

Environmental and Social Due Diligence Report

Project Number: 47083-004
January 2022

INDIA: Accelerating Infrastructure Investment Facility in India – Tranche 3 Shamlaji Expressway Private Limited (Part 30 of 34)

Prepared by India Infrastructure Finance Company Limited for the India Infrastructure Finance Company Limited and the Asian Development Bank.

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TC-5509




ULR-TC550921000004104F

TEST REPORT

Sample ID : W/03/21/086	Report No. W/03/21/086	Report Date	13/03/2021
Name and address of Customer	Shyamalaji Express Way Pvt. Ltd. Chetak Enterprises Ltd. Near Sabar Dairy, Taloda Road, Ghadhoda Himnat Nagar, Sabarkantha-383001, Gujarat		
Sampling done by	Laboratory	Sample Description / Type	Drinking Water (Group: Water)
Sampling Location	Majora RMC/HMP Camp 524+240 Km LHS	Date - Sampling	07/03/2021
Sample Quantity / Packing	5 L x 1 no. plastic can 250 ml x 1 no. sterile bottle	Date - Receipt of Sample	08/03/2021
Sampling Procedure	IS 1622:1981 & IS 3025(Part I) 1987 & APHA 23rd Ed. 2017, 1060 B,1-40, 9060 A,9-36 & 9060 B,9-39	Date - Start of Analysis	08/03/2021
Order Reference	As per your W.O. No.CEL/SM/2021-22/WO-02 dated 09.02.2021	Date - Completion of Analysis	12/03/2021

Sr.No.	Parameter	Result	Acceptable Limit as per IS 10500:2012	Unit	Method
CHEMICAL TESTING					
Organoleptic and Physical Parameters					
1	Colour	1	Max. 5	Hazen	IS 3025 (Part 4):1983, RA 2017
2	Odour	Agreeable	Agreeable	-	IS 3025 (Part 5):1983, RA 2017
3	pH value	7.21	6.5-8.5	-	IS 3025 (Part 10):1983, RA 2017
4	Turbidity	<0.02	Max. 1	NTU	IS 3025 (Part 10):1984, RA 2017
5	Total Dissolved Solids	554	Max. 500	mg/L	IS 3025 (Part 16):1984, RA 2017
General Parameters concerning substances undesirable in excessive amounts					
6	Calcium(as Ca)	51.3	Max. 75	mg/L	IS 3025 (Part 40):1991, RA 2014,
7	Chloride (as Cl)	148	Max. 250	mg/L	IS 3025 (Part 32):1988, RA 2014
8	Fluoride (as F)	0.3	Max 1	mg/L	IS 3025 (Part 60):2008, RA 2013
9	Iron (as Fe)	0.160	Max.1.0	mg/L	IS 3025 (Part 2):2004, RA 2014 / ISO 11885:1996
10	Magnesium (as Mg)	30.1	Max. 30	mg/L	IS 3025 (Part 46):1994, RA 2014, Amds.2
11	Nitrate (as NO ₃)	17.6	Max 45	mg/L	APHA, 23rd Ed., 2017, 4500-NO ₃ -B-4-127
12	Sulphate (as SO ₄)	28.4	Max. 200	mg/L	IS 3025 (Part 24):1986, RA 2014
13	Total Alkalinity (as CaCO ₃)	307	Max. 200	mg/L	IS 3025(Part 23):1986, RA 2014, Amds.2
14	Total Hardness (as CaCO ₃)	252	Max. 200	mg/L	IS 3025 (Part 21):1983, RA 2009
BIOLOGICAL TESTING					
Bacteriological Parameters					
15	<i>E.coli</i>	Absent	Not Detectable	/100 ml	APHA, 23rd Ed., 2017, 9221-G, 9-80
16	Total Coliforms	Present	Not Detectable	/100 ml	APHA, 23rd Ed., 2017, 9221-G, 9-75
Remarks: The Water Sample does not comply with Acceptable Limit as per IS 10500:2012, RA 2018 [With Amendment No.1 and 2] Standard with respect to the parameters tested, without applying measurement uncertainty.					


 Divya Sharma
 Section In-charge (Biological)
 Reviewed & Authorised by



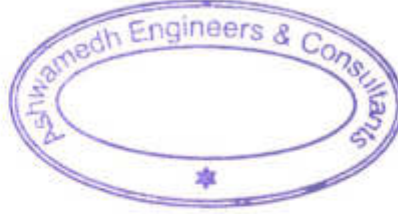

 Ninad Soundankar
 Technical Manager (Chemical)
 Reviewed & Authorised by



ULR-TC550921000004104F

Sample ID : W/03/21/086	Report No. W/03/21/086	Report Date	13/03/2021
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4. There are no additions to, deviations or exclusions from the method.
5. Statement of conformity is based on the decision rule applied.



TC-5509




ULR-TC550921000004105F

TEST REPORT

Sample ID : W/03/21/087	Report No. W/03/21/087	Report Date	13/03/2021
Name and address of Customer	Shyamalaji Express Way Pvt. Ltd. Chetak Enterprises Ltd. Near Sabar Dairy, Taloda Road, Ghadhoda Himnat Nagar, Sabarkantha-383001,Gujarat		
Sampling done by	Laboratory	Sample Description / Type	Drinking Water (Group:Water)
Sampling Location	Asal Camp 454 Km RHS	Date - Sampling	07/03/2021
Sample Quantity / Packing	5 L x 1 no. plastic can 250 ml x 1 no. sterile bottle	Date - Receipt of Sample	08/03/2021
Sampling Procedure	IS 1622:1981 & IS 3025(Part I) 1987 & APHA 23rd Ed. 2017, 1060 B,1-40, 9060 A,9-36 & 9060 B,9-39	Date - Start of Analysis	08/03/2021
Order Reference	As per your W.O. No.CEL/SM/2021-22/WO-02 dated 09.02.2021	Date - Completion of Analysis	12/03/2021

Sr.No.	Parameter	Result	Acceptable Limit as per IS 10500:2012	Unit	Method
CHEMICAL TESTING					
Organoleptic and Physical Parameters					
1	Colour	1	Max. 5	Hazen	IS 3025 (Part 4):1983, RA 2017
2	Odour	Agreeable	Agreeable	-	IS 3025 (Part 5):1983, RA 2017
3	pH value	7.21	6.5-8.5	-	IS 3025 (Part 11):1983, RA 2017
4	Turbidity	<0.2	Max. 1	NTU	IS 3025 (Part 10):1984, RA 2017
5	Total Dissolved Solids	88	Max. 500	mg/L	IS 3025 (Part 16):1984, RA 2017
General Parameters concerning substances undesirable in excessive amounts					
6	Calcium(as Ca)	10.4	Max. 75	mg/L	IS 3025 (Part 40):1991, RA 2014,
7	Chloride (as Cl)	24	Max. 250	mg/L	IS 3025 (Part 32):1988, RA 2014
8	Fluoride (as F)	0.1	Max 1	mg/L	IS 3025 (Part 60):2008, RA 2013
9	Iron (as Fe)	<0.06	Max.1.0	mg/L	IS 3025 (Part 2):2004, RA 2014 / ISO 11885:1996
10	Magnesium (as Mg)	5.83	Max. 30	mg/L	IS 3025 (Part 46):1994, RA 2014, Amds.2
11	Nitrate (as NO ₃)	9.56	Max 45	mg/L	APHA,23rd Ed.,2017,4500-NO3-B-4-127
12	Sulphate (as SO ₄)	<2	Max. 200	mg/L	IS 3025 (Part 24):1986, RA 2014
13	Total Alkalinity (as CaCO ₃)	30	Max. 200	mg/L	IS 3025(Part 23):1986, RA 2014, Amds.2
14	Total Hardness (as CaCO ₃)	50	Max. 200	mg/L	IS 3025 (Part 21):1983, RA 2009
BIOLOGICAL TESTING					
Bacteriological Parameters					
15	E.coli	Absent	Not Detectable	/100 ml	APHA, 23rd Ed., 2017, 9221-G, 9-80
16	Total Coliforms	Present	Not Detectable	/100 ml	APHA, 23rd Ed., 2017, 9221-D, 9-75

Remarks: The Water Sample does not comply with Acceptable Limit as per IS 10500:2012, RA 2018 [With Amendment No.1 and 2] Standard with respect to the parameters tested, without applying measurement uncertainty.


Divya Sharma
Section In-charge (Biological)
Reviewed & Authorised by



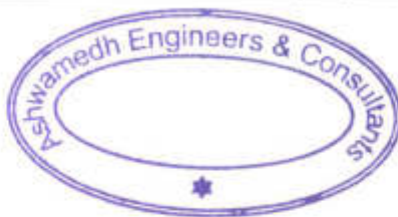

Ninad Soundankar
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ULR-TC550921000004105F

Sample ID : W/03/21/087	Report No. W/03/21/087	Report Date	13/03/2021
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TC-5509



NOISE LEVEL MEASUREMENT REPORT

Sample ID: N/03/21/0168	Report No.N/03/21/0168	Report Date	08/03/2021
Name and address of Customer	Shamlaji Expressway Pvt.Ltd. Chetak Enterprises Ltd. Near Sabar Dairy, Talod Road, Ghadoda, Himmatnagar, Sabarkantha-383001, Gujarat		
Monitoring Done By	Laboratory	Sample Description /Type	Ambient Noise (Group: Atmospheric Pollution)
Order Reference	As per your W.O.No.CEL/SM/2021-22/WO-02 dated 09.02.2021	Date-Monitoring	06/03/2021 to 07/03/2021

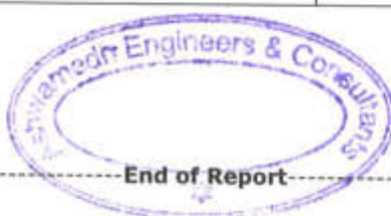
Location	Time (h)	Results Noise Level dB (A) Fast Response	Method
Prantij 513 km	1220	69	CPCB Protocol for Ambient Level Noise Monitoring, July 2015 GAEC/C/SAP/SAM/35636 36, Issue No.4, Issue date 01.04.2018
	1320	67	
	1420	69	
	1520	70	
	1620	72	
	1720	67	
	1820	66	
	1920	65	
	2020	63	
	2120	65	
	2220	66	
	2320	63	
	2420	62	
	0120	61	
	0220	60	
	0320	64	
	0420	60	
	0520	61	
	0620	63	
	0720	65	
	0820	67	
	0920	68	
	1020	70	
	1120	73	

Limit

**As per the Noise Pollution (Regulation & Control) Rules, 2000
(Rules 3 (1) and 4(1))**

Area Type	Limits in dB (A) weighted scale	
	Day (6 a.m. to 10 p.m.)	Night (10 p.m. to 6 a.m.)
Industrial Area	75	70
Average	67	62


Ninad Soundankar
Technical Manager (Chemical)
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End of Report

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TC-5509

NOISE LEVEL MEASUREMENT REPORT

Sample ID: N/03/21/0169	Report No. N/03/21/0169	Report Date	08/03/2021
Name and address of Customer	Shamlaji Expressway Pvt.Ltd. Chetak Enterprises Ltd. Near Sabar Dairy, Talod Road, Ghadoda, Himmatnagar, Sabarkantha-383001, Gujarat		
Monitoring Done By	Laboratory	Sample Description /Type	Ambient Noise (Group: Atmospheric Pollution)
Order Reference	As per your W.O.No.CEL/SM/2021-22/WO-02 dated 09.02.2021	Date-Monitoring	06/03/2021 to 07/03/2021

Location	Time (h)	Results Noise Level dB (A) Fast Response	Method
Motipura 513 km	1300	67	CPCB Protocol for Ambient Level Noise Monitoring, July 2015 BAEC/C/SAP/SAM/35636 36, Issue No.4, Issue date 01.04.2018
	1400	69	
	1500	70	
	1600	71	
	1700	65	
	1800	66	
	1900	67	
	2000	66	
	2100	64	
	2200	61	
	2300	60	
	2400	62	
	0100	64	
	0200	66	
	0300	68	
	0400	67	
	0500	66	
	0600	69	
	0700	70	
	0800	72	
	0900	75	
	1000	73	
	1100	73	
	1200	78	

Limit		
As per the Noise Pollution (Regulation & Control) Rules, 2000 (Rules 3 (1) and 4(1))		
Area Type	Limits in dB (A) weighted scale	
	Day (6 a.m. to 10 p.m.)	Night (10 p.m. to 6 a.m.)
Industrial Area	75	70
Average	69	65

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TC-5509




NOISE LEVEL MEASUREMENT REPORT

Sample ID: N/03/21/0170	Report No. N/03/21/0170	Report Date	08/03/2021
Name and address of Customer	Shamlaji Expressway Pvt.Ltd. Chetak Enterprises Ltd. Near Sabar Dairy, Talod Road, Ghadoda, Himmatnagar, Sabarkantha-383001, Gujarat		
Monitoring Done By	Laboratory	Sample Description /Type	Ambient Noise (Group: Atmospheric Pollution)
Order Reference	As per your W.O.No.CEL/SM/2021-22/WO-02 dated 09.02.2021	Date-Monitoring	06/03/2021 to 07/03/2021

Location	Time (h)	Results Noise Level dB (A) Fast Response	Method
Asal camp 454 km	1500	60	CPCB Protocol for Ambient Level Noise Monitoring, July 2015 BAEC/C/SAP/SAM/35636 36, Issue No.4, Issue date 01.04.2018
	1600	62	
	1700	66	
	1800	63	
	1900	60	
	2000	56	
	2100	55	
	2200	59	
	2300	58	
	2400	56	
	0100	54	
	0200	53	
	0300	50	
	0400	51	
	0500	48	
	0600	50	
	0700	47	
	0800	45	
	0900	60	
	1000	62	
	1100	61	
	1200	63	
	1300	60	
	1400	61	

Limit		
As per the Noise Pollution (Regulation & Control) Rules, 2000 (Rules 3 (1) and 4(1))		
Area Type	Limits in dB (A) weighted scale	
	Day (6 a.m. to 10 p.m.)	Night (10 p.m. to 6 a.m.)
Industrial Area	75	70
Average	58	54


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TC-5509



NOISE LEVEL MEASUREMENT REPORT

Sample ID: N/03/21/0171	Report No.N/03/21/0171	Report Date	08/03/2021
Name and Address of Customer	Shamlaji Express way Pvt.Ltd. Chetak Enterprises Ltd. Near Sabar Dairy, Talod Road, Ghadoda, Himmatnagar, Sabarkantha-383001, Gujarat		
Monitoring Done By	Laboratory	Sample Description /Type	Workplace Noise (Group:Atmospheric Pollution)
Order Reference	As per our Quo.ref. No.AEC/NS/March 021/Quo.04 dated 05.03.2021	Date-Monitoring	07/03/2021

Sr. No.	Location	Time (h)	Results Noise Level dB (A) Fast Response	Method
1	Ghadhoda RMC/HMP Camp 446 + 424 km LHS	1000	67.2	IS 9876: 1981, CPCB Protocol for Ambient Level Noise Monitoring, July 2015 GAEC/C/SAP/SAM/35636 36, .Issue No.4, Issue date 01.04.2018
2	Majra RMC/HMC Camp 524+240 km LHS	1600	65.6	
3	Asal camp 454 Km RHS	1200	63.2	
4	Motipura 491 Km	1400	62.8	
5	Prantij 513 Km	1500	60.2	
Limit				
Permissible Exposure Period as per Maharashtra Factories Rules,1963, Schedule XXIV Table 1				
Total hours of sound exposure per day		Level		
Hours		dB(A)		
8		90		
6		92		
4		95		


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TC-5509



NOISE LEVEL MEASUREMENT REPORT

Sample ID: N/03/21/0166	Report No. N/03/21/0166	Report Date	06/03/2021
Name and address of Customer	Shamlaji Express way Pvt.Ltd. Chetak Enterprises Ltd. Near Sabar Dairy, Talod Road, Ghadoda, Himmatnagar, Sabarkantha-383001, Gujarat		
Monitoring Done By	Laboratory	Sample Description /Type	Ambient Noise (Group: Atmospheric Pollution)
Order Reference	As per your W.O.No.CEL/SM/2021-22/WO-02 dated 09.02.2021	Date-Monitoring	05/03/2021 to 06/03/2021

Location	Time (h)	Results Noise Level dB (A) Fast Response	Method
Ghadhoda RMC/HMP Camp 446 + 424 LHS	1200	65	CPCB Protocol for Ambient Level Noise Monitoring, July 2015 GAEC/C/SAP/SAM/35636 36, Issue No.4, Issue date 01.04.2018
	1300	66	
	1400	67	
	1500	62	
	1600	64	
	1700	69	
	1800	66	
	1900	62	
	2000	64	
	2100	60	
	2200	58	
	2300	57	
	2400	55	
	0100	52	
	0200	50	
	0300	54	
	0400	51	
	0500	52	
	0600	53	
	0700	55	
	0800	57	
	0900	58	
	1000	60	
	1100	61	

Limit

As per the Noise Pollution (Regulation & Control) Rules, 2000
(Rules 3 (1) and 4(1))

Area Type	Limits in dB (A) weighted scale	
	Day (6 a.m. to 10 p.m.)	Night (10 p.m. to 6 a.m.)
Industrial Area	75	70
Average	62	53


Ninad Soundankar
Technical Manager (Chemical)
Reviewed & Authorised by



End of Report

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TC-5509



NOISE LEVEL MEASUREMENT REPORT

Sample ID: N/03/21/0167	Report No. N/03/21/0167	Report Date	06/03/2021
Name and address of Customer	Shamlaji Expressway Pvt.Ltd. Chetak Enterprises Ltd. Near Sabar Dairy, Talod Road, Ghadoda, Himmatnagar, Sabarkantha-383001, Gujarat		
Monitoring Done By	Laboratory	Sample Description /Type	Ambient Noise (Group: Atmospheric Pollution)
Order Reference	As per your W.O.No.CEL/SM/2021-22/WO-02 dated 09.02.2021	Date-Monitoring	05/03/2021 to 06/03/2021

Location	Time (h)	Results Noise Level dB (A) Fast Response	Method
Majra RMC/HMP Camp 524 + 240 LHS	1300	62	CPCB Protocol for Ambient Level Noise Monitoring, July 2015 GAEC/C/SAP/SAM/35636 36, Issue No.4, Issue date 01.04.2018
	1400	60	
	1500	65	
	1600	64	
	1700	61	
	1800	62	
	1900	60	
	2000	58	
	2100	59	
	2200	56	
	2300	51	
	2400	50	
	0100	49	
	0200	48	
	0300	46	
	0400	45	
	0500	46	
	0600	48	
	0700	49	
	0800	51	
	0900	55	
	1000	52	
	1100	53	
	1200	59	

Limit

**As per the Noise Pollution (Regulation & Control) Rules, 2000
(Rules 3 (1) and 4(1))**

Area Type	Limits in dB (A) weighted scale	
	Day (6 a.m. to 10 p.m.)	Night (10 p.m. to 6 a.m.)
Industrial Area	75	70
Average	57	42

Ninad Soundankar
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