

# Environmental and Social Monitoring Report

Seventeenth Quarterly Report (January 2019–March 2019)

November 2019

## India: Jaipur Metro Rail Line 1 – Phase B Project

Prepared by: Jaipur Metro Rail Corporation Limited for the Asian Development Bank

This environmental and social monitoring report is a document of the borrower. The views expressed herein do not necessarily represent those of ADB's Board of Directors, Management, or staff, and may be preliminary in nature. Your attention is directed to the “terms of use” section of this website.

In preparing any country program or strategy, financing any project, or by making any designation of or reference to a particular territory or geographic area in this document, the Asian Development Bank does not intend to make any judgments as to the legal or other status of any territory or area.

## **CURRENCY EQUIVALENTS**

(As of 31 March, 2019)

Currency unit	-	Indian Rupee (INR)
INR 1.00	=	\$ 0.0144
\$1.00	=	INR 69.57

## **ABBREVIATIONS**

ADB	-	Asian Development Bank
ADF	-	Asian Development Fund
CEC	-	Continental Engineering Corporation
CSC	-	Construction Supervision Consultant
ES	-	Environmental Specialist
DMRC	-	Delhi Metro Rail Corporation
EMP	-	Environmental Management Plan
EA	-	Execution Agency
EIA	-	Environmental impact Assessment
EARF	-	Environmental assessment and review framework
ESMS	-	Environmental and social management system
EMR	-	Environmental Monitoring Report
GPR	-	Ground penetrating radar
HSO	-	Health and Safety Officer
IEE	-	Initial environmental examination
IPP	-	Indigenous People Plan
JMRC	-	Jaipur Metro Rail Corporation
PAM	-	Project Administration Manual
PCAG	-	Public Consultation and Addressing of Grievances
RP	-	Resettlement Plan
SHE	-	Safety Health & Environment Management Plan
SPS	-	Safeguard Policy Statement
VMR	-	Vibration Monitoring Results

## **WEIGHTS AND MEASURES**

km	-	Kilometer
m	-	Meter

## **NOTES**

In this report, "\$" refers to US dollars

## CONTENTS

EXECUTIVE SUMMARY	I
I. INTRODUCTION	1
A Purpose of the Report	1
B Project Description	1
C Project Implementation Arrangement	3
D Project Implementation Progress	3
II. COMPLIANCE TO SAFEGUARDS PROVISIONS IN AGREEMENTS UNDER THE PROJECT	11
A Compliance to Loan Agreement	11
B Compliance to Project Administration Manual	17
C Compliance to the Civil Works Contract Agreement	26
III. COMPLIANCE TO THE ENVIRONMENTAL MANAGEMENT PLAN	30
IV. SUMMARY OF ENVIRONMENTAL MONITORING	46
A Summary of Inspection Activities:	46
B Monitoring of Cracks, Settlements of Structures	46
C Vibration Monitoring:	46
D Noise Monitoring	46
E Air Quality	49
F Water Quality	50
V. SOCIAL AND RESETTLEMENT IMPACTS	50
A Impacts on Structures	50
B Land Acquisition and Resettlement	52
VI. PUBLIC CONSULTATIONS AND ADDRESSING OF GRIEVANCES	54
VII. UNANTICIPATED SAFEGUARD ISSUES	55
VIII. CONCLUSION	55
A Summarize the overall Progress of Implementation of safeguard Measures	55
B Problems Identified and Actions Recommended	56

### APPENDICES:

Appendix 1:Photo log of Progress.....	58
Appendix 2:Record of SHE Trainings.....	62
Appendix 3: Sample format of Monthly SHE report .....	69
Appendix 4:Sample Ambient Air and Noise monitoring report .....	70
Appendix 5:Monthly Reportof Heritage Consultant.....	73
Appendix 6: Consent to Operate letter from Rajasthan State Pollution Control Board .....	74
Appendix 7: Muck disposal details .....	77
Appendix 8: Tree Transplantation details .....	83
Appendix 9:Permission letter for Tree Transplantation at JMRC UG-1B.....	106

## EXECUTIVE SUMMARY

1. This report is the 17<sup>th</sup> quarterly report on environmental and social safeguards compliance of the Jaipur Metro Rail Line 1-Phase B Project. It covers the period from January 2019 to March 2019. Line 1-Phase B of the project includes construction of 2.4 km underground portion from Chandpole to Badi Chaupar, with two stations. Line 1 – Phase B is being financed by ADB and expected to be completed by October 2019 at a cost of INR 1,126 crore.
2. Jaipur Metro Rail Corporation (JMRC) is the Executing Agency for the Project. The sole civil works contract package under the project was awarded to Continental Engineering Corporation (CEC) in September 2013. The General Consultant overseeing the design and supervision of physical works is Delhi Metro Rail Corporation Limited (DMRC).
3. Status of construction works as of March, 2019 are: i) Tunneling and cross package works have been completed. Miscellaneous work like installation railing and walkway in tunnels are under progress. ii) At Chhoti Chaupar station, all slab casting and block work have been completed. All entry/exit structures and structural work have been completed and the finishing entry/exit structure work is under progress. Flooring, wall cladding, and false ceiling works are under progress. At Badi Chaupar, all slab casting work have been completed. 3 out of 4 entry/exit structures have been completed and the remaining entry/exit structure work is under progress. Block work, wall cladding, and flooring works are under progress. False ceiling work is yet to start. iii) Track works of entire section both upline and down line have been completed up Badi Chaupar. iv) OHE works of entire section both upline and down line are nearly complete. Other Electrical works such as lighting, installation of Environmental Control System (ECS) and Tunnel Ventilation System (TVS) in underground stations and installation of lifts and escalators are under progress at both stations. v) Signalling and telecom works of the section are also under progress. As of March 2019, total physical accomplishment is about 92.4%.
4. No damage was reported during the tunneling and excavation works. Sites are being regularly visited by JMRC heritage/structural experts. Instrumentation and vibration monitoring were not carried out during the reporting period since the tunneling work has already been completed.
5. The project is running behind initially planned schedule due to the discovery of two ancient tanks and necessary design changes.
6. The environmental and social safeguards of the project are being implemented in compliance with the loan covenants. The contractor is complying with the proposed mitigation measures described in the Environmental Management Plan (EMP); Safety, Health and Environment (SHE) Manual, and contract specifications. The implementation of environmental and social safeguards are being monitored at Project Management and General Consultant (GC) level. With the exception of a few issues, the project is being implemented in compliance with project requirements.
7. A baseline study was carried out on heritage structures located in the project area in 2014 before the start of work of Phase 1B. From January 2019 to March 2019, no major changes in the condition of structures have been reported in comparison with the baseline study.
8. The study identified a list of structures that needed repair and immediate actions. The list of structures requiring immediate action was submitted to Jaipur Nagar Nigam, to ensure no damage during the tunneling work. Preventive measures like propping of the verandahs and

repair of shops along the entire road that fall above the underground metro alignment were taken up during the tunneling work and beyond.

9. For structures located around the Chaupars (station sites) where construction works are ongoing, proactive measures of providing propping support to unstable structures is already in place and are taken care by the contractor under instructions of the General Consultants (GC). In addition, regular monitoring of weak structures through installation of crack, tilt, vibration meters and building settlement markers are also being done on a regular basis. Waterproofing of the roof and strengthening of Chandpole gate has been done to improve the life of the structure as a voluntary and additional protection measure by JMRC.

10. Civil Administration and JMRC have ensured round the clock availability of a rescue team consisting of ambulance, civil defense, earth moving machines and crane, and staff from Jaipur Discom and Public Health Engineering Department (PHED). This is to ensure quick response to any problem which may arise during construction.

11. The construction works are proceeding in accordance with the provisions of the EMP such as review of monitoring reports, regulatory compliance action plan and approval by the GC. The environmental monitoring plan is successfully being implemented by the JMRC through an instrumentation company M/s AMIL engaged by executing agency with the approval of the GC.

12. JMRC and DMRC officials meet regularly with the local people and business associations in the project area to update them on construction works. Measures have been taken to address concerns of the local businesses such as stopping of work and providing proper pathways for customers during festivals. All reports and information on the project is disclosed on the JMRC website. In addition JMRC has a full-time Public Relation Officer dealing with media/press issues and also maintains a facebook page and twitter account for disclosing project information and responding to queries and concerns from the general public.

13. Various proactive measures are being taken to implement the project in compliance with requirements, prevent damages to heritage structures, maintain coordination with relevant agencies, communicate with the public and address grievances. Nevertheless, areas such as public communications, documentation, and reporting need further enhancement.

14. There were no significant environmental impacts observed during the reporting period. All environment related observations are regularly recorded and monitored and in case of any shortcomings, necessary corrective measures are being taken up.

## **I. INTRODUCTION**

### **A Purpose of the Report**

1. The objective of environmental monitoring is to allow ADB and the Jaipur Metro Rail Corporation (JMRC) to gather information to: i) evaluate the environmental management plan (EMP) progress by establishing compliance status, ii) detect and correct non-conformances, iii) identify unanticipated impacts and implement necessary mitigation measures, and iv) provide evidence to support enforcement of penalty provisions of the civil works contract to deter non-compliance.

2. Environmental monitoring and disclosure of quarterly or semi-annual monitoring reports is an ADB requirement for environmental category A projects like Jaipur Metro Rail Line 1 – Phase B. Environmental monitoring is part of project implementation process to be complied by both ADB and JMRC. The preparation and submission of the quarterly or semi-annual monitoring reports are the responsibilities of JMRC while ADB is responsible in providing supervision and guidance.

3. As many sensitive heritage structures of the Pink City are situated above the metro underground alignment, it was agreed during project preparation that quarterly environmental monitoring reports will be prepared and disclosed for this project. Since the significant physical construction works started in July 2015, the first environmental and social semi-annual monitoring report for the period July 2014 - December 2014 has been submitted to ADB and disclosed on ADB and JMRC websites. Thereafter quarterly monitoring reports are being regularly submitted to ADB and disclosed on ADB and JMRC websites. This is the 17<sup>th</sup> quarterly environment and social monitoring report covering January 2019 to March 2019.

### **B Project Description**

4. Jaipur, the capital of the Indian state of Rajasthan, is one of the fastest growing cities in India. The fast paced industrial and commercial development has resulted in a steep rise in travel demand, but the city's existing public transport infrastructure is inadequate in terms of capacity and service. With the growing economy, passengers are shifting to private modes of transport, as evident in the rise in vehicle ownership, aggravating congestion and pollution. The modal share for public transport was 19% in 2009—one of the lowest in cities with more than 3 million inhabitants in India<sup>1</sup>.

5. In 2009, Jaipur Development Authority developed a comprehensive mobility plan, seeking to provide an overall transport plan up to 2031. The plan emphasizes the pre-eminence of public transport for the movement of people, not just vehicles, and integrating land use with transport networks. It recommended, among others, the development of high capacity metro lines along the east–west corridor of 12 km from Mansarovar to Badi Chaupar, and the north–south corridor of approximately 23 km from Ambabadi to Sitapura. In January 2010, the government of Rajasthan established the Jaipur Metro Rail Corporation (JMRC) to implement the metro rail lines: Line 1 – Phase A (9.6 km elevated portion from Mansarovar to Chandpole) and Line 1 – Phase B (2.4 km underground portion from Chandpole to Badi Chaupar, with two stations).

---

<sup>1</sup> <http://www.adb.org/sites/default/files/project-document/79730/46417-001-rrp.pdf>.

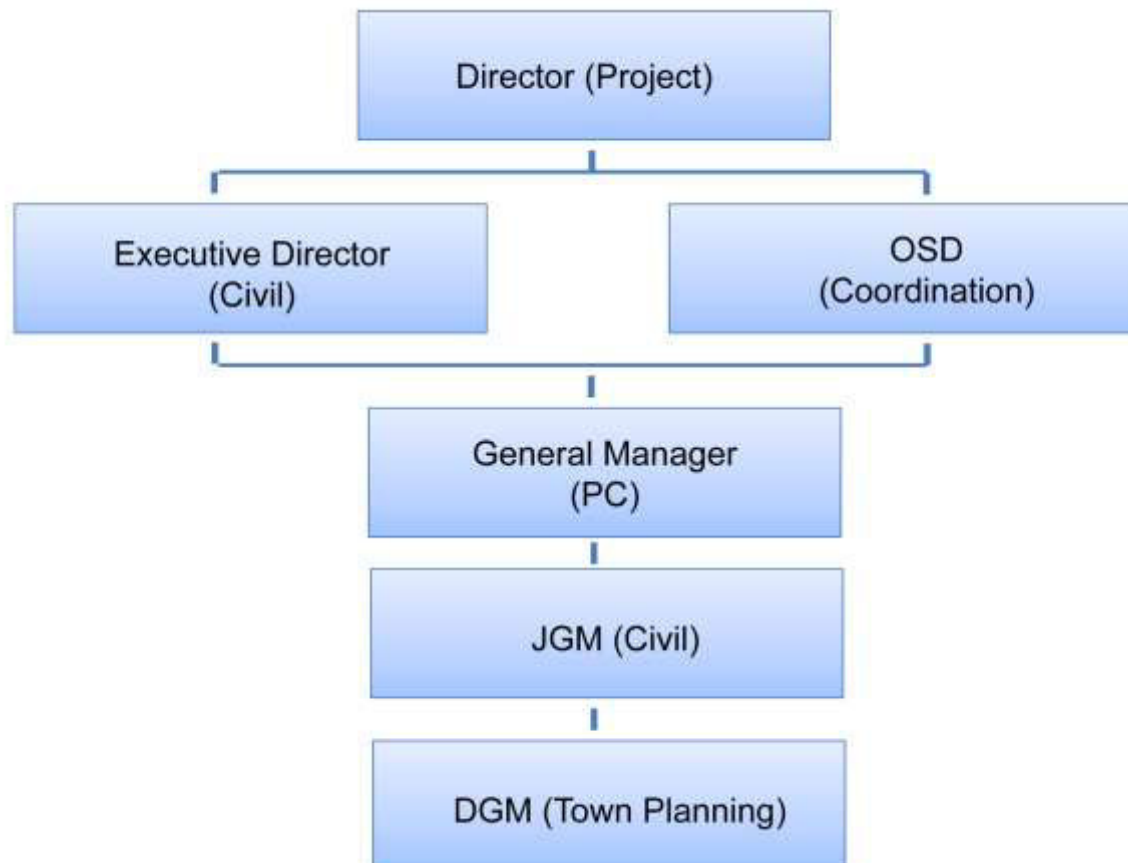
[illegible]

<sup>2</sup> <https://www.jaipurmetrorail.in/Present%20Status>.

## C Project Implementation Arrangement

7. The Government of Rajasthan acting through the Urban Development and Housing Department and Jaipur Metro Rail Corporation (JMRC) is the executing agency of the Project. JMRC has established a safeguards cell to look after implementation and monitoring of the safeguard measures associated with the project. It constitutes six officials of JMRC. Organization structure of the safeguards cell is shown in Figure 2.

**Figure 2: Organization Structure of Safeguards Cell of JMRC**

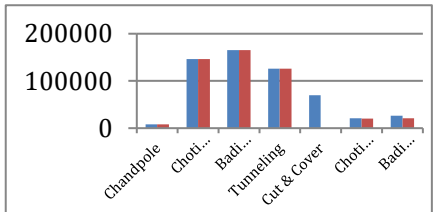


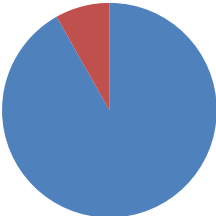
## D Project Implementation Progress

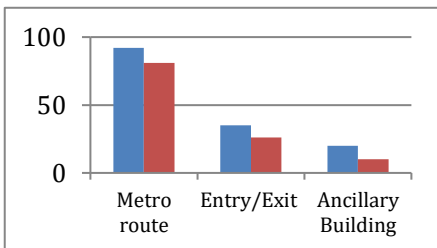
8. As of March 2019, total physical progress is about 92.7 %. The status of various construction activities is provided in the Table 1. Photolog demonstrating the progress of works is provided in Appendix 1.



**Table 1: Status of Construction Works as of March, 2019**

S.N.	Activities	Location		Status	
1	<b>Earthworks:</b>  Earthwork is to be done for construction of Launching shaft at Chandpole, construction of underground stations at Chhoti Chaupar and Badi Chaupar by cut and cover method. During the tunneling, earth will be excavated with Tunnel Boring Machine (TBM-I & II).			Location	% Completion
				Chandpole	100 %
				Chhoti Chaupar	100 %
				Badi Chaupar	100 %
				Tunneling Work	100 %
				Cut & cover Badi Chaupar	0 %
				Choti Chaupar (Entry-Exit)	97 %
				Badi Chaupar (Entry-Exit)	80%
					
2	<b>Soil Disposal:</b>	Location	Estimated quantity *(in cum)	<p>➤ Jaipur Development Authority has allotted following soil disposal sites vide letter dated 01.09.2014</p> <p>1. Mathuradaspora 2. Nahargarh biological park 3. Rajasthan police academy 4. JDA park, Hathigaon 5. Police head qtr. Jaipur 6. Police line, Jaipur</p> <p>➤ Jaipur Nagar Nigam has allotted following soil disposal sites vide letter dated 08.09.2014/ 18.04.17/31.03.17/24.04.17/17.05.17/20.04.17:-</p> <p>1. 4<sup>th</sup> Battalion, Chainpura 2. Amer Fire station 3. Police line, Jaipur 4. Rajasthan Police Academy</p> <p>➤ Jaipur Development Authority has allotted for dumping C&amp;D waste at Khasra No.-1, Area 41.08 Bigha situated at revenue village, Malpura Choud, Tehsil, Jaipur</p> <p>The abovementioned seven muck disposal sites are not exclusively given</p>	
		Chandpole	8000		
		Chhoti Chaupar	146000		
		Badi Chaupar	165000		
		Tunneling Work	125808		
		Cut & cover Badi Chaupar	70000		
		Choti Chaupar (Entry-Exit)	20843		
		Badi Chaupar (Entry-Exit)	26437		
		<i>*Estimated quantity of soil which will be disposed during complete project duration</i>			

S.N.	Activities	Location	Status						
			<p>for the metro project. These sites are also being used by other agencies for disposal of muck and, in some cases even disposal of C&amp;D waste. JMRC or its contractor is not responsible for maintenance of these sites. However, adequate precaution has been taken by the contractor to avoid nuisance and air pollution during dumping process.</p> <p>➤ Soil disposed at different disposal sites during the reporting period is as under:</p> <table><tr><th>Location</th><th>Disposal quantity (in cum)</th></tr><tr><td>Rajasthan Police Academy</td><td>5876</td></tr><tr><td>Back filling at stations</td><td>524</td></tr></table> <div><div><div>Rajasthan Police academy</div><div>Back filling</div></div></div> <p>On an average <b>65.29</b> cu.m of muck was transported daily to the dumping ground or for station backfilling. Muck is transported only during night time to avoid nuisance to general public. Wheels of every truck leaving the site with muck are washed/cleaned before entering public carriage to avoid deposition and spillage. Also, the truck is covered with tarpaulin sheet to avoid dust pollution enroute to dumping ground. The dumping ground will be compacted to avoid generation of dust.</p>	Location	Disposal quantity (in cum)	Rajasthan Police Academy	5876	Back filling at stations	524
Location	Disposal quantity (in cum)								
Rajasthan Police Academy	5876								
Back filling at stations	524								

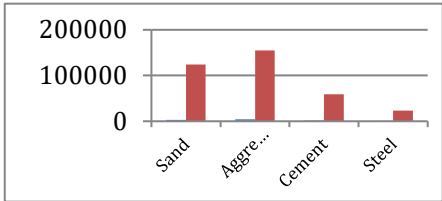
S.N.	Activities	Location	Status																												
			The route map and photographs of dumping site are annexed as <b>Appendix 7</b> .																												
3	<p><b>Vegetation and Plant Clearing:</b></p> <p>Some trees are coming in the metro route in launching shaft at Chandpole, station box and in entry exit at Chhoti Chaupar and Badi Chaupar. These trees are to be cut or relocated with prior approval of the District Collector.</p>	<ul style="list-style-type: none"><li>Location of the trees as per survey which are to be cut or located as under:</li></ul> <table><thead><tr><th>Location</th><th>Trees</th></tr></thead><tbody><tr><td>Metro route</td><td>92</td></tr><tr><td>Entry/Exit at Chhoti Chaupar &amp; Badi Chaupar</td><td>35</td></tr><tr><td>Ancillary Building area at Chhoti Chaupar</td><td>20</td></tr></tbody></table> <ul style="list-style-type: none"><li>The tree species include Gulmohar, Banyan tree &amp; Pipal tree.</li><li>The trees have been transplanted at Ghatki Ghuni, Sylvan Biodiversity forest Agra road Jaipur &amp; Ram Niwas Bagh, JDA Jaipur.</li></ul>	Location	Trees	Metro route	92	Entry/Exit at Chhoti Chaupar & Badi Chaupar	35	Ancillary Building area at Chhoti Chaupar	20	<p>Details of trees cut or transplanted is as under:</p> <table><thead><tr><th>Location</th><th>Trees transplanted</th></tr></thead><tbody><tr><td>Metro route</td><td>51</td></tr><tr><td>Entry/Exit at Chhoti Chaupar &amp; Badi Chaupar</td><td>22</td></tr><tr><td>Ancillary Building area at Chhoti Chaupar</td><td>10</td></tr></tbody></table> <div><table><thead><tr><th>Description</th><th>No.</th><th>Survival rate</th></tr></thead><tbody><tr><td>Trees felled</td><td>6</td><td>NA</td></tr><tr><td>Trees transplanted</td><td>83</td><td>50%</td></tr><tr><td>Samplings planted</td><td>226</td><td>91%</td></tr></tbody></table><p>In total <b>83</b> trees have been transplanted at three locations viz. Ghat Ki Ghuni, Ramniwas Garden and Sylvan Biodiversity forest. The survival rate as on March, 2019 is <b>50%</b>. All efforts are being made for the survival of the transplanted trees.</p><p>In addition to transplantation, the contractor has carried out multiple tree plantation drives at Casting yard, Ram Niwas Bagh and Project office, PHQ. As on March 2019, <b>246</b> saplings have been planted at aforementioned locations. Photographs and additional details on</p></div>	Location	Trees transplanted	Metro route	51	Entry/Exit at Chhoti Chaupar & Badi Chaupar	22	Ancillary Building area at Chhoti Chaupar	10	Description	No.	Survival rate	Trees felled	6	NA	Trees transplanted	83	50%	Samplings planted	226	91%
Location	Trees																														
Metro route	92																														
Entry/Exit at Chhoti Chaupar & Badi Chaupar	35																														
Ancillary Building area at Chhoti Chaupar	20																														
Location	Trees transplanted																														
Metro route	51																														
Entry/Exit at Chhoti Chaupar & Badi Chaupar	22																														
Ancillary Building area at Chhoti Chaupar	10																														
Description	No.	Survival rate																													
Trees felled	6	NA																													
Trees transplanted	83	50%																													
Samplings planted	226	91%																													

S.N.	Activities	Location	Status
			tree plantation are annexed as <b>Appendix 8.</b>  Another, 3000 no. of trees have been planted at Ghat Ki Guni and Nahargarh forest area through Forest Department.
4	<b>Utility Shifting:</b>  Underground electric cables, water supply lines and telecom lines are to be realigned at Chandpole for launching shaft and underground station at Chhoti Chaupar and Badi Chaupar.	<b>Chandpole – Launching shaft</b> Electric cables Water supply lines Telecom lines <b>Chhoti Chaupar</b> Electric cables Water supply lines Telecom lines <b>Badi Chaupar</b> Electric cables Water supply lines Telecom lines	Completed.
5	<b>Traffic Management and Diversion:</b>  For the construction of launching shaft at Chandpole, underground stations at Chhoti Chaupar and Badi Chaupar, traffic is to be diverted.  Project specific traffic management plan has been developed and the same has been approved by Jaipur Traffic Authority.	<b>Chandpole Launching Shaft</b>  Traffic from Station Road to Jhotwara Road has been diverted via Pareek College Road.  <b>Chhoti Chaupar</b>  Direct access from Chandpole Bazar to Tripolia Bazar. Traffic is diverted via Nahargarh Road – Gangauri Bazar – Cheeni Ki Burj.  <b>Badi Chaupar</b>  Traffic Diversion Plan has been submitted.	<b>Chandpole Launching Shaft</b>  Traffic management and traffic is smooth without any diversion.  <b>Chhoti Chaupar</b>  Road is open for traffic from all directions.  <b>Badi Chaupar</b>  Road is open for traffic from all directions.
6	<b>Launching shaft:</b>  Launching shaft is to be constructed for tunnel boring machine. A launching shaft has diaphragm wall/concrete wall and it is built to be permanent. Once the access shaft is completed, Tunnel	Chandpole	Launching shaft work has been completed.

S.N.	Activities	Location	Status																
	<p>Boring Machine will be lowered to the bottom and excavation will start. Launching shaft is the main entrance &amp; exit of the tunnel until project is complete.</p> <p>Launching shaft is rectangular in shape and constructed with reinforced cement concrete M50 grade. Walls of launching shaft are 800 mm thick. Dimension of launching shaft at Chandpole is 24mx20m and a depth of 14m.</p>																		
7	<p><b>Tunnel Boring Machine</b></p> <p>Tunnel boring machine will be used in excavating and advancing tunnels through any type of ground strata for the complete tunneling work.</p>	<p>The main activities of these TBMs are as under:</p> <table><tr><td colspan="2"><b>TBM 1</b></td></tr><tr><td>Refurbishment</td><td></td></tr><tr><td>Lowering in launching shaft</td><td></td></tr><tr><td>Tunneling work</td><td>1875 meter</td></tr><tr><td colspan="2"><b>TBM 2</b></td></tr><tr><td>Refurbishment</td><td></td></tr><tr><td>Lowering in launching shaft</td><td></td></tr><tr><td>Tunneling work</td><td>1875 meter</td></tr></table>	<b>TBM 1</b>		Refurbishment		Lowering in launching shaft		Tunneling work	1875 meter	<b>TBM 2</b>		Refurbishment		Lowering in launching shaft		Tunneling work	1875 meter	Completed
<b>TBM 1</b>																			
Refurbishment																			
Lowering in launching shaft																			
Tunneling work	1875 meter																		
<b>TBM 2</b>																			
Refurbishment																			
Lowering in launching shaft																			
Tunneling work	1875 meter																		
8	<p><b>Segment casting:</b></p> <p>Internal lining of the tunnel will be done by precast reinforced cement concrete segments. The segments are to be constructed with M50 concrete having outer diameter of 6.35 meter. One ring comprises 6 segments.</p>	<p>Segment casting will be done at casting yard in Bhankarota.</p> <table><tr><td>Rings</td><td>3062 (18132 segments)</td></tr></table>	Rings	3062 (18132 segments)	Completed														
Rings	3062 (18132 segments)																		

S.N.	Activities	Location	Status																												
9	<p><b>Guide wall and D wall at Chhoti Chaupar &amp; Badi Chaupar stations:</b></p> <p>For the construction of D-Wall initially guide walls are constructed so as to keep the D-Wall in proper alignment.</p> <p>Guide walls are constructed with reinforced cement concrete of M20 grade. The thickness of guide wall is about 600 mm and depth is 1.5 m.</p> <p>Diaphragm walls are constructed with reinforced cement concrete of M35 grade. The thickness of diaphragm wall is about 800 mm and depth is about 26 m.</p>	<table><tr><td>Location</td><td>Length (m)</td></tr><tr><td colspan="2"><b>Chhoti Chaupar</b></td></tr><tr><td>Guide Wall</td><td>590</td></tr><tr><td>D-Wall</td><td>590</td></tr><tr><td colspan="2"><b>Badi Chaupar</b></td></tr><tr><td>Guide Wall</td><td>590</td></tr><tr><td>D-Wall</td><td>590</td></tr></table>	Location	Length (m)	<b>Chhoti Chaupar</b>		Guide Wall	590	D-Wall	590	<b>Badi Chaupar</b>		Guide Wall	590	D-Wall	590	Completed														
Location	Length (m)																														
<b>Chhoti Chaupar</b>																															
Guide Wall	590																														
D-Wall	590																														
<b>Badi Chaupar</b>																															
Guide Wall	590																														
D-Wall	590																														
10	<p><b>Roof Slabs at Chhoti Chaupar and Badi Chaupar Station</b></p> <p>Stations are to be constructed with top down method. Top slab, roof slab, concourse slab &amp; base slab are to be constructed.</p>	<table><tr><td>Location</td><td>Area (sqm)</td></tr><tr><td colspan="2"><b>Chhoti Chaupar</b></td></tr><tr><td>Top slab</td><td>7000</td></tr><tr><td>Roof slab</td><td>7000</td></tr><tr><td>Concourse</td><td>7000</td></tr><tr><td>Base slab</td><td>7000</td></tr><tr><td colspan="2"><b>Badi Chaupar</b></td></tr><tr><td>Top slab</td><td>7000</td></tr><tr><td>Roof slab</td><td>7000</td></tr><tr><td>Concourse</td><td>7000</td></tr><tr><td>Base slab</td><td>7000</td></tr></table>	Location	Area (sqm)	<b>Chhoti Chaupar</b>		Top slab	7000	Roof slab	7000	Concourse	7000	Base slab	7000	<b>Badi Chaupar</b>		Top slab	7000	Roof slab	7000	Concourse	7000	Base slab	7000	Completed						
Location	Area (sqm)																														
<b>Chhoti Chaupar</b>																															
Top slab	7000																														
Roof slab	7000																														
Concourse	7000																														
Base slab	7000																														
<b>Badi Chaupar</b>																															
Top slab	7000																														
Roof slab	7000																														
Concourse	7000																														
Base slab	7000																														
11	<p><b>Establishment of construction camp:</b></p> <p>➤ A construction camp for laborers has been established near to casting yard area in November 2014.</p>	<p>Casting Yard, Bhankrota</p> <table><tr><td>Number of blocks</td><td>9</td></tr><tr><td>Total Camp Area</td><td>6227 Sq.m</td></tr><tr><td>Capacity</td><td>9x48</td></tr><tr><td colspan="2"><b>Facilities to be provided</b></td></tr><tr><td>Bathing room</td><td>Yes</td></tr><tr><td>Dining room</td><td>Yes</td></tr></table>	Number of blocks	9	Total Camp Area	6227 Sq.m	Capacity	9x48	<b>Facilities to be provided</b>		Bathing room	Yes	Dining room	Yes	<p>Completed.</p> <table><tr><td>Number of blocks</td><td>9</td></tr><tr><td>Area of each block</td><td>692 Sqm</td></tr><tr><td>Workers staying</td><td>150</td></tr><tr><td colspan="2"><b>Facilities installed</b></td></tr><tr><td>Bathing room</td><td>Yes</td></tr><tr><td>Dining room</td><td>Yes</td></tr><tr><td>Urinal&amp; toilet</td><td>Yes</td></tr><tr><td>Drinking water with cooling facility</td><td>Yes</td></tr></table>	Number of blocks	9	Area of each block	692 Sqm	Workers staying	150	<b>Facilities installed</b>		Bathing room	Yes	Dining room	Yes	Urinal& toilet	Yes	Drinking water with cooling facility	Yes
Number of blocks	9																														
Total Camp Area	6227 Sq.m																														
Capacity	9x48																														
<b>Facilities to be provided</b>																															
Bathing room	Yes																														
Dining room	Yes																														
Number of blocks	9																														
Area of each block	692 Sqm																														
Workers staying	150																														
<b>Facilities installed</b>																															
Bathing room	Yes																														
Dining room	Yes																														
Urinal& toilet	Yes																														
Drinking water with cooling facility	Yes																														

S.N.	Activities	Location		Status																										
		Urinal& toilet	Yes	Fans	Yes																									
		Drinking water with cooling facility	Yes	playground	Yes																									
		fans	Yes																											
		playground	Yes																											
12	<b>Other Facilities:</b>  ➤ Batching Plant, ➤ Laboratory, ➤ RO Plant ➤ Chiller Plant ➤ Diesel Generating Set ➤ Briquette Boiler	Following facilities are provided at casting Yard, Bhankrota: <table><tr><th>Item</th><th>Capacity</th></tr><tr><td>Batching Plant</td><td>(i) 30 cum/hr (ii) 60 cum/hr</td></tr><tr><td>Quality Control Laboratory</td><td>Installed</td></tr><tr><td>RO Plant</td><td>2 kl/hr</td></tr><tr><td>Chiller Plant</td><td>100 TR</td></tr><tr><td>Diesel Generating Set</td><td>500 KVA</td></tr><tr><td>Briquette Boiler</td><td>2 TPH</td></tr></table>		Item	Capacity	Batching Plant	(i) 30 cum/hr (ii) 60 cum/hr	Quality Control Laboratory	Installed	RO Plant	2 kl/hr	Chiller Plant	100 TR	Diesel Generating Set	500 KVA	Briquette Boiler	2 TPH	Completed.												
Item	Capacity																													
Batching Plant	(i) 30 cum/hr (ii) 60 cum/hr																													
Quality Control Laboratory	Installed																													
RO Plant	2 kl/hr																													
Chiller Plant	100 TR																													
Diesel Generating Set	500 KVA																													
Briquette Boiler	2 TPH																													
13	<b>Establishment and operation of quarry/ borrow area:</b>  For the construction work, the following materials are sourced:  ➤ Sand ➤ Aggregate ➤ Cement ➤ Steel	Quarry area and borrow area of construction materials are as under: <table><tr><th>Material</th><th>Quarry / borrow area</th></tr><tr><td>Sand</td><td>Banas</td></tr><tr><td>Aggregate</td><td>Shakun, Lakher</td></tr><tr><td>Cement</td><td>Lafarge</td></tr><tr><td>Steel</td><td>SAIL, VIZAG, TATA</td></tr></table>		Material	Quarry / borrow area	Sand	Banas	Aggregate	Shakun, Lakher	Cement	Lafarge	Steel	SAIL, VIZAG, TATA	Volume of the materials extracted are as under: <table><tr><th>Material</th><th>Quantity (MT)</th></tr><tr><td rowspan="2">Sand</td><td>3051</td></tr><tr><td>123764.781</td></tr><tr><td rowspan="2">Aggregate</td><td>4286</td></tr><tr><td>155042.077</td></tr><tr><td rowspan="2">Cement</td><td>1721</td></tr><tr><td>59144.19</td></tr><tr><td rowspan="2">Steel</td><td>716.42</td></tr><tr><td>23218.869</td></tr></table>			Material	Quantity (MT)	Sand	3051	123764.781	Aggregate	4286	155042.077	Cement	1721	59144.19	Steel	716.42	23218.869
Material	Quarry / borrow area																													
Sand	Banas																													
Aggregate	Shakun, Lakher																													
Cement	Lafarge																													
Steel	SAIL, VIZAG, TATA																													
Material	Quantity (MT)																													
Sand	3051																													
	123764.781																													
Aggregate	4286																													
	155042.077																													
Cement	1721																													
	59144.19																													
Steel	716.42																													
	23218.869																													

S.N.	Activities	Location	Status										
			<div><div>* Up to date quantity</div><div><table><caption>Up-to-date quantity data (approximate)</caption><thead><tr><th>Material</th><th>Quantity</th></tr></thead><tbody><tr><td>Sand</td><td>120,000</td></tr><tr><td>Aggregate</td><td>150,000</td></tr><tr><td>Cement</td><td>50,000</td></tr><tr><td>Steel</td><td>20,000</td></tr></tbody></table></div></div>	Material	Quantity	Sand	120,000	Aggregate	150,000	Cement	50,000	Steel	20,000
Material	Quantity												
Sand	120,000												
Aggregate	150,000												
Cement	50,000												
Steel	20,000												

## II. COMPLIANCE TO SAFEGUARDS PROVISIONS IN AGREEMENTS UNDER THE PROJECT

### A Compliance to Loan Agreement

9. The environmental and social safeguard requirements are explicitly provided in the Loan Agreement 3062-IND between ADB and State of Rajasthan through the Urban Development and Housing Department (UDH) and Jaipur Metro Rail Corporation (JMRC). These loan agreement provisions and compliance status are provided in Table 2.

**Table 2: Status of Compliance to Environmental Provisions of the Loan Agreement**

S.N.	Environmental Provision	Compliance Status
1	<p><b>Schedule 4. Item 7(a):</b></p> <p><u>Conditions for awards of contracts, commencement of Works:</u></p> <p>7. As condition for award of any contract under the project the EA shall ensure the following:</p> <p>a. JMRC shall not award any Works contract which involves environmental impacts until JMRC incorporated the relevant provisions from the EMP and SHE into the Works contract,</p>	<p>Complied.</p> <p>SHE (Safety, Health and Environment) Manual and Environmental Management Plan (EMP) is a part of bidding document. Section 6 of Contract Agreement includes condition of contract on SHE and EMP, requiring the Contractor to implement the EMP and comply with requirements of SHE.</p>
2	<p><b>Schedule 4. Item 8:</b></p> <p><u>Conditions for award of contracts; commencement of Works:</u></p>	<p>Complied.</p>



	8. "As a condition for commencement of Works contract under the Project which involves environmental impacts and if it requires environmental clearances, the State through the JMRC shall ensure that the final approval of environmental clearances including the EIA, SHE, from appropriate <i>authority</i> has been obtained."	The project did not require environmental clearance, as railways including metro projects in India are not included in the EIA Notification 2006 of Gol.
3	<b>Schedule 5. Item 3:</b> <u>Environment</u> 3. "The Borrower shall ensure or cause the State through JMRC to ensure that the preparation, design, construction, implementation, operation and decommissioning of the Project facilities comply with (i) all applicable laws and regulations of the Borrower and State relating to environment, health, and safety including SHE; (ii) the Environmental Safeguards; and (iii) all measures and requirements set forth in the EIA and the EMP, and any corrective or preventative actions set forth in a Safeguards Monitoring Report."	Being complied. ➤ Requirements on permits and clearance are being followed. ➤ SHE is strictly being complied with. ➤ Requirements of EIA and EMP are being implemented.
4	<b>Schedule 5. Item 4(a):</b> <u>Land Acquisition and Involuntary Resettlement</u> 4 (a) Where the need arises, the Borrower shall ensure or cause the State through JMRC to ensure that all land and all rights-of-way required for the Project, and all Project facilities are made available to the Works contractor in accordance with the schedule agreed under the related Works contract and all land acquisition and resettlement activities are implemented in compliance with (i) all applicable laws and regulations of the Borrower and State relating to land acquisition and involuntary resettlement; (ii) the Involuntary Resettlement Safeguards; and (c) all measures and requirements set forth in the respective RP, and any corrective or preventative actions set forth in a Safeguards Monitoring Report.	Being complied. All land acquisition and resettlement activities are implemented as per provisions of Indian Law and ADB SPS.
5	<b>Schedule 5. Item 4 (b)</b>	

	<p><u>Land Acquisition and Involuntary Resettlement</u></p> <p>4 (b) Without limiting the application of the Involuntary Resettlement Safeguards, or the RP, the Borrower shall ensure or cause the State through JMRC to ensure that no physical or economic displacement takes place in connection with the Project until: (a) compensation and other entitlements have been provided to affected people in accordance with the RP; and (b) a comprehensive income and livelihood restoration program has been established in accordance with the RP.</p>	<p>Being complied.</p> <p>Compensation and other entitlements have been provided to affected people in accordance with applicable laws by JMRC.</p>
6	<p><b>Schedule 5. Item 5</b></p> <p><u>Indigenous Peoples</u></p> <p>5. Where the need arises, the Borrower shall ensure or cause the State through JMRC to ensure that the preparation, design, construction, implementation and operation of the Project, and all Project facilities comply with (a) all applicable laws and regulations of the Borrower and the State relating to indigenous peoples; (b) the Indigenous Peoples Safeguards; and (c) all measures and requirements set forth in the respective IPP, and any corrective or preventative actions set forth in a Safeguards Monitoring Report.</p>	<p>Not applicable.</p> <p>No issues on Indigenous peoples have arisen during the reporting period.</p>
7	<p><b>Schedule 5. Item 6(a) &amp; 6(b)</b></p> <p><u>Human and Financial Resources to Implement Safeguards Requirements</u></p> <p>6 (a) "The Borrower shall ensure or cause the State through JMRC to ensure that all necessary budgetary and human resources to fully implement the EMP, and the RP and the IPP as required"</p> <p>6 (b) "The Borrower shall ensure or cause the State through JMRC to ensure that at least one expert each is designated to supervise implementation of the EMP, and the RP and the IPP as required"</p>	<p>Being complied.</p> <ul style="list-style-type: none"> <li>➤ Safeguards cell comprising of 06 officers has been established in JMRC since 2013.</li> <li>➤ A JV of M/s Abha Narain Lambah Associates and M/s Shashank Mehendale &amp; Associates has been engaged as Heritage Consultant through ICB.</li> <li>➤ The Heritage Consultant is to monitor the heritage structures lying along the metro route of Phase 1B.</li> <li>➤ JMRC has also engaged 3 senior Archaeological Consultants to</li> </ul>

		<p>supervise the excavation of Chhoti Chaupar and Badi Chaupar.</p> <ul style="list-style-type: none"> <li>➤ Safeguards experts are part of the PMC (DMRC) team and civil works contractor team.</li> <li>➤ Adequate budget allocation has been made for implementation of safeguards activities.</li> </ul>
8	<p><b>Schedule 5. Item 7(a)</b></p> <p><u>Safeguards – Related Provisions in Bidding Documents and Works Contracts.</u></p> <p>7 (a) “comply with the measures and requirements relevant to the contractor set forth in the EIA, the EMP, SHE, the RP and the IPP as applicable (to the extent they concern impacts on affected people during construction), and any corrective or preventative actions set out in a Safeguards Monitoring Report.</p>	<p>Being complied.</p> <p>Safeguards experts are part of the PMC (DMRC) and civil works contractor teams are implementing safeguard measures. Adequate budget allocation is being made for implementation of safeguards activities.</p>
9	<p><b>Schedule 5. Item 7(b)</b></p> <p><u>Safeguards – Related Provisions in Bidding Documents and Works Contracts.</u></p> <p>7 (b) “make available a budget for all such environmental and social measures”</p>	<p>Being complied.</p>
10	<p><b>Schedule 5. Item 7(c)</b></p> <p><u>Safeguards-Related Provisions in Bidding Documents and Works Contract.</u></p> <p>7 (c) “provide the JMRC with a written notice of any unanticipated environmental, resettlement or indigenous peoples risks if any, or impacts that arise during construction, implementation or operation of the Project that were not considered in the EIA, the EMP, and the RP and the IPP if any;”</p>	<p>Being complied.</p> <p>Appropriate measures are being and will be taken to address these issues, as they arise.</p>
11	<p><b>Schedule 5. Item 8(a)</b></p> <p><u>Safeguards – Related Provisions in Bidding Documents and Works Contracts.</u></p> <p>8 (a) submit quarterly Safeguards Monitoring Reports to ADB and disclose relevant</p>	<p>Being complied.</p> <p>Quarterly Environmental and Social Monitoring Reports are being timely submitted by JMRC to ADB. The</p>

	information from such reports to affected persons promptly upon submission"	reports are also being disclosed on ADB and JMRC websites.
12	<p><b>Schedule 5. Item 8(b)</b></p> <p><u>Safeguards – Related Provisions in Bidding Documents and Works Contracts.</u></p> <p>8 (b) "if any unanticipated environmental and/or social risks and impacts arise during construction, implementation or operation of the Project that were not considered in the EIA, the EMP, SHE, and RP and IPP as applicable, promptly inform ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan.</p>	<p>Being complied.</p> <p>2 ancient water tanks and old canals were discovered during excavation works in Badi Chaupar and Choti Chaupar. Project design and schedule have been revised to protect and recreate, preserve and showcase the water tanks, art gallery and canals.</p>
13	<p><b>Schedule 5. Item 8(c)</b></p> <p><u>Safeguards – Related Provisions in Bidding Documents and Works Contracts.</u></p> <p>8 (c) Report any breach of compliance with the measures and requirements set forth in the EMP, SHE and the RP or the IPP if any, promptly after becoming aware of the breach.</p>	<p>Being complied.</p>
14	<p><b>Schedule 5. Item 9</b></p> <p>9. The Borrower shall ensure or cause the State through JMRC to ensure that no proceeds of the Loan under the Project are used to finance any activity included in the list of prohibited investment activities provided in Appendix 5 of ADB's Safeguard Policy Statement (2009).</p>	<p>Being complied</p>
15	<p><b>Schedule 5. Item 10</b></p> <p><u>Other Social Measures</u></p> <p>10. The EA shall ensure that civil works contracts under the Project follow all applicable labor laws of the Borrower and State and that these further include provisions to the effect that contractors; (i) carry out HIV/AIDS awareness programs for labor and disseminate information at worksites on risks of sexually transmitted diseases and HIV/AIDS as part of health</p>	<p>Complied.</p> <ul style="list-style-type: none"> <li>➤ Various awareness programs have been conducted during the reporting period.</li> <li>➤ Special National Road Safety Week Campaign (Road/Traffic Safety awareness campaign) conducted from 4<sup>th</sup> February to 10<sup>th</sup> February 2019 at JMRC UG-1B project sites.</li> </ul>

	<p>and safety measures for those employed during construction; and (ii) follow and implement all statutory provisions on labor (including not employing or using children as labor, equal pay for equal work), health, safety, welfare, sanitation, and working conditions. Such contracts shall also include clauses for termination in case of any breach of the stated provisions by the contractors.</p>	<ul style="list-style-type: none"> <li>➤ National Safety Week program organized with full enthusiasm and various awareness campaigns organised from 4<sup>th</sup> March to 10<sup>th</sup> March 2019.</li> <li>➤ Health and Hygiene awareness program conducted at project sites.</li> <li>➤ Mass Tool Box Talk conducted every month for awareness of all workers, prizes and incentives.</li> <li>➤ Monthly environmental training, physical training and general housekeeping training are conducted.</li> </ul> <p>Details of Awareness Programs and trainings are provided in <b>Appendix 2</b></p>
16	<p><b>Schedule 5. Item 11</b></p> <p>11. The EA shall ensure the safety and status of the heritage sites and structures involved in the Project site at its own cost and in this regard ensure all appropriate steps included as detailed in the PAM.</p>	<p>Being complied.</p> <ul style="list-style-type: none"> <li>➤ In the bidding document, provision was made to conduct Baseline Building condition survey, wherein the structural stability of structures lying on 30 m on either side of the route alignment of Phase 1B was recorded so as to help monitor any changes which may occur during construction.</li> <li>➤ JMRC through CEC (AIMIL) got the Building Condition Survey before commencement of work at site.</li> <li>➤ For the purpose of monitoring heritage structures along with the metro route alignment of Phase 1B, JMRC has engaged Heritage Consultant M/s Abha Narain Lambah Associates and M/s Shashank Mehendale &amp; Associates (JV).</li> <li>➤ Mitigation and preventive measures are being taken up by M/s CEC in order to avoid any damage.</li> </ul>
17	<p><b>Schedule 5. Item 12</b></p> <p><u>Gender</u></p>	

	12. The EA shall ensure that the Project is undertaken in conformity with the stakeholder communication strategy as agreed between ADB, the Borrower, State, and JMRC and referred in the PAM.	Being complied.
--	--	-----------------

## B Compliance to Project Administration Manual

10. The Project Administration Manual<sup>3</sup> (PAM), describes how the JMRC will implement the project and deliver the results on time, with quality, within budget, and in accordance with government and Asian Development Bank (ADB) policies and procedures. The PAM is mandatory and serves as the main document describing implementation details. The status of implementing the safeguards requirements set out in PAM are provided in Table 3.

**Table 3: Compliance to PAM**

SN	Details	Compliance Status
1.	<p><b>Section VII.</b></p> <p><b>Safeguards</b></p> <p><b>40. Implementation of SHE and EIA.</b></p> <p>The safeguards cell within JMRC will coordinate and ensure that all environment safeguard requirements under the project are met. The SHE and EIA report including site specific EMP will be included in the contract documents. The contractors must include in their bid adequate budget for implementation of all items in the SHE and EIA. The safeguards cell through the project management consultant (Delhi Metro Rail Corporation) will monitor and report on the environmental compliance of contractors with the SHE and EIA and ensure proper implementation of the grievance and redress mechanism. Key implementation activities for each stage of the project are as follows:</p>	<p>Being complied.</p> <p>Sample monthly monitoring report is provided in <b>Appendix 3.</b></p>
2.	<p><b>(i)Pre-construction:</b></p> <p>All contractors will complete the following activities no later than 30 days from the issuance of Notice to Proceed:</p> <ol style="list-style-type: none"> <li>1. Submit appointment letter and resume of the Contractor's Health and Safety Officer (HSO) who will be the on-site focal person for environment safeguards;</li> </ol>	<p>Complied.</p>

<sup>3</sup> <http://www.adb.org/sites/default/files/project-document/79731/46417-001-pam.pdf>

SN	Details	Compliance Status
	2. HSO will engage CSC-Environment Specialist, and JMRC safeguards cell to a meeting to discuss in detail the SHE and EIA seek clarification and recommend corresponding revisions if necessary;	SHE and EIA have been discussed in detail by HSO with CSC-Environment Specialist, and JMRC safeguards cell.
	3. HSO will request CSC-ES copy of monthly monitoring formats and establish deadlines for submission;	Formats for Monthly Monitoring Reports have been finalized with CSC-Environment Specialist. Monitoring report is being sent on monthly basis in prescribed format.
	4. HSO will submit for CSC-ES approval an action plan to secure all permits and approvals needed during construction stage such as for operation of crushers and hot mix plants, transport and storage of hazardous materials, waste disposal sites, use of ground water etc.	HSO has submitted plan and action is being taken accordingly.
	5. HSO will submit for approval of CSC-ES the construction camp layout before its establishment where camps are required, and	Camp has been constructed as per approved layout diagram.
	6. Before start of construction, the contractor will post signs in and around the construction site with information on the names, positions, contact numbers, and addresses of key people for receiving grievances	Adequate relevant signage has been displayed. Photolog is in <b>Appendix 1</b> .
3.	<b>(ii)Construction:</b>  The JMRC safeguards cell through the PMC will monitor the Contractor's compliance to the SHE and EIA. In case of non-conformances, the safeguards cell will recommend corrective measures and ensure their timely implementation. If any unanticipated impacts become apparent, the safeguards cell will inform ADB. If required the EIA report will be updated, and mitigation measures and resources to address the new impacts will be identified	Being complied.
4.	<b>(iii)Post-construction:</b>  The safeguards cell through the PMC will certify works completed in accordance with SHE and EIA and ensure all construction sites are satisfactorily rehabilitated and restored or otherwise recommend withholding of payments	Not yet due.  Will be done in accordance with SHE & EIA.
5.	<b>41. PMC Environmental Specialist:</b>  JMRC will ensure PMC (Delhi Metro Rail Corporation) to provide an Environmental Specialist who will, full time during construction, to monitor compliance by	Complied.

SN	Details	Compliance Status
	<p>the contractor to the SHE and EIA in support of JMRC safeguard cell. The key qualification and experience consist of (a) minimum of a Master's Degree in Environmental Impact Assessment (EIA) or Environmental Engineering correlated subjects; and (b) experience of minimum of 5 years of working experience in conducting Environmental Assessments, implementing and/or supervising environment management activities in infrastructure projects. The objective is to ensure contractor's compliance to the Safety Health and Environment (SHE) Guidelines and EIA in accordance with the requirements of the ADB Safeguard Policy Statement (SPS) 2009 as well as relevant policies of the Government of India. The main output is the Quarterly monitoring report during the construction period. The responsibilities include:</p>	<p>Mr. S.A. Verma, GM/Environment, DMRC Delhi is designated by PMC as its Environmental specialist to monitor compliance by the Contractor for SHE and EIA. His assistants are doing full time monitoring in Jaipur.</p>
6.	<ul style="list-style-type: none"> <li>Review EIA report including site specific EMP and SHE guidelines to understand the environmental issues in the project area and mitigation and monitoring requirements of the project.</li> </ul>	<p>Complied.</p> <p>EIA, EMP and SHE guidelines have been reviewed.</p>
	<ul style="list-style-type: none"> <li>Update the site specific EMP if there are any significant changes in the project scope or environmental conditions to incorporate all new environmental issues and mitigation measures</li> </ul>	<p>Being complied.</p> <p>EMP will be updated as per requirements.</p>
	<ul style="list-style-type: none"> <li>Prepare monitoring checklists/ templates for daily or weekly monitoring on implementation of the SHE and site specific EMP by the contractor.</li> </ul>	<p>Complied.</p> <p>Site specific monitoring checklists/ templates for daily or weekly monitoring on implementation of the SHE and EMP have been prepared.</p>
	<ul style="list-style-type: none"> <li>Organize a consultation meeting with JMRC safeguards cell, contractors Health and Safety Officers (HSO), Site Engineer and Heritage Expert before the start of physical works to clarify roles and responsibilities of each party. After start of physical works organize a coordination meeting at least every quarter to provide updates, clarify and follow up on pending issues etc.</li> </ul>	<p>Being complied.</p> <p>A consultation meeting among JMRC's Safeguard Cell, Contractor, Health and Safety Officers (HSO), Site Engineer and Heritage Expert held before the start of physical work to clarify roles and responsibilities of each party.</p> <p>Coordination meetings among JMRC's Safeguard Cell, Contractors, Health and Safety Officers (HSO), Site Engineer and Heritage Expert are being held regularly.</p>
	<ul style="list-style-type: none"> <li>Where necessary organize technical training programs to enhance the field level staff's</li> </ul>	<p>Being complied.</p>



SN	Details	Compliance Status
	understanding on environmental issues such as health impacts of dust and noise, waste/debris disposal and management, safety issues etc.	Environmental training programs are conducted on regular basis. The training is conducted by contractor's HSO. If required, additional training will be provided by third party agencies on environmental issues. Details of training sessions are provided in <b>Appendix 2</b> .
	<ul style="list-style-type: none"> <li>• Monitor implementation of the SHE and site specific EMP by the contractor on a daily or weekly basis. In doing so complete the daily or weekly monitoring checklists.</li> </ul>	<p>Being complied.</p> <p>Monitoring of implementation of SHE and site specific EMP are being done by Contractor's HSO on regular basis. SHE meeting is held with participation from JMRC, DMRC and Contractor and sub-contractors to ensure compliance and implementation of SHE requirements and EMP.</p>
	<ul style="list-style-type: none"> <li>• Provide site based technical advice to the contractors where necessary during construction activities</li> </ul>	Site based technical advice to the contractors is being given by DMRC experts.
	<ul style="list-style-type: none"> <li>• Co-ordinate with the contractor's site engineers on monitoring and data collection on noise and vibration generated during tunnelling works and operation of heavy machinery</li> </ul>	PMC's environment team is coordinating with contractor's site engineers on monitoring and data collection on noise and vibration generated during operation of heavy machinery. It will also be monitored during tunneling works.
	<ul style="list-style-type: none"> <li>• Coordinate with the Heritage Expert on getting data on monitoring and status of heritage structures above ground.</li> </ul>	PMC's environment team is coordinating with the Heritage Expert on getting data on monitoring and status of heritage structures above ground.
	<ul style="list-style-type: none"> <li>• Facilitate the functioning of the Grievance Redress Mechanism and maintain proper records of all environment related grievances and details on how they were addressed.</li> </ul>	A system is in place to facilitate the functioning of the Grievance Redress Mechanism and maintain proper records of all environment related grievances and details on how they are addressed.
	<ul style="list-style-type: none"> <li>• Prepare quarterly Environmental Monitoring reports based on monitoring site visits, completed checklists and quarterly meetings for submission to JMRC safeguards cell and ADB. Amongst other environment safeguard issues, the monitoring report must cover:               <ul style="list-style-type: none"> <li>➤ compliance to the SHE and site specific EMP by the contractor</li> <li>➤ vibration monitoring activities conducted by contractor's engineers</li> <li>➤ grievances redress mechanism</li> <li>➤ monitoring and status of heritage sites above ground</li> </ul> </li> </ul>	<p>Being complied.</p> <ul style="list-style-type: none"> <li>➤ For compliance of the SHE and site specific EMP by the contractor, regular visit is being done by the Environmental team of CSC.</li> <li>➤ For monitoring of the vibration during the construction, instrumentation has been done by M/s CEC as per approval given by CSC. The monitoring was carried out by a third party agency i.e. M/s. AIMIL.</li> <li>➤ Grievance redress mechanism is in place.</li> <li>➤ For monitoring the status of heritage site above the ground, a Heritage Consultant i.e. M/s Abha Narain Lambah Associates</li> </ul>

SN	Details	Compliance Status
		and M/s Shashank Mehendale and Associates (JV) has been appointed by JMRC. During the tunneling the team of heritage consultant will be at site to monitor the status of buildings and heritage structures along the metro route.
7.	<p><b>42. Monitoring of Heritage Structures</b></p> <p>JMRC through DMRC will retain at its own cost the current Heritage architect as the Heritage site expert during construction of the underground metro section. The expert will be responsible for conducting a baseline survey of heritage sites above the metro alignment and conducting regular monitoring of the status of the heritage sites throughout the construction period. The expert will be responsible for coordinating necessary procedures if any historical/traditional artefacts are found during tunneling works. He/she will also provide advice on technical measures during construction to prevent damages to the heritage structures. In the event of any damage to a heritage structure he/she will immediately alert JMRC and recommend appropriate mitigation or restoration measures. Key outputs are: (a) Monthly monitoring report; (b) No damage on heritage structures; and (c) in the event of damage, implementation of immediate restoration and mitigation measures. The main responsibilities are:</p>	<p>Being complied.</p> <ul style="list-style-type: none"> <li>➤ JMRC through competitive bidding has engaged heritage consultant M/s Abha Narain Lambah Associates and M/s Shashank Mehendale and Associates (JV) to monitor the heritage structures lying along the metro route of Phase 1B.</li> <li>➤ JMRC has also engaged 3 senior Archaeology Consultants to supervise the excavation of Chhoti Chaupar and Badi Chaupar.</li> <li>➤ Heritage Consultant conducted Baseline survey for existing buildings' conditions along the metro route and has submitted Building Inventory report.</li> <li>➤ Structural survey of buildings along the metro route has also been conducted and reports have been submitted, wherein they categorized buildings under 3 categories             <ol style="list-style-type: none"> <li>1. Unstable Structures requiring preventive propping and immediate demolition/ evacuation.</li> <li>2. Part of structure unstable requiring propping &amp; partial replacement /demolition.</li> <li>3. No major instability.</li> </ol> </li> </ul> <p>These reports have been shared with ADB and concerned local agency for further necessary action.</p> <p>A re-evaluation for the structural condition of the shops along Chandpole launching site (from Chandpole gate to Chhoti Chaupar) was conducted by the Joint team of JMRC, DMRC and M/s CEC engineers. Preventive measures like propping of the verandahs and the shops along the above length have been taken by</p>

SN	Details	Compliance Status
		contractor. The consolidated list of unstable structures requiring immediate attention were shared with local agency (Jaipur Municipal Corporation) for further course of action.
8.	<ul style="list-style-type: none"> <li>At least one month before the start of construction activities conduct a baseline survey of all heritage structures above the metro alignment and record detailed information including, but not limited to: list of heritage structures with details on location and distance from the metro alignment, exact height of structures above ground, existence of cracks/damages prior to start of construction, detailed photographs etc.</li> <li>Monitor the condition of the heritage structures on a monthly basis throughout the construction period and compare the status with the baseline status to ensure that there are no changes from the baseline condition.</li> <li>Coordinating necessary procedures if any historical/traditional artifacts are found during tunnelling works.</li> <li>Provide advice on technical measures during construction to prevent damages to the heritage structures.</li> <li>In the event of observation in any damage to any heritage structure/s immediately alert JMRC and recommend appropriate mitigation or restoration measures.</li> <li>Provide technical advice on and supervise the mitigation or restoration activity.</li> <li>Prepare a monitoring report on a monthly basis to record activities implemented and monitoring findings and submit to JMRC safeguards cell as well the Environmental Specialist. Findings of the report will be included in the quarterly environmental monitoring report that will be prepared by the environmental specialist.</li> </ul>	<p>Complied.</p> <ul style="list-style-type: none"> <li>Before the start of construction activity, Building Condition Survey of all structure along the metro route with photograph of existing cracks and damages was conducted by CEC through AIMIL.</li> <li>Before the start of construction activity, Baseline Survey of all the structure along the metro route with detailed photographs was conducted by Heritage Consultant i.e. M/s Abha Narain Lambah Associates and M/s Shashank Mehendale and Associates (JV).</li> <li>Based on literature review of the historical background of the city, during the excavation for station work at chotichaupar and Badi Chaupar two ancient water tanks were discovered below Choti Chaupar and Badi Chaupar. Under the guidance of the Archaeology Department, the ancient water tanks were manually removed and preserved. After completion of civil work of station at Choti Chaupar, the heritage kund has been reinstated back to its original location and a new Art Gallery for display of Artefacts has been constructed. The reconstruction of Badi Chaupar heritage kund is yet to be started.</li> <li>Based on the reports and survey submitted by Heritage consultant, CEC is regularly monitoring status of buildings and the status is reported through daily and weekly reports.</li> <li>Heritage Consultant entrusted to advice on measures during construction to prevent damages to the heritage structures.</li> <li>Heritage Consultant is submitting monitoring report on monthly basis to record activities implemented and monitoring findings to JMRC. Recently heritage consultant has submitted a consolidated</li> </ul>

SN	Details	Compliance Status
		report on heritage monitoring and the same has been submitted to ADB.
9.	<p><b>Section VII- Safeguards</b></p> <p><b>b) Social – Involuntary resettlement.</b></p> <p>44. If any changes or additional land requirements or involuntary resettlement impacts are identified, a resettlement plan will be prepared in accordance with the <i>ADB Safeguard Policy Statement (2009)</i> and the same is further approved by ADB before award of related civil works contract and implemented before commencement of the relevant section of the civil works contract as applicable.</p>	<p>Being complied.</p> <p>Previously the shops from Sanjay Circle were shifted across the road near Church land and compensated for the loss of business during the shifting period. The shops are routinely into business now.</p> <p>6 Temples at Chhoti Chaupar, which were infringing the station box area have all been rehabilitated and shifted to a newly constructed Temple complex at Old Atish market land as per the satisfaction of Temple Trusts.</p> <p>Government is continuously in touch with the stakeholders and is in process of ensuring that sentiments of people at large are not hurt. Rozgareshwar Temple at Chhoti Chaupar will be relocated back to its original position after completion of Station work at Chhoti Chaupar.</p> <p>7 temples at Badi Chaupar have been identified which are infringing the station box area. 5 temples have been shifted to Manak Chowk Thana and 2 temples at Tanwarji Ka Nauhra.</p>
10	<p><b>Section VII - Safeguards</b></p> <p><b>c) Social – Indigenous people</b></p> <p>45. In case of any adverse impacts is identified during implementation on indigenous people, the JMRC will ensure that the Indigenous Peoples Plan (IPP) is prepared in accordance with the <i>ADB Safeguard Policy Statement (2009)</i> and the same is further approved by ADB before award of related civil works contract and implemented before commencement of the relevant section of the civil works contract as applicable.</p>	Not Applicable.

SN	Details	Compliance Status
11	<p><b>Section VIII - Gender and Social Dimensions</b></p> <p><b>47 Gender consultation and participation</b></p> <p>Meaningful consultations that are gender inclusive and responsive will be carried out as early as in the project preparation stage and will be carried out on an ongoing basis throughout the project cycle.</p> <p>JMRC shall ensure that the bidding documents provide clauses to ensure that all civil works contractors comply with labor laws by not employing child labor; encouraging the employment of the poor, particularly women; and not offering different wages to men and women on work of equal value.</p>	<p>Being Complied.</p> <p>This provision is a part of the bidding document.</p>
12	<p><b>Section VIII - Gender and Social Dimensions</b></p> <p><b>49. HIV and AIDS</b></p> <p>JMRC will ensure that all civil works contractors (i) carry out awareness programs for labor on the risks of sexually transmitted diseases/AIDS and human trafficking; and (ii) disseminate information at worksites on the risks of sexually transmitted diseases and HIV/AIDS as part of health and safety measures for those employed during construction. Contracts for the project will include specific clauses on these undertakings, and compliance will be strictly monitored by JMRC.</p>	<p>Complied.</p> <p>Periodically awareness about HIV/AIDS is discussed in morning tool box talk and apart from this the medical officer visits the labour camp and explains the risk of sexually transmitted disease on periodic basis.</p>
13	<p><b>Section VIII - Gender and Social Dimensions</b></p> <p><b>50. Health.</b></p> <p>JMRC shall ensure that contractors provide adequately for the health and safety of construction workers and further ensure that bidding documents include measures on how contractors will address this, including an information and awareness raising campaign for construction workers on sexually transmitted diseases, HIV/AIDS, and human trafficking.</p>	<p>Complied.</p> <p>Various type of awareness programme has been conducted during this period. Apart from this monthly environmental training, physical training and general housekeeping training are conducted in line with India Government's Swatch Bharat Abhiyan.</p>
14	<p><b>Section VIII - Gender and Social Dimensions</b></p> <p><b>51. Labor</b></p> <p>JMRC shall ensure that:</p>	<p>Complied.</p>

SN	Details	Compliance Status
	<ul style="list-style-type: none"> <li>i. civil works contractors comply with all applicable labor laws and regulations, do not employ child labor for construction and maintenance activities, and provide appropriate facilities for women and children in construction campsites;</li> <li>ii. people directly affected by the projects are given priority to be employed by the contractor;</li> <li>iii. contractors do not differentiate wages between men and women for work of equal value; and</li> <li>iv. specific clauses ensuring these will be included in bidding documents. The construction supervision consultants monitor the provisions.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Civil work contractor is complying with all applicable labour laws and regulations.</li> <li>➤ No child labour is employed.</li> <li>➤ Preference is being given to people directly affected by the project.</li> <li>➤ Complying with equal remuneration Act.</li> <li>➤ Specific clause for ensuring labour law etc. has been included in the bidding document.</li> </ul>
15	<p><b>Section IX - Performance Monitoring, Evaluation, Reporting and Communication</b></p> <p><b>B. Monitoring.</b></p> <p><b>Disclosure of Environmental Assessments and Monitoring Reports</b></p> <p>ADB and JMRC will disclose on their respective websites the EIA Report. The quarterly monitoring reports will also be disclosed on the ADB website.</p>	<p>Being complied.</p> <p>EIA report has been disclosed on ADB and JMRC websites.</p> <p>Also 1<sup>st</sup> Semi Annual and subsequent Quarterly Environmental and Social Monitoring Reports are also disclosed on ADB and JMRC websites. <a href="http://www.jaipurmetrorail.in">www.jaipurmetrorail.in</a></p> <p>This is the 17<sup>th</sup> quarterly report (January 2019 – March 2019) on environmental and social safeguards compliance.</p>
16	<p><b>Section IX - Performance Monitoring, Evaluation, Reporting and Communication</b></p> <p><b>B. Monitoring</b></p> <p><b>55. Safeguards monitoring - Resettlement</b></p> <p>If impact is identified during project implementation, a monitoring system will be established based on the <i>ADB Safeguard Policy Statement (2009)</i> and Government of India regulations.</p>	<p>Being complied.</p> <p>All resettlement and relocation issues have been settled on mutually agreed terms between JMRC and affected parties.</p>
17	<p><b>Section IX - Performance Monitoring, Evaluation, Reporting and Communication</b></p> <p><b>B. Monitoring</b></p> <p><b>56. Indigenous People</b></p>	<p>No impact has been identified.</p>

SN	Details	Compliance Status
	If impact is identified during project implementation, a monitoring system will be established based on the ADB <i>Safeguard Policy Statement (2009)</i> and Government of India regulations.	
18	<b>Section IX - Performance Monitoring, Evaluation, Reporting and Communication</b>  <b>B. Monitoring</b>  <b>58. Grievance Redress Mechanism</b>  Grievances related to the implementation of the project, particularly regarding the land acquisition and R&R will be acknowledged, evaluated, and responded to the complainant with corrective actions. Any grievance regarding the land acquisition and R&R is received by OSD (Land), JMRC and is addressed through the decision of the "Negotiation Committee".	Being complied  JMRC regularly conducts meetings with project affected people and maintains proper documentation to track their redressal. The details are at Table 12 in this report.

### C Compliance to the Civil Works Contract Agreement

11. The contractor is liable to comply with the safeguards clauses included in the contract agreement. Table 4 below provides an update on the status of safeguards compliance by the civil works contractor.

**Table 4: Compliance to the safeguards Clauses of the Civil Work Contract**

S.N.	Description	Compliance Status
1	<b>GCC Sub Clause 4.8</b>  <b>Safety Procedures</b>  The Contractor shall: <ul style="list-style-type: none"> <li>a) comply with all applicable safety regulations,</li> <li>b) take care for safety of all persons entitled to be on the Site,</li> <li>c) use reasonable efforts to keep the Site and Works clear of unnecessary obstruction so as to avoid danger to these persons,</li> <li>d) provide fencing, lighting, guarding and watching of the Works until completion and taking over under Clause 10 [Employer's Taking Over], and</li> <li>e) Provide any Temporary Works (including roadways, footways, guards and fences) which may be necessary, because of the execution of the Works, for the use and protection of the public and the owners and occupiers of adjacent land.</li> </ul>	Being complied.  Contractor is taking adequate measures to comply with regulations on safety of workers.
2	<b>GCC Sub-Clause 6.7</b>  <b>Health and Safety</b>	

S.N.	Description	Compliance Status
	<p>The Contractor shall at all times take all reasonable precautions to maintain the health and safety of the Contractor's Personnel. In collaboration with local health authorities, the Contractor shall ensure that medical staff, first aid facilities, sick bay and ambulance service are available at all times at the Site and at any accommodation for Contractor's and Employer's Personnel, and that suitable arrangements are made for all necessary welfare and hygiene requirements and for the prevention of epidemics.</p> <p>The Contractor shall appoint an accident prevention officer at the Site, responsible for maintaining safety and protection against accidents. This person shall be qualified for this responsibility, and shall have the authority to Issue instructions and take protective measures to prevent accidents. Throughout the execution of the Works, the Contractor shall provide whatever is required by this person to exercise this responsibility and authority.</p> <p>The Contractor shall send, to the Engineer, details of any accident as soon as practicable after its occurrence. The Contractor shall maintain records and make reports concerning health, safety and welfare of persons, and damage to property, as the Engineer may reasonably require.</p>	<p>Being complied.</p> <p>Contractor is taking measures as per the provision of SHE, which is also a part of bidding document.</p> <p>A medical room has been established at site with all basic facilities. Around the clock ambulance facility is also available at site.</p> <p>The contractor has tie-up with five hospitals viz, Rawal Hospital &amp; Metro Mass Hospital, Bhankrota near casting yard, Asian Hospital, near tunnel site, Amar jain Hospital and SMS Hospital for any emergencies. Emergency mock drill is conducted on monthly basis each site to check the efficacy of the system.</p> <p>HSO is also working as accident prevention officer.</p> <p>Being complied.</p>
	<p><b>PCC Sub-Clause 4.8 and 6.7</b></p> <p><b>Safety Procedures and Health &amp; Safety</b></p> <p>"The Contractor shall throughout the execution of the Works including the carrying out of any testing, commissioning (including Integrated Testing and Commissioning), or remedying of any defects:</p> <p>(a) take full responsibility for the adequacy, stability, safety and security of the Works, Plant, Rolling Stock, Contractor's Equipment, Temporary Works, operations on Site and methods of manufacture, installation, construction and transportation;</p> <p>(b) have full regard for the safety of all persons on or in the vicinity of the Site (including without limitation persons to whom access to the Site has been allowed by the Contractor), comply with all relevant safety regulations, including provision of safety gear, and insofar as the Contractor is in occupation or otherwise is using areas of the Site, keep the Site and the Works (so far as the same are not completed and</p>	<p>Being complied.</p> <p>Adequate health and safety measures are being implemented as per the provision of SHE, which is also a part of bidding document.</p>



S.N.	Description	Compliance Status
	<p>occupied by the Employer) in an orderly state appropriate to the avoidance of injury to all persons and shall keep the Employer indemnified against all injuries to such persons;</p> <p>(c) provide and maintain all lights, guards, fences and warning signs and watchmen when and where necessary or required by the Engineer or by laws or by any relevant authority for the protection of the Works and for the safety and convenience of the public and all persons on or in the vicinity of the Site; and</p> <p>(d) where any work would otherwise be carried out in darkness, ensure that all parts of the Site where work is being carried out are so lighted as to ensure the safety of all persons on or in the vicinity of the Site and of such work.</p> <p>Contractor is required to take note of all the necessary provisions in Employer's Safety, Health and Environment Manual (SHE Manual) and the Contractor's price shall be inclusive of all the necessary costs to meet the prescribed safety standards.</p> <p>Precaution shall be taken by the Contractor to ensure the health and safety of his staff and labour. The Contractor shall, in collaboration with and to the requirements of the local health authorities, ensure that medical staff, first aid facilities, sick bay and ambulance service are available at the accommodation and on the Site at all times, and that suitable arrangements are made for all necessary welfare and hygiene requirements and for the prevention of epidemics. The Contractor shall maintain records and make reports concerning health, safety and welfare of persons, and damage to property, as per the Engineer's requirement and will ensure complete compliance with relevant clauses of Employer's Health, Safety and Environment Manual (SHE Manual).</p> <p>The Contractor's Site Safety Plan shall be developed from his Outline Safety Plan as per Employer's Requirements and SHE Manual of the Employer. The Contractor shall appoint a member of his staff at the Site to be responsible for maintaining the safety, and protection against accidents, of personnel on the Site. This person shall be qualified for his work and shall have the authority to issue instructions and take protective measures to prevent accidents.</p>	
	<b>Safety Precautions</b>	

S.N.	Description	Compliance Status
	<p>Within 8 weeks of the date of Notice to Proceed, the Contractor shall submit a detailed and comprehensive contract-specific Site Safety Plan based on the Employer's Safety, Health and Environmental Manual (SHE Manual). The Contractor is required to make himself aware of all the requirements of the Employer's Safety, Health and Environmental Manual in this regard and comply with them. The Site Safety Plan shall include detailed policies, procedures and regulations which, when implemented, will ensure compliance with Sub-Clauses 4.8 and 6.7 of the General Conditions of Contract.</p>	<p>Being complied.</p> <p>Contractor has submitted site specific Safety plan and the same have been approved by CSC.</p>
	<p><b>GCC Sub-Clause 4.18</b></p> <p><b>Protection of the Environment</b></p> <p>The Contractor shall take all reasonable steps to protect the environment (both on and off the Site) and to limit damage and nuisance to people and property resulting from pollution, noise and other results of his operations.</p> <p>The Contractor shall ensure that emissions, surface discharges and effluent from the Contractor's activities shall not exceed the values indicated in the Employer's Requirements, and shall not exceed the values prescribed by applicable laws.</p>	<p>Being complied.</p>
	<p><b>PCC Sub-Clause 4.18</b></p> <p><b>Protection of the Environment</b></p> <p>The Contractor shall be responsible and liable for any stoppage, closure or suspension of the works due to any contravention of statutory requirements relating to the protection of the environment and shall indemnify and keep indemnified the Employer in this regard.</p> <p>The Contractor's Site Environmental Plan shall be developed from his Employer's Safety, Health and Environmental Manual (SHE Manual), as per the Employer's Requirements and Special Conditions of Contract. Nothing extra shall be payable to the Contractor on this account and his Bid price shall be inclusive of expenditure required to be incurred for working as per SHE Manual.</p> <p>Outline Environmental Plan means the environmental plan forming part of the Tender, setting out, in summary form, the Contractor's proposed means of complying with his obligations in relation to environmental quality. Site Environmental Plan means the site environmental</p>	<p>Being complied.</p>

S.N.	Description	Compliance Status
	<p>plan including all supplements thereto, or any amended or varied version thereof, as submitted by the Contractor in accordance with Employer's Safety, Health and Environmental Manual (SHE Manual), this Clause and which has received the Engineer's consent. The Site Environmental Plan shall include detailed policies, procedures and regulations which, when implemented, will ensure compliance with this Clause. The Contractor is required to make himself aware of all the requirements of the Employer's SHE Manual in this regard and comply with them.</p> <p>Within 8 weeks of the date of the Notice to Proceed, the Contractor shall submit a detailed and comprehensive Site Environmental Plan based on the Employer's Safety, Health and Environmental Manual (SHE Manual), and shall include such further material, which the Contractor considers necessary and relevant.</p> <p>Upon the Engineer notifying his consent to the Site Environmental Plan, or any supplemental part thereof, the Contractor shall adhere to the principles and procedures contained in such document save to the extent that the Engineer may give his consent to any amended or varied version thereof.</p> <p>The Contractor shall provide all necessary access, assistance and facilities to enable the Engineer and the Employer to monitor and conduct tests to verify that the Site Environmental Plan is being properly and fully implemented."</p>	

### III. COMPLIANCE TO THE ENVIRONMENTAL MANAGEMENT PLAN

12. The environmental management plan (EMP) for the project was provided in Annexure 4 of the EIA report and also attached to the contract documents. As per EMP, five (05) environmental management activities were required to be implemented during the pre-construction stage (PC 1 – PC5); ten (10) activities are required to be implemented during the construction stage (C1.0 – C1.4, C.1.4.1 and C2 – C6); and three (03) activities are required to be implemented during the operation stage (O1 – O3). The following Table 5 lists out the status of activities during the pre-construction and construction stage as of September 2018.

Table 5: Status of Compliance to the EMP

SN	Activity	Mitigation measures	Compliance attained (Yes, No, Partial)	Comment/Reasons for Partial or Non-Compliance	Issues for further action and target dates
		<b>PRE-CONSTRUCTION STAGE</b>			
PC1	Contractor Preparatory Works (Upon issuance of Notice to Proceed)	The Contractor will complete the following activities no later than 30 days upon issuance of Notice to Proceed			
		1) Submit appointment letter and resume of the Contractor's Health and Safety Officer (HSO) and environmental focal person to CSC.	Yes.  Mr. Raj Kishor Pandey has been appointed as Contractor's HSO after the approval of CSC and he is working full time on site.		
		2) HSO will engage CSC-Environment Specialist to a meeting to discuss in detail the EMP, seek clarification and recommend corresponding revisions if necessary	Yes.  EMP and SHE have been discussed with CSC-Environment Specialist.		
		3) HSO will request CSC-ES copy of monthly monitoring formats and establish deadlines for submission.	Yes.  Formats and schedule of monthly monitoring reports has been finalized. Sample attached in <b>Appendix 3 &amp; 4.</b>		
		4) HSO will submit for CSC-ES approval an action plan to secure all permits and approvals needed to be secured during construction stage	Yes.		

SN	Activity	Mitigation measures	Compliance attained (Yes, No, Partial)	Comment/Reasons for Partial or Non-Compliance	Issues for further action and target dates
		which include but not limited to-			
		i). operation of crushers and hot mix plants,	Yes.  No crushers and hot mix plant have been established by contractor.	Consent to Operate (CTO) batching plant has been obtained from Rajasthan State Pollution Control Board on 09.01.2017 <b>Appendix 6.</b>	Obtained
		ii) transport and storage of hazardous materials (e.g. fuel, lubricants, explosives),	Yes	Hazardous waste is disposed through government authorized agency. Relevant documents are kept at Contractor's end to show compliance.	
		iii) waste disposal sites and disposal management plan,	➤ Yes complied	<p>➤ Jaipur Development Authority has allotted following soil disposal sites vide letter dated 01.09.2014</p> <ol style="list-style-type: none"> <li>1. Mathuradaspora</li> <li>2. Nahargarh Biological park</li> <li>3. JDA park, Hathigaon</li> </ol> <p>➤ Jaipur Nagar Nigam has allotted following soil disposal sites vide letter dated 08.09.2014/ 18.04.17/31.03.17/24.04.17/17.05.17/20.04.17</p> <ol style="list-style-type: none"> <li>4. Amer Fire station</li> <li>5. 4<sup>th</sup> Battalion, chainpura</li> <li>6. Rajasthan Police Academy</li> <li>7. Policeline, Sanganer</li> </ol>	

SN	Activity	Mitigation measures	Compliance attained (Yes, No, Partial)	Comment/Reasons for Partial or Non-Compliance	Issues for further action and target dates
				Jaipur Development Authority has allotted for dumping C&D waste at Khasra No.-1, Area 41.08 Bigha situated at revenue village, Malpura Choud, Tehsil, Jaipur	
		iv) temporary storage locations,	Yes		
		v) water use, and	Permission has been obtained from state authority for extraction of ground water for drinking purpose at Chhoti Chaupar.	Construction water demand is met through external water supply by private agencies.	
		vi) emission compliance of all vehicles.  Arrangements to link with government health programs on hygiene, sanitation, and prevention of communicable diseases will also be included in the action plan.	Yes.		
		5) HSO will submit for approval of CSC-ES the construction camp layout before its establishment.	Yes, Construction camp has been established as per approved layout plan.		

SN	Activity	Mitigation measures	Compliance attained (Yes, No, Partial)	Comment/Reasons for Partial or Non-Compliance	Issues for further action and target dates
PC2	Coordinate with the Jaipur Development Authority on Traffic Management Plan to avoid nuisance from traffic congestion	<p>The Contractors will discuss and coordinate the implementation of the traffic re-routing scheme particularly in Chhoti Chaupar and Badi Chaupar when it starts the cut and cover activities and the hauling and disposal of excavated materials to the Ambabari village.</p> <p>At the minimum, the traffic management plan will have the following components: construction traffic, ensuring access to properties, accommodating pedestrians, parking, access by construction vehicles, faulty traffic lights and problem interchanges, use of public roads, parking provision during construction, use of residential streets and traffic diversion due to temporary road closures, and construction and use of temporary access roads.</p>	<p>Yes.</p> <p>The traffic diversion/management plan is in place in coordination with government agencies (Traffic department etc) for necessary permission as and when required.</p>		
PC3	Community Liaison to avoid complaints and/or address complaints if any	To ensure that ongoing feedback is provided on the progress of the JMRP together with feedback on the environmental management	<p>Yes.</p> <p>Details in Table no. 12</p>		

SN	Activity	Mitigation measures	Compliance attained (Yes, No, Partial)	Comment/Reasons for Partial or Non-Compliance	Issues for further action and target dates
		<p>performance of the project.</p> <p>Contractor will provide a minimum of two (2) weeks notification to directly affected residents, businesses and other relevant groups of the intended construction commencement date. In providing a mechanism for communication between the contractor and the community and informing the public of construction details (timing, expected impacts), the concessionaire will undertake consultation and information activities.</p>			
PC4	Ground staking to address chance find of artifacts	<p>At least 30 days before the start of tunneling, the Contractor with supervision from the Archeology Department will employ a ground penetrating radar (GPR), detect the presence of buried artifacts along the tunnel alignment.</p> <p>The Contractor, in behalf of the JMRC, will coordinate with the Archeology Department to designate an on-site representative during the</p>	<p>Yes.</p> <p>GPR survey was conducted in April 2015 and the report was submitted and uploaded on JMRC website</p> <p><a href="https://www.jaipurmetrorail.in/pdf/2015.04.16%20GPR%20Recieved%20from%20CEC.pdf">https://www.jaipurmetrorail.in/pdf/2015.04.16%20GPR%20Recieved%20from%20CEC.pdf</a></p> <p>JMRC coordinated closely with Archeology Department for excavation work.</p>		



SN	Activity	Mitigation measures	Compliance attained (Yes, No, Partial)	Comment/Reasons for Partial or Non-Compliance	Issues for further action and target dates
		entire duration of the project.			
PC5	Briefing on working near heritage resource to avoid damages to heritage resources and avoid cultural conflicts	<p>All workers will undergo a briefing with the Archeology Department to ensure safeguarding of heritage resource and cultural/religious practices.</p> <p>A proof of compliance to this requirement to include the name of participants and date and location of briefing will form part of the monthly report to the CSC.</p>	<p>Yes.</p> <p>Briefing has been carried out by the Archaeological Consultant namely Mr. R.D. Singh, Dr. S.K. Sharma and Mr. P.K. Jain engaged by JMRC on regular basis.</p>		
		<b>CONSTRUCTION STAGE</b>			
C1.0	Avoid damage to the following heritage resources during tunnel boring namely Chandpole Gate, IsarLat, Jantar Mantar, Hawa Mahal, Chhoti Chaupar, and Badi Chaupar.	No heritage resources are inadvertently damaged during construction.	<p>Yes.</p> <p>No heritage resources have been damaged at all during construction.</p>	Complying through instrumentation and online monitoring of structures of historic importance.	
C1.1	To avoid ground settlement under the Chandpole Gate during tunnel boring	<p>The contractor will ensure that no inadvertent damage is incurred to the Chandpole gate.</p> <p>Estimated settlement under the Chandpole gate is less than 5mm. The</p>	<p>Yes. Complied</p> <p>➤ Underpassing scheme prepared by M/s Omikron Kappa, of Greece, structural consultant of M/s CEC has been proof checked by M/s Ayasa of Spain.</p> <p>➤ Structural consultant of Heritage consultant has also given his comments on the underpassing scheme of M/s CEC.</p>		

SN	Activity	Mitigation measures	Compliance attained (Yes, No, Partial)	Comment/Reasons for Partial or Non-Compliance	Issues for further action and target dates
		<p>contractor will ensure that the design value is not exceeded and the trigger value = 4 mm and Alarm value = 5 millimeters are implemented.</p> <p>Tilt meters will be installed at key positions on the gate to ensure the 2/1000 design value is observed with trigger and allowable values of 1.4/1000 and 1.7/1000, respectively</p> <p>Crack meters will be installed at key positions to ensure design value of 3.0mm is not exceeded with 3 mm trigger value and 5 mm alarm value</p> <p>The contractor will immediately cease all operation if any of the trigger values are breached. The CSC will advise the contractor mitigation measures and practices to control settlement, tilt, and cracks to include but not limited to structural reinforcement and operation parameters of the TBM.</p> <p>The contractor will ensure that no structural damage is incurred and cosmetic damages are repaired under the</p>	<p>➤ Underpassing scheme of Chandpole gate has also been proof checked by IIT Delhi.</p> <p>➤ Work has been done as per approved method statement &amp; GCC</p> <p>➤ Settlement at Chandpole gate was found to be -3mm, which is less than 3.5mm</p> <p>Monitoring Results for all Geotechnical instruments installed during the passing of TBMs under Chandpole gate were within the design limits. The maximum observed settlements under Chandpole gate was -3 mm.</p>		

SN	Activity	Mitigation measures	Compliance attained (Yes, No, Partial)	Comment/Reasons for Partial or Non-Compliance	Issues for further action and target dates
		supervision and control of the Jaipur Archeology Department.			
C1.2	To avoid cosmetic and structural damages to the structures along the underground metro alignment along Chandpole Bazar and Tripola Bazar due to vibration from the tunnel boring machine	Expected vibration at the Chandpole Gate during tunneling is 0.682 mm/s which is lower than internationally accepted 5mm/s. However, to be on the safe side and as practiced in DMRC, the Contractor is to ensure that vibration levels at the Chandpole Gate foundation will not exceed.	Complied.  The observed vibration levels at the Chandpole Gate foundation during the passing of TBMs were within the trigger limit.		
C1.3	To minimize surface noise from excavating equipment in Chhoti and Badi Chaupar and avoid disturbance to patients in the Pink City Hospital near Chandpole, Chaudhary Hospital, Maharaja School at the corner of ChhotiChaupar . To avoid damage and	The contractor will ensure that noise from construction activities does not result to exceedances of relevant limits prescribed in the Indian Ambient Air Quality Standards for Commercial Area and Silence Zone. Mitigation measures to be implemented by the Contractors are: 1) liaise with local residents on how to best minimize construction noise along the Chhoti and BadiChaupars. 2) local residents and shop owners should	Yes,  Only newly manufactured equipment & regular servicing of equipment is being used in construction.  Noise monitoring is being done and necessary mitigation measures are taken as required.		

SN	Activity	Mitigation measures	Compliance attained (Yes, No, Partial)	Comment/Reasons for Partial or Non-Compliance	Issues for further action and target dates
	nuisance to JantarMantar, and HawaMahal.	<p>be informed of the nature and duration of intended activities prior to commencement and kept updated as to changes in the management and mitigation plan</p> <p>3) equipment compounds will be located off-site</p> <p>4) noise barriers will be installed at critical work areas particularly around the Chaupars</p> <p>5) enclose especially noisy activities if above the noise limits</p> <p>6) employ transportable noise screens between noise sources and identified noise sensitive areas for the duration of noisy construction activities</p> <p>7) maximize the possibility of scheduling noisy activities at the same time to minimize the duration of exposure</p> <p>Noise from vehicles particularly for hauling of excavated materials to</p>			

SN	Activity	Mitigation measures	Compliance attained (Yes, No, Partial)	Comment/Reasons for Partial or Non-Compliance	Issues for further action and target dates
		the dump site will be controlled through strict adherence to operating and maintenance instructions, routing of heavy vehicles way from noise sensitive areas whenever possible, conform with speed limits, and construction vehicles will only use routes specified in the traffic management plan.			
C1.4	To ensure careful demolition and proper restoration of Chhoti and Badi Chaupars	The project calls for the demolition of the Chhoti and Badi Chaupar and its restoration to its original condition as a requirement from Jaipur Development Authority. The demolition and restoration will be under the supervision and control of these agencies.	Yes, <ul style="list-style-type: none"> <li>➤ JMRC through competitive bidding has engaged heritage consultant M/s Abha Narain Lambah Associates and M/s Shashank Mehendale &amp; Associates (JV) to monitor the heritage structures lying along the metro route of Phase 1B.</li> <li>➤ JMRC had also engaged 3 senior Archaeology Consultants to supervise the excavation of Chhoti chaupar and Badi chaupar.</li> <li>➤ The work was done as per approved method statement. Also the work will be done under the supervision of said agencies.</li> </ul>		
C1.4.1	To address Chance heritage finds during the cut and fill operations	Please refer to FIDIC Sec. 4.24 Fossils. Recording (including chain of custody) will be made by the contractor to be validated by the CSC, and expert verification will be made by the Jaipur Archeology Department. Temporary	Yes,  During the excavation of Chhoti Chaupar and Badi Chaupar, ancient water tanks and Gomukhs were discovered. These were extracted and handed over to Archeological & Museum Dept., Government of Rajasthan. The Project station design was adjusted to accommodate the re-instatement of the water tank in Choti Chaupad. The project		

SN	Activity	Mitigation measures	Compliance attained (Yes, No, Partial)	Comment/Reasons for Partial or Non-Compliance	Issues for further action and target dates
		work stoppage in the immediate area of the chance find for up to 72 hours to allow for the on-site representative of Archeology Department to visit the site to make an assessment and provide instructions. Work in the areas adjacent to the chance find will continue as provided in the detailed design.	scope and timeline as a whole was adjusted to allow careful dismantling and protection of the ancient tanks and accommodate the additional works in relation to reinstating the tanks and gomukh.		
C2	To avoid the following issues from spoil disposal activities: generation of sediment laden runoff from the work site during monsoon; Contamination of disposal sites from construction debris; Community hazard of uncollected and improperly disposed materials.	<p>A spoil management plan will be implemented that details the location of spoil disposal sites, transporting soil, and disposing of soil. The Contractor will perform the following:</p> <ol style="list-style-type: none"> <li>1) disposed spoils on permitted sites as instructed by the JMRC</li> <li>2) ensure the adequacy of the disposal site to handle the volume of spoils that will be generated</li> <li>3) Prepare, submit and seek approval from the CSC a spoil dump plan that provides the: i) dump size, layout, and form, ii) means of</li> </ol>	<p>Yes,</p> <p>Are being disposed in the approved area only.</p> <p>All other conditions are also being fulfilled.</p>		

SN	Activity	Mitigation measures	Compliance attained (Yes, No, Partial)	Comment/Reasons for Partial or Non-Compliance	Issues for further action and target dates
		<p>controlling water and wind erosion, iii) measures to prevent spoil dump contamination, vehicular, and public access.</p> <p>4) Explore the possibility of using spoil materials to rehabilitate borrow pits</p> <p>5) All hauling vehicles should be maintained at an acceptable working order and serviced regularly</p> <p>6) Haul vehicles should be routed away from noise sensitive areas</p> <p>7) Speed limit in built up areas is 40 km/h</p> <p>8) All haul vehicles should be covered or soil sprayed with water before leaving the site specially during windy conditions</p> <p>9) Spoil dumps shall have slopes no steeper than 1V:2.5H</p> <p>10) Final shaping, topsoiling, and immediate revegetation</p> <p>11) No vehicles are to be allowed to enter in</p>			

SN	Activity	Mitigation measures	Compliance attained (Yes, No, Partial)	Comment/Reasons for Partial or Non-Compliance	Issues for further action and target dates
		revegetated spoils dump			
C3	To avoid depletion of groundwater and competition with existing groundwater users due groundwater Extraction for the construction works	<p>The Contractor shall secure permission for groundwater extraction from CGWA/pertinent groundwater authorities before establishing borewells.</p> <p>Water conservation and recycling will be observed in all aspects of construction to include water main breaks, watering roads for dust control, spraying concrete, equipment cleaning and site clean-up.</p>	Partial.	Cosntructionwater demand is met from water tankers supplied by private agencies.	
C4	To avoid nuisance from temporary damage or shifting in utilities particularly buried water pipes and electrical lines and disruption of essential services	<p>The Contractor will ensure that the public will be minimally affected when constructing in close proximity to essential services through:</p> <p>1) coordinate and secure necessary permits for utility shifting with the Jaipur Development Authority and other service utility agencies to locate all services prior to construction in any particular area</p>	<p>Yes,</p> <p>Care is taken to avoid inconvenience to uses by shifting as per instruction of concerned authorities.</p>		



SN	Activity	Mitigation measures	Compliance attained (Yes, No, Partial)	Comment/Reasons for Partial or Non-Compliance	Issues for further action and target dates
		<p>2) inform residents of planned interruptions through local media, fliers, and public address system</p> <p>3) all planned interruptions schedules will be submitted to the safeguards cell JMRC no later than 10 working days before the interruption</p> <p>4) all affected landowners, tenants, institutions, and businesses to be notified in writing prior to commencement and kept updated on changes of schedule</p> <p>5) in the event of unforeseen disruptions, the contractor will take all reasonable actions to have the service promptly restored</p> <p>6) relevant utility agencies will be informed of the construction proximity to essential service line and be kept on standby in the event of</p>			

SN	Activity	Mitigation measures	Compliance attained (Yes, No, Partial)	Comment/Reasons for Partial or Non-Compliance	Issues for further action and target dates
C5	To address occupational health and safety issues of the construction workers and local community	unforeseen disruption			
		All unplanned interruption will be immediately reported to the safeguards cell within 24 hour through an incident report. The contractor will comply with the occupational health and safety requirements as provided in SHE.	Yes		
C6	Implementation of Cleanup Operations and Restoration and Rehabilitation	Contractor shall prepare site restoration plans, which shall be subject for review and approval by the CSC, JMRC Safeguard Cell, Jaipur Development Authority and the Archeology Department to ensure consistency with zoning and town plans. The clean-up and restoration operations are to be implemented by the Contractor prior to demobilization. All spaces excavated and not occupied by the foundation or other permanent works shall be refilled with earth up to surface of surrounding ground.	Not yet due.		

#### IV. SUMMARY OF ENVIRONMENTAL MONITORING

##### A Summary of Inspection Activities:

13. A total of 13 SHE Walk inspections were conducted by the CSC-ES during the reporting period. Further details on the inspections carried out and key findings are provided in Table 6.

**Table 6: Field Inspections carried out during reporting period**

Date of Inspection	Location	Participants	Key Findings
04/01/2019	Badi Chouper	26	Safety & Environment
11/01/2019	Chhoti Chaupar	31	Safety & Environment
18/01/2019	Badi Chouper	26	Safety & Environment
25/01/2019	Chhoti Chaupar	23	Safety & Environment
01/02/2019	Badi Chouper	21	Safety & Environment
08/02/2019	Chhoti Chaupar	17	Safety & Environment
16/02/2019	Badi Chaupar	23	Safety & Environment
22/02/2019	Chhoti Chouper	25	Safety & Environment
01/03/2019	Badi Chouper	21	Safety & Environment
08/03/2019	Chhoti Chaupar	19	Safety & Environment
16/03/2019	Badi Chaupar	19	Safety & Environment
29/03/2019	Chhoti Chouper	22	Safety & Environment

Note: Sample copy of SHE Walk attached with Appendix 2.

##### B Monitoring of Cracks, Settlements of Structures

14. The entire area where the stations as well as the tunnels underpasses fall under heritage structures. In order to observe the conditions and behaviors of the structures during the operations, monitoring is being done through instrumentations. Since there was no tunneling during the reporting period instrumentation monitoring was not carried out.

##### C Vibration Monitoring:

15. Since there was no tunneling during the reporting period vibration monitoring was not carried out.

##### D Noise Monitoring

16. Noise level survey was conducted by third party M/s. IDMA Laboratories Ltd. at all project sites for day and night shifts viz Bhankrota, Chandpole launching shaft Area, Pink City Hospital, Chhoti Chaupar, Maharaja school, Chaudhry Hospital, Krishna temple, Hawa Mahal, and Jantar Mantar for day and night shifts.

17. It has been observed from the results that noise level exceedance was recorded with respect to national standard at all sites except at casting yard for both daytime and night and Chandpole for night time. However, the value recorded at Chandpole is more than the permissible

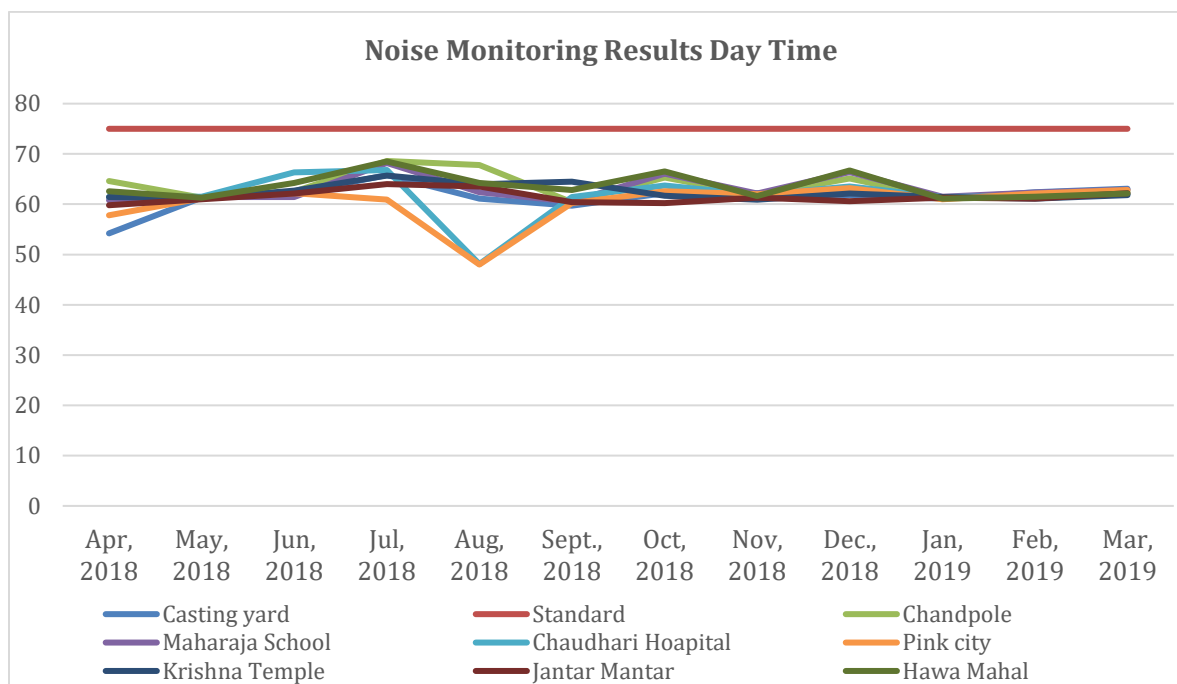
national levels but less than the baseline value. Except Chandpole and Bhankarota (casting yard) all other areas are classified as silencezone. However, these locations are located very near to road with heavy moving traffic both during day time and night time, the results are summarized in Table 7 and 8 and graphical representation of results is also given below. Sample monitoring report is provided in Appendix 4.

**Table 7: Noise Monitoring Results (Day time)**

Location	Distance from nearest metro construction site	Category of Area/Zone	National Standard (Day time)Leq dB(A)	Baseline value (Day time)Leq dB(A)	Noise levels (Day time) Leq dB(A)		
					Jan	Feb	Mar
Casting Yard (Bhankarota)	0	Industrial	75	NA	61.1	62.4	63.1
Chandpole	0	Commercial	65	74.2 <sup>#</sup>	61.2	61.7	62.5
Maharaja School	Approx 50 m	Silence	50	NA	61.5	62.3	62.9
Chaudhry Hospital	Approx 400m	Silence	50	NA	61.4	61.7	62.0
Pink City Hospital	Approx 250 m	Silence	50	NA	61.0	62.1	62.8
Krishna Temple	Approx 300 m	Silence	50	NA	61.4	61.1	61.8
Jantar Mantar	Approx 300 m	Silence	50	NA	61.3	61.1	62.2
Hawa Mahal	Approx 100 m	Silence	50	NA	61.1	61.5	62.1

NA – Not Available.

# - As per baseline line data given in the EIA.

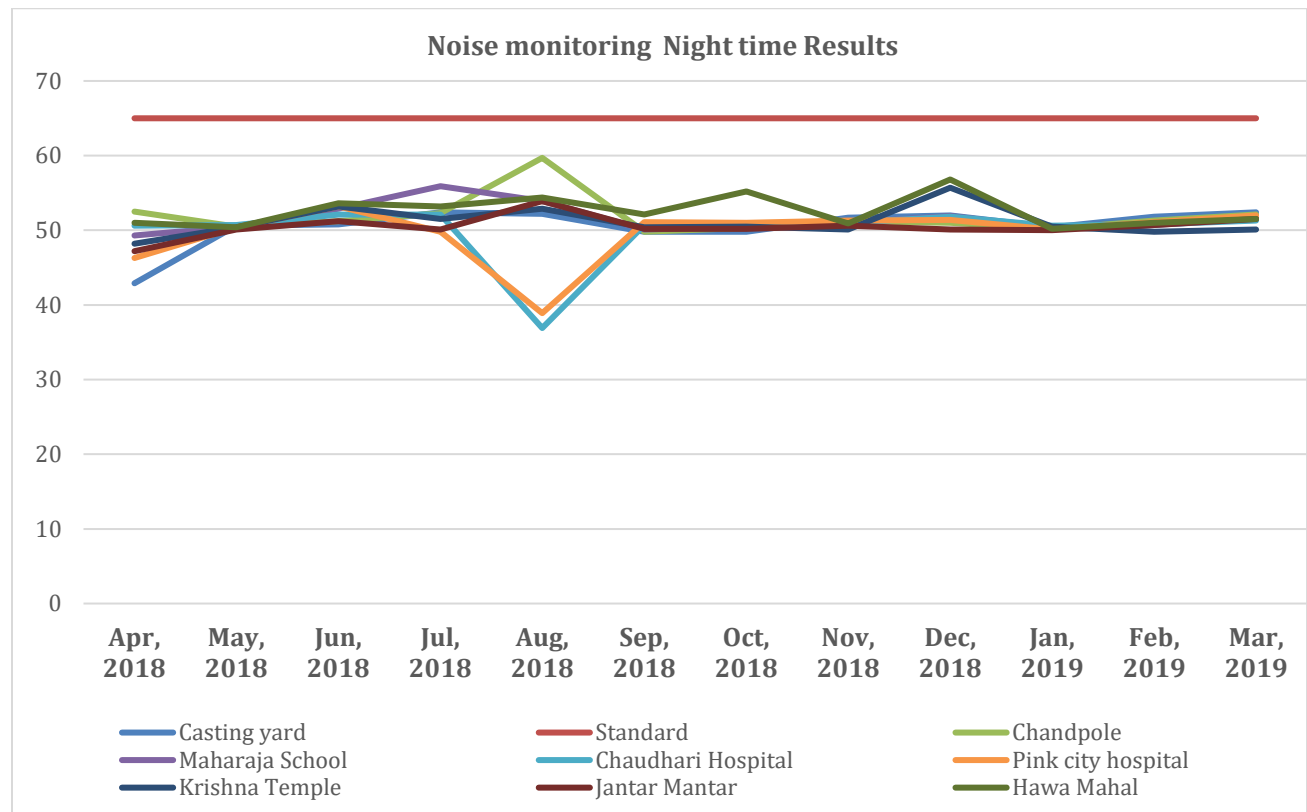


**Table 8: Noise Monitoring Results (Night time)**

Location	Distance from nearest metro construction site	Category of Area/Zone	National Standard (Night time) Leq dB(A)	Baseline value (Night time) Leq dB(A)	Noise levels (Night time) Leq dB(A)		
					Jan	Feb	Mar
Casting Yard (Bhankarota)	0	Industrial	70	NA	50.4	51.8	52.4
Chandpole	0	Commercial	55	66#	50.2	51.3	52.1
Maharaja School	Approx 50 m	Silence	40	NA	50.3	50.7	51.6
Chaudhry Hospital	Approx 400m	Silence	40	NA	50.6	50.8	51.3
Pink City Hospital	Approx 250 m	Silence	40	NA	50.1	51.1	52.0
Krishna Temple	Approx 300 m	Silence	40	NA	50.5	49.8	50.1
Jantar Mantar	Approx 300 m	Silence	40	NA	50.0	50.7	51.5
Hawa Mahal	Approx 100 m	Silence	40	NA	50.2	51.0	51.5

NA – Not Available.

# - As per baseline line data given in the EIA.



## E Air Quality

18. The ambient status of five major air pollutants PM<sub>10</sub>, Sulphur Dioxide (SO<sub>2</sub>), Oxides of Nitrogen (NO<sub>x</sub>) and Carbon Monoxide (CO) representing the quality of pollution level have been assessed by monitoring air quality at four locations viz. Casting Yard, Chandpole launching shaft, Chhoti Chaupar and Badi Chaupar. The air quality monitoring results indicate that PM<sub>10</sub> concentration exceeds the limits specified by CPCB for all sites but the monitored values are less than the baseline value.

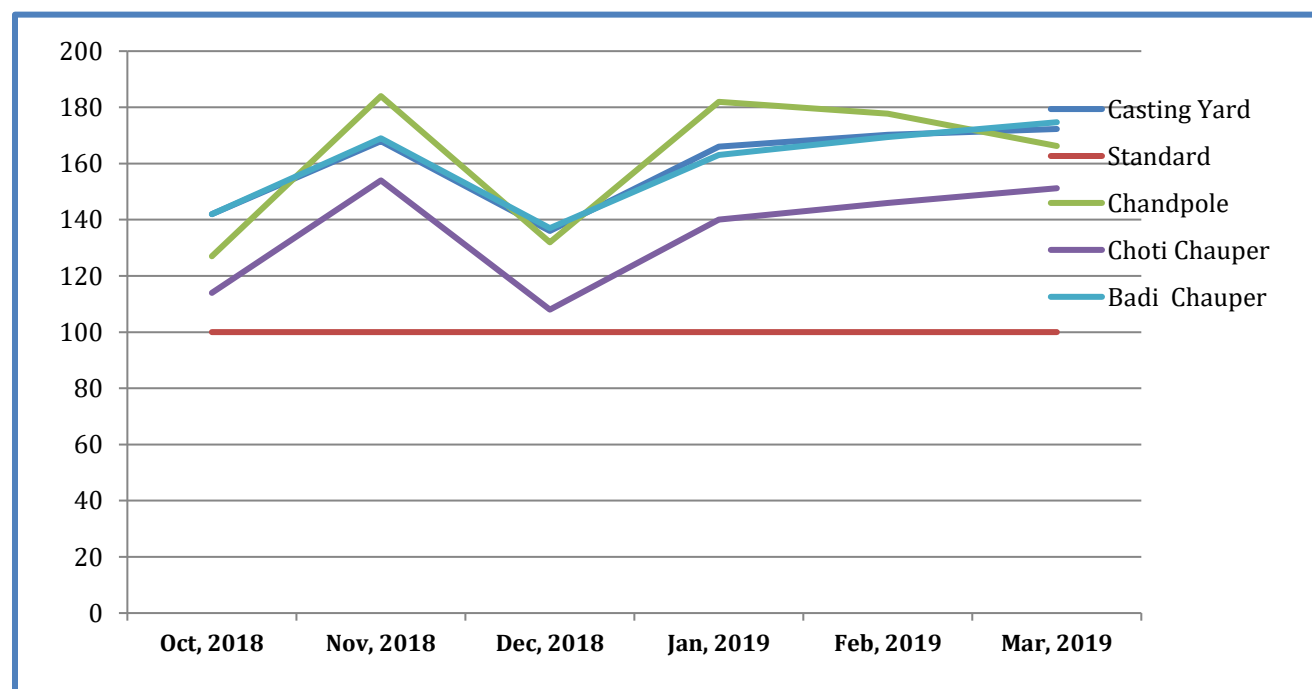
19. Air monitoring was carried out from January 2019. Test results are summarized in Table 9. Sample monitoring reports are given in **Appendix 4**.

**Table 9: Air Quality Monitoring Results**

Location	NAAQS PM <sub>10</sub> (Unit µg/m <sup>3</sup> )	Baseline data PM <sub>10</sub> (Unit µg/m <sup>3</sup> )	PM <sub>10</sub> Monitoring results (Unit µg/m <sup>3</sup> )		
			Jan	Feb	Mar
Casting Yard	100	Not available <sup>#</sup>	166	170.2	172.3
Chandpole	100	180*	182	177.8	166.2
Chhoti Chaupar	100		140	146	151.2
Badi Chaupar	100		163	169.4	174.7

\*As per Rajasthan Pollution Control Board (RSPCB) 2012 air quality monitoring data reported in the EIA for Chandpole. The same has been considered as baseline data for Chhoti Chaupar and Badi Chaupar since both locations are within the air shed area of Chandpole.

# Baseline data for Casting Yard (Bhankarota) is not available



20. **Air Pollution Control:** The mitigation measures, which have adopted to reduce the air pollution, are: all transportation of construction materials should be covered manner. To minimize

dust emission due to disposal of muck, handling of aggregate and cement at site, there are sprinkling of water on the internal roads. Vehicle speed restriction of 5-10 km/hrs have been followed at site, tyre washing facility have been provided for cleaning of vehicles/tyres at Chandpole exit gate.

## **F Water Quality**

21. Water samples were collected from nearby bore wells during March, 2019 to check the quality of the water. Quarterly water analysis results are compared with IS 10500:2012 and found within permissible limited. Results are summarized in Table 10 and monitoring reports are provided in **Appendix 4**.

**Table 10: Water Quality Monitoring Results**

<b>Sr. No</b>	<b>Parameters</b>	<b>Units</b>	<b>Results</b>
<b>Sample Identification</b>			<b>Choti choupar</b>
1.	pH(at 25 °C)	-	7.36
2.	Turbidity	NTU	<1.0
3.	Conductivity	µs/cm	914
4.	Total Dissolved Solids	mg/L	596
5.	Total Suspended Solids	mg/L	<10
6.	Oil and Grease	mg/L	<2.5
7.	Dissolve Oxygen	mg/L	6.9
8.	E. Coli	Per 100 ml	<1.8

## **V. SOCIAL AND RESETTLEMENT IMPACTS**

### **A Impacts on Structures**

#### **1. A.Shifting of Temples**

22. When the work of Phase 1B started it was found that 6 temples fell within the station box area of Chhoti Chaupar and Badi Chaupar where digging is necessary for construction of stations, required immediate relocation. Three of these temples were at Chhoti Chaupar and another three at Badi Chaupar. Seven more were identified as implementation progressed.

23. As per the decision taken by High Power Committee chaired by Chief Secretary GoR, an office order was issued on 16.10.2014, that GAD land at Tripolia Bazar i.e. TanwarJikaNauhra (around 200 mt from Chhoti Chaupar) which has two courtyards measuring 542 m<sup>2</sup> and 645 m<sup>2</sup> respectively be handed over to Jaipur Metro Rail Corporation for relocation of 6 temples and development of Two Wheeler Parking, respectively.

24. All matters related to compensation and relocation of temples at Chhoti & Badi Chaupar are being dealt with at the level of Collector, Jaipur.

25. Government is continuously in touch with the stakeholders and is in process of ensuring that sentiments of people at large are not hurt. Rozgareshwar Temple at Chhoti Chaupar will be relocated back to its original position after completion of Station work at Chhoti Chaupar.

26. The current status of shifting of temples of Chhoti Chaupar and Badi Chaupar is as under:

Chhoti Chaupar Temple Shifting Status				
Temple No.	Temple Name	Existing Area	Earlier Decision over shifting	Present Decision
1	Kashta Haran Mahadev, Towards Kishanpole Bazar	4.389 sqmt	Shifted to Old Atish Market/ 6.25 sqmt (2.5 x 2.5 mt) on 11.06.15	4 temples out of remaining 5 temples to be shifted back to Choti Chaupar Khanda after completion of Chhoti Chaupar Station work. Provision made in plan (Size 1.8 m x 1.8 mt)
2	Kanwal Sahab Hanuman Mandir, near Chhoti Chaupar	4.246 sqmt	Shifted to Old Atish Market/ 6.25 sqmt (2.5 x 2.5 mt) on 19.05.15	
3	Rojgareshwar Mandir, On median towards Tripolia Side	32.448 sqmt	Old Atish Market 32.448 sqmt (4.16 x 7.8 mt), shifted on 11.06.2015	To be shifted over platform measuring 2.6 m x 7 mt at Chhoti Chaupar after completion of civil work (Oct 17-Mar 18)
4	Barah Ling Mahadev (Gulabi Rang), NE Khanda	9.415 sqmt	Shifted to Old Atish Market/ 6.25 sqmt (2.5 x 2.5 mt) on 19.05.15	4 temples out of remaining 5 temples to be shifted back to Chhoti Chaupar Khanda after completion of Chhoti Chaupar Station work. Provision made in plan (Size 1.8 m x 1.8 mt)
5	Rameshwar Mahadev (White marble), NE Khanda	7.076 sqmt	Shifted to Old Atish Market/ 6.25 sqmt (2.5 x 2.5 mt) on 19.05.15	
6	Bajrangbali Mandir (Pyayu), NW Khanda	23.277 sqmt	Old Atish Market/ 23.277 sqmt (6.1 x 3.82 mt), shifted on 19.05.2015	

Badi Chaupar Temple Shifting status				
Temple	Temple Name	Existing Area	Present decision	As per earlier decision
1	Shiv Mandir, ShGaurishankarji, On Median towards Chhoti Chaupar	2.747	Temporary shifted to Land behind Manak Chowk Thana on 09.06.16 Permanently to median at Badi Chaupar	6.25 sqmt (2.5 x 2.5 mt) at TanwarJiKaNauhra
2	Dhruvmukhi Mahaveer Hanuman Mandir, NW Khanda	3.781	Shifted to temple behind Manak Chowk on 29 <sup>th</sup> /30 <sup>th</sup> June 2017	45 sqmt (Plot No. A363) at Ramnagariya
3	Ganesh ji Shivalay Mandir, SE Khanda	3.132	Temporary shifted to Land behind Manak Chowk Thana on 15 <sup>th</sup> /16 <sup>th</sup> Feb 2017. Permanently to Khanda at Badi Chaupar khanda (1.8 x 1.8 mt)	45 sqmt (Plot No. 229) At Rajarampura
4	Peepleshwar Mahadev, Hanumanji, Ganesh mandir- SW Khanda	8.02	Shifted to TanwarJiKaNauhra 14.07.2016	8.00 sqmt (3.2 x 2.5 mt) at TanwarJiKaNauhra
5	Mahadev ji, Mataji, Hanuman Mandir- SE Khanda	39.97	Shifted to TanwarJiKaNauhra on 15 <sup>th</sup> /16 <sup>th</sup> Feb 2017	40.0 sqmt (6.325 x 6.325 mt) at TanwarJiKaNauhra



6	Mahadev Mandir, Outside Police thana- NE Khanda (ShriJamneshwar Mahadev Trust)	5.096	shifted to temple behind Manak Chowk on 29 <sup>th</sup> /30 <sup>th</sup> June 2017	Combined Plot (Plot A434) Qmt At RamnagariyaYojana
7	Mahadev/Hanuman Mandir, Outside Police thana- NE Khanda (ShriAmneshwar Mahadev Trust)	4.899		
8.	Shifting/Relocation of Ladeshwar Hanuman Temple for approach road of Ancillary Building at Badi Chaupar		Idols shifted in Om shivalay temple on 06.05.2018.	
9	Shifting/Removal of staircase and Dwarpal at South-East Khanda Badi Chaupr for Entry/Exit work		28.01.2019	

## B Land Acquisition and Resettlement

27. For the purpose of easing the traffic diversion near Sanjay Circle, Chandpole, JMRC has processed for acquisition of 3 shops located at Sansar Chand Road. Details are given below:

SN	Shop Detail	Name of Shop Owner	Name of Shopkeeper	Area (sq.m)
1	Shekhawat Rajput Dhaba (Part of Shop No. 12)	Mohd. Salim, S/o Yaseen Khan	MukutBihari, Satynarayan, S/o BanshilalMehra	7.49
2	Bharat Cold Drink (Part of Shop No. 12)			3.90
3	Shiv Pan Bhandar (Part of Shop No. 12)		BihariLal NandlalSaini S/o	1.30
4	DCB ATM	Smt. MamtaKanwar W/o Sohan Singh Shekhawat	DCB Bank	5.46



28. Considering the time required for land acquisition process as per new Land Acquisition Act of GOI, it was agreed and decided by JMRC (in consultation and discussion with shop owners) to undergo a mutual agreement with shop and land owners and tenants to provide land for land and rebuild the shops in the land owned by JMRC on the other side of the road near

Chandpole station (Near Church land). Besides resettling shops, JMRC also agreed to provide assistance in building the civil structure.

29. The new shops were built by JMRC on its land near the church on the other side of the Chandpole station. The shops are currently functioning in routine basis. The details are as under: owners have given their consent to the proposal. JMRC is in the process of getting written consents from shop owners and shifting will be done in consultations with shop owners before start of work near these shops.

S. NO.	Name of Shops	Owner/Interested Person	Name of the Tenant	Area of the Land to be Acquired in sqm.	Land Allotted in lieu of Land at Chandpole Metro Station in sqm.	
					Name of Owner	Area sqm.
1	ShekhawatRajpootDhaba Part of Shop No. 12 (Agreement on 16.06.15)/ (Compensation paid INR 71581/- in total of shops till Sno. 3)	Mohammad Saleem S/o Yaseen Khan Plot No. 206, Near Badi Masjid, Jalupura, Jaipur	MukutBehari, Satyanarayan S/o BanshilalMehra, 105-A, RanaPratap Nagar, Jhotwada, Jaipur	7.49	Mohammad. Saleem S/o Yaseen Khan	11.39
2	Bharat Cold Drinks Part of Shop No. 12 (Agreement on 16.06.15)	Mo. Saleem S/o Yaseen Khan Plot No. 206, Near Badi Masjid, Jalupura, Jaipur	MukutBehari, Satyanarayan S/o BanshilalMehra, 105-A, RanaPratap Nagar, Jhotwada, Jaipur	3.90		
				11.39		
3	Shiv Pan Bhandar Part of Shop No. 12 (Agreement on 16.06.15)	Mo. Saleem S/o Yaseen Khan Plot No. 206, Near Badi Masjid, Jalupura, Jaipur	Beharilal S/o NandlalSaini, 1468, Bagruwalonka Rasta, Chandpole, Jaipur	1.30	Mohammad. Saleem S/o Yaseen Khan	1.30
4	DCB ATM Part of Shop No. 12 (Agreement on 23.06.15)/ (Compensation paid NIL As per Court Order ADJ no. 8 )	Smt. MamtaKanwar W/o Sohan Singh &Sohan Singh S/o Mal Singh Shekhawat, 1-A129, Shiv Shakti Colony, Shastri Nagar, Jaipur	DCB Bank ATM on rent	5.46	Smt. MamtaKanwar W/o Sohan Singh &Sohan Singh S/o Mal Singh Shekhawat	5.46
Total				18.15		18.15



## VI. PUBLIC CONSULTATIONS AND ADDRESSING OF GRIEVANCES

### A Public Consultations carried out

30. Consultations are being held regularly with the local people in the project area including relevant government agencies, the business associations in the project area are such as the Chandpole Bazaar VyaparMandal and Tripolia Bazaar VyaparMandal.

31. JMRC has taken all possible measures to ensure that following concerns are regularly addressed:

- a) Heritage character of Jaipur
- b) Traffic diversion during construction
- c) Inclusion of all key stakeholders

32. During the period of this report (January 2019–March 2019) following consultations were held:

**Table 11: Consultations held during the reporting period**

Date	Venue	Participants	Detail of discussion held
10.01.2019	Badi chauper	BadichauparVyapaarMandal	Issue related to Temporary pipe diversion towards Ramganj side at Badi Chaupar
27.01.2019	Badi Chaupar	BadichauparVyapaarMandal	Issue related to staircase removal at SE Khanda at Badi Chaupar for entry/exit work
12.03.2019	Choti Chaupar	ChotichauparVyapaarMandal	Issue related to Smart city work at chotti Chaupar.

### B Complaints and Requests Received

33. During the period of reporting (January 2019–March 2019), no written grievances and requests application was received from the local people in the project area. Although minor complaints like provision for more lighting in the area, removal/shifting of barricading etc. were raised by the general public.

## VII. UNANTICIPATED SAFEGUARD ISSUES

34. During the reporting period from January 2019 – March 2019, no such anticipated safeguard issues were come across.

## VIII. CONCLUSION

### A Summarize the overall Progress of Implementation of safeguard Measures<sup>4</sup>

35. The implementation environmental and social safeguard measures in this project show a highly satisfactory level. Overall compliance status of items defined in EMP is summarized in Table 13.

**Table 12: EMP Compliance Status**

Sl. No	Clause/Description	Compliance Status 01.10.2018 – 31.12.2018			
		FC	PC	NC	NA
<b>1.</b>	<b>Pre-construction stage</b>				
a.	HSO and Environmental officer	1			
b.	CSC Environment Expert	1			
c.	EMP documentation	1			
d.	GPR study & Baseline survey of heritage structures	1			
<b>2.</b>	<b>Construction stage – General</b>				
a.	Traffic management	1			
b.	Safe guarding of heritage structures	1			
c.	Minimum public disturbance		1		
d.	Utility diversion	1			
e.	Safe keeping of heritage findings	1			
<b>3.</b>	<b>Construction stage – Legal requirement</b>				
a.	CTE & CTO for batching plant & casting yard	1			
b.	Permission for extraction of ground water				1
c.	Authorization for storage of hazardous materials				1
d.	Permission for tunnelling	1			
e.	Emission compliance of vehicles	1			
f.	Permission for felling tress	1			
<b>4.</b>	<b>Construction stage – Monitoring</b>				

<sup>4</sup>Overall sector environmental management progress could be described in qualitative terms or be evaluated based on a ranking system, such as the following:

1. Very Good
2. Good
3. Fair
4. Poor
5. Very Poor

Additional explanatory comments should be provided as necessary.

a.	Air & Noise monitoring	1			
b.	Instrumentation monitoring				1
<b>5.</b>	<b>Construction stage – Environment protection</b>				
a.	Tree cutting and transplantation	1			
b.	Air pollution		1		
c.	Noise pollution		1		
d.	Waste management	1			
e.	Soil/muck disposal	1			
f.	Landscape & Site aesthetics		1		
<b>6.</b>	<b>Construction stage – Health &amp; Safety</b>				
a.	Site Safety	1			
b.	Labour camp condition	1			
c.	Vector borne diseases	1			
d.	SHE reports	1			
<b>Score</b>		<b>20</b>	<b>4</b>	<b>0</b>	<b>4</b>
<b>Percentage compliance</b>		<b>72%</b>	<b>14%</b>	<b>0%</b>	<b>14%</b>

FC – Full Compliance  
PC – Partial Compliance  
NC – No Compliance  
NA – Not Applicable

## **B Problems Identified and Actions Recommended**

36. During the previous reporting period (October 2018 – December 2018), some of the issues were identified such as follow-up with regulatory / government agencies to get pending approvals/permits and full time environmental specialist by the CSC. However, these issues are still pending.

37. Finally, field observations and investigations was able to establish that most of the environmental requirements are being complied according to regulations.

## **APPENDICES**

1. Photo log
2. Record of SHE Training
3. Sample format of Monthly SHE report
4. Environment Quality Monitoring Report
5. Monthly Report of Heritage Consultant
6. Consent to Operate letter from State Pollution Control Board
7. Muck disposal site photographs and details
8. Tree transplantation details
9. Permission letter from ADM for tree transplantation

**Appendix 1:Photo log of Progress****Actual Photographs of Site from different locations****View of Chhoti Chouper platform level****View of Chhoti chouper Track level****View of Badi Chouper platform level****View of Badi chouper Track level**





**View of Track, Traction line and Utilities in the Up line track towards Chhoti chouper**



**View of Track, Traction line and Utilities in the Down line track towards Chhoti chouper**



**Focussed training on Height work /Use of Harness belt at work place**



**Labour camp at casting yard**





**Occupational Health/First Aid training and special training conducted on Road Safety****Monthly Mass Tool Box Talk and Incentives/ Awards to workers at site**

**Breath analysis during night shift  
at Choti chouper station**

**Noise monitoring at Badi choupar station**



**Illumination testing**



**Barricades boards cleaning**



**Frequent pest control at site**



**Cleaning & brooming at public traffic road**

### Appendix 2:Record of SHE Trainings

#### 1. Details of SHE training conducted in the month of January 2019 – March 2019

##### Month of January, 2019 Trainings:

SN.	DATE	LOCATION	TOPIC	No. of person	REMARKS
.	02/01/2019	Casting yard	Behavior base safety Management	21	
2.	03/01/2019	Casting yard	Heavy Lifting Operation	13	
3.	05/01/2019	Casting yard	Power actuated hand tools	33	
4.	07/01/2019	Casting yard	Waste Management	20	
5.	09/01/2019	Casting yard	Fire Fighting	23	
6.	11/01/2019	Casting yard	SHE Communication	16	
7.	14/01/2019	Casting yard	Electrical and Mechanical Inspection	25	
8.	16/01/2019	Casting yard	Safe Use of Power tools	24	
9.	18/01/2019	Casting yard	Roofing Work	20	
10.	19/01/2019	Casting yard	Rigging & Crane Inspection	18	
11.	24/01/2019	Casting yard	Permit to Work	15	
12.	28/01/2019	Casting yard	First aid and CPR	20	
13.	30/01/2019	Casting yard	Waste Management System	18	
14.	03/01/2019	Chandpole	Work at height	7	
15.	10/01/2019	Chandpole	Fire Safety	7	
16.	17/01/2019	Chandpole	Use of Full Body Harness	9	
17.	17/01/2019	Chandpole	First Aid	6	
18.	27/01/2019	Chandpole	Waste Management	13	
19.	03/01/2019	Choti Chouper	Electrical Safety	7	
20.	03/01/2019	Choti Chouper	Fire Safety	31	
21.	05/01/2019	Choti Chouper	Bar Banding and Cutting Machine Safety.	20	
22.	09/01/2019	Choti Chouper	Traffic Safety	20	
23.	09/01/2019	Choti Chouper	Permit to Work	17	
24.	12/01/2019	Choti Chouper	Scaffolding(Erection and Inspection)	16	
25.	12/01/2019	Choti Chouper	HSE Communication	34	
26.	16/01/2019	Choti Chouper	First Aid (CPR)	21	
27.	17/01/2019	Choti Chouper	Heavy Lifting Operation	13	
28.	17/01/2019	Choti Chouper	Use of Harness	25	
29.	20/01/2019	Choti Chouper	Power Tool Safety (Hilti)	18	
30.	20/01/2019	Choti Chouper	Use Of PPE's	29	
31.	21/01/2019	Choti Chouper	Manual Material Handling	29	
32.	23/01/2019	Choti Chouper	Manual hand tools	29	
33.	23/01/2019	Choti Chouper	Crane Inspection	15	
34.	25/01/2019	Choti Chouper	Hot Work Safety	9	
35.	28/01/2019	Choti Chouper	Scaffolding(Erectionand Dismantling)	21	
36.	28/01/2019	Choti Chouper	Waste Management	28	
37.	30/01/2019	Choti Chouper	Behavior Base Safety	18	
38.	02/01/2019	Badi Chouper	Scaffolding erection & Dismantling	19	
39.	04/01/2019	Badi Chouper	Waste Management system	22	
40.	06/01/2019	Badi Chouper	Heavy lifting operation	12	
41.	08/01/2019	Badi Chouper	Work permit system	28	
42.	10/01/2019	Badi Chouper	Power tools hand tools	10	
43.	12/01/2019	Badi Chouper	Environment management	20	
44.	14/01/2019	Badi Chouper	Roofing work Case making	21	
45.	16/01/2019	Badi Chouper	Work at height	20	
46.	18/01/2019	Badi Chouper	CPR ( FIRST AID)	30	

47.	20/01/2019	Badi Chouper	Welding & cutting	19	
48.	22/01/2019	Badi Chouper	Electrical & Mechanical Inspection	15	
49.	24/01/2019	Badi Chouper	Work at height	18	
50.	25/01/2019	Badi Chouper	Wire rope inspection	22	
51.	27/01/2019	Badi Chouper	Manual material handling	20	
52.	29/01/2019	Badi Chouper	Fire ( Use of fire extinguisher)	23	

### Month of February, 2019 Training:

SN.	DATE	LOCATION	TOPIC	No. of person	Remarks
1.	04/02/2019	Casting yard	Welding & Gas cutting	21	
2.	08/02/2019	Casting yard	Lifting & rigging	18	
3.	11/02/2019	Casting yard	Permit to work system	21	
4.	12/02/2019	Casting yard	Fire Fighting	16	
5.	15/02/2019	Casting yard	Heavy lifting operation	19	
6.	18/02/2019	Casting yard	Working at height	18	
7.	18/02/2019	Casting yard	Labor welfare measure & legal requirements	21	
8.	19/02/2019	Casting yard	Industrial First Aid & CPR	18	
9.	25/02/2019	Casting yard	Environment pollution & control	10	
10.	26/02/2019	Casting yard	Electrical Safety	16	
11.	04/02/2019	Chandpole	Waste Management	10	
12.	08/02/2019	Chandpole	Scaffolding (Erection and Inspection)	18	
13.	10/02/2019	Chandpole	Use of safety harness	20	
14.	14/02/2019	Chandpole	Power Tools Operation	05	
15.	17/02/2019	Chandpole	Fire Safety	13	
16.	21/ 02/2019	Chandpole	Hot work	15	
17.	25/02/2019	Chandpole	First aid	13	
18.	02/02/2019	Choti Chouper	Fire Safety	37	
19.	02/02/2019	Choti Chouper	Traffic Safety	20	
20.	05/02/2019	Choti Chouper	Permit to Work	13	
21.	09/02/2019	Choti Chouper	Scaffolding (Erection and Inspection)	31	
22.	09/02/2019	Choti Chouper	SHE Communication	27	
23.	12/02/2019	Choti Chouper	First Aid (CPR)	32	
24.	14/02/2019	Choti Chouper	Heavy Lifting Operation	15	
25.	16/02/2019	Choti Chouper	Power Tool Safety (Hilti)	10	
26.	17/02/2019	Choti Chouper	Use Of PPE's	32	
27.	17/02/2019	Choti Chouper	Manual Material Handling	31	
28.	20/02/2019	Choti Chouper	Manual hand tools	14	
29.	21/02/2019	Choti Chouper	Crane Inspection	11	
30.	21/02/2019	Choti Chouper	Scaffolding (Erection and Dismantling)	23	
31.	22/02/2019	Choti Chouper	Behavior Base Safety	14	
32.	23/02/2019	Choti Chouper	Waste Management	27	
33.	23/02/2019	Choti Chouper	Slab/Core Cutting Machine operation	7	
34.	26/02/2019	Choti Chouper	Hot Work	11	
35.	02/02/2019	Badi Chouper	Scaffolding erection & Dismantling	18	
36.	04/02/2019	Badi Chouper	Waste Management system	14	
37.	06/02/2019	Badi Chouper	Road safety	15	
38.	08/02/2019	Badi Chouper	Power tools & hand tools	20	
39.	11/02/2019	Badi Chouper	Electrical & mechanical inspection	10	
40.	13/02/2019	Badi Chouper	Work at height	19	

41.	15/02/2019	Badi Chouper	Environment management	14	
42.	18/02/2019	Badi Chouper	Firefighting ( use of extinguisher)	20	
43.	20/02/2019	Badi Chouper	Manual material handling	16	
44.	22/02/2019	Badi Chouper	Heavy lifting operation	28	
45.	23/02/2019	Badi Chouper	Wire rope inspection	21	
46.	25/02/2019	Badi Chouper	CPR	29	
47.	27/02/2019	Badi Chouper	Work permit system	16	

### Month of March, 2019 Training:

















SL NO	Date	LOCATION	TOPICS	ATTENDE NCE	Remarks
1.	1/3/2019	Casting yard	Waste Management System	23	
2.	5/3/2019	Casting yard	Behavioral Base Safety Management	25	
3.	7/3/2019	Casting yard	Fire Fighting	26	
4.	9/3/2019	Casting yard	Heavy Lifting Operation	26	
5.	11/3/2019	Casting yard	Permit to Work System	22	
6.	13/3/2019	Casting yard	Rigging and Inspection	19	
7.	16/3/2019	Casting yard	First Aid and CPR	24	
8.	18/3/2019	Casting yard	Power Actuated Hand tool	21	
9.	25/3/2019	Casting yard	Safe operation of Power tools	25	
10.	27/3/2019	Casting yard	Roofing Work	20	
11.	28/3/2019	Casting yard	Electrical and Mechanical Inspection	18	
12.	04/03/2019	Chandpole	Waste Management	11	
13.	07/03/2019	Chandpole	Traffic Safety	8	
14.	12/03/2019	Chandpole	Permit to Work	8	
15.	25/03/2019	Chandpole	Power Tool Safety (Hilti)	5	
16.	26/03/2019	Chandpole	Fire safety	5	
17.	01/03/2019	Choti Chouper	Fire Safety	28	
18.	02/03/2019	Choti Chouper	Permit to Work	12	
19.	03/03/2019	Choti Chouper	Use Of PPE's	34	
20.	04/03/2019	Choti Chouper	SHE Communication	31	
21.	06/03/2019	Choti Chouper	Heavy Lifting Operation	12	
22.	06/03/2019	Choti Chouper	Crane Inspection	12	
23.	07/03/2019	Choti Chouper	Safe use of hand tools	14	
24.	09/03/2019	Choti Chouper	Power Tool Safety (Hilti)	17	
25.	11/03/2019	Choti Chouper	Traffic Safety	20	
26.	14/03/2019	Choti Chouper	Manual Material Handling	29	
27.	16/03/2019	Choti Chouper	Scaffolding (Erection and Inspection)	34	
28.	19/03/2019	Choti Chouper	First Aid (CPR)	42	
29.	25/03/2019	Choti Chouper	Scaffolding (Erection and Dismantling)	30	
30.	25/03/2019	Choti Chouper	Behavior Base Safety	27	
31.	26/03/2019	Choti Chouper	Waste Management	32	
32.	27/03/2019	Choti Chouper	Stone Cutting Machine Safety	11	
33.	28/03/2019	Choti Chouper	Hot Work(Gas Cutting)	13	
34.	01/03/2019	Badi Chouper	Manual material handling	21	
35.	04/03/2019	Badi Chouper	Road safety	15	
36.	06/03/2019	Badi Chouper	Power tools & Hand tools	18	
37.	07/03/2019	Badi Chouper	Work permit system	22	
38.	09/03/2019	Badi Chouper	Waste management system	22	
39.	11/03/2019	Badi Chouper	Work at height	22	
40.	12/03/2019	Badi Chouper	Firefighting (Use of Fire Extinguisher)	24	
41.	14/03/2019	Badi Chouper	I- Care & Take 5	09	



42	16/03/2019	Badi Chouper	Firefighting ( use of extinguisher)	21	
43	18/03/2019	Badi Chouper	Scaffolding erection & dismantling	24	
44	20/03/2019	Badi Chouper	Environment management	22	
45	25/03/2019	Badi Chouper	Tally Board (Token System) for Entry in Confined Space	24	
46	28/03/2019	Badi Chouper	CPR	24	

### Appendix 2: Record of SHE inspections attendance

Sample copy of Safety, Health and Environment (SHE) Inspections/Audits

 <b>CONTINENTAL ENGINEERING CORP</b> <small>A MEMBER OF CONTINENTAL HOLDINGS</small>		<b>200<sup>th</sup> WEEKLY SHE WALK ATTENDANCE SHEET</b> <b>PROJECT:- JMRC-UG 1B</b>			Location:- Badi Chouper Date:- 01/03/2019 Walk No:- 200	
SL.NO.	NAME	DESIGNATION	SIGNATURE	ORGANIZATION	E-MAIL ID	
01	A. K. Singh	PD		DMRC		
02	P. K. Aggarwal	ER-T		DMRC		
03	Sachin Kumar	My/BC		DMRC		
04	R. K. Pandey	CSM		CEL		
05	Ravi Prasad	AEW		DMRC		
06	Sandeep Shrivastava	P-M-CEL		CEL	sandeep@cel.co.in	
07	Himanshu Sharma	T.E CIVIL		D.M.R.C.		
08	SUNIL KUMAR	HR/ADMIN		CEL		
09	Amir Hussain	Chief SHE Manager		MBETA	AMIRHUSSAIN09@GMAIL.COM	
10	Pamir Hussain	Station Manager		MBETA	Pamir.hussain70@gmail.com	
11	Kishan Kumar Pandey	SHE Manager		AAL		
12	Kamlesh Kumar Singh	Sr. SHE Mgr		ETA		
13	Syed Zishan Akter	Env. Manager		MBETA	zishan2@gmail.com	
14	Deepak Trivedi	EHS- officer		ALSTOM	deepak.trivedi2008@yahoo.co.in	
15	Alok Kumar	Environmental and Quality		ALSTOM T Ltd	alokkumar13@gmail.com	

**Appendix 2: Record of SHE Trainings****SHE Training photographs****Spacial training programme conducted for staff & Worker on 48<sup>th</sup> National Safety Week celebration****CPR Training****Emergency Mock drill Training  
in the station**



**TBT/ Pre start work training,  
Badi chouper station**



**Training for Fire Fighting at casting yard**



**Breath analysis/ Alcohol Testing**



**General Housekeeping & brooming**








**Illumination Monitoring****First Aid training****Health & Hygiene training at site****Training of safe work practices**

## Appendix 3: Sample format of Monthly SHE report

**CONTINENTAL ENGINEERING CORPORATION****MONTHLY  
SAFETY, HEALTH & ENVIRONMENTAL  
REPORT****February - 2019****DOCUMENT No. RP/JMRC/SHE/UG1B/PHOF/056  
Revision =00, Date 14.03.2019****DESIGN AND CONSTRUCTION OF TUNNEL BETWEEN CHANDPOLE AND BADI  
CHOUER AND REVERSAL LINE BY SHIELD TBM, UNDERGROUND METRO  
STATION AT CHOTI CHOUER AND BADI CHOUER BY CUT & COVER METHOD  
ON EAST-WEST CORRIDOR OF JAIPUR METRO (PHASE-1B) AT JAIPUR,  
RAJASTHAN, INDIA****CONTRACT NO: JP/EW/1B/C1  
SUBMITTED By-****CONTINENTAL ENGINEERING CORPORATION (CEC)**

	PREPARED BY	REVIEWED BY	APPROVED BY
Signature :			
NAME :	<b>RAJANEESH KUMAR</b>	<b>RAJ KISHOR PANDEY</b>	<b>ALOK TIWARI</b>
DESIGNATION :	<b>OFFICER SAFETY</b>	<b>CHIEF SHE MANAGER</b>	<b>PROJECT LEADER</b>
DATE :	<b>14<sup>th</sup> March, 2019</b>	<b>14<sup>th</sup> March, 2019</b>	<b>14<sup>th</sup> March, 2019</b>

## Appendix 4: Sample Ambient Air and Noise monitoring report



## Idma Laboratories Limited

(A Government Approved Test House)

NABL (TC-8207) MOEF/BIS/FSSAI/State Pollution Boards/Drug &amp; Cosmetic Act/ISO 9001; 14001; 18001 Certified

## TEST REPORT

Ref. No. IL/D-9717	Date	12.03.19	Lab No.	280219L-ED-004	Page No. 1/1
Customer	Continental Engineering Corporation (CEC) JMRC UG-1B Project, Old Police Head quarter (PHQ) Near FRO, Opposite City Palace, Behind Hawa Hamal, Bedi Choupar Jaipur- 302002 Rajasthan				
Type of Sample	Air Quality Monitoring				
Customer's Description of Sample	Ambient Air				
Quantity	1 No.				
Packing, Markings	Filter Paper Packed in Polythene Pouch				
Mode of Collection of Sample	Sampling By Laboratories				
Work Order No.	16130JSD1284			Dated	22/06/2018
Date of Receipt of Sample	28/02/2019				
Period of Analysis	28/02/2019 To 02/03/2019				
Sampling Team Idma	Mr. Sahil & Team			Client	Mr. Gaurav Kumar
Sampling Location	Badi Chopar				
Visual Observation	N/A				
Date of Sampling	25/02/2019				
Date of Reporting	02/03/2019				
Sampling Protocol	IS: 5182				
Testing Protocol	CPCB				

## RESULTS

S.No.	Test Parameter	Units	Results	Specifications	Test Method
1	PM10	µg/m³	169.4	100	IS:5182(P-23)-2006(RA 2017)
2	SO2	µg/m³	13.42	80	IS:5182(P-02)-2001 (RA 2017)
3	Nox	µg/m³	25.14	80	IS:5182(P-6)-2006(RA 2017)
4	CO	mg/m³	1.17	02	IS:5182(P-10)-1999 (RA 2014)
5	Lead	µg/m³	<0.1	1.0	EPA/625/R-96/010a:1999 & USEPA IO-3.2:1999
6	TSPM	µg/m³	271.2	-	APHA ( Air ) 23rd Edition, 2017 or ILL SOP_AIR_001 Issue No.001, Issue date:02.04.18

\*\*End of Report\*\*

For Idma Laboratories Limited

Authorized Signatory



Idma Corporate Park, 391, Industrial Area, Phase-I, Panchkula, Haryana.

Tel. No. : 0172-5064827, 5064830

Website : www.idmagroup.co.in E-mail : testing@idmagroup.co.in

Turn Overleaf



# Idma Laboratories Limited

(A Government Approved Test House)

NABL (TC-8207) MOEF/BIS/FSSAI/State Pollution Boards/Drug & Cosmetic Act/ISO 9001; 14001; 18001 Certified

## TEST REPORT

Ref. No. IL/D-9721	Date	12.03.19		280219L-ED-008	Page No. 1/1
Customer	Continental Engineering Corporation (CEC) JMRC UG-1B Project, Old Police Head quarter (PHQ) Near FRO, Opposite City Palace, Behind Hawa Hamal, Bedi Choupar Jaipur- 302002 Rajasthan				
Type of Sample	Noise Level (Ambient)				
Customer's Description of Sample	Noise Level (Ambient)				
Quantity	1 No.				
Packing, Markings	Instrumental At Site				
Mode of Collection of Sample	Sampling By Laboratories				
Work Order No.	I613QJSD1284			Dated	22/06/2018
Date of Receipt of Sample	28/02/2019				
Period of Analysis	28/02/2019 To 02/03/2019				
Sampling Team Idma	Mr. Sahil & Team			Client	Mr. Gaurav Kumar
Sampling Location	Maharaja School				
Visual Observation	N/A				
Date of Sampling	25/02/2019				
Date of Reporting	02/03/2019				
Sampling Protocol	CPCB				
Testing Protocol	CPCB PROTOCOL July 2015				

## RESULTS

S.No.	Test Parameter	Units	Results	Limits, Day	Test Method
1	day	dB(A)	62.3	Max 75	CPCB PROTOCOL July 2015.
2	Night	dB(A)	50.7	Max 70	CPCB PROTOCOL July 2015.

\*\*End of Report\*\*

For Idma Laboratories Limited

Authorized Signatory



Idma Corporate Park, 391, Industrial Area, Phase-I, Panchkula, Haryana.

Tel. No. : 0172- 5064827, 5064830

Website : www.idmagroup.co.in E-mail : testing@idmagroup.co.in

Turn Overleaf





# Idma Laboratories Limited

(A Government Approved Test House)

MOEF/BIS/FSSAI/State Pollution Boards/Drug & Cosmetic Act/ISO 9001; 14001; 18001 Certified

## TEST REPORT

Ref. No. IL/D-1198	Date	06.05.19	280319ED-NL-057	Page No. 1/2
Customer	Continental Engineering Corporation (CEC) JMRC UG-1B Project, Old Police Head quarter (PHQ) Near FRO, Opposite City Palace, Behind Hawa Hamal, Bedi Choupar Jaipur- 302002 Rajasthan			
Type of Sample	Ground Water			
Customer's Description of Sample	Ground Water			
Quantity	5 Ltr			
Packing, Markings, Seal & Quantity	Plastic Can			
Mode of Collection of Sample	Sampling By Laboratories			
Work Order No.	I613OJSD1264	Dated	22/06/2018	
Date of Receipt of Sample	28/03/2019			
Period of Analysis	28/03/2019 To 04/04/2019			
Sampling Team Idma	Mr. Sahil & Team	Client	Mr. Vipin Kumar	
Sampling Location	Chand Pole			
Visual Observation	N/A			
Date of Sampling	27/03/2019			
Date of Reporting	04/04/2019			
Sampling Protocol	IS: 3025-1987			
Testing Protocol	IS: 10500			

## RESULTS

S.No.	Test Parameter	Units	Results	Limits (Max)		Test Method
				Specifications	Limits (Max)	
1	pH	-	7.38	6.5-8.5	No Relaxation	APHA 4500H+B 23rd Edition, 2017
2	Conductivity	umho/cm	914	-	-	USEPA Method 120.1
3	Dissolved Oxygen (DO)	mg/L	6.9	-	-	CPCB Guide Manual: Water & waste water Analysis
4	Oil & Grease	mg/L	<2.5	-	-	APHA 5500 B 23rd Edition, 2017
5	Total Dissolved Solids	mg/L	596	500	2000	APHA 2540 C 23rd Edition, 2017
6	Total suspended Solids	mg/L	<10	-	-	APHA 2540 D 23rd Edition, 2017
7	Turbidity	NTU	<1	1	5	APHA 3130 B 23rd Edition, 2017
8	E. Coli	MPN/100ml	<1.8	<1.8 to >1000	-	APHA 9221 B&C 23rd Edition 2017

\*\*End of Report\*\*

For Idma Laboratories Limited

Authorized Signatory

Idma Corporate Park, 391, Industrial Area, Phase-I, Panchkula, Haryana.

Tel. No. : 0172-5064827, 5064830

Website : www.idmagroup.co.in E-mail : testing@idmagroup.co.in

Turn Overleaf

### **Appendix 5:Monthly Reportof Heritage Consultant**

In the reporting period, instrumentation and vibration monitoring were not carried out since there was no tunnelling activity.

**Appendix 6: Consent to Operate letter from Rajasthan State Pollution Control Board**

**Regional Office Jaipur (S)**  
**Rajasthan State Pollution Control Board**  
**4, Jhalana Institutional Area Jhalana Doongri, Jaipur**  
**Phone: 51596991 Fax: 5159699**

**Registered**

**File No : F(Tech)/Jaipur(Sanganer)/2805(1)/2016-2017/2142-2143**

**Order No: 2016-2017/Jaipur (S)/6083**

**Date: 09/01/2017**

**Unit Id : 66141**

**M/s Contiental Engineering Corporation**

**Continental Engineering Corporation C/o JMREC City Place**

**Premises Jalevi Chowk Jaipur , Jaipur Tehsil:Jaipur**

**District:Jaipur**

**Sub: Consent to Operate** under section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21(4) of Air (Prevention & Control of Pollution) Act, 1981.

**Ref:** Your application for Consent to Operate dated 13/06/2016 and subsequent correspondence.

**Sir,**

**Consent to Operate** under the provisions of section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 (hereinafter to be referred as the Water Act) and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981, (hereinafter to be referred as the Air Act) as amended to date and rules & the orders issued thereunder is hereby granted for your **Tunnel Ring Manufacturing Plant plant** situated at **Village Keshavpura Teh Sanganer, Nera Kamla Nehru Floyover, Bhankrota Jaipur Tehsil:Sanganer District:JAIPUR**, Rajasthan, subject to the following conditions:-

- 1** That this Consent to Operate is valid for a period from **22/08/2016** to **31/07/2031**.
- 2** That this Consent is granted for manufacturing / producing following products / by products or carrying out the following activities or operation/processes or providing following services with capacities given below.

Particular	Type	Quantity with Unit
READY MIX CONCRETE	By Product	6,000.00 M3/MONTH
Tunnel Rings	Product	2,350.00 PCS PER MONTH

- 3** That this consent to operate is for existing plant, process & capacity and separate consent to establish/operate is required to be taken for any addition / modification / alteration in process or change in capacity or change in fuel.
- 4** That the quantity of effluent generation along with mode of disposal for the treated effluent shall be as under:



**Regional Office Jaipur (S)**  
**Rajasthan State Pollution Control Board**  
**4, Jhalana Institutional Area Jhalana Doongri, Jaipur**  
**Phone: 5159699 Fax: 5159699**

**Registered**

**File No : F(Tech)/Jaipur(Sanganer)/2805(1)/2016-2017/2142-2143**

**Order No : 2016-2017/Jaipur (S)/6083**

**Date: 09/01/2017**

**Unit Id : 66141**

Type of effluent	Max. effluent generation (KLD)	Recycled Qty of Effluent (KLD)	Disposed Qty of effluent (KLD) and mode of disposal
Domestic Sewage	6.000	4.000	2.000 Septic Tank and Soakpit

- 5 That the sources of air emissions along with pollution control measures and the emission standards for the prescribed parameters shall be as under:

Sources of Air Emissions	Pollution Control Measures	Prescribed	
		Parameter	Standard
Boiler( 150KG/HOUR)	ADEQUATE STACK HEIGHT , Cyclone	--	--
DG SET (1 No.)( 225KVA)	ACOUSTIC ENCLOSURE , ADEQUATE STACK HEIGHT	--	--
DG SET (2 No.)( 160KVA EACH)	ACOUSTIC ENCLOSURE , ADEQUATE STACK HEIGHT	--	--
DG SET (2 Nos.)( 1000KVA EACH)	ACOUSTIC ENCLOSURE , ADEQUATE STACK HEIGHT	--	--
DG SET (3 No.)( 125KVA EACH)	ACOUSTIC ENCLOSURE , ADEQUATE STACK HEIGHT	--	--





**Regional Office Jaipur (S)**  
**Rajasthan State Pollution Control Board**  
 4, Jhalana Institutional Area Jhalana Doongri, Jaipur  
 Phone: 5159699 Fax: 5159699

**Registered**

File No : F(Tech)/Jaipur(Sanganer)/2805(1)/2016-2017/2142-2143

Order No : 2016-2017/Jaipur (S)/6083

Date: 09/01/2017

Unit Id : 66141

- 19 That the occupier shall ensure that the noise from the operations in the unit does not exceed the prescribed noise standards for the Residential Area i.e. 55 dB (A) Leq during the day time and 45 dB (A) Leq during the night. The day time is reckoned in between 6:00 a.m. to 10:00 p.m. and the night time is reckoned between 10:00 p.m. to 6:00 a.m.
- 20 That, notwithstanding anything provided hereinabove, the State Board shall have power and reserves its right, as contained under section 27(2) of the Water Act and under section 21(6) of the Air Act to review anyone or all the conditions imposed here in above and to make such variation as it deemed fit for the purpose of Air Act & Water Act.
- 21 That the grant of this **Consent to Operate** is issued from the environmental angle only, and does not absolve the project proponent from the other statutory obligations prescribed under any other law or any other instrument in force. The sole and complete responsibility to comply with the conditions laid down in all other laws for the time-being in force, rests with the industry/ unit/ project proponent.
- 22 That the grant of this **Consent to Operate** shall not, in any way, adversely affect or jeopardize the legal proceeding, if any, instituted in the past or that could be instituted against you by the State Board for violation of the provisions of the Act or the Rules made thereunder.

This **Consent to Operate** shall also be subject, besides the aforesaid specific conditions, to the general conditions given in the enclosed Annexure. The project proponent will comply with the provisions of the **Water Act and Air Act** and to such other conditions as may, from time to time, be specified, by the State Board under the provisions of the aforesaid Act(s). Please note that, non compliance of any of the above stated conditions would tantamount to revocation of **Consent to Operate** and project proponent / occupier shall be liable for legal action under the relevant provisions of the said Act(s).

Yours Sincerely

Regional Officer[ Jaipur (S) ]

**Copy To:-**

- 1 Master File.

**Appendix 7: Muck disposal details**

a) Quantity of Muck Disposal:

<b>Quantity of Muck Disposed to dumping ground</b> (January 2019 to March 2019)	
<b>Months</b>	<b>Quantities</b>
January	1710 M <sup>3</sup>
February	398 M <sup>3</sup>
March	3768.101 M <sup>3</sup>





b) No. of trucks used for the same

<b>Number of Trucks used for transporting muck to dumping ground</b> (January 2019 to March 2019)	
<b>Months</b>	<b>Number of Muck Disposal trucks</b>
January	122 TRIPS
February	30 TRIPS
March	277 TRIPS

c) Average quantity of muck daily:

<b>Average quantity of muck transported to dumping ground on daily basis</b> (January 2019 to March 2019)	
<b>Months</b>	<b>Average quantity of muck daily</b>
January	57 M <sup>3</sup>
February	14.214 M <sup>3</sup>
March	125.603 M <sup>3</sup>

d). Details of disposal site including photographs:

Photographs of disposal (loaded and taken)site		
		
Excavated muck stored at site	Excavated muck stored at surface level	Muck loading into dumper by excavator
		
Loaded dumper properly covered by tarpaulin	Loaded dumper is going through public road for muck disposal	Road marsal deployed for safe entry/exit of vehicle



Cleaning of public traffic road after disposal of soil from site



Landfilling at Nahargarh Biological Park, Jaipur



Landfilling at Rajasthan Police academy



Landfilling at Nahargarh Biological park



Muck disposal at sumel (Mathuradaspora)

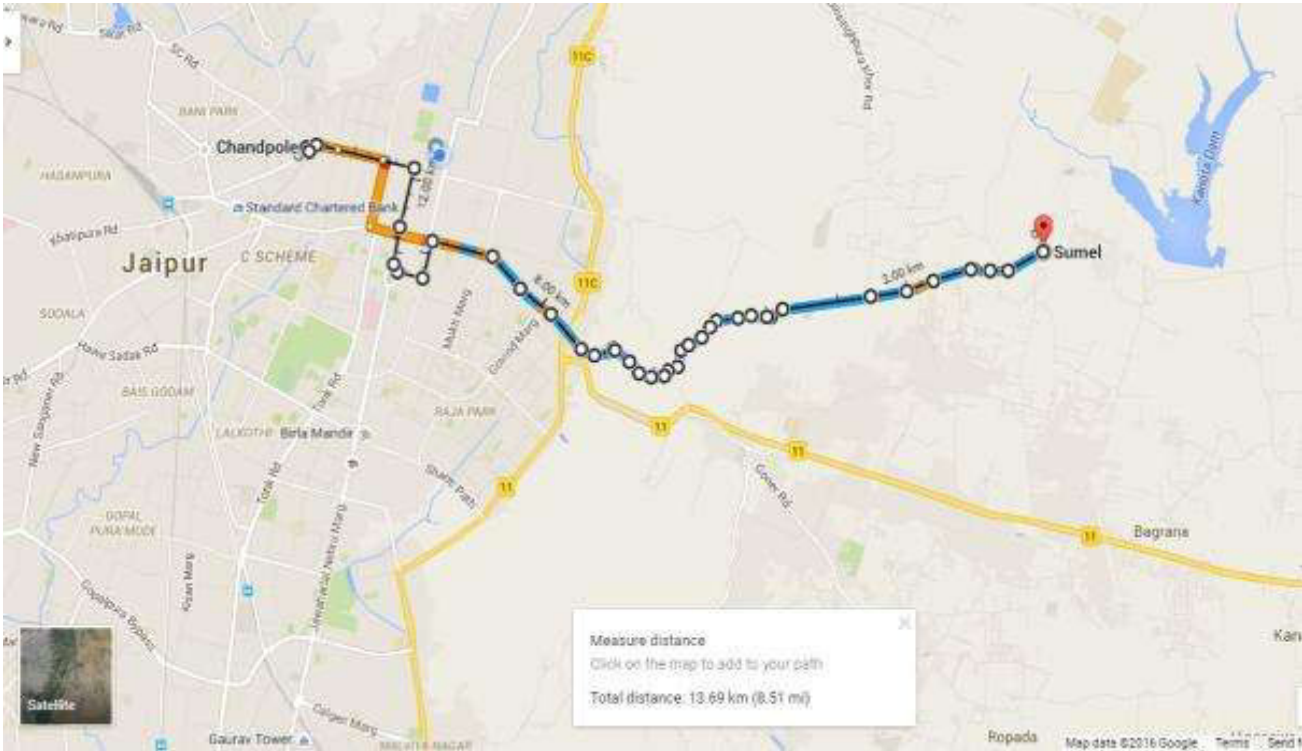


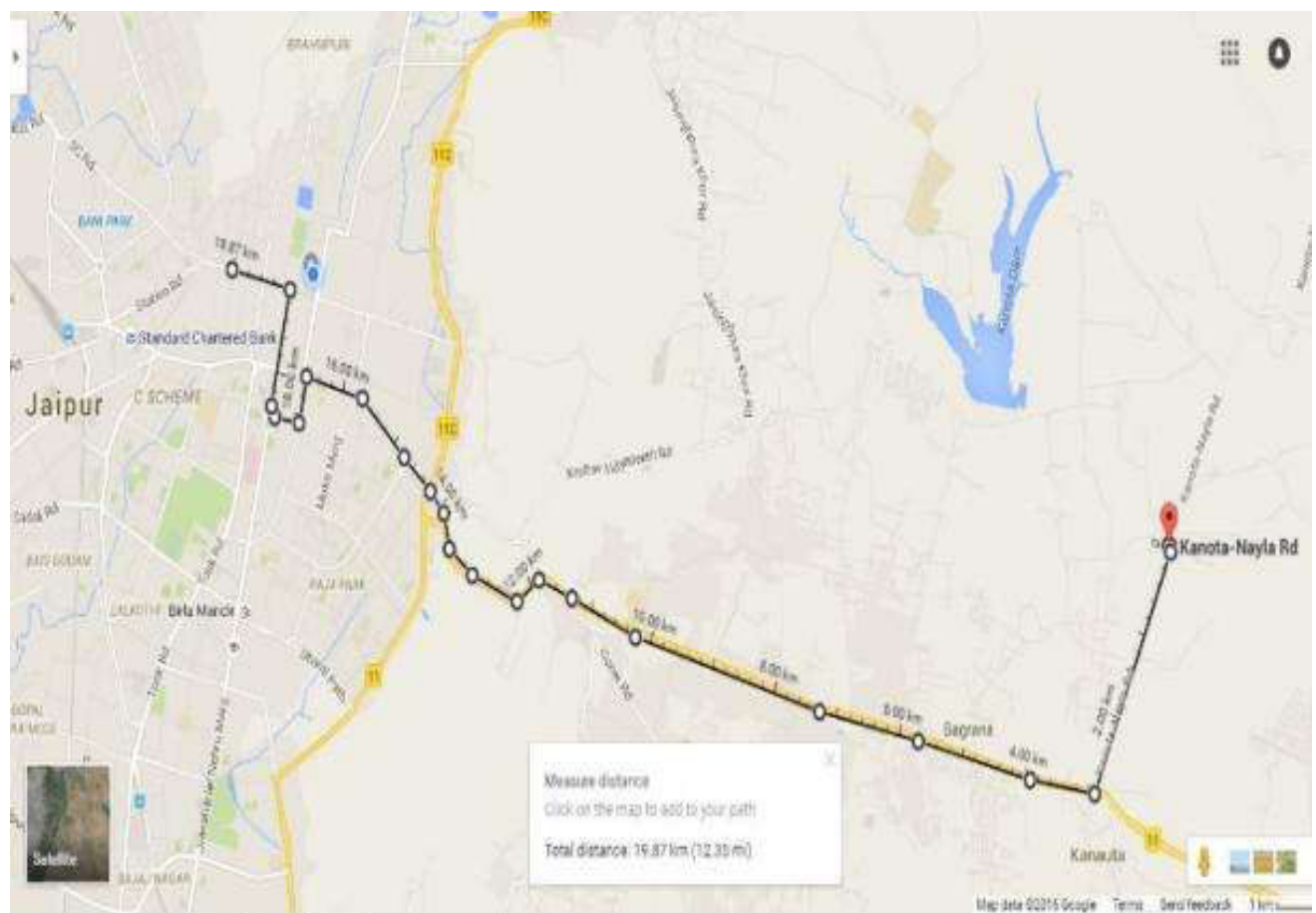
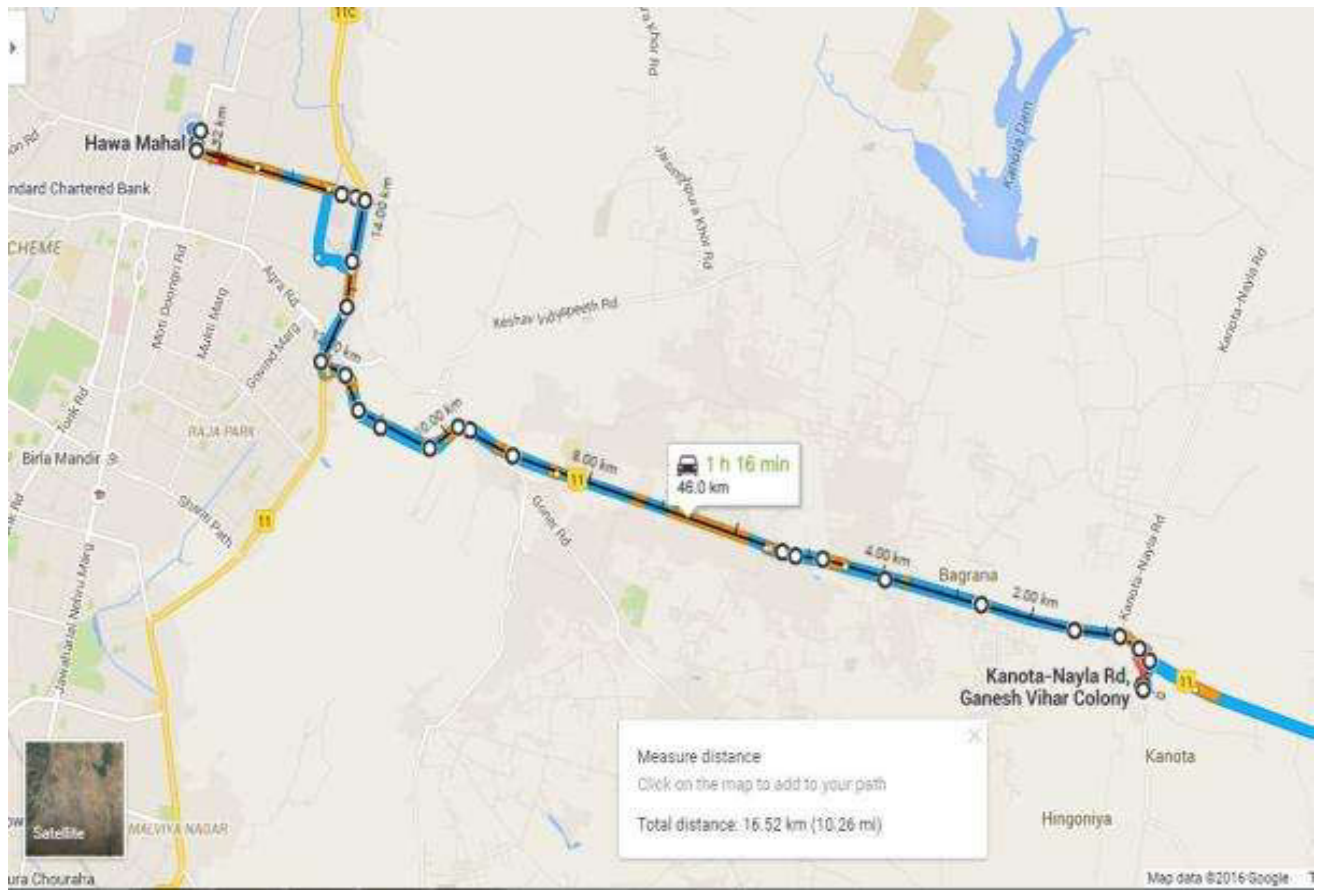
Landscalping at JDA park, Hathigaon, Jaipur



Route Map

Map showing route for muck disposal  
(Sumel, Mathuradaspura, Govindpura/Ropada& Langariyawas)

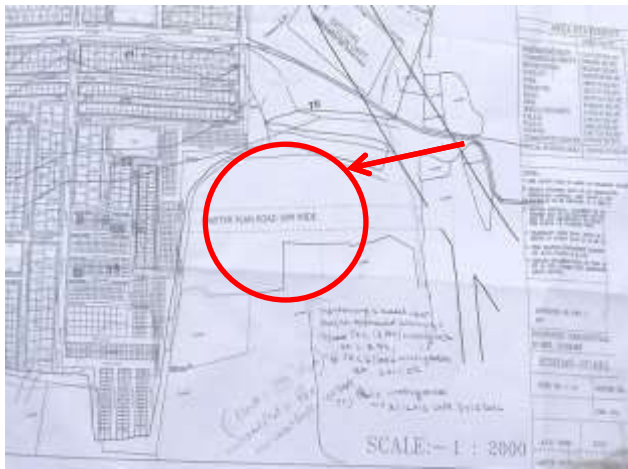






### C&D waste disposal land (location & route map)

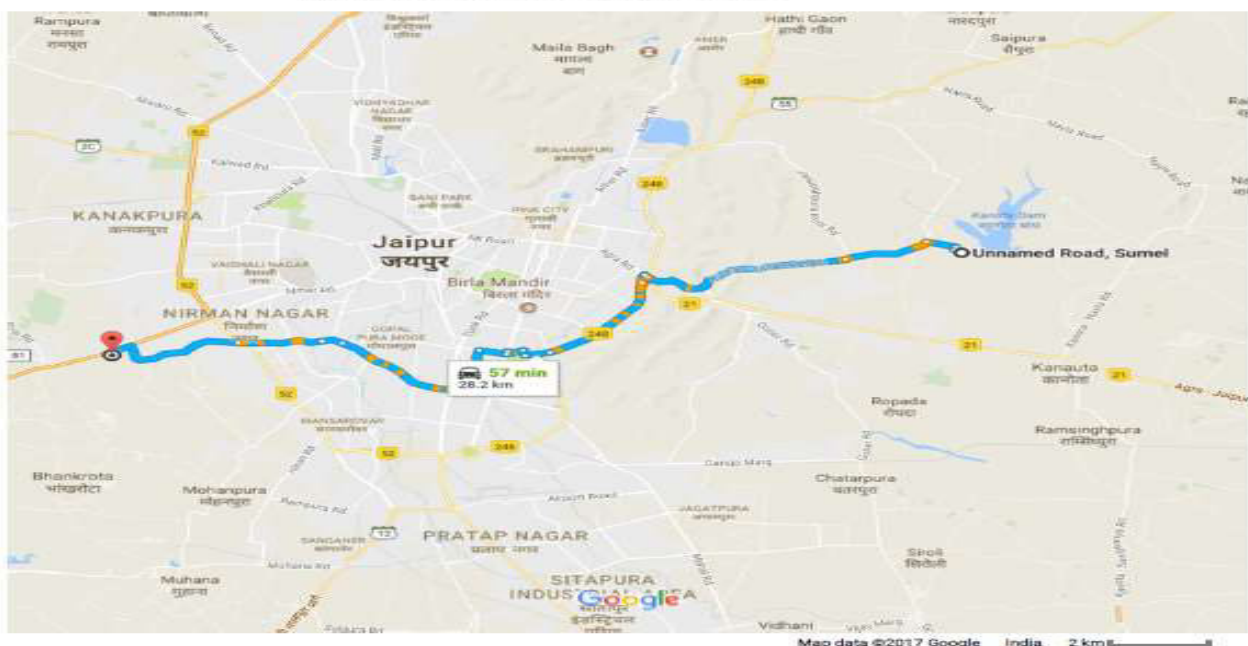
#### Map showing location & route for C&D waste disposal (Khasra No.-1, Malpurachoudvillege, Near Sumel Housing scheme, Jaipur)







Google Maps

Unnamed Road, Sumel, Beermalpura at Mukandpura,  
Rajasthan 303012 to 26.87479, 75.71186



Drive 28.2 km, 57 min







**Appendix 8: Tree Transplantation details**

		<b>CONTINENTAL ENGINEERING CORPORATION</b> <b>JMRC-1B PROJECT JP/EW/1B/C1</b>			<b>Location:</b> Ghat Ki Ghuni
<b>List of 1<sup>st</sup> phase Transplanted Trees</b>					
SI No	Previous location	Current Location	Year of tree transplantation	Photographs	Remarks
1.	Chhoti Chaupar	Ghat Ki Ghuni	2014		Not Survived
2.	Chhoti Chaupar	Ghat Ki Ghuni	2014		Survived
3.	Chhoti Chaupar	Ghat Ki Ghuni	2014		Survived






4.	Chhoti Chaupar	Ghat Ki Ghuni	2014		Survived
5.	Chhoti Chaupar	Ghat Ki Ghuni	2014		Survived
6.	Badi Chaupar	Ghat Ki Ghuni	2014		Survived

			<b>CONTINENTAL ENGINEERING CORPORATION</b> <b>JMRC-1B PROJECT JP/EW/1B/C1</b>			<b>Location:</b> <b>Ramnivas Bagh</b>
			<b>List of 2<sup>nd</sup> phase transplanted trees</b>			
SI No	Tree No.	Tree Name	Previous location	Current Location	Date of tree transplantation	Photographs
1.	81	Gulmohar	Badi Chaupar	Ramniwas Garden	09.09.2015	
2	91	Begunvillia	Chhoti Chaupar	Ramniwas Garden	25.8.2015	
3	88	Ashok	Chhoti Chaupar	Ramniwas Garden	03.09.2015	


4	78	Gulmohar	Badi Chaupar	Ramniwas Garden	05.09.2015	
5	67	Ashoka	Badi Chaupar	Ramniwas Garden	07.09.2015	
6	86	Ashoka	Badi Chaupar	Ramniwas Garden	07.09.2015	



7	68	Ashoka	Badi Chaupar	Ramniwas Garden	09.09.2015	
8	76	Ashoka	Badi Chaupar	Ramniwas Garden	10.09.2015	
9	96	Gulmohar	Chhoti Chaupar	Sylvan Bio-diversity forest	26.08.2015	




10	98	Gulmohar	Chhoti Chaupar	Sylvan Bio-diversity forest	26.08.2015	
11.	90	Shahtute	Badi Chaupar	Sylvan Bio-diversity forest	27.08.2015	
12	89	Gulmohar	Badi Chaupar	Sylvan Bio-diversity forest	04.09.2015	



13	94	Bed	Chhoti Chaupar	Sylvan Bio-diversity forest	02.11.2015	
14	108	Pipal	PS Chhoti Chaupar	Sylvan Bio-diversity forest	04.11.2015	
15	126	Shisam	Badi Chaupar	Sylvan Bio-diversity forest	06.11.2015	


 CONTINENTAL ENGINEERING CORP <small>A MEMBER OF CONTINENTAL HOLDINGS</small>	CONTINENTAL ENGINEERING CORPORATION		JMRC-1B PROJECT JP/EW/1B/C1
	List of 3rd phase transplanted trees		
Location	Exit-Entry area, Badi chouper and Choti choupar stations		
Inspected and prepared by	Raj Kishor Pandey (Chief SHE Manager)		


TREE NO.	PHOTOGRAPHS	OBSERVATIONS / DETAILS	TRANSPLANTATION/ INSPECTION DATE	REMARKS
Tree No.  118		<p>Tree No. 118 Transplanted at parking area, Biological park, Nahargarh from Exit-Entry (North-East) Badi Choupar station.</p> <p><b>Botanical name:</b> FicusBenghalensis</p> <p><b>Common name:</b> Bargad(बरगद)</p> <p><b>Girth:</b>11100 mm</p> <p><b>Weight :</b> 34 ton</p>	<p><b>Transplanted on</b> <b>16.02.2018(Friday)</b></p> <p><b>Last inspected by</b> Chief SHE Manager on <b>07.03.2019 (Thursday)</b></p>	<p><b>Status:</b> <b>SURVIVED</b></p> <p>Water dripping and growth monitoring of tree by Chief SHE Manager&amp; forest staff is under progress</p>
		<p><b>Tree is in good condition and fresh bunches of shoots and growth of leaves seen.</b></p> <p><b>Photosynthesis of tree is in good condition and lush green leaves at various branches seen.</b></p> <p><b>Formation of new shoots is continuing at various locations of branches seen.</b></p> <p><b>Ample milky latex available and new shoots appeared with budding branches.</b></p> <p><b>Anti-termite and Anti-fungal solutions applied.</b></p>		

<p><b>Tree No.</b></p> <p><b>120</b></p>		<p>Tree No. 120 Transplanted at parking area, Biological park, Nahargarh, from Exit-Entry (South-East) Badi Choupar station.</p> <p><b>Botanical name:</b> FicusBenghalensis</p> <p><b>Common name:</b> Bargad(बरगद)</p> <p><b>Girth:</b> 7000 mm <b>Weight :</b> 16 ton</p> <p><b>New bunch of shoots germination and leaves growth are seen.</b></p> <p><b>Photosynthesis of tree is in good condition and lush green leaves are seen.</b></p> <p><b>Formation of new shoots is continuing at various locations of branches seen.</b></p> <p><b>Ample milky latex with heathy capillary reaction exists in the tree.</b></p> <p><b>Anti-termite and anti-fungal solutions applied.</b></p>	<p><b>Transplanted on</b> <b>13.02.2018</b> <b>(Tuesday)</b></p> <p>Last inspected by Chief SHE Manager on <b>07.03.2019</b> <b>(Thursday)</b></p>	<p><b>Status: Survived</b></p> <p>Water dripping and growth monitoring of tree by Chief SHE Manager&amp; forest staff is under progress</p>
--	---	--	--	---






<p><b>Tree No.</b></p> <p><b>115</b></p>	 	<p>Tree No. 115 Transplanted at parking area, Biological park, Nahargarh, from station Box, Badi Choupar station.</p> <p><b>Botanical name:</b> FicusBenghalensis</p> <p><b>Common name:</b> Bargad (बरगद)</p> <p><b>Girth:</b>6500 mm <b>Weight :</b> 12 ton</p> <p><b>Existing leaves are fallen and formation of new shoots not seen.</b></p> <p><b>Milky latex found till 3 to 5 feet height from ground level at various locations.</b></p> <p><b>Existing shoot IS healthy at One location.</b></p> <p><b>Anti-termite and anti-fungal solutions applied.</b></p>	<p><b>Transplanted on</b> <b>09.02.2018(Friday)</b></p> <p>Last inspected by Chief SHE Manager on <b>07.03.2019</b> <b>(Thursday)</b></p>	<p><b>Status: Survived</b></p> <p>Water dripping and growth monitoring of tree by Chief SHE Manager&amp; forest staff is under progress</p>
--	---	---	---	---

<p><b>Tree No.</b></p> <p><b>115</b></p> <p><b>'A'</b></p> <p>(BRANCH)</p>		<p>Trimmed branches of tree no.- 115 planted in front of Forester's Office, Biological park, Nahargarh from Badi choupar station.</p> <p><b>Botanical name:</b> FicusBenghalensis</p> <p><b>Common name:</b> Bargad (बरगद)</p> <p><b>New bunches of shoots formation &amp; leaves growth are seen at various locations.</b></p> <p><b>Ample milky latex and capillary reaction exist in the tree.</b></p> <p><b>Anti-termite and anti-fungal solutions applied.</b></p>	<p><b>Transplanted on</b> <b>13.02.2018</b> <b>(Tuesday)</b></p> <p>Last inspected by Chief SHE Manager on <b>07.03.2019</b> <b>(Thursday)</b></p>	<p><b>Status: Survived</b></p> <p>Water dripping and growth monitoring of tree by Chief SHE Manager&amp; forest staff is under progress.</p>
--	---	---	--	--



<p><b>Tree No.</b></p> <p><b>115 'B'</b></p> <p>(BRANCH)</p>		<p>Trimmed branches of tree no.-115 planted near Forester's office, Biological park, Nahargarh from Badi choupar station.</p> <p><b>Botanical name:</b> FicusBenghalensis</p> <p><b>Common name:</b> Bargad (बरगद)</p> <p><b>New shoots formation seen, New leaves &amp; its growth at various locations seen.</b></p> <p><b>Ample milky latex and capillary reaction exists in the branch.</b></p> <p><b>Anti-termite and anti-fungal solutions applied.</b></p>	<p><b>Transplanted on 13.02.2018 (Tuesday)</b></p> <p>Last inspected by Chief SHE Manager on <b>07.03.2019 (Thursday)</b></p>	<p><b>Status: Survived</b></p> <p>Water dripping and growth monitoring of tree by Chief SHE Manager &amp; forest staff is under progress.</p>
--	--	---	---	---








<p><b>Tree No.</b></p> <p><b>115</b></p> <p><b>'C'</b></p> <p>(BRANCH)</p>		<p>Trimmed branches of tree no.-115 planted near Forester's office, Biological park, Nahargarh from Badi choupar station.</p> <p><b>Botanical name:</b> FicusBenghalensis</p> <p><b>Common name:</b> Bargad (बरगद)</p> <p><b>Fresh branches planted but NO shoot formation and its growth seen.</b></p>	<p><b>Transplanted on 13.02.2018 (Tuesday)</b></p> <p>Last inspected by Chief SHE Manager on <b>07.03.2019 (Thursday)</b></p>	<p><b>Status: Not Survived</b></p> <p>Water dripping and growth monitoring of tree by Chief SHE Manager&amp; forest staff is under progress.</p>
<p><b>Tree No.</b></p> <p><b>93</b></p>		<p><b>Botanical name:</b> FicusBenghalensis</p> <p><b>Common name:</b> Bargad (बरगद)</p> <p><b>Girth:7200 mm</b> <b>Weight : 14 ton</b></p> <p>Tree no.-93 transplanted near parking area, Biological park, Nahargarh from North-West, Exit-Entry, Choti choupar station.</p> <p><b>Existing leaves are burnt due to high temperature in the summer.</b> <b>Anti-termite and anti-fungal solutions applied.</b></p>	<p><b>Transplanted on 28.03.2018(Wednesday)</b></p> <p>Last inspected by Chief SHE Manager on <b>07.03.2019 (Thursday)</b></p>	<p><b>Status: Survived</b></p> <p>Water dripping and growth monitoring of tree by Chief SHE Manager&amp; forest staff is under progress.</p>

		Moss grass treatment applied for new shoot formation in the tree.		
--	--	---	--	--






**Sapling planted during World Environment Day (5<sup>th</sup> June) / National Safety Week (4<sup>th</sup> to 10 March)**  
**at JMRC UG-1B project site**

Sr. No.	Plant Photograph	Plant Name	Plant Location	Date of Plantation	Remarks
1		Botanical name: <b>Saracaasoca</b> Common name: <b>Ashoka(अशोक)</b>	Project office (PHQ)	8 <sup>th</sup> March, 2018	Survived
2		Botanical name: <b>Ficusbenjamina</b> Common name: <b>Pukar(पुकर)</b>	Project office (PHQ)	8 <sup>th</sup> March, 2018	Survived




3		Botanical name: <b>Ficus benjamina</b> Common name: <b>Pukar (पुकर)</b>	Project office (PHQ)	8 <sup>th</sup> March, 2018	Survived
4		Botanical name: <b>Syzygium cumini</b> Common name: <b>Java plum (जामुन)</b>	Project office (PHQ)	8 <sup>th</sup> March, 2018	Survived
5		Botanical name: <b>Ficus benjamina</b> Common name: <b>Pukar (पुकर)</b>	Project office (PHQ)	8 <sup>th</sup> March, 2018	Survived
6		Botanical name: <b>Syzygium cumini</b> Common name: <b>Java plum (जामुन)</b>	Project office (PHQ)	8 <sup>th</sup> March, 2018	Survived
7		Botanical name: <b>Ficus Benghalensis</b> Common name: <b>Bargad (बरगद)</b>	Project office (PHQ)	8 <sup>th</sup> March, 2018	Survived





8		Botanical name: <b>Syzygiumcumini</b> Common name: <b>Java plum (जामुन)</b>	Project office (PHQ)	8 <sup>th</sup> March, 2018	Survived
9		Botanical name: <b>Ficusbenjamina</b> Common name: <b>Pukar(पुकर)</b>	Project office (PHQ)	8 <sup>th</sup> March, 2018	Survived
10		Botanical name: <b>Syzygiumcumini</b> Common name: <b>Java plum (जामुन)</b>	Project office (PHQ)	8 <sup>th</sup> March, 2018	Survived
11		Botanical name: <b>FicusBenghalensis</b> Common name: Bargad( <b>बरगद</b> )	Project office (PHQ)	8 <sup>th</sup> March, 2018	Survived
12		Botanical name: <b>Saracaasoca</b> Common name: <b>Ashoka(अशोक)</b>	Project office (PHQ)	8 <sup>th</sup> March, 2018	Survived






13		Botanical name: <b>Ficusbenjamina</b> Common name: <b>Pukar(पुकर)</b>	Project office (PHQ)	8 <sup>th</sup> March, 2018	Survived
14		Botanical name: <b>Saracaasoca</b> Common name: <b>Ashoka(अशोक)</b>	Project office (PHQ)	8 <sup>th</sup> March, 2018	Survived
15		Botanical name: <b>Saracaasoca</b> Common name: <b>Ashoka(अशोक)</b>	Project office (PHQ)	8 <sup>th</sup> March, 2018	Survived
16		Botanical name: <b>Ficusbenjamina</b> Common name: <b>Pukar(पुकर)</b>	Casting Yard	8 <sup>th</sup> March, 2018	Survived
17		Botanical name: <b>Saracaasoca</b> Common name: <b>Ashoka(अशोक)</b>	Casting Yard	8 <sup>th</sup> March, 2018	Survived







18		Botanical name: <b>Syzygium cumini</b> Common name: <b>Java plum (जामुन)</b>	Casting Yard	8 <sup>th</sup> March, 2018	Survived
19		Botanical name: <b>Ficus benjamina</b> Common name: <b>Pukar (पुकर)</b>	Casting Yard	8 <sup>th</sup> March, 2018	Survived
20		Botanical name: <b>Ficus Benghalensis</b> Common name: <b>Bargad (बरगद)</b>	Casting Yard	8 <sup>th</sup> March, 2018	Survived





**23 Sampling planted at JMRC UG-1B project site during 46<sup>th</sup> NSW (4<sup>th</sup>-10<sup>th</sup> March-2017)**





Sr. No.	Plant Photograph	Plant Name	Plant Location	Date of Plantation	Remarks
1.		Botanical name: <b>Ficus benjamina</b> Common name: <b>Pukar (पुकर)</b>	Project office (PHQ)	8 <sup>th</sup> March, 2017	Survived
2.		Botanical name: <b>Ficus Benghalensis</b> Common name: <b>Bargad (बरगद)</b>	Project office (PHQ)	8 <sup>th</sup> March, 2017	Survived





3.		Botanical name: <b>Syzygium cumini</b> Common name: <b>Java plum (जामुन)</b>	Project office (PHQ)	8 <sup>th</sup> March, 2017	Survived
4.		Botanical name: <b>Ficus benjamina</b> Common name: <b>Pukar (पुकर)</b>	Project office (PHQ)	8 <sup>th</sup> March, 2017	Survived
5.		Botanical name: <b>Syzygium cumini</b> Common name: <b>Java plum (जामुन)</b>	Project office (PHQ)	8 <sup>th</sup> March, 2017	Survived
6.		Botanical name: <b>Saraca asoca</b> Common name: <b>Ashoka (अशोक)</b>	Project office (PHQ)	8 <sup>th</sup> March, 2017	Survived
7.		Botanical name: <b>Ficus religiosa</b> Common name: <b>Peepal (पीपल)</b>	Project office (PHQ)	8 <sup>th</sup> March, 2017	Survived

8.		Botanical name: <b>Syzygium cumini</b> Common name: <b>Java plum (जामुन)</b>	Project office (PHQ)	8 <sup>th</sup> March, 2017	Survived
9.		Botanical name: <b>Ficus Benghalensis</b> Common name: <b>Bargad (बरगद)</b>	Project office (PHQ)	8 <sup>th</sup> March, 2017	Survived
10.		Botanical name: <b>Ficus Benghalensis</b> Common name: <b>Bargad (बरगद)</b>	Project office (PHQ)	8 <sup>th</sup> March, 2017	Survived
11.		Botanical name: <b>Ficus Benghalensis</b> Common name: <b>Bargad (बरगद)</b>	Project office (PHQ)	8 <sup>th</sup> March, 2017	Survived



12.		Botanical name: <b>Saracaasoca</b> Common name: <b>Ashoka(अशोक)</b>	Project office (PHQ)	8 <sup>th</sup> March, 2017	Survived
13.		Botanical name: <b>Syzygiumcumini</b> Common name: <b>Java plum (जामुन)</b>	Project office (PHQ)	8 <sup>th</sup> March, 2017	Survived
14.		Botanical name: <b>Ficusbenjamina</b> Common name: <b>Pukar(पुकर)</b>	Project office (PHQ)	8 <sup>th</sup> March, 2017	Survived
15.		Botanical name: <b>Syzygiumcumini</b> Common name: <b>Java plum (जामुन)</b>	Project office (PHQ)	8 <sup>th</sup> March, 2017	Survived

16.		Botanical name: <b>Saraca asoca</b> Common name: <b>Ashoka (अशोक)</b>	Project office (PHQ)	8 <sup>th</sup> March, 2017	Survived
17.		Botanical name: <b>Ficus Benghalensis</b> Common name: Bargad (बरगद)	Project office (PHQ)	8 <sup>th</sup> March, 2017	Survived
18.		Botanical name: <b>Syzygium cumini</b> Common name: Java plum (जामुन)	Project office (PHQ)	8 <sup>th</sup> March, 2017	Survived
19.		Botanical name: <b>Ficus religiosa</b> Common name: Peepal (पीपल)	Project office (PHQ)	8 <sup>th</sup> March, 2017	Survived

20.		Botanical name: <b>Psidium guajava</b> Common name: <b>PERU Guava (अमरुद)</b>	Project office (PHQ)	8 <sup>th</sup> March, 2017	Survived
21.		Botanical name: <b>Syzygium cumini</b> Common name: <b>Java plum (जामुन)</b>	Project office (PHQ)	8 <sup>th</sup> March, 2017	Survived
22.		Botanical name: <b>Saraca asoca</b> Common name: <b>Ashoka (अशोक)</b>	Project office (PHQ)	8 <sup>th</sup> March, 2017	Survived
23.		Botanical name: <b>Ficus Benghalensis</b> Common name: <b>Bargad (बरगद)</b>	Project office (PHQ)	8 <sup>th</sup> March, 2017	Survived

## Appendix 9: Permission letter for Tree Transplantation at JMRC UG-1B

क्रमांक: आर-1( )13/पेड/1353

निदेशक (प्रोजेक्ट)

जयपुर मेट्रो रेल कॉरपोरेशन लि०,

खनिज भवन, तिलक मार्ग, सी-स्कीम,

जयपुर।

विषय:- जयपुर मेट्रो रेल प्रोजेक्ट के फेज-1 बी में चान्दपोल से बड़ी बीच आ रहे पेड़ों को काटने/पुनरोपण की अनुमति प्रदान

विषयान्तर्गत प्रासंगिक पत्र द्वारा जयपुर मेट्रो रेल प्रोजेक्ट के फेज से बड़ी चौपड के बीच आ रहे 90 पेड़ों को काटने/पुनरोपण अनुमति प्रदान करने का निवेदन किया गया जयपुर मेट्रो रेल प्रोजेक्ट के फेज-1 बी में कुल 88 पेड़ों को काटने/पुनरोपण की अनुमति प्रदान संख्या 3 व 4 (पीपल व बरगद) के पेड को काटने की

निर्देशानुसार  
फेज-1 बी में

पर  $88 \times 4 = 352$  पेड लगाये जावेंगे तथा काटे गये पेड की

भू-राजस्व

(मातादीन)

प्रतिलिपि तहसीलदार जयपुर को उनके पत्र क्रमांक 18ए/ 14,  
01.2014 सन्दर्भ में उपरोक्तानुसार पालना हेतु प्रेषित

11  
(मातादीन)

प्रभारी अधिक

<< END OF REPORT >>