



BISHOP BENZIGER COLLEGE

OF NURSING

Accredited by NAAC,

Member of United Nations Academic Impact Program

Approved Research Centre of Kerala University of Health Sciences



7.1.4 - Agreement for Biogas Plant

കേരളം കേരल KERALA

BK 393531

AGREEMENT

Work : Supply erection and commissioning of 750 Kg Fixed Dome Bio Gas Plant and all accessories for Bishop Benziger Hospital, Kollam.

Articles of Agreement executed at Kollam on this 8th day of February 2017 between the Bishop Benziger Hospital, Kollam. (Hereafter referred as Client) on first part and Sri. Augustin.R, Mangalathu Veedu, Parandode P.O., Aryanadu, Thiruvananthapuram - 695 542 (Proprietor Mangalathu Biogas Agency and Construction, Aryanadu) (Hereafter referred as the Contractor) on the Second part. The expression of Client and Contractor shall include their successors nominees and assignees in interest.

Whereas Contractor has received a work order No. 26597 dtd. 06.02.2017 for execution of the work of supply erection and commissioning 750 kg Fixed Dome Biogas Plant and all accessories for Bishio Benziger Hospital, Kollam for the site. In response to the enquiry of Client the contractor has submitted his offer for execution of the work vide his offer/quotation dated 31.08.2016 and Client has accepted his offer/quotation and issued a formal work order No. 26597 dated 06.02.2017. Bishop Benziger Hospital, Kollam, has been accepted the work by duly signing a copy of the same.

No. 13613
Date: 7.2.17
Rs. 100/- Issued to

(Signature)
P. Suresh



(Signature)

(Contd... 2)
13 JAN 2017

കേരളം കേരल KERALA

BK 393532

Now for the smooth, orderly and legalized operation of the work order and for the timely execution of the work, it is hereby agreed by and between the parties hitherto as follows.

1. The contractor agrees that the work will be executed strictly in accordance with the plan, specification and the rates mentioned in the schedule attached.
2. The Contractor agrees that the work will be completed in all respects within the time limit fixed as per the work order, and all the works, materials used will have a cover of guarantee as per the exiting industry norms/standards for a period of five years.
3. Bishop Benziger Hospital has agreed to M/s. Mangalathu Bio Gas Agencies for the erection of the Work an amount of work Rs. 10,25,000/- (Rupees Ten lakh twenty five thousand only)

No: 13614

Date: 7.2.17

Re: Issued to

കോൺട്രാക്ടർ
A. P. S. S. V.



(Cotd....3)

(Handwritten signature)

ആർ. വി. ഗിരിജ
സ്റ്റാമ്പ് ഡെപ്യൂട്ടി, എസ്

13 JAN 20

4. **Payment Conditions**

- a. 30% mobilization advance against work order
 - b. 20% of payment against foundation concrete finishing and brick work starting bio rector
 - c. 20% payment release vertical wall complete dome fabrication starting.
 - d. 20% payment release Dome concreting complete
 - e. 5% payment release work completed
 - f. 5% payment release after successful completion of three months.
5. The period of execution of work shall be 45 days from the date of the agreement
6. The parties hereto submit to the jurisdiction of Courts at Thiruvananthapuram, Kollam.

7. **Conditions :**

- a. Work will be completed within 45 days from the date of the work order.
- b. Power and water free of cost at institution
- c. Plant Guarantee period Five years.
- d. First Six months the Service Free of cost
- e. Bio Gas Plant life 25 years.

7. **Schedule**

Sl. No.	Specification
1.	Clearing and leveling the ground
2.	Earth work excavation in medium soil depositing bank with initial lead and lift as specified in the drawing <ol style="list-style-type: none"> (a) Digester tank (b) Dome bottom (c) Inlet tank (d) Outlet tank (e) Soak pit
3.	Foundation Concrete P.C.C.. work 1:4:8 using 40 mm broken stone, 10 cm Thick <ol style="list-style-type: none"> (a) Digester Tank bottom (b) Inlet Tank bottom (c) Outlet Tank bottom

h. f. ...



h. f. ...

(Cotd....4)

4. Solid Brick work in cement mortar 1:4 using
 - (a) Digester Tank Inner 10 cm
 - (b) Digester Tank outer 10 cm
 - (c) Dome Fabrication Brick work
 - (d) In let tank (Feeding Tank)
5. 10 cm thick RCC work for digester bottom, Vertical wall, Dome Top, balancing tank bottom and top (10 mm and 8 mm, 16 cm distance) 1:1.5:3. using 20 mm broken stone by adding water proofing mixture including labour charges material charges watering and curing
6. Plastering with Flush coating (water proof mixing) 1:4 using. 9 mm thick, scaffolding, curing, etc. Complete work
 - (a) Digester Tank Inner
 - (b) Digester Tank Floor
 - (c) Digester Tank Dome bottom and Top
 - (d) Outlet Tank Inner
 - (e) Inlet Tank
7. Plastering 1:4 using 9 mm thick
 - (a) Digester Tank Outer
 - (b) Out let tank top
 - (e) Plant dome top area
8. Back filling with excavation earth
9. Feeding Tank connection of 12" PVC Pipe inlet two numbers
10. Supply and fixing of 3 numbers canteen burner with stand, burner connection hose, burner control valve etc. complete works.
11. Supply and fixing of gas distribution line 1" PVC Pipe $\frac{3}{4}$ " Pipe with all fittings Gas control valve and accessories (Maximum length 50m)
12. Initial feeding of cow dung 1:1 ratio half digester tank
13. Supply and fixing feeding Tank Top one number lockable cover
14. Moisture removing inspection chamber

P. P. V.



[Handwritten signature]

(Cotd....5)

In witness thereof the parties hereto have executed the agreement by the authorized Representatives on the day and year herein above written.

For Bishop Benziger Hospital

h. P. Peter Very. Rev. Msgr. FERDINAND PETER
Director

Very Rev. Msgr. Ferdinand Peter
Director
BISHOP BENZIGER HOSPITAL
Kollam 691 001, Kerala

For the contractor

Augustin R.

Augustin. R.
Proprietor, Mangalathu Biogas Agency

Witness

(1) *Remy L* YESUDAS
Remy L

(2) *Joy naghese*
Joy

Witness

(1) Victor. R *Victor R*
Anto Bhavan, Parandode
Thiruvananthapuram

(2) Jayan *Jayan*
Shalom Bhavan, Thettivila
Kalliyoor, Kakkamoola
Thiruvananthapuram



PAN -



AUGUSTIN .R
Mangalathu Biogas Agency & Construction
Mangalathu Veedu, Parandodu.P.O. Aryanadu (Via)
Thiruvananthapuram, Pin: 695 542, Mob: 9544449973, 9495043413
ANERT Trained Contractor Govt. of Kerala
KAIC Empaneled Contractor Govt. of Kerala.
E-mail: augustinmangalathu@gmail.com

No. MBA/QUT/BP/I36/16

P.A - 26597
06/02/17

31/08/2016

Fr. Ferdinand Peter
Director
Bishop Benziger Hospital
Kollam.

KIND ATTN: Rev. Fr. Ferdinand Peter

Sub: 1. Construction and commissioning of 750 kg/ day biogas plant at Bishop Benziger Hospital, Kollam.

Ref: 2. Discussion had with Rev. Fr. Ferdinand Peter (Director) 26/08/2016.

Very Rev. Fr.,

We invite your kind attention to your enquiry for setting up a Biogas Plant at Bishop Benziger Hospital, Kollam.

We are forwarding here with a proposal for installation and commissioning for 750 kg/ day Biogas Plant.

We assure you our most sincere service always.

Thanking You.

Best Regards

for MANGALATHU BIO GAS AGENCY



Augustin R

Proprietor

9495043413, 9544449973

**SUPPLY, ERECTION AND COMMISSIONING OF 750 kg/day FIXED DOME
BIOGAS PLANT AT BISHOP BENZIGER HOSPITAL, KOLLAM**

1	Technology adopted	:	Anaerobic Formulation Technology
2	Gas production per day	:	30 M ³
3	Quantity of waste	:	750Kg / day
4	Type of construction	:	R.C.C and brick masonry, Cement Solid Block
5	Utilization of Gas	:	Thermal
6	Rate Quoted	:	Includes all materials labour charges
7	Unit cost	:	11,25,000/-
8	Feeding Waste	:	food waste and night soil
9	Feeding ratio	:	1: 1
10	Rate Approval Govt. of Kerala	:	(GO (MS) No.39/2008/LSGD dt.11-02-2008)
11	Guarantee	:	5 Years
12	Plant life	:	25 years

Note: Electricity and Water should be provided from your side.



PRICE DETAILS

1. 50 KG/DAY PLANT - 1,50,000/- Domestic Level
2. 100 KG/DAY PLANT - 2,85,000/-
3. 200 KG/DAY PLANT - 4,75,000/-
4. 250 KG/DAY PLANT - 5,25,000/-
5. 500 KG/DAY PLANT - 8,50,000/- Institutional Level
6. 750 KG/DAY PLANT - 11,25,000/-
7. 1000 KG/DAY PLANT - 13,50,000/-
8. 1500 KG/DAY PLANT - 18,00,000/- Community Level
9. 2000 KG/DAY PLANT - 24,50,000/-
10. 2500 KG/DAY PLANT - 31,00,000/-
11. 3000 KG/DAY PLANT - 36,50,000/-
12. 3500 KG/DAY PLANT - 41,25,000/-



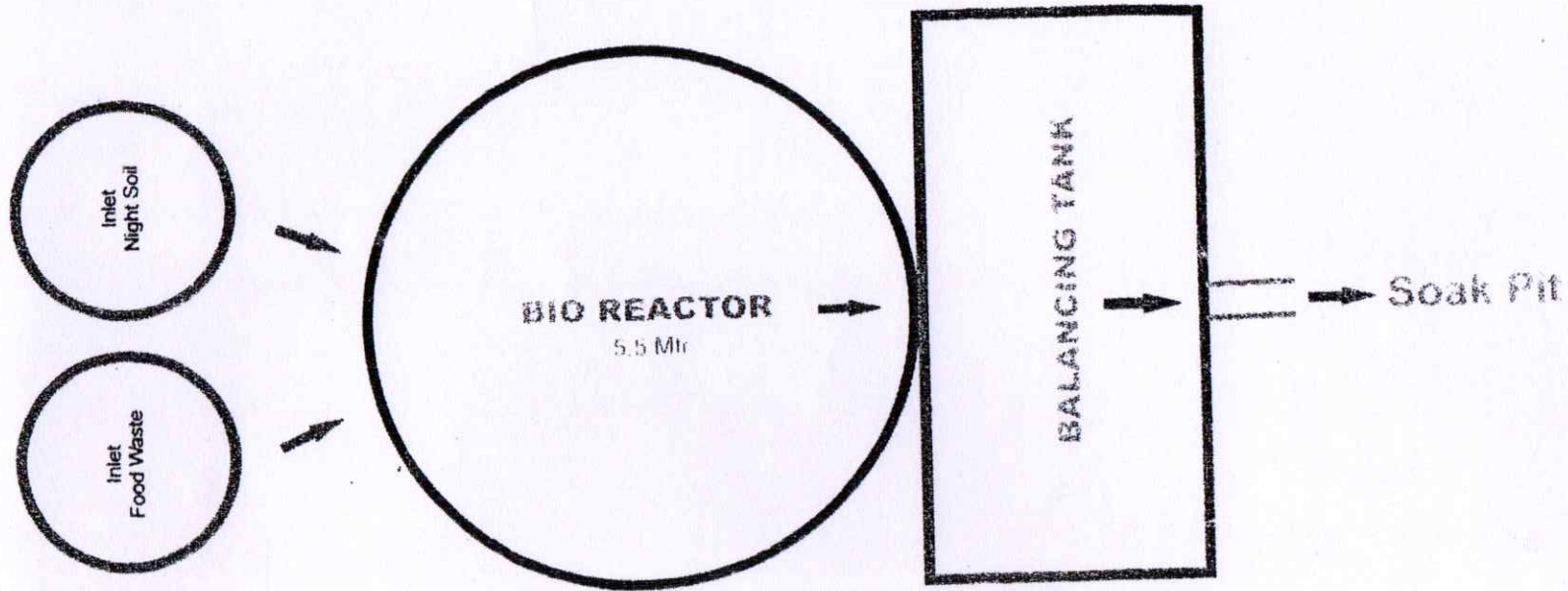
**SUPPLY, ERECTION AND COMMISSIONING OF 750kg/day FIXED
DOME BIOGAS PLANT AT BISHOP BENZIGER HOSPITAL, KOLLAM**

Sl. No	SPECIFICATION	
1	Clearing and leveling the ground	
2	Earth work excavation in medium soil depositing bank with initial lead and lift as specified in the drawing (a) Digester tank (b) Dome bottom (c) Inlet tank (d) Out let tank (e) Soak pit	
3	Foundation Concrete P.C.C. work 1:4:8 using 40 mm broken stone, 10 cm Thick (a) Digester Tank bottom (b) Inlet Tank bottom (c) Outlet Tank bottom	
4	Solid brick work in cement mortar 1:4 using (a) Digester Tank Inner 10 cm (b) Digester Tank outer 10 cm (c) Dome Fabrication brick work (d) In let tank (Feeding Tank)	
5	10 cm thick RCC work for digester bottom, Vertical wall, Dome Top, balancing tank bottom and top (10 m.m and 8 m. m. 6 mm distance) 1:1:5:3, using 20 m.m broken stone by adding water proofing mixture including labour charges material charges watering and curing	
6	Plastering with Flush coating (water proof mixing) 1:4 using, 9 mm thick, scaffolding, curing, etc. Complete work (a) Digester Tank Inner	





PLAN



UNDER GROUND FIXED DOME BIO GAS PLANT

Jyothi Biogas & Rural Social Service Centre

(Licenced agency for Biogas Scheme of Govt. of Kerala, Dept. of Agriculture)

Reg: No. T. 1050/99

Suchitwa Mission G. O. (Rt.) No. 1327 / 06. LSGD

ANERT - ATKW / BG / 07



No : JB: 16/2019

Date: 16/02/2019

To,

The Director

Bishop Benziger Hospital, Kollam.

Quotation of Biogas Plant Cleaning and Maintenance for 700 & 400 Kg Capacity Plants

1. Removal of all biogas plant wastes	-	70,000/ Rs
2. Pitt digging for biogas wastes disposal	-	20,000
3. Maintenance & mason work in inside of the plant	-	20,000
4. Construction and technical work for Outlet tank	-	15,000
5. Mixing of Cow dung	-	20,000
6. For new Biogas plant connection	-	5,000

Total - 1, 50,000

less

20,000

1,30,000/-



Advance paid
10,000/-

22/02/19

Advance 50%
RS. 75,000/-
Inv No. 002592
16/2/19

A. ALFRED (Secretary)
JYOTHI BIO GAS
& Rural Social Service Centre
Chemboor, O S Mangalam, TVM -695 125

Chemboor, Ottasekharamangalam P. O., Thiruvananthapuram Dist. Kerala

E-mail: alfredjyothi@yahoo.com, www.jyothibiogas.com

Mob: 9895398585, 8848877084

Jyothi Biogas & Rural Social Service Centre



(Licenced agency for Biogas Scheme of Govt. of Kerala, Dept. of Agriculture)

Reg: No. T. 1050/99

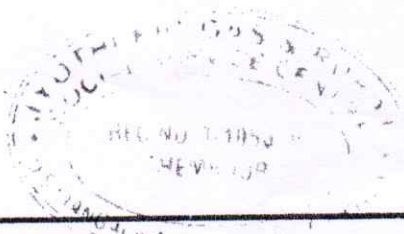
Suchitwa Mission G. O. (Rt.) No. 1327 / 06. LSGD

ANERT - ATKW / BG / 07

Date : 16 - 02 - 2019

ബന്ധിത ഭരണപത്രത്തിലെ
2 ബയോഗ്യാസ് പ്ലാന്റ് ജീനിയം, പുതിയകൊമ്പൻ.

1. പ്ലാന്റിൽ നിന്നും മാർസിംഗ് മെന്റലും അടിച്ചു
മാറ്റുന്നതും, മറ്റിയ ശേഷം പ്ലാന്റിനടുത്ത്
രണ്ടു കുഴി ഘട്ടങ്ങൾ വെക്കി വെസ്റ്റ് കുഴിച്ചുവെക്കു-
ന്നതാണ്.
2. വെസ്റ്റ് കോരി മാറ്റുന്നത് രാത്രിയായിരിക്കണം.
3. താമസ സൗകര്യം ഉപയോഗിക്കണം.
4. വെസ്റ്റ് മറ്റിയ ശേഷം, പ്ലാന്റിനടുത്തുവെച്ചു അപക-
രകൾ ചെയ്തിട്ടുള്ള മറ്റി, പുതിയ കൊമ്പൻ
നടുത്ത്, കുഴപ്പമുണ്ടാകാതെ, അതിനടുത്തുവെച്ചു
പോലുള്ള മാറ്റം ജീവനാക്കി, പ്ലാന്റിന് 2 ദിവസ-
ത്തെ വെസ്റ്റ് കൊടുത്തിട്ട് പുതിയ ചാണകം
വെക്കി ഗ്യാസാകുന്നതാണ്.
5. ചാണകം വെക്കി 5-ാം ദിവസം 2 പ്ലാന്റിൽ
വെക്കുന്ന സൂത്ര സഹായിച്ചു പുതിയ ചാണകം
ഇട്ട് കൊമ്പൻ നൽകുന്നതാണ്.



A. ALFRED (Secretary)
JYOTHI BIO GAS
& Rural Social Service Centre
Chemboor, O.S. Tangalam, Thiruvananthapuram

TERMS AND CONDITIONS

1. Land will be provided by the organization
2. The Party will have to provide sufficient water for the operation of the plant.
3. We will arrange the service of a Supervisor /Technician for the overall supervision of the plant.
4. The party will have to arrange electricity for the fabrication work, if any, water for the civil work during the installation of the plant.
5. The work of the installation and commissioning of the plant will be completed within a period of **7** days from the date of placing firm order with advance.
6. The work will be completed on TURNKEY BASIS under the expert supervision of our Engineers
7. The plant will have a guarantee period of 2 years from the date of commissioning.
8. Any repair / maintenance work after the period of guarantee will be undertaken with the financial support of the party.
9. This offer is open for acceptance for a period of 3 months.

TERMS OF PAYMENT

- 1 50% of the Total cost along with the work order
- 2 25% of the total cost shall be paid immediately after the completion of fixed dome.
- 3 15% of the total cost shall be paid immediately after finishing the work.
- 4 Balance 10% shall be paid immediately after the commissioning of the plant.

NB: 18 % GST Extra



Jyothi Biogas & Rural Social Service Centre



(Licenced agency for Biogas Scheme of Govt. of Kerala, Dept. of Agriculture)

Reg: No. T. 1050/99

Suchitwa Mission G. O. (Rt.) No. 1327 / 06. LSGD


ANERT - ATKW / BG / 07

..... m³ 2.5 kg മോഡൽ ബയോഗ്യാസ് പ്ലാന്റ് നിർമ്മിതിയെ സംബന്ധിച്ചുള്ള പരസ്പര സമ്മത പത്രം.

1.	പ്ലാന്റിൽ ദിനംപ്രതി ഇടാവുന്ന മാലിന്യങ്ങൾ	500 + 250
2.	ദിനംപ്രതി സംസ്കരിക്കാവുന്ന മലമൂത്ര വിസർജനവും, വെള്ളവും	
3.	പ്ലാന്റിന്റെ അളവുകൾ	
4.	പ്ലാന്റ് നിർമ്മിച്ച് കമ്മീഷൻ ചെയ്ത് നൽകുന്ന കാലയളവ്	
5.	പ്ലാന്റ് നിർമ്മാണത്തിന് സമ്മതിച്ച ആകെ കരാർ തുക	1,30,000/-
6.	അഡ്വാൻസ് തുക	75,000/-
7.	പണി തുടങ്ങുന്ന ദിവസം നൽകേണ്ട തുക	
8.	ഫൗണ്ടേഷൻ കോൺക്രീറ്റ് പൂർത്തിയാകുമ്പോൾ	
9.	പ്ലാന്റ് ഡ്യൂം പൂർത്തിയാകുമ്പോൾ	
10.	ഡ്യൂം കോൺക്രീറ്റ്, ഔട്ട്ലെറ്റ് ടാങ്ക്, ഇൻലെറ്റ് ടാങ്ക്	
11.	പ്ലാന്റും, അതിനോടനുബന്ധിച്ചുള്ള സെപ്റ്റി ടാങ്ക്, ഫിൽറ്ററിംഗ് ടാങ്ക് എന്നീ കൺസ്ട്രക്ഷൻ പണികൾ 100 % പൂർത്തിയാകുമ്പോൾ	50,000/-
12.	സ്റ്റാമ്പ് കണക്ഷൻ & ഗ്യാസ് കമ്മീഷൻ	5,000/-

ഈ ബയോഗ്യാസ് പ്ലാന്റിന്റെ നിർമ്മാണം ജ്യോതി ബയോഗ്യാസ് & റൂറൽ സോഷ്യൽ സർവ്വീസ് സെന്റർ നേരിട്ട് നടത്തുന്നതും, മഴ, വെള്ളക്കെട്ട്, ചെളി എന്നിവ ഇല്ലാതിരുന്നാൽ പറഞ്ഞിരിക്കുന്ന കാലയളവിനുള്ളിൽ പ്ലാന്റ് കമ്മീഷൻ ചെയ്ത് നൽകാമെന്നും, പ്രകൃതി മോശമായിരുന്നാൽ 20 ദിവസം കൂടി അതികമാകുമെന്നും, പണികൾ 2 വർഷം ഗ്യാരന്റീയിൽ പൂർത്തീകരിച്ച് നൽകുന്നതാണെന്ന് കരാറുകാരനും, പണിക്കാവിശ്യമായ വെള്ളം, വൈദ്യുതി, മേൽ പറഞ്ഞിരിക്കുന്ന സാമ്പത്തിക ഇടപാടുകൾ എന്നിവ പറഞ്ഞിരിക്കുന്ന സമയത്തിൽ തന്നെ നൽകാമെന്നും ഉടമയായ പരസ്പര സമ്മതിച്ച് ഇതിൽ ഒപ്പിട്ടിരിക്കുന്നു.

ഒപ്പ്
 പേര്
 മേൽവിലാസം


 എ.ആൽഫ്രെഡ്
 (സെക്രട്ടറി)



സ്ഥലം Chemboor, Ottasekharamangalam P. O., Thiruvananthapuram Dist. Kerala

E-mail: alfredjyothi@yahoo.com, www.jyothibiogas.com

Mob: 9895398585, 8848877084

AUGUSTIN .R

Mangalathu Biogas Agency

Mangalathu Veedu, Parandodu P.O., Aryanadu (Via),

Thiruvananthapuram, Pin : 695 542, Phone : 0472-2092362 (R)

Approved by ANERT Govt. of Kerala Mob : 9486046413



To

THE DIRECTOR
BISHOP BENZIGOR NURSING COLLEGE
KOLLAM

*Sr. Superior
Little Flower St. Joseph's Health Centre
Kollam*

MNES (GOVT. OF INDIA) AND ANERT (GOVT. OF KERALA)
APPROVED MODEL 15 CUM R.C.C. FIXED DOME BIOGAS PLANT
TECHNICAL SPECIFICATION

Sl.No.	Description of Work
1	Clearing the site, leveling the ground
2	Earth work excavation in medium soil depositing on bank initial lead and lifts as per the specification and drawing a. Digester Tank b. Dome bottom c. Intel tank d. Outlet tank e. Soak pit
3.	Dewatering at site (if needed)
4.	Foundation bottom packing of 80 m broken stone 15 cm thick
5	Foundation bottom P.C.C. work 1:4:6 using 10 cm thick 40 cm broken stone as per the spec. and drawing a. Digester tank bottom b. Intel tank c. Outlet tank
6	Foundation concrete R.C.C. work 1:2:4 using 10 cm thick 20 mm broken stone (steel bar 8 mm 20 × 20 distance) as per drawing a. Digester tank bottom b. Intel tank c. Outlet tank

Dr. ANOOPA. K.R. Ph.D (N)
PRINCIPAL
BISHOP BENZIGOR COLLEGE OF NURSING
KOLLAM - 1, KERALA



7.	Brick work in C.M. 1:5 using, country burnt bricks a. Digester tank inner wall 10 cm, outer wall 10 cm b. Intel tank c. Outlet tank d. Soak pit
8.	a. Digester tank R.C.C. 1:2:4 using 20 mm broken stone 120 cm thick including all form work curing, scaffolding etc. complete works (steel bar, 8mm 20 × 20 distance) b. Dome R.C.C. work -do- as per the drawing and design
9.	Reinforcement concrete 1:2:4 using 20 mm broken stone 10 cm thick slab (steel bar 8 mm) a. Outlet tank top
10.	Plastering with flush coat CM 1:4 using 9 mm thick, scaffolding, curing et complete works a. Digester tank inner b. Digester tank floor c. Intel tank, inner and floor d. Outlet tank inner and floor
11	Supply and fixing 8" – 4 kg/ sq.cm pipe (feeding pipe)
12	Filling all around the plant with excavated earth
13	Initial feeding of cowdung 1:1 ratio full digester tank
14	Gas distribution system P.V.C pipe 1" threaded PVC pipe and all fitting complete
15	Supply and fixing 2 nos. canteen burner

Construction and commissioning of Biogas plant

Total Amount

3,12,000.00

(Rupees Three lakhs twelve thousand only)

I Paid State Bank of India of India
Kerala, cheshe No. 0538593
15.4.08 for Rs 9,36,000/-
(Cash cheshe)



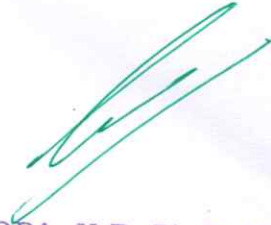
[Handwritten signature in green ink]

Dr. ANOOPA. K.R. Ph.D (N)
PRINCIPAL
BISHOP BENZIGER COLLEGE OF NURSING
KOLLAM - 1, KERALA

15³ FIXED DOME BIOGAS PLANT TECHNICAL

1. Plant capacity : 15m³
2. Type of model : NEDA UP approved by M.N.E.S. (University of Non Conventional Energy Source) (Govt. of India) ANERT Govt.of Kerala.
3. Digester Tank : R.C.C. work underground system
4. Treating Capacity : 250-3500 kg+equal water/ day
5. Gas production : 15 m³ / day
6. Digester volume : 45 m³
7. Works : Digester tank, inlet tank, outlet tank, feeding pipes, gas distribution line burnes.

Ag...


Dr. ANOOPA. K.R. Ph.D (N)
PRINCIPAL
BISHOP BENZIGER COLLEGE OF NURSING
KOLLAM - 1, KERALA

