Common mime	-	
11	Pieridae	Cotopsilia crocale	Common Emigrant	-	
12	Pieridae	Catopsilia pyranthe	Mottled emigrant	NE	
13	Pieridae	Colotis eucharis	Plain orange tip	EN	
14	Pieridae	Ceporaerissa	Common gull	EN	Schedule I
15	Pieridae	Delius eucharis	Common Jezbel	-	
16	Pieridae	Eurema hecabe	Common grass yellow	-	
17	Pieridae	Valeria valeria artais	Common Wanderer	-	
18	Pieridae	Eurerna brigitta	Small grass yellow	LC	
19	Pieridae	lxias pyrene	Yellow orange tip	-	
20	Pieridae	Eurema blanda	Three spot grass yellow	-	
21	Pieridae	Ccit-opsilla Pomona	Lemon emigrant	-	
22	Nyrnphalidae	Danaus chrysippus	Plain tiger	LC	
23	Nymphalidae	Dunaus genutia	Striped Tiger (Common Tiger)	-	

24	Nymphalida	Euploea core	Common crow	LC	
25	Nymphalidae	Melantis leda	Common evening brown	-	
26	Nymphalidae	Ariadne merione	Common castor	-	
27	Nyrnphalidae	Neptishylas	Common sailer	-	
28	Nymphalidae	Bybila ilithyla	Joker	-	
29	Nymphalidae	Hypolirnnas bolina	Great egg fly	-	
30	Nymphalidae	Hypolomnas misippus	Danaid egg fly	LC	Schedule II
31	Nyrnphalidae	Junonia lemonias	Lemon pansy	-	
32	Nymphalidae	Junanio orithyla	Blue pansy	LC	
33	Nymphalidae	Junonion iphito	Chocolate pansy	NE	
34	Nymphalidae .	Junania almanac	Peacock pansy	LC	
35	Nymphalidae	Acraea terpsicore	Tawny coster	-	
36	Nymphalidae	Melantis phedima	Dark evening brown	-	

CHAPTER 4

4.1 CONSERVATION VALUE OF THE FAUNA.

A detailed biological study of the study area, Core zone and Buffer zone (10km radius from the periphery of the mine lease) was carried out by the Green Tech Solutions and the details of flora and fauna were mentioned in Chapter 3, out of the total 100+ faunal species (20+) species are classified as Schedule I fauna and conservation measures discussed in the Plan.

The following Schedule I species are found within 10 km radius from the project site at YSR Kadapa district of Andhra Pradesh.

S.No	Species Common Name	Category under WLP, 2022
1	Four horned Antelope	Schedule I
2	Asiatic Wild Dog	Schedule I
3	Bonnet Macaque	Schedule I
4	Sloth Bear	Schedule I
5	Indian grey Mongoose	Schedule I
6	Small Indian Civet	Schedule I
7	Masked Palm Civet	Schedule I
8	Golden Jackel	Schedule I
9	Bengal Monitor Lizard	Schedule I
10	Indian Star Tortoise	Schedule I
11	Indian rat snake	Schedule I
12	Checkered Keeback	Schedule I
13	Shikra	Schedule I
14	Grey Junglefowl	Schedule I
15	Indian Peafowl	Schedule I
16	Indian Grey Hornbill	Schedule I

FOUR HORNED ANTELOPE

Characteristics



The four-horned antelope (Tetracerus quadricornis), also called chousingha, is a small bovid antelope native to central, South and Western India, along with a smaller population in Nepal. The sole member of the genus Tetracerus, the chousingha was first described in 1816 by French zoologist Henri Marie Ducrotay de Blainville. Three regional subspecies are currently recognised. The four-horned antelope has a yellowish-tan, sometimes reddish or goldenrod coat. It is slender with thin legs and a short tail. It stands nearly 55–64 cm (22–25 in) at the shoulder and weighs about 17–22 kg (37–49 lb). Its four horns are unique among antelopes and distinguish it from most other bovids.

DISTRIBUTION AND HABITAT

The four-horned antelope is confined to the Indian subcontinent, occurring widely in disjunct and small populations. It ranges from the foothills of the Himalayas in the north to the Deccan Plateau in the south. Most of the existing populations lives in India, and lower numbers in adjoining Nepal. Observations have been logged from the states of Andhra Pradesh, Chhattisgarh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra and Telangana.

REPRODUCTION

Breeding behaviour of the four-horned antelope has not been well studied. The age at which sexual maturity is gained is doubted; two captive females had their first parturition at less than two years.[2] The breeding season in Panna National Park probably lasts from May to July,[30] and from June to August in Mudumalai National Park.[31] The male approaches the female in a relaxed gait, giving out low coughs. The two may kneel and push against each other with the necks intertwined. The male makes a few short mounting attempts; the female may be foraging all the while without any reaction.

ASIATIC WILD DOG

Characteristics



The dhole's general tone of the fur is reddish, with the brightest hues occurring in winter. In the winter coat, the back is clothed in a saturated rusty-red to reddish colour with brownish highlights along the top of the head, neck and shoulders. The throat, chest, flanks, and belly and the upper parts of the limbs are less brightly coloured and are more yellowish in tone. The lower parts of the limbs are whitish, with dark brownish bands on the anterior sides of the forelimbs. The muzzle and forehead are greyish reddish. The tail is very luxuriant and fluffy, and is mainly of a reddish-ocherous colour, with a dark brown tip. The summer coat is shorter, coarser and darker.

Ecology and behaviour

Dholes produce whistles resembling the calls of red foxes, sometimes rendered as *coo-coo*. How this sound is produced is unknown, though it is thought to help in coordinating the pack when travelling through thick brush. Other sounds include whines (food soliciting), growls (warning), screams, chatterings (both of which are alarm calls) and yapping cries. In contrast to wolves, dholes do not howl or bark.

Reproduction and development

In India, the mating season occurs between mid-October and January, while captive dholes in the Moscow Zoo breed mostly in February.[11] Unlike wolf packs, dhole clans may contain more than one breeding female.[94] More than one female dhole may den and rear their litters together in the same den. During mating, the female assumes a crouched, cat-like position. There is no copulatory tie characteristic of other canids when the male dismounts. Instead, the pair lie on their sides facing each other in a semicircular formation.

SLOTH BEAR

Characteristics



Sloth bears adults are medium-sized bears. The typical weight range for females is from 55 to 105 kg (121 to 231 lb), and for males is from 80 to 145 kg (176 to 320 lb). Exceptionally large female specimens can reach 124 kg (273 lb) and males up to 192 kg (423 lb). The average weight of sloth bears from the nominate subspecies in Nepal was 95 kg (209 lb) in females and 114 kg (251 lb) in males. Nominate bears in India were found to weigh average 93.2 kg (205 lb) in males and 83.3 kg (184 lb) in female per one study.

Distribution and habitat

The sloth bear's global range includes India, the Terai of Nepal, temperate climatic zones of Bhutan and Sri Lanka. It occurs in a wide range of habitats including moist and dry tropical forests, savannahs, scrublands and grasslands below 1,500 m (4,900 ft) on the Indian subcontinent, and below 300 m (980 ft) in Sri Lanka's dry forests. It is regionally extinct in Bangladesh.

Behaviour and ecology

Adult sloth bears may travel in pairs. Males are often observed to be gentle with cubs. They may fight for food. They walk in a slow, shambling motion, with their feet being set down in a noisy, flapping motion. They are capable of galloping faster than running humans.

Reproduction

Seven-day-old bear cubs, rescued from a building site where they had been bornA mother with a cub on her back at the Daroji Sloth Bear Sanctuary, India. The breeding season for sloth bears varies according to location: in India, they mate in April, May, and June, and give birth in December and early January, while in Sri Lanka, it occurs all year.

PEACOCKS



Peacocks are a larger sized bird with a length from bill to tail of 100 to 115 cm (39 to 45 in) and to the end of a fully grown train as much as 195 to 225 cm (77 to 89 in) and weigh 4–6 kg (8.8–13.2 lb). The females, or peahens, are smaller at around 95 cm (37 in) in length and weigh 2.75–4 kg (6.1–8.8 lb). Indian peafowl are among the largest and heaviest representatives of the Phasianidae. So far as is known, only the wild turkey grows notably heavier. The green peafowl is slightly lighter in body mass despite the male having a longer train on average than the male of the Indian species.

Distribution and habitat

The Indian peafowl is a resident breeder across the Indian subcontinent and inhabits the drier lowland areas of Sri Lanka. In the Indian subcontinent, it is found mainly below an elevation of 1,800 m (5,900 ft) and in rare cases seen at about 2,000 m (6,600 ft). It is found in moist and dry-deciduous forests, but can adapt to live in cultivated regions and around human habitations and is usually found where water is available.

Feeding

Peafowl are omnivorous and eat seeds, insects (including termites), worms, fruits, small mammals, frogs, and reptiles (such as lizards). They feed on small snakes but keep their distance from larger ones. In the Gir forest of Gujarat, a large percentage of their food is made up of the fallen berries of Zizyphus. They also feed on tree and flower buds, petals, grain, and grass and bamboo shoots.

Mortality factors

Large animals such as leopards, dholes, golden jackals, lions, and tigers can ambush adult peafowls. However, only leopards regularly prey upon peafowls as adult peafowls are difficult to catch since they can usually escape ground predators by flying into trees. They are also sometimes hunted by large birds of prey such as the changeable hawk-eagle and rock eagle-owl. Chicks are somewhat more prone to predation than adult birds.

CHAPTER 5

ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATIVE MEASURES

There are two types of impacts that occur due to construction and operation of projects viz.,permanent which generally lead to loss of plant species, change of land-use, etc. which can be compensated/managed and temporary which can be minimized and mitigated.

Based on the project details and the baseline environmental status, potential impacts of the construction and operation of the proposed Plan and Mine Project have been identified. Wherever possible, the impacts have been quantified and otherwise, qualitative assessment has been undertaken. Environmental protection measures can be best enforced through the inclusion of relevant clauses in the contract not only for the main contractors but also for subcontractors as most activities are undertaken through various contractors.

5.1 Impacts on Air Quality

The sources and activities that might affect air quality in the project area are vehicular traffic, dust arising from unpaved village roads and domestic fuel burning. The air environment around the project site is free from any significant pollution source. Therefore, ambient air quality is quite good in and around the project area. Increased vehicular movement for transportation of man and material and use of construction equipment will impact air quality at the construction site through emissions from the engines and equipment, fugitive emissions due to material handling, etc. Additionally, construction activities including operation of crushers, concrete batch plants, construction work and movement of vehicles along unpaved road will generate dust & gaseous emission and impact air quality. The operation of various construction equipment requires combustion of fuel. Normally, diesel is used in such equipment. Diesel exhaust contains various types of organic and inorganic pollutants, whose concentration depends upon fuel quality and engine running conditions. During construction phase, there will be increased vehicular movement. Lot of construction material like sand, fine aggregate is stored at various sites, during the project construction phase. Normally, due to blowing of winds, especially when the environment is dry, some of the stored material can get

entrained in the atmosphere. The burning of waste will also affect air quality and therefore needs to be controlled. In absence of proper fuel, construction workers at the project site may use wood for fuel burning.

In Mine area air pollution occurs mainly during project construction phase. During operation phase, no major impacts are envisaged on the air environment.

5.2 Impact on Noise Environment:

Sources of noise will be increased vehicular traffic due to project construction on approach roads and at construction sites. Due to construction activity in the area, noise levels will increase during the period of construction, however, they will remain limited to the work area mainly where large-scale construction activity will progress. Other sources of noise and vibration will be the use of explosives for blasting purposes for construction activities. During construction phase, there will be an increase in vehicular movement for transportation of construction material in and around the project sites. During construction phase, the increase in vehicular movement is expected to be at least 5-6 trucks/hour during peak construction period. The impact on noise level due to increased vehicular movement cannot be quantified as it will depend upon various factors such as vehicle condition, vehicle speed, road condition, idling time, traffic condition, etc. Noise generated by blasting is instantaneous in nature. Noise generated due to blasting is site specific and depends on type, quantity of explosives, dimension of drill hole, degree of compaction of explosives in the hole and rock. The effect of high noise levels on the operating personnel has to be considered as this may be particularly harmful. It is known that continuous exposure to high noise levels above 90 dB(A) affects the hearing ability of the workers/operators and hence, should be avoided.

5.3 Impacts due to Ground Vibrations

The explosive energy generated during blasting sets up a seismic wave within the surface, which may affect the structures and cause discomfort to human population. When an explosive charge is fired in a hole, stress waves traverse in various directions, causing the rock particles to oscillate. Blasting also generates ground vibrations and instantaneous noise. Various measures have been recommended to

minimize the adverse impacts due to blasting:

- Proper design of blast hole to be developed.
- Use of noiseless trunk delays to minimize the noise due to air blast.
- Use of non-electric system of blasting for true bottom-hole initiation.
- Use of muffling mats to arrest the dust and fly rock.

Noise in and around the construction site has the potential to affect the wildlife and residentsin the nearby areas. Typically, wildlife in the area will likely move away from the noise and eventually return to the area when the blasting is over. However, there is no major wildlife observed in and around the construction site and hence this may not be a significant issue.

5.4 Impacts of water pollution

Water pollution is harmful and is a serious health hazard. It has far-reaching consequences andeffects on human beings and animals also. The effect can be felt not only in the surface water bodies but also the ground water source in the area. Various sources of water pollution in the project area during the construction phase include disposal of effluents with high turbidity from crushers commissioned at various sites, sewage disposal from labour camp, blasting and other land clearing activities, washing of oil, grease and other chemicals from diesel generator sets, vehicles, and other machinery etc. During construction phase, wastewater, sewage etc., shall be generated from the labour camp and workshops. If disposed untreated, this would substantially deteriorate the surface and ground water quality in the area. The oil and grease released from the project related activities may also change the physico-chemical characteristics of water. The major sources of water pollution during project construction phase are Sewage from Construction work camps/colonies, Effluent from Construction Plants and Workshops and Disposal of muck.

5.6 Impact on Flora and Fauna

a) Impact on Terrestrial Flora

The proposed project is located within the Tarimela Reserve Forest. The change in land use pattern of the area will result in the loss of area 460 Ha. out of which about 320 Ha is forest land in Tarimela Reserve Forest and other area is private land. The Wildlife conservation Planminimizes the impact on forest cover will be minimized.

The direct impact of construction activity is generally limited to the vicinity of the constructionsites only. As mentioned earlier, a large population of people are likely to congregate in the area during peak project construction phase. The workers and other population groups residing in the area may use fuel wood, if no alternate fuel is provided. Hence, to minimize such impacts, it is proposed to provide alternate fuel for cooking e.g. LPG/kerosene to the construction workers. The other alternative is to provide community kitchens on a cooperative basis by the contractor.

b) Impact on Terrestrial Fauna

Forest cover in the vicinity of proposed project working sites and their immediate vicinity is comprised of deciduous forest with agriculture as next pre-dominant land use type. 12 speciesof mammals, 33 species of herpetofauna and 53 species of avifauna have been compiled fromthe study area. The acquisition of forest land from Tarimela Block will cause disturbance to wildlife habitat.

In addition, during construction period, large number of machinery and construction workersshall be mobilized, which may create disturbance to wildlife population in the vicinity of project area. The operation of various equipment will generate significant noise; noise and vibration will also increase during blasting which will have adverse impact on fauna of the area. The noise may scare the fauna and force them to migrate to other areas. Likewise, the setting of construction plants, workshops, stores, labour camps etc. could also lead to adverse impact on fauna of the area. During the

construction phase, accessibility to the area will lead to an influx of workers and the people associated with the allied activities from outside will also increase. Increase in human interference will have an impact on the terrestrial ecosystem.

Therefore, adequate measures will be required during the construction phase not to cause any adverse impact on terrestrial and avifaunal population. Impact of blasting and other construction activities needs to be mitigated by adopting controlled blasting and strict surveillance regime and the same is proposed to be used in the project. This will reduce the noise level and vibrations due to blasting to a great extent.

5.7 Impacts on Socio-economic Environment

A project of this magnitude is likely to entail both positive as well as negative impacts on the socio-cultural fabric of the area.

a) Positive Impacts on Socio-Economic Environment

The following positive impacts are anticipated on the socio-economic environment of the local people of villages of project area during the project construction and operation phases:

I. A few marginal activities and jobs would be available to the locals during construction phase.
II. Developer bringing large scale investment to the area will also invest in local area development and benefit will be reaped by locals. Education, medical, transportation, road network and other infrastructure will improve.
III. The availability of alternative resources provided by developer in the rural areas will reduce the dependence of the locals on natural resources such as forest.

b) Negative Impacts on Socio-Economic Environment

Such projects, in addition, to positive impact on socio-economic environment may also bring certain negative impact due to influx of outside population. Workforce for construction activities will reside in that area for around three years and also there will be influx of drivers and other workers on temporary basis.

Villagers in the area also depend on forest resources for their day by day needs, other than fodder and fuel, villagers also collected NTFP from the forest area. Scrub forest in the area also used as grazing land for livestock's. Loss of forest and grazing land have impact on social environment of the area. Loss of natural habitat will also lead to human wildlife conflict by means of damage of agriculture crops. This influx of people in otherwise isolated area may lead to various social and cultural conflicts during the construction stage. Developer need to take help of local leaders, Panchayat and NGOs to ensure minimum impact on this count.

5.8 Measures For Minimizing Adverse Impacts

Pollution generation mainly during construction phase will be in the form of air, water and noise pollution, which will be mitigated by adopting various mitigation measures during construction activities as discussed in later section under the head, "Mitigation Measures".

Impacts of projects such as muck generation, worker's health and safety, waste generation from labour colonies, impact on workers' health, impact of tree cutting for fuel, impact on physical environment due to material handling and operation of construction machinery, etc. will be minimized by implementing various management plans. Environmental Management Plans viz. Compensatory Afforestation Plan, Green Belt Development Plan, Landscaping & Restoration Plan, Muck Management Plan, Dam Break Modeling & Disaster Management Plan, Public Health Delivery Plan, Sanitation and Solid Waste Management Plan, Energy Conservation Measures and Biodiversity Management & Wildlife Conservation Plan have been prepared to address these specific impacts with a view to minimize adverse impacts.

During the construction stage of the project, raw material will be consumed as resources, which are in abundant supply. No impact is identified on any of the flora or fauna species which will make them extinct by the project. Land required for the project will undergo permanent change of land use. Forest land will be compensated for by compensatory afforestation and private land will be compensated as per the law. During the project operation, water will be the main raw material for Cement generation.

5.9 Mitigation Measures

Mitigation of construction-related impacts would be the responsibility of the project proponent (through its contractors). Air and water are two major environmental factors that are directly affected by any kind of construction activity. Transportation of material, storage and handling of material and construction operations lead to air and noise pollution. During construction period generation and release of effluents from construction site, workshops, sewage disposal from labour camp, blasting and other land clearing activities, washing of oil, grease and other chemical from diesel generator sets, vehicles and other machinery etc. cause water pollution and affect the quality of surface as well ground water.

The major air pollutants, which could be generally released during various construction activities and vehicular movements are Particulate Matter (PM), Sulphur oxide and Nitrous oxide. In addition to these construction activities also generate noise due to the use of heavy machinery, heavy vehicles, blasting, etc. which has serious impacts on humans as well as the wildlife of the area.

a) Control of Air Pollution

For the control of air pollution during construction phase of the project, it is suggested that it should be made mandatory for the contractor/s engaged in the construction worksto ensure the following conditions:

- The crushers should be provided with air pollution control devices as per the rules laid down by pollution control board, to minimize the release of PM into the atmosphere.
- The chimneys of the Diesel Generator Sets should be kept at appreciable height (as per the CPCB guidelines). The DG sets should be properly maintained and with valid certificates of Type Approval and valid certificates of Conformity of Production.

- Regular water sprays at the crushing sites, dumping sites as well as on roads should be ensured.
- Masks should be provided to the workers and staff.
- Proper ventilation facilities shall be provided inside the tunnel and at all the residentialcomplexes of the staff and labour.
- Ambient Air quality shall be monitored seasonally during the construction phase at different locations with the help of NABL accredited lab.
- Controlled blasting during construction activities will be ensured.

b) Control of Noise Pollution

Since continuous exposure to noise is detrimental to health, it is essential to control noise pollution. Various measures for control of noise pollution in the project area are suggested below:

- Diesel Generator sets should have acoustic enclosures to reduce the noise as per theCPCB guidelines.
- Ear protection aids such as ear plugs and earmuffs, must be provided to the workerswho must continuously work in the high noise area.
- Proper and regular maintenance/lubrication of machines should be done.
- Noise producing still machines (such as crushers, aggregate processing plants, etc.)should be provided with sound barriers, if close to habitation.
- Quieter machines and vehicles with high quality silencers should be used.
- Afforestation around the residential colonies and office complexes should be done asproposed under the Green Belt Development Plan.
- Ambient noise should be monitored periodically at different locations as outlined inthe Environment Monitoring Program.

c) Control of water pollution

To avoid deterioration of water quality of the receiving water body followingmeasures are suggested:

a. During Construction phase provision of Portal STP/septic tank/ soak pit etc., of adequate capacity for labour camp so that it can function properly for the entire

duration of construction phase.

b. Construction of settling tank to settle the suspended impurities from various sources i.e. HMP/ crushers, labour camps, etc. before discharging into the main stream.

c. During Operation, Commission of suitable treatment facilities to treat the sewage generated from the colony.

d. Provision of sedimentation cum grease traps at the outer mouth of drains located along workshops, fuel filling stations, diesel generator rooms etc. to prevent entry of contaminants to the water bodies.

e. Oil interceptors shall be provided for refuelling areas, vehicle parking, washing areas etc. All spills and collected petroleum products will be disposed of in accordance with SPCB guidelines.

5.10 Management Measures

a) Muck Management Plan

The construction activities would generate muck from excavation for various project structures. The total quantity of muck generated from soil and rock excavation shall be as perthe specified plan provided in the EIA of the Project.

b) Landscaping and Restoration of Construction Sites

During the construction phase of the project, number of temporary construction sites and working areas will come up. For the restoration of proposed project affected areas to its original landscape as much as possible and retain its aesthetic values. Various engineering and biological measures will be implemented for the restoration of proposed project affected areas.

c) Sanitation and Solid Waste Management

Solid waste generated from temporary and permanent colonies in construction as well as operation phase requires special management for disposal. The project authorities will ensure sewage generated from labour colonies and site office is treated and disposed of as per the SPCB guidelines. It is proposed to provide adequate septic tanks with soak pits for treatment and disposal of sewage. The waste generated from

the project area will be collected, segregated and disposed of in line with the provisions laid down in Solid Waste Management Rules, 2016.

d) Public Health Delivery system

Project construction and operation will bring about several changes in the socio-economic environment of the area including increased threats to health of the community.

i. New Diseases due to Migratory Population
ii. Chances of increase in water borne diseases as malaria, and dengue are high
iii. Chances of increase in respiratory troubles due to increase in suspended particles during the construction phase.
iv. Chances of occurrence of gastroenteritis, cholera, and typhoid in the labourcamps.

Medical services at secondary level play a vital and complimentary role to the tertiary and primary health care systems and together form a comprehensive district-based health care system. Following activities are proposed:

- Ambulance: 2 no. with all the basic Medicare facilities and small DG set, etc. to cater forvillages in the project area.
- Budget for running the ambulances including driver, fuel and maintenance for 3 years.
- First aid posts including sheds, furniture, and basic equipment.
- Budget for running the first aid post including cost of medico, para-medico/Nurses andattendant, consumables, etc. for 3 years.
- Budget for strengthening existing medical facilities.
- Budget for Health Awareness/ Vaccination Camps for 3 years.
- Mitigation measures to avoid spread of pandemic like COVID19 among workforce.

e) Energy Conservation Measures

The existing facilities will become insufficient for supply of kitchen fuel for the migrant population during the construction of the project. Therefore, the project authorities would make adequate arrangements such as Community kitchen, Supply of Kitchen fuel, efficient cooking facilities and solar lantern either directly by developer or through contractor to reduce the pressure on natural resources in the project area and minimize impacts on thiscount.

f) Labour Management Plan for their Health and Safety

Construction work has many associated risks and health impacts for the workers who aredirectly exposed to such health and safety risks. Therefore, there is a need to prepare complete health and safety documents for workers either by project proponent/contractor and proponent shall ensure its implementation. A detailed plan willbe prepared covering the above activities before start of construction work.

Finally Regarding the Biodiversity of the area, particularly of habitat and wildlife in the study area of the M/s ACC Cements, there are (20) Schedule species, details of species, managerial interventions are mentioned in the chapter 5 and 6 and financial projection for the wildlife conservation plan is given in Chapter 7. The proposed mitigation / Conservation measures and management plans shall be executed within the construction period. While the Wildlife Conservation Plan is planned for (10) years. All the activities proposed under Wildlife Conservation Plan for Schedule I species is being executed by StateForest Department.

CHAPTER 6

WILDLIFE CONSERVATION MEASURES IN THE STUDY AREA:

Managerial interventions

Forest areas are ecosystems that support a variety of life forms and there is an intricate relationship between different animal, plant, and microbial groups. The type of biota present in an ecosystem depends on the local edaphic and biotic factors. Nature maintains the ecological balance and disturbances like Mine area create imbalances in it. The details of the impacts of due operation in Mine have been dealt with in chapter 4.

Food, fodder, and water are main resources provided by the forests to the wild animals.Wild animals stray out of their habitat mainly in search of food and water normally in pinch periods of summer which period water and fodder resources are not either not available or less available in their Natural habitat i.e., Reserved Forests surrounding the min area. Therefore, mitigation measures must be prescribed to ensure wild animals especially the Schedule I species remain in their original habitat. As Mine and Plan in operation is a human induced disturbance, there is need to carry out certain management interventions in the nearby forest areas where these animals normally inhabit.

The managerial interventions include ensuring the availability of sufficient food, fodder and water in their native zone, ensuring protection from poaching, improving the habitat, providing artificial salt licks etc. The mitigation measures taken up in these forest blocks will facilitate the wild animals to remain in their natural habitat and prevent them from straying out of their habitat in search of water and food which may resulting in man animal conflicts. Hence conservation measures are proposed for the schedules – I Species in the Reserved Forest area falling in the impact zone.

The impact area is having open scrub lands with certain grass patches and some seasonal water sources in the area, but their distribution is not uniform my lead to competition between wild animals during summers and hence there is need to increase the quantum of grasslands and water sources in the Forest Blocks. The mitigation activities proposed will develop and enhance the carrying capacity of the habitat and in the long run, lead to

supporting a viable breeding population Schedule species in a sustainable manner. These blocks are interspersed with very good grassland patches along with xeric vegetation of *Zizyphus nummularia, Z.xylopyrus, Z. jujube, Carissa carandas, Acacia latronum, Buchanania lanzan, Acacia arabica, Acacia ferruginea, Albizia lebbeck, Acacia leucophloea, Albizia amara, Anona squamosa, Azadirachta indica, Carissa carandas, Dodonea viscosa, Embilica officinalis, Euphorbia antiquorum, Hardwickia binata,* etc.

There are (10) Schedule I species as per the Wildlife (protection) Act, 1972 in the study area. Though the list is long, most of the species survive in human dominated landscapes. These species mostly stay in the fringes of forests and accommodative with human disturbance to a certain extent. The main object of conservation in this specific study area is protect the area, conserve the area, or minimize the disturbance to reduce the human interference in the forest area and create awareness among the people, students and other stakeholders of the Study area. This is in addition to the provision of food, water, and space for wildlife species in the specified blocks. The other important aspect of conserving the species in the study area is to engage a Biologist or Research Scholar to study the status, distribution, threats and their breeding behaviour in the study area. The species are to be monitored regularly with suitable equipment and staff. To achieve these objectives the following conservation measures are suggested.

1. Creation and maintenance of grasslands
2. Providing Water Resources in the Reserved Forest and Soil Moisture Conservationworks in the Study area.
3. Provision of artificial saltlicks
4. Fire protection of vulnerable areas.
5. Afforestation in village woodlots, Avenues, Schools and Public places:
6. Payment of compensation for wildlife kills or crop damages.
7. Office support system.
8. Publicity and Awareness programme.
9. Research and Monitoring of Schedule Fauna and Flora.

Creation and maintenance of grasslands:

The grass lands in the Buffer area are very rich, having good palatable grasses, that's why the herbivore population is coming to the Buffer leaving the Reserved Forests. Department needs to improve the grasslands in the Reserved Forest areas. There must be a long-term plan for development of grasslands and water sources in the impact zone of the mine falling in the above forest blocks in an integrated manner. This is essential to mitigate the impacts due to Cement Plan and Mine through prudent management interventions. Grasslands form an important intervention, and they have to be carefully planned and maintained in a sustainable manner which involves concerted efforts by the department. The identification of proper locations for grassland development is a critical aspect of planning process. Activities spread over minimum 3 years to establish viable grasslands and water sources involving expenditure.

a. Grasslands development:

Suitable areas of plot size 3 ha each in 4 locations where grass availability is less need to be identified in prioritized Forests blocks in the impact area , the plots may be demarcated and ploughed depending of the possibility. Grasses like *Cenchrus ciliaris*, Themeda, Guinea grass, Brachiaria, Grazing guinea, Perennial fodder sorghum, Rhodes grass Legumes: *Stylosanthes scabra*, Hedge lucerne etc. are some of the suitable species. The grass plots can be enriched by dibbling with grass seed balls composed of *Dicanthium annulatum, Aristida species, Cenchrus ciliaris, Setaria pumilla, Setaria intermedia, Eragrostris uniloides, Apluda mutica, Panicum repens, Chloris barbeta, Heteropogan contortus, Chrysopogan fulvus, Themeda triandra, Themeda quadrivalvis and wild tuwar dal (Atlosia scorbioides*). They have to be broadcast sown at the rate of 3 to 5 kgs seeds / Ha during the months of May/June and weeding will be done twice a year i.e. after commencement of monsoon (Sept/ Oct) and (Nov/Dec) month. Exotics may be avoided as far as possible to prevent future problems. The treated grass plots will be maintained for three years until the entire area is covered with local palatable grass species.

b. Fruit /fodder bearing plantation development

This second treatment practice is for developing fruit bearing plantation method at 4 locations 2.5 ha each in all the (4) blocks of the Study area by planting pasture and fruit /fodder yieldingtrees in a surveyed and demarcated area in the study area. Planting of species like carissa caranda, ziziphus jujuba (Regu), *Sesbania grandiflora* (Avise), *Acacia nilotica* (Thumma), *Tamarindus indica* (chinta), *Syzygium cumini, Azadirachta indica (Vepa)* and other local fruit or fodder species Watering is also proposed to be done through tractor and tanker mounted on a trolly to be included in the plan and supplied by the M/s ACC Cements. Necessary budget provision shall be made .

1. Providing water resources and SMC works in the Study area and RFs surrounding it:

Soil and moisture conservation becomes important in any land development programme. Irrespective of the land use pattern, soil and moisture conservation measures taken up to improve the moisture availability in the area, arrest the erosion of soil and increase the productivity of the soil. In implementation of SMC works, emphasis is given to the drainage line treatment. SMC works carried out are site specific based on the topography, soil cover and other site conditions.

There are many seasonal nallas in buffer area and need for soil and moisture conservation work especially in the forests located around the villages. Soil and moisture conservation would help increasing moisture content in the soil, which would facilitate growth of natural vegetation. These measures not only enrich the ecosystem but also providewater to the wildlife and support aquatic fauna.

Based on the topography of the site, various SMC measures like restoration and repairsto Kunta's etc. are to be taken up.

As regards the SMC works are to be taken up by the M/s ACC Cements Authorities. Water availability is critical for the survival and enhancement of the wildlife. Wherever water resources are available wildlife populations grow and nature regulates their balance. Project works causes disturbances in the ecosystem, and it is necessary to create and augment additional water sources in the impact zone forest areas tomeet the water requirements of wildlife especially the Scheduled I mammals and invertebrates to conserve them. There are many ways in which water resources and regimen can be

improved. The treatment of the area to be in watershed development approach. Catchment area treatment and habitat improvement activities for restoration and creation of water bodies and increase the water availability in the Reserve Forests. Improvement of perennial water holes in streams and by restoration or creation of water harvesting and storage structures and by increasing the vegetative cover.

(i) Continuous Contour trenches are very good soil and moisture harvesting structures well suited for scanty rainfall areas of Alluri Sitarama Raju District.

(ii) Percolations tanks are very useful structures in semi-arid forest areas of the impact zone for impounding and percolating the rainwater. Suitable locations with natural depression and perennial or seasonal stream and soil with good permeability and porosity may be selected with a proposed water spread area ofabout 2 to 3 acres for construction of percolation tanks. A sluice with an apron may be provided for stability of the tank. The water stored per unit area is more in Percolation tanks compared to check dams and more cost effective too. The dugout soil has to be formed into a bund and compacted to required height

depending upon the amount of water likely to be impounded.

(iii) There are old Kuntas and tanks in the forest blocks forming the impact area of the mine. Many of them were constructed long ago and they are either silted

completely or breached due to floods in the past. It is better and easier to restore the old tanks and ponds and maintain them for enhanced water storage and availability to wild animals.

(iv) Saucer pits are artificial water sources created in circular shape in the forest areaswhere there are no adequate natural sources of water. They are made with cement mortar and mesh and shallow in depth at the rims and about 35 cms deepin the middle. The pits serve the wildlife well and they are filled every week generally in the summer months and a tractor fitted with a tanker is provided to the filed staff for this purpose. To meet this requirement, a tractor with water tankmounted on a trolley will be procured by M/S ACC

Cements handed over to the Forest Department for operation. It is proposed toconstruct saucer pits in the forest blocks of the impact zone as per need. 10 saucer pits each with an estimated cost of Rs.0.25 Lakh total Rs.2.50 Lakhs estimated costproposed.





Design of Saucer pit.

Filling of water in saucer pit by Tractor & Tanker

2.Provision of artificial saltlicks:

Wild animals require in the wild, adequate intake of natural salt for the normal physiological functioning of the body system. To meet this need blackbuck, chinkara, regularly visit the natural salt lick area and consume the salt littered grit and meet their bodily needs. To meet the craving for salt, blackbuck, chinkara travel a good distance in search of the natural saltlickwhich are far and few present in nature. Conversely, blackbuck, chinkara can be tied and kept restricted to a local area by providing artificial saltlick that are available in the market as mono block of1kg, 2kg, 3kg, 5kg, 10kg blocks under various brand name of which one is Galatic saltlick available in the market. The saltlick mono block can be procured from the market and provided regularly near the water holes for the animals to lick and consume the salt required for their physiological need. This is one of the measures that will prevent the straying of wildlife to study area. Utmost care is required when these are provided as there is every chance of the animals being trapped in these areas.



3.Construction of Boundary Pillars: It is proposed to construct (50) RF boundary pillars, in the forest blocks in the study area, to replace damaged RF boundary pillars and erecting where they are missing due to illegal activities of the people in the past, and lack of awareness on the conservation of Forests. The unit cost for construction of RF Boundary Pillars in Reserved Forests of in the study area of the M/s Acc Cements authority of Plan and Mine area is proposed @ Rs. 14,000/- as per the standard design approved by the Prl. CCF & HoFF, A.P. as contained in the FSR. An amount of Rs.7.00 Lakhs is proposed in the Plan.

Prescription as per FSR {Sl.no. 131 (05-17-001)}"*Construction of cairn with rough stone available at 1.0mx1.0m at bottom 0.50m at top end 1.0m height including white washing and central stone piece of 1.8m., in height and 10x15cm in section with letter R.F. and arrow on the outside (Prl.C.C.F.Circular)". The circular may be perused, RCC structures may be constructed with the measurements as prescribed. The detailed estimate is placed in Annexure.*	 Model Boundary Pillar

4. Afforestation in village woodlands, Avenues, Schools and Public places: Large scale afforestation need to be done in the village woodlands, poramboke lands and also avenues to accommodate the avifauna in the Buffer area of M/s ACC Cements authorities of Integrated Cement Plan. The species for the afforestation may be selected considering the needs and necessities of avifauna. They may include *Syzygium cumini, Mangifera indica, Ficus bengalensis, F. religiosa, F. glomerata, F. microcarpa, Tamarindus indica, Azadirchta indica, Madhuca latifolia, Phyllanthus emblica, Zizyphus xylopyrus, Z. Mauritian, Z.jujuba, Limonia acidissima, Aegle marmelos, Cassia fistula, Bauhinia racemosa, Manilkara hexandra, Mimusops elengi, Anona squomosa, Acacia Arabica, Prosopis cineraria, Eucalyptus* species etc. The planting of forest species like Hardwickia binata, Buchanania lanzan, Dolichondron crispa, Alangium solvifolium, Mitragyna parviflora, Grewia tilaefolia species may be considered which are fruit bearing plants to accommodate birdlife in the Forests. Suitable provision made in the budget.

5. Publicity and awareness programmes:

a) Awareness programmes: Wildlife conservation includes awareness and publicity programmes for the benefit of the villagers in and around the study area and adjoining areas. Proposed Project causes impacts not only on the wildlife but also on the people living in the surroundings in many ways. Creation of awareness among the people regarding the impacts of Proposed Project on wildlife and seeking community assistance and cooperation in conservation efforts will go a long way in mitigating the impacts of Proposed Project. Present study area consists of (18) Schedule Fauna which are very much related to human landscapes and awareness solves most of the conservation issues. The schedule fauna in question in fact benefits the farmers and villagers, the necessity of wildlife and coexistence with the species in the study area need to be explained. A variety of activities are proposed under this component as follows:

Awareness activities need to be carried out in the villages of Buffer area and surrounding villages. The awareness programs include display of posters,

signages, celebration of Wildlife Week, Van Mahotsav and other important events/days related to the conservation of wildlife (Owl awareness day on 4 August, Snake Conservation day on 16th July, Wetland day on 2February etc.,) and environment, organizing nature camps involving schools, colleges in the surrounding areas, distribution of Brochures, pamphlets regarding the wildlife of mine and study area & conservation measures to be taken.

b) Publicity material distribution: The publicity material/ posters may be displayed at all government buildings, schools, colleges in buffer and surrounding villages. Programmes need to be conducted in the target-oriented villages. Awareness and Nature education camps need to be conducted in all the educational institutions of the study area. Hoardings and posters to be displayed at important junctions to create awareness on conservation of Wildlife and penal provisions of Wildlife (Protection) Act 1972.

7) Research & monitoring of Wildlife Fauna including Avifauna in the Core & Buffer of Proposed Integrated Cement Plant Project Area: The Research & Monitoring includes study of Flora & fauna in the Core & Buffer of Project and in the Reserved Forests of impact area. The general study assignment includes the study and managerial inputs to the Forest departments on Schedule I species .It is also proposed to have a post graduate in wildlife biology/zoology/Botany as "Naturalist" (Biologist / Research Scholar) to take up regular monitoring and research on flora/fauna in the Core & Buffer of Integrated Cement Plant and Reserved Forests of impact area covering following aspects of Flora and Fauna with emphasis on palatability of grass species by herbivores, status of the population, distribution of fauna in the specified areas, mapping the areas , breeding areas of the important fauna, assessment of threats and possible solutions. Suitable amount provided in the budget.

8) Payment of compensation for wildlife kills or crop damages:

Wildlife knows no human drawn boundaries on ground and occasionally stray from forests and un-reserves into habitations, agricultural fields, industrial establishments, gardens etc. As a rule of nature wildlife disperse with breeding,

to new areas for colonization. In the process they use well established corridors for dispersal. Any encounter by humans with wildlife is viewed unpleasantly and brings an adverse reaction. Mostly, it is the wildlife that is exterminated. To avoid any unpleasant happenings and killing of wildlife, it is proposed to take a series of steps that can mitigate human-wildlife conflict.

9) **Office Support:** It is proposed to provide technical assistants to DFO and FRO on outsourcing and computer systems for data processing and monitoring the impact of Cement Plant Project operations and implementation of wildlife conservation plan etc.

10) Miscellaneous items: Certain amount provided for any essential items not covered above for any unforeseen expenditure during the implementation of the Project.

CHAPTER 7

Financial Outlay:

Conservation Plan & Financial Projections

The Wildlife Conservation Plan of Schedule I Fauna for the study area of Integrated Cement Plan and Limestone Mine area, YSR Kadapa District of Andhra Pradesh includes various components to be implemented in the Reserved Forest areas of falling in the impactzone (As per Local FSR applicable) is shown in the table below:

Sl.no.	Management intervention in the core area	Estimated cost (Rs.in lakh)	Implementing Agency	Remarks
1	Conservation plan for Schedule – I animals:	567.00	State Forest Department	FD will implement the works as per guidelines.
2	Development of greenbelt in plant area.	200.00	M/s ACC Cement	ACC will implement the greenbelt plan as per the approved guidelines of MoEF&CC covering 35% of the plant area with greenbelt.
3	Development of greenbelt in surrounding villages of M/s ACC Cement Plant.	200.00	M/s ACC Cement	ACC will implement under CSR program.
4	Stabilization of nallah banks and SMC works in the plant area.	100.00	M/s ACC Cement	ACC will be implemented
	Total	**1067.00**		

Physical and Financial plan for the proposed project (Rs 567.00 in Lakhs).

Sl. No	ITEM OF WORK	Kadapa Division		
		Qty	**Unit cost**	**Fin**
(I) Wildlife Monitoring & Protection				
i	Wildlife monitoring, Data Collection and study (Procurement of Camera traps and other allied items).	LS	LS	25.00
ii	Construction of Boundary pillars	350	0.12	42.00
iii	Vehicles for Project Monitoring Officers	2	25.00	50.00
iv	Maintenance of the vehicles for 5 years, Driver, POL etc.,	2	LS	50.00
v	Watch towers / Bird watching / Wildlife Watching etc.,	1	10.00	10.00
	Total			**177.00**
(II) Habitat Improvement				
i	Raising Grass lands and Maintenance of Grass lands habitat	LS	LS	10.00
ii	Construction of Saucer Pits	LS	LS	5.00
iii	Digging for PTs / SMC Works	LS	LS	30.00
iv	Formation & improvement of roads for access	LS	LS	30.00
Sub-Total				**75.00**
(III) Fire Protection				
i	Creation and Maintenance of Fire Lines (surrounding Forest areas)	LS	LS	20.00
ii	Providing Fire Fighting equipment	10	LS	10.00
Sub-Total				**30.00**
(IV) Publicity and Extension				
i	Placing wildlife interpretation signage/Caution boards at strategic locations both forest and Non-Forest areas including stickering /painting/fixing	LS	LS	10.00
Ii	Local Flora and Fauna interpretation center at Gandikota	LS	LS	100.00
Sub-Total				**110.00**
(V) Man-Animal conflict mitigation				
i	Procurement of Transportation cages	LS	LS	20.00
ii	Reptile rescue equipment	5	0.20/ each	1.00
iii	Procurement of wildlife rescue van	1	25.00	25.00
iv	Maintenance of wildlife rescue vehicles, Wildlife Rapid response vehicle 10 years 2.00 lakhs per year for Oils and repairs.	LS	LS	20.00
v	Awareness creation programs in fringe villages	10	1	5.00
vi	Crop compensation	LS	LS	2.00
vii	Veterinary unit with vet, medical equipment	LS	LS	20.00
Sub-Total				**93.00**

(VI)	**Miscellaneous**			
i	Maintenance of officials building, Computers etc.,	LS	LS	25.00
ii	Development of Forest Rest house in Muddunur Range	LS	LS	50.00
iii	Office expenditure for Circle / Division / Range etc.,	LS	LS	5.00
iv	Overhead charges	LS	LS	2.00
Sub-Total				**82.00**
Grand Total				**567.00**

- Vehicles shall be purchased and handed over to the Forest Department for Monitoring purposes.
- The amount of **Rs. 517.00 Lakhs** should be deposited in AP FOREST DEPARTMENT WILDLIFE FUND Account for effective implementation by the state Forest Department.

SI. No	Item of work	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	Total
(I)	**Wildlife Monitoring & Protection:**											
i	Wildlife monitoring, Data Collection and study (Procurement of Camera traps and other allied items).	5.00	5.00	5.00	5.00	5.00	0.00	0.00	0.00	0.00	0.00	25.00
ii	Construction of Boundary pillars	42.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.00
iii	Vehicles for Project Monitoring Officers	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00
iv	Maintenance of the vehicles for 5 years, Driver, POL etc.,	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	50.00
Vi	Watch towers / Bird watching / Wildlife Watching etc.,	5.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00
	Total	**107.00**	**15.00**	**10.00**	**10.00**	**10.00**	**5.00**	**5.00**	**5.00**	**5.00**	**5.00**	**177.00**
(II)	**Habitat Improvement**											
i	Raising Grass lands and Maintenance of Grass lands habitat.	3.00	3.00	3.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00
ii	Construction of Saucer Pits	3.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00
iii	Digging for PTs / SMC Works	6.00	6.00	6.00	6.00	6.00	6.00	0.00	0.00	0.00	0.00	30.00
iv	Formation & improvement of roads for	10.00	10.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	30.00

	access											
Total		**22.00**	**21.00**	**19.00**	**7.00**	**6.00**	**6.00**	**0.00**	**0.00**	**0.00**	**0.00**	**75.00**
(III)	**Fire Protection**											
i	Creation and Maintenance of Fire Lines (surrounding Forest areas)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	20.00
ii	Providing Fire Fighting equipment	5.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00
	Total	**7.00**	**7.00**	**2.00**	**2.00**	**2.00**	**2.00**	**2.00**	**2.00**	**2.00**	**2.00**	**30.00**
(IV)	**Publicity and Extension**											
i	Placing wildlife interpretation signage/Caution boards at strategic locations both forest and Non Forest areas including stickering /painting/fixing	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	10.00
ii	Local Flora and Fauna interpretation center at Gandikota	50.00	25.00	25.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Total		**51.00**	**26.00**	**26.00**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**110.00**
(V)	**Man-Animal conflict mitigation**											
i	Procurement of Transportation cages	10.00	5.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.00

ii	Reptile rescue equipment	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
iii	Procurement of wildlife rescue van	25.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.00
iv	Maintenance of wildlife rescue vehicle, Wildlife Rapid response vehicle 10 years for Oils and repairs.	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	20.00
v	Awareness creation programs in fringe villages	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	5.00
vi	Crop compensation	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00
vii	Veterinary unit with vet, medical equipment	10.00	5.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.00
Total		**49.00**	**15.00**	**13.00**	**3.00**	**3.00**	**2.00**	**2.00**	**2.00**	**2.00**	**2.00**	**93.00**
(VI)	**Office support**											
i	Maintenance of officials building, Computers etc.,	10.00	5.00	5.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	25.00
ii	Development of Forest Rest house in Muddunur Range	25.00	25.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00
iii	Office expenditure for Circle /Division / Range etc.,	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	5.00
iv	Overhead charges	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	2.00
Total		**35.70**	**30.70**	**5.70**	**5.70**	**0.7**	**0.70**	**0.70**	**0.70**	**0.70**	**0.70**	**82.00**
Grand Total		**271.70**	**114.70**	**69.70**	**28.70**	**22.70**	**16.70**	**10.70**	**10.70**	**10.70**	**10.70**	**567.00**

References:

Flora Sources:

- Champion, H.G. and S.K. Seth, 1968. A Revised Survey of the Forest Types of India. 1st Edn., Govt. of India Press, Nueva Delhi, India, Pages: 404
- Ellis, J.L., 1987. Flora of Nallamalais. Vol. 1-2, Botanical Survey of India, Calcutta
- Reddy, C.S., M.S.R. Murthy and C.B.S. Dutt, 2002. Vegetation diversity and endemism in Eastern Ghats, India. Proceedings of the National Seminar on Conservation of Eastern Ghats, March 24-26, 2002, EPTRI., Hyderabad, pp: 109-134
- Reddy, C.S., M. Brahmam and V.S. Raju, 2006. Conservation prioritization of endemic plants of Eastern Ghats, India. J. Econ. Taxon. Bot., 30: 755-772.

Fauna sources:

- Forest Department: Tiger conservation plan for Nagarjunasagar Tiger Reserve, Management plan for Gundlabrahmeswaram wildlife sanctuary.
- Vivek Menon (2014), Indian Mammals: A Field Guide. Hachette Book Publishing India Pvt. Ltd., Gurgaon, India, pp 1-522;
- IUCN 2023. The IUCN Red List of Threatened Species. Version 2022-2. <https://www.iucnredlist.org>
- Schedules I to II: Indian Wildlife (Protection) Act, 1972 Amended in 2022.
- Ali, S and Ripley, S.D. 1969. Handbook of the Birds of India and Pakistan together with those of Nepal, Sikkim, Bhutan and Ceylon,3. Stone Curlews to Owls. Oxford University Press, Bombay, 327pp.
- Birdlife International 2012. In: IUCN 2012. IUCN Red List of Threatened Species. Version 2012.2. <www.iucnredlist.org>. Downloaded on 11 March 2013.
- Grimmett, R., Inskipp, C and T. Inskipp, 2001. Pocket Guides to the Birds of the Indian Subcontinent. Cristopher Helm Publishers, Oxford University Press, 384pp.
- Indraneil Das (2002). Snakes & other Reptiles of India. New Holland Publishers (UK) Ltd pp. 1-144;
- S.K. Chanda (2002) Hand Book Indian Amphibians, Zoological Survey of India,
- Working Plan data from Forest department.

AMBIENT AIR QUALITY MONITORING

Location- 1: Project Site (Unit: µg/m3)

Date of Monitoring	Clock Hours								
	00-08		08-16		16-24		24 Hours	24 Hours	24 Hours
	SO_2	NO_2	SO_2	NO_2	SO_2	NO_2	PM_{10}	$PM_{2.5}$	CO
01.03.2024	5.0	10.5	5.9	12.3	5.4	10.9	38.8	22.0	BDL
02.03.2024	5.1	9.8	5.8	11.5	5.7	10.5	46.8	25.2	BDL
08.03.2024	4.9	10.7	6.2	12.0	5.7	9.9	43.3	22.9	BDL
09.03.2024	4.5	9.9	6.3	11.8	5.6	10.2	47.0	20.8	BDL
15.03.2024	5.0	10.2	6.1	11.7	5.7	10.6	41.2	25.7	BDL
16.03.2024	4.6	10.1	5.9	11.2	5.5	10.8	49.9	26.7	BDL
22.03.2024	4.8	10.3	6.0	12.1	4.4	10.3	41.1	21.7	BDL
23.03.2024	4.6	10.8	6.5	11.9	5.2	10.2	40.2	21.2	BDL
29.03.2024	4.5	10.7	6.6	12.1	5.5	10.9	39.7	22.2	BDL
30.03.2024	5.0	9.6	5.9	11.5	5.7	10.6	38.1	24.7	BDL
05.04.2024	4.7	10.1	5.8	12.3	5.0	10.4	38.1	22.8	BDL
06.04.2024	4.6	10.2	6.8	11.8	4.4	9.9	50.2	23.3	BDL
12.04.2024	4.8	10.3	6.0	11.3	5.4	10.9	49.2	24.6	BDL
13.04.2024	5.2	10.8	6.5	12.0	4.8	10.6	47.3	22.9	BDL
19.04.2024	4.6	10.0	5.8	12.1	4.9	10.3	48.5	26.4	BDL
20.04.2024	5.3	10.5	6.8	11.5	5.5	10.5	47.2	25.4	BDL
26.04.2024	5.2	10.2	6.2	11.8	5.7	10.3	40.5	28.0	BDL
27.04.2024	5.0	10.6	5.8	11.6	5.4	10.8	43.2	22.1	BDL
03.05.2024	4.8	9.6	6.2	12.0	5.7	9.9	38.6	26.2	BDL
04.05.2024	4.9	10.4	6.1	12.3	5.1	10.6	49.4	25.1	BDL
10.05.2024	5.2	9.8	6.8	11.5	5.5	10.8	49.3	25.4	BDL
11.05.2024	4.8	10.2	6.7	11.8	5.7	10.2	49.7	24.6	BDL
17.05.2024	4.3	9.5	5.8	12.1	4.9	10.3	36.4	21.2	BDL
18.05.2024	4.5	9.8	5.9	12.3	5.6	10.9	43.6	27.8	BDL
24.05.2024	4.8	9.8	6.5	11.2	5.5	10.2	42.9	27.0	BDL
25.05.2024	4.4	10.8	6.2	12.3	5.7	9.8	41.4	25.1	BDL

	SO_2	NO_2	PM_{10}	$PM_{2.5}$	CO
Max.	6.8	12.3	50.2	28.0	BDL
Min.	4.3	9.5	36.4	20.8	BDL
98%tile	6.8	12.3	50.1	27.9	BDL

AMBIENT AIR QUALITY MONITORING

Location- 2: Mine Site (Unit: µg/m3)

Date of Monitoring	Clock Hours								
	00-08		08-16		16-24		24 Hours	24 Hours	24 Hours
	SO_2	NO_2	SO_2	NO_2	SO_2	NO_2	PM_{10}	$PM_{2.5}$	CO
01.03.2024	4.9	9.0	6.3	11.0	5.3	10.4	51.2	23.3	BDL
02.03.2024	5.0	9.1	6.5	10.8	5.6	10.5	45.8	25.3	BDL
08.03.2024	5.1	9.4	6.6	10.6	5.6	10.2	42.1	21.1	BDL
09.03.2024	5.4	9.1	6.0	11.0	5.8	10.5	38.7	25.7	BDL
15.03.2024	5.5	9.5	6.6	11.0	6.2	9.8	49.8	23.4	BDL
16.03.2024	5.1	9.8	6.1	10.4	5.9	10.4	45.1	21.9	BDL
22.03.2024	4.7	9.7	5.9	11.0	4.8	9.7	44.8	27.8	BDL
23.03.2024	5.4	9.5	6.6	10.5	6.3	9.6	38.3	23.3	BDL
29.03.2024	5.0	9.6	6.5	10.2	5.4	10.5	50.4	25.5	BDL
30.03.2024	5.1	9.2	6.1	10.5	6.2	10.2	51.9	27.4	BDL
05.04.2024	4.6	9.0	5.8	10.6	4.9	9.8	50.3	26.5	BDL
06.04.2024	5.3	9.5	5.9	11.0	5.9	10.1	39.2	23.4	BDL
12.04.2024	4.7	9.1	6.1	10.8	5.3	10.3	43.0	24.9	BDL
13.04.2024	5.2	9.6	6.6	11.0	6.2	9.9	47.9	24.5	BDL
19.04.2024	4.5	8.9	5.7	10.8	4.8	9.7	47.4	23.1	BDL
20.04.2024	5.2	9.8	5.7	10.4	5.4	10.4	40.6	21.3	BDL
26.04.2024	5.5	9.1	6.2	11.0	6.1	10.1	38.0	24.4	BDL
27.04.2024	4.9	8.9	6.3	10.4	5.3	9.8	46.0	22.6	BDL
03.05.2024	5.4	9.2	6.6	11.0	5.9	9.6	51.4	23.0	BDL
04.05.2024	4.2	9.8	6.0	10.5	5.0	10.0	44.6	25.0	BDL
10.05.2024	5.4	9.5	6.2	11.0	6.3	10.1	51.4	23.1	BDL
11.05.2024	5.1	9.5	6.6	10.9	5.6	10.9	47.8	25.8	BDL
17.05.2024	4.5	9.4	5.7	11.0	4.8	9.7	41.7	27.3	BDL
18.05.2024	4.6	9.1	6.4	10.8	5.9	9.6	50.6	22.4	BDL
24.05.2024	4.3	9.6	5.9	10.2	6.0	9.5	39.0	25.6	BDL
25.05.2024	5.5	9.5	6.2	11.0	6.1	9.7	44.5	20.1	BDL

	SO_2	NO_2	PM_{10}	$PM_{2.5}$	CO
Max.	6.6	11.0	51.9	27.8	BDL
Min.	4.2	8.9	38.0	20.1	BDL
98%tile	6.6	11.0	51.7	27.6	BDL

AMBIENT AIR QUALITY MONITORING

Location - 3: Near Village Chinna Venthrula (Unit: µg/m3)

Date of Monitoring	Clock								
	00-08		08-16		16-24		24 Hours	24 Hours	24 Hours
	SO_2	NO_2	SO_2	NO_2	SO_2	NO_2	PM_{10}	$PM_{2.5}$	CO
01.03.2024	6.6	12.4	8.0	14.8	7.0	12.8	50.4	34.0	BDL
02.03.2024	6.7	12.5	8.2	15.0	7.3	13.1	48.4	34.9	BDL
08.03.2024	6.5	12.8	8.3	15.2	7.3	13.3	52.2	24.7	BDL
09.03.2024	6.1	13.3	7.8	16.0	7.5	13.7	55.1	29.9	BDL
15.03.2024	6.0	13.6	8.1	16.3	7.9	14.3	56.9	29.4	BDL
16.03.2024	6.5	13.7	7.5	16.6	7.6	14.0	48.4	33.7	BDL
22.03.2024	6.4	12.1	7.6	14.3	6.4	12.1	59.2	24.9	BDL
23.03.2024	6.5	14.3	8.6	17.5	8.0	14.7	49.8	30.3	BDL
29.03.2024	6.5	12.5	8.2	15.0	7.1	12.9	52.5	33.2	BDL
30.03.2024	6.3	14.2	8.6	17.3	7.9	14.6	51.2	34.5	BDL
05.04.2024	6.3	11.9	7.5	14.2	6.6	12.2	51.5	33.0	BDL
06.04.2024	6.5	13.2	8.5	15.8	7.6	13.8	58.5	34.7	BDL
12.04. 2024	6.4	12.1	7.6	14.3	7.0	12.7	50.3	33.2	BDL
13.04. 2024	5.9	13.7	8.6	16.6	7.9	14.3	54.0	28.8	BDL
19.04. 2024	6.2	11.3	7.4	13.9	6.5	12.1	50.9	27.4	BDL
20.04. 2024	6.6	13.0	8.6	15.5	7.1	13.2	52.5	30.1	BDL
26.04. 2024	6.5	14.3	8.5	17.5	7.8	14.5	50.6	30.7	BDL
27.04. 2024	6.6	12.4	8.0	14.8	7.0	12.8	49.9	28.7	BDL
03.05. 2024	6.0	13.3	8.6	16.0	7.6	13.8	51.2	26.4	BDL
04.05. 2024	6.5	12.2	7.7	14.5	6.7	12.4	48.8	28.2	BDL
10.05. 2024	6.7	14.5	8.6	17.9	8.1	14.9	48.8	32.8	BDL
11.05. 2024	6.0	12.8	8.3	15.2	7.3	13.3	50.4	30.0	BDL
17.05. 2024	6.2	11.8	7.4	13.9	6.5	12.1	53.9	31.2	BDL
18.05. 2024	6.5	13.7	8.1	16.6	7.6	14.0	56.5	29.7	BDL
24.05. 2024	6.2	13.9	8.6	17.0	7.7	14.2	51.7	25.4	BDL
25.05. 2024	6.5	14.2	8.2	17.3	7.8	14.5	48.2	30.1	BDL

	SO_2	NO_2	PM_{10}	$PM_{2.5}$	CO
Max.	8.6	17.9	59.2	34.9	BDL
Min.	5.9	11.3	48.2	24.7	BDL
98%tile	8.6	17.5	58.9	34.8	BDL

AMBIENT AIR QUALITY MONITORING

Location - 4: Village Vaddirala (Unit: µg/m3)

Date of Monitoring	Clock Hours						24 Hours	24 Hours	24 Hours
	00-08		08-16		16-24				
	SO_2	NO_2	SO_2	NO_2	SO_2	NO_2	PM_{10}	$PM_{2.5}$	CO
01.03. 2024	8.7	16.8	10.1	19.2	9.1	17.2	59.0	36.5	BDL
02.03. 2024	8.8	16.9	10.3	19.4	9.4	17.5	71.3	31.5	BDL
08.03. 2024	8.9	16.5	10.4	19.6	9.4	17.7	64.8	34.5	BDL
09.03. 2024	9.2	16.2	10.9	20.3	9.6	18.1	70.5	36.8	BDL
15.03. 2024	9.3	15.9	11.1	20.1	10.0	18.7	69.7	33.6	BDL
16.03. 2024	9.4	16.1	11.3	20.3	9.7	18.4	67.8	32.4	BDL
22.03.2024	8.5	16.5	9.8	18.7	8.5	16.5	62.7	35.6	BDL
23.03.2024	9.6	16.1	11.7	20.3	10.1	19.1	65.3	35.5	BDL
29.03.2024	8.8	16.9	10.3	19.4	9.2	17.3	69.3	31.6	BDL
30.03. 2024	9.6	16.5	11.7	20.3	10.0	19.0	59.0	33.5	BDL
05.04.2024	8.4	16.3	9.6	18.6	8.7	16.6	69.3	30.9	BDL
06.04.2024	9.1	16.6	10.8	20.2	9.7	18.2	64.8	34.8	BDL
12.04.2024	8.5	16.5	9.7	18.7	9.1	17.1	69.0	38.5	BDL
13.04. 2024	9.4	16.4	11.3	20.3	10.0	18.7	64.9	33.5	BDL
19.04.2024	8.3	16.2	10.2	18.3	8.6	16.5	63.8	32.1	BDL
20.04.2024	9.0	16.0	10.7	19.9	9.2	17.6	71.0	32.6	BDL
26.04.2024	9.7	16.5	11.7	20.3	9.9	18.9	70.5	35.8	BDL
27.04.2024	8.7	16.5	10.1	19.2	9.1	17.2	69.8	37.8	BDL
03.05.2024	9.2	16.4	10.9	18.5	9.7	18.2	63.3	35.1	BDL
04.05.2024	8.6	16.3	10.2	18.9	8.8	16.8	65.2	34.7	BDL
10.05.2024	9.6	16.5	11.7	20.1	10.2	19.3	59.7	30.8	BDL
11.05.2024	8.9	15.8	10.4	19.6	9.4	17.7	62.9	35.1	BDL
17.05. 2024	8.0	15.7	10.2	18.3	8.6	16.5	67.5	34.1	BDL
18.05.2024	9.4	15.8	11.3	20.3	9.7	18.4	60.8	39.2	BDL
24.05.2024	9.5	16.3	11.5	20.1	9.8	18.6	61.0	36.8	BDL
25.05.2024	9.6	16.4	11.7	18.5	9.9	18.9	68.0	34.9	BDL

	SO_2	NO_2	PM_{10}	$PM_{2.5}$	CO
Max.	11.7	20.3	71.3	39.2	BDL
Min.	8	15.7	59.0	30.8	BDL
98%tile	11.7	20.3	71.2	38.8	BDL

AMBIENT AIR QUALITY MONITORING

Location- 5: Village Bestavemula (Unit: µg/m3)

Date of Monitoring	Clock Hours								
	00-08		08-16		16-24		24 Hours	24 Hours	24 Hours
	SO_2	NO_2	SO_2	NO_2	SO_2	NO_2	PM_{10}	$PM_{2.5}$	CO
01.03.2024	6.1	11.4	7.5	13.8	6.5	11.8	51.3	31.0	BDL
02.03.2024	6.2	11.5	6.6	14.0	6.8	12.1	54.3	29.4	BDL
08.03.2024	6.3	11.8	7.1	14.2	6.8	12.3	50.4	26.8	BDL
09.03.2024	6.5	12.3	7.5	15.0	7.0	12.7	58.3	31.4	BDL
15.03.2024	6.2	12.6	7.2	15.3	6.3	13.3	49.6	26.2	BDL
16.03.2024	5.6	12.7	6.6	15.6	7.1	13.0	53.2	28.1	BDL
22.03.2024	5.9	11.1	7.1	13.3	5.9	11.1	58.1	24.4	BDL
23.03.2024	6.5	13.3	7.5	16.5	6.7	13.7	52.5	31.0	BDL
29.03.2024	6.2	11.5	6.9	14.0	6.6	11.9	56.4	33.0	BDL
30.03.2024	5.5	13.2	7.4	16.3	6.2	13.6	57.5	32.0	BDL
05.04.2024	5.8	10.9	7.0	13.2	6.1	11.2	47.0	27.2	BDL
06.04.2024	6.5	12.2	7.5	14.8	7.1	12.8	52.6	32.0	BDL
12.04.2024	5.9	11.1	7.1	13.3	6.5	11.7	57.5	27.6	BDL
13.04.2024	6.5	12.7	7.4	15.6	6.2	13.3	50.4	30.9	BDL
19.04.2024	5.4	10.3	6.9	12.9	6.0	11.1	57.1	31.7	BDL
20.04.2024	6.4	12.0	6.2	14.5	6.6	12.2	49.4	33.3	BDL
26.04.2024	6.2	13.3	7.5	16.5	7.1	13.5	56.9	31.7	BDL
27.04.2024	6.1	11.4	6.8	13.8	6.5	11.8	55.6	28.2	BDL
03.05.2024	6.5	12.3	7.5	15.0	7.1	12.8	48.7	24.5	BDL
04.05.2024	6.0	11.2	7.2	13.5	6.2	11.4	55.1	27.0	BDL
10.05.2024	6.5	13.5	7.5	17.8	6.1	13.9	46.8	27.7	BDL
11.05.2024	6.3	11.8	7.1	14.2	6.8	12.3	48.0	26.7	BDL
17.05.2024	5.7	10.8	6.9	12.9	6.0	11.1	57.6	26.1	BDL
18.05.2024	5.5	12.7	7.4	15.6	6.4	13.0	53.3	27.2	BDL
24.05.2024	6.5	12.9	7.5	16.0	6.2	13.2	52.6	25.6	BDL
25.05.2024	5.8	13.2	7.1	16.3	6.1	13.5	52.1	27.1	BDL

	SO_2	**NO_2**	**PM_{10}**	**$PM_{2.5}$**	**CO**
Max.	7.5	17.8	58.3	33.3	BDL
Min.	5.4	10.3	46.8	24.4	BDL
98%tile	7.5	16.5	58.2	33.2	BDL

AMBIENT AIR QUALITY MONITORING

Location -6: Village T.Kammavaripalli (Unit: µg/m3)

Date of Monitoring	Clock Hours								
	00-08		08-16		16-24		24 Hours	24 Hours	24 Hours
	SO_2	NO_2	SO_2	NO_2	SO_2	NO_2	PM_{10}	$PM_{2.5}$	CO
01.03.2024	5.3	10.8	7.0	13.2	5.7	11.2	42.4	25.4	BDL
02.03.2024	5.4	10.9	6.1	13.4	6.0	11.5	50.1	27.2	BDL
08.03.2024	5.5	11.2	7.0	13.6	6.0	11.7	53.4	28.8	BDL
09.03.2024	4.7	11.7	6.2	14.4	6.2	12.1	42.8	29.0	BDL
15.03.2024	5.5	12.0	7.0	14.7	6.6	12.7	56.4	32.9	BDL
16.03.2024	4.8	12.1	6.5	15.0	6.3	12.4	42.9	25.3	BDL
22.03.2024	5.1	10.5	6.3	12.7	5.1	10.5	44.3	31.5	BDL
23.03.2024	5.4	12.7	7.0	15.9	6.7	13.1	51.4	27.2	BDL
29.03.2024	4.9	10.9	6.9	13.4	5.8	11.3	49.6	24.0	BDL
30.03.2024	5.5	12.6	7.0	15.7	6.6	13.0	47.0	25.0	BDL
05.04.2024	5.0	10.3	6.2	12.6	5.3	10.6	43.9	27.8	BDL
06.04.2024	5.5	11.6	7.0	14.2	6.3	12.2	46.9	31.4	BDL
12.04.2024	5.1	10.5	6.3	12.7	5.7	11.1	45.0	29.0	BDL
13.04.2024	5.2	12.1	7.0	15.0	6.6	12.7	42.0	32.2	BDL
19.04.2024	4.9	9.7	6.1	12.3	5.2	10.5	51.5	32.9	BDL
20.04.2024	5.5	11.4	6.8	13.9	5.8	11.6	52.2	28.4	BDL
26.04.2024	4.7	12.7	7.0	15.9	6.5	12.9	52.0	27.0	BDL
27.04.2024	5.3	10.8	6.7	13.2	5.7	11.2	42.0	27.3	BDL
03.05.2024	5.1	11.7	6.9	14.4	6.3	12.2	47.7	32.0	BDL
04.05.2024	5.2	10.6	6.4	12.9	5.4	10.8	49.8	30.0	BDL
10.05.2024	5.4	12.9	7.0	16.5	6.8	13.3	45.2	28.9	BDL
11.05.2024	5.5	11.2	7.0	13.6	6.0	11.7	42.8	27.1	BDL
17.05.2024	4.6	10.2	6.1	12.3	5.2	10.5	45.3	29.8	BDL
18.05.2024	5.4	12.1	7.0	15.0	6.3	12.4	48.4	24.6	BDL
24.05.2024	5.3	12.3	6.5	15.4	6.4	12.6	47.2	28.8	BDL
25.05.2024	5.2	12.6	7.0	15.7	6.5	12.9	52.9	30.4	BDL

	SO_2	NO_2	PM_{10}	$PM_{2.5}$	CO
Max.	7	16.5	56.4	32.9	BDL
Min.	4.6	9.7	42.0	24.0	BDL
98%tile	7.0	15.9	54.9	32.9	BDL

AMBIENT AIR QUALITY MONITORING

Location -7: Village G.Uppalapadu (Unit: µg/m3)

Date of Monitoring	Clock Hours								
	00-08		08-16		16-24		24 Hours	24 Hours	24 Hours
	SO_2	NO_2	SO_2	NO_2	SO_2	NO_2	PM_{10}	$PM_{2.5}$	CO
01.03.2024	6.1	15.2	8.0	17.6	7.0	15.6	60.1	31.6	BDL
02.03.2024	6.0	15.3	7.4	17.8	7.3	15.9	60.5	35.1	BDL
08.03.2024	6.3	15.6	7.8	18.0	7.3	16.1	62.5	32.7	BDL
09.03.2024	6.5	16.1	8.0	17.5	7.5	16.5	56.6	34.2	BDL
15.03.2024	6.6	16.4	7.1	18.0	7.9	17.1	62.1	32.9	BDL
16.03.2024	6.8	16.5	8.0	17.8	7.6	16.8	55.1	31.8	BDL
22.03.2024	6.4	14.9	7.6	17.1	6.4	14.9	61.6	32.2	BDL
23.03.2024	5.9	17.1	7.0	18.0	7.4	17.5	54.8	36.1	BDL
29.03.2024	6.7	15.3	7.6	17.8	7.1	15.7	65.7	32.8	BDL
30.03.2024	6.4	17.0	8.0	17.6	7.9	17.4	60.2	29.5	BDL
05.04.2024	6.3	14.7	7.5	17.0	6.6	15.0	64.7	32.8	BDL
06.04.2024	6.5	16.0	8.0	18.0	7.6	16.6	57.5	31.1	BDL
12.04.2024	6.1	14.9	7.6	17.1	7.0	15.5	55.7	33.8	BDL
13.04.2024	6.3	16.5	8.0	18.0	7.9	17.1	59.4	33.2	BDL
19.04.2024	6.2	14.1	7.4	16.7	6.5	14.9	67.6	36.3	BDL
20.04.2024	6.5	15.8	8.0	17.4	7.1	16.0	66.8	35.6	BDL
26.04.2024	6.1	17.1	7.4	18.0	7.8	17.3	61.2	33.6	BDL
27.04.2024	6.5	15.2	8.0	17.6	7.0	15.6	57.0	29.9	BDL
03.05.2024	6.1	16.1	7.4	17.9	7.6	16.6	61.3	36.7	BDL
04.05.2024	6.5	15.0	7.7	17.3	6.7	15.2	67.4	36.9	BDL
10.05.2024	6.3	17.3	8.0	18.0	7.4	17.7	54.7	35.7	BDL
11.05.2024	6.5	15.6	7.5	17.6	7.3	16.1	57.0	35.8	BDL
17.05.2024	5.9	14.6	7.4	16.7	6.5	14.9	60.2	30.0	BDL
18.05.2024	6.1	16.5	7.1	17.5	7.6	16.8	63.5	34.0	BDL
24.05.20124	6.6	16.7	7.7	18.0	7.7	17.0	63.2	29.5	BDL
25.05.2024	6.2	17.0	8.0	17.9	7.8	17.3	60.3	31.9	BDL

	SO_2	NO_2	PM_{10}	$PM_{2.5}$	CO
Max.	8	18.0	67.6	36.9	BDL
Min.	5.9	14.1	54.7	29.5	BDL
98%tile	8.0	18.0	67.5	36.8	BDL

Location- 8: Village Madhavapuram **(Unit µg/m³)**

DATE OF MONITORING	CLOCK HOURS								
	00 – 08		08 – 16		16 – 24		24 HOURS PM_{10}	24 HOURS $PM_{2.5}$	CO
	SO_2	NO2	SO_2	NO2	SO_2	NO2			
03.03.2024	5.6	11.0	7.0	13.4	6.0	11.4	44.1	27.2	BDL
04.03.2024	5.5	11.1	6.9	13.6	6.3	11.7	48.5	25.4	BDL
10.03.2024	5.8	11.4	6.8	13.8	6.3	11.9	50.9	27.8	BDL
11.03.2024	6.1	11.9	7.0	14.6	6.5	12.3	47.5	31.6	BDL
17.03.2024	6.2	12.2	6.5	14.9	6.3	12.9	54.0	27.0	BDL
18.03.2024	6.3	12.3	7.0	15.2	6.6	12.6	48.8	32.7	BDL
24.03.2024	5.4	10.7	6.6	12.9	5.4	10.7	46.4	32.9	BDL
25.03.2024	6.6	12.9	7.0	15.6	6.5	13.3	47.7	29.0	BDL
31.03.2024	5.7	11.1	7.0	13.6	6.1	11.5	54.0	31.6	BDL
01.04.2024	6.5	12.8	7.0	15.2	6.5	13.2	44.4	31.1	BDL
07.04.2024	5.3	10.5	6.5	12.8	5.6	10.8	51.9	33.5	BDL
08.04.2024	6.0	11.8	7.0	14.4	6.6	12.4	51.8	32.0	BDL
14.04.2024	5.4	10.7	6.7	12.9	6.0	11.3	51.4	30.7	BDL
15.04.2024	6.3	12.3	7.0	15.2	6.3	12.9	50.7	25.8	BDL
21.04.2024	4.9	10.4	6.7	12.5	5.5	10.7	47.3	25.2	BDL
22.04.2024	5.5	11.6	6.8	14.1	6.1	11.8	46.2	31.8	BDL
28.04.2024	5.4	12.9	7.0	15.6	6.8	13.1	48.5	30.1	BDL
29.04.2024	5.6	11.0	7.0	13.4	6.0	11.4	51.2	31.7	BDL
05.05.2024	6.1	11.9	7.0	14.6	6.6	12.4	51.4	26.7	BDL
06.05.2024	5.5	10.8	6.7	13.1	5.7	11.0	44.5	28.9	BDL
12.05.2024	6.5	13.1	6.9	15.6	6.8	13.5	55.0	24.0	BDL
13.05.2024	5.8	11.4	7.0	13.8	6.3	11.9	53.3	25.5	BDL
19.05.2024	5.2	9.9	6.7	12.5	5.5	10.7	51.2	28.4	BDL
20.05.2024	6.3	12.3	6.6	15.2	6.6	12.6	48.2	29.4	BDL
26.05.2024	6.4	12.5	6.8	15.6	6.7	12.8	48.3	25.7	BDL
27.05.2024	6.5	12.8	7.0	14.5	6.8	13.1	53.2	33.1	BDL

AMBIENT AIR QUALITY MONITORING

	SO_2	NO_2	PM_{10}	$PM_{2.5}$	CO
Max.	7	15.6	55.0	33.5	BDL
Min.	4.9	9.9	44.1	24.0	BDL
98%tile	7.0	15.6	54.5	33.3	BDL

Location - 9: Village Erragudi **(Unit µg/m³)**

DATE OF MONITORING	CLOCK HOURS								
	00 – 08		08 – 16		16 – 24		24 HOURS PM_{10}	24 HOURS $PM_{2.5}$	CO
	SO_2	NO2	SO_2	NO2	SO_2	NO2			
03.03.2024	6.7	12.3	8.1	14.7	7.1	12.7	59.1	34.5	BDL
04.03.2024	6.8	12.4	8.3	14.9	7.4	13.0	58.8	34.1	BDL
10.03.2024	6.9	12.7	8.4	15.1	7.4	13.2	52.7	31.5	BDL
11.03.2024	7.2	13.2	8.9	15.9	7.6	13.6	58.5	32.3	BDL
17.03.2024	7.3	13.5	9.0	16.2	8.0	14.2	56.7	35.4	BDL
18.03.2024	7.4	13.6	8.8	16.5	7.7	13.9	51.4	30.3	BDL
24.03.2024	6.5	12.0	7.7	14.2	6.5	12.0	52.0	28.3	BDL
25.03.2024	7.7	14.2	9.0	16.6	8.1	14.6	54.5	30.9	BDL
31.03.2024	6.8	12.4	8.3	14.9	7.2	12.8	52.5	35.2	BDL
01.04.2024	7.6	14.1	8.2	16.5	8.0	14.5	54.5	34.2	BDL
07.04.2024	6.4	11.8	7.6	14.1	6.7	12.1	60.3	28.9	BDL
08.04.2024	7.1	13.1	8.8	15.7	7.7	13.7	51.9	29.2	BDL
14.04.2024	6.5	12.0	7.7	14.2	7.1	12.6	62.0	34.8	BDL
15.04.2024	7.4	13.6	9.0	16.5	8.0	14.2	57.6	29.1	BDL
21.04.2024	6.0	11.2	7.5	13.8	6.6	12.0	51.8	33.0	BDL
22.04.2024	7.0	12.9	8.7	15.4	7.2	13.1	55.3	33.6	BDL
28.04.2024	7.7	14.2	8.8	16.6	7.9	14.4	52.3	32.3	BDL
29.04.2024	6.7	12.3	8.1	14.7	7.1	12.7	51.3	33.9	BDL
05.05.2024	7.2	13.2	8.9	15.9	7.7	13.7	54.7	28.2	BDL
06.05.2024	6.6	12.1	7.8	14.4	6.8	12.3	57.4	30.1	BDL

12.05.2024	7.8	14.4	9.0	16.4	8.2	14.8	54.9	29.0	BDL
13.05.2024	6.9	12.7	8.4	15.1	7.4	13.2	50.8	27.6	BDL
19.05.2024	6.3	11.7	7.5	13.8	6.6	12.0	53.7	32.8	BDL
20.05.2024	7.4	13.6	8.8	16.5	7.7	13.9	57.0	33.0	BDL
26.05.2024	7.5	13.8	8.1	16.1	7.8	14.1	49.0	33.2	BDL
27.05.2024	7.6	14.1	8.5	16.6	7.9	14.4	49.9	30.1	BDL

	SO_2	**NO_2**	**PM_{10}**	**$PM_{2.5}$**	**CO**
Max.	9	16.6	62.0	35.4	BDL
Min.	6	11.2	49.0	27.6	BDL
98%tile	9.0	16.6	61.2	35.3	BDL

AMBIENT AIR QUALITY MONITORING

Location- 10: Village Talamanchipatnam **(Unit µg/m³)**

DATE OF MONITORING	CLOCK HOURS								
	00 – 08		08 – 16		16 – 24		24 HOURS PM_{10}	24 HOURS $PM_{2.5}$	CO
	SO_2	NO2	SO_2	NO2	SO_2	NO2			
03.03.2024	5.7	10.9	7.1	13.3	6.1	11.3	53.1	31.2	BDL
04.03.2024	5.8	11.0	7.3	13.5	6.4	11.6	51.1	29.9	BDL
10.03.2024	5.9	11.3	7.4	13.7	6.4	11.8	51.7	27.4	BDL
11.03.2024	6.2	11.8	7.6	14.5	6.6	12.2	49.0	26.0	BDL
17.03.2024	6.3	12.1	7.2	14.8	7.0	12.8	58.3	31.3	BDL
18.03.2024	6.4	12.2	7.7	15.1	6.7	12.5	48.3	31.0	BDL
24.03.2024	5.5	10.6	6.7	12.8	5.5	10.6	53.4	26.5	BDL
25.03.2024	6.5	12.8	7.7	15.4	7.1	13.2	49.7	27.3	BDL
31.03.2024	5.8	11.0	7.3	13.5	6.2	11.4	54.4	29.5	BDL
01.04.2024	6.4	12.7	7.2	15.8	7.0	13.1	53.4	30.5	BDL
07.04.2024	5.4	10.4	6.6	12.7	5.7	10.7	57.2	29.0	BDL
08.04.2024	6.1	11.7	7.7	14.3	6.7	12.3	58.0	30.6	BDL
14.04.2024	5.5	10.6	6.7	12.8	6.1	11.2	49.3	26.7	BDL
15.04.2024	6.4	12.2	7.7	15.1	7.0	12.8	53.9	29.3	BDL
21.04.2024	5.0	10.3	6.5	12.4	5.6	10.6	48.3	29.6	BDL
22.04.2024	6.0	11.5	7.7	14.0	6.2	11.7	53.0	28.3	BDL
28.04.2024	6.5	12.8	7.4	15.9	6.9	13.0	46.7	25.9	BDL
29.04.2024	5.7	10.9	7.1	13.3	6.1	11.3	51.6	26.3	BDL
05.05.2024	6.2	11.8	7.2	14.5	6.7	12.3	57.9	27.4	BDL
06.05.2024	5.6	10.7	6.8	13.0	5.8	10.9	53.8	28.5	BDL
12.05.2024	6.4	13.0	7.7	15.9	7.2	13.4	50.9	29.5	BDL
13.05.2024	5.9	11.3	7.4	13.7	6.4	11.8	49.9	29.9	BDL
19.05.2024	5.3	9.8	6.5	12.4	5.6	10.6	58.9	26.6	BDL
20.05.2024	6.4	12.2	7.7	15.1	6.7	12.5	51.5	29.3	BDL
26.05.2024	6.5	12.4	7.4	15.5	6.8	12.7	53.4	26.6	BDL
27.05.2024	6.2	12.7	7.1	15.8	6.9	13.0	46.2	31.2	BDL

	SO_2	NO_2	PM_{10}	$PM_{2.5}$	CO
Max.	7.7	15.9	58.9	31.3	BDL
Min.	5	9.8	46.2	25.9	BDL
98%tile	7.7	15.8	58.6	31.3	BDL

AMBIENT AIR QUALITY MONITORING

Location- 11: Village Peddaventurla **(Unit µg/m³)**

DATE OF MONITORING	CLOCK HOURS								
	00 – 08		08 – 16		16 – 24		24 HOURS PM_{10}	24 HOURS $PM_{2.5}$	CO
	SO_2	NO2	SO_2	NO2	SO_2	NO2			
05.03.2024	6.9	14.5	8.3	16.9	7.3	14.9	67.0	35.3	BDL
06.03.2024	7.0	14.6	8.5	17.1	7.6	15.2	60.0	33.1	BDL
12.03.2024	7.1	14.9	8.6	17.3	7.6	15.4	60.2	33.7	BDL
13.03.2024	7.4	15.4	9.0	18.0	7.8	15.8	63.3	35.6	BDL
19.03.2024	7.5	15.7	8.2	17.4	8.2	16.4	66.5	36.3	BDL
20.03.2024	7.2	15.8	8.4	16.5	7.9	16.1	59.5	34.6	BDL
26.03.2024	6.7	14.2	7.9	16.4	6.7	14.2	62.6	35.2	BDL
27.03.2024	7.1	16.4	9.0	18.0	8.3	16.8	55.8	34.9	BDL
02.04.2024	7.0	14.6	8.5	17.1	7.4	15.0	67.8	35.0	BDL
03.04.2024	7.5	16.3	9.0	16.3	8.2	16.7	65.2	32.6	BDL
09.04.2024	6.6	14.0	7.8	16.3	6.9	14.3	60.4	36.5	BDL
10.04.2024	7.3	15.3	9.0	17.9	7.9	15.9	59.6	30.0	BDL
16.04.2024	6.7	14.2	7.9	16.4	7.3	14.8	68.0	35.2	BDL
17.04.2024	7.5	15.8	9.0	18.0	8.2	16.4	59.3	31.6	BDL
23.04.2024	6.2	13.9	7.7	16.0	6.8	14.2	63.9	33.0	BDL
24.04.2024	7.1	15.1	8.9	17.6	7.4	15.3	68.1	35.0	BDL
30.04.2024	6.4	16.4	8.8	17.8	8.1	16.6	63.7	32.8	BDL
01.05.2024	6.9	14.5	8.3	16.9	7.3	14.9	57.9	31.6	BDL
07.05.2024	7.4	15.4	9.0	18.0	7.9	15.9	67.4	32.2	BDL
08.05.2024	6.8	14.3	8.0	16.6	7.0	14.5	67.3	30.5	BDL
14.05.2024	7.5	16.5	8.6	18.0	8.4	17.0	57.4	32.7	BDL
15.05.2024	7.1	14.9	8.6	17.3	7.6	15.4	68.0	32.1	BDL
21.05.2024	6.5	13.4	7.7	16.0	6.8	14.2	61.2	36.4	BDL
22.05.2024	6.8	15.8	9.0	18.0	7.9	16.1	60.4	30.4	BDL
28.05.2024	7.1	16.0	8.5	16.2	8.0	16.3	62.6	34.2	BDL
29.05.2024	7.4	15.5	9.0	17.5	8.1	16.6	67.9	33.1	BDL

AMBIENT AIR QUALITY MONITORING

	SO_2	NO_2	PM_{10}	$PM_{2.5}$	CO
Max.	9	18.0	68.1	36.5	BDL
Min.	6.2	13.4	55.8	30.0	BDL
98%tile	9.0	18.0	68.1	36.5	BDL

AMBIENT AIR QUALITY MONITORING

Location- 12: Village Perusomula **(Unit µg/m³)**

DATE OF MONITORING	CLOCK HOURS								
	00 – 08		08 – 16		16 – 24		24 HOURS PM_{10}	24 HOURS $PM_{2.5}$	CO
	SO_2	NO_2	SO_2	NO_2	SO_2	NO_2			
03.03.2024	9.0	19.0	10.4	21.4	9.4	19.4	63.9	39.2	0.6
04.03.2024	9.1	19.1	10.6	21.6	9.7	19.7	76.5	36.9	0.7
10.03.2024	9.2	19.4	10.7	21.8	9.7	19.9	65.3	36.6	0.7
11.03.2024	9.5	19.9	11.2	21.5	9.9	20.3	71.2	36.1	0.6
17.03.2024	9.1	20.2	11.1	20.5	10.3	20.9	75.1	41.8	0.6
18.03.2024	8.5	20.3	10.9	22.2	10.0	20.6	71.3	38.3	0.6
24.03.2024	8.8	18.7	10.0	20.9	8.8	18.7	74.2	40.5	0.6
25.03.2024	9.5	20.1	11.2	22.2	10.4	21.3	73.8	38.3	0.6
31.03.2024	9.1	19.1	10.6	21.6	9.5	19.5	67.1	39.3	0.6
01.04.2024	8.9	20.2	11.1	22.2	10.3	21.2	64.8	38.3	0.6
07.04.2024	8.7	18.5	9.9	20.8	9.0	18.8	71.7	40.0	0.6
08.04.2024	9.4	19.8	11.1	22.1	10.0	20.4	75.3	36.9	0.6
14.04.2024	8.8	18.7	10.0	20.9	9.4	19.3	64.9	39.7	0.6
15.04.2024	9.5	20.3	11.0	20.6	10.3	20.9	66.1	40.4	0.6
21.04.2024	8.3	17.9	9.8	20.5	8.9	18.7	70.2	41.8	0.7
22.04.2024	9.3	19.6	11.0	22.1	9.5	19.8	74.5	38.6	0.6
28.04.2024	9.5	20.5	10.9	20.8	10.2	21.1	62.9	34.8	0.6
29.04.2024	9.0	19.0	10.4	21.4	9.4	19.4	68.2	39.9	0.6
05.05.2024	9.5	19.9	11.2	21.9	10.0	20.4	76.4	41.3	0.6
06.05.2024	8.9	18.8	10.1	21.1	9.1	19.0	62.5	36.1	0.6
12.05.2024	9.1	20.5	11.2	22.2	10.5	21.5	70.9	38.2	0.7
13.05.2024	9.2	19.4	10.7	21.8	9.7	19.9	67.5	37.6	0.6
19.05.2024	8.6	18.4	9.8	20.5	8.9	18.7	70.8	38.8	0.6
20.05.2024	9.1	20.3	10.6	22.2	10.0	20.6	73.5	37.7	0.6
26.05.2024	9.3	20.5	11.2	22.1	10.1	20.8	65.4	38.2	0.6
27.05.2024	9.5	19.5	10.8	19.8	10.2	21.1	74.6	40.6	0.6

	SO_2	NO_2	PM_{10}	$PM_{2.5}$	CO
Max.	11.2	22.2	76.5	41.8	0.67
Min.	8.3	17.9	62.5	34.8	0.56
98%tile	11.2	22.2	76.4	41.8	0.67

AMBIENT AIR QUALITY MONITORING

Location- 13 : Village Nakkavanipalle **(Unit µg/m³)**

DATE OF MONITORING	CLOCK HOURS								
	00 – 08		08 – 16		16 – 24		24 HOURS PM_{10}	24 HOURS $PM_{2.5}$	CO
	SO_2	NO2	SO_2	NO2	SO_2	NO2			
03.03.2024	4.8	10.0	6.2	12.4	5.2	10.4	52.2	32.6	BDL
04.03.2024	4.9	10.1	6.4	12.6	5.5	10.7	54.8	26.2	BDL
10.03.2024	5.0	10.4	6.5	12.8	5.5	10.9	58.0	27.4	BDL
11.03.2024	5.3	10.9	7.0	13.6	5.7	11.3	47.7	32.5	BDL
17.03.2024	5.4	11.2	7.2	13.9	6.1	11.9	54.0	32.7	BDL
18.03.2024	5.5	11.3	7.4	14.2	5.8	11.6	56.1	26.6	BDL
24.03.2024	4.6	9.7	5.8	11.9	4.6	9.7	51.7	30.4	BDL
25.03.2024	5.8	11.9	7.6	14.8	6.2	12.3	57.8	33.2	BDL
31.03.2024	4.9	10.1	6.4	12.6	5.3	10.5	56.3	28.8	BDL
01.04.2024	5.7	11.8	7.6	14.6	6.1	12.2	51.1	25.1	BDL
07.04.2024	4.5	9.5	5.7	11.8	4.8	9.8	50.1	32.2	BDL
08.04.2024	5.2	10.8	6.9	13.4	5.8	11.4	57.6	28.1	BDL
14.04.2024	4.6	9.7	5.8	11.9	5.2	10.3	50.6	25.1	BDL
15.04.2024	5.5	11.3	7.4	14.2	6.1	11.9	49.6	26.8	BDL
21.04.2024	4.4	8.9	5.6	11.5	4.7	9.7	51.1	33.1	BDL
22.04.2024	5.1	10.6	6.8	13.1	5.3	10.8	49.3	25.9	BDL
28.04.2024	5.8	11.9	7.5	14.5	6.0	12.1	51.0	25.6	BDL
29.04.2024	4.8	10.0	6.2	12.4	5.2	10.4	51.7	28.3	BDL
05.05.2024	5.3	10.9	7.0	13.6	5.8	11.4	56.6	33.1	BDL
06.05.2024	4.7	9.8	5.9	12.1	4.9	10.0	60.0	27.0	BDL
12.05.2024	5.9	12.1	7.5	14.8	6.3	12.5	51.8	30.2	BDL
13.05.2024	5.0	10.4	6.5	12.8	5.5	10.9	53.1	32.2	BDL
19.05.2024	4.1	9.4	5.6	11.5	4.7	9.7	49.6	26.0	BDL
20.05.2024	5.5	11.3	7.4	14.2	5.8	11.6	58.7	26.1	BDL
26.05.2024	5.6	11.5	7.6	14.6	5.9	11.8	60.2	32.6	BDL
27.05.2024	5.7	11.8	7.4	14.5	6.0	12.1	49.2	26.1	BDL

AMBIENT AIR QUALITY MONITORING

	SO_2	NO_2	PM_{10}	$PM_{2.5}$	CO
Max.	7.6	14.8	60.2	33.2	BDL
Min.	4.1	8.9	47.7	25.1	BDL
98%tile	7.6	14.7	60.1	33.2	BDL

BASELINE MONITORING PHOTOGRHAPHS

AMBIENT AIR MONITORING PHOTOGRAPHS

	
Project Site	**Mine Site**
	
Near Village Chinnavenuturla	**Village Vaddirala**
	
Village Bestavemula	**Village T. Kammavaripalli**
	
Village G. Uppalapadu	**Village Madhavapuram**



Village Erragudi



Village Talamanchipatnam



Village Peddaventurla



Village Perusomula



Village Nakkavanipalle

NOISE LEVEL MONITORING PHOTOGRAPHS



Project Site



Mine Site



Near Village Chinnavenuturla



Village Vaddirala



Village Bestavemula



Village T. Kammavaripalli



Village G. Uppalapadu



Village Madhavapuram



Village Erragudi



Village Talamanchipatnam

GROUND WATER SAMPLING PHOTOGRAPHS



Plant Site



Village Jangalapalle



Village Vaddirala



Village Talamanchipatnam



Village Peddaventurla



Village Nosam



Village Bestavemula

SOIL SAMPLING PHOTOGRAPHS



Plant Site



Mine Site



Village G. Uppalapadu



Village Vaddirala



Village Kammavaripalle



Village Talamanchipatnam



Village Pedda ventula



Village Erragudi

SURFACE WARER SAMPLING PHOTOGRAPHS



Nallah



Canal



Pond near Kallutla



Nalla Cheruvu



Pond 2



Pond 3

BASELINE RESULT DURING PRE-MONSOON SEASON 2013 BY VIMTA LAB

3.1 INTRODUCTION

The baseline data were collected in core as well as buffer zone (10 km distance from the Mine Lease boundary) during Pre-Monsoon Season (March to May, 2013) by the Vimta Labs Ltd. For which Sampling Site, Results are discussed below:

3.2 AMBIENT *AIR ENVIRONMENT*

Monitoring Locations

Ambient Air quality monitoring has been carried out at 12 locations for PM10, PM2.5, Sox, NOx, CO and PAH. Details of Monitoring sites and Results for each location is discussed below:

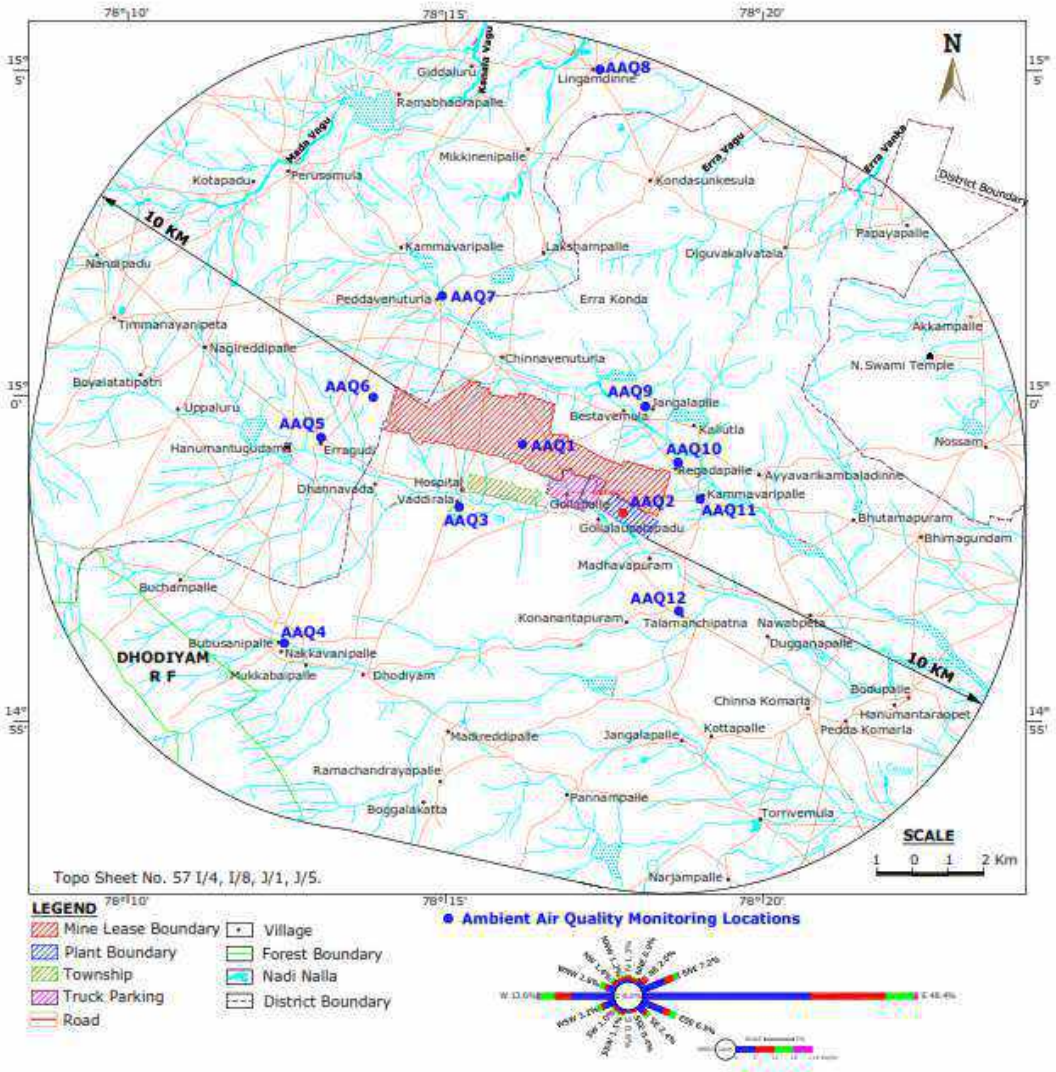


Fig: 1 Figure Showing Location of Air Quality Monitoring Stations

Table – 1

Locations of Ambient Air Quality Monitoring Stations

Study Period: Pre- Monsoon Season (March to May, 2013)

Station Code	Name of the Station	Distance (km)	Direction
AAQ1	Mine Lease Area	-	-
AAQ2	Plant site	Adjacent to ML area	
AAQ3	Vaddirala Village	1.5	SW
AAQ4	Nakkavanipalle Village	6.7	SW
AAQ5	Erragudi Village	1.8	W
AAQ6	West side boundary of ML area	0.5	W
AAQ7	Peddavenuturla Village	2.4	NW
AAQ8	Lingamdinne Village	9.3	N
AAQ9	Jangalapalle Village	1.4	ENE
AAQ10	Regadapalle Village	0.5	E
AAQ11	Kammavaripalle Village	1.1	ESE
AAQ12	Talamanchipatnam Village	2.9	SE

Results:

Table – 2 shows the maximum & minimum concentration of the air pollutants monitored at different locations during the study period.

Table - 2

Ambient Air Quality Monitoring Results

Study Period: Pre- Monsoon (March to May, 2013)

Station Code	Location/ Village	PM10 (µg/m3)				PM2.5 (µg/m3)			
		Min	Max	Avg	98%	Min	Max	Avg	98%
AAQ1	Mine Lease Area	34.1	39.4	36.7	39.4	19.6	22.1	20.6	22.0
AAQ2	Plant site near Gollalaupalepadu	30.6	38.4	35.4	38.0	19.8	21.9	20.8	21.8
AAQ3	Vaddirala	34.6	42.5	39.6	42.3	20.3	23.5	21.7	23.5
AAQ4	Nakkavanipalle	28.4	31.9	30.5	31.9	21.1	23.6	22.2	23.4
AAQ5	Erragudi	33.6	40.6	37.0	40.2	19.5	22.3	21.0	22.2
AAQ6	West side boundary of ML area	29.5	33.4	31.2	33.3	20.8	23.0	21.8	22.9
AAQ7	Peddavenuturia	29.5	35.6	32.7	35.2	19.5	21.5	20.4	21.5
AAQ8	Kondsunkesula	28.3	33.9	30.3	33.7	19.6	21.8	20.1	21.6
AAQ9	Bestavemula	29.2	35.8	32.1	35.6	19.1	20.6	19.7	20.6
AAQ10	Regadapalle	32.8	42.3	37.6	42.1	19.2	21.6	20.1	21.4
AAQ11	Kammavaripalle	32.9	41.2	37.3	41.1	19.2	22.1	20.6	22.1
AAQ12	Talamanchipatnam	34.9	41.8	38.9	41.7	19.6	22.2	20.8	22.2
Range		28.3-42.5				19.1-23.6			
NAAQ Standards		100				60			

Station Code	Location/ Village	SO2(µg/m3)				NOX(µg/m3)			
		Min	Max	Avg	98%	Min	Max	Avg	98%
AAQ1	Mine Lease Area	8.5	11.7	10.1	11.4	13.3	14.9	14.1	14.9
AAQ2	Plant site near Gollalaupalepadu	9.6	11.1	10.4	11.0	12.5	14.2	13.3	14.2
AAQ3	Vaddirala	10.2	12.8	11.4	12.8	13.9	15.9	15.0	15.9
AAQ4	Nakkavanipalle	8.3	10.8	9.8	10.8	12.8	14.9	13.8	14.8
AAQ5	Erragudi	8.5	11.7	10.5	11.7	14.1	15.8	14.9	15.8
AAQ6	West side boundary of ML area	8.7	10.9	10.1	10.9	12.1	14.8	13.2	14.8
AAQ7	Peddavenuturia	8.9	11.4	9.8	11.1	11.1	13.2	12.1	13.2
AAQ8	Kondsunkesula	8.3	10.4	9.2	10.4	10.4	12.8	11.4	12.8
AAQ9	Bestavemula	8.1	10.8	9.2	10.6	11.1	12.7	11.8	12.7
AAQ10	Regadapalle	11.4	13.4	12.6	13.4	14.2	16.2	15.3	16.2
AAQ11	Kammavaripalle	10.4	13.8	12.8	13.8	14.4	16.4	15.5	16.4
AAQ12	Talamanchipatnam	11.7	13.8	13.0	13.8	14.1	16.7	15.3	16.6
Range		8.1-13.8				10.4-16.7			
NAAQ Standards		80				80			

Station Code	Location/ Village	CO (µg/m3)				O3 (µg/m3)			
		Min	Max	Avg	98%	Min	Max	Avg	98%
AAQ1	Mine Lease Area	275	395	346	386	3.0	6.1	4.7	6.0
AAQ2	Plant site near Gollalaupalepadu	267	391	330	381	2.3	6.8	4.3	6.5
AAQ3	Vaddirala	246	445	347	427	3.4	6.8	5.2	6.7
AAQ4	Nakkavanipalle	233	345	281	325	2.3	6.3	4.0	6.1
AAQ5	Erragudi	247	388	316	366	3.1	6.7	4.5	6.3
AAQ6	West side boundary of ML area	235	387	312	384	2.1	5.6	3.6	5.5
AAQ7	Peddavenuturia	214	337	278	330	2.1	6.1	3.7	5.8
AAQ8	Kondsunkesula	204	310	251	307	2.1	6.2	3.9	6.1
AAQ9	Bestavemula	215	349	280	346	2.3	5.4	3.5	5.2
AAQ10	Regadapalle	215	371	309	368	2.1	6.2	3.9	6.1
AAQ11	Kammavaripalle	288	421	345	412	3.3	6.2	4.8	6.0
AAQ12	Talamanchipatnam	316	420	364	410	3.8	7.4	5.4	7.1
Range		204-445				2.1-7.4			
NAAQ Standards		2000				100			

Station Code	Location/ Village	Ammonia (µg/m3)				Arsenic (µg/m3)			
		Min	Max	Avg	98%tile	Min	Max	Avg	98%tile
AAQ1	Mine Lease Area	<20.0	<20.0	<20.0	<20.0	<0.01	<0.001	<0.001	<0.001
AAQ2	Plant site near Gollalaupalepadu	<20.0	<20.0	<20.0	<20.0	<0.01	<0.001	<0.001	<0.001
AAQ3	Vaddirala	<20.0	<20.0	<20.0	<20.0	<0.01	<0.001	<0.001	<0.001

AAQ4	Nakkavanipalle	<20.0	<20.0	<20.0	<20.0	<0.01	<0.001	<0.001	<0.001
AAQ5	Erragudi	<20.0	<20.0	<20.0	<20.0	<0.01	<0.001	<0.001	<0.001
AAQ6	West side boundary of ML area	<20.0	<20.0	<20.0	<20.0	<0.01	<0.001	<0.001	<0.001
AAQ7	Peddavenuturia	<20.0	<20.0	<20.0	<20.0	<0.01	<0.001	<0.001	<0.001
AAQ8	Kondsunkesula	<20.0	<20.0	<20.0	<20.0	<0.01	<0.001	<0.001	<0.001
AAQ9	Bestavemula	<20.0	<20.0	<20.0	<20.0	<0.01	<0.001	<0.001	<0.001
AAQ10	Regadapalle	<20.0	<20.0	<20.0	<20.0	<0.01	<0.001	<0.001	<0.001
AAQ11	Kammavaripalle	<20.0	<20.0	<20.0	<20.0	<0.01	<0.001	<0.001	<0.001
AAQ12	Talamanchipatnam	<20.0	<20.0	<20.0	<20.0	<0.01	<0.001	<0.001	<0.001
Range		<20.0				<0.001			

Station Code	Location/ Village	Benzene (µg/m3)				BaP (µg/m3)			
		Min	Max	Avg	98%tile	Min	Max	Avg	98%tile
AAQ1	Mine Lease Area	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
AAQ2	Plant site near Gollalaupalepadu	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
AAQ3	Vaddirala	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
AAQ4	Nakkavanipalle	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
AAQ5	Erragudi	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
AAQ6	West side boundary of ML area	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
AAQ7	Peddavenuturia	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
AAQ8	Kondsunkesula	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
AAQ9	Bestavemula	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
AAQ10	Regadapalle	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
AAQ11	Kammavaripalle	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
AAQ12	Talamanchipatnam	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Range		<0.01				<0.01			

Station Code	Location/ Village	Lead (µg/m3)				Nickel (µg/m3)			
		Min	Max	Avg	98%tile	Min	Max	Avg	98%tile
AAQ1	Mine Lease Area	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
AAQ2	Plant site near Gollalaupalepadu	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
AAQ3	Vaddirala	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
AAQ4	Nakkavanipalle	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
AAQ5	Erragudi	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
AAQ6	West side boundary of ML area	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
AAQ7	Peddavenuturia	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
AAQ8	Kondsunkesula	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
AAQ9	Bestavemula	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

AAQ10	Regadapalle	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
AAQ11	Kammavaripalle	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Range		<0.001				<0.001			

3.3 NOISE ENVIRONMENT

Sampling Locations

Locations / stations selected for noise level monitoring are given in Table - 3 and shown in Figure – 2.

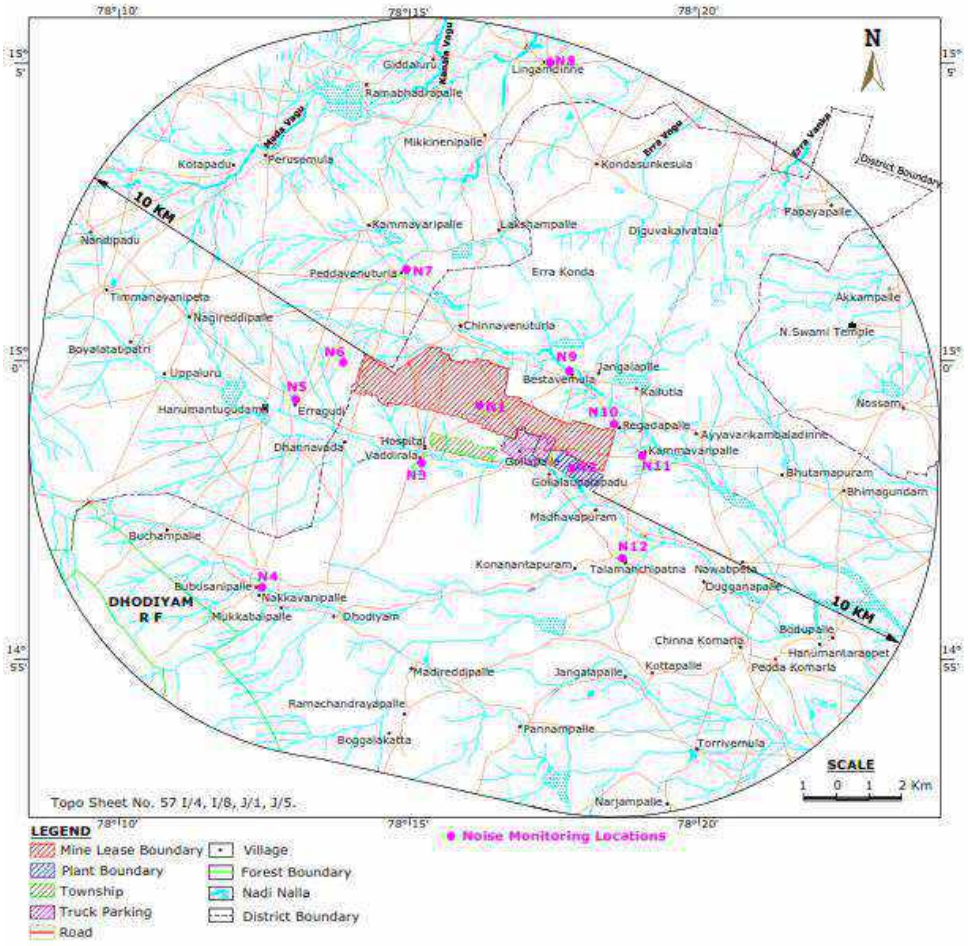


Fig: 2 Figure Showing Location of Noise Monitoring Stations

Table - 3

Locations of Ambient Noise Level Monitoring Stations

Study Period: Pre-Monsoon Season (March to May 2013)

Station	Name of the Station	Distance	Direction	Environmental
N1	Mine Lease Area	-	-	Core Zone
N2	Plant site near Gollalaupalepadu	-	-	Core Zone
N3	Vaddirala	1.5	SW	Residential
N4	Nakkavanipalle (Babusanipalle)	6.7	SW	Residential
N5	Erragudi	1.8	W	Residential
N6	West side boundary of ML area	0.6	NE	Residential

N7	Peddavenuturla	2.4	NW	Residential
N8	Lingamdinne	9.3	N	Residential
N9	Bestavemula	1.4	ENE	Residential
N10	Regadapalle	0.5	E	Residential
N11	Kammavaripalle	1.1	ESE	Residential
N12	Talamanchipatnam	2.9	SE	Residential

Results:

Ambient noise levels monitoring results monitored at different locations (during the study period, and results are given in Table - 4

Table - 4

Ambient Noise Level Monitoring Results

Study Period: Pre-Monsoon Season (March to May 2013)

Code	Location	L10	L50	L90	Leq	Lday	Lnight	Ldn
N1	Mine Lease Area	49.3	45.6	42.0	46.5	47.1	43.9	50.9
N2	Plant site near Gollalaupalepadu	48.6	44.7	40.9	45.7	46.6	43.0	50.1
N3	Vaddirala	48.7	44.5	40.6	47.5	49.1	41.6	50.2
N4	Nakkavanipalle	46.9	43.3	39.6	44.2	44.7	41.7	48.7
N5	Erragudi	49.8	45.9	42.1	46.9	47.9	44.0	51.2
N6	West side boundary of ML area	47.3	43.6	40.0	44.5	45.0	42.1	49.1
N7	Peddavenuturia	46.2	42.6	38.9	43.5	44.0	40.9	47.9
N8	Kondsunkesula	45.6	41.8	38.3	42.7	43.6	40.4	47.4
N9	Bestavemula	47.2	43.3	39.5	44.3	45.2	41.6	48.7
N10	Regadapalle	47.5	43.9	40.2	44.8	45.3	42.2	49.2
N11	Kammavaripalle	48.3	44.4	40.6	45.4	46.4	42.5	49.7
N12	Talamanchipatnam	49.6	45.8	42.3	46.7	47.3	44.3	51.3

3.4 WATER ENVIRONMENT

3.4.1 SURFACE WATER QUALITY

Monitoring Locations

During the Pre-Monsoon Season (March to May 2013) baseline study period, four water bodies were found in within 10 km study area of the mine site and all the water bodies water bodies were found dry during seasons.

Table - 5

Surface Water Monitoring Locations

Study Period: Pre-Monsoon Season (March to May, 2013)

Sr.No.	Code	Location	Distance (km)	Direction
1	SW1	Mada Vagu	7.0	NW
2	SW2	Erra vagu	8.0	NNE
3	SW3	Vagu near Chinnavenuturla village	2.2	NE

4	SW4	Vagu near Maylavaram village	9.2	SE

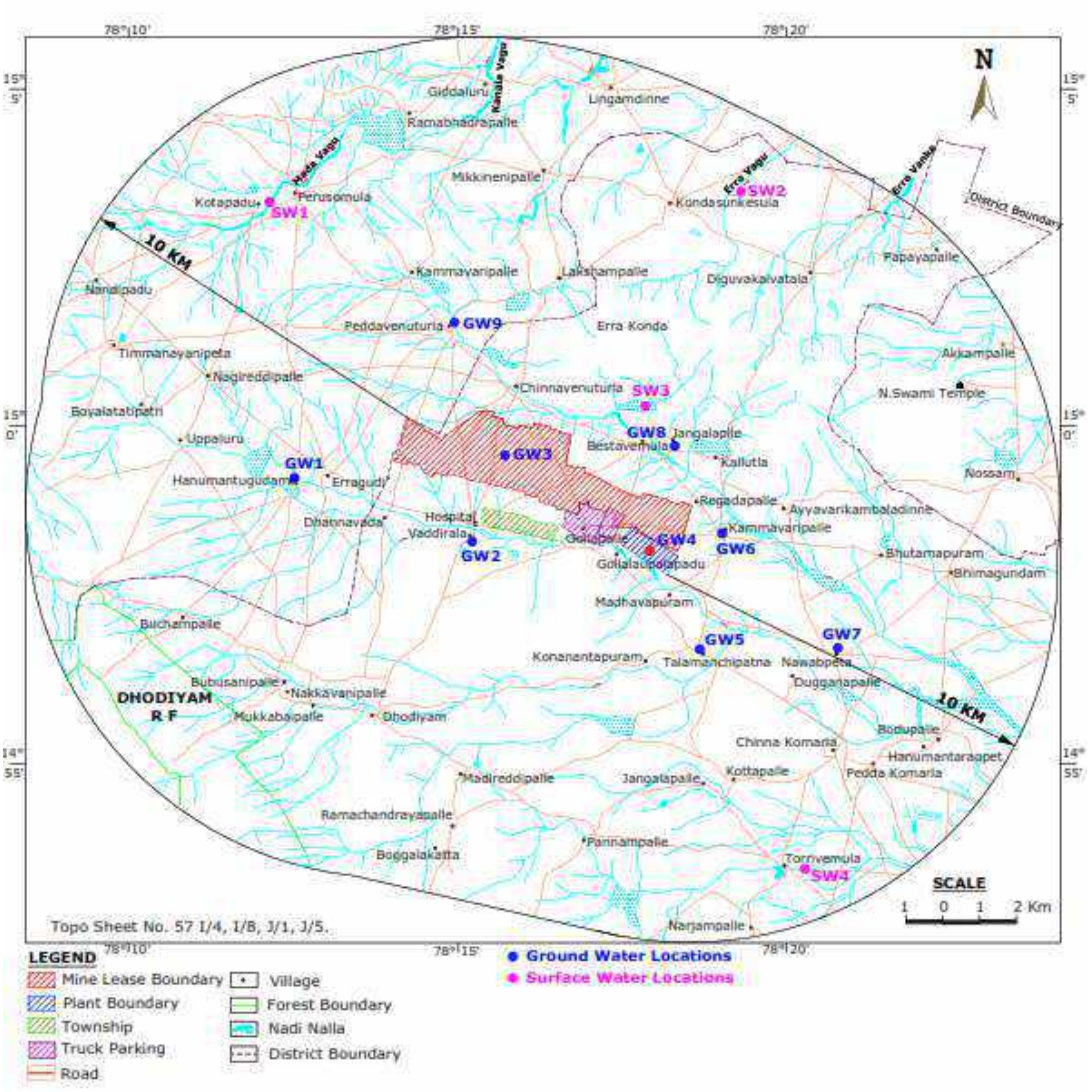


Fig: 3 Figure Showing Location of Surface and Ground water sampling Stations

Results

All the Surface water were found dry at the time of baseline study

3.4.2 GROUND WATER QUALITY

Sampling Locations

Details of ground water sampling locations and their distance and directions from the mine site are given in Table - 6 & shown in Figure – 3.

Table - 6

Locations of Ground Water Sampling Stations

Study Period: Pre-Monsoon Season (March to May 2013)

Sr.No.	Code	Location	Distance (km)	Direction
1	GW 1	Hanumantugudam village	2.7	W
2	GW 2	Vaddirala village	1.5	SW
3	GW 3	Mine lease area village	-	-
4	GW 4	Plant Site village	-	-
5	GW 5	Talamanchipatna village	2.9	SE
6	GW 6	Kammavaripalle village	1.1	ESE
7	GW 7	Nawabpeta village	5.1	ESE
8	GW 8	Jangalaplle village	1.7	E
9	GW 9	Peddaventurla village	2.4	NW

Results:

Ground water collected from nine different locations (during the study period, and results are given in Table 7:

Table: 7
Ground Water Analysis
Study Period: Pre- Monsoon Season (March to May 2013)

Parameters	Unit	IS:10500	GW1	GW2	GW3	GW4	GW5	GW6	GW7	GW8	GW9
pH	-	6.5-8.5(NR)	7.4	7.8	7.6	7.2	7.5	7.7	7.5	7.8	7.3
Colour	Hazen	5(15)	3	2	3	4	2	2	3	3	2
Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Odour	-	U. O	UO	UO	UO	UO	UO	UO	UO	UO	UO
Conductivity	MS/cm	$	1210	1057	713	182	836	1702	1923	814	756
Turbidity	NTU	1(5)	3	3	4	5	3	3	4	3	3
TDS	mg/l	500(2000)	790	695	470	120	570	1160	1290	550	510
Total Hardness as	mg/l	200(600)	240	318	193	51	163	459	480	263	231
Total Alkalinity	mg/l	200(600)	125	135	110	45	156	135	240	120	140
Calcium as Ca	mg/l	75(200)	68.2	84.2	54.2	14.4	35.1	108.6	119.4	70.5	74.5
Magnisium as Mg	mg/l	30(100)	16.9	26.1	15.3	3.7	18.2	45.5	44.1	21.2	10.8
Residual Chlorine	mg/l	1 min	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Boron	mg/l	0.5 (1)	0.02	0.01	<0.01	<0.01	0.02	0.03	0.05	0.02	0.02
Chloride as Cl	mg/l	250(1000)	146.5	119.0	68.4	22.1	108.0	340	302	120	135
Sulphate as SO4	mg/l	200(400)	226.9	192.2	132.0	12.1	95.5	210	237.7	102	35.7
Fluorides as F	mg/l	1.0(1.5)	0.8	0.7	0.8	0.6	0.9	0.8	0.7	0.9	0.7
Nitrates as NO3	mg/l	45(NR)	22.6	20.2	21.0	5.8	18.7	20.7	25.4	16.9	14.7
Sodium as Na	mg/l	$	148.5	84.7	65.9	18.0	105.9	165.5	191.1	56.4	63.2
Potassium as K	mg/l	$	24.8	13.6	10.2	2.5	21.4	35.0	46.1	15.4	13.1
Phenolic compounds	mg/l	0.001(0.002)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cyanides	mg/l	0.05(NR)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Anionic Detergents	mg/l	0.2(1)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mineral Oil	mg/l	0.5 (NR)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cadmium as Cd	mg/l	0.01(NR)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Asrsenic as As	mg/l	0.01(0.05)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Copper as Cu	mg/l	0.05(1.5)	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.02	0.01
Lead as Pb	mg/l	0.01(NR)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Manganese as Mn	mg/l	0.1(0.3)	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	0.03	0.01	0.02

Iron as Fe	mg/l	0.3(NR)	0.08	0.09	0.11	0.09	0.07	0.07	0.03	0.01	0.02
Chromium as Cr	mg/l	0.05(NR)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.05	<0.05	<0.05
selenium as Se	mg/l	0.01(NR)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc as Zn	mg/l	5(15)	0.04	0.03	0.04	0.07	0.05	0.07	0.12	0.09	0.04
Aluminium as Al	mg/l	0.03(0.2)	<0.01	0.02	0.01	<0.01	0.02	<0.01	0.01	<0.01	0.02
Mercury as Hg	mg/l	0.001(NR)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Pesticides	mg/l	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
E. Coli	mg/l	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
Total Coliforms	MNP/10	10	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL

3.5 SOIL *ENVIRONMENT*

Sampling Locations

Details of Location of soil sampling stations along with the direction are given below mentioned table 8:

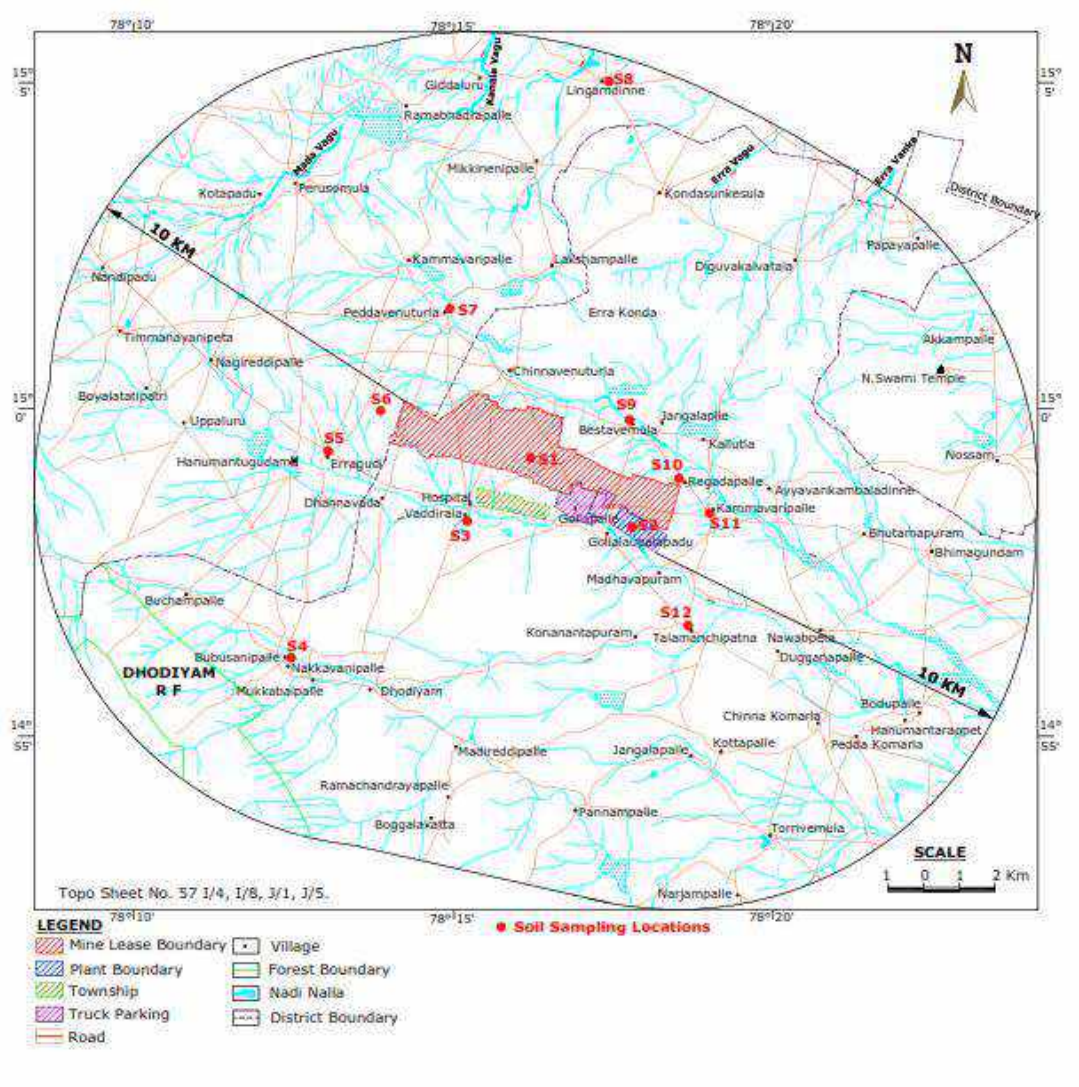


Fig: 4 Figure Showing Location of Soil sampling Stations

Table - 8

Locations of Soil Sampling Stations

Study Period: Pre-Monsoon Season (March to May 2013)

Station Code	Location	Distance from	Direction
S1	Mine Lease Area	-	-
S2	Plant site	Adjacent to ML area	
S3	Vaddirala	1.5	SW
S4	Nakkavanipalle	6.7	SW
S5	Erragudi	1.8	W
S6	West side boundary of	0.6	NE
S7	Peddavenuturia	2.4	NW

S8	Lingamdinne	9.3	N
S9	Bestavemula	1.4	ENE
S10	Regadapalle	0.5	E
S11	Kammavaripalle	1.1	ESE
S12	Talamanchipatnam	2.9	SE

Results:

Soil collected from 12 different locations (during the study period, and results are given in Table 8:

Table – 9, Soil Analysis

Study Period: Pre-Monsoon Season (March to May 2013)

Sr.	Parameters	Unit	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12
1	pH (1:5 soil	---	8.1	7.9	7.8	7.9	8.0	8.1	8.2	8.1	7.8	7.9	8.0	8.1
2	Electrical	MS/cm	168	140	176	156	148	172	226	130	268	226	216	273
3	Texture	---	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy
4	Sand	%	48	46	47	52	48	50	32	48	46	50	46	53
5	Silt	%	16	17	15	12	16	12	14	16	16	13	18	11
6	Clay	%	36	37	38	36	36	38	34	36	38	37	36	36
7	Bulk Density	g/cc	1.2	1.1	1.2	1.2	1.1	1.2	1.2	1.2	1.1	1.2	1.2	1.3
8	Exchangeable	mg/kg	8400	4400	7868	5995	8000	7236	9200	2600	7505	7235	8976	3315
9	Exchangeable	mg/kg	486	729	910	1479	1074	356	486	729	830	356	474	232
10	Exchangeable	mg/kg	900	800	896	702	700	587	65	70	73.2	78.2	78.0	87.8
11	Available	Kg/ha	226	196	208	176	212	126	176	184	182	178	168	186
12	Available	Kg/ha	56	58	60	56	52	48	56	62	50	48	46	52
13	Available	Kg/ha	50	52	48	48	56	56	44	58	56	58	52	50
14	Organic	%	0.41	1.96	0.63	0.60	0.33	1.66	1.66	0.63	0.58	0.36	2.21	0.63
15	Organic	%	0.24	1.14	0.59	0.36	0.19	0.96	0.96	0.37	0.37	0.21	0.11	0.37
16	Water soluble	mg/kg	578	630	250	264	308	414	374	202	198	214	216	220
17	Water soluble	mg/kg	134.9	374.2	91.9	96.2	81.2	62.8	102	98.6	76.2	86.2	78.6	86.2
18	Sodium	---	0.12	0.13	0.10	0.10	0.09	0.08	0.08	0.14	0.10	0.11	0.10	0.18
19	Aluminum	%	1.72	1.53	3.55	1.63	3.73	3.44	3.72	1.17	2.79	3.75	4.60	1.77
20	Total Iron	%	1.31	1.17	2.37	1.12	2.43	2.25	2.60	1.08	1.85	2.68	3.00	1.43
21	Manganese	mg/kg	340	882	880	274	536	548	188	372	714	632	623	288
22	Boron	mg/kg	26	28	36	14	26	20	22	18	16	20	18	10
23	Zinc	mg/kg	68	67	90.6	38.6	78.6	38.4	45	24.02	22.72	32.4	45.6	41.34

HYDROGEOLOGICAL REPORT



PROPOSED 5.0 MTPA INTEGRATED CEMENT CLINKERISATION PLANT, 8.0 MTPA CEMENT GRINDING UNIT, 100 MW CAPTIVE POWER PLANT WITH KADAPA LIMESTONE MINE (AREA-997.08 HA)
AT
GOLLAPALLE, VILLAGE OF MYLAVARAM MANDAL, KADAPA (YSR) DISTRICT, ANDHRA PRADESH

ASSESSMENT BLOCK: MYLAVARAM
CATEGORY: SAFE

PROJECT PROPONENT

ACC LIMITED

ADANI CORPORATE HOUSE,

SHANTIGRAM, SG HIGHWAY,

AHMEDABAD, GUJARAT 382 421

MOBILE NO. +91 792 555 8623

NABET ACCREDITED CONSULTANT

J.M. ENVIRONET PVT. LTD.

(NABET CERTIFICATE NO. NABET/GWCO/IA/GW018)

EMMAR DIGITAL GREENS, TOWER – B, UNIT NO. 1517, GOLF COURSE EXT. ROAD, SECTOR – 61, GURUGRAM (HARYANA)

Email: jmenviron@hotmail.com

Table of Contents

1. SALIENT FEATURES OF THE PROPOSAL 1
2. ABOUT THE PROJECT 2
2.1 LANDUSE / LAND COVER OF THE SURROUNDING AREA 6
2.2. DEM / TOPOGRAPHY 8
2.3 GEOMORPHOLOGY AND DRAINAGE 10
2.4 DETAILS OF WETLANDS/ MAJOR WATER BODIES 13
3 HYDROGEOLOGY 14
3.1 GEOLOGICAL SETUP 14
3.2 HYDROGEOLOGICAL SETUP 17
3.3.1. Aquifer characteristics 17
3.3.2. Ground water flow and aquifer interaction with surface water bodies 17
3.3.3 Depth to Water level 21
3.3.4 Long term water level data analysis 27
3.3.5 Ground water quality 32
3.3.6 Water Quality of Nearby water body 40
4 DETAILS OF PROPOSED / EXISTING TUBEWELLS/ BOREWELLS 40
5. PROPOSED DEWATERING PLANS IN CASE OF INFRASTRUCTURE DEWATERING PROJECTS 41
6 IMPACT ASSESSMENT 41
6.1 IMPACT ON THE GROUND WATER REGIME 41
6.2 IMPACT ON SURFACE WATER SOURCE 45
6.3 IMPACT ON WATER QUALITY 45
6.4 MITIGATION MEASURES 45
7 WATER BALANCE, RECYCLE AND REUSE 46
8 SALINE WATER DISPOSAL STRATEGIES 50
9 ANY OTHER DETAILS PERTAINING TO THE PROJECT 51
10 SUMMARY AND CONCLUSION 51
11 BIBILIOGRAPHY 52
12 ACCREDITATION CERTIFICATE 53

List of Figures

Figure 1:Location Map of the Study Area 3
Figure 2:Environment Setting Map of the Study Area 4
Figure 3: Google map of the Study Area 5
Figure 4:LULC Map of the Study Area 7
Figure 5: Digital Elevation Map of Study Area. 9
Figure 6: Geomorphology Map of the Study Area 11

Figure 7:Drainage Map of the Study Area 12
Figure 8:Ramsar Site Map of India showing Wetlands 13
Figure 9: Geology Map of the Study Area 16
Figure 10:Hydrogeology Map (Pre-monsoon, May-2024) of the Study Area 18
Figure 11:Water Table Contour Map Pre-Monsoon May-2024 Season of the Area 19
Figure 12:Water Table Contour Map Post Monsoon Season (November-2023) of the Study Area 20
Figure 13:Monitoring Location Map of the Study Area 23
Figure 14:Depth to Water Level map pre-Monsoon (May-2024) Season 24
Figure 15:Depth to Water Level Post Monsoon Season (November-2023) of the Study Area 25
Figure 16:Seasonal Fluctuation Map of the Study Area 26
Figure 17:Water level Fluctuation Graph in last 10 years (Nossam Station) 28
Figure 18:Decadal Map Post Monsoon Season of Kadapa District 29
Figure 19 Decadal (m/year) Map Pre-Monsoon Season (May-2024) of the Study area 30
Figure 20:Decadal(m/year) Map Post Monsoon Season (November-2023) of the Study Area 31
Figure 21:Chloride Map of the Study Area 36
Figure 22: Electrical Conductivity Map of the Study Area 37
Figure 23: Nitrate Map of the Study Area 38
Figure 24:Fluoride Map of the Study Area 39
Figure 25:Water Balance Diagram 47
Figure 26 Schematic Diagram for Sewage Treatment Plant 49
Figure 27 Schematic Diagram for Reverse Osmosis. 50

List of Table

Table 1:LULC Classification 6
Table 2:Aquifer Property (Hard Rock) in the Study Area 17
Table 3:Details of Ground Water in and around Buffer Zone 22
Table 4:Details of Nossam Station 27
Table 5:Ground Water Sampling Result 33
Table 6:Details of Ground Water Abstraction Structure 40
Table 7: Details of Groundwater resources Available in the study area calculated based on GEC 2015 44
Table 8:Break up of Water Requirement 47
Table 9 Expected Waste Water Characteristics of STP 49

1. SALIENT FEATURES OF THE PROPOSAL

S. No.	Particulars	Information
1.	Fresh or Renewal	Fresh
2.	Existing or New/ Proposed	New Project
3.	If Renewal, date of validity of existing/ last NOC	Not Applicable
4.	CTE Issue Date	New Project
5.	Name of Project with Address	Proposed 5.0 MTPA Integrated Cement Clinkerisation Plant, 8.0 MTPA Cement Grinding Unit, 100 MW Captive Power Plant with Kadapa Limestone Mine (Area-997.08 Ha) at Gollapalle, Village of Mylavaram Mandal, Kadapa (YSR) District, Andhra Pradesh
6.	State	Andhra Pradesh
7.	District	Kadapa (YSR)
8.	Block/ Taluka	Mylavaram Mandal
9.	Category of Block/ Taluka (as per prevailing GWRE)	Safe
10.	Quantum of GW (KLD)	2922 KLD
11.	Quantum of GW (m3/Year)	9,64,260 m3/year
12.	Alluvium/ non-alluvium	Non- alluvium
13.	Consultant Details with Name of Authorized Signatory (If Institution)	Deepa Taneja J M Enivronet Pvt. Ltd.
14.	In case report is prepared jointly by accredited institute and individual consultant, name details of chapters prepared by the individual consultant	NA
15.	Accreditation Certificate No. and Date/ Validity (In case jointly as per Point No. 14, No. and validity of both institution and individual are to be given)	Accreditation Certificate No.: QCI/NABET/ENV/GWCO/ACO/21/51 dated 23.09.2021 Date/ Validity: 08.09.2026

2. ABOUT THE PROJECT

Proposed 5.0 MTPA Integrated Cement Clinkerisation Plant, 8.0 MTPA Cement Grinding Unit, 100 MW Captive Power Plant with Kadapa Limestone Mine (Area – 997.08 Ha) at Gollapalle, Village of Mylavaram Mandal, Kadapa (YSR) District, Andhra Pradesh is a Greenfield project which falls under Category 'A' projects as per the EIA Notification, 2006 and as amended thereof; Project or Activity '3(b)' Cement Plants --- in which the plant of proposed capacity will be installed by M/s. ACC Limited. And M/s. ACC Limited also has proposed Kadapa limestone mine of area 997.08 Ha at Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle, G. Uppalapadu Villages of Mylavaram Mandal, Kadapa (YSR) District which is located just above the proposed plant site.

Scope of Work

- Conducting of Field investigation related to Water levels and Aquifer disposition
- Groundwater level monitoring
- Groundwater quality monitoring
- Surface Water quality
- Preparation of Hydrogeological Report on ground water conditions in both core and buffer zones

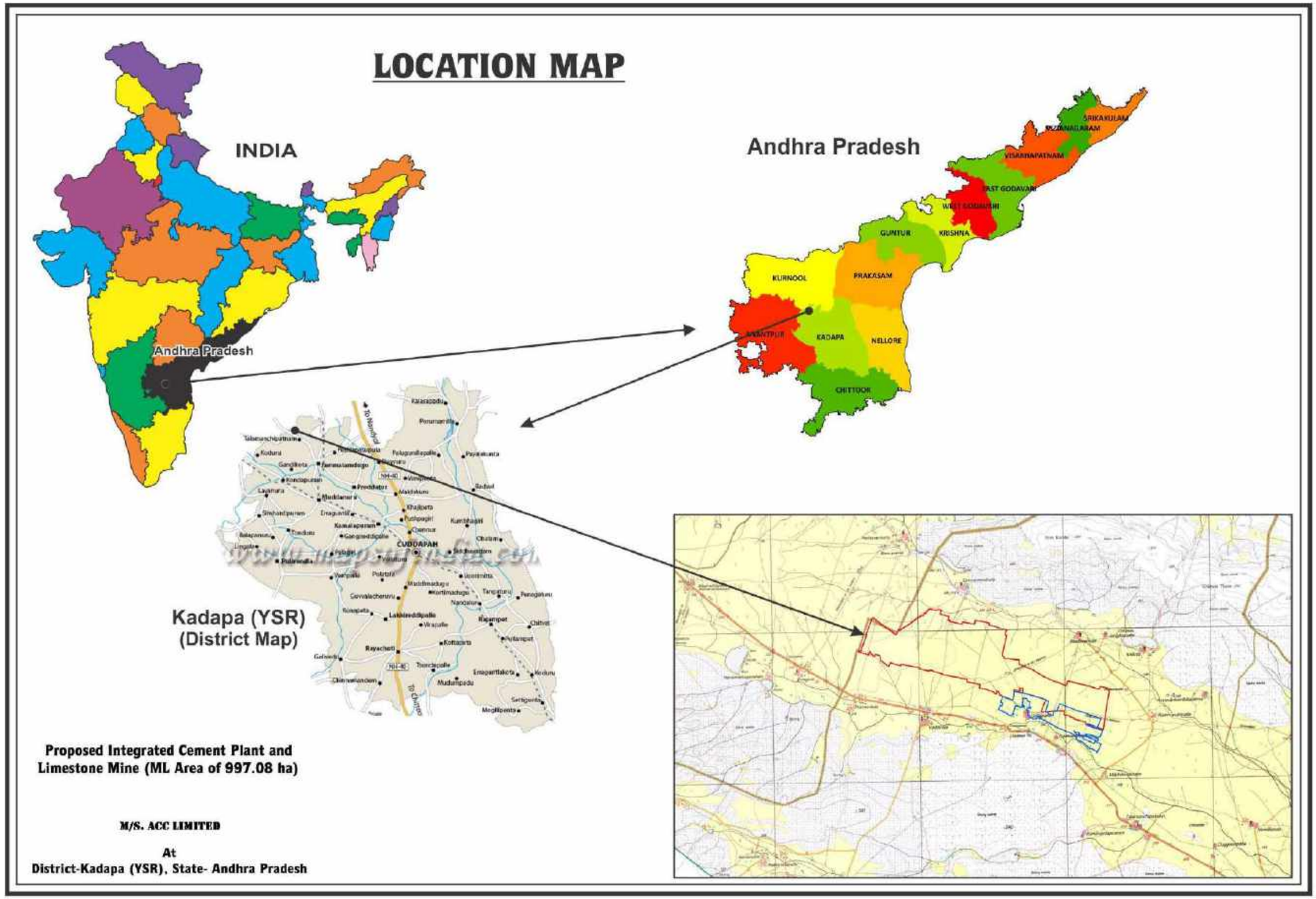


Figure 1:Location Map of the Study Area

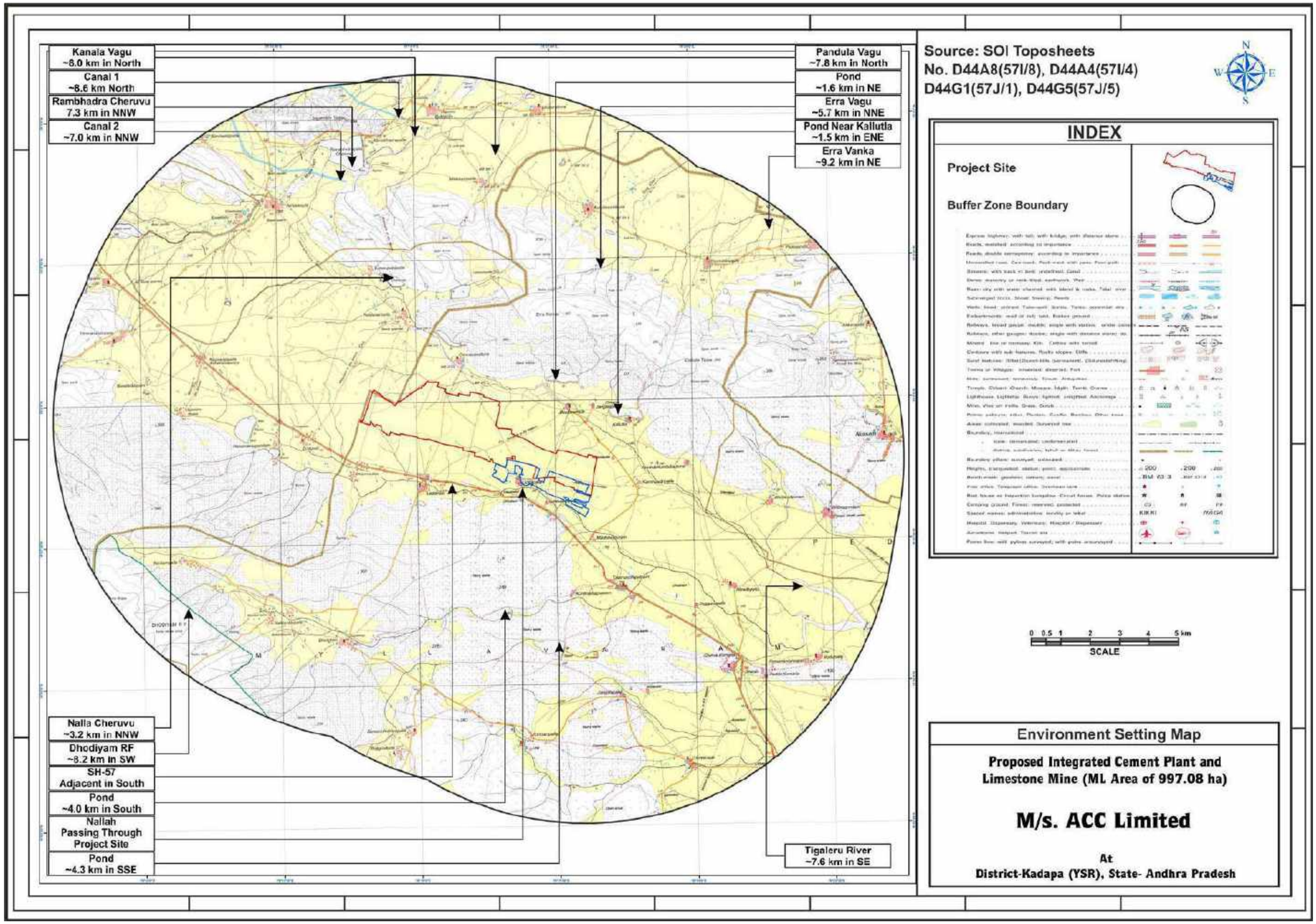


Figure 2:Environment Setting Map of the Study Area

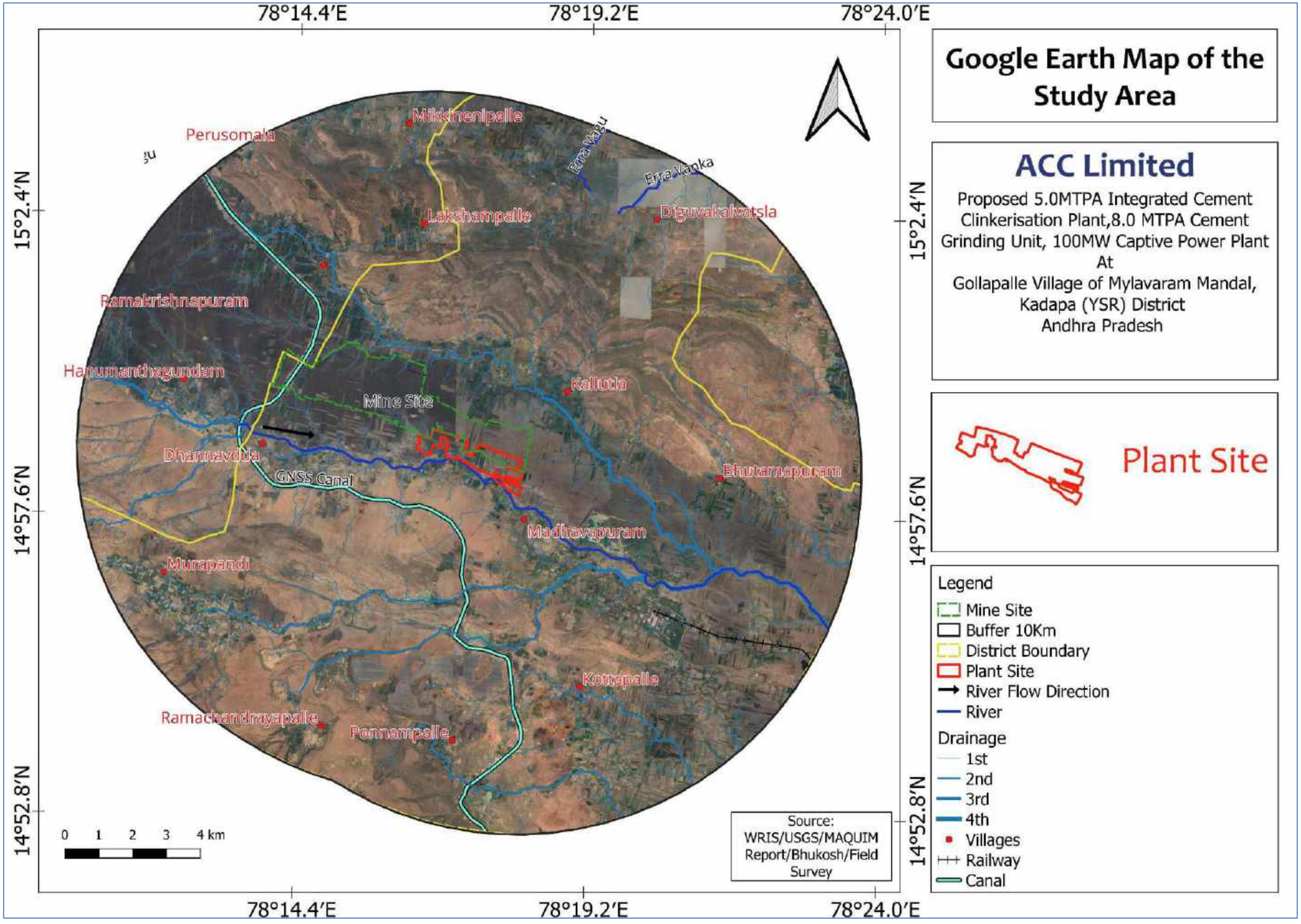


Figure 3: Google map of the Study Area

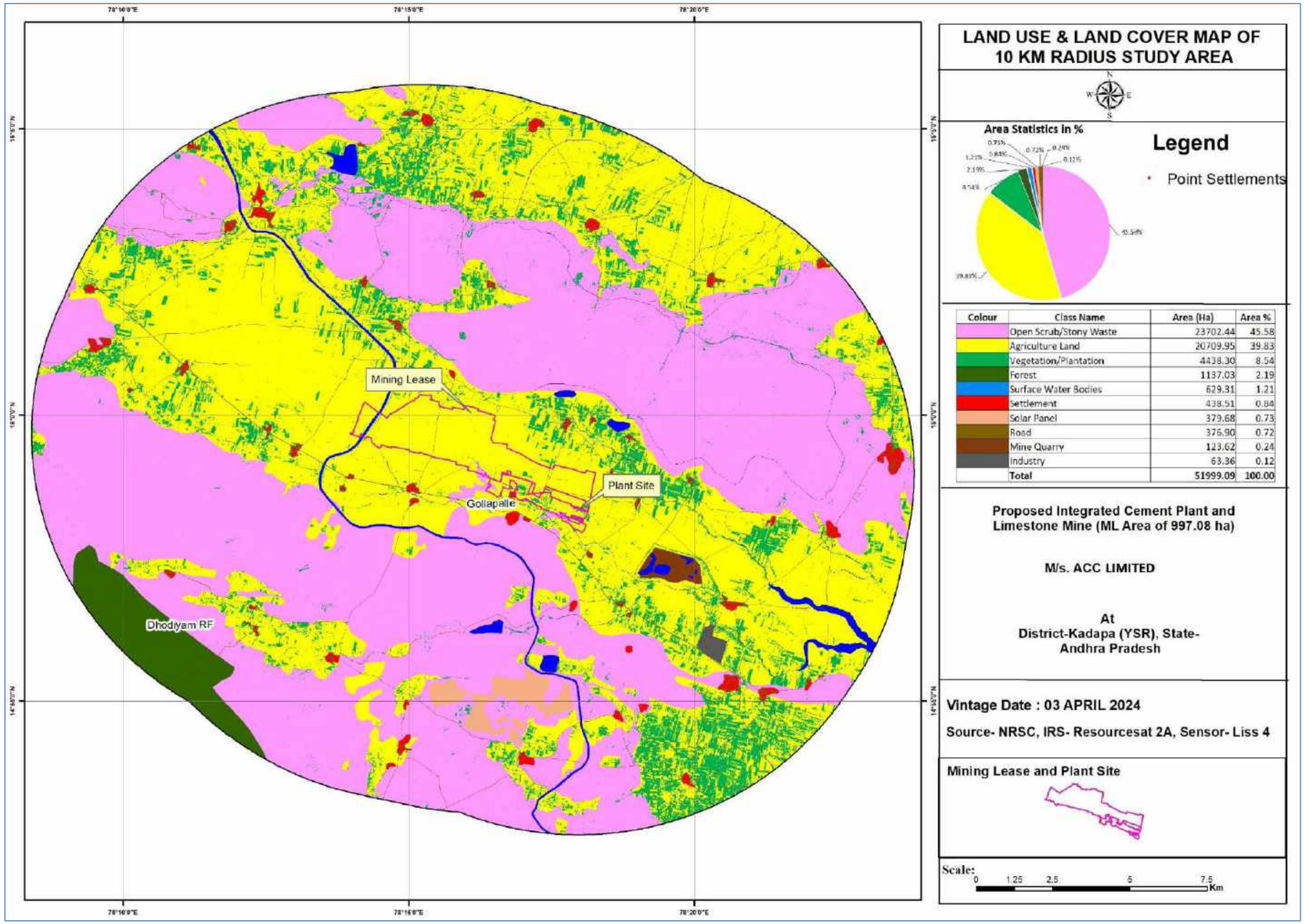
2.1 LANDUSE / LAND COVER OF THE SURROUNDING AREA

The land use classification of the project area is primarily dominated by Open Scrub/Stony Waste, covering 21,976.79 hectares, which constitutes 50.52% of the total land. Agriculture Land is the second most prevalent category, occupying 16,336.20 hectares and accounting for 37.55% of the total area. Vegetation and Plantation areas span 3,432.70 hectares, forming 7.89% of the land. Surface Water Bodies are present in 511.16 hectares, representing 1.18% of the total site. The area under Solar Panels covers 379.68 hectares, making up 0.87% of the land. Road infrastructure is spread over 366.22 hectares, contributing 0.84% to the total area. Settlements occupy 310.49 hectares, forming 0.71% of the land use, while Mine Quarries cover 123.62 hectares, accounting for 0.28% of the area. Lastly, the Industrial Area is relatively small, occupying 63.36 hectares and making up 0.15% of the total land.

And in the proposed Limestone mine area most of the area is covered by Open scrub/stony waster which is almost about 45.58%, followed by agricultural land of about 39.83% and minor area is covered by Plantation, Forest, surface water bodies, settlements and etc.

Table 1:LULC Classification

S. No.	Class Name	Area (Ha)	Area %
1.	Open Scrub/Stony Waste	21976.79	50.52
2.	Agriculture Land	16336.2	37.55
3.	Vegetation/Plantation	3432.7	7.89
4.	Surface Water Bodies	511.16	1.18
5.	Solar Panel	379.68	0.87
6.	Road	366.22	0.84
7.	Settlement	310.49	0.71
8.	Mine Quarry	123.62	0.28
9.	Industry	63.36	0.15
Total		**43500.22**	**100.00**



Colour	Class Name	Area (Ha)	Area %
	Open Scrub/Stony Waste	23702.44	45.58
	Agriculture Land	20709.95	39.83
	Vegetation/Plantation	4438.30	8.54
	Forest	1137.03	2.19
	Surface Water Bodies	629.31	1.21
	Settlement	438.51	0.84
	Solar Panel	379.68	0.73
	Road	376.90	0.72
	Mine Quarry	123.62	0.24
	Industry	63.36	0.12
	Total	51999.09	100.00

Figure 4:LULC Map of the Study Area

2.2. DEM / TOPOGRAPHY

The elevation of the study area ranges from 171 to 466 m amsl which indicates that it is Gently undulating topography. The digital elevation map is prepared by data taken from USGS SRTM. Similarly, the study area considered for the Kadapa limestone mine, the elevations are ranging from 176 to 430 m asml with gently undulating topography.

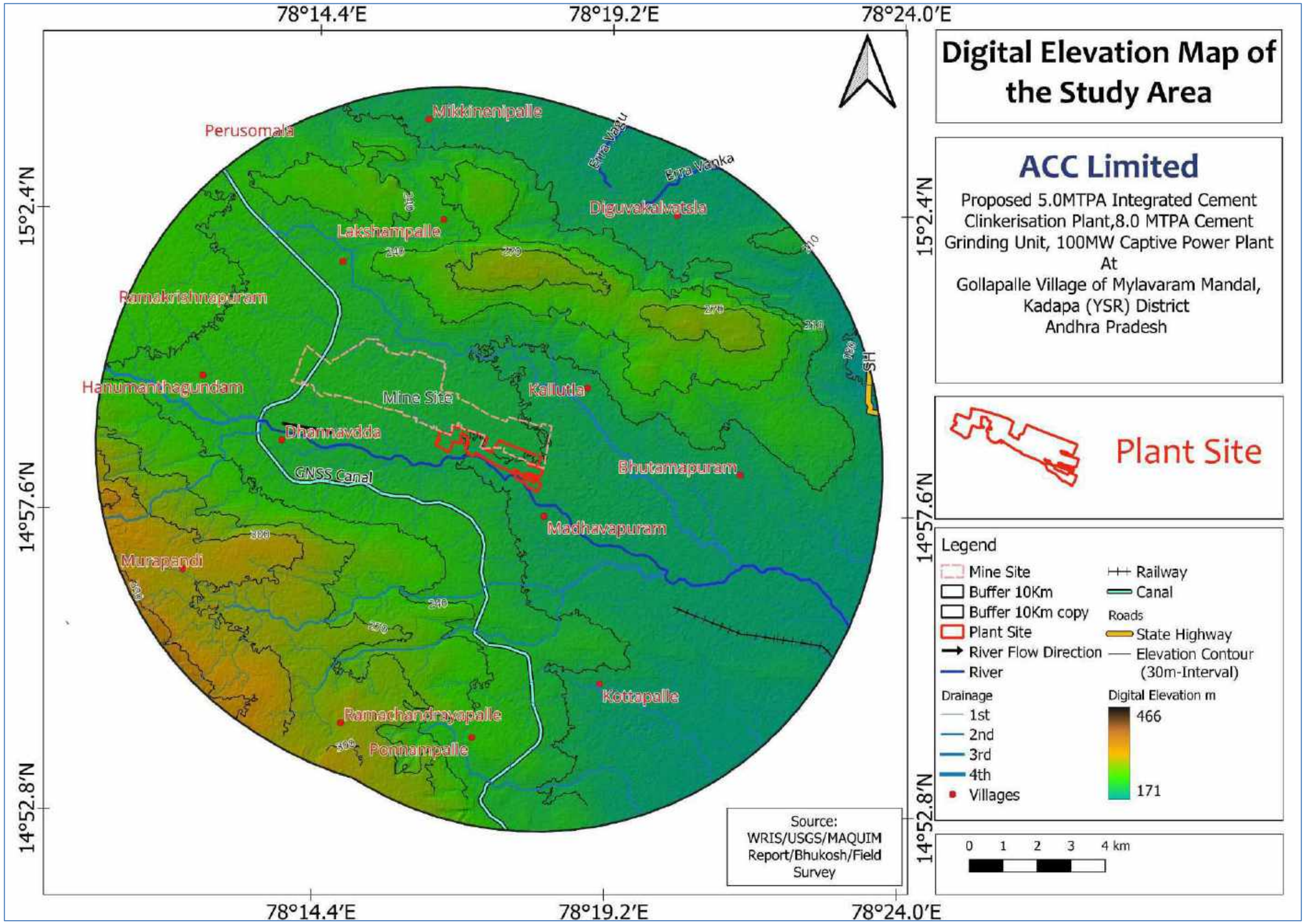


Figure 5: Digital Elevation Map of Study Area.

2.3 GEOMORPHOLOGY AND DRAINAGE

Kadapa district, located in the southern part of the Indian state of Andhra Pradesh, exhibits diverse geomorphological features owing to its location between the Eastern Ghats and the Deccan Plateau.

Eastern Ghats: The eastern part of the district is characterized by the presence of the Eastern Ghats Mountain range. This region is marked by rugged terrain, steep slopes, and deep valleys. The Nallamala Hills, a part of the Eastern Ghats, run through the northeastern portion of the district.

Plateaus: Much of the district is situated on the Deccan Plateau, which is a relatively flat and elevated region. These plateaus are often dissected by rivers and streams, resulting in undulating topography.

River Valleys: The district is traversed by several rivers, including the Pennar, Chitravathi, and Papagni rivers. These rivers have carved out valleys and plains across the landscape, contributing to the agricultural productivity of the region.

Alluvial Plains: The river valleys and their tributaries have created extensive alluvial plains in certain areas, particularly along the banks of major rivers. These fertile plains support agriculture and are densely populated.

Residual Hills: In addition to the Nallamala Hills, Kadapa district also features smaller residual hills and rocky outcrops scattered throughout its landscape. These hills often provide scenic vistas and serve as habitats for diverse flora and fauna.

The upper watershed of the Penner includes Kadapa district, central and eastern Anantapur district, the southern part of Kurnool district, northwestern Chittoor district. The main tributaries of the Penner are the Jayamangali, Kunderu and Sagileru from the north, and the Chitrabvati, Papaghni and Cheyyeru from the south. The Penner then flows east through a gap in the Eastern Ghats enters in to the plains of Coastal Andhra, where it empties into the Bay of Bengal 15 km east of Nellore at a place called Ootukuru. Where few streams of first order originate near the northern and southern border of the project area. The catchment areas of these streams originating inside the project area is small and these streams carry limited surface runoff during the rains. GNSS canal (Galeru Nagari Sujala Sravanthi) is passing through the western side of the project area. Northern and southern sides of the project area are bounded by two nalas (Vagu), Pala Vagu (northern side) and Rallavanka Vagu (southern side). The upstream catchment areas of both Vagu (nala) are disturbed by huge height of dumps of deep excavated GNSS canal.

Although there is a well-defined drainage system having Trellis drainage pattern in the buffer zone, a major part of drainage has been harnessed by constructing irrigation projects, tanks and anicuts.

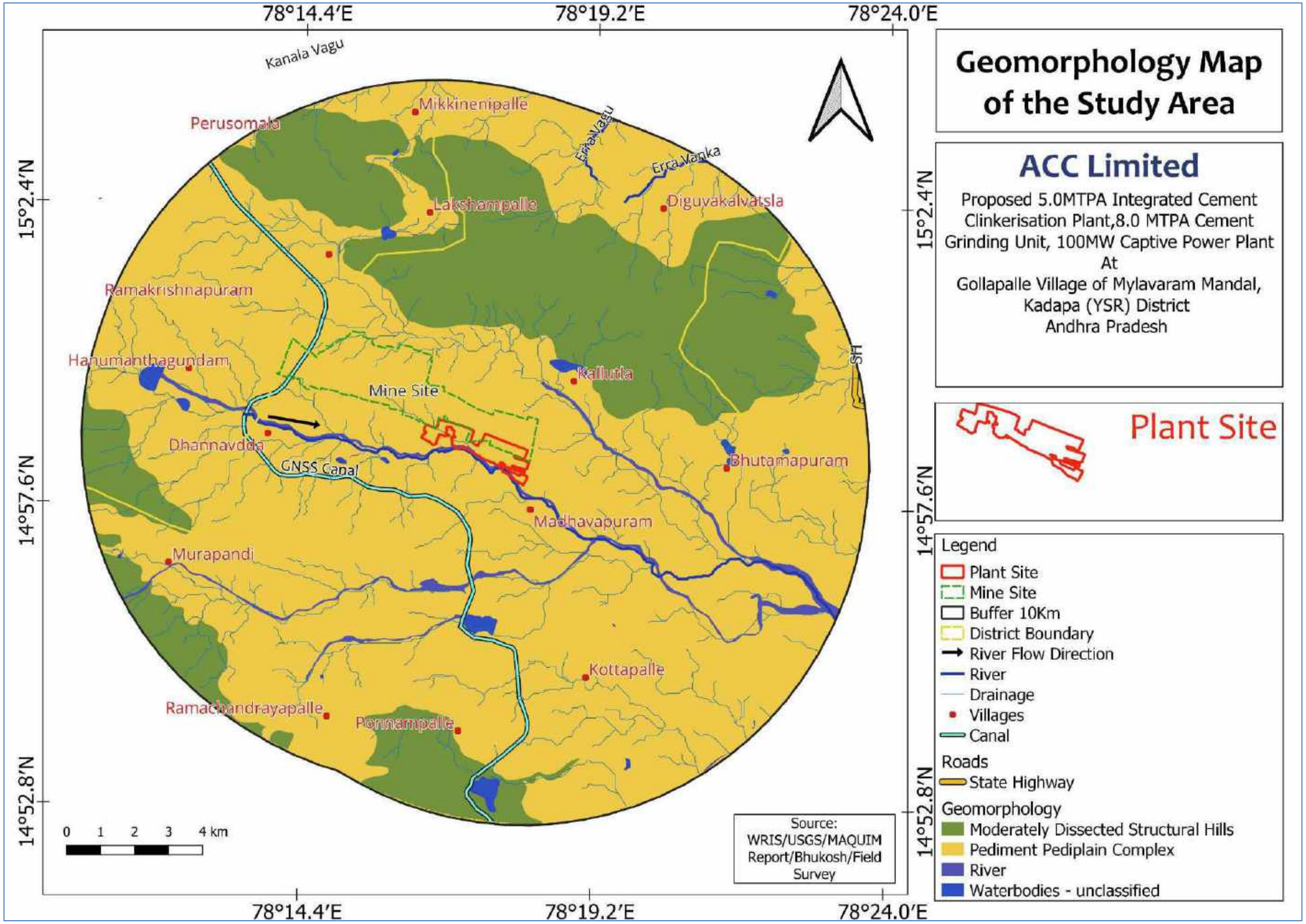


Figure 6: Geomorphology Map of the Study Area

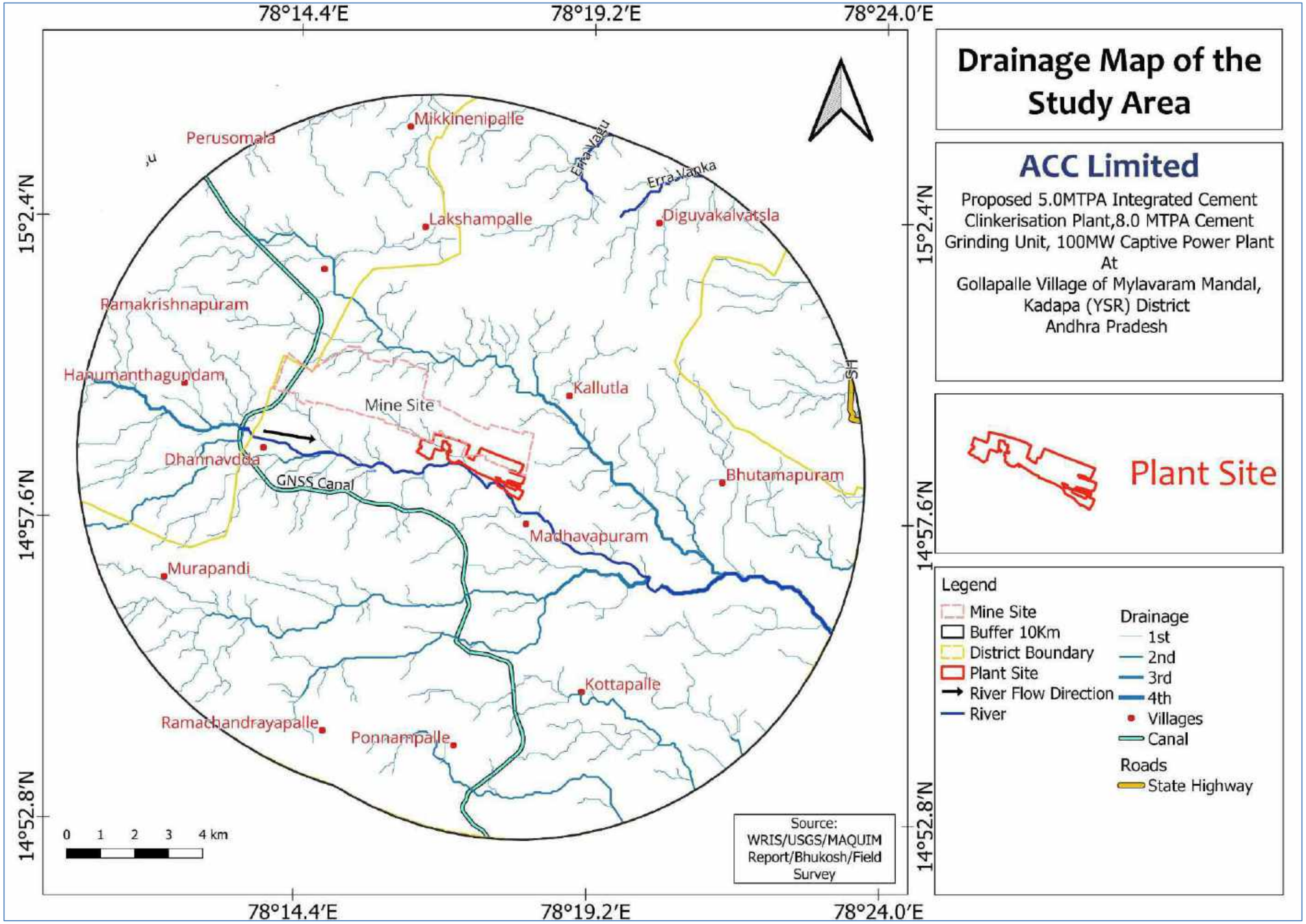


Figure 7:Drainage Map of the Study Area

2.4 DETAILS OF WETLANDS/ MAJOR WATER BODIES

A wetland is a distinct ecosystem that is flooded by water, either permanently or seasonally, where oxygen-free processes prevail. The primary factor that distinguishes wetlands from other land forms or water bodies is the characteristic vegetation of aquatic plants, adapted to the unique hydric soil. Any wetland site which has been listed under the Ramsar Convention that aims to conserve it and promote sustainable use of its natural resources is called a Ramsar Site. The nearest wetland is Kolleru Lake (Andhra Pradesh) located at a distance of about 359 Km approximately in the NE direction from the Plant Site and about 351 km from the Mine site in NE direction. Therefore, certificate regarding the same is not applicable for this particular proposal.

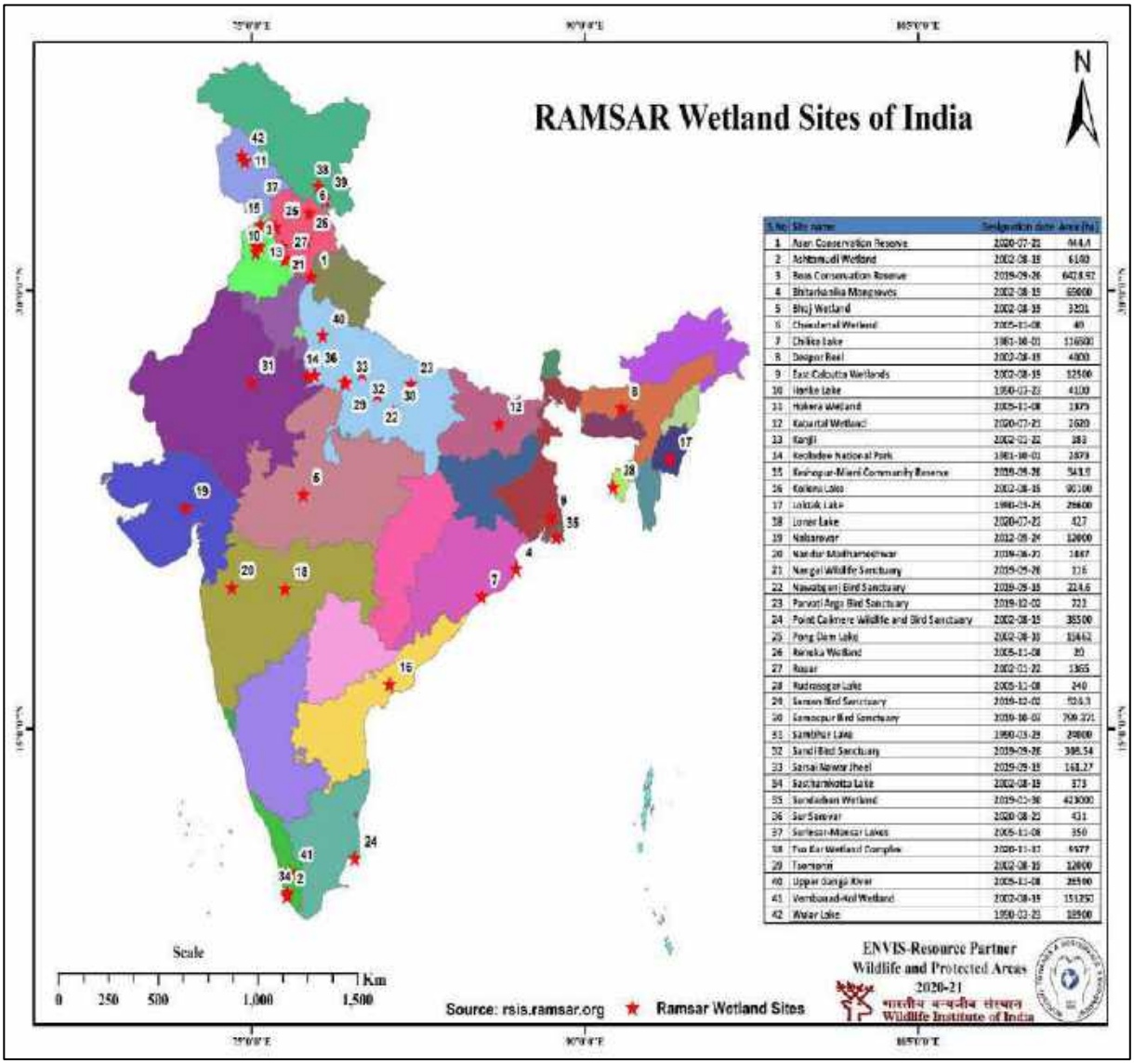


Figure 8:Ramsar Site Map of India showing Wetlands

3 HYDROGEOLOGY

3.1 GEOLOGICAL SETUP

Sedimentary rocks found in the northwestern part of Kadapa district belong to the Kurnool Group. The limestone and other rock formations occurring in the area belong to Kurnool Formations of Indian Stratigraphy sequence. These formations are younger than rocks of the Kadapa Basin and are well preserved in the Kadapa Basin. The Kadapa basin extends from Nagari in the south up to Amaravati in the north east over a length of about 440 km. with width ranging from 80 to 145 km. encompassing an area of about 44000 sq. km. Kadapa and associated younger Kurnool occupy a unique position in Indian Stratigraphy because of economic interest and hence have been the subject of studies for more than seven decades. Kurnool Group of rocks is found confined to two small areas within Kadapa basin one in the area between Kadapa and Kurnool and another in the area West of Amaravati. In general, the Kurnool rocks overlie rocks belonging to the Kadapa. The Kadapa are in turn deposited over the Archaean basement. These rocks are believed to be of Proterozoic age equivalent to early Vindhyan rocks. The Kurnool rocks comprise limestone, shale and sandstones. Unlike the rocks of Kadapa group, which are associated with intrusive and are slightly disturbed, the younger Kurnool group are free from intrusive and are structurally undisturbed. Bruce Foote first studied the area and subsequently W. King gave a detailed account of the stratigraphic sequence of the formations. Later, the Geological Survey of India (GSI) carried out systematic mapping of the region and confirmed the stratigraphy, which was established earlier with minor changes. The regional stratigraphic sequence of rocks is shown in the below:

	Recent post-Kurnool	Soil and Alluvium
		Quartz/Calcite/Baryte veins
Kurnool Group	Kundair Formation	Nandyal Shales
		Koilkuntla Limestone
	Panyam Formation	Pinnacled Quartzites
		Plateau Quartzites
	Jammalamadugu Formation	Auk Shales
		Narji Limestone
	Banaganapalli Formation	Sandstone
Unconformity		
Archean	Granites and granitic gneisses traversed by dolerite dykes & quartz veins	

Source: Mining plan

The limestone deposit under consideration belongs to the Narji Limestone of Jammalamadugu Formation and is seen to extend from Nalgonda in the NE up to in the SW. The limestone deposits occur in Dondapadu and Wadapalli in Nalgonda District, Dachepalli and Sitarampuram in Guntur District, Panyam, Koilkuntla and Banaganapalli in Kurnool District and Jammalamadugu and Kamalapuram in Kadapa District.

LOCAL GEOLOGY

The Geological Formation in the belongs to the Narji Limestone of Jammalamadugu formation in Kurnool group as mentioned earlier. Locally sharp changes in strike direction are also seen due to broad Warping. The local strike of the deposit is N70° -S70° E with 2° dip towards N20° E.

Thick Soil Cover Entire area and only at places limestone could be seen in the cultivated lands. However, the core samples do not indicate any major geologically disturbed zone and indicate that the formations in the area are relatively massive. Thick bedded and fine grained in nature.

Lithology	Thickness m	
	Min	Max
Overburden Soil	1	6
Grey flaggy limestone	2.5	20.5
Dark Grey Limestone	8.5	31
Light Grey Limestone	1	6.5

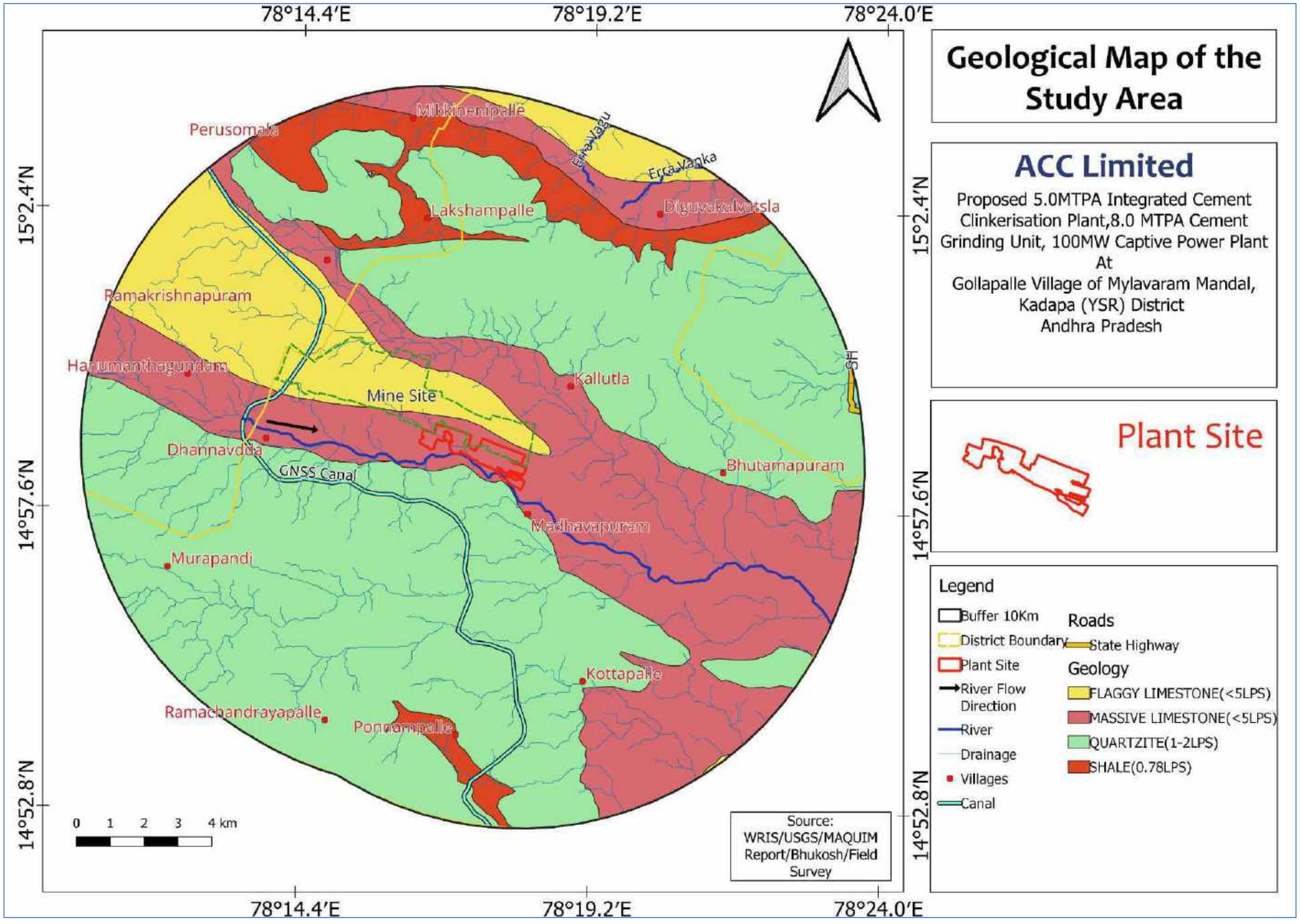


Figure 9: Geology Map of the Study Area

3.2 HYDROGEOLOGICAL SETUP

Geologically, the area is underlain by formations ranging in age from Late Proterozoic, i.e. limestone, sandstone/quartzite and shale of Kurnool Group to the recent alluvium. The Archean group of rocks comprising of pink colored granites, granite gneisses and quartz and micaceous schist form the basement rocks, although these are not exposed anywhere in the study area. Ground water occurs in the Late Proterozoic to recent formations, under water table conditions. The formations exposed in the buffer area are grouped in to two distinct formations, i.e.

a) quartzite,

b) limestone.

The ground water is transmitted through the fractures, joints and bedding planes of limestone and quartzite. The limestone (Narjee, the cement grade) being hard, non-cavernous and fine grained is impervious in nature and does not have primary porosity. It is well bedded occurring as flag stone and is low dipping. The secondary porosity or fracture porosity decreases with depth due to overlying weight of the rocks which reduces the secondary openings.

3.3.1. Aquifer characteristics

Hydraulic parameters of an aquifer system are determined by conducting aquifer performance test at optimum extraction rate on representative set of exploratory and observation tube wells. Data collected during the test were subject to analysis by Jacob's method to calculate hydraulic parameters of aquifer.

Formulae: $T = 2.3\ Q / 4\pi\ \Delta s$ & $S = 2.25\ T\ t_0 / r^2$

Where, T =KD = Transmissivity, m2/day; Q = Discharge m3/day, r = Distance (m) between pumping and observation well

Δs = Slope of straight line per log cycle of time, S = Storage coefficientt_0= time in days at zero drawdown

Accordingly, the T and K values for the present study area are given in Table 2.

Table 2:Aquifer Property (Hard Rock) in the Study Area

S. No	*Particulars*	*Unit*
1.	Transmissivity	600 m2/day
2.	Potential Yield	Limestone= 1 to 10 lps
3.	Sp. Yield of aquifer	2 %
4.	Depth of the aquifer	150 m
5.	Hydraulic conductivity of Aquifer (m/day)	4 m/day

3.3.2. Ground water flow and aquifer interaction with surface water bodies

The groundwater movement in and around the project area as well as the mine lease area is mainly controlled by fractures, bedding Plane. The highest water table in Pre-Monsoon Season is 394.5 m amsl and lowest water table 157.6 m amsl. The direction of water table in general is Towards North East direction.

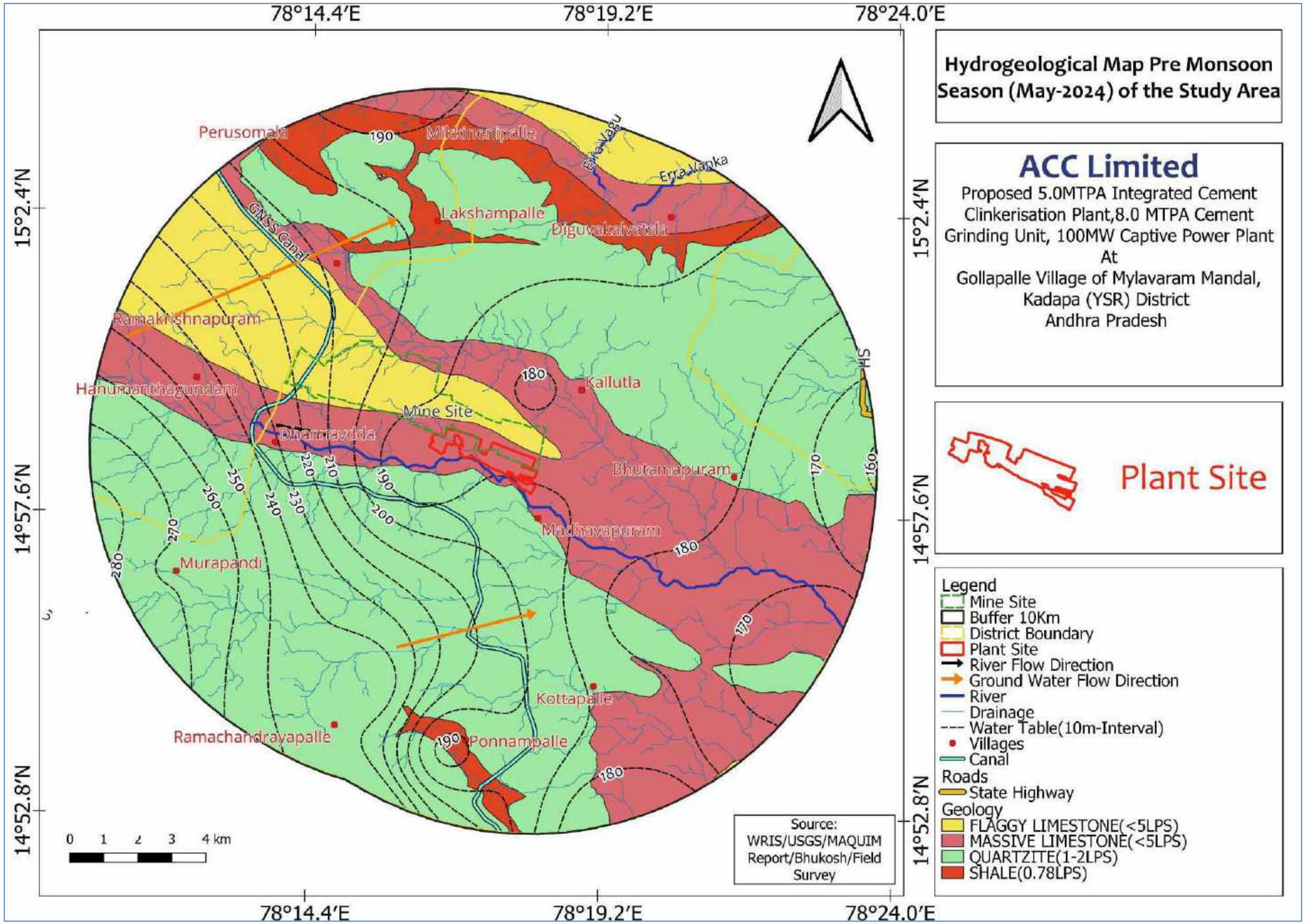


Figure 10:Hydrogeology Map (Pre-monsoon, May-2024) of the Study Area

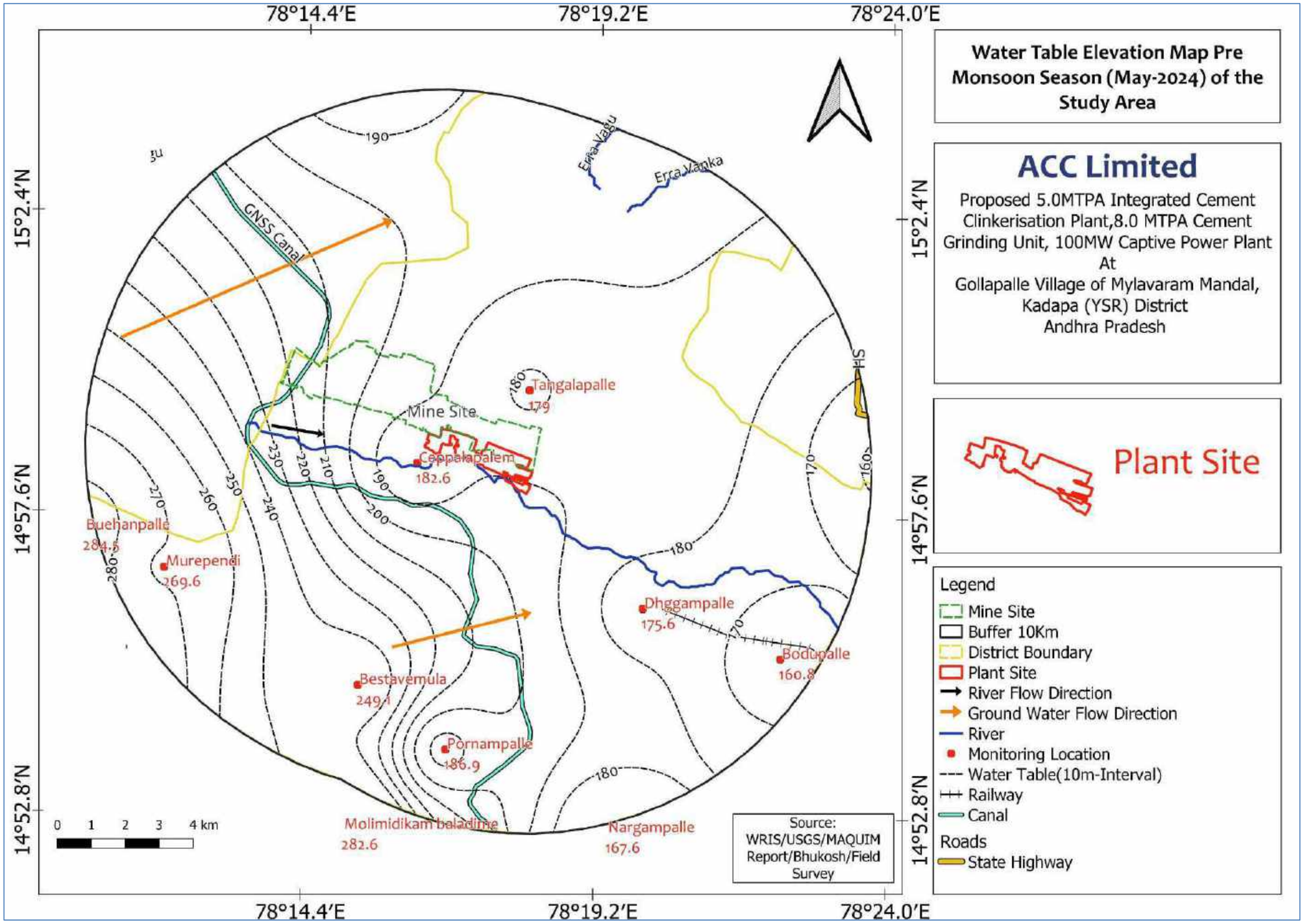


Figure 11:Water Table Contour Map Pre-Monsoon May-2024 Season of the Area

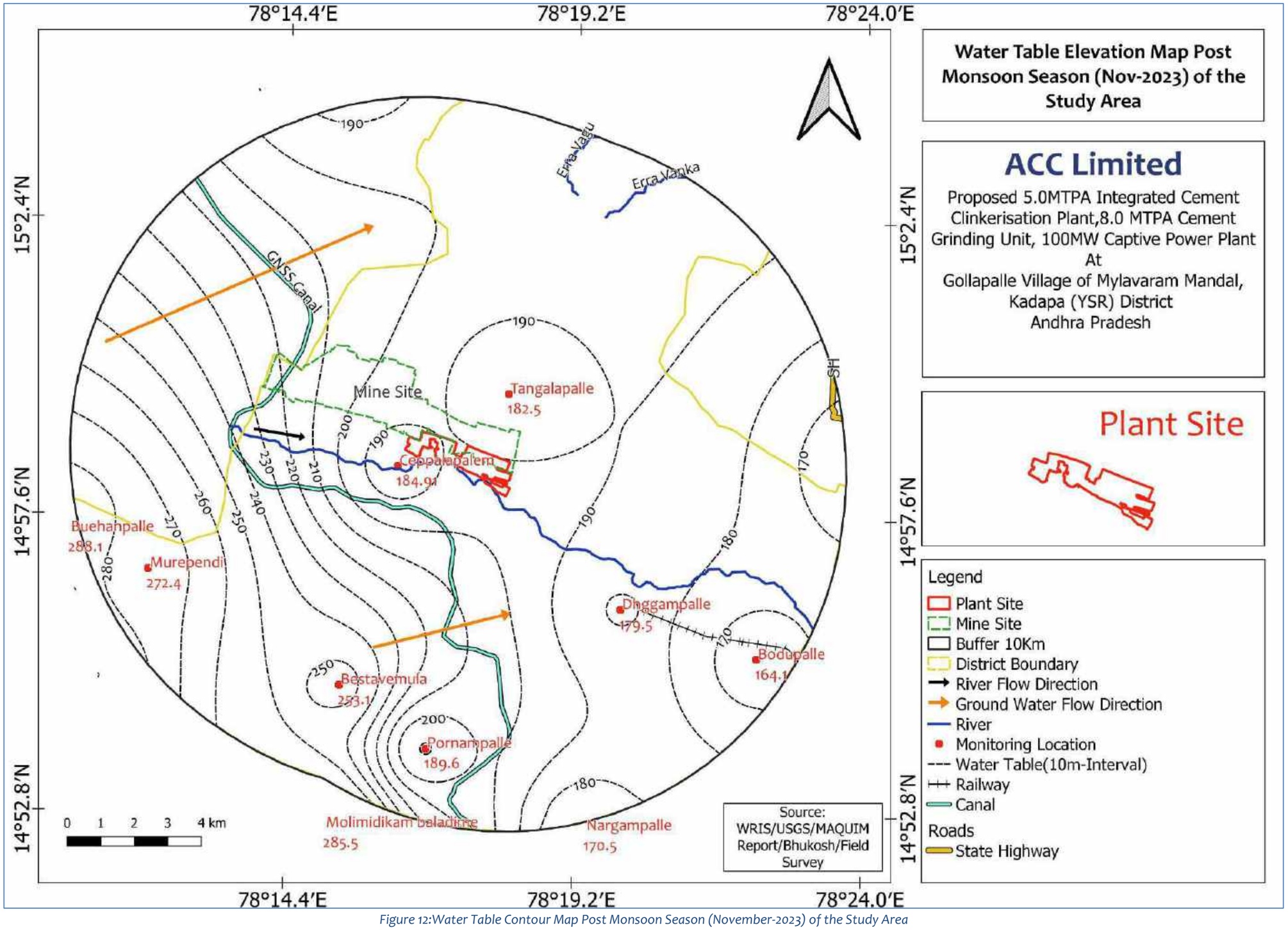


Figure 12:Water Table Contour Map Post Monsoon Season (November-2023) of the Study Area

3.3.3 Depth to Water level

A detailed groundwater level monitoring has been carried during pre-monsoon season a pre monsoon season at about 14 different locations around buffer zone from existing open wells, dug wells & Key wells. Complete water level and water table details are presented in Table 3.

Depth to water level in study area was found to vary between 17.5 m bgl to 47.4 m bgl during post-monsoon season and 21.4 m bgl to 50.5 m bgl during pre-monsoon season indicating water level to be relatively Shallow to Deep ground water. The minimum and maximum surface elevation of monitoring points in the study area is found to vary between 183 to 445 m AMSL respectively.

	Depth to Water Level (mbgl)				Water Table Elevation (m amsl)			
	Pre-Monsoon		Post Monsoon		Pre-Monsoon		Post Monsoon	
	From	To	From	To	From	To	From	To
Core Zone	25	25.4	21.5	23.1	179	182.6	182.5	184.91
Buffer Zone	21.4	50.5	17.5	47.4	157.6	394.5	160.8	397.6

Source: Groundwater Baseline Monitoring

Table 3:Details of Ground Water in and around Buffer Zone

S. No	Village Name	Latitude	Longitude	Elevation (m)	Depth to Water Level Pre-Monsoon Season (m bgl)	Depth to Water Level Post Monsoon Season (m bgl)	Water Table Pre-Monsoon Season (m amsl)	Water Table Post Monsoon Season (m amsl)	Fluctuation (m)	Type of Well	Depth of well (m)	Diameter of Well (Inch)	Distance & Direction from Plant Site and Mine site
1	Ceppalapalem	14.97361	78.27056	208	25.4	23.09	182.6	184.91	2.3	Bore Well	110	8	0.1 Km South
2	Tangalapalle	14.99333	78.30111	204	25	21.5	179	182.5	3.5	Bore Well	110	8	1.8 Km NE
3	Nosom	14.97361	78.40167	183	25.4	22.2	157.6	160.8	3.1	Bore Well	125	8	10.8 Km East
4	Bodupalle	14.9225	78.37056	196	35.2	31.9	160.8	164.1	3.3	Bore Well	120	8	9.0 Km East
5	Nargampalle	14.87583	78.32361	193	25.4	22.5	167.6	170.5	2.9	Bore Well	125	8	10.6 Km SSE
6	Pornampalle	14.8975	78.27917	227	40.1	37.4	186.9	189.6	2.7	Bore Well	150	8	8.1 Km South
7	Molimidikam baladime	14.87583	78.25139	308	25.4	22.5	282.6	285.5	2.8	Bore Well	120	8	11 Km South
8	Dobbudapalle	14.91333	78.16139	445	50.5	47.4	394.5	397.6	3.1	Bore Well	150	8	12.3 Km SW
9	Murependi	14.94528	78.20167	305	35.4	32.6	269.6	272.4	2.7	Bore Well	120	8	6.9Km SW
10	Buehanpalle	14.95472	78.17972	325	40.5	36.9	284.5	288.1	3.6	Bore Well	125	8	8.3 Km SW
11	Gladabela	15.08444	78.255	203	22.4	19.09	180.6	183.91	3.3	Bore Well	100	8	11.2 Km North
12	Bestavemula	14.91444	78.255	273	23.9	19.9	249.1	253.1	4	Bore Well	110	8	6.8 Km South
13	Dhggampalle	14.93556	78.33278	197	21.4	17.5	175.6	179.5	3.8	Bore Well	100	8	5.1 Km SE

*Baseline monitoring

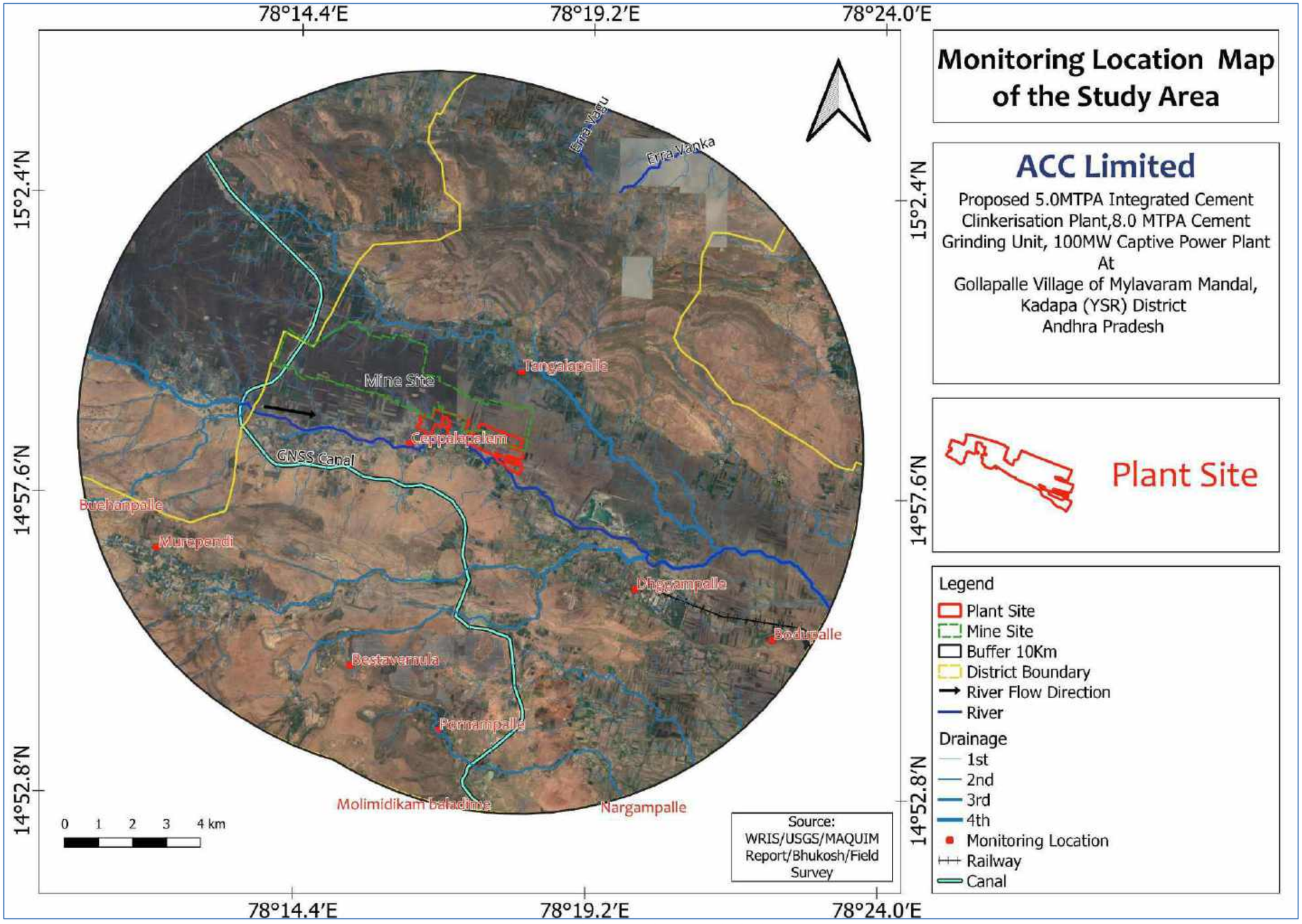


Figure 13:Monitoring Location Map of the Study Area

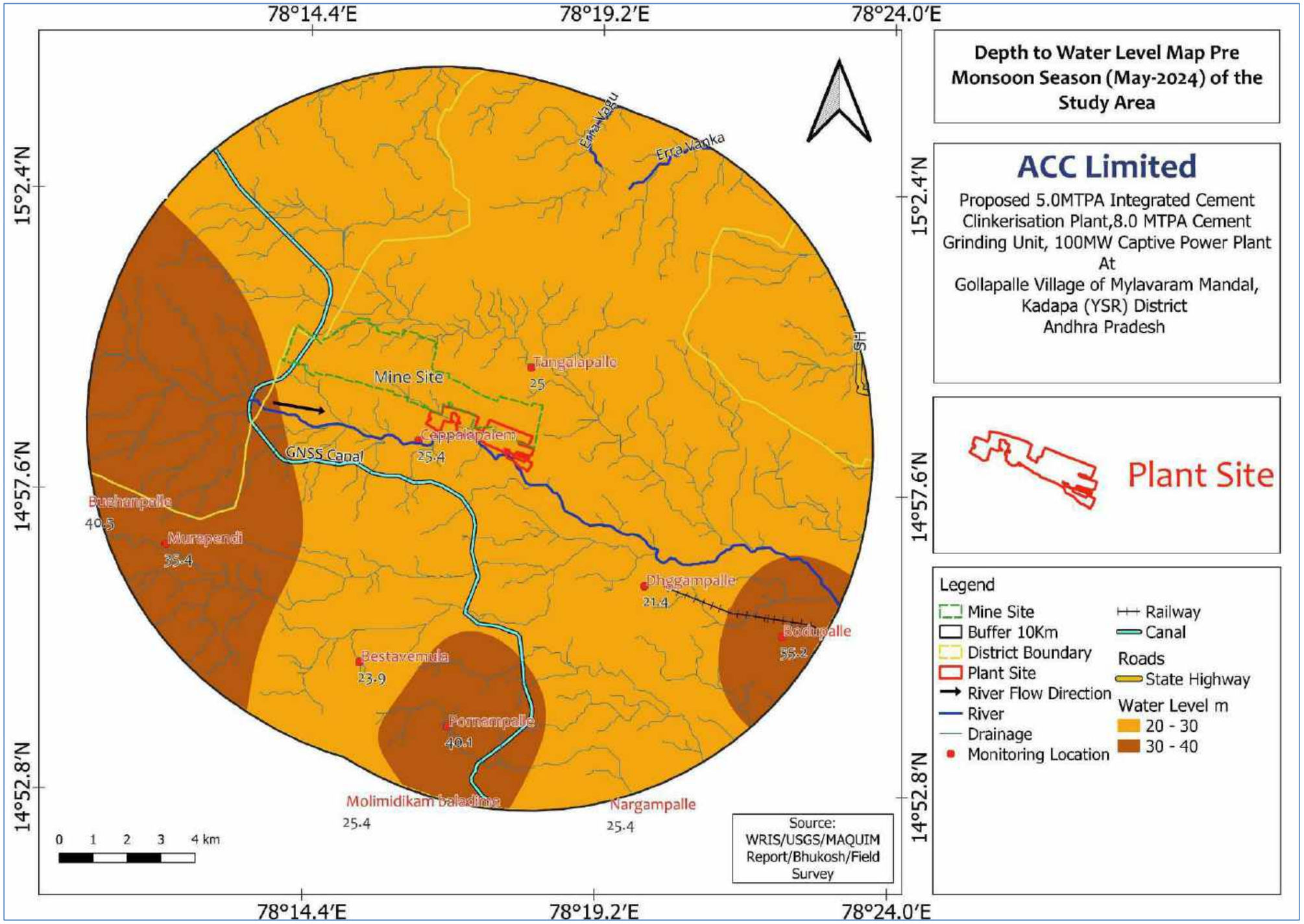


Figure 14:Depth to Water Level map pre-Monsoon (May-2024) Season

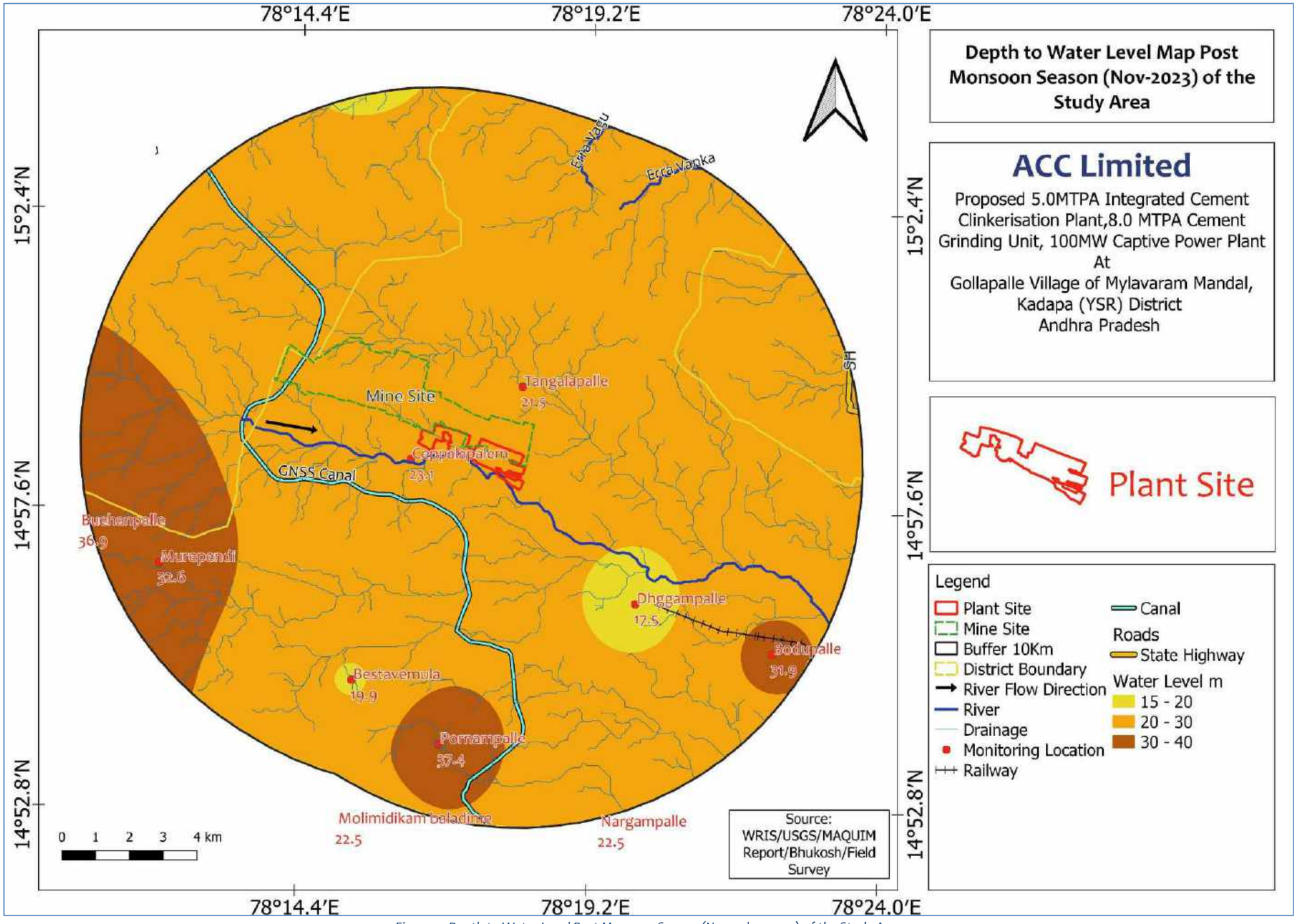


Figure 15:Depth to Water Level Post Monsoon Season (November-2023) of the Study Area

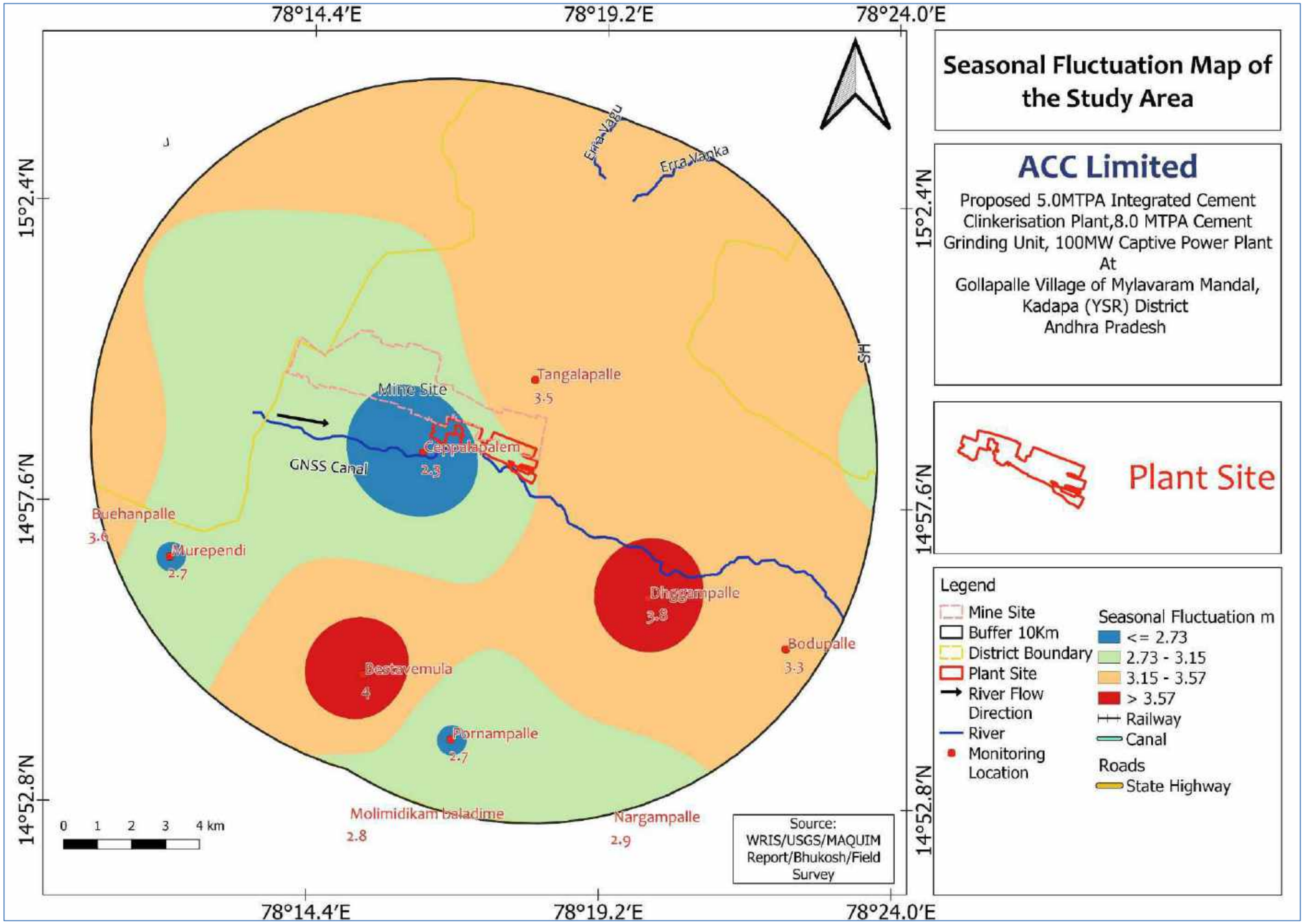


Figure 16:Seasonal Fluctuation Map of the Study Area

3.3.4 Long term water level data analysis

The ground water levels observed over a period provides valuable information on the Behavior of the ground water regime, which is constantly subjected to changes due to recharge and discharge phenomenon. When the recharge exceeds discharge, there will be a rise in the ground water storage and vice versa. The decline in water level may be due to increase in draft (for different purposes) or decrease in precipitation (less recharge to ground water). On the other hand, a rise in water level may be due to an increase in rainfall and/or due to changes in irrigation practices. From the pre monsoon and post monsoon depth to water level data collected during May and December respectively, water level fluctuation was computed. The water level fluctuation between pre monsoon and post monsoon period of the Study Area varies from 2.3 m to 4 m. On the basis of secondary data collected from WRIS (Water Resource Information System) portal, the pre monsoon depth to water level in last 10 years ranges between 4.95 m bgl to 9.56 m bgl and the post monsoon depth to water level ranges between 0.8 m bgl to 7.67 m bgl. Hydrograph of Nossam station Show Rising Water Level Trend in Pre-Monsoon Season and Post Monsoon Season. Distance of the Nossam station from the Plant site and the mine site is approximately 11 km. The Nossam Station borewell is located in an aquifer with limestone rock formation. Details of water level for last 10 years for pre and post monsoon are given with graph.

Table 4:Details of Nossam Station

Year	Depth to Water Level (m bgl) Pre-Monsoon	Depth to Water Level (m bgl) Post Monsoon
2013	9.5	2.5
2014	9.5	5.15
2015	7.6	2
2016	9	3.27
2017	8.3	0.9
2018	9.45	7.67
2019	9.56	2.39
2020	8.2	1.25
2021	5.3	2.65
2022	7.8	1.013
2023	4.95	0.8
Latitude		**14.9916**
Longitude		**78.4000**

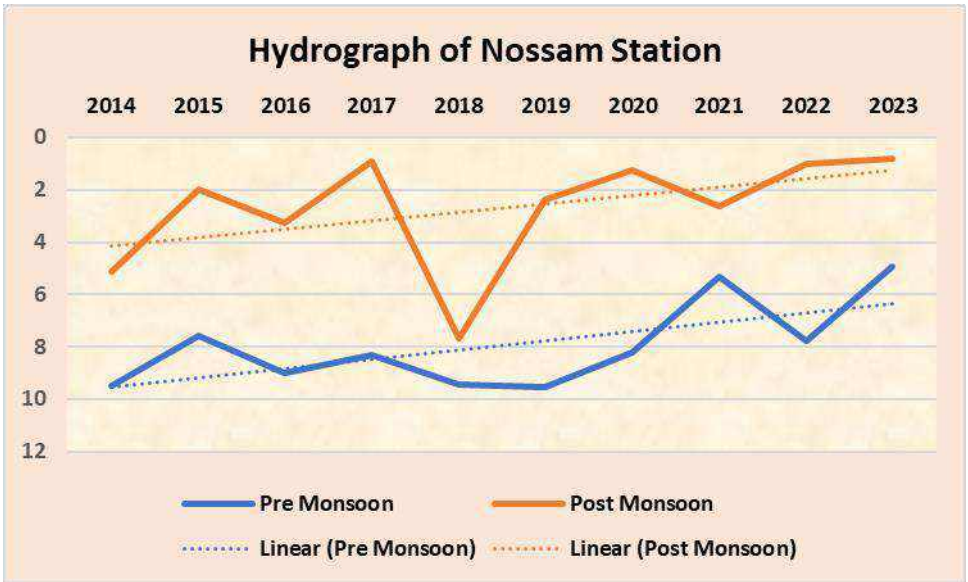


Figure 17:Water level Fluctuation Graph in last 10 years (Nossam Station)

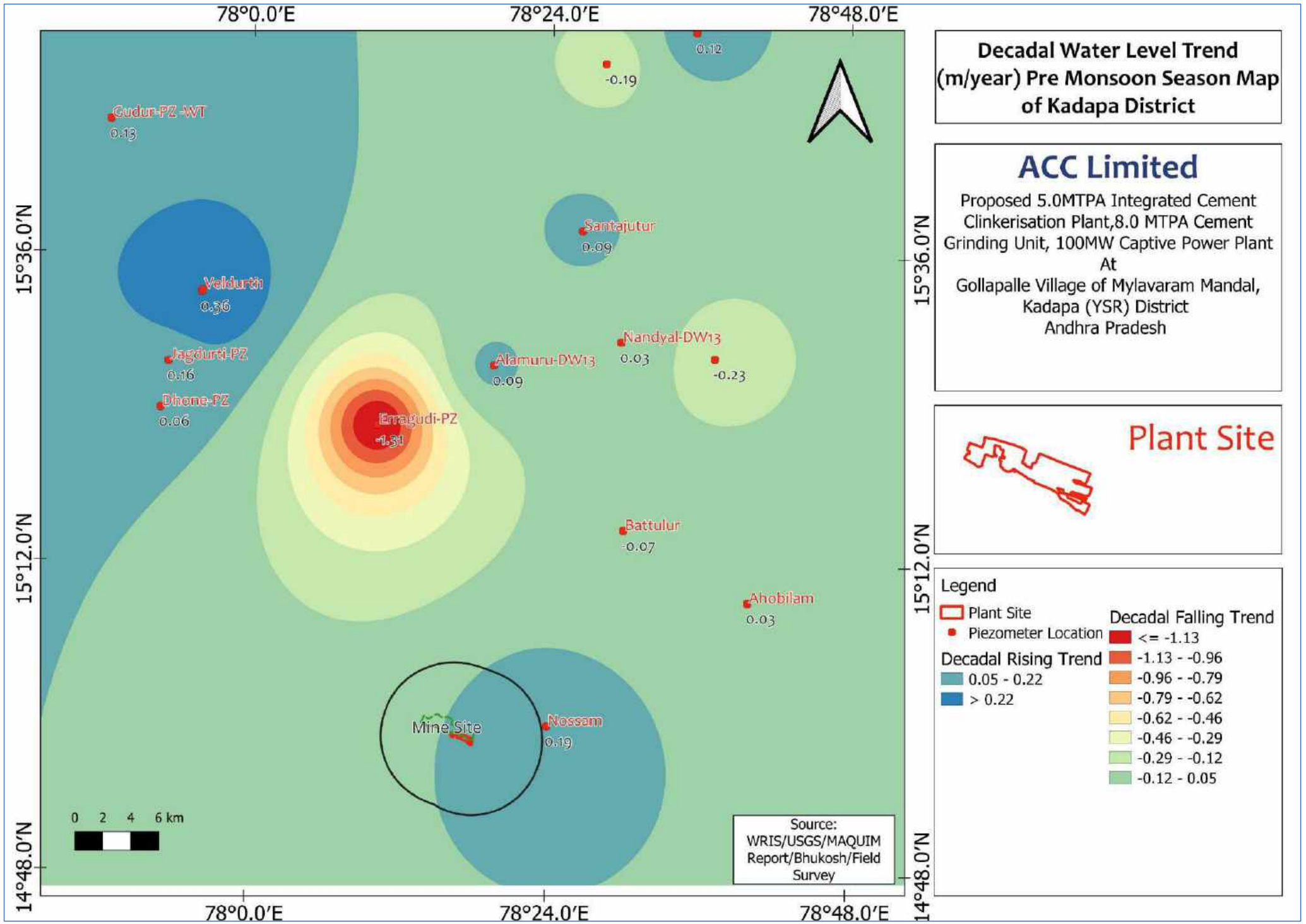


Figure 18:Decadal Map Post Monsoon Season of Kadapa District

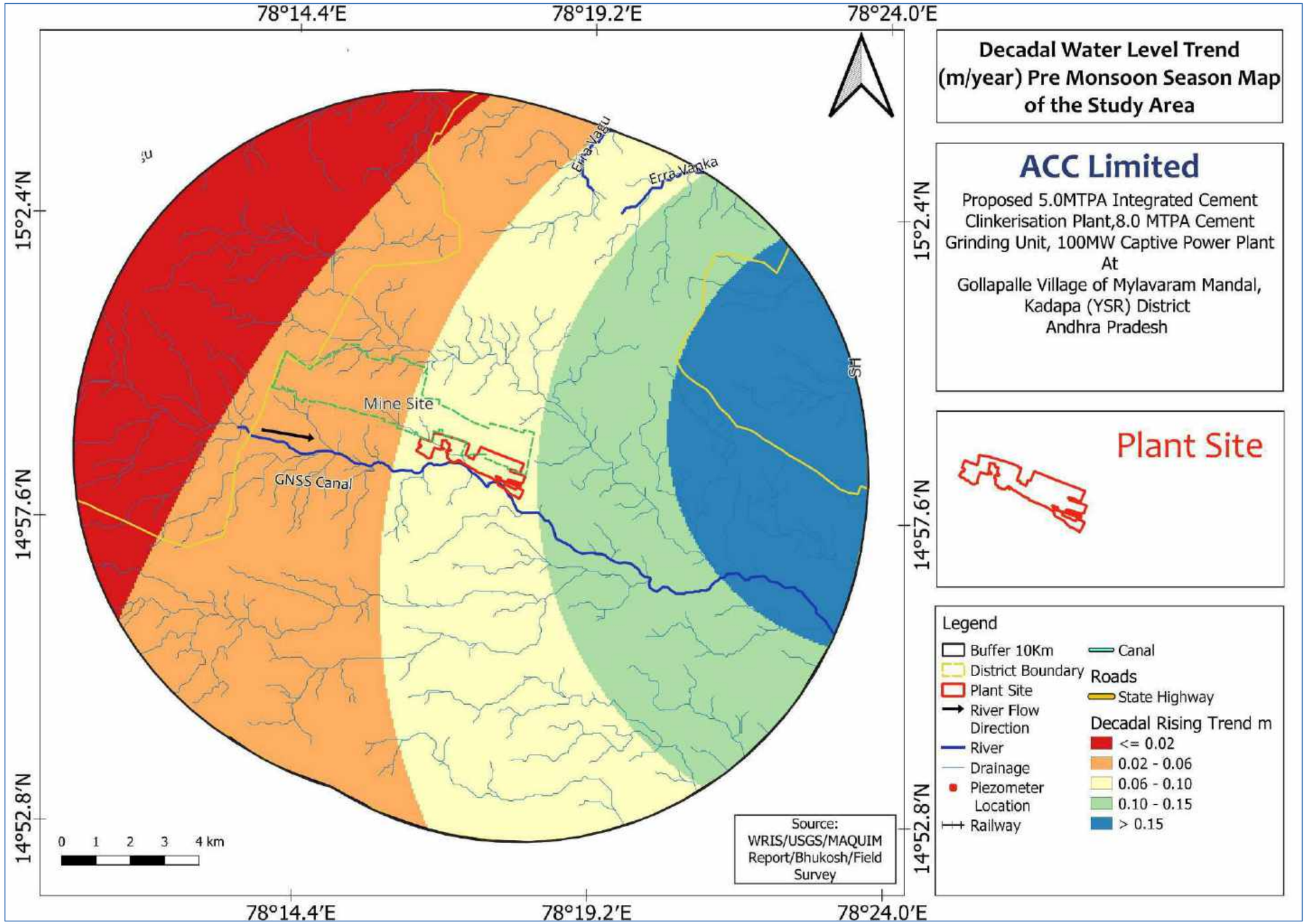


Figure 19 Decadal (m/year) Map Pre-Monsoon Season (May-2024) of the Study area

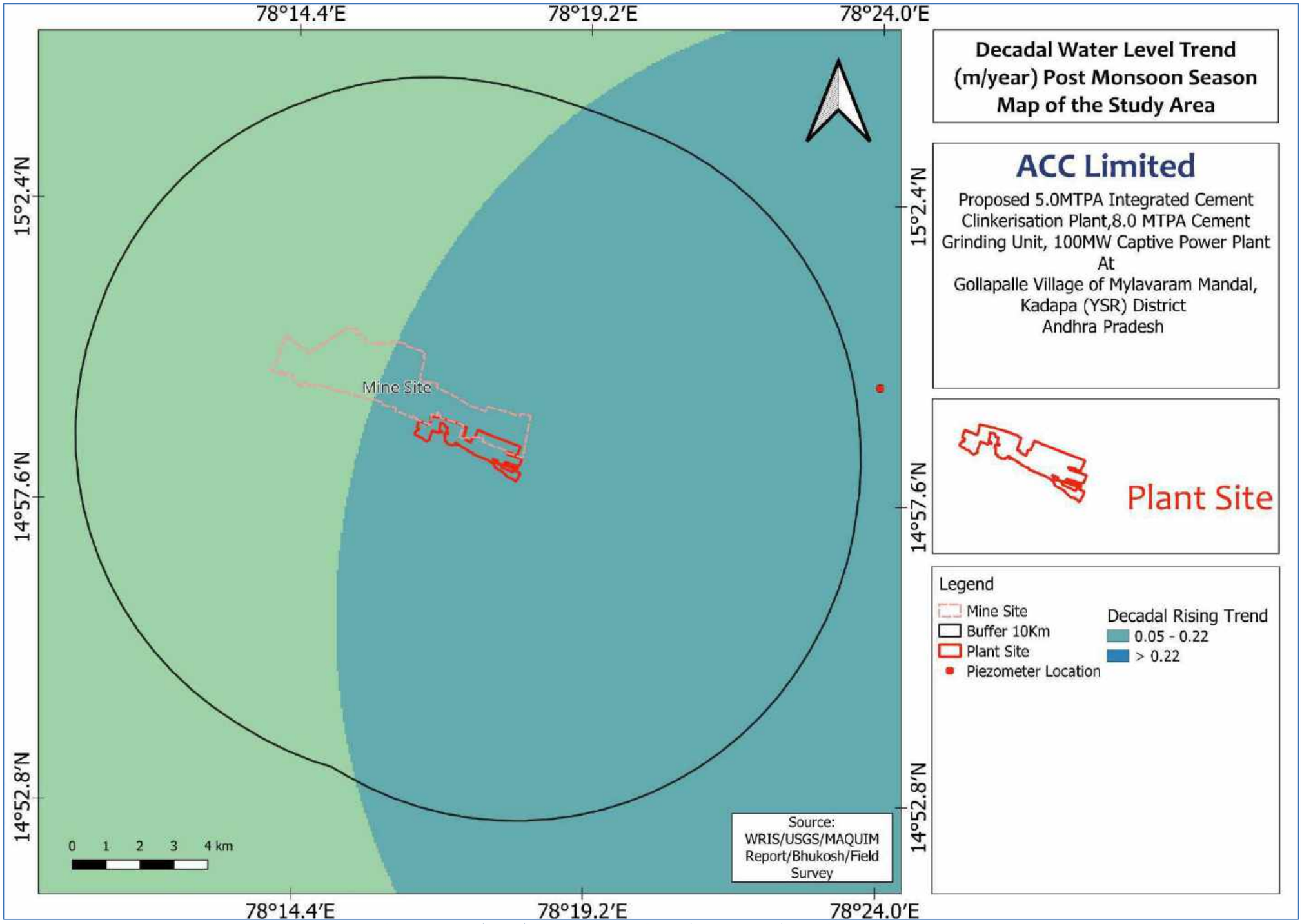


Figure 20:Decadal(m/year) Map Post Monsoon Season (November-2023) of the Study Area

3.3.5 Ground water quality

Ground water samples were collected from the available water resources around the Plant site and the Mine site. The samples were collected and tested from different sites. The quality of ground water was studied by collecting 9 water samples. The analysis of the samples has been carried out in J.M. EnviroLab Pvt. Ltd. located in Gurgaon, the lab is NABL certified and has approval from Mo EFCC and state boards. Details of the same given in the table below.

Table 5:Ground Water Sampling Result

S. No.	Parameters	Unit	Sampling Locations									Specification as per IS 10500-2012	
			Near Plant Site	Village Ped Daventurla	Village Jangalapalle	Village Talamanchipatnam	Village Vaddirala	Nosam	Dobbudapalle	Bestavemula	Malamidkambaladinne	Requirement Acceptable Limit	Permissible Limit in the Absence of Alternate Source
1.	pH (at 25°C)	-	7.47	7.38	7.6	7.56	7.78	7.5	7.44	7.64	7.55	6.5-8.5	No Relaxation
2.	Colour	Hazen Unit	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	5	15
3.	Turbidity	NTU	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	1	5
4.	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5.	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
6.	Total Hardness as $CaCO_3$	mg/l	478.7	398.2	693.2	357.6	736.4	278.3	283.1	535	239.17	200	600
7.	Calcium as Ca	mg/l	112.6	85.66	196.84	97.55	202.3	60.61	51.63	139.2	41.74	75	200
8.	Alkalinity as $CaCO_3$	mg/l	321.1	310.7	310.8	236	585.9	195.7	196	270.7	185.6	200	600
9.	Chloride as Cl	mg/l	247.6	137.29	386.3	167	434.5	119.63	165.16	287.8	104.81	250	1000
10.	Cyanide as CN	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	0.05	No Relaxation
11.	Magnesium as Mg	mg/l	47.9	44.72	48.85	27.63	56.04	30.8	37.42	45.43	32.76	30	100
12.	Total Dissolved Solids	mg/l	986	678	1162	645	1582	524	567	883	475	500	2000
13.	Sulphate as SO_4	mg/l	130.3	76.59	108.3	55.2	149.4	67.56	40.38	91.2	48.23	200	400
14.	Fluoride as F	mg/l	0.63	0.28	0.73	0.63	0.76	0.16	0.43	0.52	0.36	1	1.5
15.	Nitrate as NO_3-N	mg/l	22.86	9.95	19.68	12.05	27.6	6.24	6.47	10.37	8.19	45	No Relaxation
16.	Iron as Fe	mg/l	BDL(DL 0.02)	BDL(DL 0.02)	0.06	0.07	0.11	BDL(DL 0.02)	BDL(DL 0.02)	BDL(DL 0.02)	BDL(DL 0.02)	1	No Relaxation
17.	Aluminium as Al	mg/l	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	0.03	0.2
18.	Boron	mg/l	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.03)	BDL (DL 0.20)	0.5	2.4
19.	Phenolic Compounds	mg/l	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	0.001	0.002
20.	Anionic Detergents as MBAS	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	0.2	1
21.	Hexa Chromium as Cr^{+6}	mg/l	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	--	--
22.	Chromium as Cr	mg/l	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	0.05	No Relaxation
23.	Zinc as Zn	mg/l	0.06	0.09	0.03	0.07	0.1	0.08	0.04	0.08	0.11	5	15
24.	Copper as Cu	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	0.05	1.5

25.	Manganese as Mn	mg/l	BDL (DL 0.01)	0.12	0.16	BDL(DL 0.01)	0.3	BDL(DL 0.01)	0.33	0.23	BDL(DL 0.01)	0.1	0.3
26.	Cadmium as Cd	mg/l	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	0.003	No Relaxation
27.	Lead as Pb	mg/l	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)	0.01	No Relaxation
28.	Arsenic as As	mg/l	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002	BDL (DL 0.002)	0.01	No Relaxation
29.	Mercury as Hg	mg/l	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	distri	No Relaxation
30.	Sodium as Na	mg/l	155	85	140	80	280	70	87	108	70	--	--
31.	Potassium as K	mg/l	9	6	8	20	11	5	4	9	3	--	--
32.	Phosphate as PO_4	mg/l	BDL(DL 0.02)	BDL(DL 0.02)	BDL(DL 0.02)	BDL(DL 0.02)	BDL(DL 0.02)	BDL(DL 0.02)	BDL(DL 0.02)	BDL (DL 0.02)	BDL(DL 0.02)	--	--
33.	Nickel	mg/l	BDL(DL 0.005)	BDL(DL 0.005)	BDL(DL 0.005)	BDL(DL 0.005)	BDL(DL 0.005)	BDL(DL 0.005)	BDL(DL 0.005)	BDL(DL 0.005)	BDL(DL 0.005)	0.02	No Relaxation
34.	Conductivity	µS/cm	1490	1014	1720	970	2407	793	870	1318	714	--	--
35.	Total Suspended Solid	mg/l	BDL(DL 1.0)	BDL (DL 1.0)	BDL(DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL(DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	--	--

Source: Ground Water Quality Analysis Report BDL – Below Detectable Limit and DL – Detection Level

Ground Water Quality Analysis

pH: The pH values across sampling locations range from 7.38 to 7.78, within the acceptable limit of 6.5-8.5, indicating neutral to slightly alkaline water, suitable for most purposes.

Total Hardness: Total hardness levels vary significantly, with values ranging from 239.17 to 736.4 mg/l as CaCO3. High hardness can cause scale buildup in pipes and appliances but does not pose direct health risks.

Chloride: Chloride concentrations exceed permissible limits at several locations, ranging from 104.81 to 434.5 mg/l. Elevated chloride levels can impart a salty taste to water and, in high concentrations, may have adverse health effects.

Total Dissolved Solids (TDS): TDS levels are elevated, ranging from 475 to 1582 mg/l. High TDS can affect water taste and contribute to scale formation. It also indicates the presence of dissolved salts, minerals, and other contaminants.

Sulphate: Sulphate concentrations vary widely 40.38 to 149.4 mg/l. High sulphate levels may cause a laxative effect in drinking water and can impact water taste and odor.

Nitrate: Nitrate levels are within acceptable limits in all locations, ranging from 6.24 to 27.6 mg/l. Elevated nitrate concentrations pose health risks, particularly to infants, and can indicate contamination from agricultural runoff or wastewater.

Fluoride: Fluoride levels are generally within acceptable limits, ranging from 0.16 to 0.76 mg/l. Excessive fluoride intake can lead to dental or skeletal fluorosis.

Other Parameters: Cyanide, phenolic compounds, anionic detergents, hexavalent chromium, and heavy metals such as lead, arsenic, cadmium, and mercury are below detectable limits (BDL), indicating compliance with standards.

Electrical Conductivity:

Groundwater samples with EC values ranging from 714 to 2407 µS/cm fall within the lower salinity range, indicating relatively low concentrations of dissolved salts.

These samples may be suitable for various uses, including drinking water supply and irrigation, with minimal risk of salinity-related issues.

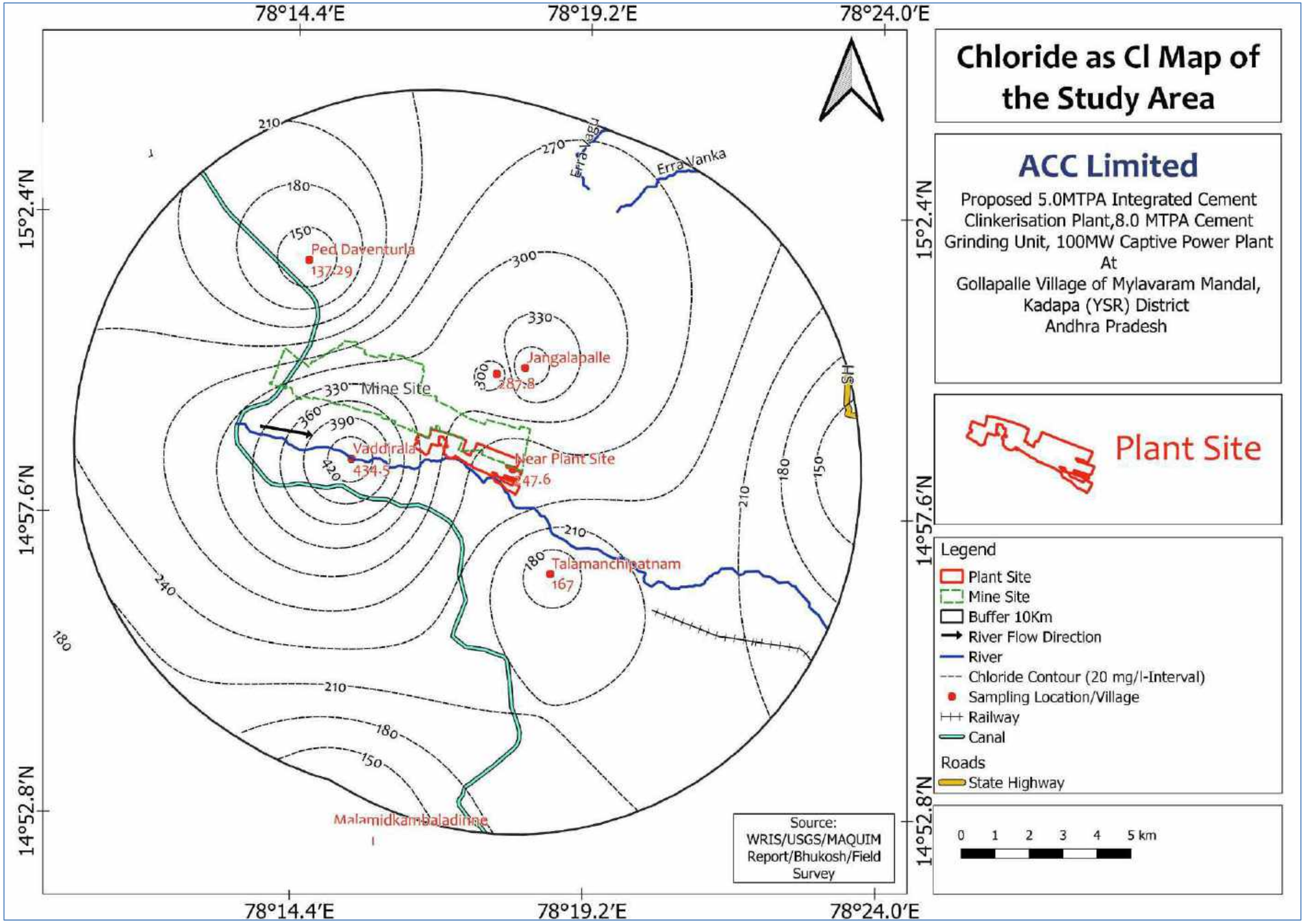


Figure 21:Chloride Map of the Study Area

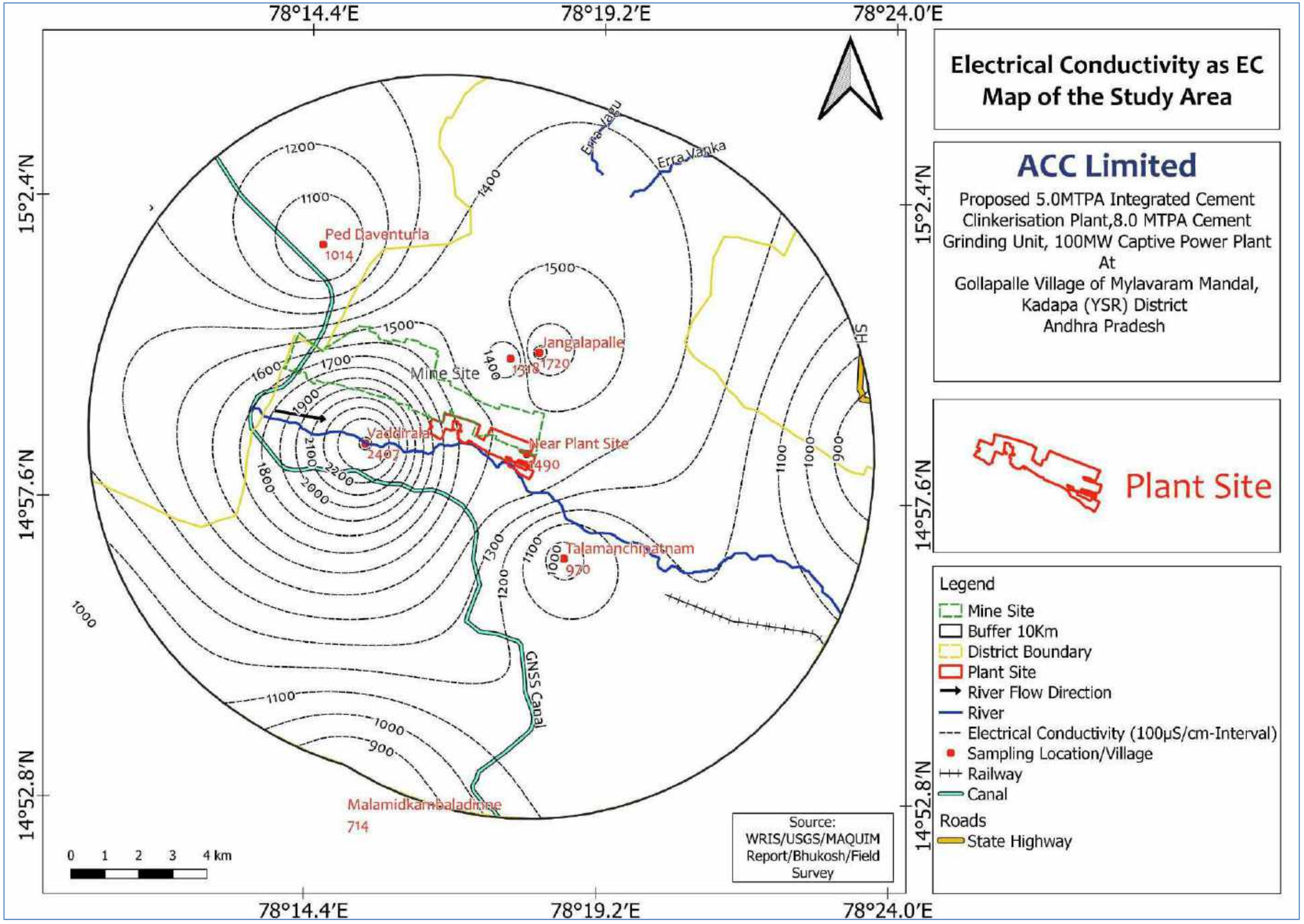


Figure 22: Electrical Conductivity Map of the Study Area

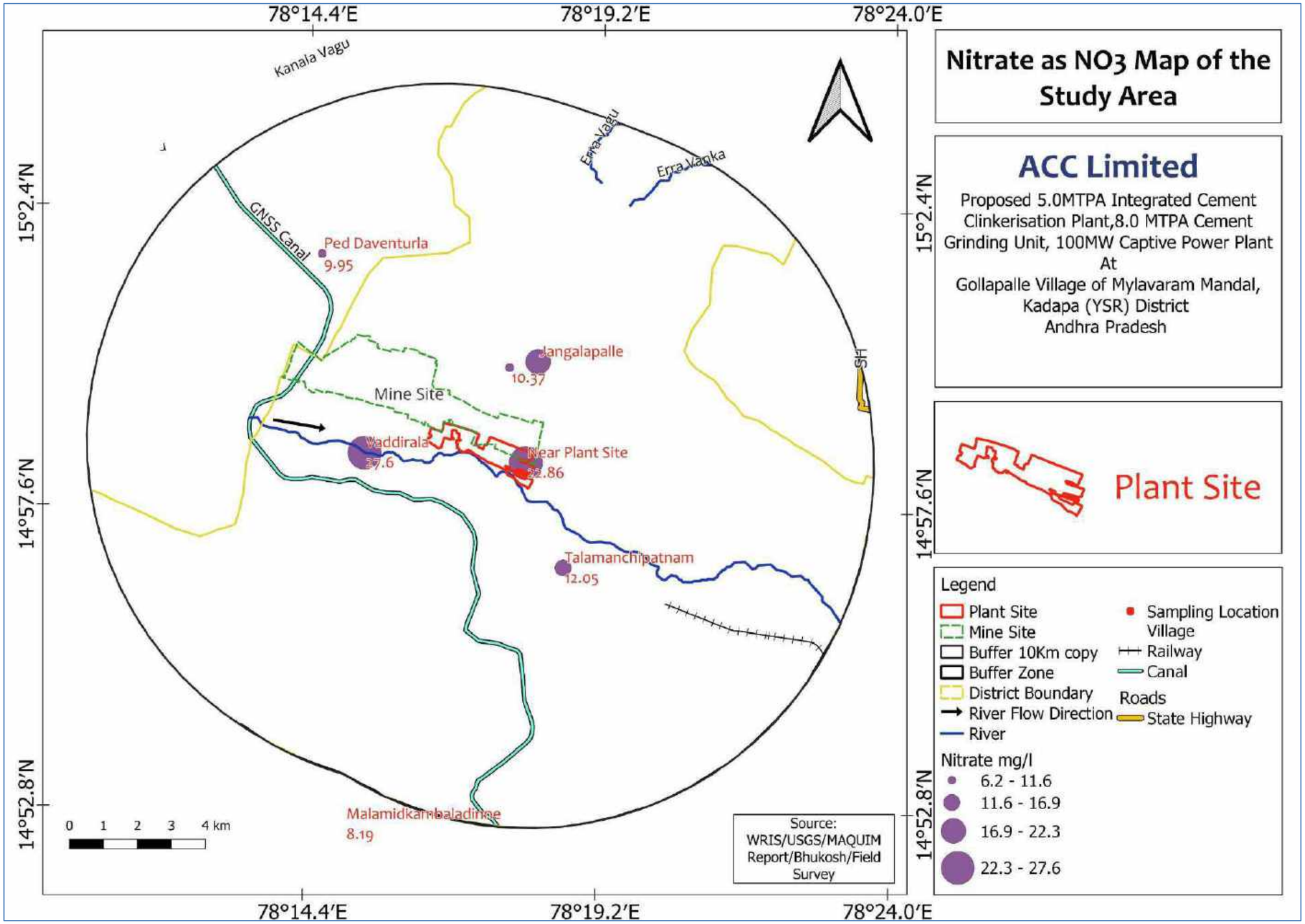


Figure 23: Nitrate Map of the Study Area

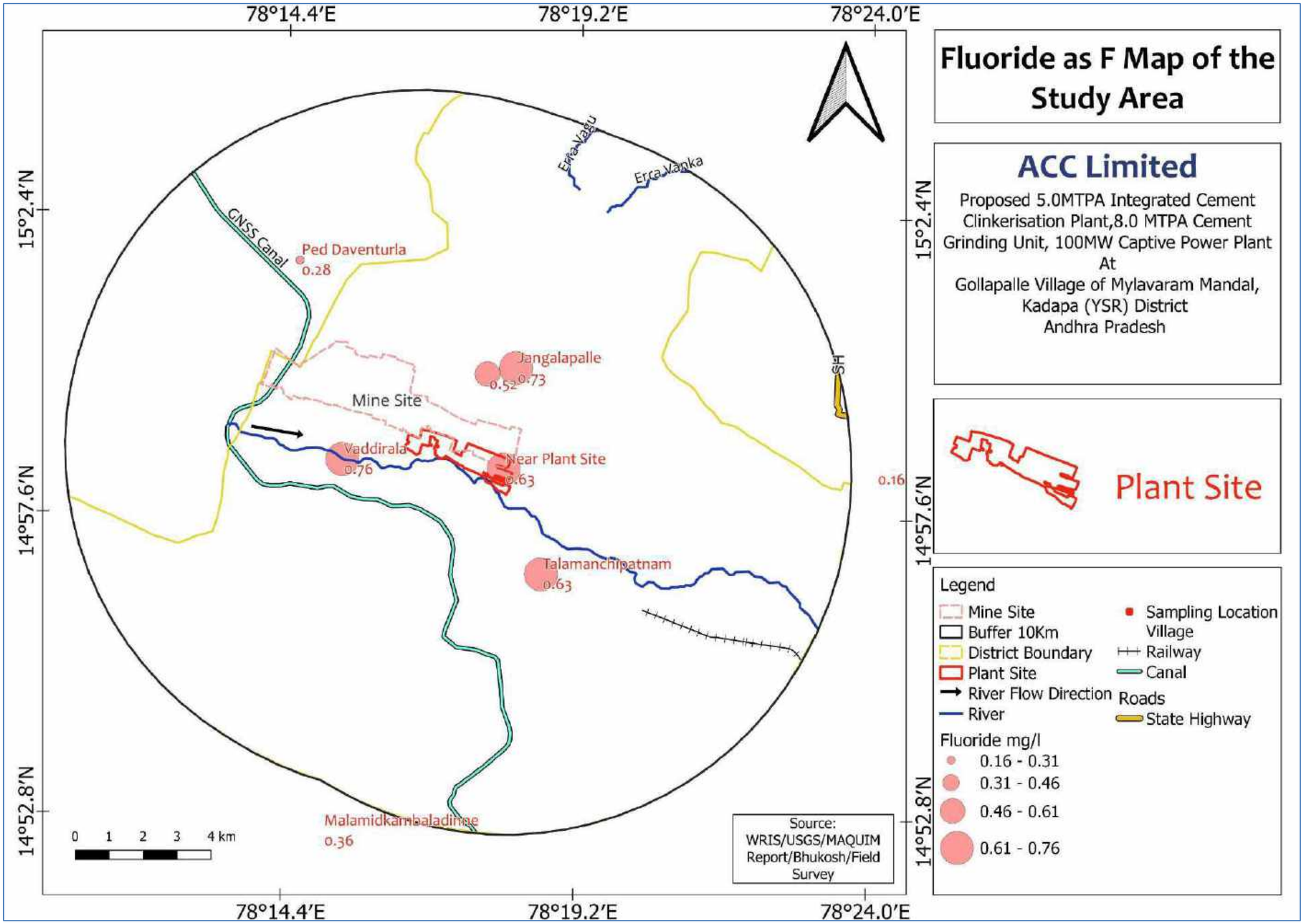


Figure 24:Fluoride Map of the Study Area

3.3.6 Water Quality of Nearby water body

The water bodies in the study area are seasonal; as the pre-monsoon season falls within the monitoring period, there is no water in the water bodies.

4 DETAILS OF PROPOSED / EXISTING TUBEWELLS/ BOREWELLS

Ten bore wells will be installed on the proposed cement plants to meet groundwater requirements. Proposed bore wells fitted with water meter for monitoring quantum of groundwater abstraction. The monitoring of groundwater abstraction is done on regular basis. Details of the Proposed bore well is given below:

Table 6:Details of Ground Water Abstraction Structure

Proposed Groundwater Abstraction Structures								
S. No.	**Type of Structure**	**Depth (m) / Dia (mm)**	**Depth to Water Level(m bgl)**	**Discharge (m^3/Hr)**	**OperationalHrs. (Day) / Days (Year)**	**Mode of Lift**	**Pump Capacity (HP)**	**Net Ground Water Discharge (KLD)**
1.	Bore well	150/204	26	29	10/365	Submersible Pump	30	290
2.	Bore well	150/204	26	29	10/365	Submersible Pump	30	290
3.	Bore well	150/204	26	29	10/365	Submersible Pump	30	290
4.	Bore well	150/204	26	29	10/365	Submersible Pump	30	290
5.	Bore well	150/204	26	29	9/365	Submersible Pump	30	290
6.	Bore well	150/204	26	29	9/365	Submersible Pump	30	290
7.	Bore well	150/204	26	29	9/365	Submersible Pump	30	290
8.	Bore well	150/204	26	29	9/365	Submersible Pump	30	290
9.	Bore well	150/204	26	29	9/365	Submersible Pump	30	290
10.	Bore well	150/204	26	29	9/365	Submersible Pump	30	290

5. PROPOSED DEWATERING PLANS IN CASE OF INFRASTRUCTURE DEWATERING PROJECTS

This is a Proposed 5.0 MTPA Integrated Cement Clinkerisation Plant, 8.0 MTPA Cement Grinding Unit, 100 MW Captive Power Plant at Gollapalle, Village of Mylavaram Mandal, Kadapa (YSR) District, Andhra Pradesh details regarding approved dewatering plan is not applicable for this project.

6 IMPACT ASSESSMENT

6.1 IMPACT ON THE GROUND WATER REGIME

Proposed 5.0 MTPA Integrated Cement Clinkerisation Plant, 8.0 MTPA Cement Grinding Unit, 100 MW Captive Power Plant with Kadapa Limestone Mines (Area – 997.08 Ha) at Gollapalle, Village of Mylavaram Mandal, Kadapa (YSR) District, Andhra Pradesh

The total water requirement for integrated cement plant is about 2922 m3/day. The requirement will be met initially from the ground water sources by bore wells made in near plant area Once the mine pits are formed and water is filled in these pits, the collected rain water in mine pits and reservoir will be used for plant purpose. According to GWRE (Ground Water Resource Estimation) 2023, Mylavaram Mandal is in the Safe Category. According to the groundwater resource estimation of the study area, it was found to have a groundwater development of 28% and thus can be put under Safe Category.

Methodology Used

The groundwater resources of the study were estimated by following the GEC (Groundwater Estimation Committee) 2015. The data for district groundwater resources was taken from GWRE (Ground Water Resource Estimation) 2023. Further, for calculating the groundwater resources of the study area the data for resources was block was also taken from the IN-GRES website and distributed to the study area on prorate basis.

GROUND WATER RESOURCES FOR BUFFER ZONE

Area of buffer zone is coming about 519.9 sq.km. This buffer zone has Limestone/Quartzite as the main aquifer. Main recharging factors in this area is recharge due to rainfall, due to return flow from the applied irrigation from surface and groundwater and recharge form the surface water bodies.

RECHARGE IN BUFFER ZONE BY WATER LEVEL FLUCTUATION METHOD	
	Monsoon Season
Description of items	**Quantity**
1.Total Area (sq.km)	519.9
2. Water Table Fluctuation (m)	3.16
3. Specific Yield	0.02
4. Total Groundwater Storage [(1) * (2) * (3)] (M cum)	32.85

RECHARGE IN BUFFER ZONE BY RAINFALL INFILTRATION FACTOR METHOD	
Description of items	**Quantity**

1.Total Area (sq.km)	519.90
2. Average Annual Rainfall Monsoon Season (mm)	427.78
3. Rainfall infiltration factor	0.06
4. Rainfall recharge in Buffer zone by Rainfall Infiltration Factor Method (M cum)	13.34

As per the recommendations of Groundwater Estimation Committee (GEC), 2015, if the difference between the two, expressed as a percentage of rainfall infiltration method is greater than or equal to -20% or less than or equal to +20 %, then the recharge is taken as the value estimated by the water table fluctuation method. If it is less than -20%, then it is taken as 0.8 times the value estimated by rainfall infiltration factor method. If it is greater than +20%, then recharge is taken as equal to 1.2 times the value estimated by rainfall infiltration factor method.

RAINFALL RECHARGE IN BUFFER ZONE AFTER COMPARING RESULTS FROM WATER LEVEL FLUCTUATION METHOD AND RAINFALL INFILTRATION FACTOR METHOD	
Description of items	**Quantity**
1. Rainfall Recharge during monsoon season in Buffer Zone	
a) By Water Level Fluctuation Method (Mcum)	32.86
b) By Rainfall Infiltration Factor Method (Mcum)	13.34
1. Difference between (1a) and (1b) expressed as a percentage of (1b), 'PD' [{(1a) – (1b)/ (1b)} *100]	6.23
3. Rainfall Recharge in the Buffer Zone during monsoon season (Mcum) [= (1a) if 'PD' is between -20 and +20% = 0.8 * (1b) if 'PD' is less than -20% = 1.20 * (1b) if 'PD' is greater than +20%]	16.01

Recharge from rainfall in Non- monsoon Season:

Non-Monsoon Season	
RECHARGE IN BUFFER ZONE BY RAINFALL INFILTRATION FACTOR METHOD	
Description of items	**Quantity**
1.Total Area (sq.km)	519.90
2. Total Annual Rainfall Non-Monsoon Season(mm)	415
3. Rainfall infiltration factor	0.06
4. Rainfall recharge in Buffer zone by Rainfall Infiltration Factor Method (m cum)	12.94

Draft Due to Domestic utilization:

Draft Due to Domestic Utilisation	
Population of Study Area	51,313

Census Year	2011
Current Year	2024
Annual Growth Rate	1.38
Projected Population	60519
Groundwater requirement (KLD)	133

All the other parameters were calculated on pro rata basis and adjusted with intellectual judgments made for the study area considering it demography and geography. Recharge from River, Pond, Canal and Tank were Calculated on pro rata basis. The summary of the Groundwater resources of the study area as per GWRE 2022-23 is given below.

RECOMMENDATIONS AND SUGGESTION

- Awareness program about the conservation of ground water resources to make the population aware.
- In order to arrest the declining trends of water levels in the block, the rooftop rainwater harvesting technology shall be further strengthen and more recharge structures may also be constructed in depression areas where water gets accumulated during rainy season. This will help in enhancing the recharge to ground water reservoir.
- The abandoned dug wells may be cleaned and should be used for recharging the ground waterby utilizing the surface runoff.
- The water level monitoring network needs to be increased in the block.

Table 7: Details of Groundwater resources Available in the study area calculated based on GEC 2015

S. NO.	Name	Area (Sq.km)	Ground Water recharge (HAM)				Total Annual Groundwater Recharge (HAM)	Total Natural Discharge (HAM)	Annual Extractable GW Resource (HAM)	Current Annual Groundwater Extraction (HAM)				Annual GW Allocation for (HAM) Domestic Use as on 2025	Net Ground Water Availability for future use (HAM)	Stage of Groundwater Extraction (%)	Category
			Monsoon Season		Non- Monsoon					Irrigation	Industrial	Domestic	Total				
			Recharge from rainfall	Recharge from other Source	Recharge from rainfall	Recharge from other Source											
1	Kadapa	15379	54542.1	23121	540	28810	107012	5351	101662	29760	390	4264	34414	4264	68870	34	Safe
2	Mylavaram	365	1531	649	15	809	3005	150	2854	696	22	91	809	13	2123	28	Safe
3	Study Area	519.9	2181	925	22	1152	4280	214	4066	991	32	133	1156	136	2907	28	Safe

6.2 IMPACT ON SURFACE WATER SOURCE

All the project activity to be carried out in the future will not interfere anywhere with the natural drainage pattern. Moreover, no stored water shall be released directly to streams; hence no possibility of any siltation in natural streams and reduction of vertical percolation. It is therefore apparent that there is very less impact of project on the surface water regime.

6.3 IMPACT ON WATER QUALITY

Cement manufacturing involves the use of large amounts of water. However, being dry process technology, there will be no waste water generation from cement production. Waste water will be generated from CPP/WHRS as blow down, RO reject and sewages from domestic usage. The discharge of this wastewater outside plant boundary which can contain suspended solids, high pH levels, and trace amounts of heavy metals and other pollutants, will pollute surrounding surface water bodies. Cement production often involves the use of additives, fuels, and raw materials that may contain hard substances. These substances will properly manage and control, the leaching into water sources and potentially contaminate surface water and groundwater. Adopting energy-efficient technologies and optimizing processes to reduce fuel consumption and minimize thermal pollution. No Direct contact with surface water and implementing appropriate measures to mitigate the potential impacts on water quality and protect the surrounding ecosystems.

6.4 MITIGATION MEASURES

- Sedimentation pits will be provided at appropriate location to trap the silt laden runoff water and prevent excessive silt from going outside. The storm water drains will be diverted to a water reservoir to collect the runoff.
- Rainwater harvesting will be practiced which helps in recharge of ground water table.
- Waste water will not be discharged outside the plant premises. RO reject from CPP/WHRS will be used in Cooling mill spray.
- Domestic wastewater will be generated from plant & Canteen which will be treated in STP and utilized for greenbelt development/ plantation.
- Rain water harvesting will be practiced inside the plant. One pond will be constructed for the storage of runoff generated throughout the plant. This water will be utilized for greenbelt development and dust separation.
- Regular monitoring of water quality and water level will be carried out.

Details of Rainwater Harvesting:

Sl. no		Particular	Length (m)	Width (m)	Depth (m)	Area (m)	Volume (m^3)	remarks
1.	Rainwater Harvesting Pond	Dimension of pond	**250**	**166**	**4.5**	**41,500**	**186750**	
		Capacity of pond (m^3/Y)	**560250**					**3 filling seasons**
		Total capacity of pond (m^3/Y)	**560250**					

Water Requirement (m^3/Y)	**9,64,260**
Total Runoff generated in Project Site (m^3/Y)	**5,59,784**
Runoff to be Stored (m^3/Y)	**5,59,784**
Capacity of RW Harvesting Pond (m^3/Y)	**5,60,250**

- To accommodate the total runoff generated in the project site which is (5,60250 m3/Y), the area of the pond should be approximately, 41,500 m2 which covers 4.15 Ha area.
- As the capacity of the Rainwater Harvesting Pond is higher than that of the runoff which is to be stored, 100% runoff water can be stored.
- The capacity of the rainwater harvesting pond with respect to the water requirement is 58%.

7 WATER BALANCE, RECYCLE AND REUSE

The total water requirement for integrated cement plant & CPP 2,922 m3/day. The requirement will be met initially from the ground water sources by bore wells made in near plant area. Once the mine pits are formed and water is filled in these pits by rain harvesting, the collected rain water in mine pits and reservoir will be used for plant purpose.

In the proposed mine area, as the maximum depth is considered to be 193 m and as the water table elevation is 183.7 m in post-monsoon and 180 m in pre-monsoon. The water table is not intersecting with the working depth in the plan period except for the conceptual year. Therefore, there will be no seepage.

The considered normal rainfall in the area is about 0.718 m/annum. With respect to the area of the pit the rainwater that can be accumulated in the pit as per the plan period is 66630, 110069, 135558, 166791 m^3/annum respectively. And considering the evaporation loss of 43400 m^3/annum, the total amount of water available in the pit will be of 64, 183, 252 and 338 m^3/day respectively.

And in the conceptual year as the water table is intersecting the working depth of the mine, Therefore the total water accumulated including the rainfall and the seepage is 2656600 m^3/ annum and after the

evaporation loss, the available water in the pit is 4530 m^3/day.

Hence, the water accumulated in the mine pits can be considered for usage for mine operations and other purposes.

Table 8:Break up of Water Requirement

Area	Input (KLD)	Input (KLD)	Total	Loss/ Consumption (KLD)		Wastewater Generated (KLD)	
	Phase -I	Phase-II		Phase -I	Phase-II	Phase -I	Phase-II
Cement Plant	411	411	**822**	411	411	0	0
CPP	450	450	**900**	300	300	150	150
Domestic consumption in the Plant	150	150	**300**	40	40	110	110
Domestic consumption in the colony	400	400	**800**	100	100	300	300
Greenbelt	50	50	**100**	50	50	0	0
Total	**1461**	**1461**	**2922**	**901**	**901**	**560**	**560**

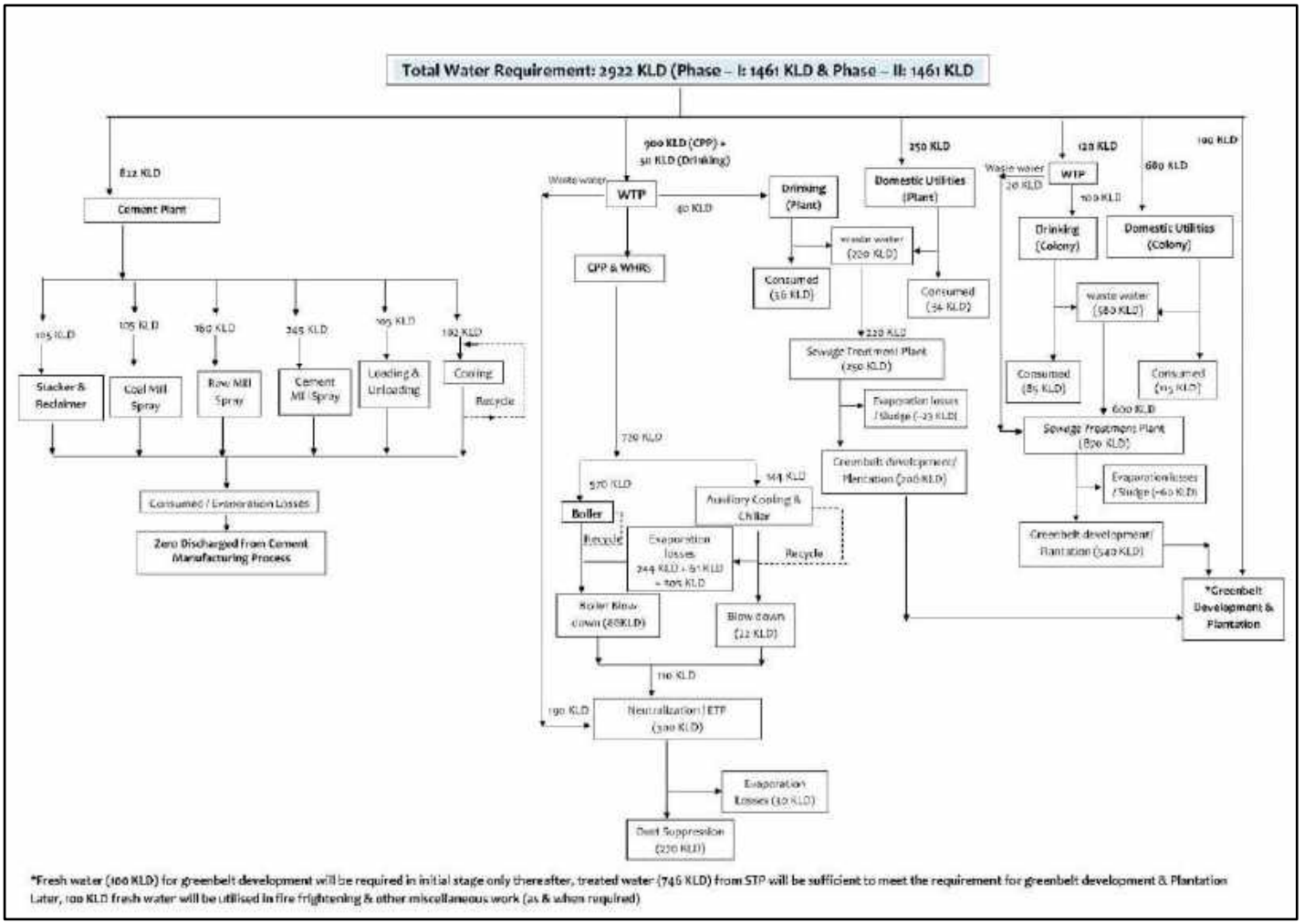


Figure 25:Water Balance Diagram

Sewage Treatment Plant

The sewage treatment plant (STP) of 300 KLD in Plant will be installed for treatment of Domestic waste water generated from Plant. The treatment given to the influent in the STP will be both chemical and biological.

Process description of STP plant:

Screen:

Screen is mechanical filter used to remove large objects from wastewater. The Sewage is first allowed to pass through screen chamber where heavy waste, floating materials are trapped. Due to this blockage or choking of downstream equipment's is avoided.

Equalization:

The sewage from the bar screen chamber, grit trap and oil & grease striper comes to the equalization tank. It is first collection tank of the STP, it acts as buffer: to collect the incoming raw sewage that comes at widely fluctuating rates, and pass it on to the rest of the STP at a constant flow rate.

Biological Treatment:

The equalized sewage is passed into the MBBR tank. The bulk of the treatment is provided here, employing microbes/bacteria for the process, where BOD and COD treatments are enhanced. Oxygen is supplied by means of diffused aeration system. The components of the aeration tank are mixed completely. For higher surface area for microorganisms, floating media (MBBR) is provided on which their growth takes place. The MBBR process works on the principle of attached growth system and uses rotating bio-media to retain an active biomass to reduce the influent BOD levels.

Sludge Settling:

The bio treated waste water passed through the settling tank, where the biomass gets settle at the bottom and the clear water overflows from the top of settling tank for filtration. Settled sludge has been pumped periodically.

Membrane diffuser:

Dual Media Filter (DMF): The treated sewage is passed to Dual Media Filter (DMF) for removing of turbidity, suspended solids and Odour of treated sewage. Dual media filters provide very efficient particle removal under the conditions of high filtration rate.

Activated Carbon Filter (ACF): It receives the water that is already filtered by the Pressure Sand Filter and improves the multiple quality parameters of the water like BOD, COD, turbidity, color and odor.

Softener: After filtration water is passed through Softener to reduce total hardness.

Disinfection: The treated water is then disinfected using Sodium hypochlorite (NaOCl) to kill and render harmless disease-causing organisms, such as bacteria, viruses, etc. Sodium Hypochlorite is dosed for disinfection of the treated water.

Finally, the treated water will be collected in the treated water tank for further uses in greenbelt development & plantation and gardening activities. The schematic diagram for sewage treatment plant has been shown below.

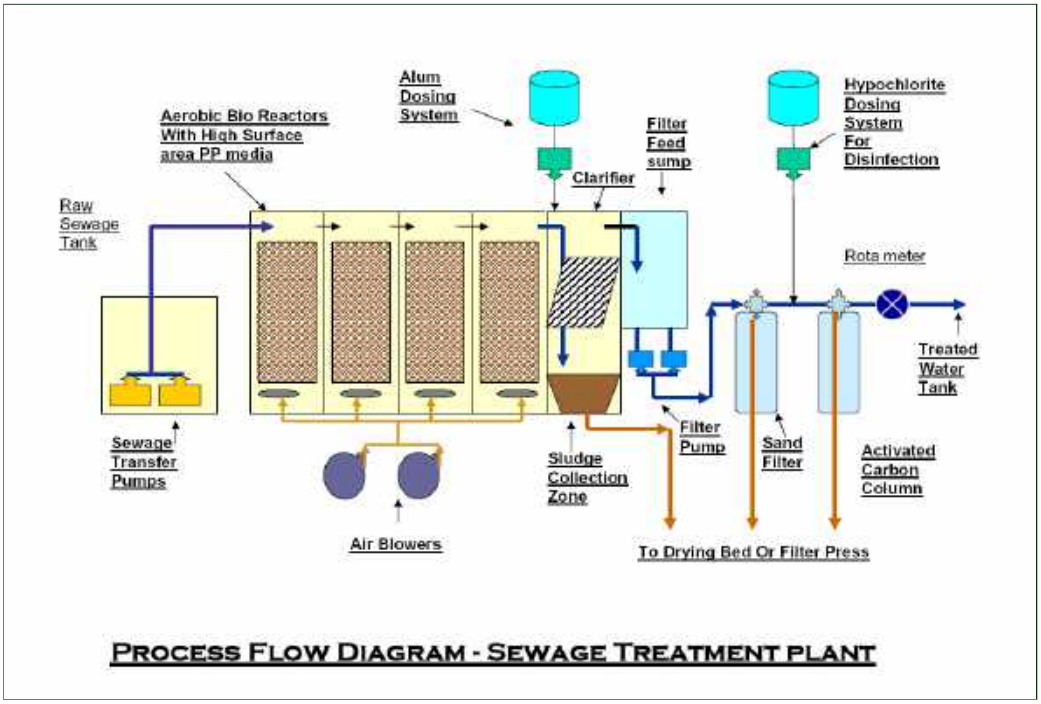


Figure 26 Schematic Diagram for Sewage Treatment Plant

Table 9 Expected Waste Water Characteristics of STP

S. No.	Parameters	Unit	Raw sewage quality	Expected Quality of Treated Sewage
1.	pH	-	7.5 - 8.5	6.5 - 9.0
2.	BOD	mg/L	300 - 350	< 10
3.	COD	mg/L	500 - 550	< 100
4.	Total Coliform	MPN/100 ml	10^6	10^3
5.	TSS	mg/L	300	<80
6.	Oil & grease	mg/L	20 - 30	<5
7.	Total Coliform	MPN/100 ml	10^6	$<10^3$

Water Treatment Process Description (Reverse Osmosis)

The reverse osmosis of capacity process consists of three main steps: (1) Pre-treatment, (2) Membrane Assembly System and (3) post-treatment.

Pre-treatment

The purpose of the pre-treatment step is to avoid any risk of clogging, fouling or scaling of the membrane. Pre-treatment is an important aspect of RO system. All RO devices require pre-treatment to remove the suspended solids, scalants, foulants and colloidal matter. In the pre-treatment system, some chemicals are usually used before the filtration step. Chlorine is often injected to disinfect feed water. Sodium Meta bisulphate is used to dechlorinate the feed water. Ferric chloride, alum or polymers are the typical coagulants used at the pre-filter stage. In the filtration stage, a gravity filter with different sand particle sizes is used. Then a fine cartridge filter is used after the sand filtration. For ground water

treatment, Hydrochloric acid and sodium hexameta phosphate (SHMP) is often used to prevent carbonate scale. The exact dosage of each chemical depends on the chemical analysis of the feed water.

Membrane Assembly System

Several types of RO membranes are commercially available. These are prepared either as flat sheet or as hollow fibres made from cellulose acetate (CA) ester or polyamide (PA). There are different ways of packing RO membranes. Of these, three configurations have been produced commercially: tubular, spiral wound (SW) and hollow fine fibre (HFF). Hollow fine fibre and spiral wound modules have proved to be appropriate for several types of raw water in RO desalination systems. Spiral wound has found many applications in the wastewater reclamation. The success of the spiral-bound device has been related to the capability to package a relatively large amount of membrane surface area into a relatively small element while maintaining a certain degree of "cleavability", which, of course, is particularly important for wastewater processes.

Post-treatment

In the post-treatment step, product water passes through a de-carbonation system, a pH adjustment system and water passing through UV light. Generally, Sodium Carbonate (Food Grade) is added to the product water to adjust its alkalinity. The purpose of passing the water through UV is to eliminate the presence of microorganisms during storage and distribution.

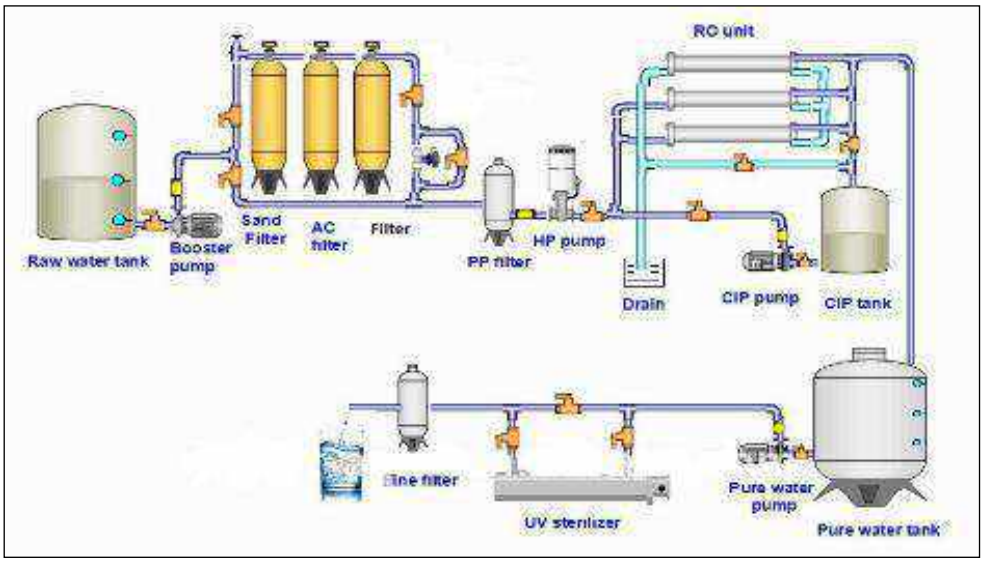


Figure 27 Schematic Diagram for Reverse Osmosis.

8 SALINE WATER DISPOSAL STRATEGIES

As this project is a Proposed 5.0 MTPA Integrated Cement Clinkerisation Plant, 8.0 MTPA Cement Grinding Unit, 100 MW Captive Power Plant with Kadapa Limestone Mine (Area-997.08 Ha) at Gollapalle, Village of Mylavaram Mandal, Kadapa (YSR) District, Andhra Pradesh and this project site does not fall under saline zone as per CGWA categorization. Therefore, this section on disposal of saline water is not required.

9 ANY OTHER DETAILS PERTAINING TO THE PROJECT

All the required details of the project are furnished in the sections above. Any other details as deemed fit by APGWD will be furnished when required for.

10 SUMMARY AND CONCLUSION

Proposed 5.0 MTPA Integrated Cement Clinkerisation Plant, 8.0 MTPA Cement Grinding Unit, 100 MW Captive Power Plant at Gollapalle, Village of Mylavaram Mandal, Kadapa (YSR) District, Andhra Pradesh is a Greenfield project which falls under Category 'A' projects as per the EIA Notification, 2006 and as amended thereof; Project or Activity '3(b)' Cement Plants --- in which the plant of proposed capacity will be installed by M/s. ACC Limited. And M/s. ACC Limited also has proposed Kadapa limestone mine of area 997.08 Ha at Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle, G. Uppalapadu Villages of Mylavaram Mandal, Kadapa (YSR) District which is located just above the proposed plant site.

- The elevation of the study area ranges from 171 to 466 m amsl which indicates that it is Gently undulating topography. The digital elevation map is prepared by data taken from USGS SRTM. Similarly, the study area considered for the Kadapa limestone mine, the elevations are ranging from 176 to 430 m asml with gently undulating topography.
- Kadapa district, located in the southern part of the Indian state of Andhra Pradesh, exhibits diverse geomorphological features owing to its location between the Eastern Ghats and the Deccan Plateau. There is a well-defined drainage system having Trellis drainage pattern in the buffer zone, a major part of drainage has been harnessed by constructing irrigation projects, tanks and anicuts.
- The nearest wetland is Kolleru Lake (Andhra Pradesh) located at a distance of about 359 Km approximately in the NE direction from the Plant Site and about 351 km from the Mine site in NE direction. Therefore, certificate regarding the same is not applicable for this particular proposal.
- The Geological Formation in the belongs to the Narji Limestone of Jammalamadugu formation in Kurnool group as mentioned earlier. Locally sharp changes in strike direction are also seen due to broad Warping. The local strike of the deposit is N70° -S70° E with 2° dip towards N20° E.
- Thick Soil Cover Entire area and only at places limestone could be seen in the cultivated lands. However, the core samples do not indicate any major geologically disturbed zone and indicate that the formations in the area are relatively massive. Thick bedded and fine grained in nature.
- The highest water table in Pre-Monsoon Season is 394.5 m amsl and lowest water table 157.6 m amsl. The direction of water table in general is Towards North East direction.
- Depth to water level in study area was found to vary between 17.5 m bgl to 47.4 m bgl during post-monsoon season and 21.4 m bgl to 50.5 m bgl during pre-monsoon season indicating water level to be relatively Shallow to Deep ground water. The minimum and maximum surface elevation of monitoring points in the study area is found to vary between 183 to 445 m AMSL respectively.
- Hydrograph of Nossam station Show Rising Water Level Trend in Pre-Monsoon Season and Post Monsoon Season.

- According to the groundwater resource estimation of the study area, it was found to have a groundwater development of 28% and thus can be put under Safe Category.

  The total water requirement for integrated cement plant & CPP 2,922 m3/day. The requirement will be met initially from the ground water sources by bore wells made in near plant area. Once the mine pits are formed and water is filled in these pits by rain harvesting, the collected rain water in mine pits and reservoir will be used for plant purpose. In the proposed mine area, as the maximum depth is considered to be 193 m and as the water table elevation is 183.7 m in post-monsoon and 180 m in pre-monsoon. The water table is not intersecting with the working depth in the plan period except for the conceptual year. Therefore, there will be no seepage.

  The considered normal rainfall in the area is about 0.718 m/annum. With respect to the area of the pit the rainwater that can be accumulated in the pit as per the plan period is 66630, 110069, 135558, 166791 m^3/annum respectively. And considering the evaporation loss of 43400 m^3/annum, the total amount of water available in the pit will be of 64, 183, 252 and 338 m^3/day respectively.
- As this project is a Proposed 5.0 MTPA Integrated Cement Clinkerisation Plant, 8.0 MTPA Cement Grinding Unit, 100 MW Captive Power Plant with Kadapa Limestone Mine (Area-997.08 Ha) at Gollapalle, Village of Mylavaram Mandal, Kadapa (YSR) District, Andhra Pradesh and this project site does not fall under saline zone as per CGWA categorization. Therefore, this section on disposal of saline water is not required.

11 BIBILIOGRAPHY

- Aquifer mapping report Kadapa (YSR) CGWB
- Census of India, 2011
- Drainage & DEM (adopted from USGS SRTM data)
- Geological map, Geomorphological Map (adopted from Bhukosh, Geological Survey of India)
- Ground water estimation committee, Govt. of India (2015)
- India Water Resources Information System (India WRIS)
- RAMSAR Site Information Service https://rsis.ramsar.org/

12 ACCREDITATION CERTIFICATE



Quality Council of India
National Accreditation Board for Education and Training
ITPI Building, 6th Floor, 4 - A, Ring Road, I P Estate, New Delhi - 110002

CERTIFICATE OF ACCREDITATION

Under the QCI-NABET Scheme
for
Ground Water Consultant Organisation

M/s J.M. EnviroNet Private Limited

Address: Unit No. 1517, Tower - B, EMAAR DIGITAL GREENS, Golf Course Extension Road, Sector-61, Gurugram-122011 (Haryana)

S.No.	SCOPE COVERAGE		
	Industrial Use	Mining Projects	Infrastructure Projects
1	Hydrogeological report: Comprehensive report on groundwater condition/situation		
2	Impact Assessment Reports with modelling studies		

Note: Names of approved Project Coordinators and Technical Area Experts are mentioned in IA AC Minutes dated Sep 09, 2021 on QCI-NABET website.

The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in NABET's letter of accreditation bearing no. QCI/NABET/ENV/GWCO/ACO/21/51 dated Sep 23, 2021. The accreditation needs to be renewed before the expiry date by M/s J.M. EnviroNet Private Limited following due process of assessment.

Sr. Director, NABET
Issue Date : Sep 23, 2021

Certificate No.
NABET/GWCO/IA/GW018

Valid Upto
Sep 08, 2026

REHABILITATION & RESETTLEMENT ACTION PLAN

FOR

Proposed 7.0 MTPA Limestone Mine with ML Area of 997.08 ha

At

Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle, G. Uppalapadu Villages of Mylavaram Mandal, Kadapa (YSR) District, Andhra Pradesh State

PROJECT PROPONENT
M/S. ACC LIMITED

CHAPTER-I
INTRODUCTION

1.1 INTRODUCTION

M/s ACC Limited is proposing for 7.0 MTPA limestone mine with ML area of 997.08 ha at Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle and G.Uppalapadu villages of Mylavaram mandal of Kadapa (YSR) district, Andhra Pradesh.

The Proposed Limestone Mining Project requires land acquisition from the local people therefore needs to establish and harmonize relationship amongst the local people and the project developers. The rehabilitation and resettlement Plan has aimed to address the rights and privileges of local people, ensures good share of jobs in the projects and facilitate comprehensive socio-economic development of the area. Govt. of India has passed the "The Right to fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act-2013" (LARR Act, 2013) which came into force w.e.f. 1st January, 2014.This Act provides guidelines for land acquisition as well as compensation for the project affected persons. The LARR Act, 2013 served as the guide in the development of the Rehabilitation and Resettlement Action Plan for this project. The main objective of the new LARR Act, 2013 is to provide appropriate and adequate compensation to the project affected families against the divestment of land, minimize displacement, and provide adequate infrastructure facilities at rehabilitation site to improve the living standard of affected zone and to facilitate the harmonious relationship between acquiring body and inhabitants of affected area.

As mentioned above, the Rehabilitation & Resettlement Plan (RRP) for the affected families of this proposed Limestone Mine Project follows the guidelines of the LARR Act, 2013 and state Government.

The demarcation of the area was done by department of Mines and Geology, Kadapa (YSR). The mine lease area falls at Villages: Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle, G. Uppalapadu Mandal: Mylavaram, Kadapa (YSR) District, Andhra Pradesh State.

1.2 SCOPE OF THE STUDY

On the basis of analysis of data, information collected, the study provides directional inputs with cost estimates and budgetary allocations for the resettlement and rehabilitation of the project affected families (PAFs). The study, in particular, provides the following:

(i) Demarcation of project-affected areas that are directly and indirectly affected by the project;
(ii) Description of project-affected persons and their actual number;
(iii) Assessment of actual number of PAFs and people who have received all benefits of the package and have purchased the land;
(iv) Assessment of the socioeconomic impact of the package on those who have received it fully and those who have received it partly;
(v) Assessment of the possibility of regrouping the clusters so that PAPs have increased opportunities for improving their living standards and access to social infrastructure;
(vi) Assessment of availability of adequate land from "willing sellers" for resettlement and rehabilitation;
(vii) Assessment of choices expressed by the PAPs for their resettlement and rehabilitation;
(viii) Suggestions for policy so that the socioeconomic and cultural conditions of the PAPs could be improved with their own participation.
(ix) Suggestions for improving the socioeconomic conditions of the PAPs, including women, so they could be improved with their own participation.
(x) Methodology/suggestive measure/action regarding monitoring of compensated project affected family/person. (can we provide a status of already rehabilitated families?)

1.3 METHODOLOGY FOR BASELINE DATA

The baseline data was collected based on field survey and carried out in a combination of primary source and secondary source in the study area.

Primary Source: Household survey, Personal Interview, Group Discussion in community meetings etc.

Secondary Source: Revenue department, Census 2011, LARR Act, 2013, State Government policies.

The preliminary survey and secondary data collection helped to understand the physical, social, economic and cultural setup of the area before undertaking the field survey. The household survey was conducted of the PAFs using a well-structured questionnaire prepared in local language enabling subjects to reply appropriately. The questionnaires were designed to suit the subjects considering their rural background enabling to furnish correct information and data as far as possible. Additionally, public consultations and focus group discussions were held during the fieldwork to understand views of people affected, with reference to acquisition of land, its due compensation, benefits of the project, opinion about health and safety issues due to the project to ensure participation of community in project implementation, monitoring and to develop a comprehensive coordination amongst the stakeholders for successful implementation of the project.



CHAPTER-II

LAND REQUIREMENT AND ACQUISITION

M/s. ACC Ltd. has collected the information of survey numbers and sub-division numbers of the plots proposed for acquisition and the names of owners of these lands along with land summary and a cadastral map showing the proposed lands for acquisition. Copy of the land summary is enclosed with this report as **Annexure A**.

2.1 PLAN FOR PURCHASED OF LAND

Various acts related to acquisition of land serve as a guide for purchasing of land from the land holders whose lands are falling in the ML area. These are listed below:

1. The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act 2013 with amendments.
2. The Andhra Pradesh Land Acquisition Notification, 2014. **Annexure B**.
3. The land for the proposed mine is being acquired as per provisions of above-mentioned act which entitles the lease holder to purchase land from private owners on market rate.

2.2 OUTLINES OF PROPOSED RESETTLEMENT & REHABILITATION (R & R) PLAN

There is no houses/structure present within mine lease area, hence there is no need of displacement due to the mining activities.

M/S. ACC Ltd. has following options for purchase of land for proposed mining project:

- Acquire land falling in the mining lease area through provisions of LARR Act, 2013.
- Land purchase through mutual agreement with the land holders falling in the mining lease area at negotiated rates and terms and conditions.

2.3 STEPWISE PROCEDURE FOR LAND PURCHASE

The following steps will be followed all throughout the period for the land acquisition /purchase for the proposed mining project:

- **i.** Identification of the exact area and rightful land owners and demarcation of the areas to be acquired /purchased, through Revenue/Tehsil office.
- **ii.** Carrying out the Socio-Economic Survey of the Project Affected Persons (PAFs).
- **iii.** Discussions with landowners from time to time to offer the applicable rates to land owners on the prevailing market rates decided by the State Government or collector.
- **iv.** Land will be purchased in mutual consent with the land holders at mutually agreeable rates and terms & conditions.
- **v.** Part of the agreed compensation amount to be released immediately after registration of the land by the Tehsil Office and receipt of the documents. The payments to the land owners are to be made through deposit directly in bank account.
- **vi.** One time mutually agreed compensation (on pro rata basis) to the land owners (owning land in the mining lease area).
- **vii.** Final payment of compensation to be released only after physical possession of the land & Registration of land in the name of M/s ACC Limited at the market rate.
- **viii.** To set up a Dispute Redressal System, so that the land holder/land loser can approach the project proponent for his/her grievances.
- **ix.** In case of disputed land, compensation amount will be submitted in Tehsil office or district court.

Payment of compensation

Complete transparency will be maintained in land purchase as per the ACC, the total agreed compensation is proposed to be paid in three parts, however, the onus of accepting proposed approach lies with the land owners only.

1. Lump sum payment of 40% of the total agreed compensation through direct bank transfer in the

account of Land owner/s

2. 40% of the total agreed compensation as fixed deposit and
3. An annuity of 20% of the total agreed compensation (as policies like LIC etc.)

Any other additional or modification in above mentioned payment terms as mutually agreed between the land owner/s.

2.4 LAND BREAKUP OF MINE LEASE AREA

Table 2.1

Land Breakup of Mine Lease Area

Village	Type of Land		Total Area
	Govt. in ha.	Private in ha.	
Dhannawada	0	69.6	69.6
Vaddarala	0.85	94.87	95.72
Chinna Venturla	6.19	438.29	444.48
Bestavemula	0	103.77	103.77
Gollapalle	0	189.83	189.83
G.Uppalapadu	3.31	90.37	93.68
Total	10.35	986.73	997.08

Source: ACC Limited

Table 2.2

Land Purchased Status

S No.	Village	Total land Pvt (In ha.)	Land already Purchased (In ha.)	Balance land to be purchased (In ha.)
1	Dhannawada	69.60	0	69.6
2	Chinna Venturla	94.88	60.09	34.79
3	Vaddarala	438.29	254.87	183.42
4	Bestavemula	103.77	103.81	0.04
5	Gollapalle	189.83	184.64	5.19
6	G. Uppalapadu	90.37	88.95	1.42
Total		986.74	692.36	294.46

Source: ACC Limited

The total Mining Lease area is 997.08 ha out of which 986.73 ha is private agricultural land and 10.35 ha is government land. Out of total private land, 692.36 ha land has been purchased by ACC and remaining 294.46 ha. land need to be purchased.

2.5 PROJECT AFFECTED FAMILIES' DETAILS

Table 2.3

Details of Project Affected Families

S No.	Village	PAFs (Land to be purchased)
1	Dhannawada	33
2	Chinna Venturla	70
3	Vaddarala	18
4	Bestavemula	00
5	Gollapalle	03

6	G. Uppalapadu	01
Total		**125**

Source: ACC Limited

There are 747 families of total Pvt. Land **984.74** ha. out of which 125 PAFs whose land 294.46 ha. to be purchased, 622 PAFs whose land 692.36 ha. has already been acquired.

Table 2.4

Lease Area Specific Details

S. No.	Villages	Land details of PAFs (Land to be purchased)		
		Families having Land Only	Families having House and land within ML	Families having House 0nly
1	Dhannawada	33	00	00
2	Chinna Venturla	70	00	00
3	Vaddarala	18	00	00
4	Bestavemula	00	00	00
5	Gollapalle	03	00	00
6	G. Uppalapadu	01	00	00
Total		125	00	00

Source: ACC Limited

CHAPTER-III
SOCIO-ECONOMIC PROFILE OF THE AFFECTED POPULATION

An integral part of environment study, which deals with the total environment, socio economic environment incorporation various facts related to socio-economic condition in the area. These include demographic structure of the affected population, provision of the basic amenities viz. housing, education, health and medical services, occupation, water supply, sanitation, communication, transportation, prevailing diseases pattern etc. at the baseline level.

Socio-economic study of an area gives an opportunity to assess the socio-economic conditions of the affected population. This study would help in visualization and predicting the likely impact depending upon the nature of resettlement and rehabilitation activists of the proposed project.

3.1 PROCEDURE OF SOCIO-ECONOMIC SURVEY

The Objectives of the survey are given below:

Objectives:

- To conduct the household survey in the lease area.
- To know the current scenario of the region to cover the resettlement and rehabilitation activities.
- To help in further planning for providing better living standards to the PAFs based on their needs identified during survey.

3.2 SOCIO-ECONOMIC AND DEMOGRAPHIC DETAIL OF AFFECTED VILLAGE

Socio-economic survey and verification of the affected persons were undertaken to address the possible adverse impacts if any that may emerge during and after the course of the project implementation. The socio-economic survey carried out, acts as base line information and provides a cut off point for eligibility to compensation or assistance for loosing assets in the process of land purchase.

The detailed questionnaires were designed to suit the subjects considering their rural background enabling them to furnish correct information and data as far as possible. Formats included questions on concerns of affected families towards problems, their choices for infrastructure improvement, additional facilities required, Questionnaires were pre tested and when the findings were satisfactory the same were used for ground work.

It was decided that as far as possible, each of the selected Project Affected Family (PAF'S) should be interviewed at the time convenient to them. Before embarking on data collection, family members including heads of families of affected families were briefed about need and procedure of the study. Few focused group discussions involving representative members of families were also conducted.

In the public consultations undertaken by organizing Focus Group Discussions (FGDs) in the village, people participating in the group discussions were informed about the project and then members were asked to provide their concerns regarding the project activities. Their participation helped in identifying social issues and incorporating suggestions in the R&R measures wherever feasible. Therefore, the objective of the public consultation was to inform, make them aware and participate in the project planning. The focus group discussion was conducted to elicit the views of the affected persons and other stakeholders on displacement, compensation, employment, gender issue, infrastructure, education, health care, sanitation, woman empowerment and any other advised/raised by the stakeholders. Views expressed by participants have been incorporated in the project design wherever feasible. On an average 10-15 persons including women of the village who are likely to be affected participated in the focus group discussion. The number of participants increased as the consultation progressed. The issues were raised, views were expressed and suggestions were provided by the participants. Summary of public consultation is as below:

- Employment opportunities will increase for local people with the development work both as construction worker as well as service providers.
- Price of land will increase.
- Loss of land, properties and disruption of livelihood of those close to the project area.
- Majority people preferred one to one purchase of land/direct purchase. No forceful Purchase, noninvolvement of mediators and transparency in land purchase were asked during survey.
- In some cases, people were interested to get employment for their survival and betterment.

Infrastructure facilities in villages:

The facilities that are available in the village include Anganwadi (Pre-school), Primary School, secondary School, drinking Water and government primary health Centre. The agriculture is the main economic activities in the area. Farmers also keep cow and goat, for their alternative source of earning. The other economic activities in the area are related to business and trade. A summary of economic activities in the area could identify about economic activities like-provision store, beauty parlor, hair cutting saloon, polish work, electrical and hardware shops, medical store, auto repair, tailoring, mobile repairing shop, tea shop, sweet shop and Small Dhaba, fruits and vegetable shops, gas stove repair shop, photo studio, Bank, ATM, jewelry shops etc.

Total no of families 747 are affected due to proposed mine. During the study along with the total number of household of villages of socio-economic and demographic profile is being shown in table no. 3.1

Table: 3.1

Demography of affected villages

Sl No.	Name	No_HH	TOT_P	TOT_M	TOT_F	Sex Ratio	P_06	M_06	F_06	Age below 6 Sex Ratio	P_SC	P_ST	P_LIT	M_LIT	F_LIT	Lit Rate	Male Lit Rate	Female Lit Rate	TOT_WORK_P	MAINWORK_P	MARGWORK_P	NON_WORK_P
1	Dhannavada	232	851	421	430	1021	107	53	54	1019	55	21	465	273	192	62.50	74.18	51.06	477	380	97	374
2	Chinna Venthurla	154	666	352	314	892	78	48	30	625	132	6	368	223	145	62.59	73.36	51.06	405	367	38	261
3	Vaddirala	325	1356	672	684	1018	178	95	83	874	149	4	689	391	298	58.49	67.76	49.58	789	735	54	567
4	Bestavemula	309	1250	611	639	1046	140	68	72	1059	252	0	695	407	288	62.61	74.95	50.79	743	614	129	507
5	Gollapalle	162	604	299	305	1020	63	40	23	575	174	0	352	200	152	65.06	77.22	53.90	337	329	8	267
6	Golla Uppalapadu	44	166	89	77	865	17	11	6	545	0	0	108	67	41	72.48	85.90	57.75	97	78	19	69
Total		**1226**	**4893**	**2444**	**2449**	**1002**	**583**	**315**	**268**	**851**	**762**	**31**	**2677**	**1561**	**1116**	**62.11**	**73.32**	**51.17**	**2848**	**2503**	**345**	**2045**

Source: Census of India 2011

Above table highlights the proportion of PAF's and PAPs of mining area at villages- Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle, G. Uppalapadu, Mandal- Mylavaram, District- Kadappa, and State- Andhra Pradesh. Total surveyed Project Affected Families (PAFs) whose land to be purchased are 125 families, where Sex ratio of the affected family is 1002 women per 1000 men suggesting that area has ideal presence of men and women in the PAFs.

Literacy is one parameter that determines quality condition of education in the surveyed population. An ability to read, write, understand and perform basic fraction is called Literacy which is noted to be 62.11 % as per Census 2011, pre-defined spatially the presence of primary educational centers in village. The availability of Pre-Primary School (Anganwadi schools), Primary, Middle school are present in village, Middle & Senior Secondary Schools are available in the region. Other Government and Private Degree colleges are present in YSR Town area. The proportion of working population (58.21%) are more than non-working population among PAPs. The study also suggests that out of total working population most of these men and women are involved at performing work at informal sector and agriculture farmer/ labour or employed in nearby industries. The study highlights that general caste category groups inhabits here; SC are 15.57% and there are .06% ST present within household. For their social and economic welfare, various social protection schemes initiated by Central and State Government are running in the village Considering their housing structure, most of these families are living in 2 – 3 room dwelling made up of pacca and semi-pacca structure (i.e. with brick walls/ stone walls and cemented roof tops).

The study also revealed that average basic annual income of a family varies from Rs. 60000 to 10 lakhs where major expenses are borne on food, medical provision and accommodation. Facilities relating to sanitary & hygiene in the region is comparatively good. Toilets are built under 'Swachh Bharat Abhiyan' toilets are functioning properly.

As per census 2011 number of households in village are 1,226 and population is 4,893 that comes to 4 persons per house. During the study it is found, there are average 4 people per house in the affected villages, thus we can say that the total population of 747 project affected families will be around Approx. 2,988.

The Socio-economic study for village – Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle, G. Uppalapadu, Mandal- Mylavaram, District- Kadappa, Andhra Pradesh, where proposition of this Limestone mine gives clear picture of how it is favorable place in bringing development. It cites various important parameters (viz. demographic information, average household size, literacy rates, and sex ratio). It suggests broadly literacy is fair among Project Affected Population, however unemployment still persist in this area. These village have average infrastructural facilities in comparison to the facilities available in other parts of the district; it shows there is need of improvement in medical facilities, drinking water and education in these village. Villagers have to commute outside from their village for higher education. Medical facilities are highly needed to be strengthened. These villages area well connected with road transport and communication facilities however can have quality facilities.



CHAPTER IV

INCOME RESTORATION PROGRAM AND ACTIVITIES

4.1 INCOME RESTORATION PROGRAM

Major impact identified for the land acquisition of the project is related to loss of incomes of Affected Persons (APs). Loss of income may then affect socio- cultural systems of affected families. Thus, restoration of pre-project levels of income is an important part of restoring socio-economic and cultural systems of Affected Persons.

For income restoration ACC will provide employment of project affected people as per their educational qualification and skill at mines and plant.

Below is showing income generation activities will be done by for PAFs.

ACC shall facilitate for suitable source of income directly or indirectly to one member of the PAF w.r.t. proposed plant & mine based on qualification, skill & experience. Since the proposed project is a state of art project, there will be limited opportunity for the direct employment in the company operations at the location.

In case necessary opportunity is not available in our operations at the location, company shall facilitate employability training under its skill development initiative (i.e. ACC DISHA initiative) and enhance their skill for employability and placement elsewhere. ACC has allocated Rs. 1.2 Crore for establishment of DISHA Skill Development Centre at the location i.e. Kadapa. An allocation of additional Rs. 50 Lakhs per annum would be made towards continuance of regular operations of DISHA Centre.

The DISHA Skill Development Centre will focus on sustainable rehabilitation for the candidates who need skill enhancement facilitation and appropriate placement support.

ACC DISHA Skill Development Centre Initiative has a proven track record in the following four separate lines of livelihood engagements.

i. Skill based Professional Engagements Welder, Fitter, Electrician, Plumber, Tailor, Driver HMV, Operator Hyva, Operator JCB, Cook
ii. Self-Employment Support for Individuals 2W/4W Mechanic, Electrician, Pump Repair, Small Food Cart, Wedding Photographer, Provision Store, Car Wash
iii. Micro Enterprise through Self Help Group Model Mushroom, Fabrication Unit, Food Processing Unit, Food Cart and Catering Unit, Garment Unit, Soap and Shampoo, Spice Production, Tent House Unit, DTP Unit, Sanitary Napkin Unit, Security Agency
iv. Equitable Re-Placement Helper, Loader, Godown Help, Packing Help, Electrician, Raj Mistri (Mason), Computer Operator, Account Asst., Office Secretary, Maintenance Services, Retail Jobs, Logistic Worker, Hotel Support Service

Proposed Area Development Plan for targeted interventions for Project Affected Families during the pre-operation Phase

The area development plan focused on the 747 Land owner families (from whom the entire 997.08 Ha. of land is purchased) would include project-based interventions on development of Livelihood, Education, Health & Sanitation, Community Environment, and Promotion of local sports, arts and culture.

ACC has earmarked a budget of Rs. 2.0 crore per annum for development of the area Following initiatives have emerged from Social Impact Assessment report and detailed interaction with villagers (by a full time Social Development Professionals of ACC CSR Team) during various social responsibility initiatives in the villages that were carried out during last few years. The set of area development interventions are given as following apropos their correspondence to thematic categorization.

Proposed Area Development Plan for targeted interventions for Project Affected Families during the pre-operation Phase (in Rs. Lakhs)

Table 4.1

Interventions	YR.1	YR.2	YR.3	YR.4	TOTAL
ACC Vidya Utkarsh - Improving Quality and Reach of Education **– Support for Quality Education in schools of the villages** **– Support for competitive exams preparation to students** **– Advanced computer education** **– Spoken English classes** **– Career counselling and guidance** **– Computer Aided Education** **– Provide desk and benches to schools** **– School bags and stationery for students** **– Construction of toilets at Schools** **– Merit scholarships**	**50**	**50**	**50**	**50**	**200**
ACC DISHA - Skill Development of Youth and Placement **– 4-wheeler Driving Training to youth** **– License Support to Auto Drivers** **– Two Wheelers Mechanic Training** **– AC/Fridge Repair training to un employed youth** **– Rural Electrification training** **– Basic Computer skills to Un employed youth** **– Budget will be drawn from Broad CSR Plan for the Project Period**	**27**	**27**	**27**	**27**	**108**
ACC LEISA - Low External Input for Sustainable Agriculture **– Formation of RMG (Rythu Mitra Group/Farmers Group) and its capacity building** **– Approach Road to Jangalapalli** **– Dairy Development** **– Crop intensification** **– Multi cropping – NPM/Bio fertiliser practices** **– Support for hybrid plants/improved variety of Seeds** **– Mushroom Cultivation Training** **– Connect with GKVK/ICRISAT** **– Honey bee keeping training** **– Formation of Farmer Producer Company**	**25**	**25**	**25**	**25**	**100**
ACC Swawlamban - Women Empowerment through SHGs and facilitating Micro Enterprises **– Support for Dairy Development** **– Support for sheep rearing** **– Support for Gottery – Support for Poultry – Tailoring training to Women – EDP Support** **– Agarbathi making and packing** **– Exposure Visits to Apparel Park** **– Capacity Building of MS/VO/SHGs – Exposure on Best Practices** **– Book Writing training to SHGs**	**26**	**26**	**26**	**26**	**104**
ACC Arogyam - Enhancement of health and wellbeing **– PHC - Vaddirala strengthening through PPP model**	**20**	**20**	**20**	**20**	**80**

– Awareness camps and IEC activities of Health – Conducting Health checkup camps in Villages – Work together with PHC – Support for NRHM and National programs – Multi speciality Health camps – Mother and child health support – Support for Anganwadi Centres					
ACC Sampoorn Swachchata - Promote hygiene, ODF environment and safe disposal of waste – Support for ODF villages – Construction of CC approach roads – Solid waste Management at villages – Water turfs and washing plot farms – RO water plants at villages	**20**	**20**	**20**	**20**	**80**
ACC Sanrakshit Paryavaran - Sustainability of resources for posterity – Avenue Plantation – Plantation on fields – Barren Hill Afforestation – Environment protection initiatives – Agro forestry promotion – Block plantation (Home based and field based) – Rain water harvesting structures for ground water recharge – Soil and moisture conservation – De-siltation of surface tanks – Water harvesting structures – Construction of check dams – Dried bore well recharging Pond Deepening in the villages	**24**	**24**	**24**	**24**	**96**
ACC Drona - Promotion of local Sports, Arts and Culture – Coaching to local youth for sports – Organize mandal level tournaments (Cricket/ Khokho/ Kabbaddi/Shuttle cock) – Participation of Dist./state/National level – Schools supported by sports material/infra – Association with sports club/federation/Academy – Support for cultural activities – Conduct Games and sports at School/village levels.	**8**	**8**	**8**	**8**	**32**
TOTAL	**200**	**200**	**200**	**200**	**800**

CHAPTER V

REHABILITATION POLICY & LEGAL FRAMEWORK, COST& BUDGET OUTLAYS

5.1 RESETTLEMENT POLICY AND LEGAL FRAMEWORK

Purchased of land for its limestone mine project is an ongoing process and would always be site specific. The land purchased is based on compensation arrived through legal process and discussion with land owners. Purchased of land for proposed project is voluntary, since the land owners have willingly agreed to sell their land at market rate and provision of LARR Act, 2013.

The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (LARR Act, 2013) serve as a guiding factor in acquisition of land. So far ACC has been able to avoid expropriation setting compensation through mutually agreed rates. However, in order to comply with the LARR Act, 2013, to address these directives, ACC will pursue the following Resettlement Policy for purchase of land for proposed project. The acquisition/purchase, compensation, rehabilitation and resettlement of land for mining purpose is mentioned in the section 2 (3) of the LARR Act-2013. Further section 2(2)(b)(i) of LARR Act, 2013 mentions when appropriate Government can acquire land, according to this in case of acquisition for private companies, the prior consent of at least eighty percent, of those affected families, as defined in the sub-clause (i) and (v) of clause (c) section 3.

TABLE-5.1

Resettlement Policy of ACC

S. No.	Resettlement policy of ACC	Description of policy
1	**Land acquisition on market rate and provision of LARR Act.**	Land will be acquired by legal process (according to market rate), No Involuntary displacement (ID) is anticipated.
2	**Assistance in Re-establishment**	Affected Persons will be assisted to re-establish themselves, if required, in order to at least restore the pre-project income or improve their living standards.
3	**Gender Equality**	Gender equality will be ensured and adhered to; and vulnerable AFs will be favorably considered for restoring their livelihoods.
4	**RRP and project related information**	RRP and project related information will be informed to AFs from time to time.
5	**Compensation for loss of land and other assets**	Compensation for loss of land, trees, other assets (Structure & standing crops) and income will be based on market value and full replacement cost will be paid before taking physical possession of the land. Compensation will include transaction cost also.
6	**Compensation payments prior to the commencement of project**	All compensation payments and related activities will be completed prior to the commencement of project activities;
7	**Transparency in Payments**	All compensation will be paid by demand draft only to ensure the PAPs are getting compensation in full.
8	**Grievance Redress Mechanism**	A Grievance Redress Mechanism will be set up at the unit level
9	**Involvement of women and vulnerable APs**	Project will ensure involvement of women and vulnerable PAPs also in all activities related to resettlement planning, implementation, and monitoring.
10	**Adequate Budget**	ACC will ensure adequate budgetary support to cover

		implementation cost.
11	**Monitoring**	ACC will conduct external monitoring and evaluation of the implementation of RRP.

5.2 ELIGIBILITY FOR COMPENSATION AND ENTITLEMENT MATRIX

Compensation for acquisition of land for the project is fixed according to LARR Act, 2013 considering the market price cost of resettlement and alternate income generation of PAFs. Consequent to its Resettlement Policy and considering socio-economic profile and impacts, eligibility and entitlement matrix has been drawn for the project to ensure that affected persons have a better economic and social status. This matrix takes into consideration provisions not only for land compensation but also entitlements for the families whose livelihood is primarily dependent on land and provisions for infrastructural facilities and basic minimum amenities for population. Compensation for land according to Schedule I, has been given in table 6.2.

Table- 5.2

Compensation Policy Matrix

S. No.	Type of Loss	Application	Definition of Entitled Person	Compensation Policy	Responsible Agency
1.	Loss of Private Land	Agricultural Land Homestead land or vacant plot	Legal title holders / PAPs with customary land right / APs with Permit from local authority	• Compensation at market value or • Transitional allowance • Notice to harvest standing seasonal crops. If notice cannot be given, compensation for share of crops will be provided • Additional compensation for vulnerable household.	ACC through its Land Acquisition Officer (LAO) or through the appropriate Government officials (District magistrate office/ Revenue office) will determine value. ACC will ensure provision of affected people assistance, and identify vulnerable household.
2.	Loss of structure	Residential / commercial buildings and other assets	Legal titleholders	• Compensation at Replacement value based on current market rate of the structure and other assets, if remainder is viable • Fees, taxes, and other changes related to replacement structure. • Shifting assistance • Right to salvage materials from structure and other assets with no deductions from replacement value. • Additional compensation for vulnerable households.	ACC through its Land Acquisition Officer (LAO) or through the appropriate Government officials (District magistrate office/ Revenue office) will determine value. ACC will ensure provision of notice. ACC will verify the extent of impacts through survey of APs determine assistance, and identify vulnerable household.
3.	Loss of livelihood	livelihood	Legal titleholder / tenant / lease holder / employee of commercial structure farmer /	• Assistance for lost income based on three months minimum wage rates. • Additional compensation for vulnerable households.	ACC will verify the extent of impacts through a 100% survey of AHs determine assistance, and identify vulnerable household.

S. No.	Type of Loss	Application	Definition of Entitled Person	Compensation Policy	Responsible Agency
			agricultural worker	• Consideration for project employment.	
4.	Loss of trees and crops	Standing trees and crops	Legal title holder / tenant/ lease holder / share cropper	• Notice to harvest standing seasonal crops • If notice cannot be provided, compensation for standing crop (or share of crop for sharecroppers) at market value. • Compensation for trees based on timber value at market price, and compensation for perennial crops and fruit trees at annual net product market value multiplied by remaining productive years; to be determined in consultation with the Forest Department for timber trees and the Horticulture Department for other trees/crops.	ACC will ensure provision of notice. ACC through its LAO and appropriate department/valuation committee will undertake valuation of standing crops, perennial crops and trees, and finalize compensation rates in consultation rates in consultation with APs.
5.	Impacts on vulnerable APs	All Impacts	Vulnerable APs	• Additional one-time financial assistance • Vulnerable households will be given priority in project construction employment	ACC will verify the extent of impacts through 100% surveys on AHs determine assistance, verify and identify vulnerable households.
6.	Any other loss not identified	_	_	• Unanticipated involuntary impacts will be documented and mitigated based on the principles of the Resettlement Framework.	ACC will ascertain the nature and extend of such loss and will finalize the entitlements in line with the RR Principles

Note: ACC has proposed the above mention provision, however the actual R & R compensation will be applicable as per the mutual agreement with the landowner.

The entitlement matrix has been derived on the basis of LARR Act 2013 and survey carried out for purchase of land for Limestone mine. During implementation, if additional impacts are identified, the entitlement matrix will be updated by including compensation and assistance. The proposed entitlement framework will be applicable only in the case of land acquisition for mining lease area.

Note: Vulnerable group like women headed / Orphans / physically handicap / disable families under Section 3 (C) (i& ii) of LARR, 2013 shall be considered for additional need-based benefits.

5.3 INITIATIVES FOR INCOME RESTORATION OF PAFS

Major impacts identified for the land acquisition project is related to loss of income of PAFs. Loss of income may then affect socio cultural systems of affected families. Thus, restoration of pre-project levels of income is an important part of restoring socio-economic and cultural systems of affected persons. Income restoration

interventions are much more complex due to the following considerations:

(i) Varying numbers of dependent family members.

(ii) PAFS not able to provide dependable data on their present agriculture income.

(iii) More than one registered owner in same khasra (plots of land).

This complex nature of occupational diversity and income variation poses a problem for mitigation measures in the context of economic rehabilitation. However, the entitlement matrix proposed for the project has adequate provisions for restoration of livelihood of affected persons/families. The focus of restoration of livelihoods is to ensure that the PAFs are able to at least regain their living standards.

Income Generation Programme: To restore and further enhance the economic conditions of the PAFs, certain income generation and income restoration programs are incorporated by ACC as part of the RRP. Salient essentials of these initiatives are listed below:

Table-5.3

Income Generation Programmes

S. No.	Income generation programme	Descriptions
1	**Employment**	Apart from payment of compensation for the land, ACC will explore suitable source of income directly or indirectly to one member of the PAF w.r.t. proposed plant & mine based on qualification, skill & experience.
2	**Compensation for Land**	Aside from payment of full compensation for acquired/ purchased land at negotiated rates, vulnerable PAFs who are to lose all their land will be assisted by ACC in utilizing their cash compensation for buying alternate land in nearby area, as per the availability of land.
3	**Compensation for Crop**	Compensation for the standing crop and for the land purchased by the project will be paid at the market value.
4	**Assistance in Alternate Land**	ACC would advise PAFs for purchase of alternative land as well as to invest in fixed deposit in banks, so that they are assured of good return of income.
5	**Guidance and consultations for purchase of agriculture land**	ACC will provide guidance and consultations for purchase of agriculture land that will generate income equivalent to the land being loosed and it will also provide guidance and assistance for availing fixed deposit schemes of the banks.
6	**Productivity Enhancement**	ACC will provide facilities for availing consultations and advice from experts on best practices for improving productivity and to optimize requirement of fertilizers, water and manpower and information on market for the produce.
7	**Vocational Training**	The Company will organize vocational training, entrepreneur development programmes for the PAFs including women members and will provide advice for starting suitable small-scale industry. ACC will encourage entrepreneurship amongst PAFs or their qualified family members by awarding services, contracts for activities such as canteens, vehicle hiring, maintenance of gardens, office services and cleanliness, courier services, and material supplies.

Note: ACC has proposed the above mention provision, however the actual R & R compensation will be applicable as per the mutual agreement with the landowner.

5.4 CONTINUATION OF PUBLIC CONSULTATION

The effectiveness of the RRP program is directly related to the degree of continuing involvement of those

affected by the project. During the preparatory stage, consultations were held at local level. Several additional rounds of consultations with PAPs have been planned in the action plan during RRP implementation. Consultations during RRP implementation will involve agreements on compensation, assistance options, and entitlement package and income restoration. The other round of consultations will occur when compensation and assistance are provided. For continued consultations, following steps have been envisaged in the project:

- There will be Grievance Redressal Committees (GRCs) in the district. The PAPs will be associated with such committee.
- Key features of the entitlements will be displayed in billboards on the project site office.
- ACC with the help of the local community leaders will encourage the participation of the PAPs in RRP implementation.
- Attempt shall be made to ensure that vulnerable groups understand the process and their needs are specifically taken into consideration.

5.5 INFORMATION CAMPAIGN & FUTURE PLANS

PAFs will be invited to the proposed Redressal System for a quick, inexpensive and amicable settlement of claims. They will also be advised to get their records of rights updated. All possible efforts will be put forth to motivate the affected landowners and structure owners for a voluntary and amicable settlement of their claims outside the court.

Most of the issues will be settled, out of court as far as possible. Handouts will be distributed by NGOs among all the affected persons highlighting the prospects of amicable settlement of disputes outside the court for speedy settlement and in a less expensive way along with the timetable of inquiries and spot inspections of the committee. Besides this, public announcements will be made in affected areas and Press notes will be released in local newspapers to aid publicity.

5.6 COST & BUDGET OUTLAYS

The budget is indicative of outlays for the different expenditure categories and is calculated. The costs are based on the information collected by the socio-economic and Census of the PAPs and from the Revenue departments. These costs will be updated and adjusted to the inflation rate as the project continues and more specific information, such as extra number of PAPs during the implementation. Unit cost will be updated if the findings of the district level committee on market value assessment justify it.

5.7 VALUE OF LAND & OTHER ASSISTANCE

Economic rehabilitation grant:

M/s. ACC follows The Right to fair compensation and Transparency in Land Acquisition, Rehabilitation & Resettlement Act,2013 (LARR Act 2013) (no. 30 of 2013). The objective of this Act is to provide guidelines to support to the vulnerable families whose land is to acquire/purchase so that their livelihood is not affected.

Land Compensation: - As per the LARR, 2013, land compensation calculation is given below.

Accordingly, the price per unit has been worked out as given below:

- Factor – Factor 1.25 as per notification issued by Govt. of Andhra Pradesh dated 20.11.2014, G.O.MS.No. 389 (attached as **Annexure-B)**
- Solatium - 100% of the market value of land mentioned against factor multiplication as per Schedule I of LARR Act, 2013.
- The market value of land is taken from Registration and stamps department Govt. of Andhra Pradesh Effective Date 31-10-2023. (Attached as **Annexure-C)**

Compensation on Houses/Structure & assets: -

There are no houses falling withing ML area hence there is no need of displacement due to mining activities.

Based on these determinants the land compensation rate per hectare works out.

Table 5.4

Compensation as Per Schedule I & II of LARR ACT, 2013

Serial No.	Component of compensation package in respect of land acquired under the Act	Manner of determination of value	Value
1.	Market value of land	To be determined as provided under section 26	Land market rate in village Dhannavada Rs.1.65 lakh. per ha, in village Chinnaventhurla Rs.1.65 lakh. per ha, in village Vaddarala Rs.4.00 lakh. per ha, in village Bestavemula Rs.3.10 lakh. per ha, in village Gollapalle Rs.3.10 lakh. per ha, in village G. Uppalapadu Rs.1.65 lakh. per ha, (Market Rate decided by Registration and stamps department Govt. of Andhra Pradesh Date 31-10-2024
2.	Factor by which the market value is to be multiplied in the case of rural areas	1 (One) to 2.00 (Two) based on the distance of project from urban area as may be notified by the appropriate Government	Factor 1.25 as per notification issued by Govt. of Andhra Pradesh dated 20.11.2014, G.O.MS. No. 389 (attached as Annexure-B)
3.	Value of assets attached to land or building	To be determined as provided under section 29.	For value of assets attached to land or building ACC will pay as per notification.
4.	Solatium	Equivalent to one hundred per cent. of the market value of land mentioned against serial number 1 multiplied by the factor specified against serial number 2 for rural areas or serial number 3 for urban areas plus value of assets attached to land or building mentioned against serial number 4 under column (2) plus solatium mentioned against serial number 5 under column (2)	ACC will give 100% Solatium.
5.	Final award in rural areas	Market value of land mentioned against serial number 1 multiplied by the factor specified against serial number 2 plus value of assets attached to land or building mentioned against serial number 4 under column (2) plus solatium mentioned against serial number 5 under column (2)	According to the provision the final award is for villages, Multiplied factor 1.25 as per Andhra Pradesh Govt. Solatium 100%. As per Right to Fair Compensation and Transparency in land Acquisition, Rehabilitation and Resettlement Act, 2013 (No. 30 of 2013).

6.	Choice of Annuity or Employment	The appropriate Government Shall ensure that the affected families are provided with the following options: (a) Where jobs are created through the project, after providing suitable training and skill development in the required field, make provision for employment at a rate not lower than the minimum wages provided for in any other law for the time being in force, to at least one member per affected family in the project or arrange for a job in such other project as may be required; or (b) Onetime payment of five lakhs rupees per affected family; or (c) Annuity policies that shall pay not less than two thousand rupees per month per family for twenty years, with appropriate indexation to the Consumer Price Index for Agricultural Laborers.	ACC will provide one-time payment 5 lakh to project affected family.
7.	One-time grant to artisan, small traders and certain others	Each affected family of an artisan, small trader or self- employed person or an affected family which owned non-agricultural land or commercial, industrial or institutional structure in the affected area, and which has been involuntarily displaced from the affected area due to land acquisition, shall get one-time financial assistance of such amount as the appropriate Government may, by notification, specify subject to a minimum of twenty- five thousand rupees.	ACC will give as per govt. notification
8.	One-time Resettlement Allowance	Each affected family shall be given a one-time "Resettlement Allowance" of fifty thousand rupees only.	ACC will pay as fifty thousand per PAFs
9.	Stamp duty and registration fee	1. The stamp duty and other fees payable for registration of the land or house allotted to the affected families shall be borne by the Requiring Body. 2. The land for house allotted to the affected families shall be free from all encumbrances.	ACC will give as per the notification if applicable

		3. The land or house allotted may be in the joint names of wife and husband of the affected family.	

Note: ACC has proposed the above mention provision, however the actual R & R compensation will be applicable as per the mutual agreement with the landowner.

5.8 SUMMARY OF RRP BUDGET

Table 5.5

Land Compensation Matrix for Land to be Purchased

S No.	Particulars	Villages	(In Lakh)
1.	Market Rate per ha.	Dhannawada	1.65
		Chinna Venturla	1.65
		Vaddarala	4.00
		Gollapalle	3.10
		G. Uppalapadu	1.65
2.	Multiplication Factor 1.25	Dhannawada	2.06
		Chinna Venturla	2.06
		Vaddarala	5.00
		Gollapalle	3.88
		G. Uppalapadu	2.06
3.	Solatioum 100%	Dhannawada	2.06
		Chinna Venturla	2.06
		Vaddarala	5.00
		Gollapalle	3.88
		G. Uppalapadu	2.06
4.	Land Compensation per Ha. (Market Rate*Factor+ Solatioum 100%)	Dhannawada	4.125
		Chinna Venturla	4.125
		Vaddarala	10.00
		Gollapalle	7.75
		G. Uppalapadu	4.125
5.	**Total Land Compensation for Pvt. Land to be Purchased (294.46 ha.)**	Dhannawada (area: 69.6 ha.)	287.1
		Chinna Venturla (area: 34.79 ha.)	143.51
		Vaddarala (area: 183.42 ha.)	1834.20
		Bestavemula (area: 0.04 ha.)	0.31
		Gollapalle (area: 5.19 ha.)	40.22
6.		G. Uppalapadu (area: 1.42 ha.)	1.42
7.	**Total compensation on land to be purchased**		**2311.20**
8.	**One time Resettlement allowance Rs. 50000 per PAFs (Nos 125)**		**62.50**
9.	**One time Annuity Rs. 5 lakhs per PAFs (Nos.125)**		**625.00**
10.	**Monitoring & Evaluation (PMC)**		**10**
11.	**Proposed Area Development Plan for targeted interventions for Project Affected Families**		**800**
12.	**Total R & R Budget (Sl No. 6+7+8+9+10)**		**3808.70 38.087 cr.**

Note: *-This is the estimated R & R cost. However, the actual R & R cost will be applicable as per the mutual agreement with the land owner.*

Table: 5.6

Village Wise land cost for already purchased land

Village Name	Land Cost
Dhannawada	00
Vaddarala	29070665
Chinna Venturla	258378672.5
Bestavemula	12814360
Gollapalle	36612810
G.Uppalapadu	10926045
Total	**347802552.5**
Total (Cr)	34.78025525

Source: ACC Limited

CHAPTER-VI
MONITORING AND EVALUATION

6.1 NEED FOR MONITORING

Monitoring is a periodic assessment of planned activities providing midway inputs, facilitates changes and gives necessary feedback of activities and the directions in which they are going, whereas evaluation is an activity aimed at assessing whether the activities have actually achieved their intended goals and purposes. The monitoring and evaluation (M&E) mechanism is being/will be measured project performance and fulfillment of the project objectives. RRP implementation for the project will be closely monitored by the duly constituted Project Management Cell (PMC) of ACC. PMC will be at the helm of all activities related to the RRP implementation. Components of monitoring include performance monitoring, impact monitoring and external evaluation. Monitoring and evaluation will be carried out post-implementation and social audits in consultation with the Gram Sabha. Two broad categories of indicators are to be monitored during the project are: (i) input and output indicators and (ii) outcome and impact indicators. Input and output indicators related to physical progress of the work should include items such as:

- Census, assets inventories, assessments and socio-economic studies completed. Records of Socio-Economic data of all the PAPs are maintained and are retrievable when needed.
- Training of PMC and associated will be done
- Monitoring Agency (MA) will be recruited within schedule.
- Meetings of GRCs.
- Grievance redress procedures will be finalized
- Entitlement Matrix will be effectively used for ascertaining compensation
- Corporate Social Responsibility activities are designed and will be implemented on schedule for the benefits of PAPs and outcome recorded.
- Infrastructure facilities and community welfare activities as arising out of public consultation will be implemented and records will be maintained.
- Training of PAPs will be done.
- Income restoration activities will be done.
- Information and data on alternate lands acquired/ purchased and income generated due to newly purchased land by PAPs be obtained and recorded.
- Monitoring and Evaluation reports will be timely submitted.

The monitoring will be carried out by the company. ACC will form a Monitoring Cell to monitor and proactively evaluate the RRP objectives. The Monitoring Agency (MA) will be required to submit biannual monitoring reports and a final evaluation report before the due date.

6.2 METHODOLOGY FOR MONITORING

- Random sample of PAPs to be interviewed by Monitoring Cell.
- Participatory rapid appraisal of the RRP implementation in the revenue village.
- Consultations with senior community members.
- Review of grievance appeals.
- Comparison of standard of living of PAPs before and after implementation of land acquisition project.

6.3 INPUT AND OUTPUTS MONITORING

Internal monitoring will be the responsibility of the Project Management Cell (PMC). On a monthly basis, the PMC will report on each of the indicators stated herein and other indicators that might emerge as project implementation proceed forward. PMC will monitor the following activities:

(i) Verification exercise (final number of PAPs and affected households (AH)
(ii) Progress of land acquisition
(iii) Consultations on entitlements (no. of consultations, number of PAPs/s attended)

(iv) Training of staff and PAPs (number of PAPs and staff trained, type and effectiveness of skills/livelihood training provided), (staff for PMC recruited, office facilities provided, vehicles provided).

6.4 ROLE OF MONITORING AGENCY

M/s. ACC may absorb the services of a self-governing agency not associated with the project accomplishment to carry out Monitoring & Evaluation of the project. The Monitoring Agency will be appointed after approval of RRP. Criteria for choosing an external agency for M&E should be based on their involvement in the field and inclusive knowledge of Resettlement & Rehabilitation needs of the PAPs. The independent Monitoring Agency (MA) will monitor the following**:**

(i) Feedbacks from PAPs; information from PAPs on entitlements, options, alternatives and relocation related issues.
(ii) Visit to sites.
(iii) Valuation of property.
(iv) Use of grievance procedure.
(v) Disbursement of compensation.
(vi) Behavior of staff.
(vii) Changes in land assets status.
(viii) Annual incomes, assets, capabilities of family members to contribute to the family income, impact of training availed etc. to compare economic & social status with pre acquisition.

6.5 REPORTING

Report's authenticating progress on resettlement implementation and completion report will be submitted by the PMC to the Chief Executive/Corporate Office of ACC.

6.6 BUDGETARY ALLOCATION

A budgetary allocation of Rs. 10 lakhs are provided for PMC.



CHAPTER-VII

IMPLEMENTATION SCHEDULE

7.1 IMPLEMENTATION

Implementation is a critical activity in a rehabilitation operation. The implementation of RRP is to be carried out by M/s. ACC for which an environment and social management (E&S) team is constituted. The E&S team will take up the implementation. The key function of the E&S team as follows:

- Conduct surveys on environmental and social aspect to finalize the route for the projects.
- Interact with revenue authorities for land acquisition and follow it up with authorized agencies for implementation of RRP.

Implementation of Rehabilitation and Resettlement Plan

The implementation of RRP will be following these 8 activities:

- Identifying the project affected persons
- Awareness campaign at project site
- Finalization of bank for providing rehabilitation assistance
- Mobilization for IGS (Income Generation Scheme)
- Implementation of IGS (Income Generation Scheme)
- Implementation of other development works
- Review process
- Evaluation and assessment

The implementation of RRP has been divided into above 8 basic activities and each activity has been identified as specific mile stone on which implementation of RRP is based.

Table – 7.1

Scheduled for Implementation of Rehabilitation Plan

Activity	Target/Completion Date
A. Socio-Economic Survey & Impact Assessment	**May 2024**
B. Land Acquisition, Physical Possession of all the lands and Disbursement of Compensation amounts	Land acquisition shall be done in phases as per the requirement for mining purpose
C. Implementation of Training Programs, advice for purchase of alternative lands and investment of compensation amounts.	To be continued till a satisfactory outcome is obtained.
D. Evaluation & Monitoring	After Land Acquisition every year.

All these activities are quite crucial for successful implementation of RRP in the project area.

CHAPTER VIII
GRIEVANCE REDRESSAL SYSTEM

8.1 NEED FOR GRIEVANCE REDRESSAL

In case of projects involving Land Acquisition (LA), the grievance procedure and appeal mechanism are an important aspect related to RRP of the PAFs. The LARRA Act 2013 has provisions at different stages of land acquisition, for the affected party, to object to the Award announced by the acquiring authority. They can also receive compensation under protest and move to the court for enhancement of the Award. Experience shows that litigation causes unnecessary delay and cost overrun of the project. Keeping in mind legal procedures involving such cases Andhra Pradesh Government would have provision for Grievance redress mechanism which will provide a forum for people to express their dissatisfaction over compensation and R & R provisions. It does not imply that the affected will be debarred from moving to the court on compensation.

Company will adopt land acquisition.

8.2 GRIEVANCE REDRESS COMMITTEE

The Grievance Redressal Committee's shall consist of the following representatives for every establishment with 20 or more on roll employees:

1. CXO's from the BU (one representative ideally)
2. Site Heads/Nominated representatives of the Site Head
3. Human Resources Heads (Site/BU)
4. Heads of BU IT/HSE/Corporate Affairs/Security
5. Employee Representatives (representatives from various depts. below DGM)

8.3 GRIEVANCE REDRESS MECHANISM

GRC is the central stake holder for the employee grievance redressal mechanism. The role of the GRC would be as follows: -

6. To assess the concern /issues raised by the employees.
7. To allocate the grievances to an investigation officer for investigating every employee grievance without any bias and to also maintain a transparent approach toward resolution of grievance.
8. To arrive at an appropriate decision in consultation with the investigating officer after looking into all the facts and evidence presented before them relating to the grievance.
9. To assist the stakeholders and the appellate authority in all relevant matters so that employee grievances are resolved to the best extent within the scheduled timelines.

8.4 RESPONSE TIME

The Grievance Redressal Cell (GRC) will hear grievances once in a month. Since the entire rehabilitation process has been completed the Grievance Redressal Cell may meet more than once in every month depending upon the number of such cases. The GRC (Grievance Redressal Cell) will inform the concerned Entitled Person of their decision within 14 days of the hearing of grievance.

ANNEXURE 2

Khasra Details

Annexure- 2
Khasara Details

Dhannavada Village			
S.No.	Khasra No	Area (in acres)	Ownership
1	1 to 3	12.96	Private land
2	4 to 6	23.57	-do-
3	7/1 to 10/2	12.84	-do-
4	11/1 to 15/1	17.57	-do-
5	15/2 to 17	16.2	-do-
6	19/1 to 23	17.5	-do-
7	106 to 109	17.48	-do-
8	110 to112	12.8	-do-
9	113/1 to 116	11.14	K.No 114/A (Govt Land)
10	117 to 122	22.25	K.No.121 Govt Land
11	123 to 124	7.65	-do-
12	114	0.02	K.No 114/B Govt Land
	Total	**171.98**	

Vaddarala Village			
S.No.	Khasra No	Area (in acres)	Ownership
1	1 to 5/1	14.83	Private land
2	5/2 to 9/2	13.78	-do-
3	10/1 to 12	9.54	-do-
4	17 to 18	1.32	K.No.17 Govt Land
5	45 to 47/2	10.60	-do-
6	48 to 53	20.08	-do-
7	54/1 to 57/1	19.61	-do-
8	57/2 to 59	12.80	-do-
9	94 to 95/1	9.62	-do-
10	95/2 to 98/1	10.59	-do-
11	98/2 to 101/1	5.17	-do-
12	101/2 to 104/1	3.96	-do-
13	104/2	1.88	-do-
14	118 to 119/4	16.45	-do-
15	120/1 to 123	16.63	-do-
16	124 to 127/2	1.06	-do-
17	128 to 132/2	15.07	K.No.129 Govt Land
18	133 to 137	24.36	-do-
19	138 to 140/3	8.82	-do-
20	141 to 145	19.39	-do-
21	17	0.10	-do-
22	84	0.50	-do-
23	129	0.40	-do-
	Total	**236.56**	

Chinna Venturla Village			
S. No.	Khasra No	Area (in acres)	Ownership
1	14	4.73	Private land
2	15 to 16/1	6.14	-do-
3	16/2 to 19/1	4.88	-do-
4	19/2 to 20/1	5.05	-do-
5	20/2A to 25	21.27	-do-
6	26 to 28/5	35.4	-do-
7	28/6 to 31/3	22.16	-do-
8	32/1 to 33/5	3.39	-do-
9	33/6 to 34/2B	1.44	-do-
10	35 to 37	5.61	-do-
11	39 to 40	7.15	-do-
12	41 to 44	18.11	-do-
13	150	2.59	-do-
14	190 to 194	14.12	-do-
15	195 to 198/3	17.68	-do-
16	198/4 to 203/2	14.83	-do-
17	203/3 to 206	20.96	-do-
18	207/1 to 21 2	18.26	-do-
19	213 to 215/3	7.96	-do-
20	218/1 to 218/5	9.80	-do-

Indian Bureau of Mines
भारत सरकार
Govt. of India

Chinna Venturla Village			
S. No.	Khasra No	Area (in acres)	Ownership
21	218/6 to 222	7.15	-do-
22	223/1 to 228	15.58	-do-
23	229/1 to 233/2	15.42	-do-
24	234 to 238/3	14.09	-do-
25	239 to 245	47.42	-do-
26	246 to 251/1	21.45	-do-
27	251/2 to 253/4	26.5	-do-
28	253/5 to 256/2	17.51	-do-
29	257 to 259/1	13.48	-do-
30	259/2 to 261/4	24.03	-do-
31	261/5 to 262/2	27.46	-do-
32	263 to 265/5	14.89	-do-
33	266/1 to 268/2	11.61	-do-
34	269/1 to 274	23.43	-do-
35	275 to 281	21.37	-do-
36	282 to 287	20.82	-do-
37	287 to 293	37.57	-do-
38	294 to 299/1	11.56	-do-
39	299/2 to 304/2	24.96	-do-
40	304/3 to 309/1	20.49	-do-
41	309/2 to 31 4	12.22	K.No: 313 is Govt land
42	315 to 321/1	27.50	-do-
43	321/2 to 324	12.52	-do-
44	325 to 328/2	18.80	-do-
45	329 to 333	19.08	-do-
46	334 to 335	7.20	-do-
47	338/1 to 340/2A	6.59	-do-
48	340/2B to 341/2D	14.08	-do-
49	341/3E to 342	15.04	-do-
50	343/1 to 347/2	14.17	-do-
51	347/3 to 347/7	11.25	-do-
52	347/8 to 349/3	19.42	-do-
53	349/4 to 352/1A	7.81	-do-
54	352/1B to 355/1	2.32	-do-
55	355/2 to 358	13.79	-do-
56	359 to 364	27.04	-do-
57	365 to 369	14.82	-do-
58	370/1 to 371/2B	11.3	-do-
59	372/1 to 374/2	16.14	-do-
60	375/1 to 375/6A	11.81	-do-
61	375/6B to 377/2	21.24	-do-
62	377/3 to 379/1	3.71	-do-
63	379/2 to 383/1	7.45	-do-
64	383/2 to 385/2	13.34	-do-
65	385/3 to 388	12.35	-do-
66	401 to 404 & 407/1	16.64	K.No: 401 Is Road
67	408 & 410	10.46	-do-
68	456/2	7.64	-do-
69	456/2B to 460/1B	14.93	-do-
70	460/1C to 463	27	-do-
71	464/1 to 468/2	12.65	-do-
72	36	0.06	AW
73	313	0.13	AW
74	22	1.41	Road (part)
75	219	0.12	Road (part)
76	224	0.23	Road (part)
77	284	1.38	Road (part)
78	332	0.07	Road (part)
79	335	1.74	Road (part)
80	337	0.21	Road (part)
81	354	0.81	Road (part)
82	388	0.6	Road (part)
83	459	0.34	Road (part)
84	279	2.59	VAGU (Nalla)
	Total	**1098.32**	

Indian Bureau of Mines
Govt. of India

Bestavemula Village			
S.No.	Khasra No	Area (in acres)	Ownership
1	49/2	1.42	ACC
2	104, 65/3A	8.19	-do-
3	50/2	3.23	-do-
4	66/1 B	2.87	-do-
5	51/2	3.29	-do-
6	4,3	2.39	-do-
7	58	2.91	-do-
8	65/4, 65/5	3.18	-do-
9	67/2	3.06	-do-
10	67/1	2.86	-do-
11	66/2A	3.23	-do-
12	66/3	3.05	-do-
13	57/1,57/2	3.03	-do-
14	46, 55/2	6.00	-do-
15	65/1	2.88	-do-
16	49/2, 48/2	1.42	-do-
17	110/1	2.60	-do-
18	111	8.00	-do-
19	50/3, 50/2	5.70	-do-
20	57, 56	6.06	-do-
21	66/2B	3.22	-do-
22	103/1	2.30	-do-
23	2	2.88	-do-
24	59	2.92	-do-
25	110/4B	2.80	-do-
26	105,106,107,108/2	5.92	-do-
27	63/1, 63/2, 63/3	7.16	-do-
28	51/1	3.49	-do-
29	66/4	2.95	-do-
30	67/4	2.98	-do-
31	65/6	3.00	-do-
32	67/3	1.54	-do-
33	67/3B	1.54	-do-
34	4	3.10	-do-
35	58, 59, 53	3.95	-do-
36	52/18,55/1,53	4.09	-do-
37	50/1	3.23	-do-
38	61	6.53	-do-
39	62	5.92	-do-
40	105, 106, 107, 108/2	5.91	-do-
41	45	1.47	-do-
42	45/1	1.00	-do-
43	65/3B	1.73	-do-
44	48/1,49/1	2.48	-do-
45	52/1 A, 110/5, 110/6	4.58	-do-
46	53, 52/1D, 55/1	4.10	-do-
47	52/1 C	1.88	-do-
48	65/2	3.08	-do-
49	5, 8/3	4.17	-do-
50	1	4.25	-do-
51	103/3	2.13	-do-
52	52/1B	2.00	-do-
53	6,8/2	2.80	-do-
54	110/2, 110/4A	2.07	-do-
55	103/2	2.20	-do-
56	111	13.59	-do-
57	47	1.90	-do-
58	110/2,110/3	1.97	-do-
59	110/4	2.00	-do-
60	110/3	2.00	-do-
61	54/1 , 54/2	3.32	-do-
62	66/1A	2.86	-do-
63	64/1,64/2,110/7	7.42	-do-
64	7, 8/1	3.96	-do-
65	52/3, 60	8.88	-do-
66	52/2	4.86	-do-
67	65/4	3.18	-do-
68	108/1,109	1.89	-do-
69	109	5.68	-do-
70	103/3	2.17	-do-
	Total	256.41	

Indian Bureau of Mines
भारत सरकार
Govt. of India

Gollapalle Village			
S.No	Khasra No	Area (in acres)	Ownership
1	55/1	1.66	ACC
2	52/1 A	5.10	-do-
3	51/1, 51/2, 51/3	4.20	-do-
4	33/6, 68/3	2.07	-do-
5	33/6	2.00	-do-
6	50/4	2.37	-do-
7	50/3	1.36	-do-
8	53/1, 53/2	2.23	-do-
9	68/3	1.00	-do-
10	58/1, 58/3, 58/5B	1.27	-do-
11	50/3	1.50	-do-
12	49/4	2.00	-do-
13	63	3.74	-do-
14	57	3.10	-do-
15	66/1	6.02	-do-
16	65/1	2.00	-do-
17	65/1,65/2,66/1	4.73	-do-
18	47/4, 67/2, 67/5	6.01	-do-
19	69/2, 69/1	2.63	-do-
20	69/2	3.00	-do-
21	58/1A, 58/5A, 58/3	1.26	-do-
22	58/1C, 58/3, 58/5C	1.28	-do-
23	54/1	4.70	-do-
24	32/5	1.21	-do-
25	32/1	1.17	-do-
26	49/4, 32/2, 32/3, 32/4	1.08	-do-
27	49/2, 49/3, 49/4	3.67	-do-
28	49/4	1.00	-do-
29	50/4	2.00	-do-
30	32/1, 32/2, 32/3	1.58	-do-
31	32/4, 32/5, 50/4	1.77	-do-
32	64/1	2.82	-do-
33	63	1.00	-do-
34	51/1, 51/2, 51/3	2.10	-do-
35	69/2	1.00	-do-
36	36	2.80	-do-
37	58/4, 58/3	1.31	-do-
38	69	5.51	-do-
39	62/11,33/3,33/2	2.53	-do-
40	62/8, 58/4, 33/2	1.58	-do-
41	58/4, 62/8	1.38	-do-
42	33/5, 33/7, 62/11	1.54	-do-
43	33/5, 33/7, 34/1	1.58	-do-
44	59	1.00	-do-
45	47/2	3.48	-do-
46	59	3.00	-do-
47	55/2	1.98	-do-
48	68/1	2.74	-do-
49	50/1, 50/2, 50/3	2.74	-do-
50	53/4	2.35	-do-
51	62/1, 62/7	1.38	-do-
52	52/1C, 52/1B, 34/4	2.01	-do-
53	57	3.40	-do-
54	38/2	1.38	-do-
55	33/8, 33/9, 33/10, 49/1	1.88	-do-
56	62/4, 62/10	2.82	-do-
57	59	2.42	-do-
58	34/4	0.46	-do-
59	68/2, 62/6	1.55	-do-
60	52/4B	2.81	-do-
61	58/4, 62/8, 33/2	1.57	-do-
62	64/2	1.19	-do-
63	33/3, 33/5, 33/7, 34/1	1.66	-do-
64	56/1	2.37	-do-
65	38/3	1.66	-do-
66	35	2.63	-do-
67	36	3.20	-do-
68	52/1C	1.31	-do-
69	34/3	1.58	-do-
70	34/2	0.72	-do-

Indian Bureau of Mines
Govt. of India

GOVERNMENT OF ANDHRA PRADESH
ABSTRACT

The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation & Resettlement Act, 2013 (No. 30 of 2013) – Andhra Pradesh Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Rules, 2014 – Notification – Orders – Issued.

REVENUE (LAND ACQUISITION) DEPARTMENT

G.O.MS.No. 389, Dated: 20-11-2014.
Read the following:-

1) The Gazette of India No.40, dated 27-09-2013 of Ministry of Law & Justice, New Delhi.
2) The Gazette of India Notification No.2839, dated 19-12-2013.
3) From the Special Chief Secretary & Chief Commissioner of Land Administration, Andhra Pradesh, Hyderabad, Lr.No.G1/1420/2013, dated 23-1-2014.
4) From the Special Chief Secretary & Chief Commissioner of Land Administration, Andhra Pradesh, Hyderabad, Lr.No.G1/1420/2013, dated 04.08.2014.
5) G.O.Ms.No.316, Revenue (LA) Department, dated 13-09-2014.

***

ORDER:

The following Notification will be published in an Extra Ordinary Issue of the Andhra Pradesh Gazette, dated 21-11-2014:-

NOTIFICATION

Whereas, the draft rules, namely the Andhra Pradesh Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Rules, 2014 were published as required under Section 112 of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (30 of 2013), vide notification of the Government of Andhra Pradesh, Revenue (Land Acquisition) Department in Andhra Pradesh State Extraordinary Gazette No.1, dated 15th September, 2014 for inviting objections and suggestions from all persons likely to be affected there by before the expiry of a period thirty days from the date on which copies of the Gezzette containing the notification were made available to the public.

(2) And whereas, the copies of the Gazzette containing the said notification were made available to the public on the 15th September, 2014.

(3) And whereas, the objections and the suggestions received from the public on the said draft rules have been considered by the Government of Andhra Pradesh.

(4) Now, therefore in exercise of the powers conferred by Section 109 of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (Act 30 of 2013), the Government of Andhra Pradesh hereby makes the following rules, as the same having been previously issued in G.O.Ms.No.316, Revenue (Land Acquisition) Department, dated 13-09-2014 and published in the Rules Supplement to Part-I, Extra ordinary of the Andhra Pradesh Gazette No.1, dated 15-09-2014 as required under section 112 of the said Act.

(BY ORDER AND IN THE NAME OF THE GOVERNOR OF ANDHRA PRADESH)

J.C. SHARMA
PRINCIPAL SECRETARY TO GOVERNMENT

To
The Commissioner of Printing & Stationery (Printing Wing), Chanchalguda, Hyderabad.
(With a request to publish the Notification in the Andhra Pradesh Extraordinary Gazette and supply 1000 copies of the same)
The Special Chief Secretary & Chief Commissioner of Land Administration, A.P., Hyderabad.
All Collectors in the State of Andhra Pradesh.
Copy to:-
The P.S. to Secretary to Hon'ble Chief Minister.
The P.S. to Deputy Chief Minister (Revenue).
The P.S. to Principal Secretary to Government, Revenue Department.
All the Departments of A.P.Secretariat.
SF/SC.

// FORWARDED :: BY ORDER //

SECTION OFFICER

(Annexure Appended)

(Annexure to the G.O.MS.No. 389, Revenue (Land Acquisition) Department, dated 20-11-2014)

ANNEXURE

RULES

CHAPTER - I
General

1. Short title, extent and commencement

(1) These rules may be called the Andhra Pradesh Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Rules, 2014.

(2) They shall extend to the whole of the State of Andhra Pradesh.

(3) They shall come into force on the date of their publication in the Andhra Pradesh State Gazette.

2. Definitions

(1) In these rules, unless the context otherwise requires,-

(a) "Act" means the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (Act No.30 of 2013);

(b) "Appropriate Government" means the State Government and includes the District Collector of the concerned District for any extent of land to be acquired for a public purpose within the jurisdiction of the revenue district ;

(c) "Central Rules" means the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (Social Impact Assessment and Consent) Rules, 2014 published by Ministry of Rural Development, Government of India, vide Notification No. G.S.R.574(E), Dated 8th August, 2014.

(d) "Collector" means the District Collector and includes the Joint Collector, Additional Joint Collector, Sub Collector/ RDO , Special Collector (LA)/Special Deputy Collector (LA) and any other officer designated by the State Government to perform all or any of the functions of the Collector under the Act;

(e) "Form" means Forms appended to these rules ;

(f) "Grama Panchayat" means the body constituted for the local administration of a village under section 2(17) of the Andhra Pradesh Panchayat Raj Act, 1994 ;

(g) "Gram Sabha" means the Gram Sabha as defined under section. 6 of the Andhra Pradesh Panchayat Raj Act, 1994 and for Scheduled Areas the Gram Sabha defined under Section 4 of the Provisions of the Panchayats (Extension to the Scheduled Areas) Act, 1996 read with Rule 4 of the Andhra Pradesh Panchayats Extension to Scheduled Areas (PESA) Rules, 2011.

(h) "Landless" means any resident of the State of the Andhra Pradesh who is below poverty line, major and not owning any land;

(i) "State Government" means the Government of Andhra Pradesh;

(j) "Urban Area" means the urban area within the meaning of Articles 243(P) and 243(Q) of Part IXA of the Constitution of India as amended in the Constitution (Seventy Fourth Amendment) Act, 1992.

(2) All words and expressions used but not defined in these rules shall have the meanings respectively assigned to them in the Act.

CHAPTER II

Requisition for land Acquisition

3. Requisition for land Acquisition- Any requiring body or its representative duly authorized by it for whom land is to be acquired shall file the Requisition to the concerned District Collector and to the Commissioner, Rehabilitation & Resettlement in Form-I together with the document s mentioned therein. In case of acquisition for Government, the requisition shall be filed by concerned Secretary of the Department or a person authorized by him.

4. Action by District Collector on receiving requisition- (1) The District Collector upon receiving requisition shall constitute a team of revenue and agriculture officers to make field visit along with the representative of the requiring body to make a preliminary enquiry about the correctness of the particulars furnished in the requisition including the enquiry whether the requisition is consistent with the provisions of the Act, and submit a report to the District Collector.

(2) If the District Collector, based on the report of the team, other information available with him and instructions issued by the State Government in this regard, is satisfied that the requisition is consistent with the provisions of the Act; he shall make a preliminary estimate of the cost of the acquisition as defined under Section 3 (i) of the Act. The administrative cost under item (A) of Section 3 (i) (vi) of the Act, shall be at the rate of 10% of the cost of compensation as provided in item (i) of Section 3 (i) of the Act. The District Collector will inform the Requiring Body to deposit the estimated cost of acquisition in his office within a period as may be specified by him and the Requiring

Body shall deposit the same within the period specified by the District Collector without which process under the Act shall not commence.

(3) The Requiring Body shall deposit the balance cost of acquisition after final estimation is prepared by the Collector and if any excess amount is awarded by the Authority or a Competent Court.

CHAPTER III

Social Impact Assessment (SIA)

5. Acquisition under Urgency Provisions and Exemption from Social Impact Assessment Study– Where any land is proposed to be acquired invoking urgency provisions under section 40 of the Act and if it is considered expedient to do so, the District Collector, where he is not the appropriate Government, shall submit a report to the State Government to issue appropriate directions. In other cases the decision shall be taken by the District Collector.

6. Social Impact Assessment Study- (1) The Commissioner, Rehabilitation & Resettlement shall be the state Social Impact Assessment Unit to arrange to carry out Social Impact Assessment Study (herein after referred to as SIA).

(2)The District Collector shall, within a period of fifteen days from the date of deposit of the processing fee for carrying the SIA study by the Requiring Body, issue a notification for carrying out SIA in accordance with Part-A of FORM-II . The same shall be made available in Telugu language to the Gram Panchayat, Mandal Parishad, Municipality or Municipal Corporation, as the case may be, and in the offices of the District Collector, the Sub-Divisional Magistrate and the Tahsildar at Mandal level. The notification shall be published in the form of posters and pamphlets circulated in the affected area and by affixing the posters at some conspicuous places in the affected areas and shall be uploaded on the website of the State Government and the revenue district concerned.

Provided that such notification shall be issued within thirty days after the deposit of the processing fee for carrying Social Impact Assessment by the Requiring Body, which shall be determined under the Rule 8(1)(b).

(3) The SIA shall be conducted in consultation with concerned Gram Panchayat, Mandal Parishad, Municipality or Municipal Corporation, as the case may be, at village level or ward level in the affected areas, for the purposes of section 4 of the Act, followed by a public hearing at the affected areas by giving adequate publicity about the date and time and venue for the public hearing to ascertain the views of the affected families which shall be recorded in writing.

(4) The SIA report shall be submitted in FORM-III to the Commissioner, Rehabilitation & Resettlement within a period of Six months from the date of commencement and shall include the views of the affected families recorded in writing.

(5) The SIA Report including summaries shall be prepared and divided into three parts;

(i) the Project Feasibility Report;
(ii) the Project Impact Report, and
(iii) the Social Impact Management Plan.

(6) The Social Impact Management Plan listing the ameliorative measures required to be undertaken for addressing the impact of the project under sub-section (6) of Section 4 shall be submitted in FORM-IV along with the SIA report to the Commissioner, Rehabilitation & Resettlement.

(7) The SIA Report and the Social Impact Management Plan shall be made available in the Telugu language to the concerned Gram Panchayat, Mandal Parishad, Municipality or Municipal Corporation, at village level or ward level in the affected areas and in the Offices of the District Collector, the Sub-Divisional Officer and Tahsildar. It shall also be published by way of a public notice by affixing at some conspicuous places in the affected areas and shall be uploaded on the website of the State Government and the revenue district concerned.

7. Institutional support and facilitation for Social Impact Assessment- The State SIA Unit shall undertake the following tasks namely:-

(a) build and continuously expand a State Database of Qualified SIA Resource Partners and Practitioners, which will serve as a network of individuals and institutions with the required skills and capacities to conduct SIAs for land acquisition and Rehabilitation and Resettlement;

(b) respond immediately to the State Government or District Collector's request for an SIA to be conducted by preparing a project-specific Terms of Reference (herein after referred to as ToR);

(c) conduct training and capacity building programmes for the SIA team and community surveyors and make available manuals, tools, comparative case study reports and other materials required for the analysis;

(d) provide ongoing support and corrective action, as required during the SIA process;

(e) ensure that the transaction based web-based workflow for SIAs and MIS for land acquisition and Rehabilitation and Resettlement as specified in rule 16 is maintained and that all relevant documents are disclosed as per the provisions of the Act;

(f) maintain, catalogue of all SIAs and associated primary material; and

(g) continuously review, evaluate and strengthen the quality of SIAs and the capacities available to conduct them across the State.

8. Project-specific Terms of Reference (ToR) and Processing Fee for the SIA.- (1) The District Collector after depositing of estimated cost of acquisition by the requiring body and such other verification as may be required shall send a proposal for such land acquisition along with all the relevant documents to the Commissioner, Rehabilitation & Resettlement, who shall-

(a) prepare a detailed project-specific ToR for each proposal of land acquisition, listing all the activities that must be carried out indicating the appropriate team size (and number of field teams) and profile of the team members, and stipulate the schedule and deadlines for key deliverables for the SIA as detailed in Part-B of FORM-II to these rules;

(b) determine estimated SIA fee based on the ToR with clear break-up of costs for each item or activity. The fee amount shall be based on defined parameters including area, type of project and number of affected families.

(2) Ten per cent of the SIA fee shall be allocated to SIA Unit as administrative expenses for preparing the Terms of Reference (ToR) and estimated SIA fee report.

(3) The Requiring Body shall deposit the SIA fee in the Scheduled Bank account of the appropriate Government.

9. Selection of the SIA team- (1) The Commissioner, Rehabilitation & Resettlement shall select the SIA team for each project from the individuals and institutions registered or empanelled in the State Database of Qualified SIA Resource Partners and Practitioners.

(2) The Requiring Body shall not be involved in any way in the appointment of the SIA team being appointed to carry out the SIA.

(3) The size and selection criteria for the SIA team shall be as per the project-specific ToR developed by the State SIA Unit.

(4) The SIA team may be constituted by appointing individuals or an organization with experience in conducting SIAs or related field-based assessments and the team may include-

(i) a combination of independent practitioners, qualified social activists, academics, technical experts, who are not directly connected with the requiring body; and

(ii) at least one woman member;

(5) A team leader shall be appointed from amongst the SIA team to liaison with the State SIA Unit throughout the assessment period.

(6) While selecting the SIA team, it is to be ensured that there is no conflict of interest involving the team members appointed to assess the concerned project.

(7) If at any stage, it is found that any team member or any family member of the team member directly or indirectly receives any benefit from the Requiring Body or any other stakeholder in the project, the said member shall be disqualified.

10. Process of conducting the Social Impact Assessment.- (1) The SIA team shall collect and analyze a range of quantitative and qualitative data, undertake detailed site visits, use participatory methods such as focused group discussions, participatory rural appraisal techniques and informant interviews in preparing the Social Impact Assessment report.

(2) All relevant project reports and feasibility studies shall be made available to the SIA team throughout the SIA process, as required. Any request for information from SIA team shall be met at the earliest but not exceeding seven days. The District Collector shall be responsible for providing the information requisitioned by the SIA team.

(3) A detailed assessment based on a thorough analysis of all relevant land records and data, field verification, review and comparison with similar projects shall be conducted by the SIA team. The assessment shall determine the following, namely:-

(a) area of impact under the proposed project, including both land to be acquired and areas that will be affected by environmental, social or other impacts of the project;

(b) area and location of land proposed to be acquired for the project;

(c) the land proposed for acquisition is the bare minimum required;

(d) possible alternative sites for the project and their feasibility;

(e) whether the land proposed for acquisition is irrigated multi-cropped land and if so, whether the acquisition is a demonstrable last resort;

(f) land, if any, already purchased, alienated, leased or acquired, and the intended use for each plot of land required for the project;

(g) the possibility of use of any public, unutilised land for the project and whether any of such land is under occupation;

(h) nature of the land, present use and classification of land and if it is an agricultural land, the irrigation coverage for the said land and the cropping pattern;

(i) the special provisions with respect to food security have been adhered to in the proposed land acquisition;

(j) size of holdings, ownership patterns, land distribution, number of residential houses, and public and private infrastructure and assets; and

(k) land prices and recent changes in ownership, transfer and use of lands over the last three years.

(4) Based on the land assessment, land records and field verification, the SIA team shall provide an accurate estimate of the number of affected families and the number of displaced families among them and ensure that, as far as possible, all affected families are enumerated:

Provided that where enumeration is not possible, a representative sample shall be done.

(5) A socio-economic and cultural profile of the affected area must be prepared, based on available data and statistics, field visits and consultations as per FORM-III:

Provided that in projects where resettlement is required, the identified resettlement sites shall be visited and a brief socio-economic profile of the land and its current resident population shall be indicated.

(6) Based on the data collected in processes listed above and in consultation with the affected communities and key stakeholders, the SIA team shall identify and assess the nature, extent and intensity of the positive and negative social impacts associated with the proposed project and land acquisition as per FORM-III.

(7) The SIA process includes the preparation of a Social Impact Management Plan (SIMP), which will present the ameliorative measures to be undertaken to address the social impacts identified in the course of the assessment. The SIA team must assess the viability of impact mitigation and management strategies with clear indication of costs, timelines and capacities. The Social Impact Management Plan(SIMP) shall include the following measures-

(a) that have been specified in the terms of Rehabilitation and Resettlement and compensation for all the categories of affected families as outlined in the Act;

(b) that the Requiring Body has stated that it will undertake in the project proposal and other relevant project documents; and

(c) that additional measures being undertaken by the Requiring Body, which have been undertaken by it in response to the findings of the SIA process and public hearings.

(8) The SIA team must provide a conclusive assessment of the balance and distribution of the adverse social impacts and social costs and benefits of the proposed project and land acquisition, including the mitigation measures, and provide an assessment as to whether the benefits from the proposed project exceed the social costs and adverse social impacts that are likely to be experienced by the affected families or even after the proposed mitigation measures, the affected families remained at risk of being economically or socially worse, as a result of the said land acquisition and resettlement.

11. Process for conducting public hearings- (1) Public hearings shall be held in the affected areas to bring out the main findings of the SIA, seeking feedback on the findings and to seek additional information and views for incorporating the same in the final documents.

(2) Public hearings shall be conducted in all Gram Sabhas where members are directly or indirectly affected by the acquisition of the land.

(3)The date and venue of the public hearing must be announced and publicized by the State SIA Unit with assistance of Collector one week affixed at some conspicuous places in all the villages where the land is proposed to be acquired through direct communication with Gram Panchayat or Municipal Ward representatives and by uploading the information on the official website of the concerned district.

(4) The draft SIA report and Social Impact Management Plan shall be published in the telugu language one week prior to the public hearing and distributed to all the affected Gram Panchayats and Municipal offices. One copy of the draft report shall be made available in the Offices of the District Collector, Sub-Divisional Magistrate and Tahsildar concerned. The Requiring Body may also be served with a copy of the draft report. Adequate copies of the report and summaries shall be made available on the day of the public hearing.

(5) A member of the SIA team shall facilitate the public hearing. The concerned Tahsildar, MPDO and Station House Officer of respective police station shall also be present in the public hearing to assist the SIA team. The Gram Panchayat or Municipal Ward representatives shall also be involved in all the decisions regarding the arrangements for the public hearings in their respective areas.

(6) All the proceedings shall be held in the telugu language with effective and credible translators to ensure that all the participants could understand and express their views.

(7) Representatives from the Requiring Body and Collector and Administrator shall also attend the public hearing and address the questions and concerns raised by the affected parties.

(8) Public representatives, local voluntary organizations and media shall also be invited to attend the public hearings.

(9) The proceedings of the public hearing shall be video recorded and transcribed accordingly. This recording and transcription shall be submitted along with the final SIA report and SIMP to the Collector.

(10) After the conclusion of the public hearings, the SIA team shall analyze the entire feedback received and information gathered in the public meetings and incorporate the same along with their analysis, in the revised SIA report accordingly.

(11) Every objection raised in the public meeting shall be recorded and the SIA team shall ensure that the every objection shall be considered in the SIA report.

12. **Submission of SIA Report and SIMP-** The final SIA Report and SIMP shall be prepared in Telugu language and shall be made available to Grama Panchayat, Mandal Parishad, Municipality or Municipal Corporation, as the case may be, and the offices of the District Collector, the Sub-Divisional Magistrate and the Tahsildar shall be propagated in the form of posters circulated in the affected areas by affixing the posters in conspicuous places and shall be uploaded on the website of the State Government and the district concerned.

13. **Appointment of expert Group**: The Appropriate Government shall constitute an independent multi disciplinary Expert Group for appraisal of SIA report and SIMP as per provisions of Section 7 of the Act.

14. **Appraisal of Social Impact Assessment report by an Expert Group.-** (1)The Expert Group constituted under sub-section (I) of section 7 of the Act shall evaluate the SIA report and shall make its recommendation to that effect within a period of two months from the date of its constitution

    (2)The recommendations of the Expert Group shall be made available in the telugu language to the concerned Gram Panchayat, Mandal Parishad, Municipality or Municipal Corporation, as the case may be, at village level or ward level in the affected areas and in the Offices of the District Collector, the Sub-Divisional Magistrate and the Tahsildar and shall be uploaded on the website of the State Government and the District concerned.

15. **Consideration of the Social Impact Assessment report, recommendations of the Expert Group etc** - (1) appropriate Government shall examine the Social Impact Assessment report, the recommendations of the Expert Group, if any, and decide such area for acquisition which would ensure minimum displacement of people, minimum

disturbance to the infrastructure, ecology and minimum adverse impact on the individuals affected.

(2) The decision of the appropriate Government under sub-Rule (1) shall be made available in the telugu language to the concerned Grama Panchayat, Mandal Parishad, Municipality or Municipal Corporation, as the case may be, at village level or ward level in the affected areas and in the Offices of the District Collector, the Sub-Divisional Magistrate and the Tahsildar and shall be uploaded on the website of the appropriate Government concerned.

(3)Before taking a decision under Sub Rule (1) the appropriate Government shall ensure that consent is obtained the cases where such consent is required as per the provisions of Sub Section 2 of Section 2 read with Section 41(3). Rules 16 to 20 of the Central Rules shall be followed for obtaining consent. Part-A and B of Form-V shall be used for the purpose of obtaining consent under Section of 41(3).

16. **Web-based Work Flow and Management Information System (MIS) for Land Acquisition and Rehabilitation and Resettlement.-**The Commissioner, Rehabilitation & Resettlement shall create a dedicated, user-friendly website that may serve as a public platform on which the entire work flow of each acquisition case will be hosted, beginning with the notification of the SIA and tracking each step of decision-making, implementation and audit.

17. **Additional Norms with regard to the Social Impact Assessment Process-** Parameters and a table of contents for the Social Impact Assessment Study and the Social Impact Management Plan are given in FORM-III and FORM-IV respectively, which should be used by the SIA team while preparing its report.

18. **Inventory of Waste, Barren and Un-utilized Lands-** To ensure acquisition of minimum amount of land and to facilitate the utilization of un utilized public lands, the District Collector may prepare a district-level inventory report of waste, barren and unutilized public land, and land available in the Government land bank and shall be made available to the SIA team and Expert group. The inventory report shall be updated from time to time.

CHAPTER IV
Preliminary Notification and Rehabilitation and Resettlement Scheme

19. **Publication of Preliminary Notification-** (1) **A**fter conclusion of the social impact assessment study and consent of the affected persons or Gram Sabha, as the case may be, when it appears to the appropriate Government that land is required or likely to be required in any area for any public purpose, a preliminary notification shall be issued in FORM VI.

(2)The preliminary notification shall be published in the manner provided in section 11 of the Act.

(3) A copy of the notification shall be affixed at conspicuous places in the affected areas and shall also be informed to the public by beat of Tom-tom and shall be published in Andhra Pradesh State Gazzette.

(4) After issuing the preliminary notification, the Collector shall ensure completion of the exercise of updating land records within a period of two months as specified here under:-

(a) Delete the entries of dead persons;
(b) Enter the names of the legal heirs of the deceased persons;
(c) Take effect of the registered transactions of the rights in land such as sale, gift, partition, etc.
(d) Make all entries of the mortgage in the land records;
(e) Delete the entries of mortgage in case the lending agency issues letter towards full payment of loans taken;
(f) Make necessary entries in respect of all prevalent forest laws;
(g) Make necessary entries in case of the Government land;
(h) Make necessary entries in respect of assets in the land like trees, wells, etc.
(i) Make necessary entries of share croppers in the land
(j) Make necessary entries of crops grown or sown and the area of such crops, and
(k) Any other entries or up-dating in respect of land acquisition, rehabilitation and resettlement.

20. Preliminary survey of land proposed for acquisition- The officer authorised by the District Collector to conduct preliminary survey shall have all the powers as provided under section 12.

21. Disposal of objections- (1) The Collector shall issue a notice in Form-VI(B) and after hearing all objections and making enquiry as provided under Section 15(2) shall submit a report along with his recommendations on the objections to the District Collector for decision.

(2) The decision of the District Collector shall be final.

22. Preparation of Rehabilitation and Resettlement Scheme and Public Hearing- (1) On publication of the preliminary notification under Sub-section(1) of Section 11 by the appropriate Government, the Administrator for Rehabilitation and Resettlement shall conduct a survey and undertake a census of the affected families within a period of two months from the date of publication of such preliminary notification.

(2) In the survey conducted and the census of the affected families so undertaken by the Administrator, he shall collect the data based on the SIA report as well as collect the data from the secondary sources such as Panchayat and Government records and verify that data by door visit of the affected families and by site visits in case of infrastructure in the affected area.

(3) The draft Rehabilitation and Resettlement Scheme prepared by the Administrator shall in addition to the particulars mentioned in the sub-section (2) of section 16, contain the following:

(i) List of likely to be displaced families;
(ii) List of infrastructure in the affected area;
(iii) List of land holdings in the affected area;
(iv) List of trades/business in the affected area;
(v) List of landless people in the affected area;
(vi) List of persons belonging to disadvantageous groups like persons belonging to Scheduled Castes or Scheduled Tribes, handicapped persons in the affected area;
(vii) List of landless agricultural labourers in the affected area;
(viii) List of unemployed youth in the affected area.

(4) The Administrator shall prepare comprehensive and detailed draft Rehabilitation and Resettlement Scheme and give wide publicity in the affected area.

(5) The Administrator or an officer authorized by him shall conduct a public hearing in the affected areas on such date, time and venue as decided by giving advance notice of fifteen days. The provisions of rule 11 relating to the public hearing shall, mutatis mutandis, apply to the public hearing in this case also.

23. Publication of the Approved Rehabilitation and Resettlement Scheme- The Commissioner of Rehabilitation and Resettlement shall publish the approved Rehabilitation and Resettlement Scheme in the affected area by affixing in conspicuous places in addition to making it public by other means provided in section 18.

24. Development Plan for Scheduled Castes or Scheduled Tribes Families- The Development Plan to be prepared in cases of a project involving land acquisition on behalf of a requiring body which involves involuntary displacement of the Scheduled Castes or Scheduled Tribes families under section 41 shall be in FORM VIII.

CHAPTER V

Declaration, Award and Compensation

25. Publication of Declaration for Acquisition- (1) Upon receipt of a report of the Collector as provided under sub-section(2) of section 15 and after examination and

taking a decision on the objections, a declaration for acquisition of the land under sub-section(1) of section 19 of the Act along with the summary of the Rehabilitation and Resettlement Scheme shall be made by the appropriate Government in FORM VII. However, no such declaration shall be made unless the requiring body has deposited an amount in full towards the cost of acquisition of the land.

(2)The said declaration shall be published in the manner prescribed under section 19 (4) and also in the affected areas by way of affixing a copy of the declaration in Telugu language at conspicuous places in the Panchayat, Mandal, Municipality or Municipal Corporation, as the case may be, under which the affected area falls.

26. Land Acquisition Award- (1) The Collector after enquiry into and disposal of the objections, if any, raised by the interested persons in pursuance of the public notice published and given under sub-section (1) of section 21, shall make land acquisition Award under section 23 of the Act in FORM IX.

27. Rehabilitation and Resettlement Award- The Collector shall also make Rehabilitation and Resettlement Award for each affected family in accordance with the Second Schedule of the Act in FORM X and hand over family wise Awards to each affected family. The recovery of any rehabilitation and resettlement benefit availed of by making a false claim or through fraudulent means, on refusal to refund shall be recovered as an arrear of land revenue invoking the provisions of the Andhra Pradesh Revenue Recovery Act, 1864.

28. Compensation – (1) The compensation shall be calculated as per the provisions laid down under section 26 to section 30 read with the First Schedule of the Act and paid to all parties whose land or other immovable property or assets attached to the land or building have been acquired. The multiplication factor under item(2) of the First Schedule for rural areas shall be 1.25 other than scheduled areas and 1.50 for scheduled (tribal) areas subject to any further notification as may be notified by Government.

(2) The one-time grant to artisans, small traders and others under item (8) of second schedule of Act shall be Twenty Five Thousand Rupees.

(3) The manner in which fishing rights shall be allowed to affected families in cases of irrigation or hydel projects under item (9) of second schedule of Act shall be notified by fisheries department in consultation with irrigation department.

(4)The payment of compensation shall be made expeditiously through account payee cheques/electronic mail transfer.

(5) Where any excess amount is proved to have been paid to any person as a result of the correction made in an award under sub-section (1) of section 33 and such person

refuses to refund the said excess amount paid to him, then such amount shall be recovered as an arrear of land revenue invoking the provisions of Revenue Recovery Act, 1864. Such proceedings shall be initiated within three years from the date on which the excess amount is found to have been paid.

29. Limits on extent of land under Section 2(3)(a) read with Section 46 of the Act- The limits on extent of land beyond which provisions of Rehabilitation and Resettlement under the Act apply, in Cases of purchase by a private company through Private Negotiation with the owner of the land shall be five thousand acres of dry land or equivalent extent of Irrigated Dry or Wet lands in rural areas subject to any further notification as may be notified by Government. However, the provisions of Rehabilitation and Resettlement shall be applicable wherever any habitation is part of such land.

CHAPTER VI

Administrator and Rehabilitation and Resettlement Committee and State Monitoring Committee

30. Power, duties and responsibilities of the Administrator- The Administrator shall exercise the powers and perform the duties and have the responsibilities as follows-

(a) To conduct a survey and undertake a census of the affected families in the manner and within time as provided under these rules;

(b) To prepare a draft Rehabilitation and Resettlement Scheme;

(c) To publish the draft scheme by the mode provided under these Rules;

(d) To make the draft scheme available to the concerned persons and authorities;

(e) To organize and conduct public hearings on the draft scheme;

(f) To provide an opportunity to the Requiring Body to make suggestions and comments on the draft scheme;

(g) To submit the draft scheme to the Collector;

(h) To publish the approved Rehabilitation and Resettlement Scheme in the affected area;

(i) To help and assist the Collector in preparing the Rehabilitation and Resettlement award;

(j) To monitor and supervise the implementation of the Rehabilitation award;

(k) To assist in post-implementation audit of Rehabilitation and Resettlement, and

(l) Any other work required to be done for Rehabilitation and Resettlement.

31. Rehabilitation and Resettlement Committee at Project Level- (1) The appropriate Government shall under Section 45(1) and (2) constitute a Rehabilitation and Resettlement Committee at project level to monitor and review the progress and

implementation of the Rehabilitation and Resettlement Scheme and to carry out post-implementation social audits in consultation with the Gram Sabha in concerned Grama Panchayat in the rural area and Municipality or Municipal Corporation, as the case may be, in the urban area.

(2)The Committee shall have its first meeting when a draft Rehabilitation and Resettlement Scheme has been prepared by the Administrator. The Committee shall discuss the scheme and make suggestions and recommendations. Thereafter, the Committee shall meet and review and monitor the progress of Rehabilitation and Resettlement once in a month till the process of rehabilitation and resettlement is completed. For the purpose of carrying out the post-implementation social audits, the Committee shall meet once in three months. The Committee may visit the affected area and discuss with the affected families if it so desires and also visit the resettlement area to monitor the resettlement process.

(3)The members of the Committee shall get travelling and daily allowance at the rate admissible to the class I Officers of the State Government.

32. Procedure of State Monitoring Committee for Rehabilitation and Resettlement and Allowances of the experts associated with it- (1) The State Monitoring Committee constituted under Section 50(1) and (2) shall have its first meeting for review and monitoring the implementation of the Rehabilitation and Resettlement Schemes for the projects within a month of the publication of the said approved Schemes by the Commissioner of the Rehabilitation and Resettlement under section 18. Thereafter, the meetings of the Committee shall be held once in three months to review and monitor the implementation of the rehabilitation and resettlement schemes.

(2) The experts associated with the State Monitoring Committee shall be paid an amount of rupees one thousand as sitting fee and travelling and daily allowance at the rate admissible to the Class-I rank Officers of the State Government for journeys outside headquarter.

33. The Salaries and allowances and other conditions of service of the Registrar and other officers and employees and Presiding Officer of Land Acquisition , Rehabilitation and Resettlement Authority– (1)The salaries, allowances and conditions of service of the Registrar and other Officers and employees of the Land Acquisition , Rehabilitation and Resettlement Authority constituted by the State Government Under Section 51 shall be the same as applicable to the officers and employees of similar grades working in the Judicial Department of the State Government.

(2) The salaries and allowances of the Presiding Officer of the Authority shall be the same as applicable to a District Judge working in the State.

CHAPTER VII
MISCELLENEOUS

34. Reconveyance of Land to the Original Land Owner- (1) Where any land acquired under the Act remains unutilized for a period of five years from the date of taking over the possession by the requiring body, the same shall be returned to the original owner or owners or their legal heirs, as the case may be, or to the Land Bank by issuing a notice to the Requiring Body for whom the land was acquired and by giving an opportunity of being heard and by passing necessary written order by the District Collector in this behalf.

(2) After passing the written order as above the District Collector shall take the possession of the acquired land for the purpose of returning the same to the original owner or owners or their legal heirs, as the case may be, or to the Land Bank.

(3) If the Requiring Body does not handover possession of the said land to the Collector, Collector shall be competent to take the help of Executive Magistrate and police force to take the possession by giving prior notice to the Requiring Body.

35.Removal of Difficulties- If any difficulty arises as to the interpretation of any provisions of these Rules or in the implementation of such provisions, the State Government shall have powers to issue clarifications/directions for the purpose of removal of the difficulties.

FORM-I

[See rule-3]

Requisition for Land Acquisition

From:
Name
and/or Designation of the Requiring Body

To:
1. The District Collector
District_____

2. Commissioner,
Rehabilitation &Resettlement, Andhra
Pradesh State.

It is requested to acquire _____acre(s) of land for _____ project/purpose and the details are furnished in Appendix I, II & III along with three copies of Combined Sketch showing the lands to be acquired.

Requisite cost of acquisition including cost of social impact assessment study (SIA) is available and will be deposited in your office, as provided under provisions of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act-2013, as and when required by you. It is certified that the land to be acquired was demarcated on the field and all further necessary information and assistance will be provided on the date/time appointed/stipulated by you.

Yours faithfully

Requiring Body

Appendix-I

Name of the project:-

(1) Name of the Village-

(2) Name of the Mandal-

(3) Name of the Municipality/Municipal Corporation-

(4) Name of the District-

(5) Sy. Nos. to be acquired-

(6) Accurate extent of the land proposed for acquisition in each Survey Number (connected field map is attached)

(7) Total area under requisition (in acres/ Sq.Yards)-

(8) Classification of the lands proposed for acquisition

(9) Boundaries of the area to be acquired-

East -

West -

North –

South -

(10) Area of the agricultural and irrigated multi-cropped land

(11) Reasons for inclusion of agricultural and irrigated multi-cropped land

---

---

(12) Details of buildings and other structures, tanks, wells, trees, etc.,

(13) Reasons for the inclusion of religious building, graveyard or tomb etc. for acquisition, if any.

Requiring Body

Appendix-II

Name of the project:-

1. Name of the Department or Government or Company, Local Authority, Institution:
2. Official designation of the representative of the requiring body authorised to sign the requisition :-
3. Purpose of Acquisition (in detail) :-
4. Whether the requisition is filed u/s 2(1) of the Act by the Government or Department for its own use hold and control :-
5. Whether the requisition is filed u/s 2(1)(a) to 2(1) (f) of the Act:-
6. Whether the requisition is filed u/s 2(2) (a) or (b) of the Act :-
7. How many families are affected as described u/s 3(c)(i) to (vi) of the Act:-
8. Whether the requisition is filed u/s 40 of the Act :-
9. If so, on what ground?
10. Has the land to be acquired already been taken over form the owners by private negotiation?
11. If so, on what date and on what terms (please state the terms of negotiation in short and attach the copy of it)
12. Date of issue of administrative approval for the project (copy to be attached)
13. Reasons for delay in filing requisition, if requisition is filed after 6 weeks from the date of administrative approval of the project.
14. By what time possession of the land is required.

Requiring Body

Appendix-III

Certificate to be furnished along with the requisition for acquisition of land by the requiring authorities

Name of the project:-

Certified that :-

1) The project for which the land is sought to be acquired has been administratively approved vide Department letter No:----------, Dated----------for acquisition under the Act.

2) The estimated cost of the project is of Rs._____and necessary budget was sanctioned and funds are available towards the cost of acquisition. The funds will be deposited as and when required.

3) The Department undertakes to pay the full amount, in case of decree by the Land Acquisition, Rehabilitation and Resettlement Authority / High Court / Supreme Court as and when asked to do so by the Collector/District Collector.

Requiring Body

FORM-II

Part-A

Notification of the SIA

[See sub-rule (2) of rule 6]

The Notification of the SIA must include:

(i) Name of project developer, a brief description of the proposed project and the extent of the lands proposed for acquisition, the project area and the affected areas to be covered by the SIA

(ii) The main objectives of the SIA and key activities including (a) consultations (b) survey (c) public hearing/s.

(iii) If consent of Gram Sabhas and/or land owners is required, the notification must state this.

(iv) The timeline for the SIA and the final deliverables (SIA Report and SIMP) along with the manner of their disclosure must be specified

(v) Statement that any attempt at coercion or threat during this period will render the exercise null and void.

(vi) Contact information of the State SIA Unit

FORM-II
Part-B.
[See Sub-rule (1)(a) of rule-8]

Terms of Reference and Processing Fee for the SIA

The State SIA Unit will review the proposal for land acquisition sent by the Appropriate Government and produce a project-specific Terms of Reference (ToR) and budget. Based on the ToR and budget, a processing fee will be determined, which must be deposited by the Requiring Body before the notification of the SIA can be issued. The ToR shall include the following information:

(i) A brief description of the project, project area and the extent of lands proposed for acquisition

(ii) The objectives of the SIA and all the activities that must be carried out by the SIA team

(iii) Sequencing, schedule and deadlines for deliverables with dates for the SIA process, based on the size and complexity of the project and land acquisition, and whether consent of Gram Sabhas and/or land owners is required to be sought

(iv) The appropriate size and profile of the SIA team required (including field surveyors, if needed) to conduct the SIA for the specific project

(v) A project-specific budget based on the ToR, with a clear break-up of costs for each item/activity

(vi) The schedule for the disbursement of funds to the SIA team tied to clearly-defined deliverables in the SIA process

(vii) The processing fee will be determined based on the ToR and budget developed for each specific project and will be based on the type, size, location, and sensitivity of the project and the land proposed for acquisition

(viii) Information regarding the processing fee bands and the cost for separate components/line items must be made consistent and easily accessible, so that the Requiring Body can factor this into its costs in advance. These rates must be reviewed and revised from time to time.

(ix) A fixed proportion of the fee will go towards meeting the costs of the State SIA Unit

FORM III

[See Sub-rule(4) of rule-6]

Social Impact Assessment Report

I Part-A: List of socio-economic and cultural parameters to be covered by the SIA

1. **Demographic details of the population in the project area**
   - Age, sex, caste, religion
   - Literacy, health and nutritional status

2. **Poverty levels**
   - Vulnerable groups
     - Women, children, the elderly, women-headed households, the differently abled
   - Kinship patterns and women's role in the family
   - Social and cultural organisation
   - Administrative organisation
   - Political organisation
   - Civil society organisations and social movements

3. **Land use and livelihood**
   - Agricultural and non-agricultural use
   - Quality of land - soil, water, trees, etc.
   - Livestock
   - Formal and informal work and employment
     Household division of labour and women's work
   - Migration
   - Household income levels
   - Livelihood preferences
   - Food security

4. **Local economic activities**
   - Formal and informal, local industries
   - Access to credit
   - Wage rates
   - Specific livelihood activities women are involved in

5. **Factors that contribute to local livelihoods**
   - Access to natural resources
   - Common property resources
   - Private assets
   - Roads, transportation
   - Irrigation facilities
   - Access to markets
   - Tourist sites
   - Livelihood promotion programmes
   - Co-operatives and other livelihood-related associations

6. Quality of the living environment

- Perceptions, aesthetic qualities, attachments and aspirations
- Settlement patterns
- Houses
- Community and civic spaces
- Sites of religious and cultural meaning
- Physical infrastructure (including water supply, sewage systems etc.)
- Public service infrastructure (schools, health facilities, anganwadi centres, public distribution system)
- Safety, crime, violence
- Social gathering points for women

II Part-B: Key impact areas Impacts on land, livelihoods and income

- Level and type of employment Intra-household
- employment patterns Income levels
- Food security
- Standard of living
- Access and control over productive resources
- Economic dependency or vulnerability
- Disruption of local economy
- Impoverishment risks
- Women's access to livelihood alternatives

1. Impacts on physical resources

- Impacts on natural resources, soil, air, water, forests
- Pressures on land and common property natural resources for livelihoods

2. Impacts on private assets, public services and utilities

- Capacity of existing health and education facilities
- Capacity of housing facilities
- Pressure on supply of local services
- Adequacy of electrical and water supply, roads, sanitation and waste management system
- Impact on private assets such as bore wells, temporary sheds etc.

3. Health impacts

- Health impacts due to in-migration
- Health impacts due to project activities with a special emphasis on
- Impact on women's health
- Impact on the elderly

4. Impacts on culture and social cohesion

- Transformation of local political structures
- Demographic changes
- Shifts in the economy-ecology balance
- Impacts on the norms, beliefs, values and cultural life
- Crime and illicit activities
- Stress of dislocation
- Impact of separation of family cohesion
- Violence against women

5. Impacts at different stages of the project cycle

The type, timing, duration, and intensity of social impacts will depend on and relate closely to the stages of the project cycle. Below is an indicative list of impacts:
Pre-construction phase

- Interruption in the delivery of services
- Drop in productive investment
- Land speculation
- Stress of uncertainty

Construction phase

- Displacement and relocation
- Influx of migrant construction workforce
- Health impacts on those who continue to live close to the construction site

6. Operation phase

- Reduction in employment opportunities compared to the construction phase
- Economic benefits of the project
- Benefits on new infrastructure
- New patterns of social organisation

7. De-commissioning phase

- Loss of economic opportunities
- Environmental degradation and its impact on livelihoods

8. Direct and indirect impacts

- "Direct impacts" will include all impacts that are likely to be experienced by the affected families

- "Indirect impacts" will include all impacts that may be experienced by those not directly affected by the acquisition of land (i.e. Direct land and livelihood losers), but those living in the project area

9. Differential impacts

- Impact on women, children, the elderly and the different abled

- Impacts identified through tools such as Gender Impact Assessment Checklists, and Vulnerability and Resilience Mapping

10. Cumulative impacts

- Measureable and potential impacts of other projects in the area along with the identified impacts for the project in question.
-Impact on those not directly in the project area but based locally or even regionally.

III PART-C. Table of Contents for SIA Report and Social Impact Management Plan

1. Chapter	**Contents**
Executive Summary	- Project and public purpose Location - Size and attributes of land acquisition - Alternatives considered - Social Impacts - Mitigation measures - Assessment of social costs and benefits
2. Detailed Project Description	- Background of the project, including developers background and governance/ management structure Rationale for project including how the project fits the public purpose criteria listed in the Act - Examination of alternatives - Phases of project construction - Core design features and size and type of facilities - Need for ancillary infrastructural facilities - Work force requirements (temporary and permanent) - Details of SIA/EIA if already conducted and any technical feasibility reports - Applicable legislations and policies

3. **Team composition, Approach, methodology and schedule of the SIA**
   - List of all team members with qualifications. Gender experts to be included in team
   - Description and rationale for the methodology and tools used to collect information for the SIA
   - Sampling methodology used
   - Overview of information/data sources used. Detailed reference must be included separately in the forms
   - Schedule of consultations with key stakeholders and brief description of public hearings conducted. Details of the public hearings and the specific feedback incorporated into the Report must be included in the forms

4. **Land assessment**
   - Describe with the help of the maps, information from land inventories and primary sources
   - Entire area of impact under the influence of the project (not limited to land area for acquisition)
   - Total land requirement for the project
   - Present use of any public, unutilised land in the vicinity of the project area
   - Land (if any) already purchased, alienated, leased or acquired, and the intended use for each plot of land required for the project
   - Quantity and location of land proposed to be acquired for the project
   - Nature, present use and classification of land and if agricultural rand, irrigation coverage and cropping patterns
   - Size of holdings, ownership patterns, land distribution, and number of residential houses
   - Land prices and recent changes in ownership, transfer and use of lands over the last 3 years

5. **Estimation and enumeration of affected Families and assets** (where required)
   - Estimation of the following types of families that are to be
   (a) Directly affected (own land that is proposed to be acquired):
   - Are tenants/occupy the land proposed to be acquired
   - The Scheduled Tribes and other traditional forest dwellers who have lost any of their forest rights
   - Depend on common property resources which will be affected due to acquisition of land for their livelihood
   - Have been assigned land by the State Government or the Central Government under any of its schemes and such land is under acquisition;
   - Have been residing on any land in the urban areas

	for preceding three years or more prior to the acquisition of the land - Have depended on the land being acquired as a primary source of livelihood for three years prior to the acquisition (b) Indirectly impacted by the project (not affected directly by the acquisition of own lands) (c) Inventory of productive assets and significant lands
6. Socio-economic and profile (affected area and resettlement site)	- Demographic details of the population in the project area-l - Income and poverty levels -Vulnerable groups - Land use and livelihood - Local economic activities -Factors that contribute to local livelihoods - Kinship patterns and social and cultural organisation - Administrative organization - Political organisation - Community-based and civil society-organisations - Regional dynamics and historical change processes - Quality of the living environment
7. Social impacts	- Framework and approach to identifying impacts - Description of impacts at various stages of the project cycle such as impacts on health and livelihoods and culture. For each type of impact, separate indication of whether it is a direct/indirect impact, differential impacts on different categories of affected families and where applicable cumulative impacts - Indicative list of impacts areas include: impacts on land, livelihoods and income, physical resources, private assets, public services and utilities, health, culture and social cohesion and gender based impacts
8. Analysis of costs and and Recommendation Acquisition	- Final conclusions on: assessment of public **benefits** purpose, less-displacing alternatives minimum on requirements of land, the nature and intensity of social impacts, the viability of the mitigation measures and the extent to which mitigation measures described in the SIMP will address the full range of social impacts and adverse social costs.. - The above analysis will use the equity principle as acriteria of analysisfor presenting a final recommendation on whether the acquisition should go through or not
9. References and Forms	- For reference and further information

FORM IV

[See Sub-rule(6) of Rule-6]

Social Impact Management Plan

(a) Approach to mitigation

(b) Measures to avoid, mitigate and compensate impact

(c) Measures that are included in the terms of R&R and compensation as outlined in the Act

(d) Measures that the Requiring Body has stated it will introduce in the Project Proposal

(e) Additional measures that the Requiring Body has stated it will undertake in response to the findings of the SIA process and public hearings

(f) The SIMP must include a description of institutional structures and key person responsible for each mitigation measure and timelines and costs for each activity

FORM –V

Part-A

[See sub rule(3) of rule 15]

PRIOR WRITTEN CONSENT OR DECLARATION FORM

Details of the Person Concerned

1. Name of the person(s) as per section 3(1)(i)& (v) of the Act:
2. Name of the spouse:
3. Name of father/ mother:
4. Address:
5. Village
6. Gram Panchayat/Municipality/Township:
7. Mandal
8. District:
9. Name of other members in the family with age: (including children and adult dependents)
10. Sy.Nos/Plot No. & Extent of land owned:
11. Sy.Nos/Plot No. & Extent under Acquisition:
12. R.O.R IB-Patta No./ Regd.Document Number:
13. Disputed lands, if any
14. Purchase/lease/grant, if any
15. Any other right, if any:
16. Regarding the acquisition of my land by the government, I wish to state the following: (please circle one of the below):

    I have read/read out the contents of this consent form and explained to me in Telugu language
    and
    I do not agree to this acquisition/ I agree to this acquisition.

Signature/ Thumb impression of the affected family(s) and date:

17. The terms and conditions, Rehabilitation and Resettlement, compensation and other measures committed by the Requiring Body have been explained in telugu language.(These terms and conditions must be attached to the Form).

Date and Signature of designated district official receiving the signed form

It is a crime under law to threaten any person or to cause them any harm, if they refuse to consent or if they choose to state that they don not consent on this Form. This includes any threat or act that causes them to loss money, that hurts them physically or that results in harm to their family. If any such threat has been made this Form is null and void.

FORM –V
PART-B.
[See sub-rule (3) of rule 15]

FORMAT FOR GRAM SABHA RESOLUTION

We, the undersigned members of the Gram Sabha of _____ within _____ panchayat of _____ Mandal in _____district wishes to state that the following certification is based on the information supplied by the administration and officials. If this information is incomplete or incorrect or if any consent has been obtained through any use of threats, fraud or misrepresentation, it is null and void. On this basis, this Gram Sabha hereby certifies that it CONSENTS / REFUSES TO CONSENT to the proposed _____ project, which will involve:

acquisition of _____ acres of private land.

transfer of _____ acres of government land to the project.

transfer of _____ acres of forest land to the project.

The terms and conditions of compensation, rehabilitation and resettlements benefits and social impact mitigation measures agreed to by the Requiring Body (state the name) are attached.

The Gram Sabha also states that any consent is subject to all of its residents receiving title to all of their individual and community rights over forests and forest lands, including their titles for forest land that they have been cultivating, ownership titles for all forms of minor forest produce that they use, and titles to protect and manage their community forests. [Note: This will have to be certified by this Gram Sabha separately.]

Date and signatures/thumb impressions of Gram Sabha members

Date and Signature of designated district officer on receipt of the Ressolution

Form No-VI (A)

[under Section 11 (1) of the Act, 30 of 2013
read with Sub Rule (1) of Rule 19]

PRELIMINARY NOTIFICATION

Rc. No. ---------- Dt. ----------

Whereas it appears to the District Collector ---------- that the lands specified in the schedule below are needed for a public purpose, to wit, for----------, notice to that effect is hereby given to all to whom it may concern in accordance with the provisions of Section-11(1) of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (Central Act No. 30 of 2013).

Social Impact Assessment Study was carried out by the State Social Impact Assessment Unit and a report submitted. The summary of the Social Impact Assessment report is as follows ----------.

A total number of ---------- families are likely to be displaced due to land acquisition.

The reasons necessitating such displacement are given below :

The Joint Collector is appointed as Administrator vide Notification issued in G.O.Ms.No. ---------- dt. ---------- under Section-43(1) of the Act for the purpose of rehabilitation and resettlement of the affected families.

* ***[And whereas it has become necessary to acquire immediate possession of the land / lands specified in the Schedule below, the undersigned, hereby, directs that the land / lands be acquired under the provisions of Section 40 of the Act.] ****

Now, therefore, in exercise of the powers conferred under Section-12 of the Act, the District Collector ---------- hereby, designates the Sub-Collector / Revenue Divisional Officer/ Spl. Dy. Collector, his staff and workmen to exercise the powers conferred under the above said section.

* ***[Under Sub section (4) of Section 40 of the said Act, the District Collector ---------- , Andhra Pradesh State hereby directs that the Social Impact Assessment Study under section 4 of the Act shall be exempted----------].***

Under section 11(4) of the Act, no person shall make any transaction or cause any transaction of land ie, sale / purchase etc. or create any encumbrances on such land from the date of this notification without the prior approval of the Collector.

Objections to the acquisition, if any, may be filed by the person(s) interested within 60 (sixty) days from the date of publication of this Notification as provided under Section-15 of the Act before the Collector.

Place : **District Collector**

Date : ----------District.

**** Strike off when urgency clause is not going to be invoked u/s 40.***

SCHEDULE

Mandal ---------- Village ----------

Sl. No.	Survey No.	Total Extent A.Cs.	Extent under Acquisition A.Cs.	Name & address of the person interested	Boundaries N .S.E.W	Details of Trees, Structures etc., if any
(1)	(2)	(3)	(4)	(5)	(6)	(7)

Copy to the Tahsildar(s) concerned.

Copy to the Sub Registrar(s), concerned.

Form No. VI (B)

[under Section 15(2) of the Act read with Rule 21]

NOTICE

Rc. No. ---------- Dt. ----------

Notice is hereby given that the land specified in the appended schedule and situated in the village of ---------- in the Mandal ---------- in the District of ----------is needed or is likely to be needed in accordance with the notification under Section-11(1) of the Act published by the District Collector at page ---------- of part I of the Andhra Pradesh Gazette, dated ---------- All persons interested in the land are accordingly required to lodge their objections before ---------- within sixty (60) days from the date of publication of the above notification a statement in writing of their objection ---------- ,if any, to the acquisition of the said land.

Any objection statement which is received after the due date or which does not clearly explain the nature of the senders interest in ----------the lands is liable to be summarily rejected.

Objections received within the due date, if any, will be enquired into on ---------- at ---------- when ---------- the objectors will be at liberty to appear in person or by Advocate and to adduce any oral or documentary evidence in support of their objections.

SCHEDULE

Sl. No.	Survey No.	Total Extent A.Cs.	Extent under Acquisition A.Cs.	Name & address of the person interested	Boundaries N .S.E.W	Details of Trees, Structures etc., if any
(1)	(2)	(3)	(4)	(5)	(6)	(7)

Place : **Collector**

Date :

Form No-VII

[under Section-19 (1) of the Act read with sub Rule (1) of Rule 25]

Declaration

Rc. No. ---------- Dt. ----------

Whereas it appears to the District Collector ---------- that a total extent of Acs. ---------- of land is required in the Village ---------- Mandal ---------- District ---------- for a public purpose viz. ---------- the District Collector having been satisfied that the land / lands specified in the schedule below has / have to be acquired for public purpose, after having heard the objections of the persons interested and after due enquiry as provided U/s 15 of the Act 30 of 2013 and that the Requiring Body viz. ---------- has deposited the amount in full towards the cost of acquisition of the lands, the following Declaration is made under section 19 (1) of the Act 30 of 2013 (Central Act 30 of 2013).

DECLARATION

Under Section 19 (1) of the Act 30 of 2013 (Central Act 30 of 2013), the District Collector ---------- district, hereby, declares that the land / lands specified in the Schedule below and measuring ---------- acres; be the same a little more or less, is / are needed for a public purpose, to wit for ----------

SCHEDULE

Mandal ---------- Village ----------

Sl. No.	Survey No.	Total Extent	Extent under Acquisition	Classification	Name & address of the person interested	Boundaries N .S.E.W	Details of Trees, Structures etc., if any
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

A plan of the land / lands is kept in the Office of the Collector ---------- and may be inspected on any working day during Office hours.

The number of families likely to be rehabilitated and resettled due to land acquisition is ---------- for whom the Resettlement Area is identified. The details of the Resettlement Area are as follows

Sl. No.	Name of the Village	Name of the Mandal	Name of the District	Area in Acs. / Cents.
(1)	(2)	(3)	(4)	(5)

A summary of the Rehabilitation and Resettlement Scheme is appended.

Mines of coal, iron-stone, slate or other minerals lying under the said land or any particular portion of the said land, except such parts of the mines and minerals which may be required to be dug or removed or used during the construction phase of the project for the purpose of which the land is being acquired are not needed.

Place : **District Collector**

Date : ----------District.

FORM VIII

[See rule-24]

Format for Development Plan under R&R scheme for SC/ST families displaced due to land acquisition

Sl. No.	Name of the Claimant / family head	Permanent Address	Entitlements	Remarks
			1. Land up to one acre for agricultural, horticultural, cattle grazing field per family shall be provided. 2. Provision of dwelling housing unit per family, Drinking Water facility, toilets etc., 3. One time financial assistance of Rs. One lakh fifty thousand per family shall be given. 4. For landless laborers employment shall be provided under MNREGA and any other job providing scheme, 5. Skill development through different training programs for the youth of affected family. 6. Subsistence grant for displaced family allowance equivalent to Rs Three thousand per month for a year should be granted from the date of award. 7. For cattle shed and petty shop each effected family shall be provided minimum Rupees twenty five thousand.	

FORM IX

[See rule-26 read with Sections 23 & 30 of the Act (30 of 2013)]

Land Acquisition Award

Land Acquisition case No:

<table>
<tr><td>1.</td><td colspan="6">Name of the Project -</td></tr>
<tr><td>2.</td><td colspan="6">Number and date of declaration under which the land is to be acquired</td></tr>
<tr><td>3.</td><td colspan="6">Situation and extent of the land in acres, the number of field plots on the survey map, the village in which situated with the number of mile plan if any.</td></tr>
<tr><td>4.</td><td colspan="6">Description of the land, i.e., whether fallow, cultivated, homestead, etc. If cultivated, how cultivated?</td></tr>
<tr><td>5.</td><td colspan="6">Names of persons interested in the land and the nature of their respective interests.</td></tr>
<tr><td>6.</td><td colspan="6">Amount allowed for the land itself, without trees, buildings etc., if any</td></tr>
<tr><td>7.</td><td colspan="6">Amount allowed out of such sum as compensation for the tenants interest in the land.</td></tr>
<tr><td>8.</td><td colspan="6">Basis of calculation:</td></tr>
<tr><td>9.</td><td colspan="6">Amount allowed for trees, houses or any other immovable things.</td></tr>
<tr><td>10.</td><td colspan="6">Amount allowed for crops.</td></tr>
<tr><td>11.</td><td colspan="6">Additional compensation on the market value under section 30(3)</td></tr>
<tr><td>12.</td><td colspan="6">Damages under section 28 of Act 30 of 2013</td></tr>
<tr><td>13.</td><td colspan="6">Solatium u/s 30(1)</td></tr>
<tr><td>14.</td><td colspan="6">Award under section 23 and 30 of Act 30 of 2013</td></tr>
<tr><td>15.</td><td colspan="6">Particulars of abatement of Government Revenue, or of the capitalized value paid, the date from which the abatement takes effect.</td></tr>
<tr><td rowspan="2">16.</td><td>Apportionment of the amount of compensation.</td><td rowspan="2">Serial No.</td><td rowspan="2">Name of claimants</td><td rowspan="2">Amount payable to each</td><td rowspan="2">Bank A/c No.</td><td rowspan="2">Remarks</td></tr>
<tr><td>Area (in Acre)</td></tr>
<tr><td>17.</td><td colspan="6">Date on which possession was taken U/s. 38(1) & 40(1) of Act of 30/2013.</td></tr>
</table>

If under Section 40(1), the number and date of the order of Government or the District Collector, as the case may be, giving authority to do so.

Date: **Signature**

FORM X

[See rule-27 and 2nd Schedule of the Act]

Award for Rehabilitation and Resettlement

Land Acquisition case No:

1.	Name of the Project -							
2.	Number and date of declaration under which the land is to be acquired							
3.	Situation and extent of the land in acres, the number of field plots on the survey map, the village in which situated with the number of mile plan if any.							
4.	Description of the housing units, transportation cost, housing allowances, annuity, employment subsistence grant, cattle shed, petty shop, one time resettlement allowances etc.							
5.	Name/ Names of persons interested in the land and the nature of their respective claim for rehabilitation and resettlement.							
6.	Apportionment of the amount of compensation Area (in acres)	Sl. No.	Name of claimants / affected	R & R entitlements	Bank A/c No.	Amount payable to each	Non monetary entitlemen	Remarks
				House to be allotted Land to be allotted Fishing rights Annuity Employment transportation cost, Housing allowances, Annuity Employment Subsistence Cattle shed, Petty shop, One time resettlement allowances One time resettlement allowances				

7.	Date on which R& R entitlements given to the affected family.					
8.	Basis of calculation:					
9.	Amount allowed for trees, houses or any other immovable things.					
10.	Amount allowed for crops.					
11.	Additional compensation on the market value under section 30(3)					
12.	Damages under section 28 of Act 30 of 2013					
13.	Solatium u/s 30(1)					
14.	Award under section 23 and 30 of Act 30 of 2013					
15.	Particulars of abatement of Government Revenue, or of the capitalized value paid, the date from which the abatement takes effect.					
	Apportionment of the amount of compensation	Serial No.	Name of claimants	Amount payable to each	Bank A/c. No.	Remarks
	Area (in Acre)					
16.	Date on which possession was taken u/s. 38(1) & 40(1) of Act of 30/2013.					

If under section 40(1), the number and date of the order of government giving authority to do so.

Date: **Signature**

Market Value Report (Annexure-C)

Habitation	Survey No	Sub Survey No	Land Rate Rs. per Acre	Nature Of Use	Effective Date
BESTAVEMULA	-	-	308000	Wet Land double crop	31/10/2023
BESTAVEMULA	-	-	2662000	House Sites	31/10/2023
BESTAVEMULA	-	-	2662000	House Sites	31/10/2023
BESTAVEMULA	-	-	308000	Dry land	31/10/2023
BESTAVEMULA	-	-	308000	Dry land	31/10/2023
BESTAVEMULA	-	-	308000	Coconut Garden	31/10/2023
BESTAVEMULA	-	-	308000	Coconut Garden	31/10/2023
BESTAVEMULA	-	-	1331000	Agricultural Land fit for H.S.	31/10/2023
BESTAVEMULA	-	-	1331000	Agricultural Land fit for H.S.	31/10/2023
BESTAVEMULA	-	-	308000	Wet Land double crop	31/10/2023

Habitation	Survey No	Sub Survey No	Land Rate Rs. per Acre	Nature Of Use	Effective Date
CHINNA VENTHURLA	-	-	165000	Coconut Garden	31/10/2023
BESTAVEMULA	-	-	165000	Dry land	31/10/2023
BESTAVEMULA	-	-	1331000	Agricultural Land fit for H.S.	31/10/2023
BESTAVEMULA	-	-	165000	Wet Land double crop	31/10/2023
BESTAVEMULA	-	-	2662000	House Sites	31/10/2023

Habitation	Survey No	Sub Survey No	Land Rate Rs. per Acre	Nature Of Use	Effective Date
DHANNAVADA	-	-	165000	Coconut Garden	31/10/2023
DHANNAVADA	-	-	165000	Wet Land double crop	31/10/2023
VADDIRALA	-	-	2662000	House Sites	31/10/2023
VADDIRALA	-	-	1331000	Agricultural Land fit for H.S.	31/10/2023
VADDIRALA	-	-	165000	Dry land	31/10/2023
VADDIRALA	-	-	385000	Land abutting NH/SH/ZPP/MPP	31/10/2023

Habitation	Survey No	Sub Survey No	Land Rate Rs. per Acre	Nature Of Use	Effective Date
GOLLA PALLE	-	-	308000	Wet Land double crop	31/10/2023
GOLLA PALLE	-	-	308000	Coconut Garden	31/10/2023
VADDIRALA	-	-	1331000	Agricultural Land fit for H.S.	31/10/2023
VADDIRALA	-	-	2662000	House Sites	31/10/2023
VADDIRALA	-	-	308000	Dry land	31/10/2023

Habitation	Survey No	Sub Survey No	Land Rate Rs. per Acre	Nature Of Use	Effective Date
GOLLA UPPALAPADU	-	-	165000	Wet Land double crop	31/10/2023
GOLLA UPPALAPADU	-	-	165000	Coconut Garden	31/10/2023
TALAMANCHI PATNAM	-	-	165000	Dry land	31/10/2023
TALAMANCHI PATNAM	-	-	2662000	House Sites	31/10/2023
TALAMANCHI PATNAM	-	-	1331000	Agricultural Land fit for H.S.	31/10/2023

Habitation	Survey No	Sub Survey No	Land Rate Rs. per Acre	Nature Of Use	Effective Date
VADDIRALA	-	-	400000	Coconut Garden	31/10/2023
VADDIRALA	-	-	400000	Dry land	31/10/2023
VADDIRALA	-	-	1730000	Agricultural Land fit for H.S.	31/10/2023
VADDIRALA	-	-	501000	Land abutting NH/SH/ZPP/MPP	31/10/2023
VADDIRALA	-	-	400000	Wet Land double crop	31/10/2023
VADDIRALA	-	-	3484800	House Sites	31/10/2023

CORPORATE ENVIRONMENT POLICY

As an integral part of our business philosophy, ACC Limited is committed to contribute towards ensuring a clean and sustainable environment by continually improving our environmental performance.

To achieve this goal, we wholeheartedly and proactively commit ourselves to:

- Conduct all our operations in an environmentally responsible manner that is better than statutory environment compliances and applicable standards.
- Continuously assess our environmental impacts and measure and improve our environmental performance by adopting best practices for prevention and control of pollution.
- Make continuous efforts to increase the use of non carbonaceous raw material, renewable energy and fuels and co-processing of wastes to reduce our greenhouse gases (GHG) footprint as part of our Climate Change mitigation initiative.
- Make continuous efforts to reduce water intensity and fresh water usage by increased use of harvested and recycled water in our operations.
- Assess biodiversity quality in all our extraction sites and strive to create a positive impact.
- Invest in research and development of environmentally sustainable products which have a low ecological footprint.
- Implement and continually improve the Environmental Management System across all our operations.
- Adhere and report our environmental performance to all our stakeholders.

Sridhar Balakrishnan
Managing Director & CEO

November 25, 2020

भारतीय गुणवत्ता परिषद्
QUALITY COUNCIL® OF INDIA
QCI Creating an Ecosystem for Quality

NABET

National Accreditation Board for Education and Training

Certificate of Accreditation

JM EnviroNet Pvt. Ltd., Gurugram

Unit No. 1517, Tower-B, Emmar Digital Greens, Golf Course Ext. Road, Sector – 61, Gurugram-122011

The organization is accredited as ***Category-A*** *under the QCI-NABET* ***Scheme for Accreditation of EIA Consultant Organization, Version 3****: for preparing EIA/EMP reports in the following Sectors*

S. No	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1.	Mining of minerals including Open cast/ Underground mining	1	1 (a) (i)	A
2.	River Valley Projects	3	1 (c)	A
3.	Thermal power plants	4	1 (d)	A
4.	Mineral beneficiation including pelletisation	7	2 (b)	A
5.	Metallurgical industries (ferrous & non-ferrous)	8	3 (a)	A
6.	Cement Plants	9	3(b)	A
7.	Coke oven plants	11	4(b)	A
8.	Chlor-alkali industry	13	4 (d)	A
9.	Chemical Fertilizers	16	5 (a)	A
10.	Petro-chemical complexes	18	5 (c)	A
11.	Manmade fibers manufacturing	19	5 (d)	A
12.	Petrochemical based processing	20	5 (e)	A
13.	Synthetic organic chemicals industry	21	5 (f)	A
14.	Distilleries	22	5 (g)	A
15.	Pulp & paper industry excluding manufacturing of paper from wastepaper and manufacture of paper from ready pulp without bleaching	24	5 (i)	A
16.	Sugar Industry	25	5 (j)	B
17.	Industrial estates/ parks/ complexes/ Areas, export processing zones (EPZs), Special economic zones (SEZs), Biotech parks, Leather complexes	31	7 (c)	A
18.	Ports, harbours, break waters and dredging	33	7 (e)	A
19.	Common Municipal Solid Waste Management Facility (CMSWMF)	37	7 (i)	B
20.	Building and construction projects	38	8 (a)	B
21.	Townships and Area Development projects	39	8 (b)	B

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in RAAC minutes dated October 20, 2023 posted on QCI-NABET website.

The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no QCI/NABET/ENV/ACO/23/3044 dated Nov 29, 2023. The accreditation needs to be renewed before the expiry date by JM EnviroNet Pvt. Ltd., Gurugram following due process of assessment.

Issue Date
Nov 29, 2023

Mr. Ajay Kumar Jha
Sr. Director, NABET

Certificate No.
NABET/EIA/23-26/RA 0308

Valid up to
August 07, 2026

Prof (Dr) Varinder S Kanwar
(CEO NABET)

For the updated List of Accredited EIA Consultant Organizations with approved Sectors please refer to QCI-NABET website.

CIN No. U74220HR2011PTC085756

J. M. ENVIROLAB PVT. LTD.

30 years of success

Approved from MoEF&CC & Certified - ISO 9001:2015, ISO 14001:2015, ISO 45001:2018

TEST REPORT

Issued to:	J. M. EnviroNet Pvt. Ltd. Emaar Digital Greens, Tower- B, Unit No. 1517, Golf Course Ext. Road, Sector-61, Gurugram- 122001 (Haryana)	Report No.:	JME/A/2400311031-043
		Date of Reporting:	04/06/2024
Project:	M/s. ACC Limited Proposed 5.0 MTPA, (Unit, 100Mw captive Power Plant) & 87.0 MTPA Captive LS Mine with Mining Lease Area of 999.08ha at Gollapalle Vill. of Mylavaram Mandal, Kadapa (YSR) District, Andhra Pradesh	P.O. No.	JMEPL/LAB/Baseline/2024-02/29, Dated 29.02.2024
		Monitoring Period:	March to May, 2024
Sample Description:	AMBIENT AIR QUALITY MONITORING	Equipment Used:	RDS, FPS
Sampled by:	JMELPL TEAM	Protocol Used:	CPCB Guidelines/IS-5182
Contact Person:	Mr. Amit Sinha		

AIR QUALITY MONITORING RESULTS

S. No.	Sampling Location	Parameters									
		PM2.5 (µg/m3)		PM10 (µg/m3)		Nitrogen Oxide (µg/m3)		Sulphur Dioxide (µg/m3)		Carbon Monoxide (mg/m3)	
		Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	Project Site	28.0	20.8	50.2	36.4	12.3	9.5	6.8	4.3	BDL	BDL
2	Mine Site	27.8	20.1	51.9	38.0	11.0	8.9	6.6	4.2	BDL	BDL
3	Near Village Chinnavenuturla	34.9	24.7	59.2	48.2	17.9	11.3	8.6	5.9	BDL	BDL
4	Village Vaddirala	39.2	30.8	71.3	59.0	20.3	15.7	11.7	8.0	BDL	BDL
5	Village Bestavemula	33.3	24.4	58.3	46.8	17.8	10.3	7.5	5.4	BDL	BDL
6	Village T. Kammavaripalli	32.9	24.0	56.4	42.0	16.5	9.7	7.0	4.6	BDL	BDL
7	Village G. Uppalapadu	36.9	29.5	67.6	54.7	18.0	14.1	8.0	5.9	BDL	BDL
8	Village Madhavapuram	33.5	24.0	55.0	44.1	15.6	9.9	7.0	4.9	BDL	BDL
9	Village Erragudi	35.4	27.6	62.0	49.0	16.6	11.2	9.0	6.0	BDL	BDL
10	Village Talamanchipatnam	31.3	25.9	58.9	46.2	15.9	9.8	7.7	5.0	BDL	BDL
11	Village Peddaventurla	36.5	30.0	68.1	55.8	18.0	13.4	9.0	6.2	BDL	BDL
12	Village Perusomula	41.8	34.8	76.5	62.5	22.2	17.9	11.2	8.3	0.67	0.56
13	Village Nakkavanipalle	33.2	25.1	60.2	47.7	14.8	8.9	7.6	4.1	BDL	BDL
Detection Limit										0.5	
NAAQS*		60		100		80		80		4	

Vandana Sharma
Tested by

Deepak Singh
Checked by

J. M. ENVIROLAB PVT. LTD. Authorised Signatory
Shri Ram Yadav
Authorized Signatory

Note:
1. This test report has been at your request and test results pertain to the tested sample received.
2. This reports is for your reference only and not to be used for any legal purpose.
3. Any discrepancy in the test report or any remarks regarding the test results shall be brought to our knowledge within 7 days of the issue of this report.
4. Total liability or any claim in case of dispute is limited to the invoice raised by the laboratory.
5. The sample will be destroyed after retention time unless otherwise specified specially.
6. Endorsement of the product tested by the laboratory is neither inferred nor implied.
7. Report shall not be reproduce except in full without approval of the laboratory.
8. All disputes are subject to exclusive jurisdiction of Jaipur court only.

Reg. Office & Lab.
424, Ground Floor, Udyog Vihar,
Phase-IV, Gurugram-122015 (Haryana)
E-mail: jmenvirolab@hotmail.com | www.jmenvironet.org

Corporate Office
Emaar Digital Greens, Tower-B, Unit No.1517,
Golf Course Ext. Road, Sector-61,
Gurugram-122011(Haryana)

J. M. ENVIROLAB PVT. LTD.

30 years of success

Approved from MoEF&CC & Certified - ISO 9001:2015, ISO 14001:2015, ISO 45001:2018

TEST REPORT

Issued to:	**J. M. EnviroNet Pvt. Ltd.** **Emaar Digital Greens, Tower- B,** **Unit No. 1517, Golf Course Ext. Road,** **Sector-61, Gurugram- 122001 (Haryana)**	Report No.:	**JME/A/2400311031-043**
		Date of Reporting:	**04/06/2024**
Project:	**M/s. ACC Limited** **Proposed 5.0 MTPA, (Unit, 100Mw captive Power Plant) & 87.0 MTPA Captive LS Mine with Mining Lease Area of 999.08ha at Gollapalle Vill. of Mylavaram Mandal, Kadapa (YSR) District, Andhra Pradesh**	P.O. No.	**JMEPL/LAB/Baseline/2024-02/29, Dated 29.02.2024**
		Monitoring Period:	**March to May, 2024**
Sample Description:	**AMBIENT AIR QUALITY MONITORING**	Equipment Used:	**RDS, FPS**
Sampled by:	**JMELPL TEAM**	Protocol Used:	**CPCB Guidelines/IS-5182**
Contact Person:	**Mr. Amit Sinha**		

AIR QUALITY MONITORING RESULTS

S. No.	Sampling Location	Parameters								
		Benzo (a) pyrene (ng/m3)	Ozone (µg/m³)		Lead (µg/m³)	Ammonia (µg/m³)		Benzene (µg/m³)	Arsenic (ng/m³)	Nickel (ng/m3)
			Max.	Min.		Max.	Min.			
1.	Project Site	BDL	10.6	5.1	BDL	13.2	7.8	BDL	BDL	BDL
2.	Mine Site	BDL	9.9	5.2	BDL	12.3	7.1	BDL	BDL	BDL
3.	Near Village Chinnavenuturla	BDL	13.2	8.4	BDL	25.0	14.4	BDL	BDL	BDL
4.	Village Vaddirala	BDL	17.0	10.7	BDL	30.3	19.1	BDL	BDL	BDL
5.	Village Bestavemula	BDL	12.7	7.1	BDL	16.6	9.3	BDL	BDL	BDL
6.	Village T. Kammavaripalli	BDL	9.1	4.0	BDL	13.2	6.7	BDL	BDL	BDL
7.	Village G. Uppalapadu	BDL	15.4	9.6	BDL	24.3	14.0	BDL	BDL	BDL
8.	Village Madhavapuram	BDL	11.7	6.3	BDL	17.0	10.0	BDL	BDL	BDL
9.	Village Erragudi	BDL	15.2	9.1	BDL	23.2	14.1	BDL	BDL	BDL
10.	Village Talamanchipatnam	BDL	10.3	5.4	BDL	19.7	13.3	BDL	BDL	BDL
11.	Village Peddaventurla	BDL	18.2	7.3	BDL	24.9	15.0	BDL	BDL	BDL
12.	Village Perusomula	BDL	25.6	17.7	BDL	38.8	21.7	BDL	BDL	BDL
13.	Village Nakkavaripalle	BDL	9.9	4.1	BDL	19.3	8.0	BDL	BDL	BDL
Detection Limit		**0.5**	**1.0**		**0.02**	**1.0**		**1.0**	**0.5**	**1.0**
NAAQS*		**1**	**180**		**6**	**400**		**5**	**1.0**	**20**

*NAAQS – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 16.11.2009

Vandana Sharma
Tested by

Deepak Singh
Checked by

Sita Ram Yadav
Authorized Signatory

Note:
1. This test report has been at your request and test results pertain to the tested sample received.
2. This reports is for your reference only and not to be used for any legal purpose.
3. Any discrepancy in the test report or any remarks regarding the test results shall be brought to our knowledge within 7 days of the issue of this report.
4. Total liability or any claim in case of dispute is limited to the invoice raised by the laboratory.
5. The sample will be destroyed after retention time unless otherwise specified specially.
6. Endorsement of the product tested by the laboratory is neither inferred nor implied.
7. Report shall not be reproduce except in full without approval of the laboratory.
8. All disputes are subject to exclusive jurisdiction of Jaipur court only.

Reg. Office & Lab.
424, Ground Floor, Udyog Vihar,
Phase-IV, Gurugram-122015 (Haryana)
E-mail: jmenvirolab@hotmail.com | www.jmenvironet.org

Corporate Office
Emaar Digital Greens, Tower-B, Unit No.1517,
Golf Course Ext. Road, Sector-61,
Gurugram-122011(Haryana)

TEST REPORT

Issued to:	**J. M. EnviroNet Pvt. Ltd.** **Emaar Digital Greens, Tower- B,** **Unit No. 1517, Golf Course Ext. Road,** **Sector- 61, Gurugram- 122001 (Haryana)**	Report No.:	**JME/AN/240520031-042**
		Reporting Date:	**25/05/2024**
		Analysis Completion Date	**25/05/2024**
Project:	**M/s. ACC Limited** **Proposed 5.0MTPA, (Unit, 100Mw captive Power Plant) & 87.0 MTPA Captive LS Mine with Mining Lease Area of 999.08ha at Gollapalle Vill. of Mylavaram Mandal, Kadapa (YSR) District, Andhra Pradesh**	Analysis Start Date:	**20/05/2024**
		Receipt Date:	**20/05/2024**
		Monitoring Period:	**08/05/2024 to 19/05/2024**
		Sample Collected by:	**JMELPL TEAM**
Sample Description:	**AMBIENT NOISE LEVEL MONITORING**		
Contact Person:	**Mr. Amit Sinha**	Protocol Used:	**CPCB Guidelines /IS-9989**

AMBIENT NOISE MONITORING RESULTS

S. No.	Locations	Day Time (06:00 AM to 10:00 PM)	Night Time (10:00 PM to 06:00 AM)
		Leq in dB (A)	Leq in dB (A)
1	Plant Site	48.1	37.8
2	Mine Site	47.5	37.7
3	Village G. Uppalapadu	51.4	40.5
4	Village Madhavapuram	50.5	40.1
5	Village Regadapalle	50.7	40.6
6	Village Vaddirala	52.6	42.5
7	Village Kammavaripalle	50.3	40.2
8	Village Bestavemula	51.8	41.7
9	Village Chinnavenuturala	53.1	42.5
10	Village Talamanchipatnam	50.1	39.8
11	Village Erragudi	53.9	42.6

CPCB NOISE STANDARDS

Category of Zones	Leq in dB(A)	
	Day	Night
Industrial*	75	70
Commercial**	65	55
Residential	55	45
Silence Zone	50	40

1. Day Time is from 6.00 AM to 10.00 PM.
2. Night Time is reckoned between 10.00 PM to 6.00 AM
3. Silence Zone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, loudspeaker and bursting of crackers is banned in these zones.

Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

Vandana Sharma
Tested by

Deepak Singh
Checked by

J.M. ENVIROLAB PVT. LTD. Authorised Signatory
Sita Ram Yadav
Authorized Signatory

Note:
1. This test report has been at your request and test results pertain to the tested sample received.
2. This reports is for your reference only and not to be used for any legal purpose.
3. Any discrepancy in the test report or any remarks regarding the test results shall be brought to our knowledge within 7 days of the issue of this report.
4. Total liability or any claim in case of dispute is limited to the invoice raised by the laboratory.
5. The sample will be destroyed after retention time unless otherwise specified specially.
6. Endorsement of the product tested by the laboratory is neither inferred nor implied.
7. Report shall not be reproduce except in full without approval of the laboratory.
8. All disputes are subject to exclusive jurisdiction of Jaipur court only.

Reg. Office & Lab.
424, Ground Floor, Udyog Vihar,
Phase-IV, Gurugram-122015 (Haryana)
E-mail: jmenvirolab@hotmail.com | www.jmenvironet.org

Corporate Office
Emaar Digital Greens, Tower-B, Unit No.1517,
Golf Course Ext. Road, Sector-61,
Gurugram-122011(Haryana)

CIN No. :U74220HR2011PTC085758

J. M. ENVIROLAB PVT. LTD.

30 years of success

Approved from MoEF&CC & Certified - ISO 9001:2015, ISO 14001:2015, ISO 45001:2018

TEST REPORT

Issued to:	**J. M. EnviroNet Pvt. Ltd.** **Emaar Digital Greens, Tower- B,** **Unit No. 1517, Golf Course Ext. Road,** **Sector-61, Gurugram- 122001 (Haryana)**	Report No. :	**JME/GW/240520011-012**
		Reporting Date:	**27/05/2024**
		Analysis Completion Date:	**27/05/2024**
Project:	**M/s. ACC Limited** **Proposed 5.0MTPA, (Unit, 100Mw captive Power Plant) & 87.0 MTPA Captive LS Mine with Mining Lease Area of 999.08ha at Gollapalle Vill. of Mylavaram Mandal, Kadapa (YSR) District, Andhra Pradesh**	Analysis Start Date:	**20/05/2024**
		Receipt Date	**20/05/2024**
		Sampling Date:	**18/05/2024**
		Sampling Type:	**Grab**
Sample Description:	**GROUND WATER**	Protocol Used:	**IS:3025 & APHA 23rd Edition 2017**
Sample Collected by:	**JMELPL TEAM**		
Contact Person:	**Mr. Amit Sinha**		

WATER ANALYSIS REPORT

S. No.	Parameters	Unit	Sampling Locations		Specification as per IS 10500- 2012	
			Near Plant Site	Village Ped Daventurla	Requirement Acceptable Limit	Permissible Limit in the Absence of Alternate Source
1.	pH (at 25°C)	-	7.47	7.38	6.5-8.5	No Relaxation
2.	Colour	Hazen Unit	BDL (DL 1.0)	BDL (DL 1.0)	5	15
3.	Turbidity	NTU	BDL (DL 1.0)	BDL (DL 1.0)	1	5
4.	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable
5.	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable
6.	Total Hardness as $CaCO_3$	mg/l	478.7	398.2	200	600
7.	Calcium as Ca	mg/l	112.6	85.66	75	200
8.	Alkalinity as $CaCO_3$	mg/l	391.7	379.1	200	600
9.	Bicarbonates as HCO3	mg/l	240.1	119.0	-	-
10.	Carbonates as CO3	mg/l	BDL (DL 1.0)	BDL (DL 1.0)	-	-
11.	Chloride as Cl	mg/l	247.6	137.29	250	1000
12.	Cyanide as CN	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	0.05	No Relaxation
13.	Magnesium as Mg	mg/l	47.9	44.72	30	100
14.	Total Dissolved Solids	mg/l	986	678.0	500	2000
15.	Sulphate as SO_4	mg/l	130.3	76.59	200	400
16.	Fluoride as F	mg/l	0.63	0.28	1.0	1.5
17.	Nitrate as NO_3-N	mg/l	22.86	9.95	45	No Relaxation
18.	Iron as Fe	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	1.0	No Relaxation
19.	Aluminium as Al	mg/l	BDL (DL 0.03)	BDL (DL 0.03)	0.03	0.2
20.	Boron	mg/l	BDL (DL 0.20)	BDL (DL 0.20)	0.50	2.4
21.	Phenolic Compounds	mg/l	BDL (DL 0.001)	BDL (DL 0.001)	0.001	0.002
22.	Anionic Detergents as MBAS	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	0.2	1
23.	Hexa Chromium as Cr^{+6}	mg/l	BDL (DL 0.03)	BDL (DL 0.03)	--	--
24.	Chromium as Cr	mg/l	BDL (DL 0.002)	BDL (DL 0.002)	0.05	No Relaxation
25.	Zinc as Zn	mg/l	0.06	0.09	5	15
26.	Copper as Cu	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	0.05	1.5
27.	Manganese as Mn	mg/l	BDL (DL 0.01)	0.12	0.1	0.3
28.	Cadmium as Cd	mg/l	BDL (DL 0.002)	BDL (DL 0.002)	0.003	No Relaxation
29.	Lead as Pb	mg/l	BDL (DL 0.008)	BDL (DL 0.008)	0.01	No Relaxation
30.	Arsenic as As	mg/l	BDL (DL 0.002)	BDL (DL 0.002)	0.01	No Relaxation
31.	Mercury as Hg	mg/l	BDL (DL 0.001)	BDL (DL 0.001)	0.001	No Relaxation
32.	Sodium as Na	mg/l	155.0	85.0	--	--
33.	Potassium as K	mg/l	9.0	6.0	--	--
34.	Phosphate as PO_4	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	--	--
35.	Nickel	mg/l	BDL (DL 0.005)	BDL (DL 0.005)	0.02	No Relaxation
36.	Conductivity	µS/cm	1490.0	1014.0	--	--
37.	Total Suspended Solid	mg/l	BDL (DL 1.0)	BDL (DL 1.0)	--	--

Note: BDL – Below Detection Limit, DL- Detection Limit

J.M. ENVIROLAB PVT. LTD. Authorised Signatory

Srishti Mehta
Tested by

Abhishek Tiwari
Checked by

Rajkumar Yadav
Authorized Signatory

Note:
1. This test report has been at your request and test results pertain to the tested sample received.
2. This reports is for your reference only and not to be used for any legal purpose.
3. Any discrepancy in the test report or any remarks regarding the test results shall be brought to our knowledge within 7 days of the issue of this report.
4. Total liability or any claim in case of dispute is limited to the invoice raised by the laboratory.
5. The sample will be destroyed after retention time unless otherwise specified specially.
6. Endorsement of the product tested by the laboratory is neither inferred nor implied.
7. Report shall not be reproduce except in full without approval of the laboratory.
8. All disputes are subject to exclusive jurisdiction of Jaipur court only.

Reg. Office & Lab.
424, Ground Floor, Udyog Vihar,
Phase-IV, Gurugram-122015 (Haryana)
E-mail: jmenvirolab@hotmail.com | www.jmenvironet.org

Corporate Office
Emaar Digital Greens, Tower-B, Unit No.1517,
Golf Course Ext. Road, Sector-61,
Gurugram-122011(Haryana)

CIN No. :U74220HR2018PTC086758

J. M. ENVIROLAB PVT. LTD.

30 years of success

Approved from MoEF&CC & Certified - ISO 9001:2015, ISO 14001:2015, ISO 45001:2018

TEST REPORT

Issued to:	**J. M. EnviroNet Pvt. Ltd.** **Emaar Digital Greens, Tower- B,** **Unit No. 1517, Golf Course Ext. Road,** **Sector-61, Gurugram- 122001 (Haryana)**	Report No. :	**JME/GW/240520014-016**
		Reporting Date:	**27/05/2024**
		Analysis Completion Date:	**27/05/2024**
Project:	**M/s. ACC Limited** **Proposed 5.0MTPA, (Unit, 100Mw captive Power Plant) & 87.0 MTPA Captive LS Mine with Mining Lease Area of 999.08ha at Gollapalle Vill. of Mylavaram Mandal, Kadapa (YSR) District, Andhra Pradesh**	Analysis Start Date:	**20/05/2024**
		Receipt Date	**20/05/2024**
		Sampling Date:	**18/05/2024**
		Sampling Type:	**Grab**
Sample Description:	**GROUND WATER**	Protocol Used:	**IS:3025 &** **APHA 23rd Edition 2017**
Sample Collected by:	**JMELPL TEAM**		
Contact Person:	**Mr. Amit Sinha**		

WATER ANALYSIS REPORT

S. No.	Parameters	Unit	Sampling Locations			Specification as per IS 10500- 2012	
			Village Jangalapalle	Village Talamanchipatnam	Village Vaddirala	Requirement Acceptable Limit	Permissible Limit in the Absence of Alternate Source
1.	pH (at 25°C)	-	7.60	7.56	7.78	6.5-8.5	No Relaxation
2.	Colour	Hazen Unit	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	5	15
3.	Turbidity	NTU	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	1	5
4.	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5.	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
6.	Total Hardness as $CaCO_3$	mg/l	693.2	357.6	736.4	200	600
7.	Calcium as Ca	mg/l	196.84	97.55	202.3	75	200
8.	Alkalinity as $CaCO_3$	mg/l	310.8	236.0	585.9	200	600
9.	Bicarbonate as HCO3	mg/l	240.1	119.0	246.8	-	-
10.	Carbonate as CO3	mg/l	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	-	-
11.	Chloride as Cl	mg/l	386.3	167.0	434.5	250	1000
12.	Cyanide as CN	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	0.05	No Relaxation
13.	Magnesium as Mg	mg/l	48.85	27.63	56.04	30	100
14.	Total Dissolved Solids	mg/l	1162.0	645.0	1582	500	2000
15.	Sulphate as SO_4	mg/l	108.3	55.2	149.4	200	400
16.	Fluoride as F	mg/l	0.73	0.63	0.76	1.0	1.5
17.	Nitrate as NO_3-N	mg/l	19.68	12.05	27.6	45	No Relaxation
18.	Iron as Fe	mg/l	0.06	0.07	0.11	1.0	No Relaxation
19.	Aluminium as Al	mg/l	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	0.03	0.2
20.	Boron	mg/l	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.20)	0.50	2.4
21.	Phenolic Compounds	mg/l	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	0.001	0.002
22.	Anionic Detergents as MBAS	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	0.2	1
23.	Hexa Chromium as Cr^{+6}	mg/l	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	--	--
24.	Chromium as Cr	mg/l	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	0.05	No Relaxation
25.	Zinc as Zn	mg/l	0.03	0.07	0.10	5	15
26.	Copper as Cu	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	0.05	1.5
27.	Manganese as Mn	mg/l	0.16	BDL (DL 0.01)	0.30	0.1	0.3
28.	Cadmium as Cd	mg/l	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	0.003	No Relaxation
29.	Lead as Pb	mg/l	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)	0.01	No Relaxation
30.	Arsenic as As	mg/l	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	0.01	No Relaxation
31.	Mercury as Hg	mg/l	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	0.001	No Relaxation
32.	Sodium as Na	mg/l	140.0	80.0	280.0	--	--
33.	Potassium as K	mg/l	8.0	20.0	11.0	--	--
34.	Phosphate as PO_4	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	--	--
35.	Nickel	mg/l	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)	0.02	No Relaxation
36.	Conductivity	µS/cm	1720.0	970.0	2407.0	--	--
37.	Total Suspended Solid	mg/l	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	--	--

BDL – Below Detection Limit, DL- Detection Limit

Srishti Mehta
Tested by

Abhishek Tiwari
Checked by

J. M. ENVIROLAB PVT. LTD. Authorised Signatory
Rajkumar Yadav
Authorized Signatory

Note:
1. This test report has been at your request and test results pertain to the tested sample received.
2. This reports is for your reference only and not to be used for any legal purpose.
3. Any discrepancy in the test report or any remarks regarding the test results shall be brought to our knowledge within 7 days of the issue of this report.
4. Total liability or any claim in case of dispute is limited to the invoice raised by the laboratory.
5. The sample will be destroyed after retention time unless otherwise specified specially.
6. Endorsement of the product tested by the laboratory is neither inferred nor implied.
7. Report shall not be reproduce except in full without approval of the laboratory.
8. All disputes are subject to exclusive jurisdiction of Jaipur court only.

Reg. Office & Lab.
424, Ground Floor, Udyog Vihar,
Phase-IV, Gurugram-122015 (Haryana)
E-mail: jmenvirolab@hotmail.com | www.jmenvironet.org

Corporate Office
Emaar Digital Greens, Tower-B, Unit No.1517,
Golf Course Ext. Road, Sector-61,
Gurugram-122011(Haryana)

CIN No. U74220HR2011PTC085756

J. M. ENVIROLAB PVT. LTD.

30 years of success

Approved from MoEF&CC & Certified - ISO 9001:2015, ISO 14001:2015, ISO 45001:2018

TEST REPORT

Issued to:	**J. M. EnviroNet Pvt. Ltd.** **Emaar Digital Greens, Tower- B,** **Unit No. 1517, Golf Course Ext. Road,** **Sector-61, Gurugram- 122001 (Haryana)**	Report No. :	**JME/GW/240520017-020**
		Reporting Date:	**27/05/2024**
		Analysis Completion Date:	**27/05/2024**
Project:	**M/s. ACC Limited** **Proposed 5.0MTPA, (Unit, 100Mw captive Power Plant) & 87.0 MTPA Captive LS Mine with Mining Lease Area of 999.08ha at Gollapalle Vill. of Mylavaram Mandal, Kadapa (YSR) District, Andhra Pradesh**	Analysis Start Date:	**20/05/2024**
		Receipt Date	**20/05/2024**
		Sampling Date:	**18/05/2024**
		Sampling Type:	**Grab**
Sample Description:	**GROUND WATER**	Protocol Used:	**IS:3025 &** **APHA 23rd Edition 2017**
Sample Collected by:	**JMELPL TEAM**		
Contact Person:	**Mr. Amit Sinha**		

WATER ANALYSIS REPORT

S. No.	Parameters	Unit	Sampling Locations				Specification as per IS 10500- 2012	
			Nosam	Dobbudapalle	Bestavemula	Malamidkambaladinne	Requirement Acceptable Limit	Permissible Limit in the Absence of Alternate Source
1.	pH (at 25°C)	-	7.50	7.44	7.64	7.55	6.5-8.5	No Relaxation
2.	Colour	Hazen Unit	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	5	15
3.	Turbidity	NTU	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	1	5
4.	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5.	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
6.	Total Hardness as $CaCO_3$	mg/l	278.3	283.1	535.0	239.17	200	600
7.	Calcium as Ca	mg/l	60.61	51.63	139.2	41.74	75	200
8.	Alkalinity as $CaCO_3$	mg/l	195.7	196.0	270.7	185.6	200	600
9.	Bicarbonates as HCO3	mg/l	238.8	239.1	330.3	226.4	-	-
10.	Carbonates as CO3	mg/l	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	-	-
11.	Chloride as Cl	mg/l	119.63	165.16	287.8	104.81	250	1000
12.	Cyanide as CN	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	0.05	No Relaxation
13.	Magnesium as Mg	mg/l	30.8	37.42	45.43	32.76	30	100
14.	Total Dissolved Solids	mg/l	524.0	567.0	883	475.0	500	2000
15.	Sulphate as SO_4	mg/l	67.56	40.38	91.2	48.23	200	400
16.	Fluoride as F	mg/l	0.16	0.43	0.52	0.36	1.0	1.5
17.	Nitrate as NO_3-N	mg/l	6.24	6.47	10.37	8.19	45	No Relaxation
18.	Iron as Fe	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	1.0	No Relaxation
19.	Aluminium as Al	mg/l	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	0.03	0.2
20.	Boron	mg/l	BDL (DL 0.20)	BDL (DL 0.20)	BDL (DL 0.03)	BDL (DL 0.20)	0.50	2.4
21.	Phenolic Compounds	mg/l	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	0.001	0.002
22.	Anionic Detergents as MBAS	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	0.2	1
23.	Hexa Chromium as Cr^{+6}	mg/l	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	BDL (DL 0.03)	--	--
24.	Chromium as Cr	mg/l	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	0.05	No Relaxation
25.	Zinc as Zn	mg/l	0.08	0.04	0.08	0.11	5	15
26.	Copper as Cu	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	0.05	1.5
27.	Manganese as Mn	mg/l	BDL (DL 0.01)	0.33	0.23	BDL (DL 0.01)	0.1	0.3
28.	Cadmium as Cd	mg/l	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002)	0.003	No Relaxation
29.	Lead as Pb	mg/l	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)	BDL (DL 0.008)	0.01	No Relaxation
30.	Arsenic as As	mg/l	BDL (DL 0.002)	BDL (DL 0.002)	BDL (DL 0.002	BDL (DL 0.002)	0.01	No Relaxation
31.	Mercury as Hg	mg/l	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	BDL (DL 0.001)	0.001	No Relaxation
32.	Sodium as Na	mg/l	70.0	87.0	108.0	70.0	--	--
33.	Potassium as K	mg/l	5.0	4.0	9.0	3.0	--	--
34.	Phosphate as PO_4	mg/l	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	BDL (DL 0.02)	--	--
35.	Nickel	mg/l	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)	BDL (DL 0.005)	0.02	No Relaxation
36.	Conductivity	µS/cm	793.0	870.0	1318.0	714.0	--	--
37.	Total Suspended Solid	mg/l	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	BDL (DL 1.0)	--	--

BDL – Below Detection Limit, DL- Detection Limit

J.M. ENVIROLAB PVT. LTD. Authorised Signatory

Srishti Mehta
Tested by

Abhishek Tiwari
Checked by

Ratkunwar Yadav
Authorized Signatory

Note:
1. This test report has been at your request and test results pertain to the tested sample received.
2. This reports is for your reference only and not to be used for any legal purpose.
3. Any discrepancy in the test report or any remarks regarding the test results shall be brought to our knowledge within 7 days of the issue of this report.
4. Total liability or any claim in case of dispute is limited to the invoice raised by the laboratory.
5. The sample will be destroyed after retention time unless otherwise specified specially.
6. Endorsement of the product tested by the laboratory is neither inferred nor implied.
7. Report shall not be reproduce except in full without approval of the laboratory.
8. All disputes are subject to exclusive jurisdiction of Jaipur court only.

Reg. Office & Lab.
424, Ground Floor, Udyog Vihar,
Phase-IV, Gurugram-122015 (Haryana)
E-mail: jmenvirolab@hotmail.com | www.jmenvironet.org

Corporate Office
Emaar Digital Greens, Tower-B, Unit No.1517,
Golf Course Ext. Road, Sector-61,
Gurugram-122011(Haryana)

CIN No. :U74220HR2011PTC065756

J. M. ENVIROLAB PVT. LTD.

30 years of success

Approved from MoEF&CC & Certified - ISO 9001:2015, ISO 14001:2015, ISO 45001:2018

TEST REPORT

Issued to:	**J. M. EnviroNet Pvt. Ltd.** **Emaar Digital Greens, Tower- B,** **Unit No. 1517, Golf Course Ext. Road,** **Sector-61, Gurugram- 122001 (Haryana)**	Report No. :	**JME/S/240520015-019**
		Reporting Date:	**27/05/2024**
Project:	**M/s. ACC Limited** **Proposed 5.0MTPA, (Unit, 100Mw captive Power Plant) & 87.0 MTPA Captive LS Mine with Mining Lease Area of 999.08ha at Gollapalle Vill. of Mylavaram Mandal, Kadapa (YSR) District, Andhra Pradesh**	Analysis Completion Date:	**27/05/2024**
		Analysis Start Date:	**21/05/2024**
		Receipt Date:	**20/05/2024**
Sample Description:	**SOIL**	Sampling Date:	**18/05/2024**
Sample Collected by:	**JMELPL TEAM**	Sampling Type:	**Composite**
Contact Person:	**Mr. Amit Sinha**	Protocol Used:	**IS-2720/USDA**

SOIL ANALYSIS REPORT

S. No.	Parameters	Unit	Sample Location				
			Plant Site	Mine Site	Village- G.Uppalapadu	Village-T. Kammavaripalli	Village – Jangalapalle
1.	pH (at 25°C) (1:2.5 soil water sus.)	-	8.22	8.19	8.09	8.16	8.17
2.	Conductivity (1:2 soil water sus)	mS/cm	0.40	0.56	0.36	0.31	0.63
3.	Soil Texture	-	Sandy Clay	Sandy Loam	Sandy Loam	Sandy Loam	Loam
a)	Sand	%	51.0	58.0	60.0	57.0	42.0
b)	Silt	%	10.0	29.0	26.0	30.0	46.0
c)	Clay	%	39.0	13.0	14.0	13.0	12.0
4.	Colour	-	Dull Yellowish Brown	Dull Yellowish Brown	Dull Yellowish Brown	Dull Yellowish Brown	Dull Yellowish Brown
5.	Water Holding Capacity	%	31.37	28.60	27.85	27.72	32.63
6.	Porosity	%	38.58	36.90	36.51	37.0	37.79
7.	Bulk Density	gm/cc	1.56	1.59	1.60	1.60	1.58
8.	Chloride	mg/kg	703.04	766.32	685.0	518.85	685.16
9.	Calcium	mg/kg	4583.69	4346.28	4920.45	5267.12	4098.00
10.	Sodium	mg/kg	263.37	243.56	249.34	204.20	190.46
11.	Potassium	kg/hec	591.96	300.63	312.44	511.33	410.95
12.	Organic Matter	%	0.78	0.82	0.84	0.55	0.62
13.	Magnesium as Mg	mg/kg	881.17	561.64	691.56	780.06	917.93
14.	Available Nitrogen as N	kg/hec	208.57	193.97	227.54	174.02	186.53
15.	Available Phosphorus	kg/hec	19.46	16.03	11.55	13.26	8.93
16.	Zinc as Zn	mg/kg	27.17	30.40	25.39	24.53	34.12
16.	Manganese as Mn	mg/kg	388.34	388.30	298.83	256.78	313.90
18.	Chromium as Cr	mg/kg	15.49	19.61	13.67	11.63	8.77
19.	Lead as Pb	mg/kg	20.99	21.57	16.60	6.78	16.57
20.	Cadmium as Cd	mg/kg	BDL (DL 5.0)	BDL (DL 5.0)	BDL (DL 5.0)	BDL (DL 5.0)	BDL (DL 5.0)
21.	Copper as Cu	mg/kg	23.24	13.73	21.48	24.88	17.29
22.	Organic Carbon	%	0.45	0.48	0.49	0.32	0.36
23.	SAR Value	-	0.93	0.92	0.88	0.69	0.70

BDL– Below Detection Limit, DL- Detection Limit

Kavita Mandal
Tested by

Abhishek Tiwari
Checked by

J.M. ENVIROLAB PVT. LTD. Authorised Signatory
Rajkumar Yadav
Authorized Signatory

Note:
1. This test report has been at your request and test results pertain to the tested sample received.
2. This reports is for your reference only and not to be used for any legal purpose.
3. Any discrepancy in the test report or any remarks regarding the test results shall be brought to our knowledge within 7 days of the issue of this report.
4. Total liability or any claim in case of dispute is limited to the invoice raised by the laboratory.
5. The sample will be destroyed after retention time unless otherwise specified specially.
6. Endorsement of the product tested by the laboratory is neither inferred nor implied.
7. Report shall not be reproduce except in full without approval of the laboratory.
8. All disputes are subject to exclusive jurisdiction of Jaipur court only.

Reg. Office & Lab.
424, Ground Floor, Udyog Vihar,
Phase-IV, Gurugram-122015 (Haryana)
E-mail: jmenvirolab@hotmail.com | www.jmenvironet.org

Corporate Office
Emaar Digital Greens, Tower-B, Unit No.1517,
Golf Course Ext. Road, Sector-61,
Gurugram-122011(Haryana)

CIN No. :U74220HR2011PTC085756

J. M. ENVIROLAB PVT. LTD.

30 years of success

Approved from MoEF&CC & Certified - ISO 9001:2015, ISO 14001:2015, ISO 45001:2018

TEST REPORT

Issued to:	**J. M. EnviroNet Pvt. Ltd.** **Emaar Digital Greens, Tower- B,** **Unit No. 1517, Golf Course Ext. Road,** **Sector-61, Gurugram- 122001 (Haryana)**	Report No. :	**JME/S/240520020-024**
		Reporting Date:	**27/05/2024**
Project:	**M/s. ACC Limited** **Proposed 5.0MTPA, (Unit, 100Mw captive Power Plant) & 87.0 MTPA Captive LS Mine with Mining Lease Area of 999.08ha at Gollapalle Vill. of Mylavaram Mandal, Kadapa (YSR) District, Andhra Pradesh**	Analysis Completion Date: Analysis Start Date:	**27/05/2024** **21/05/2024**
		Receipt Date:	**20/05/2024**
Sample Description:	**SOIL**	Sampling Date:	**18/05/2024**
Sample Collected by:	**JMELPL TEAM**	Sampling Type:	**Composite**
Contact Person:	**Mr. Amit Sinha**	Protocol Used:	**IS-2720/USDA**

SOIL ANALYSIS REPORT

S. No.	Parameters	Unit	Sample Locations				
			Village- Erragudi	Village- Talamanchipatnam	Village- Nawabpeta	Village- Peddaventuria	Village – Vaddirala
1.	pH (at 25°C) (1:2.5 soil water sus.)	-	8.00	8.63	8.25	8.58	8.36
2.	Conductivity (1:2 soil water sus)	mS/cm	0.45	0.34	0.41	0.37	0.49
3.	Soil Texture	-	Sandy Loam	Silty Loam	Silty Clay	Silty Clay	Silty Clay
a)	Sand	%	62.0	20.0	6.0	9.0	7.0
b)	Silt	%	28.0	74.0	52.0	51.0	52.0
c)	Clay	%	10.0	6.0	42.0	40.0	41.0
4.	Colour	-	Dull Yellowish Brown	Dull Yellowish Brown	Grayish Brown	Light Gray	Dull Yellowish Gray
5.	Water Holding Capacity	%	30.15	34.48	33.03	33.49	36.43
6.	Porosity	%	38.10	38.98	41.27	42.13	42.91
7.	Bulk Density	gm/cc	1.56	1.55	1.48	1.47	1.45
8.	Chloride	mg/kg	528.24	483.63	473.88	455.28	606.83
9.	Calcium	mg/kg	4704.08	4403.79	3653.65	4153.06	4969.93
10.	Sodium	mg/kg	233.40	207.16	158.69	211.41	242.09
11.	Potassium	kg/hec	467.67	512.59	544.36	578.86	489.56
12.	Organic Matter	%	0.88	0.65	0.62	0.58	0.77
13.	Magnesium as Mg	mg/kg	634.30	657.59	650.14	873.91	659.46
14.	Available Nitrogen as N	kg/hec	281.30	218.15	224.23	199.61	318.18
15.	Available Phosphorus	kg/hec	27.36	13.58	17.25	23.88	37.76
16.	Zinc as Zn	mg/kg	42.07	25.16	22.63	29.63	24.35
16.	Manganese as Mn	mg/kg	390.13	285.52	245.75	280.72	377.95
18.	Chromium as Cr	mg/kg	17.73	20.33	16.5	20.61	24.09
19.	Lead as Pb	mg/kg	28.69	22.26	21.37	31.41	34.81
20.	Cadmium as Cd	mg/kg	BDL(DL-5.0)	BDL (DL 5.0)	BDL (DL 5.0)	BDL (DL 5.0)	BDL(DL-5.0)
21.	Copper as Cu	mg/kg	21.55	18.07	16.80	15.70	13.64
22.	Organic Carbon	%	0.51	0.38	0.36	0.34	0.45
23.	SAR Value	-	0.85	0.77	0.64	0.78	0.86

BDL- Below Detection Limit, DL- Detection Limit

Kavita Mandal
Tested by

Abhishek Tiwari
Checked by

J. M. ENVIROLAB PVT. LTD. Authorised Signatory
Rajkumar Yadav
Authorized Signatory

Note:
1. This test report has been at your request and test results pertain to the tested sample received.
2. This reports is for your reference only and not to be used for any legal purpose.
3. Any discrepancy in the test report or any remarks regarding the test results shall be brought to our knowledge within 7 days of the issue of this report.
4. Total liability or any claim in case of dispute is limited to the invoice raised by the laboratory.
5. The sample will be destroyed after retention time unless otherwise specified specially.
6. Endorsement of the product tested by the laboratory is neither inferred nor implied.
7. Report shall not be reproduce except in full without approval of the laboratory.
8. All disputes are subject to exclusive jurisdiction of Jaipur court only.

Reg. Office & Lab.
424, Ground Floor, Udyog Vihar,
Phase-IV, Gurugram-122015 (Haryana)
E-mail: jmenvirolab@hotmail.com | www.jmenvironet.org

Corporate Office
Emaar Digital Greens, Tower-B, Unit No.1517,
Golf Course Ext. Road, Sector-61,
Gurugram-122011(Haryana)

UNDERTAKING

I, Sanjay Prasad (Authorized Signatory & Head Environment) of ACC Limited hereby give this undertaking that **M/s. ACC Limited** is proposing Kadapa Limestone Mine (ML Area: 997.08 ha) with Proposed Limestone Production of 7.0 million TPA, Sub grade 2.5 million TPA, (ROM: 9.5 million TPA), Top Soil: 0.012 million TPA & Over Burden 0.9 million TPA (Total excavation 10.412 million TPA) at Villages Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollaapalle, G. Uppalapadu of Mylavaram Mandal, District (YSR) Kadapa, (Andhra Pradesh). There is no litigation pending against the project and/or any direction/order passed by any Court of Law against the project and/or land in which the project is proposed and that for any such litigation whatsoever, the sole responsibilities will be borne by the company.

Date: 17.01.2025
Place: Ahmedabad

For M/s. ACC Cement Limited

Sanjay Prasad
(Head Environment & Authorized Signatory)

ACC Limited
Cement House,
121, Maharshi Karve Road,
Mumbai 400 020, India
www.acclimited.com

Annexure 16_PH Proceeding

ANDHRA PRADESH POLLUTION CONTROL BOARD

REGIONAL OFFICE

1st Floor, APSFC Building, Narasimha Theertham, Road, TIRUPATI - 517502

A.NARENDRA BABU,
Environmental Engineer

Ph.:2253981

Lr.No. K-824/PCB/RO/TPT/2016- 1530

Dt.: 21-10-2016

To
Sri. C.V.G. Murali Krishna
M/s. ACC Limited
Gollapalli village,
Mylavaram Mandal
YSR District.
Ph: 9480686416.
Email: chowadam.muralikrishna@acclimited.com

Sir,

Sub:- EIA Notification – Public Hearing of M/s. ACC Limited has proposed Captive Lime Stone Mining project with mining lease area of 997.08 ha – Communication of Minutes of the Public Hearing – Reg.

Ref:- Public Hearing Meeting held on 20-10-2016 at 2.00 PM near proposed project site.

###

With reference to the above, it is here with submitting the Minutes of the Public Hearing of M/s. ACC Limited proposed Captive Lime Stone Mining project with mining lease area of 997.08 ha at Dhannewada, Chinna Venturila, Vaddarala, Bestavemula, Gollapalli and G.Uppalapadu villages, Mylavaram Mandal of YSR District at Gollapalli village, Mylavaram Mandal of YSR District on 20-10-2016.

Submitted for favour of information and taking necessary action.

Yours faithfully,

ENVIRONMENTAL ENGINEER

Encl: Minutes of Public Hearing.

Proceedings of the Environmental Public Hearing conducted for the Proposed to establish Captive Lime Stone Mining project with mining lease area of 997.08 ha at Dhannawads, Chinna Venturia, Vaddarala, Bestavemula, Gollapalli and G.Uppalapadu villages in Mylavaram Mandal, YSR District conducted on 20-10-2016 at 2.00 P.M near proposed site near Gollapalli village, Mylavaram Mandal of YSR District.

In accordance with the Notification No. S.O. 1533 dt. 14.09.2006 of Ministry of Environment & Forests, Government of India, New Delhi, the Environmental Engineer, Andhra Pradesh Pollution Control Board, Regional Office, Tirupati issued a notification pertaining to the Environmental Public Hearing on the proposed to establish Captive Lime Stone Mining project with mining lease area of 997.08 ha at Dhannawads, Chinna Venturia, Vaddarala, Bestavemula, Gollapalli and G.Uppalapadu villages in Mylavaram Mandal, YSR District in leading newspapers inviting suggestions, views, comments and objections of the general public and the same was conducted on 20.10.2016 at 2.00 P.M and the minutes of the meeting are as follows:

The following Officials attended the Environmental Public Hearing :

1)	**Sri K.V. SATYANARAYANA, I.A.S.,**	Collector & District Magistrate, Kadapa.
2)	**Sri A.NARENDRA BABU,**	Environmental Engineer, AP. Pollution Control Board, Regional Office, Tirupati.

The following Departmental Officials attended the hearing:

Sl.No.	Name & Designation
1)	Sri K. Vinayakam, Revenue Divisional Officer, Jammalamadugu, YSR Dt
2)	Sri. S. Rajendra, Tahsildar, Mylavaram Mandal, YSR Dt.
3)	Sri P.V.Kishore Reddy, Asst. Environmental Engineer, APPCB, RO, Tirupati

The following representatives of the industry were present:

Sl.No.	Name & Designation
1)	Smt. B. Durga Bhavani, M/s Vimta Labs Ltd, Hyderabad, Environmental Consultant of the proposed Project.
2)	Sri. K. Narayana Rao, Director, M/s. ACC Limited.
3)	Dr. S.P. Singh, Cluster South Zone Head, M/s. ACC Limited.

The Environmental Engineer, A.P.Pollution Control Board, Tirupati welcomed the District Collector, YSR District and Chairman of the Environmental Public Hearing Panel and general public to the Public hearing and explained the need to conduct Environmental Public Hearing for the proposed project as per the Ministry of Environment & Forests, Govt. of India, New Delhi notification 2006.

He also explained as per the Terms of Reference (TOR), Ministry of Environment & Forest, Govt. of India, Dt: 30.10.2012 & Dt. 30.11.2015, it is necessary to get the public hearing conducted for this project in accordance with the procedure prescribed under the EIA Notification 2006 in the process of obtaining the Environment Clearance.

Smt. B.Durga Bhavani, M/s Vimta Labs Ltd, Hyderabad, Environmental Consultant of the proposed Project., while speaking on the occasion she explained the salient features of the proposed project.

M/s ACC Cement Ltd is proposed for 7.0 MTPA mine stone lease with mining lease area of 997.08 Ha at Dhannawada, Chinna Venturia, Vaddarala, Bestavemula, Gollapalli and G.Uppalapadu villages in Mylavaram Mandal, YSR District. The expected life time of the mine will be 50 acres. The method of mining considered as open cast mining and the sequence of the operation in quarrying will be drilling, blasting, excavation, loading and transportation. She further informed that during blasting there won't be secondary blasting and they are proposed to use rock breaker for getting small boulders.

With regard to Air quality, Ambient Air Quality monitoring (AAQM) was carried out and analyzed 12 parameters as per the National Ambient Air Quality standard. Results shown that the Ambient Air Quality is well within the National Ambient Air Quality (NAAQ) standards for residential and rural areas.

The industry proposed to provide water sprinkling systems, closed conveyor belts, greenbelt development to control the fugitive emissions. The wastewater containing oil and grease in the mine site work shop will be removed by suitable traps and treated wastewater will be used for dust suppression in the core area. Negligible quantity of oil generated from the workshop will be disposed to through authorized agencies.

With regard to water requirement a quantity of 60 m^3/day is required initially for machinery operations, dust suppression and for afforestation. As per analysis and results indicates ground water conforming with the IS 10500 Standards and there is no industrial contamination.

With regard to noise, material handling, movement of vehicle, crushing, blasting, loading, unloading are the main noise generating sources and will be controlled by adopting proper methods.

With regard to CSR activities, the Industry is proposed to spent an amount Rs 2.87 Crores for 10 years and also industry proposed to provide large number of direct employment to the local people.

Then the District Collector, YSR Dt requested the public to express their views on the proposed project.

Smt. G.Venkata Lakshmi W/o. Sri Chandra Sekhar r/o Gollapalli Opined that none of the speakers spoke earlier have not brought the main demand of the surrounding farmers to the notice of public hearing panel and demanded the management to solve the issue on priority basis.

Sri Kota Lakshmi Reddy r/o Chinna Vedurla while speaking on the occasion requested the management to provide proper jobs to the local people, education, medical facilities and also to construct check dams to increase the ground water table.

Sri Nandyala Venkata Lakshmaiah r/o S.G. Uppalapadu is requested the District Collector, for taking the responsibility of fulfilling the assurances made by the management of M/s ACC Cement Ltd.,

Sri Pamilcti r/o Vaddiralla expressed his un-happiness on filing cases against the farmers for demanding additional compensation. He requested the management to issue proper compensation to the surrounding farmers.

Sri. Y.Chenna Kesava Reddy r/o T.Sunkesula, an NGO while speaking on the occasion requested the management to fulfill all promises made by them during land allenation and also requested to take thorough responsibility on the issues of the public.

Then **the District Collector, YSR Dt** while inviting the project proponent to answer the issues raised by the public during public hearing informed that, CSR funds may help for the community development and requested the management to come out of a concrete solution to benefit the local farmers individually after placing this issue in Board's meeting (M/s ACC Cements Ltd) within 3 months.

He also remembered the importance mutual co-operation between the management and the local people and they have work together atleast for 70 years.

Sri. K. Narayana Rao, Director, M/s. ACC Limited while answering the issues raised by the public and he answered the following.

1. Industry has not proposed any secondary blasting operations and rock breakers will be used for making smaller boulders.
2. If at all any casualties took place during mining the company will take the responsibility.

3. Industry is proposed to supply the water (mine pit) for farming, drinking and to for surrounding villages.

4. Industry strictly proposed to develop greenbelt of 40% more than 33% of greenbelt as per the regulations of the Government.

5. Industry proposed to develop good greenbelt in consultation of Forest Department, species survive in this area al along the village roads and vacant places of mining area.

6. Industry will close the mine after it's life as per the closure plan according to Indian Bureau of mine.

Then **The District Collector and Chairman of the Environmental Public Hearing Panel** while summed up of the proceedings of the Environmental Public Hearing in vernacular language and he assured the public, that all the opinions/views raised by the public during Environmental Public Hearing will be brought to the notice of Ministry of Environment & Forest, Govt. of India.

He while making the conclusive remarks thanking the public for completing the Environmental Public Hearing in a peaceful manner and made the following few suggestions to the management.

1. Online monitoring systems shall be provided for pollution levels monitoring.

2. Requested the management to take up the CSR activities immediately during the construction stage itself.

3. Establishment of skill development institutes and provide job opportunities to the local public in the industry or Other industry.

4. Requested the management to give written commitment on the promises made by the management during public hearing.

On seeing no more suggestions / objections from the public the District Collector and Chairman of the Environmental Public Hearing was ended the Environmental Public Hearing with vote of thanks by Assistant Environmental Engineer, AP Pollution Control Board, Tirupati.

A.Narendra Babu,
Environmental Engineer
&Member Convener,
APPCB, Regional Office,
Tirupati.

K.V. Satyanarayana,
Collector & District Magistrate,
Kadapa, YSR District.

2363
19/10/16

Revenue Department

From
Sri K.V. Satyanarayana, I.A.S,
District Collector,
Y.S.R District,
Kadapa-516001.

To
The Environmental Engineer,
A.P. Pollution Control Board,
Regional Office, Tirupathi.

L.Dis. REV-ESECOMNS/35/2016-SA(EZ)-KDPCO dt:06/10/2016

Sir,

Sub:- A.P. Pollution Control Board :- Conduct of public consultation - M/s ACC Limited, Gollapally, Vaddirala and G.Uppalapadu Villages of Mylavaram Mandal - Representation of formers of Gollapally, Vaddirala and G. Uppalapadu Villages of Mylavaram Mandal - Take necessary action - Reg.

Ref:- Government of India, Ministry of Environment, Forests and Climate Change (Regional Office-Chennaiah) Ref. No. F.No. EP/12.1/2016-17/Misc/1/AP/1881, dated: 26-092016.

@@@

It is to inform that the Scientist 'D', Government of India, Ministry of Environment, Forests and Climate Change (Regional Office-Chennaiah) has forwarded copy of representations received from farmers of Gollapally, Vaddirala and G. Uppalapadu Villages of Mylavaram Mandal for taking appropriate action.

I forward herewith the copy of the above reference for taking appropriate action in the above subject matter.

Yours faithfully,
Sd/- BOGINENI ESWARAIAH,
For Collector

Validity unknown
Digitally signed by [illegible]
Eswaraiah
Date: 2016.10.[illegible]
PDT
Reason: Approved

19/10/16

4445/2016/SA(E2)-KDPCO

By Speed Post



F.No.EP/12.1/2016-17/Misc/1/AP/1868
Government of India
Ministry of Environment, Forests and Climate Change
(Regional Office - Chennai)

1st and 2nd floor, HEPC Building,
No.34, Cathedral Garden Road,
Nungambakkam,
Chennai – 600034

E-mail:roefccc1@gmail.com
Tel: 044-28222326

Dated: 26th September, 2016

E E2 Send to the EE APPCB, TPT for necessary by 29/9/16.

OFFICE MEMORANDUM

Subject: Certain objections against the proposed establishment of Cement factory by M/s ACC Limited, Gollapally, Vaddirala and G.Uppalapadu villages, Mylavaram Mandal, YSR District, Andhra Pradesh – Request to withdraw the proposal of establishment in public interest – Reg.

The undersigned is hereby directed to forward the complaint received from farmers of Gollapally, Vaddirala and G.Uppalapadu villages, Mylavaram Mandal, YSR District, Andhra Pradesh dated 25/08/2016 on the subject cited above for taking action as appropriate.

(Sundar Ramanathan)
Scientist 'D'

Encl: as above

To

The District Collector,
(K.V.Satyanarayen, IAS)
Kadapa District Collector Office,
YSR District – 516001.
Andhra Pradesh.

Copy for information to:-

Shri Lakshmi Narayana, Gollapally Village, Vaddirala Gram Panchayat, Mylavaram Mandal, YSR District, Andhra Pradesh – *with reference to your letter dated 25.8.2016.*

(Sundar Ramanathan)
Scientist 'D'

GTN4L282706IN

15/10/16

4445/2016/SA(E2)-KDPCO

Hyderabad
Date: 25-08-2016

To
The Regional Director,
Office of the Regional (Soughtern Zone) Environment,
Forest Department,
Government of India,
Kendriya Sadan, 4th Floor,
Environment and Forest Wings, Koramangala,
BENGULURU - 34

Respected Sir,

Sub: Certain objections against the proposed establishment of Cement factory by M/s ACC Ltd., Gollapally, Vaddirala and G.Uppalapadu villages, Mylavaram Mandal, YSR District, A.P. – Request to withdraw the proposal of establishment in public interest – Reg.

****

We, the undersigned farmers of Gollapally village, Vaddirala Gram Panchayat, Dhannawada, Chinnaventurla, Bestaveemula, Uppalapedu villages in Myiavaram mandal, YSR Kadapa district, humbly submit the following few lines for your kind consideration and favourable orders.

That Public opinion has been invited from Andhra Pradesh Pollution Control Board, Tirupathi for environmental objections in the local newspapers on 7-08-2016 for establishment of the proposed cement factory of M/s ACC Ltd., at Gollapally, Vaddirala and G.Uppalapadu villages, Mylavaram Mandal, YSR District.

We submit that we are all small farmers and agricultural labour belong to poor SC, ST and BC (i.e., Reddy, Balija, Yadava, Patra, Mangali, Mala, Madiga, Dudekula, Chakali, Boya, Christian etc.) communities living on cultivation, Cattle, Sheeps and Goats as our occupation.

Contd...2..

In the year 1996 the management of ACC Cement factory visited our Gollapally village and identified heavy deposits of limestone in the village and found the area suitable for establishment of a fullfledged cement factory and asked us to give our agricultural lands. They orally promised to provide employment to our families and also establish school to provide education to our children and hospital for medical facilities if we accepted to their proposal. In accordance with their proposal we, the farmers sold our lands at a cost of Rs. 50,000/- per acre to them in the year 1996. But as per their proposal, they did not built the factory.

Again after 11 years i.e., in the year 2007 they came and wanted to us to give remaining lands also promising to give all the help and assistance as assure in the past. Believing the words of the management we had sold our remaining lands in the year 2007 at a consideration of Rs. 1,25,000/-.

Similarly, during 2009-2010 they asked us to vacate our residential houses in our village promising to pay money for each of the houses in the entire village. Believing the words of ACC Cement management we vacated all our houses and moved our families to different location to facilitate them to take our village for the factory. But as per their assurance, they did not pay any amount in respect of the lands or the houses that we surrendered to them to implement their proposal so far. In this matter since 1996 to 2016, the management of ACC Cement, by continuously making their oral assurances of providing financial benefits to us, have not paid anything, and deceiving us for the last 20 years in the name of false promises and caused huge loss to us.

Contd...3..

All the lands that were surrendered by us to them have become barren lands filled with heavy shrubs and bushes and they cannot be utilized for cultivation. In these circumstances, all our villagers have come to a decision for our live.ihood of our families and worked hard and cleared the shrubs and bushes that were grown in the said lands to bring them into cultivabe lands by spending Rs. 50,000/- to Rs. 75,000/- for each acre. Now the management are again saying to give up our lands for their proposed factory. With the fake promises of the management for the last 20 years, we could not cultivate our lands properly and not provided proper education to our children. In this process, we have faced lot of loss financially and educationally became backward. Taking the help of our illiteracy to their benefit, they have been making false promises and continuously deceiving us and our next generation children also.

We further submit that a cement factory is existing near our villages. When they conducted blasts to obtain limestone most of our houses in our area were got damaged and we are suffering a lot due to the heavy smoke and dust emitted from the factory, which also adversely affected to our lands and they became not useful for cultivation.

In the light of the above facts, if the ACC Cement management builds their factory, our lands and houses will get damaged in huge manner when they conduct blasts to obtain limestone in our area and the emissions of dust and smoke will definitely damage our health and the water also gets polluted, which will cause damage to our cattle and domestic animals apart from heavy noise pollution.

Contd....4..

In view of the all the above facts, we humbly request the Regional Director, Office of the Regional (Soughtern Zone) Environment, Forest Department, Government of India, Kendriya Sadan, 4th Floor, Environment and Forest Wings, Koramangala, Bengaluru, to take appropriate action to fulfill all the promises that were made by the Management of M/s ACC Cement i.e. (1) To provide compensation to the farmers to all the lands surrendered by us in the year 1996 and 2007 as per the present market rates. (2) Payment of the expenses incurred (Rs. 70,000/- per acre) by us for clearing of bushes and shrubs in our lands as explained above. (3) To provide 100% employment guarantee to the children of the farmers, who lost their lands under the proposed factory.

We further request the PCB authorities to provide us the assurance in the form of written agreement from the ACC Cement Management to enable us to relieve our families from our financial crisis and to protect the future of our children, for which act of kindness we shall be ever grateful to you.

If any of the above promises are not fulfilled, kindly take necessary action to cancel the mining permissions of the ACC Cement and also to cancel the grant of permission for establishment of their factory in our village area.

Thanking you Sir,

Yours faithfully,

Villagers of Gollapally village,
Vaddirala Gram Panchayat,
Dhannawada, Chinnaventurla,
Bestavemula, Uppalapadu villages in
Mylavaram mandal,
YSR Kadapa district

1. P. Lakshmi Narayana Gollapalli (V)
2. G. Chandra Sekhar Gollapalli (V)
3. S. [illegible]
4. D. Rama mohan Gollapalli,

4445/2013(SA(S2)-KDPCO

Casuals & Others

33 [redacted]
34 [redacted]
35 [redacted]
36 [redacted]
37 [redacted]
38 [redacted]
39 [redacted]
40 [redacted]
41 [redacted]
42 [redacted]
43 [redacted]
44 [redacted]
45 [redacted]
46 [redacted]
47 [redacted]
48 [redacted]
49 [redacted]
50 [redacted]
51 [redacted]
52 [redacted]
53 [redacted]
54 [redacted]
55 [redacted]
56 [redacted]
57 [redacted]
58 [redacted]
59 [redacted]
60 [redacted]
61 [redacted]

4446/2016/SA(E2)-KDPCO

Revenue Department

From
Sri K.V. Satyanarayana, I.A.S,
District Collector,
Y.S.R District,
Kadapa-516001.

To
The Environmental Engineer,
A.P. Pollution Control Board,
Regional Office, Tirupathi.

2364
19/10/16

L.Dis.REV-ESECOMNS/36/2016-SA(E2)-KDPCO, dt: 07/10/2016

Sir,

Sub:- A.P. Pollution Control Board - Conduct of public consultation - M/s ACC Ltd.- Representations of farmers of Gollapally, Vaddirala and G. Uppalapadu Villages of Mylavaram Mandal - Take necessary action - Reg.

Ref:- Representation of farmers of Gollapally, Vaddirala and G. Uppalapadu Villages of Mylavaram Mandal.

@@@

Copy of representations received in the reference cited are forwarded for taking necessary action on the above subject.

Yours faithfully,
Sd/-BOGINENI ESWARAIAH,
For Collector

Validity unknown
Digitally signed by Bogineni Eswaraiah
Date: 2016.10.19 14:14:14 PDT
Reason: Approved

19/10/16

4539/2016/SA(E2)-KDPCO

COLLECTOR'S OFFICE
- 4 OCT 2016
KADAPA

Gollapally ,G.Uppalapadu(v).
Date : 03-10-2016.

To
The Collector and Magistrate,
YSR Kadapa District,
ANDHRA PRADESH.

E2
pump
6/10/16

Respected Sir,

Sub:- Certain objections against the proposed establishment of Cement Factory by M/s ACC Ltd., Gollapally, Vaddirala and G.Uppalapadu villages, Mylavaram Mandal, YSR District, A.P. – Request to withdraw the proposal of establishment in public interest – Reg.

****

We, the undersigned farmers of Gollapally village, Vaddirala Gram Panchayath, Dhannawada, Cainnaventurla, Bestavemula, Uppalapadu villages in Mylavaram Mandal, YSR Kadapa District, humbly submit the following few lines for your kind consideration and favourable orders.

That public opinion has been invited from Andhra Pradesh Pollution Control Board, Tirupathi for environmental objections in the local newspapers on 19-09-2016 for establishment of the proposed cement factory of M/s ACC Ltd., at Gollapally, Vaddirala and G.Uppalapadu villages, Mylavaram Mandal, YSR District.

We submit that we are all small farmers and agricultural labour belong to poor SC, ST and BC(i.e., Reddy, Balija, Yadava, Patra, Mangali, Mala, Madiga, Dudekula, Chakali, Boya, Christian etc.) communities living on cultivation, Cattle, Sheeps and Goats as our occupation.

Contd...2

20
6/10/16

Rs 9326257/-
03/10/16

In the year 1996 the management of ACC Cement factory visited our Gollapally village and identified heavy deposits of limestone in the village and found the area suitable for establishment of a fullfledged cement factory and asked us to give our agricultural lands. They orally promised to provide employment to our families and also establish school to provide education to our children and hospital for medical facilities if we accepted to their proposal. In accordance with their proposal we, the farmers sold our lands at a cost of Rs. 50,000/- per acre to them in the year 1996. But as per their proposal, they did not built the factory.

Again after 11 years i.e., in the year 2007 they came and wanted to us to give remaining lands also promising to give all the help and assistance as assure in the past. Believing the words of the management we had sold our remaining lands in the year 2007 at a consideration of Rs. 1,25,000/-.

Similarly, during 2009-2010 they asked us to vacate our residential houses in our village promising to pay money for each of the houses in the entire village. Believing the words of ACC Cement management we vacated all our houses and moved our families to different location to facilitate them to take our village for the factory. But as per their assurance, they did not pay any amount in respect of the lands or the houses that we surrendered to them to implement their proposal so far. In this matter since 1996 to 2016, the management of ACC Cement, by continuously making their oral assurances of providing financial benefits to us, have not paid anything, and deceiving us for the last 20 years in the name of false promises and caused huge loss to us.

Contd....3..

All the lands that were surrendered by us to them have become barren lands filled with heavy shrubs and bushes and they cannot be utilized for cultivation. In these circumstances, all our villagers have come to a decision for our livelihood of our families and worked hard and cleared the shrubs and bushes that were grown in the said lands to bring them into cultivable lands by spending Rs. 50,000/- to Rs. 75,000/- for each acre. Now the management are again saying to give up our lands for their proposed factory. With the fake promises of the management for the last 20 years, we could not cultivate our lands properly and not provided proper education to our children. In this process, we have faced lot of loss financially and educationally became backward. Taking the help of our illiteracy to their benefit, they have been making false promises and continuously deceiving us and our next generation children also.

We further submit that a cement factory is existing near our villages. When they conducted blasts to obtain limestone most of our houses in our area were got damaged and we are suffering a lot due to the heavy smoke and dust emitted from the factory, which also adversely affected to our lands and they became not useful for cultivation.

In the light of the above facts, if the ACC Cement management builds their factory, our lands and houses will get damaged in huge manner when they conduct blasts to obtain limestone in our area and the emissions of dust and smoke will definitely damage our health and the water also gets polluted, which will cause damage to our cattle and domestic animals apart from heavy noise pollution.

Contd 4

-:4:-

In view of the all the above facts, we humbly request the authorities of The Collector, YSR Kadapa District to take appropriate action to fulfil all the promises that were made by the Management of M/s ACC Cement i.e., (1) R&R Special Package in Gollapalle to G. Uppalapadu to provide house compensation to the farmers to all the lands surrendered by us in the year 1996 and 2007 as per the present market rates. (2) Payment of the expenses incurred (Rs. 70,000/-per acre) by us for clearing of bushes and shrubs in our lands as explained above. (3) To provide 100% employment guarantee to the children of the farmers, who lost their lands under the proposed factory.

We further request the PCB authorities to provide us the assurance in the form of written agreement from the ACC Cement Management to enable us to relieve our families from our financial crisis and to protect the future of our children, for which act of kindness we shall be ever grateful to you.

If any of the above promises are not fulfilled, kindly take necessary action to cancel the mining permission of the ACC Cement and also cancel the grant of permission for establishment of their factory in our village area.

Thanking you Sir,

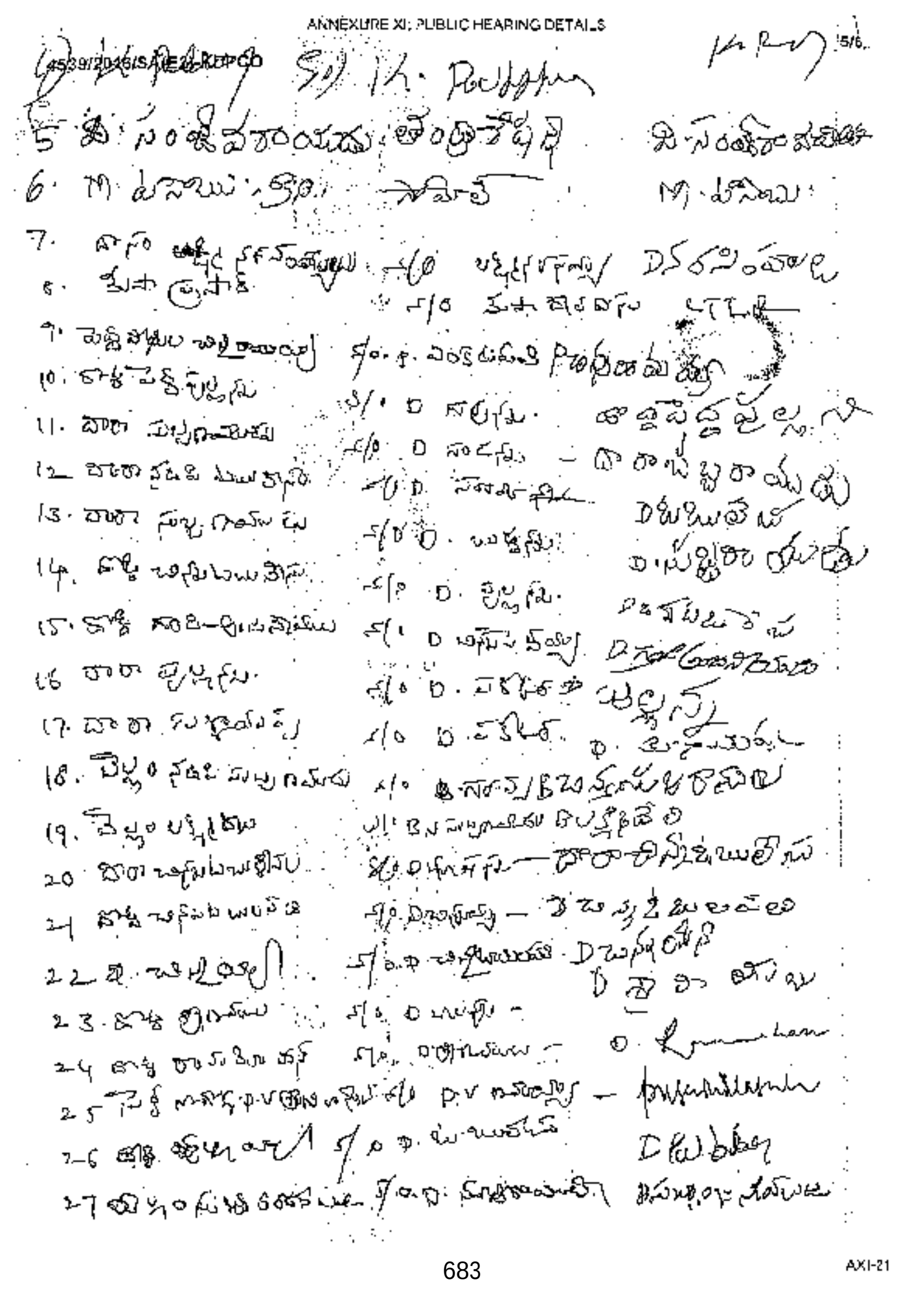
Yours faithfully,

Villagers of Gollapally village,
G. Uppalapadu village in
Mylaveram mandal,
YSR Kadapa district.

1. P. Lakshmi Narayana
2. D. Rama mohan
3. G. [illegible]

Copy to :

1. Andhra Pradesh Pollution Control Board, Tirupathi.
2. The Superintendent of Police, YSR Kadapa District.



4639/2016/SE(EE)/KDPCG/Proceedings: D. Lakshmi Narayana/ D.B. Narayana Reddy

2 [illegible]

3 [illegible]

3 [illegible]

3 [illegible]

33 K. Shivaram Reddy S/o. Chinna Ramaiah

34 [illegible]

35 [illegible]

3 [illegible]

37 [illegible]

3 [illegible]

3 [illegible]

4 [illegible]

41 [illegible]

42 M. [illegible]

43 M. Hariprasad Reddy S/o Narayana Reddy

44. V. Subramanyam Achari S/o.

45. A. [illegible]

46 [illegible]

47 Gr. Shaik Saud S/o G. [illegible]

48 [illegible]

49 Chinnakkabbanavar W/o Chandrakhar

50 A. Chandra Sekhar Reddy S/o Ramakrishna Reddy

51 M. Joseph S/o M. Abraham

B. [illegible]

[illegible]

T. [illegible]

P. Ramu Balaji

B. [illegible]

P. [illegible]

M. [illegible]

V. Subbachari

A. [illegible]

Gr. Shaik Saud

A. Chandra Sekhar Reddy

M. Joseph

2384
20/10/16

Gollapally ,G.Uppalapadu(vi).
Date : 08-10-2016.

To
The Environmental Engineer,
Andhra Pradesh Pollution Control Board,
Regional Office,
S.T. Road,
TIRUPATHI – 517 502

Respected Sir,

Sub:- Certain objections against the proposed establishment of Cement Factory by M/s ACC Ltd., Gollapally, Vaddirala and G.Uppalapadu villages, Mylavaram Mandal, YSR District, A.P. – Request to withdraw the proposal of establishment in public interest – Reg.

****

We, the undersigned farmers of Gollapally village, Vaddirala Gram Panchayath, Dharmawada, Chinnaventuria, Bestavemula, Uppalapadu villages in Mylavaram Mandal, YSR Kadapa District, humbly submit the following few lines for your kind consideration and favourable orders.

That public opinion has been invited from Andhra Pradesh Pollution Control Board, Tirupathi for environmental objections in the local newspapers on 19-09-2016 for establishment of the proposed cement factory of M/s ACC Ltd., at Gollapally, Vaddirala and G.Uppalapadu villages, Mylavaram Mandal, YSR District.

We submit that we are all small farmers and agricultural labour belong to poor SC, ST and BC(i.e., Reddy, Balija, Yadava, Patra, Mangali, Mala, Madiga, Dudekula, Chakali, Boya, Christian etc.) communities living on cultivation, Cattle, Sheeps and Goats as our occupation.

Contd...2

In the year 1996 the management of ACC Cement factory visited our Gollapally village and identified heavy deposits of limestone in the village and found the area suitable for establishment of a fullfledged cement factory and asked us to give our agricultural lands. They orally promised to provide employment to our families and also establish school to provide education to our children and hospital for medical facilities if we accepted to their proposal. In accordance with their proposal we, the farmers sold our lands at a cost of Rs. 50,000/- per acre to them in the year 1996. But as per their proposal, they did not built the factory.

Again after 11 years i.e., in the year 2007 they came and wanted to us to give remaining lands also promising to give all the help and assistance as assure in the past..... Believing the words of the management we had sold our remaining lands in the year 2007 at a consideration of Rs. 1,25,000/-.

Similarly, during 2009-2010 they asked us to vacate our residential houses in our village promising to pay money for each of the houses in the entire village. Believing the words of ACC Cement management we vacated all our houses and moved our families to different location to facilitate them to take our village for the factory. But as per their assurance, they did not pay any amount in respect of the lands or the houses that we surrendered to them to implement their proposal so far. In this matter since 1996 to 2016, the management of ACC Cement, by continuously making their oral assurances of providing financial benefits to us, have not paid anything and deceiving us for the last 20 years in the name of false promises and caused huge loss to us.

Contd....3..

All the lands that were surrendered by us to them have become barren lands filled with heavy shrubs and bushes and they cannot be utilized for cultivation. In these circumstances, all our villagers have come to a decision for our livelihood of our families and worked hard and cleared the shrubs and bushes that were grown in the said lands to bring them into cultivable lands by spending Rs. 50,000/- to Rs. 75,000/- for each acre. Now the management are again saying to give up our lands for their proposed factory. With the fake promises of the management for the last 20 years, we could not cultivate our lands properly and not provided proper education to our children. In this process, we have faced lot of loss financially-and-educationally became backward. Taking the help of our illiteracy to their benefit, they have been making false promises and continuously deceiving us and our next generation children also.

We further submit that a cement factory is existing near our villages. When they conducted blasts to obtain limestone most of our houses in our area were got damaged and we are suffering a lot due to the heavy smoke and dust emitted from the factory, which also adversely affected to our lands and they became not useful for cultivation.

In the light of the above facts, if the ACC Cement management builds their factory, our lands and houses will get damaged in huge manner when they conduct blasts to obtain limestone in our area and the emissions of dust and smoke will definitely damage our health and the water also gets polluted, which will cause damage to our cattle and domestic animals apart from heavy noise pollution.

Contd....4..

In view of the all the above facts, we humbly request the authorities of Andhra Pradesh Pollution Control Board, Tirupathi to take appropriate action to fulfill all the promises that were made by the Management of M/s ACC Cement i.e., (1) R&R Special Package in Gollapalle to G. Uppalapadu to provide house compensation to the farmers to all the lands surrendered by us in the year 1996 and 2007 as per the present market rates. (2) Payment of the expenses incurred (Rs. 70,000/-per acre) by us for clearing of bushes and shrubs in our lands as explained above. (3) To provide 100% employment guarantee to the children of the farmers, who lost their lands under the proposed factory.

We further request the PCB authorities to provide us the assurance in the form of written agreement from the ACC Cement Management to enable us to relieve our families from our financial crisis and to protect the future of our children, for which act of kindness we shall be ever grateful to you.

If any of the above promises are not fulfilled, kindly take necessary action to cancel the mining permission of the ACC Cement and also cancel the grant of permission for establishment of their factory in our village area.

Thanking you Sir,

Yours faithfully,

Villagers of Gollapally

village,

G. Uppalapadu village in
Mylavaram mandal,
YSR Kadapa district.

P Lakshmi Devi
Gollapalle

Copy to :

1. The Collector, YSR Kadapa District,
2. The Superintendent of Police, YSR Kadapa District. K Rammohan

మద్దిరాల,
తేది :

గౌరవనీయశ్రీ ఆంధ్రప్రదేశ్ కాలుష్య నియంత్రణ మండలి పర్యావరణ ఇంజనీరు సార్ దివ్య సన్నిధికి
తమరి విధేయులు, ఎసిసి భూ బాధితులు విన్నపముతో రాసుకొను మనవి పూర్వకంగా!

అయ్యా !

2360
19/10/16

అసోసియేటెడ్ సిమెంటు కంపెనీస్ (ఎసిసి లిమిటెడ్) అను సంస్థ వైయస్.ఆర్ జిల్లా మైలవరం మండలం మద్దిరాల, గొల్లపల్లి, ఉప్పలపాడు, దున్న వెంకట్రపల్లి, దొన్నేపాడు, భుజంగాలపల్లె గ్రామాల్లో 1996 వ సంవత్సరం నుంచి 2010 సంవత్సరం వరకు విడతల వారీగా దాదాపు 3000 ఎకరాల భూమిని రైతుల నుండి కొనుగోలు చేసింది. 20 ఏళ్ళ నుంచి రైతుల పంట పొలాలను కొంటూనే ఉన్న ఎసిసి లిమిటెడ్ నేటికి ఫ్యాక్టరీ నిర్మించక పోవడం విచారకరం. ఇప్పటికైనా ఫ్యాక్టరీ నిర్మిస్తారన్న ఆశ మాకు లేదు. కోపం కట్టలు తెంచుకొని కయ్యం చేస్తే రైతుల నోట్లో మన్ను కొట్టడానికి ఎసిసి లిమిటెడ్ ప్రయత్నిస్తుంది తప్ప నిజంగా చిత్తశుద్ధితో ఫ్యాక్టరీ నిర్మాణానికి ముందుకు రావడం లేదు.

వెన్నుపోటుకి 20 ఏళ్ళ క్రితమే ఎసిసి లిమిటెడ్ ఇక్కడ భూములు కొంటున్నప్పుడు మేము ఎంతగానో సంతోషించాము. భూములు కోల్పోయిన మాకు, మా పిల్లలకు ఫ్యాక్టరీలో ఉపాధి లభిస్తుందని మా ఆశలను అడియాశలు చేస్తూ కనీసం పునాది రాయి కూడా వేయకుండా ఎసిసి లిమిటెడ్ నాన్చుడు ధోరణితో వ్యవహరిస్తూ వచ్చింది. సంస్థ కొనుగోలు చేసిన భూములు బీడుగా మారి, అందులో దివ్యంగా తంపచెట్లు పెరిగి, ప్రక్కనే ఉన్న పంట పొలాలకు తీవ్ర ఇబ్బంది కలిగిస్తూ ఉండేవి.

ఎసిసి ఫ్యాక్టరీ వారు భూత నిర్మాణానకు చెట్లను ఫ్యాక్టరీకి ముందే ఏర్పాటు చేయాలి. ఫ్యాక్టరీ వారు త్రవ్వకాలు జరుపునపుడు డ్రిల్లింగ్ బ్లాస్టింగ్ చేస్తే గ్రామాలలో ఇల్లు నేరలు బీటలు అవకాశం ఉంది. అంతేకాక ఏత ఇల్లు కూలిపోతాయి. అలాజరిగితే ప్రస్తుత రేట్ల ప్రకారం నష్టపరిహారం చెల్లించటానికి వ్రాతపూలకంగా ఇవ్వవలెను. ధ్వని కాలుష్యనియంత్రణ చర్యలు పాటించాలి. గ్రామాలలో కాలుష్యంకారణంగా చాలా రకాలుగా నష్టపోయే ప్రమాదం ఉన్నది. వాటిని నివారించడానికి అన్ని విధములుగా సిద్ధంగా ఉండాలి. కమ్యూనిటి డెవలప్‌మెంట్ సాంఘీక కార్యకలాపాలు అయిన నీటి సదుపాయాలు, ఆరోగ్యపరమైన వంటి సౌకర్యాలు కల్పించాలి. ప్రభుత్వం అనుమతించిన వేళలలోనే బ్లాస్టింగ్ చేయాలి. కాలుష్యం కారణంగా అనారోగ్యానికి గురియితే వైద్యసదుపాయం ఉచితంగా కల్పించాలి. వాతావరణ కాలుష్యం కాకుండా ఉండేవిధంగా నియంత్రణాచర్యలు చేపట్టాలి. అని నిర్భయంగా వ్రాతపూర్వకంగా మీకు ఇవ్వాలి. రైతుల సంక్షేమము దృష్ట్యా అన్ని గ్రామాలను దత్తత తీసుకోవలెను.

19/10/16

ఈ నేపథ్యంలో మేము అనేక మారులు హెచ్చరికలు చేసిన తర్వాత కూడా ఫ్యాక్టరీ నిర్మాణానికి ఎసిసి లిమిటెడ్ ఏ మాత్రం ముందుకు రాకపోవడంతో భూములు కోల్పోయి ఎలాంటి ఉపాధి లేక ఖాళీగా ఉన్న మేము..... ఏపుగా పెరిగిన తంపచెట్లను తొలగించి అనేక వ్యయ ప్రయాసలు కోర్చి గత ఐదేళ్ళుగా ఆ భూములను సాగు చేసుకుంటున్నాము. ఇన్నేళ్ళ తర్వాత కళ్ళు తెరిచిన ఎసిసి లిమిటెడ్ ఇప్పుడు ఫ్యాక్టరీ నిర్మించబోతున్నామని అందుకోసం పర్యావరణ ప్రజాభిప్రాయ సేకరణ కార్యక్రమాన్ని తమరు ఆగ్రహంగా పత్రికా ప్రకటన ఇప్పించింది. కానీ గత ఇరవై ఏళ్ళుగా ఎసిసి లిమిటెడ్ నాన్చుడు ధోరణి వల్ల ఎన్నో

కన్నగపల్లెలు ఎదుర్కొన్నట్లే భూతో కూడు మాత్రమైనా చెప్పకుండా పత్రికా ప్రకటన ఇవ్వడం శోచనీయం. ప్రస్తుత రేట్ల ప్రకారం ఎకరాకు భూమికోల్పోయిన ప్రతి రైతుకు అధనంగా ప్రతిఫలం చెల్లించాలి. భూములు ధారుగోలు విషయంలో ఎ.సి.సి యాజమాన్యానికి మాకు గతంలో ఎన్నో సమస్యలు పెండింగులో ఉన్నాయి. కావున ఎ.సి.సి లిమిటెడ్ భూములు కోల్పోయిన బాధిత రైతులతో చర్చలు జరిపిన తర్వాతే తమరు పర్యావరణ ప్రజాభిప్రాయ సేకరణ జరిపితే సముచితంగా ఉంటుందని బాధ్యతాయుతంగా తమరికి విన్నవించుకుంటున్నాం. అన్నీ తెలిసిన పెద్దలు భూ బాధితుల పట్ల సానుభూతితో స్పందిస్తారని వేడుకొనుచున్నాము.

అనేక నమస్కారములతో

ఇట్లు తమ విధేయులు

ఎసిసి భూ బాధితులు,
పద్దరాల, గొల్లపల్లె, జి.ఉప్పలపాడు,
చిన్నవెంకుర్లు, పెన్నవేముల, జి.ఇంగాలపల్లి,
గ్రామాల రైతులు.
మైలవరం మండలం
వైయస్ఆర్ జిల్లా

Ysr

K వెంగళరెడ్డి

V రామలక్ష్మి

K వెంకయ్య

ఆరు మాకిచ్చివేయ

A బుజ్జయ్య

[illegible]

[illegible]

10

A.C.C భూనిర్వాసితులు.

		తండ్రి పేరు
1	K. Sheshagiri Reddy	S/o [illegible]
2	V Pamulety.	S/o [illegible]
3	D. వెంకట సుబ్బమ్మ	S/o [illegible]
4	B. చిన్నపు మునిరత్నమ్మ	S/o [illegible]
5	వేలుపుల వరప్రసాదులు	[illegible]
6	ఎ. సం ధ్య వరాంజనేయులు	ఎ. [illegible]
7	M. Narasimha Reddy	S/o M. [illegible]
8	Y. [illegible]	S/o [illegible]
9	M. బాలకృష్ణా రెడ్డి	S/o M. [illegible]
10	P. Sreenivasulu	S/o. P. [illegible]
11	దలప్పనాగిరెడ్డి	దానిరెడ్డి [illegible]
12	S. Harishchandra Reddy	S/o S. Hanumantha Reddy
13	చల్లు బాబు	S/o. [illegible]
14	P. Sreenivasulu	S/o. P. [illegible]
15	M. వెంకటసుబ్బారెడ్డి	S/o M. [illegible]
16	[illegible]	S/o [illegible]
17	P. [illegible]	S/o [illegible]
18	రా [illegible] మ్మ	w/o [illegible]
19	[illegible]	[illegible]
20	[illegible]	[illegible]
21	M. [illegible]	S/o [illegible]
22	M. [illegible]	S/o [illegible]
23	G. Ramachandra Reddy	S/o. G. Hanumantha Reddy

ACC లోని సిబ్బంది వివరాలు – వివరాలు

1. [illegible] s/o Venkata [illegible]
2. [illegible] s/o [illegible]
3. V. [illegible] s/o [illegible]
4. = [illegible]
5. – P. [illegible] s/o [illegible]
6. K. [illegible] [illegible]
7. – [illegible] s/o. [illegible]
8. – P. Tirupathaiah
9. – K. [illegible] s/o [illegible]
10. S. [illegible] s/o [illegible]
11. K. [illegible] s/o. [illegible]
12. P. [illegible]
13. S. [illegible] s/o [illegible]
14. [illegible] – [illegible]
15. [illegible]



16. [illegible]
17. [illegible]
18. [illegible]



19. [illegible] s/o [illegible]
20. [illegible] s/o [illegible]
21. [illegible]













24  W/o. M. చిన్నయ్య

25 M. శ్రీనివాసులు S/o M.P. వెంకటేశం

26 M. రాజశేఖర్ S/o M.P. వెంకటేశం

27 పుల్లలచెరువు W/o K. వెంకటేష్.

28  L.T.Ent T. నరసింహ W/o T. లక్ష్మన్న

W/o B. మాణిక్యాచారి

29  L.T.Ent B. వీరస్వామి

30 పుల్లలచెరువు S/o. [illegible]

31 D. నారాయణ S/o. [illegible]

32 D. శ్రీనివాసులు S/o. నాగేశ్వరాచారి

33 B. వీరవెంకయ్యశెట్టి S/o. B. [illegible]

34 P. Nani Krishna son of P. Penda Ramdiah

35 K. యేసు లేమ S/o K. [illegible]

36 A. కాసుకొండారెడ్డి S/o. M. వెంకటరాయుడు.

37 [illegible] S/o. [illegible]

38 G. రంగమ్మ W/o G. [illegible]

39 T. రమణమ్మ W/o. [illegible]

40 K. ప్రేమలతదేవి W/o. K. [illegible]

41 A. వెంకటసుబ్బయ్య S/o. [illegible]

42 T. [illegible] S/o. T. [illegible]

43 D. [illegible] S/o. D. [illegible]

44 B. జయమ్మ S/o B. [illegible]

45 N. వెంకటరమణ S/o. N. [illegible]

46 B. RAMAMOHAN S/o B. [illegible]

47 M. Ruku S/o. [illegible]

48 N. [illegible] S/o. N. [illegible]

49 [illegible] S/o [illegible]

50 A. [illegible] S/o [illegible]

51  [illegible]

52 M. [illegible] S/o M. [illegible]

53  [illegible]

54 D. Kasinath D. Kadiyala

55 [illegible] S/o [illegible]

56 [illegible] S/o. Chinna Hussain Reddy

57 MK. [illegible] S/o: [illegible]

58 D [illegible]

59 D. [illegible] S/o D [illegible]

60 D [illegible] S/o. D. [illegible]

61 [illegible] S/o. D. [illegible]

62  [illegible]

63 [illegible] S/o [illegible]

64 [illegible] S/o. D. [illegible]

65 [illegible] S/o [illegible]

66 D [illegible] S/o. D. [illegible]

67 [illegible] S/o. [illegible]

70 V. [illegible]

71 V. Narasimhulu [illegible] S/o V. [illegible]

72 Mr. [illegible] S/o Ahmadullah.

73 D. [illegible] S/o. [illegible]

74 D. [illegible] S/o D. [illegible]

75 [illegible] S/o. [illegible]

76 D. [illegible] S/o. D. [illegible]

S/o. [illegible]

77 D. [illegible]

[illegible] S/o. M. [illegible]

29 [illegible] S/o. [illegible]

[illegible] W/o. [illegible]

81 [illegible] S/o. [illegible]

82 C. [illegible] S/o. C. N. [illegible]

83 [illegible] W/o. D. [illegible]

84 D. [illegible] S/o. [illegible]

[illegible] S/o. M. [illegible]

86 K. [illegible] S/o. K. [illegible]

87 [illegible] [illegible]

88 [illegible] [illegible]









ACC ఉద్యోగస్తులు - ఈ వివరాలు

1. పెండ్యాల శ్రీనివాసులు S/. కంబాలు.
2. S. సంధ్య వెంకటేశులు S/o పాగోలులు.
3. బంక ఉదయ్ భాస్కర్ S/o పాపయ్య
4.  M. గణేశ్వరరావు S/o పెద్దన్న.
5. N. కనకారావు S/o బుచ్చిరాజు
6. N. శివ S/o కాంచనమ్మ
7. N. లక్ష్మీ S/o నరసింహులు
8. M. లక్ష్మీనరసయ్య
11. ఇంజనీర్ భూపాలుడు S/o పెద్దయ్య
12. C. కోటేశ్వరి S/o సుబ్బరాజు
13. మరియు ఇలా చాలమంది ఉద్యోగులు ఉన్నారు అని తెలియజేయుటకు విన్నవించుకుంటున్నాము.
14. N. Srinivasulu S/o N. P రాజు.
15. N. V. Krishnam. S/o N.R Ramanna
16. N.P. Ramanna. S/o N.R Ramanna.
17. N.C. రాజు S/o N.R Ramanna
18. N. రత్నాలమ్మ. S/o N.C Ramanna
19. N. వెంకటేశ్వర్లు S/o N.C Ramanna.

E.E, APPCB - Tirupati

Hyderabad
Date: 25-08-2016

The Collector and Magistrate,
Y.S.R. Kadapa District,
KADAPA.

2362 19/10/16

Respected Sir,

Sub: Certain objections against the proposed establishment of Cement factory by M/s. ACC Ltd., Gollapally, Vaddirala and G.Uppalapadu villages, Mylavaram Mandal, YSR District, A.P. – Request to withdraw the proposal of establishment in public interest – Reg.

****

We, the undersigned farmers of Gollapally village, Vaddirala Gram Panchayat, Dhannawada, Chinnaveturla, Bestavemula, Uppalapadu villages in Mylavaram mandal, YSR Kadapa district, humbly submit the following few lines for your kind consideration and favourable orders.

That Public opinion has been invited from Andhra Pradesh Pollution Control Board, Tirupathi for environmental objections in the local newspapers on 17-08-2016 for establishment of the proposed cement factory of M/s ACC Ltd., at Gollapally, Vaddirala and G.Uppalapadu villages, Mylavaram Mandal, YSR District.

We submit that we are all small farmers and agricultural labour belong to poor SC, ST and BC (i.e., Reddy, Balija, Yadava, Patra, Mangali, Mala, Madiga, Dudekula, Chakali, Boya, Christian etc.) communities living on cultivation, Cattle, Sheeps and Goats as our occupation.

Contd...2..

19/10/16

RR147964566
22/8/16

In the year 1996 the management of ACC Cement factory visited our Gollapally village and identified heavy deposits of limestone in the village and found the area suitable for establishment of a fullfledged cement factory and asked us to give our agricultural lands. They orally promised to provide employment to our families and also establish school to provide education to our children and hospital for medical facilities if we accepted to their proposal. In accordance with their proposal we, the farmers sold our lands at a cost of Rs. 50,000/- per acre to them in the year 1996. But as per their proposal, they did not built the factory.

Again after 11 years i.e., in the year 2007 they came and wanted to us to give remaining lands also promising to give all the help and assistance as assure in the past. Believing the words of the management we had sold our remaining lands in the year 2007 at a corisideration of Rs. 1,25,000/-.

Similarly, during 2009-2010 they asked us to vacate our residential houses in our village promising to pay money for each of the houses in the entire village. Believing the words of ACC Cement management we vacated all our houses and moved our families to different location to facilitate them to take our village for the factory. But as per their assurance, they did not pay any amount in respect of the lands or the houses that we surrendered to them to implement their proposal so far. In this matter since 1996 to 2016, the management of ACC Cement, by continuously making their oral assurances of providing financial benefits to us, have not paid anything and deceiving us for the last 20 years in the name of false promises and caused huge loss to us.

Contd....3..

All the lands that were surrendered by us to them have become barren lands filled with heavy shrubs and bushes and they cannot be utilized for cultivation. In these circumstances, all our villagers have come to a decision for our livelihood of our families and worked hard and cleared the shrubs and bushes that were grown in the said lands to bring them into cultivable lands by spending Rs. 50,000/- to Rs. 75,000/- for each acre. Now the management are again saying to give up our lands for their proposed factory. With the fake promises of the management for the last 20 years, we could not cultivate our lands properly and not provided proper education to our children. In this process, we have faced lot of loss financially and educationally became backward. Taking the help of our illiteracy to their benefit, they have been making false promises and continuously deceiving us and our next generation children also.

We further submit that a cement factory is existing near our villages. When they conducted blasts to obtain limestone most of our houses in our area were got damaged and we are suffering a lot due to the heavy smoke and dust emitted from the factory, which also adversely affected to our lands and they became not useful for cultivation.

In the light of the above facts, if the ACC Cement management builds their factory, our lands and houses will get damaged in huge manner when they conduct blasts to obtain limestone in our area and the emissions of dust and smoke will definitely damage our health and the water also gets polluted, which will cause damage to our cattle and domestic animals apart from heavy noise pollution.

Contd....4..

In view of the all the above facts, we humbly request the Collector, YSR Kadapa district to take appropriate action to fulfil all the promises that were made by the Management of M/s ACC Cement i.e., (1) To provide compensation to the farmers to all the lands surrendered by us in the year 1996 and 2007 as per the present market rates. (2) Payment of the expenses incurred (Rs. 70,000/- per acre) by us for clearing of bushes and shrubs in our lands as explained above. (3) To provide 100% employment guarantee to the children of the farmers, who lost their lands under the proposed factory.

We further request the PCB authorities to provide us the assurance in the form of written agreement from the ACC Cement Management to enable us to relieve our families from our financial crisis and to protect the future of our children, for which act of kindness we shall be ever grateful to you.

If any of the above promises are not fulfilled, kindly take necessary action to cancel the mining permissions of the ACC Cement and also to cancel the grant of permission for establishment of their factory in our village area.

Thanking you Sir,

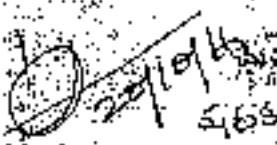
Yours faithfully,

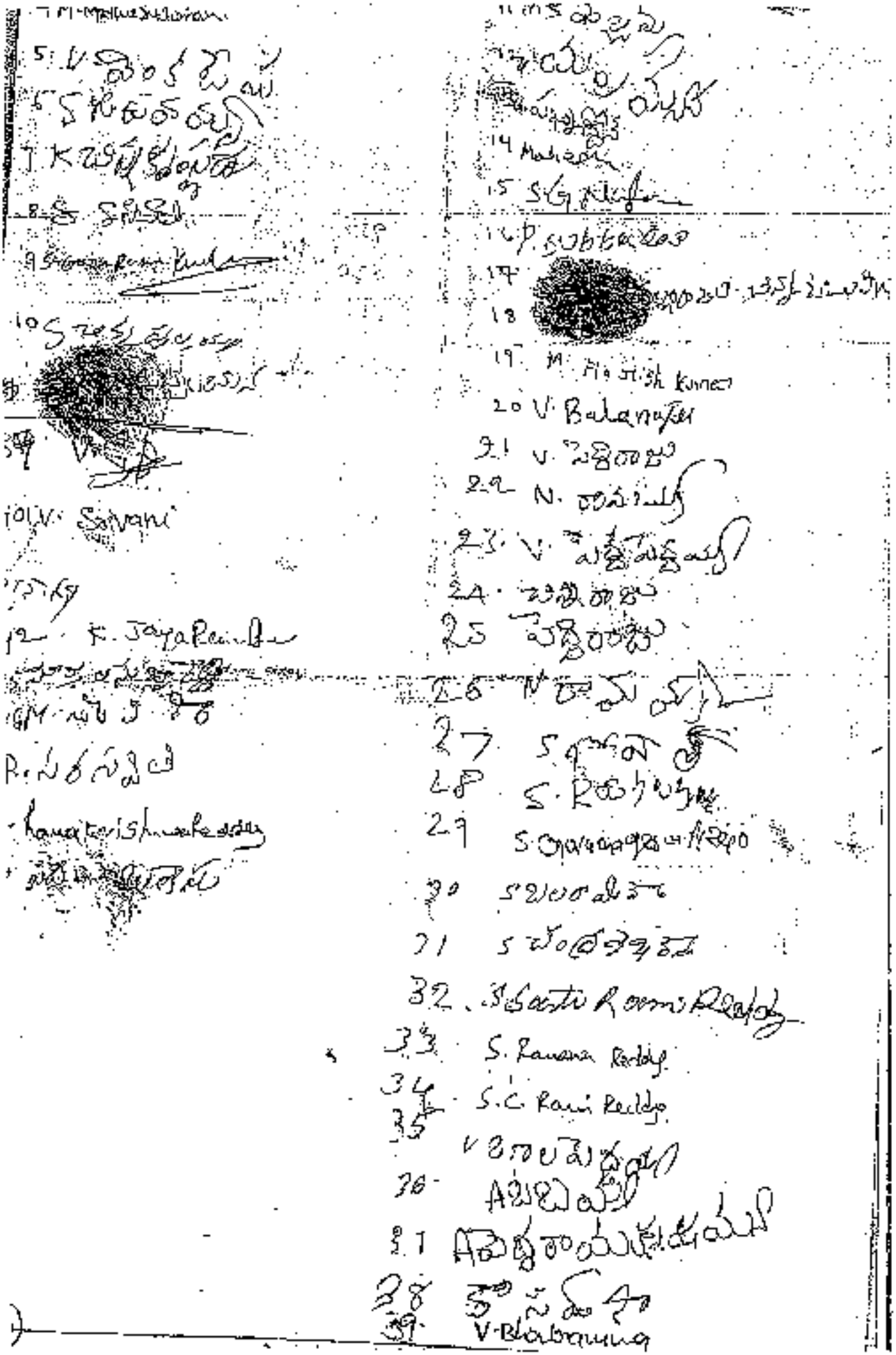
Villagers of Gollapally village,
Vaddirala Gram Panchayat,
Dhannawada, Chinnaventurla,
Bestavemula, Uppalapadu villages in
Mylavaram mandal,
YSR Kadapa district

1. P. Lakshmi Narayana (Gollapalli)
2. G. Chandra Sekhar Gollapalli
3. S. [illegible]
4. O. Ramamohan Gollapalli

5 V
6 సంజీవరాయుడు
7. D. Lakshmaiah
8 S
9 వెంకటసుబ్బయ్య
10 M. [illegible]
11 Venkatesulu
12 V. సుబ్బారెడ్డి
13 నాగార్జున
14 D. [illegible]
15 D. [illegible]
16 D. [illegible]
17 B. [illegible]
18 VRK Reddy
19 M. DBA
20 [illegible]
21 V. Ramakrishnaiah
22 [illegible]
23 K. Ravi Kumar
24 [illegible]
25 V. [illegible]
26 N. Venkatesulu
27 N. [illegible]
28 [illegible]
29 [illegible]
30 [illegible]
31 [illegible]
32 [illegible]
33 [illegible]
34 [illegible]
35 [illegible]
36 D. Jayaramudu
37 K. [illegible]
38 [illegible]
39 [illegible]
40 V. Subramanyam Achary
41 [illegible]
42 N. [illegible]
43 N. [illegible]
44 N. [illegible]
45 [illegible]
46 [illegible]
47 [illegible]
48 [illegible]
49 [illegible]
50 [illegible]
51 [illegible]
52 [illegible]
53 [illegible]
54 [illegible]
55 [illegible]
56 [illegible]
57 D. Kondaiah
58 [illegible]
59 K. [illegible]
60 [illegible]
61. V. Raghu Rama Naidu
62. [illegible]







706

8/7/16

— శ్రీ ఆంధ్రప్రదేశ్ కాలుష్య నియంత్రణ మండలి గారికి, తిరుపతి

గౌరవనీయులైన ఏ.సి.సి.రాజమాన్యం గారికి,

అయ్యా!

కడప జిల్లా మైలవరం మండలం చిన్నవెంతుర్ల గ్రామరైతులు ప్రాసుకున్న విన్నపము,

1. పెద్దవంతుర్ల దాన చారుర్ట్ వరకు భూమిని కొనవలెను (నంక వరకు).
2. ఎకరాకు ఇప్పుడు కొన్న భూమికి రూ. 15,00,000/- వున్న భూమిని కొనుగోలు చేయవలెను.
3. భూమిని కోల్పోయిన వారికి ఉద్యోగము చదువును బట్టి మరియు చదువులేనివారికి ఒపాధి కల్పించవలెను. ఫై విషయములను ఎ.సి.సి.లెటరు ప్యాడ్ మీద లిఖితపూర్వకముగా ప్రాయవలెను.
4. భూమిని కోల్పోయిన వారికి స్థానికులకు వాహనాలు మరియు మిషనరీలు, కాంట్రాక్ట్ పనులు స్థానికులకు ఇవ్వవలెను.
5. రూ. 50,000/- మరియు రూ. 1,25,000/- పోయిన భూమికి వారికి రూ. 4,00,000/- రేటుతో కల్పించవలెను.
6. గ్రామంలో విద్య మరియు వైద్యము మరియు స్త్రీలకు పాడిపశువులు మరియు గొర్రెల పెంపకం ఆర్థిక సహాయం చేయవలెను.
7. ఫ్యాక్టరీ మొదట పెట్టవరకు కొన్న భూములు రైతులు పండించుకొనవలెను.
8. ఏ.సి.సి.సిమెంట్ ఫ్యాక్టరీ త్వరగా కట్టమని కోరికలు తీర్చవలెను.
9. మేము ఏ.సి.సి ఫ్యాక్టరీకి రావడానికి స్వాగతిస్తున్నాము. మాకు ఎలాంటి అభ్యంతరము లేదు ఫ్యాక్టరీని తొందరగా కట్టవలెను.
10. మైనింగ్స్ వలన ఇల్లులకు ముడలగు వారికి నష్టము కలుగకుండా చూడవలెను.

8/7/16

ఇట్లు,

గ్రామ రైతులు

C. సుబ్బరాయుడు

C. శ్రీనివాసులు

M. సుబ్బన్న

M. వెంకటరాయుడు

N. చిన్నయ్య

B. Venkataswamy

చెంచెకొడ్డి ఒబిలేశ్వరకొడ్డి

నా పొలికోరిచినాకిచ్చి సుబ్బరాయుడు.

C. సుబ్బరాజు కొమ్మిరి

C.P. సుబ్బరాయుడు మిట్టపల్లి

K. చొరిస్తుదాస్

C. సుబ్బరాయుడు

B. సుబ్బరాయుడు

B చిన్న వెంకటరాయుడు

C.C సుబ్బరాయుడు

Date
8.7.2016

2375

గౌరవనీయులైన AP కాలుష్య నియంత్రణ మండలి, తిరుపతి గారికి

రేణిగుంట మండలం పంచాయతీల పెద్దపెద్దల గ్రామసభకు చేసిన 'పైలట్ -

యుటిలిటీ సంస్థ' నుంచి (మాసుకొన్న) ఎసపి ...

ఉమ్మడి!

A.C.C. వారు సిమెంట్ ఫ్యాక్టరీకి కట్టడానికి ముందుగా

కాంపౌండు నిర్మించడం దానిని మేము వ్యతిరేకిస్తున్నాము. ఫ్యాక్టరీ కట్టడానికి

ముందు చుట్టూరా ఉన్న గ్రామాలకు చెరువు. ఫ్యాక్టరీ అయ్యాక ఇక్కడి గాలి నీటి

కాలుష్యం వలన ప్రజలకు మరిన్ని వ్యాధులు వస్తాయి. ప్రజల ఆరోగ్యాభివృద్ధి పెరుగుతుంది.

అయితే ముందుగా ప్రజలకు ప్రత్యామ్నాయ ఉద్యోగాలు ఇవ్వాలని కోరుతున్నాము.

సిమెంట్ ఫ్యాక్టరీ వలన ముందు ఉన్న ఉద్యోగాలను బట్టి ఉద్యోగ ఉపాధి కల్పించాలి.

మీ యుటిలిటీ సంస్థ ద్వారా ఉన్నత్తి చేయబడిన నీరు సామాన్యం కొనాలి.

రెండు సంవత్సరాల తరువాత CSR కింద డ్రైవింగ్ ట్రైనింగ్ ఇచ్చి లైసెన్సులు

ఇచ్చారు, ఉపాధి కల్పించాలని ఇవ్వలేదు. ఒక్కరే కాబట్టి ఉద్యోగం ఇవ్వలేదు.

ఉంటే కాదుంటే ఉపాధి కల్పించాలి, నష్ట పరిహారం ఇవ్వాలి ఫ్యాక్టరీ వస్తే

ఇంతలో ఉన్నత్తి కాలుష్యకేంద్రాలు పెరిగిపోయాయని భావిస్తున్నాము. పెరిగిపోకుండా

ఉండేలా చూసే అధికారులు పని చేయడంలేదు, మన చుట్టూ ఉన్నవారు ఆరోగ్యం

పాడవుతుంది. చిన్న చిన్న ఇబ్బందులకు ఉన్నత్తి సామాన్యం

చెయ్యాలి. చిన్న పిల్లలు ఉండే గ్రామాలకు ఉన్నత్తి CSR నిధులు సామాన్యం

చెయ్యాలి. సర్వే చేయడంలో కాలుష్యకేంద్రాలు నిర్మించాలి. ఉద్యోగాలు

ప్రజలకు ఇవ్వాలి ఉపాధి అవకాశం కల్పించాలి. గ్రామంలోని ... ...

వ్యక్తులకు ప్రాజెక్టు అయిపోయిన తరువాత కొనసాగించాలి.

PTO

గ్రామంలోని రాళ్లు పగిలిపోవ్వు, ఇండ్లకు బీటలు వారిన -
నిజామాబాద్ సమాచారం చెబుతున్నారు. ఇట్టి పరిస్థితులు గ్రామాలకు ప్రమాదకర
మైన అట్లాంటి లేని విస్ఫోటనాలు గ్రామంలో జరిగిన పరిస్థితుల దృష్టిలో ఉంచుకోవలసిందిగా
కోరుతున్నాము.

2- రంగాలను ACC వారి దృష్టికి తీసుకెళ్ళి కంటిన్యూస్
బారన్ తీసుకోవలసిందిగా 'పెద్దన్న యువజన సంఘం' కోరుతున్నది.

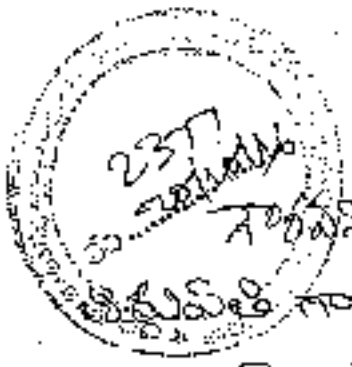
వినతి

పెద్దన్న యువజన సంఘం
సభ్యులు.

విస్ఫోటనాల గ్రామం.

1. P. Malpathi
2. K. Shakunthi.
3. M. Mercilin.
4. P. Laxminarayana
5.

7-9-16



వెల్లంకిలో మాదులు చిన్నమెంతుర్తి గ్రామం
పైనాని బాలాసుబ్రమణ్యం కుమారుడు సుబ్బయ్యగుప్త
ప్రాయుచున్నది

ప్రియ

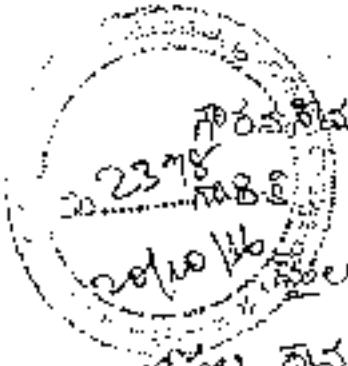
A.C.C సిమెంటు ప్రాజెక్టు కర్మాగారాన్ని మేము
రంగిరికి స్వాగతిస్తున్నాము మాకు పొలాంటి రిజిస్ట్రేషన్ లాభం
భారీగా ప్రాజెక్టు కర్మాగారాన్ని ప్రారంభించి కోటి మా
ప్రాంతంలో ఉద్యోగ అవకాశాలు బాగా పెరుగుతాయి.
గతంలో C.S.R ప్రాజెక్టు క్రింద నిరుద్యోగులకు
ట్రైనింగ్ ట్రైనింగ్ కంప్యూటర్ ట్రైనింగ్ ఇవ్వడంతో
పాటు ఫ్రీ ఎంబెడ్డ్ కోచింగ్ ఇచ్చినారు.
మీ మేనేజ్మెంట్ సంతృప్తి చేసినారు గత్యంతరం ఎన్నో
రోజులకాలాలు ఉంటారు.

నిరుద్యోగులైన మాకు ఉద్యోగం, వ్యాపారం ఉపాధ్యాయ
కి తప్పనిసరిగా కావలసినవి. నేను. C.S.R క్రింద ట్రైనింగ్
ట్రైనింగ్ కూడా తీసుకున్నాను. రెండు దస్తావేజులు

గట్టు
ఇ. కొండలు
చిన్నమెంతుర్తి

Date 7/9/16

To



గౌరవనీయులైన కాలుష్య నియంత్రణ మండలి అధికారులు

గోసల దొవరాజు కుమారుడు బాలరాజు మాము పల్లె

మనవి.

ఐయ్యా!

Acc cement ఫ్యాక్టరీ కట్టడాన్ని మేము వ్యతిరేకిస్తున్నాము. మాకు ఎటువంటి ఉపాధి అవకాశం లేదు. కనుక కుటుంబ పరంగా ఫ్యాక్టరీని కట్టనివ్వలేను. ఫ్యాక్టరీ కట్టిన తరువాత పొల్యూషన్ వల్ల శిక్షక పరిస్థితులు వస్తాయి. గతంలో ACC వారు ట్రైబు నిరుద్యోగులకు డ్రైవింగ్ ట్రైనింగ్, కంప్యూటర్ ట్రైనింగ్ ఇవ్వడం జరిగింది. కాని కొంత మందికి మాత్రం కోచింగ్‌కు ఇ నోటిఫికేషన్ చేయడం జరిగింది. కావున ఇలాంటి మోసపూరిత అవకాశాలు ఇవ్వొద్దు.

ఇందువలన నిరుద్యోగులైన మాకు ఉద్యోగం, ఆరోగ్యం అభివృద్ధికి సహాయం చేయగలరు. నేను ఇంకా ACC లో చేసే బాధ్యతకు కోచింగ్ ట్రైనింగ్ తీసుకొన్నాను. ఇందువలన తమరు దయచూపి మాకు ఉద్యోగం కల్పించిదరని కోరుచున్నాము.

7/9/16

ఇట్లు

తమ విధేయుడు

G. బాలరాజు

[Signature]

తిరుపతి

కరప జిల్లా పైలచరం మండలం చిన్నపెదపుతుల్లి గ్రామ రైతులు ప్రాసుకున్న విన్నపము.

1. టెప్పవేముల దావ తారి రోడ్డు వరకు అనుగా పాలవాగు పోయినట్లు ఇక పీడలు పోయిన భూమిని కొనుగోలు చేయాలి

2. ఎకరాకు ఇప్పుడు కావే భూమికి 15,00,000/- ఇస్తున్న భూమిని కొనుగోలు చేయాలి.

3. భూమిని కోల్పోయిన వారికి ఉద్యోగము చదువును బట్టి మరియు మధ్య గల వయస్సు గల వారికి ఉపాధి కల్పించవలెను.

4. భూమిని కోల్పోయిన వారికి స్థానికులకు వాహనాలు మరియు మిషనరీలు కాంట్రాక్ట్ పనులు స్థానికులకు ఇవ్వవలెను.

5. 50,000/- మరియు 1,25,000/- పోయిన భూమికి బాలకి 4,00,000/- రేటుతో కల్పించవలెను.

6. గ్రామంలో విద్య మరియు వైద్యము మరియు స్త్రీలకు పాడి పశువులు మరియు గొర్రెల పెంపకం ఆర్థిక సహాయం చేయవలెను

7. ఫ్యాక్టరీ మొదలు పెట్టేలగకు కొన్న భూములు మేమే చేయుకొనవలెయును.

8. ఏ.సి.సి సిమెంట్ ఫ్యాక్టరీ త్వరగా కట్టి మా కోరికలు తీర్చవలెను.

9. మేము ఏ.సి.సి ఫ్యాక్టరీకి రావడానికి స్వాగతిస్తున్నాము కాని ఎలాంటి అభ్యంతరము లేదు ఫ్యాక్టరీని త్వరగా కట్టవలెను

1

2. K. నాగేశ్వరరావు

3 K. Thippareddy

4 B. వీరనీలంరాజు

5 B. వెంకటేశ్వరరావు

6 V. వెంకటరమణ

7 [illegible]

ఇట్లు

గ్రామ రైతులు

[illegible]

K. Lakshmana Reddy

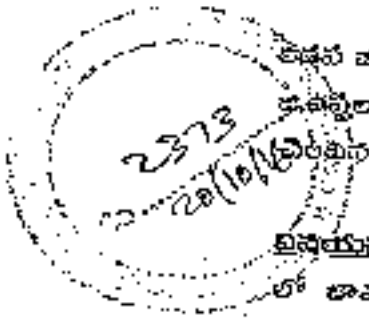
K. Laxmi Reddy

M. రాంబాబు —
B. మురళీకృష్ణ
పి. వెంకటేశ్వర్లు
G. వీరాంజనేయులు
A. చంద్రశేఖర్
K. శ్రీనివాసులు
M. కృష్ణయ్య
B. [illegible]

మిల్లలకు విజ్ఞప్తి న్యాయం చేయండి

తేది :- 20-12-2016

గౌరవనీయులు కడప జిల్లా కలెక్టరు గారికి,



కడప జిల్లా మైలవరం మండలం పరిధిలోని వల్లిరాల, గొల్లపల్లి, జి.ఉప్పలపాడు, చిన్న వెంకుర్ల, చిన్నవేములు, ఆరంగాలపల్లి గ్రామాలకు చెందిన రైతులు వ్రాసుకున్న అర్జి.

విషయము :- అనిగోనుచేనెండ్ సిమెంటు కంపెని (ఎసిసి) స్థాపన లో భాగం మరియు ఎ.సి.సి ద్వారా నివ్వనికియిన భూ సేకరణ నిర్వాసితులైన ఆరు గ్రామాల రైతుల దీనాందములను గురించు.

అయ్యా !

ఎసిసి అనే సంస్థ మైలవరం మండల పరిధిలోని గొల్లపల్లి, జి.ఉప్పలపాడు, చిన్నవేములు, ఆరంగాలపల్లి గ్రామాలలో తొలసారిగా 1996 సం॥లో ఎకరా 1 కి రూ. 50,000/- లతో రైతులతో ఒప్పందం కుదుర్చుకొని త్వరలో ఫ్యాక్టరీని ఏర్పాటు చేసి భూమి కోల్పోయిన ప్రతి రైతు కుటుంబానికి విద్యా అర్హత ఉన్నా, లేకున్నా, వయస్సు సంభంధం లేకుండా శాశ్వత ఉద్యోగ అవకాశం కల్పిస్తామని మాకు ఇచ్చి, సుమారు 810 ఎకరాల భూమిని కొనుగోలు చేసినారు. భూమి కోల్పోయిన ప్రతి రైతుకుంద పని చేసే కుంటలకు కూడా ఉపాధి కల్పిస్తాము అని చెప్పి ఉన్నారు. కాని ఫ్యాక్టరీ నిర్మాణం చేపట్టలేదు, ఉపాధి లేదు. దీనివలన 1998 సం॥నుండి 2006 వరకు ప్రతి సంవత్సర కంపెనీ ఫ్యాక్టరీ వారు తీసుకున్న భూములలో తంప చెట్లు పెరిగి అడవి పందులు, అడవి అవులు చేరుకొని పూర్తి భూమి మట్టు ఉన్న మిగిలిన భూములలో వేసిన పైరుకు కూడా తీరని నష్టం జరిగినది. ఈ విధముగా తొలి పది సంవత్సరాల కాలంలో కంపెని ద్వారా తమిగిసి పొందలేక పంటలను పండించుకోలేక రైతులు తీరని నష్టానికి గురి కావలసివచ్చింది. ఈ విషయాలను అనేక మార్లు కంపెనీ దృష్టికి తీసుకొని వెళ్లిగా ఫలితం లేకుగలేదు.

10 సంవత్సరములు తరువాత అనగా 2006 సం॥లో మా మండల పరిధిలోని వల్లిరాల, గొల్లపల్లి, జి.ఉప్పలపాడు, చెన్నవేములు, చిన్నవెంకుర్ల భూములు తొలుగోలు చేయుటకు వచ్చి ఎసిసి యాజమాన్యం వారు ఆర్.డి.ఓ ఆఫీసు వద్దకు ప్రజా ప్రతినిధులు సమక్షంలో పైన తెలిపిన గ్రామాల ప్రజలను పిలిపించి ఫ్యాక్టరీ నిర్మించుటకు ఇంకా భూములను అమ్మండి మీ భూములు ఇస్తే మేము త్వరలో ఫ్యాక్టరీ నిర్మిస్తాము అని నమ్మకలికి ఎకరం 1 కి రూ. 1,25,000/- లతో దాదాపు 1000 ఎకరాలు తొలుగోలు చేసినారు. ఆ రోజు కూడా విద్యా అర్హతలు మరియు వయస్సుతో సంభంధం లేకపోయినా భూమి కోల్పోయిన ప్రతి రైతు కుటుంబానికి శాశ్వత ఉద్యోగం కల్పిస్తామని చెప్పినారు. మరియు భూమి కోల్పోయిన ప్రతి రైతు క్రింద పనిచేసే కుంటలకు కూడా ఉపాధి కల్పిస్తాము అని కూడా చెప్పి ఉన్నారు. ఫ్యాక్టరీ నిర్మించగానుంచి యువకులు ఉద్యోగ అవకాశాలు కోల్పోయి ప్రస్తుతము వయస్సు మీరి మా పిల్లలకు కూడా ఉద్యోగ అవకాశాలు ఉంటాయో లేదో బాధలతో ఉన్నాము.

ఎసిసి వారు రైతులకు నాడు చెల్లించిన డబ్బులను కూడా ఆడపిల్లల పెళ్లిళ్లకు, పిల్లల చదువులకు ఖర్చు చేయగా రైతుల ఆర్థిక పరిస్థితి అగమ్య గోచరంగా మారింది. ఎసిసి కంపెనీ ఉపాధి కల్పించక పోవడం వలన రైతులమే కూలీగా మరి సిమెంట ఫ్రాంతాలకు వెళ్ళి కష్టపడ వలసి వచ్చినది. ఏసిసి యాజమాన్యం వారు మరలా 2010 సం॥లో వల్లిరాల గ్రామ పంచాయతీ ప్రభుత్వ అనుమతి మైదానంలో ఆర్.డి.ఓ, ఎం.ఆర్.ఓ ప్రజా ప్రతినిధులతో గ్రామ పంచాయితీ ప్రజల

సమక్షంలో వెంటనే ఫ్యాక్టరీ నిర్మిస్తామని ఎకరా 1 కి రూ. 4,00,000/- లతో రేటు నిర్ణయించి కొన్ని తొయ్యలు చేసి ఉన్నారు. ఆ సమయంలో అదే రోజు రేటు ప్రకటించగానే వెంటనే 1996, 2006 సం॥లో భూములు కోల్పోయిన భూ నిర్వాసితులు అందరము తలసి పి.సి.సి యాజమాన్యం వారిని మరియు ఆర్.డి.ఓ గారిని స్థానిక ప్రజాప్రతినిధుల సమక్షంలో మాకు ఫ్యాక్టరీ నిర్మించగానే సరిసమానమైన భూములు ఇవ్వాలని లేదా అందరికీ ఒకే రేటు మాకు కూడా ఇవ్వవలయునని రేటు విషయంలో అన్యాయం జరిగిందని అడగడం జరిగింది. ఆ మరునాటి రోజునే ఆరు గ్రామాల భూ నిర్వాసితుల రైతులు భూ నిర్వాసిత పోరాట కమిటీ ఏర్పాటు చేసుకోవడం జరిగింది.

మొదటి సారిగా 05-06-2010 సం॥లో భూ నిర్వాసితులము అందరము పెద్ద ఎత్తున ర్యాలీ ధర్నా జిల్లాబంద్‌లో చేసి ఆర్.డి.ఓ గారికి వినతి పత్రం సమర్పించిన తరువాత పి.సి.సి ఆఫీసు వద్దకు వెళ్ళి మేనేజరు మురళి కృష్ణ గారికి మా సమస్యల వినతి పత్రము సమర్పించడమైనది. వినతి పత్రంలో ఫ్యాక్టరీ తప్పనిసరిగా అదే రేటు రూ. 4,00,000/-ల ప్రకారం ఇవ్వవలసినది అని అడుగగా మురళి కృష్ణ గారు సమాధానంలో ఎక్కడైనా ఏ ఫ్యాక్టరీ వారైనా అధికారముగా సర్టిఫికేటు ఇచ్చినట్లైతే భూ పి.సి.సి వారు కూడా మీకు డబ్బులు చెల్లించడానికి సిద్ధంగా ఉంటుందని సమాధానం ఇచ్చినారు.

ఇందుకు సాక్ష్యాధారముగా 17-05-2010 సం॥న భాధితి సిమెంటు వారి ఎకరా 1 కి అధికారముగా అప్పటి రేటు ప్రకారం రూ. 2,00,000/-ల నష్టపరిహారం చెల్లించినారు. రైతులకు చెల్లించిన చెక్కుల జిరాక్స్ కాపీని చూపించడం జరిగినది. ఇందుకు సంబంధించిన ప్రచురితమైన వార్త పత్రికల నకలు కాపీని సమర్పించడమైనది. అప్పటికీ కూడా పి.సి.సి యాజమాన్యంలో చలనం లేనందున భూ నిర్వాసితులము అందరము ఇక ఇంకా భూమి లేకు బతక్కూడని స్థితిలో జీవనోపాధి కరువైనందున తీడుగా ఉన్న దట్టమైన కంపచెట్లు వాటిలతో కూడిన భూములను తయారు చేసుకొనుటకు సిద్ధపడినాము. తరువాత 07-08-2010 తారీఖున మేము భూ నిర్వాసితులము అయిన 6 గ్రామాల రైతులము అందరము కలిసి ఆర్.డి.ఓ కార్యాలయం ఎదుట 3 రోజుల పాటు రిలే నిరాహార దీక్ష చేయగా మా దీక్షకు అప్పటి ఆర్.డి.ఓ గారు మద్దతు తెలుపుతూ పి.సి.సి ప్రతినిధులతో సంప్రదింపులు జరిపి ఫ్యాక్టరీ నిర్మాణం చేసేవరకు ఎవరి భూములు వారు సాగు చేసుకొనుటకు అనుమతి ఇచ్చినారు. ఎకరా భూమిని సాగు చేయడానికి దానాపు రూ.40,000/- లు ఖర్చు చేయడం జరిగినది. అయినా భూములు లేకుగా ఉన్నందున సాగు చేసిన భూములు కూడా వంట పోనీనా కూడా పంట పండలేదు. ఈ విధముగా కూడా నష్టం జరిగినది. పి.సి.సి యాజమాన్యం వారు అక్రమముగా రైతులపై కేసులు పెట్టి ఈ విధముగా నష్టము జరిగించినారు

ఫ్యాక్టరీ నిర్మించనందున అసెంబ్లీ నియోజకవర్గ ఆనాటి ఇంచార్జులు గారికి, ఆర్.డి.ఓ గారికి పి.సి.సి. యాజమాన్యం వారికి భూ నిర్వాసితులము అంతా కలిసి వినతి పత్రములు ఇచ్చినాము.
మరియు ధర్నాలు, ర్యాలీలు, దీక్షలు, చేసినామనుకోగాని ఎవ్వరి స్పందన లేదు. అధికారులు ప్రభుత్వాలు మారినా మా బ్రతుకులు మాత్రము మారలేదు. ఇందుకు సాక్ష్యాధారాలు వినతిపత్రములతో జతపరుచుడమైనది. ఇదే సమయంలో అంగరా 2010 సం॥లో గొల్లపల్లి గ్రామ ప్రజలందరికీ పి.సి.సి కంపెనీ వారు తీరని నష్టం కలిగించారు. పి.సి.సి కంపెనీని త్వరగా పూర్తి చేస్తామని మీరు కంపెనీ నిర్మాణానికి సహకరించాలని, మీరు మీ గ్రామాన్ని ఖాళీ చేసి వేరొక చోట పునరావాసాన్ని ఏర్పాటు చేసుకోవాలని అందుకు ప్రతిఫలముగా ప్రతి ఇంటికి నష్టపరిహారం చెల్లిస్తామని నమ్మపలికి ఆర్ & ఆర్ పాలసీ సర్వే జరిపించి ప్రతి ఇంటిని కొలిపించి అప్పటి రేటు ప్రకారం రేటు వేయించడం జరిగినది.

పి.సి.సి వారు చెప్పిన మోసపూరిత మాటలను నమ్మిన గొల్లపల్లి గ్రామ ప్రజలందరము

గ్రామాన్ని వదలివెళ్ళి మా ఊరి పై భాగాన దక్షిణ దిక్కుగా ఇండ్లస్థలములు, వాడిపత్తి రోడ్డు ప్రక్కన కొండపైన ప్రజలందరూ అప్పులు చేసి కొత్తగా ఇండ్లను నిర్మించడం జరిగినది. ఇప్పటికి 8 సం॥లు గడిచి పోయినా మా గ్రామంలో ఉన్న ఇండ్లకు ఎలాంటి నష్టపరిహారం చెల్లించకపోవడం వల్ల కొత్త ఇళ్ళ నిర్మాణానికి అప్పుగా తెచ్చిన డబ్బులకు వడ్డీలు చెల్లించలేక మొత్తం గ్రామ ప్రజలంతా ఆర్థికముగా చితికిపోవడం జరిగినది. ఇపుడు మా పిల్లలకు చదివించుకోవడానికి కూడా ఆర్థిక స్థితిగతి లేక వారిని కూడా కూలీ పనులకు పంపించడం జరుగుతున్నది. ఇప్పటికి ఇట్లకు నష్టపరిహారం చెల్లించకపోవడం చాలా బాధాకరము. చాలా అన్యాయము. 2010 సం॥లోనే మా ఆరు గ్రామాల ప్రజలము ఏ.పి.ఐ.ఐ.సి కంపెనీ వారు మరొక నాలి మోసపూరిత మాటలతో త్వరలో ఫ్యాక్టరీలు నిర్మిస్తామని నమ్మపలికి ఎకరా భూమి రూ. 4,00,000/-లతో దాదాపు 700 ఎకరాలు తీసుకోని చేసి రైతులకు మోసగించి ఫ్యాక్టరీలు నిర్మాణం చేయలేదు.

ఏ.పి.ఐ.ఐ.సి కంపెనీ వారు ఫ్యాక్టరీలు ఏర్పాటు చేయుటకు వాతావరణ కాలుష్య నియంత్రణ మండలికి చేసుకున్న దరఖాస్తు మేరకు వాతావరణ కాలుష్య నియంత్రణ మండలి వారు 07-08-2016 సబ్లిక్ హియరింగ్ కొరకు పేపర్ ప్రకటన 29-07-2016 న జరుగుతుందని వివరం ఇవ్వడం జరిగినది. ఇప్పటికి అనేక సర్వాయములు ఏ.పి.ఐ.ఐ.సి ప్రతినిధుల ద్వారా మోసపోయిన 6 గ్రామాల రైతులము అంతా కలిసి ఏ.పి.ఐ.ఐ.సి వారు మోసపూరిత మాటలను నమ్మకూడదని భావించి ఆ కంపెనీకి చెందిన ఉన్నత స్థాయిలో ఉన్న అన్నలు ప్రతినిధులు మరియు ఉన్నతాధికారుల సమక్షంలో రైతుల డిమాండ్లను వ్రాత మూలకంగా ప్రాయించుకోవుటకు నిర్ణయించుకున్నాము. ఏ.పి.ఐ.ఐ.సి కంపెనీ వారికి భూములు కోల్పోయిన మా 6 గ్రామాల రైతులకు చెందిన డిమాండ్లను మీ ముందు ఉంచుతున్నాము. అందులో ప్రధానమైనవి.

1. గొల్లపల్లె గ్రామాన్ని 2010 సం॥లో ఆర & ఆర్ వారిచే సర్వే చేయించిన ప్రతి ఇంటిని తొలగించి వేయించి అప్పటి రేట్ల ప్రకారం నిర్ణయించినారు. ప్రస్తుత రేట్ల ప్రకారం నష్టపరిహారం చెల్లించాలి

2. 1998 సం॥లో ఎకరా 1 కి రూ. 50,000/-లు కొన్న భూములకు 2008 సం॥లో 1 కి రూ. 1,25,000/-ల ప్రకారం కొన్న భూములకు బద్దరాజు, గొల్లపల్లి, ఉప్పలపాడు, బెస్తవేములు, తంగేలపల్లి, చిన్నవెంతుర్ల గ్రామములు భూ నిర్వాసితులకు ప్రస్తుతము ఉన్న రేట్ల ప్రకారము నష్టపరిహారం చెల్లించాలి. లేని పక్షంలో మా భూములు మాకు తిరిగి అప్పచెప్పవలెను.

3. ఫ్యాక్టరీ నిర్మాణం జరిగితే 2016, 2017 సం॥లో నే నిర్మాణం చేపట్టాలి. అదే విధముగా ఎక్కువ భూమిని సేకరించిన గ్రామ పంచాయతీ పరిధిలోనే ఫ్యాక్టరీ నిర్మాణం జరగాలి. ఫ్యాక్టరీ ఎక్కడ నిర్మించేది ఇప్పుడే మాకు తెలియజేయాలి.

4. భూ నిర్వాసితుల సమస్యలను పరిష్కరించిన తరువాతనే కాలుష్య కాలుష్య సభ జరపాలి.

5. కేంద్ర ప్రభుత్వము, పార్లమెంటులో భూ సేకరణ చట్టము 2013 సం॥లో మార్పులుగా భూమి కోల్పోయిన భూ నిర్వాసితులకు ఆ కంపెనీ ఉత్పత్తి ఆదాయంలో 30% ఇవ్వాలి.

6. ఏ.పి.ఐ.ఐ.సి ఫ్యాక్టరీ నిర్మాణము భూమి పూజ చేసినప్పటి నుంచి పూర్తి నిర్మాణము చేసేవరకు భూమి కోల్పోయిన అన్ని గ్రామాల రైతులకు కంపెనీ నిర్మాణంలో కాంట్రాక్టు పనులను రైతుల ద్వారా కొనసాగించాలి. ఈ విషయంలో ఎలాంటి రాజకీయాలకు తావు లేకుండా రైతులకు న్యాయం చేయాలి.

7. అన్ని గ్రామాలను దత్తత తీసుకొని అభివృద్ధి చేయాలి. ప్రతి రైతు కుటుంబానికి శాశ్వత ఉద్యోగాలు ఇవ్వాలి. నిరక్షరాస్యులకు కూడా ఉపాధి కల్పించాలి.

8. 1996 సం॥లో రైతుల నుండి ఏ.పి.ఐ.ఐ.సి వారు భూములు తీసుకున్నప్పటి నుండి ఈ రోజు వరకు ప్రతి ఎకరానికి వచ్చే బోనస్ డబ్బులు కూడా ప్రతి రూపాయితో సహా తప్పకుండా అన్ని గ్రామాల రైతులకు నష్టపరిహారం చెల్లించాలి.

9. ఎక్కడైతే ఏ.పి.ఐ.ఐ.సి ఫ్యాక్టరీలు నిర్మిస్తారో ఆ ప్రాంత భూమి తప్ప దిగిలిన భూములలో మీరు క్వారీక

బగే వరకు రైతుల పొలాలు వేసుకొనే అవకాశం కల్పించాలి. ఈ విషయంలో రైతులకు ఎలాంటి ఆటంకాలు కల్పించరాదు.

10. ఏసిసి ఫ్యాక్టరీ వారు మైనింగ్ తీసే క్రమంలో బ్లాస్టింగు చేయటం వల్ల మా గ్రామాల ఇండ్లకు ఎలాంటి నష్టం జరగకుండా చూడాలి. అలా జరిగితే ప్రస్తుత రేటు ప్రకారము నష్ట పరిహారము తక్షణమే చెల్లించాలి.

11. ఏసిసి. ఫ్యాక్టరీ వారు నిర్మాణంలో గాని తరువాత కాని వాతావరణం కాలుష్యం లేకుండా నియంత్రణ చర్యలు చేసి ఫ్యాక్టరీకి ముందే చుట్టు నాటే కార్యక్రమం చేపట్టాలి.

12. మా గ్రామాలలో మౌలిక సదుపాయాలు అంటగా విద్యా, వైద్యా, నీరు, విద్యుత్తుతో పాటుశుభ్రం మొదలైన అంశాలతో బ్రాంచ్ను ఇస్తూ ఉచితంగా ఏర్పాటు చేయాలి. మరియు సిమెంటు రోడ్లు డ్రైనేజి, మంచినీటి వాటర్ ప్లాంట్లు ప్రతి గ్రామంలో ఏర్పాటు చేయాలి. భూములు కోల్పోయిన ప్రతి గ్రామంలోనుంచి కలిసి ఎల్.డి.సి నుండి జనరల్ మరియు మెడిసిన్ లాంటి ఉన్నత చదువులు మా గ్రామాల పిల్లలు చదువుకొనుటకు కార్పొరేటు స్థాయిలో ఉచితంగా విద్యను అందించేందుకు విద్యా సంస్థలను మా ప్రాంతంలోనే ఏర్పాటు చేయాలి.

13. ఏసిసి వారు ఫ్యాక్టరీ నిర్మాణము కొరకు కొనుగోలు చేసిన భూముల పక్కన ఉన్న రుణాలు భూములను, ఫ్యాక్టరీ పరిధిలో ఉన్న భూములను ప్రస్తుత రేట్ల ప్రకారం కొనుగోలు చేయాలి.

14. ముఖ్యముగా సొంత గ్రామాలను వదిలి పెట్టి కొత్త గ్రామాలకు వెళ్ళుటకు సిద్ధపడ్డ ఆ.ఉప్పలపాడు గ్రామాలలో అన్ని కనీస మౌలిక సదుపాయాలతో పాటు మూడు దేవాలయాలను నిర్మించాలి. సొంత గ్రామాలలో ఉన్న స్మశాన భూములను యధాతథిగా కొనసాగించాలి.

15.1998 సం॥ నుండి ఇప్పటి వరకు ఫ్యాక్టరీ నిర్మించినందున ఉద్యోగము లేక ఉపాధి కోల్పోయినందుకు అన్ని గ్రామాలలో భూ నిర్వాసిత రైతులకు అప్పటినుండి ప్రతి నెలకు రూ. 20,000/-లు ఇప్పటి వరకు చెల్లించాలి.

ముఖ్యముగా తెలియజేయు విషయము ఏమనగా అన్ని గ్రామాల భూనిర్వాసితుల అన్ని సమస్యలను పరిష్కరించిన పెంటనే ఫ్యాక్టరీ నిర్మించాలి. అంతే కాక సుమారు 20 సం॥ నుండి భాదపు 900 కుటుంబాల దగ్గరికి ఆవేదనను మీకు విన్నవించుకుంటున్నము. మా బాధలను పూర్తి మానసికంగా కనికరించి మా సమస్యలను అర్థంచేసుకొని సహృదయంతో రైతుల బాధను అర్థం చేసుకొని అన్ని గ్రామాల రైతులకు న్యాయం చేయుదురని శతకోటి వందనాలు తెలియజేయుచూ మా విన్నపాన్ని విన్నవించుకుంటున్నాము.

ఇట్లు,
ఏసీ.సి భూ నిర్వాసితులు

ANNEXURE-X PUBLIC HEARING DETAILS

1 [illegible] S/o [illegible]

2 [illegible] S/o [illegible]

3 [illegible] S/o [illegible]

4 [illegible] S/o [illegible]

[illegible] S/o [illegible]

[illegible] S/o [illegible]

[illegible] S/o [illegible]

[illegible] S/o [illegible]

[illegible] S/o [illegible]

[illegible] S/o [illegible]

[illegible] S/o [illegible]

[illegible] S/o [illegible]

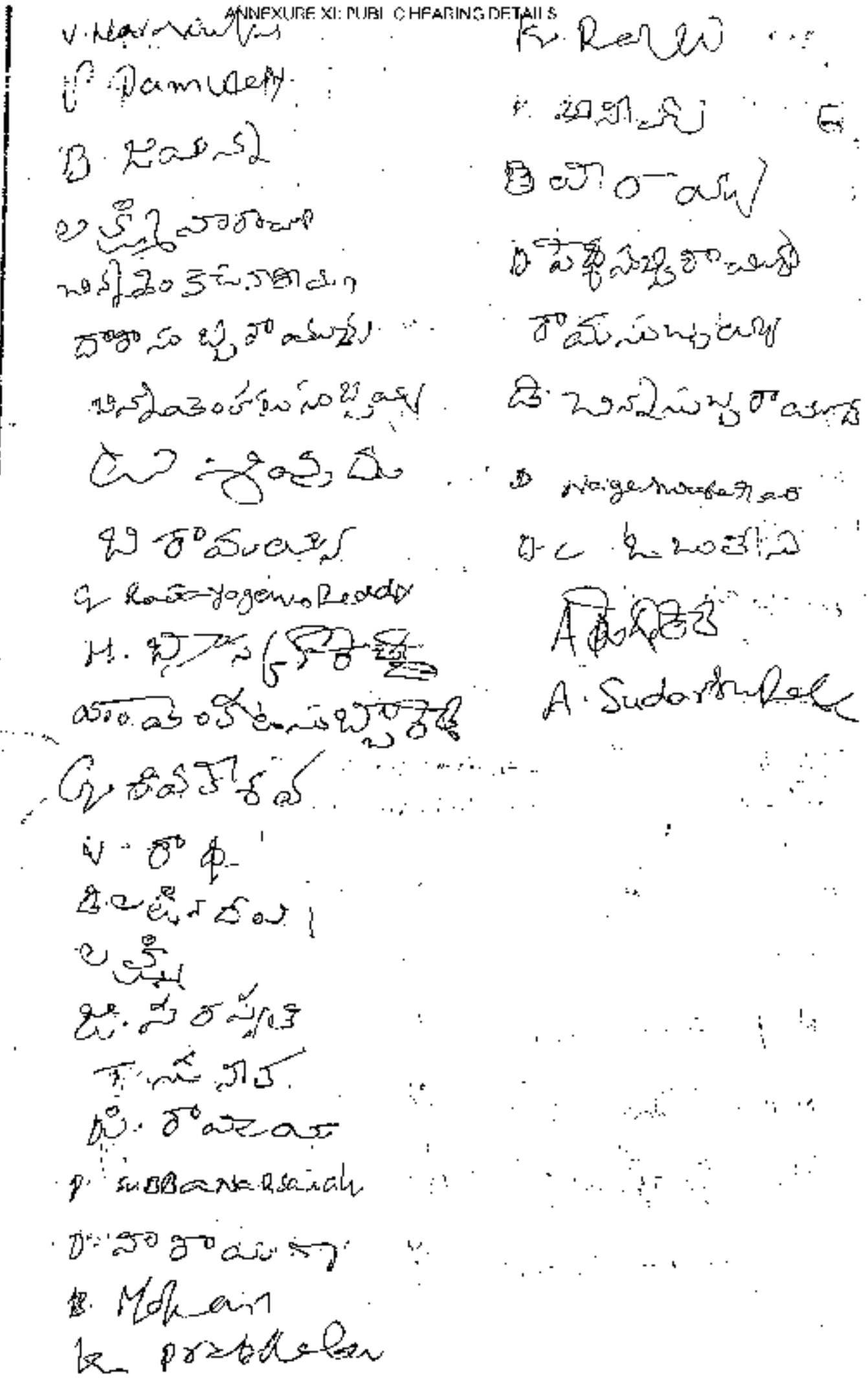
[illegible] S/o [illegible]

[illegible] S/o [illegible]

[illegible] S/o [illegible]

[illegible] S/o [illegible]

[illegible] S/o [illegible]



Date 7.9.2016

To

The Chairman
A.P.P.C.B Amaravathi

Through proper channel

Sir,

Sub: Objection to the proposed A.C.C cement project at Dachepalli

We have received notice regarding proposed A.C.C cement project at Dachepalli. We are strongly objecting the proposed project. We have our agricultural lands around 5 kms from the proposed project. We are cultivating paddy, groundnut, cotton and vegetables. Our livelihood depends on agriculture. If the project is established, it will affect our agriculture and livelihood. Cement dust will affect our crops and health. Our cattle will also affect. Our water resources will be polluted. Our children will suffer with respiratory problems. Our agricultural lands will be converted into barren lands. Our livelihood will be affected. Hence we request you to cancel the proposed project.

Yours faithfully

P. Venkaiah

K. Venkateswarlu

C. Ramesh

K. Venkateswarlu

Agriculture

K. Siva Reddy.
A. రామకృష్ణ
Y. భక్తిరెడ్డి
Y. Nagamalli.
D. Siddaiah.
G వెంకన్న
S Srinivasulu.
X రామానందప్రసాద్
K. Narayanamma
గంగిరెడ్డి
D గురుకరెడ్డి
P Venkatramudu
P రామాంజి
D వెంకటసుబ్బయ్య
D. చిన్నపుల్లయ్య
గంగాధరాంజనేయులు
M. గురివిరెడ్డి
T. శంకర్
C Govindu
M. లక్ష్మీరెడ్డి
K తులసీవెంకటరామయ్య
K తులసీవెంకటరామయ్య
K. [illegible]
T. Narasimha Kumar
C [illegible]
Jr. Pullaiah Reddy
Y నాగేశ్వరి

(5)

సౌరవిద్యుత్ APPCB అధికారులకు,

పైలటకం చుండలు వద్దిరాలశాఖ ప్రతిపాదన వివరములు

కడప.

ఐయ్యా,

A.C.C వారు నెలకొల్పుతున్న పైలట్ ప్రాజెక్టు వల్ల కాలుష్యం కలుగుతుందని సంబంధిత గ్రామస్థులు ఫిర్యాదు చేస్తున్నారు. కావున పరిశీలించి తగిన చర్యలు మేరకు. అందుకు అవసరమైన చర్యలను పరిశీలించి తగిన నివేదిక చేయగలరని మనవి.

1. పైలటు ప్రాజెక్టు చాల తక్కువ స్థలంలో ఫ్లాంటు ఫిర్యాదులు వచ్చినందున ఫ్లాంటు ప్రస్తుతం ఉన్న పరిస్థితిలో ఫ్లాంటు నడిపినట్లు అయితే ఎటువంటి ఇబ్బందులు వస్తాయో పరిశీలించి నివేదిక ఇవ్వగలరు.

2. ఎండిన చెత్తను కలిపేందుకు ప్రత్యామ్నాయం ఏమైనా ఉన్నట్లయితే ఆ వివరాలు తెలియజేయగలరు.

3. వర్షాకాలం ప్రారంభమవుతుంది అందువల్ల ఫ్లాంటు నడపడానికి ఏమైనా ఇబ్బందులు ఉన్నట్లయితే తెలియజేయగలరు.

4. ఎలాంటి కేటాయింపులు కోరుతున్నట్లయితే వాటి వివరాలు తెలియజేయగలరు.

పైనాలుగు అంశాలపై తగిన నివేదికలు సమర్పించవలసిందిగా కోరడమైనది.

ఇట్లు,

వర్షిరాలు ప్రాజెక్టు అధికారి.

K. Chandrasekhar Reddy.

గనుల శాఖ

S. Venkatasubbaiah

Rayalaseema

K. Ramakrishna Reddy

Mining Engineer

S. Neelakanta Reddy

P. Suryachandra Reddy.

T. Madhusudhan

M. Madhusudhan

M. Madhusudhan

S. Sudhakar Reddy

S. Sudarshan Naidu

M. Ramanjaneyulu

M. Venkata Siva Reddy

I.C. Engg.

30-10-2016
కలెక్టరేట్ కార్యాలయము

23వ [illegible] కొండవలస [illegible] జిల్లా [illegible] (కలెక్టరు) వారికి ఈ ఫిర్యాదు [illegible] తెలుగు [illegible] పూర్వక నివేదికలు

[illegible] మాగాణి [illegible] పంటలనష్టం [illegible] A.C.C యాజమాన్యం [illegible] పొగొట్టుకొని [illegible] తోపుగుంట [illegible] C.S.R నిధులు [illegible] మాగాణి [illegible] తొలగించి [illegible] మడులు [illegible] తాత్కాలిక [illegible] మళ్ళు [illegible] మిగిలిన [illegible] పంటనష్టం [illegible] C.S.R నిధులు [illegible] మాగాణి [illegible] అభివృద్ధి [illegible] చేయవలసినదిగా [illegible]

[illegible]

[illegible]

[

వినతిపత్రం

పరిసరాల ప్రజాభిప్రాయసేకరణ

గొల్లపల్లి గ్రామము

మైలవరం మండలం

కృష్ణా జిల్లా

తేదీ: 20-10-2016



విషయం :- H.C.C. సిమెంటు పరిశ్రమ మరియు దాని కోసం చేపట్టే భూసేకరణ మరియు కలిగే నష్టాలు.

(1) పరిశ్రమ కోసం గొల్లపల్లి మరియు చుట్టుపక్కల గ్రామాల పొలాలు మరియు పశువుల కొరకు ఏమి చూపించారు తాము.

(2) ఈ గొల్లపల్లి చుట్టుపక్కల గ్రామాలు పరిశ్రమ పరిధిలోకి పోతున్నాయని చుట్టుపక్కల గ్రామానికి పరిహారం వచ్చింది కాని గొల్లపల్లి గ్రామం దూరాన ఉందని పరిహారం ఇవ్వలేదు. గ్రామ రైతులు పడుతున్న ఇబ్బందులు వర్ణనాతీతం

(3) పశువులకు మేత నీరు లేక దుర్భరమైన పరిస్థితులు కల్పించి నాశనం చేస్తారు.

(4) రైతు భూములు పోతే ఆర్థికంగా చితికి పోతాం. కావున కాలుష్యం లేకుండా ప్రత్యామ్నాయ పరిశ్రమ పెట్టుకోవాలని కోరుతున్నాం.

(5) మా ... చుట్టూ సారవంతమైన భూములు

20-10-2015

Hyderabad
Date: 25-08-2016

To.
The Environmental Engineer,
Andhra Pradesh Pollution Control Board,
Regional Office,
S.T. Road,
TIRUPATHI -517 502

2361
19/10/16

Respected Sir,

Sub: Certain objections against the proposed establishment of Cement factory by M/s ACC Ltd., Gollapally, Vaddirala and G.Uppalapadu villages, Mylavaram Mandal, YSR District, A.P. – Request to withdraw the proposal of establishment in public interest – Reg.

****

We, the undersigned farmers of Gollapally village, Vaddirala Gram Panchayat, Dhannawada, Chinnaventurla, Bestavemula, Uppalapadu villages in Mylavaram mandal, YSR Kadapa district, humbly submit the following few lines for your kind consideration and favourable orders.

That Public opinion has been invited from Andhra Pradesh Pollution Control Board, Tirupathi for environmental objections in the local newspapers on 7-08-2016 for establishment of the proposed cement factory of M/s ACC Ltd., at Gollapally, Vaddirala and G.Uppalapadu villages, Mylavaram Mandal, YSR District.

We submit that we are all small farmers and agricultural labour belong to poor SC, ST and BC (i.e., Reddy, Balija, Yadava, Patra, Mangali, Mala, Madiga, Dudekula, Chakali, Boya, Christians etc.) communities living on cultivation, Cattle, Sheeps and Goats as our occupation.

Contd...2..

19/10/16

In the year 1996 the management of ACC Cement factory visited our Gollapally village and identified heavy deposits of limestone in the village and found the area suitable for establishment of a fullfledged cement factory and asked us to give our agricultural lands. They orally promised to provide employment to our families and also establish school to provide education to our children and hospital for medical facilities if we accepted to their proposal. In accordance with their proposal we, the farmers sold our lands at a cost of Rs. 50,000/- per acre to them in the year 1995. But as per their proposal, they did not built the factory.

Again after 11 years i.e., in the year 2007 they came and wanted to us to give remaining lands also promising to give all the help and assistance as assure in the past. Believing the words of the management we had sold our remaining lands in the year 2007 at a consideration of Rs. 1,25,000/-.

Similarly, during 2009-2010 they asked us to vacate our residential houses in our village promising to pay money for each of the houses in the entire village. Believing the words of ACC Cement management we vacated all our houses and moved our families to different location to facilitate them to take our village for the factory. But as per their assurance, they did not pay any amount in respect of the lands or the houses that we surrendered to them to implement their proposal so far. In this matter since 1996 to 2016, the management of ACC Cement, by continuously making their oral assurances of providing financial benefits to us, have not paid anything and deceiving us for the last 20 years in the name of false promises and caused huge loss to us.

Contd....3..

All the lands that were surrendered by us to them have become barren lands filled with heavy shrubs and bushes and they cannot be utilized for cultivation. In these circumstances, all our villagers have come to a decision for our livelihood of our families and worked hard and cleared the shrubs and bushes that were grown in the said lands to bring them into cultivable lands by spending Rs. 50,000/- to Rs. 75,000/- for each acre. Now the management are again saying to give up our lands for their proposed factory. With the fake promises of the management for the last 20 years, we could not cultivate our lands properly and not provided proper education to our children. In this process, we have faced lot of loss financially and educationally became backward. Taking the help of our illiteracy to their benefit, they have been making false promises and continuously deceiving us and our next generation children also.

We further submit that a cement factory is existing near our villages. When they conducted blasts to obtain limestone most of our houses in our area were got damaged and we are suffering a lot due to the heavy smoke and dust emitted from the factory, which also adversely affected to our lands and they became not useful for cultivation.

In the light of the above facts, if the ACC Cement management builds their factory, our lands and houses will get damaged in huge manner when they conduct blasts to obtain limestone in our area and the emissions of dust and smoke will definitely damage our health and the water also gets polluted, which will cause damage to our cattle and domestic animals apart from heavy noise pollution.

Contd....4..

In view of the all the above facts, we humbly request the authorities of Andhra Pradesh Pollution Control Board, Tirupathi to take appropriate action to fulfill all the promises that were made by the Management of M/s ACC Cement i.e., (1) To provide compensation to the farmers to all the lands surrendered by us in the year 1996 and 2007 as per the present market rates. (2) Payment of the expenses incurred (Rs. 70,000/- per acre) by us for clearing of bushes and shrubs in our lands as explained above. (3) To provide 100% employment guarantee to the children of the farmers, who lost their lands under the proposed factory.

We further request the POB authorities to provide us the assurance in the form of written agreement from the ACC Cement Management to enable us to relieve our families from our financial crisis and to protect the future of our children, for which act of kindness we shall be ever grateful to you.

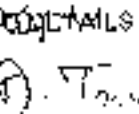
If any of the above promises are not fulfilled, kindly take necessary action to cancel the mining permissions of the ACC Cement and also to cancel the grant of permission for establishment of their factory in our village area.

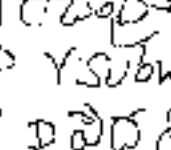
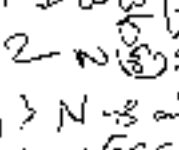
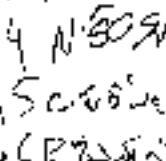
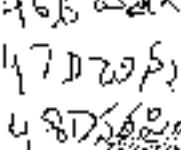
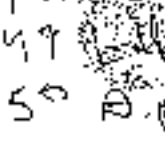
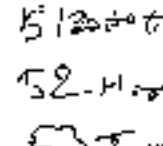
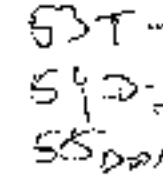
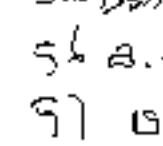
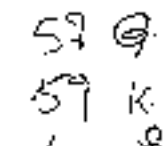
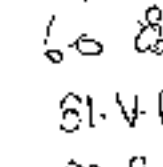
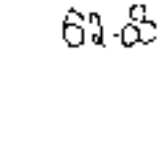
Thanking you Sir,

Yours faithfully,

Villagers of Gollapally village,
Vaddirala Gram Panchayat,
Dharmawada, Chinnaventuta,
Bestavemula, Uppalapadu villages in
Mylavaram mandal,
YSR Kadapa district

1 P. Lakshmi narayana Gollapalli
2 G. Chandra Sekhar Gollapalli (V)
3 B. [illegible]
4 D. Rama mohan





Rural Environment Education and Health Awareness Society

Regd.No: 1702/2007



TO,
THE ENVIRONMENTAL ENGINEER,
Thirupathi Regional office ,
Chittoor Dist. APPCB.

Gollapalli,
Date: 20.10.2016.

RESPECTED SIR,

SUB:- review of public hearing of M/s ACC Ltd. Proposed Limestone Mine 7.0 MTPA with 57.30 crores in 997.08 Ha Man power of 62 at Dhannawada,Chinna venturla,Vadderala, Besta vemula,Gollapalli & G.Uppalapadu (V) Mylavaram (Mdl) YSR Kadapa (Dist) A.P.

I, P.Madhubabu Environment Voulenteer (REEHAS, Rural Environment Education and Health Awareness Society) R/O of Hyderabad, Most Respectfully Submit That:

In this regard as a Environment Volunteer I am giving few suggestions to the proponent
So Please Kindly Consider the Below Points ,

All Environmetallsts are opposing the industries but I am supporting the industries why because, in the time of Independece our country population 30 crores but now it increased to 130 crores, every year 50 lakhs Graduates coming for employment but Government giving employment 5 lakhs people only, others are getting job opportunites in private sector so we must welcome to the industries.

Especially after Sidercation of State of Andhra Pradesh Industries must, that also cement industry essential for construct of new Capital city and all Govt offices, for development of residential houses. Hon'ble Chief Minister Mr. N.Chandrababu naidu also inviting to establish Industries.

All are discussing about pollution ... pollution... but main pollution of our country is unemployment is most dangerous pollution to all

1. The Proponent of M/S ACC Cement Ltd Proposed lime stone Mine 7.0 MTPA with 57.30 Crores Man power of 62 in 997.08 Ha at Golla palli, Dhannawada, Chinna venturla, Vadderala, Besta vemula & G.Uppalapadu(V) Myalavaram (Mdl) YSR Kadapa(Dist) A.P.

2. The Environment consultant Vimta Labs Pvt.Ltd. of this project study area coverd 10 k.m radius around the proposed Project area, they studied locations of air ambipent quality , noise levels recorded , water samples collected,soil samples also collected these all are in norms of CPCB. This is satisfactory.

3. The consultant please take health states of village people in 10 km radius around is must, why because it is very useful in future.

1 7-495/9, Musheerabad, Hyderabad-500 020.
Email : madhuhanumandla@gmail.com, reehas76@gmail.com
Cell : 9908612657



Rural Environment Education and Health Awareness Society

Rege. No: 1702/2007



4. For operation of the project water requirement is 60 m3/day . It is taking from ground water source, in summer season chance to down fall water level so please arrange rain water harvesting system.

5. Please utilise waste water to plantation, sprinkling on roads. It controls Dust Pollution when your vehicles transport time.

6. Your taking 33% for plantation for Green belt is good it is CPCB norms, but I requesting to improve 50% if any possible.

7. You take avenue plantation to near villages, road side it is useful to save environment. Plant fruit baring and medicinal value trees.

8. Please give employment opportunities to local people first.

9. Give medical facilities to near villages, Conduct Medical Camps Regularly.

10. Give drinking water facility to near villages.

11. Give good education to near village children

12. Develop all main roads and street roads of near villages.

13. The project will contribute additional revenue to the State & Central Govt.

I am recommending authorities of pollution control panel of MOEF, for grant a permission to the above proponent.

Thanking you.

Yours faithfully,

H Madhubabu (REEHAS, Rural Environment Education and Health Awareness Society)

1) copy to R.O Thirupathi, APPCB.
2) copy to Project Proponent M/s ACC Ltd.
3)copy to Project Consultant Vimta Labs Ltd.

1-7-485/9, Musheerabad, Hyderabad-500 020.
Email : madhuhanumandla@gmail.com, reehas78@gmail.com
Cell : 9908612657

Rural Environment Education and Health Awareness Society

Regd. No: 1702/2007

2368
29/10/16

TO,
THE ENVIRONMENTAL ENGINEER,
Thirupathi Regional office ,
Chittoor Dist. APPCB.

Gollapalli,
Date: 20.10.2016.

RESPECTED SIR,

SUB:- review of public hearing of M/s ACC Ltd.- Proposing Cement Plant 5 MTPA Clinker, 8 MTPA Cement, 100 MW Captive Power Plant along with Captive Limestone Mine 7.0 MTPA with 7100 crores in 279.028 Ha Man power of 499 at Gollapalli (V) Mylavaram (Mdl) YSR Kadapa(Dist) A.P.

I, H.Madhubabu Environment Vocienteer (REEHAS, Rural Environment Education and Health Awareness Society) R/O of Hyderabad, Most Respectfully Submit That:

In this regard as a Environment Volunteer I'am giving few suggestions to the proponent So Please Kindly Consider the Below Points .

All Environmentalists are opposing the industries but I am supporting the Industries why because, in the time of Independece our country population 30 crores but now it increased to 110 crores, every year 50 lakhs Graduates coming for Employment but Government giving employment 5 lakhs people only, others are getting job opportunities in private sector so we must welcome to the industries.

Especially after Bifurcation of State of Andhra Pradesh Industries must, that also cement industry essential for construct of new Capital city and all Govt offices, for development of residential houses. Hon'ble Chief Minister Mr. N.Chandrababu naidu also inviting to establish industries.

All are discussing about pollution ... pollution... but main pollution of our country is unemployment is most dangerous pollution to all.

1. The Proponent of M/S ACC Cement Ltd Proposing Cement Plant Clinker 5 MTPA, Cement 8 MTPA, Captive power 100 MW along with Captive lime stone 7.0 MTPA with 7100 Crores Man power of 499 in 279.028 Ha at Gollapalli(V) Myalavaram (Mdl) YSR Kadapa(Dist) A.P.

2. The Environment consultant Vimta Labs Pvt.Ltd. of this project study area coverd 10 k.m radius around the proposed Project area, they studied locations of air ambient quality , noise levels recorded , water samples collected,soil samples also collected those all are in norms of CPCB. This is satisfactory.

3. The consultant please take health states of village people in 10 km radius around is must, why because it is very useful in future.

29/10/16

[redacted]
1-7-496/9, Musheerabad, Hyderabad-500 020,
Email : madhusanumandla@gmail.com, reehas78@gmail.com
Cell : 9908612657



Rural Environment Education and Health Awareness Society

Regd. No: 1702/2007



4. For operation of the project water requirement is 7750 m3/day. It is taking from ground water source, in summer season chance to down fall water level so please arrange rain water harvesting system.

5. Please utilise waste water to plantation, sprinkling on roads. It controls Dust Pollution when your vehicles transport time.

6. Your taking 33% (90.75 Ha) for plantation for Green belt is good it is CPCB norms, but I requesting to Improve 50% if any possible.

7. You take avenue plantation to near villages, road side it is useful to save environment Plant fruit bearing and medicinal value trees.

8. Please give employment opportunities to local people first.

9. Give medical facilities to near villages, Conduct Medical Camps Regularly.

10. Give drinking water facility to near villages.

11. Give good education to near village children.

12. Develop all main roads and street roads of near villages.

13. The project will contribute additional revenue to the State & Central Govt.

I am recommending authorities of pollution control panel of MOEF, for grant a permission to the above proponent.

Thanking you.

Yours faithfully,

N.Madhubabu (REEHAS, Rural Environment Education and Health Awareness Society)

1) copy to R.O Thirupathi, APPCB.
2) copy to Project Proponent M/s ACC Ltd.
3)copy to Project Consultant Vimta Labs Ltd.

1-7-495/0, Musheerabad, Hyderabad-500 020.
Email : madhuhanumandla@gmail.com, reehas78@gmail.com
Cell : 9908612657

గౌరవనీయులైన ఆంధ్రప్రదేశ్ కాలుష్య నియంత్రణ మండలి గారికి,

తిరుపతి

కడప జిల్లా మైలవరం మండలం చిన్నఅణుతుర్ల గ్రామ రైతులు ధ్రువీకరించిన విన్నపము.

1. ఐస్తావేముల రావ తాల్ రోడ్డు వరకు అనగా పాలవాగు పోయినట్టు ఇక మీదట పోయిన భూమిని కొనుగోలు చేయాలి

2. ఎకరాకు ఇప్పుడు కొనే భూమికి 15,00,000/- వున్న భూమిని కొనుగోలు చేయాలి.

3. భూమిని కోల్పోయిన వారికి ఉద్యోగము చదువును బట్టి మరియు మధ్య గల వయస్సు గల వారికి ఉపాధి కల్పించవలెను.

4. భూమిని కోల్పోయిన వారికి స్థానికులకు దొహనాలు మరియు మిషనరీలు కాంట్రాక్ట్ పనులు స్థానికులకు ఇవ్వవలెను.

5. 50,000/- మరియు 1,25,000/- పోయిన భూమికి వారికి 4,00,000/- రేటుతో కల్పించవలెను.

6. గ్రామంలో విద్య మరియు వైద్యము మరుగు స్త్రీలకు పాడి పశువులు మరియు గొర్రెలు పెంపకం ఆర్థిక సహాయం చేయవలెను.

7. ఫ్యాక్టరీ మొదలు పెట్టేవరకు కొన్న భూములు మేమే వేయుకొనవలెయును.

8. ఏ.సి.సి సిమెంట్ ఫ్యాక్టరీ త్వరగా కట్టి మా కోరికలు తీర్చవలెను.

9. మేము ఏ.సి.సి ఫ్యాక్టరీకి రావడానికి స్వాగతిస్తున్నాము. మాకు ఎలాంటి అభ్యంతరము లేదు ఫ్యాక్టరీని తొందరగా కట్టవలెను.

ఇట్లు

గ్రామ రైతులు

K. Thippa Reddy

Ex Sarpanch

20/8/16

అక్టోబరు 2019 వ తేదీన జరుగనున్న ప్రజాభిప్రాయ సేకరణ సందర్భంగా పీసం లిమిటెడ్ నూతన సిమెంటు కర్మాగార ప్రతిపాదనపై తయారు చేసిన నివేదిక లో మీ అందోళన కలిగిస్తున్న విషయాలపై కొన్ని ప్రశ్నలు. వీటికి కంపెనీ వారు నియమానుసారంగా రాత పూర్వకంగా సమాధానాలు చెప్పాలని కోరుతున్నాము.

1. సిమెంటు ప్లాంట్లు అతి కాలుష్యకారక పరిశ్రమలు. పరిసర ప్రజల ఆరోగ్యంపై పడే ప్రభావం గురించి నివేదికలో ఏమీ చెప్పలేదు. ఎందువల్ల? సున్నపురాయి గాలి పీల్చుకు జీవిస్తున్న మాకు యీ శ్వాసలు వల్ల కలుషిత గాలి పీల్చుతూ బతక వలసిన పరిస్థితి ఏర్పడుతుంది. ప్రపంచ ఆరోగ్య సంస్థ సంగ్రహించిన వివరాల ప్రకారం ప్రపంచంలో ఏటా 70 లక్షల మంది ఘుంధుగా చనిపోతున్నారని చెబుతున్నది. భూమ్మీ భూతి కాలుష్యాన్ని పాన్స్ కాన్సర్ పదార్థ జాబితాలో చేర్చింది ప్రపంచ ఆరోగ్య సంస్థ. దీని మధ్యనే హార్వర్డ్ విశ్వ విద్యాలయం రోజువారీ పాదే రసాయనాలు క్రిమి సంహారకాలూ, చర్మ సౌందర్య సాధకాలూ, పొగ్మూలూ, కల్తుష చారకాలూ (డీటర్జెంట్లు) వల్ల అమెరికా ప్రజల ఆరోగ్యంపై ఏటా 340లు కోట్ల డాలర్ల భారం పడుతోందని పరిశోధించి చెప్పింది. అలాగే బొగ్గుతో విద్యుదుత్పత్తి వల్ల ఆరోగ్య నష్టంగా అమెరికా ప్రజలపై 34500 కోట్ల డాలర్ల ఆర్థిక భారం పడుతోందనీ లక్ష్యం స్పష్టమే చెప్పింది. థర్మల్ విద్యుత్ కేంద్రాలూ, సిమెంటు ఫ్యాక్టరీలూ కాలుష్య పరంగా యిరుమిండు ఒకే స్థాయిలో వుంటాయి. మీలాభాల కోసం నడుపుకునే యీ వ్యవహారం వల్ల మీపై పడే ఆర్థిక భారానికి మీరు బాధ్యత తీసుకోవాలి. మీ సమాధానం ఏమిటి?

2. ఇది వర్షాధారిత జీవన ప్రాంతం. తరతరాలుగా భూగర్భ జలాలమీ ఆధారపడి జీవనం సాగిస్తున్నాము. మీరు సిమెంటు ఉత్పత్తికీ, విద్యుదుత్పత్తికీ కలిపి 7750 ఘనపు మీటర్ల నీటిని రోజూ భూగర్భ జలాలనుండి తీసుకుంటామని నివేదికలో తెలిపారు. ఇ రోజులో వాడే నీటితో 6 ఎకరాల వరి పండించ వచ్చు. మా ఉన్నతి మనుగడ ఘోరు ఆర్థిక, రాజకీయ బలంతో భాగేసుకుంటే చూసు రక్షణది? మీరు ఉన్నతి సహజ వనరులతో వ్యాపారం చేసుకునేందుకు, అభివృద్ధిమీ మిషతో మా జీవించే హక్కును హరిస్తారా?

3. నిజంగా అంత నీరు కావాలా? మీ కంపెనీ నివేదికలలో ఉన్న క్లింకర్ ఉత్పత్తికి కేవలం 60 లీటర్ల నీరు సరిపోతుందనీ వాడుతున్నట్లు చెప్పుకుంటూ, మరి యీ ప్లాంటులో రోజుకి 480 లీటర్లెందుకు చూపుతున్నారు? ఇది మోసం కాదా? అనేకమి అధికార వ్యవస్థతో కుమ్మక్కై మా జీవనాధార వనరు దోచుకుంటారా?

4. ప్లాంటు విద్యుదవసరాల కొరకు నిర్మించనున్న 100 మెగావాట్ల బొగ్గు ఆధారిత విద్యుత్ కేంద్రానికి రోజుకి 900 ఘనపు మీటర్ల నీరు కావాలని చూపారు. దాని ప్రతిపాదిక వివరాలు తెలియ జేయండి. గాలితో నీటి ఆవిరిని ద్రవీకరించే పద్ధతి వాడతామని చెబుతూ అంత నీరు కావాలని ఎందుకు చూపారో వివరించాలి.

5. మన దేశంలో పర్యావరణ ప్రభావ అంచనా నివేదికలు హాస్యాస్పదంగా తయారయ్యాయి. ఎనిమి అంతర్జాతీయ కంపెనీ లపైన్ హాల్సిమ్ లో భాగమైనా అలాంటి దేశాలతో పోలిస్తే కనీస ప్రజాస్వామిక చిలువలూ, అంతర్జాతీయ పర్యావరణ ఒప్పందాల సూచ్ తోనూ తప్పుడంకెలతో నివేదికలు నిలవడం ఎలా సమర్థించు కుంటారు?

6. పవర్ ప్లాంటులో వెలువడే వాయువులతో సైలికి ఆక్సైడ్ మోతాదు 350 మిల్లీగ్రాములు ఘనపు మీటరుకి గా తీసుకున్నారు. ఏ ప్రమాణాల ఆధారంగా ఆ సంఖ్య తీసుకున్నారు. 2017 నుండి అమలయ్యే ప్రమాణాల కేవలం 100 మాత్రమే. పాత సాంకేతికతతో నూతన ప్రమాణాలు ఎలా సాధిస్తారు?

7. ఆంధ్ర ప్రదేశ్ లో విద్యుత్ ఉండగా, పొరుగు దేశంపై భారత సంతకం చేసిన తరువాత కచ్చిత ఉద్యోగాలను పెంచే, విధాన పరంగా భారత విరుద్ధంగా ఉన్న సబ్ క్రిటికల్ సాంకేతికతతో పవర్ ప్లాంటు నిర్మించడం ఎంతవరకు సామాజిక బాధ్యత?

8. ఎందుకని 2 మిలియన్ టన్నుల స్థాయిలో బొగ్గు దాదే పరిశ్రమకు తొగ్గ మంత్రిత్వ శాఖ నుంచి అనుమతులు కావాలి. బొగ్గు లభ్యతకు అంగీకార పత్రం వుండాలి. ఇవేవీ ఉన్నట్లు చూపలేదు. నీటి అనుమతి లేదు. జనసరళమైన అనుమతులు లేకుండా పర్యావరణ అనుమతికి తొందర పడడంలో అంతర్యం ఏమిటి?

9. ఎగరు కాలుష్య పెరుగుదలపై ఎన్నిసార్లు అంకెలు అనుమానాస్పదంగా నమ్మశక్యంగా లేవు. స్వతంత్ర పరిశీలన అవసరంగా భావిస్తున్నాము.

10. వాహనాల ద్వారా పోకడ వల్ల లేదే దూళి. దగ్గరలోనే వున్న సున్నపురాయి గని నుండి వెలువడే దూళి కలిసి కాలుష్యం జనావాస ప్రాంతాలకి చేరుతుంది. ప్రపంచ ఆరోగ్య సంస్థ నిర్ణయించిన మోతాదులు దాటుతుంది. భారత నియమాలు పరిశ్రమలకు అనుకూలంగా వున్నాయి. అవి మానవ ఆరోగ్య హాని స్థాయి ప్రాతిపదికను వెద్య శాస్త్ర పరిశోధనల ఆధారంగా నిర్ణయించినవి కావు. ఏమైందో స్థానిక పరిసరాలలో కాలం మారి బతికిన వారు కానున్నారో కాలమే చెబుతుంది. మీ గాలిలో విషమయం వేసే ముందు మీరు ఆరోగ్య రక్షణ కల్పిస్తుంది?

11. వైట్రిక్ ఆక్సైడ్ వదులలయ్యే పరిశ్రమల చుట్టూ వాయు రవాయన చర్యల వల్ల ఓజోను పొరలు పెరుగుతుంది. అవి ప్రజారోగ్యానికి, పంటలకూ హానికారి. పంటలకు జరిగే హానిని బట్టి నివేదిక ప్రస్తావించలేదు. ఓజోనుతో పంటలకు జరిగే నష్టంపై ఎన్నో పరిశోధనలూ, సాహిత్యాల నివేదికలూ వున్నాయి. మీకు తెలుసు, మీకు వివిధ శాఖల నిపుణులు. చాలినవారు భాధ్యత మీదేనా?

12. పరిశ్రమలు బట్టీ (కోలగే కిల్న్) లో వెలువడే రసాయన వ్యర్థాలను దహించే ప్రక్రియను కాలుష్య నియంత్రణ పరంపరగా ప్రోత్సహిస్తోంది. ఉత్పత్తి ప్రారంభమైన తరువాత యీ ప్లాంటులోనూ ఆ పని చేస్తే అలోనన ఏ స్పష్టంగా నివేదికలో లేదు. అది చేయడితే మీకు జరిగే హాని స్థాయి పెరుగుతుంది. కడప జిల్లాలోనే ఇతర సిమెంటు ప్లాంట్లు చేస్తున్న రసాయన వ్యర్థాల దహనంతో ప్రజలు ఇబ్బందులు పడుతున్నారు వారి గోప వినిపించుకునే నాథే లేరు. అధికారులకు దృష్టి, శ్రేయ లోపం ఎక్కువగా వుంది.

13. సెప్టెంబరు, 2016 లో ప్రకటించిన ప్రజాభిప్రాయ సేకరణకు ప్రజలకు పర్యావరణ ప్రభావ అంచనా నివేదిక ప్రవేశపెట్టిన పంచాయితీలలో అందుబాటులో పెట్ట లేదు. ఇప్పుడేమో రకరకాల నిర్బంధ నిబంధనలు ప్రారంభించారు. ఇది ప్రజాస్వామ్యాన్ని, పత్రికాస్వాతంత్ర్యాన్ని సమితి విస్మరించడాన్ని అవహేళన చేయడం. మొదట్లోనే ఇంత దౌర్జన్యానికి ఒడిగట్టే ఒక బిహేళ జాతి కంపెనీ ఇక ముందెన్ని అఘాయిత్యాలకు దిగకుండా ఉండదని మనమందరం కలసి మేల్కొంది. మీకు భారత రాజ్యాంగం కల్పించిన ప్రాథమిక హక్కులన్నా మీగులుతాయా? మీ వ్యాపార ప్రయోజనాల కోసం ప్రమాదాలను జానిసత్వంలోకి నెట్టుతారా?

14. సిమెంటు బట్టీ దూళి (సి కె డి) ప్రమాదకరమైనది. అందులో విష భార లోహాలుంటాయి. ఐందుకా మానవ వ్యర్థాలను దహించే ప్లాంట్ల నుండి వెలువడే సి కె డి లో భారలోహాల మోతాదు తొగ్గ ఉండనుంది వాటి బట్టీల నుండి వెలువడే సికెడి కంటే 5 నుండి 9 రెట్లు ఎక్కువగా ప్రమాదాయని అమెరికా పర్యావరణ రక్షణ సంస్థ అధ్యయనాలు మాదాయి. యీ దూళిని ఏంచేస్తారనే వివరాలు ఇవ్వి నివేదికలో స్పష్టంగా లేవు. వివరాలివ్వండి.

15. కాలుష్యం తగ్గించడానికి హరితహారాన్ని ప్లాంటు చుట్టూ పెంచాము లేక్కాపని ప్రతిపాదించారు. కనీసం పుట మీటర్ల వెడల్పున్న హరిత వనం మాత్రమే కాలుష్యాన్ని గణనీయంగా తగ్గించగలదని పరిశోధకులు చెప్పుతున్నారు. కేవలం పర్యావరణ పరిరక్షణ చట్ట నియమాలను పాటించడం కోసమే 33 శాతం హరితవనం నాటితే, అదిన్నా అప్పుడప్పుడూ భూమిలున్న చోట నాటుతూ పోతే దాని ప్రయోజనం శూన్యం. శాస్త్రీయంగా రూపకల్పన చేసి మొక్కలు నాటాలి. ఏ ప్రాంతి పడికన గ్రీన్ బెల్ట్ ప్లాను నిర్ధారించారు? కాలుష్య క్షీణత గుణకం ఎంత? వివరాలివ్వండి.

తేదీ: 28/10/2016

(3)

మహాగౌరవ

గౌరవనీయులైన జిల్లా [illegible] గారికి [illegible] గ్రామం

నివాసము:

విన్నపం:

కృష్ణపట్నం పోర్టు వద్ద [illegible] సిమెంట్ కర్మాగారము నిర్మించు నిమిత్తం మా [illegible] ఎంతటి దిగ్భ్రాంతికరము [illegible] మీరు మా [illegible] సిమెంట్ కర్మాగారము నిర్మించ వలసినంతగా [illegible] మాకు ఉద్యోగము ఇచ్చే పక్షము [illegible] వీరు ఉద్యోగాలను ఇవ్వక [illegible] ఇవ్వగలిగిన [illegible] మీరు [illegible] ఇవ్వవలసినదిగా కోరుచున్నాము.

28/10/16

[illegible]

1. H. Hathi Seshagiri
2. S. Sowrirajan Ramireddy
3. M. N. [illegible]
4. V. [illegible]
5. M. [illegible]
6. S. [illegible]
7. S. [illegible]
8. S. P. [illegible]
9. S. Rama Subbalakshmi Reddy
10. S. Venkateswara Phaneendra

11. వి. వెంకట రావు
12. S. బాలకోటయ్య
13. S Sunita Reddy
14. S Ramachandra Reddy
15. V పుల్లయ్య
16. R Rangaiah Sagar Reddy
17. M. Raghu
18. M. Mahboob
19. S. Gaffar Khan
20. S. Krishnamohan
21. K వెంకటేశ్వర్లు
22. M. Hafeeza Babu
23. గంగాధర్
24. చంద్రశేఖర్
25. A. వెంకటేశ్వర్లు
26. S.G. Nath
27. S. Gangaraju
28. N రామకృష్ణ
29. V. Balaraju
30. V. నరసింహులు
31. M. Hanumanthu
32. M. Venkataramana
33. A [illegible]
34. A. [illegible]
35. S. [illegible]

ప్రజాభిప్రాయ సేకరణకు

గొల్లపల్లి
20-10-2016

గౌరవనీయులగు A.C.C. సమక్ష ప్రజాభిప్రాయ సేకరణ యందు గొల్లపల్లి నివాసి కాటేపల్లి(లి)ఎల్లా K. పుల్లారెడ్డి అనుబడిదీనిని పరిగణించి రాయి విస్ఫోటనం ఆపాలని!

నా భూమి (Pass Book No 177643, పట్టా నెం 158 సర్వేనెం 19/1 143లో 93/10A) 5 ఎంపి ప్రతిపాదిత ఎకరాలు ఇరిపై సాగు మెత్తం యుంటుంది. ఇప్పుడు బోర్లు ఇస్సారెస్సు పట్టి పెరుగుతూ ఉంది. నా ఆర్థిక స్థితి బాగా లేదు - B.P. సుగర్ లు ఉన్నాయి.. నా ఆర్థిక స్థితి బాగా లేదు - B.P. సుగర్ లు ఉన్నాయి.. ఆపరేషన్ లు కూడా చేసుకున్నాము. మాకు నివాసానికి ఇల్లు లేదు.. ఏ ఆదుకోవడం చెప్పుకోవడానికి లేదు. మీరు భూసేకరణ చేసిన వారికి ఉద్యోగం ఇస్తాం అని చెప్పుకుంటారు - నాకు ఉద్యోగం ఎటువంటి సంబంధం లేకపోయినా నా భూమి పోతే నాకు ఆదాయం లేకుండా పోతుంది. ఎకరానికి 3 లక్షలు ఇస్తాం అంటున్నారు. 5 ఎ - చొప్పున 2 కోట్లు వస్తాయి. ఇంటి ఖర్చులకు సరిపోతాయని. ఆదాయం లేకుండా ఇస్తే ఏమి పరిహారం ఇస్తారని నిలదీయడం కూడా నేర్చుకోలేదు. నేను నా భూమి ఇవ్వకపోతే లేదు.. నేరేళ్ళ దొరికినట్లు ఇవ్వకపోతే నాకు ఇంకా గతి దిక్కు లేదు. నేను ఇంకా ఎవరితో చెప్పుకోవాలి. అని ఏడ్వటానికి

మీరు సైన్ చేయకపోయినట్లయితే... నోడల్ ఆఫీసర్ వచ్చి వెళ్ళినది... మీరు ఫిజికల్‌గా సబ్మిట్ చేసి సైన్ చేయకపోయారని... ఇకనైనా వాళ్లకి ఇన్ఫర్మ్ చేయండి... కాబట్టి రాదు... తిరిగి పోస్ట్‌లో పంపారని ఆశిస్తున్నాను... మీ పేరు తరి... ఫోటోలు ఇవ్వని వారి ఆంప్లిఫై ప్రతులు పోస్టులు పెట్టకపోగా కూడా తీయకుండా పంపారని... తీసి కొనాలని ప్రాసిస్ ఇట్లు (భర్త చిరునామా)

K. Savithri w/o late [illegible]
Cell No:- 8008464585

గాజువాక

పెదవేగం మండలం

కడ్ జిల్లా

A.P

తేది:

గౌరవనీయులైన పర్యావరణ ప్రభావ కారిగారికి,

భన్నవాడ, చిన్నఓడ్డిపాలెం, వడ్డితాల, పెద్దపేరుపాలెం, గొల్లపల్లి, దిప్పలపాడు గ్రామస్థుల నుండి వ్రాతపూర్వక విన్నపం మనవి చేయునది...

2344
14/10/16

మెస్సర్ Acc లిమిటెడ్ వారికి సంబంధించిన మైనింగ్ లీజు; క్లింకర్ ప్రొడక్షన్ సిమెంట్ గ్రైండింగ్ మరియు పవర్ ప్లాంట్ ప్రాజెక్ట్ సంబంధించి 19-9-2016 తేదీన ప్రతిపాదిత ప్రదేశంలో కాలుష్య నియంత్రణ మండలి వారు కాన్సులియం పబ్లిక్ హియరింగ్ 20-10-2016న పర్యావరణ ప్రభావిత ప్రాంతాలలో పత్రికా ప్రకటన ఇచ్చియున్నారు. గతంలో కూడా 8-8-2016న మరొక పత్రికా ప్రకటన ఇచ్చారు. దీనితో 9-9-2016న జరిగిన ప్రజాభిప్రాయ సేకరణ సమావేశాన్ని రైతులందరు బహిష్కరించి నిరసన తెలియజేయడంతో అధికారులు సమావేశాన్ని వాయిదా వేయడం జరిగింది. రైతుల సమస్యలను తెలుసుకోకుండా, సమస్యలను పరిష్కరించకుండా సమావేశాన్ని నిర్వహించడం అంటే రైతులను బలవంతం చేయడమే అవుతుంది. గతంలో మేము సర్వేచేస్తామని రైతులకు చెప్పగానే, భూసేకరణ చట్టం 1996, 2006, 2010 సం. కట్టుబట్టలే కరువుల చెబుతూ కాలయాపన చేస్తూ 1996, 2006, 2010 సం. రాలలో ఎకరాల చొప్పున భూములు కొంటున్నారే తప్ప పరిశ్రమ సంబంధించిన తుది నిర్ణయం చేయకపోవడం బాధాకరం. పరిశ్రమ సంబంధించిన వివరాలను తెలిపిన చాంప్లెట్ పుస్తకమును కాంపెనీలు Acc యాజమాన్యానికి అనుకూలంగా ఉన్న అధికారులకు, ఉన్నతాధికారులకు భూములు ఇచ్చిన రైతులకు మాత్రం 15 పేజీలున్న పుస్తకమును కొందరికి ఇవ్వడం వలన రైతులందరు అసంతృప్తిగా ఉన్నారు. ఉదాహరణకు 62 ఎకరాలు ఉన్నా, మరియు సాగుభూములను బీడు భూములుగా చూపడం, గ్రామాలలో నివసిస్తున్న ప్రజలను.

వలసవెళ్ళినట్లుగా చూపడం దారుణమైన విషయము. రైతులు సాగు
చేస్తున్న భూమి నల్లరేగడి భూమి కావడంతో వానాకాలంలో
అధిక దిగుబడి వస్తుంది. రైతులందరూ వ్యవసాయమే జీవనాధారంగా
జీవిస్తున్నారన్న విషయాన్ని ACC యాజమాన్యం మరిచిపోయింది.
వర్షం రాకున్న కూడా భూగర్భజలాలు పుష్కలంగా ఉండటంతో బోర్లతో రైతులు
పంటలు పండిస్తున్నారు. మరికొందరు వర్షాధార పంటలు ఎడాదికి రెండు
లేక మూడు పంటలు పండిస్తూ జీవనం సాగిస్తున్నారు. కొన్ని గ్రామాల
ప్రజలు తాము నివసిస్తున్న గ్రామాన్ని ACC వారు పరిశ్రమ పేరుతో
మింగి వేయటంతో చేతులుకాలి చేతులు మూపుకున్నారు. తినడానికి పరిశ్రమ వస్తుందన్న
ఆశతో రైతులు తిప్పలు చేసి ఇళ్ళు నిర్మించుకొని నేడు రైతులుగా
లేకుండా కూలీలుగా మారిపోయారు. నిగనిగలాడుతూ గుర్తుకు
రాని పరిశ్రమ నేడు మారికి గుర్తుకు రావడం ఆశ్చర్యాన్ని కలిగిస్తోంది.
పరిశ్రమ రాకపోవడంతో భూములున్నో, పాత ఇళ్లలో ఉండి మృగ్యులు!
నివాసస్థావరాలు ఏర్పరచుకున్నారు. పట్టపగలు నేరాలకు కూడా రైతులకు
కనిపించని రైతులను భయాందోళనకు గురిచేస్తున్నాయి పరిశ్రమతో
ప్రజలకు ఎన్నో ఉపాధులు ఉన్నాయి. పరిశ్రమతో భూమి, నీరు, గాలి
కాలుష్యంతో పాటు పరిశ్రమల వలన వేటిదో కాన్సర్ ఇళ్ళు కూడా
కూలిపోయి గ్రామాలన్నీ శాశ్వతనామాలుగా మారుతాయి. కాబట్టి పరిశ్రమకు
భూములు ఇవ్వడానికి సిద్ధంగా లేము. కనుక మాయందు దయచూపాలని
ACC ప్రతినిధులను వేడుకొనుచున్నాము. తగిన చర్యలు చేపట్టి చుట్టుప్రక్కల
39 గ్రామాలను తొలగించవలసినదిగా పాఠశాలస్థాయి. మా జీవనాధారాన్ని,
మా మనుగడను, పర్యావరణాన్ని రక్షించవలసినదిగా కోరుతున్నాము.

ధన్యులు
తమ విధేయులు
మెస్సర్స్ ACC పరిశ్రమ భూ నిర్వాసిత గ్రామాల
రైతులు మరియు ప్రజలు
మైలవరం {మండలం}
వై.ఎస్.ఆర్. కడప జిల్లా

1) [illegible]
2) [illegible]
3) [illegible]
4) [illegible]
5) [illegible]
6) [illegible]
7) [illegible]

Signatures for Vaddirala Villages

1. A. [illegible]
2. V.C. [illegible]

[redacted]

19. P.V. Sivaiah
12. G. Ramanaiah.
13. K.N. Peddaiah
14. [illegible]
15. M. Malleswara Yadav
16. [illegible]
17. [illegible]
18. [illegible]
19. [illegible]
20. S. [illegible]
21. (MCR) M.V. Sita Reddy
22. [illegible]
23. P.C. Sulaiman
24. [illegible]

26. [illegible]
27. K.S.P. [illegible]
28. A. [illegible]
29. S. [illegible]
30. S. [illegible]
31. K. [illegible]
32. [illegible]
33. [illegible]

[redacted]

P. [illegible]
S. [illegible]
M.V. [illegible]
M. [illegible]
[illegible]
[illegible]

S. [illegible]

[illegible]

P. [illegible]
S. [illegible]

25 కానడీయ తెగలు

26 [redacted]

27 [redacted]

28 R. [redacted]

29 [redacted] [redacted]

30 [redacted]

31

32 [redacted] గంగానదీ

33

34 [redacted] అంకలమ్మ

35

36 [redacted] పోలమ్మ

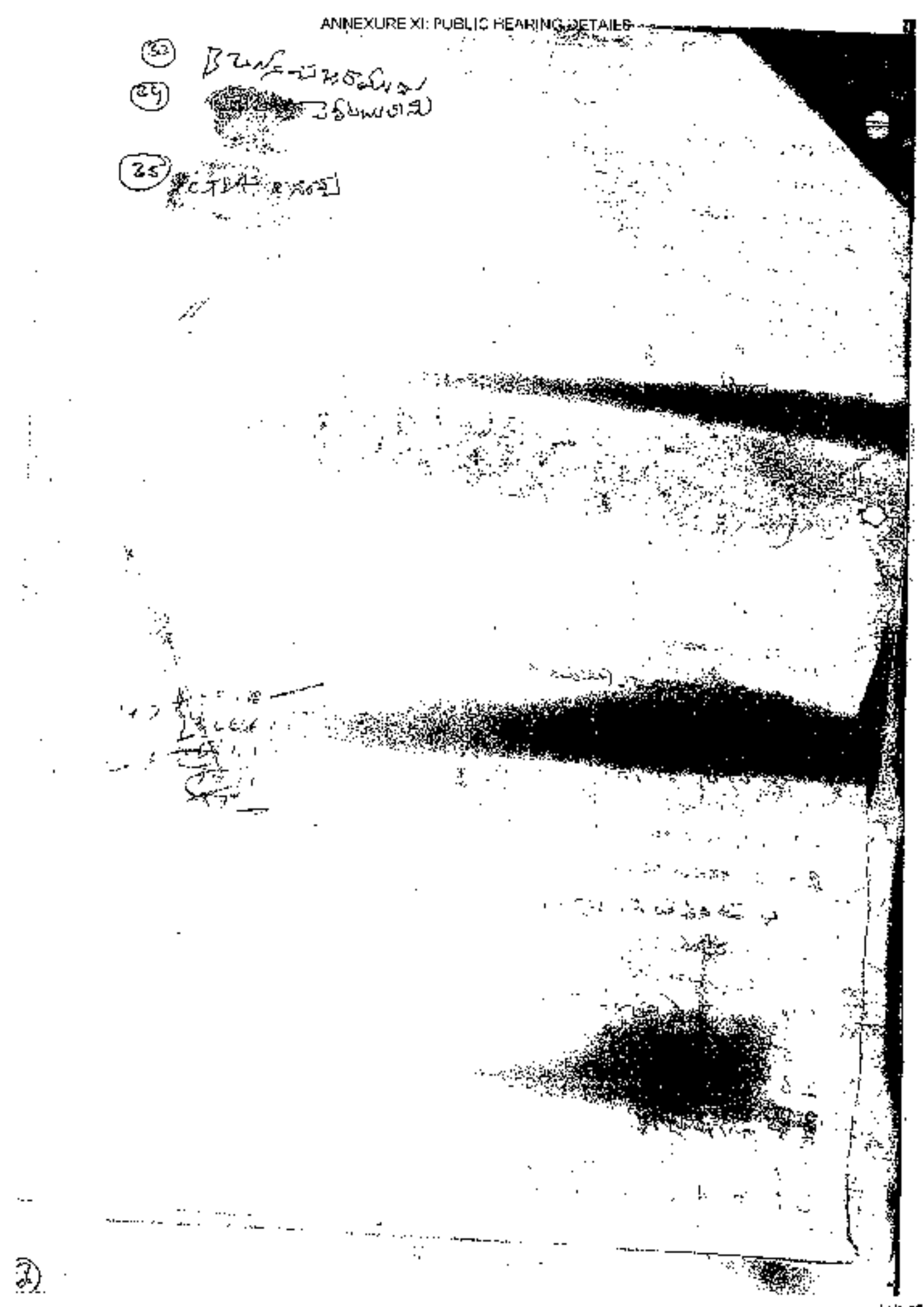
37

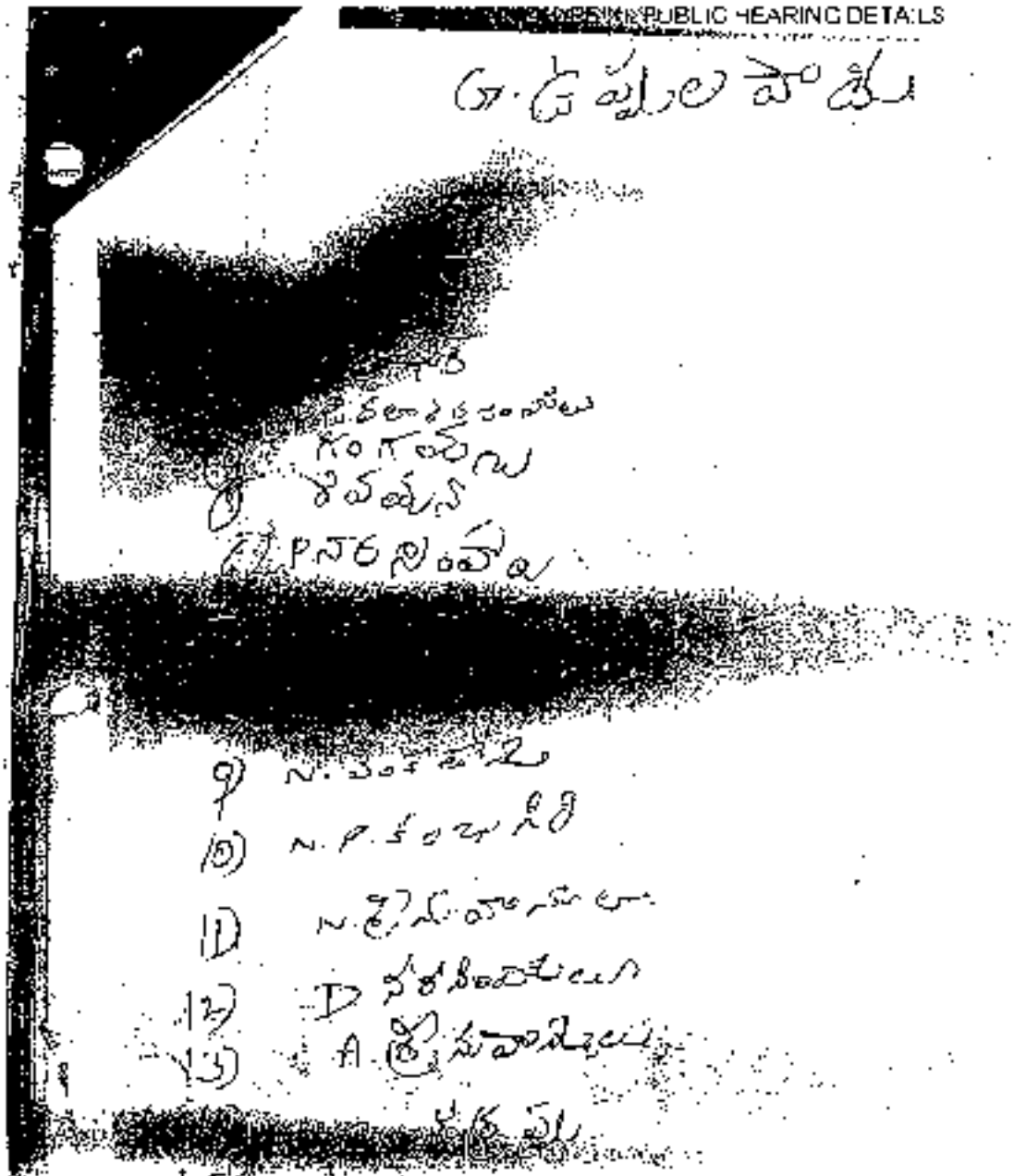
38

39

Signature for Bollapalli village

1. V. Narasimhulu
2. S. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]
7. N. [illegible]
8. [illegible]
9. [illegible]
10. [illegible]
11. T. [illegible]
12. V. Ramulu
13. M.R. [illegible]
14. P. [illegible]
15. M.V. Bhaskar Reddy
16. G. Sarma [illegible]
17. [illegible]
18. [illegible]
19. M. K. [illegible]
20. C. [illegible]
21. A [illegible]
22. B. [illegible]
23. C. [illegible]
24. [illegible]
25. K. [illegible]
26. T. [illegible]
27. M. [illegible]
28. M.V. [illegible]
29. [illegible]
30.
31. [illegible]
32. [illegible]





ANNEXURE XI: PUBLIC SHOW NOTICE (AP)

1 పంచాయితీ కార్యదర్శులు కార్యాలయం

2. మండల పరిషత్ అభివృద్ధి అధికారులు మండల పరిషత్ కార్యాలయం

3. మండల కో-ఆప్షన్ సభ్యులు S/o

4. ఎన్నికల అధికారులు S/o

5. N. [illegible] S/o N [illegible]

6. N [illegible] S/o [illegible]

7. N. [illegible] S/o [illegible]

8) Mr. [illegible] S/o [illegible]

9. [illegible] S/o [illegible]

5. మరియు
పట్టణ ఓటరు జాబితా సవరణ అధికారులు కార్యాలయం

N. [illegible] S/o N R Ramam

N. V. [illegible] S/o N.R Ramam

N. R. Ramanna S/o NP Ramanna

N. C. [illegible] S/o N.R Ramanna

N. [illegible] S/o NC [illegible]

N. [illegible] S/o N. C Ramanna

V. Narasimha

V. Ramulu

B. Yadaiah

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

G. Ramaiah Yadav

M. [illegible]

[illegible]

[illegible]

[illegible]

V. [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

V. Subba Narsaiah

[illegible]

B. Mohan

K. Prabhakar

K. Ravi

D. [illegible]

D. [illegible]

[illegible]

D. Nageshwar

D. C. [illegible]

A. [illegible]

A. [illegible]

విజ్ఞాపన విజ్ఞప్తి న్యాయం చేయండి

తేదీ: 20-10-2011

మహారాజశ్రీ గౌరవనీయులైన పొల్యూషన కంట్రోల్ బోర్డు గారికి,

కడప జిల్లా ఖైలపరం మండలం పరిధిలోని గొల్లపల్లి, జి. ఉప్పలపాడు, పెన్నవేములు, జంగాలపల్లి,పట్టరాలు, చిన్నవెంతుర్ల గ్రామాలకు చెందిన రైతులం ప్రాసుకున్న అర్జి.

విషయము : అసోసియేటెడ్ సిమెంటు కంపెని (ఎ.సి.సి) స్థాపన లో భాగ్యం కులిరయు ఎ.సి.సి ద్వారా నష్టపోయిన భూం నిర్వాసితులైన అరు గ్రామాల రైతుల విజ్ఞాపనలను గురించి,

అయ్యా !

ఎసిసి అనే సంస్థ ఖైలపరం మండల పరిధిలోని గొల్లపల్లి, జ.ఉప్పలపాడు, పెన్నవేములు, జంగాలపల్లి గ్రామాలలో తొలిసారిగా 1996 సం॥లో ఎకరా 1 కి రూ. 50,000/- లతో రైతులతో ముప్పందు కుదుర్చుతూని త్వరలో ఫ్యాక్టరీని ఏర్పాటు చేసి భూమి కోల్పోయిన ప్రతి రైతు కుటుంబానికి విద్యా అర్హత ఉన్నా, లేకున్నా, వయస్సు సంభంధం లేకుండా శాశ్వత ఉద్యోగ అవకాశం కల్పిస్తామని హామి ఇచ్చి సుమారు 800 ఎకరాల భూమిని కొనుగోలు చేసినారు. భూమి కోల్పోయిన ప్రతి రైతుక్రింద పని చేసే కూలీలకు కూడా ఉపాధి కల్పిస్తాము అని చెప్పి ఉన్నారు. కాని ఫ్యాక్టరీ నిర్మాణం చేపట్టలేదు, ఉపాధి లేదు. దీనులను 1996 సం॥నుండి 2006 వరకు పది సంవత్సరాల కాలంలో ఫ్యాక్టరీ వారు తీసుకున్న భూములలో కంప చెట్లు పెరిగి అడవి వండుము, అడవి అవుకు చేయకొని వారి భూమి చుట్టూ తుగ్గ మిగిలిన భూములతో వేసిన పైరుకు కూడా తీరని నష్టం జరిగినది. ఈ విధముగా తొలి పది సంవత్సరాల కాలంలో కంపెని ద్వారా ఉపాధిని పొందలేక సంతలను వండించుకోలేక రైతులు తీరని నష్టానికి గురి కావలసివచ్చింది. ఈ విషయాలను అనేక మార్లు కులెన్ దృష్టికి తీసుకొను వినగా ఫలితం కనుగలేదు.

10 సంవత్సరముల తరువాత అనగా 2006 సం॥లో మా మండల పరిధిలోని గొల్లపల్లి, జ. ఉప్పలపాడు, పెన్నవేములు, జంగాలపల్లి,పట్టరాల, చిన్నవెంతుర్ల భూములు కొనుగోలు చేయుటకు మళ్ళి ఎసిసి యాజమాన్యం వారు ఆర్.డి.ఓ ఆఫీసు వద్దకు ప్రజా ప్రతినిధులు సమక్షంలో సైన తెలిపిన గ్రామాల ప్రజలను పిలిపించి ఫ్యాక్టరీ నిర్మించుటకు ఇంకా భూములను ఆఫ్కండి గీసు భూములు ఇస్తే మేము త్వరలో ఫ్యాక్టరీ నిర్మిస్తాము అని నమ్మపలికి ఎకరా 1 కి రూ. 1,25,000/- లతో దాదాపు 1200 ఎకరాలు కొనుగోలు చేసినారు. ఆ రోజు కూడా విద్యా అర్హతలు మరియు వయస్సుతో సంబంధం లేకపోయినా భూమి కోల్పోయిన ప్రతి రైతు కుటుంబానికి శాశ్వత ఉద్యోగం కల్పిస్తామని చెప్పినారు. మరియు భూమి కోల్పోయిన ప్రతి రైతు క్రింద పనిచేసే కూలీలకు కూడా ఉపాధి కల్పిస్తాము అని కూడా చెప్పి ఉన్నారు. ఫ్యాక్టరీ నిర్మించబడుతున్న యువకులు ఉద్యోగ అవకాశాలు కోల్పోయి ప్రస్తుతము వయస్సు మీరి మా పిల్లలకు కూడా ఉద్యోగ అవకాశాలు ఉంటాయో లేదో బిగాలతో వున్నాము.

ఎసిసి వారు రైతులకు నాడు చెల్లించిన డబ్బులను ఆనాడు ఆడపిల్లల పెళ్ళిళ్ళను, పిల్లల చదువులకు ఖర్చు చేయగా రైతుల ఆర్థిక పరిస్థితి అగమ్య గోచరంగా మారింది. ఎసిసి కంపెనీ ఉపాధి కల్పించక పోవడం వలన పని దొరుకుతోందని పరిస్థితులలో రైతులమే కూలీగా కూలి సుమారు ప్రాంతాలకు వెళ్ళి కష్టపడ పలసి వచ్చినది. ఏసిసి యాజమాన్యం మాట మరణా 2010 సం॥లో రవ్వరాల గ్రామ పంచాయతీ ప్రభుత్వ అనుమతి నైదాసులో ఆర్.డి.ఓ, ఎం.ఆర్.ఓ ప్రజా ప్రతినిధులతో గ్రామ పంచాయతీ ప్రజల సమక్షంలో పెంటనే ఫ్యాక్టరీ నిర్మిస్తామని ఎకరా 1 కి రూ. 4,00,000/- లతో రేటు కుదుర్చుకొని కొనుగోలు చేసి ఉన్నారు. ఆ సమయంలో అదే రోజు రేటు ప్రకటించిన పెంటనే 1996, 2006 సం॥లో భూములు కోల్పోయిన భూ నిర్వాసితులు అందరము కలిసి ఏసిసి యాజమాన్యం వారిని మరియు ఆర్.డి.ఓ గారిని ప్రజా ప్రతినిధుల సమక్షంలో మాకు

ఫ్యాక్టరీ నిర్మించకుండ మరతదిడతలుగా భూములు కొనుగోలు వేస్తూ అందరికీ అన్యాయం చేస్తున్నాయి. ఫ్యాక్టరీ నిర్మించలేదు కాబట్టి అనే రోటు మాకు కూడా ఇన్సూరెన్సు రేటు విషయంలో అన్యాయం జరిగిందని అడిగడం జరిగింది. ఆ మరుసటి రోజున ఆరు గ్రామాల భూ నిర్వాసితుల రైతులు భూ నిర్వాసిత పోరాట కమిటీ ఏర్పాటు చేసుకోవడం జరిగినది.

మొదటి సారిగా 05-09-2010 నం॥లో భూ నిర్వాసితులము అందరము పెద్ద ఎత్తున ర్యాలీ ధర్నా నిర్వహించడంగాలో చేసి ఆర్.డి.ఓ గారికి మనత పత్రం సమర్పించిన తరువాత ఏ.సి.సి ఆఫీసు వద్దకు పోయి మేనేజరు మురళీ కృష్ణ గారికి మా సమస్యల వినతి పత్రము సమర్పించడమైనది. మనత పత్రంలో ఫ్యాక్టరీ కట్టనందుకు అదే రోటు రూ. 4,00,000/-ల ప్రకారం ఇవ్వనేలసెసరని అని జడంగగా మురళీ కృష్ణ గారు సమాధానంలో ఎక్కడైనా ఏ ఫ్యాక్టరీ వారైనా అదనంగా నష్టపరిహారము చెల్లిస్తే మా ఏ.సి.సి వారు కూడా మీకు డబ్బులు చెల్లించడానికి సిద్ధంగా ఉంటుందని మాకు చెప్పినారు.

దానితో సాక్ష్యాధారముగా 17-05-2010 నం॥న భారతీ సిమెంటు వారి ఎకరా 1 కి అదనముగా అప్పటి రోటు ప్రకారం రూ. 2,00,000/-ల నష్టపరిహారం చెల్లించినారు. రైతులకు చెల్లించిన చెక్కుల జిరాక్సు కాపీని చూపించడం జరిగినది. ఇదంతా సంభవించిన ప్రచురితమైన వార్త పత్రికల నికలు కాపీని సమర్పించడమైనది. అప్పటికి కూడా ఏ.సి.సి యాజమాన్యంలో చలనం లేనందున భూ నిర్వాసితులము అందరము ఇటు ఉపాధి లేక అటు భూమి లేకు తిర్కుతోవని స్థితిలో జీవనోపాధి తరుమైపందున పెరుగుగా ఉన్న చట్టమైన కంపచెక్కు పాదలతో కూడిన భూములను తయారు చేసుకొనుటకు సిద్ధపడినాము. తరువాత 07-08-2010 తారీఖున ఏ.సి.సి భూ నిర్వాసితులము అందరము 6 గ్రామాల రైతులము అందరము కలిసి ఆర్.డి.ఓ కార్యాలయం ఎదుట 3 రోజుల పాటు రిలే నిరాహార దీక్ష చేయగా మా దీక్షకు అప్పటి ఆర్.డి.ఓ గారు మద్దతు తెలుపుతూ ఏ.సి.సి ప్రతినిధులతో సంప్రదింపులు జరిపి ఫ్యాక్టరీ కట్టాము చేసేవరకు ఎసరి భూములు పాడు సాగు చేసుకొనుటకు అనుమతి ఇచ్చినారు. ఎకరా భూమిని సాగు చేయుటకు దాదాపు రూ.40,000/- లు ఖర్చు చేయుడం జరిగినది. అయినా చాలా లాభదాయంగా భూములు బీడుగా ఉన్నందుని సాగు చేసిన భూములు కూడా వంట చేసినా కూడా వంట కుంటలేదు. ఈ విధముగా రూడా నష్టం జరిగినది. ఏ.సి.సి యాజమాన్యం మాకు అక్రమముగా రైతులపై కేసులు పెట్టి ఈ విధముగా నష్టము జరిపించినారు.

ఫ్యాక్టరీ నిర్మించమనే అనేకసార్లు ఆనాటి కలెక్టరు గారికి, ఆర్.డి.ఓ గారికి ఏ.సి.సి. యాజమాన్యం వారికి భూ నిర్వాసితులము అంతా కలిసి వినతి పత్రములు ఇచ్చినాము. మధ్యలో ధర్నాలు, ర్యాలీలు, దీక్షలు, చేసినాము. అయినా స్పందన లేదు. అధికారులు ప్రభుత్వాలు మారినా మా బ్రతుకులు మాత్రము మారలేదు. ఇందుకు సాక్ష్యాధారాలు వినతిపత్రములతో జతపరచడమైనది. ఇదే సమయంలో ఆగస్టు 2010 నం॥లో గొల్లపల్లె గ్రామ ప్రజలందరితో ఏ.సి.సి కంపెనీని వారు తీరని నష్టం కలిగించారు. ఏ.సి.సి కంపెనీని త్వరగా ఏర్పాటు చేస్తామని మీరు కంపెనీ ఏర్పాటుకు సహకరించాలని, మీరు మీ గ్రామాన్ని ఖాళీ చేసి వేరొక చోట మౌలిక సదుపాయాలను ఏర్పాటు చేసుకోవాలని అందుకు ప్రతిఫలముగా ప్రతి ఇంటికి నష్టపరిహారం చెల్లిస్తామని సమ్మతించి ఆర్ & ఐ చాలతో సర్వే జరిపించి ప్రతి ఇంటికి కొలిపించి అప్పటి రోటు ప్రకారం రేటు వేయించడం జరిగినది.

ఏ.సి.సి వారు చెప్పిన మోసపూరిత మాటలను నమ్మిన గొల్లపల్లె గ్రామ ప్రజలందరము గ్రామాన్ని వదలిపెట్టి మా ఊరి పై భాగాన దక్షిణ దిక్కుగా ఇమ్మడిదుగు, తాడిపత్రి రోడ్డు ప్రక్కన కొండపైన ప్రజలందరూ అప్పులు చేసి కొత్తగా ఇండ్లను నిర్మించడం జరిగినది. ఇప్పటికి 8 సం॥లు గడిచి పోయినా ఏంత గ్రామంలో ఉన్న ఇండ్లకు ఎలాంటి నష్టపరిహారం చెల్లించకపోవడం వల్ల కొత్త ఇళ్ల నిర్మాణానికి అప్పుగా తెచ్చిన డబ్బులకు వడ్డీలు చెల్లించలేక మొత్తం గ్రామ ప్రజలంతా ఆర్థికముగా చితికిపోవడం జరిగినది. ఇపరకు మా పిల్లలను చదివించుకోవడానికి కూడా ఆర్థిక స్థోమత లేక పలిని కూడా కూలి పనులకు పంపించడం జరుగుతున్నది. ఇప్పటికి ఇళ్లకు నష్టపరిహారం చెల్లించకపోవడం చాలా బాధాకరము, అన్యాయము. 2010 నం॥లోనే మా ఆరు గ్రామాల ప్రజలము ఏ.సి.సి కంపెనీ వారు మరొక సారి మోసపూరిత మాటలతో త్వరలో ఫ్యాక్టరీ నిర్మిస్తామని నమ్మపలికి ఎకరా భూమి రూ. 4,00,000/-లతో దాదాపు 700 ఎకరాలు

కొనుగోలు చేసి రైతులను మోసగించి ఫ్యాక్టరీ నిర్మాణం చేయబోము.

ఏసిసి తరపున వారు ఫ్యాక్టరీ డిజైను చేయుటకు నాణ్యతరణ కాలుష్య నియంత్రణ మండలికి చేసుకున్న విన్నపం మేరకు కాలుష్య నియంత్రణ మండలి వారు 07-08-2010 పబ్లిక్ హియరింగ్ కొరకు పేపర్ ప్రకటన 09-09-2016 న జరుగుతుందని వివరం ఇవ్వడం జరిగినది. ఇప్పటికి అనేక పర్యాయము ఏసిసి ప్రతినిధుల ద్వారా మోసపోయిన 6 గ్రామాల రైతులము అంతా కలిసి ఏసిసి వారు మోసపూరిత మాటలను నమ్మకూడదని భావించి ఆ కంపెనీకి చెందిన ప్రస్తుత స్థాయిలో ఉన్న అన్నలు ప్రతినిధులు రుసియు ఉన్నతాధికారుల సమక్షంలో రైతుల డిమాండ్లను ప్రాతి మూలకంగా వ్రాయించుకొనుటకు నిర్ణయించుకున్నాము. ఏసిసి తరపని వారికి భూములు కోల్పోయిన మా 6 గ్రామాల రైతులకు చెందిన డిమాండ్లను మీ ముందు ఉంచుతున్నాము. అందులో ప్రధానమైనవి.

1. భూ నిర్వాసితుల సమస్యలను పరిష్కరించిన తరువాతనే వాణిజ్యరణ కాలుష్య సభ జరపాలి.

2. మాతగొల్లపల్లి గ్రామాన్ని 2010 సం॥లో అగ్ని ని జ వారిచే సర్వే చేయించిన ప్రతి ఇంటిని కూలతలు వేయించి అప్పటి రేట్ల ప్రకారం నిర్ణయించినారు. ఇప్పటికే 7సం॥రాలు పూర్తి అయినప్పుడు కల్ల ప్రస్తుత రేట్ల ప్రకారం ప్రతి ఇంటికి నష్టపరిహారం చెల్లించాలి

3. 1996 సం॥లో ఏ.సిసి కంపెని వారు గొల్లపల్లి, బి.ఉప్పలపాడు, బెస్తవేముల గ్రామ పొలములో ఎకరా 1 కి రూ. 50,000/-లు కొన్న భూములకు ప్రస్తుతం భూములకు ఉన్న రేట్ల ప్రకారం నష్టపరిహారం చెల్లించాలి.

4. 2006 సం॥లో గొల్లపల్లి, బి. ఉప్పలపాడు, బెస్తవేముల, జంగాలపల్లి,వల్లిరాల, గున్నపెంటుగ్ల గ్రామాలలో ఒక్క ఎకరా1 కి రూ. 1,25,000/-ల ప్రకారం కొన్న భూములకు కూడా ప్రస్తుతము ఉన్న రేట్ల ప్రకారము నష్టపరిహారం చెల్లించాలి. లేని పక్షంలో అన్ని గ్రామాల భూములు మాకు తిరిగి అప్పచెప్పవలెను.

5. ఏ.సిసి వారు ఫ్యాక్టరీ నిర్మాణము కొరకు కొనుగోలు చేసిన భూముల పక్కన ఉన్న మిగిలిన భూములను, ఫ్యాక్టరీ సరిహద్దులో ఉన్న భూములను ప్రస్తుత రేట్ల ప్రకారం కొనుగోలు చేయాలి.

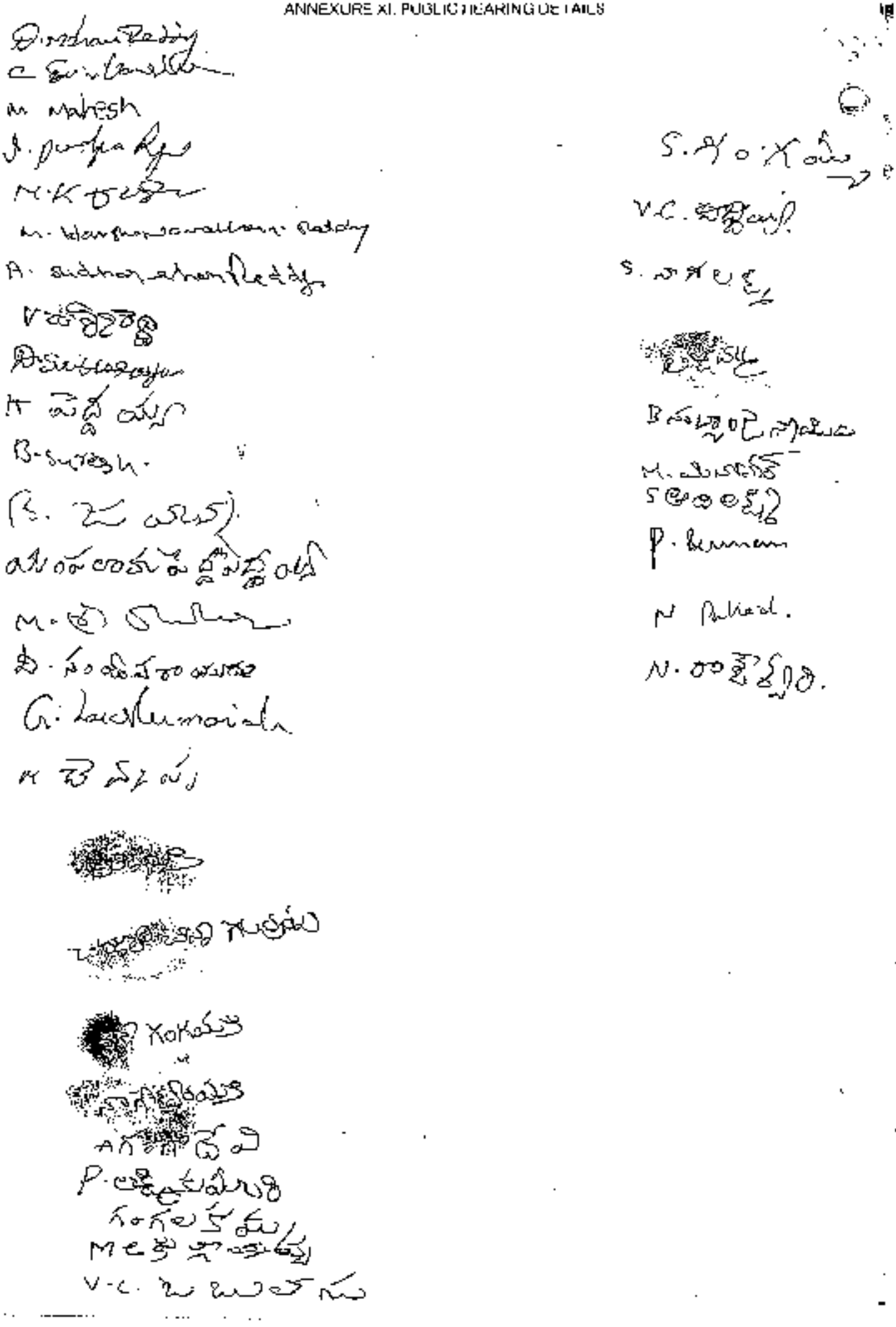
6. ముఖ్యముగా పాత గ్రామాలను వదిలి పెట్టి కొత్త గ్రామాలను ఏర్పాటు చేసుకున్న గొల్లపల్లి, బి.ఉప్పలపాడు గ్రామాలలో అన్ని మౌలిక సదుపాయాలతో పాటు అన్నిరకాల వాక్కులను పునరుద్ధరించాలి

7.1996 సం॥ నుండి ఇప్పటి వరకు ఫ్యాక్టరీ నిర్మించనందుని ఉద్యోగము లేక ఉపాధి కోల్పోయినందున అన్ని గ్రామాలలో భూ నిర్వాసిత రైతులకు అప్పటినుండి ప్రతి నెలకు రూ. 20,000/-లు ఇప్పటి వరకు చెల్లించాలి.

8. ఏ.సిసి యాజమాన్యం పైన తెలిపిన డిమాండ్లు తీర్చిన వెంటనే రైతులకు ఉద్యోగాలు మరియు మిగిలిన అంశాలన్నిటిని అధికారుల సమక్షంలో వ్రాతపూర్వకమైన హామీని ఇచ్చి ఫ్యాక్టరీని నిర్మించాలి.

ముఖ్యముగా తెలియజేయు విన్నపము ఏమనగా అన్ని గ్రామాల భూనిర్వాసితుల అన్ని సమస్యలను పరిష్కరించిన వెంటనే ఫ్యాక్టరీ నిర్మించాలి. అంతే కాక సుమారు 20 సం॥ నుండి దాదాపు 800 కుటుంబాల కన్నీటి ఆవేదనను మీకు విన్నవించుకుంటున్నాము. మా బాధలను మంచి మనస్సుతో పరిశీలించి మా సమస్యలను అన్నింటిని సహృదయంతో రైతుల బాధను అర్థం చేసుకొని అన్ని గ్రామాల రైతులకు న్యాయం చేయుదుగను శతకోటి వందనాలు తెలియచేయుచూ మా విన్నపాన్ని విన్నవించుకుంటున్నాము.

ఇట్లు,
ఏసిసి భూ నిర్వాసితులు



GOVERNMENT OF ANDHRA PRADESH
FOREST DEPARTMENT

From

Sri M. Nagarjuna Reddy,
Forest Range Officer (FAC),
MUDDANUR

To

The Divisional Forest Officer,
Proddatur Division
PRODDATUR

Rc.No.Misc/2006, Dt: /082006

Sir,

Sub:- ACC Cements -- Classification about lands purchased by ACC report submitted - Regarding.

Ref:- ACC PD/PVR/0/22, Dt:12/07/2006.

* * *

With reference to the above, I submit that I have inspected the lands shown in the Map near Dhannawada, Vaddirala, Chinnaventuru, Gollapalle, Besthavemula, C-Uppalapadu Villages on 04-08-2006 and found that the lands shown in the map do not fall in the Reserve Forest of Muddanur Range.

This is submitted for favour of information and necessary action.

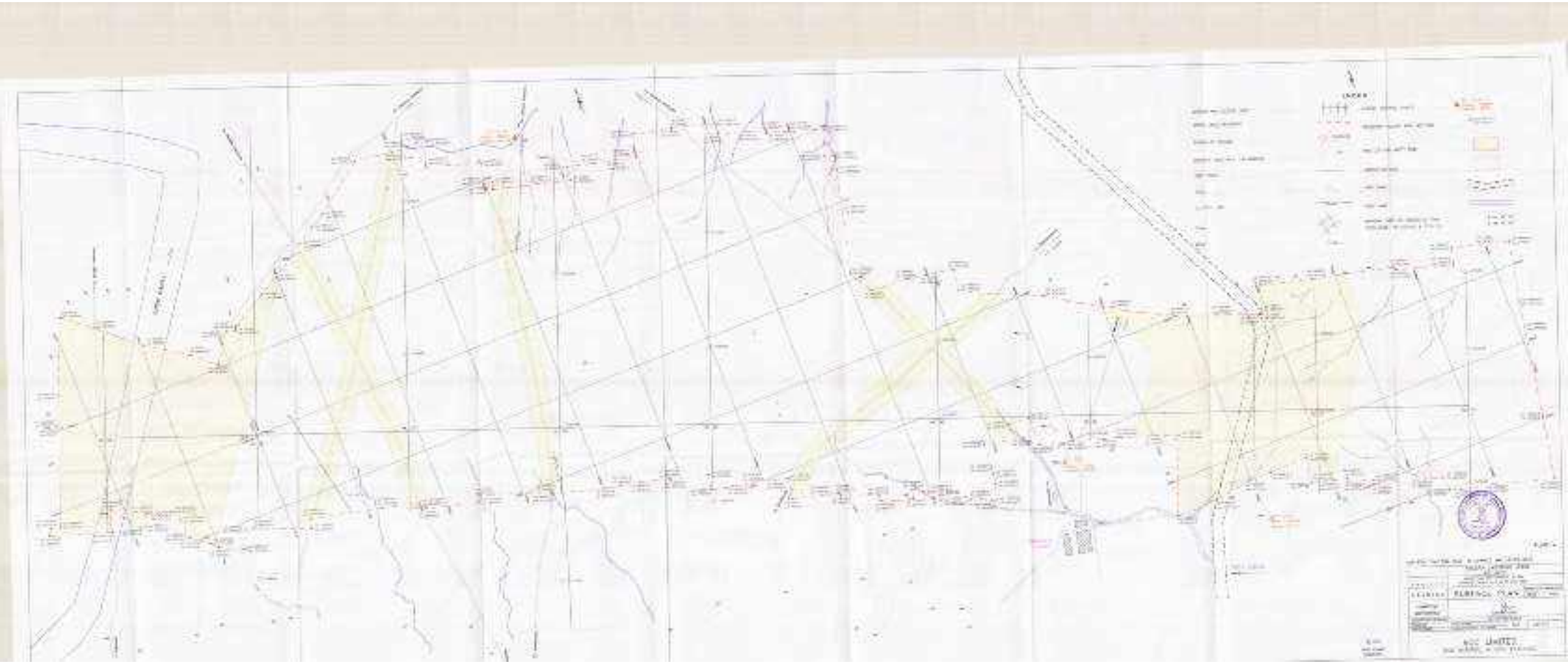
Yours faithfully

Forest Range Officer
MUDDANUR.

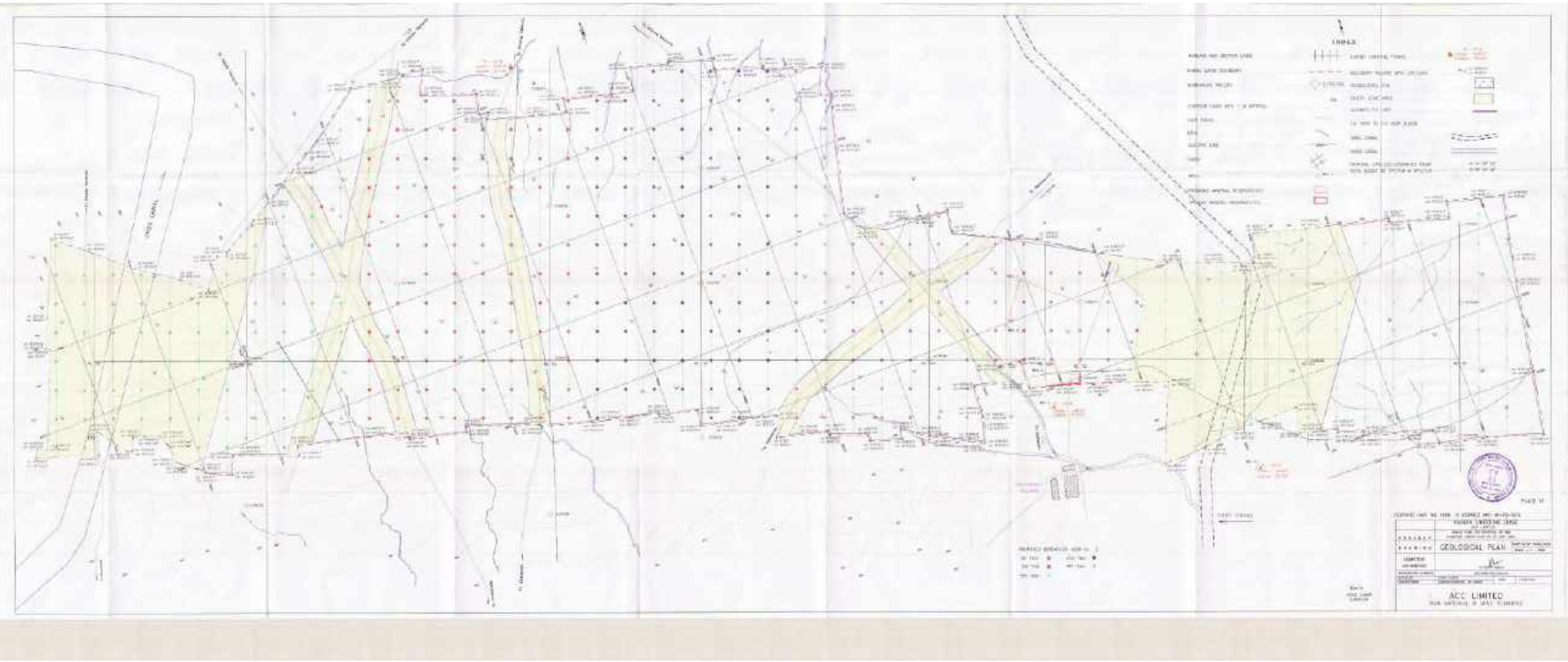
Copy to the Associated Cement Companies Ltd, Proddatur Camp for information and necessary action.

D:\My Documents\Miscellaneous correspondence 2006.doc

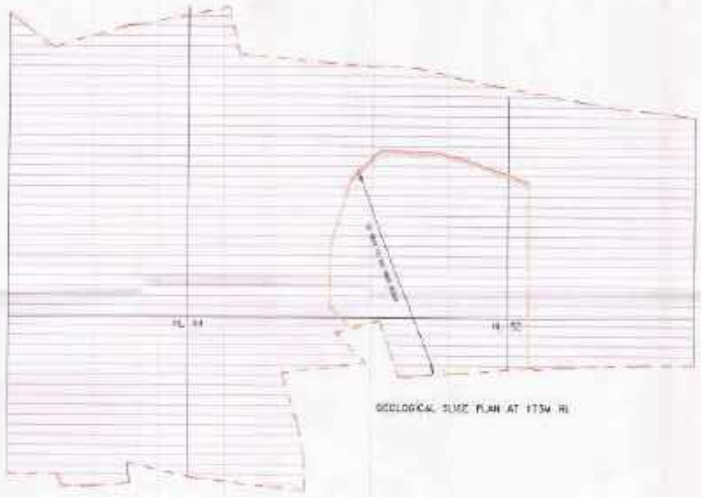
Annexure 17a_Surface Plan



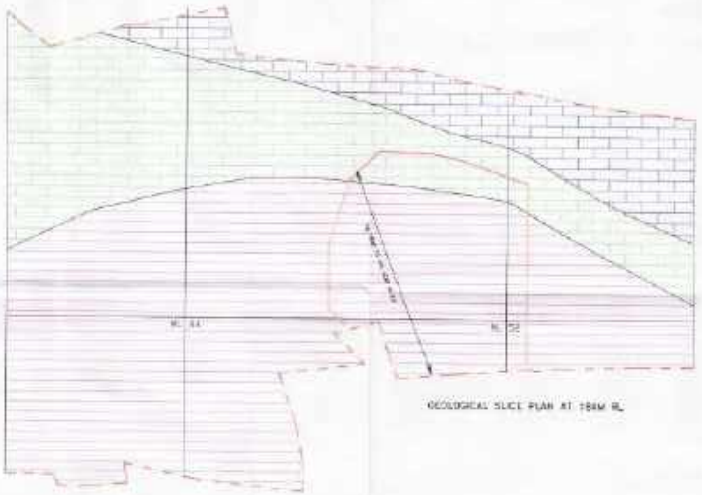
Annexure 17b_Surface Geological Plan & section



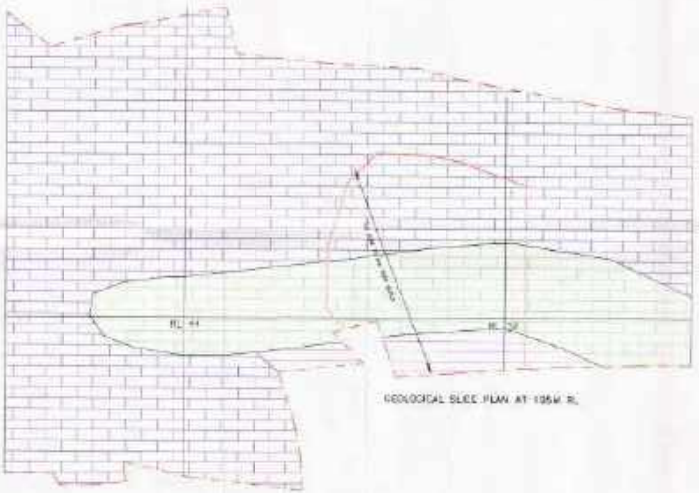
KEY PLAN



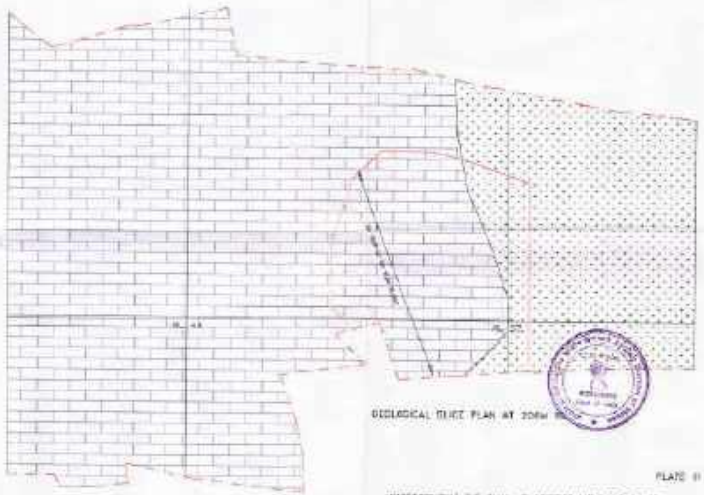
GEOLOGICAL SLICE PLAN AT 173M RL



GEOLOGICAL SLICE PLAN AT 188M RL



GEOLOGICAL SLICE PLAN AT 195M RL



GEOLOGICAL SLICE PLAN AT 208M RL

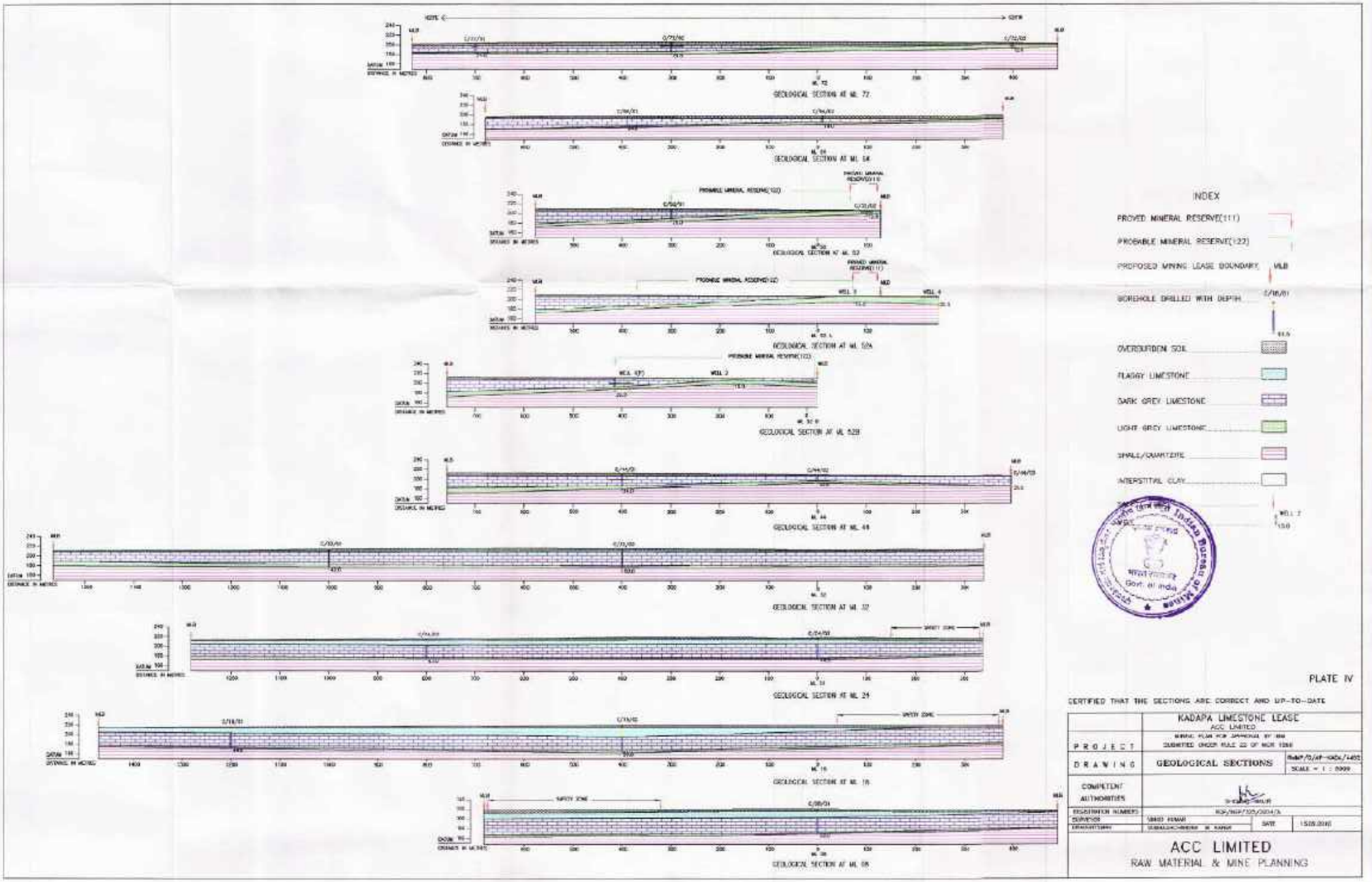
PLATE II A

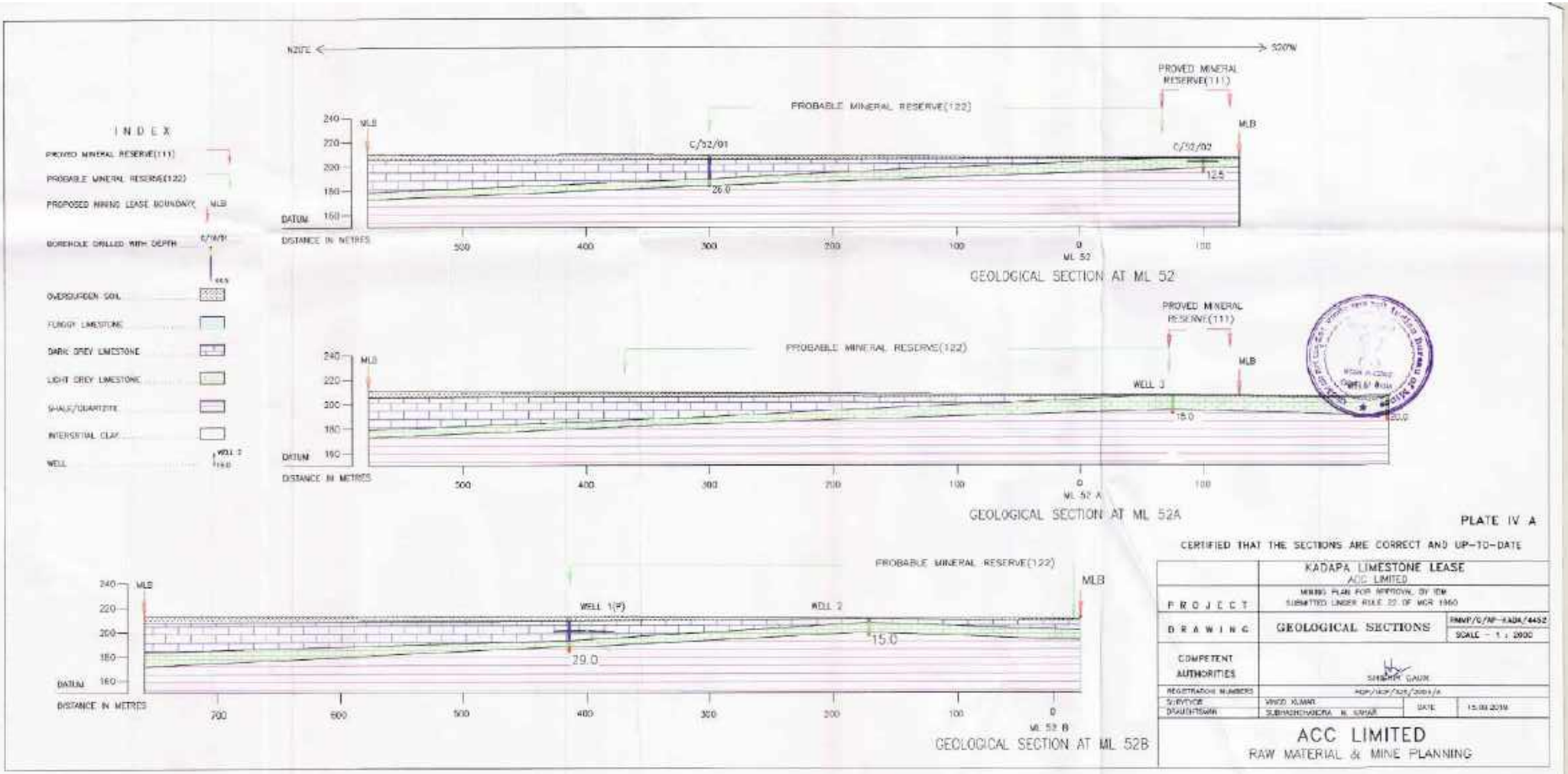
CERTIFIED THAT THE PLAN IS CORRECT AND UP-TO-DATE

INDEX

PROJECT	GADAPA LIMESTONE LEASE
DRAWING	GEOLOGICAL SLICE PLAN
COMPETENT AUTHORITIES	

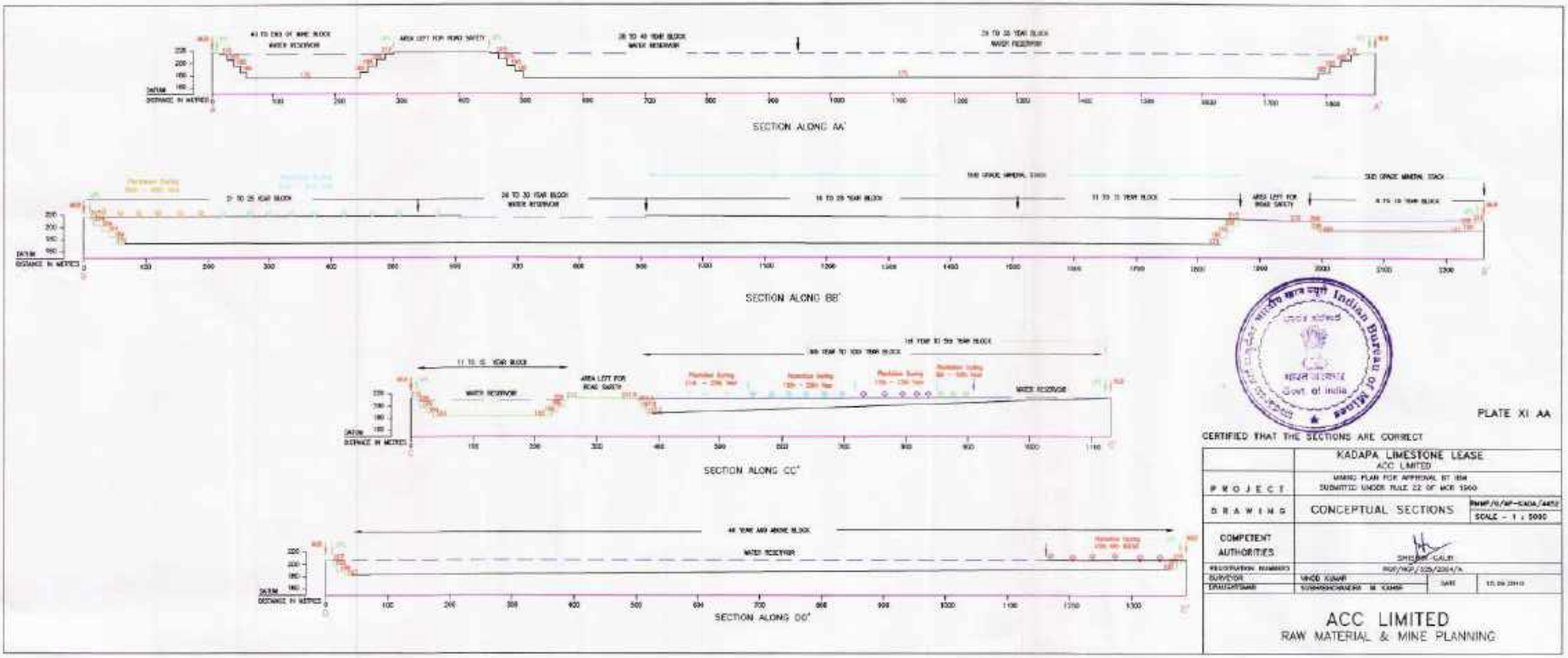
ACC LIMITED
RAW MATERIAL & MINE PLANNING


GEOLOGICAL SECTION AT ML 72
GEOLOGICAL SECTION AT ML 54
GEOLOGICAL SECTION AT ML 52
GEOLOGICAL SECTION AT ML 52A
GEOLOGICAL SECTION AT ML 52B
GEOLOGICAL SECTION AT ML 44
GEOLOGICAL SECTION AT ML 32
GEOLOGICAL SECTION AT ML 24
GEOLOGICAL SECTION AT ML 16
GEOLOGICAL SECTION AT ML 08
INDEX
PROVED MINERAL RESERVE(111)
PROBABLE MINERAL RESERVE(122)
PROPOSED MINING LEASE BOUNDARY
BOREHOLE DRILLED WITH DEPTH
OVERBURDEN SOIL
FLAGGY LIMESTONE
DARK GREY LIMESTONE
LIGHT GREY LIMESTONE
SHALE/QUARTZITE
INTERSTITIAL CLAY
PLATE IV
CERTIFIED THAT THE SECTIONS ARE CORRECT AND UP-TO-DATE
KADAPA LIMESTONE LEASE
ACC LIMITED
PROJECT
DRAWING
GEOLOGICAL SECTIONS
SCALE = 1 : 5000
COMPETENT AUTHORITIES
REGISTRATION NUMBER
SURVEYOR
DRAUGHTSMAN
DATE
ACC LIMITED
RAW MATERIAL & MINE PLANNING


INDEX
PROVED MINERAL RESERVE(111)
PROBABLE MINERAL RESERVE(122)
PROPOSED MINING LEASE BOUNDARY
MLB
BOREHOLE DRILLED WITH DEPTH
OVERBURDEN SOIL
FUNGGY LIMESTONE
DARK GREY LIMESTONE
LIGHT GREY LIMESTONE
SHALE/QUARTZITE
INTERSTITIAL CLAY
WELL
N20°E
S20°W
PROVED MINERAL RESERVE(111)
PROBABLE MINERAL RESERVE(122)
MLB
C/52/01
C/52/02
26.0
12.5
DATUM
DISTANCE IN METRES
ML 52
GEOLOGICAL SECTION AT ML 52
WELL 3
15.0
20.0
ML 52 A
GEOLOGICAL SECTION AT ML 52A
WELL 1(P)
WELL 2
29.0
15.0
ML 52 B
GEOLOGICAL SECTION AT ML 52B
PLATE IV A
CERTIFIED THAT THE SECTIONS ARE CORRECT AND UP-TO-DATE
KADAPA LIMESTONE LEASE
ACC LIMITED
PROJECT
DRAWING
GEOLOGICAL SECTIONS
SCALE - 1 : 2000
COMPETENT AUTHORITIES
REGISTRATION NUMBERS
SURVEYOR
VINOD KUMAR
DRAUGHTSMAN
SUBHASHCHANDRA N. SAHAR
DATE
ACC LIMITED
RAW MATERIAL & MINE PLANNING

Annexure 17C_Conceptual plan & section




SECTION ALONG AA'
SECTION ALONG BB'
SECTION ALONG CC'
SECTION ALONG DD'
CERTIFIED THAT THE SECTIONS ARE CORRECT
PLATE XI AA
KADAPA LIMESTONE LEASE
ACC LIMITED
PROJECT
DRAWING
CONCEPTUAL SECTIONS
SCALE - 1 : 5000
COMPETENT AUTHORITIES
SURVEYOR
VINOD KUMAR
ACC LIMITED
RAW MATERIAL & MINE PLANNING

ADDITIONAL INFORMATION

S. No	Point	Reply
A.	**REPLY OF ADS DATED 07.12.2016 AND 11.01.2017**	
1.	Detailed R&R plan for all the 747 families involved with need-based action plan along with details of cost involved to be provided. With regard to skill development the details of the number of people trained also to be provided.	The total mining lease area is 997.08 ha which falls into villages Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollaapalle, G. Uppalapadu of Mandal: Mylayara, District: Kadapa (YSR), Andhra Pradesh. Out of total lease area 10.35 ha is government land and 986.74 ha is private land. Out of the total private land, 681.47 ha land is under possession and remaining land to be acquire. Total project affected families are 747 (622 PAF's are those whose land has been acquired and 125 PAF's are those whose land to be acquired) Total budget for R&R is estimated as Rs. 298.648 Crore. Detailed R&R Action Plan has been prepared and same is enclosed as ***Annexure 11*** with Final EIA/EMP Report
2.	The committee also required the PP to submit a detailed action plan on the issues raised during the public hearing.	Detailed action plan on the issues raised during the public hearing is prepared and given in Chapter 7, Para 7.2, Page no 195 to 202 of this Final EIA/EMP Report.
3.	The committee noted that in the mine plan the total production was given only as 3.5 MTPA but the proponent was applying for 7.0 MTPA. The committee stated that the proposal be revised and submitted for 3.5 MTPA.	Mining Plan is prepared for 7.0 million TPA production capacity. Same can be verified through Mining plan, chapter 4, Page no 44, where it is mentioned "Initially the mine will be under development for the first four years. In third- and fourth-year initial production will start in view of development of faces in limestone benches and preparation of roads and ramps. And fifth year onwards, production from mine will be at the rate of 3.5MTPA. In the eighth year there will be enhancement in production and the level of production of limestone will be raised to 7.0 MTPA"
4.	The committee also noted that there was a discrepancy in the land use based on the satellite image and most of the mine area resembled agriculture land. Based on the presentation of the committee noted that there was 300 ha. of non-mineral area which could be reduced from the project area.	Out of total lease area of 997.08 ha, Government land is 10.35 ha and private land is 986.74 ha. As per Approved Mining Plan, at the conceptual stage, total excavated area will be 707.1 ha, out of which 390.6 ha will be converted into water reservoir and 146.5 ha will be backfilled area and 170.0 Ha area will be used for storage of sub grade. 9.5 ha area will be under waste dump outside excavated area. The other infrastructure like Workshop, Admin Building & Road exists in 2.90 ha area. The remaining 247.58 ha area will be left undisturbed at the

		end of life of mine. Undisturbed area of 247.58 ha may convert for mining uses after detailed exploration work.
5.	The committee also noted that though the PP mentioned that there was no forest land involved and no National Park/Sanctuary was within 10 Km radius, the certified letters from the respective Forest Department was not submitted. Also, the list of species present in the mine lease area authenticated by the forest department has not been submitted. In this regard, the committee required the above letter to be submitted for further consideration of the proposal	No forest land falls within the lease area. Certificate from State Forest Department has been obtained vide letter No 105/2016 dated 11.11.2024. Copy of same is enclosed as **Annexure 4** with Final EIA/EMP Report. There is no National Park, Wild Life Sanctuary, Biosphere Reserves, Wildlife corridors, Tiger/Elephant Reserves, etc exist within 10 km radius study area. Authenticated location map has been received from State Forest Department on 16.01.2025. Copy of same is enclosed as **Annexure 5** with Final EIA/EMP Report. Conservation plan for 16 schedule I species has been prepared and approved from Principal Chief Conservator of Forests (WL) & Chief Wildlife Warden, A.P. over an amount of Rs. 10.67 Crore for 10 years vide letter No 21034/3/2024/WL-2 dated 16.01.2025. Copy of authenticated list of flora and fauna with location map and wildlife conservation plan for Schedule I species is enclosed as **Annexure 6** with Final EIA/EMP Report.
B	**REPLY OF ADS DATED 09.02.2017**	
1.	Kindly provide valid lease documents or Valid LOI	Mining lease has been granted by State Govt on 15.11.2023 and executed on 14.05.2024. Copy of Mining lease deed is enclosed as **Annexure 2** with Final EIA/EMP Report.

Annexure II

MINING PLAN
AND
PROGRESSIVE MINE CLOSURE PLAN
OF
KADAPA LIMESTONE DEPOSIT
(APPLIED AREA – 997.08 Ha)
of
ACC LIMITED



Area: Non Forest
Category – A Fully Mechanized
Village: Dhannawada, ChinaVenturla, Vaddarala, Bestavemula, Gollapalle, G. Uppalapadu
District: Kadapa
State: Andhra Pradesh

Prepared For:
ACC Limited
Cement House
121, Maharshi Karve Road,
Mumbai – 400 020

VOLUME - I (TEXT)

SUBMITTED
Under Rule 22(4) of
Mineral Concession Rules, 1960

Prepared by

Shishir Gour

Reg. No. RQP/NGP/325/2004/A

CONTENTS

Indian Bureau of Mines
Govt. of India

S.No.	Subject	Page No.
	CERTIFICATE FROM RQP	
	CERTIFICATE OF MCDR COMPLIANCE	
	CONSENT LETTER FROM APPLICANT	III
	CERTIFICATE FROM APPLICANT	IV
	DECLARATION FROM APPLICANT	V
	DECLARATION FROM RQP	VI
	UNDERTAKING FOR CIR. NO. 2/2010	VII
	COPY OF BOARD RESOLUTION	VIII
	PERMISSION LETTER OF CHANGE OF SCALE	IX
	INTRODUCTORY NOTES	1
1.0	GENERAL	6
2.0	LOCATION AND ACCESSIBILITY	9
3.0	GEOLOGY &.EXPLORATION	11
4.0	MINING	36
5.0	BLASTING	56
6.0	MINE DRAINAGE	59
7.0	STACKING OF MINERAL REJECTS & DISPOSAL OF WASTE	61
8.0	USE OF MINERAL	64
9.0	OTHERS	65
10.0	MINERAL PROCESSING	69
11.0	ENVIRONMENT MANAGEMENT PLAN	70
12.0	PROGRESSIVE MINE CLOSURE PLAN	107

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14

LIST OF ANNEXURE

S.No.	DESCRIPTION / TITLE	ANNEXURE No.	PAGE NO.
1.	Letter of Lease Grant	1	123
2.	Investigation (PL) Report	1A	128
3.	Letter from Forest Department	1B	149
4.	Certificate of Registration	1C	152
5.	Photo Identity of Constituted Authority	1D	154
6.	Application for Mining Lease (Copy)	1E	156
7.	Photos of the applied area	1F	166
8.	Khasra Details	2	171
9.	Reserve Calculation (122,332,334)	2A,2B,2C	178
10.	Photos of Ground Control Points	2D	182
11.	Charging pattern in blasting	3	186
12.	Firing pattern in blasting	4	188
13.	Risk management in mines	5	190
14.	Accreditation Letter (Vimta Labs)	5A	192
15.	Physical & Chemical Characteristics of Soil and Waste	5B	196
16.	Year-wise proposal of abandonment cost	6	199
17.	Tentative Abandonment Schedule	6A	201
18.	Financial assurance calculation	7	204
19.	Copy of letter submitted to RCOM Hyderabad for Financial Assurance	7A	206
20.	Borehole logs	8	208

Indian Bureau of Mines
Govt. of India

SHRI [illegible] GAUR
Valid upto 30th Dec. 14

S.No.	DESCRIPTION / TITLE	ANNEXURE No.	PAGE NO.
21.	RQP Certificate	9	253
22.	Results of ambient air quality	10	255
23.	Ground water quality	11	257
24.	Surface water quality	12	259
25.	Demographic Details	12A	261
26.	Costing details	13	263
27.	Cash flow forecast	14	265
28.	Sensitivity analysis	15	268
29.	Flow sheet of Crushing Plant	16	273
30.	Species for Plantation	17	275
31.	Notification dated 21.09.2007	18	276

Indian Bureau of Mines
Govt. of India

Valid upto 31st Dec. 14

LIST OF PLATES

SR.NO.	PLATE NUMBER		TITLE OF PLAN	SCALE	FOLDER VOLUME
1	I		Key plan	1 : 50,000	
2	II		Revenue Plan	1 : 8,000	
3	III		Geological Plan	1 : 5,000	
4	IIIA		Geological Slice Plan	1 : 5,000	
5	IV		Geological Sections	1 : 5,000	
6	IVA		Geological Sections (SL 52, 52A & 52 B)	1 : 2,000	
7	V		Surface Plan	1 : 5,000	
8	VI		Production & development Plan 1st Year	1 : 2,000	
		VIA	SL 00 to SL 16		
		VIB	SL 08 to SL 32		
		VIC	Sl 24 to SL 44		
		VID	SL 44 to SL 64		
		VIE	SL 52 to SL 72		II
9	VII		Production & development Plan 2nd Year	1 : 2,000	
		VIIA	SL 00 to SL 16		
		VIIB	SL 08 to SL 32		
		VIIC	Sl 24 to SL 44		
		VIID	SL 44 to SL 64		
		VIIE	SL 52 to SL 72		
10	VIII		Production & development Plan 3rd Year	1 : 2,000	
		VIIIA	SL 00 to SL 16		
		VIIIB	SL 08 to SL 32		
		VIIIC	Sl 24 to SL 44		
		VIIID	SL 44 to SL 64		
		VIIIE	SL 52 to SL 72		III
11	IX		Production & development Plan 4th Year	1 : 2,000	
		IXA	SL 00 to SL 16		
		IXB	SL 08 to SL 32		
		IXC	Sl 24 to SL 44		
		IXD	SL 44 to SL 64		
		IXE	SL 52 to SL 72'		
12	X		Production & development Plan 5th Year	1 : 2,000	
		XA	SL 00 to SL 16		
		XB	SL 08 to SL 32		
		XC	Sl 24 to SL 44		
		XD	SL 44 to SL 64		
		XE	SL 52 to SL 72		
13	XI		Conceptual plan	1 : 5,000	
14	XIAA		Conceptual Sections	1 : 5,000	
15	XII		Enviornment Plan	1 : 5,000	
16	XIII		Progressive Mine Closure Plan	1 : 5,000	
17	XIV		Enviornment Management Plan	1 : 5,000	IV

SHISHIR GAUR
ROP/NGP/335/2004/A
Valid upto 6th Dec. 14

CERTIFICATE

I, Shishir Gour, duly recognized as qualified persons to prepare mining plans under rule 22 (C) of Mineral Concession Rules 1960(revised 1987) the registration number being **RQP/NGP /325/2004/A**. have prepared the Mining Plan and Progressive Mine Closure Pl. in respect of the Kadapa Mining Lease **(997.08 Ha)** in District Kadapa, State Andhra Pradesh

The various data and write up enclosed have been complied and verified by me. The working plans and all other details given in the mining plan along with progressive mine closure plan have been prepared under my guidance and duly verified by me.

The provisions of Mines Act, Rules and Regulation made there under and the precautions outlined by the Directorate General of Mines Safety have been observed in the mining plan and progressive mine closure plan.

The information provided in the mining plan and progressive mine closure plan is corre.. and accurate to the best of my knowledge and belief.

(Shishir Gour)

Recognised Qualified Person

Reg No RQP/NGP/325/2004/A
Validity up to 06/12/2014
Manager Geology
Raw Material & Mine Planning
ACC Limited,
ACC Thane Complex
L B S Marg
Thane 400 604

Date: 15/09/2011

CERTIFICATE

The provisions of Mineral Conservation and Development Rules, 1988 have been observed in the mining plan of Kadapa Limestone Mine for an area of 987.08 Ha in Kadapa District, Andhra Pradesh state applied by ACC Limited and wherever specific permissions are required, the applicant will approach the concerned authorities of Indian Bureau of Mines.

(Shishir Gour)

Recognised Qualified Person

Reg No RQP/NGP/325/2004/A
Validity up to 06/12/2014
Manager Geology
Raw Material & Mine Planning
ACC Limited,
ACC Thane Complex
L B S Marg
Thane 400 604

Date: 15/09/2011

CONSENT LETTER FROM APPLICANT

The Mining Plan under Rule 22 (4) of Mineral Concession Rules, 1960 and Progressive Mine Closure Plan under Rule 23 (B) of Mineral Conservation and Development Rules, 1988 in respect of Kadapa Mining Lease covering an area of 997.08 Ha in Kadapa District, Andhra Pradesh, has been prepared by Mr. Shishir Gour, Regn.No.RQP/NGP/325/2004/A. I request Controller of Mines, South Zone, Bangalore and Regional Controller of Mines, IBM, Hyderabad to make further correspondence regarding the modification of the above on the following address.

Mr. Shishir Gour
Manager Geology
Raw Material & Mine Planning
ACC Limited,
ACC Thane Complex
L B S Marg
Thane 400 604

I hereby undertake that the mining plan and the progressive mine closure plan made by the recognized person may be deemed to have been made with my knowledge and consent and shall be acceptable to me and binding on me in all respect.

ACC Limited M.D.'S Office MUMBAI

(Kuldip Kaura)
CEO & Managing Director
ACC Limited

Date: 15/09/2011



CERTIFICATE

"The mine closure plan complies all statutory rules, regulations, orders made by the central or state govt., statutory organizations, court etc. have been taken into consideration and wherever specific permission is required the concerned authorities will be approached. I also give an undertaking to the effect that all measures proposed in this closure plan will be implemented in a time bound manner".



(Kuldip Kaura)
CEO & Managing Director
ACC Limited

Date : 15/09/2011

Declaration

Certified that the provisions of Mines Act, Rules and Regulations made there under have been observed in the Mining Plan and Progressive Mine Closure Plan of Kadapa Mining Lease **(area- 997.08 Ha)** in District Kadapa, State Andhra Pradesh and wherever specific permissions are required, the applicant will approach DGMS. Further Standards prescribed by DGMS in respect of Miner's health will be Strictly Implemented.

(Kuldip Kaura)
CEO & Managing Director
ACC Limited

Date: 15/09/2011

Declaration

Certified that the provisions of Mines Act, Rules and Regulations made there under have been observed in the Mining Plan and Progressive Mine Closure Plan of Kadapa Mining Lease **(area- 997.08 Ha)** in District Kadapa, State Andhra Pradesh and wherever specific permissions are required, the applicant will approach DGMS. Further Standards prescribed by DGMS in respect of Miner's health will be Strictly Implemented.

(Shishir Gour)

Recognised Qualified Person

Reg No RQP/NGP/325/2004/A
Validity up to 06/12/2014
Manager Geology
Raw Material & Mine Planning
ACC Limited,
ACC Thane Complex
L B S Marg
Thane 400 604

Date: 15/09/2011

UNDERTAKING

I / We undertake that Mining Plan (including Progressive Mine Closure Plan) in respect of Kadapa Mining Lease covering an area of 997.08 Ha in Kadapa District, Andhra Pradesh, shall be resubmitted complying the contents of Circular No. 2/2010 issued by Chief Controller of Mines, Indian Bureau of Mines, Nagpur vide letter no. N – 11013/3/MP/90 – CCOM Vol – VII dated 06/04/2010 within a period of six months.

ACC Limited M.D.'S Office MUMBAI

(Kuldip Kaura)
CEO & Managing Director
ACC Limited

Secretarial Division



ACC Limited
Registered Office
Cement House
121, Maharshi Karve
Mumbai 400 020, Inc
Phone +91 22 3302
Fax +91 22 6631
limited.com

Certified copy of a Resolution passed by the Members of the Company on 29th September 2010 approving the terms of appointment and remuneration of Mr Kuldip Kaura as CEO & Managing Director of the Company.

"**RESOLVED THAT** pursuant to the provisions of Sections 198, 269, 309, read with Schedule XIII and other applicable provisions, if any, of the Companies Act, 1956, the Company hereby approves of the appointment and remuneration of Mr Kuldip Kaura as the Chief Executive Officer & Managing Director (Designate) for the period 5th August 2010 till 12th August 2010 and thereafter as the Chief Executive Officer & Managing Director of the Company from 13th August 2010 upto and including 31st December 2013, upon and subject to the terms and conditions (including the remuneration to be paid in the event of loss or inadequacy of profits in any financial year during the aforesaid period) as set out in the Explanatory Statement annexed to the Notice and which terms and conditions have been incorporated in the draft Agreement between the Company and Mr Kuldip Kaura, which Agreement is hereby specifically sanctioned with liberty to the Directors to alter and vary the terms and conditions of the said appointment / remuneration and/or Agreement in such manner as may be agreed to between the Directors and Mr Kuldip Kaura."

Certified True Copy

Burjor D Nariman
Company Secretary & Head Compliance

September 16, 2011

VIII

SHISHIR GAUR
RQP/NGP/326/2004/A
Valid upto 6th Dec. 14

BY REGD POST

GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES
OFFICE OF THE CHIEF CONTROLLER OF MINES

No. N-11013/61/MP/07-CCOM (PF-III) **Nagpur, dated 13/04/2011**

To,

M/s Head Mining Support,
Raw Material & Mines planning,
ACC Thane Complex,
L.B.S. Marg, Thane – 400604.

*Sub - Permission for preparation of plans on a scale other than prescribed scale under rule 27(1)(d) of MCDR 1988 in respect of applied area for Limestone over an area of 997.08 Hect.(2463.83 Acres) in Dhanawada, Chinnaventurla, Vaddirala, Bestavemula, Golapalli & G. Uppalpadu villages Mylavaram Mandal, kadappa district of Andhra pradesh state, in favour of **M/s ACC Ltd.***

Ref: *Your letter No.* RMMP/KDP/2011, **dated 22/02/2011.**

Sir,

With reference to the letter on the subject mentioned above, I am directed to intimate that your request has been duly considered by competent authority and permission is hereby granted to prepare and maintain the plans on a scale of ***1:5000***, provided that mining block is demarcated clearly on the surface plan showing the area proposed for excavation for next five years. *Year-wise development plan* (pit position at the end of every year for five years) within the mining block boundary should be drawn on a scale of ***1:2000.*** The sections prepared should be in the same natural scale and all the plans and sections should be laid down on suitable grid for easy reference.

Yours Faithfully

(M. V. SAHASRABUDDHE)
Regional Controller of Mines.

SHISHIR GAUR
RQP/NCP/326/2004/A
Valid upto 6th Dec. 14

This Mining Plan is approved subject to the conditions / stipulations indicated in the Mining Plan approval letter No. MP/AP/COP/SY-339-52 Date 26/12/2011

ACC Limited

खान नियंत्रक (द.मं.)
Controller of Mines (S. Z.)
भारतीय खान ब्यूरो
Indian Bureau of Mines
बंगलूर / BANGALORE

INTRODUCTORY NOTES

The ACC Limited (ACC) is the oldest and one of the largest cement producers in India with annual production capacity of more than 21.40 Million tonnes per annum (MTPA).

ACC (ACC Limited) is India's foremost manufacturer of cement and concrete. ACC's operations are spread throughout the country with 16 modern cement factories, more than 40 Ready mix concrete plants, 20 sales offices, and several zonal offices. It has a workforce of about 9,000 persons and a countrywide distribution network of over 9,000 dealers. The manufacturing units are backed by a technology support services centre. Since its inception in 1936, the company has been a trendsetter and important benchmark for the cement industry in respect of its production, marketing and personnel management processes. Its commitment to environment-friendliness, its high ethical standards in business dealings and its on-going efforts in community welfare programmes have won it acclaim as a responsible corporate citizen. ACC has made significant contributions to the nation building process by way of quality products, services and sharing its expertise. The Company had a turnover of more than Rs. 8000/- Crores in its cement business in the year 2009.

ACC is also contributing to the implementation of the national pollution control strategy by consuming large quantities of blast furnace slag and fly ash in cement manufacture.

ACC was granted a prospecting license over an area of 2127 Ha in revenue villages of Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle, G. Uppalapadu, Madhapuram, Kallutla and Nawabpeta in Mylavaram Mandalam of Kadapa district in Andhra Pradesh State on 23.8.2000.

To delineate the limestone bearing areas, which could be applied under Mining Lease, ACC carried out a preliminary geological investigation during 10th Apr 2002 and 10th July 2002.

On the basis of this exploration, ACC applied for a Mining Lease in the area over an extent of 997.08 Ha vide application dated 03.07.2002.

State Government has indicated the consent for considering the area to grant Mining Lease for a period of 20 years for the mineral Limestone in villages Dhannawada, Chinna

SHISHIR GAUR
IBM/SZ/MP/325/2004/A
valid upto 6th Dec. 14

Venturla, Vaddarala, Bestavemula, Gollapalle and G.Uppalapadu in Mylavaram mandalam, District Kadapa in Andhra Pradesh over an area of 997.08 Ha vide Govt. of Andhra Pradesh memo bearing number MEMO 16073/M.III (1)/2006-1 dated 22.06.2010. ACC Limited has proposed to put up a new cement plant (Clinkerisation) of 5.00 MTPA in the area in planned manner. The first plant of 2.5 MTPA (3.5 MTPA Limestone) clinkerisation is proposed to be set up within 3 years of ML execution followed by another line of 2.5 MTPA (3.5 MTPA Limestone) in next 5 years of commissioning of 1st unit. The major raw material, Limestone requirement for the plant will be met from the Mining Lease under discussion. Being a virgin land at present, lots of developmental and infrastructural jobs are to be started in advance before actual production starts.

The execution of the Mining Lease needs to be done in the stipulated time. As per the state government order, to execute the Mining Lease, Mining Plan and Progressive Mine Closure Plan are required to be prepared and approved. And hence Mining Plan including Mine Closure Plan is being submitted for approval under rule 22(4) of MCR, 1960.

Prior to grant of mining lease under discussion, there does not exist any mining lease granted/executed in favor of ACC Limited in the state of Andhra Pradesh. The area of the mining lease is **997.08 Ha** in villages Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle and G.Uppalapadu in Mylavaram mandalam, District Kadapa in Andhra Pradesh and it is to be executed after approval of the Mining plan.

The details of Mining Leases (state wise) already held by ACC Limited are tabulated below –

S No.	Lease Reference No & Date	Area (Hectare)	Postal address/ Location	Mineral	Remarks
1	Ref. No. 427 dt 06.01.2003 as transfer of ML	448.392	Bargarh Cement Works, Cement Nagar , PO Bardol-768038 Dist-Bargarh (Orissa)	Limestone	
2	Ref. No. MMN-1086/117539/(4199)/IND & Dtd. 17.11.1988	840.83	Chanda Cement Works, PO Cement Nagar - 442 502 Dist-Chandrapur Maharashtra	Limestone	

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14



3	Ref. No. MMN-1095/C.R.6938/Ind - 9 & Dtd. 06.12.2004	558.9	Chanda Cement Works, PO Cement Nagar - 442 502 Dist-Chandrapur Maharashtra	Limestone and Shale	
4	Ref. No.2082 Dtd. 13/9/1965	63.87	Chaibasa Cement Works, PO Jhinkpani - 833 215 Dist-West Singhbhum Jharkhand	Limestone	
5	Ref. No. 912 Dtd. 18.03.1971	598.88	Chaibasa Cement Works, PO Jhinkpani - 833 215 Dist-West Singhbhum Jharkhand	Limestone	
8	Udyog-Bhu(Khani-4)Major-47/98-1-7556 dated 29.01.2003	231.25	Gagal Cement Works, PO Barmana - 174 013 Dist- Bilaspur Himachal Pradesh	Limestone, Quarzite & Shale	
9	Udyog-Bhu(Khani-4)Major-71/98-1917 dated 06.06.2008	4.88	Gagal Cement Works, PO Barmana - 174 013 Dist- Bilaspur Himachal Pradesh	Shale & Quartzite	
10	Ref. No. 7388 & Dtd. 06.04.1988	269.95	Jamul Cement Works, PO Jamul Cement Works Dist- Durg - 490 024 Chhattisgrah	Limestone	
11	Ref. No.F 3-11/2001/M Raipur Dtd.07.06.2001	36.01	Jamul Cement Works, PO Jamul Cement Works Dist- Durg - 490 024 Chhattisgrah	Limestone	
12	Ref. No. 1833 & Dtd. 04.02.2006	37.85	Jamul Cement Works, PO Jamul Cement Works Dist- Durg - 490 024 Chhattisgrah	Limestone	
13	Ref. No. 1671 & Dtd. 04.12.2008	53.57	Jamul Cement Works, PO Jamul Cement Works Dist- Durg - 490 024 Chhattisgrah	Limestone	
14	Ref. No.F 3-86/2007/12(1) Raipur Dtd.10.8.2009	582.962	Jamul Cement Works, PO Jamul Cement Works Dist- Durg - 490 024 Chhattisgrah	Limestone	
15	Ref. No. 4114/Khani./U.P./2007 & Dtd. 08.10.2007	1520.22	Kymore Cement Works, P.O. Kymore - 483 880 Dist- Katni, Madhya Pradesh	Limestone and clay	

SHISHIR GAUR
RQP/NGP/326/2004/A
Valid upto 6th Dec. 14



16	Ref. No. F- 3 - 75 / 2002 / 12 / 2 dated 23.09.03 Vide Order of the Department of Mineral Resources , Govt. of M.P.	1.093	Kymore Cement Works, P.O. Kymore - 483 880 Dist- Katni, Madhya Pradesh	Limestone	
17	Ref. No. F- 3 - 55 / 2000 / 12 / 2 dated 04.10.08 Vide Order of the Department of Mineral Resources , Govt. of M.P	5.76	Kymore Cement Works, P.O. Kymore - 483 880 Dist- Katni, Madhya Pradesh	Limestone	
18	Ref. No. 3- 90 / 97 / 12 / 2 dated 12.02.2009 Vide Order of the Department of Mineral Resources , Govt. of M.P	1.121	Kymore Cement Works, P.O. Kymore - 483 880 Dist- Katni, Madhya Pradesh	Limestone	
19	Ref. No. F - 3 - 104 / 97/ 12 / 2 dated 26.08.08 Vide Order of the Department of Mineral Resources , Govt. of M.P	31.43	Kymore Cement Works, P.O. Kymore - 483 880 Dist- Katni, Madhya Pradesh	Limestone	
20	Ref. No. F- 3 - 105 / 2000 / 12 / 2 dated 26.08.08 Vide Order of the Department of Mineral Resources , Govt. of M.P	8.01	Kymore Cement Works, P.O. Kymore - 483 880 Dist- Katni, Madhya Pradesh	Limestone	
21	Applied for renewal, thru receipt in form - D S.No. 51 dated 21.07.92. The Ml is under deemed renewal.	1516.88	Lakheri Cement Works, P.O. Lakheri - 323 603 Dist- Bundi, Rajasthan	Limestone, building and other stone	
22	Ref. No. G.O. 674 & Dtd. 22.09.1989	135.5	Madukkarai Cement Works, Madukkarai , P.O. 641 105 Dist-Coimbatore, Tamil Nadu	Limestone	
23	Ref. No. GO. 7702/MMI/98 Dated 04/01/2010	14.51	Madukkarai Cement Works, Madukkarai , P.O. 641 105 Dist-Coimbatore, Tamil Nadu	Limestone	
24	Ref. No. GO. 2333/MMI/98 Dated 04/01/2010	2.711	Madukkarai Cement Works, Madukkarai , P.O. 641 105 Dist-Coimbatore, Tamil Nadu	Limestone	
25	Ref. No. G.O. 725 & Dtd. 12.10.1989	29.72	Madukkarai Cement Works, Madukkarai , P.O. 641 105 Dist-Coimbatore, Tamil Nadu	Limestone	

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14



26	Ref. No. G.O. 220 & Dtd. 12.05.2006	66.659	Madukkarai Cement Works, Madukkarai , P.O. 641 105 Dist-Coimbatore, Tamil Nadu	Limestone	
27	Ref. No. C - 258 & Dtd. 27.02.1982	471.03	Wadi Cement Works, P.O. Wadi- 585 225 Dist- Gulbarga, Karnataka	Limestone, clay and shale	

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14

1.0 GENERAL:

a) Name and address of the applicant:

Registered Office : ACC Limited,
Cement House,
121, Maharshi Karve Road,
Mumbai - 400 020
Telephone - (022) 33024321
FAX - (022) 66317403

CEO & MD : Mr Kuldip Kaura

Address of Correspondence : Mr M K Mehta
Head – Mining Support
Raw Materials & Mines Planning
ACC Limited
ACC Thane Complex
LBS Marg, Teen Haath Naka

District : Thane (W)
State : Maharashtra
Pin Code : 400604
Phone : 022 - 67973967
Fax : 022 – 25811618

True copy of certificate of registration of company is enclosed as **Annexure – 1C**.
Copy of photo identity (pan card) of CEO & MD has been enclosed as **Annexure – 1D**.

b) Status of the applicant: ACC Limited is a public limited company.

c) Mineral or Minerals occurring in the area which the applicant intends to mine.

Limestone.

d) Period for which the mining lease is granted/renewed.

State Government has indicated the consent for considering the area to grant Mining Lease for a period of 20 years for the mineral Limestone. Copy of the consent letter / memo of Government of Andhra Pradesh bearing number MEMO.NO.16073/M.III(1)/2006-1 dated 22.06.2010 has been enclosed as **Annexure – 1.**

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14

The copy of the application for mining lease submitted to State Government for grant of lease has been enclosed as **Annexure – 1E**.

Few photographs of the area showing features such canals under construction and road are enclosed as **Annexure – 1F**.

e) Name and address of RQP preparing Mining Plan.

Name of the RQP	Shishir Gour
Address	Manager, Raw Materials & Mines Planning, ACC Limited, ACC Thane Complex, LBS Marg, Near Teen Haath Naka, Thane (W) - 400607
Phone	022 - 39248393
e-mail	shishir.gour@acclimited.com
Registration No.	RQP/NGP/325/2004/A
Date of grant	7th Dec 2004
Validity upto	6th Dec 2014

f) Name and Address of the Prospecting agency.

ACC Limited was granted and had executed the agreement for Prospecting License for limestone over an area of 2127 hectares in revenue villages of Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle, G. Uppalapadu, Madhapuram, Kallutla and Nawabpeta in Mylavaram Mandalam of Kadapa district in Andhra Pradesh State on 23.8.2000. Raw materials and mine planning cell of ACC carried out a preliminary geological investigation designed to delineate the limestone bearing areas which could be applied under Mining Lease (ML) and carry out detailed proving later. The name and address of ACC raw materials and mine planning cell is as follows:

Raw Materials & Mine Planning
ACC Limited
ACC Thane Complex
LBS Marg, Teen Haath Naka,
Thane (W) – 400604
Maharashtra

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14

This geological investigation included topographic survey, geological mapping, wide spaced diamond core drilling and estimating the reserves as well as quality. The fieldwork at the site was conducted from March 2002 to July 2002. The copy of the PL report is attached as **Annexure No – 1A**.

g) Reference No. and date of consent letter from the State Govt. : MEMO.NO.16073/M.III(1)/2006-1 dated 22.06.2010 **(Annexure No.1)**

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14

Indian Bureau of Mines
ACC Limited
Govt of India

2.0 LOCATION AND ACCESSIBILITY:-

a) Details of area (with location map) : The Mining Lease is located in the villages Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle and G.Uppalapadu in Mylavaram Tehsil, Kadapa District, Andhra Pradesh State

b) District and State : District – Kadapa, State – Andhra Pradesh

c) Taluka : Mylavaram mandalam.

d) Village : Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle and G.Uppalapadu in Mylavaram mandalam.

e) Khasra No./Plot No./ Block Range/Felling series etc. : Enclosed as **Annexure No.2**

f) Lease Area (hectares) : 997.08 hectares

g) Whether the area is recorded to be in forest(please specify whether protected, reserved etc.) : No forest in mining lease area (Letter of Forest Dept. is enclosed as **Annexure - 1 B**)

h) Ownership/Occupancy : Private Land 293.84 Ha,
Government Land 9.81 Ha and
ACC Purchased Land 693.43 Ha
(Enclosed as **Annexure - 2**)
Permanent Ground Control Points (Photographs enclosed as **Annexure – 2D**) –

Point Number	Latitude	Longitude	Location
1	15°00' 18" N	78°15' 39" E	Road
2	14°58' 50" N	78°16' 51" E	Well No - 4
3	14°58' 33" N	78°17' 21" E	Well No - 5

i) Existence of public road/ Railway line, if any nearby and approximate distance : Public road exists inside lease.

j) Toposheet No. with latitude and longitude : Toposheet Nos. 57 I/4 & 8 and 57 J/1 & 5
Latitude – From 14 ° 59' 20" N – To 15 ° 00' 10"
Longitude – From 78 ° 13' 55" E - 78 ° 18' 08" E

SHISHIR GAUR
Valid upto 9th Dec. 14

k) General location and vicinity map showing area boundaries and existing and proposed access routes. : Enclosed as Key Plan & Surface Plan (Plate No. I, V)

n) Accessibility

The mining lease area is located at a distance of 40 Km NW from Muddanur railway station which is on the Mumbai – Chennai main line of south central railway. At 14 Km from mining lease, on the up coming Nandyal-Yerraguntla railway line of south central railway, S. Uppalpadu railway station is under construction.

The area is well connected by the road network. Mining lease area is about 60 Km from NH 18 and about 20 Km from Jammalamadugu, located on State Highway no. 57.

The nearest airport is Tirupathi located about 240 Km away.

The nearest sea port for the area is the Krishnapatnam which is about 240 Km away.

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14

Indian Bureau of Mines
भारत सरकार
Govt. of India

Part - A
3.0 GEOLOGY & EXPLORATION:-

The deposit is located in villages Dhannawada, Chinna Ventuna, Vaddarala, Bestavemula, Gollapalle and G. Uppalapadu, in Mylavaram Mandalam of Kadapa District ,Andhra Pradesh and lies between Latitude – 14 ° 58' 20" - 15 ° 00' 21" and Longitude – 78 ° 13' 55"- 78 ° 18' 20" in the Survey Of India Toposheet Nos. 57 I/4 & 8 and 57 J/1 & 5. The area lies north of the Jammalamadugu – Tadipatri State Highway no. 57.

3 (A) Topography, Drainage, General geology and Local geology:

Topography

The area exhibits gently undulating topography in the central and Western parts and gentle to moderately steep slopes towards northern and eastern flanks. Vaddarala village in the Western part is situated at a higher elevation (226.0 m) as compared to eastern part of the area. The highest and lowest contour level in the area is 226m, 204m respectively located in the west and eastern side of the mining lease respectively.

Drainage

In the Northern side of mining lease area, one stream named "Pala Vagu" is flowing from the West to the East and the Southern side of mining lease area, another stream named "Rallavanka" is flowing from the West to East. Both of the streams become dry during the summer. The Western side of our area, one canal named the GNSS (Galeru Nagari Sujala Sravanthi) is passing from the North to the South. Limestone is covered by soil and most of the area is being used for active dry cultivation. Seasonal cash crops like groundnut, pulses etc are grown as and when favourable monsoon is received. The area is characterized by thin/sparse vegetation mainly comprising thorny bushes and is free from any major tree or forest cover. The average annual rainfall is about 783.3 mm. The area experiences maximum rainfall due to south West monsoon.

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14

General (Regional) Geology:

Sedimentary rocks found in the northwestern part of Kadapa district belong to the Kurnool Group. The limestone and other rock formations occurring in the area belong to Kurnool Formations of Indian Stratigraphy sequence. These formations are younger than rocks of the Kadapa Basin and are well preserved in the Kadapa Basin.

The Kadapa Basin extends from Nagari in the south up to Amaravati in the north east over a length of about 440 km. with width ranging from 80 to 145 km. encompassing an area of about 44000 sq. km. Kadapas and associated younger Kurnools occupy a unique position in Indian Stratigraphy because of economic interest and hence have been the subject of studies for more than seven decades. Kurnool Group of rocks is found confined to two small areas within Kadapa basin one in the area between Kadapa and Kurnool and another in the area West of Amaravati. The later is also referred to as the Palnads.

In general the Kurnool rocks overlie rocks belonging to the Kadapas. The Kadapas are in turn deposited over the Archaean basement. These rocks are believed to be of Proterozoic age; equivalent to early Vindhyan rocks. The Kurnool rocks comprise limestone, shale and sandstones. Unlike the rocks of Kadapa Group, which are associated with intrusives and are slightly disturbed, the younger Kurnool Group are free from intrusives and are structurally undisturbed.

Bruce Foote first studied the area and subsequently W. King gave a detailed account of the stratigraphic sequence of the formations. Later, the Geological Survey of India (GSI) carried out systematic mapping of the region and confirmed the stratigraphy, which was established earlier with minor changes.

The regional stratigraphic sequence of rocks is furnished on next page:

SHISHIR GAUR
Valid upto 6th Dec. 14

	Recent	: Soil and Alluvium
	Post-Kurnool	: Quartz/Calcite/Barite veins
Kurnool Group	Kundair Formation	: Nandyal Shales
		: Koilkuntla Limestone
	Panyam Formation	: Pinnacled Quartzites
		: Plateau Quartzites
	Jammalamadugu Formation	: Auk Shales
		: Narji Limestone
	Banaganapalli Formation	: Sandstone
---------- UNCONFORMITY ----------		
Kadapa Group		Gandipet Quartzites
Archaean	Granites and granitic gneisses traversed by dolerite dykes & quartz veins	

The limestone deposit under consideration belongs to the Narji Limestone of Jammalamadugu Formation and is seen to extend from Nalgonda in the NE up to Kadapa in the SW. The limestone deposits occur in Dondapadu and Wadapalli in Nalgonda District, Dachepalli and Sitarampuram in Guntur District, Panyam, Koilkuntla and Banaganapalli in Kurnool District and Jammalamadugu and Kamalapuram in Kadapa District.

Archaean granites and gneisses occupy the edge of the main Kadapa Basin all the way from the southeast to the northeast in arcuate shape and present unconformable contact with the overlying sedimentary rocks.

Quartzites are hard and compact but gritty in nature. They are traceable all along the boundary of the basin overlying the Archaean rocks. Shales are purple coloured and show horizontal to gently dipping beds. These Shales are sandwitched between the overlying limestone and underlying Quartzites.

Limestone outcrops are in shades of grey, off white and green and exhibit fine-grained texture, hard as well as compact in nature with thin shale partings. The Narji limestone is thick bedded, occasionally flaggy and occurs in shades of dark grey to light grey in

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14

ACC Limited
Govt. of India

colour. The quality of limestone deteriorates at places depending upon the predominance of shale partings and interstitial clay. Limestone outcrops show uneven weathering pattern due to the presence of alternating argillaceous and calcareous material. Good quality limestone shows smooth weathered surfaces while the argillaceous limestone shows sharp edged weathering pattern resembling a dentate structure. The general strike of the beds varies around NNW - SSE and dip gently towards east. Locally sharp changes in strike direction are also seen due to broad warpings. All the members of the Kurnool Group generally exhibit very gentle centroclinal dips varying between 2°-10° indicating deposition of sediment in a basin like depression.

Local Geology:

The geological formation in the area belongs to the Narji Limestone of Jammalamadugu Formation in Kurnool group as mentioned earlier. The regional characteristics of these rocks have been described in detail in 'Regional Geology' chapter. Locally sharp changes in strike direction are also seen due to broad warping. The local strike of the deposit is N70°W – S70°E with 2° dip towards N20°E.

Thick soil covers entire area and only at places limestone scree could be seen in the cultivated lands. However, the core samples do not indicate any major geologically disturbed zone and indicate that the formations in the area are relatively massive, thick bedded and fine grained in nature.

The local geological succession as observed from the boreholes core samples in the area could be described as given below.

Lithology	Thickness (m)	
	Min	Max
Overburden soil	1.0	6.0
Grey flaggy limestone	2.5	20.5
Dark grey limestone	8.5	31.0
Light grey limestone	1.0	6.5
Quartzite/Sandstone	0.5	Not bottomed

The litho units are described below in their order of superposition.

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14

Indian Bureau of Mines
ACC Limited
भारत सरकार
Govt. of India

Description of the rock type and typical quality:

Quartzite

This is the oldest unit identified in geological mapping and all the boreholes drilled were terminated after touching this litho unit. Outside the area, Quartzite is well exposed in the South. The Quartzite is greyish white in colour, hard in nature and typical quality of this litho unit would be as under :-

TC %	CaCO3 %	MgCO3 %	SiO2 %	Al2O3 %	Fe2O3 %	CaO %	MgO %	LOI %
2.5	0.9	1.3	95.3	0.6	0.8	0.9	0.3	1.7

Light Grey limestone

Light grey limestone overlies Quartzite and the contact between these two is sharp. Limestone could be distinguished by its colour and texture easily and is grey to light grey in colour, fine grained, hard and compact in nature. Thickness as observed from core samples is found to be extremely variable and the contact with overlying dark grey limestone is gradational. Being high in CaCO3 % content the typical quality of this litho unit would be as under:

TC %	$CaCO_3$ %	$MgCO_3$ %	SiO_2 %	Al_2O_3 %	Fe_2O_3 %	CaO %	MgO %	LOI %
88.8	85.7	2.6	8.8	0.7	0.4	48.7	1.3	38.7

Dark Grey Limestone

The dark grey limestone overlies light grey limestone and as the name signifies is dark grey in colour, fine grained, hard and compact in nature. From the core samples it has been observed that the thickness of dark grey massive limestone is maximum towards West in comparison to east. This could mainly be attributed to higher elevation of surface topography. In this limestone thin veins of calcite occur frequently and the same increase with depth. At places, the limestone appears to be siliceous thereby the CaCO3 content is relatively low. This could be due to presence of shale and clay. It has been noticed that whenever dark grey limestone underlies overburden soil, clay seepage seems to be

SHISHIR GAUR
RQP/NGP/326/2004/A
Valid upto 5th Dec. 14

very evident. Further, clay pockets ranging from 0.30 m to 1.30m have been observed in few boreholes only. Total 22 boreholes (cumulative meterage 730 m) were drilled and only 4.75 m is the clay pocket which is 0.65% of total meterage drilled. Hence contribution of this clay towards the total reserves estimation is negligible and no allowance has been considered in reserve estimation. Typically dark grey limestone would analyse as under.

TC %	$CaCO_3$ %	$MgCO_3$ %	SiO_2 %	Al_2O_3 %	Fe_2O_3 %	CaO %	MgO %	LOI %
85.2	82.6	2.3	11.1	1.2	0.6	47.6	0.9	37.6

Grey Flaggy Limestone

A variant of dark grey limestone, grey flaggy limestone overlies dark grey limestone. Being the youngest of all the limestone units is confined to higher elevation mostly in the Western part of the lease. The limestone is grey in colour, flaggy in nature with thin layer of shale partings. But these shale partings and bands cannot be mines separately with mechanized mining and hence contribution of these shale partings in the reserve estimated for grey flaggy limestone has not been considered. The extent of shale partings controls the quality of this litho unit. Typical quality of this limestone could be observed from the analysis given below:

TC %	$CaCO_3$ %	$MgCO_3$ %	SiO_2 %	Al_2O_3 %	Fe_2O_3 %	CaO %	MgO %	LOI %
76.2	73.9	1.9	24.6	3.8	2.0	36.7	0.8	30.5

The above quality primarily indicates that it is not suitable for the cement manufacture directly. However the utility of this litho-unit by beneficiation may result in conservation of mineral. Hence we propose to carry out beneficiation studies to identify the type of silica impurity and method of up gradation.

Overburden soil

Entire area is covered with overburden soil. The thickness varies from 1.0 m to nearly 6.0 m at places. The typical sample of overburden soil would analyse as below.

TC %	$CaCO_3$ %	$MgCO_3$ %	SiO_2 %	Al_2O_3 %	Fe_2O_3 %	CaO %	MgO %	LOI %
26.5	23.7	2.7	41.6	11.1	6.3	13.7	1.9	23.2

3(b) Topographic Plan

The topographic plan/Surface plan has been prepared in 1: 5000 scale with contour interval of one meter. As the entire area has been covered with soil, in the geological plan

SHISHIR GAUR Valid upto 5th Dec, 14

only overburden soil has been marked. The details of exploratory boreholes are marked in the plan.

3(c) Geological Sections

The local strike of the deposit is N70°W – S70°E with 2° dip towards N20°E. Therefore the geological sections have been prepared in N20°E – S20°W in 1:5000 scale i.e in dip direction (perpendicular to the strike direction). These geological sections have been used to calculate the resources and reserves

3 (d) Exploratory work:

Already carried out

The area was initially traversed in 1994 for Reconnaissance Prospecting and was found to contain extensive low dipping good quality limestone suitable for cement manufacture which was evidenced from the observation of various dug wells located in the area. (Enclosed with Annexure – 1A). Based on the initial traverses PL was applied on 27.9.1994

The Prospecting License over an area of 2127 hectares was granted and executed on 23.8.2000. It was valid for a period of 2 years i.e. till 22.8.2002.

After the execution of the PL, MoEF accorded site clearance for prospecting work on 4.9.2001. Moreover, due to local issues, it was difficult in accessing ground for exploration work and hence exploration could be commenced only in March 2002.

As the PL area was large, exploration of the PL area was conducted by placing boreholes in 800X800 and 800X400 grid intervals to quickly delineate the area to be applied for Mining Lease before expiry of the PL. On 3 rd July 2002 ML application was filed based on the prospecting work done till 26th June 2002 (17 boreholes). In the PL report enclosed the details are given. However the prospecting work was continued and further 5 boreholes were drilled before the expiry of the PL period i.e till 22.8.2002.

Therefore 22 boreholes have been drilled in total. The details of these boreholes are furnished below.

SHISHIR GAUR
Valid upto 6th Dec. 14

Sl No	SECTION LINE NO.	BOREHOLE NO.	LOCATION	SRL (m)	DEPTH (m)	BRL (m)
1	8	C/8/1	At ML 8	283.00	52.00	231.00
2		C/8/2	752.0 m S20^{0}W OF ML 8	219.00	33.50	185.50
3	16	C/16/1	1200.0 m N20^{0}E OF ML 16	216.00	44.50	171.50
4		C/16/2	400.0 m N20^{0}E OF ML 16	220.50	59.00	161.50
5		C/16/3	400.0 m S20^{0}W OF ML 16	220.00	41.00	179.00
6	24	C/24/1	1400.0 m N20^{0}E OF ML 24	213.00	38.50	174.50
7		C/24/2	800.0 m N20^{0}E OF ML 24	216.50	43.00	173.50
8		C/24/3	AT ML 24	218.50	44.50	174.00
9		C/24/4	800.0 m S20^{0}W OF ML 24	216.50	26.00	190.50
10	32	C/32/1	1000.0 m N20^{0}E OF ML 32 ,	215.00	42.00	173.00
11		C/32/2	400.0 m N20^{0}E OF ML 32	215.50	50.00	165.50
12		C/32/3	400.0 m S20^{0}W OF ML 32	214.50	35.00	179.50
13	44	C/44/1	400.0 m N20^{0}E OF ML 44	212.00	34.00	178.00
14		C/44/2	AT ML 44	210.00	19.00	191.00
15		C/44/3	400.0 m S20^{0}W OF ML 44	208.00	25.00	183.00
16	52	C/52/1	300.0 m N20^{0}E OF ML 52	209.00	26.00	183.00
17		C/52/2	100.0 m S20^{0}W OF ML 52	207.00	12.50	194.50
18	64	C/64/1	390.0 m N20^{0}E OF ML 64	207.50	24.00	183.50
19		C/64/2	10.0 m S20^{0}W OF ML 64	208.00	19.00	189.00
20	72	C/72/1	700.0 m N20^{0}E OF ML 72	204.00	24.00	180.00
21		C/72/2	300.0 m N20^{0}E OF ML 72	205.50	25.50	180.00
22		C/72/3	400.0 m S20^{0}W OF ML 72	204.00	12.00	192.00
Total Metreage					730.00	

Based on the data collected, it was found that the deposit is simple, low dipping and consistent in quality. It provided a confidence on the simple nature of the deposit and an area of 997.08 hectares was delineated and applied for ML on 3.7.2002.

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14

Meanwhile the UNFC guidelines came into effect vide IBM G.S.R. 338(E) dated 17.4.2003 on resource / reserve nomenclature. At a time when PL got lapsed and ML was under consideration of Government of Andhra Pradesh, time constraints could not provide an opportunity for carrying out exploration work as per the guidelines.

Now State Government has indicated the consent for considering the area of 997.08 Ha to grant Mining Lease vide Government of Andhra Pradesh letter 16073/M.III/2006-1 dated 22.6.2010 citing a provision to submit approved mining plan within a period of 6 months.

For estimating the reserve in the area, following points have been considered –

- The UNFC guidelines under Technological considerations indicate evidence of mineralization such as drilling/pitting/trenching/exploratory mining etc. in 200 to 400 m grid interval for G2 level of exploration and less than 200 m grid interval for G1 level of exploration
- Therefore an area around section line 52 has been identified having dug wells located in the vicinity of the boreholes on the section line.
- A section named 52B was constructed based on two dug wells Well 1 and 2 and another section named 52A was constructed based on dug wells Well 3 and 4.
- These two sections along with Section line 52 where boreholes C/52/01 and C/52/02 were drilled in 400 m interval formed the base for G2 and G1 level of exploration
- An area of 1.07 ha based on borehole C/52/02 and dug wells Well 3 and 4 which satisfy G1 level (less than 200 m grid interval) is taken up for Proved Mineral Reserve (111) category.
- An area of 16.5 ha based on borehole C/52/01 and dug wells Well 1 , 2 and 3 which satisfy data G2 level (between 200 to 400m grid interval) is taken up Probable Mineral Reserve (122) category.

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14

Indian Bureau of Mines
Limited
Govt. of India

- This reserve thus categorized as Proved Mineral Reserve (111) where G1 level of exploration is taken up and Probable Mineral Reserve (122) where G2 level of exploration is taken up for first five year working plan.
- For the rest of the area, the resources are calculated as Reconnaissance Mineral Resources (334).

Proposed Exploration

As discussed earlier since our PL period expired much before the UNFC guidelines came into effect we could not comply exploration as per the UNFC guidelines and we are not in a position to comply now as the ML is principally granted and any ground activity can be done only after execution of the ML. We therefore propose to conduct exploration as per UNFC norms soon after the ML is executed so that the entire ML area is covered under G1 level of exploration and reserves are calculated under Proved Mineral Reserve (111). We therefore propose boreholes over the entire ML area and propose to complete the same in the first five year period. A total of 428 boreholes have been proposed with a metreage of 12840. The details of this are given in the future exploration program.

Sampling:

The core samples were systematically split longitudinally and one half of the core was crushed to about 10 mm size, coned and quartered to yield a representative sample of about 200 gms. These samples were finely powdered and passed through 100 mesh BSS sieve. The other half of the core was packed in core boxes and sent to Logistics Base at Nagpur for preservation as required under Mineral Conservation and Development Rules, 1958 and for future reference.

Chemical Analysis:

All the samples mentioned above were analyzed for their carbonate contents mainly TC%, CaCO3% and MgCO3% by the acid alkali method by our Research laboratory at Thane which has more than 35 years of analytical experience in cement industry. The research laboratory kept at Thane complex by the company is one of the leading and specialized laboratories in India for the cement industry which has not only served for the

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14

in-house activities but also for many other cement projects/companies of the country. Apart from these, typical samples each from grey flaggy limestone, dark grey limestone and light grey limestone, overburden soil, interstitial clay and quartzite were generated for determination of major oxides (SiO2, Al2O3, Fe2O3, CaO, MgO, & LOI). The details are provided in the local geology chapter.

Future Exploration

In order to comply with the UNFC guidelines (of G1 level) boreholes are proposed in the entire ML area in 150 X 150 m grid interval (Less than G2 level of 200 m to 400 m grid interval as prescribed by UNFC for limestone and dolomite).

Year	Location	No. of Boreholes	Proposed depth	Total Metreage	Grid interval
1st Year	SL 52 to 32	82	30	2460	150X150 m
2nd Year	SL 32 to 24	85	30	2550	150X150 m
3 rd Year	SL 24 to 16	90	30	2700	150X150 m
4 th year	SL 16 to 0	84	30	2520	150X150 m
5 th year	SL 52 to 72	87	30	2610	150X150 m

For the proposed location of these boreholes, please refer **Plate No. III.**

Estimation of reserves

Categorization of Reserves

The Kadapa deposit can be categorized as Stratiform, Stratabound and Tabular Deposits of Regular Habit. The compliance for UNFC guidelines are as follows.

Proved Mineral Reserve (111)

G1(General Exploration)	Studies done
I.Geological survey: (i)Mapping-For coal, mapping 1:5000;for other minerals 1:1000 (ii)Preparation of detailed topographical-cum-geological map including all surface geological features, extent of deposit, structure, location of boreholes, assay plan and	Geological survey has been done. Mapping has been done on 1: 2000. Detailed topographical cum geological map – Plate III (on a scale of 1:5000 after obtaining permission from IBM – copy enclosed) including all required features has been prepared.

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14

sections of exploratory mine development and borehole data; (iii)Topogrid/triangulation stations/identified fiducials linking in the maps.	Identification of litho units and vertical sections have been prepared along the dip direction (Plate - Triangulation stations have been linked with spherical coordinates.
2.Geochemical survey: Detailed grid pattern sampling and analysis.	NA
3.Geophysical survey: Detailed and specific borehole geophysical survey.	NA
4.Technological: (i)Pitting - 2 to 5 per sq. km. for simple deposits; (ii)Trenching - At spacing of 200-300m; (iii)Drilling- closer spaced (with definite grid pattern) than that for G2 category; For coal, i)Density of boreholes to be 12 to 15 per sq.km. depending on the complexities for geostructural proving. ii) For opencast project grid spacing may be 100m x 50m depending on the geology, weather mantle cover , burning nature of coal seams. (iv)Exploratory mining and check drilling results if possible ; (v)Sampling- systematic pit and trench sampling, core and sludge sampling for laboratory scale and bulk sample for the pilot plant scale beneficiation studies.	In the area taken up for the reserve estimation borehole influence of less than 200 m has been taken. The data obtained from two dug wells is taken. 24samples have been collected from the well cuttings.
5.Petrographic and mineragraphic study: Refining of data on the petrographic character of rocks of the deposit and its surroundings, alterations (if any), including study of grain size texture gangue and its liberation characteristics for further refining of data	All the exploration data have been refined based on the petroqraphic character of rocks of the deposit & its surroundings
6)Geostatistical analysis of borehole data thickness of ore : waste encountered in holes, assay values of samples if considered neccesarry.	The samples have been statistically evaluated
F2 (Pre-feasibility Study)	
1. Geology: Geology of area and project, detailed exploration, closed spaced drilling, ore body modelling, bulk samples for beneficiation, geotechnical and ground water &surface waters studies.However for coal, beneficiation studies to be carried out depending upon coal qualities.	1. Detailed geological studies have been carried out. Detailed exploration, closed spaced drilling has been carried out.

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14



2. Mining: Mining plan, mine recoveries and efficiencies, equipment selection, manpower requirement.	2. Draft Mining plan has been prepared and submitted for approval by IBM
3.Environment: EIA studies and EMP including socio-economic impact, rehabilitation of project affected persons, waste disposal/reclamation.,detailed land use data.	3. Base Line data is collected and enclosed in EMP.
4. Processing: Pilot scale/industrial scale investigation data, list of equipment, manpower and environmental considerations like waste disposal of tailing, etc.	4. Limestone will be delivered to Cement Plant where it will be crushed for size reduction.
5. Infrastructure and services, construction activities: Full details	5. Full details have been incorporated in the Mining Plan.
6. Costing: Detailed break-up of capital cost, operating cost, details of working capital.	6. Detail break up of capital cost has been done (Annexure - 13)
7.Marketing: Overview, specific market aspects.	7. The mineral is not for sale, entirely consumed by our captive cement plant. However cement has good potential market in this part of country.
8. Economic viability: Cash flow forecast, inflation effects, sensitivity studies.	8. Cash flow forecast and sensitivity studies have been done. (Annexure – 14 & 15)
9. Other factors: Statutory provisions relating to labour, land, mining, taxation etc.	9. All statutory provisions shall be taken care of in the Mining Plan and will be regularly complied with.

E1(Economic)	Studies done
1.Detailed exploration.	1. Detailed exploration has been carried out by ACC.
2.Mining report /mining plan / working mines.	2. Draft Mining plan has been submitted by Lessee for approval.
3.Specific end-use grades of reserves (above economic cut-off grade).	3. End-use grades of reserves have been defined in the geological report & mining plan.
4. Specific knowledge of forest/non-forest and other land use data.	4. Different land-use data are clearly available and given in mining plan. There is no forest land in ML area.

Method of Estimation :

The Proved Mineral Reserves under 111 category have been calculated by cross sectional area X distance method. The cross sectional areas of different litho units within the area demarcated for Proved Mineral Reserve (111) in sections 52A and 52 were

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14



calculated and were multiplied by the influencing sectional distance to get the volume. This was multiplied by the TCF factor (2.3) to get the tonnage. The detailed calculations are shown in **Annexure – 2A.**

Probable Mineral Reserve (122)

G2(General Exploration)	Studies done
1.Geological survey : (i)Mapping on 1:25,000 to 1:5,000 or larger scale with triangulation points, benchmarks, if any shown For coal, mapping on 1:10,000 scale (ii) Linking of maps so prepared with topogrid; (iii)Assessment of lithology, structure, surface mineralisation, analysis of old history of mining	Geological survey has been done. Mapping has been done on 1: 2000. Detailed topographical cum geological map - Plate – III (on a scale of 1:5000 after obtaining permission from IBM – copy enclosed) including all required features has been prepared. Identification of litho units, geological sections have been prepared along the dip direction (Plate - IV) Triangulation stations have been linked with spherical coordinates.
2. Geochemical survey; (i)Detailed litho-geochemical channel sampling from fresh rock exposures, trenches, pits; (ii)Recording of deleterious elements, likely by-product elements (e.g. Ga in bauxite, Ni, PGE etc. in chromite, Au in Fe ore, etc. (Nil for coal/lignite exploration); (iii)In coal/ lignite exploration, geo-chemical sampling of coal and water to be done for environmental study.	**NA**
3.Geophysical survey: (i)Borehole geophysical survey; (ii)Special geophysical traverses for problem solving, if required .	**NA**
4.Technological: (a)Pitting/trenching: Systematic pitting/trenching for deciphering extent of mineralisation at surface. (b)Drilling: grid reduction needed: spacing (i) for coal, gypsum near surface potash and salt beds-400 to 1000m; (ii) Iron and manganese ore-100 to 200m. (iii) limestone and dolomite and barytes- 200 to 400m up to a depth of at least 30 m; (iv) bauxite of thick cappings and chromite as regional lode-100 to 300m. (c) Sampling: (i) Systematic pit and trench sampling, deep pitting if necessary; (ii) Core sampling: lithology and strength of mineralisation wise (check sampling -10%).	In the area taken up for the reserve estimation borehole influence of 200 m has been taken. The data obtained from two dug wells is taken. 24samples have been collected from the well cuttings.

SHISHIR GAUR
Valid upto 08.06.14



(d) Laboratory scale scanning/chemical analysis, (e) Bulk sampling if necessary for testing 'processing technology. (f) Collection of abiotic geo-environmental parameters.	
5.Petrographic: Study of petrographic character of rocks including grain size, texture etc.	All the exploration data have been ~~related~~ based on the petrographic character of rocks of the deposit & its surroundings
F2 (Pre-feasibility Study)	
1. Geology: Local geology, mineralogy, identification of ore types and geometry.	1. Detailed geological studies have been carried out. Detailed exploration, closed spaced drilling have been carried out.
2. Mining: Methods, pre-production plan, development plan, manpower (rough estimate).	2. Draft Mining plan has been prepared and submitted for approval by IBM
3. Environment: Base line data on environment.	3. Base Line data is collected and enclosed in EMP.
4. Processing: Proven laboratory scale/pilot scale beneficiation, investigation data,likely establishment,	4. Limestone will be delivered to Cement Plant where it will be crushed for size reduction.
5.Infrastructure and services, construction activities: Brief details	5. Full details have been incorporated in the Mining Plan.
6. Costing: Capital and operating cost - rough estimates based on comparable mining operations.	6. Detail break up of capital cost has been done (Annexure - 13)
7.Marketing: Overview like industrial structure, demand supply relation, pricing, etc.	7. The mineral is not for sale, entirely consumed by our captive cement plant. However cement has good potential market in this part of country.
8. Economic viability: Preliminary study of cash flow forecasts.	8. Cash flow forecast and sensitivity studies have been done. (Annexure – 14 & 15)
9. Other factors: Statutory provisions relating to labour, land, mining, taxation, etc.	9. All statutory provisions shall be taken care of in the Mining Plan and will be regularly complied with.
E1(Economic)	**Studies done**
1. Detailed exploration.	1. Detailed exploration has been carried out by ACC.
2. Mining report /mining plan / working mines.	2. Draft Mining plan has been submitted by Lessee for approval.
3. Specific end-use grades of reserves (above economic cut-off grade).	3. End-use grades of reserves have been defined in the geological report & mining plan.
4. Specific knowledge of forest/non-forest and other land use data.	4. Different land-use data are clearly available and given in mining plan. There is no forest land in ML area.

SHISHIR GAUR
ROP/NGP/2012/0041A
Valid upto 6th Dec. 14

Indian Bureau of Mines
ACC Limited
भारत सरकार
Govt. of India

Method of Estimation:

The Probable Mineral Reserves under 122 category has been calculated by cross sectional area X distance method. The cross sectional areas of different litho units within the area demarcated for Probable Mineral Reserve (122) in sections were calculated along section lines 52B, 52A and 52 were multiplied by the influencing sectional distance to get the volume. This was multiplied by the TCF factor (2.3) to get the tonnage. The detailed calculations are shown in **Annexure – 2B.**

Reconnaissance Mineral Resource (334)

The detailed UNFC guidelines and the work carried out is as follows

G4 (Reconnaissance)	
Guidelines	**Actual work carried out**
1.Aerial reconnaissance: Remote sensing, airborne geophysical survey etc.	NA
2.Geological survey: Mapping on 1: 50,000 or smaller scales.	The area has been mapped in 1:2000 scale (geological map enclosed as Plate III has been prepared on a scale of 1:5000 after obtaining permission from IBM – copy enclosed)
3.Geochemical survey: (i)Grab/chip sampling of rocks or weathered profiles (Nil for coal/lignite); (ii)Recording of broad geomorphology, drainage, etc.	641 core samples have been analyzed. Geomorphology, drainage data have been collected.
4. Geophysical survey: Ground geophysical survey.	NA
5. Technological : (i)Trenching - One or two to expose mineralised zone at ideal locations only; (ii)Pitting/drilling: Up to 5 test pits/boreholes per 100 sq.km. area; (iii)Scout drilling – A few to know the existence of coal/lignite; (iv)Sampling -Regional and random grab/chip sampling.	22 boreholes totaling 730 m in the PL area.
6. Petrographic and mineragraphic studies: Determination of principal rock types, mineral assemblage, identification of minerals of interest (especially of metallic minerals and gangues).	All the exploration data have been refined based on the petroqraphic character of rocks /of the deposit & its surroundings
7. Synthesis of all available data/concepts.	Prospecting Report has been prepared. **(Encl. 1A)**

SHISHIR GAUR
Regd. GSP/23/2004/A
Valid upto 6th Dec. 14

Indian Bureau of Mines
ACC Limited
भारत सरकार
Govt. of India

Method of Estimation:

The Reconnaissance Mineral Resource under 334 category have been calculated by cross sectional area X distance method. The cross sectional areas of different litho units were calculated along all the section lines of the Mining lease area were multiplied by the intersectional distance to get the volume. This was multiplied by the TCF factor (2.3) to get the tonnage.

From the total resources calculated in this way the Proved Mineral Reserve (111) and Probable Mineral Reserve (122) were subtracted to arrive at the final Reconnaissance Mineral Resource (334)

From the above guidelines the resources of limestone in the entire mining lease area has been calculated under Reconnaissance Mineral Resources (334) and the details are given in **Annexure -2C.**

The reserve under UNFC classification has been estimated and tabulated below –

Classification	UNFC code	Total (Mil.Ts)	Grade	Remarks
Mineral Resources				
Reconnaissance Mineral Resource	334	641	CaO 36 to 47 % MgO 0.8 to 1.3 %	*Dark, Light and flaggy Limestone*
Mineral Reserve				
Proved Mineral Reserve	111	0.22	*CaO 47 to48 % MgO 0.9 to 1.3 %*	*Light Grey Limestone*
Probable Mineral Reserve	122	5.89	*CaO 47 to 48 % MgO 0.9 to 1.3 %*	*Dark and Light Grey Limestone*
Total Resources and Reserves		**647.1**		

SHISHIR GAUR
RQP/NGP/326/2004/A

Indian Bureau of Mines
भारत सरकार
Govt. of India

Feasibility Report

Geographical Conditions:

The Mining Lease area lies in the villages Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle and G.Uppalapadu in Mylavaram Thesil, Kadapa District, Andhra Pradesh State.

Location and approach details are as follows:

Toposheet No.	Part of Toposheet Nos. 57 I/4 & 8 and 57 J/1 & 5
Latitude	14 ° 59' 20" N – To 15 ° 00' 10" N
Longitude	78 ° 13' 55" E – 78 ° 18' 08" E
Village Covered	Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle and G.Uppalapadu
Taluqa/Tehsil	Mylavaram
District	Kadapa
State	Andhra Pradesh
Nearest Railway Station	Muddanur
Nearest Highway	State Highway 57, National Highway 18
Nearest Airport	Tirupathi

Infrastructure:

Road, Railway and other:

The mining lease area is located at a distance of 40 Km NW from Muddanur railway station which is on the Mumbai – Chennai main line of south central railway. At 14 Km from mining lease, on the up coming Nandyal-Yerraguntla railway line of south central railway, S. Uppalpadu railway station is under construction.

The area is well connected by the road network. Mining lease area is about 60 Km from NH 18 and about 20 Km from Jammalamadugu, located on State Highway no. 57.

The nearest airport is Tirupathi located about 240 Km away.

The nearest sea port for the area is the Krishnapatnam which is about 240 Km away.

SHISHIR GAUR
RQP/NGP/[illegible]/A
Valid upto 6th Dec. 14

Manpower:

The mine is proposed to be highly mechanized operations. Adequate number of staff, officers, managers and workmen are deployed at mine to achieve the desired objective.

For operations of HEMM, skilled and semi skilled manpower is required. And for generic various jobs, unskilled manpower will be required.

Need based calculation of officials, skilled, semi skilled and unskilled manpower is, manpower requirement have been assessed and tabulated in chapter 9 (b).

Geology:

Sedimentary rocks found in the northwestern part of Kadapa district belong to the Kurnool Group. The limestone and other rock formations occurring in the area belong to Kurnool Formations of Indian Stratigraphy sequence. These formations are younger than rocks of the Kadapa Basin and are well preserved in the Kadapa Basin.

The limestone deposit under consideration belongs to the Narji Limestone of Jammalamadugu Formation and is seen to extend from Nalgonda in the NE up to Kadapa in the SW.

Locally sharp changes in strike direction are also seen due to broad warping. The local strike of the deposit is N70°W – S70°E with 2° dip towards N20°E.

Thick soil covers entire area and only at places limestone scree could be seen in the cultivated lands. However, the core samples do not indicate any major geologically disturbed zone and indicate that the formations in the area are relatively massive, thick bedded and fine grained in nature.

The local geological succession as observed from the boreholes core samples in the area could be described as given below.

Lithology	Thickness (m)	
	Min	Max
Overburden soil	1.0	6.0
Grey flaggy limestone	2.5	20.5
Dark grey limestone	8.5	31.0
Light grey limestone	1.0	6.5
Quartzite/Sandstone	0.5	Not bottomed

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14

Indian Bureau of Mines
ACC Limited
भारत सरकार
Govt. of India

For details, please refer Chapter 3.0 of Mining Plan.

Legal Matters:

Rights and Ownership:

Kadapa Mining Lease having an area of 997.08 Ha. is located at the villages Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle and G.Uppalapadu in Mylavaram Thesil, Kadapa District, Andhra Pradesh State. Mining lease area of 997.08 ha in villages Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle and G.Uppalapadu was granted by the State Government in the year 2010. Land of mining lease area is cultivation land.

ACC is in the process of purchasing rights of mining lease land. Major portion of Mining Lease land is held by the Lesse, the details of which are enclosed in **Annexure – 2**.

Operating:

Mining Method:

The mine will be worked by Mechanized Opencast Method of working. The height of the bench will be kept of 8 – 12 Meter and width of the bench will be kept more than 30 Meter.

The blast holes of 115 mm dia will be drilled using hydraulic drills. The blast holes will be drilled in staggered pattern keeping burden of 3.0 to 4.0 Meter and spacing of 4.0 to 6.0 Meter.

The blast holes will be charged with combination of ANFO and slurry explosives (booster charge). Almost 30 % of blast hole depth will be stemmed for effective blasting and to reduce noise and fly rock. The explosives will be blasted by using non – electric detonator (NONEL). This enables bottom initiation in the holes and with this technique each hole is blasted separately by providing delay in each hole. The bottom initiation and delay in each hole not only control the throw of the blast but also reduce the ground vibration and noise pollution.

The shovel dumper combination will be used for excavation of the limestone. Shovels of 7 m^3 and 4 m^3 will be deployed in combination with 50 / 60 T class dumpers. The blasted stone will be excavated using these shovels and transported using these dumpers. All the

SHISHIR GAUR
Valid upto 6th Dec. 14

benches and roads will be sloped properly to maintain the safety of these equipments / machineries.

For removal of overburden soil, a bench of 3.0 - 5.0 meter will be formed and excavators with dumpers will be deployed for development. The overburden soil thus excavated will be dumped and stacked as waste dump. For scrapping of top soil dozer in combination with shovel / loader will be used.

For details, please refer Chapter 4.0 of Mining Plan.

Mining Equipment:

The mine working will be highly mechanized. For operations like drilling, excavating and hauling, heavy earth moving machineries viz. drill machine, hydraulic excavator and dumpers will be used. Hydraulic drill machine will be used for drilling 115 mm dia blast holes. Hydraulic Excavators will be used for loading of blasted material. The dumpers of 50 / 60 tons payload will be used for transport overburden and limestone to dump yard and crusher location respectively. Dozer will be used for leveling & compacting of overburden dump as well as face preparation and road maintenance.

The adequacy of machines for limestone productions is given in the table on next page.

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14

MACHINES REQUIRED FOR 12000 TPD LIMESTONE

SL. NO.	TYPE OF MACHINE	PROPOSED UNITS	CAPACITY/ SIZE	MOTIVE POWER
1	HYD. SHOVEL	3	7.0 m^3	DIESEL ENGINE
2	HYD. SHOVEL	1	4.0 m^3	DIESEL ENGINE
3	HYD. BACK HOE with rock Breaker	1	4.0 m^3 Backhoe/60T class machine	DIESEL ENGINE
4	DUMPER	12	50/60 T	DIESEL ENGINE
5	Hydraulic Drill	2	115 MM DIA	DIESEL ENGINE
6	PAYLOADER	1	5.0 CU.M. BUCKET	DIESEL ENGINE
7	DOZER	1		DIESEL ENGINE
8	EXPLOSIVE VAN	1	10 TONNE	DIESEL ENGINE
9	WATER TANKER	1	20 KL	DIESEL ENGINE
10	DIESEL TANKER	1	3 KL	DIESEL ENGINE
11	MOBILE SERVICE VAN	1		DIESEL ENGINE
12	Pickup Van	1		DIESEL ENGINE

For details, please refer Chapter 4.0 of Mining Plan.

Construction plan and schedule:

All required construction of mine office, workshops, explosives magazine and substation will be carried out in first year. The schedule of construction plan is as below –

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14

Indian Bureau of Mines भारतीय खान ब्यूरो भारत सरकार Govt. of India

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Mine Office														
Work shop														
Sub station														
Explosive Magazine														

Mill and Processing Plant:

The ROM ore of Kadapa mine will be used for captive use for production of cement. All facilities for crushing and subsequent processing will be installed in cement plant. Limestone will be delivered to cement plant for further processing.

Tailing disposal:

There is no beneficiation plant within the mine premises so there is no generation of tailings.

Water Management:

Industrial water is required for mining operations/establishment mainly for sprinkling on haulage roads and at faces for suppression of dust. Water is also required for washing and servicing utilities for equipment. Water requirement for mines will be about 60 m^3/day which will be met from reservoirs developed in the mine lease area. The rainwater is proposed to be harvested in these reservoirs for this purpose.

Transportation:

Transportation of ROM limestone is done through Dumpers from Mine pit to crusher plant.

Closure Design:

At the proposed rate of production, it is estimated that the life of mine is about 50 years. The Progressive mine closure plan is prepared and attached in this mining plan. All

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14

Indian Bureau of Mines
Govt. of India

activities to be done during the time of closure are tentatively planned and details are provided in Progressive mine closure plan.

Environment:

This chapter is separately discussed in chapter 11 of this mining plan.

Market Analysis:

The limestone mined from mining lease is proposed to be supplied to cement plant for manufacturing of cement. The cement has huge demand in this region. And hence market potential is quiet good for cement and in turn for limestone also.

Capital Cost:

The capital cost has been estimated in Annexure - 13. The total capital estimated is Rs. 57.30 Crore. This capital is proposed to be invested over a period of initial three years. Details are provided in **Annexure – 13.**

Cash flow Forecast:

The receipt from sales per tonne of Cement is taken as Rs4000.00 and proportionate receipt and return of Limestone has been considered. The same is discussed and the calculations are mentioned in **Annexure - 14.**

Pay back period for the above is between years 7 to 8.

The internal rate of return calculated is 15 %

Operation cost

The operation cost for delivering stone to crusher is detailed below –

Sl.No.	Item	Cost(Rs)/Tonne
1	Development Cost(Overburden handling)	20.00
2	Drilling Cost	4.50
3	Blasting Cost	3.50
4	Dozing Cost	2.00
5	Loading Cost	10.00
6	Transportation Cost from Lease to Plant	10.15
7	Mining Concessions and Royalties/Cess	63.00
	Total	**113.15**

Valid upto 6th Dec. 14

ACC Limited
भारत सरकार
Govt. of India
Indian Bureau of Mines

Sensitivity Studies:

The sensitivity studies are done based on two criteria

a) With respect of increase in cost of limestone.

b) With respect to increase in sale price of cement.

The sensitivity analysis is enclosed in **Annexure- 15.**

Closure cost and rehabilitation cost Progressive mine closure is done along with mine operation to reduce the burden at the end. The same is discussed under the chapter of Progressive Mine Closure Plan.

SHISHIR GAUR
RQP/NGP/335/2003/A
Valid upto 6th Dec. 14

Indian Bureau of Mines
ACC Limited
भारत सरकार
Govt. of India

4.0 MINING:

The limestone bearing portion of the total mining lease area has been shown in the geological plan and working has been described below:

a) Proposed method of developing / working of the deposit

The mine will be worked by Mechanized Opencast Method of working. The height of the bench will be kept of 8 – 12 Meter and width of the bench will be kept more than 30 Meter.

For simplicity, each bench will be designated as per the bottom RL of the bench e.g. the bottom RL of the first overburden bench is 206.0 m hence the name of the bench will be 206.0 mRL.

The blast holes of 115 mm dia will be drilled using hydraulic drills. The blast holes will be drilled in staggered pattern keeping burden of 3.0 to 4.0 Meter and spacing of 4.0 to 6.0 Meter.

The blast holes will be charged with combination of ANFO and slurry explosives (booster charge). Almost 30 % of blast hole depth will be stemmed for effective blasting and to reduce noise and fly rock. The explosives will be blasted by using non – electric detonator (NONEL). This enables bottom initiation in the holes and with this technique each hole is blasted separately by providing delay in each hole. The bottom initiation and delay in each hole not only control the throw of the blast but also reduce the ground vibration and noise pollution.

The shovel dumper combination will be used for excavation of the limestone. Shovels of 7 m^3 and 4 m^3 will be deployed in combination with 50 / 60 T class dumpers. The blasted stone will be excavated using these shovels and transported using these dumpers. All the benches and roads will be sloped properly to maintain the safety of these equipments / machineries.

For removal of overburden soil, a bench of 3.0 - 5.0 meter will be formed and, excavators with dumpers will be deployed for development. The overburden soil thus excavated will be dumped and stacked as waste dump. For scrapping of top soil dozer in combination with shovel / loader will be used.

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14

To achieve the desired production and productivity, adequate number of staff, officers, managers and workmen (skilled and unskilled) will be deployed. The number of equipment, capacity of equipment, number of persons etc. is detailed in the sections to be followed.

Starting point

The mine working will be started in the eastern most part of mining lease area. The location of the box cut is around ML 52. Reason for selecting this part as box cut is the least depth of the limestone in this area. The average lithology in this area vis a vis mining lease area with thickness, depth and average quality (CaO %) is as below:

	Litho logy	Thickness	Depth	Av.CaO%
Mining Lease Area	Overburden Soil	3.5	3.5	13.7
	Flaggy Limestone	7.5	11	36.7
	Dark Grey Limestone	18.2	24	47.6
	Light Grey Limestone	3.5	27.1	48.7
Eastern Side Area (ML 44 – ML 72)	Overburden Soil	2.2	2.2	14
	Flaggy Limestone	Nil	Nil	Nil
	Dark Grey Limestone	13.9	16.4	47.1
	Light Grey Limestone	4.3	20.8	49.4

In the first year, only top soil scrapping work will be undertaken. The other jobs such as mobilization of resources like machineries, recruitment of adequate manpower, obtaining various statutory permissions and licences, construction of buildings etc. will also be carried out in the first year. In 2nd year overburden removal will be started and 3rd year onwards limestone production will be started.

SHISHIR GAUR
Valid upto 6th Dec. 14



b) Quantum of development and tonnage of production

During first five year, the annual rate of production has been tabulated below:

Year	Production of Limestone(**Tonnes**)	Development (**Tonnes**)	
		Top Soil	Overburden
1st YEAR	Nil	5000	-
2nd YEAR	Nil	15000	200000
3rd YEAR	100000	10000	275000
4th YEAR	400000	12000	200000
5th YEAR	3500000	12000	250000

Year wise Development Plan

As discussed above, it is proposed to open the first bench in the eastern most part of the lease around ML 52. The same bench will be continued for removal of overburden for the development of the mine around ML 52 during the first five years.

1st Year: In the first year efforts will be put towards developing the infrastructure for the mines. The jobs such as mobilization of resources like machineries, recruitment of adequate manpower, obtaining various statutory permissions and licences, construction of buildings etc. will be undertaken in this year.

Simultaneously top soil scrapping using dozer in combination with shovel / loader will be started. Total amount of about 5000 T of top soil will be removed and stacked at top soil dump. (Please refer **Plate no. VI**)

2nd Year: The jobs taken up in the first year like construction of buildings will be completed. All the machineries will be installed and erected and made operational in this year.

There will be development (overburden removal and dumping) on 206 mRL bench towards north of ML 52. Shovel with combination of dumpers will be deployed for this development work. The volume of the waste / overburden material to be handled in this year will be 200000 tonnes.

A road of 30 mtrs width will be prepared for deployment of dumpers. Gradient of the road will be maintained 1 in 16. Parapet / Protection bunding will be maintained in the bench of

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14

ACC Limited
भारत सरकार
Govt. of India

adequate dimension (as required in statue) for safety of man and machines. The bench will be sloped properly for proper drainage.

The RL of the development bench around ML 52 will be 206 mRL. For face movement and dumping locations please refer **Plate no. VII.**

3rd Year: There will be development on the same 206 MRL bench towards further north of ML 52 ahead of the development done in the second year. The volume of the waste material to be handled in this year will be 275000 tonnes.

The road prepared in the second year will be extended further to present working.

All the jobs / activities related to development of infrastructure of mine will be completed within this year. The job of affroestation of dumping area created due to dumping in the second year will be carried out in this year only.

The RL of the development bench around ML 52 will be 206 mRL. For face movement and dumping locations please refer **Plate no. VIII.**

4th Year: In this year, development on the same 206 MRL bench will be carried out ahead of the development done in the third year. The volume of the waste material to be handled in this year will be 200000 tonnes.

The road prepared in the third year will be extended further to present working.

The job of affroestation of dumping area created due to dumping in the third year will be carried out in this year only.

The RL of the development bench around ML 52 will be 206 mRL. For face movement and dumping locations please refer **Plate no. VIII.**

5th Year: There will be development on the same 206 mRL bench around ML 52 ahead of the development done in the fourth year. The volume of the waste material to be handled in this year will be 250000 tonnes.

The road prepared in the fourth year will be extended further to present working.

The job of affroestation of dumping area created due to dumping in the fourth year will be carried out in this year only.

The RL of the development bench around ML 52 will be 206 MRL. For face movement and dumping locations please refer **Plate no. X.**

The year wise and bench wise length, depth and quantity of overburden handled has been tabulated below –

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14

Indian Bureau of Mines
ACC Limited
भारत सरकार
Govt. of India

Year	Bench Name (mRL)	Length (M)	Top RL (M)	Bottom RL (M)	Depth / Height (M)	Section Line	Overburden generated (Tonnes)	
							Top Soil	Overburden
1st	206	345	207	NA	0.15 (6")	ML 52	5000	nil
2nd	206	260	208.5	206	1.5	ML 52	15000	200000
3rd	206	260	210	206	4.0	ML 52	10000	275000
4th	208	260	209.5	208	1.5	ML 52	12000	200000
5th	208	260	210.5	209	1.5	ML 52	12000	250000

Topsoil Management

The mining lease area 997.08 ha has overburden in the form of overburden soil. There is limited fertile top soil (about 6 inch) except overburden soil which will be removed and stacked properly for use in afforestation within the lease boundary.

For scrapping of top soil primarily dozer will be deployed. For loading and transportation small capacity (4.0 m^3) shovel / loader in combination with 50 / 60 T class dumper will be used. For maintenance of top soil dump, same dozer will be utilized. The height of top soil dump will be maintained as 4 m.

Total top soil to be generated in first five year period will be about 54,000 Tonnes. The top soil will be stacked properly at a dump prepared and maintained in NNE of ML 52. For dumping location and top soil dump parameters please refer **Plate No. X**.

Top soil dumped and stacked will be utilized for the purpose of afforestation in the green belt development and dump areas. There will be no utilization in first and second year as there will not be any matured dump created. From third year onwards, utilization will be increased. Top Soil utilization will be increased once we start afforestation in the backfilled areas. The year wise top soil generated, utilized and preserved in first five years is tabulated below –

SHISHIR GAUR
RQP/NCP/326/2004/A
Valid upto 6th Dec. 14

Indian Bureau of Mines
भारत सरकार
Govt reserved

YEAR	Top Soil Scrapped Area (Ha)	Top-Soil (Tonnes)		
		Generated	Utilized	
FIRST YEAR	2.20	5000	Nil	5000
SECOND YEAR	6.80	15000	Nil	15000
THIRD YEAR	4.60	10000	320	9670
FOURTH YEAR	5.30	12000	320	11670
FIFTH YEAR	5.30	12000	320	11670

Waste Dump Management

In the first five years, a total of 925000 Tonnes of overburden will be generated. It is proposed to dump the overburden in the south west direction of SRBC canal inside the lease area. This overburden dump will be designated as Outside Dump area. The mineral below this cannot be mined because of the vicinity of the canal and hence the dumping has been planned at a distance of 50 meter from the canal. For the initial five years, dumping will be carried out in this area.

The features of the waste dump are detailed below –

YEAR	Overburden Generated (Tonnes)	Waste Dump Fetures			
		Area (Ha)	Bottom RL (M)	Top RL (M)	Height (M)
FIRST YEAR	nil	-	-	-	-
SECOND YEAR	200000	2.00	205	211	6
THIRD YEAR	275000	2.64	206	212	6
FOURTH YEAR	200000	2.05	207	213	6
FIFTH YEAR	250000	2.63	208	214	6

And once the ultimate depth of the limestone in the deposit will be established (on the basis of proposed exploration) and sooner the mine will be matured, backfilling will be started in the mined out area. Afforestion of the waste dump will also be started so as to improve the stability of the waste dump.

NEC Limited
भारत सरकार
Govt. of India
Indian Bureau of Mines

Year wise Production Plan

The production of limestone will be started in the third year and from fifth year onwards the total capacity of the mine will be developed. Year wise production details are as follows –

1st Year: There will be no production in this year as all efforts will be towards developing the infrastructure for the mines.

(Please refer **Plate no. VI**)

2nd Year: In this year also same development job will be carried out. There will be no limestone production throughout this year also.

(Pl ref. **Plate no. VII**)

3rd Year: In this year, first limestone /195 MRL bench will be started around ML 52. The quanta of production in this year will be100000 Tonnes. The production bench parameters will be as follows –

Bench Height	:	8 - 12 Mtr
Bench Width	:	30 Mtr

An access ramp of suitable slope will be developed.

The bench will be properly sloped for effective drainage. Shovel and dumpers will be deployed for excavation of limestone.

The RL of the 1st limestone bench will be 198 MRL. For development of production bench faces please refer **Plate no. VIII**.

4th Year: The first bench of limestone will be advanced in the North of ML 52 further to the production done in the third year. In this year also, mine will not attain the total capacity and the production of limestone will be 400000 Tonnes. The total production will be mined out from the same 195 MRL bench.

The ramp developed in the third year will be advanced further.

The RL of the 1st limestone bench will be 195 MRL. For development of production bench faces please refer **Plate no. IX.**

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14

5th Year. In this year, the total capacity of the mine will be achieved. The total production of limestone will be 3500000 Tonnes.

The first bench of limestone at ML 52 will be advanced in the North North-East of ML 52 further to the production done in the fourth year. The production from this bench will be 2950000 Tonnes.

In this year second limestone bench of 184 MRL will be opened around ML 52. The second bench of limestone will be advanced in parallel to the first bench of limestone. An access ramp will be developed. The production from this bench will be 550000 Tonnes.

The RL of the 1st limestone bench around ML 52 will be 195 mRL and that of 2nd limestone bench around ML 52 will be 193 mRL. For development of production bench faces please refer **Plate no. X.**

The year wise and bench wise width, length, depth and quantity of limestone production has been tabulated below–

Year	No of Benches	Section Line	Bench Name (mRL)	Width (M)	Length (M)	Top RL (M)	Bottom RL (M)	Av Depth / Height (M)	Limestone Production (Tonnes)
1st	nil	-	-	-	-	-	-	-	Nil
2nd	Nil	-	-	-	-	-	-	-	Nil
3rd	1	ML 52	195	280	70	206	198	4	100000
4th	1	ML 52	195	300	100	206	195	11	400000
5th	3	ML 52	195	360	320	206	195	11	2950000
		ML 52	184	240	120	195	193	2	550000

c) Individual year wise plans and sections :

Year wise development and production plan and sections are prepared as per the details provided above. For production and Development plans and sections, please refer following plates.

Production and Development Plan & Section 1st Year – Plate No. VIA to VIE

Production and Development Plan & Section 2nd Year – Plate No. VIIA to VIIE

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14

Production and Development Plan & Section 3rd Year – Plate No. VIIIA to VIIE

Production and Development Plan & Section 4th Year – Plate No. IXA to IXE

Production and Development Plan & Section 5th Year – Plate No. XA to XE

d) Supporting composite plan showing pit layouts, dumps:

The production and development plans show the pit layouts, dumps also. Please refer plates VIA to VIE, VIIA to VIIE, VIIIA to VIIIE, IXA to IXE and XA to XE.

e) Proposed rate of production when the mine is fully developed, and the expected life of mine and the year from which effected:

Initially the mine will be under development for the first four years. In third and fourth year initial production will start in view of development of faces in limestone benches and preparation of roads and ramps. And fifth year onwards, production from mine will be at the rate of 3.5MTPA. In the eight year there will be enhancement in production and the level of production of limestone will be raised to 7.0 MTPA. The present machineries and other resources calculated for the mine plan are as per 3.5 MTPA capacity. In the subsequent scheme of mining, the machineries and other resources will be estimated and calculated as per the enhanced capacity i.e. 7.0 MTPA.

The detail of the reserve estimation and calculations is given in **Annexure – 2A, 2B & 2C**. The Reconnaissance Mineral Resource (334) is 641.40 MT, Probable Mineral Reserve (122) is 5.89 MT and Proved Mineral Reserve (111) is 0.22 MT.

For assessment of the mine life, mineral under following category has not been considered for mining in the present scenario –

- Mineral under area of safety zone – area left around Canal, Road and other features in the Mining Lease area.
- Flaggy Limestone - typical quality of Flaggy Limestone Indicates that it is not suitable for the cement manufacture directly. However the utility of this lithounit by beneficiation may result in conservation of mineral. Hence we propose to carry out beneficiation studies to identify the type of silica impurity and method of up gradation.

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14

In future, the mineral described in the above points may be used subject to the then scenarios.

Thus considering production as per the production plan and annual production of 7.0 MTs per annum from eighth year onwards the life of the mines will be about 50 years (approx.) while considering the first year as time after obtaining all clearances.

f) Conceptual Mining Plan

The total mining lease area comprises of dark grey limestone, light grey limestone, flaggy limestone and overburden soil. Initially mining operations will be started in the eastern part of mining lease while approaching Western part of the lease area. Soil/overburden will be stacked in the mines lease boundary for creation of the Green belt along the mines/lease boundary. And sooner mines is matured enough for backfilling, the worked out portion of the pit will be backfilled partially and balance area will be converted into water reservoir.

At few locations, immediately below the overburden soil, there is flaggy limestone. The average quality of flaggy limestone is about 36 % CaO and hence it cannot be used for cement manufacturing. Flaggy limestone will be mined and stacked separately as sub grade mineral dump for its potential to be used in future.

We propose to carry out beneficiation studies to identify the type of silica impurity and method of up gradation for flaggy limestone.

There is a barrier area inside the lease containing roads and canal (safety zone). These areas will be left out as it is and remaining areas will be developed for winning limestone fully.

Five yearly position of mining operations with sections till the end of life of the deposit has been shown in the Conceptual Plan & Sections.(**Plate XIA, XIB, XIC, XID,XIE & XIAA**)

In all, it is conceptualized to work out total nine quarries (pits) in the lease area. The details of these quarries as per conceptual plan are tabulated on next page –

ACC Limited
Govt. of India

Quarry Number	Perimeter (M)	Area (Ha)	Top RL (M)	Bottom RL (M)	Ultimate Depth (M)
1	3600	53.70	221	176	45
2	1800	14.80	221	186	35
3	1990	15.60	217	175	42
4	4913	113.80	221	166	55
5	7163	292.70	217	176	41
6	3087	43.00	210	193	17
7	1282	8.00	213	183	30
8	2949	57.00	211	184	27
9	4583	108.50	207	183	24
Total	31367	707.10			

During first five years, mine working will be confined to quarry number 8 only. The details of quarry in each year as per the production plans are tabulated below –

Year	Quarry Number	Perimeter (M)	Area (Ha)	Top RL (M)	Bottom RL (M)	Ultimate Depth (M)
1st	8	Nil	Nil	207	NA	NA
2nd	8	1340	9.28	208	206	2.0
3rd	8	1250	6.05	209	198	11.0
4th	8	1150	3.55	210	195	1.5
5th	8	1150	4.35	210	193	17.0

a) Exploration: In order to comply with the UNFC guidelines (of G1 level) boreholes are proposed in the entire ML area in 150 X 150 m grid interval (Less than G2 level of 200 m to 400 m grid interval as prescribed by UNFC for limestone and dolomite).

Year	Location	No. of Boreholes	Proposed depth	Total Metreage	Grid interval
1st Year	SL 52 to 32	82	30	[illegible]	[illegible] m
2nd Year	SL 32 to 24	85	30	2550	[illegible]X150 m
3 rd Year	SL 24 to 16	90	30	2700	150X150 m
4 th year	SL 16 to 0	84	30	2520	150X150 m
5 th year	SL 52 to 72	87	30	2610	150X150 m

For the proposed location of these boreholes, please refer **Plate No. III.**

b) Mine Development Ultimate pit limit : Depending upon the exploration borehole data available, the resources have been assessed. Mine development and ultimate pit limit has been demarcated in the Geological Plan(**Plate No. IIIA to IIIE**), Surface Plan (**Plate No. VA to VE**) and Conceptual Plan & sections (**Plate- XIA to XIE & XIAA**).
Further, on the basis of future exploration data, resources will be again estimated and if required these limits will have to undergo a modification.

c) Ultimate depth of the mine : The ultimate depth of mine will be 55 meters. The ultimate size (area) of the pit will be 707.10 Ha. The ultimate size (L x W x D) is tabulated below –

Quarry Number	Length L (M)	Width W (M)	Depth D (M)
1	1400	500	45
2	600	300	35
3	800	320	42
4	1710	780	55
5	1910	1950	41
6	710	880	17
7	320	380	30
8	760	950	27
9	1150	970	24

d) Ultimate generation of waste : Depending upon the ultimate mine development pit limit, ultimate generation of waste will be about 40.00 Million Tonnes.

The overburden generated is planned to be backfilled in the mined out area. As detailed below, the requirement of land for total dumping will be about 330 Ha in the mined out area while the ultimate size of the pit will be 707.10 Ha. Hence there will be adequate availability of the mined out land for the backfilling purpose.

e) Post Mining Land use pattern : The mined out area will be partially back filled by overburden and sub grade mineral (flaggy limestone) removed from the top surface. And rest will be converted into water reservoir.

The plantation will be done on the overburden soil dumps area in the lease. Post mining land use pattern is tabulated below –

Sl. No.	Particulars	Area (Ha)
1	Area Excavated	707.10
2	Storage for Top Soil	Nil
3	Overburden Dump	
3 (a)	Outside Dump Area	9.5
3 (b)	Backfilled Dump Area	146.5
4	Mineral Storage (Sub grade mineral – flaggy limestone dump area)	170.0
5	Infrastructure	1.50
6	Roads	1.40
7	Railways	Nil
8	Green Belt	
8 (a)	Along periphery of Mining Lease	30.0
8 (b)	Overburden Dump Area	156.0
9	Tailing Pond	Nil
10	Effluent Treatment Plant	Nil
11	Mineral Separation Plant	Nil
12	Township Area	Nil
13	Others – Water Reservoir Area	390.6

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14

f) Final slope of faces : The ultimate pit slope will be 60^0 from the horizontal.

g) Ultimate dump capacity & its design : At present it is proposed to dump the overburden along the periphery of Mining lease boundary for development of green belt around the mining lease boundary. Apart from that, it is also proposed to dump the overburden in the south west direction of SRBC canal inside the lease area. This overburden dump will be designated as Outside Dump area. The mineral below this cannot be mined because of the vicinity of the canal and hence the dumping has been planned at a distance of 50 meter from the canal. For the initial five years, dumping will carried out in this area.

And once the ultimate depth of the limestone in the deposit will be established (on the basis of proposed exploration) and sooner the mine will be matured, backfilling will be started in the mined out area. During the first five years proposal for waste material dumping is tabulated below –

Year	Outside Dump Area (Ha)	Green Belt Dump Area (Ha)
1st	Nil	Nil
2nd	2.00	Nil
3rd	2.64	1.71
4th	2.05	Nil
5th	2.63	1.00

The area will be partially backfilled and the remaining part of area will be converted into water reservoir. The parameter of waste material dumped is as follows -

Total Overburden /waste to be generated	: 40.00 MT.
Break up:	
Overburden to be generated	: 39.50 MT
Top soil to be generated	: 0.50 MT
Over burden dump (Green belt along ML Boundary)	: 4.45 MT
Over burden dump (Outside Dump)	: 0.72 MT
Back Filling (Reclamation)	: 34.50 MT
Total Sub grade mineral to be generated	: 96.00 MT

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14

Indian Bureau of Mines
ACC Limited
भारत सरकार

Design parameters of dump –

Dump Height (Outside Dump)	: 6 Mtr without terracing
Dump Height (Back Filling)	: 25 Mtr with terracing
Sub grade mineral Dump	: 25 Mtr with terracing
Slope Angle	: 37 degree

There will be garland drains having a cross section of 1X1 m^2 all along the outside dump for protection and fencing will be provided as additional protection and safety. The dumps along with protection measures have been shown in the conceptual plan.

h) Environment aspect: As the average production level is low in the first five year, there will be negligible environment impact and that will be monitored regularly as proposed in Environment Management Plan. Any change in the environment aspect and impact will be incorporated in the next Scheme of Mining.

i) Afforestation area: Afforestation will be done in the Periphery of Mining Lease Boundary for development of green belt. (Refer **Plate No. VI - X**). Moreover afforestation will be carried out in dump of overburden as well as backfilled area with overburden. During the first five years, year wise area proposed to be rehabilitated by way of plantation is tabulated below –

Year	Area (Ha)	Location
1st	Nil	No area for afforestation
2nd	Nil	No area for afforestation
3rd	3.71	Over Burden Dump & Green Belt – Southern Side (2nd year dump)
4th	2.64	Over Burden Dump (3rd year dump)
5th	3.05	Over Burden Dump & Green Belt – North Eastern Side (4th year dump)

SHISHIR GAUR
RQP/NGP/325/2004/A

Indian Bureau of Mines
ACC Limited
Govt. of India

In the conceptual plan, proposed rehabilitation by way of plantation is tabulated below:

Sl No	Area (Ha)	Location
1	92.5	North Side of Quarry No. 5
2	49.7	North Side of Quarry No. 8
3	13.8	South Side of Quarry No. 9
4	30.0	Green Belt (Along ML Boundary)

g) Opencast Working:

i) Salient features of the mode of working: The mine will be developed and worked by mechanised method of working with all precautions complying with all related legislations. The present layout of the area is shown in the **Plate No. V**. Section of area corresponding to yearly Development and Production Plan is shown in the **Plate No. VI - X**.

At present the overburden removed from top surface will be dumped in the periphery of Mining lease boundary to develop the green belt and wind barrier. An overburden dump (outside dump) will be prepared in the south west direction of SRBC canal. The height of this overburden dump will be 6 Mtr.

ii) Extent of mechanization:

The mine working will be highly mechanized. For operations like drilling, excavating and hauling, heavy earth moving machineries viz. drill machine, hydraulic excavator and dumpers will be used. Hydraulic drill machine will be used for drilling 115 mm dia blast holes. Hydraulic Excavators will be used for loading of blasted material. The dumpers of 50 / 60 tons payload will be used for transport overburden and limestone to dump yard and crusher location respectively. Dozer will be used for leveling & compacting of overburden dump as well as face preparation and road maintenance.

The adequacy of machines for limestone productions is given in the table on next page. Other auxiliary machines are also included in the table.

SHISHIR GAUR
Valid upto dt. Dec. 14

MACHINES REQUIRED FOR 12000 TPD LIMESTONE

SL. NO.	TYPE OF MACHINE	PROPOSED UNITS	CAPACITY/ SIZE	MOTIVE POWER
1	HYD. SHOVEL	3	7.0 m^3	DIESEL ENGINE
2	HYD. SHOVEL	1	4.0 m^3	DIESEL ENGINE
3	HYD. BACK HOE with rock Breaker	1	4.0 m^3 Backhoe/60T class machine	DIESEL ENGINE
4	DUMPER	12	50/60 T	DIESEL ENGINE
5	Hydraulic Drill	2	115 MM DIA.	DIESEL ENGINE
6	PAYLOADER	1	5.0 CU.M. BUCKET	DIESEL ENGINE
7	DOZER	1		DIESEL ENGINE
8	EXPLOSIVE VAN	1	10 TONNE	DIESEL ENGINE
9	WATER TANKER	1	20 KL	DIESEL ENGINE
10	DIESEL TANKER	1	3 KL	DIESEL ENGINE
11	MOBILE SERVICE VAN	1		DIESEL ENGINE
12	Pickup Van	1		DIESEL ENGINE

Justification of deployment of machineries

Annual Requirement of Limestone	=	3.50 Million Ton
Annual Overburden Handled	=	5.90 Lakh Ton
Number of working days	=	290 Days
Daily Production	≃	12000 Ton per day
Weekly Production	≃	72000 Ton
Daily Overburden Handling	≃	2000 Ton
Weekly Overburden Handling	≃	12000 Ton
Frequency of Blast	≃	4 Blasts / Week (Limestone)

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14

Indian Bureau of Mines
ACC Limited
भारत सरकार
Govt. of India

Drill Requirement

For Limestone

Limestone Blasted in one Blast	=	72000 / 4
	=	18000 Ton
Burden X Spacing	=	3.0 X 5.0
Average output of drilling in a hole	=	10.0 x 3.0 x 5.0 x 2.3 (sp. Gr.)
	=	345 tons/ hole
Number of Holes per blast	=	18000 / 345
	=	52 Hole
Number of Holes per Week	=	52 * 4
	=	208 Holes
Meterage to be drilled per day	=	208 * 10 / 6
	≃	350 M

For overburden

No drilling and blasting is required in the overburden soil.

Drilling rate of hyd. Drill machine	=	30 meter / hour
Working Hours	=	10 hour
Number of Drill Machines required	=	(350) / (30 * 10)
	=	1.17

Considering idle time, shifting time and breakdown time,
Total Number of Drill Machined = 2 (Two)

Year wise drilling requirement per bench is furnished in the following table –

No of Year	Number of Bench	Bench (mRL)	Blasting Requirement (Million Tonnes)	Drilling Meterage Required (M)
1st	1	195	Nil	Nil
2nd	2	195	Nil	Nil
3rd	3	195	1.00	28990
4th	3	195	3.50	101500
5th	3	195	1.41	40900
		184	2.09	60600

SHISHIR GAUR
RQP/NCP/328/2004/A
Valid upto 6th Dec. 14

Indian Bureau of Mines
भारतीय खान ब्यूरो
भारत सरकार
Govt. of India

Shovel Requirement

For Limestone

Limestone handled per day	- 12000 Tonnes
Output of Hyd shovel 7 m^3 capacity	- 600 TPH
Average Total running hr. per day	- 11Hrs (Considering operational losses)
So output of one shovel per day (2 shift)	- 6,600 Tonnes
So total no. of shovels required	- 12,000/6600 = 1.81 (2 nos)

For Overburden

Overburden handled per day	- 2000 Tonnes
Output of Hyd. shovel 4.0 m^3 capacity	- 300 TPH
Average Total running hr. per day (2 shifts)	- 11 Hrs (Considering operational losses)
So output of one shovel per day (2 shifts)	- 3300 Tonnes
So total no. of shovels required	- 2000/3300 = 0.61 (1 no)

Thus 3 nos of shovel of bucket capacity 6.0 m^3 and 1 no of shovel of bucket capacity 4.0 m^3 will be required.

Dumper Requirement

For Limestone

Total material to be handled per day	– 12,000 Tonnes
Payload of one dumper	- 45 Tonnes
Haul road lead distance	-1-2 Km
Time taken to complete one cycle	- 20 minutes
Output per hour per dumper	- 135 Tonnes
Total running hr. per day	- 11 Hrs (Considering operational losses)
Output per dumper per day	- 1485
Number of dumpers required	- 12,000/1485

= 8.08 (8 nos)

For Overburden

Total material to be handled per day - 2000 Tonnes

Indian Bureau of Mines
भारत सरकार
Govt. of India

Payload of one dumper	- 45 Tonnes
Haul road lead distance	-1.5-2.5 Km
Time taken to complete one cycle	- 30 minutes
Output per hour per dumper	- 90 Tonnes
Total running hr. per day	- 11 Hrs
Output per dumper per day	- 990
Number of dumpers required	- 2000/990
	= 2.02 (2 nos.)

Considering two dumper extra for maintenance work

Total dumpers required - 12 nos.

Dozer = 1 no. (for leveling of dump yard and cleaning of faces)

Pay loader = 1 (for miscellaneous jobs)

One numbers of Service van, water tanker, pickup van, diesel tanker, rock breaker each will be required.

As calculate in Chapter 5 & 9 (b), the Powder Factor and OMS are as follows –

Powder Factor = 7.0 Tons / Kg

OMS = 193 Tons ,

h) Underground mines: Not applicable

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14

ACC Limited
भारत सरकार
Govt. of India
Indian Bureau of Mines

5.0 BLASTING:

a) **Broad blasting parameters:**

Dia of holes	=	115 mm
Depth of holes	=	10.0 Mts. – 13.0 Mts.
Blasting pattern	=	V- Pattern / Expanded V
Spacing	=	4.0 to 6.0 Mts.
Burden	=	3.0 to 4.0 Mts.
Charge per hole	=	65 - 90 kgs (20 % booster + 80% ANFO)

115 mm holes are to be drilled on benches of 8 - 12 m height. Sub grade drilling of 10% is to be practiced along with angular drilling to avoid toe problem and better blasting efficiency. High wall face will be kept inclined to vertical by drilling 5° to 10° inclined holes to ease the loading operation.

Single row as well as multiple row blasting is to be practiced. Holes are drilled on staggered pattern. Nonel will be used for initiation as well as detonation of blast block.

Sequence of firing of holes is given in **Annexure - 4** for non-electric firing for holes of 115 mm. In Nonel blasting system row to row delay is 42 ms. Blasting sites are selected on grade requirement and geological information. Number of holes blasted per blast will be in range of 30 – 40. Charge per delay will not be allowed to exceed 200 -250 kg. A typical charging pattern is given in **Annexure - 3**. For 115 mm hole of 10.0 m. depth 45 kg of ANFO explosive together with 11.25 kg. of booster will be required per hole. Proportion of column charge and booster is likely to change depending on site specific conditions. Drill cuttings are used as stemming for top 3 m portion. Nonel (Non Electric initiation) Initial firing is to be done by ordinary / electric detonator and subsequent holes are to be fired in succession through respective detonating relays. Delay of 17 ms is to be maintained in adjacent holes in a row whereas in multi row blasting 42 ms delay is to be kept between two rows Maximum three rows are blasted at a time. The blasting/shot firing pattern to be used is given in **Annexure – 4.**

Blast vibration will be controlled to minimum levels by controlling the charge per delay and use of non-electric delay. The vibration levels will be measured at specific distances to monitor and control the vibration effects.

SHISHIR GAUR
RQP/NGP/135/2004/A
Valid upto 6th Dec. 14

ACC Limited
Govt. of India

b) Type of explosives to be used:

The following explosives and accessories will be used for blasting in the mines.

ANFO with Cast Booster/ Cartridge Slurry or Emulsion Explosive is to be used. Column charge is ANFO consisting 5% fuel oil mixed with prilled ammonium nitrate. Booster explosive is available in 2.78 kg cartridges. Nonel tubes and electric detonators are other explosive materials that are required for blasting.

Competent Blaster will carry out the blasting under strict supervision of Mines foreman / Asst. Manager Mining with all precautions as laid down in the Act, Rules, Regulations & circulars made their under.

c) Powder factor:

Powder factor may vary from 7 to 8 tons / kg. A typical calculation of PF in a blast conducted in limestone bench is detailed below –

Tonnage per hole = 10.0 x 3.0 x 5.0 x 2.3 (sp. Gr.)

= 345 tons/ hole

Actual tonnage (considering 30 to 40 % side & back breaks) = 450 - 490 tons / Hole

Explosives in a hole ~ 70 Kg

Powder Factor = Tonnage / Explosives

~ 7 - 8 Tons / Kg

d) Secondary blasting:

The primary blasts parameters are so designed that minimum number of oversize boulders are generated. But the generated oversize boulders will be handled with rock breaker. There will be no secondary blasting in mines.

e) Storage of explosives. :

At present lessee does not have a magazine / licensed storage space. Within due course of time, an explosive magazine will be built. The proposed location of the Magazine has been shown in the Surface Plan **(Plate no. V).**

SHISHIR GAUR
RQP/NGP/0525/2004/A
Valid upto 6th Dec. 14

Indian Bureau of Mines
भारतीय खान ब्यूरो
AGC Limited
भारत सरकार

The above mentioned explosives will be purchased at regular intervals as per the requirement and considering the capacity of the Magazine. As the production increases accordingly the higher capacity magazine will be installed at suitable locations. Details of the proposed Magazine are as under:

CAPACITY OF MAGAZINE

SL. NO.	EXPLOSIVES	CLASS	DIV.	MAGAZINE CAPACITY
1.	NITRATE MIXTURE	2	-	10000 KG
2.	NITRO COMPOUND	3	2	1000 KG
3.	DETONATOR	6	1	25000 Nos
4.	DETONATING FUSE	6	2	75000 Mtrs

Ammonium Nitrate will be stored in a separated store room. ANFO will be prepared in a licensed Mixing Shed .The explosive will be transported to the site of blasting by means of a licensed Explosive Van.

SHISHIR GAUR
RQP/NGP/326/2004/A
Valid upto 6th Dec. 14

Limited
भारत सरकार
Govt. of India

6.0 MINE DRAINAGE:

a) Depth of water table:

The Northern side of our area, one stream by name "Pala Vagu" flowing from the West to the East and the Southern side of our area, another stream by name "Rallavanka", also flowing from the West to East, drain the area. Both of the streams become dry during the summer. The Western side of area, one flood canal by name the GNSS (Galeru Nagari Sujala Sravanthi) is passing from the North to the South. Irrigation wells, ponds, and bore wells serve as the source of water during the summer.

The water table remains almost near the surface (6.0 to 7.0 mtrs depth in most of the places) during the monsoons, but it gradually goes down in the bore wells below 60 mtrs. from the surface during the summer season. Many wells which are shallow in depth become dry during the summer except some deeper wells which sustain the water even during the hottest months.

During the rainy season there will be accumulation of rain water in the pit bottom which will be utilized for water spraying on haul road and face and watering of plantation.

If water table is intersected during the course of mining that water will be pumped out of the pit and discharged to the nearby seasonal natural drain to recharge the water table in nearby area

b) Working levels:

The deepest working level in the next five years is 193 MRL for the next five years of planning, considering sump below the limestone level.

c) Quantity & pumping arrangement:

Mine working will be quite away from water bodies. As a precautionary measure to avoid inundation of the working pit, a garland drain with bund will be provided around the pit considering the HFL. Over and above during rainy season the working will be carried out in the uppermost benches and work in the lower benches will be carried out in dry season when pits will be emptied from rain water. Moreover water pumps will be installed during rainy season for dewatering and its water will be diverted in the seasonal nalla.

SHISHIR GAUR
Valid upto 6th Dec. 14

The details of dewatering pumps to be installed:

H.P.	Nos. of units	Capacity
100	1	500 GPM
200	1	1000 GPM
30	2	200 GPM

d) Water Quality:

Quality of water is to be continuously monitored by company to maintain clean and safe water resources in its surroundings. Water samples are to be collected periodically from existing dug wells and bore wells nearer the lease area and adjoining villages.

SHISHIR GAUR
RQP/NOP/335/2004/A
Valid upto 6th Dec. 14

Indian Bureau of Mines Govt. of India

7. STACKING OF MINERAL REJECTS AND DISPOSAL OF WASTE:

a) Nature of waste & its rate of yearly generation:

Soil mostly occurs as overburden in the leasehold. The area which is planned for first five years development programme has an overburden of 1.0 to 4.0 meter thickness.
The waste material generated comprises of top soil and overburden soil.

YEAR	TOP-SOIL (TONNES)	O.B. / WASTE (TONNES)
FIRST YEAR	5000	-
SECOND YEAR	15000	200000
THIRD YEAR	10000	275000
FOURTH YEAR	12000	200000
FIFTH YEAR	12000	250000

The physical and chemical characteristics of top soil and waste were analyzed by Vimta Labs, Hyderabad. The accreditation certificate of Vimta Labs, Hyderabad is enclosed as **Annexure 5A**. The analysis reports for physical and chemical characteristics of top soil and waste duly signed by lab authority are enclosed as **Annexure 5B**.

b) Selection of dumping site:

The removed overburden will be dumped in an area within 10 meters of the lease boundary along both sides of ML 52 to form bunds. The dimension of the bund will be 7.5 meters width and 3 meters height. Plantation on these bunds will be done to create a green belt along the mines boundary.
An overburden dump inside the lease area will be prepared. The location of this dump will be south west direction of SRBC canal. The height of this dump will be 10 mtr. There will be garland drains having a cross section of 1X1 m^2 all along the dump for protection and fencing will be provided as additional protection and safety.
The top soil removed will be stored at North of SL 52 and used for plantation purpose.
The locations of these dumps are shown in **Plate No. V**.

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14

This methodology is adopted only for first five years as no area will be available for back filling considering full extraction. Once the ultimate depth of the limestone will be established (based on the proposed exploration program) and sooner the area will get matured for backfilling purpose, the overburden will be dumped in the worked out portion of the pit and that will be stabilized with the help of plantation.

c) Maximum height & spread of dumps:

The spread of dump will be kept that the slope of dump shall not be the more than angle of repose of the material to be dumped. The slope of the dump will be maintained by proper benching by terracing method and dump slopes and top will be stabilized with plantation.

In the bunds the height will be maintained 3.0 meters and width will be maintained at 7.5 m.

The topsoil dumps will be made up to 4.0 meters height.

The overburden (outside dump) dump will be made up to 6.0 meters height. The configuration of waste dump during first five years is tabulated below –

YEAR	Overburden Generated (Tonnes)	Waste Dump Fetures			
		Area (Ha)	Bottom RL (M)	Top RL (M)	Height (M)
FIRST YEAR	nil	-	-	-	-
SECOND YEAR	200000	2.00	205	211	6
THIRD YEAR	275000	2.64	206	212	6
FOURTH YEAR	200000	2.05	207	213	6
FIFTH YEAR	250000	2.63	208	214	6

Sub – grade Limestone

During exploration, it was found that a variant of dark grey limestone, grey flaggy limestone overlies dark grey limestone. Being the youngest of all the limestone units is confined to higher elevation mostly in the Western part of the lease area. The limestone is grey in colour, flaggy in nature with a lot of shale partings and bands. The extent of

Indian Bureau of Mines
भारत सरकार
Govt. of India

shale partings controls the quality of this litho unit. Typical quality of this limestone could be observed from the analysis given below:

TC %	$CaCO_3$ %	$MgCO_3$ %	SiO_2 %	Al_2O_3 %	Fe_2O_3 %	CaO %	MgO %	LOI %
76.2	73.9	1.9	24.6	3.8	2.0	36.7	0.8	30.5

Typically this is sub – grade limestone. But during the first five year working, there is no generation of sub – grade limestone i.e. flaggy limestone.

The above quality primarily indicates that it is not suitable for the cement manufacture directly. However the utility of this lithounit by beneficiation may result in conservation of mineral. Hence we propose to carry out beneficiation studies to identify the type of silica impurity and method of up gradation.

In conceptual plan the generation and separate stack of sub – grade limestone i.e. flaggy limestone has been discussed.

SHISHIR GAUR
RQP/NGP/025/2004/A
Valid upto 6th Dec. 14

8. USE OF MINERAL

Mining lease under discussion will be entirely captive to ACC's Cement Works. The limestone raised from the leasehold area will be used as a raw material for cement manufacture at lessee's Cement Plant.

In cement plant, it is proposed to operate dry kilns. Dry process kilns require kiln feed of about 44.0 % CaO. A typical indication for raw kiln feed is given below –

Composition	Kiln Feed
SiO_2	11.4
Al_2O_3	3.7
Fe_2O_3	1.8
CaO	44.0
MgO	2.2

For kiln feed, required correctives will be added to ROM limestone to prepare the proper and required raw mix.

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14

ACC Limited
भारत सरकार
Govt. of India

9. Others

(a) Site service

All the infrastructure facilities and site services are required to be provided fresh in and around the mine to facilitate the limestone production. Power, water, tele-communication transport roads & track lines, machinery skilled & unskilled manpower ANFO mixing shed, explosive magazine mine office etc and efficient managerial organization is to be established for smooth and effective operation in mine and plant. Following site services are to be made available at the mine to cater the need of workers.

i) First Aid Station :

A well-equipped First Aid Station is to provided and maintained where necessary free medicines and medical aids are available. In addition, an Ambulance Van is to be made available at the mines for emergencies.

ii) Canteen :

A canteen with modern amenities is to be provided for the benefit of employees where eatables, tea etc. are sold at subsidized rates.

iii) Rest Shelter :

Separate rest shelters at the quarry office building complex, site offices are to be provided with electricity, fans, cool drinking water etc.

iv) Drinking Water:

In order to arrange cool drinking water for the employees, water cooler is to be provided.

v) Urinals and Latrines:

Sufficient number of Latrines and Urinals are to be provided in the quarry office building complex and other quarry premises with proper sanitation.

SHISHIR GAUR
Valid upto 6th Dec. 14

ACC Limited

vi) Vocational Training Centre:

A vocational Training Centre is to be provided to impart vocational training to workers in quarry Office building complex. Number of models and charts are to be provided along with morden training facilities.

vii) Lighting Arrangement:

Adequate lighting arrangement is to be provided at quarry faces, roads, garage, dumps and other working areas.

viii) Workshop, Garage and Store:

A well equipped workshop is to be set up and maintained near quarry office building , where all types of repairs and maintenance of Heavy Earthmoving Machinery will be carried out. The repairs of all types of mining machinery are to be carried out in this workshop. A store is also to be set up and maintained for keeping spares, tools and lubricants.

xii) Water Supply – Water is to be used for dust suppression, afforestation & equipment washing in workshop etc.

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14

Indian Bureau of Mines
ACC Limited
भारत सरकार
Govt. of India
Annexure-

(b) Employment potential:

Adequate number of staff, officers, managers and workmen are deployed at mine to achieve the desired objective. Organization structure is as given in Annexure- and employment potential is as follows.

EMPLOYMENT POTENTIAL
MANAGEMENT AND SUPERVISORY PERSONNEL

Designation	Nos.	Qualifications
Manager	1	Graduate in Mining Engineering with 1st Class Manager's Certificate of Competency
Mining Engineer	1	Graduate in Mining Engineering
Asst. Manager	2	Graduate/Diploma in Mining Engineering with 1st /2nd Class Manager's Certificate of Competency
Mines Foremen	5	Diploma in Mining Engineering or Foreman's Certificate of Competency
Mechanical Engineer	1	Graduate/Diploma in Mechanical/Automobile Engineering
Engineer	2	Diploma in Mechanical/Automobile Engineering
Geologist	1	Post graduate degree in Geology

Vocational Training Officer (1), Vocational Training Instructor (1), and Part-time Surveyor will also be provided.

For operations of HEMM, skilled and semi skilled manpower is required. And for generic various jobs, unskilled manpower will be required. Need based calculation of skilled, semi skilled and unskilled manpower is detailed below –

Activity	Skilled Manpower	Semi Skilled Manpower	Unskilled Manpower
Drilling	2	-	-
Blasting	2	3	4
Shovel	6	-	-
Dumper	16	-	-
General Works	-	-	4
Electrical Staff	2	-	-
Clerical & Administrative Staff	2	-	-
Additional for Leave	5	1	2
Total	**35**	**4**	**10**

SHISHIR GAUR
RQP/NGP/328/2004/A
Valid upto 6th Dec. 14



Thus total manpower of the mines will be 62.
Estimated OMS = 12000 / 62
= 193
The estimated OMS is 193 Tonnes.

भारतीय खान ब्यूरो Indian Bureau of Mines
भारत सरकार
Govt. of India

10.0 MINERAL PROCESSING:

The excavated limestone will be transported through dumpers to a crusher for size reduction of the boulders. This crusher will be the primary crusher. The specifications of primary crusher are as follows –

Output	=	1500 TPH
Feed Size	=	1500 mm
Output Size	=	70 mm

The flow sheet of the crushing plant is detailed in **Annexure No. 16.**

The crushed limestone will be stacked using the limestone stacker and same will be reclaimed by the reclaimer located in the plant for use in raw meal preparation for cement manufacturing.

SHISHIR GAUR
Valid upto 5th Dec. 14

PART – B

11. ENVIRONMENT MANAGEMENT PLAN

The Mining lease area of 997.08 Ha in the villages Dhannavada, Chinna Vehurla, Vaddarala, Bestavemula, Gollapalle and G.Uppalapadu of Mylaveram Mandalam, District Kadapa in Andhra Pradesh will be developed as limestone mine. The area is almost flat with gentle undulations.

It is inevitable that mining operations have certain impact on the general environment of the area. However, systematic & planned mining operations may reduce the impact considerably and convert the mining area into an area having even better environment. With this view, assessment of Kadapa mining lease area was conducted by Vimta-labs, Hyderabad. During aforesaid assessment, the data was monitored for the period of October, 2007 to December, 2007. Based on the assessment, this Environment Management Plan has been prepared. The base line information were collected and represented in the subsequent paragraph.

The area is not subjected to pollution or environmental damage under **Water Act, 1974 and Air Act,1981.** (Please refer Annexure 18 Notification dated 21.09.2007)

A) Base Line Information

This chapter illustrates the description of the existing environment status of the study area with reference to the prominent environmental attributes. The existing environmental setting is considered to adjudge the baseline environmental conditions, which are described with respect to –

1. Physical Environment
   a) Climate,
   b) Air Quality,
   c) Water Quality & Water Regime, and
   d) Noise Level,
2. Land Environment
   a) Soil quality, and
   b) Land use pattern,

SHISHIR GAUR
ROPNO.
Valid upto 30 Dec. 14

Indian Bureau of Mines
ACC Limited
भारत सरकार
Govt. of India

3. Biological Environment

   a) Flora & Fauna,

4. Human Settlement, Public Buildings and historical monuments.

The objective of this section is to define the present environmental status which would help in assessing the environmental impact due to proposed mining operations.

The various monitoring stations for assessing different environmental parameters have been tabulated below –

Sl. No.	Environmental Attribute	Criteria Adopted
1.	Meteorology	Regional pattern through IMD Data and data generated during the study period at the project site
2.	Ambient Air Quality	Sampling at 10 locations viz: - AAQ1 – ML Area AAQ2 – Erragudi Village AAQ3 – Vaddirala Village AAQ4 – Gollapalle Village AAQ5 – JangalpalleVillage AAQ6 – KamavaripalleVillage AAQ7 – Bhutmapuram Village AAQ8 – Nawabpeta Village AAQ9 – Talamanchipatnam Village AAQ10 – Peddavenuturla Village
3.	Water Quality	Sampling at 6 Ground water locations viz: - GW1 – Erragudi Village GW2 – Vaddirala Village GW3 – Jangalapalli Village GW4 – Gollapalli Village GW5 – Kammavaripalli Village GW6 – Talamanchipatna Village & Sampling at 3 Surface water locations viz: - SW1 – Jagalapalli Village SW2 – Thalamanchipatnam Village SW3 – Mada Vagu near Kotapadu
4.	Noise levels	Sampling at 11 locations viz:- N1 – Mine Lease area N2 – Erragudi Village N3 – Vaddirala Village N4 – Gollapalli Village N5 – Jangalapalli Village

SHISHIR GAUR
ROP/NGP/335/2004/A
Valid upto 6th Dec. 14

ACC Limited
Govt. of India

Sl. No.	Environmental Attribute	Criteria Adopted
		N6 – Kammavaripalli Village N7 – Bhutamapuram Village N8 – Nawabpeta Village N9 – Talamanchipatna Village N10 – Proposed Township N11 – Nainalappa Swami Temple near Akkampalle Village
5.	Soil Quality	Sampling at 6 locations viz: - S1 – ML area S2 –Erragudi Village S3 – Vaddirala Village S4 – Jangalapalli Village S5 – Gollapalli Village S6 – Thallamanchipatnam Village

SHISHIR GAUR
ROP/NGP/525/2004/A
Valid upto 6th Dec. 14

ACC Limited
Bureau of Indian Standards
भारत सरकार
Govt. of India

11.1 Meteorology

The meteorological data recorded during the monitoring period is very useful for proper interpretation of the baseline information as well as for input prediction models for air quality dispersion.

The year may broadly be divided into four seasons namely:

- Winter Season - December to February
- Pre – monsoon Season - March to May
- Monsoon Season - June to September
- Post – Monsoon Season - October to November

11.1.1 Meteorological Data Generated at Site

The monthly average, maximum and minimum values of the parameters recorded during the study period are presented below while the wind pattern is presented as wind rose diagram shown in Environmental Plan.

Summary of meteorological data generated at site

Month	Temperature (°C)		Relative Humidity (%)		Rainfall (mm)	Atmospheric Pressure (mb)	
	Max	Min	Max	Min		Max	Min
Oct'07	32.6	23.2	72	63	Nil	995	991
Nov'07	29.5	20.6	70	68	Nil	998	995
Dec'07	30.7	18.4	73	61	Nil	999	996

Generally, light to moderate winds prevails through the year. Winds were light and moderate particularly during the morning hours. While during the afternoon hours the winds were stronger. The wind rose of the area is shown in **Plate no.XII** and figures are tabulated on next page –

SHISHIR GAUR

Season	First Predominant Wind Direction		Second Predominant Wind Direction		Predominant Wind Speeds (kmph)	Calm %	
	0830 hrs	1730 hrs	0830 hrs	1730 hrs		0830 hrs	1730 hrs
Annual	W (14.7%)	E (19.6%)	NW (7.9%)	W (10.2%)	< 1.0 - 19	29.6 %	18.0%

11.2 Ambient Air Quality:

The area is not subjected to pollution or environmental damage under **Air Act,1981.** The ambient air quality with respect to the study zone of 10 km radius around the mine site forms the baseline information. The primary sources of air pollution in the region are transportation and domestic activities. In addition at locations near the National Highway traffic movement could be a major contributor. Dusty environment also contribute to the air pollution. The prime objective of the baseline air quality study was to assess the existing ambient air quality of the area. The study area represents mostly rural environment.

11.2.1 Methodology adopted for Air Quality Survey

11.2.1.1 Selection of Sampling Locations

The baseline status of the ambient air quality has been assessed through a scientifically designed ambient air quality –monitoring network. The design of monitoring network in the air quality surveillance program has been based on the following considerations:

- Meteorological conditions on synoptic scale ;
- Topography of the study area
- Representatives of regional background air quality for obtaining baseline status and
- Representatives of likely impact areas.

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14

11.2.1.2 Frequency and parameters for Sampling

Ambient air quality monitoring has been carried out with a frequency of two days per week at all locations during study period. The baseline data of air environment has been generated for the following parameters:

- Total Suspended Particulate Matter (TSPM) ;
- Respirable Particulate Matter (RPM) ;
- Sulphur dioxide (SO_2) ;
- Oxides of Nitrogen (NO_x) ;
- Carbon Monoxide (CO) ; and
- Dust fall

11.2.1.3 Duration of Sampling

The sampling duration for Suspended Particulate Matter (RSPM & TSPM), SO2, NOx and CO is twenty-four hourly continuous samples per day.

11.2.1.4 Selection of Instruments for Air Quality Sampling

Respirable Dust Samplers have been used for monitoring Total Suspended Particulate Matter (TSPM), Respirable fraction (< 10 microns) and gaseous pollutants like SO2, NOx, and CO. Glass tubes are deployed for collection of grab samples of Carbon monoxide.

11.2.2 Presentation of Primary Data – Baseline Air Quality

Various statistical parameters like 98th percentile, average, maximum, and minimum values have been computed from the observed raw data for all the AAQ monitoring stations. The summary of these results for post-monsoon season is presented in **Annexure No. 10**.

SHISHIR GAUR
ROP/NGP/325/2004/A
Valid upto 8th Dec. 14

भारत सरकार
Govt. of India
Indian Bureau of Mines

Summary of Observations

The results of the monitored data indicate that the ambient air quality of the region in general is in conformity with respect to rural / residential norms of the National Ambient Air Quality Standards of CPCB, with present level of activities.

- **Post Monsoon Season (2007)**

1] **TSPM:** The maximum value for TSPM were observed at Talamanchipatnam (AAQ9) station, as 135.6 µg/m3 and the minimum value observed at Gollapalle (AAQ4) station as 45.6 µg /m3 during the study period.

2] **RPM:** The maximum value for RPM were observed at Gollapalle (AAQ4), as 38.5 µg/m3 with the minimum value observed at Talamanchipatnam (AAQ9) as 15.8 µg/m3 during the study period.

3] **SO_2**: The maximum value for SO_2 were observed 9.2 µg/m3 at Gollapalle (AAQ4) and the minimum concentration of SO_2 were observed at Janganapalle (AAQ5) as 5.1 µg/m3 during the study period.

4] **NOx**: The concentrations for NOx were ranged in 6.6 - 11.0 µg/m3 in the study area with the maximum concentration of 11.0 µg/m3 at Gollapalle (AAQ4) and the minimum value (6.6 µg/m3) were observed at Jangalapalle (AAQ5).

5] **CO**: The maximum and minimum values of CO were observed 415 µg/m3 and 215 µg/m3at Vaddirala (A3) and Jangalapalle (AAQ5) respectively.

It is proposed to conduct the air quality monitoring on quarterly basis and the analysis data will be submitted to IBM office.

11.3 Water Quality

The area is not subjected to pollution or environmental damage under **Water Act, 1974.**

SHISHIR GAUR
Valid upto 6th Dec 16

Selected water quality parameters of ground and surface water resources within 10-km radius of the study area has been studied for assessing the water environment and evaluate anticipated impact of the proposed project. Understanding the water quality is essential in preparation of Environmental Impact Assessment and to identify critical issues with a view to suggest appropriate mitigation measures for implementation. The purpose of this study is to:

- Assess the water quality characteristics for critical parameters;
- Evaluate the impacts on agricultural productivity, habitat conditions, recreational resources and aesthetics in the vicinity ; and
- Prediction of impact on water quality by this project and related activities.

The information required has been collected through primary surveys and secondary sources.

11.3.1 Methodology

Reconnaissance survey was undertaken and monitoring locations were finalized based on:

- Drainage pattern;
- Location of residential areas representing different activities/likely impact areas; and
- Likely areas, which can represent baseline conditions.

Water sources covering 10-km radial distance from proposed project site were examined for physico-chemical, heavy metals and bacteriological parameters in order to assess the effect of industrial and other activities on water.

11.3.2 Water Sampling Locations

Water samples were collected from nine sampling locations consisting of six ground and three surface water samples. These samples were analyzed for

SHISHIR GAUR
Valid upto 6th Dec. 14

various parameters to compare with the standards for drinking water as per IS: 10500 for ground water sources and standard for inland waters as per IS: 2296 for surface water sources.

11.3.3 Presentation of Results

The results of the parameters analyzed for the six ground water and two surface water samples are presented in **Annexure 11** and **Annexure 12** respectively. It is proposed to conduct the water quality monitoring on quarterly basis and the analysis data will be submitted to IBM office.

11.3.4 Water Regime

In the Northern side of mining lease area, one stream named "Pala Vagu" is flowing from the West to the East and the Southern side of mining lease area, another stream named "Rallavanka" is flowing from the West to East. Both of the streams become dry during the summer. The Western side of our area, one canal named the GNSS (Galeru Nagari Sujala Sravanthi) is passing from the North to the South. Limestone is covered by soil and most of the area is being used for active dry cultivation. Seasonal cash crops like groundnut, pulses etc are grown as and when favourable monsoon is received. The area is characterized by thin/sparse vegetation mainly comprising thorny bushes and is free from any major tree or forest cover. The average annual rainfall is about 783.3 mm. The area experiences maximum rainfall due to south West monsoon.

11.4 Noise Level Survey

The physical description of sound concerns its loudness as a function of frequency. Noise in general is sound which is composed of many frequency components of various loudness are distributed over the audible frequency range. Various noise scales have been introduced to describe, in a single number, the response of an average human to a complex sound made up of various frequencies at different loudness levels. The most common and universally accepted scale is the A

weighted scale which is measured as dB (A). This is more suitable for audible range of 20 to 20,000 Hz. The scale has been designed to weigh various components of noise according to the response of a human ear. The impact of noise sources on surrounding community depends on:

- Characteristics of noise sources (instantaneous/intermittent or continuous in nature). It can be observed that steady noise is not as annoying as one which is continuously varying in loudness;
- The time of day at which noise occurs, for example high noise levels at night in residential areas are not acceptable because of sleep disturbance; and
- The location of the noise source, with respect to noise sensitive land use, which determines the loudness and period of exposure.

The environmental impact of noise can have several effects varying from Noise Induced Hearing Loss (NIHL) to annoyance depending on loudness of noise. The environmental impact assessment of noise due to construction activity, and vehicular traffic can be undertaken by taking into consideration various factors like potential damage to hearing, physiological responses, and annoyance and general community responses. Noise monitoring has been undertaken for 24-hr duration at each location.

11.4.1 Identification of Sampling Locations

A preliminary reconnaissance survey has been undertaken to identify the major noise generating sources in the area. Noise at different noise generating sources has been identified based on the activities in the village area, ambient noise due to industries and traffic and the noise at sensitive areas like hospitals and schools. The noise monitoring has been conducted for determination of noise levels at eleven locations in the study area.

11.4.2 Method of Monitoring

Sound Pressure Level (SPL) measurements were measured at all locations one reading for every hour was taken for 24 hours. The day noise levels have been monitored during 6 am to 10 pm and night levels during 10 pm to 6 am at all the locations covered in 10-km radius of the study area.

DETAILS OF NOISE MONITORING LOCATIONS

Station Code	Locations	Distance from Mine Site (Km)	Direction w.r.t. Mine Site
N1	Mine Lease area	----	----
N2	Erragudi Village	1.9	W
N3	Vaddirala Village	1.5	SW
N4	Gollapalli Village	0.4	SSE
N5	Jangalapalli Village	1.6	ENE
N6	Kammavaripalli Village	1.0	ESE
N7	Bhutamapuram Village	5.3	ESE
N8	Nawabpeta Village	5.1	ESE
N9	Talamanchipatna Village	2.9	SE
N10	Proposed Township	1.1	SW
N11	Nainalappa Swami Temple near Akkampalle Village	7.9	ENE

SHISHIR GAUR
ROP/NGP/035/2013
Valid upto 6th Dec. 14

11.4.3 Parameters Measured During Monitoring

For noise levels measured over a given period of time interval, it is possible to describe important features of noise using statistical quantities. This is calculated using the percent of the time certain noise levels are exceeding the time interval. The notation for the statistical quantities of noise levels are described below:

- L_{10} is the noise level exceeded 10 per cent of the time ;
- L_{50} is the noise level exceeded 50 per cent of the time ; and
- L_{90} is the noise level exceeded 90 per cent of the time.

Equivalent Sound Pressure Level (Leq):

The Leq is the equivalent continuous sound level which is equivalent to the same sound energy as the actual fluctuating sound measured in the same period. This is necessary because sound from noise source often fluctuates widely during a given period of time. This is calculated from the following equation:

$$L_{eq} = L_{50} + \frac{(L_{10} - L_{90})^2}{60}$$

L_{day} is defined as the equivalent noise level measured over a period of time during day (6 am to 10 pm).

L_{night} is defined as the equivalent noise level measured over a period of time during night (10 pm to 6 am).

A noise rating developed by **E P A** for specification of community noise from all the sources is the Day-Night Sound Level, (L_{dn}).

Day-Night Sound Level (L_{dn}):

The noise rating developed for community noise from all sources is the Day-Night Sound Level (L_{dn}). It is similar to a 24 hr equivalent sound level except that during

night time period (10 pm to 6 am) a 10 dB (A) weighting penalty is added to the instantaneous sound level before computing the 24 hr average.

This night time penalty is added to account for the fact that noise during night when people usually sleep is judged as more annoying than the same noise during the day time.

The L_{dn} for a given location in a community may be calculated from the hourly

L_{eq} 's by the following equation.

$$L_{dn} = 10 \log \{1/24[16(10^{Ld/10}) + 8\,(10^{(Ln+10)/10})]\}$$

Where L_d is the equivalent sound level during the day time (6 am to 10 pm) and L_n is the equivalent sound level during the night time (10 pm to 6 am).

11.4.4 Presentation of Results

The statistical analysis is done for measured noise levels at ten locations during study period representing post-monsoon season. The parameters are analyzed for L_{day}, L_{night}, and L_{dn}. These results are tabulated in below

NOISE LEVELS IN THE STUDY AREA- POST-MONSOON SEASON

Location Code	Location	L10	L50	L90	Leq	Ld	Ln	Ldn
NI	Mine lease area	45.6	42.1	38.6	42.9	43.8	39.8	47.1
N2	Erragudi	51.2	47.6	43.8	48.5	49.4	45.6	52.8
N3	Vaddirala	50.4	45.9	42.5	46.9	48.9	44.0	51.5
IM4	Gollapalli	49.8	45.9	42.2	46.9	47.7	44.1	51.2
N5	Jangalapalli	46.5	42.7	38.9	43.7	44.9	41.0	48.2
N6	Kammavaripalli	48.6	44.4	40.5	45.5	46.5	42.1	49.5
N7	Bhutamapuram	47.5	43.7	39.9	44.7	46.3	42.0	49.3

Location Code	Location	L10	L50	L90	Leq	Ld	Ln	Ldn
N8	Nawabpeta	49.6	44.8	41.2	46.0	48.0	42.3	
N9	Talamanchipatna	50.3	46.4	42.5	47.4	48.3	43.7	51.1
N10	Proposed township	43.5	39.7	36.5	40.5	41.9	38.4	45.5
N11	Nainalappa Swami Temple near Akkampalle village	42.4	38.9	35.4	39.7	40.6	36.6	43.9

11.4.5 Observations - Post-Monsoon season

a) **Day time Noise Levels (L_{day})**

The daytime (L_{day}) noise levels at all the residential locations were observed to be in the range of 46.3 dB(A) to 49.4 dB(A). The maximum noise level of 49.4 dB(A) was observed at Erragudi (N2) and the minimum noise level of 46.3 dB(A) was observed at Bhutamapuram (N7). It is observed that the day time noise levels at maximum residential locations are within the prescribed limit of 55 dB (A). The noise levels at sensitive zones are 40.6 dB(A) at Nainalappa Swami Temple near Akkampalle village and 41.9 dB(A) at proposed town ship (N10).

b) **Night time Noise Levels (L_{night})**

The night time (L_{night}) noise levels at all the residential locations were observed to be in the range of 45.6 dB (A) to 41 dB (A). The maximum noise level of 45.6 dB (A) was observed at Erragudi (N2) and the minimum noise level of 41 dB (A) was observed at Jangalapalli (N5). It is also observed that the night time noise levels at all the residential locations are within the prescribed limit of 45 dB(A).It is proposed to conduct the noise and vibration monitoring on quarterly basis and the analysis data will be submitted to IBM office.

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 5th Dec. 14

11.5 Soil Quality:-

It is essential to determine the potentiality of soil in the area and to identify the impacts of plant activities on soil quality. Accordingly, the soil quality assessment has been carried out.

The sampling locations have been identified with the following objectives:

- To determine the baseline soil characteristics of the study area;
- To determine the impact of proposed project on soil characteristics; and
- To determine the impact on soils more important from agricultural productivity point of view.

11.5.1 Data Generation

For studying soil profile of the region, a total of six sampling locations were selected to assess the existing soil conditions in and around the proposed project site. The details of the soil sampling locations are given in table below -

DETAILS OF SOIL SAMPLING LOCATIONS

Code	Location	Distance from Mine Site (km)	Direction w.r.t. Mine site
S1	ML area	----	----
S2	Erragudi Village	1.9	W
S3	Vaddirala Village	1.5	SW
S4	Jangalapalli Village	1.6	ENE
S5	Gollapalli Village	0.4	SSE
S6	Thallamanchipatnam Village	2.9	SE

Composite soil samples were collected by ramming a core cutter into the soil to a depth of 30, 60 and 90-cm at each location. The physical, chemical and heavy metal concentrations were determined in each composite soil sample.

The physical and chemical characteristics of soil are enclosed as **Annexure 5B**.

11.6 Land Use Pattern:-

The Mining Lease is located in the villages Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle and G.Uppalapadu in Mylavaram Thesil, Kadapa District, Andhra Pradesh State and lies between Latitude – 14 ° 59' 20" N – To 15 ° 00' 10" N and Longitude – 78 ° 13' 55" E - 78 ° 18' 08" E in Toposheet Nos. 57 I/4 & 8 and 57 J/1 & 5. Total mining lease area is 997.08 Ha.

Type of lease area (Forest/Non forest) : Non forest

- **The present land use pattern :**

- Area for mining activity (Broken land) : Nil
- Area under Green belt : Nil
- Area under Infrastructure : Nil
  (i.e. office and building)
- Area under road : Nil
- Area under dump yard : Nil

The land use details based on census data for the area within 10 Km from ML boundary is tabulated on next page –

Indian Bureau of Mines
Govt. of India

Land Use Pattern within 10 Km of ML Boundary

Sl. No.	Particulars of Land Use (All values in Ha)	0 – 3 Km	3 – 7 Km	7 – 10 Km	0 – 10 Km
1	Forest Land	0.00	3123.36	2219.00	5342.36
2	Land Under Cultivation				
	a) Irrigation Land	1109.66	1475.62	2096.72	4682.00
	b) Un Irrigated Land	5932.28	5305.03	10330.70	21568.01
3	Cultivable Waste Land	157.48	818.90	1308.16	2284.54
4	Area not Available for Cultivation	7240.79	4737.79	7827.01	19805.59
	Total Area	14440.21	15460.70	23781.59	53682.50

11.7 Flora & Fauna:-

An ecological survey of the study area was conducted particularly with reference to recording the existing biological resources in the study area.

11.7.1 Terrestrial Ecological Studies

11.7.1.1 Objectives of Ecological Studies

The objectives of this study are intended to:

- Generate baseline data from field observations from various terrestrial and aquatic ecosystems;
- Compare the data so generated with authentic past records to understand changes; and
- Characterize the environmental components like flora and fauna.

11.7.1.2 Methods adopted for the study

To accomplish the above objectives, a general ecological survey covering an area of 10 Km radius from mine lease boundary is conducted.

- Reconnaissance survey for selection of sampling sites in and around mining site on the basis of meteorological conditions;
- Generation of primary data to understand baseline ecological status, important floristic elements;

SHISHIR GAUR
ROP/NGP/035/2004/A
Valid upto 9th Dec. 14

- Generation of primary data to understand baseline fauna structure and
- Collection of secondary data from Forest Working Plan and Gazetteers.

11.7.1.3 Criteria adopted for Selection of Sampling Locations

Reconnaissance survey was conducted to identify the phyto-sociological sampling location on the basis of following criteria:

- Proximity to the mine/plant site;
- Downwind direction of the mine/plant site ; and
- Upwind direction of the mine/plant area.

11.7.2 Review of Secondary Data from Kadapa District

The forests of the district are of dry deciduous type. They vary considerably in their condition densely and floristic distribution due to natural factors and depredations of the man. Natural factors include factors such as the altitude, the soil conditions, the quantity and regularity of the rainfall. The ravages of relate to fire, theft and grazing. The over all condition of the forests in the district is not very good. The only distinction of the forest of the district is the availability of the most important species like Ptereocarpus santalinus or red sanders. Since, this is the species occurs, a policy to conserve and extend the same has been evolved. The forest of Kadapa, south division falls under three zones, viz those of division fall forests upto an elevation of 800 feet, hill forests or red sanders lying between the elevation of 800 feet and the Shorea eugenia occupying elevations about 2,000 feet.

Fauna and flora

During the study period it was observed that, among the carnivorous jungle cat (Felis chaus), hyena and Jackal are occasionally seen in the kadapa district. The large flying foxes, yellow bats, five stripped palm squirrel,porcupine (Hystrix India), Wild bear, represented by the are some of the common flesh eating wild animals found in the district. Of avifauna, patridges, rock pigeon and jungle fowl are found in large numbers.

Field survey conducted in post monsoon season revealed a total of 309 species of plants of which 135 were phanerophytes, 122 were therophytes, 25 hemicryptophytes, 8 hydrophytes, and 9 geophytes. Among angiosperms 109 were woody members and 163 were herbaceous plants.The list of plant species recorded in district are tabulated below –

LIST OF PLANT SPECIES RECORDED FROM KADAPA FOREST DIVISION

Technical Name	Family
Ficus reliosa	Urticacaceae
Terminal/a chebula	Combretaceae
Ficus benghalensis	Urticaceae
Sapindus marginatus	Sapindaceae
Dodonia viscose	Sapindaceae
Kydia calcina	Malvaceae
Albizia lebbeck	Mimosaceae
Acacia instsia	-
Albizia odorattissima	-
Sterculia villosa	Sterculiaceae
Acacia leucophloe	Mimosaceae
Azadirachta indica	Meliaceae
Gardenia gummifera	
Feronia limonia elephanathum	Rutaceae
Aegle marmelos	Rutaceae
Givotia rettleformis	Euphorbiaceae
Ficus trista	Urticaceae
Seerigenia virora	Euphorbiaceae
Sterculia urens	Sterculiaceae
Terminal/a arjuna	Combretaceae
Bombax ceiba	Malvaceae
Zizyphus jujube	Rhamnaceae
Bauhinia purpuria	Caesalpinaceae
Acacia ferruginea	Mimosaceae
Albizia amara	Mimosaceae
Cordia myxa	Loraginaceae
Strychnos nuxvomica	Linaceae
Anogeissus latifolia	Combretaceae
Technical Name	Family
Boswellia serrrata	Burseraceae
Plumeraia acutifolia	Apocyanaceae
Plumeria acutifolia.	Apocyanaceae
Phoenix sylvestris	Palmea

Indian Bureau of Mines
Govt. of India

Dischrostachys cineraria	Mimosaceae
Premna tomentosa	Verbinaceae
Zizyphus oenophila	Rhamnaceae
Ixora parviflora	Rubiaceae
Ficus myserensis	Urticaceae
Garuga pinnata	Burseraceae
Bridelia retusa	Euphorbiaceae
Abrus precatorius	Papillionaceae
Wrightia tingctoria	Apocyanceae
Pongamia pinnata	Papillionaceae
Acacia lataronium	Mimosaceae
Melia dubia	Melaiceae
Tamarindus indica	Papillionaceae
Saccopetalum tomentosum	Annonaceae
Bassia latifolia	Sapotaceae
Bamsbusa bamboo	Graminaceae
Shorea talura	D i pteroca rpacaceae
Grew/a tiliafolia	Tiliaceae
Diospyros Montana	Ebanaceae
Mallotus Philippines	Eupohorbiaceae
Acacia Arabica	Mimosaceae
Euphorbia tricauli	Euphorbiaceae
Atalatiana monophylla	Rutaceae
Schleichera oleosa	Sapindaceae
Toddlaia aculata	Rutaceae
Cassia fistula	Caesalpinaceae
Mitragyna parviflora	Rubiaceae
Semecarpus anacardium	Anacardiaceae
Dalbargia latifolia	Papillionaceae
Moridna tinctoria	Apocyanceae
Carissa carandus	Apocyanaceae
Careya arborea	Myrtaceae
Hardwickia binata	Caesalpinaceae
Phoenix farnefera	Palmae
Protium caudatum	Burseraceae
Diospyros Montana	Ebanaceae
Lanatana camara	Verbinaceae
Acacia sundra	Mimosaceae
Buchanania angustifolia	Anacardiaceae
Mangifera indica	Anacardiaceae
Terminalaia tomentosa	Combretaceae
Asparagus racemosus	Liliaceaee
Strebulus asper	Moraceae

RQFINC/1025/2004/A
Valid upto 6th Dec. 14

ACC Limited
Govt. of India

Butea monosperma	Papilionaceae
Chloroxylon sweitenia	Meliiaceae
Eugenia jumbolina	Myrtaceae
Emblica officinalis	Euphorbiaceae
Canthium didynum	Rubiaceae
Opuntia dillinii	Cactaceae
Annona squamosa	Annonaceae
Tectona grandis	Verbinaceae
Delonix elata	Caesalpinaceae
Dendrocalamus strictus	Graminaceae
Terminalaia bellerica	Combretaceae
Diospyros melanoxylon	Ebanaceae
Casia auriculata	Papillionaceae
Stachyarpheta jamaicansis	Verbinaceae

Cryptogamic Vegetation

The area shows many algae, fungi, bryophytes and ferns. Algae are present in aquatic bodies or in marshy places. Fungi, particularly from ascomycetes and basidiomycetes are located on ground or epiphytically. Lichens of crustose, foliose and fruticose types are present on different substrates (Lichens, Ascomycetes and Basidiomycetes could be observed near old house walls and agricultural waste dump areas. Bryophytes occur in wet areas and occasionally on barks of trees and old walls of houses. The commonly observed in this are Funaria sp and Polypodium sp.

Life Form Spectrum

Raunkiaer defined life forms as the sum of adaptations of plants to climate. Braun-Blanquet (1951), whose system is adapted in this study, modified the Raunklaer's system. Following five of the ten classes created by Braun-Blanquet is present in the study area.

Phanerophytes	:	Shrubs and trees
Therophytes	:	Annuals including ferns
Hydrophytes	:	Water plants except plankton
Hemicryptophytes	:	Plants with perennial shoots and buds close to surface.
Geophytes	:	Plants with parenting parts buried in substratum.

SHISHIR GAUR

ACC Limited
Govt. of India

309 plant species (except algae, fungi and bryophytes) were recorded from the study area. Their analysis is presented is tabulate below –

CLASS WISE DISTRIBUTION OF PLANT SPECIES IN THE STUDY AREA

Type of Species	Number	% of Total
Phanerephytes (P)	135	43.69
Therophytes (T)	122	39.48
Hemicryptophytes (He)	35	11.32
Hydrophytes	8	2.59
Geophytes (G)	09	2.92
Total	309	100

Comments on the Life Form Spectrum

Life form spectrum is a reflection of plant community. A plant community is governed by several factors like climatic, edaphic, topographic and biotic. Even local variations in environment affect components of plant community. Among all these factors, life form spectrum of an area, which reflects climatic conditions prevailing.

In the study area, maximum number of species are phanerophytes (43.69%) followed by therophytes (39.48%). These classes are followed by hemicryptophytes (11.32%) and hydrophytes(2.59%). Geophytes were found in very few numbers (2.92%)

Presence of large number of phanerophytes (shrubs and trees) and therophytes (Annuals or herbaceous vegetation) indicates tropical and mixed decidious vegetation structure. The area shows a rich gene pool of perennial shrubs and trees. This indicates a potentially good area for their growth.

Hemicryptophytes (predominantly grasses and sedges) were found to be significant in the area. These indicate fertile and wet soil in upper layer of soil profile. Hydrophytes were present in both the seasonal or perennial water bodies.

Phytosociological Studies

A preliminary survey was made and eight locations for detailed study within 10-km radius were selected.

The primary data was generated through:

- Preparing a general checklist of all plants encountered in the study area. This would indicate the biodiversity for wild and cultivated plants. The plants so encountered were classified into life form spectrum according to the classification of Raunkiaer's (Braun Blanquet) classification of life form spectrum.
- Phytosociological studies by using list count quadrate method. Sufficient number of quadrates of 100-m2 size was employed for this. The number of quadrates depended on actual field requirements.
- Estimating basal areas of trees and shrubs at breast height [132 cm from ground or above buttresses].
- Herbaceous flora was studied by taking 10 quadrates in each location, each quadrate having 10 m^2.
- Determining frequency, abundance, relative frequency, relative density, relative dominance and importance value indices using Mueller-Dombois-Ellenberge [1974] Method.
- Determining the bird population of migratory and local birds by taking 10 random readings at every location
- Observing mammals, amphibians and reptiles, noting their call, droppings, burrows, pugmarks and other signs.
- Noting impact of industrial activities on fauna, flora and crops. Effects on statusand/or quality of growth on plants and any symptoms like defoliation, deformities, chlorosis, necrosis, warping, reduced vigour and infection by parasites and attacks by predator insects were noticed.
- Local inhabitants were interviewed for uses of plants and animals and to get Ethnobiological data.

11.7.3 Identification of Local Protected Species

A detailed enumeration of flora species within 10 km radius from the mine lease is presented above. As per Botanical Survey of India records and available published literature pertaining to the study area and current detailed study of project site, no threatened, endangered and rare plant species were observed from the study area.

SHISHIR GAUR
RQP/NGP/0352/2004/A
Valid upto

11.7.5 Wildlife Studies

An extensive field studies were conducted in post monsoon season to know the present status of fauna of the study area. Apart from that, secondary data was collected by mode of interaction of local elderly people and Forest Working Plans of Kadapa district.

11.8 Human Settlement, Public Buildings and historical monuments

The information on socio-economic aspects of the study area has been compiled from secondary sources, which include various public and semi-public offices. The demographic and land use data has mainly been compiled from District Primary Census Hand Books, 2001 as this document is comprehensive and authentic. The sociological aspects like human settlements, demographic profile, other socio-economic aspects available in the study area have been covered in this study. The socio-economic details are briefly described in the following sections.

The population pattern in the surrounding villages is as follows:

Sl. No.	Village	No of House Holds	Population
1	Dhannawada	194	871
2	Vaddirala	249	1175
3	Chinna Venthurla	137	639
4	Bestavemula	280	1242
5	Kallutla	222	1122
6	Ayyari Kambala Dinne	85	399
7	Talamanchi Patnam	200	810
8	Madhavapuram	71	318
9	Golla Upplapadu	28	149
10	Gollapalle	137	650
11	Kona Annathapuram	55	224
12	Hanumanthagundam	189	892
13	Erragudi	296	1183
14	Murapandi	279	1173
15	Nakkavanipalle	58	221
16	Dhodium	316	1309
17	Nawabpeta	271	1205
18	Chinna Komerla	815	3434

Sl. No.	Village	No of House Holds	Population
19	Duggana Palle	28	143
20	Ramachandrayapalle	207	835
21	Bhutamapuram	123	514
22	Boyala Uppalur	340	1416
23	Peddaventhurla	423	1847
24	Ponnampalle	272	1125
25	Malameedi Kambala Dinne	305	1309
26	Thorrivemula	599	2467
27	Kondasunkesula	458	2039
28	Diguva Kalvatala	284	1418
29	Papayapalle	236	1084
30	Bheemagundam	277	1101
31	Gundlakunta	451	3385
32	Thimmanayunipeta	439	1931
33	Boyala Tadipatri	58	241
34	Perusomala	1075	4858
35	Giddalur	587	2572
36	Mikkinenipalle	146	615
37	Nossam	1036	4992
Total		11226	50908

The villages within 10 Km of lease area is shown in the table above with population and the details of the demographic profile with socio-economic status of the area/population has been provided and tabulated in **Annexure -12A.**

The occupational structure of the area has been shown in following table:

OCCUPATIONAL STRUCTURE OF AREA

Catagory	Population (Nos)
Total Working population	29735
Total Non-working population	21173
Total Main Worker	19794
Total Marginal Workers	9941

There are no human settlements in the mining lease area.

There is no historical monument or archeological sites within the 10 km radius from the mining lease area.

B) ENVIRONMENT IMPACT ASSESSMENT STATEMENT

The impact of mining activities on the environment of the area is described below.

i) Land Area (Including Land use pattern)

The impact of mining on land use is positive because of high afforestation activities carried out and conversion of mined out land in the water reservoirs. Land will be acquired and after extraction of limestone shall be backfilled properly with natural sequence of soil structure and converted for plantation (affforestation).

The development of greenbelt as proposed in the post mining land use pattern (an area of 30 Ha around mining lease boundary and an area of 156 ha above waste dump) will help in attracting minor fauna and birds to the area. This will have a net positive impact on the land use pattern.

II) Air Quality

The air pollution impact of limestone mines depends on the intensity of extraction operations, method of mining and mode of transport. The intensity of operation is directly related to the rate of production from mining. Drills, excavators, and dumpers of different capacities will be engaged for extracting and transporting the limestone from the mining area.

Majority of the heavy machinery in the mines are operated on diesel. The proposed mining activity is likely to contribute towards SPM, NO_x and SO_2 from mining machinery.

Air pollution sources at the opencast mine can be classified into three categories, *viz.* volume area sources, line sources and instantaneous point sources. Extraction of limestone by various activities in mining area is considered as an area source. Transportation of limestone from mining area to the crusher is considered as line source. Blasting operations are considered as instantaneous point sources.

SOURCES OF POLLUTANTS – MINING ACTIVITIES

Sr. No.	Source	Type of Pollutant
1	Drilling & Blasting	SPM, NOx
2	Loading & Hauling	SPM, NOx
3	Dumping	SPM

There will be increase in terms of dust load and gaseous emissions. However, it can be stated that these incremental contributions will be confined to the proposed mine lease area only and will not have any adverse impact on the outside community. Further, the additional mitigation measures as described will further bring down these concentrations making the proposed mining activities more environmental friendly.

iii) Water Resources (Regime) & Quality

The water flowing through open channel and stored in mine pits acts as artificial ground water impoundment ad recharges the groundwater and also provides a dependable surface water source for irrigation purposes of local farmers. This indicates mine operation has no adverse effect on the local water regime.

Water pollution can take place only if the dump and mineral stockpiles contain chemical substances. The chemicals get leached by the precipitation water and percolate to the ground water table thus polluting it. Any nearby wells or other sources of water can be rendered unfit for drinking and even for industrial use. This is not the case with this deposit as the mineral or topsoil does not contain any harmful ingredients, which could leach down to the water table. Moreover, limestone constitutes of fairly inert and chemically non-reactive ingredients.

iv) Noise Level

With the proposed mining operations due to the deployment of drilling and blasting for mine development, excavation and transportation of ore and men, it is imperative that noise levels would increase. However, the expected noise levels are not likely to have any effect from the occupational health point of view.

SHISHIR GAUR
ROP/NGP/[illegible]
Valid upto 6th Dec. 14

The likely noise levels of the machinery operated during mining are given in Table below –

NOISE GENERATION DUE TO MINING OPERATIONS

Machines	Typical Noise Levels dB(A)
Dumpers	87.5
Hydraulic Excavator	88.0
DTH Drills	89.0
Dozer	89.0

The noise levels given in above table represent worst case scenario. It should be noted that each shift being of 8-hr duration, equivalent noise level exposure during the shift is 90 dB(A). Hence, noise generated may affect workers if equivalent 8-hr exposure is more than the safety limit of 90 dB(A).

Noise generated from blasting is neither continuous nor for a shorter duration but instantaneous. It takes less than 5 seconds to occur. Noise of blast is site specific and depends on type, quantity of explosives, dimensions of drill holes, degree of compaction of explosive in the hole and rock.

v) Vibrations Level (Due to Blasting)

Ground vibration, fly rock, air blast, noise, dust and fumes are the deleterious effects of blasting on environment. The explosive energy sets up a seismic wave in the ground, which can cause significant damage to structures and disturbance to human occupants.

When an explosive charge is fired inside the blast hole, it is instantly converted into hot gases, which exert intense pressure on the blast hole walls. A high intensity shock waves propagate radially in all directions and cause the rock particles to oscillate. This oscillation is felt as ground vibration. The proposed mining operations using deep hole drilling and blasting using delay detonators are bound to produce ground vibrations.

SHISHIR GAUR
ROP/NGP/226/2004/A
Valid upto 9/8/26

Blasting, in addition to easing the hard strata, generates ground vibrations and instantaneous noise. Ground vibration from mine blasting is expressed by amplitude, frequency and duration of blast. The variables, which influence ground vibrations are controllable and non-controllable. The non-controllable variables include general surface terrain, type and depth of overburden and wind. Similarly, the controllable variables include type of explosives, charge per delay, delay interval, direction of blast progression, burden, spacing and specific charge and coupling ratio.

The oscillation of rock particles is called Particle Velocity and its maximum value is called Peak Particle velocity (PPV), which is measured in millimetre per second. The standards for safe limit of PPV are established by Director General of Mines Safety for safe level criteria. The safe level criteria PPV are detailed below in the table –

PERMISSIBLE PEAK PARTICLE VELOCITY

All values are given in mm/sec

Type of Structure	Dominant excitation Frequency		
	<8 Hz	8 – 25 Hz	>25 Hz
A] Buildings/structures not belonging to the owner			
Domestic houses/structures (Kuchha brick and cement)	5	10	15
Industrial Buildings (RCC and framed structures)	10	20	25
Objects of historical importance and sensitive structures	2	5	10
B] Buildings belonging to the owner with limited life span			
Domestic houses/structures (Kuccha brick and cement)	10	15	25
Industrial buildings (RCC & framed structures)	15	25	50

Source: DGMS Circular No. 7 dated 29/08/1997

Indian Bureau of Mines
ACC Limited
Govt. of India

As the distance increases the PPV value is likely to reduce. The ground vibrations generated by blasting during the mining operations will be well within the standards prescribed by DGMS by controlled blasting. Ground vibrations are not likely to affect the structures in the vicinity of mine lease area.

By adopting controlled blasting, the problems will be greatly minimized at mines. The impacts are also minimized by choosing proper detonating system, optimizing total charge and charge/delay. Noiseless trunk delays to minimize the noise due to air blast, non-electric (NONEL) system of blasting for bottom hole initiation.

vi) Flora & Fauna

- **Impact on Terrestrial Ecology**

The baseline of Flora and Fauna has been described earlier in this chapter. There are no ecologically sensitive areas like wildlife sanctuaries within 10 Km radius of the mining lease. Similarly, as per the forest department, no endangered or rare species of flora and fauna are reported or observed in the study area.

- **Impact on Aquatic Ecology**

There are no significant aquatic bodies within 10 Km radius of the mining lease. Hence no impact is envisaged from the proposed project on aquatic bodies.

C) ENVIRONMENT MANAGEMENT PLAN:

On the basis of environment impact assessment in the foregoing paragraphs, Environment Management Plan is drawn to restrict and control the impact of mining on environment, details of which are as follows:

(i) Storage & preservation of top soil

The mining lease area in 997.08 ha has overburden in the form of overburden soil. There is limited fertile top soil except overburden soil which will be removed and stacked properly for use in afforestation within the lease boundary.

Topsoil generation, utilization and preservation for the first five years have been tabulated on next page –

SHISHIR GAUR
ROP/NGP/325/2004/A
Valid upto 6th Dec. 14

YEAR	Top Soil Scrapped Area (Ha)	Top-Soil (Tonnes)		
		Generated	Utilized	Preserved
FIRST YEAR	2.20	5000	Nil	5000
SECOND YEAR	6.80	15000	Nil	15000
THIRD YEAR	4.60	10000	320	9670
FOURTH YEAR	5.30	12000	320	11670
FIFTH YEAR	5.30	12000	320	11670

Following precautions will be taken to minimize the washout of the top soil.

a) Various types of trees will be planted over the active dump.

b) There will be garland drains having a cross section of 1X1 m^2 all along the outside dump for protection and fencing will be provided as additional protection and safety.

(ii) Proposal of land reclamation

At present there is no proposal for the land reclamation in first five year period. The conceptual mined out area is proposed to be partially backfilled and rest converted to water reservoir.

All the exploratory boreholes drilled so far are terminated after touching the bottom quartzite. On the basis of exploration program proposed to be carried out, deposit will be again established and, if required, the land reclamation proposal may be revised and submitted again.

(iii) In case of forest, programme of phased compensatory afforestation.

The area does not fall in forest land and no compensatory afforestation will be carried out.

Afforestation will be done in the Periphery of Mining Lease Boundary for development of green belt. (Refer **Plate No. VI - X**). Moreover afforestation will be carried out in dump of overburden as well as backfilled area with overburden. During the first five

SHISHIR GAUR

Indian Bureau of Mines
ACC Limited
Govt. of India

years, year wise area proposed to be rehabilitated by way of plantation is tabulated below –

Year	Green Belt		Overburden Dump		Number of Sapling	Survival Rate
	Area (Ha)	Location	Area (Ha)	Location		
1st	3.47	ML 44 to ML 64	Nil	Nil	10500	NA
2nd	3.26	ML 64 to ML 72	Nil	Nil	9800	NA
3rd	3.48	ML 32 to ML 44	2.00	Above the overburden dump created in 2nd Year	16500	60 – 70 %
4th	3.09	ML 16 to ML 32	2.64	Above the overburden dump created in 3rd Year	17200	60 – 70 %
5th	3.20	ML 00 to ML 16	2.05	Above the overburden dump created in 4th Year	15700	60 – 70 %
Total	16.50		6.69		69700	

The plantation species will be considered based on the following –

- Adoption to the geo – climatic condition of the area,
- Mix of round, spreading, oblong and conical canopies,
- Different heights ranging from 4 m to 20 m,
- Preferably evergreen trees,
- Fast growing type,
- A thick canopy cover,
- Preferably of native origin, and
- Having large leaf area index.

The list of species for consideration for plantation has been enclosed in **Annexure17**.

For post care of plantation, following steps will be taken –

- Watering - For optimum growth sufficient water should be supplied to the plants especially at seedling stage, in sandy soils, and during drought or dry season. However once grown, plants can thrive with rainfall also.
- Weeding - The growth of weeds should be suppressed to minimize competition for water, nutrients and light.
- Actions should be taken to minimize loss of water from the soil through evaporation.
- To control erosion and to regulate soil temperature, material organic or inorganic, natural or synthetic, should be placed on the ground.
- Plantation should be protected from insect pests and diseases.
- Protection from fire, especially in dry period should be taken care.
- A dedicated responsible team should be there to take care in totality.

(iv) Stabilization and vegetation of dumps

At present, the overburden will be removed and stacked along periphery of the mining lease and in the outside dumps in Northern side of the area. There will be plantation on these bund and dumps systematically and the dumps will be stabilized. These bunds will act as a barrier to protect soil wash off from the dump.

Stabilization of dumps will be done through afforestation for avoiding surface wash off. Dump of one year will be undertaken for afforestation in subsequent year so that stabilization is done simultaneously. Afforestation of dump will be undertaken from first year. Sides of dumps will be sloped & plants will be grown on the slope to stabilize the dump slopes.

(v) Treatment and disposal of water from mine and beneficiation plant.

There is no requirement for treatment of disposed water and beneficiation plant as water will not be affected as no toxic chemicals are present. However regular monitoring of water quality will be carried out.

(vi) Measures for minimizing adverse effects on water regime

Rain water will be collected in the mine pit. The mine water will not affect the water regime of the area.

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 5th Dec. 14

The accumulated water in the pit due to rains will be dewatered through dewatering pumps driven by diesel engine. This water will be discharged in the natural seasonal drainage / nalla inside the Mining Lease area so that pumped out water reaches back to the ground water body. Thus there is constant replenishment/recharge of the ground water & the ground water table is not disturbed. Monitoring stations for discharge of water into natural seasonal drainage / nalla outside the lease area will be done once the mine is operational for regular monitoring so as to keep the results within permissible limits. There will be negligible impact on water quality due to mining operations which will be carried out for producing limestone.

(vii) Measures to minimize vibration due to blasting and check noise pollution.

a) Use of NONEL system of initiation in blasting

b) Free faces to be provided adequately with adequate burden

c) Charge per Delay to be kept within limit/ as minimum as possible

d) Multi row blasting to be adopted

e) Blasting to be avoided in foggy weather

f) Blasting is to be done in afternoon time when temperature inversions are not likely to be there and air density is less.

g) Proper use of HEMM with suitable/recommended maintenance practices

h) Noise level survey and blast vibration measurements with suitable instruments will be carried out for monitoring and control the effects and rectify the process.

(viii) Measures for dust suppression

Dust pollution occurs at various stages of mining activity and effective measures are implemented for suppression of dust at all stages:

a) Drilling

1) Proper use of drill tools and spares

2) Use of proper Dust collectors

3) Use of wet drilling methods and equipments

b) Blasting

1) Proper stemming and stemming material



2) Blast area to be kept clean before blasting

3) Green belt to be provided all along the mines boundary

4) Use of NONEL initiation system

c) Crushing

1) Use of proper Dust collectors / Bag filter

2) Water spraying system at transfer points

3) All the dust generation sources to be properly enclosed

d) HEMM Operation

1) Water spraying on blasted stacks before loading

2) Water spraying on haul roads and other roads

3) Automatic water sprinklers to be provided in main road

Ambient air quality will be monitored quarterly and will be controlled to be within the permissible limit.

(ix) Measures for protecting historical monument

There is no historical monument in and around mining lease area. Hence no impact is anticipated on any place of historical importance.

(x) Rehabilitation of human settlements likely to be disturbed due to mining activity

As the land is already acquired, no impact on human settlement is envisaged. On contrary, for the human settlement around the mining lease area will be economically benefited as described in the following paragraph.

(xi) Socio Economic benefits arising out of mining

The impact of industrialization on the economic aspects can be clearly observed. The proposed plant and mining activities will provide employment to persons of different skills and trades. The local population is the largest beneficiaries.

As per our corporate philosophy, we are committed for development of local community through local groups and government agencies to the maximum extent possible. Social welfare activities are taken up on a large scale. The social welfare activities are planned in the following areas –



- Medical Assistance
- Primary Education
- Rural water supply
- Agriculture improvement
- Vocational Training
- Assistance in utilizing government programs.

C) Monitoring Schedules:

The environmental monitoring for the mining activity shall be conducted as follows –

- Air Quality
- Water & waste water quality
- Noise Levels
- Soil quality
- Greenbelt development.

Monitoring of important and crucial environmental parameters are of immense importance to assess the status of the environment during the mining operations. With the knowledge of baseline conditions, the monitoring program can serve as an indicator for any deterioration in environmental conditions due to mining operations and suitable mitigations could be carried out to safeguard the environment. The monitoring program after commencement of mining and other related activities is given below –

- **Air Pollution and Meteorological Aspects**

  Both ambient air quality and meteorology will be monitored. The ambient air will be monitored twice in a week line with the guidelines of Central Pollution Control Board and SPCB.

  Meteorological parameters like wind speed, wind direction, temperature, relative humidity and rainfall will be recorded continuously.

SHISHIR GAUR
ROP/NGP/325/2004/A
Valid upto 30th Dec. 14

- **Water and Waste water Quality**

The storm water will be analyzed in the rainy season. The ground and surface water quality will be monitored in every season at selected locations. The water depth will be monitored in the wells of surrounding villages in every season.

- **Noise Level**

Noise level in the work zone environment will be monitored regularly. The frequency of noise monitoring will be once in a month in the work zone. The ambient noise levels in the surrounding villages will be monitored once in six months.

- **Soil Sampling**

Soil samples will be tested before plantation. The environment monitoring cell will coordinate all monitoring programs at site and data thus generated will be regularly furnished to State regulatory agencies as required under the statue.

SHISHIR GAUR
RQP/NGP/[illegible]
Valid upto 6th Dec. [illegible]



PART C

12. PROGRESSIVE MINE CLOSURE PLAN

Introduction:

The ACC Limited (ACC) is the oldest and one of the largest cement producer in India with annual production capacity of more than 21.40 Million Tonnes per annum (MTPA).

ACC Limited has proposed to put up a new cement plant (clinkerisation) in Kadapa. In view of the above, Limestone requirement for the plant for clinkerisation will be met from the Kadapa Mining Lease. As this is a virgin land at present, lot of developmental and infrastructural jobs has to be started in advance before actual production does.

The execution of the Mining lease needs to be done in the stipulated time. In order to execute the Mining Lease, Mining Plan and Progressive Mine Closure Plan is submitted for approval by IBM under rule 22 of MCR,1960.

In view of the reasons stated above, this Mining Plan including Progressive Mine Closure Plan is being submitted for approval.

ACC is pioneer in propagating the usage of Slag cement there by conserving mineral resource. With the organizational Commitment towards mineral Conservation, sustainable development of mineral resources & environmental protection, the mining activities by ACC have played a vital role in uplifting the standards of living of surrounding communities.

This mining lease of ACC Limited will be developed as a captive mine for its upcoming cement plant and will be supplying the raw material requirement of Limestone to its plant.

Name of the Mine : Kadapa Limestone Deposit

Name of Lessee : ACC Limited
121,M.K Road,
Mumbai – 400 020

ACC Limited

Location and extent of lease area : The Mining Lease is located in the villages Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle and G.Uppalapadu in Mylavaram Thesil, Kadapa District, Andhra Pradesh State and lies between Latitude – 14 ° 59' 20" N – To 15 ° 00' 10" and Longitude – 78° 13' 55" E – 78 ° 18' 08" E in Toposheet Nos. 57 I/4 & 8 and 57 J/1 & 5. Total mining lease area is 997.08 Ha.

Type of lease area (~~Forest~~/Non forest) : **Non forest**

- **The present land use pattern** :

- Area for mining activity (Broken land) : ~~Nil~~
- Area under Green belt : Nil
- Area under Infrastructure : Nil
  (i.e. office and building)
- Area under road : Nil
- Area under dump yard : Nil

- **The method of mining:** The mining will be carried out by open cast method of mining by Shovel dumper combination and fully mechanised with deep hole blasting.

1.1 Reasons for closure:

At present the mine has to be started and will continue to operate till the entire mineral is exhausted. With the present reserve and proposed rate of production, it is presumed that the mining will continue for 50 years. Hence at present **progressive mine closure plan** has been prepared.

1.2 Statutory obligations:

State Government has indicated consent for considering the area to grant Mining Lease for an area over 997.08Ha in Villages of Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollapalle and G.Uppalapadu in Mylavaram Thesil, Kadapa District, Andhra Pradesh State. Approved Mining Plan for the above granted

ACC Limited
Indian Bureau of Mines
Govt. of India

Mining Lease has to be submitted to the State Government. However all the Acts, Rules, Regulations & Bye-laws as applicable to mines will be strictly followed.

1.3 Closure Plan preparation:

Since the mine working will continue for more than 20 years, a progressive Mine closure plan has been prepared.

Name of Applicant and Address:		ACC Limited
Address	:	Cement House, 121, M.K Road, Mumbai
District	:	Mumbai
State	:	Maharashtra
Pin Code	:	400 020
Phone	:	+91 22 33024321
Fax	:	+91 22 66317403

Name of the recognised qualified person who prepared the Progressive Closure Plan

Name of the RQP	Shishir Gour
Address	Manager, Raw Materials & Mines Planning, ACC Limited, ACC Thane Complex, LBS Marg, Near Teen Haath Naka, Thane (W) – 400607
Phone	022 – 39248393
e-mail	shishir.gour@acclimited.com
Registration No.	RQP/NGP/325/2004/A
Date of grant	7th Dec 2004
Validity upto	6th Dec 2014

2. Mines Description:

2.1 Geology:

Sedimentary rocks found in the northwestern part of Kadapa district belong to the Kurnool Group. The limestone and other rock formations occurring in the area belong to Kurnool Formations of Indian Stratigraphy sequence. These formations are younger than rocks of the Kadapa Basin and are well preserved in the Kadapa Basin. The limestone deposit under consideration belongs to the Narji Limestone of Jammalamadugu Formation and is seen to extend from Nalgonda in the NE up to Kadapa in the SW.

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 5th Dec. 14

ACC Limited
Indian Bureau of Mines
Govt. of India

Locally sharp changes in strike direction are also seen due to broad warping. The local strike of the deposit is N70°W – S70°E with 2° dip towards N20°E. Thick soil covers entire area and only at places limestone scree could be seen in the cultivated lands. However, the core samples do not indicate any major geologically disturbed zone and indicate that the formations in the area are relatively massive, thick bedded and fine grained in nature.

The local geological succession as observed from the boreholes core samples in the area could be described as given below.

Lithology	Thickness (m)	
	Min	Max
Overburden soil	1.0	6.0
Grey flaggy limestone	2.5	20.5
Dark grey limestone	8.5	31.0
Light grey limestone	1.0	6.5
Quartzite/Sandstone	0.5	Not bottomed

For details, please refer Chapter 3.0 of Mining Plan.

2.2 Reserve:

The Kadapa deposit can be categorized as Stratiform, Stratabound and Tabular Deposits of Regular Habit.

Method of Reserve Estimation

The Proved Mineral Reserves under 111 category have been calculated by cross sectional area X distance method. The cross sectional areas of different litho units within the area demarcated for Proved Mineral Reserve (111) in sections 52A and 52 were calculated and were multiplied by the influencing sectional distance to get the volume. This was multiplied by the TCF factor (2.3) to get the tonnage.

The Probable Mineral Reserves under 122 category has been calculated by cross sectional area X distance method. The cross sectional areas of different litho units within the area demarcated for Probable Mineral Reserve (122) in sections were calculated along section lines 52B, 52A and 52 were multiplied by the influencing

SHISHIR GAUR
Valid upto 5th Dec, 14

Indian Bureau of Mines ACC Limited Govt. of India

sectional distance to get the volume. This was multiplied by the TCF factor (2.3) to get the tonnage.

The Reconnaissance Mineral Resource under 334 category have been calculated by cross sectional area X distance method. The cross sectional areas of different litho units were calculated along all the section lines of the Mining lease area were multiplied by the intersectional distance to get the volume. This was multiplied by the TCF factor (2.3) to get the tonnage.

From the total resources calculated in this way the Proved Mineral Reserve (111) and Probable Mineral Reserve (122) were subtracted to arrive at the final Reconnaissance Mineral Resource (334)

The reserve under UNFC classification has been estimated and tabulated below –

Classification	UNFC code	Total (Mil.Ts)	Grade	Remarks
Mineral Resources				
Reconnaissance Mineral Resource	334	641	CaO 36 to 47 % MgO 0.8 to 1.3 %	*Dark, Light and flaggy Limestone*
Mineral Reserve				
Proved Mineral Reserve	111	0.22	*CaO 47 to48 % MgO 0.9 to 1.3 %*	*Light Grey Limestone*
Probable Mineral Reserve	122	5.89	*CaO 47 to 48 % MgO 0.9 to 1.3 %*	*Dark and Light Grey Limestone*
Total Resources and Reserves		**647.1**		

For details, please refer Chapter 3.0 of Mining Plan.

2.3 Mining method :

The mine will be worked by Mechanized Opencast Method of working. The height of the bench will be kept of 8 – 12 Meter and width of the bench will be kept more than 30 Meter.

The blast holes of 115 mm dia will be drilled using hydraulic drills. The blast holes will be drilled in staggered pattern keeping burden of 3.0 to 4.0 Meter and spacing of 5.0 to 6.0 Meter.

The blast holes will be charged with combination of ANFO and slurry explosives (booster charge). Almost 30 % of blast hole depth will be stemmed for effective blasting and to reduce noise and fly rock. The explosives will be blasted by using non – electric detonator (NONEL). This enables bottom initiation in the holes and with this technique each hole is blasted separately by providing delay in each hole. The bottom initiation and delay in each hole not only control the throw of the blast but also reduce the ground vibration and noise pollution.

The shovel dumper combination will be used for excavation of the limestone. Shovels of 7 m^3 and 4 m^3 will be deployed in combination with 50 / 60 T class dumpers. The blasted stone will be excavated using these shovels and transported using these dumpers. All the benches and roads will be sloped properly to maintain the safety of these equipments / machineries.

For removal of overburden soil, a bench of 3.0 - 5.0 meter will be formed and, excavators with dumpers will be deployed for development. The overburden soil thus excavated will be dumped and stacked as waste dump. For scrapping of top soil dozer in combination with shovel / loader will be used.

For details, please refer Chapter 4.0 of Mining Plan.

Extent of Mechanization:

The mine working will be highly mechanized. For operations like drilling, excavating and hauling, heavy earth moving machineries viz. drill machine, hydraulic excavator and dumpers will be used. Hydraulic drill machine will be used for drilling 115 mm dia blast holes. Hydraulic Excavators will be used for loading of blasted material. The dumpers of 50 / 60 tons payload will be used for transport overburden and limestone to dump yard and crusher location respectively. Dozer will be used for leveling & compacting of overburden dump as well as face preparation and road maintenance.

The adequacy of machines for limestone productions is given in the table on next page.

SHISHIR GAUR
RQP/NGP/0328/2004/A
Valid upto 6th Dec. 14

MACHINES REQUIRED FOR 12000 TPD LIMESTONE

SL. NO.	TYPE OF MACHINE	PROPOSED UNITS	CAPACITY/ SIZE	MOTIVE POWER
1	HYD. SHOVEL	3	7.0 m^3	DIESEL ENGINE
2	HYD. SHOVEL	1	4.0 m^3	DIESEL ENGINE
3	HYD. BACK HOE with rock Breaker	1	4.0 m^3 Backhoe/60T class machine	DIESEL ENGINE
4	DUMPER	12	50/60 T	DIESEL ENGINE
5	Hydraulic Drill	2	115 MM DIA.	DIESEL ENGINE
6	PAYLOADER	1	5.0 CU.M. BUCKET	DIESEL ENGINE
7	DOZER	1		DIESEL ENGINE
8	EXPLOSIVE VAN	1	10 TONNE	DIESEL ENGINE
9	WATER TANKER	1	20 KL	DIESEL ENGINE
10	DIESEL TANKER	1	3 KL	DIESEL ENGINE
11	MOBILE SERVICE VAN	1		DIESEL ENGINE
12	Pickup Van	1		DIESEL ENGINE

For details, please refer Chapter 4.0 of Mining Plan.

2.4 Mineral Beneficiation :

The excavated limestone will be transported through dumpers to a crusher for size reduction of the boulders. This crusher will be the primary crusher. The specifications of primary crusher are as follows –

Output = 1500 TPH

Feed Size = 1500 mm

Output Size = 70 mm

The flow sheet of the crushing plant is detailed in **Annexure No. 16.**

The crushed limestone will be stacked using the limestone stacker and same will be reclaimed by the reclaimer located in the plant for use in raw meal preparation for cement manufacturing.

3. Review of implementation of mining plan/scheme of mining including five years progressive closure plan up to the final closure of mine:

This is the first Mining plan prepared in view of Mining Lease under discussion.

4. Progressive Mine Closure plan:

The Progressive closure plan has been prepared for the first five years. The details are enumerated below.

4.1 Mined out land:

Ultimate pit limit has been demarcated in Geological, Surface and Conceptual plan.

Adequate warning signals and signboards will be displayed at strategic points.

Security persons will also be deployed.

During first five years there is no backfilling proposed. In first five years, there will not be any area matured for backfilling hence no backfilling is proposed during the first five years.

In the ultimate pit, the total land disturbed due to mining operation is proposed to be reclaimed by backfilling along with plantation and creating water reservoir.

The sub grade mineral (flaggy limestone) as proposed in the conceptual plan (aforementioned) will be stacked separately.

The amount of area to be disturbed due to mining operation and amount of area rehabilitated (by way of backfilling and creating water reservoir) during first five years and conceptually is tabulated on next page –

Limited

Period	Area under Mining Operation (Ha)	Area Rehabilitated (Ha)		Remarks
		By Backfilling	Creating Water Reservoir	
First Five Years (Plan period)	23.23	Nil	Nil	No Area matured for backfilling
Conceptually	707.10	146.50	370.00	Area backfilled is limited due to quantity of waste generation, sub grade mineral dump area would be about 170 Ha

4.2 Water quality Management:

The accumulated water in the pit due to rains will be dewatered through Dewatering pump driven by diesel engine. This water will be discharged in the natural drainage. Thus there is constant replenishment of the ground water and the ground water table is not disturbed. Water analysis of discharged water will be done quarterly and results will be maintained for the next five years period. There will be no impact on water quality due to mining operations which will be carried out for producing limestone.

4.3 Air quality Management:

There will be negligible impact on air quality due to mining operations which will be carried out for raising and transporting limestone.

Regular monitoring of air quality will be done in the mining area through volumetric dust samplers placed at definite locations.

Following adequate control measures during the mining operation as well as transportation of material will be taken to control dust pollution.

(i) Water spraying on muck pile before loading operation.

(ii) Water spraying all along the haul road by using water tanker.

(iii) Thick plantation around existing mine will be done.

ACC Limited
Govt. of India

(iv) Development of Green Belt of plantation along the mines/lease.

(v) Monitoring of air quality in the mine will be done.

(vi) Use of rock breaker to break boulders.

(vii) Regular maintenance of vehicles and machinery.

(viii) Wet drilling system in all the drills.

4.4 Waste Management System:

The development bench constitutes of overburden soil. The overburden in the form of soil of thickness of average 1.0 to 4.0 m height will be removed by Shovel and Dumper combination. This overburden will be removed and stacked along the southern periphery of the mining lease. An overburden dump inside the lease area will be prepared. The location of this dump will be south West direction of SRBC canal.

As mining operation progress and area becomes mature, backfilling (after full extraction of limestone) will be started.

Stabilization of dumps will be done through Afforestation for avoiding surface wash off. Dump of one year will be undertaken for afforestation in subsequent year so that stabilization is done simultaneously. Afforestation of lease boundary dump and outside dump will be undertaken from 3rd year. Sides of dumps will be sloped and plants will be grown over the slope to stabilize the dump slopes.

4.5 Top Soil Management:

The mining lease area 997.08 ha has overburden in the form of overburden soil. There is limited fertile top soil (about 6 inch) except overburden soil which will be removed and stacked properly for use in afforestation within the lease boundary.

For scrapping of top soil primarily dozer will be deployed. For loading and transportation small capacity (4.0 m^3) shovel / loader in combination with 50 / 60 T class dumper will be used. For maintenance of top soil dump, same dozer will be utilized. The height of top soil dump will be maintained as 4 m.

For details, please refer Chapter 4.0 – Top Soil Management.

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14



Period	Area under Mining Operation (Ha)	Area Rehabilitated (Ha)		Remarks
		By Backfilling	Creating Water Reservoir	
First Five Years (Plan period)	23.23	Nil	Nil	No Area matured for backfilling
Conceptually	707.10	146.50	370.00	Area backfilled is limited due to quantity of waste generation, sub grade mineral dump area would be about 170 Ha

4.2 Water quality Management:

The accumulated water in the pit due to rains will be dewatered through Dewatering pump driven by diesel engine. This water will be discharged in the natural drainage. Thus there is constant replenishment of the ground water and the ground water table is not disturbed. Water analysis of discharged water will be done quarterly and results will be maintained for the next five years period. There will be no impact on water quality due to mining operations which will be carried out for producing limestone.

4.3 Air quality Management:

There will be negligible impact on air quality due to mining operations which will be carried out for raising and transporting limestone.

Regular monitoring of air quality will be done in the mining area through volumetric dust samplers placed at definite locations.

Following adequate control measures during the mining operation as well as transportation of material will be taken to control dust pollution.

(i) Water spraying on muck pile before loading operation.

(ii) Water spraying all along the haul road by using water tanker.

(iii) Thick plantation around existing mine will be done.



4.6 Tailings Dam Management:

No management of tailing dam is proposed as there is no generation of tailings.

4.7 Infrastructure:

At present there is no infrastructure in the mine area. It is proposed to build Site Office, First aid Station, Latrine and urinal and other infrastructure as required statutorily in the first year.

4.8 Disposal of Mining Machinery:

The lessee will be operating the equipments till they are economically and technically viable.

4.9 Safety and security:

During the abandonment / closure of the mine, the entrances to the mine shall be securely fenced and all dangerous inlet will be barricaded. Adequate warning signals and signboards will also be displayed at strategic points. Security Persons will also be deployed to look after the security.

4.10 Disaster Management and Risk Assessment:

To save the mine from any flood or inundation, a bund of adequate size will be made encircling the quarry. The safety benches which would be left in the later stage of mining shall have a proper angle of repose and would be planted with different species of trees. This would help in avoiding the slope failure. Since the deposit is of limestone which is a hard strata, the chances of any slope failure would be minimal. However to meet any disaster, mobile vehicles and arrangement for the first aid will always be available at the mine site all the time. An effective communication system like land line phones facilities will also be available at the mine site at all the time.

The nearest fire station is about 22 Km. The nearest Primary Health Centre is at a distance of 3 Km whereas the Hospital is at a distance of 24 Km. The nearest Police

SHISHIR GAUR
ROPINGP/325/2004/A

Indian Bureau of Mines
ACC Limited
Govt. of India

Station is at a distance of 10 Km. The Following addresses may be of use in case any emergency –

- Fire Station - The Fire Officer
  Fire Station
  Muddanur Road
  Jammalamadugu (P)
  Y.S.R – Dist
  Phone: 08560- 270099
- Primary Health Centre - The Medical Officer
  Primary Health Centre
  Vaddirala (P)
  Mylavaram (Mandal)
  Y.S.R – Dist
  Phone: 08560- 273034
- Hospital - The Hospital Superintendent
  Area Hospital
  Jammalamadugu (P)
  Y.S.R – Dist
  Phone: 08560- 270054
- Police Station - The Sub-Inspector of Police
  Talamanchipatnam Police Station
  Talamanchipatnam (P)
  Mylavaram (Mandal)
  Y.S.R – Dist
  Phone: 08560- 202133

Risk Assessment of mines is enclosed as **Annexure No.5**

4.11 Care and Maintenance during temporary discontinuance:

In the event of temporary discontinuance due to any unforeseen circumstances the following care would be taken:

1) All the approaches to the mine would be maintained in good working condition.
2) Any dangerous opening will be securely fenced and no one will be allowed to go towards the same.
3) Round the clock persons will be deployed to provide security to the area.
4) Daily inspection of the discontinued area by the Mine official will be carried out.

5.0 Economic repercussions of closure of mine and manpower retrenchments:

Since it is a progressive mine closure plan, hence no retrenchment of manpower is envisaged and hence there is no socio economic repercussions can be foreseen.

5.1 There will be employment of local residents in the mine and the social economic benefits will be extended to the society around the mine. Family occupation will flourish with the development of the total area. As the final closure is not envisaged at this stage, hence no retrenchment can be planned.

5.2 As there is no retrenchment being planned, hence no question of any compensation arises. However in the event of unforeseen closure, the employees will be compensated under prevailing law.

5.3 There will be development of satellite occupations connected to the mining industry and definitely the local residents will be provided with the opportunity of the jobs in those occupations. As we don't discuss the final closure of the mine, hence continuance of such business after mine closure cannot be planned.

5.4 As the closure of mine is not planned, the repercussions on the expectation of the society around cannot be envisaged.

6.0 Time scheduling for abandonment:

Kadapa Limestone Deposit is a captive limestone mines and its production will depend upon the requirement of the cement plant and market demand.

At present there is no proposal to abandon the mine in first five years. The mine at the proposed rate of production will have the life of approx. 50 years based on the

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec '14

Indian Bureau of Mines
भारत सरकार
Govt. of India

available proved reserves as on date. But depending on various internal as well as external factors the life of the mine may vary.

As required, a tentative time schedule for abandonment of the mine is enclosed as **Annexure – 6A**.

7.0 Abandonment cost:

At present there is no proposal to abandon the mine in first five years. The mine at the proposed rate of production will have the life of about 50 years. Year wise proposal for first five years abandonment cost is enclosed as **Annexure – 6**. Total abandonment cost comes to be Rs. 5753000 /- (In words: Rupees Fifty Seven Lakhs and Fifty Three Thousand Only).

8.0 Financial assurance:

The Mining Plan along with Progressive Mine Closure Plan has been prepared for the first five years. The area put to use comes to be 52.53 Ha and financial assurance for the area put to use at the end of five year period is **Rs. 1313250 /- (in words :Rupees Thirteen Lakhs Thirteen Thousand Two Hundred and Fifty only).**

Net area put to use for Mining and allied activities is tabulated on the next page and same has been enclosed as **Annexure – 7** also.

The net area put to use for calculation of Financial Assurance has been submitted the office of the Regional Controller of Mines, IBM, Hyderabad vide letter no. RMMP/KDP/2011/13 dated 28/11/2011, enclosed as **Annexure – 7A** .

The Financial assurance of **Rs. 1313250 /-** in the form of Bank Guarantee will be submitted to the Regional Controller of Mines, IBM, Hyderabad before the execution of lease deed.

SHISHIR GAUR
RQP/NGP/325/2004/A
Valid upto 6th Dec. 14



a) Net Area put to use for mining and allied activities :

Sl No	Head	Area in Ha.				
		Area(Ha) put on use at start of Mining Plan	Additional requirement during from 1st Year to 5th Year	Total Area(Ha)	Area (Ha)considered as fully reclaimed /rehabilitated till date	Net area(Ha) considered for Calculation
a	b	c	d	e =c+d	f	g =(e-f)
1	Area to be excavated	0.00	23.23	23.23	0.00	23.23
2	Storage for top soil	0.00	0.58	0.58	0.00	0.58
3	Overburden dump	0.00	9.32	9.32	0.00	9.32
4	Mineral storage	0.00	0.00	0.00	0.00	0.00
5	Infrastructure	0.00	1.50	1.50	0.00	1.50
6	Roads	0.00	1.40	1.40	0.00	1.40
7	Railways	0.00	0.00	0.00	0.00	0.00
8	Green Belt	0.00	16.50	16.50	0.00	16.50
9	Tailing Pond	0.00	0.00	0.00	0.00	0.00
10	Effluent Treatment Plant	0.00	0.00	0.00	0.00	0.00
11	Mineral separation Plant	0.00	0.00	0.00	0.00	0.00
12	Township area	0.00	0.00	0.00	0.00	0.00
13	Other to specify(Pond,Nala etc)	0.00	0.00	0.00	0.00	0.00
	Total	0.000	52.53	52.53	0.00	52.53

Financial assurance to be paid for the area that shall be under use at the end of the Period
Area put to use = 52.53 Ha
Financial assurance =52.53x25000 =1313250.00
Financial assurance =Rs.1313250 (In words :Rupees Thirteen Lakhs Thirteen Thousand Two Hundred and Fifty only)

Indian ACC Limited भारत सरकार Govt. of India

9.0 Certificate

Enclosed before Part – I.

10.0 Plan & Sections

The Plans & Sections enclosed as **Plate – XIII.**

Prepared by Recognized Qualified Person or a person employed under clause (b) of sub-rule (1) of rule 42 of MCDR, 1988

Name of the RQP	Shishir Gour
Address	Manager, Raw Materials & Mines Planning, ACC Limited, ACC Thane Complex, LBS Marg, Near Teen Haath Naka, Thane (W) - 400607
Phone	022 - 39248393
e-mail	shishir.gour@acclimited.com
Registration No.	RQP/NGP/325/2004/A
Date of grant	7th Dec 2004
Validity upto	6th Dec 2014

This Mining Plan is approved **subject** to the conditions / stipulations indicated in the Mining Plan approval letter No. MP/AP/CMP/KDP/11-339-62
Date. 26/12/2011

26/12/11
खान नियंत्रक (द.अं.)
Controller of Mines (S. Z.)
भारतीय खान ब्यूरो
Indian Bureau of Mines
बेंगलूर / BANGALORE

SHISHIR GAUR
Valid upto 6th Dec. 14

adani Cement

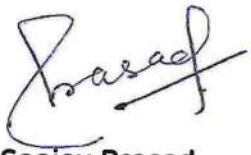
ACC

Undertaking

I, Sanjay Prasad (Authorized Signatory & Head Environment) of ACC Limited give this undertaking to the effect that the ToRs prescribed by MoEFCC, New Delhi vide letter no. J-11015/133/2012-IA-II (M) dated 30.12.2012 and Validity extension of ToR issued vide letter no J-11015/133/2012-IA.II (M) dated 30.11.2015 for "Proposed Kadapa Limestone Mine (ML Area: 997.08 ha) with Proposed Limestone Production of 7.0 million TPA, Sub grade 2.5 million TPA, (ROM: 9.5 million TPA), Top Soil: 0.012 million TPA & Over Burden 0.9 million TPA (Total excavation 10.412 million TPA) at Villages Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollaapalle, G. Uppalapadu of Mylavaram Mandal, District (YSR) Kadapa, (Andhra Pradesh) by M/s ACC Ltd" have been complied with, and the data submitted is factually correct. We further certify that we have reviewed the EIA report and take full responsibility and ownership of the contents presented in the EIA report by J.M. EnviroNet Pvt. Ltd. Instructions as per MoEF&CC vide O.M. No. J-11013/41/2006-IA. II (I) dated 4th August, 2009 has been followed in the preparation of this EIA Report.

Date: 17.01.2025
Place: Ahmedabad

For M/s. ACC Cement Limited



Sanjay Prasad
(Head Environment & Authorized Signatory)

ACC Limited
Cement House,
121, Maharshi Karve Road,
Mumbai 400 020, India
www.acclimited.com

Annexure IV_Undertaking by Consultant

Undertaking

We, J.M. EnviroNet Pvt. Ltd., JMEPL, Emaar Digital Greens, Tower - B, Unit No. 1517, Golf Course Ext. Road, Sector-61, Gurugram (Haryana) - 122 011, Environmental Consultants of ACC Limited for their Proposed Kadapa Limestone Mine (ML Area: 997.08 ha) with Proposed Limestone Production of 7.0 million TPA, Sub grade 2.5 million TPA, (ROM: 9.5 million TPA), Top Soil: 0.012 million TPA & Over Burden 0.9 million TPA (Total excavation 10.412 million TPA) at Villages Dhannawada, Chinna Venturla, Vaddarala, Bestavemula, Gollaapalle, G. Uppalapadu of Mylavaram Mandal, District (YSR) Kadapa, (Andhra Pradesh) give this undertaking to the effect that this Final EIA/EMP Report has been prepared as per the ToRs prescribed by MoEFCC, New Delhi vide letter no. J-11015/133/2012-IA-II (M) dated 30.12.2012 and Validity extension of ToR issued vide letter no J-11015/133/2012-IA.II (M) dated 30.11.2015 & as per data/ details provided by Project Proponent and the data submitted are factually correct. We also take the ownership of the complete EIA-EMP report including all the lab test reports, monitoring data, etc.

Date: 17.01.2025

Place: Gurugram

For & behalf of J.M EnviroNet Pvt. Ltd.

Dr. Deepa Taneja

Managing Director