

STATE URBAN DEVELOPMENT AGENCY

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ক্রমিক নং SUDA-366/2019/ 8597

তারিখ 14-01-2020

CORRIGENDUM – 2

Name of the Work : Selection of Concessionaire for Bio-remediation of Legacy Waste, setting up of Processing facility at Pramodnagar and Kamarhati and Sanitary Landfill at Identified Site, Secondary collection and Transportation, Processing and Disposal of Municipal Solid Waste for Dum Dum, South Dumdum, North Dumdum, Baranagar, Kamarhati and New Barrackpore Municipalities

Tender Reference No. : SUDA-366/2019/8156 **Dated:** 30.12.2019

Tender ID No : 2019_MAD_262852_1 **Dated:** 30.12.2019

The **Terms of Reference & Concession Agreement** should be read as follows :

TERMS OF REFERENCE

Abbreviations

C&D	Construction and Demolition
C/N	Carbon/Nitrogen Ratio
CPCB	Central Pollution Control Board
CPHEEO	Central Public Health & Environmental Engineering Organization
DPR	Detailed Project Report
EC	Environmental Clearance
EIA	Environmental Impact Assessment
FCO	Fertilizer (Control) Order, 1985
GCV/CV	Gross Calorific Value
Ha	Hectare
IEC	Information, Education & Communication
Kcal	Kilo Calories
MNRE	the union Ministry for Non-Conventional and renewable Energy
MOEF&CC	Ministry of Environment Forests and Climate Change
MOHUA	Ministry of Housing and Urban Affairs, Govt. of India
MOUD	Ministry of Urban Development (Govt. of India)
MRF	Material Recovery Facilities
MSW	Municipal Solid Waste
NABL	National Accreditation Board for Testing & Calibration Laboratories
NGOs	Non-Governmental Organizations
PPE	Personal Protective Equipment
PPP	Public Private Partnership
RDF	Refuse Derived Fuel
RFP	Request for Proposal
SBM	Swachh Bharat Mission
SPCB	State Pollution Control Board
SLB	Service Level Benchmark
SLF	Sanitary Landfill
SOP	Standard Operating Procedure
SWM	Solid Waste Management
TPD/TPA	Tons per Day / Tons per Annum
ULBs	Urban Local Bodies
BWG	Bulk Waste Generator

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Project Synopsis

Solid Waste Management (SWM) is a vital service provided by Urban Local Bodies to its citizens to ensure a healthier environment, standard of living, health and sanitation facilities. Solid Waste Management Rules, 2016 issued by Government of India (GoI) and various directions given by National Green Tribunal (NGT) time to time have set the baseline for the modus operandi of SWM in the country. In line with these requirements, State Urban Development Agency (SUDA) of West Bengal has proposed to set up cluster based solid waste management projects in various municipalities of the state. The project comprises of six municipalities i.e. of Dum Dum, North Dum Dum, South Dum Dum, Baranagar, New Barrackpore and Kamarhati municipalities. Presently, the cluster generates about 635 TPD of waste which is estimated to reach 909 TPD by 2042. The area of the Pramodnagar site is about 22.69 acres and approximately 6.6 lakh cubic meter of legacy waste is already lying at the site and site needs to be reclaimed for developing the processing plant facility. Kamarhati site measures an area of about 8 acres and around 1.46 lakhs cubic meter of waste is lying at this site. It is proposed to set up the processing plant for Kamarhati and New Barrackpore municipalities at this 8-acre site after biomining of legacy waste and reclaiming the land at Kamarhati site. The Processing plant at Pramodnagar site will cater the waste from Dum Dum, North Dum Dum, South Dum Dum and Baranagar municipalities which shall reduce the waste burden at Pramod Nagar site.

Pramodnagar site is in vicinity of a large water body, residential areas, belghoria expressway and also lies in the buffer zone of Dum Dum Airport. The estimated area required for SLF (around 33 acres) is more than the total available area (22.69 acres) at Pramod Nagar site. Due to this, SLF has been proposed to be developed at another site, which will accommodate processing rejects from both Pramodnagar and Kamarhati sites. As per the project structure two processing plants are to be set up, one at Pramod Nagar (450 TPD compost & RDF facility and 100 TPD Bio-methanation plant), second at Kamarhati (180 TPD compost & RDF facility) and a common SLF at another site (to be finalized by SUDA). Also, as part of land development, to setup new plants at Pramod Nagar and Kamarhati, existing legacy waste biomining and land reclamation activities need to be taken up including disposal of inert/biomining rejects at low-lying area. A low-lying land parcel has been identified at Panihati for disposal of bioremediation rejects which is about 22 km. The project structure has been conceptualized for private sector participation in secondary collection and transportation, processing and disposal of waste. The municipalities shall carry out the source segregation, primary collection and transportation of waste to the secondary collection points. Secondary collection points to be developed by the concessionaire.

The overall project is designed considering the year 2027 and provisions of expansion have been taken in to consideration to cater the future waste generation till year 2042. The concession period accounts for the time envisaged in contract signing, biomining of legacy waste, construction & commissioning of the processing plant, SLF and operations for 20 years. The entire project is divided in to 3 components: (i) Primary Collection & Transportation (responsibility of the ULB's); (ii) Secondary transportation & Processing and Disposal and (iii) Removal of Legacy waste. For second and third component, a combined bid process is initiated. However, the latter will also bring the challenge in bidding process as dumpsite reclamation projects are usually civil works contract and do not involve PPP structuring. Hence, a cost bracket is fixed for of legacy waste removal and disposal at the identified site on per ton basis which shall be paid by government. The cost of revenue deficit (i.e. Tipping fee) for Secondary Collection and Transportation of waste to processing site, setting up processing & disposal facility and 20 years operation is used as a bidding variable in bid process for invitation of a private party.

1 Project Development

1.1 Project background

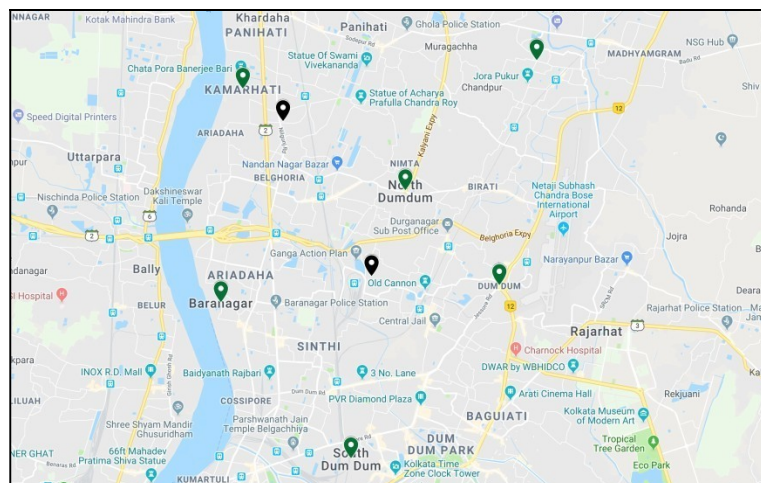
As mentioned in the introduction, Government of West Bengal has taken several steps/ initiatives for making all the cities Clean, Green and Beautiful with special emphasis on management of Solid Wastes in Municipal Towns of the State. One of the obligatory functions of the Municipal Bodies is to remove solid waste from the cities under Sections 63, 95B, 260, 273 of the West Bengal Municipal Act, 1993 and corresponding provisions of the statute governing Municipal Corporations in West Bengal.

Under Mission Nirmal Bangla, number of equipment's such as garbage bins, compactors, hydraulic tippers and other vehicles, community bins were granted to Municipal Bodies to assist them in systematic collection of garbage from individual holdings, their transportation and stacking before disposal. Land has also been provided through inter departmental transfer to municipal bodies to set up dumping ground and solid waste processing plants. In some cases, these bodies have been permitted to purchase private land for setting up these facilities. The municipal bodies are required to collect waste from individual holdings systematically and transport them regularly to the solid waste disposal facility and get them recycled/processed scientifically. There are some sporadic efforts by some municipalities to collect waste and process them to the best of their abilities. It is, however, a fact that most municipal bodies need additional support in the technical capability, financial muscle and managerial competence aspects to handle solid waste in a scientific manner. Hence SUDA (State Urban Development Authority) formulated this project to identify gaps in existing infrastructure of respective municipalities and to improve the current situation of solid waste management substantially.

Proposed scheme as per RFP/Contract

Cluster-1 consists of 6 ULB's - Dum Dum Municipality, North Dum Dum Municipality, South Dum Dum Municipality, Baranagar Municipality, Kamarhati Municipality, and New Barrackpore Municipality. As per scope, PramodNagar site (adjacent to Belgharia Expressway) and Kamarhati site is identified for setting up the processing plant and a Sanitary Landfill Site (Site to be finalised) for these 6 municipalities. The details of ULBs are given below:

Figure 1 ULB's and Dumpsites in Cluster 1



1. Dum Dum

Dum Dum is located at 22.62°N 88.42°E. It has an average elevation of 11 meters. It is a city and a municipality of North 24 Parganas district in the Indian state of West Bengal and a part of the area covered by Kolkata Metropolitan Development Authority (KMDA). It is bounded by North Dumdum (municipality) on the north and a part of the west, Rajarhat CD Block on the east, and South Dumdum (municipality) on the south and a part of the west. As per the 2011 Census of India, Dum Dum had a total population of 114,786, of which 58,566 (51%) were males and 56,220 (49%) were females. Population below 6 years was 8,259. The total number of literates in Dum Dum was 97,997 (91.99% of the population over 6 years). Dumdum has an average

literacy rate of 82%, higher than the national average of 59.5%: male literacy is 85% and, female literacy is 78%. In Dumdum, 8% of the population is under 6 years of age. Its brief profile is as follows:

Area	9.37 sq kms
Total population (as per Census 2011)	114786
Female population	56220
Male population	58566
Total number of wards	22

2. North Dum Dum

North Dum Dum is located at 22.6520800°N 88.4190700°E. It is a city and a municipality of North 24 Parganas district in the Indian state of West Bengal. It is bounded by Panihati (municipality), Teghari, Muragachha, Chandpur (all three census towns in Barrackpore II CD Block) and New Barrackpore (municipality) on the north, Barasat II CD Block and Rajarhat CD Block on the east, Dum Dum (municipality) and South Dumdum (municipality) on the south, and Panihati (municipality) on the west. As per the 2011 Census of India, North Dum Dum had a total population of 249,142, of which 126,279 (51%) were males and 122,863 (49%) were females. Population below 6 years was 18,411. The total number of literates in North Dum Dum was 209,964 (91.00% of the population over 6 years). It had a population of 220,032. Males constitute 51% of the population and females 49%. North Dumdum has an average literacy rate of 82%, higher than the national average of 59.5%: male literacy is 86%, and female literacy is 79%. In North Dumdum, 9% of the population is under 6 years of age. Its brief profile is as follows:

Area	20 sq kms
Total population (as per Census 2011)	249142
Female population	126279
Male population	122863
Total number of wards	34

3. South Dum Dum

South Dumdum is located at 22.61°N 88.40°E. South Dumdum is a city and a municipality of North 24 Parganas district in the Indian state of West Bengal and a part of the area covered by Kolkata Metropolitan Development Authority (KMDA). South Dumdum is bounded by North Dumdum (municipality) and Dum Dum (municipality) on the north, Baguiati on the east, Bidhannagar on the south, and Belgachia and Sinthee in Kolkata district and Baranagar (municipality) on the west. As per the 2011 Census of India, South Dum Dum had a total population of 403,316, of which 202,214 (50%) were males and 201,102 (50%) were females. Population below 6 years was 28,703. The total number of literates in South Dum Dum was 344,971 (92.09% of the population over 6 years). South Dumdum had a population of 392,150. Males constitute 51% of the population and females 49%. South Dumdum has an average literacy rate of 83%, higher than the national average of 59.5%: male literacy is 87%, and female literacy is 80%. In South Dumdum, 8% of the population is under 6 years of age. Its brief profile is as follows:

Area	17.25 sq kms
Total population (as per Census 2011)	403316
Female population	201102
Male population	202214
Total number of wards	35

4. Baranagar

Baranagar is located at 22.64°N 88.37°E. It has an average elevation of 12 meters (39 feet). It is a neighbourhood in Kolkata and a municipality of North 24 Parganas district in the Indian state of West Bengal. It is situated in the region of Greater Kolkata and therefore is a part of the area covered by Kolkata Metropolitan Development Authority (KMDA). More particularly to say, the boundary of Baranagar is – in the east, the Rail

line from Sealdah towards Krishnanagar; in the west – the holy river Ganga, in the north – PWD Road and in the south – Baranagar Bazaar. It is connected by the holy Ganges to Dakshineswar temple which lies just a quarter of a mile from this place. As per the 2011 Census of India, Baranagar had a total population of 245,213, of which 126,187 (51%) were males and 119,026 (49%) were females. Population below 6 years was 16,825. The total number of literates in Baranagar was 208,779 (91.41% of the population over 6 years). Baranagar had a population of 250,615. Males constitute 53% of the population and females 47%. Baranagar has an average literacy rate of 82%, higher than the national average of 59.5%; with 55% of the males and 45% of females' literate. 8% of the population is under 6 years of age. Its brief profile is as follows:

Area	7.12 sq kms
Total population (as per Census 2011)	245123
Female population	119026
Male population	126187
Total number of wards	34

5. Kamarhati

Kamarhati is located at 22.67°N 88.37°E. Kamarhati is a city and a municipality of North 24 Parganas district in the Indian state of West Bengal and a part of the area is covered by Kolkata Metropolitan Development Authority (KMDA). The sacred temple at Dakshineswar is situated in Kamarhati municipal area. Neighbourhoods such as Belgharia and Ariadaha are part of this municipality. The Kamarhati Municipality is located in Rathtala on BT Road. Kamarhati is bounded by Khardaha and Panihati on the north, North Dum Dum on the east, Baranagar on the south, and the Hooghly on the west. As per the 2011 Census of India, Kamarhati had a total population of 331163, of which 170,293 (52%) were males and 159,918 (48%) were females. Population below 6 years was 25,350. The total number of literates in Kamarhati was 267,267 (87.67% of the population over 6 years). Kamarhati had a population of 314,334. Males constitute 54% of the population and females 46%. Kamarhati has an average literacy rate of 77%, higher than the national average of 59.5%: male literacy is 81%, and female literacy is 72%. In Kamarhati, 9% of the population is under 6 years of age. Its brief profile is as follows:

Area	10.9 sq kms
Total population (as per Census 2011)	331163
Female population	159918
Male population	170293
Total number of wards	35

6. New Barrackpore

New Barrackpore is located at 22.7°N 88.45°E. New Barrackpore is a city and a municipality in Kolkata of North 24 Parganas district in the Indian state of West Bengal. It is a part of the area covered by Kolkata Metropolitan Development Authority (KMDA).

As per the 2011 Census of India, New Barrackpore had a total population of 76,879, of which 38,239 (50%) were males and 38,607 (50%) were females. Population below 6 years was 5,157. The total number of literates in New Barrackpore was 67,384 (93.99% of the population over 6 years). New Barrackpore had a population of 83,183. Males constitute 50% of the population and females 50%. In New Barrackpore, 7% of the population is under 6 years of age. The literacy rate is 95.19% where the male literacy rate is 97.66% and female literacy rate is 92.72%. Its brief profile is as follows:

Area	8.69 sq kms
Total population (as per Census 2011)	76879
Female population	38607
Male population	38239
Total number of wards	20

Table 1: Population & waste generation details of Cluster – 1

S. No	ULB	Population projection for 2019	Current Waste generation in 2019 (Tons per day)	Solid Waste Generated (Shared by ULB's) in TPD	Population projection for 2027	Estimated waste generation in 2027 (Tons per day)	Population projection for 2042	Estimated waste generation in 2042 (Tons per day)
1	Dum Dum	127281	59.35	62.1	189306	75.72	294399	117.76
2	North Dum Dum	276263	102.93	150	345079	120.78	461216	161.43
3	South Dum Dum	446869	204.07	698	506459	227.91	614345	276.46
4	Baranagar	271906	110.03	145	309441	123.78	388725	155.49
5	Kamarhati	367212	124.25	100	380981	133.34	433299	151.65
6	New Barrackpore	85237	34.62	29	108831	38.09	132080	46.23

2 Project Studies

2.1 Waste Characterization of Fresh Waste

Solid waste is very heterogeneous in nature and its composition varies with place and time. Even samples obtained from the same place (sampling point) on the same day, but at different times may show totally different characteristics. Waste characterization has been done in all the ULBs to find out the physical and chemical components of MSW in Cluster-1.

The following parameters are analysed based on the waste sample collected for the **fresh waste** from each of the ULBs:

- (a) Parameters tested:
- Physical composition includes percentage fractions of different components in mixed waste & Sieve analysis results.

Table 2: Test Results

S.No	Test Parameters	Unit	Dum Dum	North Dum Dum	South Dum Dum	Kamarhati	New Barrackpore	Baranagar	Average
1.	Texture	--	Solid	Solid	Solid	Solid	Solid	Solid	Solid
2.	Smell	--	Rotten Odour	Rotten Odour	Rotten Odour	Rotten Odour	Rotten Odour	Rotten Odour	Rotten Odour
3.	Solids Constituent								
	a) Plastic	%	10	12	09	14	10	08	10.5
	b) Vegetable Waste	%	12	50	15	50	50	40	36.2
	c) Soil	%	30	15	25	12	08	10	16.7
	d) Grass	%	07	--	05	10	12	05	7.8
	e) Leather	%	08	10	08	--	--	12	9.5
	f) Glass Bottle	%	05	05	05	--	10	20	9
	g) Other Waste	%	28	08	33	16	10	05	16.7
4.	Probe Moisture		29	30	27.5	31	31	26	29.1

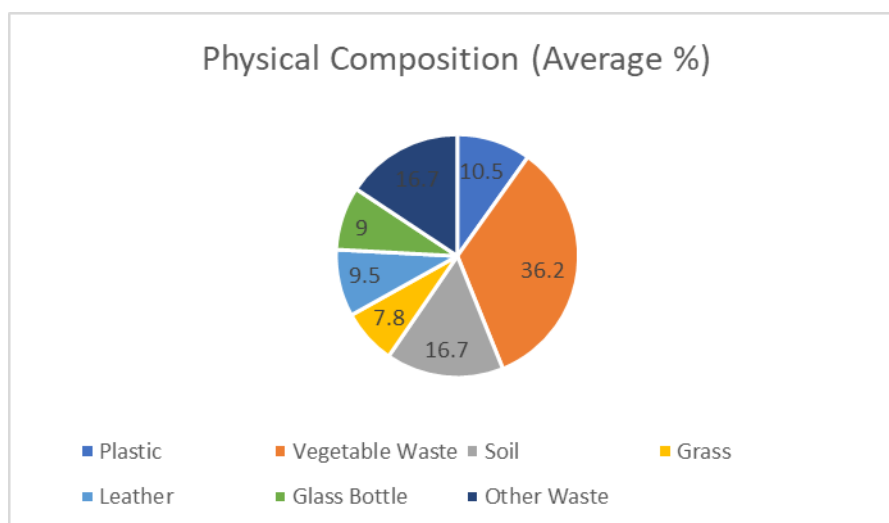


Figure 2: Physical composition

- ii. Chemical composition will include Moisture Content, Ash Content, Gross CV Value, Bulk Density.

Table 3: Chemical Composition

S. No	Test Parameters	Unit	Dum Dum	North Dum Dum	South Dum Dum	Kamar-hati	New Barrackpore	Baranagar	Average
1.	Bulk Density	gm/cc	0.53	0.62	0.59	0.49	0.48	0.55	0.54
2.	Total Organic Content	%	10.40	8.95	12.81	6.85	7.30	8.40	9.12
3.	Moisture Content	%	63.51	66.85	75.91	45.55	70.71	64.67	64.5
4.	Ash Content (Dry Basis)	%	33.69	15.99	56.32	34.80	9.53	28.50	29.8
5.	Nitrogen	%	0.36	0.31	0.27	0.28	0.33	0.39	0.32
6.	C:N ratio	--	28.9	28.87	47.4	24.5	22.12	21.5	28.88
7.	Gross Calorific Value (Dry Basis)	Kcal/kg	2343	5489	2154	2715	3891	3403	3332

The original test reports have been attached in the Annexure I.

2.2 Waste Composition of Legacy Waste and its TCLP test (For dumpsite waste)

Legacy waste has always been a major concern with exhausted dumpsites. Legacy waste is a result of dumping of waste and leaving untreated garbage at dumpsites for decades. Toxicity characteristic leaching procedure (TCLP) is a soil sample extraction method for chemical analysis employed as an analytical method to simulate leaching through a landfill. There is a need to bio mine the legacy waste and dispose off the inert in a low-lying area before initiating any construction work in the dumpsites at Pramodnagar and Kamarhati. When this dumped legacy waste is exposed to any kind of moisture, it tends to release heavy amounts of toxic chemicals along with the leachate.

Table 4: Physical Properties of Legacy Waste

S.No	Test Parameters	Unit	Pramodnagar Dumpsite	Kamarhati Dumpsite
1.	Texture	--	Solid Dust	Solid
2.	Smell	--	Pungent Odour	Slight Foul Smell
3.	Solids Constituent			
	a) Plastic	%	15	20
	b) Vegetable Waste	%	--	--
	c) Soil	%	55	50
	d) Grass	%	--	--
	e) Leather	%	12	10
	f) Glass Bottle	%	10	05
	g) Other Waste	%	08	15
4.	Probe Moisture	%	15	14
5	Moisture Content	%	6.87	NA

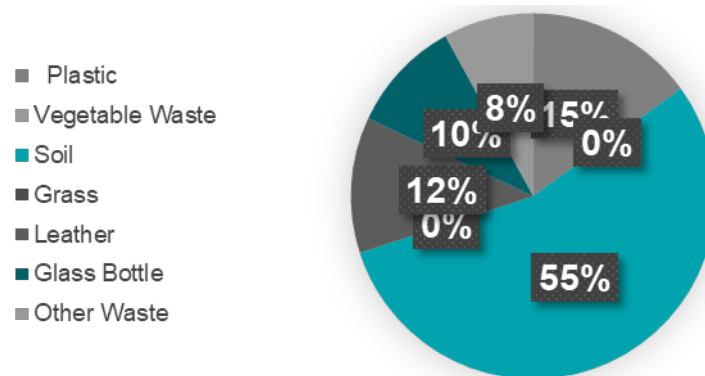


Figure 3: Physical Composition of Legacy Waste: Pramod Nagar

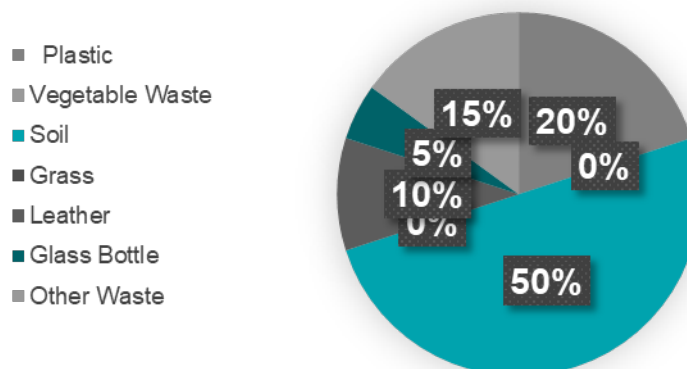


Figure 4: Physical Composition of Legacy Waste: Kamarhati

Table 5: Results of TCLP test of Legacy Waste

S.No	Test Parameters	Unit	Pramodnagar Dumpsite	Kamarhati Dumpsite
1.	Lead as Pb	--	<0.1	<0.1
2.	Cadmium as Cd	--	<0.01	<0.01
3.	Iron as Fe	%	3.750	0.109
4.	Zinc as Zn	%	0.928	0.05
5.	Nickel as Ni	%	0.160	0.188
6.	Copper as Cu	%	0.105	<0.05
7.	Chromium as Cr	%	0.10	<0.1
8.	Sulphide as S	%	<0.1	<0.1
9.	Cyanide as CN	%	<0.1	<0.1
Note: Minimum Detection Limit of Pb, Cr, S & CN .. 0.1 mg/lit., Cd .. 0.01 mg/lit., Cu .. 0.05 mg/lit				

The original test reports have been attached in the Annexure I.

From the test reports of TCLP conducted on Pramodnagar Dumpsite and Kamarhati Dumpsite legacy waste, it is safe to dispose it in low lying area after appropriate processing.

2.3 Topographical Survey and Geo Technical Studies

The topographical survey will be carried out to prepare site plan and contouring of the site, to get the dimensions of the site & to analyze the general surface drainage slope. Topographical study is conducted to gather data about the waste elevation points of the landfills. 10% variation in topographic area was allowed to get exact contour. Waste quantification of dumpsite would also need to be done based on topographical details. This shall also include details about the infrastructure facilities available near the site.

Results of Pramodnagar Dumpsite topographical survey:

Total area of the site as per our survey is 22.69 Acres. There are 4 landfill zones in the area. The area and volume of each are given below.

Area Statement:

1. LANDFILL ZONE - A :- 3569.70 SQM
 2. LANDFILL ZONE - B :- 40748.15 SQM
 3. LANDFILL ZONE - C :- 27095.32 SQM
 4. LANDFILL ZONE D : 26505.12 SQM
- TOTAL LANDFILL AREA : 97918.29 SQM

Volume Statement

1. LANDFILL ZONE - A :- 12850.94 CUM
 2. LANDFILL ZONE - B :- 264659.8 CUM
 3. LANDFILL ZONE - C :- 166455.9 CUM
 4. LANDFILL ZONE - D :- 111630.4 CUM
- TOTAL LANDFILL VOLUME: 555597 CUM.

Zone B is the Most utilized Landfill amongst all. Existing water bodies in the vicinity: Canals on North and South side, Pond on East side. There is a processing shed and Proposed Site for SLF cell/ Leachate Tank in Zone D.

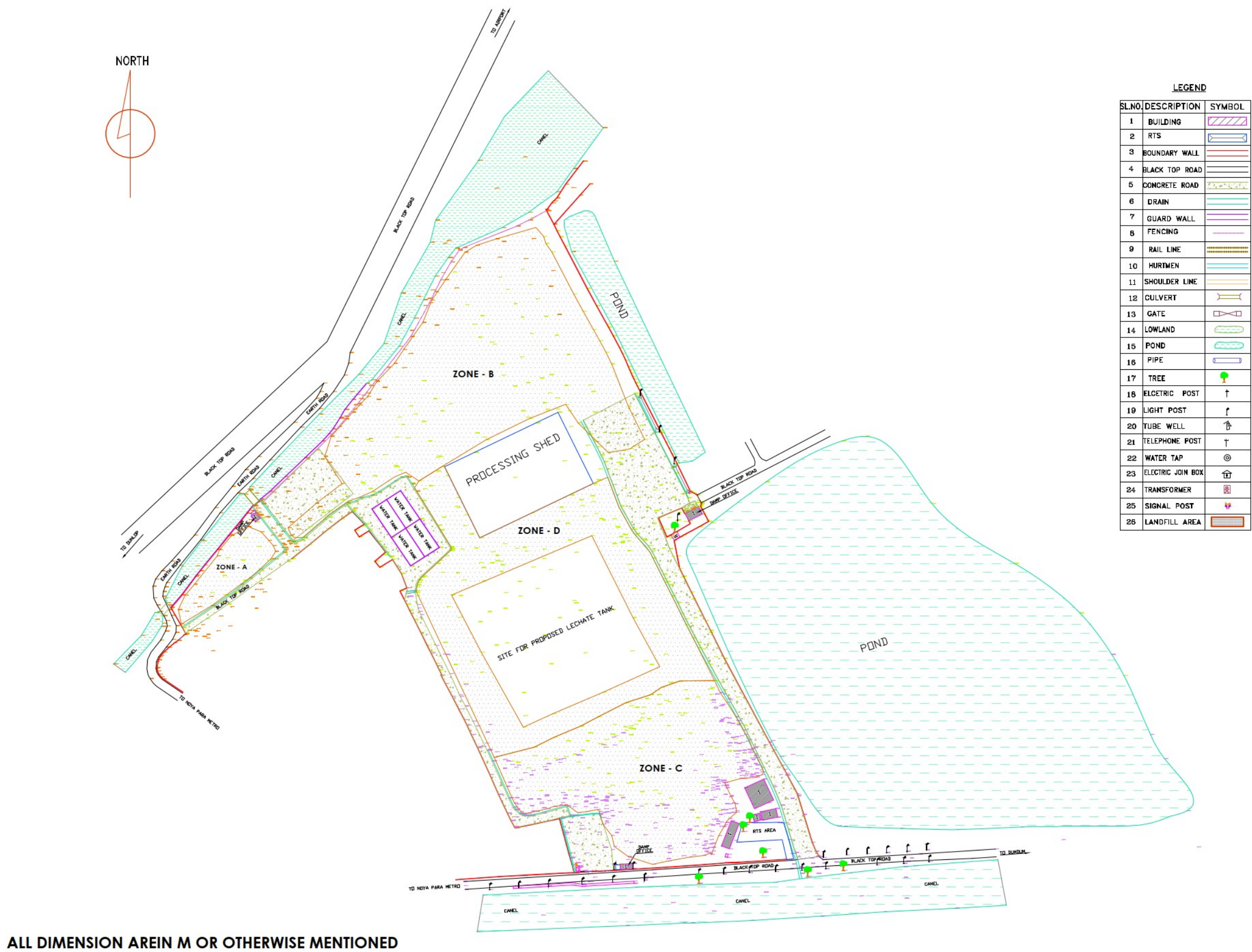


Figure 5: Detailed topographical survey of the Pramodnagar Dumpsite

Results of Kamarhati Dumpsite topographical survey:

Total area of the site as per our survey is 8.003 Acres. There are 1 landfill zone in the area. The area and volume is given below.

Area Statement:

LANDFILL ZONE - A:- 28784.23 SQM ; TOTAL LANDFILL AREA : 28784.23 SQM

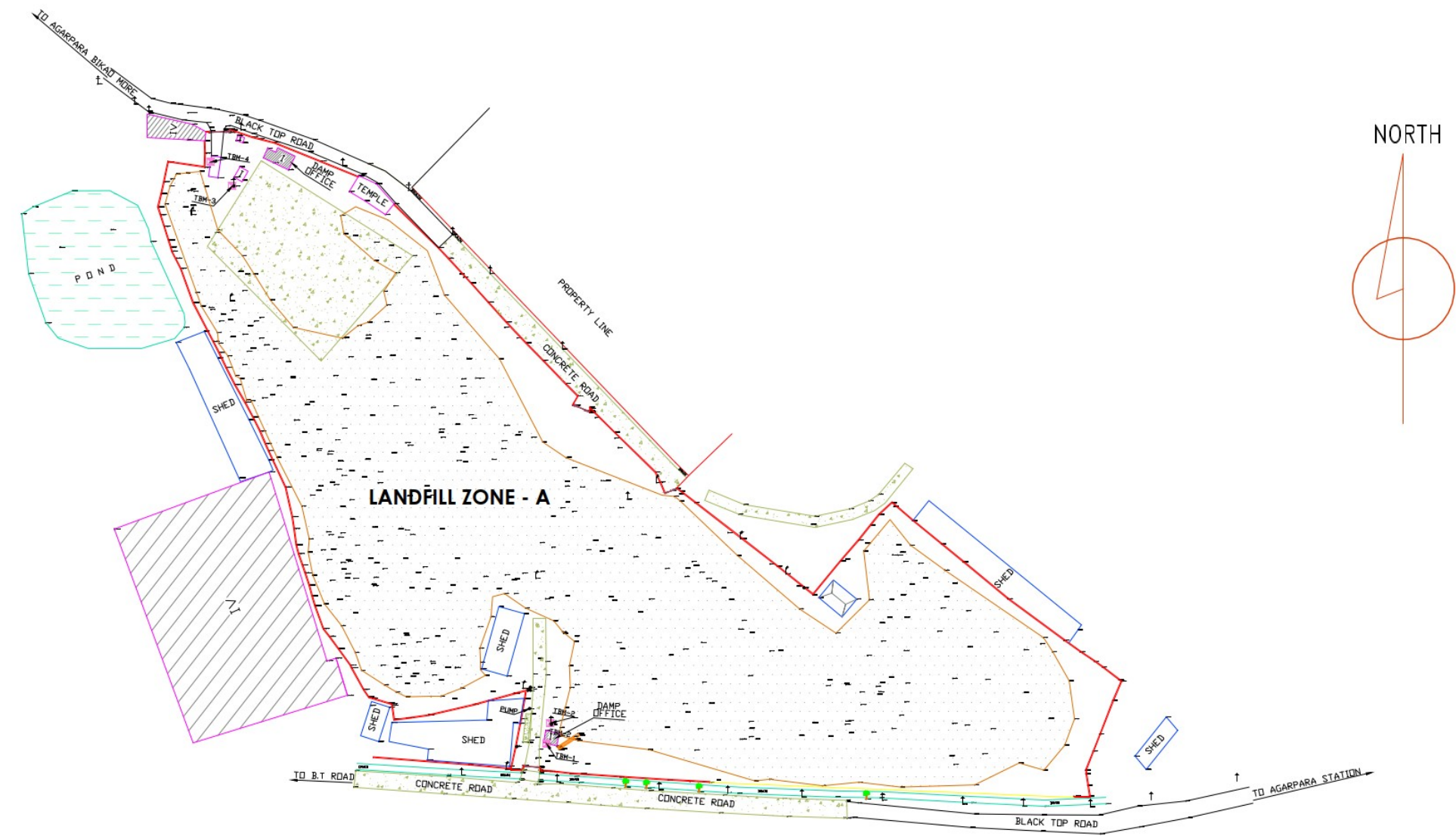
Volume Statement:

LANDFILL ZONE - A:- 122333 CUM ; TOTAL LANDFILL VOLUME :- 122333 CUM

Existing water bodies in the vicinity: Water body on East side
There is no processing shed and Leachate Tank.

LEGEND

SL.NO.	DESCRIPTION	SYMBOL
1	BUILDING	
2	RTS	
3	BOUNDARY WALL	
4	BLACK TOP ROAD	
5	CONCRETE ROAD	
6	DRAIN	
7	GUARD WALL	
8	HURTMEN	
9	GATE	
10	POND	
11	TREE	
12	ELCETRIC POST	
13	LIGHT POST	
14	TUBE WELL	
15	TELEPHONE POST	
16	WATER TAP	
17	ELECTRIC JOIN BOX	
18	TRANSFORMER	
19	HIGHMAKS	
20	TBM	
21	VALVE	
22	LANDFILL AREA	



ALL DIMENSION AREIN M OR OTHERWISE MENTIONED

Figure 6: Detailed topographical survey of the Kamarhati Dumpsite

Geo-technical studies were conducted to analyses the strength and other characteristics of soil by making boreholes in the proposed site. Apart from a few on-site physical strength tests, the following parameters analysed in the laboratory:

The soil investigation covered the following procedures: -

- ▶ Laboratory team conducted Standard Penetration Test (SPT) / Dynamic Cone Penetration Test (DCPT) at 2 -3 Nos. of locations up to a depth of 10.0 m or refusal whichever is earlier.
- ▶ Laboratory team collected soil samples at various depths as per requirement of the Client from the bore holes as feasible, for laboratory tests.
- ▶ Laboratory team collected disturbed & undisturbed soils samples.
- ▶ Laboratory team analyzed the field and laboratory observations and have put up a report

The report contains the details of field investigations, laboratory tests and the recommendation based on the results. The various results are produced in two following heads, i.e.

- (i) The field tests
- (ii) The laboratory tests

The field tests comprised of:

- ▶ Laboratory team bored at the proposed site to obtain soil samples from every stratum encountered by the boring tools. Depending upon the type of soil, both disturbed & undisturbed samples were collected.
- ▶ A standard penetration test is meant for measuring the penetration resistance of the soil, which is measure of its bearing capacity in-situ.

The laboratory tests included:

- ▶ Bulk Density Test - Bulk density determinations were carried out on undisturbed soil samples collected from the boreholes.
- ▶ Moisture Content- Moisture Content of undisturbed soil samples were determined by oven drying method for knowing Dry Density of soil.
- ▶ Particle Size Analysis of Soil (as per IS: 2720 (Part-IV) — 1985)
- ▶ Atterberg Limit (as per IS: 2720 Part—V - 1985. "Determination of Liquid and Plastic Limits".)
- ▶ Shear strength test and Permeability Tests.
- ▶ Analysis of water samples where water table occurs within the depth of geotechnical exploration such as pH value, Chlorides etc.

FIELD WORK: A brief description of method of boring, field tests, collection of samples etc. and type of equipment used are given below:

1. BORING

Boring through the soil was carried out using 150 mm auger upto a depth of about 1.00 M and thereafter is followed by bentonite to advance the bore holes upto termination depths. Casing was used upto about 3.00 m below ground level. Bentonite solution of adequate density was used for stabilization of boreholes.

2. COLLECTION OF REPRESENTATIVE SAMPLES

Representative soil samples were collected where possible from auger split spoon samples of standard penetrometer and outing shoe of undisturbed sampling of strata encountered. All the samples were labeled and placed in air-tight polythene bag and shifted to the laboratory for identification and testing.

3. STANDARD PENETRATION TESTS

Standard Penetration Tests were conducted at the boring points at suitable interval. The number of blows required for niddle 30 cm penetration of split spoon samples out of a total penetration of 60 cm driven by 63.5 kg. Hammer falling freely from a height of 75 cm. was recorded as N-value. The samples from split were

collected after each test and were properly labelled and placed in air-tight polythene bags before sending it to the laboratory for identification and testing purpose. The test procedure was conformed to IS 2131-1981.

4. COLLECTION OF UNDISTURBED SAMPLES

Undisturbed samples were collected by means of a two tier 100 mm. I.D. open drive sampling assembly having area ratio of about 14%. Before sampling, the boreholes were thoroughly cleaned. The sampling assembly was driven to the required depth manually with the help of a jarring link. Samples collected in the lower tube were obtained, labeled and waxed at both ends before sending to the laboratory.

5. GROUND WATER TABLE

Water levels in the boreholes were observed during and after completion of boring operation. The final water readings were recorded in the field and are shown in the individual boring logs and test boring summary.

Representative soil samples were tested in the laboratory for identification purpose and to determine their strength and other physical characteristics. Based on the findings of the sub-soil condition, their strength and settlement characteristics, reasonable and appropriate soil parameters were obtained and recommended here in this report.

Results of Pramodnagar Dumpsite Geo-technical studies:

SUMMARY OF BORING DATA

Table 6: Summary of Boring Data

Borehole No.	Termination Depth. (M)	Depth of Ground Water below G.L. (M)
1	10.45	(-) 1.20
2	10.45	(-)1.30

LABORATORY TESTS

SUB-SOIL PROFILE AND PROPERTIES

Depending on color, constituents etc. as revealed from borehole it is observed that the sub-soil profile is sum of different deposits of silty clay followed by decomposed wood & vegetation. The sub-soil profile as revealed from borehole is divided into three major strata and are shown in “Bore Log Data Sheets” & also described as below,

FILL- Filling with soft brownish gray silty clay, plastic, brick bats, surki, rubbish, etc. constitute this stratum. Max. thickness of this stratum is 1.50 m.

STRATUM – I

Soft blackish gray silty clay.

Constitute this stratum: Thickness of this stratum is 2.70 m from BH 2.

SPT value varies from 3 to 4.

STRATUM – II

This stratum consists of Soft yellowish gray silty clay.

This layer has a maximum thickness of 3.00 m as obtained from borehole 01.

SPT value varies between 4 and 5

The engineering properties are as below,

Table 7: Engineering Properties

Natural water content	35.0 %
Liquid Limit	51.0 %
Plastic Limit	33.0 %
Bulk	1.72 t/m ³
C _u	2.50 t/m ²
φ	0

Cc	0.175
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STRATUM – III

Soft blackish gray silty clay with decomposed wood & vegetation.

Constitute this stratum. Thickness of this stratum is obtained 4.95 m from Bore no. 02.

SPT values varies between 2 to 3.

The engineering properties are as below

Table 8: Engineering Properties (Stratum III)

Natural water content	37.0 %
Liquid Limit	55.0 %
Plastic Limit	31.0 %
Bulk Density	1.69 t/m ³
C _u	2.30 t/m ²
φ	0
Cc	0.190

Results of Kamarhati Dumpsite Geo-technical studies:

SUMMARY OF BORING DATA

Table 9: Boring Data-Kamarhati Dumpsite

Borehole No.	Termination Depth. (M)	Depth of Ground Water below G.L. (M)
1	10.45	(-) 1.30
2	10.45	(-)1.40

LABORATORY TESTS

SUB-SOIL PROFILE AND PROPERTIES

Depending on color, constituents etc. as revealed from borehole it is observed that the sub-soil profile is sum of different deposits of silty clay followed by decomposed wood & vegetation. The sub-soil profile as revealed from borehole is divided into three major strata and are shown in “Bore Log Data Sheets” & also described as below,

FILL- Filling with soft brownish gray silty clay, plastic, brick bats, surki, rubbish, etc. constitute this stratum. Max. thickness of this stratum is 1.80 m.

STRATUM – I

Soft blackish gray silty clay. Constitute this stratum:

Thickness of this stratum is 2.20 m from BH 2.

SPT value varies from 2 to 4.

Table 10: Engineering Properties Stratum-I

Natural water content	35.0 %
Liquid Limit	51.0 %
Plastic Limit	33.0 %
Bulk	1.68t/m ³
C _u	2.60 t/m ²
φ	0
Cc	0.168

STRATUM – II

This stratum consists of Soft yellowish grey silty clay.

This layer has a maximum thickness of 3.30 m

SPT value varies between 3 to 4

The engineering properties are as below.

Table 11: Engineering Properties Stratum-II

Natural water content	36.0 %
Liquid Limit	52.0 %
Plastic Limit	32.0 %
Bulk	1.65 t/m ³
C _u	2.30 t/m ²
φ	0
Cc	0.170

STRATUM – III

Soft blackish grey silty clay with decomposed wood & vegetation.

Constitute this stratum. Thickness of this stratum is obtained 3.95 m.

SPT values varies between 2 to 3.

The engineering properties are as below.

Table 12: Engineering Properties Stratum-III

Natural water content	38.0 %
Liquid Limit	51.0 %
Plastic Limit	31.0 %
Bulk Density	1.65 t/m ³
C _u	2.20 t/m ²
φ	0
Cc	0.190

2.4 Legacy Waste Reclamation

2.4.1 Methodology

The treatment & disposal of Legacy MSW can be done by Bio-remediation and Bio-mining. A total station survey or drone mapping of any landfill/dumping site must be done prior to start of the project. Hence, it is suggested to ensure precursor study with history of the site, compositional analysis of waste. Site environment parameters such as baseline study of heavy metals in surface and subsurface soils and water, rainfall, soil type, surface hydrology, topography, wind direction etc. shall be studied before and after bio-mining. Periodic study should also to be carried out after completion of bio mining to check for any adverse effects in the surrounding area.

A. Bio-remediation & Bio-mining of Old Municipal Dumpsites

It refers to the excavation of old dumped waste and make windrow of legacy waste thereafter stabilization of the waste through bio-remediation i.e. exposure of all the waste to air along with use of composting bio-cultures, i.e. screening of the stabilized waste to recover all valuable resources (like organic fines, bricks, stones, plastics,

metals, clothes, rags etc.) followed by its sustainable management through recycling, co-processing, road making etc.

The first step is to excavate legacy waste, loosen it and make windrows so as the leachate can be dried of through solar exposure and all the entrapped methane is removed from the heap. All biodegradable waste, like discarded food, fruit, flower and garden waste, needs air to decompose it in an odourless way without producing leachate. So, the first step in stabilizing and bringing down airless legacy waste is to expose as much of it as possible to air.

Addition of composting bio—cultures speeds up decomposition and rapidly creates biological heat within the waste that helps to dry it out and reduce its volume by 35-40%. This happens through loss of moisture and by decomposition of some of the aerated waste to carbon dioxide and water vapor. This is called bio-remediation and makes the waste dry enough for screening. Waste is called stabilized when there is no more generation of heat or landfill gas or leachate, and seeds can germinate in it.

It means the screening of such stabilized waste into different size fractions that can be usefully used off-site or disposed of without affecting the environment. Screen sizes commonly used are one or more of the following: 150 mm, 80 to 100 mm, 24 to 50mm, 12- 16 mm and 4-6. The finest fraction is called bio-earth or good earth. It contains a mixture of humus-rich organics which improve soil fertility along with a high proportion of soil or sand, which is why it cannot meet FCO standards for compost. The coarsest fraction contains bricks, stones, coconut shells, footwear, cloth and larger plastics. Density separation helps recover combustibles which can be used (usually up to 5-10%) as fuel replacement after supplying it to customer requirements. The lighter mid-fractions are mostly plastics and can be shredded as per industry requirement for use in bitumen hot- mix plants to make so- called Plastic Roads or as refuse derived fuel for co-processing in cement kilns. Fractions up to 50mm do not require shredding for use as RDF. The heavier mid-fractions are mostly stony inert which can be used in the lowest layers of road-making or plinth-filling or in low-lying areas, but should not contain more than 3—5% plastics by weight. Less than 10% of the original waste remains as totally unusable residual rejects and may remain onsite, either in a small heap or spread to raise the ground level by a couple of meters.

The land which was hosting waste dumps is now fully recovered for alternate uses. Bio- mining and Bio-remediation processes should be adopted as early as possible to ensure holistic solid waste management.

B. Process of Bio-remediation and Bio-mining

Exposing the legacy waste to air to stabilize it has been done since 1998 in many ways. Almost all of them involve forming the waste into long low heaps of about 2-meter height called wind-rows, to get maximum surface area to volume. Repeated turning is necessary to ensure that the innermost waste in wind—rows also gets exposed to air. Usually 3-4 turnings of legacy waste are necessary to stabilize it.

1. Use a tractor—tiller to repeatedly loosen the topmost 150 mm layer of legacy waste. Mist-spray the waste lightly with bio-cultures to control odour and get the decomposing microbes dispersed into the waste. Hand-pick out large objects like rocks or coconut-shells or long pieces of cloth. Form the waste into wind-rows using a Bob-cat or JCB or similar earth—moving equipment. Turn these wind-rows every 5 days. After 2-3 weeks when the heaps are free—flowing enough for screening, move the material to multi-deck vibrating screens or to trommels (rotating cylinders with different size perforations) to get fractions of different size and weight.
2. Use a JCB to dig 2-2.5-meter-deep trenches downwards from the top of a legacy waste heap at 1.5 to 2-meter intervals. This is a rapid and cost-effective way to slice the uppermost layer into in-situ wind-rows. Mist-spray the sides of the trenches to get microbes to reach exposed waste surfaces. Bring down these slices to form terraces and turn one aerated windrow onto another weekly before repeating the process until almost ground level is reached. Start screening when waste moisture is low enough.
3. Use a JCB to lift legacy waste off the top of a heap and drop it from a height to aerate and loosen the waste and form 2-3-meter-high cones. Mist-spray bio culture on the cones. Every day or 2-3 days use

the JCB to lift waste from the cones and drop it back to the same or a nearby location, to aerate the waste. This is rather fuel-intensive.

4. Where space permits, move the waste to form several long parallel windrows. Turn these weekly with a JCB. Often at the second or third turning, one heap can be combined with a second one as their volumes decrease. Windrows can be aerated either by moving all the waste to form a new parallel windrow, with the innermost waste on the outside for aeration, or by moving all the waste forward in small steps while dropping it from a height for aeration.
5. If waste needs to be moved from one location to another part of the same site, usually the perimeter, place it in thin 150 mm layers and mist-spray bio cultures. Allow 5 days to aerate one layer before adding the next one and mist-spraying bio cultures on that also. Turning may not be necessary when waste is spread thin like this, to decompose like leaves on a forest floor.
6. This is a constantly-evolving field. Hence other cost effective and space effective methods can also be applied.

C. Treatment Process

Processing of accumulated legacy waste shall be done in following manner as given below:

1. Local Body (LB) shall make a time bound plan to execute the bio-mining process to clear the old waste.
2. Volume of waste to be determined through contour survey (Total Station Survey) and site measurements. Drone mapping of heap volumes at different stages is most cost-effective and fast. Weighment of heaps is difficult and problematic as payment would be collected for heavy fractions, leaving behind the more pollution-prone lighter fractions.
3. Initial Contour level survey of the site shall be done on start of work and Final Contour level survey shall be done on completion of the work.
4. Do an initial baseline survey of surface and subsurface soils and waters and leachate present, to check for heavy metals and toxics if any. Samples should be drawn by a NABL or MOEFCC certified lab, also at the final stage. During operations, the operator should collect and keep daily samples of the finest fractions, to be pooled and analysed monthly or at random by an NABL lab. This is to ensure that unsterilized rotted waste is not simply moved from one location to another by mining without bioremediation.
5. Sprinkle the newly exposed surfaces with a composting bio culture solution or a dilute solution of 5% fresh cow dung in water. This will control smell and speed up decomposition. With the help of Back Hoe loader, the waste in the demarcated area should be loosened up.
6. Usually the top layer has several materials in the active biological state. This layer shall be stabilised through composting bio-cultures, as well as herbal/biological sanitizers if found necessary for odour control.
7. Raking of garbage layers by a long spike harrow operating in cross directions may be done as needed to pull out large rags, plastic, rubber, textiles etc.
8. Waste pickers or labour should manually pick out bulky waste like coconut shells, banana stems, tyres and rocks prior to screening for bio-mining. Store in separate heaps for sale or use.
9. Turn these windrow heaps once a week until no more volume reduction is observed in the heaps and no more heat is generated. If the garbage is stabilized, there will be no smell or leachate formation and the material will be dry enough for sieving.
10. LB or its agency may deploy Trommels and/or Horizontal Screens or other types of screens for screening. Screen the stabilized waste in a rotary screen or gravity screens of different size openings, preferably 35mm and 8mm. A fan can blow out the plastic fraction for use by recyclers. Compost
11. Appropriate numbers of excavators, back hoe loaders and workers will be required to execute the work.
12. The recyclables recovered from the bio-mining process should be sent for recycling as per the quality of the material, which should also be randomly sampled by an NABL lab and tested for heavy metals, salinity/electrical conductivity and leachability to ensure no environmental harm during use. FCO

standards for pH and contaminants could be provisionally used as a benchmark. Non-Recyclable plastic material shall be sent for road making or to RDF units or cement plants. Initial cleaning of recyclable waste shall be done before it is transported for sale or disposal.

13. The recovered earthy fines shall preferably be used for landscaping or gardening or road medians within the Local Body or the site. The recovered soil can also be used as “Soil enricher” to develop green areas or by farmers.
14. The recyclables like plastic, glass, metals, rags and cloth recovered from the waste during screening shall be sorted out and preferably cleaned before sending to recycling industries or as RDF.
15. The heavy fractions may be sand and gravel usable for road shoulders or for plinth filling. Stones and concrete if any can be used for road sub-grade, or for crushing. recycling and reuse in the construction industry. The recovered construction and demolition waste recovered from the bio-mining process may be sent to a C&D processing facility if suitable for production of building materials.
16. In very old garbage layers with high debris content, most of the organic matter may have already been decomposed. Do a seed germination test to ensure it is stabilised. Add bio cultures to fully stabilise it if heat is still generated in windrow heaps or volume reduction is observed. After 7-10 days of stabilization the waste can be taken up for screening.
17. Usually the finest fraction will be organic matter plus fine soil, called ‘bio-earth’, which can be used as soil improver, especially for restoring alkaline or saline soils to fertility, or to grow some vegetation for erosion control. It is also useful as a lawn subgrade cum drainage layer, or it can be used as organic manure in tree pits. The next coarser fraction will be gravel and coarse organics, which can be used for road and railway embankments the coarsest fraction may have a lot of combustibles (cloth etc.) which can be baled and supplied as Alternate Fuel Resources in cement kilns or boilers.
18. There may be some (maximum 5—10% of total) left over waste including lumps of heterogeneous nature. The waste may be soaked with leachate or hard and difficult to disintegrate. This waste can be sent to scientific landfill for disposal (near zero residues).
19. The recovered land from the bio-mining process shall be utilized for any purpose deemed appropriate. Ideally reclaimed space should be reused for waste processing, otherwise for alternate non-habitation uses.

D. Use of Screened Fractions:

When planning for bio-remediation and bio-mining, it is important at the same time to identify where the screened fractions will go, in order to bring down the heap of mixed waste to fractions that would each have been usable if unmixed. None of these fractions will bring in income. In fact, their transport offsite is a cost to be budgeted for. Look for the nearest industries using solid fuel. Look for the nearest bitumen hot—mix plants and also specify Plastic Roads in road tenders to ensure offtake of the thin-film plastic fractions. Start a dialogue with all kabadiwalas within the local body to see who will be willing to pick up or accept which items. Plan for offsite aggregation space for different fractions and types of waste that will result from screening. Identify aggregation and storage sheds for use by waste-picker groups or kabadiwalas. Identify transporters who can transport different fractions out on their return trips.

For the bio-earth or good earth finest fraction, test periodically for heavy metals, then look for farmers willing to accept it. It is excellent for reclaiming salt-affected soils and for restoration of mining overburden areas if any are nearby. There is a cess for restoration of mined areas, which is normally unspent as forest departments are supposed to revegetate them. But this is unviable in barren rocky soil by planting and watering saplings. Revegetation is instead possible and effective by mixing grass seed with the good earth fraction and spreading it on the overburden to start a natural succession of grasses, herbs and shrubs.

2.4.2 Process Management:

There are several factors that must be kept in mind during implementation of the project.

2.4.2.1 Space Management:

For all waste-stabilising methods, management of space is the biggest challenge, as aeration, stabilizing and screening mostly needs to be done within the boundaries of an already overloaded dumpsite. This is achieved mainly by experience and creative common-sense. Onsite earth-mover operators often come up with the best solutions, so seek their opinions. Every dumpsite poses a case-by-case challenge, but there is no above-ground dump that cannot be successfully bio-remediated and bio-mined.

Keep safety in mind. Always try to work downward from the top surface. Do not think of slicing waste from the top down along one side of the heap unless you can ensure leaving a stable wall of waste with a safe slope of 25 - 30 degrees while you work. Leaving a vertical wall of waste during operations can cause a dangerous landslide of disturbed waste.

2.4.2.2 Leachate Management:

Most high heaps of legacy waste are water-logged with leachate even near the topmost layers and all the way to the bottom. This is not just from rainwater entering the heap but is produced by airless rotting within the entire waste heap. So, when legacy waste heaps are opened up, some leachate almost always trickles out. This is not produced by the formation of wind—rows or cones, which in fact help to dry out the waste by aerated decomposition.

Channels must be created to lead the oozing leachate rivulets to a lined depression or pond for treatment or for leachate recirculation onto wind-rows as a type of bioculture. (test to see if heaps generate enough heat with its use). Leachate can also be treated in collection ponds by underwater composting. Bio-cultures that have been proved successful at other locations can be sprinkled onto the leachate pools. But intermittent aeration is a must, using small compressor pumps or aerators or airlift aeration or even simple manual or mechanical agitation. Aeration is necessary for the added microbes to do their work of digesting the polluting solids suspended in the dark and turbid leachate. Success is noticed by a progressive change in colour from dark to light, by reduction or absence of odour and by fine bubbles rising to the surface from digested solids.

2.4.3 Fire Control and Safety

Most large dumpsites are smouldering from hidden fires. Methane itself is flammable with a blue flame and supports the yellow-flame burning of combustible plastics, cloth and oily rags. Sometimes flammable industrial waste find its way onto dumpsites, aggravating the problem. It is difficult to begin bio—remediation work on a smoking dump. Sometimes digging into the dump awakens hidden fires. So fire control is important. Adding water increases the generation of both methane and leachate and is counter-productive, not a long-term solution, adding soil cover to smother the flames adds more material to a heap that one is trying to bring down.

There is a better way, again requiring creative common-sense and experience and training of earth-mover drivers. Most fires within heaps have a point source — a bag of textile discards or plastic waste or a ball of oily rags. Earthmover drivers must learn to dig in and pluck out these burning balls of fire. These should be laid nearby on the surface of the dump and then rubbed out with the back of the excavator shovel to extinguish the flames and smoke. Wet soil should be kept handy to immediately plug the excavated hole. Adding composting bio- cultures can be tried, to counter the anaerobic conditions around the burning spots. Smoking points must be tackled patiently and systematically, one by one, till the dump is smoke-free to begin stabilizing operations by bio-remediation.

It is important to do the risk assessment and an onsite emergency plan should be kept handy prior to commencement of dumpsite bio-remediation & bio-mining.

2.4.4 Use of Recovered Space

The benefit of bio-mining lies in abatement of ongoing and future pollution and ill health and in the recovery and re-use of valuable space. This is ideally for continued long-term waste management since public consent for new waste sites is increasingly difficult because of earlier visible mis-management of a Virgin site. Ensure advance demarcation and declaration of a buffer zone of no new habitation for upto 500 meters around the cleared site to prevent real-estate activity from encroaching the buffer as soon as the dump is removed. If a dump is engulfed within a growing city and its continued use for waste management is unsuitable, identify in advance the planned future use of that site and put up a signboard indicating that use, to ensure public acceptance of the biomining operations which will be temporarily noisy and dusty. This will also protect the site from land-grabbers. leared dumps are not permitted for habitation for at least 15 years (SWM Rules Schedule I, H (2)). This is because of unhealthy leachate below the site and formation of flammable and offensive landfill gases from waste pockets that may remain unexcavated. Permissible options are reuse for SWM, open stadia, sports grounds, parks and gardens, parking lots, container yards, warehouses of non-flammables and similar facilities where people are not living or working all day and night.

2.4.5 Pramodnagar & Kamarhati Dumpsite Details

As per the survey, total volume of waste estimated to be present in Pramod Nagar is 6.6 Lakhs cubic meter. Similarly, Kamarhati dumpsite has a volume of 1.46 Lakh cubic meter present. Waste samples have been collected from both the dumpsites and TCLP test reports have been summarized.

3 Gap Analysis for Collection & Transportation

In the proposed PPP structure, the cluster ULBs shall be responsible for Primary collection and transportation of solid waste management to secondary collection points in cluster-1. The developer shall be responsible for improvement, deployment of secondary waste collection infrastructure for secondary collection & transportation of the waste to the processing sites and further disposal of processing rejects to the sanitary landfill site to be developed by the Developer.

Average population from all three methods is considered for final calculation:

Location	Population 2011	Avg. population 2019	Avg. population 2027	Avg. population 2042	Avg. population 2022
Kamarhati	330211	354990	380981	433299	364590
New Barrackpore	76846	98913	108831	132080	107540
Baranagar	245213	275074	309441	388725	287396
Dumdum	114786	148365	189306	294399	162745
South dumdum	403316	453488	506459	614345	473009
North dumdum	249142	294082	345079	461216	312439

Waste Estimation: Following are the considered values for waste quantity estimation and finalizing plant capacity after the discussion with the technical committee SUDA.

S. No	ULB Name	Waste generation per capita per day (in grams)
1	Dum Dum	400
2	North Dum Dum	350
3	South Dum Dum	450
4	Baranagar	400
5	Kamarhati	350
6	New Barrackpore	350

As per the population projections and per capita waste generation, following are the waste projections.

S. No	ULB	Population projection for 2019	Current Waste generation in 2019 (Tons per day)	Solid Waste Generated (Shared by ULB's) in TPD	Population projection for 2027	Estimated waste generation in 2027 (Tons per day)	Population projection for 2042	Estimated waste generation in 2042 (Tons per day)
1	Dum Dum	127281	59.35	62.1	189306	75.72	294399	117.76
2	North Dum Dum	276263	102.93	150	345079	120.78	461216	161.43
3	South Dum Dum	446869	204.07	698	506459	227.91	614345	276.46

4	Baranagar	271906	110.03	145	309441	123.78	388725	155.49
5	Kamarhati	367212	124.25	100	380981	133.34	433299	151.65
6	New Barrackpor	85237	34.62	29	108831	38.09	132080	46.23

3.1 Primary Collection

According to data provided by ULBs in cluster-1, there are combination of tricycles and light commercial vehicles being deployed for primary collection purpose. The ULBs data have been analyzed to estimate the number of additional vehicles required to sustain 100% collection of waste generated by households for the year 2027.

The gap analysis for the infrastructure requirement with respect to primary and secondary collection and transportation of waste is given in the table below. As per CPHEEO manual, for a ULB with a population in the range of 1 lakh to 5 Lakh, 70% of the primary collection needs to be performed by deploying Light commercial vehicles (LCV's) and the rest needs to be done using Tricycles. In the gap analysis, considering the family size of a household to be 5, it has been assumed using past references that 1 LCV can covers 600 households and 1 tricycle covers 200 households per day. Hence the total number of LCV's and tricycles required for primary collection and transportation in all participating cluster ULBs are 479 and 613 respectively. The waste collected in primary collection should be segregated and it should have a twin bin system each for dry and wet waste.

According to the data collected from the ULB's, it is observed that the vehicles used for primary collection do not comply with the CPHEEO manual i.e. tractors and handcarts which are being used presently shall not be used for primary collection. As a result of which, a gap analysis has been performed for the existing vehicles as given in the table below. The existing vehicles are well partitioned and equipped to perform collection of waste in a segregated manner, however segregated waste collection is not being implemented presently. As per the gap analysis, it can be concluded that all the 6 ULB's, requires a definite upgradation of primary collection vehicles. The ULB's are required to deploy 479 LCV's for efficient collection and transportation in compliance to the SWM rules, 2016. From the analysis, it can be inferred that Kamarhati Municipality is required to upgrade their collection vehicles and replace the existing vehicles with LCV'S and Tricycles i.e. 98 and 127 respectively.

Assumptions for calculations:

Assumptions	
Family size	5
LCV (70% coverage)	0.7
Tricycle (30% coverage)	0.3
Percentage of spare vehicles	10%

Table 13: Gap Analysis for All municipality for Collection & Transportation

Municipality	Population (2027)	No. of Wards	Total Waste generation on 2027	Primary Collection Infrastructure										
				No. of Households	No. of LCV's	Spare LCV's	Total No of LCVs	Existing LCV's	Gap (LCV)	No. of Tricycle	Spares Tricycles	Total No of Tricycles	Existing Tricycles	Gap (Tricycles)
Dum Dum	189306	22	75.72	37862	45	5	50	0	50	57	6	63	42	21
Kamarhati	380981	35	133.34	76197	89	9	98	0	98	115	12	127	0	127
New Barrackpore	108831	20	38.09	21767	26	3	29	0	29	33	4	37	33	4
Baranagar	309441	34	123.78	61889	73	8	81	0	81	93	10	103	80	23
South Dum Dum	506459	35	227.91	101292	119	12	131	0	131	152	16	168	490	-322
North Dum Dum	345079	34	120.78	69016	81	9	90	0	90	104	11	115	170	-55
Total		180	720				479	0	479	554		613	815	-202

Vehicles and equipment

Tricycle with Hydraulic Tipping Containers: MSW tricycles should have mild steel epoxy painted and tipping containers. The tipping containers should be mounted on a standard tricycle. These tricycles are suitable for door-to-door collection from houses in small/narrow lanes and small waste generators. As per manual, a tricycle can cover approximately 200 households.



Figure 7: Indicative picture of Tricycle

Light Commercial Vehicles (Mini Trucks) with Hydraulic Tipping Containers:

These vehicles are suitable for door-to-door collection of segregated waste for lanes with less than 5m width. They have a total payload capacity of nearly 600–900 kg per trip. The load height is approximately 1,500 mm from the ground level. They should have a leak-proof MS load body with drainage tube and plug. The small tipper should be built on a suitable chassis. These vehicles should have four openings, two on each side to facilitate direct transfer of waste from a domestic bin to the vehicle. They can also have a central removable partition to facilitate storage of segregated waste. It is desirable to use up to 3m³ capacity vehicle for door-to-door collection to cater to a large number of houses in a single trip. As per manual, a LCV can cover approximately 600 households.



Figure 8: Indicative picture of Light Commercial Vehicle

The Summary of proposed requirement is as follows:

Manpower

The manpower requirement for primary collection is as follows:

Table 13: Manpower requirement for primary collection in Cluster – 1 for 2027

Particulars	Details	Requirement
Tricycles	One worker per vehicle	613
	Supervisors (One for 15 workers)	41
Light Commercial Vehicles	One driver per vehicle	479
	One worker per vehicle	479
	Supervisors (One for 20 workers)	48

The PPE requirements for all the above manpower handling MSW are gloves, shoes and uniforms covering the entire body. It is proposed that domestic waste shall be collected in the morning hours before 12 noon. Waste from the commercial areas shall be collected between 10.00 am and 2 pm. Vegetable market waste shall be collected in non-peak hours either early morning or late in the afternoon or at night.

3.2 Secondary Collection

As per the field survey, some of the secondary collection points in the cluster ULBs have static compactors to improve collection and transportation of waste to disposal site. Whereas contrary to that some secondary collection points are informal points, wherein through open and roadside dumping, the waste is further transferred from smaller vehicle to larger vehicle. Upgradation of Secondary collection points in compliance with SWM rules, 2016 and in accordance CPHEEO manual has been suggested and hence proposed the deployment of bins of appropriate size as listed in the table below.

Indicative Bin Image:



Figure 9: Bins for Secondary Collection

Table 14: Secondary Collection Calculations

ULB	No. of SCP's (existing)	Calculated number of SCPS as per CPHEEO manual	Waste Qty. (Ton / day)	Waste Qty. (Cum/ day)	200% waste Qty./day considered for planning (as per CPHEEO manual)	Total waste at each SCP (existing) (Cum)	No. of Bins at each existing SCP (4.5 m3/7 m3)	No. of Bins (Total)
Dum Dum	31	38	75.72	95	190	7	2	62
Kamarhati	53	77	133.34	167	334	7	2	106
New Barrackpore	13	22	38.09	48	96	8	2	26
Barranagar	7	62	123.78	155	310	45	7	49
South Dum Dum	88	102	227.91	285	570	7	2	176
North Dum Dum	23	70	120.78	151	302	14	4	92

3.3 Secondary Transportation

According to the data obtained from ULBs in cluster-1, there are a combination of tractors, lorries, dumper, compactors are being used for secondary waste transportation purpose as attached in annexure II. The ULBs data have been analysed to estimate the number of additional vehicles required to sustain 100% collection and transportation of waste in year 2027. To ensure uniformity in vehicles of secondary transportation, dumper placers and compactors are proposed for secondary transportation of waste. Small and medium sized compactors are proposed to allow for efficient transportation of waste. It is proposed that dumper placers of 6 tonnes waste/ trip and RCs of 1 tonnes waste /trip would cater to all the ULBs in this cluster. Each vehicle can undertake a maximum of 2 trips per day. Further, remaining waste shall be transported by 16 cu.m compactors with a payload capacity of 10 tonnes/ trip. These compactors can undertake a maximum of 2 trips per day. Manpower calculated as one driver and one helper per vehicle.

The number of SCP has been calculated as per population in compliance with CPHEEO guidelines. Due to less availability of space in this cluster and high land costs, maximum use of the existing SCPs for secondary collection & transportation has been suggested. The details of existing secondary collection points have been attached in annexure IV.

Vehicle and Equipment

To ensure uniformity in vehicles of secondary collection, compactors are proposed for secondary transportation of waste. Small and medium sized compactors are proposed to allow for efficient transportation of waste. It is proposed that dumper placers of 6 cum and 16 cum waste/ trip would cater to the waste in Cluster-1.



Figure 10: Indicative picture of medium size compactor truck

Assumptions for Secondary Transportation:

Assumptions	
Family size	5
1 SCP/Population	5000
Percentage of spare vehicle	10%
No. of trips of RC's/DP's	2
Capacity of RC's (cum)	16 ¹
Capacity of DP's (cum)	6 ²

¹ The actual capacity shall be 14cum

² The actual capacity shall be 5cum

Table 15: Requirement of vehicles for secondary transportation of waste for 2027

Municipality	Population (2027)	No. of Wards	Total Waste generation (TPD)	Secondary collection		
				No. of Households	No. of refuse compactors	No. of Dumper placers
Dum Dum	189306	22	75.72	37862	2	2
Kamarhati	380981	35	133.34	76197	4	3
New Barrackpore	108831	20	38.09	21767	1	2
Barranagar	309441	34	123.78	61889	3	3
South Dum Dum	506459	35	227.91	101292	8	1
North Dum Dum	345079	34	120.78	69016	4	1
Total		180	720	368023	22	12

Manpower requirement

Table 16: Manpower requirement for secondary collection of waste in cluster-1

Particulars	Details	Requirement
6 cum Dumper Placers	Drivers	12
	Helper /Worker (One for each)	12
	Supervisors for dumper placers	2
16 cum compactors (RC)	Drivers	22
	Helper /Worker (One for each)	22
	Supervisors for compactors	3

Further, it is proposed to incorporate advanced information management system such as GPS, MIS for management of information in such vehicles.

4 Processing and Disposal

4.1 Land details of proposed processing plant

Pramodnagar Site

The Pramodnagar site is under the jurisdiction of South Dum Dum municipality. Over the past two decades the location has been turned into a dumping yard. The site is approximately a 22 acres land which stacked up to 15 meters with waste. It is located in a sensitive zone surrounded by Pramodnagar Jheel, Adarsh Nagar residential area, Mathkol School and Belghoria Expressway which is a four-lane, 8 kilometer (5.0 mi) long access controlled tolled expressway in the northern suburbs of Kolkata, West Bengal. It is a key arterial road, linking the terminal junction points of NH 19 and NH 16 near Dankuni to Dakshineswar, across Nivedita Setu, and NH 12 (Jessore Road), near Dum Dum Airport.



Figure 11: Bird's eye view of the Pramod Nagar dumpsite

The site was previously used by 6 ULBs – Dum Dum, South Dum Dum, North Dum Dum, Baranagar, Kamarhati and New Barrakpur. Due to heavy inflow of 500 - 600 tonnes solid waste per day, the site is in the verge of exhaustion. The authority has controlled the waste inflow and now allows only 4 ULBs - Dum Dum, South Dum Dum, North Dum Dum, Baranagar to dump waste at Pramodnagar site.

It has been observed that there is likely release of methane and carbon dioxide gases from the fresh waste. The leachate released from the site has choked the adjacent water body (Pramodnagar Jheel) and made the water non-potable. The site is also filled with a significant amount of legacy waste which does not have any alternative processing plant or site to process and dispose it. The gases and odour released from the site contaminates the

air in the surrounding areas. The people living in the adjacent residential areas use the contaminated water from Pramodnagar Jheel for domestic purposes. The pig breeding is also observed in the vicinity of the site.

Under Mission Nirmal Bangla (Urban) and Swach Bharat Mission (Urban) on turnkey basis, the Kolkata Municipal Development Authority have initiated few projects with an aim of managing solid waste in scientific manner.

As demonstrated in the figure above, the Pramodnagar dumpsite area can be broadly divided into:

- Platform area - It is located at the entrance point of Dum Dum and South Dum Dum municipalities and is a major area for waste unloading
- Waste Mount A, B & C – These waste mounts divide the contours of waste dumped in 3 major sections. However, apart from these 3 mounts, the waste is also spread across entire site up to a height of 5 mts. or so.
- SLF Cell – KMDA had also initiated the work for constructing a SLF Cell- It can be used for setting up biomining processing plant
- 50 TPD compost plant – KMDA had initiated the work for setting up a 50 TPD compost plant, which has been abandoned and infrastructure developed to be absorbed under the proposed processing project

Platform Area



Legacy waste



SLF Cell – Under Construction



Figure 12: Pramodnagar site pictures from Visit Conducted on 11 April 2019

50 TPD Compost Plant

Temporary Septage Plant



According to the project structure, the Pramodnagar Site should cater waste from Dum Dum, North Dum Dum, South DumDum and Baranagar only. Accordingly, RDF plant and windrow composting of 450 TPD capacity should be planned at Pramod Nagar site with provision for future waste generation assessment and expansion. Addition to this, the land reclamation activities should be carried out in parallel to the plant construction.

The possible scheme can be first to remove Mount A and Mount C to get an extra space for the expansion of current 50 TPD compost plant into windrow composting + RDF plant. It is assumed that this activity will take around 2 years. Until then the fresh waste can be dumped at Mount B side, where Baranagar municipality is dumping their waste. After installation of the new plant, processing of fresh waste can be initiated. Therefore, removal of waste from Mount B and other remaining waste scattered at the site can be done. The free space at Mount B may be used for future expansion of processing plant. The SLF space, after the entire land reclamation process, can also be used for setting up some Bio-Methanation plant.

As discussed earlier, for initiating any new construction activity, the land should first be reclaimed by processing the legacy waste. The disposal of legacy waste and new construction should be done in parallel to achieve synergies in project. Usually process of removal of legacy waste is called landfill reclamation. In this, the waste is subjected to mining and segregation activities using conveyors and trommels. A typical layout of such plant working in Noida (U.P) is given at Figure below. Usually these are mobile equipment, which are removed from the site after completion of landfill reclamation activities.



Figure 13: Typical layout of Bio-remediation plant

Kamarhati site

The Kamarhati site is enclosed in an area of approximately 8 acres under the jurisdiction of Kamarhati municipality. This area was utilized by Kamarhati and New Barrackpore for dumping waste. The site is filled with legacy waste which staked up to 6 meters and has leachate flowing out of it and is completely exhausted

now. This site is also located in a very sensitive residential zone with a school beside it. Since this dumpsite is completely exhausted.



Figure 14: Kamarhati site pictures from Site Visit Conducted on 11 April 2019

The processing plant for Kamarhati municipality is proposed on the existing closed site at Kamarhati. The land reclamation for the site should be carried out in parallel to the processing plant construction. If possible, New Barrackpore Municipality may also be integrated with Kamarhati Municipality for waste processing at Kamarhati site only. Processing waste from Kamarhati and New Barrack pore municipalities in Kamarhati site will reduce the stress on PramodNagar site by about 100-120 TPD.

The proposed scheme is to remove the legacy waste completely. The empty area is to be used to construct new windrow composting and RDF plant of capacity 180 TPD while transporting the waste from Kamarhati and New Barrackpore simultaneously.

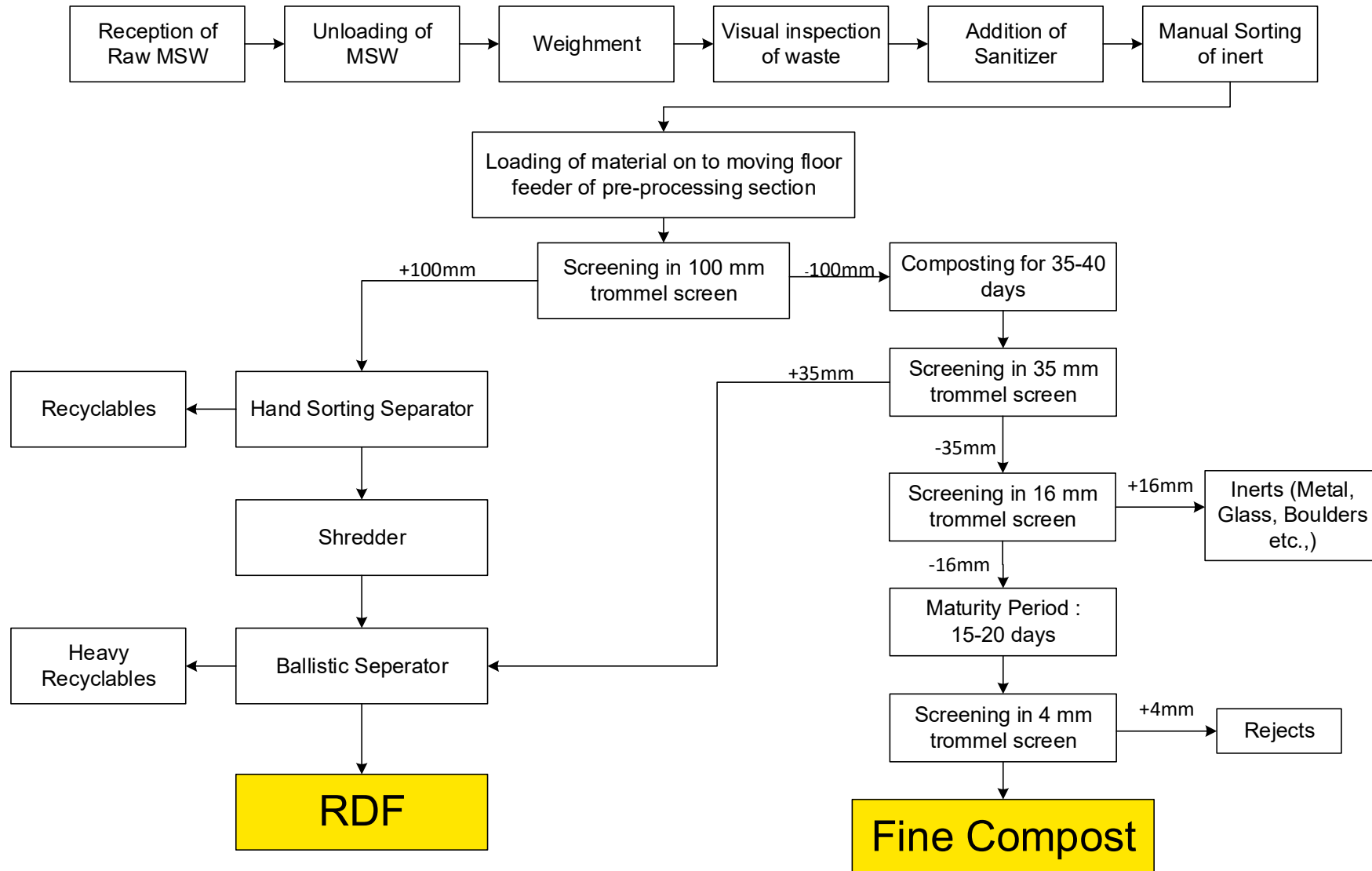


Figure 15: Process flow at the Material Recovery processing facility

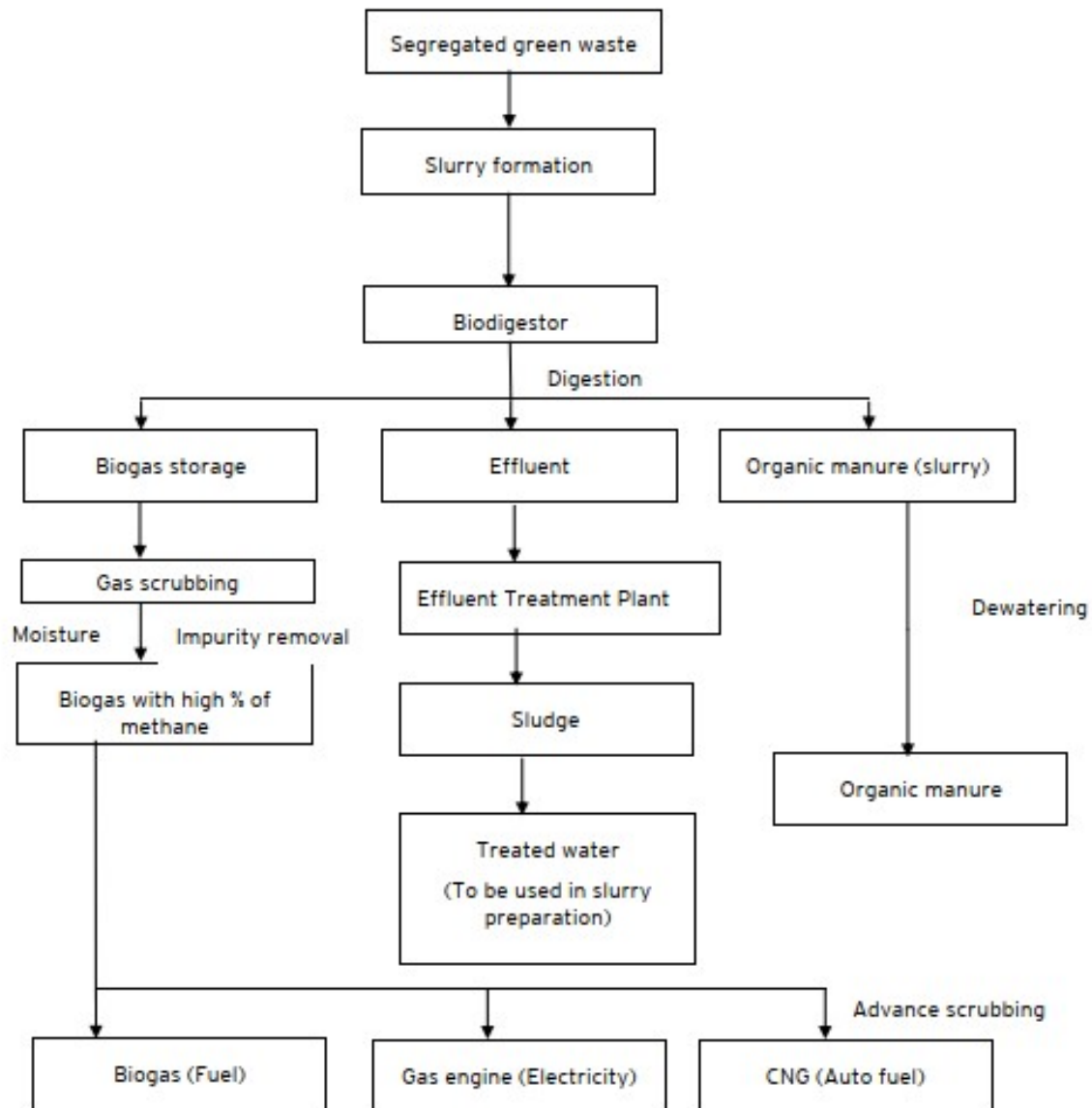


Figure 16: Flow chart for Bio-methanation

4.2 Mass Balance

Mass Balance for Legacy Waste is as follows:

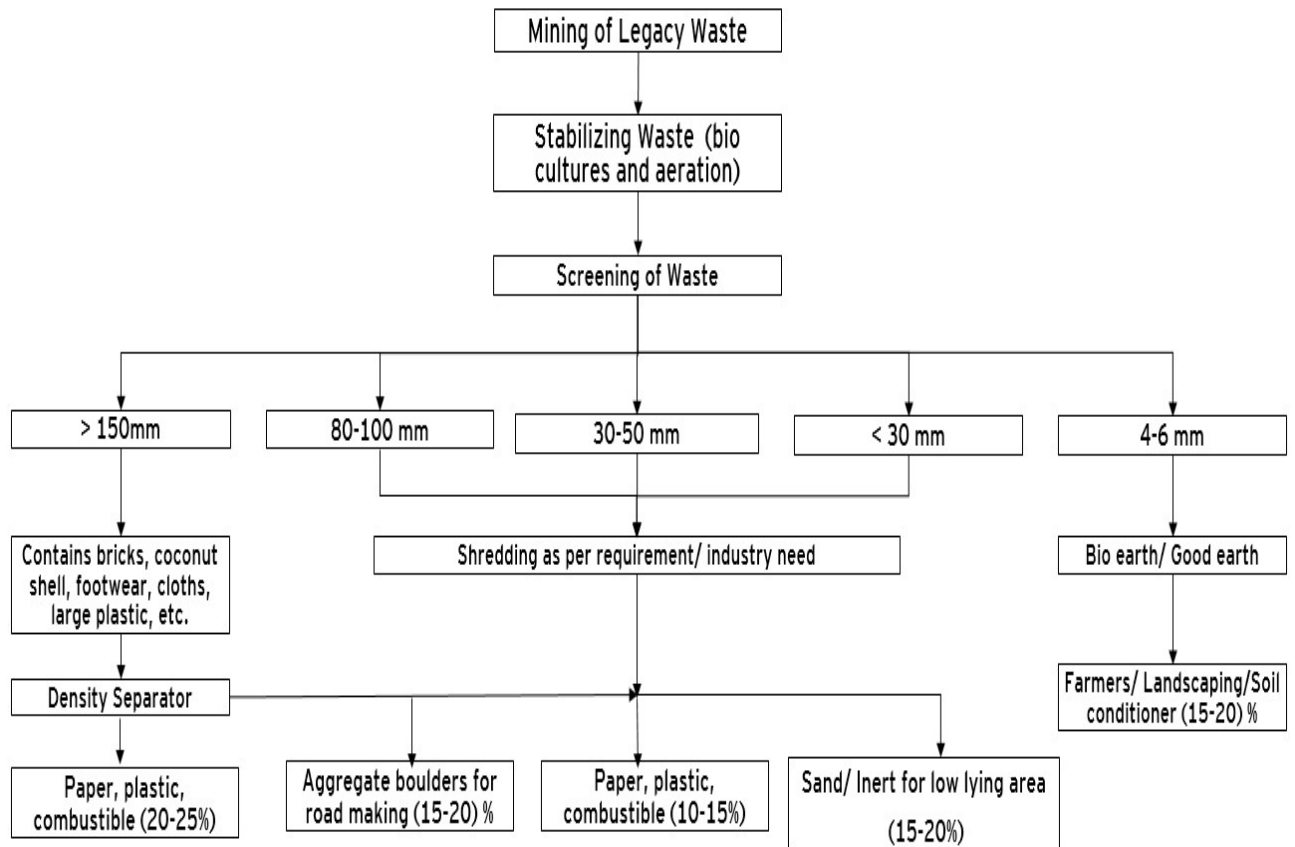


Figure 17: Mass Balance for Legacy Waste

An indicative mass balance for MSW processing facility for Dum Dum, South Dum Dum, North Dum Dum, Baranagar at Pramodnagar processing facility has been provided in the below flow chart:

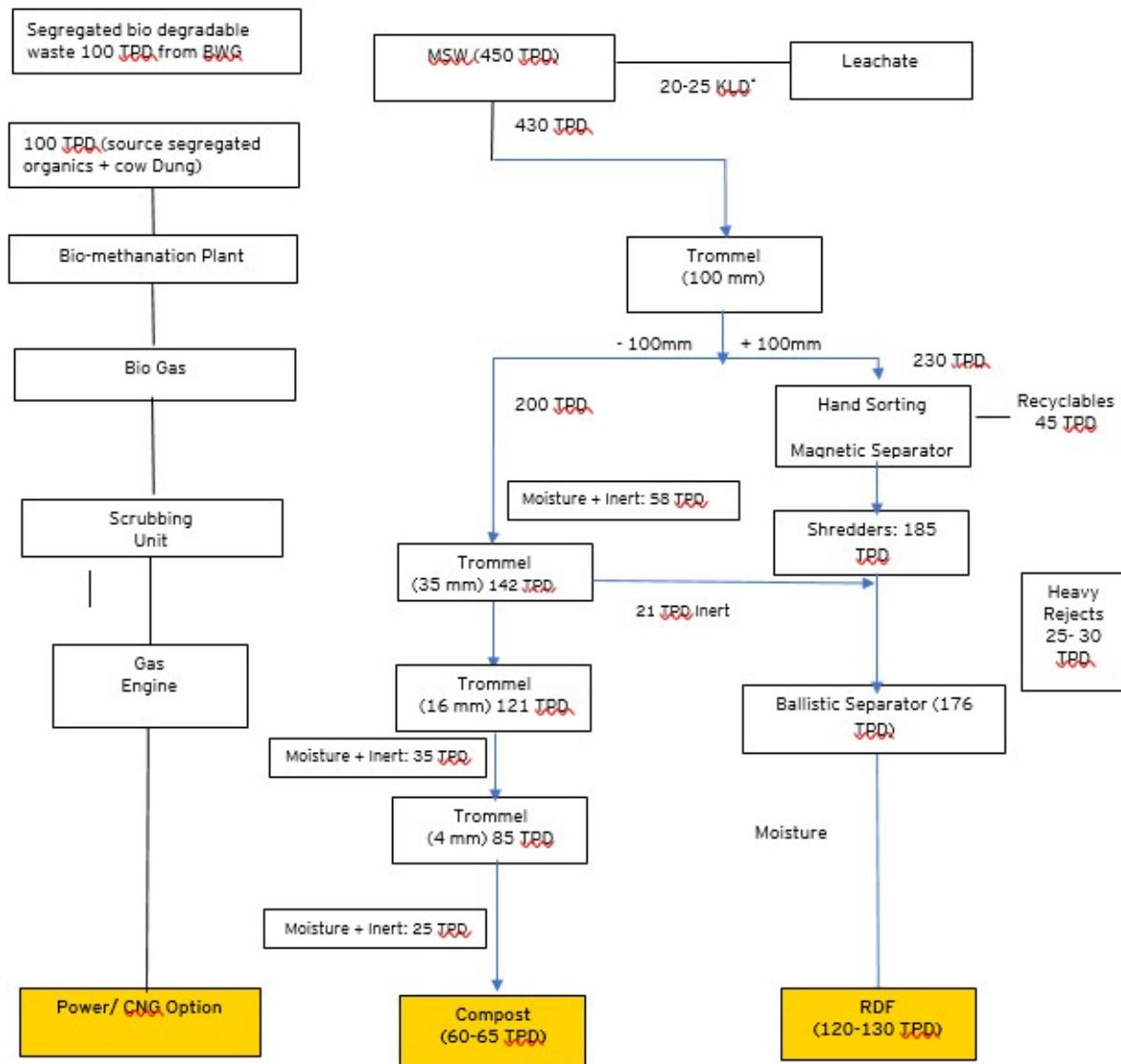


Figure 18: Flow Chart – Material Balance of 450 TPD Pramodnagar Processing Plant

The MSW processing facility for Kamarhati and New Barrackpore at Kamarhati Dumpsite can be summarized in the following Indicative mass balance flow chart:

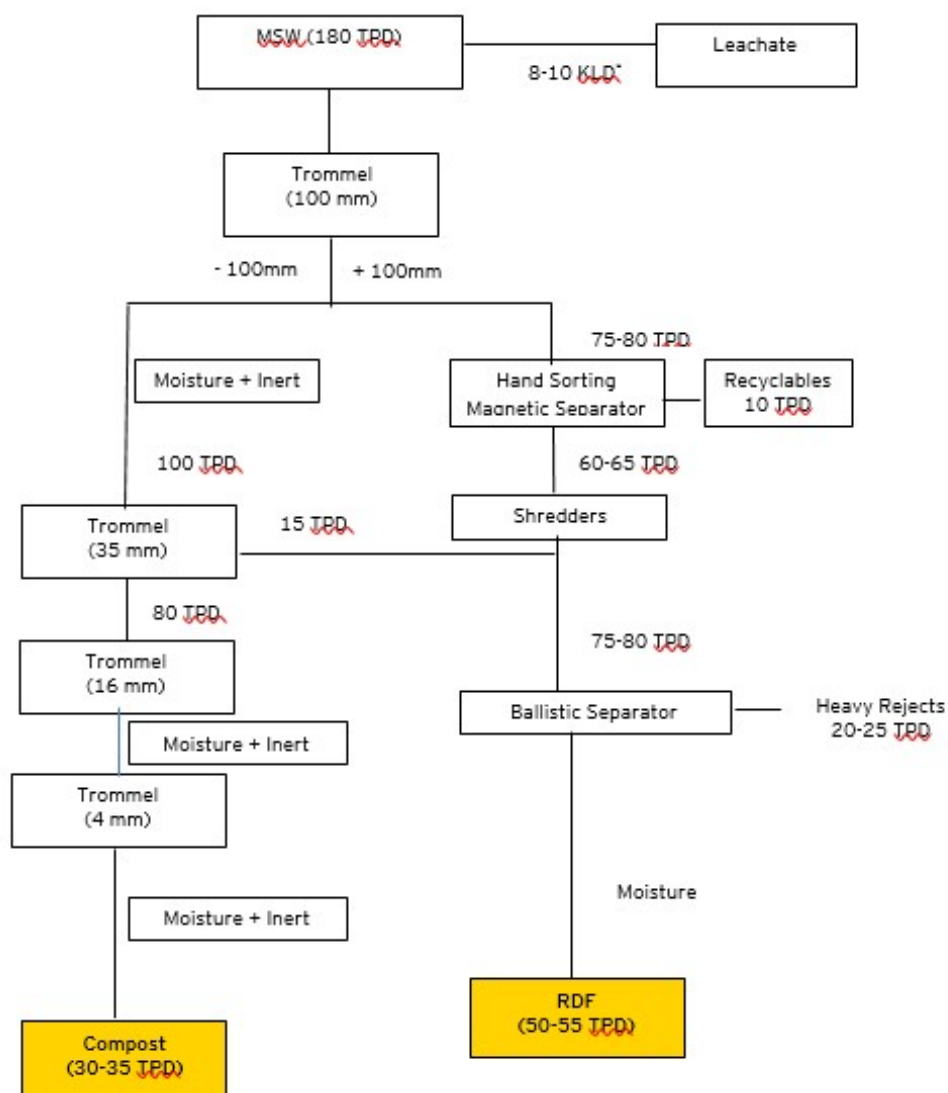


Figure 19: Flow Chart – Material Balance of 180 TPD Kamarhati processing Plant

4.3 Sanitary Landfill

Currently, the total waste generated by ULBs in Cluster-1 is being transported to the Pramodnagar site where waste is being dumped crudely or indiscriminately. In the light of the above, as the part of development of MSW management project for the Cluster-1, it is proposed to develop a common sanitary landfill site. Common sanitary waste disposal facility would be planned for the safe disposal of processing rejects and non-biodegradable components of solid waste and it is envisaged that common sanitary landfill site would receive/accommodate about 20% of processing rejects and inert per day from the total MSW processed at processing plant.

4.3.1 Site details

The MSW Regulations pertain to the design and construction of the conventional lined sanitary landfill (containment landfill). These regulations do not address alternate landfill designs like the natural attenuation or bioreactor landfills. Hence, to adhere to the Solid Waste Management Rules, 2016 and land availability in the region, it was decided to construct a common municipal sanitary landfill, for the entire cluster. It was informed during the meetings that KMDA is looking for new land area for sanitary landfill development as per the area requirement given by TA. The land shall be finalized within nine months period from award of work to private developer within the distance of 35 km. The site would be provided for the project throughout the concession period, on a nominal lease. Preliminary site development activities and detailed design would be required to carry out, prior to landfill development by the Concessionaire.

4.3.2 Assessment of landfill volume and life

Assessment of volume of the waste to be land filled is the preliminary design requirement in terms of area and landfill life estimation. The volume of waste to be placed in the landfill is computed for the active period of the landfill considering (a) the current generation of waste per annum and (b) the anticipated increase in rate of waste generation and waste diversion rates that cluster-1 intends to achieve. It is envisaged that in Processing Plants at Pramodnagar and Kamarhati site, about 550-650 TPD of waste would be processed and about 20% of processing rejects would be landfilled as final disposal to SLF site i.e. about inert rejects of 130-150 TPD plus top liners would be land filled per day. By assuming the height of landfill as 10m, the landfill volume requirements for a duration 20 years is about 32.4 acres.

4.3.3 Disposal: Landfill

As per the requirements of the Solid Waste (Management & Handling) Rules 2016, land filling should be restricted to non-biodegradable, inert waste and other waste that are not suitable for further recycling or biological processing. Land filling, amounts ranging from 15-20% shall also be carried out as residues of waste processing facilities. Land filling of mixed waste shall be avoided unless the same is found unsuitable for waste processing. The process of land filling must be performed by adhering to proper norms and landfill sites should meet the specifications as given in these rules. As per solid waste management rules, 2016, it is mandatory to design, construct and operate Sanitary landfill in addition to waste processing facilities.

Annexure – I

Original Copies of Lab Reports



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CIN : U51109WB1931PTC007007

TEST REPORT

NO. G(D)/19-20/117B

Date: 11 June 2019

Page 1 of 1

Issued to	:	M/s. MARSS CONSULTANCY Kolkata
Your Ref. No.	:	E mail dtd. 13.05.2019
Description of sample	:	Municipal Waste (Legacy)
Collection Source	:	Legacy waste from Promodnagar Dump site
Sample Drawn by us on	:	30.05.2019
Analysis completed on	:	10.06.2019

A. PHYSICAL PROPERTIES

Sl. No.	Test Parameters	Unit	Results
01.	Texture	-	Solid Dust
02.	Smell	-	Pungent Odour
03.	Solids Constituent :		
	a) Plastic	%	15
	b) Vegetable Waste	%	--
	c) Soil	%	55
	d) Grass	%	--
	e) Leather	%	12
	f) Glass Bottle	%	10
	g) Other Waste	%	08
4.	Probe Moisture	%	15

B. GENERAL PARAMETERS:

Sl. No.	Test Parameters	Unit	Results
01.	Moisture Content	%	6.87

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Authorised Signatory

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CIN : U51109WB1931PTC007007

TEST REPORT

NO. G(D)/19-20/117C

Date: 19 June 2019


Page 1 of 1

Issued to : M/s. MARSS CONSULTANCY
Kolkata
Your Ref. No. : E mail dtd. 13.05.2019
Description of sample : Municipal Waste (Legacy)
Collection Source : Legacy waste from Promodnagar Dump site
Sample Drawn by us on : 30.05.2019
Analysis completed on : 19.06.2019

TCLP REPORT:

Sl. No.	Test Parameters	Unit	Results
1.	Lead as Pb	mg/lit	< 0.1
2.	Cadmium as Cd	mg/lit	< 0.01
3.	Iron as Fe	mg/lit	3.750
4.	Zinc as Zn	mg/lit	0.928
5.	Nickel as Ni	mg/lit	0.160
6.	Copper as Cu	mg/lit	0.105
7.	Chromium as Cr	mg/lit	0.10
8.	Sulphide as S	mg/lit	< 0.1
9.	Cyanide as CN	mg/lit	< 0.1

Note : Minimum Detection Limit of Pb, S & CN .. 0.1 mg/lit.,
Cd .. 0.01 mg/lit.


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TEST REPORT

NO. G(D)/19-20/146A

Date: 19 June 2019

Page 1 of 1

Issued to : M/s. MARSS CONSULTANCY
Kolkata
Your Ref. No. : E mail dtd. 13.05.2019
Description of sample : Municipal Waste (Legacy)
Collection Source : Kamarhati Municipality waste from
Dumping ground
Sample Drawn by us on : 14.06.2019
Analysis completed on : 19.06.2019

A. PHYSICAL PROPERTIES

Sl. No.	Test Parameters	Unit	Results
01.	Texture	..	Solid
02.	Smell	..	Slight Foul Smell
03.	Solids Constituent :		
	a) Plastic	%	20
	b) Vegetable Waste	%	--
	c) Soil	%	50
	d) Grass	%	--
	e) Leather	%	10
	f) Glass Bottle	%	05
	g) Other Waste	%	15
4.	Probe Moisture	%	14

B. TCLP REPORT:

Sl. No.	Test Parameters	Unit	Results
1.	Lead as Pb	mg/Lt	< 0.1
2.	Cadmium as Cd	mg/Lt	< 0.01
3.	Iron as Fe	mg/Lt	0.109
4.	Zinc as Zn	mg/Lt	0.05
5.	Nickel as Ni	mg/Lt	0.188
6.	Copper as Cu	mg/Lt	< 0.05
7.	Chromium as Cr	mg/Lt	< 0.1
8.	Sulphide as S	mg/Lt	< 0.1
9.	Cyanide as CN	mg/Lt	< 0.1

Note : Minimum Detection Limit of Pb, Cr, S & CN .. 0.1 mg/Lt.,
Cd .. 0.01 mg/Lt., Cu .. 0.05 mg/Lt.

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TEST REPORT

NO. G(D)/19-20/144

Date: 18 June 2019

Page 1 of 1

Issued to : M/s. MARSS CONSULTANCY
Kolkata
Your Ref. No. : E mail dtd. 13.05.2019
Description of sample : Municipal Waste (Fresh)
Collection Source : New Barrackpore Municipality waste from
Dumping Spot
Sample Drawn by us on : 14.06.2019
Analysis completed on : 18.06.2019

A. PHYSICAL PROPERTIES

Sl. No.	Test Parameters	Unit	Results
01.	Texture	--	Solid
02.	Smell	--	Rotten Odour
03.	Solids Constituent :		
	a) Plastic	%	10
	b) Vegetable Waste	%	50
	c) Soil	%	08
	d) Grass	%	12
	e) Leather	%	--
	f) Glass Bottle	%	10
	g) Other Waste	%	10
4.	Probe Moisture	%	31

B. GENERAL PARAMETERS:

Sl. No.	Test Parameters	Unit	Results
01.	Bulk Density	gm/cc	0.48
02.	Total Organic Carbon	%	7.30
03.	Moisture Content	%	70.71
04.	Ash Content (Dry Basis)	%	9.53
05.	Nitrogen	%	0.33
06.	C : N Ratio	--	1 : 22.12
07.	Gross Calorific Value (Dry Basis)	kcal/kg	3891


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TEST REPORT

NO. G(D)/19-20/145

Date: 18 June 2019

Page 1 of 1

Issued to	:	M/s. MARSS CONSULTANCY
	:	Kolkata
Your Ref. No.	:	E mail dtd. 13.05.2019
Description of sample	:	Municipal Waste (Fresh)
Collection Source	:	Kamarhati Municipality waste from Dumping ground
Sample Drawn by us on	:	14.06.2019
Analysis completed on	:	18.06.2019

A. PHYSICAL PROPERTIES

Sl. No.	Test Parameters	Unit	Results
01.	Texture	..	Solid
02.	Smell	..	Rotten Odour
03.	Solids Constituent :		
	a) Plastic	%	14
	b) Vegetable Waste	%	50
	c) Soil	%	12
	d) Grass	%	10
	e) Leather	%	--
	f) Glass Bottle	%	--
	g) Other Waste	%	16
4.	Probe Moisture	%	31

B. GENERAL PARAMETERS:

Sl. No.	Test Parameters	Unit	Results
01.	Bulk Density	gm/cc	0.49
02.	Total Organic Carbon	%	6.85
03.	Moisture Content	%	45.55
04.	Ash Content (Dry Basis)	%	34.80
05.	Nitrogen	%	0.28
06.	C : N Ratio	..	1 : 24.5
07.	Gross Calorific Value (Dry Basis)	kcal/kg	2715


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TEST REPORT

NO. G(D)/19-20/113

Date: 11 June 2019

Page 1 of 1

Issued to	:	M/s. MARSS CONSULTANCY Kolkata
Your Ref. No.	:	E mail dtd. 13.05.2019
Description of sample	:	Municipal Waste (Fresh)
Collection Source	:	Baranagar Municipality waste from Promodnagar Dump site
Sample Drawn by us on	:	30.05.2019
Analysis completed on	:	10.06.2019

A. PHYSICAL PROPERTIES

Sl. No.	Test Parameters	Unit	Results
01.	Texture	..	Solid
02.	Smell	..	Rotten Odour
03.	Solids Constituent :		
	a) Plastic	%	08
	b) Vegetable Waste	%	40
	c) Soil	%	10
	d) Grass	%	05
	e) Leather	%	12
	f) Glass Bottle	%	20
	g) Other Waste	%	05
4.	Probe Moisture	%	26

B. GENERAL PARAMETERS:

Sl. No.	Test Parameters	Unit	Results
01.	Bulk Density	gm/cc	0.55
02.	Total Organic Carbon	%	8.40
03.	Moisture Content	%	64.67
04.	Ash Content (Dry Basis)	%	28.50
05.	Nitrogen	%	0.39
06.	C : N Ratio	..	1 : 21.5
07.	Gross Calorific Value (Dry Basis)	kcal/kg	3403

(T. NANDI)
Authorised Signatory



R. V. BRIGGS & CO. PRIVATE LTD.

ANALYTICAL CONSULTING & TECHNICAL CHEMISTS

TAHER MANSION, 1ST FLOOR

9, BENTINCK STREET, KOLKATA - 700 001

Ph. : 2248-3661/2698/7803, 2262-4153/4154, Fax : 33 2248-0447

E-mail : rvbriggs.kolkata@gmail.com, Website : www.rvbriggs.com

CIN : U51109WB1931PTC007007

TEST REPORT

NO. G(D)/19-20/114

Date: 11 June 2019

Page 1 of 1

Issued to	:	M/s. MARSS CONSULTANCY
	:	Kolkata
Your Ref. No.	:	E mail dtd. 13.05.2019
Description of sample	:	Municipal Waste (Fresh)
Collection Source	:	North Dum Dum Municipality waste from Promodnagar Dump site
Sample Drawn by us on	:	30.05.2019
Analysis completed on	:	10.06.2019

A. PHYSICAL PROPERTIES

Sl. No.	Test Parameters	Unit	Results
01.	Texture	..	Solid
02.	Smell	..	Rotten Odour
03.	<u>Solids Constituent :</u>		
	a) Plastic	%	12
	b) Vegetable Waste	%	50
	c) Soil	%	15
	d) Grass	%	--
	e) Leather	%	10
	f) Glass Bottle	%	05
	g) Other Waste	%	08
4.	Probe Moisture	%	30

B. GENERAL PARAMETERS:

Sl. No.	Test Parameters	Unit	Results
01.	Bulk Density	gm/cc	0.62
02.	Total Organic Carbon	%	8.95
03.	Moisture Content	%	66.85
04.	Ash Content (Dry Basis)	%	15.99
05.	Nitrogen	%	0.31
06.	C : N Ratio	..	1 : 28.87
07.	Gross Calorific Value (Dry Basis)	kcal/kg	5489


(T. NANDI)
Authorised Signatory



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TEST REPORT

NO. G(D)/19-20/115

Date: 11 June 2019

Page 1 of 1

Issued to : M/s. MARSS CONSULTANCY
Kolkata
Your Ref. No. : E mail dtd. 13.05.2019
Description of sample : Municipal Waste (Fresh)
Collection Source : South Dum Dum Municipality waste from
Promodnagar Dump site
Sample Drawn by us on : 30.05.2019
Analysis completed on : 10.06.2019

A. PHYSICAL PROPERTIES

Sl. No.	Test Parameters	Unit	Results
01.	Texture	..	Solid
02.	Smell	..	Rotten Odour
03.	Solids Constituent :		
	a) Plastic	%	09
	b) Vegetable Waste	%	15
	c) Soil	%	25
	d) Grass	%	05
	e) Leather	%	08
	f) Glass Bottle	%	05
	g) Other Waste	%	33
4.	Probe Moisture	%	27.5

B. GENERAL PARAMETERS:

Sl. No.	Test Parameters	Unit	Results
01.	Bulk Density	gm/cc	0.59
02.	Total Organic Carbon	%	12.81
03.	Moisture Content	%	75.91
04.	Ash Content (Dry Basis)	%	56.32
05.	Nitrogen	%	0.27
06.	C : N Ratio	..	1 : 47.4
07.	Gross Calorific Value (Dry Basis)	kcal/kg	2154

(T. NANDI)
Authorised Signatory



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E-mail : rvbriggs.kolkata@gmail.com, Website : www.rvbriggs.com

CIN : U51109WB1931PTC007007

TEST REPORT

NO. G(D)/19-20/116

Date: 11 June 2019

Page 1 of 1

Issued to : M/s. MARSS CONSULTANCY
Kolkata
Your Ref. No. : E mail dtd. 13.05.2019
Description of sample : Municipal Waste (Fresh)
Collection Source : Dum Dum Municipality waste from
Promodnagar Dump site
Sample Drawn by us on : 30.05.2019
Analysis completed on : 10.06.2019

A. PHYSICAL PROPERTIES

Sl. No.	Test Parameters	Unit	Results
01.	Texture	..	Solid
02.	Smell	..	Rotten Odour
03.	<u>Solids Constituent :</u>		
	a) Plastic	%	10
	b) Vegetable Waste	%	12
	c) Soil	%	30
	d) Grass	%	07
	e) Leather	%	08
	f) Glass Bottle	%	05
	g) Other Waste	%	28
4.	Probe Moisture	%	29

B.GENERAL PARAMETERS:

Sl. No.	Test Parameters	Unit	Results
01.	Bulk Density	gm/cc	0.53
02.	Total Organic Carbon	%	10.40
03.	Moisture Content	%	63.51
04.	Ash Content (Dry Basis)	%	33.69
05.	Nitrogen	%	0.36
06.	C : N Ratio	..	1 : 28.9
07.	Gross Calorific Value (Dry Basis)	kcal/kg	2343

(T. NANDI)

Authorised Signatory

A. Primary Collection & Transportation									
S.No.*	Type of Machinery		Make and Model No.	Capacity (in cum.)	Capacity (in TPD)	No. of Such units	No. of trips (per day)	Total Waste Collected	Percentage of waste collection
	Vehicle	Equipment							
1	WB-37TC-261	TRACTOR	475DI	59.5	7.5	1	3	178.5	9.68
2	WB-37TC-258	TRACTOR	475DI	59.5	5	1	2	119	6.45
3	WB-37TC-263	TRACTOR	475DI	59.5	7.5	1	3	178.5	9.68
4	WB-37TC-255	TRACTOR	475DI	59.5	5	1	2	119	6.45
5	WB-37TC-265	TRACTOR	475DI	59.5	7.5	1	3	178.5	9.68
6	WB-37TC-260	TRACTOR	475DI	59.5	7.5	1	3	178.5	9.68
7	WB-37TC-259	TRACTOR	475DI	59.5	5	1	2	119	6.45
8	WB-37TC-262	TRACTOR	475DI	59.5	7.5	1	3	178.5	9.68
9	WB-37TC-254	TRACTOR	475DI	59.5	7.5	1	3	178.5	9.68
10	WB-37TC-257	TRACTOR	475DI	59.5	5	1	2	119	6.45
11	WB-37TC-264	TRACTOR	475DI	59.5	5	1	2	119	6.45
12	WB-37TC-256	TRACTOR	475DI	59.5	7.5	1	3	178.5	9.68
total								1844.5	100

B. Secondary Collection & Transportation									
S.No.*	Type of Machinery		Make and Model No.	Capacity (in cum.)	Capacity (in TPD)	No. of Such units	No. of trips (per day)	Partitoned (Y/N)	Outsourced (Y/N)
	Vehicle	Equipment							
1	WB-37TC-3337	TRACTOR	EMMU925	59.5	7.5	1	3		
2	WB-23C-4350	TRACTOR	4455DX	59.5	5	1	2		
3	WB-23C-4351	TRACTOR	4455DX	59.5	7.5	1	3		
4	WB-23C-4352	TRACTOR	4455DX	59.5	7.5	1	3		
5	WB-23C-4353	TRACTOR	4455DX	59.5	5	1	2		
6	WB-23C-4349	TRACTOR	4455DX	59.5	7.5	1	3		
7	230H	TRACTOR	3522	59.5	5	1	2		
8	6522/D	TRACTOR	6522	59.5	7.5	1	3		
9	6522	TRACTOR	6522	59.5	5	1	2		
10	230D	TRACTOR	3511	59.5	7.5	1	3		
11	4022	TRACTOR	4022	59.5	7.5	1	3		

Types of Vehicles/Equipment Used

Name of the ULB: NEW BARRACKPORE MUNICIPALITY

A. Primary Collection & Transportation									
S.No.*	Type of Machinery		Make and Model No.	Capacity (in cum.)	Capacity (in TPD)	No. of Such units	No. of trips (per day)	Partitoned (Y/N)	Outsourced (Y/N)
	Vehicle	Equipment							
1	TRICYCLE			18CFT		33			
2	Hand Trali			5 CFT		25			

*Add more serial number if required

B. Secondary Collection & Transportation									
S.No.*	Type of Machinery		Make and Model No.	Capacity (in cum.)	Capacity (in TPD)	No. of Such units	No. of trips (per day)	Partitoned (Y/N)	Outsourced (Y/N)
	Vehicle	Equipment							
1	TRACTOR	TRACTOR	HMT	2 MT		1	2		
2	TRACTOR	TRACTOR	HMT	2 MT		1	2		
3	TRACTOR	TRACTOR	HMT	2 MT		1	2		
4	TRACTOR	TRACTOR	HMT	2 MT		1	2		
5	TRACTOR	TRACTOR	HMT	2 MT		1	2		
6	TRACTOR	TRACTOR	HMT	2 MT		1	2		
7	TRACTOR	TRACTOR	HMT	2 MT		1	2		
8	TRACTOR	TRACTOR	MAHINDRA (ARJUN)	2 MT		1	2		
9	TRACTOR	TRACTOR	MAHINDRA (ARJUN)	2 MT		1	2		

Types of Vehicles/Equipment Used

Name of the ULB: NORTH DUM DUM MUNICIPALITY

A. Primary Collection & Transportation

S.No.*	Type of Machinery		Make and Model No.	Capacity (in cum.)	Capacity (in TPD)	No. of Such units	No. of trips (per day)	Partitoned (Y/N)	Outsourced (Y/N)
	Vehicle	Equipment							
1	Try-cycle van	Spade	Spade- Tata			170	3	Yes	No
2	Tractor	Trailer	Tractor- HMT		5 tpd	2	5	Yes	No
3	Tractor	Cover trailer	Tractor- HMT		2 tpd	1	4	Yes	No
4	Tractor	Container	Tractor- HMT						

B. Secondary Collection & Transportation

S.No.*	Type of Machinery		Make and Model No.	Capacity (in cum.)	Capacity (in TPD)	No. of Such units	No. of trips (per day)	Partitoned (Y/N)	Outsourced (Y/N)
	Vehicle	Equipment							
1	Tractor	Trailer	Tractor- HMT					Yes	No
2	Tractor	Cover trailer	Tractor- HMT		4 tpd		2	Yes	No
3	Tractor	Container	Tractor- HMT		26 tpd	1 (tractor)+17 (container)	13	Yes	No
4	Compactor	Spade	Compactor- Tata & Eicher	36.5 cum		3	3		No
5	Stationary Compactor	Try-cycle van & Spade	Stationary compactor- Tata	10.5 cum		1	1		No

Types of Vehicles/Equipment Used

Name of the ULB: SOUTH DUM DUM

A. Primary Collection & Transportation

S.No.*	Type of Machinery		Make and Model No.	Capacity (in cum.)	Capacity (in TPD)	No. of Such units	No. of trips (per day)
	Vehicle	Equipment					
1	Tricycle Van		Iron made angel, Patti with Iron Sheet	0.42	1.01	490	560
2	Hand Cart		Iron made angel, Patti with Iron Sheet	0.21	0.51	120	35

*Add more serial number if required

B. Secondary Collection & Transportation

S.No.*	Type of Machinery		Make and Model No.	Capacity (in cum.)	Capacity (in TPD)	No. of Such units	No. of trips (per day)
	Vehicle	Equipment					
1	Tractor		Tata/Mahindra	1.06	2.55	13	28
2	Lorry		Outsourced	N.A	N.A	22	77
3	Dumper		Tata & Eicher	4.97	11.98	2	2
4	Hook loader		Tata & Eicher	N.A	N.A	4	18

Annexure – III

Calculation of Distance to be travelled for Secondary Transportation

North Dum Dum (SCP in ward number)	Distance from plant	Unit	Assumptions if any
2	9	km	
4	7	km	
7	6	km	
32	8	km	
17	5	km	
11	8	km	
Average distance	7.17	km	
Buffer	1.43	km	20% of the average Distance
Average distance used for calculation	9	km	

South Dum Dum (SCP in ward number)	Distance from plant	Unit	Assumptions if any
10	6.2	km	
17	7.4	km	
20	7.1	km	
28	10.8	km	
31	13	km	
29	11.8	km	
Average distance	9.38	km	
Buffer	1.88	km	20% of the average Distance
Average distance used for calculation	12	km	

Dum Dum (SCP in ward number)	Distance from plant	Unit	Assumptions if any
4	5	km	
1	4	km	
11	7	km	
21	5	km	
5	6	km	
6	5	km	
Average distance	5.33	km	
Buffer	1.07	km	20% of the average Distance
Average distance used for calculation	7	km	

Baranagar (SCP in ward number)	Distance from plant	Unit	Assumptions if any
4	8	km	
31	6	km	
28	5	km	
3	5	km	
23	5	km	
25	4	km	
Average distance	5.50	km	
Buffer	1.10	km	20% of the average Distance
Average distance used for calculation	7	km	

Kamarhati (SCP in ward number)	Distance from plant	Unit	Assumptions if any
17-20	3	km	
25-28	2	km	
29-35	3	km	
12 to 16	3	km	
1 t 7	3	km	
21-24	3	km	
Average distance	2.83	km	
Buffer	0.57	km	20% of the average Distance
Average distance used for calculation	4	km	

New Barrackpore (SCP in ward number)	Distance from plant	Unit	Assumptions if any
6	11	km	
4	12	km	
14	12	km	
17	9	km	
12	12	km	
2	11.2	km	
Average distance	11.20	km	
Buffer	2.24	km	20% of the average Distance
Average distance used for calculation	14	km	

Annexure – IV

ULB Wise Secondary Collection Points List:

Summary sheet		
ULB Name	Total no. of SCP	Total no. of Static Compactor
Dum Dum	31	0
Kamarhati	53	1
New Barrackpore	13	0
Barranagar	7	1
South Dum Dum	71	11
North Dum Dum	23	1
	198	14

SOUTH DUM DUM MUNICIPALITY					
Ward No.	No. of SCP's	SCP location	Area	No. of static compactor (as per survey)	Transported to
1	3	Surya Sen Pally beside sitala mandir	NA	0	PramodNagar processing facility
		Sukanta pally beside belghariya exp.way	NA	0	PramodNagar processing facility
		sukanta pally beside medicine shop	NA	0	PramodNagar processing facility
2	2	Health 's Ground	1430 sqft	2	PramodNagar processing facility
3	3	Promod nagar bazar	NA	0	PramodNagar processing facility
		back side of Promod Nagar Police fari	NA	0	PramodNagar processing facility
		near mangal's tea shop	NA	0	PramodNagar processing facility
4	4	vidyasagar road	NA	0	PramodNagar processing facility
		chandsi bhaban road	NA	0	PramodNagar processing facility
		beside of post office	NA	0	PramodNagar processing facility
		front of f.l shop	NA	0	PramodNagar processing facility
5	5	subhash nagar 4th bye lane	NA	0	PramodNagar processing facility

		khudiram sarani infront of Rekha Singh's House	NA	0	PramodNagar processing facility
		front of dudh pukur	NA	0	PramodNagar processing facility
		front of amtala pukur	NA	0	PramodNagar processing facility
		sarat bose road	NA	0	PramodNagar processing facility
6	4	front of dum dum biri's house	NA	0	PramodNagar processing facility
		near deshbandhu school	NA	0	PramodNagar processing facility
		sarat bose road	NA	0	PramodNagar processing facility
		nikhil aich sarani (teler drum)	NA	0	PramodNagar processing facility
7	5	padrihata	NA	0	PramodNagar processing facility
		beside of post office	NA	0	PramodNagar processing facility
		beside of ganesh mashla	NA	0	PramodNagar processing facility
		front of mahendra colony	NA	0	PramodNagar processing facility
		beside 1no.rail gate	NA	0	PramodNagar processing facility
8	3	ramgarh (sisu uddan)	NA	0	PramodNagar processing facility
		rastraguru avenue banik das's house	NA	0	PramodNagar processing facility
		golpark	NA	0	PramodNagar processing facility
9	3	Front of Motijheel Big Pond	NA	0	PramodNagar processing facility
		Lakshmi Nagar Mazit Math Corner	NA	0	PramodNagar processing facility
		Old quarter	NA	0	PramodNagar processing facility
10	2	Near Bagjola ground	1000 sqft	2	PramodNagar processing facility
11	1	Near Motish Roy bridge	NA	0	PramodNagar processing facility
12	1	Near Military Camp	NA	0	PramodNagar processing facility
13	2	Khal Par	NA	0	PramodNagar processing facility
		Jahor Tea Stall	NA	0	PramodNagar processing facility
14	2	Gibson Gully	NA	0	PramodNagar processing facility
		Near	NA	0	PramodNagar

		Gostobihari Transformer			processing facility
15	3	4 no. Daga Colony (Near Kali Mandir)	NA	0	PramodNagar processing facility
		Hanuman Mandir	NA	0	PramodNagar processing facility
		***	NA	0	PramodNagar processing facility
16	2	Bipin Ganguly Road (Shani Mandir)	NA	0	PramodNagar processing facility
		Bipin Ganguly Road (Uren Trailors)	NA	0	PramodNagar processing facility
17	1	Near Prachya Bani School	NA	0	
18	2	Near Jaibya Hut	NA	0	PramodNagar processing facility
		Front of Jawpur rd.	NA	0	PramodNagar processing facility
19	2	Near ward committee office	NA	0	PramodNagar processing facility
		moyra bagan G.C. ghosh rd.	NA	0	PramodNagar processing facility
20	1	Near Kalindi Bazaar	1000 sqft	1	PramodNagar processing facility
21	4	Front of Durgabati Colony Pond	NA	0	PramodNagar processing facility
		Front of Debendra Colony School	NA	0	PramodNagar processing facility
		M.M. Ghosh Road	NA	0	PramodNagar processing facility
		Front of Ajoy Nagar Pond	NA	0	PramodNagar processing facility
22	4	Beside of Bagala Mandir	NA	0	PramodNagar processing facility
		R.P. Sweet Gully	NA	0	PramodNagar processing facility
		Near Prafullya Nagar Park	NA	0	PramodNagar processing facility
		Near Amarpally Pond	NA	0	PramodNagar processing facility
23	2	Beside of Arunadoi Club	NA	0	PramodNagar processing facility
		Carbala Math	NA	0	PramodNagar processing facility
24	3	P.N.T. Vat	NA	0	PramodNagar processing facility
		Prafulayan Club	NA	0	PramodNagar processing facility
		Kol tola Beside of Axis Bank	NA	0	PramodNagar processing facility
25	1	Near Ajitesh Mancha	1000 sqft	1	PramodNagar processing facility

26	2	Krishnapur Road opposite Maszid	NA	0	PramodNagar processing facility
		Baguihati Road Front of 4th Bye Lane	NA	0	PramodNagar processing facility
27	3	Opposite of United Club	NA	0	PramodNagar processing facility
		Harihar Nagar Colony	NA	0	PramodNagar processing facility
		Rail Line (Near Udbastu Park)	NA	0	PramodNagar processing facility
28	1	Near Dumdum Park Bazaar	NA	0	PramodNagar processing facility
29	2	Barat	5000 sqft	2	PramodNagar processing facility
30	1	Laketown PS (new Building)	1000 sqft	1	PramodNagar processing facility
31	1	Tetultola Bus Stop	2700 sqft	1	PramodNagar processing facility
	1	Sardar Para	NA	0	PramodNagar processing facility
32	4	Rail quarter	NA	0	PramodNagar processing facility
		End of Priya Mitra Road	NA	0	PramodNagar processing facility
		Gazi Danga	NA	0	PramodNagar processing facility
			NA	0	PramodNagar processing facility
33	6	Front of Municipal Primary school	NA	0	PramodNagar processing facility
		front of Post Office	NA	0	PramodNagar processing facility
		Front of Maszid	NA	0	PramodNagar processing facility
		26 no. Rail Gate	NA	0	PramodNagar processing facility
		Front of Ambedkar Colony	NA	0	PramodNagar processing facility
		Front of Manasha Mandir	NA	0	PramodNagar processing facility
34	1	Golaghata Busstop	NA	0	PramodNagar processing facility
35	1	Near Burd & Jute Company	1000 sqf	1	PramodNagar processing facility
TOTAL SCP's	88			11	
DUM DUM MUNICIPALITY					
Ward No.	No. of SCP's	SCP location	Area	No. of static compactor	Transportated to
1	1	Delhi Road Vat	29.7 SQ.M./ 320 SQ.FT.	0	PramodNagar processing facility
4	1	2 no. Motilal Bazar	40 sq ft (approx)	0	PramodNagar processing facility

5	1	Majumderpara (Punjab Goli)	40 sq ft (approx)	0	PramodNagar processing facility
6	1	Padma Pukur Vat	45.77 SQ.M./ 493 SQ.FT.	0	PramodNagar processing facility
8	1	Badra Vat	18.98 SQ.M./ 204 SQ.FT.	0	PramodNagar processing facility
9	2	Auxalium Vat (3 No Rail Gate)	15.04 SQ.M./ 162 SQ.FT.	0	PramodNagar processing facility
		Litchi Bagan Vat	9.25 SQ.M./ 100 SQ.FT.	0	PramodNagar processing facility
11	2	H.M.V. (Joshore Road)	36 SQ.M./ 387 SQ.FT.	0	PramodNagar processing facility
		Radhashree	40 sq ft (approx)	0	PramodNagar processing facility
14	2	Kamalapur	300 sq ft (approx)	0	PramodNagar processing facility
		ESI Battala	300 sq ft (approx)	0	PramodNagar processing facility
15	3	King's Becary Vat	21.96 SQ.M./ 236 SQ.FT.	0	PramodNagar processing facility
		School Vat (St. Steven)	25 sq ft (approx)	0	PramodNagar processing facility
		Hospital	40 sq ft (approx)	0	PramodNagar processing facility
17	1	1 no. Rail Gate	60 sq ft (approx)	0	PramodNagar processing facility
18	3	Gora Bazar vat (Bazar) Tel Mill Goli	24.24 SQ.M./ 261 SQ.FT.	0	PramodNagar processing facility
		Panthanibas	50 sq ft (approx)	0	PramodNagar processing facility
		Bandhab Nagar	50 sq ft (approx)	0	PramodNagar processing facility
19	4	Central jail	30.3 SQ.M./ 326 SQ.FT.	0	PramodNagar processing facility
		Manu Saha	12 sq ft (approx)	0	PramodNagar processing facility
		Jailor House	50 sq ft (approx)	0	PramodNagar processing facility
		Hanuman Mandir Lamppost	16 sq ft (approx)	0	PramodNagar processing facility
20	1	Siddheswari Lamppost	40 sq ft (approx)	0	PramodNagar processing facility
21	7	Mall Road Vat (Bazar)	18.76 SQ.M./ 202 SQ.FT	0	PramodNagar processing facility
21		Mall Road Vat (New water tank) Sirishtala	25.92 SQ.M./ 279 SQ.FT.	0	PramodNagar processing facility
21		Mall Road Vat (Bhutan House & Christ Church	15.51 SQ.M./ 167 SQ.FT.	0	PramodNagar processing facility
21		Nepali Patty	30 sq ft (approx)	0	PramodNagar processing facility

21		Ajoy Sib Kali Mandir	20 sq ft (approx)	0	PramodNagar processing facility
21		Metro Goli	10 sq ft (approx)	0	PramodNagar processing facility
21		Naidu College	50 sq ft (approx)	0	PramodNagar processing facility
22	1	Tata Gate	30 sq ft (approx)	0	PramodNagar processing facility
TOTAL SCP's	31			0	PramodNagar processing facility
BARANAGAR MUNICIPALITY					
Ward No.	No. of SCP's	SCP location	Area	No. of static compactor	Transportated to
15	1	Central Toolroom	90 sqm	0	PramodNagar processing facility
15	1	R.I.C Gate no. 2	500 Sqft	1	PramodNagar processing facility
14	1	B.T. Road (Uttarayan Housing Estate)	130 sqm	0	PramodNagar processing facility
23	1	B.T. Road (CESC Ghosh para)	90 sqm	0	PramodNagar processing facility
27	1	B.T. Road (Bhattacharjee para)	44 sqm	0	PramodNagar processing facility
13	1	Gilta Road (Shilpa Pith)	77 sqm	0	PramodNagar processing facility
31	1	Basak Bagan	90 sqm	0	PramodNagar processing facility
TOTAL SCP's	7			1	PramodNagar processing facility
NORTH DUM DUM MUNICIPALITY					
Ward No.	No. of SCP's	SCP location	Area (Sqm)	No. of static compactor	Transportated to
2	1	Sahabagan	40	0	PramodNagar processing facility
3	1	Chota Finga	28	0	PramodNagar processing facility
4	1	Fatellapur (on service road PWD - Kalyani expressway)	40	0	PramodNagar processing facility
6	1	Patna Shishu Sangha	42	0	PramodNagar processing facility
7	1	Patna Jhilpara	25	0	PramodNagar processing facility
8	1	Pubmora road (on service road PWD - MB Road)	40	0	PramodNagar processing facility
9	1	Beside of Milan Samity play ground	13.5	0	PramodNagar processing facility
10	1	Beside of Golbagan stadium (on	200	0	PramodNagar processing facility

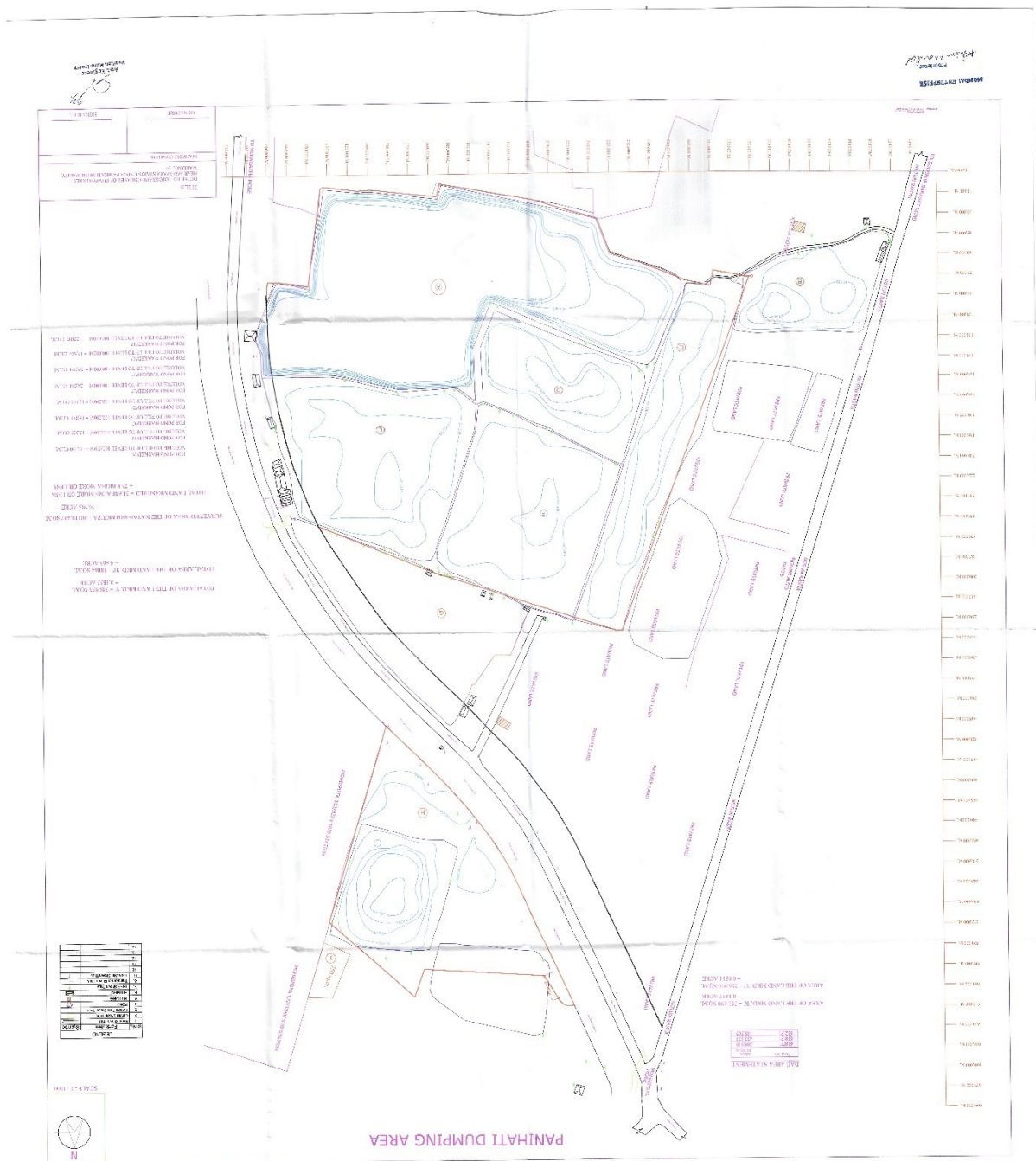
		service road PWD - Kalyani expressway)			
11	1	Pratapgarh (on service road PWD - Kalyani expressway)	20	0	PramodNagar processing facility
13	1	Opposite of Nimita P.S	50	0	PramodNagar processing facility
15	1	Kalabagan beside of LLK2 canal	35	0	PramodNagar processing facility
17	1	Opposite of Rajbari Police	35	0	PramodNagar processing facility
18	1	Birati mini Bus stand	35	0	PramodNagar processing facility
19	1	Khalishakota	70	0	PramodNagar processing facility
21	1	Sreenagar	35	0	PramodNagar processing facility
23	1	Dhalaikharkhana	80	0	PramodNagar processing facility
24	1	Iteetkhola Shivachal	500 Sqft	1	
25	1	Birati abashan	120	0	PramodNagar processing facility
26	1	Kalyani highway 201 Bus stand	80	0	PramodNagar processing facility
28	1	Nimta Rabindrapally	12	0	PramodNagar processing facility
29	1	Udaipur	35	0	PramodNagar processing facility
31	1	Adarsha Nagar	35	0	PramodNagar processing facility
33	1	Nabadarsha gate	50	0	PramodNagar processing facility
TOTAL SCP's	23			1	PramodNagar processing facility
KAMARHATI MUNICIPALITY					
Ward No.	No. of SCP's	SCP location	Area	No. of static compactor	Transportated to
1 to 7	2	Kamarhati Loha gate	NA	0	Kamarhati processing facility
		Opposite side of Chota Mosque	NA	0	Kamarhati processing facility
	1	Kathal Bagan	NA	0	Kamarhati processing facility
6	2	Police Phari	NA	0	Kamarhati processing facility
		Sastitala Vat	NA	0	Kamarhati processing facility
8 to 11	8	Beside Ashoke Foundary M.M. Feeder road	NA	0	Kamarhati processing facility
		Shree Gopal Mullick Road Vat	NA	0	Kamarhati processing facility
		Ramakrishna	NA	0	Kamarhati processing

		Pally Vat			facility
		Bagan Vat	NA	0	Kamarhati processing facility
		Ishwar Banerjee Lane	NA	0	Kamarhati processing facility
		Anushree Pally Vat	NA	0	Kamarhati processing facility
		Bhagawan Mondal Street Vat	NA	0	Kamarhati processing facility
		A.C.pal street Vat	NA	0	Kamarhati processing facility
12 to 16	8	May Day Pally	NA	0	Kamarhati processing facility
		34 Bus stand	NA	0	Kamarhati processing facility
		Runway Math	NA	0	Kamarhati processing facility
		U.N. Mukherjee Phari	NA	0	Kamarhati processing facility
		Vat near Sarada Math	NA	0	Kamarhati processing facility
		Govt quarter Vat	NA	0	Kamarhati processing facility
		Vat near Maa Kali Kanta B.T. road	NA	0	Kamarhati processing facility
		Vat opposite side of L9 Bus storage B.T. road	NA	0	Kamarhati processing facility
17 to 20	10	Present Compactor station beside allied ceramics	600 sqft	1	Kamarhati processing facility
		Prafulla Nagar sarat Pally Vat	NA	0	Kamarhati processing facility
		Prafulla Nagar Kali tala more vat	NA	0	Kamarhati processing facility
		Belghoria Bazar vat	NA	0	Kamarhati processing facility
		Ambika Mukherjee road Vat	NA	0	Kamarhati processing facility
		Flower shop vat near Belghoria Flyover	NA	0	Kamarhati processing facility
		Vat Near C.S.T.C head Office	NA	0	Kamarhati processing facility
		B.M. Banerjee Road Vat	NA	0	Kamarhati processing facility
		Indra Puri Vat	NA	0	Kamarhati processing facility
		Priya Nath Middha Road	NA	0	Kamarhati processing facility

		Vat			
21 to 24	7	Present Compactor station beside allied ceramics	150-200 sqft	0	Kamarhati processing facility
		Vat near Nilgunj road near Vivekananda association	NA	0	Kamarhati processing facility
		Belghoria station Bazar vat	NA	0	Kamarhati processing facility
		Vat near Mahakali School	NA	0	Kamarhati processing facility
		Vat near Barthala	NA	0	Kamarhati processing facility
		Vat near B.N. Ghosal Road	NA	0	Kamarhati processing facility
		Vat near Uchu Pole Nilgunj road	NA	0	Kamarhati processing facility
27	1	Central Vat Ward	150-200 sqft	0	Kamarhati processing facility
28	1	Central Vat Ward	150-200 sqft	0	Kamarhati processing facility
25 to 28	5	Beside Hind Ceramics factory	NA	0	Kamarhati processing facility
		Vat near 2 no. Railway gate	NA	0	Kamarhati processing facility
		Vat near 3 no. Railway gate	NA	0	Kamarhati processing facility
		D.P. Nagar Bazar Vat	NA	0	Kamarhati processing facility
		Adarsha Pally Vat	NA	0	Kamarhati processing facility
32	1	Central Vat Ward	150-200 sqft	0	Kamarhati processing facility
29 To 35	7	Gitanjali Vat	NA	0	Kamarhati processing facility
		Baluchar Vat Nandan Nagar	NA	0	Kamarhati processing facility
		Ghola Road Bazar Vat	NA	0	Kamarhati processing facility
		Opposite Baisakhi Math Vat	NA	0	Kamarhati processing facility
		Vat near Sarkal Bari	NA	0	Kamarhati processing facility
		Vat near 5 no. uncha bridge	NA	0	Kamarhati processing facility
		Vat naer Bandhab nagar Yuba Sangha	NA	0	Kamarhati processing facility
TOTAL SCP's	53			1	
NEW BARRACKPORE MUNICIPALITY					

Ward No.	No. of SCP's	SCP location	Area/No. of Bins (4.5MT)	No. of static compactor	Transportated to
3	1	beside railway gate no - 8	2	0	Kamarhati processing facility
2	1	Vivekananda Road, near Ghasheer Math.	1	0	Kamarhati processing facility
6	2	Sajirhat Bazar	1	0	Kamarhati processing facility
		Barabattala	2	0	Kamarhati processing facility
7	1	Kamargathi Road, Nazrul Sarani	2	0	Kamarhati processing facility
8	1	Kamarshala Battala	2	0	Kamarhati processing facility
9	1	Rabi Dutta's House	1	0	Kamarhati processing facility
11	1	Ganguly Bari	2	0	Kamarhati processing facility
12	1	Puratan Bazar	1	0	Kamarhati processing facility
13	1	Anubhab Bazar	1	0	Kamarhati processing facility
14	1	Madhumita Sarani	2	0	Kamarhati processing facility
17	1	Lanin Sarani	1	0	Kamarhati processing facility
19	1	Angana	1	0	Kamarhati processing facility
TOTAL SCP's	13				

Selection of Concessionaire for Bio-remediation of Legacy Waste, setting up of Processing facility at Pramodnagar and Kamarhati and Sanitary Landfill at Identified Site, Secondary collection and Transportation, Processing and Disposal of Municipal Solid Waste for Dum Dum, South Dumdum, North Dumdum, Baranagar, Kamarhati and New Barrackpore Municipalities



Concession Agreement

This Concession Agreement made this day of, 2020 at Kolkata.

BETWEEN

STATE URBAN DEVELOPMENT AGENCY, a society registered under the West Bengal Societies Registration Act, 1961, represented by its Director,[●], having its office at ILGUS Bhaban, HC Block, Sector- III, Salt Lake, Kolkata - 700 106, hereinafter referred to as “**SUDA**” (which expression shall unless excluded by or repugnant to the subject or context, be deemed to mean and include its successors and assigns) of the **FIRST PART**;

AND

....., a company incorporated under the provisions of the Companies Act, 2013, represented by its authorized signatory [●], and having its registered office at, hereinafter referred to as the “**Concessionaire**”, (which expression shall, unless excluded by or repugnant to the subject or context, be deemed to mean and include its successors and permitted assigns) of the **SECOND PART**;

AND

[where the Selected Bidder is a single entity]

....., a company within the meaning of Companies Act, 2013/ a Limited Liability Partnership incorporated under Limited Liability Partnership Act, 2008/ a registered partnership firm within the meaning of the Indian Partnership Act, 1932, represented by its authorized signatory [●], and having its registered office at, hereinafter referred to as “**Confirming Party**” (which term or expression shall, unless repugnant to the context or meaning thereof, be deemed to mean and include its successors and/or permitted assigns) of the **THIRD PART**;

AND

[where the Selected Bidder is a Joint Venture/ Consortium]

(1), a company within the meaning of Companies Act, 2013/ a Limited Liability Partnership incorporated under Limited Liability Partnership Act, 2008/ a registered partnership firm within the meaning of the Indian Partnership Act, 1932, represented by its authorized signatory [●], and having its registered office at, (2), a company within the meaning of Companies Act, 2013/ a Limited Liability Partnership incorporated under Limited Liability Partnership Act, 2008/ a registered partnership firm within the meaning of the Indian Partnership Act, 1932, represented by its authorized signatory [●], and having its registered office at, and (3), a company within the meaning of Companies Act, 2013/ a Limited Liability Partnership incorporated under Limited Liability Partnership Act, 2008/ a registered partnership firm within the meaning of the Indian Partnership Act, 1932, represented by its authorized signatory [●], and having its registered office at, hereinafter referred to as the “**Confirming Parties**” (which expression shall, unless excluded by or repugnant to the context be deemed to include their respective successors and permitted assigns) of the **THIRD PART**;

SUDA and the **Concessionaire** are hereinafter individually referred to as a “**Party**” and collectively as the “**Parties**”.

WHEREAS :

- A. State Urban Development Authority (“SUDA”) is a society registered under the West Bengal Societies Registration Act, 1961, functioning under the aegis of Urban Development & Municipal Affairs Department of the Government of West Bengal. SUDA is the agency responsible for undertaking sustainable projects relating to management of Municipal Solid Waste (“MSW”) in different urban areas across the State of West Bengal.
- B. SUDA is desirous of creating and developing world-class facilities in different urban areas identified within the State of West Bengal for management of MSW by seeking private sector participation. SUDA intends, in public interest, to implement a project by engaging a private partner for Bio-remediation of Legacy Waste and Setting Up of Processing Facilities at Pramodnagar and Kamarhati and Sanitary Landfill at Identified Site on Design, Build, Finance Operate and Transfer (DBFOT) basis, and Secondary Collection, Transportation, Processing and Disposal of Municipal Solid Waste for Dum Dum, South Dum Dum, North Dum Dum, Baranagar, Kamarhati and New Barrackpore Municipalities (the “**Project**”), on the terms and conditions as contained hereinafter.
- C. SUDA, following a process of competitive bidding for the Project and after evaluating the Bids received in response to its Request for Proposal (RFP) being No. [●] dated [●], accepted the Bid submitted by the Confirming Party/ Parties for implementing the Project.
- D. SUDA communicated its acceptance to the Confirming Party/ Parties vide its LOI bearing Memo No. [●] dated [●] (the “**LOI**”), a copy whereof is attached hereto as **Appendix - 1**.
- E. The Confirming Party/ Parties has/ have signed and returned duplicate of the LOI in acknowledgement thereof. Thereafter, the Confirming Party/ Parties has/ have promoted and incorporated the Concessionaire to enter into this Agreement pursuant to the LOI as a Special Purpose Vehicle (SPV) which has been incorporated solely to fulfil the obligations of the Confirming Party/ Parties pursuant to the LOI and has/ have requested SUDA to accept the Concessionaire as the entity which shall undertake and fulfil and perform the obligations and exercise the rights of the Confirming Party/ Parties under the LOI, including the obligation to enter into this Agreement for providing the works and services on the terms and conditions as mentioned herein.
- F. The Concessionaire and the Confirming Party/ Parties acknowledge and confirm that they have undertaken due diligence of all aspects of the Project including technical and financial viability, relevant legal due diligence, present demand assessment for the requirement of products/ by-products from MSW and future demand forecast and on the basis of its independent satisfaction has agreed to accept the Concession and to implement the Project at its cost and expenses in accordance with the terms and conditions of this Agreement.
- G. SUDA and the pertinent municipalities being Dum Dum Municipality, North Dum Dum Municipality, South Dum Dum Municipality, Baranagar Municipality, Kamarhati Municipality and New Barrackpore Municipality (collectively referred to as “**the Municipalities**”) have entered into a Memorandum of Understanding dated [●] for management and disposal of MSW generated within respective areas under the purview of each of the Municipalities and whereby SUDA has been authorised to enter into this Agreement, and a copy of whereof is attached hereto as **Appendix – 4**.
- H. Following acknowledgement of the LOI by the Confirming Party/ Parties and upon the undertaking to provide the Performance Security by the Concessionaire prior to the

Compliance Date, SUDA has agreed to enter into this Concession Agreement with the Concessionaire for implementation of the Project by the Concessionaire.

- I. The Concessionaire hereby agrees and acknowledges that management and scientific disposal of Legacy Waste and MSW is a vital and essential public utility service and is paramount for public health and protection of the environment, and the Concessionaire under no circumstances shall take unilateral action to interrupt management and scientific disposal of Legacy Waste and MSW.

NOW THEREFORE IN CONSIDERATION OF THE PREMISES AND THE MUTUAL COVENANTS HEREINAFTER CONTAINED, SUDA, THE CONCESSIONAIRE AND THE CONFIRMING PARTY/ PARTIES HEREBY AGREE AND THIS AGREEMENT WITNESSETH AS FOLLOWS :

ARTICLE 1|DEFINITIONS AND INTERPRETATION

1.1. Definitions

In this Agreement, the following words and expressions shall, unless repugnant to the context or meaning thereof, have the meaning hereinafter respectively assigned to them hereunder:

- (1) **“Abandonment”** means the total cessation of activity in the Project by the Concessionaire and of its obligations under the Agreement for a:
 - (a) continuous period of more than 15 (fifteen) days during the Concession Period, or
 - (b) cumulative period of more than 45 (forty-five) days during the Concession Period other than as a result of an event of Force Majeure, or
 - (c) a Material Breach of its obligations by the Concessionaire;
- (2) **“Access Road”** means the motorable approach road for access to the Project Sites from public road;
- (3) **“Accounting Year”** or **“Financial Year”** means the financial year commencing on 1st April in each year and ending on 31st March in the next year, except in the first and the last financial year of the subsistence of this Agreement; in the first year of subsistence of this Agreement, it means the period from the Compliance Date to 31st March of the next calendar year, and in the last year of subsistence of this Agreement, it means the period from 1st April to the Transfer Date;
- (4) **“Additional Costs”** means the additional capital expenditure and/or the additional operating costs or both as the case may be, which the Concessionaire would be required to incur as a result of Change in Law;
- (5) **“Affected Party”** means the Party claiming to be affected by a Force Majeure Event in accordance with Article 11.1;
- (6) **“Agreement”** or **“Concession Agreement”** means this agreement executed between SUDA, the Concessionaire, and the Confirming Party/ Parties including its

Appendices and includes any amendments made thereto in accordance with the provisions hereof;

- (7) **“Applicable Laws”** means all laws, acts, ordinances, rules, regulations, notifications and guidelines in force and effect, including, *inter alia*, CPCB’s Guidelines on Disposal of Legacy Waste, 2019, Solid Waste Management Rules, 2016, and CPHEEO’s Municipal Solid Waste Management Manual, as of the date hereof and which may be promulgated or brought into force and effect hereinafter in India including judgments, decrees, injunctions, writs or orders of any court of record, as may be in force and effect during the period of subsistence of this Agreement and applicable to the Project; For avoidance of doubt, Applicable Laws shall include the Guidelines for direct sale of city compost by compost manufacturers, as notified by Ministry of Chemical and Fertilizers, Government of India;
- (8) **“Applicable Approvals”** means all the authorizations, licenses, clearances, permits, no-objections, sanctions and consents as required under Applicable Laws, at its respective cost, to be procured by the Concessionaire in connection with the implementation of the Project;
- (9) **“Appointed Date”** means the date of signing of this Agreement;
- (10) **“Bio-remediation”** means the excavation of Legacy Waste, making windrow of Legacy Waste, and subsequently stabilization of the Legacy Waste through bio-remediation i.e. exposure of all the Legacy Waste to air along with use of composting bio-cultures, i.e. screening of the stabilized Legacy Waste to recover all valuable resources (like organic fines, bricks, stones, plastics, metals, clothes, rags etc.) followed by its sustainable management through recycling, co-processing, road making etc.
- (11) **“Bio-remediation Plant”** shall mean facilities as required for Bio-remediation of Legacy Waste at the Pramodnagar and Kamarhati Sites along with all other allied facilities.
- (12) **“Bio-methanation”** means an anaerobic decomposition process that entails enzymatic decomposition of the organic matter by microbial action to produce methane rich biogas or as defined under the Solid Waste Management Rules, 2016;
- (13) **“Change in Law”** shall have the meaning assigned thereto in Article 11.6;
- (14) **“Collection and Transportation”** or **“C&T”** refers to secondary collection and transportation of MSW from the Project Area to the Processing Facilities;
- (15) **“Commencement Date”** shall have the meaning as assigned to it in Article 2.3;
- (16) **“Compliance Date”** means the later of the date by which the Conditions Precedent of the Concessionaire or SUDA under Article 2.6 are achieved or waived in terms of Article 2.7;
- (17) **“Composting”** means a controlled process involving microbial decomposition of organic matter or as defined under the Solid Waste Management Rules, 2016;
- (18) **“Construction and Demolition Debris”** or **“C&D Debris”** means solid waste resulting from construction, re-modelling, repair, renovation or demolition of Structures or from land clearing activities and includes, but is not limited to, bricks, concrete rubble and other masonry materials, soil, rock, wood (including painted, treated and coated wood and wood products), land clearing debris, wall coverings,

plaster, drywall, plumbing fixtures, roofing, waterproofing material and other roof coverings, asphalt pavement, glass, plastics, paper, gypsum boards, electrical wiring and components containing no hazardous materials, pipes, steel, aluminium and other non-hazardous metals used in construction of Structures; “Structures” for the purposes of this definition means buildings of all types (both residential and non-residential), utilities, infrastructure facilities and any other type of man-made structure;

- (19) **“Concession”** shall have the meaning as assigned thereto in Article 2.1;
- (20) **“Concessionaire’s Event of Default”** shall have the meaning assigned thereto in Article 13.2;
- (21) **“Conditions Precedent”** means Conditions Precedent as specified in Article 2.6;
- (22) **“Compliance Period”** shall have the meaning assigned thereto in Article 2.7;
- (23) **“Commercial Operations Date”** or **“COD”** means the date when the Concessionaire begins commercial operations of the Processing Facilities and Engineered Sanitary Landfill pursuant to issuance of Operational Acceptance Certificates by the Project Management Unit;
- (24) **“Contractor”** or **“Sub-Contractor”** means any Person with whom the Concessionaire has entered into/may enter into any material contract in relation with the Project;
- (25) **“Daily Weight Sheet”** shall mean the weight sheets in the format provided in **Appendix - 6**;
- (26) **“Damages”** means the damages to which a Party hereto may become subject under the provisions of this Agreement, which shall be considered to be a genuine pre-estimate of losses and damage likely to be suffered and incurred by the Party entitled to receive the damages under the provisions of this Agreement and not by way of penalty.
- (27) **“Debt Service”** means the sum of all payments on account of principal, interest, financing fees and charges due and payable in an Accounting Year to the Lenders under the Financing Agreements;
- (28) **“Dispute”** shall have the meaning assigned thereto in Article 16.1(1) hereof;
- (29) **“Dispute Resolution”** means the procedure for resolution of disputes as set forth in Article 16.2;
- (30) **“Encumbrances”** means any encumbrances such as mortgage, charge, pledge, lien, hypothecation, security interest, assignment, privilege or priority of any kind having the effect of security or other obligation or restriction and shall include physical or legal obstructions or encroachments on the Project Facilities and / or the Project Sites, as the case may be, or Third Party claims or rights of any kind attaching thereto;
- (31) **“Sanitary Landfill”** means the Sanitary Landfill to be developed, constructed and maintained by the Concessionaire at the site allocated in terms of Article ____ in conformance with the Solid Waste Management Rules, 2016 or any revision thereof, for final and safe disposal of Residual Solid Waste and Inert Waste, which shall be designed with protective measures against pollution of ground water, surface water and fugitive air dust, wind-blown litter, bad odour, fire hazard, animal menace, pests

or rodents, greenhouse gas emissions, persistent organic pollutants, slope instability and erosion;

- (32) **“Equity”** means the sum expressed in Indian Rupees representing the paid up equity share capital of the Concessionaire for meeting the equity component of the Total Project Cost, and for the purposes of this Agreement shall include convertible instruments or other similar forms of capital, which shall compulsorily convert into equity share capital of the Company, but does not include any grant from a Government Agency;
- (33) **“Event of Default”** shall have the meaning assigned thereto in Article 13 ;
- (34) **“Escrow Account”** means an Account which SUDA shall open and maintain with a Bank through which all fee payable to the Concessionaire shall be credited, in accordance with the provisions of this Agreement.
- (35) **“Financing Documents”** means collectively the agreements entered into for providing the debt financing for the implementation of the Project and shall include the security documents creating the relevant security (such as mortgages or charges or liens) on the Project or any part thereof in line with this Agreement, for securing the debt provided;
- (36) **“Financial Default”** means occurrence of breach of the terms and conditions of the Financing Documents or continuous default in Debt Service by the Concessionaire for period of (three) months;
- (37) **“Force Majeure”** or **“Force Majeure Event”** means an act, event, condition or occurrence as specified in Article 11;
- (38) **“Good Industry Practice”** means the exercise of that degree of skill, diligence, prudence and foresight in compliance with the undertakings and obligations under this Agreement which would reasonably and ordinarily be expected of a skilled and an experienced person engaged in the implementation, operation and maintenance or supervision or monitoring thereof or any of them of facilities similar to the Project Facilities to be constructed, operated and maintained pursuant to the Project;
- (39) **“Government Agency”** means Government of India, Government of West Bengal, the Municipalities or any governmental department, commission, board, body, bureau, agency, authority, instrumentality, court or other judicial or administrative body, central, state, or local, having jurisdiction over the Concessionaire, the Sites/ Project or any portion thereof, or the performance of all or any of the services or obligations of the Concessionaire under or pursuant to this Agreement;
- (40) **“Independent Expert”** refers to a person/ firm/ entity appointed by SUDA to monitor the activities of the Concessionaire and shall be a member of the PMU;
- (41) **“Inert Waste”** means waste which are not bio-degradable, recyclable or combustible;
- (42) **“Legacy Waste”** means the old MSW at the dump sites at Pramodnagar and Kamarhati in respect of which the Concessionaire shall undertake Bio-remediation.
- (43) **“Lenders”** means any person, financial institutions, banks, funds and trustees for bond holders or debenture holders, who have provided loans for financing any part of the Project as evidenced in Financing Documents;

- (44) “**Municipal Solid Waste**” or “**MSW**” means solid waste generated by households, public utility services, agricultural farms/ lands, poultry & dairy farms, commercial establishments and industries located within the jurisdiction of each of the Municipalities;
- (45) “**MSW Rules**” means the Solid Waste Management Rules, 2016 and includes any statutory amendments / modifications thereto or re-enactments thereof, from time to time;
- (46) “**Material Adverse Effect**” means a material adverse effect of any act or event on the ability of any Party to perform any of its obligations under and in accordance with the provisions of this Agreement and which act or event causes a material financial burden or loss to any or all Party(ies);
- (47) “**Material Breach**” means a breach by any Party of any of its obligations under this Agreement which has or is likely to have a Material Adverse Effect on the Project and which such Party shall have failed to cure;
- (48) “**Operational Acceptance Certificate(s)**” shall refer to the Certificate(s) to be issued by the PMU, upon successful commissioning and functioning of each of the Project Facilities;
- (49) “**Processing & Disposal**” or “**P&D**” refers to Processing & Disposal of MSW gathered at the Landfill, as is more clearly defined in Scope of Works;
- (50) “**Performance Security**” means the unconditional and irrevocable bank guarantee to be furnished by the Concessionaire for performance of its obligations as per terms of this Agreement in accordance with Article 5.1;
- (51) “**Person**” means (unless otherwise specified or required by the context), any individual, company, corporation, partnership, joint venture, trust, unincorporated organization, government or government body or any other legal entity;
- (52) “**Post-COD Period**” means the period starting on and from the COD and ending on the Transfer Date;
- (53) “**Pre-COD Period**” means the period commencing from the Appointed Date and extending up to the COD;
- (54) “**Preliminary Notice**” means the notice of intended Termination by the Party entitled to terminate this Agreement to the other Party setting out, *inter alia*, the underlying Event of Default;
- (55) “**Processing Facilities**” means the Compost plant and RDF plant of total capacity of 450 TPD and the Bio-methanation plant of at least 100 TPD capacity for processing of MSW to be created at the Pramodnagar site and the Compost plant and RDF plant of total capacity of 180 TPD at the Karmarhati site for processing of MSW, prior to its final disposal at the Sanitary Landfill;
- (56) “**Project**” refers to the project for Bio-remediation of Legacy Waste and Setting Up of Processing Facilities at Pramodnagar and Kamarhati and Sanitary Landfill at Identified Site on Design, Build, Finance Operate and Transfer (DBFOT) basis, and Secondary Collection, Transportation, Processing and Disposal of Municipal Solid Waste for Dum Dum, South Dum Dum, North Dum Dum, Baranagar, Kamarhati and New Barrackpore Municipalities, as defined in the recital hereinabove;

- (57) **“Project Agreements”** means any material contracts or agreements entered into by the Concessionaire after the date of this Agreement relating to the construction, operation and maintenance of the Project.
- (58) **“Project Area”** means the area presently under municipal boundary of the Municipalities or any alteration thereof during the Concession Period.
- (59) **“Project Assets”** means all physical and other assets relating to and forming part of the Project Facilities including (a) rights over the Project Sites in the form of license (as applicable), Right of Way or otherwise; (b) tangible assets such as civil works and equipment including but not limited to foundations, buildings, electrical systems, transportation vehicles, machinery and equipment procured, inherited, installed and operated and all other project related physical assets, communication systems and administrative office; (c) Processing Facilities situated on the Pramodnagar and Kamarhati sites; (d) all rights of the Concessionaire under the Project Agreements; (e) financial assets, such as receivables, security deposits etc.; (f) insurance proceeds; and (g) Applicable Approvals and authorisations relating to or in respect of the Project;
- (60) **“Project Facilities”** means all the amenities, facilities and infrastructure for implementing the Project and consists of the Processing Facilities and the Engineered Sanitary Landfill;
- (61) **“Project Management Unit”** or **“PMU”** means the unit set up by SUDA in terms of Article 4, inter alia, to monitor and supervise the implementation of the Project by the Concessionaire;
- (62) **“Project Sites”** means the sites handed over to the Concessionaire for implementing the Project which are described in **Appendix – 2**;
- (63) **“Proprietary Material”** shall be as defined in Article 18;
- (64) **“Reclamation Fee”** shall be as defined in Article 9.1.
- (65) **“Refuse Derived Fuel”** or **“RDF”** means the fuel derived from combustible waste fraction of solid waste like plastic, wood, pulp, organic waste, other than chlorinated materials, in the form of pellets or fluff produced by drying, shredding, dehydrating and compacting of solid waste as defined under the MSW Rules;
- (66) **“Residual Solid Waste”** means the waste and rejects from the Processing facilities which are not suitable for recycling or further processing;
- (67) **“Sanitary Landfilling”** means the disposal of the Residual Solid Waste and Inert Waste at the Sanitary Landfill in accordance with the terms of this Agreement including MSW Rules;
- (68) **“Secondary Collection Points”** means the areas allocated by SUDA in consultation with the Concessionaire to temporarily store the MSW collected by the Municipalities from the Project Area by way of door-to-door waste collection system, street sweeping and drain de-silting from the Project Area;
- (69) **“Substitution Agreement”** is an agreement that may be executed between the Concessionaire, SUDA and the Lenders, pursuant to which, in case of Default by the Concessionaire including any Financial Default, Lenders (through its nominee) shall be allowed to take charge of the Concessionaire’s roles and responsibilities under this

Agreement. The Substitution Agreement may vary depending on Lender's requirements, but shall substantially adhere to the format provided in **Appendix - 9**;

- (70) **"Substitute Entity"** means the entity that is selected either by the Lenders or by SUDA for substituting the Concessionaire, upon occurrence of Concessionaire's Event of Default or Financial Default, in terms of the provisions of the Agreement and the Substitution Agreement;
- (71) **"SUDA's Event of Default"** shall have the meaning assigned thereto in Article 13.3;
- (72) **"Tax"** means and includes all taxes, fees, cess, levies that may be payable by the Parties under Applicable Law(s);
- (73) **"Termination"** means early termination of this Agreement pursuant to Termination Notice or otherwise in accordance with the provisions of this Agreement but shall not, unless the context otherwise requires, include expiry of this Agreement due to efflux of time in the normal course;
- (74) **"Termination Date"** means the date specified in the Termination Notice as the date on which Termination occurs / comes into effect;
- (75) **"Termination Notice"** means the notice of Termination by any of the Parties to the other Party, in accordance with the applicable provisions of this Agreement;
- (76) **"Termination Payments"** means the payments payable pursuant to Articles 11.4, 13.9 and 13.10 of this Agreement;
- (77) **"Tipping Fee"** shall be as defined in Article 9.1;
- (78) **"Third Party"** means any Person other than the Parties to this Agreement;
- (79) **"Total Project Cost"** means the lowest of the following:
 - (a) The estimated project cost as specified in the RFP; or
 - (b) Project Cost as set forth in the Financing Documents; or
 - (c) Actual capital cost of the Project upon completion of construction of the Project as certified by the Statutory Auditors.
- (80) **"Transfer Date"** means the date on which this Agreement and the Concession hereunder expires pursuant to the provisions of this Agreement or is terminated by a Termination Notice. In the event of Termination, Transfer Date shall be same as the Termination Date;
- (81) **"Tests"** means the tests to be carried out by the Concessionaire at its cost, in the presence of PMU as may be required for getting Applicable Approvals or asked by the PMU in respect of each of the Project Facilities, to ensure that the same conforms to the requirements as per **Appendix – 2**, Good Industry Practice, Applicable Laws and/or Applicable Approvals;
- (82) **"Vacant Possession"** means delivery to the Concessionaire of possession of the Project Sites free from all Encumbrances and the grant of all rights and all other rights appurtenant thereto;
- (83) **"Weighbridge"** means the electronic weighbridge capable of performing the operations to meet the Concessionaire's obligations as specified in **Appendix - 2**.

1.2 Interpretations

In this Agreement, unless the context otherwise requires,-

- (1) reference to any legislation or law or to any provision thereof shall include references to any such law as it may, after the date of this Agreement, from time to time be amended, supplemented or re-enacted;
- (2) words importing singular shall include plural and vice versa, and words importing the masculine shall include the feminine gender;
- (3) the headings are for convenience of reference only, and shall not be used in and shall not affect the construction or interpretation of this Agreement;
- (4) terms and words beginning with capital letters and defined in this Agreement shall have the meaning ascribed thereto herein, and the terms and words defined in the Appendices and used therein shall have the meaning ascribed thereto in the Appendices;
- (5) words “include” and “including” are to be construed without limitation;
- (6) any reference to any point in time shall mean a reference to that point according to Indian Standard Time;
- (7) any reference to day shall mean a reference to a calendar day; any reference to month shall mean a reference to a calendar month;
- (8) Appendices to this Agreement form an integral part of this Agreement and will be in full force and effect as though they were expressly set out in the body of this Agreement;
- (9) reference to this Agreement or any other agreement, deed, instrument, concession or document of any description shall be construed as reference to such agreement, deed, instrument, concession or other document as the same may from time to time be amended, varied, supplemented, modified, novated or suspended;
- (10) references to Recitals, Articles, and Appendices in this Agreement shall, except where the context otherwise requires, be deemed to be references to Recitals, Articles, Appendices of or to this Agreement;
- (11) any reference to any period commencing “from” a specified day or date and “till” or “until” a specified day or date shall include both such days or dates; provided that if the last day of any period computed under this Agreement is not a Business day, then the period shall run until the end of the next Business day;
- (12) references to any date, period or milestone dates shall mean and include such date, period or milestone date as may be extended pursuant to this Agreement or by mutual consent of the Parties hereto;
- (13) wherever in this Agreement provision is made for the giving or issuing of any notice, endorsement, consent, approval, certificate, agreement, concession, proposal, communication, information or report or determination by any party and/or the PMU, unless otherwise specified, such notice, endorsement, consent, approval, certificate, agreement, concession, proposal, communication, information or report or determination shall be in writing under the hand of the duly authorised representative of such party and/or the PMU in this behalf;

- (14) unless otherwise provided, any interest to be calculated and payable under this Agreement shall accrue on a monthly basis and from the respective due dates as provided for in this Agreement;
- (15) any word or expression used in this Agreement shall, unless defined or construed in this Agreement, bear its ordinary English meaning;
- (16) references to Project or Project Facilities in this Agreement shall mean the essential facilities and shall not include the optional facilities unless the Concessionaire opts to design, finance, construct, complete, commission and operate and maintain the same;
- (17) the damages payable by a party to the other party as set forth in this Agreement, whether on per diem basis or otherwise, are mutually agreed genuine pre-estimated loss and damage/ liquidated damages likely to be suffered and incurred by the party entitled to receive the same and are not by way of penalty; and
- (18) any confirmation, approval or written consent, as the case maybe, to be given by either party for which no specific time period has been set out shall not be unreasonably withheld or delayed.

1.3 Measurements and Arithmetic Conventions

All measurements and calculations shall be in metric system and calculations done to 2 (two) decimal places, with the third digit of 5 (five) or above being rounded up and below 5 (five) being rounded down except in money calculation which shall be rounded off to nearest rupee.

1.4 Ambiguities within Agreement

In case of ambiguities or discrepancies within this Agreement, the following shall apply:

- (1) Between two Articles of this Agreement, the provisions of specific Article relevant to the issue under consideration shall prevail over those in the other Article;
- (2) Between the provisions of this Agreement and the Appendices, the Agreement shall prevail, save and except as expressly provided in the Agreement or the Appendices;
- (3) Between any value written in numerals and that in words, the latter shall prevail.

1.5 Priority of Documents

The documents forming part of the bidding process leading to this Agreement shall be relied upon and interpreted in the following descending order of priority:

- (1) This Agreement with Appendices
- (2) LOI
- (3) Bid
- (4) Addendum / Corrigendum to the RFP
- (5) RFP

ARTICLE 2|THE CONCESSION AND CONDITIONS PRECEDENT

2.1 Grant of Concession

Subject to and in accordance with the terms and conditions set forth in this Agreement, the Applicable Laws and the Applicable Approvals, SUDA hereby grants to the Concessionaire the Concession as set forth herein including exclusive rights, license and authority during the subsistence of this Agreement to implement the Project on Design, Build, Finance, Operate, Maintain and Transfer (DBFOT) basis, including management of all the Project Assets and Project Facilities and procure the resources required for the Project and to exercise and/or enjoy such rights, powers, benefits, privileges, authorisations and entitlements as set forth in this Agreement (the “**Concession**”) and the Concessionaire hereby accepts the Concession and agrees to implement the Project subject to the terms and conditions set forth herein.

2.2 Rights Associated with the Grant of Concession

Only as long as the Concessionaire is not in breach of the terms of this Agreement or Applicable Laws, the Concession hereby granted shall oblige or entitle (as the case may be) the Concessionaire, without prejudice to the generality of foregoing and without requiring any further authorisation or authority from SUDA, to enjoy, the following rights, privileges and benefits in accordance with the provisions of this Agreement, the Applicable Laws, Applicable Approvals and Good Industry Practice:

- (1) to design, engineer, finance, procure, construct, install, commission, operate and maintain the Project;
- (2) to undertake Bio-remediation of Legacy Waste at the Pramodnagar and Kamarhati sites according to Applicable Laws;
- (3) to transfer entire MSW from the Secondary Collection Points to the Processing Facilities for processing, and dispose of the Residual Solid Waste and Inert Waste from the respective Processing Facilities at the Sanitary Landfill;
- (2) upon achieving Commercial Operations Date (“**COD**”) of Project Facilities to manage, operate and maintain the same;
- (3) to obtain financing for the Project in the form of Equity, debt and other sources, from domestic and foreign sources, through public issues, private placements or direct borrowings or investment from the capital markets, banks, lending institutions, mutual funds, insurance companies, pension funds, provident funds and any other source as it may deem necessary for implementing the Project;

Provided that the Concessionaire shall not be entitled to creation of any security interest in favour of the Lenders, save and except as expressly permitted by the terms of this Agreement.

Provided further, nothing contained in this Article 2.2(3) shall :-

- (a) absolve the Concessionaire from its responsibilities to perform/discharge any of its obligations under and in accordance with the provisions of this Agreement;

- (b) authorise or be deemed to authorise the Lenders to implement and execute Project themselves; and
 - (c) under any circumstances amount to any guarantee from or recourse to SUDA.
- (5) to store, use, appropriate, market and sell or dispose-off all the constituents/ products/ by-products from the MSW, including but not limited to recyclables, methane (biogas), Refuse Derived Fuel (RDF), and Compost and to further retain and appropriate any revenues generated from the sale of such constituents/ products/ by-products;
 - (6) to obtain the resources and utilities required for enabling the construction, operation and maintenance of the Project, without any additional cost or charges, by fulfilling conditions (if any) and paying the applicable charges for the utilities;
 - (7) to have right of way and access to the Project Sites and exclusively hold, possess, control the Project Sites, in accordance with the terms of this Agreement for the purposes of due implementation of the Project;
 - (8) to appropriate, possess and control and to further, at its sole discretion, utilise, renovate, modify, replace or demolish, free of any cost or charges or any liability for payment of compensation in respect thereof, all the buildings and structures and infrastructure that may be existing on the Project Sites as required to implement the Project;
 - (9) to develop the Project by establishing the Project Facilities specified in **Appendix – 2** using such technology suitable and commercially viable for the purposes of implementing the Project in accordance with the terms of this Agreement, SWM Rules, Manual on Municipal Solid Waste Management, 2016 and Good Industry Practices;
 - (10) to modify, adapt, upgrade or change the technology, from time to time, based on actual operations of the Processing Facilities and in accordance with Good Industry Practices and the requirements of the Project;
 - (11) to transport Residual Solid Waste and Inert Waste from the Processing Facilities to the Sanitary Landfill for Sanitary Landfilling;
 - (12) to appoint Contractors or agents on its behalf to assist the Concessionaire in fulfilling its obligations in relation to the Project;
 - (13) to perform and fulfil all of the Concessionaire's obligations as may be specified under the Concession Agreement;
 - (14) to bear and pay all expenses, costs and charges incurred in the fulfilment of all the Concessionaire's obligations under the Agreement.
 - (15) exercise and/or enjoy the rights, powers, privileges, authorizations and entitlements as set forth in this Agreement.

2.3 Concession Period

The Concession shall commence from the Compliance Date and shall extend, for a period of 22 (twenty two) years from such date or till the earlier termination or any extension of this Agreement in accordance with the terms and conditions hereof, during which the

Concessionaire is authorised to implement the Project and make commercial use thereof in accordance with the provisions of this Agreement (the “**Concession Period**”). The Concessionaire shall complete Bio-remediation of Legacy Waste and achieve Commercial Operation Date (COD) of each of the Project Facilities within a period of 2 (two) years of the Compliance Date.

2.4 Renewal of Concession

SUDA may in its sole discretion and in the event the Concessionaire does not commit any Event of Default during the last 5 (five) years of the Concession Period, agree to extend the Concession after expiry of the Concession Period for a further period of 5 (five) years or such other period as may be mutually agreed to and on such terms and conditions as may be mutually agreed upon, which shall not be less favourable than similar concessionaire then being ordinarily awarded.

2.5 Acceptance of Concession

In consideration of the rights, privileges and benefits conferred upon the Concessionaire, as expressed herein, the Concessionaire hereby accepts the Concession and agrees and undertakes to perform/ discharge all of its obligations in accordance with the provisions hereof, Applicable Laws and Applicable Permits.

2.6 Conditions Precedent

Save and except as may otherwise be expressly provided herein, the obligations of a Party under this Agreement, except under this Article 2.6, shall be subject to the satisfaction in full of the conditions precedent relating to the other Party (the “**Conditions Precedent**”). The obligations of a Party under this Article 2.6 shall be effective from the Appointed Date. The Conditions Precedent are as follows :-

(1) Conditions Precedent for SUDA

SUDA shall have:

- (a) finalised and allocated Secondary Collection Points in the Project Area in consultation with the Concessionaire;
- (b) allocated/ demarcated the area for depositing fresh MSW at the Pramodnagar and Kamarhati Sites;
- (c) appointed Project Management Unit in terms of Article 4;
- (d) executed and procured execution of Escrow Agreement in terms of Article 10;
- (e) upon receipt of Performance Security, facilitated and ensured hand over of right of way and access and Vacant Possession of the Pramodnagar and Kamarhati Sites and the Secondary Collection Points to the Concessionaire in accordance with the terms of this Agreement;

Provided that upon request in writing by SUDA, the Concessionaire may, in its sole discretion, waive fully or partially any or all the Conditions Precedent set forth in this Article 2.6(1).

(2) **Conditions Precedent for Concessionaire**

The obligations of SUDA hereunder are subject to the satisfaction in full of the following Conditions Precedent of the Concessionaire. The Concessionaire shall have:-

- (a) provided notarised true copies of its charter documents including Board Resolution authorising the execution, delivery and performance of this Agreement by the Concessionaire;
- (b) provided copy of its Certificate of Commencement of Business issued by the Registrar of Companies;
- (c) achieved Financial Closure i.e., procured and raised all the funds (debt, Equity, etc.) necessary to finance the Project as evidenced by the Financing Documents becoming effective and the Concessionaire having immediate access to the funds thereunder;
- (d) finalised the Secondary Collection Points in the Project Area in consultation with SUDA;
- (d) confirmed in writing that all the representations and warranties of the Confirming Party/ Parties set forth in its Bid and in this Agreement are true and correct;
- (e) provided Performance Security in full to SUDA;
- (g) procured at its own cost, water connection, power connection and other necessary service connections to the Pramodnagar and Kamarhati Sites and the Secondary Collection Points as applicable.

Provided that upon request in writing by the Concessionaire, SUDA may in its sole discretion, waive fully or partially any or all the Conditions Precedent set forth in this Article 2.6(2).

2.7 Satisfaction of Conditions Precedent

Each Party shall make all reasonable endeavours at its respective cost and expense to comply in full with the Conditions Precedent relating to it within a period of 60(sixty) days from the Appointed Date (the “**Compliance Period**”) including such period as may be extended by SUDA in its sole discretion and in writing. The earlier or later of the date within such time when SUDA and the Concessionaire fulfil their Conditions Precedent certified in writing by the other party (unless SUDA waives the same for the Concessionaire and the Concessionaire waives for SUDA, as the case may be) shall be the date from which the respective obligations of the Parties hereunder shall commence (the “**Compliance Date**”).

2.8 Non-Compliance with Conditions Precedent

- (1) In the event the Conditions Precedent for Concessionaire have not been satisfied within the stipulated time and SUDA has not waived, fully or partially, such conditions relating to the Concessionaire, this Agreement shall cease to have any effect as of that date and shall be deemed to have been terminated by the mutual agreement of the Parties and no Party shall subsequently have any rights or

obligations under this Agreement and SUDA shall not be liable in any manner whatsoever to the Concessionaire or the Confirming Party/ Parties or any Persons claiming through or under it.

- (2) In the event this Agreement is terminated on account of non-fulfilment of the Conditions Precedent for Concessionaire, SUDA shall forfeit and encash the Performance Security or the Bid Security, in case the Concessionaire has not furnished the Performance Security.
- (3) Upon termination of this Agreement under this Article 2.8, the right of access to or possession of all the Project Sites granted to the Concessionaire pursuant to this Agreement shall forthwith terminate, and the Concessionaire and the Persons claiming through or under it shall immediately cease to have access and remove itself from all the Project Sites, without any demur or delay. Vacant possession of all the Project Sites shall be immediately handed over to SUDA, free and clear from any encumbrances, irrespective of any outstanding or mutual claims between the Parties or claims of any person.
- (4) In the event the Conditions Precedent for SUDA have not been satisfied within the stipulated time, then the Concessionaire shall have the option of either: (i) mutually extend the time period for satisfaction of the Conditions Precedent for SUDA or (ii) terminate this Agreement, in which event, SUDA shall release the Performance Security or the Bid Security, as the case may be.
- (5) Instead of terminating this Agreement as provided in this Article 2.8, the Parties may by mutual agreement extend the time for fulfilling the Conditions Precedent.

ARTICLE 3|PROJECT SITES

3.1 Possession of and Access to Project Sites

- (1) SUDA hereby grants to the Concessionaire access to the Project Sites, save and except the site for the Sanitary Landfill which is to be finalised by SUDA in terms of Article 2.6(1)(a), from the Appointed Date for carrying out such surveys, investigations and tests as the Concessionaire may deem necessary at the Concessionaire's cost, expense and risk.
- (2) SUDA hereby undertakes to hand over to the Concessionaire Vacant Possession of the Pramodnagar and Kamarhati Sites and sites for Secondary Collection Points together with the existing assets and facilities, if any, free from encumbrance and without the Concessionaire being required to make any payment to SUDA on account of any costs, expenses and charges for the use of such Project Sites and the existing assets and facilities during the Concession Period except as otherwise provided in this Agreement within the Compliance Period on "as is where is basis" together with the necessary easementary rights and/or rights of way/ way leaves along with the rights, authority and license to implement the Project in accordance with this Agreement.
- (3) SUDA hereby undertakes to finalise the site for the Sanitary Landfill and hand over to the Concessionaire Vacant Possession of the site for the Sanitary Landfill, together with the existing assets and facilities, if any, free from encumbrance and without the

Concessionaire being required to make any payment to SUDA on account of any costs, expenses and charges for the use of such Project Site and the existing assets and facilities during the Concession Period except as otherwise provided in this Agreement within 9 (nine) months from the date of issuance of the LOI on “as is where is basis” together with the necessary easementary rights and/or rights of way/ way leaves along with the rights, authority and license to implement the Project in accordance with this Agreement.

- (4) The grant of the rights and license herein and handing over of the Project Sites as aforesaid shall not confer or be deemed to have conferred on the Concessionaire any right, title or interest whatsoever (whether in the nature of lease or otherwise) in the Project Sites or any part thereof and nothing in these presents contained shall be construed as a demise in law of the Project Sites unto the Concessionaire so as to give the Concessionaire any legal interest therein. The Concessionaire shall only have the right to enter upon the Project Sites for the purpose of implementing the Project in accordance with the terms hereof.
- (5) Upon the Concessionaire observing and performing its obligations, the several covenants, conditions and agreements herein contained and on the part of the Concessionaire to be observed and performed, the Concessionaire shall remain in peaceful possession of the Project Sites during the Concession Period. In the event the Concessionaire is obstructed by any Person claiming any right, title or interest in or over the Project Sites or in the event of any enforcement action including any attachment, distraint, appointment of receiver or liquidator being initiated by any Person claiming to have any interest in/ charge on the Sites or any part thereof, SUDA shall, if called upon by the Concessionaire, defend such claims and proceedings at its cost and expense and the Concessionaire shall not be liable for the same in any manner whatsoever.
- (6) Such right and license of the Concessionaire to the use of the Project Sites shall be subject to:
 - (a) Any existing utilities on, under or above the Project Sites are kept in continuous satisfactory use; and
 - (b) A right of access by SUDA, the PMU and any of their agents to perform their obligations and rights under the Agreement or any other functions that they have and to conduct any study or trial for the purpose of research.
- (7) Following delivery of Vacant Possession of the Project Sites, the Concessionaire shall keep the Sites free from any trespass or encroachment.
- (8) SUDA confirms that upon the Vacant Possession of the Project Sites being handed over pursuant to Articles 3.1(2) and 3.1(3), the Concessionaire shall have the right to enter upon, occupy and use each of the Project Sites only for the purpose of this Agreement and to make at its cost, charge and expense such development and improvements in each of the Project Sites as may be necessary or appropriate to implement the Project and to design, engineer, finance, procure, construct, install, commission, operate and maintain the Project, subject to and in accordance with the provisions of this Agreement.
- (9) The Concessionaire shall not part with or create any Encumbrance on the whole or any part of the Project and Project Assets, Project Facilities and the Project Sites save

and except as set forth and permitted under this Agreement provided that nothing contained herein shall be construed or interpreted as restricting the right of the Concessionaire to appoint contractors, to enter into contractual arrangements and to create a security interest in favour of the Lenders on the grant of this Concession only provided that the Concessionaire shall not create any kind of charge or lien over the Project and Project Assets, Project Facilities and the Project Sites in accordance with the provisions of this Agreement.

- (10) The Concessionaire shall not, without the prior written approval of SUDA, use the Project Sites for any purpose other than for the purpose of the Project and purposes incidental or ancillary thereto.
- (11) The Concessionaire shall allow free access to the Project Sites to the PMU, any authorized officer of any Government Agency for inspection of the Project Sites and the Project being undertaken by the Concessionaire.
- (12) The Concessionaire shall have exclusive rights to the use of the Project Sites in accordance with the provisions of the Agreement and for this purpose it may regulate the entry and use of the Project by third parties.
- (13) The Concessionaire shall allow access to, and use of the Project Sites for telegraph lines, electricity lines or such other public purposes as SUDA may specify. Where such access or use causes any damage to the Project and consequent financial loss to the Concessionaire, it may seek compensation or damages from such user of the Project Sites as per Applicable Laws.
- (14) The Concessionaire shall not be liable to pay any municipal taxes, fees and charges for the Site.

3.2 Information about Project Sites

The information about the Project Sites which is provided by SUDA to the Concessionaire is in good faith and with due regard to the matters for which such information is required by the Concessionaire. SUDA agrees to provide to the Concessionaire, upon a reasonable request, any further information relating to the Project Sites, which SUDA may now possess or may hereafter come to possess. Subject to this, SUDA makes no representation and gives no warranty to the Concessionaire in respect of the condition of the Project Sites and the Concessionaire shall accept the Project Sites handed over to it by SUDA on an “as is where is basis”.

3.3 Peaceful Possession

SUDA hereby warrants that the Project Sites together with the necessary right of way/ way-leaves:

- (1) SUDA has full powers to hold and deal with the same consistent, *inter alia*, with the provisions of this Agreement and the Memorandum of Understanding with the Municipalities; and that
- (2) the Concessionaire shall, in respect of the Project Sites, have no liability regarding any payment of compensation on account of land acquisition or rehabilitation/ resettlement of any Persons affected thereby.

3.4 Applicable Approvals

The Concessionaire shall obtain and maintain the Applicable Approvals in such sequence as is consistent with the requirements of the Project. The Concessionaire shall act in compliance with the terms and conditions subject to which Applicable Approvals have been issued.

ARTICLE 4|PROJECT MANAGEMENT UNIT

4.1 Composition

SUDA shall appoint the Project Management Unit in terms of Article 2.6(1)(c), which shall be a centralised project management unit for all the solid waste management projects on behalf of SUDA (the “PMU”). SUDA shall have complete right, authority and discretion to decide the composition and structure of the PMU.

4.2 Duties and Functions

The PMU shall have the overall responsibility of monitoring and supervising of the Project. The Scope of Service of the PMU has been specified in **Appendix – 8** hereto.

4.3 Remuneration

The remuneration, cost and expenses of the PMU and the members thereof shall be borne by SUDA.

4.4 Replacement

SUDA may, in its discretion, terminate the appointment of any member of the PMU at any time, but only after appointment of another member in its place.

4.5 Tenure

The tenure of the PMU shall commence from the date of its constitution during the Compliance Period and extension of the same shall be decided by SUDA at its discretion.

ARTICLE 5|THE CONCESSIONAIRE’S OBLIGATIONS

The Concessionaire shall, without qualification, as its own cost and expense observe, undertake, comply with and perform, in addition to and not in derogation of its obligations elsewhere set out in this Agreement, the following obligations:

5.1 Performance Security

- (1) The Concessionaire shall for due and faithful performance of its obligations relating to the Project during the Concession Period provide to SUDA, on or before the Compliance Date, an unconditionally and unequivocally enforceable Bank Guarantee of INR/- (Rupees only) in favour of “State Urban Development Agency” from a Scheduled Commercial Bank as per the form annexed hereto as **Appendix - 7** and payable at Kolkata (the “**Performance Security**”). Till such time the Concessionaire provides to SUDA the Performance Security pursuant hereto, the Bid Security shall remain in full force and effect and upon furnishing the Performance Security the Bid Security shall be returned by SUDA to the Confirming Party/ Parties, subject to fulfillment of all Conditions Precedent on the part of the Concessionaire. Failure of the Concessionaire to provide the Performance Security in accordance with this Clause 5.1(1) shall entitle SUDA to terminate the Agreement without being liable in any manner whatsoever to the Concessionaire and to appropriate the Bid Security as Damages.
- (2) The Performance Security shall be kept valid and in force by the Concessionaire for the entire duration of the Concession Period through periodic renewals and for a period of 60 (sixty) days after the Transfer Date. The bank guarantee towards such Performance Security shall be valid for 3 (three) years and shall be renewed by the Concessionaire at least 30 (thirty) days prior to its expiry for like periods of 3 years for such renewal. In case the Concessionaire fails to renew the bank guarantee towards Performance Security within such date, such an event shall be deemed to be a Concessionaire Event of Default and SUDA shall be entitled to immediately invoke the Performance Security bank guarantee.
- (3) Notwithstanding anything elsewhere provided in this Agreement, SUDA reserves its right to invoke the Performance Security bank guarantee in case the Concessionaire has committed any default in the performance of any its obligations in terms of this Agreement.
- (4) In the event of the Concessionaire being in default or breach of the due, faithful and punctual performance of its obligations under this Agreement, in the event of there being any claims or demands whatsoever whether liquidated or which may at any time be made or have been made on behalf of SUDA for or against the Concessionaire under this Contract or against SUDA in respect of this Agreement, SUDA shall, without prejudice to its other rights and remedies hereunder or in law, be entitled to appropriate the relevant amounts from the Performance Security as damages for such default, or loss suffered due to non-completion of works/ services within the time period specified herein, or in respect of any dues, demands, damages or claims against the Concessionaire.
- (5) The decision of SUDA as to any breach/ delay having been committed, liability accrued or loss or damage caused or suffered shall be conclusive, absolute and binding on the Concessionaire and the Concessionaire specifically confirms and agrees that no proof of any amount of liability accrued or loss or damages caused or suffered by SUDA under this Concession Agreement is required to be provided in connection with any demand made by SUDA to recover such compensation through appropriation of the relevant amounts from the Performance Security under this Agreement.

- (6) In the event of encashment of the Performance Security by SUDA, the Concessionaire shall within 15 (fifteen) days of receipt of the encashment notice from SUDA provide a fresh Performance Security. The provisions of this Article 5.1 shall apply mutatis mutandis to such fresh Performance Security.
- (7) Provided that if the Agreement is terminated due to any event other than a Concessionaire's Event of Default, the Performance Security if subsisting as of the Termination Date shall, subject to SUDA's right to receive amounts, if any, due from the Concessionaire under this Agreement, be duly discharged and released to the Concessionaire.

5.2 General Obligations

The Concessionaire shall:

- (1) perform and fulfil all of the Concessionaire's obligations under this Agreement and the Confirming Party's/ Parties obligations under the Bid and the LOI;
- (2) obtain all Applicable Approvals as required by or under the Applicable Laws and be in compliance thereof at all times during the Concession Period;
- (3) comply with Applicable Laws (including without limitation all public and labour related laws, and health, safety, and sanitation laws, as then in force) governing the operations of Project at all times during the Concession Period;
- (4) endeavour to improve the ancillary conditions and infrastructure related to the Project including assistance to informal recycling workers;
- (5) procure and maintain in full force and effect, as necessary, appropriate proprietary rights, licenses, agreements and permissions for materials, methods, processes and systems used in or incorporated into the Project;
- (6) have right to enter into sub-contracts for the purposes of and subject to the terms of this Agreement;
- (7) make efforts to maintain harmony and good industrial relations among the personnel employed in connection with the performance of its obligations under this Agreement and shall be solely responsible for compliance with all labour laws and solely liable for all possible claims and employment related liabilities of its staff employed in relation with the Project and hereby indemnifies SUDA against any claims, damages, expenses or losses in this regard and that in no case and shall for no purpose shall SUDA be treated as employer in this regard;
- (8) be responsible for all the health, security, environment and safety aspects of the Project at all times during the Concession Period;
- (9) ensure that the Sites handed over to the Concessionaire remains free from all encroachments and take all steps necessary to remove encroachments, if any;
- (10) upon receipt of a request thereof, afford access to the Project to the authorized representatives of SUDA for the purpose of ascertaining compliance with the terms, covenants and conditions of this Agreement;
- (11) bear all expenses towards safety gear and waste handling equipment to all the waste handling personnel and drivers;

- (12) ensure that the Project is operational on all calendar days of the year;
- (13) be responsible for the conduct of its staff employed for this Project while on duty;
- (14) obtain passing and fitness certificate for the vehicles from the jurisdictional RTO each year before the due date and shall bear any cost or expense associated with this;
- (15) operate, maintain, repair and renovate the Project Assets and Project Facilities, in accordance with, inter alia, the Applicable Laws, Applicable Approvals and the requirements;
- (17) procure, acquire and put into place at its own cost and expenses all the Project Assets and Project Facilities required by the Concessionaire to implement the Project during the Pre-COD Period so as to achieve COD within the time stipulated in this Agreement;
- (18) promptly rectify and remedy any defects or deficiencies, if any pointed out by the PMU in the Inspection Report and furnish a report within the stipulated time period in respect thereof to the PMU;
- (19) comply with all the performance parameters as specified in Service Level Benchmarks, set forth in **Appendix –5**;
- (20) carry out all necessary test(s) and get the approvals as required by the Applicable Laws and Applicable Approvals and in conformity of Good Industry Practice prior to achieving COD;
- (21) pay all taxes, duties and outgoings, including utility charges relating to the Project; and
- (22) transfer the Project to SUDA upon Termination or expiry of this Agreement in accordance with the provisions herein.

5.3 Bio-remediation of Legacy Waste by the Concessionaire prior to Compliance Date

- (1) The Concessionaire shall complete construction and erection of the Bio-remediation Plant and allied facilities and commence its obligation related to reclamation of the Pramodnagar and Kamarhati Sites by way of Bio-remediation of Legacy Waste within 90 (ninety) days of the Compliance Date (the "**Commencement Date**") in accordance with the requirements as provided in **Appendix – 2** hereto as well as Remediation Plan submitted by the Confirming Party/ Parties with their Bid, which forms part of this Agreement as **Appendix –3**. SUDA shall grant right of way and right of use to the Concessionaire in respect of the Pramodnagar and Kamarhati Sites within the Compliance Period. The Concessionaire shall be paid a fixed tipping fee of INR 750/- (Rupees Seven Hundred and Fifty) per ton of Legacy Waste which is treated by the Concessionaire (the "**Reclamation Fee**").
- (2) From the Commencement Date as aforesaid, the Concessionaire shall also ensure that an electronic Weighbridge at the Pramodnagar and Kamarhati Sites is operational as per the specifications specified in this regard in **Appendix – 2** of this Agreement. The Weighbridge installed by the Concessionaire or being used of a third party during initial phase of operation or in the case of breakdown or maintenance shall be calibrated as per applicable BIS/IS standard. The calibration report will be submitted to SUDA and the PMU. The Concessionaire shall also install CCTV cameras above

the Weighbridge. All conditions relating to Weighbridge as provided in **Appendix – 2** shall also apply.

- (3) For measurement of Legacy Waste and later for measurement of MSW, Weighbridge shall be installed at the location agreed upon by the Parties. The Weighbridge shall be operated and maintained by the Concessionaire but the same shall be subject to inspection by the authorized representatives of the SUDA and the PMU;
- (4) The Weighbridges installed at the Project Facilities shall be monitored and inspected regularly by the PMU to ensure due calibration and accuracy and any errors shall be rectified immediately.
- (5) Each consignment to each of the Bio-remediation Plants shall be screened and weighed at the Weighbridge. Concessionaire shall also keep a record of weight and volume of each empty delivery truck, in order to determine the net weight of the consignment. SUDA shall have an option to depute a responsible person from the concerned Municipality(ies) to monitor the operations of the Weighbridges; such representative shall provide details of the same to the PMU and SUDA on a weekly basis;
- (6) Reclamation Fee shall be paid to the Concessionaire as per the measurement at the Weighbridge installed at the location as agreed by the Parties and as verified by the PMU;
- (7) The Residual Solid Waste and Inert Waste left after processing of Legacy Waste shall be used to fill the low-lying area in Panahati, as identified by SUDA, after compaction and if directed by SUDA, the Concessionaire shall develop the low-lying area at Panihati with an impermeable liner system.
- (8) The Concessionaire shall minimise the disposal of Residual Solid Waste and Inert Waste left after processing of the Legacy Waste at the Bio-remediation Plants, and the quantity of Residual Solid Waste from the Bio-remediation Plant shall not exceed more than 20% of the respective quantity of Legacy Waste present at the Pramodnagar and Kamarhati Sites.

5.4 Transportation, Processing and Disposal of MSW by the Concessionaire prior to COD

- (1) The Concessionaire shall commence its obligation related to transportation of the MSW from the Secondary Collection Points within the Commencement Date. SUDA shall grant right of way and right of use to the Concessionaire in respect of the Secondary Collection Points within the Compliance Date. The collected MSW shall be deposited by the Concessionaire at the allocated/ demarcated the area for depositing fresh MSW at the Pramodnagar and Kamarhati Sites on daily basis, as per Applicable Law. MSW collected from Secondary Collection Points in Project Area falling under Dum, Dum, North Dum Dum, South Dum Dum and Baranagar Municipalities shall be deposited at the allocated/ demarcated area in the Pramodnagar Site, and MSW collected from Secondary Collection Points in Project Area falling under Kamarhati and New barrackpore Municipalities shall be deposited at the allocated/ demarcated area in the Kamarhati Site.
- (2) The Concessionaire shall be paid a fixed fee of INR/- (Rupees only) per ton of MSW [*this figure shall be 40% of the Tipping Fee*]

quoted by the Confirming Party/ Parties] transported from the Secondary Collection Points and deposited at the allocated/ demarcated the area for depositing fresh MSW at the Pramodnagar and Kamarhati Sites (the “**Pre-CODC&T Fees**”).

- (3) The payment of Pre-COD C&T Fees to the Concessionaire will be made as per the measurement at the Weighbridges located at the Pramodnagar and Kamarhati Sites. Each consignment to the Pramodnagar and Kamarhati Sites shall be screened and weighed at their respective Weighbridges. Concessionaire shall also keep a record of weight and volume of each empty delivery truck in the form of the daily weight sheet as provided in **Appendix – 6** hereto, in order to determine the net weight of the consignment.
- (4) The Weighbridges shall be monitored and inspected regularly by SUDA and/ or the PMU to ensure due calibration and accuracy and any errors shall be rectified immediately.
- (5) Damages

5.5 Obligation to set-up of Processing Facilities and Engineered Sanitary Landfill

- (1) The Concessionaire shall be obligated to set up at its cost and expense, each of the Processing Facilities and the Sanitary Landfill at the designated Project Sites as detailed in **Appendix- 2**, for processing of MSW at the Processing Facilities and disposal of Residual Solid Waste and Inert Waste at the Sanitary Landfill. For this purpose the Concessionaire shall prepare and submit an Implementation Schedule within 60 (sixty) of the Compliance Date which shall specify the timeline for carrying out the milestones of Pre-COD activities. The Implementation Schedule shall be submitted in MS Word format.
- (2) The Concessionaire shall design and construct the Project Facilities including each of the Processing Facilities and the Sanitary Landfill in compliance with all Applicable Approvals and Applicable Laws at its own cost.
- (3) The Project Sites provided shall only be used for the purposes of the Project.
- (4) The Concessionaire shall obtain all Applicable Approvals in sequence and comply with the provisions therein from time to time.
- (5) Each of the Processing Facilities and the Sanitary Landfill shall be developed by the Concessionaire in conformity with Applicable Laws and Applicable Approvals.
- (6) The Concessionaire may use its own choice of technology for the Processing Facilities, in line with the Applicable Laws and Applicable Approvals including but not limited to MSW Rules.
- (5) The Concessionaire shall fully develop each of the Processing Facilities and the Sanitary Landfill and obtain respective Operational Acceptance Certificates from the PMU for each of the newly installed Processing Facilities and the Sanitary Landfill within a period no later than 24 (twenty four) months from the Compliance Date (the “**Construction Period**”). The Concessionaire shall also be obligated to promptly rectify and remedy any defects or deficiencies that are pointed by the PMU and furnish a report in respect thereof to the PMU.

- (3) In the event, the Concessionaire is unable to achieve COD within the Construction Period, damages at the rate of 0.1% (zero point one percent) of the Performance Security per day of delay shall be levied by SUDA on the Concessionaire, subject to a maximum of 90 (ninety) days beyond which it shall tantamount to Concessionaire's Event of Default.

Provided however, if the delay to achieve COD is due to any Force Majeure Event or delay on the part of any Government Agency to grant the requisite Applicable Approvals within time or due to delay on the part of PMU in issuing Operational Acceptance Certificate, no such damages shall be levied.

5.6 Processing and Disposal of MSW

- (1) The Concessionaire shall operate and maintain all the Project Assets and Project Facilities including each of the Processing Facilities and Engineered Sanitary Landfill in compliance with all Applicable Approvals and Applicable Laws at its own cost.
- (2) The Concessionaire shall obtain all Applicable Approvals and comply with the provisions therein from time to time.
- (3) The Concessionaire shall employ the technology/ processes of its own choice to manage the MSW piled up at the Pramodnagar and Kamarhati Sites.
- (8) The Concessionaire shall at its cost and expense procure all machinery and equipment for the Processing Facilities and/or Engineered Sanitary Landfill. The Concessionaire shall comply with proprietary rights, licenses, agreements and permissions for materials, methods, processes and systems used or incorporated in the Project.
- (11) The Concessionaire shall ensure that the Residual Solid Waste and Inert Waste generated from each of the Processing Facilities should not be in excess of 20% (twenty percent) of the quantum of MSW deposited by the Concessionaire at the Pramodnagar and Kamarhati Sites, respectively.
- (12) The Concessionaire will ensure at all times the daily capping of Sanitary Landfill as per MSW Rules.
- (13) The Concessionaire will also ensure treatment and discharge of leachate generated at the Pramodnagar and Kamarhati Sites, Processing Facilities and/ or the Sanitary Landfill.
- (14) The Concessionaire shall develop a part of the Sanitary Landfill as secured landfill for disposal of fly ash/ air pollution residual.
- (15) All penalties, levies due to any non-compliance of Applicable Laws and Applicable Approvals will be borne by the Concessionaire as Damages.
- (16) The Concessionaire shall receive revenue generated through the by-products of MSW processing like compost, energy, RDF, methane, etc.
- (17) The Concessionaire shall maintain daily records of quantum of incoming, processed waste, rejects, products and product quality in the formats approved by PMU. The monthly report shall be submitted by the Concessionaire to SUDA and PMU. The monthly report may be subject to verification by SUDA and PMU.

- (18) The Concessionaire shall arrange for all facilities and equipment for weighment, including minimum 2 (two) electronic Weighbridges with CCTV cameras, platforms etc.
- (19) The Concessionaire shall erect at least (1) signboard with details (capacity, contact details and signage) about the Processing Facilities and/ or the Sanitary Landfill in local language, Hindi and English of a size not less than 2ft. by 4ft. each, adjacent to the main entrance in a manner that is ordinarily visible to any person using such entrance.
- (20) The Concessionaire shall all time comply with the guidelines of Central Pollution Control Board and West Bengal Pollution Control Board for pollution control.
- (21) Concessionaire will place a board at the entrance of the Processing Facilities displaying emission and discharge parameters of air and water. The Concessionaire shall also display layout at the entrance and indicate warning signs in the Processing Facilities and/ or the Sanitary Landfill.
- (22) The workers involved in MSW handling shall be provided with gloves, masks, uniforms, aprons and other Personal Protective Equipment (PPE).

5.7 No Breach of Obligations

The Concessionaire shall not be considered to be in breach of its obligations under this Agreement nor shall it incur or suffer any liability if and to the extent performance of any of its obligations under this Agreement is affected by or on account of any of the following:

- (1) Force Majeure Event, subject to Article 11;
- (2) SUDA's Event of Default;
- (3) Compliance with the instructions of SUDA/ PMU or the directions of any Competent Authority other than instructions issued as a consequence of a breach by the Concessionaire of any of its obligations hereunder.

5.8 Damages

In case the Concessionaire fails to fulfil the obligations as set under this Agreement, the penalties for non-fulfilment/ damages, unless provided in the provisions of this Agreement, shall be imposed as provided **Appendix - 5**.

5.9 Other Obligations of the Concessionaire

The Concessionaire shall in accordance with and subject to the provisions of this Agreement, undertake or manage, inter alia, the following activities:

- (1) arranging the financing for the Project, including mobilization of debt and Equity;
- (2) procurement of Applicable Approvals in sequence for commencing and implementing the Project;
- (3) award of Project Agreements in respect of engineering, procurement, construction and operation and maintenance of the Project;

- (4) ensuring timely implementation of the Project in accordance with the provisions of this Agreement, the Applicable Laws, the terms of the Applicable Approvals and Good Industry Practice;
- (5) compliance with and implementation of the environment management plan;
- (6) compliance with the provisions of this Agreement relating to liability and indemnification; and
- (7) facilitating implementation of measures for safety, security and protection of the works, property, life and materials at the Project Sites and the environment.

5.10 Concessionaire's Representative

The Concessionaire shall deploy a representative on its behalf to be designated as the Project Manager who shall have full authority to act on behalf of the Concessionaire for all matters relating to this Agreement and shall be overall in-charge in order to ensure implementation of the Project in accordance with the provisions hereof (the “**Project Manager**”). The Project Manager shall closely co-ordinate with the PMU, and shall be responsible to ensure redressal, on an immediate basis, of any objections, observations, shortcomings, defects or defaults pointed out by the PMU during routine inspections and project review meetings and submit action take report to the PMU within a period no later than 7 (seven) days from the date of conveying of such defect/shortcoming. The Project Manager or its nominee shall make themselves available for meetings as and when called upon by the PMU.

5.11 Sole Purpose of the Concessionaire

As the Concessionaire has been set up for the sole purpose of exercising the rights and observing and performing its obligations and liabilities under this Agreement, the Concessionaire or any of its subsidiaries shall not, except with the previous written consent of SUDA/ PMU, be or become directly or indirectly engaged, concerned or interested in any business other than as envisaged herein. The Memorandum and Articles of Association of the Concessionaire, to be prepared by the Concessionaire, should not envisage carrying out other categories of business by the Concessionaire save and except that required to be carried out under this Agreement and businesses allied to the present business.

5.12 Employment of Trained Personnel

The Concessionaire shall ensure that the personnel engaged by it in the performance of its obligations under this Agreement are at all times properly trained for their respective functions.

5.13 Obligations relating to Project Agreements

- (1) It is expressly agreed that the Concessionaire shall, at all times, be responsible and liable for all its obligations under this Agreement irrespective of anything contained in the Project Agreements or any other agreement, and no default under any Project Agreement or agreement shall excuse the Concessionaire from its obligations or liability hereunder.

- (2) The Concessionaire shall submit to SUDA/ PMU the drafts of all Project Agreements or any amendments or replacements thereto for its review and comments, and SUDA/ PMU shall have the right but not the obligation to undertake such review and provide its comments, if any, to the Concessionaire within 15 (fifteen) days of the receipt of such drafts.
- (3) Within 7 (seven) days of execution of any Project Agreement or amendment thereto, the Concessionaire shall submit to SUDA/PMU a true copy thereof, duly attested by a Director of the Concessionaire, for its record.
- (4) For the avoidance of doubt, it is agreed that the review and comments hereunder shall be limited to ensuring compliance with the terms of this Agreement. It is further agreed that any failure or omission of SUDA/ PMU to review and/ or comment hereunder shall not be construed or deemed as acceptance of any such agreement or document by SUDA/ PMU. No review and / or observation of SUDA/ PMU and / or its failure to review and / or convey its observations on any document shall not relieve the Concessionaire of its obligations and liabilities under this Agreement in any manner nor shall SUDA/ PMU be liable for the same in any manner whatsoever.
- (5) The Concessionaire shall ensure that each of the Project Agreements contains provisions that entitle SUDA to step into such agreement or substitute the Concessionaire with a nominated agency, in its sole discretion, in the event of Termination.
- (6) For the avoidance of doubt, it is expressly agreed that in the event SUDA does not exercise such rights of substitution within a period not exceeding 30 (thirty) days from the Termination Date, the Project Agreements shall be deemed to cease to be in force and effect on the Termination Date without any liability whatsoever on SUDA and the covenant shall expressly provide for such eventuality.
- (7) The Concessionaire expressly agrees to include the covenant in all its Project Agreements and undertakes that it shall, in respect of each of the Project Agreements, procure and deliver to SUDA an acknowledgment and undertaking, in a form acceptable to SUDA, from the counter party(ies) of each of the Project Agreements, where under such counter party(ies) shall acknowledge and accept the covenant and undertake to be bound by the same and not to seek any relief or remedy whatsoever from SUDA in the event of Termination.

5.14 Equity Lock-in requirements

The Concessionaire and the Confirming Party/ Parties acknowledges that the Confirming Party/ Parties shall hold at least 51% (fifty one per cent) of the subscribed and paid-up equity of the SPV/ Concessionaire at all times until the end of 3 (three) years from the Commercial Operations Date of the Project.

Provided that in case the Selected Bidder is a Consortium, then:

- (1) Each of the Confirming Parties whose Technical Capacity and/or Financial Capacity was considered for the purpose of qualification and short-listing herein shall be required, until the end of 3 (three) years from the Commercial Operations Date of the Project, to hold equity share capital representing not less than 26% (twenty six per cent) of the subscribed and paid-up equity of the Concessionaire and 10% (ten per

cent) of the subscribed and paid-up equity of the Concessionaire, throughout the Concession Period;

- (2) The other members shall be required to hold equity share capital representing not less than 10% (ten per cent) of the subscribed and paid up equity of the Concessionaire until the end of 3(three) years from the Commercial Operations Date of the Project.

Any violation/ modification in the shareholding pattern in the equity lock-in requirements would be treated as Concessionaire's Event of Default.

ARTICLE 6|FINANCIAL CLOSURE AND SUBSTITUTION AGREEMENT

6.1 General Obligations

- (1) The Concessionaire expressly agrees and undertakes that it shall itself be responsible to arrange for financing and/ or meeting all financing requirements for the Project at its cost and shall enter into Financing Agreements with the Lenders for the same.
- (2) The Concessionaire hereby agrees and undertakes that it shall achieve Financial Closure within the Compliance Date and in the event of delay, it shall be entitled to a further period not exceeding 30 (thirty) days, subject to payment of Damages to SUDA in a sum calculated at the rate of 0.1 (zero point one per cent) of the Performance Security for each day of delay.
- (3) Damages specified herein shall be payable every week in advance and the period beyond the said Compliance Date shall be granted only to the extent of Damages so paid.

Provided further that no Damages shall be payable if such delay in Financial Closure has occurred solely as a result of any default or delay by SUDA in satisfaction of the Conditions Precedent for SUDA as provided in Article 2.6 or due to any Force Majeure Event as provided in Article 11.1.

- (4) For the avoidance of doubt, the Damages payable hereunder by the Concessionaire shall be in addition to the Damages, if any, due and payable under the provisions of penalties.
- (5) The Concessionaire shall, upon occurrence of Financial Closure, notify SUDA forthwith, and shall provide to SUDA, at least 2 (two) days prior to Financial Closure, 3 (three) true copies of the Financial Package and the Financial Model, duly attested by a Director of the Concessionaire, along with 3 (three) soft copies of the Financial Model in MS Excel version or any substitute thereof, which is acceptable to the Lenders.

6.2 Termination due to Failure to Achieve Financial Closure

Notwithstanding anything to the contrary contained in this Agreement, in the event that Financial Closure does not occur, for any reason whatsoever, within the period set forth in Article 6.1 or the extended period provided thereunder, all rights, privileges, claims and entitlements of the Concessionaire under or arising out of this Agreement shall be deemed to

have been waived by, and to have ceased with the concurrence of the Concessionaire, and the Concession Agreement shall be deemed to have been terminated by mutual agreement of the Parties.

6.3 Substitution Agreement

This Agreement shall not be assigned by the Concessionaire. Provided, however, subject to the provisions of this Agreement, Lenders may be given the right of substitution by execution of the Substitution Agreement. The Lenders may exercise the rights of step in or substitution as provided in the Substitution Agreement provided that the Nominated Company substituting the Concessionaire shall enjoy all rights and be obliged to perform/ fulfil all obligations of the Concessionaire under this Agreement. Provided that in the event the Lenders are unable to substitute the Concessionaire by Nominated Company as per the provisions of the Substitution Agreement, SUDA shall proceed terminate the Agreement.

ARTICLE 7| SUDA'S OBLIGATIONS

In addition to and without prejudice to its obligations, subject to the Concessionaire not being in breach of this Agreement, Applicable Laws and/or Applicable Approvals, specified in the other provisions of this Agreement, SUDA, shall during the Concession Period, comply with the following obligations in respect of the Project:

7.1. Specific Obligations

SUDA shall:

- (1) identify and earmark / allocate parcel(s) of land for the purpose of setting up Processing Facilities and the Sanitary Landfill for scientific management of MSW;
- (2) facilitate in a timely manner all such approvals, permissions and authorisations which the Concessionaire may require or is obliged to seek from SUDA under this Agreement, in connection with implementation of the Project and the performance of its obligations;
- (3) appoint the PMU who shall monitor, supervise, and review Concessionaire's progress details/ activities. The Concessionaire shall submit monthly reports to SUDA and PMU regarding progress of the Project. SUDA shall validate the data provided by the Concessionaire in monthly progress reports after seeking comments of the PMU;
- (4) handover the existing infrastructure deployed in Project Area, on as-is-where-is basis, if any, to the Concessionaire within the Compliance Date;
- (5) facilitate and ensure that the Assured Waste Quantity is delivered at the Pramodnagar and Kamarhati Sites;
- (6) facilitate and ensure that a separate waste collection stream from bulk waste generators, vegetable and flower markets for the purpose of collecting segregated organic waste to be sent directly to the Bio-methanation Plant at Pramod Nagar;

- (7) make timely payments as prescribed in Article 9;

7.2 Assured Waste Quantity

- (1) SUDA shall facilitate ensure collection and transportation to the Pramodnagar and Kamarhati Sites, respectively, a minimum waste input for the Processing Facilities i.e. minimum of ____ TPD at Pramodnagar Site and ____ TPD at Kamarhati Site on daily basis, as well as facilitate and ensure that a separate waste collection stream from bulk waste generators, vegetable and flower markets for the purpose of collecting segregated organic waste is sent directly for Bio-methanation Plant at Pramodnagar site with a minimum assured waste of ____ TPD on daily basis (the “**Assured Waste Quantity**”).
- (2) In the event SUDA is unable to provide the Assured Waste Quantity, the Concessionaire shall make its own arrangements, either directly or through a third party, to bring MSW to the Processing Facilities, and the cost of such waste collection and transport, as verified by the PMU, shall be borne by SUDA and shall be reimbursed within 60 (sixty) days to the Concessionaire.

ARTICLE 8|MONITORING AND INSPECTION

8.1 During Pre-COD Period

(1) Monthly Progress Reports

During the Pre- COD Period, the Concessionaire shall, no later than 7 (seven) days after the end of each month, furnish to the PMU, a monthly report bringing out in detail the progress of the work on each of the Project Facilities including the Processing Facilities and the Sanitary Landfill, the quantity of MSW received at the Pramodnagar and Kamarhati Sites respectively, processed and disposed and any such information as may be considered essential by the PMU.

(2) Inspection

- (a) During the Pre-COD Period, PMU shall inspect or cause to be inspected the Project Assets and Project Facilities at least once a month or at such shorter intervals as may be considered essential by the PMU and make report of such inspection (the "**Pre-COD Inspection Report**") stating in reasonable detail the delay or deficiencies, if any, with particular reference to the scope of the Project, specifications, Good Industry Practices, Applicable Law and/or Approvals and submit the Pre-COD Inspection Report to SUDA.
- (b) It shall send a copy of such Pre-COD Inspection Report to the Concessionaire within 2 (two) days of such inspection/ observation and upon receipt thereof, the Concessionaire shall rectify and remedy the observations, if any, stated in the Pre-COD Inspection Report. Provided however, such inspection or submission of Pre-COD Inspection Report by the PMU shall not relieve or absolve the Concessionaire of its obligations and liabilities hereunder in any manner whatsoever.

(3) **Tests**

- (a) For determining that the Project Assets and Project Facilities conform to the specifications and requirements of this Agreement, the PMU shall require the Concessionaire to carry out or cause to be carried out tests, at such time and frequency and in such manner as may be specified by the PMU from time to time, in accordance with Good Industry Practice for quality assurance. The Concessionaire shall, with due diligence, carry out or cause to be carried out all the tests in accordance with the instructions of the PMU and furnish the results thereof to the PMU.
- (b) For the avoidance of doubt, the costs to be incurred on any such test undertaken shall be borne solely by the Concessionaire.
- (c) In the event that results of any tests conducted under this Article establish any defects or deficiencies in the works, the Concessionaire shall carry out remedial measures and furnish a report to the PMU in this behalf.
- (d) For the avoidance of doubt, it is agreed that tests pursuant to this Article shall be undertaken in addition to and independent of the tests that shall be carried out by the Concessionaire for its own quality assurance in accordance with Good Industry Practice. It is also agreed that a copy of the results of such tests shall be sent by the Concessionaire to the PMU forthwith.

8.2 Post COD Period

(1) **Monthly Status Reports**

During Post-COD Period, the Concessionaire shall, no later than 7 (seven) days after the end of each month, furnish to the PMU a monthly report stating in reasonable detail the condition of the Project including its compliance or otherwise with the maintenance requirements, the Compost,RDF and other by-products of MSW generated and sold, the quantity of MSW collected, processed and disposed and shall promptly give such other relevant information as may be required by SUDA or the PMU. In particular such report shall separately identify and state in reasonable detail the defects and deficiencies that require rectification.

(2) **Inspection**

The PMU shall inspect or cause to be inspected the execution of the Project at least once a month. It shall make a report of such inspection (the “**Post COD Inspection Report**”) stating in reasonable detail the defects or deficiencies, if any, with reference to the maintenance requirements, performance parameters or requirements as set forth in this Agreement including its Appendices and send a copy thereof to SUDA and the Concessionaire within 7 (seven) days of such inspection and upon receipt thereof, the Concessionaire shall rectify and remedy the defects or deficiencies, if any, stated in the Post COD Inspection Report. Such inspection or submission of Post COD Inspection Report by the PMU shall not relieve or absolve the Concessionaire of its obligations and liabilities hereunder in any manner whatsoever.

(3) **Remedial measures**

- (a) The Concessionaire shall repair or rectify the defects or deficiencies, impacting the operations/ efficiency of the Project, if any, set forth in the Post

COD Inspection Report and furnish a report in respect thereof to the PMU and SUDA within 15 (fifteen) days of receiving the Post COD Inspection Report; provided that where the remedying of such defects or deficiencies is likely to take more than 15 (fifteen) days, the Concessionaire shall submit progress reports to SUDA and the PMU of the repair works once every week until such works are completed in conformity with this Agreement.

- (b) In the event that remedial measures are not completed by the Concessionaire in conformity with the provisions of this Agreement, SUDA shall be entitled to recover Damages from the Concessionaire at the rate of 0.1 % of Performance Security for each day of delay beyond the period specified for rectification of such defect or deficiency.

(4) **SUDA's right to take Remedial measures**

- (a) In the event the Concessionaire does not maintain and/ or repair the Processing Facilities, Project Facilities, or the Project Assets or any part thereof in conformity with the maintenance requirements or performance parameters requirements or requirements as set forth in this Agreement including its Appendices, and fails to commence remedial works within 15 (fifteen) days of receipt of Post COD Inspection Report or notice in this behalf from SUDA or the PMU, as the case may be, SUDA shall, without prejudice to its right under this Agreement, including Termination thereof, be entitled to undertake such remedial measures at the risk and cost of the Concessionaire, and to recover its cost from the Concessionaire. In addition to recovery of the aforesaid cost, an additional sum equal to 10% (ten percent) of such cost shall be paid by the Concessionaire to SUDA as Damages.

ARTICLE 9| PAYMENTS

9.1 Fees Payable to the Concessionaire

Subject to the provisions of this Agreement and in consideration of the Concessionaire accepting the Concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in this Agreement, SUDA agrees and undertake to pay the following fees to the Concessionaire.

(1) **Reclamation Fee**

SUDA agrees and undertakes to pay to the Concessionaire fixed charges of INR 750(Rupees Seven Hundred and Fifty only) per ton of Legacy Waste reclaimed by the Concessionaire. The amount will be paid on the basis of actual Legacy Waste being processed measured in terms of Article 5.3(5), and the invoice shall be verified by the PMU. The Concessionaire shall raise monthly invoice and attach daily weight sheets of the electronic Weighbridges in format provided in **Appendix – 6** hereto.

(2) **Pre-CODC&T Fee**

SUDA agrees and undertakes to pay to the Concessionaire fixed charges of INR/- (Rupees only) per ton of MSW [*this figure shall be 40% of the Tipping Fee quoted by the Confirming Party/ Parties*] transported from the Secondary Collection Points and deposited at the allocated/ demarcated the area

for depositing fresh MSW at the Pramodnagar and Kamarhati Sites. The payment of Pre-COD C&T Fees to the Concessionaire will be made as per the measurement at the Weighbridges located at the Pramodnagar and Kamarhati Sites. Each consignment to the Pramodnagar and Kamarhati Sites shall be screened and weighed at their respective Weighbridges, and the invoice shall be verified by the PMU. The Concessionaire shall raise monthly invoice and attach daily weight sheets of the electronic Weighbridges in the format provided in **Appendix – 6** hereto.

(3) **Tipping Fee**

SUDA agrees and undertakes to pay to the Concessionaire fixed charges of INR/- (Rupees only) per ton of MSW [*this figure shall be the Tipping Fee quoted by the Confirming Party/ Parties*] towards secondary collection and transportation, and processing and disposal of MSW in terms of this Agreement. The payment of Tipping Fees to the Concessionaire will be made as per the measurement at the Weighbridges located at the Pramodnagar and Kamarhati Sites. Each consignment to the Pramodnagar and Kamarhati Sites shall be screened and weighed at their respective Weighbridges, and the invoice shall be verified by the PMU. The Concessionaire shall raise monthly invoice and attach daily weight sheets of the electronic Weighbridges in the format provided in **Appendix – 6** hereto. The Tipping Fee shall be escalated at the end of every Financial Year after achievement of COD at the rate of 3% (three percent) per annum over the last Tipping Fee. Provided that for the purpose of this Article 9.1(3) the first Financial Year shall be deemed to be the period starting from the COD till 31st March of the next calendar year.

9.2 Payment Mechanism

- (1) The Concessionaire shall raise its invoice for the fees payable to the Concessionaire as provided in Article 9.1 above on monthly basis by the 5th day of the next month. Such invoice shall be approved by the PMU within 15 (fifteen) days from the receipt of such invoice and thereafter submit such invoice to SUDA for release of payment.
- (2) SUDA shall, subject to due performance of obligations by the Concessionaire and verification of invoices by the PMU, pay 90% (ninety percent) of the invoice amount of Reclamation Fee and Pre-COD C&T Fee to the Concessionaire within 15 (fifteen) days from the date of approval of the invoice by the PMU. The remaining 10% (ten percent) of the invoice amount shall be paid by SUDA after assuring the progress through topographical surveys of the Legacy Waste at the Pramodnagar and Kamarhati Sites after every 3 (three) months.
- (3) SUDA shall, subject to due performance of obligations by the Concessionaire, pay 80% (eighty percent) of the invoice amount of Tipping Fee to the Concessionaire within 15 (fifteen) days from the date of approval of the invoice by the PMU. The remaining 20% (ten percent) of the bill amount shall be paid by SUDA after verification of the data and/or records for MSW at the Pramodnagar and Kamarhati Sites after processing outputs like Compost, RDF, biogas and other recyclables, subject to deductions as applicable.

- (4) SUDA shall, subject to terms of this Agreement, pay the Reclamation Fee, Pre-COD C&T Fees and/or Tipping Fee by way of credit of the relevant amount in the Escrow Account. Further, subject to due performance of obligations by the Concessionaire, SUDA shall, by way of additional security for payment, deposit and maintain at all times, an amount equivalent to fee corresponding to next 2(two) months estimated payment in the Escrow Account.

ARTICLE 10|ESCROW ACCOUNT

SUDA shall, prior to the Compliance Date, open and establish an Escrow Account with a Bank (the “**Escrow Bank**”) in accordance with this Agreement read with the Escrow Agreement. The nature and scope of the Escrow Account are fully described in the agreement (the “**Escrow Agreement**”) to be entered into amongst SUDA, the Concessionaire and the Escrow Bank, which shall be substantially in the form set forth in **Appendix - 10**. SUDA shall at all times throughout the Concession Period maintain in the Escrow Account, a balance of at least an amount equivalent to one month of estimated payments to be made to the Concessionaire per month, in the Escrow Account.

10.1 Deposits into Escrow Account

SUDA shall deposit or cause to be deposited the following inflows and receipts into the Escrow Account:

- (1) Reclamation Fees, Pre-COD COT Fees and/or Tipping Fee in terms of the provisions of this Agreement;
- (2) All payments to the Concessionaire towards Damages; and
- (3) Termination Payments, if any, by SUDA, after deduction of any outstanding amounts and/ or penalties and/ or Damages payable by the Concessionaire.

10.2 Withdrawals during Concession Period

SUDA shall, at the time of opening the Escrow Account, give irrevocable instructions, by way of an Escrow Agreement, to the Escrow Bank instructing, *inter alia*, that deposits in the Escrow Account shall be appropriated in the following order every month, or at shorter intervals as necessary, and if not due in a month then appropriated proportionately in such month and retained in the Escrow Account and paid out there from in the month when due:

- (1) all taxes due and payable by the Concessionaire;
- (2) all payments relating to Reclamation Fees, Pre-COD COT Fees and/or Tipping Fee;
- (3) all payments to the Concessionaire towards Damages;
- (4) and balance funds, if any, to flow to SUDA subject to the maintenance of balance of an amount equivalent to one month of payment in the Escrow Account.

The Concessionaire shall not in any manner modify the order of payment specified in this Article, except with the prior written approval of SUDA.

10.3 Withdrawals upon Termination

Notwithstanding anything to the contrary contained in this Agreement, all amounts standing to the credit of the Escrow Account shall, upon Termination, be appropriated in the following order:

- (1) payment towards taxes and other statutory levies, if applicable to SUDA in respect of the Project;
- (2) all payments relating to Reclamation Fees, Pre-COD COT Fees and/or Tipping Fee;
- (3) all payments to the Concessionaire towards Damages as due and payable by it to the Concessionaire;
- (4) Termination Payment, if any, by SUDA, after deduction of any outstanding amounts and/ or penalties and/ or Damages payable by the Concessionaire;
- (5) any other payment required to be made under this Agreement;
- (6) payments towards costs and expenses incurred by SUDA for appointment of Independent Expert; and
- (8) balance, if any, to be paid to SUDA.

The provisions of this Article 10 and the instructions contained in the Escrow Agreement shall remain in full force and effect until the entire obligations set forth in this Agreement have been discharged.

ARTICLE 11|FORCE MAJEURE AND CHANGE IN LAW

11.1 Force Majeure Event

Any of the following events which is beyond the control of the Party claiming to be affected thereby (the “**Affected Party**”) and which the Affected Party has been unable to overcome or prevent despite exercising due care and diligence, and which results in Material Adverse Effect shall constitute Force Majeure Event:

- (1) earthquake and landslide;
- (2) flood, hurricane, cyclone or drought;
- (3) fire caused by reasons not attributable to the Concessionaire or any of the employees, Contractors or agents appointed by the Concessionaire for purposes of the Project;
- (4) acts of terrorism;
- (5) strikes, boycotts or labour disruptions or any other industrial disturbances (other than those arising on account of the acts or omissions of the Concessionaire or the Contractor);
- (6) action of a Government Agency having Material Adverse Effect including but not limited to acts of expropriation, compulsory acquisition or takeover by any

Government Agency of the Project / Project or any part thereof or of the Concessionaire's or the Contractor's rights in relation to the Project;

- (7) any judgment or order of a court of competent jurisdiction or statutory authority in India made against the Concessionaire or the Contractor in any proceedings which is non-collusive and duly prosecuted by the Concessionaire, any unlawful, unauthorised or without jurisdiction refusal to issue or to renew or the revocation of any Applicable Approvals, in each case, for reasons other than Concessionaire's or the Contractor's breach or failure in complying with the Project Requirements, Applicable Laws, Applicable Approvals, any judgement or order of a Governmental Agency or of any contract by which the Concessionaire or the Contractor as the case may be is bound;
- (8) early termination of this Agreement by SUDA for reasons of national emergency or national security.
- (9) any failure or delay of a Contractor caused by any of the sub-clauses (6) and (7) hereinabove, for which no offsetting compensation is payable to the Concessionaire by or on behalf of the Contractor.
- (10) War, hostilities (whether declared or not), invasion, act of foreign enemy, rebellion, riots, weapon conflict or military actions, civil war, ionising radiation, contamination by radioactivity from nuclear fuel, any nuclear waste, radioactive toxic explosion, any failure or delay of a Contractor caused by the events mentioned in this sub-clause for which no offsetting compensation is payable to the Concessionaire by or on behalf of the Contractor.

11.2 Notice of Force Majeure Event

- (1) As soon as practicable and in any case within ten days of the date of occurrence of a Force Majeure Event or the date of knowledge thereof, the Affected Party shall notify the PMU, and the other Party, inter alia, the following in reasonable detail:
 - (a) the nature and extent of the Force Majeure Event;
 - (b) the estimated Force Majeure Period;
 - (c) the nature of and the extent to which, performance of any of its obligations under this Agreement is affected by the Force Majeure Event;
 - (d) the measures which the Affected Party has taken or proposes to take to alleviate/mitigate the impact of the Force Majeure Event and to resume performance of such of its obligations affected thereby; and
 - (e) any other relevant information concerning the Force Majeure Event, and/or the rights and obligations of the Parties under this Agreement.
- (2) As soon as practicable and in any case within five days of notifying by the Affected Party in accordance with the preceding Article, the Parties shall along with the PMU, meet, hold discussions in good faith and where necessary conduct physical inspection/survey of the Project in order to:
 - (a) assess the impact of the underlying Force Majeure Event,
 - (b) determine the likely duration of Force Majeure Period and,

- (c) formulate measures to mitigate damage and steps to be undertaken by the Parties for resumption of obligations, the performance of which shall have been affected by the underlying Force Majeure Event.
- (3) The Affected Party shall during the Force Majeure Period provide to the other Party and the PMU regular (not less than weekly) reports concerning the matters set out in the preceding Article as also any information, details or document, which the other Party may reasonably require.

11.3 Performance of Obligations

If the Affected Party is rendered wholly or partially incapable of performing any of its obligations under this Agreement because of a Force Majeure Event, it shall be excused from performance of such obligations to the extent it is unable to perform the same on account of such Force Majeure Event provided that:

- (1) due notice of the Force Majeure Event has been given as required by this Article 11;
- (2) the excuse from performance shall be of no greater scope and of no longer duration than is necessitated by the Force Majeure Event;
- (3) the Affected Party has taken all reasonable efforts to avoid, prevent, mitigate and limit the damage, if any, caused or is likely to be caused to the Project as a result of the Force Majeure Event and to restore the Project, in accordance with the Good Industry Practice and its obligations under this Agreement;
- (4) when the Affected Party is able to resume performance of its obligations under this Agreement, it shall give to the other Party and the PMU written notice to that effect and shall promptly resume performance of its obligations hereunder, the non-issuance of such notice being no excuse for any delay in resuming such performance;
- (5) the Affected Party shall continue to perform such of its obligations which are not affected by the Force Majeure Event and which are capable of being performed in accordance with this Agreement; and
- (6) any insurance proceeds received shall be, subject to the provisions of Financing Documents, entirely applied to repair, replace or restore the assets damaged on account of the Force Majeure Event, or in accordance with Good Industry Practice.

11.4 Termination due to Force Majeure Event

(1) Termination

- (a) If a Force Majeure Event, excluding events described under Articles 11.1(6), 11.1 (7) or 11.1 (8) above, continues or is in the reasonable judgement of the Parties likely to continue beyond a period of 120 days, the Parties may mutually decide to terminate this Agreement or continue this Agreement on mutually agreed revised terms. If the Parties are unable to reach an agreement in this regard, the Affected Party shall after the expiry of the said period of 120 days, be entitled to terminate this Agreement.
- (b) Notwithstanding anything inconsistent contained in this Agreement, if a Force Majeure Event is an event described under Articles 11.1(6), 11.1 (7) or

11.1(8), and the same subsists for a period exceeding 365 days, then either Party shall be entitled to terminate this Agreement.

- (c) Provided that SUDA may at their sole discretion have the option to terminate this Agreement any time after the occurrence of any event described under Articles 11.1(6), 11.1 (7) or 11.1(8).

(2) Termination Notice

If any Party, having become entitled to do so, decides to terminate this Agreement pursuant to the preceding Article, it shall issue Termination Notice setting out:

- (a) in sufficient detail the underlying Force Majeure Event;
- (b) the Termination Date which shall be a date occurring not earlier than 60 days from the date of Termination Notice;
- (c) the estimated Termination Payment including the details of computation thereof and;
- (d) any other relevant information.

(3) Obligation of Parties

Following issue of Termination Notice by either Party, the Parties shall promptly take all such steps as may be necessary or required to ensure that:

- (a) the Termination Payment, if any, payable by SUDA in accordance with the following Article is paid to the Concessionaire on the Termination Date; and
- (b) the Project along with all the Project Assets, is handed back to SUDA by the Concessionaire on the Termination Date free from all Encumbrances.

(4) Payment on Termination due to Force Majeure Event

- (a) If Termination is due to a Force Majeure Event, described under Articles 11.1(1) to 11.1(5) and 11(10) no Termination Payment shall be made by SUDA to the Concessionaire but, the Concessionaire shall be entitled to receive and appropriate proceeds of any amounts under insurance policies and any pending invoice amounts of the Concessionaire up to the date of Termination, for services rendered by it to the satisfaction of SUDA and certified by the PMU.
- (b) If Termination is due to the occurrence of any event described under Articles 11.1(6), 11.1(7), 11.1(8) or 11.1(9), SUDA shall pay to the Concessionaire Termination Payment as calculated in the following manner:
 - (i) Pre-COD Period: SUDA shall pay an amount equal to the cost incurred towards the Processing Facilities after adjustment of all dues and Damages, if any, till the Termination Date as certified by the PMU.
 - (ii) Post-COD Period: SUDA shall pay a Termination Payment to the Concessionaire of an amount that would be payable as if it were a SUDA's Event of Default.

11.5 Liability for Other Losses, Damages etc.

Save and except as expressly provided in Article 11, neither Party hereto shall be liable in any manner whatsoever to the other Party in respect of any loss, damage, cost, expense, claims, demands and proceedings relating to or arising out of occurrence or existence of any Force Majeure Event.

11.6 Changes in Law

- (1) Change in Law shall mean the occurrence or coming into force of any of the following, after the Appointed Date:
 - (a) The enactment of any new Indian law including laws related to environment/emission/ discharge standards;
 - (b) The repeal, modification or re-enactment of any existing Indian law;
 - (c) A change in the interpretation or application of any Indian law by a court of record;

Provided that Change in Law shall not include:

- (a) Coming into effect, after the Appointed Date, of any provision or statute which is already in place as of the Appointed Date,
 - (b) Any new law or any change in the existing law under the active consideration of or in the contemplation of any government as of the Appointed Date which is a matter of public knowledge,
 - (c) Any change in the rates of the Taxes which have a direct effect on the Project.
- (2) Subject to Change in Law resulting in Material Adverse Effect and subject to the Concessionaire taking necessary measures to mitigate the impact or likely impact of Change in Law on the Project, if as a direct consequence of a Change in Law, the Concessionaire is obliged to incur Additional Costs, SUDA shall subsequently reimburse to the Concessionaire the percentage of such Additional Costs as provided in Article 11.6(5).
- (3) Upon occurrence of a Change in Law, the Concessionaire may, notify SUDA and the PMU of the following:
 - (a) The nature and the impact of Change in Law on the Project in sufficient detail;
 - (b) The estimate of the Additional Costs likely to be incurred by the Concessionaire on account of Change in Law;
 - (c) The measures, which the Concessionaire has taken or proposes to take to mitigate the impact of Change in Law, including in particular, minimising the Additional Costs; and
 - (d) The relief sought by the Concessionaire.
- (4) Upon receipt of the notice of Change in Law issued by the Concessionaire pursuant to the preceding Article, SUDA and the Concessionaire shall along with the PMU hold discussions and take all such steps as may be necessary including determination / certification by the PMU of the quantum of the Additional Costs to be borne and paid by SUDA.

- (5) SUDA shall within 30 (thirty) days from the date of determination of quantum of Additional Costs and submission of requisite documents, reimburse 50% of such Additional Costs incurred by the Concessionaire in the manner as mutually agreed upon by the Parties.

ARTICLE 12|SUSPENSION OF CONCESSIONAIRE'S RIGHTS

12.1 Suspension upon Concessionaire's Event of Default

- (1) Upon occurrence of an Concessionaire's Event of Default, SUDA shall be entitled, without prejudice to its other rights and remedies under this Agreement including its rights of Termination hereunder, to (i) suspend all rights of the Concessionaire under this Agreement including the Concessionaire's right to receive Reclamation Fee, Pre-COD C&T Fees and/or Tipping Fee, and (ii) exercise such rights itself and perform the obligations hereunder or authorise any other person to exercise or perform the same on its behalf during such suspension (the "**Suspension**").
- (2) Suspension hereunder shall be effective forthwith upon issue of notice by SUDA to the Concessionaire and may extend up to a period not exceeding 180 (one hundred and eighty) days from the date of issuance of such notice; provided that upon written request from the Concessionaire and the Lenders, SUDA may extend the aforesaid period of 180 (one hundred and eighty) days by a further period not exceeding 90 (ninety) days.

12.2 Authority to Act on behalf of Concessionaire

- (1) During the period of Suspension, SUDA shall be entitled to make withdrawals from the Escrow Account for meeting the costs incurred by it for remedying the Concessionaire's Event of Default committed by the Concessionaire.
- (2) During the period of Suspension hereunder, all rights and liabilities vested in the Concessionaire in accordance with the provisions of this Agreement shall continue to vest therein and all things done or actions taken, including expenditure incurred by SUDA for discharging the obligations of the Concessionaire under and in accordance with this Agreement and the Project Agreement, shall be deemed to have been done or taken for and on behalf of the Concessionaire and the Concessionaire undertakes to indemnify SUDA for all costs incurred during such period.

12.3 Revocation of Suspension

- (1) In the event that SUDA shall have rectified or removed the cause of Suspension within a period not exceeding 90 (ninety) days from the date of Suspension, it shall revoke the Suspension forthwith and restore all rights of the Concessionaire under this Agreement.

- (2) For the avoidance of doubt, the Parties expressly agree that SUDA may, in its discretion, revoke the Suspension at any time, whether or not the cause of Suspension has been rectified or removed hereunder.
- (3) In the event the Concessionaire remedies the Concessionaire's Event of Default within a period not exceeding 90 (ninety) days from the date of Suspension, SUDA shall revoke the Suspension forthwith and restore all rights of the Concessionaire under this Agreement.

12.4 Substitution of Concessionaire

At any time during the period of Suspension, the Lenders shall be entitled to substitute the Concessionaire under and in accordance with the Substitution Agreement, and upon receipt of notice there under from the Lenders, SUDA may withhold Termination for a period not exceeding 180 (one hundred and eighty) days from the date of Suspension, and any extension thereof under this Article 12, for enabling the Lenders to exercise its rights of substitution.

12.5 Termination

- (1) At any time during the period of Suspension under this Article 12, the Concessionaire may by notice require SUDA to revoke the Suspension and issue a Termination Notice. Subject to the rights of the Lenders to undertake substitution in accordance with the provisions of this Agreement and within the period specified hereinabove, SUDA shall, within 15 (fifteen) days of receipt of such notice, terminate this Agreement under and in accordance with this Article 12 and other provisions of this Agreement.
- (2) Notwithstanding anything to the contrary contained in this Agreement, in the event the Suspension is not revoked within 180 (one hundred and eighty) days from the date of Suspension hereunder or within the extended period, if any, set forth in this Article 12, the Concession Agreement shall, upon expiry of aforesaid period, be deemed to have been terminated by mutual agreement of the Parties and all provisions of this Agreement shall apply, *mutatis mutandis*, to such Termination as if a Termination Notice had been issued by SUDA upon occurrence of a Concessionaire's Event of Default.

ARTICLE 13| EVENTS OF DEFAULT AND TERMINATION

13.1 Events of Default

Events of Default shall mean either Concessionaire's Event of Default or SUDA's Event of Default or both as the context may admit or require.

13.2 Concessionaire's Event of Default

In addition to any events specified elsewhere in this Agreement, any of the following events shall constitute an Event of Default by the Concessionaire (the "**Concessionaire's Event of**

Default") unless such event has occurred as a consequence of a SUDA Event of Default or a Force Majeure Event :-

- (1) The Concessionaire is in Material Breach of any of its obligations under this Agreement in respect of which a specified time period has not been specified in this Agreement and the same has not been remedied for more than 30 (thirty) days;
- (2) The Concessionaire's repudiation or failure to perform or discharge any of its obligations in accordance with the provisions of this Agreement which will result in Material Breach.
- (3) The Concessionaire's failure to perform or discharge any of its obligations under this Agreement or any Project Agreement, which has or is likely to have a Material Adverse Effect on its ability to perform as per the provisions of this Agreement
- (4) Notwithstanding anything to the contrary contained herein, in the event in any quarter the aggregate Damages levied by SUDA on account of non-performance exceeds 10% of the Performance Security, then the same shall be construed as Concessionaire's Event of Default.
- (5) Any representation made or warranty given by the Concessionaire under this Agreement is found to be false or misleading;
- (6) A resolution for voluntary winding up has been passed by the shareholders of the Concessionaire;
- (7) Any petition for winding up of the Concessionaire has been admitted and liquidator or provisional liquidator has been appointed or the Concessionaire has been ordered to be wound up by Court of competent jurisdiction, except for the purpose of amalgamation or reconstruction with the prior consent of SUDA, provided that, as part of such amalgamation or reconstruction and the amalgamated or reconstructed entity has unconditionally assumed all surviving obligations of the Concessionaire under this Agreement;
- (8) The Concessionaire is adjudged bankrupt or insolvent, or if a trustee, receiver or insolvency professional is appointed for the Concessionaire which has a Material Adverse Effect on the Project
- (9) The Concessionaire has abandoned the Project;
- (10) The Concessionaire has unlawfully repudiated this Agreement or has otherwise expressed an intention not to be bound by this Agreement;
- (11) The Concessionaire has suffered an attachment levied on any of its assets which has caused or is likely to cause a Material Adverse Effect on the Project and such attachment has continued for a period exceeding 90 (ninety) days;
- (12) The Concessionaire fails to obtain and maintain a valid Performance Bank Guarantee for the requisite amounts in terms of this Agreement.

13.3 SUDA's Event of Default

Any of the following events shall constitute an event of default by SUDA ("SUDA's Event of Default"), when not caused by a Concessionaire Event of Default or Force Majeure Event:

- (1) The Sites have not been handed over to the Concessionaire within 30 days of Appointed Date;
- (2) SUDA has failed to make any payments including payment of Grant and Tipping Fee due to the Concessionaire and more than 90 (ninety) days have elapsed since such default;
- (3) SUDA is in Material Breach of any of its obligations under this Agreement and has failed to cure such breach within 30 (thirty) days of receipt of notice thereof issued by the Concessionaire;
- (4) SUDA has unlawfully repudiated this Agreement or otherwise expressed its intention not to be bound by this Agreement;
- (5) SUDA has unreasonably withheld or delayed grant of any approval or permission which the Concessionaire is obliged to seek under this Agreement, and thereby caused or likely to cause Material Adverse Effect;
- (6) Any representation made or warranties given by SUDA under this Agreement have been found to be false or misleading.
- (7) SUDA has failed to supply the Assured Waste Quantity for a continuous period of 15 days .

13.4 Termination for Concessionaire's Event of Default

- (1) Without prejudice to any other right or remedy which SUDA may have in respect thereof under this Agreement, upon the occurrence of a Concessionaire's Event of Default, SUDA shall, be entitled to terminate this Agreement in the manner as set out under this Article 13.

Provided however that upon the occurrence of a Concessionaire's Event of Default as specified hereinabove, SUDA may terminate this Agreement by issuing Termination Notice after giving the Concessionaire an opportunity of hearing.

- (2) If SUDA decides to terminate this Agreement pursuant to the preceding Article, it shall in the first instance issue a preliminary notice (the "**Preliminary Notice**") to the Concessionaire.
- (3) Within 15 (fifteen) days of receipt of the Preliminary Notice, the Concessionaire shall submit to SUDA in sufficient detail, the manner in which it proposes to cure the underlying Event of Default (the "**Concessionaire's Proposal to Rectify**"). In case of non-submission of the Concessionaire's Proposal to Rectify within the said period of 15(fifteen) days, SUDA shall be entitled to terminate this Agreement by issuing Termination Notice and appropriate the Performance Security.
- (4) If the Concessionaire's Proposal to Rectify is submitted within the period stipulated therefor, the Concessionaire shall have further period of 30 (thirty) days to remedy/ cure the underlying Event of Default (the "**Cure Period**"). If, however the Concessionaire fails to remedy/cure the underlying Event of Default within such Cure Period, SUDA shall be entitled to terminate this Agreement, by issuing Termination Notice and appropriate the Performance Security.

13.5 Termination for SUDA's Event of Default

- (1) Without prejudice to any other right or remedy which the Concessionaire may have in respect thereof under this Agreement, upon the occurrence of SUDA's Event of Default, the Concessionaire shall be entitled to terminate this Agreement by issuing Termination Notice.
- (2) If the Concessionaire decides to terminate this Agreement pursuant to the preceding Article, it shall in the first instance issue Preliminary Notice to SUDA.
- (3) Within 15 (fifteen) days of receipt of Preliminary Notice, SUDA shall forward to the Concessionaire its proposal to cure the underlying Event of Default (the "**SUDA's Proposal to Rectify**"). In case of non-submission of SUDA's Proposal to Rectify within the period stipulated therefor, Concessionaire shall be entitled to terminate this Agreement by issuing Termination Notice.
- (4) If SUDA Proposal to Rectify is forwarded to the Concessionaire within the period stipulated therefor, SUDA shall have further period of 30 (thirty) days to cure the underlying Event of Default as Cure Period. If, however SUDA fails to cure the underlying Event of Default within such Cure Period, the Concessionaire shall be entitled to terminate this Agreement by issuing Termination Notice.

13.6 Termination Notice

If a Party has become entitled to do so decide to terminate this Agreement pursuant to the preceding Clauses, it shall issue Termination Notice setting out:

- (1) in sufficient detail the underlying Event of Default;
- (2) the Termination Date which shall be a date occurring not earlier than 60 (sixty) days from the date of Termination Notice;
- (3) the estimated Termination Payment including the details of computation thereof; and,
- (5) any other relevant information.

13.7 Obligation of Parties

Following issue of Termination Notice by either Party, the Parties shall promptly take all such steps as may be necessary or required to ensure that:

- (1) until Termination the Parties shall, to the fullest extent possible, discharge their respective obligations so as to maintain the continued operation of the Project;
- (2) the Termination Payment, if any, payable by SUDA in accordance with the provisions of this Agreement is paid to the Concessionaire within 30 (thirty) days of the Termination Date; and
- (3) the Project is handed back to SUDA as instructed by SUDA, by the Concessionaire on the Termination Date free from any encumbrance along with any payment that may be due by the Concessionaire to SUDA.

13.8 Withdrawal of Termination Notice

- (1) Notwithstanding anything inconsistent contained in this Agreement, if the Party who has been served with the Termination Notice cures the underlying Event of Default to

the satisfaction of the other Party at any time before the Termination occurs, the Termination Notice shall be withdrawn by the Party which had issued the same.

- (2) Provided that the Party in breach shall compensate the other Party for any direct costs/ consequences occasioned by the Event of Default which caused the issuance of Termination Notice.

13.9 Termination Payment for SUDA's Event of Default

Upon Termination of this Agreement on account of SUDA's Event of Default, the Concessionaire shall be entitled to receive back the Performance Security from SUDA and also receive from SUDA, Termination Payment of an amount equal to 100% (one hundred percent) of the amount invested by the Concessionaire in the Project, without any interest. The total amount to be paid under this head shall be derived by calculating the total expenses incurred upto that date by the Concessionaire in line with the Scope of Services as provided in **Appendix – 2** hereto, subject however to a joint survey and verification of the work done by the Concessionaire in the Project.

13.10 Termination Payment for Concessionaire's Event of Default

Upon Termination by SUDA on account of occurrence of a Concessionaire's Event of Default, the Concessionaire shall not be entitled to refund of any part of the amount invested by it in the Project. SUDA shall also be entitled to forfeit the entire amount of Performance Security paid in terms of Article 5.1 above.

13.11 Rights of SUDA on Termination

- (1) Upon Termination of this Agreement for any reason whatsoever, SUDA shall upon making the Termination Payment, if any, to the Concessionaire, have the power and authority to:
 - (a) enter upon and take possession and control of the Project Facilities and Project Assets forthwith;
 - (b) prohibit the Concessionaire and any person claiming through or under the Concessionaire from entering upon/ dealing with the Project including the Project Sites, Project Facilities and Project Assets;
- (2) Notwithstanding anything contained in this Agreement, SUDA shall not, as consequence of Termination or otherwise, have any obligation whatsoever including but not limited to obligations as to compensation for loss of employment, continuance or regularisation of employment, absorption or re-employment on any ground, in relation to any person in the employment of or engaged by the Concessionaire in connection with the Project, and the handback of the Project Sites, Project Facilities and Project Assets by the Concessionaire to SUDA shall be free from any such obligation/ fee/penalties/ taxes.
- (3) Termination Payment shall become due and payable to the Concessionaire within 15(fifteen) days of a demand being made by the Concessionaire to SUDA with the necessary particulars, and in the event of any delay, SUDA shall pay interest at a rate equal to 3% (three per cent) above the Bank Base Rate on the amount of Termination

Payment remaining unpaid; provided that such delay shall not exceed 90 (ninety) days.

- (4) For the avoidance of doubt, it is expressly agreed that the Termination Payment shall become due and payable by SUDA upon actual or constructive transfer of the Project Sites, Project Assets and Project Facilities by the Concessionaire to SUDA clear from all Encumbrances, charges and liens whatsoever, unless expressly agreed by the Parties otherwise.
- (5) The Concessionaire expressly agrees that Termination Payment under this Clause shall constitute a full and final settlement of all claims of the Concessionaire on account Termination of this Agreement for any reason whatsoever and that the Concessionaire or any shareholder thereof shall not have any further right or claim under any law, treaty, convention, contract or otherwise.

13.12 Accrued Rights of Parties

Notwithstanding anything to the contrary contained in this Agreement, Termination pursuant to any of the provisions of this Agreement shall be without prejudice to accrued rights of either Party including its right to claim and recover money as Damages and other rights and remedies which it may have in law or contract. The rights and obligations of either Party under this Agreement, including without limitation those relating to the Termination Payment, shall survive the Termination but only to the extent such survival is necessary for giving effect to such rights and obligations.

ARTICLE 14|SUBSTITUTION OF THE CONCESSIONAIRE

14.1 Substitution by Lenders

In the event of Concessionaire's Event of Default, SUDA shall, if there are any Lenders, send copy of the Termination Notice to the Lenders to inform and grant 15 (fifteen) days to the Lenders, for making representation on behalf of the Lenders stating the intention to substitute the Concessionaire. In case SUDA receives representation in this regard on behalf of the Lenders, within the aforesaid period, SUDA shall withhold the Termination Payment for a period not exceeding 180 (one hundred and eighty) days, for enabling the Lendersto exercise the Lenders' right of substitution in accordance with the Substitution Agreement, and substitute the Concessionaire with a Substitute Entity.

14.2 Substitution by SUDA

In the event that no company is nominated by the Lenders to act as the Substitute Entity or the company nominated by the Lendersin terms of Article 14.1 is not acceptable to SUDA, it may either substitute the Concessionaire with a Substitute Entity, identified by it in accordance with the Substitution Agreement, or terminate the Agreement.

14.3 Substitution Process

While carrying out substitution, the Lenders or SUDA, as the case may be, shall invite competitive bids/ proposals from the prospective parties for acting as the Substitute Entity and substituting the Concessionaire. Such Substitute Entity shall have to agree to bear all the liabilities of the Concessionaire in terms of this Agreement and Financing Documents.

14.4 Consequences of Substitution

- (1) SUDA shall grant, to the Substitute Entity, the right to develop, design, finance, construct, operate and maintain the Project (including entering into Sub-Contracts) together with all other rights of the Concessionaire under this Agreement, subject to fulfilment of the Concessionaire's entire obligation under this Agreement by such Substitute Entity, for the remainder of the term of this Agreement. Such rights shall be granted by SUDA through novation of the Agreement, if applicable, in favour of the Substitute Entity.
- (2) SUDA shall also execute a fresh Substitution Agreement with the Substitute Entity and the Lenders, if there are any. All sub-contracts and agreements in respect of the Project including Financing Documents and all sub-contracts executed by the Concessionaire shall stand transferred and novated in favour of the Substitute Entity.
- (3) Further all rights of the Concessionaire on the Project Sites, Project Facilities and Project Assets in terms of the Agreement shall stand transferred and novated in favour of the Substitute Entity. All approvals/clearances of SUDA received by the Concessionaire shall stand transferred and novated in favour of the Substitute Entity. The Concessionaire shall be replaced by the Substitute Entity for all purposes related to the Project.

ARTICLE 15|HANDOVER OF PROJECT

15.1 Ownership of Project and Project Assets

The ownership of all the Project Assets and Project Facilities shall always remain vested with SUDA. The rights of the Concessionaire shall only be that of a licensee as provided in this Agreement. It is clarified for the avoidance of doubt that ownership of any equipment, plant or machinery installed by the Concessionaire during the Concession Period shall remain vested with SUDA and the Concessionaire shall only have the right to use the same in accordance with the provisions of this Agreement.

15.2 Condition Survey

- (1) The Concessionaire agrees that on the service of a Termination Notice or 180 (one hundred and eighty) days prior to the Expiry of this Agreement, it shall conduct or cause to be conducted by the PMU under the supervision of SUDA, a survey (the "**Condition Survey**") and inventory of the Project to ascertain the condition thereof, verify compliance with the Concessionaire's obligations under this Agreement and to prepare an inventory of the assets comprised in the Project. If, as a result of the Condition Survey, SUDA observes/notices that the Project or any part thereof is not

in the condition required under this Agreement (except normal wear and tear), the Concessionaire shall, at its cost and expenses, take all necessary steps to put the Project in the requisite condition 60 (sixty) days before the Transfer Date.

- (2) In the event the Concessionaire fails to comply with the provisions of this Agreement, SUDA may itself cause the Condition Survey and inventory of the Project to be conducted. SUDA shall be compensated by the Concessionaire for any costs incurred in conducting the Condition Survey and preparation of inventory of the Project as also in putting the Project in the requisite condition. In the event the Concessionaire fails to pay the cost incurred, SUDA shall be entitled to recover the amount from its invoices and/or the Performance Security.

15.3 Concessionaire's Obligations upon Termination or Expiry

- (1) Without prejudice to any other consequences or requirements under this Agreement or under Applicable Laws, the following consequences shall follow upon Termination due to a Force Majeure Event or Event of Default or Expiry of this Agreement.
- (2) The Concessionaire shall subject to the provisions of this Agreement:
 - (a) hand over Vacant Possession of the Project Site to SUDA without any delay or demur;
 - (b) hand over to SUDA or its nominated agency free of cost the vacant and peaceful possession and control of the Project;
 - (c) hand over/ transfer to SUDA all its rights, titles and interest in or over the assets comprised in the Project and the Project Assets (including movable assets which SUDA agrees to take over) which are required to be transferred to SUDA in accordance with this Agreement and execute such documents as may be necessary for this purpose and complete all legal or other formalities required in this regard;
 - (d) hand over to SUDA all documents, Proprietary Material, including as built designs, drawings, data, engineering, manuals and records relating to the Project Assets and the Project;
 - (e) transfer to SUDA all such Applicable Approvals which SUDA or its nominated agency may require and which can be legally transferred.
- (3) It is clarified that only the Project shall be taken over and no liabilities, including without limitation, liabilities relating to labour and personnel related obligations of the Concessionaire shall be taken over by SUDA or its nominated agency. The Concessionaire's employees shall be the Concessionaire's responsibility even after the Termination or Expiry of this Agreement.
- (4) The Concessionaire shall also transfer or cause to be transferred/assigned to SUDA any Project Agreements which are:
 - (a) valid and subsisting;
 - (b) capable of being transferred to SUDA or its nominated agency; and
 - (c) those which SUDA has chosen to take over,

- (5) The Concessionaire shall cancel or cause to be cancelled entirely at its cost such Project Agreements not transferred to SUDA, and remove at its cost from the Project Sites all such moveable assets which are not taken over by or transferred to SUDA. In the event the Concessionaire fails to remove such assets within the stipulated time, SUDA may remove and transport or cause removal and transportation of such assets, after giving the Concessionaire notice of its intention to do so to a suitable location for safe storage. The Concessionaire shall be liable to bear the reasonable cost and risk of such removal, transportation and storage.
- (6) All proceeds of insurance claims shall be deposited in a separate account and the Concessionaire or Persons claiming through or under it shall have no claim thereon or rights thereto unless and until all dues of/Damages payable to SUDA or any Government Agency or in respect of the Project have been cleared and no amounts payable/ refundable to either of them by the Concessionaire pursuant to this Agreement are outstanding.
- (7) SUDA shall be entitled to encash any subsisting Performance Security provided by the Concessionaire, if the Termination is on account of Concessionaire's Event of Default.

ARTICLE 16|DISPUTE RESOLUTION

16.1 Amicable Resolution

- (1) Save where expressly stated to the contrary in this Agreement, any dispute, difference, claim or controversy of whatever nature between the Parties, howsoever arising under, out of or in relation to this Agreement, or the rights, duties or liabilities of any Party under this Agreement, whether before or after the Termination of this Agreement, including those arising with regard to acts, decision or opinion of the PMU (the "**Dispute**"), shall in the first instance be attempted to be resolved amicably in accordance with the procedure set forth below.
- (2) The Parties agree to use their best efforts for resolving all Disputes arising under or in respect of this Agreement promptly, equitably and in good faith, and further agree to provide each other with reasonable access during normal business hours to all non-privileged records, information and data pertaining to any Dispute.
- (3) The Parties may, in appropriate cases agree to discuss the matter with an expert (the "**Expert**") appointed by them with mutual consent, to amicably resolve the Dispute. The cost of obtaining the service of the Expert shall be shared equally.

16.2 Dispute Resolution

If the parties are unable to resolve the Dispute amongst themselves amicably by applying the provisions of Article 16.1 above, then any of the parties may approach the courts at prescribed in Article 20.3 below, for resolution of the Dispute.

ARTICLE 17|INSURANCE

17.1 Insurance Cover

The Concessionaire shall, at its cost and expense, purchase and maintain effective from the Compliance Date and during the Concession Period such insurance policies for such maximum sums as are necessary and customary under the Financing Documents and Applicable Laws, and/or in accordance with Good Industry Practice (or which may in the future become available or necessary) on commercially reasonable terms and reasonably required to be maintained consistent with projects and facilities of the size and type of the Project, including but not limited to the following:

- (1) Builders'/Contractors' all risk insurance;
- (2) Erection insurance and/or break down insurance;
- (3) Public liability insurance;
- (4) Statutory insurances such as workmen's compensation insurance or any other insurance required by the Applicable Laws;
- (5) Comprehensive Third Party liability insurance including injury or death to Persons who may enter the Site;
- (6) Insurance policies related to any of the Concessionaire's obligations hereunder;
- (7) Any other insurance that may be considered necessary by SUDA/Lenders of the Concessionaire, if any, to protect the Concessionaire, its employees and its assets (against loss, damage or destruction at replacement value) or otherwise, including all Force Majeure Events that are insurable and not otherwise covered in items (1) to (6) above.

17.2 Insurance Companies and Costs

- (1) The Concessionaire shall insure all insurable Project Assets and Project Facilities comprised in the Project.
- (2) All insurance policies supplied by the Concessionaire shall include a waiver of any right of subrogation of the insurers thereunder against, inter alia, SUDA, and its assigns, subsidiaries, affiliates, employees, insurers and underwriters and of any right of the insurers of any set-off or counter claim or any other deduction, whether by attachment or otherwise, in respect of any liability of any such person insured under any such policy.
- (3) The Concessionaire hereby further releases, assigns and waives any and all rights of recovery against, inter alia, SUDA and its affiliates, subsidiaries, employees, successors, assigns, insurers and underwriters, which the Concessionaire may otherwise have or acquire in or from or in any way connected with any loss covered by policies of insurance maintained or required to be maintained by the Concessionaire pursuant to this Agreement (other than Third Party liability insurance policies) or because of deductible articles in or inadequacy of limits of any such policies of insurance, unless otherwise mentioned in this Agreement.

17.3 Evidence of Insurance Cover

The Concessionaire shall, from time to time, provide to SUDA copies of all insurance policies (or appropriate endorsements, certifications or other satisfactory evidence of insurance) obtained by the Concessionaire in accordance with this Agreement.

17.4 Application of Insurance Proceeds

All money received under insurance policies shall be promptly applied by the Concessionaire towards repair or renovation or restoration or substitution or replacement of the Project or any part thereof, which may have been damaged or destroyed. The Concessionaire shall carry out such repair or renovation or restoration or substitution or replacement to the extent possible in such manner that the Project or any part thereof, shall, after such repair or renovation or restoration or substitution or replacement be as far as possible in the same condition as they were before such damage or destruction, normal wear and tear excepted.

17.5 Validity of the Insurance Cover

The Concessionaire shall pay the premium payable on such insurance policies so as to keep the policies in force and valid throughout the Concession Period and furnish copies of the same to SUDA. Each insurance policy shall provide that the same shall not be cancelled or terminated unless 10 (ten) days' clear notice of cancellation is provided to SUDA in writing. If at any time the Concessionaire fails to purchase and maintain in full force and effect any and all of the insurances required under this Agreement, SUDA may at its option purchase and maintain such insurance and all sums incurred by SUDA in this behalf shall be reimbursed by the Concessionaire forthwith on demand, failing which the same shall be recovered by SUDA by exercising right of set off or otherwise from the Performance Security.

ARTICLE 18|INTELLECTUAL PROPERTY AND CONFIDENTIALITY

18.1 Proprietary Material

- (1) The Concessionaire accepts and agrees that all designs, drawings, processes, methods, details, plans, concepts, technology, specifications, schedules, programs, reports, calculations, documents and other works relating to the Project, including intellectual property rights therein or thereto, whether registered or not (hereafter referred to as "**Proprietary Material**"), which have been or are hereafter written, originated, made or generated by the Concessionaire or any of its employees, Contractors, consultants or agents in connection with this Agreement or the design, development, construction, operation and maintenance of the Project, shall be and remain at all times the property of SUDA.
- (2) SUDA shall own all the intellectual property rights in or relating to the Proprietary Material and all rights, privileges, entitlements, interests, title, property and benefits and associated rights whatsoever therein for the full period in accordance with the Applicable Laws and with all the reservations and extensions thereof and together

with the exclusive right of SUDA to use such information and intellectual property/authorize the use thereof by Third Parties in India and abroad in any form, including without limitation the right to reproduce, translate, edit, modify, distribute, sell or assign such rights, with or without consideration.

- (3) The Concessionaire and SUDA hereby grant to each other an irrevocable, royalty-free, non-exclusive concession to use all proprietary material owned by any of them or any of their respective employees, contractors, consultants or agents in connection with this Agreement or the design, construction, insurance and financing of the Project. Such concession shall carry the right to use such material for all purposes connected with the Project; however, it shall not be transferable to any Person other than to the permitted assignee under this Agreement. Such concession shall discontinue on the Termination or Expiry of this Agreement or the discharge by any Party of its duties hereunder.

18.2 Confidentiality

- (1) No Party shall, without the prior written consent of the other Party, at any time divulge or disclose or suffer or permit its servants or agents to divulge or disclose, transfer, communicate to any Person or use in any manner for any purpose unconnected with the Project any information which is by its nature or is marked as “confidential”, concerning the other (including any information concerning the contents of this Agreement) except to its directors, officers, employees, consultants, agents or representatives on a need to know basis or as may be required by any law, rule, regulation or any judicial process.
- (2) This provision shall not apply to the following information:
 - (a) already in the public domain, otherwise than by breach of this Agreement;
 - (b) already in the possession of the receiving Party on a lawful basis before it was received from the other party in connection with this Agreement and which was not obtained under any obligation of confidentiality;
 - (c) obtained from a Third Party who is free to divulge the same and which was not obtained under any obligation of confidentiality; or
 - (d) disclosed to the Lenders under terms of confidentiality; or
 - (e) which is required to be disclosed by judicial, or administrative process, any enquiry, investigation, action, suit, proceeding or claim or otherwise by or under any Applicable Law or by any Competent Authority including the laws governing the members of the Consortium.

18.3 Survival

The Concessionaire and SUDA accepts and confirms that the provisions of this Article 18 shall survive the expiration or any earlier Termination of this Agreement.

ARTICLE 19|REPRESENTATIONS AND WARRANTIES

19.1 Representations and Warranties of the Parties

Each Party represents and warrants to the others that:

- (1) it is duly organized, validly existing and in good standing under the laws of India;
- (2) it has full power and authority to execute, deliver and perform its obligations under this Agreement and to carry out the transactions contemplated hereby;
- (3) it has taken all necessary corporate and other action under Applicable Laws and its constitutional documents to authorize the execution, delivery and performance of this Agreement;
- (4) it has the financial standing and capacity to undertake the Project;
- (5) this Agreement constitutes its legal, valid and binding obligation fully enforceable against it in accordance with the terms hereof;
- (6) it is subject to civil and commercial laws of India with respect to this Agreement and it hereby expressly and irrevocably waives any immunity in any jurisdiction in respect thereof; and
- (7) it shall have an obligation to disclose to the other Party as and when any of its representations and warranties ceases to be true and valid.

19.2 Representations and Warranties of the Concessionaire

The Concessionaire represents and warrants to SUDA that:

- (1) the execution, delivery and performance of this Agreement will not conflict with, result in the breach of, constitute a default under or accelerate performance required by any of the terms of the charter documents of the Concessionaire or of the Confirming Party/ Parties or any Applicable Laws or any covenant, agreement, understanding, decree or order to which it is a party or by which it or any of its properties or assets are bound or affected;
- (2) there are no actions, suits, proceedings or investigations pending or, to the Concessionaire's knowledge, threatened against it at law or in equity before any court or before any other judicial, quasi-judicial or other authority, the outcome of which may constitute the Concessionaire's Event of Default or which individually or in the aggregate may result in Material Adverse Effect;
- (3) it has no knowledge of any violation or default with respect to any order, writ, injunction or any decree of any court or any legally binding order of any Government Agency which may result in Material Adverse Effect;
- (4) it has complied with all Applicable Laws and has not been subject to any fines, penalties, injunctive relief or any other civil or criminal liabilities which in the aggregate have or may have Material Adverse Effect;
- (5) no representation or warranty by the Concessionaire contained herein or in any other document furnished by it to SUDA or to any Government Agency in relation to

Applicable Approvals contains or will contain any untrue statement of material fact or omits or will omit to state a material fact necessary to make such representation or warranty not misleading;

- (6) its shareholding pattern is in compliance with the requirements of this Agreement;
- (7) have the financial standing and resources to fund the required Equity and to raise the debt necessary for undertaking and implementing the Project in accordance with this Agreement;
- (8) it is subject to the laws of India, and hereby expressly and irrevocably waives any immunity in any jurisdiction in respect of this Agreement or matters arising thereunder including any obligation, liability or responsibility hereunder;
- (9) all its rights and interests in the Project shall pass to and vest in SUDA on the Transfer Date free and clear of all liens, claims and encumbrances.

19.3 Representations and Warranties of SUDA

SUDA represents and warrants to the Concessionaire that:

- (1) it has full power and authority to execute, deliver and perform its obligations under this Agreement and to carry out the transactions contemplated herein and that it has taken all actions necessary to execute this Agreement;
- (2) it has taken all necessary actions under the Applicable Laws to authorise the execution, delivery and performance of this Agreement;
- (3) it has the financial standing and capacity to perform its obligations under this Agreement;
- (4) this Agreement constitutes a legal, valid and binding obligation enforceable against it in accordance with the terms hereof;
- (5) all information provided by SUDA in the bid documents in connection with the Project is to the best of its knowledge and true and accurate in all material respects.

19.4 Disclosure

In the event that any occurrence or circumstance comes to the attention of either Party that renders any of its aforesaid representations or warranties untrue or incorrect, such Party shall immediately notify the other Party of the same. Such notification shall not have the effect of remedying any breach of the representation or warranty that has been found to be untrue or incorrect nor shall it adversely affect or waive any right, remedy or obligation of either Party under this Agreement.

19.5 Disclaimer

- (1) Without prejudice to any express provision contained in this Agreement, the Concessionaire and the Confirming Party/ Parties acknowledge that prior to the execution of this Agreement, the Concessionaire and the Confirming Party/ Parties have, after a complete and careful examination, made an independent evaluation of the Project, the legal framework and the technical and financial aspects of the Project,

the Technical Specifications, all the information and documents provided by SUDA or any Government Agency, the market and demand conditions, and the cost, risks, consequences and liabilities involved in implementing the Project, and has determined to the Concessionaire's and the Confirming Party's/ Parties' satisfaction the nature and extent of such difficulties, risks and hazards as are likely to arise or may be faced by the Concessionaire in the course of performance of its obligations hereunder.

- (2) The Concessionaire further acknowledges and hereby accepts the risk of inadequacy, mistake or error in or relating to any of the matters set forth in this Agreement and hereby confirms that SUDA, any Government Agency and their consultants and advisors shall not be liable for the same in any manner whatsoever to the Concessionaire or Persons claiming through or under the Concessionaire.
- (3) The Concessionaire accepts that it is solely responsible for the verification of any design, data, documents or information provided by SUDA, any Government Agency or their consultants and advisors to the Concessionaire and that it shall accept and act thereon at its own cost and risk.
- (4) The Concessionaire shall be solely responsible for the contents, adequacy and correctness of the design, data, drawings and detailed engineering prepared or procured by the Concessionaire for implementing the Project.

19.6 Obligation to Notify Change

In the event that any of the representations or warranties made/given by a Party ceases to be true or stands changed, the Party who had made such representation or given such warranty shall promptly notify the other of the same.

ARTICLE 20 MISCELLANEOUS PROVISIONS

20.1 Assignment and Charges

- (1) The Concessionaire shall not assign in favour of any person this Agreement or the rights, benefits and obligations hereunder save and except with prior written consent of SUDA.
- (2) Restraint set forth in Article 20.1(i) above shall not apply to:
 - (a) liens/encumbrances arising by operation of law (or by an agreement evidencing the same) in the ordinary course of business of the Concessionaire;
 - (b) mortgage/ pledge/ hypothecation of goods/ stocks/ moveable assets other than the Project Assets, revenue and receivables shall be allowed as security, for financing the Project, in favour of the Lenders;
 - (c) assignment of the Concessionaire's rights and benefits under this Agreement to or in favour of the Lenders as security for financial assistance provided by them.

- (3) The Concessionaire shall not create nor permit to subsist any encumbrance over the Project Assets and Project Sites.

20.2 Interest and Right of Set Off

- (1) Any sum which becomes payable under any of the provisions of this Agreement by one Party to the other Party shall, if the same be not paid within the time allowed for payment thereof, shall be deemed to be a debt owed by the Party responsible for payment thereof to the Party entitled to receive the same. Such sum shall until payment thereof carry interest at prevailing PLR of State Bank of India per annum from the due date for payment thereof until the same is paid to or otherwise realised by the Party entitled to the same.

Provided the stipulation regarding interest for delayed payments contained in this Article shall neither be deemed nor construed to authorise any delay in payment of any amount due by a Party nor be deemed or construed to be a waiver of the underlying breach of payment obligations.

- (2) Without prejudice to any other right or remedy that may be available under this Agreement or otherwise under law, the Party entitled to receive such amount shall also have the right of set off.

20.3 Governing Law and Jurisdiction

This Agreement shall be construed and interpreted in accordance with and governed by the laws of India and the Courts at Barasat, shall alone have jurisdiction to the exclusion of all other Courts over all matters arising out of relating to this Agreement.

20.4 Waiver and Remedies

- (1) Waiver by either Party, including conditional or partial waiver, of any default by the other Party in the observance and performance of any provision of or obligations under this Agreement:
 - (a) shall not operate or be construed as a waiver of any other or subsequent default hereof or of other provisions or obligations under this Agreement;
 - (b) shall not be effective unless it is in writing and executed by a duly authorized representative of such Party; and
 - (c) shall not affect the validity or enforceability of this Agreement in any manner.
- (2) No failure on the part of any Party to exercise, and no delay in exercising, any right, power, obligation or privilege hereunder or time or indulgence granted by a Party to the other Party shall operate or be treated or deemed as a waiver thereof or a consent thereto or the acceptance of any variation or relinquishment of any such right hereunder; nor shall any single or partial exercise of any such right, power or privilege preclude any other or further exercise thereof or the exercise of any other right, power or privilege. The remedies herein provided are cumulative and not exclusive of any remedies provided by the Applicable Laws.

- (3) Neither the failure by either Party to insist on any occasion upon the performance of the terms, conditions and provisions of this Agreement or any obligation hereunder nor time or other indulgence granted by a Party to the other Party shall be treated or deemed as waiver of such breach or acceptance of any variation or the relinquishment of any such right hereunder.

20.5 Survival

Termination of this Agreement shall not relieve the Concessionaire or SUDA of any obligations hereunder which expressly or by implication survives Termination/ Expiry hereof, and except as otherwise provided in any provision of this Agreement expressly limiting the liability of either Party, shall not relieve either Party of any obligations or liabilities for loss or damage to the other Party arising out of or caused by acts or omissions of such Party prior to the effectiveness of such Termination/ Expiry or arising out of Termination/ Expiry of this Agreement.

20.6 Entire Agreement and Amendments

- (1) This Agreement and the Appendices together constitute a complete, exclusive and entire statement of the terms of the Agreement between the Parties on the subject hereof.
- (2) No amendment or modification or waiver of any provision of this Agreement, nor consent to any departure by any of the Parties therefrom, shall in any event be valid and effective unless agreed to by all the Parties hereto and evidenced in writing and signed by the Parties or their duly authorised representative especially empowered in this behalf and then such waiver or consent shall be effective only in the specific instance and for the specific purpose for which it is given.

20.7 Notices

- (1) Unless otherwise stated, notices to be given under this Agreement including but not limited to a notice of waiver of any term, breach of any term of this Agreement and termination of this Agreement, shall be in writing and shall be given by hand delivery, recognized courier service, registered post, electronic-mail, or facsimile transmission and delivered or transmitted to the Parties at their respective addresses as specified below or such address, e-mail address or facsimile number as may be duly notified by the respective Parties from time to time, and shall be deemed to have been made or delivered at their respective addresses set forth below :-

If to SUDA:

E-mail ID :-----

Fax No. :-----

Attn:

If to Concessionaire:

E-mail ID :-----

Fax No. :-----

Attn:

If to Confirming Party/ Parties:

E-mail ID :-----

Fax No. :-----

Attn:

or such other address, or facsimile number as may be duly notified by the respective Parties from time to time, and shall be deemed to have been made or delivered (i) if delivered personally or by courier, be deemed given upon delivery (whether accepted or not); (ii) if delivered by electronic-mail, be deemed given when electronically confirmed, and in the case of any communication made by facsimile transmission, when transmitted properly addressed to the facsimile number; and (iii) if sent by registered post be deemed given seven (7) days after the same has been sent.

- (2) In case any Party changes its address, communication numbers, or directed attention as set forth above, it shall notify the other Party in writing prior to the adoption thereof.

20.8 Severability

- (1) If for any reason whatsoever any provision of this Agreement is or becomes invalid, illegal or unenforceable or is declared by any court of competent jurisdiction or any other instrumentality to be invalid, illegal or unenforceable, such invalidity, illegality or unenforceability shall not prejudice or affect the remaining provisions of this Agreement which shall continue in full force and effect.
- (2) The Parties shall negotiate in good faith with a view to agreeing upon one or more provisions which may be substituted, as nearly as practicable, to such invalid, illegal and unenforceable provision. Provided failure to agree upon any such provisions shall not be subject to Dispute Resolution under this Agreement or otherwise.

20.9 No Partnership

Nothing contained in this Agreement shall be construed or interpreted to create an association, trust, partnership, agency or joint venture between the Parties and Parties shall be liable to perform their respective duties and discharge their respective liabilities or obligations in accordance with the provisions of this Agreement. Neither Party shall have any authority to bind the other in any manner whatsoever.

20.10 Language

All notices required to be given under this Agreement and all communications, documentation and proceedings which are in any way relevant to this Agreement shall be in writing and in English language and true translation into English language if other than English is used at the costs and expenses of the Party sending such communication, notice, documentation and proceedings.

20.11 Exclusion of Implied Warranties etc.

This Agreement expressly excludes any warranty, condition or other undertaking implied at law or by custom or otherwise arising out of any other agreement between the Parties or any representation by any party not contained in a binding legal agreement executed by the Parties.

20.12 Liability for Review

Except to the extent expressly provided in this Agreement:

- (a) no review, comment, certification, verification or approval by SUDA or an Independent Expert or any Government Agency of any Project Agreement, design and drawing, detailed engineering, or any other document, accounts, invoice etc. submitted by the Concessionaire pursuant to this Agreement nor any observation, testing, certification, validation or inspection of the construction, operation or maintenance of the Project nor the failure to review, approve, comment, observe, test or inspect hereunder shall relieve or absolve the Concessionaire from its obligations, duties and liabilities under this Agreement, the Applicable Laws and Applicable Approvals; and
- (b) SUDA, its advisors or the Government Authorities shall not be liable to the Concessionaire by reason of any review, comment, approval, observation, testing, certification, verification, validation or inspection referred above and the Concessionaire shall indemnify them and keep them indemnified in this behalf.

20.13 Unforeseen Event

Any event or condition that has not been explicitly covered under the provisions of this Agreement shall be resolved after discussion and mutual agreement between the Parties.

20.14 Liability and Indemnification

- (1) The Concessionaire shall indemnify, defend and hold harmless (the “**Indemnifying Party**”) SUDA (the “**Indemnified Party**”) during the Concession Period from and

against all liabilities, damages, losses, expenses, claims, suits, proceedings, judgments, settlements, actions, costs of any nature whatsoever, whether directly or indirectly arising, for personal injury, for damage to or loss of any property and any Third Party liability, including reasonable attorneys' fees, actually incurred or suffered by the Indemnified Party, arising out of or in any way connected with (i) any breach, negligence, default, omission, violation, infringement etc., as the case may be, by the Indemnifying Party or Persons claiming through or under it or due to Indemnifying Party's representations and warranties herein; covenants, agreements or obligations contained herein or the terms and conditions hereof; any intellectual property right of any Person; (ii) failure of the Indemnifying Party or Persons claiming through or under it to comply with Applicable Laws or the Applicable Approvals or to pay taxes or make contractual or other payments due and payable to any Person; the employment, sickness, injury or death of any Person employed directly or indirectly by the Indemnifying Party or Persons claiming through or under it ; or (iv) as provided elsewhere herein.

- (2) The Concessionaire shall be responsible for executing, performing and completing the Project in accordance with the provisions of this Agreement at its risk and consequence and shall be responsible for any liability whatsoever arising under, in connection with or relating to discharge of its obligations under this Agreement by the Concessionaire or Persons claiming through or under it and shall indemnify, keep indemnified and hold harmless SUDA, PMU and its advisors in this behalf.
- (3) SUDA shall not be liable to the Concessionaire for any indirect, consequential, incidental, punitive or exemplary damages, loss of profit, consequential financial or economic loss or any disruption in the flow of MSW into the Project for any reason whatsoever.
- (4) The Concessionaire shall keep SUDA indemnified during the Concession Period against any claims, damages, liabilities, costs, penalties etc. (i) from or by any Government Agency, including the Central Pollution Control Board or the West Bengal Pollution Control Board, and Third Parties for damages to the environment or any acts, omissions, defaults or negligence of the Concessionaire that damages the environment; and (ii) resulting from accidents at work, occupational diseases and contingencies that may arise at or around the Project Sites or in the employment of labour and personnel for implementation of the Project. The Concessionaire shall remain liable for its acts or omissions in implementing the Project in accordance with this Agreement and the Applicable Laws even after the Termination or Expiry of this Agreement by efflux of time or otherwise.
- (5) Except as expressly provided in this Agreement, the Concessionaire shall carry out and perform its rights and obligations under this Agreement and the Project Agreements at its own cost and risk. It shall be fully responsible for and shall bear the financial risks in relation to the Project and all its rights and obligations under or pursuant to this Agreement and the Project Agreements till the Transfer Date.
- (6) The provisions of this Article 20.14 shall survive the expiration or prior termination of this Agreement.

IN THE WITNESS whereof the Parties have placed their respective hands and seals hereto on the day, month and year first herein above mentioned

SIGNED, STAMPED AND DELIVERED SIGNED, SEALED AND DELIVERED BY:

BY: For CONCESSIONAIRE

.....

Director of Concessionaire, duly authorized by the resolution of the Board of Directors

For STATE URBAN DEVELOPMENT AGENCY _____

Duly authorised by the resolution passed at its meeting held on

For CONFIRMING PARTY/ PARTIES

_____ of Confirming Party, duly authorized by the _____

IN PRESENCE OF

Sign:

Name:

Address

APPENDIX – 1 | LETTER OF INTENT

[Insert copy of Letter of Intent (LOI) issued by SUDA to the Confirming Party/ Parties]

APPENDIX – 2 | PROJECT DETAILS AND SCOPE OF SERVICES

I. PROJECT SITES:

- (i) The Concessionaire shall undertake Bio-remediation of Legacy Waste and set-up the Processing Facilities at the following sites:-
 - (1) Pramodnagar Site
 - (2) Kamarhati Site
- (ii) The site upon which the Sanitary Landfill is to be developed by the Concessionaire shall be finalised and handed over to the Concessionaire in terms of Article 3.1(3).

II. PROJECT FACILITIES:

- (1) Waste to Compost and RDF processing facility having capacity of at least 450 TPD (Four Hundred and Fifty Tonnes Per Day) at the Pramodnagar Site.
- (2) Bio-methanation Plant having capacity of at least 100 TPD (One Hundred Tonnes Per Day) at the Pramodnagar Site.
- (3) Waste to Compost and RDF processing facility having capacity of at least 180 TPD (One Hundred and Eighty Tonnes Per Day) at the Kamarhati Site.
- (4) Engineered Sanitary Landfill at the site to be allocated by SUDA in terms of Article 3.1(3).

III. SCOPE OF SERVICES:

1. BIOREMEDIATION

- (1) The Concessionaire will be given earmarked land area for reclamation and there will be a separate area for dumping of fresh waste.
- (2) The Concessionaire should conduct a Drone Survey at their own cost. Initial and final contour level survey for determination of volume of waste has also to be done by the Concessionaire at its own cost.
- (3) Excavate the existing mixed dumped garbage and sieve the waste through mechanical sieving machines/ any other equipment at the cost of the Concessionaire.
- (4) The Concessionaire shall deploy sufficient machinery, manpower and required resources to execute the Bio-remediation of Legacy Waste within the stipulated time.
- (5) Construction of temporary shed, platform and creation of facilities for handling, separating, segregating, storing and quantifying of the excavated Legacy Waste and processing material.
- (6) Construction/Provision of temporary site office, water, power, sanitation facilities to workers as per statutory standards.
- (7) The Concessionaire shall take necessary steps and processes to minimize environmental pollution while carrying out Bio-remediation of Legacy Waste at both the Pramodnagar and Kamarhati Sites. The Concessionaire shall take all reasonable steps to ensure to undertake

required efforts to mitigate the impact of odor and dust. Also, ensure treatment of leachate from Legacy Waste prior to its disposal. The Concessionaire shall mitigate menace caused by flies, rodents and bird and fire hazards in and around the Pramodnagar and Kamarhati Sites during the period of reclamation.

- (8) The Bioremediation activity should be carried out in accordance with Guidelines for Disposal of Legacy Waste (Old Municipal Solid Waste), 2019 as issued by the Central Pollution Control Board..
- (9) Excavate and segregate Legacy Waste into as many kinds and categories as possible. Maximize the separation of recyclables viz. glass, metal etc. from the Pramodnagar and Kamarhati Sites. Maximize the separation of waste into useful components such as Compost, soil conditioner, recyclables, raw RDF, filler material (Soil, C&D) and un-useful material from the Pramodnagar and Kamarhati Sites.
- (10) Baling, packing, stacking, storing and sale of non-recyclable fraction of high calorific as raw material to RDF producer/ user or sale to waste to energy or co-processing in cement plants or to thermal power plants.
- (11) Set up an eco-friendly processing system in order to reduce the impact of the Legacy Waste at the Pramodnagar and Kamarhati Sites on the adjacent areas.
- (12) Set a soil (in accordance with IS: 2720) and ground water baseline (in accordance with IS: 10500) so that the same will be available to evaluate post Bio-remediation and reclamation of both the Pramodnagar and Kamarhati Sites.
- (13) Monitor ground water quality (in accordance with CPCB norms), work zone air quality and ambient air quality monitoring within the site from NABL accredited laboratories/agencies and submit the report on quarterly basis.
- (14) Carry out leachate management of existing leachate (if any) at the site in accordance to the applicable rules and regulations.
- (15) The record of weighment of processed waste sold to recyclers and also the Inert Waste shall be maintained after measuring their weight in computerized Weighbridges. All recyclables going out of the site boundary and rejects stored separately have to be weighed and record to be maintained by the Concessionaire.
- (16) Provide on-site storage facility for various fractions of processed waste and proper channelization further for sale or reuse to industry/vendors.
- (17) Ensure arrangement for water and power supply at site. Adequate power back-up shall be ensured for smooth operation of Bio-remediation Plant, lighting of work area and water requirements.
- (18) The Concessionaire shall take all Applicable Approvals in sequence and comply with the CPCB and WBPCB norms therein from time to time.
- (19) The Concessionaire shall make reasonable endeavour to maximize the utilization of the waste from both the Pramodnagar and Kamarhati Sites and for this purpose shall ensure that maximum waste is utilized/reused by the Concessionaire, so as to produce products/outputs such as soil enricher/ Compost, recyclables, RDF and products from construction and demolition waste.

- (20) Selling, diverting for recycling, marketing and recycling the excavated materials within 15 (fifteen days) of segregation, without any accumulation in the storage facility at the Pramodnagar and Kamarhati Sites, will be the responsibility of the Bidder.
- (21) The Concessionaire also needs to cater to the incoming fresh waste to the Pramodnagar and Kamarhati Sites during the course of reclamation activity. The Concessionaire shall, in consultation with the Municipalities, designate an area within the Pramodnagar and Kamarhati Sites for deposition of fresh solid waste. All fresh waste shall be dumped only at designated locations based on discussions and plan layout discussed between the Concessionaire and SUDA. The fresh waste shall be considerably decomposed to be called as Legacy Waste subjected to Bio-remediation. The Concessionaire shall ensure that waste (not older than 2 months) shall remain at each of the Pramodnagar and Kamarhati Sites on the Commercial Operation Date (COD).
- (22) While reclaiming and excavating Legacy Waste from each of the Pramodnagar and Kamarhati Sites, the following aspects must be handled carefully
- (a) Exposure to hazardous material, leachate, gases, odor etc.;
 - (b) Contaminated wastes that maybe uncovered during reclamation operations require special handling and disposal requirements; and
 - (c) Precautions must be taken while excavating as it releases gases like methane, sulphur dioxide and other gases which causes explosion and fire.
- (23) The Concessionaire shall explore the possibility of minimizing the disposal of processing rejects and maximize the usage of such processing rejects including but not limited to making of curb side blocks, filling of low-lying areas, construction of roads etc. To facilitate the disposal of rejects, SUDA has identified a low-lying land area in Panihati (approximately at a distance of 12km). If opted, the Concessionaire needs to develop this low-lying area in Panihati with an impermeable liner system for disposal of Inert Waste and perform proper compaction, so that the site can be available for future use to put in new infrastructure.
- (24) The Concessionaire to ensure that un-usable fraction of the total of the Residual Solid Waste and Inert should not exceed more than 20% of total Legacy Waste quantity present in each of the Pramodnagar and Kamarhati Sites. The un-usable fraction shall be stored at an identified location, over HDPE sheets after their weighment. Record of weight of the Residual Solid Waste and Inert shall be properly maintained.
- (25) Disposal of the recovered material from the Legacy Waste to the identified vendors without stocking them at the Pramodnagar or Kamarhati site.
- (26) Be responsible for development and maintenance of infrastructure, facilities and amenities for sieving the excavated Legacy Waste and storing the segregated materials etc. at their own risk and cost. Provide adequate number of processing machines for achieving its daily target of handling at least 1500-2000 Metric Tons of Legacy Waste per day.
- (27) The Project and other Bio-remediation Plant shall be designed in such capacity that the entire Legacy Waste at each of the Pramodnagar and Kamarhati Sites to be processed/bio-remediated, taken out and processed within the period of 2 (two) years from the Compliance Date.
- (28) Provide Weighbridges to measure the quantity of Legacy Waste subjected to Bio-remediation at each of the Pramodnagar and Kamarhati Sites, as well as Residual Solid Waste and Inert Waste going out of the Pramodnagar and Kamarhati Sites as approved by SUDA. The

Concessionaire shall ensure that the Weighbridges are installed and operational from the Commencement Date. The weighing system shall be fully online electronic, automatic system equipped with the latest technology along with backup server facility. Data of weighing system shall be maintained properly for the entire Concession Period with backup server facility and shall be provided as and when required by the officials SUDA/PMU and other Government Agencies.

Conditions for Weigh Bridge:

- (a) It shall be fully online and electronic with real time monitoring systems, automatic system equipped with the latest technology along with backup server facility. Data of weighing system shall be maintained properly for the entire Concessionaire Period with backup server facility and shall be provided as and when required by officials of SUDA/ PMU and other Government Agencies.
 - (b) It shall be operated in CCTV surveillance with data storage during entire Concession Period. For CCTV surveillance High Definition IP based cameras in adequate numbers and installed at proper angles shall be provided by the Operator.
 - (c) CCTV recordings of operation of weighing system shall be provided as and when required by SUDA/PMU and other Government Agencies.
- (29) Deploy the necessary manpower, materials, equipment, tools to the Pramodnagar and Kamarhati Sites. The Concessionaire shall be responsible for construction of plants, sheds, support facilities for handling, separating, segregating and storing for the operation of the Bio-remediation Plant.
 - (30) Provide security arrangements for the sites, machineries, equipment etc. at the cost of the Concessionaire.
 - (31) Legacy C&D waste if found during excavation, sorting/segregation and final disposal of such legacy C&D Waste shall be the sole responsibility of the Concessionaire. The Concessionaire shall be free to explore alternate uses for C&D waste as per the C&D Waste Rules, 2016. Further, if the said C&D Waste is found to be lying around the Pramodnagar and Kamarhati Sites or found to be not properly disposed of, the Concessionaire shall be liable to be penalized for the same in accordance with the terms of the Concession Agreement.
 - (32) Hazardous waste such as physical, chemical, biological, reactive, toxic, flammable, explosive or corrosive waste, if found, during excavation, sorting or segregation shall be handled as per the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.
 - (33) The revenue or the income from the sale of the segregated useful material such as reusable and recyclable, Compost, soil conditioner, raw RDF, C&D, soil or any other by-product materials shall be receivable by the Concessionaire.
 - (34) The Concessionaire shall use the reclaimed land area for development of Processing Facilities i.e ***450 TPD RDF and Compost plant, 100 TPD Bio methanation plant at Pramodnagar Site and 180 TPD RDF and Compost plant at Kamarhati Site.***
 - (35) Carrying out the entire Bio-remediation in accordance with the Approach and methodology for Remediation and Reclamation at Pramodnagar and Kamarhati Site which is annexed hereto as **Appendix - 4.**
 - (36) Ensure use of only covered body vehicles for the transportation of materials at the cost of the Concessionaire

- (37) Providing security arrangement for the project site, machineries, equipment etc. at its own cost
- (38) The Concessionaire shall ensure that SUDA is provided with adequate information of any event or any other matter affecting the Bio-remediation Plant to enable them to control/minimize any adverse consequences.
- (39) The frequency and formats for the reports to be submitted shall be finalized in consultation with the SUDA and form part of the O&M Plan and Operations Protocol.
- (40) The following data should be included in the progress reports submitted by the Concessionaire:
 - (a) Daily excavated Legacy Waste quantity with extent of area reclaimed.
 - (b) Quantity of Legacy Waste segregated in each day.
 - (c) Quantity of Legacy Waste taken out in each day including RDF, recyclable material, bio-soil, C&D and residual solid waste etc. as far as category wise.
 - (d) Leachate generation and management reports.
 - (e) Inert Waste and Product Quality test reports as and when made.

2. SECONDARYTRANSPORTATION OF MSW TO THE PROCESSING FACILITIES

- (1) To undertake detailed field survey and planning to optimize the existing secondary collection points and finalization of secondary collection points with Municipality to undertake collection and transportation of waste to processing site from secondary collection points.
- (2) Upgrade/ replace secondary waste collection Points with the modernized storage bins (for storage of segregated waste) and procurement of transportation vehicles (which may be e-vehicles) for transportation of waste to processing site from secondary collection points.
- (3) Exclusively hold, possess, control the Secondary collection Points site(s) (but not to own), in accordance with the terms of the Concession Agreement and Land License Agreement, for the purposes of the due implementation of this Project.
- (4) The Concessionaire shall transport MSW from Secondary Collection Points to the Processing Facilities i.e. Pramod Nagar and Kamarhati on a daily basis. The Pramod Nagar processing site will cater for waste collected from Dum Dum, North Dum Dum, South Dum Dum and Baranagar Municipalities Secondary collection points, whereas the Kamarhati processing plant site will cater for waste collected from Kamarhati and New Barrackpore Municipalities secondary collection points.
- (5) The Concessionaire shall deploy adequate number of closed vehicles such as tipper trucks, compactors etc. to transport the MSW generated in the Project Area to the Processing Facility at its own cost. Also, if required, the Concessionaire shall purchase vehicles and other movable infrastructure deployed in Project Area from the concerned Municipality at a price as determined by an independent valuer appointed by the Concessionaire.
- (6) The Concessionaire shall deploy closed vehicles, which can carry segregated waste as per applicable Law and waste should not be exposed to open environment. The vehicles deployed shall be roadworthy conforming to approval from the State Transport Authority.
- (7) The Concessionaire shall comply with all applicable Laws, including all rules and regulation prescribed in the regard, from time to time by any other statutory and Competent Authorities concerned, regarding fuel used or pollution control standards or any other applicable norm.

- (8) The Concessionaire shall at periodic intervals check their adequateness and their conformity with the manufacturer's specification for their maintenance and replacement.
- (9) The Concessionaire shall provide automatic position identification systems using Global Positioning System (GPS) technology which shall ensure automatic tracking and recording of vehicle identification and movement in all vehicles and provide a live GPS feed to PMU/Municipality.
- (10) The Concessionaire shall display Municipality name (and social message given by Municipality) and logo of Swachh Bharat Abhiyaan of at least 12 inches X 12 inches size (font size of 6-9 inches) on the transportation vehicles and shall display any other form of advertisement on the transportation vehicles for any other advisories that would be undertaken, the Concessionaire shall abide by the Applicable Laws.
- (11) The drivers appointed/engaged by the Concessionaire shall have a valid driving license as desired for the specific vehicle complying with Motor Vehicle Act, 2019.
- (12) All vehicles shall have High Security Registration Plate as per Motor Vehicle Act, 2019.
- (13) All penalties, levies and fines levied in relation to the activities/ operations of the Concessionaire under the Project, shall be borne by the Concessionaire only without any liability of the Designated Municipality/ Participating Municipalities/ SUDA.

3. PROCESSING FACILITIES

- (1) Designing, Constructing and Operating Municipal Solid Waste Processing facilities on Design, Build, Finance, Operate and Transfer (DBFOT) basis. The Concessionaire is permitted to process the incoming waste using any approved technology as per SWM rules, 2016. Whereas the following processing facilities are recommended as per the Technical feasibility report:
 - (a) **Processing Facility at Pramod Nagar** - Compost plant and RDF plant of total capacity of at least 450 TPD and a Bio methanation plant of at least 100 TPD for the processing of waste.
 - (b) **Processing Facility at Kamarhati** - Compost plant, RDF plant of a total capacity of at least 180 TPD for the processing of waste.
- (2) The scope shall be to design, build, testing, commissioning, operation, maintenance, of MSW Processing Facilities (Windrow Composting Technology with Pre-Sorting facility, and RDF and Compost Generation and Bio-methanation Plant) with subsequent expansion provisions during the Concession Period of 20 years from COD.
- (3) The Concessionaire shall implement and operate the windrows composting process in compliance with SWM Rules, 2016 and Manual on Municipal Solid Waste Management, 2016.
- (4) The Concessionaire shall procure all necessary project assets (i.e. Plant and Equipment) including equipment, vehicles, machineries and others required for the successful execution of the treatment and disposal of MSW and ensure their timely maintenance, replacement and capacity augmentation, as the case may be, during the entire duration of the Concession Period. Also, the Concessionaire shall ensure appropriate use of existing infrastructure available at the Pramodnagar and Kamarhati Sites. The cost for the assets at Pramodnagar and

Kamarhati Site shall be determined by an independent valuer appointed by the Concessionaire.

- (5) To store, use, appropriate, market and sell or dispose all the products obtained after the processing and treatment of the waste (including but not limited to RDF, compost, electricity, methane, CNG and Residual Solid Waste and Inert Waste) and to further retain and appropriate any revenues generated from the sale of such products;
- (6) To sell or otherwise dispose of all recyclables in a manner which is not detrimental to the environment.
- (7) All the necessary Applicable Approvals should be taken prior to the commencement of construction and development of the Processing Facilities.
- (8) To obtain, maintain and renew all the Applicable Approvals as required for implementation of the Project.
- (9) Ensure arrangement for water and power supply at site at its own cost.
- (10) To improve the ancillary conditions and infrastructure related to the Project including assistance to informal recycling workers.
- (11) Access to the Pramodnagar and Kamarhati Sites provided by SUDA shall have to be maintained by the Concessionaire to have easy movement of vehicles and etc.
- (12) The Concessionaire shall be responsible for all the health, security, environment and safety aspects of the Project at all times during the Concession Period.
- (13) Ensure that the Processing Facilities remain free from all encroachments and take all steps necessary to remove encroachments, if any;
- (14) Pay all Taxes, duties and outgoings, including utility charges relating to the Processing Facilities.
- (15) The Concessionaire shall also set up a leachate treatment facility for both the plants in accordance of applicable rules and regulations.
- (16) The Concessionaire shall adhere to the construction requirements as per the details project DPR to be prepared by Concessionaire and approved by SUDA/Project Municipalities and standards/ guidelines for construction as per BIS, Solid Waste Management Rules, 2016 and other applicable standards/ guidelines.
- (17) The Concessionaire shall install Weighbridges at his own cost and keep the daily record of waste transported to Processing Facilities and Residual Solid Waste and Inert Waste from Processing Facilities to the Sanitary Landfill and submit the same every month to the SUDA.
- (18) The Concessionaire shall ensure that the Weighbridges are installed and operational from the Commercial Operation Date (COD). The weighing system shall be fully online electronic, automatic system equipped with the latest technology along with backup server facility. Data of weighing system shall be maintained properly for the entire contract period with backup server facility and shall be provided as & when required by SUDA/Municipality officials and other competent authorities.

Conditions for Weigh Bridge:

- (a) It shall be fully online and electronic with real time monitoring systems, automatic system equipped with the latest technology along with backup server facility. Data of weighing system shall be maintained properly for the entire Concessionaire Period

with backup server facility and shall be provided as and when required by officials of SUDA/ PMU and other Government Agencies.

- (b) It shall be operated in CCTV surveillance with data storage during entire Concession Period. For CCTV surveillance High Definition IP based cameras in adequate numbers and installed at proper angles shall be provided by the Operator.
 - (c) CCTV recordings of operation of weighing system shall be provided as and when required by SUDA/PMU and other Government Agencies.
- (19) Transportation of inert/residual processing waste from Processing Facilities to the Sanitary Landfill is to be done by the Concessionaire from each site. The rejects should be minimized and restricted to maximum 20% of the total incoming waste as per SWM Rules 2016.
 - (20) Provide adequate lighting system for easy operations in the working area as well as to the access ways. Provide utilities such as drinking water facilities and sanitary facilities (preferably washing/bathing facilities for workers) and safety provisions including health inspections of workers at site shall be carried out.
 - (21) Provide fire protection measures and safety equipment for all workers at the site.
 - (22) Entrance into the Project Site from outside the Site shall be restricted to one point. However, emergency exits may be provided in accordance with the Building Bye laws.
 - (23) Adequate measures to avoid trespassing shall be taken by the Concessionaire.
 - (24) Ensure adequate power back-up for smooth operation of the machinery and equipment installed.

4. SANITARY LANDFILL SITE

- (1) The Concessionaire shall Design, Construct and Operate a Sanitary Landfill Facility (SLF) at the site to be provided by SUDA. *The site for SLF to be finalized by SUDA and handed over to the Concessionaire within 9 (nine) months from LoI* within an average distance of 35 km from both the Processing Facilities. The Sanitary Landfill shall be setup in accordance with the requirement of SWM Rules, 2016 and Manual on Municipal Solid Waste Management, 2016.
- (2) The Concessionaire shall install a Weighbridge from the start date of disposal activity of appropriate capacity. The weighing system shall be fully online electronic, automatic system equipped with the latest technology along with backup server facility. Data of weighing system shall be maintained properly for the entire ConcessionPeriod with backup server facility and shall be provided as and when required by SUDA/PMU and other Government Agencies.

Conditions for Weigh Bridge:

- (a) It shall be fully online and electronic with real time monitoring systems, automatic system equipped with the latest technology along with backup server facility. Data of weighing system shall be maintained properly for the entire Concessionaire Period with backup server facility and shall be provided as and when required by officials of SUDA/ PMU and other Government Agencies.
- (b) It shall be operated in CCTV surveillance with data storage during entire Concession Period. For CCTV surveillance High Definition IP based cameras in adequate numbers and installed at proper angles shall be provided by the Operator.

- (c) CCTV recordings of operation of weighing system shall be provided as and when required by SUDA/PMU and other Government Agencies.
- (3) Concessionaire to ensure by weighment that inert/residual processing waste from Processing Facilities to the Sanitary Landfill should not be disposed more than 20% of the total incoming waste at processing facility and as per SWM Rules 2016.
- (4) The Sanitary Landfill shall comprise compacted earth bunds with impermeable liner systems comprising compacted clay liners, or geomembranes, or geosynthetic clay liners. The landfill cells will incorporate leachate collection systems comprising gravel and geotextile filter layers and pipe collection and transfer systems.
- (5) The Concessionaire shall also set up a leachate treatment facility at the Sanitary Landfill site involving any suitable technology to meet the standards as per regulatory norms.
- (6) The Concessionaire shall be responsible for all the health, security, environment and safety aspects of the Project at all times during the Concession Period.
- (7) Ensure arrangement for water and power supply at site at its own cost.
- (8) Transportation of Residual Solid Waste and Inert Waste from both the Processing Facilities to the Sanitary Landfill is to be done by the Concessionaire from each of the Pramodnagar and Kamarhati Sites.
- (9) Ensure that the Sanitary Landfill remains free from all encroachments and take all steps necessary to remove encroachments, if any;
- (10) Pay all Taxes, duties and outgoings, including utility charges relating to the Sanitary Landfill.
- (11) The Concessionaire shall provide fencing along the perimeter of the Sanitary Landfill and arrange adequate lighting system for easy operations in the working area as well as to the access ways.
- (12) Provide fire protection measures and safety equipment for all workers at the site. Entrance into the Sanitary Landfill site from outside shall be restricted to one point. However, several emergency exits may be provided.
- (13) Adequate measures to avoid trespassing shall be taken by the Concessionaire. Ensure adequate power back-up for smooth operation of the machinery and equipment installed.
- (14) All the necessary regulatory approvals (including Environmental Clearance, consent to establish and operate from SPCB, etc.) shall be taken prior to the commencement of construction and operations of the Sanitary Landfill.
- (15) The Concessionaire shall provide access to the Municipalities to dispose of desilting and road sweeping waste in the Sanitary Landfill.
- (16) The Concessionaire shall carry out scientific closure of the Sanitary Landfill after the Concession Period before handing over the site.

APPENDIX – 3 | APPROACH AND METHODOLOGY FOR REMEDIATION AND RECLAMATION AT PRAMODNAGAR AND KAMARHATI SITES

[The Approach and Methodology for Remediation and Reclamation at Pramodnagar and Kamarhati Sites as submitted by the Confirming Party/ Parties shall be annexed to this Agreement as Appendix – 3]

APPENDIX – 4 | MEMORANDUM OF UNDERSTANDING BETWEEN SUDA AND THE MUNICIPALITIES

[The Memorandum of Understanding shall be executed before execution of the Concession Agreement and copy of such executed Memorandum of Understanding shall be annexed to the Agreement as Appendix – 4.]

APPENDIX –5 | SERVICE LEVEL BENCHMARKS

Following are the benchmarks as provided in the Handbook on Services Level Benchmarks issued by MOHUA (Ministry of Housing and Urban Affairs) (formerly known as Ministry of Urban Development). The Concessionaire shall achieve the benchmarks within the proposed timeline, as follows:

Sl. No.	Indicator	Unit	Definition	Benchmark Value	Proposed Timeline
1.	Collection Efficiency	%	The total MSW collected by each of the Municipalities and authorised service providers versus the total waste generated within the Project Area, excluding recycling or processing at the generation point. (Typically, some amount of waste generated is either recycled or reused by the citizens themselves. This quantity is excluded from the total quantity generated, as reliable estimates will not be available for these.)	100%	6 months from the Appointed Date
2.	Extent of recovery of waste collected	%	This is an indication of the quantum of waste collected, which is either recycled or processed. This is expressed in terms of percentage of waste collected.	100%	From date of commissioning of the Processing Facility: <u>Phase Timeline Target</u> Phase 1 6 months 70% Phase 2 9 months 90% Phase 3 12 months 100%
3.	Extent of segregation of waste	%	It is important that MSW segregated at the source is not again mixed but transported through the entire chain in a segregated manner. It is therefore important that this indicator is based on measurement of MSW arriving in a segregated	100%	6 months from the date of signing of the Concession Agreement.

			manner at the treatment/disposal site, rather than being measured at the collection point.		
4.	Extent of scientific disposal of waste at landfill sites	%	The amount of waste that is disposed in the Sanitary Landfill that has been designed, built, operated and maintained as per standards laid down by Central Government. This extent of compliance should be expressed as a percentage of the total quantum of waste disposed at landfill sites, including open dump sites	100%	Six months from the date of setup of the Sanitary Landfill

Damages

Sl. No.	Default	Monitoring Mechanism	Cure Period	Damages
Secondary Collection and Transportation				
1.	Non-clearance of bins/ dhalao for consecutive 2 days	Spot inspection conducted by SUDA/ PMU with proof (photograph/video).	One day	Rs. 1000 per instance
2.	Transportation of MSW in non-covered vehicles	Spot inspection conducted by SUDA/ PMU with proof (photograph/video).	One day	Rs. 1000 per instance
3.	Transportation of MSW in segregated manner	It is important that waste segregated at the source is not again mixed but transported through the entire chain in a segregated manner. It is therefore important that this indicator is based on Measurement of waste arriving in a segregated	7 days	Rs. 5000 per instance

		manner at the treatment/disposal site, rather than being measured at the collection point.		
Processing of MSW				
1.	Weighbridge is non-operational at Processing facility/ landfill due to breakdown for a consecutive period of 2 days.	Daily check by PMU/Real time monitoring reports.	From a list of three weighbridges, located near the project / processing site provided by SUDA from where the concessionaire can weigh the MSW at concessionaires cost.	Rs. 5000 per day after 2 days
2.	Failure to achieve COD within 1 year of the Scheduled Construction Completion Date	Inspection by PMU/ SUDA/ Progress Report	1 year from the Scheduled Construction Completion Date	0.1% of the Performance Security per week of delay beyond 30 days.
Sanitary Landfill				
2.	Inert/ Residual waste greater than 20% sent to landfill	Weighment slips/ Daily reports/ Inspection by PMU	-	For every ton of increase, an amount equivalent to 2.5 times of per ton of tipping fee. In the event tipping fee is zero, penalty shall be imposed at the rate of Rs 1000/ ton.
Bio - remediation				
3.	Extent of waste remediated per day at the project	Weighment slips/ Daily reports		For each ton of shortfall – Rs 500/ton

	site 1500 TPD till the completion of reclamation of entire project/.			penalty shall be imposed.
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APPENDIX – 6 | FORMAT FOR DAILY WEIGHT SHEET

Weighbridge Details	
Location	
Capacity	
Date	
Time In	
Time Out	
Truck No.	
Tier Weight (in Tons)	
Full Weight (in Tons)	
Waste Quantity (Full Weight – Tier Weight)	

APPENDIX – 7 | BANK GUARANTEE FOR PERFORMANCE SECURITY

[To be executed on INR 100/- non-judicial stamp paper]

B.G. No.

Dated: [●]

THIS DEED OF GUARANTEE is executed on this day of at Kolkata by
[insert name of Bank] having its head/registered office at
....., and its branch office at Kolkata at
....., hereinafter referred to as the “**Bank**” or “**Guarantor**”
(which expression shall unless excluded by or repugnant to the subject or context thereof, be deemed to mean and include its successors and permitted assigns);

IN FAVOUR OF :

State Urban Development Agency, having its office at ILGUS Bhaban, HC Block, Sector- III, Salt Lake, Kolkata - 700 106, hereinafter referred to as “**SUDA**” or “**Beneficiary**” (which expression shall unless excluded by or repugnant to the subject or context, be deemed to mean and include its successors and assigns)

WHEREAS :

- (A) (the “**Concessionaire**”) and State Urban Development Agency (“**SUDA**”), have entered into a Concession Agreement dated (the “**Agreement**”) whereby SUDA has agreed to the Concessionaire to carry out Bio-remediation of Legacy Waste and Setting Up of Processing Facilities at Pramodnagar and Kamarhati and Sanitary Landfill at Identified Site on Design, Build, Finance Operate and Transfer (DBFOT) basis, and Secondary Collection, Transportation, Processing and Disposal of Municipal Solid Waste for Dum Dum, South Dum Dum, North Dum Dum, Baranagar, Kamarhati and New Barrackpore Municipalities (the “**Project**”)
- (B) The Agreement requires the Concessionaire to furnish a Performance Security to SUDA of a sum of INR 11,31,50,000/- (Rupees Eleven Crore Thirty One Lakh Fifty Thousand only) (the “**Guarantee Amount**”) as security for due and faithful performance of its obligations, under and in accordance with the Agreement, to be kept valid at all times during the Concession Period, which is for a period of (the “**Guarantee Period**”).
- (C) We,through our branch at (the “**Bank**”) have agreed to furnish this bank guarantee (“**Bank Guarantee**”) as Performance Security.

NOW, THEREFORE, the Bank hereby, unconditionally and irrevocably, guarantees and affirms as follows:

1. The Bank hereby, unconditionally and irrevocably, guarantees and undertakes to pay to SUDA upon occurrence of any failure or default in due and faithful performance of all or any of the Concessionaire’s obligations, under and in accordance with the provisions of the Agreement, on its mere first written demand, and without any demur, reservation, recourse,

contest or protest, and without any reference to the Concessionaire, such sum or sums upto an aggregate sum of the Guarantee Amount as SUDA shall claim, without SUDA being required to prove or to show grounds or reasons for its demand and/ or for the sum specified therein.

2. A letter from SUDA that the Concessionaire has committed default in the due and faithful performance of all or any of its obligations under and in accordance with the Agreement shall be conclusive, final and binding on the Bank. The Bank further agrees that SUDA shall be the sole judge as to whether the Concessionaire is in default in due and faithful performance of its obligations under the Agreement and its decision that the Concessionaire is in default shall be final, and binding on the Bank, notwithstanding any difference between SUDA and the Concessionaire, or any dispute between them pending before any court, tribunal, arbitrator or any other judicial or quasi-judicial body or by the discharge of the Concessionaire for any reason whatsoever.
3. In order to give effect to this Bank Guarantee, SUDA shall be entitled to act as if the Bank were the principal debtor and any change in the constitution of the Concessionaire and/ or the Bank, whether by their absorption with any other body or corporation or otherwise, shall not in any way or manner affect the liability or obligation of the Bank under this Bank Guarantee.
4. It shall not be necessary, and the Bank hereby waives any necessity, for SUDA to proceed against the Concessionaire before presenting to the Bank its demand under this Bank Guarantee.
5. SUDA shall have the liberty, without affecting in any manner the liability of the Bank under this Bank Guarantee, to vary at any time, the terms and conditions of the Agreement or to extend the time or period for the compliance with, fulfillment and/ or performance of all or any of the obligations of the Concessionaire contained in the Agreement or to postpone for anytime, and from time to time, any of the rights and powers exercisable by SUDA against the Concessionaire, and either to enforce or forbear from enforcing any of the terms and conditions contained in the Agreement and/ or the securities available to SUDA, and the Bank shall not be released from its liability and obligation under this Bank Guarantee by any exercise by SUDA of the liberty with reference to the matters aforesaid or by reason of time being given to the Concessionaire or any other forbearance, indulgence, act or omission on the part of SUDA or of any other matter or thing whatsoever which under any law relating to sureties and guarantors would, but for this provision, have the effect of releasing the Bank from its liability and obligation under this Bank Guarantee and the Bank hereby waives all of its rights under any such law.
6. This Bank Guarantee is in addition to, and not in substitution of, any other guarantee or security now or which may hereafter be held by SUDA in respect of, or relating to, the Agreement or for the fulfillment, compliance and/ or performance of all or any of the obligations of the Concessionaire under the Agreement.
7. Notwithstanding anything contained hereinbefore, the liability of the Bank under this Bank Guarantee is restricted to the Guarantee Amount and this Bank Guarantee will remain in force until the expiry of the Guarantee Period, and unless a demand or claim in writing is made by SUDA on the Bank under this Bank Guarantee no later than six months from the date of expiry of the Guarantee Period, all rights of SUDA under this Bank Guarantee shall be forfeited and the Bank shall be relieved from its liabilities hereunder.
8. The Bank undertakes not to revoke this Bank Guarantee during its validity, except with the previous express consent of SUDA in writing, and declares and warrants that it has the power

to issue this Bank Guarantee and the undersigned has full powers to do so on behalf of the Bank.

9. Any notice by way of request, demand or otherwise hereunder may be sent by post addressed to the Bank at its above referred branch, which shall be deemed to have been duly authorized to receive such notice and to effect payment thereof forthwith, and if sent by post it shall be deemed to have been given at the time when it ought to have been delivered in due course of post and in proving such notice, when given by post, it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an officer of SUDA that the envelope was so posted shall be conclusive.
10. This Bank Guarantee shall come into force with immediate effect and shall remain in force and effect until the expiry of the Guarantee Period or until it is released earlier by SUDA pursuant to the provisions of the Agreement.
11. Notwithstanding anything contained herein :
 - i) Our liability under this Bank Guarantee shall not exceed INR 11,31,50,000/-
 - ii) The Bank Guarantee shall be valid up to (“**Expiry Date**”..... of the Bank Guarantee).
 - iii) We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only and if you serve upon us a written claim or demand made in the manner prescribed in this Bank Guarantee on or before the Expiry Date.
 - iv) After claim period all your rights under this Bank Guarantee will be forfeited and we shall be relived and discharged from all liabilities thereunder, irrespective of whether the original has been returned to us or not.

Signed and Delivered by _____ Bank

By the hand of Mr./Ms. _____, its _____ and authorized official.

(Signature of the Authorized Signatory)

(Official Seal)

NOTE:

- (i) The Bank Guarantee should contain the name, designation and code number of the officer(s) signing the Bank Guarantee.
- (ii) The address, telephone number and other details of the head office of the Bank as well as of issuing branch should be mentioned on the covering letter of issuing Branch.

APPENDIX – 8 | SCOPE OF WORK OF PROJECT MANAGEMENT UNIT

1. Role of the PMU

The PMU is expected to play a positive and independent role in discharging its functions, thereby facilitating the smooth implementation and operation of the Project. Broadly, the role of the PMU is to:

- (a) independently review, monitor and where required by the Agreement, to approve activities associated with the design, construction, operation and maintenance of the Project;
- (b) report to the Parties on the various physical, technical and financial aspects of the Project based on inspections, PMU site visits and Tests;
- (c) assist the Parties in arriving at an amicable settlement of disputes, should the need arise; and
- (d) review matters related to safety and environment management measures adopted by the Concessionaire for the Project.

2. Structure & Scope of Services

PMU shall comprise of members appointed by SUDA. Such members should be officers of rank of executive officer or above.

The services to be provided by the PMU are listed below. In addition, the scope of services would also include such other functions as are required to be undertaken pursuant to specific provisions of the Agreement.

2.1 Design and Planning

- (a) Ensure that all activities of the Project fully comply with all Applicable Laws including but not limited to the SWM Rules, 2016, and Manual on Municipal Solid Waste Management, 2016, governing the requirements of Municipal Solid Waste disposal.
- (b) Review of the any plans or designs submitted by the Concessionaire.

2.2 Construction Inspection and General Services

- (a) The PMU would monitor, in accordance with Good Industry Practice, the progress in implementation of the Project. For this purpose, the PMU shall undertake, inter-alia, the following activities and where appropriate make suitable suggestions:
 - (i) Ensure compliance by the Concessionaire with the provisions of this Agreement and Applicable Laws;
 - (ii) act on SUDA' behalf as SUDA' representative regarding all contact with the Concessionaire unless expressly indicated otherwise;
 - (iii) perform physical progress monitoring of Bio-remediation activity by daily and monthly visit photographs and topographical tests of the Legacy Waste to monitor the quantity of Legacy Waste processed through Bio-remediation;

- (iv) carry out inspections and review of all Tests;
 - (v) interpret the requirements of the contract and make decisions regarding performance of the Concessionaire, including review of the Monthly Progress Report. The PMU shall inform and advise SUDA, in a timely manner all matters relating to the execution, progress, and completeness of the Project; and
 - (vi) reject work which fails to comply with the specifications and requirements of the Agreement. Whenever considered necessary or advisable to ensure correction of defective work, the PMU may require inspection or testing of such work, whether or not such work be then fabricated, installed, or completed;
 - (vii) issue Operational Acceptance Certificate in respect of each of the Project Facilities.
- (b) The PMU shall attend regular meetings (“**Project Review Meetings**” or “**PRMs**”) with SUDA and the Concessionaire, to be held from time to time. The PMU shall take notes at the meetings and provide a copy of the PRM minutes to each person who attended the meeting.
- (c) PMU shall perform regular contract monitoring of the Project.
 - (d) PMU shall verify the invoices raised by the Concessionaire.
 - (e) It shall approve Monthly Progress Reports submitted by the Concessionaire.
 - (e) The PMU shall perform real time monitoring of the weighbridges at the Processing Facilities and Sanitary Landfill.

APPENDIX – 9 | SUBSTITUTION AGREEMENT

THIS SUBSTITUTION AGREEMENT (hereinafter referred to as the “Agreement”) is entered into on this the day of, 20.....

BETWEEN

STATE URBAN DEVELOPMENT AGENCY, a society registered under the West Bengal Societies Registration Act, 1961, represented by its Director, [●], having its office at ILGUS Bhaban, HC Block, Sector- III, Salt Lake, Kolkata - 700 106, hereinafter referred to as “**SUDA**” (which expression shall unless excluded by or repugnant to the subject or context, be deemed to mean and include its successors and assigns) of the **FIRST PART**;

AND

....., a company incorporated under the provisions of the Companies Act, 2013, represented by [●], and having its registered office at, hereinafter referred to as the “**Concessionaire**”, (which expression shall, unless excluded by or repugnant to the subject or context, be deemed to mean and include its successors and permitted assigns) of the **SECOND PART**;

AND

....., (*insert Name and Particulars of Lenders’ Representative*) and having its registered office at, acting for and on behalf of the Lenders listed in Schedule - I hereunder written, hereinafter referred to as the “**Lenders’ Representative**” (which expression shall, unless excluded by or repugnant to the context or meaning thereof, be deemed to include its successors, permitted assigns and substitutes);

(**SUDA**, **Concessionaire** and the **Lender’s Representative** are hereinafter collectively referred to as the “**Parties**” and individually are hereinafter referred to as “**Party**”)

WHEREAS

- A. By the Concession Agreement dated (the “**Concession Agreement**”) entered into between SUDA and the Concessionaire, SUDA has granted to the Concessionaire, the Concession, being Bio-remediation of Legacy Waste and Setting Up of Processing Facilities at Pramodnagar and Kamarhati and Sanitary Landfill at Identified Site on Design, Build, Finance Operate and Transfer (DBFOT) basis, and Secondary Collection, Transportation, Processing and Disposal of Municipal Solid Waste for Dum Dum, South Dum Dum, North Dum Dum, Baranagar, Kamarhati and New Barrackpore Municipalities (the “**Project**”), subject to and on the terms, conditions and covenants set forth in the said Agreement.
- B. The Lenders have agreed to finance the Project in accordance with the terms and conditions set forth in the Financing Documents.
- C. In consideration of the financial assistance granted by the Lenders to the Concessionaire pursuant to the terms and condition of the Financing Documents, the Parties have agreed subject to the terms and conditions of the Concession Agreement and the Financing Documents, that the Lenders shall have the right to substitute the Concessionaire with a Substitute Entity (as defined hereunder) for the residual period of the Concession Period on the terms, conditions and covenants mentioned hereinbelow.

- D. As a condition for making any disbursement pursuant to the Financing Documents, the Lenders have required and it is deemed necessary and expedient to record the terms, conditions and covenants of the above agreement between the Parties.

NOW IT IS HEREBY AGREED BY AND BETWEEN THE PARTIES HERETO as follows:

1. DEFINITIONS :

For the purposes of this Agreement, the following words and expressions shall, unless repugnant to the context or meaning thereof, have the meaning hereinafter respectively assigned to them:

- (a) **“Agreement”** means this Substitution agreement and any amendment thereto made in accordance with the provisions contained in this Agreement;
- (b) **“Financial Default”** means occurrence of a material breach of the terms and conditions of the Financing Agreements or a continuous default in Debt Service by the Concessionaire for a minimum period of 3 (three) months;
- (c) **“Lenders’ Representative”** means the person referred to as the Lenders’ Representative in the foregoing Recitals;
- (d) **“Nominated Company”** means a company, incorporated under the provisions of the Companies Act, 1956/2013, selected by the Lenders’ Representative, on behalf of Lenders, and proposed to SUDA for assignment/transfer of the Concession as provided in this Agreement;
- (e) **“Notice of Financial Default”** shall have the meaning assigned thereto in Clause 4.2; and
- (f) **“Parties”** mean the parties to this Agreement collectively and “Party” shall mean any of the Parties to this Agreement individually.

Each capitalized term used herein and not otherwise defined shall have the definition assigned to such term in the Concession Agreement.

2. Interpretation

- (a) References to Lenders' Representative shall, unless repugnant to the context or meaning thereof, mean references to the Lenders' Representative, acting for and on behalf of Lenders.
- (b) References to Clauses are, unless stated otherwise, references to Clauses of this Agreement.
- (c) The words and expressions defined in this Agreement shall have the meaning ascribed thereto herein, and the words and expressions used in this Agreement and not defined herein but defined in the Concession Agreement shall, unless repugnant to the context, have the meaning assigned thereto in the Concession Agreement.
- (d) The rules of interpretation stated in in the Concession Agreement shall apply, *mutatis mutandis*, to this Agreement.

3. **ASSIGNMENT OF RIGHTS AND TITLE**

The Concessionaire hereby assigns the rights, title and interest in the Concession to, and in favour of, the Lenders' Representative pursuant to and in accordance with the provisions of this Agreement and the Concession Agreement by way of security in respect of financing by the Lenders under the Financing Documents.

4. **SUBSTITUTION OF THE CONCESSIONAIRE**

4.1 **Rights of Substitution**

Pursuant to the rights, title and interest assigned herein, the Lenders' Representative shall be entitled to substitute the Concessionaire by a Substitute Entity under and in accordance with the provisions of this Agreement and the Concession Agreement.

SUDA hereby agrees to substitute the Concessionaire by endorsement on the Concession Agreement in favour of the Substitute Entity selected by the Lenders' Representative in accordance with this Agreement.

For the avoidance of doubt, the Lenders or the Lenders' Representative shall not be entitled to operate and maintain the Project as Concessionaire either individually or collectively.

4.2 **Substitution upon occurrence of Financial Default**

Upon occurrence of a Financial Default, the Lenders' Representative may issue a notice to the Concessionaire (the "**Notice of Financial Default**") along with particulars thereof, and send a copy to SUDA for its information and record. A Notice of Financial Default under this Clause shall be conclusive evidence of such Financial Default and it shall be final and binding upon the Concessionaire for the purposes of this Agreement.

Upon issue of a Notice of Financial Default hereunder, the Lenders' Representative may, without prejudice to any of its rights or remedies under this Agreement or the Financing Agreements, substitute the Concessionaire by a Substitute Entity in accordance with the provisions of this Agreement.

At any time after the Lenders' Representative has issued a Notice of Financial Default, it may by notice require SUDA to suspend all the rights of the Concessionaire and undertake the operation and maintenance of the Project in accordance with the provisions of the Concession Agreement, and upon receipt of such notice, SUDA shall undertake Suspension under and in accordance with the provisions of the Concession Agreement. The aforesaid Suspension shall be revoked upon substitution of the Concessionaire by a Substitute Entity, and in the event such substitution is not completed within 180 (one hundred and eighty) days from the date of such Suspension, SUDA may terminate the Concession Agreement forthwith by issuing a Termination Notice in accordance with the provisions of the Concession Agreement; provided that upon written request from the Lenders' Representative and the Concessionaire, SUDA may extend the aforesaid period of 180 (one hundred and eighty) days by a period not exceeding 90 (ninety) days.

4.3 Substitution upon occurrence of Concessionaire's Default

Upon occurrence of a Concessionaire's Default, SUDA shall by a notice inform the Lenders' Representative of its intention to issue a Termination Notice and grant 15 (fifteen) days time to the Lenders' Representative to make a representation, stating the intention to substitute the Concessionaire by a Substitute Entity.

In the event that the Lenders' Representative makes a representation to SUDA within the period of 15 (fifteen) days specified hereinabove, stating that it intends to substitute the Concessionaire by a Substitute Entity, the Lenders' Representative shall be entitled to undertake and complete the substitution of the Concessionaire by a Substitute Entity in accordance with the provisions of this Agreement within a period of 180 (one hundred and eighty) days from the date of such representation, and SUDA shall either withhold Termination or undertake Suspension for the aforesaid period of 180 (one hundred and eighty) days.

Provided that upon written request from the Lenders' Representative and the Concessionaire, SUDA shall extend the aforesaid period of 180 (one hundred and eighty) days by a period not exceeding 90 (ninety) days.

4.4 Procedure for Substitution

SUDA and the Concessionaire hereby agree that on or after the date of Notice of Financial Default or the date of representation to SUDA, as the case may be, the Lenders' Representative may, without prejudice to any of the other rights or remedies of the Lenders, invite, negotiate and procure offers, either by private negotiations or public auction or tenders for the take over and transfer of the Project including the Concession to the Substitute Entity upon such Substitute Entity's assumption of the liabilities and obligations of the Concessionaire towards SUDA under the Concession Agreement and towards the Lenders under the Financing Agreements.

To be eligible for substitution in place of the Concessionaire, the Substitute Entity shall be required to fulfill the eligibility criteria that were laid down by SUDA in the RFP No. _____ dated _____ for short listing the bidders for award of the Concession; provided that the Lenders' Representative may represent to SUDA that all or any of such criteria may be waived in the interest of the Project, and if SUDA determines that such waiver shall not have any material adverse effect on the Project, it may waive all or any of such eligibility criteria.

Upon selection of a Substitute Entity, the Lenders' Representative shall request SUDA to:

- a) accede to transfer to the Substitute Entity the right to construct, operate and maintain the Project in accordance with the provisions of the Concession Agreement;
- b) endorse and transfer the Concession to the Substitute Entity, on the same terms and conditions, for the residual Concession Period; and
- c) enter into a Substitution Agreement with the Lenders' Representative and the Substitute Entity on the same terms as are contained in this Agreement.

If SUDA has any objection to the transfer of Concession in favour of the Substitute Entity in accordance with this Agreement, it shall within 15 (fifteen) days from the date of proposal made by the Lenders' Representative, give a reasoned order after hearing the Lenders' Representative. If no such objection is raised by SUDA, the Substitute Entity shall be deemed to have been accepted. SUDA thereupon shall transfer and endorse the Concession within 7 (seven) days of its acceptance/deemed acceptance of the Substitute Entity.

Provided that in the event of such objection by SUDA, the Lenders' Representative may propose another Substitute Entity whereupon the procedure set forth in this Clause shall be followed for substitution of such Substitute Entity in place of the Concessionaire.

4.5 Selection to be binding

The decision of the Lenders' Representative and SUDA in selection of the Substitute Entity shall be final and binding on the Concessionaire. The Concessionaire irrevocably agrees and waives any right to challenge the actions of the Lenders' Representative or the Lenders or SUDA taken pursuant to this Agreement including the transfer/ assignment of the Concession in favour of the Substitute Entity. The Concessionaire agrees and confirms that it shall not have any right to seek revaluation of assets of the Project or the Concessionaire's shares. It is hereby acknowledged by the Parties that the rights of the Lenders' Representative are irrevocable and shall not be contested in any proceedings before any court or judicial forum.

SUDA and the Concessionaire shall have no right or remedy to prevent, obstruct or restrain SUDA or the Lenders' Representative from effecting or causing the transfer by substitution and endorsement of the Concession as requested by the Lenders' Representative.

5. PROJECT AGREEMENTS

5.1 Substitution of Substitute Entity in Project Agreements

The Concessionaire shall ensure and procure that each Project Agreement contains provisions that entitle the Substitute Entity to step into such Project Agreement, in its discretion, in place and substitution of the Concessionaire in the event of such Substitute Entity's assumption of the liabilities and obligations of the Concessionaire under the Concession Agreement.

6. TERMINATION OF CONCESSION AGREEMENT

6.1 Termination upon occurrence of Financial Default

At any time after issue of a Notice of Financial Default, the Lenders' Representative may by a notice in writing require SUDA to terminate the Concession Agreement forthwith, and upon receipt of such notice, SUDA shall undertake Termination under and in accordance with the provisions of the Concession Agreement.

6.2 Termination when no Substitute Entity is selected

In the event that no Substitute Entity acceptable to SUDA is selected and recommended by the Lenders' Representative within the period of 180 (one hundred and eighty) days or any extension thereof as set forth in herein, SUDA may terminate the Concession Agreement forthwith in accordance with the provisions thereof.

6.3 Realisation of Debt Due

SUDA and the Concessionaire hereby acknowledge and agree that, without prejudice to their any other right or remedy, the Lenders' Representative is entitled to receive from the Concessionaire, without any further reference to or consent of the Concessionaire, the Debt Due upon Termination of the Concession Agreement.

7. DURATION OF THE AGREEMENT

7.1 Duration of the Agreement

This Agreement shall come into force from the date hereof and shall expire at the earliest to occur of the following events:

- a) Termination of the Agreement; or
- b) No sum remains to be advanced, or is outstanding to the Lenders, under the Financing Agreements.

8. INDEMNITY

8.1 General indemnity

The Concessionaire will indemnify, defend and hold SUDA and the Lenders' Representative harmless against any and all proceedings, actions and third party claims for any loss, damage, cost and expense of whatever kind and nature arising out of any breach by the Concessionaire of any of its obligations under this Agreement or on account of failure of the Concessionaire to comply with Applicable Laws and Applicable Approvals.

SUDA will indemnify, defend and hold the Concessionaire harmless against any and all proceedings, actions and third party claims for any loss, damage, cost and expense arising out of failure of SUDA to fulfil any of its obligations under this Agreement, materially and adversely affecting the performance of the Concessionaire's obligations under the Concession Agreement or this Agreement, other than any loss, damage, cost and expense, arising out of acts done in discharge of their lawful functions by SUDA, its officers, servants and agents.

The Lenders' Representative will indemnify, defend and hold the Concessionaire harmless against any and all proceedings, actions and third party claims for any loss, damage, cost and expense arising out of failure of the Lenders' Representative to fulfil its obligations under this Agreement, materially and adversely affecting the performance of the Concessionaire's obligations under the Concession Agreement, other than any loss, damage, cost and expense, arising out of acts done in discharge of their lawful functions by the Lenders' Representative, its officers, servants and agents.

8.2 Notice and contest of claims

In the event that any Party hereto receives a claim from a third party in respect of which it is entitled to the benefit of an indemnity under Clause 8.1 or in respect of which it is entitled to reimbursement (the "**Indemnified Party**"), it shall notify the other Party responsible for indemnifying such claim hereunder (the "**Indemnifying Party**") within 15 (fifteen) days of receipt of the claim and shall not settle or pay the claim without the prior approval of the Indemnifying Party, such approval not to be unreasonably withheld or delayed. In the event that the Indemnifying Party wishes to contest or dispute the claim, it may conduct the proceedings in the name of the Indemnified Party and shall bear all costs involved in contesting the same. The Indemnified Party shall provide all cooperation and assistance in contesting any claim and shall sign all such writings and documents as the Indemnifying Party may reasonably require.

9. DISPUTE RESOLUTION

9.1 Dispute resolution

Any dispute, difference or claim arising out of or in connection with this Agreement, which is not resolved amicably, shall be decided finally by reference to arbitration to an arbitral tribunal comprising one arbitrator nominated by SUDA, the Concessionaire and the Lenders' Representative. Such arbitration shall be held in accordance with the provisions of the Arbitration and Conciliation Act, 1996.

The Arbitrators shall issue a reasoned award and such award shall be final and binding on the Parties. The venue of arbitration shall be Kolkata and the language of arbitration shall be English.

10. MISCELLANEOUS PROVISIONS

10.1 Governing law and jurisdiction

This Agreement shall be construed and interpreted in accordance with and governed by the laws of India, and the Courts at Kolkata shall have jurisdiction over all matters arising out of or relating to this Agreement.

10.2 Waiver of sovereign immunity

SUDA unconditionally and irrevocably:

- a) agrees that the execution, delivery and performance by it of this Agreement;
- b) constitute commercial acts done and performed for commercial purpose;
- c) agrees that, should any proceedings be brought against it or its assets, property or revenues in any jurisdiction in relation to this Agreement or any transaction contemplated by this Agreement;
- d) no immunity (whether by reason of sovereignty or otherwise) from such proceedings shall be claimed by or on behalf of SUDA with respect to its assets;

- e) waives any right of immunity which it or its assets, property or revenues now has, may acquire in the future or which may be attributed to it in any jurisdiction; and
- f) consents generally in respect of the enforcement of any judgement or award against it in any such proceedings to the giving of any relief or the issue of any process in any jurisdiction in connection with such proceedings (including the making, enforcement or execution against it or in respect of any assets, property or revenues whatsoever irrespective of their use or intended use of any order or judgment that may be made or given in connection therewith).

10.3 Priority of agreements

In the event of any conflict between the Concession Agreement and this Agreement, the provisions contained in the Concession Agreement shall prevail over this Agreement.

10.4 Alteration of terms

All additions, amendments, modifications and variations to this Agreement shall be effectual and binding only if in writing and signed by the duly authorized representatives of the Parties.

10.5 Waiver

Waiver by any Party of a default by another Party in the observance and performance of any provision of or obligations under this Agreement:

- a) shall not operate or be construed as a waiver of any other or subsequent default hereof or of other provisions of or obligations under this Agreement;
- b) shall not be effective unless it is in writing and executed by a duly authorized representative of the Party; and
- c) shall not affect the validity or enforceability of this Agreement in any manner.

Neither the failure by either Party to insist on any occasion upon the performance of the terms, conditions and provisions of this Agreement or any obligation thereunder nor time or other indulgence granted by a Party to another Party shall be treated or deemed as waiver of such breach or acceptance of any variation or the relinquishment of any such right hereunder.

10.6 No third party beneficiaries

This Agreement is solely for the benefit of the Parties and no other person or entity shall have any rights hereunder.

10.7 Survival

Termination of this Agreement:

a) shall not relieve the Parties of any obligations hereunder which expressly or by implication survive termination hereof; and

b) except as otherwise provided in any provision of this Agreement expressly limiting the liability of either Party, shall not relieve either Party of any obligations or liabilities for loss or damage to the other Party arising out of or caused by acts or omissions of such Party prior to the effectiveness of such termination or arising out of such termination.

All obligations surviving the cancellation, expiration or termination of this Agreement shall only survive for a period of 3 (three) years following the date of such termination or expiry of this Agreement.

10.8 Severability

If for any reason whatever any provision of this Agreement is or becomes invalid, illegal or unenforceable or is declared by any court of competent jurisdiction or any other instrumentality to be invalid, illegal or unenforceable, the validity, legality or enforceability of the remaining provisions shall not be affected in any manner, and the Parties will negotiate in good faith with a view to agreeing to one or more provisions which may be substituted for such invalid, unenforceable or illegal provisions, as nearly as is practicable to such invalid, illegal or unenforceable provision. Failure to agree upon any such provisions shall not be subject to dispute resolution under Clause 9 of this Agreement or otherwise.

10.9 Successors and assigns

This Agreement shall be binding on and shall inure to the benefit of the Parties and their respective successors and permitted assigns.

10.10 Notices

All notices or other communications to be given or made under this Agreement shall be in writing, shall either be delivered personally or sent by courier or registered post with an additional copy to be sent by facsimile. The address for service of each Party and its facsimile number are set out under its name on the signing pages hereto. A notice shall be effective upon actual receipt thereof, save that where it is received after 5.00 (five) P.M. on any day, or on a day that is a public holiday, the notice shall be deemed to be received on the first working day following the date of actual receipt.

It is hereby agreed and acknowledged that any Party may by notice change the address to which such notices and communications to it are to be delivered or mailed. Such change shall be effective when all the Parties have notice of it.

10.11 Language

All notices, certificates, correspondence and proceedings under or in connection with this Agreement shall be in English.

10.12 Authorised representatives

Each of the Parties shall by notice in writing designate their respective authorized representatives through whom only all communications shall be made. A Party hereto shall be entitled to remove and/or substitute or make fresh appointment of such authorised representative by similar notice.

IN WITNESS WHEREOF THE PARTIES HAVE EXECUTED AND DELIVERED THIS AGREEMENT AS OF THE DATE FIRST ABOVE WRITTEN.

SIGNED, SEALED AND DELIVERED SIGNED, SEALED AND DELIVERED

For and on behalf of CONCESSIONAIRE by:

For and on behalf of SUDA by:

SIGNED, SEALED AND DELIVERED

For and on behalf of LENDERS by the Lenders' Representative:

In the presence of:

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2.

APPENDIX – 10 | ESCROW AGREEMENT

THIS ESCROW AGREEMENT is entered into on this the day of, 20....

BETWEEN

STATE URBAN DEVELOPMENT AGENCY, a society registered under the West Bengal Societies Registration Act, 1961, represented by its Director, [●], having its office at ILGUS Bhaban, HC Block, Sector- III, Salt Lake, Kolkata - 700 106, hereinafter referred to as “**SUDA**” (which expression shall unless excluded by or repugnant to the subject or context, be deemed to mean and include its successors and assigns) of the **FIRST PART**;

AND

.....[insertName of the Escrow Bank], having its registered office at, hereinafter referred to as “**Escrow Bank**”(which expression shall, unless excluded by or repugnant to the context, be deemed to include its successors and assigns), of the **SECOND PART**;

AND

....., a company incorporated under the provisions of the Companies Act, 2013, represented by [●], and having its registered office at, hereinafter referred to as the “**Concessionaire**”, (which expression shall, unless excluded by or repugnant to the subject or context, be deemed to mean and include its successors and permitted assigns) of the **THIRDPART**;

WHEREAS:

- A. SUDA is the agency responsible for undertaking sustainable projects relating to management of Municipal Solid Waste (“**MSW**”) in different urban areas across the State of West Bengal..
- B. The Concessionaire was selected by SUDA under a competitive bidding process and is established, inter-alia, with the objectives of implementing Bio-remediation of Legacy Waste and Setting Up of Processing Facilities at Pramodnagar and Kamarhati and Sanitary Landfill at Identified Site on Design, Build, Finance Operate and Transfer (DBFOT) basis, and Secondary Collection, Transportation, Processing and Disposal of Municipal Solid Waste for Dum Dum, South Dum Dum, North Dum Dum, Baranagar, Kamarhati and New Barrackpore Municipalities (the “**Project**”).
- C. SUDA and the Concessionaire have entered into a Concession Agreement dated _____ (herein after referred to as “**ConcessionAgreement**”), whereby SUDA has granted to the Concessionaire the Concession to undertake the Project on the terms and conditions contained therein. A copy of the aforesaid Agreement is annexed hereto and marked as Schedule A to form part of this Agreement.
- D. Under the terms of the Agreement, it has been stipulated that an Escrow Account shall be created and maintained by SUDA into which it shall deposit such sums as specified herein and the Concession Agreement during the term of the Agreement (the “**Escrow Account**”).
- E. This Agreement sets forth the detailed mandates, terms and conditions and operating procedures for such escrow account.

NOW THEREFORE, in consideration of the foregoing and the respective covenants and agreements set forth in this Agreement, the receipt and sufficiency of which is hereby acknowledged and intending to be legally bound hereby, the Parties agree as follows:

1. DEFINITIONS AND INTERPRETATION

(1) Definitions:

In this Agreement the following words and expressions shall, unless repugnant to the context or meaning thereof, have the meaning herein after respectively assigned to them:

- a) **“Agreement”** means this Escrow Agreement and any amendment thereto made in accordance with the provisions contained herein;
- b) **“Concession Agreement”** means the Agreement referred to in the recital above and annexed hereto as Schedule A, and shall include all of its recitals and Appendices and any amendments made thereto in accordance with the provisions contained in this behalf therein;
- c) **“Cure Period”** means the period specified in this Agreement for curing any breach or default of any provision of this Agreement by SUDA, and shall commence from the date on which a notice is delivered by the Concessionaire, to SUDA asking the latter to cure the breach or default specified in such notice;
- d) **“Escrow Account”** means the escrow account established in terms of and under this Agreement, and shall include the Sub-Accounts;
- e) **“Escrow Default”** shall have the meaning assigned thereto in Clause 6;
- f) **“Parties”** means the parties to this Agreement collectively and **“Party”** shall mean any of the Parties to this Agreement individually;
- g) **“Payment Date”** means, in relation to any payment specified in Clause 4, the date(s) specified for such payment; and
- h) **“Sub-Accounts”** means the respective Sub-Accounts of the Escrow Account, into which the monies specified in Clause 4 would be credited every month and paid out if due, and if not due in a month then appropriated proportionately in such month and retained in the respective Sub Accounts and paid out therefrom on the Payment Date(s).

(2) Interpretation

The words and expressions beginning with capital letters and defined in this Agreement shall have the meaning assigned thereto herein, and the words and expressions used in this Agreement and not defined herein but defined in the Agreement shall, unless repugnant to the context, have the meaning assigned thereto in the Agreement.

References to Clauses are, unless stated otherwise, references to Clauses of this Agreement.

The rules of interpretation stated in the Concession Agreement shall apply, *mutatis mutandis*, to this Agreement.

3. ESCROW ACCOUNT

3.1 Escrow Bank to Act as Trustee

SUDA hereby appoints the Escrow Bank to act as trustee for the Concessionaire and SUDA for the purposes set out in this Agreement and authorises the Escrow Bank to exercise such rights, powers, authorities and discretion as are specifically delegated to the Escrow Bank by the terms hereof together with all such rights, powers, authorities and discretion as are reasonably incidental hereto, and the Escrow Bank accepts such appointment pursuant to the terms and conditions hereof.

SUDA hereby declares that all rights, title and interest in and to the Escrow Account shall be vested in the Escrow Bank and held in trust for SUDA and the Concessionaire, and applied in accordance with the terms of this Agreement. No person other than SUDA and the Concessionaire shall have any rights hereunder as the beneficiaries of or as third party beneficiaries, under this Agreement.

3.2 Acceptance of Escrow Bank

The Escrow Bank hereby agrees to be responsible for the monitoring and operations of the Escrow Account and to accept all payments and other amounts to be delivered to and held by the Escrow Bank pursuant to the provisions of this Agreement. The Escrow Bank shall hold and safeguard the Escrow Account during the term of this Agreement and shall treat the amount in the Escrow Account as monies deposited by SUDA or the Concessionaire with the Escrow Bank. In performing its functions and duties under this Agreement, the Escrow Bank shall act in trust for the benefit of, and as agent for, SUDA and the Concessionaire or their nominees, successors or assigns, in accordance with the provisions of this Agreement.

3.3 Establishment and Operation of Escrow Account

Within 30 (thirty) days from the date of this Agreement SUDA shall open and establish the Escrow Account with the (insert name of branch) branch of the Escrow Bank. The Escrow Account shall be denominated in Rupees.

The Escrow Bank shall maintain the Escrow Account in accordance with the terms of this Agreement and its usual practices and applicable regulations, and pay the maximum rate of interest payable to similar customers on the balance in the said account from time to time.

The Escrow Bank and SUDA shall, after consultation with the Concessionaire agree on the detailed mandates, terms and conditions, and operating procedures for the Escrow Account, but in the event of any conflict or in consistency between this Agreement and such mandates, terms and conditions, or procedures, this Agreement shall prevail.

3.4 Escrow Bank's Fee

The Escrow Bank shall be entitled to receive its fee and expenses in an amount, and at such times, as may be agreed between the Escrow Bank and SUDA. Such fee and expenses shall be appropriated from the Escrow Account.

3.5 Rights of the Parties

The rights of SUDA and the Concessionaire in the monies held in the Escrow Account are set forth in their entirety in this Agreement and SUDA and the Concessionaire shall have no other rights against or to the monies in the Escrow Account.

4. DEPOSITS INTO ESCROW ACCOUNT

4.1 Deposits by SUDA

SUDA agrees and undertakes that it shall deposit into and/or credit the Escrow Account with:

- a) all Reclamation Fee, Pre-COD C&T Fee and Tipping Fee;
- b) all payments to the Concessionaire towards Damages; and
- c) Termination Payments, if any, by SUDA, after deduction of any outstanding amounts and/ or penalties and/ or Damages payable by the Concessionaire.

SUDA may at any time make deposits of its other funds into the Escrow Account, provided that the provisions of this Agreement shall apply to such deposits.

4.2 Deposits by the Concessionaire

The Concessionaire agrees and undertakes that as and when due and payable it shall deposit into and/or credit the Escrow Account with Damages payable by the Concessionaire to SUDA;

4.3 Interest on deposits

The Escrow Bank agrees and undertakes that all interest accruing on the balances of the Escrow Account shall be credited to the Escrow Account provided that the Escrow Bank shall be entitled to appropriate therefrom the fees and expenses due to it from SUDA in relation to the Escrow Account and credit the balance remaining to the Escrow Account.

5. WITHDRAWALS FROM ESCROW ACCOUNT

5.1 Withdrawals during Agreement Period

At the beginning of every month, or at such intervals as SUDA may by written instructions determine, the Escrow Bank shall withdraw amounts from the Escrow Account and appropriate them in the following order by depositing such amounts in the relevant Sub-Accounts for making due payments, and if such payments are not due in any month, then retain such monies in such Sub-Accounts and pay out therefrom on the Payment Date(s):

- a) all Reclamation Fee, Pre-COD C&T Fee and Tipping Fee;
- b) all payments to the Concessionaire towards Damages;
- c) all payments to SUDA towards Damages; and
- d) balance funds, if any, to flow to SUDA subject to the maintenance of balance of an amount equivalent to one month of payment in the Escrow Account.

5.2 Withdrawals upon Termination

Upon Termination of the Agreement, all amounts standing to the credit of the Escrow Account shall, notwithstanding anything in this Agreement, be appropriated in the following order:

- a) Payment towards taxes and other statutory levies, if applicable to SUDA in respect of the Project;
- b) Payments relating to Reclamation Fee, Pre-COD C&T Fee and Tipping Fee;
- c) All payments towards Damages as due and payable by the Concessionaire to SUDA;
- d) All payments towards Damages as due and payable by SUDA to the Concessionaire;
- e) Termination Payments, if any by SUDA, after deduction of any outstanding amounts and/ or penalties and/ or liquidated damages payable by the Concessionaire;
- f) Any other payment required to be made under this Agreement; and
- g) balance funds, if any, to flow to SUDA.

5.3 Application of Insufficient Funds

Funds in the Escrow Account shall be applied in the serial order of priority set forth in this Agreement. If the funds available are not sufficient to meet all the requirements, the Escrow Bank shall apply such funds in the serial order of priority until exhaustion thereof.

6. OBLIGATIONS OF THE ESCROW BANK

6.1 Segregation of Funds

Monies and other property received by the Escrow Bank under this Agreement shall, until used or applied in accordance with this Agreement, be held by the Escrow Bank in trust for the purposes for which they were received, and shall be segregated from other funds and property of the Escrow Bank.

6.2 Notification of Balances

7(seven) business days prior to each Payment Date (and for this purpose the Escrow Bank shall be entitled to rely on an affirmation by SUDA as to the relevant Payment Dates), the Escrow Bank shall notify SUDA of the balances and any anticipated shortfall in the Escrow Account and Sub-Accounts as at the close of business on the immediately preceding business day. In the event of any such shortfall, SUDA shall meet the same by crediting adequate sums to the Escrow Account from its own financial sources.

6.3 Communications and Notices

In discharge of its duties and obligations hereunder, the Escrow Bank:

- a) may, in the absence of bad faith or gross negligence on its part, rely as to any matters of fact which might reasonably be expected to be within the knowledge of SUDA upon a certificate signed by or on behalf of SUDA;
- b) may, in the absence of bad faith or gross negligence on its part, rely upon the authenticity of any communication or document believed by it to be authentic;
- c) shall, within 5 (five) Business Days after receipt, deliver a copy to SUDA of any notice or document received by the Escrow Bank (in its capacity as the Escrow Bank) from the Concessionaire or any other person hereunder or in connection herewith;
- d) shall, within 5 (five) Business Days after receipt, deliver a copy to the Concessionaire of any notice or document received by the Escrow Bank (in its capacity as the Escrow Bank) from SUDA or any entity in connection herewith.

6.4 No Set-off

The Escrow Bank agrees not to claim or exercise any right of setoff, banker's lien or other right or remedy with respect to amounts standing to the credit of the Escrow Account.

For the avoidance of doubt, it is hereby acknowledged and agreed by the Escrow Bank that the monies and properties held by the Escrow Bank in the Escrow Account shall not be considered as part of the assets of the Escrow Bank and being trust property, shall in the case of bankruptcy or liquidation of the Escrow Bank, be wholly excluded from the assets of the Escrow Bank in such bankruptcy or liquidation.

6.5 Regulatory Approvals

The Escrow Bank shall use its best efforts to procure, and thereafter maintain and comply with, all regulatory approvals required for it to establish and operate the

Escrow Account. The Escrow Bank represents and warrants that it is not aware of any reason why such regulatory approvals will not ordinarily be granted to the Escrow Bank.

7. ESCROW DEFAULT

7.1 Escrow Default

Following events shall constitute an event of default by SUDA (an “Escrow Default”) unless such event of default has occurred as a result of Force Majeure or any act or omission of the Concessionaire:

- a) SUDA commits breach of this Agreement by failing to deposit any receipts into the Escrow Account as provided herein and fails to cure such breach by depositing the same into the Escrow Account within a Cure Period of 5 (five) business days;
- b) SUDA causes the Escrow Bank to transfer funds to any account of SUDA in breach of the terms of this Agreement and fails to cure such breach by depositing the relevant funds into the Escrow Account or any Sub-Account in which such transfer should have been made, within a Cure Period of 5 (five) business days; or
- c) SUDA commits or causes any other breach of the provisions of this Agreement and fails to cure the same within a Cure Period of 5 (five) business days.

Upon occurrence of an Escrow Default, the consequences thereof shall be dealt with under and in accordance with the provisions of the Agreement.

8. TERMINATION OF ESCROW AGREEMENT

8.1 Duration of the Escrow Agreement

This Agreement shall unless terminated earlier by the mutual consent of the Parties or otherwise in accordance with the provisions of this Clause by written notice from SUDA and the Concessionaire to the Escrow Bank, remain in full force and effect for the duration of the Agreement.

8.2 Substitution of Escrow Bank

SUDA may after consultation with the Concessionaire, by not less than 45 (forty five) days prior notice to the Escrow Bank, terminate this Agreement and appoint a new Escrow Bank, provided that arrangements are made for transfer of amounts deposited in the Escrow Account to a new Escrow Account established with the succeeding Escrow Bank. The termination of this Agreement shall take effect only upon coming into force of an Escrow Agreement with the substitute Escrow Bank.

8.3 Closure of Escrow Account

The Escrow Bank shall, at the request of SUDA made on or after the payment by SUDA of all outstanding amounts under the Agreement including the payments

specified herein, and upon confirmation of receipt of such payments, close the Escrow Account and Sub-Accounts and pay any amount standing to the credit thereof to SUDA. Upon closure of the Escrow Account hereunder, the Escrow Agreement shall be deemed to be terminated.

9. SUPPLEMENTARY ESCROW AGREEMENT

9.1 Supplementary Escrow Agreement

SUDA shall be entitled to enter into a supplementary escrow agreement with the Escrow Bank providing, inter alia, for detailed procedures and documentation for withdrawals from Sub-Accounts pursuant to provisions hereof and for matters not covered under this Agreement such as the restrictions on withdrawals by SUDA in the event of breach of this Agreement or upon occurrence of an Escrow Default, procedures relating to operation of the Escrow Account and withdrawal therefrom, reporting requirements and any matters incidental thereto;

Provided that such supplementary escrow agreement shall not contain any provision which is inconsistent with this Agreement and in the event of any conflict or inconsistency between provisions of this Agreement and such supplementary escrow agreement, the provisions of this Agreement shall prevail.

10. INDEMNITY

10.1 General Indemnity

SUDA will indemnify, defend and hold the Concessionaire and Escrow Bank, harmless against any and all proceedings, actions and third party claims for any loss, damage, cost and expense arising out of any breach by SUDA of any of its obligations under this Agreement or on account of failure of SUDA to comply with Applicable Laws and Applicable Approvals.

The Concessionaire will indemnify, defend and hold SUDA harmless against any and all proceedings, actions and third party claims for any loss, damage, cost and expense arising out of failure of the Concessionaire to fulfill any of its obligations under this Agreement materially and adversely affecting the performance of SUDA's obligations under this Agreement.

The Escrow Bank will indemnify, defend and hold SUDA harmless against any and all proceedings, actions and third party claims for any loss, damage, cost and expense arising out of failure of the Escrow Bank to fulfill its obligations under this Agreement materially and adversely affecting the performance of SUDA's obligations under the Agreement other than any loss, damage, cost and expense, arising out of acts done in discharge of their lawful functions by the Escrow Bank, its officers, servants and agents.

10.2 Notice and Contest of Claims

In the event that any Party hereto receives a claim from a third party in respect of which it is entitled to the benefit of an indemnity or in respect of which it is entitled to reimbursement (the “**Indemnified Party**”), it shall notify the other Party responsible for indemnifying such claim hereunder (the “**Indemnifying Party**”) within 15(fifteen) days of receipt of the claim and shall not settle or pay the claim without the prior approval of the Indemnifying Party, which approval shall not be unreasonably withheld or delayed. In the event that the Indemnifying Party wishes to contest or dispute the claim, it may conduct the proceedings in the name of the Indemnified Party and shall bear all costs involved in contesting the same. The Indemnified Party shall provide all cooperation and assistance in contesting any claim and shall sign all such writings and documents as the Indemnifying Party may reasonably require.

11. DISPUTE RESOLUTION

11.1 Dispute Resolution

Any dispute, difference or claim arising out of or in connection with this Agreement, which is not resolved amicably, shall be decided finally by reference to arbitration to an arbitral tribunal, comprising one arbitrator nominated by each Party to the dispute, and where the number of such nominees is an even number, the nominated Arbitrators shall elect another person to such arbitral tribunal. Such arbitration shall be held in accordance with the provisions of the Arbitration and Conciliation Act, 1996.

The Arbitrators shall issue a reasoned award and such award shall be final and binding on the Parties. The venue of arbitration shall be Kolkata and the language of arbitration shall be English.

12. MISCELLANEOUS PROVISIONS

12.1 Governing Law and Jurisdiction

This Agreement shall be construed and interpreted in accordance with and governed by the laws of India, and the Courts at Kolkata shall alone have jurisdiction over all matters arising out of or relating to this Agreement.

12.2 Waiver of Sovereign Immunity

SUDA unconditionally and irrevocably: agrees that the execution, delivery and performance by it of this Agreement constitute commercial acts done and performed for commercial purpose; agrees that, should any proceedings be brought against it or its assets, property or revenues in any jurisdiction in relation to this Agreement or any transaction contemplated by this Agreement, no immunity (whether by reason of sovereignty or otherwise) from such proceedings shall be claimed by or on behalf of SUDA with respect to its assets, and SUDA waives any right of immunity which it or its assets, property or revenues now has, may acquire in the future or which may be attributed to it in any jurisdiction; and consents generally in respect of the

enforcement of any judgment or award against it in any such proceedings to the giving of any relief or the issue of any process in any jurisdiction in connection with such proceedings (including the making, enforcement or execution against it or in respect of any assets, property or revenues what so ever irrespective of their use or intended use of any order or judgment that may be made or given in connection therewith).

12.3 Priority of Agreements

In the event of any conflict between this Agreement and any other Agreement, the provisions contained in this Agreement shall prevail over the other Agreements.

12.4 Alteration of Terms

All additions, amendments, modifications and variations to this Agreement shall be effectual and binding only if in writing and signed by the duly authorised representatives of the Parties.

12.5 Waiver

Waiver by any Party of a default by another Party in the observance and performance of any provision of or obligations under this Agreement:

- a) shall not operate or be construed as a waiver of any other or subsequent default hereof or of other provisions of or obligations under this Agreement;
- b) shall not be effective unless it is in writing and executed by a duly authorized representative of the Party; and
- c) shall not affect the validity or enforceability of this Agreement in any manner.

Neither the failure by any Party to insist on any occasion upon the performance of the terms, conditions and provisions of this Agreement or any obligation there under nor time or other indulgence granted by any Party to another Party shall be treated or deemed as waiver of such breach or acceptance of any variation or the relinquishment of any such right hereunder.

12.6 No Third Party Beneficiaries

This Agreement is solely for the benefit of the Parties and no other person or entity shall have any rights hereunder.

12.7 Survival

Termination of this Agreement:

- a) shall not relieve the Parties of any obligations hereunder which expressly or by implication survive termination hereof; and except as otherwise provided in any provision of this Agreement expressly limiting the liability of either Party;

- b) shall not relieve either Party of any obligations or liabilities for loss or damage to the other Party arising out of, or caused by, acts or omissions of such Party prior to the effectiveness of such termination or arising out of such termination.

All obligations surviving the cancellation, expiration or termination of this Agreement shall only survive for a period of 3 (three) years following the date of such termination or expiry of this Agreement.

12.8 Severability

If for any reason whatever any provision of this Agreement is or becomes invalid, illegal or unenforceable or is declared by any court of competent jurisdiction or any other instrumentality to be invalid, illegal or unenforceable, the validity, legality or enforceability of the remaining provisions shall not be affected in any manner, and the Parties will negotiate in good faith with a view to agreeing to one or more provisions which may be substituted for such invalid, unenforceable or illegal provisions, as nearly as is practicable to such invalid, illegal or unenforceable provision. Failure to agree upon any such provisions shall not be subject to dispute resolution under this Agreement or otherwise.

12.9 Successors and Assigns

This Agreement shall be binding on the Parties and their respective successors and permitted assigns.

12.10 Notices

All notices or other communications to be given or made under this Agreement shall be in writing and shall either be delivered personally or sent by courier or registered post with an additional copy to be sent by facsimile or e-mail. The addresses for service of each Party, its facsimile number or e-mail, are set out under its name on the signing pages hereto. A notice shall be effective upon actual receipt thereof, save that where it is received after 5.30 (five thirty) p.m. on a business day, or on a day that is not a business day, the notice shall be deemed to be received on the first business day following the date of actual receipt. Without prejudice to the foregoing, a Party giving or making a notice or communication by facsimile or e-mail shall promptly deliver a copy thereof personally, or send it by courier or registered post to the addressee of such notice or communication. It is hereby agreed and acknowledged that any Party may by notice change the address to which such notices and communications to it are to be delivered or mailed. Such change shall be effective when all the Parties have notice of it.

12.11 Language

All notices, certificates, correspondence and proceedings under or in connection with this Agreement shall be in English.

12.12 Authorised Representatives

Each of the Parties shall, by notice in writing, designate their respective authorized representatives through whom only all communications shall be made. A Party hereto shall be entitled to remove and/or substitute or make fresh appointment of such authorised representative by similar notice.

IN WITNESS WHEREOF THE PARTIES HAVE EXECUTED AND DELIVERED THIS AGREEMENT AS OF THE DATE FIRST ABOVE WRITTEN.

SIGNED, SEALED AND SIGNED, SEALED AND DELIVERED

For and on behalf of
ESCROW BANK by:

For and on behalf
SUDA by:

For and on behalf of
Concessionaire by:

In the presence of:

- 1.
- 2.

SCHEDULE A: THE CONCESSION AGREEMENT


Director, SUDA