



NCC LTD.
 STATE WATER AND SANITATION MISSION
 CLIENT: JIM / SWSM / DWSM
 GORAKHPUR-UP



SPECIFIC GRAVITY OF PEA GRAVELS (SIZE- 1.6 mm to 4.8 mm)
 As per IS : 2386 (Part-3)

Date of Testing- 23/12/2021
 Test report no : NCC/SL-18/043

SL NO. DESCRIPTION OBSERVATIONS

1 Source of material : Lakhon, Noida, Uttar Pradesh

2 Location : NAME OF THE BLOCK - BANSGAN NAME OF THE GRAM PANCHAYAT - KHATHUA BHATT

3 Date of sampling : 22/12/2021

4 Lab. Test no : 43

5 Sample no : 43

SPECIFIC GRAVITY TEST AT ROOM TEMPERATURE

6 Weight of the jar, W1 (gm) = 246 gm

7 Weight of jar + Gravel, W2 (gm) = 458 gm

8 Weight of jar + Gravel + Water, W3 (gm) = 654 gm

9 Weight of the jar + Water, W4 (gm) = 718 gm

10 Specific Gravity = $\frac{W2 - W1}{W2 - W1 - (W3 - W4)}$ = $\frac{212}{212 - 136}$ = 2.70

Note : The Specific Gravity should not be less than 2.5

NCC LTD. *[Signature]*
 PMC/TPIA *[Signature]*
 CLIENT *[Signature]*

SWSM PROJECTS - UP - GORAKHPUR



Project Name : Survey, Design, Preparation of DPR, Construction, Commissioning and O&M for 10 years of Various Rural Water Supply Project in the State of Uttar Pradesh - Gorakhpur District
 Client : SWSM/DWSSM-UP-GKP
 Consultant : Medhaj Techno Concept Pvt. Ltd.
 Contractor : NCC Limited

Request For Inspection

RFI No:	SWSM-UP-GKP/X/S/7w/43/K1	Date And Time	28/12/21
Description:	Rectification Against Compliance.		
Location:	Block - Bangaon, C.I. - Kharna Bhatt		
Preceding RFI No.	SWSM-UP-GKP/S/7w/43		
Commencement of work:	28/12/21		
Submitted By:	Hishab Khan		
Signature:			
Designation:	AE		
Concessionaire:	Proceed	Hold	
Name:			
Designation:			
Comments:	① As per instruction from Jd Nizam, we use Syntrax's enamel paint. (copy Attached) ② Fee amount is checked hereby & measured by Trolley.		

Contractor Representative

Consultant Representative

Client Representative

Signature



Latitude: 22.26101

Longitude: 83.82323

Time: 29-12-2021 11:20

Note: @ Block Bansaon, GP-

Khamua Bhatt

Khamua Bhatt

SWSM PROJECTS - UP - GORAKHPUR



Project Name : Survey, Design, Preparation of DPR, Construction, Commissioning and O&M for 10 years of Various Rural Water Supply Project in the State of Uttar Pradesh - Gorakhpur District
 Client : SWSM/DWSM-UP-GKP
 Consultant : Medhaj Techno Concept Pvt. Ltd.
 Contractor : NCC Limited

Request For Inspection



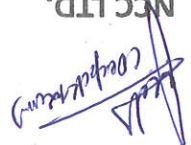
RFI No:	SWSM-UP-GKP/N/S/TW/13	Date And Time	26/12/2021
Description:	Locating of pipe with assembly and filling of blocks - Bangwan, G.P - Khamur Bhatt		
Location:	Bangwan - Bangwan, G.P - Khamur Bhatt		
Preceding RFI No.			
Commencement of work:	28/12/2021		
Submitted By:	Mishra Kishan		
Signature:			
Designation:	AE		
Concessionaire:	Proceed	Hold	
Name:			
Designation:			
Comments:	① Per Gravel not stacking in proper manner ② Enamel paint used on pipe assembly However 2 coat anti corrosion paint should be use on pipe assembly.		

Contractor Representative

Consultant Representative

Client Representative

Signature

CLIENT 	PMC/TPIA 	NCC LTD. 
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Note:- The Hardness value should not be less than 5 in Moh's scale.

The Hardness of Material is = 08

IS Sieve Size	retained	Cumulative wt. Retained (gm)	Cumulative % wt. Retained	% passing	Acceptable / Not Acceptable
6.3 mm	09	09	0.9	99.1	
4.75 mm	220	229	22.9	76.1	
2.36 mm	696	925	92.5	6.5	
1.18 mm	71	996	99.6	0.4	
Pan	04				
Total(gm)=					

SIEVE ANALYSIS



SL NO.	DESCRIPTION	OBSERVATIONS
1	Source of material :	Lalson, Nainital, Uttarakhand.
2	Location :	Block Name- BHANSGARON G.P Name- KHANNUWA BHATT
3	Date of sampling :	22/12/2021
4	Lab. Test no :	43
5	Sample no. :	43
6	Total wt. of sample (gm) :	1000 gm

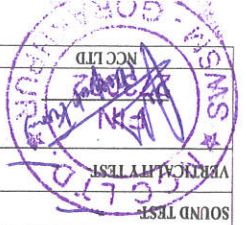
Date of Testing :	23/12/2021
Test report no :	NCC/AF-5/B/043

(As per IS : 460 and IS: 4097)

SIEVE ANALYSIS OF PEA GRAVELS (SIZE-1.6 mm to 4.8 mm)

GORAKHPUR-UP

	NCC LTD.	
	STATE WATER AND SANITATION MISSION	
	CLIENT: JIM / SWSM / DWSM	



JE & AE
(Mondy Jaiswal) (Rohangopal)

P.M.C/P.T.A
(Signature)

E.E
(Signature)

NAME OF THE DISTRICT: GORAKHPUR
NAME OF THE BLOCK: BANS GAN
NAME OF THE GRAM PANCHAYAT: KHAPUA BHATT
NAME OF THE VILLAGE:

DISCHARGE - 500 LPM

TYPE OF RIG M/C: RC
SIZE OF BORE: 5.50 / 500 mm φ
STATIC WATER LEVEL: 12.0 M
A/B Incharge:
J/B Incharge:

DEPTH B.G.L. IN METER

BORING CHART

STRATA

EXECUTED ASSEMBLY

ASSEMBLY DETAILS

mm Dia Housing Pipe A.G.L. = 0.50 m (5.49 m)
200 mm Dia Housing Pipe m to 36.21 m
200/150 mm Dia Reducer 35.71 m to 35.91 m
150 mm Dia BUND pipe 35.91 m to 96.31 m (5.0 mm)
150 mm Dia SLOTER pipe 96.31 m to 99.34 m (5.43 mm)
150 mm Dia BUND pipe 99.34 m to 117.49 m
150 mm Dia SLOTER pipe 117.49 m to 129.55 m
150 mm Dia BUND pipe 129.55 m to 149.68 m
150 mm Dia SLOTER pipe 149.68 m to 149.68 m
150 mm Dia BUND pipe 149.68 m to 153.65 m

0M

SANDY CLAY

35.0M

35.71M

SANDY CLAY

36.0M

35.91M

CONCRETE CLAY

37.0M

36.31M

MEDIUM SAND

38.0M

96.31M

MEDIUM SAND

39.0M

99.34M

MEDIUM SAND

40.0M

117.49M

MEDIUM SAND

42.0M

129.55M

CONCRETE CLAY

48.0M

149.68M

MEDIUM SAND

49.0M

149.68M

MEDIUM SAND

50.0M

153.65M

MEDIUM SAND

51.0M

153.65M

MEDIUM SAND

52.0M

153.65M

MEDIUM SAND

53.0M

153.65M

MEDIUM SAND

54.0M

153.65M

MEDIUM SAND

55.0M

153.65M

MEDIUM SAND

56.0M

153.65M

MEDIUM SAND

57.0M

153.65M

MEDIUM SAND

58.0M

153.65M

MEDIUM SAND

59.0M

153.65M

MEDIUM SAND

60.0M

153.65M

MEDIUM SAND

61.0M

153.65M

MEDIUM SAND

62.0M

153.65M

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MEDIUM SAND

66.0M

153.65M

MEDIUM SAND

67.0M

153.65M

MEDIUM SAND

68.0M

153.65M

MEDIUM SAND

69.0M

153.65M

MEDIUM SAND

70.0M

153.65M

MEDIUM SAND

71.0M

153.65M

MEDIUM SAND

72.0M

153.65M

MEDIUM SAND

73.0M

153.65M

MEDIUM SAND

74.0M

153.65M

MEDIUM SAND

75.0M

153.65M

MEDIUM SAND

76.0M

153.65M

MEDIUM SAND

77.0M

153.65M

MEDIUM SAND

78.0M

153.65M

MEDIUM SAND

79.0M

153.65M

MEDIUM SAND

80.0M

153.65M

MEDIUM SAND

81.0M

153.65M

MEDIUM SAND

82.0M

153.65M

MEDIUM SAND

83.0M

153.65M

MEDIUM SAND

84.0M

153.65M

MEDIUM SAND

85.0M

153.65M

MEDIUM SAND

86.0M

153.65M

MEDIUM SAND

87.0M

153.65M

MEDIUM SAND

88.0M

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MEDIUM SAND

89.0M

153.65M

MEDIUM SAND

90.0M

153.65M

MEDIUM SAND

91.0M

153.65M

MEDIUM SAND

92.0M

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MEDIUM SAND

93.0M

153.65M

MEDIUM SAND

94.0M

153.65M

MEDIUM SAND

95.0M

153.65M

MEDIUM SAND

96.0M

153.65M

MEDIUM SAND

97.0M

153.65M

MEDIUM SAND

98.0M

153.65M

LOGGING REPORT

1. Drilling Started - 18/12/2021
2. Drilling Completed/Lowering - 22/12/2021
3. Drilling Depth (m) - 167.0M
4. Assembly Lowered (m) - 154.15M
5. Housing Pipe (m) - 36.21M
6. Plain Pipe (m) - 99.85M
7. Slotted Pipe (m) - 18.09M
8. Reducer (m) - 0.20M

ABSTRACT

Total Assembly = 153.65 m + A.G.L (m) = 154.15 m

mm Dia	pipe	m to	m to
150	mm Dia BLIND	147.18	m to 153.65
150	mm Dia SLOTER	144.63	m to 149.68
150	mm Dia BLIND	129.55	m to 144.68
150	mm Dia SLOTER	117.49	m to 129.55
150	mm Dia BUND	99.34	m to 117.49
150	mm Dia SLOTER	96.31	m to 99.34 (5.43 mm)
150	mm Dia BUND	35.91	m to 96.31 (5.0 mm)
200/150	mm Dia Reducer	35.71	m to 35.91
200	mm Dia Housing Pipe	36.21	m to 35.71

ASSEMBLY DETAILS

mm Dia Housing Pipe A.G.L. = 0.50 m (5.49 m)

200 mm Dia Housing Pipe m to 36.21 m

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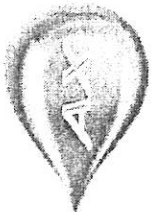
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150 mm Dia BLIND pipe 149.68 m to 153.65 m

1



Aqua Xplore

(Groundwater Assessment & Allied Services)

243/5, New Colony Jiyamau, Hazratganj, Lucknow – 226001
Mob. 9918202546 / 9889323322, Email-aquaxploreiko@gmail.com

Advisor- Dr. R. A. Yadav, ex-Manager(Groundwater), U. P. Jal Nigam

Ref 1211 - K/ AX - 2021 Date 11.12.2021

Geophysical Borehole Logging Report

Name of the site : Khamua Bhatt, Block- Bangsaon

District : Gorakhpur

Date : 11.12.2021

Depth logged : 153.0 mbgl

Depth drilled : 167.0 mbgl

Logged by : Aqua Xplore

Presence : Representative of M/S NCC Limited, Gorakhpur - South

Based on the interpretation of geophysical logs, following information may be deciphered, particularly with respect to salinity of the formation water;

Sl.No.	Depth range(mbgl)	Thickness(m)	Remarks
1	20.0--34.0	14.0	Good all
2	46.0--54.0	8.0	
3	57.0--70.0	13.0	
4	76.0--80.0	4.0	
5	88.0--92.0	4.0	
6	96.0--100.0	4.0	
7	115.0--130.0	15.0	
8	144.0--150.0	6.0	

Note. Sl. No. 4 is very fine sand.

for Aqua Xplore

CC:

1. Executive Engineer, C.D. (E/M), U.P. Jal Nigam, Gorakhpur.
2. M/S NCC Limited, Gorakhpur - South, SWSM Project.

TECHPRO ENGINEERS PVT. LTD.



Lab Add. 131, Ram Ganga Housing Society, Naramau, Kanpur-209217,
Tel.: 0512-2525759, 097933209918, Web site: www.techproindia.com,
e-mail: techproindia@gmail.com, info@techproindia.com,
Doc No.: TEQR-36C, Issue No.: 02, Issue Date: 18/08/20, Rev. No.: 01, Rev. Date: 10/12/2020

TEPL/MT/2022/136/R1

Dated: 05-03-2022

TEST REPORT

Name of Customer	Jal Nigam, Gorakhpur
Project	SWSM-JJM Project (Har Ghar Jal Mission) at Gorakhpur U.P.
Reference No.	SWSM-UP/GKP/QC/77
Sample supplied to Lab by	Customer representative
Name of Contractor/ Agency	NCC Ltd.
Sample Particulars	Pea-Gravel

Sample Receipt Date	03/03/2022	Job No.	MT136
Condition of sample	Satisfactory	SRF No.	2022/29
Type of Sample	Pea-Gravel	ULR No.	NA
Source of sample	Lalkuan (Uttarakhand)	Period of Testing	03/03/2022 to 05/03/2022

Terms & Conditions:

1	Results relate only to the test sample provided by customer.
2	This report is under copyright of Techpro Engineers Pvt. Ltd. (Laboratory Division) and is not to be reproduced, copied, handed over third party or used for any purpose other than for which it has been loaned.
3	The tested samples are retained for three months after issue of test report (if not collected by customer).
4	The unique identification of sample is as Job No. / Chainage No. /BH. No./SI. No. But only SI. No is mentioned in results.



Checked By:

Alok Chauhan

Alok Kumar Chauhan
(Technical Manager)

Approved By:

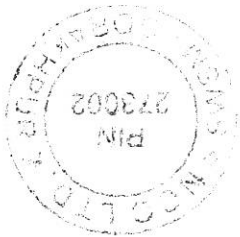
Arvind Kumar Garg

Arvind Kumar Garg
(Quality Manager)

1. PHYSICAL TEST RESULT OF PEA GRAVEL

Sample Unique ID: MT136/TEPL/02

Sl. No.	Particular of Test	Test Passing %	Specification As Per IS (383 & 4097)	Test Method	Remarks	
1.0	Sieve Analysis (% by weight)	12.5 mm	100	IS 2386 (Part-1) 1963, RA-2016		
		8.0 mm	100			
		6.30mm	100			
		4.75 mm	80.90			
		3.35 mm	14.40			
		2.00 mm	8.60			
2.0	Combined Flakiness & Elongation Index (% by weight)	0.0	40 Max	IS 2386 (Part-1)-1963, RA-2016	Partical Size >6.3	
3.0	Water Absorption (% by weight)	0.90	5 Max	IS 2386 (Part-3)-1963 RA-2016	-	
4.0	Specific Gravity	2.66	2.1 - 3.2	IS 2386 (Part-3)-1963 RA-2016	-	
5.0	Hardness Test (Number)	7.3	5 Min	IS 13630 (Part-13)-2006	-	
6.0	Bulk Density, Kg/litre			IS 2386 (Part-3)-1963 RA-2016		
		a) Compacted	1.59			NA
		b) Loose	1.49			NA



Approved By:

(Signature)

Arvind Kumar Garg
(Quality Manager)

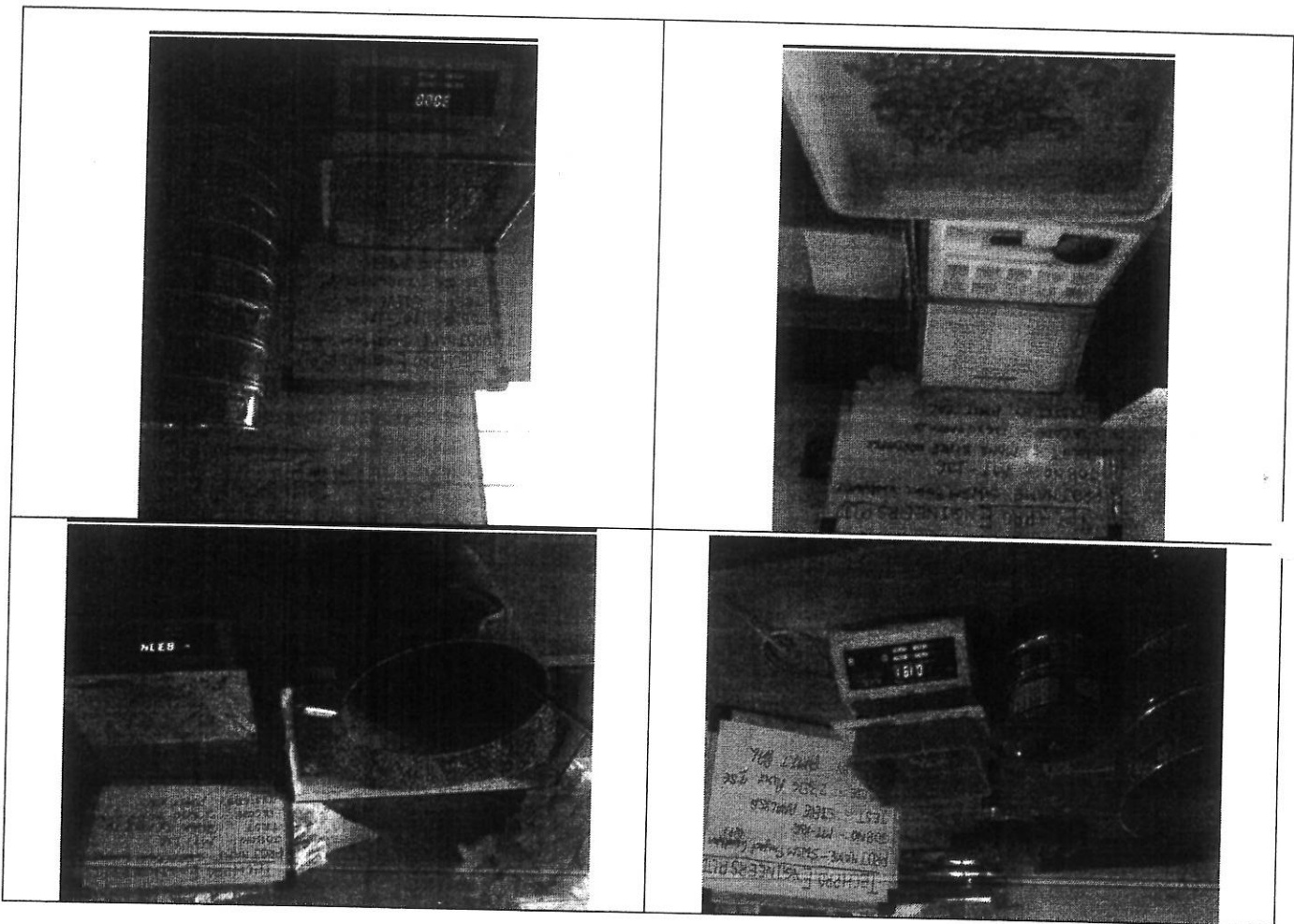


Checked By:

(Signature)

Alok Kumar Chauhan
(Technical Manager)

END OF REPORT



PHOTOGRAPHS

Doc No.: TEQR-36C, Issue No.: 02, Issue Date: 18/08/20, Rev. No.: 01, Rev. Date: 10/12/2020
e-mail: tepllab@gmail.com, info@techproindia.com,
Tel.: 0512-2525759, 09793209918, Web site: www.techproindia.com
Lab Add. 131, Ram Ganga Housing Society, Naramau, Kanpur-209217,

TECHPRO ENGINEERS PVT. LTD. (Laboratory Division)



TUV INDIA PRIVATE LIMITED

INSPECTION RELEASE NOTE / CERTIFICATE

IRN - 8119494049-NCC/ROK/SWSMUP-G(S)/FO/47 - Sr. No 1 - Rev 00



5) QAP Sr.No 3.3 Hydro test done randomly selected @5% items at 7Mpa test pressure and hold period 3 seconds

minimum - observed no pressure dip - found satisfactory.

6) QAP Sr.No 3.4 - Identification marking checked randomly - found in order.

7) All measuring instruments/ equipment were verified for continued suitability for intended use, proper identification, calibration status, traceability to national standards & found satisfactory.

Documents Reviewed:

- 1) QAP Sr. No. 1.1 Raw material test certificates reviewed for its technical content only as declared by manufacturer and endorsed by vendor - Found to meet the applicable code and project specification requirement
- 2) QAP Sr. No. 1.2, 1.3 & 1.4 - Physical Properties, Dimension & Visual report of Raw material reviewed - found in order.
- 3) QAP Sr. No. 2.1 - In-process Dimension inspection report reviewed and found in order.
- 4) QAP Sr. No. 2.2 - In-process Mechanical testing report reviewed and found in order.
- 5) QAP Sr. No. 2.3 - In-process Hydro testing report reviewed and found in order.
- 6) QAP Sr. No. 2.4 - In-process workmanship & protective coating report reviewed and found in order.
- 7) Material test certificates Number DPP/LQC/TC-01212 Date 10.12.2021 reviewed and found in order.

NCR / Waiver (if Any):

None

Identification:

Inspected items identified with TUV Hard stamp "on OD near manufacturers marking (Double on witnessed & rest single)

Order status:

Complete Incomplete

Sub order status: (if applicable)

Complete Incomplete

Date(s) of Inspection:

10.12.2021

Conclusion:

All items were inspected within the scope defined in approved PO, QAP, specifications & Found to meet the requirements of purchase order & Specifications.

Inspector(s) to TUV India Private Limited

Gaurav Kumar



Distribution List: TUV India Client/End User TUV India Executing/Originating Branch Vendor/Sub Vendor
 Revision Number (if Applicable): 00 - Type Reason for revision here.
 This Document Supersedes IRN No.: Mention previous IRN Number.

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 Email: inspection@tuv-india.com Website: www.tuv-india.com
 Form No.: F / INSP / IRN / 03 - RT; Revision Date: 13.03.2020 Page 2 of 2



Salient Feature

- Name of the State : Uttar Pradesh
- Name of the District : Gorakhpur
- Name of the Block : Bansaon
- Name of the Programme : Jal Jeevan Mission
- Name of the Gram Panchayat : Khamua Bhatt
- No. of Village/Habitations : 4/4

Table 1: List of village and Habitation

S. No	1	2	3	4	S. No
District Name	GORAKHPUR				
Sub District Name	Bansaon				
Block Name	Bansaon				
Gram Panchayat	Khamua Bhatt				
2011 Census Code	0	0	0	0	
Revenue Village Name	Badauli	Khamua Bhatt	Khamua Padum	Mahadeeh	
Habitations Name	Badauli	Khamua Bhatt	Khamua Padum	Mahadeeh	

Table 2: Gram Panchayat Population Summary

S. NO	DESCRIPTION	GROWTH FACTOR WRT Y-2011	POPULATION	SC/ST	HOUSE HOLDS
1.	As per Census 2011	1	1814	672	274
2.	Initial Stage 2022	1.22	2210	819	334
3.	Middle Stage 2037	1.62	2940	1090	444
4.	Ultimate Stage 2052	2.14	3890	1442	587



Rate of Water Supply : 64.70 LPCD (Added 15 % losses over 55 LPCD)

Nature of Sources : Ground Water

Source of Development : Tube Well

Daily Water Demand Summary :

a) Initial Year 2022 : 143 KLD

b) Intermediate Year 2037 : 190 KLD

c) Ultimate Year 2052 : 252 KLD

Number of Tube Wells : 1

Nature of Treatments :

: Chlorinator through HDPE Tank (100L) and Dosing metering pump (0-6LPH)

Average Dosing Capacity : 0.50 PPM

Pumping plant for Tube Well

a) No. and Type of Plant : 1

b) Anticipated Discharge : 500 LPM

c) Total Working Head : 42 m

d) Motor (HP) : 10 HP

Service Storage

a) Quantity : 1

b) Capacity : 150 KL

c) Staging : 13 m

Pipeline Summary

Table 3: Rising Mains

Details of Tube well Location		Material	Class	Diameter (mm)-OD	Length (m)
Rising Mains	New Tube Well	DI	K-9	150	35
	New Tube Well	DI	K-9	150	0
Total Length (m)					35

Estimate for KHAMUA BHATT Gram Panchayat
Water Supply Scheme
Under - SWSM
Block - BANSGAON, District- Gorkhpur

183172	183172.00	1.00	LS	All the works including Hydrological survey, topographical survey; Design charges including preparation and approval of DPR
				Drilling of Borehole for Tubewell construction by DCR/CDTH Rig
				Machine including transportation, erection, dismantling of Rig and associated T&P complete in all respect including required all material labour etc.
				RIG Transportation for Tube Well Construction
				Transportation, Installation Dismantling of Rig machine and logging of bore hole
159479	159478.88	1.00	Job	Tube Well Construction- Drilling of Borehole
				400 MMØ
				450 MMØ
				500 MMØ
				550 MMØ
				600 MMØ
				D/CR/CD Drilling from 101 Mtr. To 200 Mtr.Deep
				450 MMØ
				500 MMØ
				550 MMØ
				600 MMØ
				D/CR/CD Drilling from 101 Mtr. To 200 Mtr.Deep
				450 MMØ
				500 MMØ
				550 MMØ
				600 MMØ
				D/CR/CD Drilling from 201 Mtr. To 300 Mtr.Deep
				450 MMØ
				500 MMØ
				550 MMØ
				600 MMØ
				D/CR/CD Drilling from 301 Mtr. To 400 Mtr.Deep & above
				450 MMØ
				500 MMØ
				550 MMØ
				600 MMØ
				DTH Drilling upto 200.0 Mtr.Deep
				200/165 MMØ (in over burden/Hard Rock)
				Development / Flushing of tubewell
				Tube Well Assembly (Supply + Fittings & Specials)
				MSERW plain pipe,As per IS 4270
				100 MMØ
				150 MMØ
				200 MMØ
				300 MMØ
				MSERW Pipe slotted pipe as per IS 8110
				100 MMØ
				150 MMØ
				200 MMØ
				300 MMØ
				MSEW fittings such as clamp, ball plug, reducer, well cap, girder & support structure
				MS fittings such as ring & centre guide
				Tubewell Assembly Lowering Works
				Lowering of above assembly with welding of parts complete in all respect with all required material, T&P, labour, etc.
				Lowering up to 100 Mtr. Deep
				100 MMØ MSERW Plane/Slotted Pipe
				150 MMØ MSERW Plane/Slotted Pipe
				200 MMØ MSERW Plane/Slotted Pipe
				300 MMØ MSERW Plane/Slotted Pipe

BoQ Item No.	Description	Unit	Qty	Rate	Amount
1.01	All the works including Hydrological survey, topographical survey; Design charges including preparation and approval of DPR	LS	1.00	183172.00	183172
2.00	Drilling of Borehole for Tubewell construction by DCR/CDTH Rig				
	Machine including transportation, erection, dismantling of Rig and associated T&P complete in all respect including required all material labour etc.				
	RIG Transportation for Tube Well Construction				
	Transportation, Installation Dismantling of Rig machine and logging of bore hole				
2.01	Tube Well Construction- Drilling of Borehole	Job	1.00	159478.88	159479
2.03	D/CR/CD Drilling up to 100Mtr.				
2.04	400 MMØ	Mtr.		1638.27	
2.05	450 MMØ	Mtr.		1834.20	
2.06	500 MMØ	Mtr.	60.00	2013.00	120780
2.06.01	550 MMØ	Mtr.	40.00	2422.00	96880
2.07	600 MMØ	Mtr.		2422.00	
2.08	D/CR/CD Drilling from 101 Mtr. To 200 Mtr.Deep				
2.09	450 MMØ	Mtr.		1960.88	
2.10	500 MMØ	Mtr.		2144.00	
2.10.1	550 MMØ	Mtr.	56.00	2510.00	120064
2.11	600 MMØ	Mtr.		2510.25	
2.12	D/CR/CD Drilling from 201 Mtr. To 300 Mtr.Deep				
2.13	450 MMØ	Mtr.		2831.63	
2.14	500 MMØ	Mtr.		3014.75	
2.15	600 MMØ	Mtr.		3381.00	
2.16	D/CR/CD Drilling from 301 Mtr. To 400 Mtr.Deep & above				
2.17	450 MMØ	Mtr.		3319.35	
2.18	500 MMØ	Mtr.		3502.48	
2.19	600 MMØ	Mtr.		3868.72	
2.20	DTH Drilling upto 200.0 Mtr.Deep				
2.21	200/165 MMØ (in over burden/Hard Rock)				
2.22	Development / Flushing of tubewell	Mtr.		1250.00	
3.01	Tube Well Assembly (Supply + Fittings & Specials)				
	MSEW plain pipe,As per IS 4270				
3.02	100 MMØ	Mtr.		927.50	
3.03	150 MMØ	Mtr.	86.00	1900.00	163400
3.04	200 MMØ	Mtr.	36.00	2550.00	91800
3.05	300 MMØ	Mtr.		3800.00	
3.06	MSEW Pipe slotted pipe as per IS 8110				
3.07	100 MMØ	Mtr.		1366.85	
3.08	150 MMØ	Mtr.	18.00	2800.00	50400
3.09	200 MMØ	Mtr.		3833.80	
3.10	300 MMØ	Mtr.		5188.59	
3.11	MS fittings such as clamp, ball plug, reducer, well cap, girder & support structure	LS	1.00	32295.00	32295
3.12	MS fittings such as ring & centre guide	RM	140.00	471.68	66035
4.01	Lowering up to 100 Mtr. Deep				
	Lowering of above assembly with welding of parts complete in all respect with all required material, T&P, labour, etc.				
4.02	100 MMØ MSERW Plane/Slotted Pipe	Mtr.		129.45	
4.03	150 MMØ MSERW Plane/Slotted Pipe	Mtr.	64.00	281.00	17984
4.04	200 MMØ MSERW Plane/Slotted Pipe	Mtr.	36.00	376.50	13554
4.05	300 MMØ MSERW Plane/Slotted Pipe	Mtr.		472.00	

BOQ Item No.	Description	Unit	Qty	Rate	Amount
4.06	Lowering from 101 Mtr. To 200 Mtr. Deep	Mtr.	40.00	376.00	15040
4.07	150 MMØ MSERW Plane/Slotted Pipe	Mtr.			
4.08	200 MMØ MSERW Plane/Slotted Pipe	Mtr.			
4.09	300 MMØ MSERW Plane/Slotted Pipe	Mtr.			
4.10	Lowering from 201 Mtr. To 300 Mtr. Deep	Mtr.		745.58	
4.11	150 MMØ MSERW Plane/Slotted Pipe	Mtr.		385.19	
4.12	200 MMØ MSERW Plane/Slotted Pipe	Mtr.		459.00	
4.13	300 MMØ MSERW Plane/Slotted Pipe	Mtr.		606.62	
4.14	Lowering from 301 Mtr. To 400 Mtr. Deep & above	Mtr.			
4.15	150 MMØ MSERW Plane/Slotted Pipe	Mtr.		426.53	
4.16	200 MMØ MSERW Plane/Slotted Pipe	Mtr.		499.00	
4.17	300 MMØ MSERW Plane/Slotted Pipe	Mtr.		643.94	
5.00	Supply and unconsolidated packing of gravel with suitable size	Cum	44.00	7500.00	330000
6.01	Development of Tube well				
6.02	Transportation, Installation Dismantling of 150 PSI Compressor	Job		42120.00	
6.03	Charges for Development by 150 PSI Compressor per hour	Hr.		2544.52	
6.04	Transportation, Installation Dismantling of 250/400/600 PSI Compressor	Job	1.00	42120.00	42120
6.05	Charges for Development by 250 PSI Compressor per hour	Hr.	60.00	3027.00	181620
6.06	Charges for Development by 400 PSI Compressor per hour	Hr.		3154.10	
6.07	Charges for Development by 600 PSI Compressor per hour	Hr.		4062.20	
6.08	Transportation, Installation Dismantling of 0.5 Cusec OP Unit and Yield test, water test	Job		22321.28	
6.09	Charges for Development of TW by 0.5 Cusec OP Unit	Hr.		785.42	
6.10	Transportation, Installation Dismantling of 1 Cusec to 3 Cusec OP Unit and Yield test, water test	Job	1.00	67225.00	67225
6.11	Charges for Development of TW by 1 cusec OP Unit	Hr.	100.00	959.00	95900
6.12	Charges for Development of TW by 3 cusec OP Unit	Hr.		1196.00	
6.13	Transportation, Installation Dismantling of 2 Cusec OP Unit and Yield test, water test	Job		89317.00	
7.01	Charges for Development of TW by 2 cusec OP Unit	Hr.		1119.00	
7.02	1 HP	Nos		32518.98	
7.03	2 HP	Nos		35843.14	
7.04	3 HP	Nos		46249.21	
7.05	5 HP	Nos		65037.95	
7.06	7.5HP	Nos		228500	
7.07	10 HP	Nos	1.00	230200	230200
7.08	12.5 HP	Nos		238800	
7.09	15 HP	Nos		252100	
7.10	17.5 HP	Nos		276504.56	
7.11	20 HP	Nos		295500	
7.12	25 HP	Nos		334043.48	
7.13	30 HP	Nos		366163.04	
7.14	35 HP	Nos		393723.7	
7.15	40 HP	Nos		426547.83	
8.00	Pressure Transmitter	Nos	1.00	43120	43120
9.00	Electrically operated Sluice Valve PN 1.0 dia 100 mm	Nos	1.00	125000	125000
A.1.9.01	Electrically operated Sluice Valve PN 1.0 dia 80 mm	Nos	2.00	125000	250000
9.01	Electrically operated Sluice Valve PN 1.0 dia 150 mm	Nos		125000	
9.02	Electrically operated Sluice Valve PN 1.0 dia 200 mm	Nos		150000	
9.03	Check Valve PN 1.0 DPCV dia 100 mm	Nos		27519.8	
9.03.01	Check Valve PN 1.0 DPCV dia 80 mm	Nos	1.00	27519.8	27520
9.04	Check Valve PN 1.0 DPCV dia 150 mm	Nos		51145.45	

BOQ Item No.	Description	Unit	Qty	Rate	Amount
9.05	Check Valve PN 1.0 DPCV dia 200 mm	Nos	73485.9		
9.06	Dismantling Joint :- Dismantling Joint PN 1.0 dia 100 mm	Nos	3.00	3923.92	11772
9.07	Dismantling Joint PN 1.0 dia 150 mm	Nos	3.00	5605.6	16817
9.08	Dismantling Joint PN 1.0 dia 200 mm	Nos	3.00	7367.36	
9.09	SITC of Chain Pulley Blocks	Nos			
9.10	1 Tonne	Nos	1.00	46305	46305
9.11	2 Tonne	Nos	1.00	58432.5	273000
10.00	Turbidity & Chlorine analyzer	Nos	1.00	273000	273000
11.00	Hydrostatic Level Sensor:- Providing and installation hydrostatic level sensor at all tubewell pumping system including all accessories etc. complete in all respect as per instructions of Engineer-in-charge.	Nos	1.00	126000	126000
12.00	Stabilizer				
12.01	2 KVA	Nos	12777.78		
12.02	5 KVA	Nos	25555.56		
12.03	7.5 KVA	Nos	44722.22		
12.04	10 KVA	Nos	12777.78		
12.05	15 KVA	Nos	16611.11		
12.06	20 KVA	Nos	191666.67		
12.07	25 KVA	Nos	204444.44		
12.08	30 KVA	Nos	230000		
12.09	40 KVA	Nos	281111.11		
12.10	50 KVA	Nos	319444.44		
12.11	60 KVA	Nos	345000		
13.00	Column Pipe:- SITC of Column pipe of MS pipe for connecting submersible pumps				
13.01	32 mm Dia size - MS pipe	Mtr.	500		
13.02	40 mm dia size - MS pipe	Mtr.	666.67		
13.03	50 mm dia size - MS pipe	Mtr.	921		
13.04	65 mm Dia size - MS pipe	Mtr.	1066.67		
13.05	80 mm Dia size - MS pipe	Mtr.	1400		42000
13.06	100 mm Dia size - MS pipe	Mtr.	1567		
13.07	150 mm Dia size - MS pipe	Mtr.	2167		
14.00	Chlorinating System:- Supply, installation of chlorinating system with dosing pump 0-6 LPH capacity with 100 Litres(1wt's) tanks, valves, pipes with required accessories (Automatic dosing system for chemical injection)	JOB	1.00	112000	112000
15.00	Fluoride Removal Plant:- Supplying, installation, testing, commissioning of Fluoride removal plant for required capacity including transportation and labour charges as complete. (Vendor have to select the technology based on capacity (Electrolytic-de fluoridation plant or media based system). Rates for 400 KLD/ 500 LPM	LS		8062500	
16.00	Iron Removal Plant:- Supplying, installation, testing, commissioning of Iron removal plant including transportation and labour charges as complete. Rates for 400 KLD/ 500 LPM	LS		6062500	
17.00	Arsenic Removal Plant:- Supplying, installation, testing, commissioning of Arsenic removal plant which include vessel, media, piping valves etc. for required capacity including transportation and labour charges as complete. Rates for 400 KLD/ 500 LPM	LS		9000000	

BOQ Item No.	Description	Unit	Qty	Rate	Amount
18.00	TDS and Hardness Removal Plant:- Supplying, installation, testing, commissioning of reverse osmosis plant which includes pump, micron cartridge filter, high pressure pump, reverse osmosis membrane, cleaning system and required piping and valves etc. complete for required capacity including transportation and labour charges as complete. Rates for 400 KLD/ 500 LPM	LS		13125000	
19.00	Tube Well Electrification:- Internal electrification of tube well	LS	1.00	20000	20000
20.00	Solar Power Plant:- SITC of Solar power plant (for complete plant) including solar panel, Structure, inverter etc. complete in all respect with required material, T&P labour	KW	19.00	86800	1649200
21.00	Boundary Wall:- Construction of 1.3 m high and 115mm thick boundary wall with 230 mm x 230 mm thick pillar made in Brick masonry in 1 cement and 4 sand mortar, the spacing between two pillar should not be more than 3.0 m c/c and the depth of foundation should not be less than 0.60m, at the site of water works as per departmental type design and drawing, and, as per specifications given in the bid document including supply of all materials, labour T&P etc. for proper completion of work as per instructions of Engineer - in - charge. (Drawing No.D-1)	Rmt	137.20	6400	878080
22.00	MS Gate:- Supply and fixing of 3.6 m x 1.20 m MS gate including fabrication and supply of steel and construction of boundary wall pillars of size 1.35m x 0.23m x 0.23m with ornamental brick work 15mm th. around RCC, as per departmental type design and drawing (Drawing No. D-1) and as per specifications laid down in the bid document, including supply of all material, labour, T&P etc. required for proper completion of work as per instructions of Engineer-in-charge.	No.	1.00	52000	52000
23.00	MS Wicket Gate :- Supply and fixing of 1.2m wide MS wicket gate including fabrication and supply of steel and construction of boundary wall pillars etc. as per specifications laid down in the bid document, including supply of all material, labour, T&P etc. required for proper completion of work as per instructions of Engineer-in-charge.	No.	1.00	19000	19000
24.00	Interlocking Pavement:- Construction of Interlocking pavement for approach to water works, as per departmental type design and drawing and as per specifications laid down in the bid document, including supply of all materials, labour, T&P etc. required for proper completion of work as per instructions of Engineer -in -charge.	Sqm.	250.20	1070.5	267839
25.00	Granular Sub Base:- Construction of granular sub base by providing coarse grade materials, spreading in uniform layers including watering and compaction, complete.	Cum	50.04	2800	140112
26.00	Construction of WBM:- Construction of WBM by providing grade materials, spreading in uniform layers including watering and compaction complete.	Cum	62.55	3029	189464

BQ Item No.	Description	Unit	Qty	Rate	Amount
27.00	Earth Filling:- with the contour map and Grid map of existing site enclosed (Drawing no.D-1), including leveling, dressing, excavation and filling of earth where necessary and also including all labour, materials, T&P etc. required for proper completion of works and also including cartage of earth from within a distance of about 8 km. from the site of works as per instructions of Engineer - in - charge.	Cum		890	
28.00	Semirectular Drain:- Provision for inside semirectular drain 200mm dia including supply of all materials, labour and T & P etc. complete.	Rmt	156.50	1607.14	251517
29.00	Pump House (3.6x3.0x3.0):- Provide all materials, labour, T&P etc. complete and construct Pump house size (3.6x3.0x3.0)m Chlorinating room size (2.5x1.8x3.0)m as per departmental type design and drawing (drawing no-D-2) and as per the specifications for civil work given in the bid document, including supply of all material, labour and of Engineer - in - charge.	Job		597000	
30.00	Pump House (2.5x3.0x3.0):- Provide all materials, labour, T&P etc. complete and construct Pump house size (2.5x3.0x3.0)m Chlorinating room size (1.5x1.3x3.0)m as per the specifications for civil work given in the bid document, including supply of all material, labour and T&P etc complete as per instructions of Engineer - in - charge.	Job	1.00	404000	404000
31.00	Bye-pass Chamber:- Provide all materials, labour, T&P etc. complete and constructed Bye-pass chamber for pump house (1000 (L) x 1000 (W) x 1150 (H) mm) drawing (drawing no.D-3) and as per the specifications for civil work given in the bid document, including supply of all material, labour and T&P etc complete as per instructions of Engineer - in - charge.	No.	1.00	14600	14600

BOQ Item No.	Description	Unit	Qty	Rate	Amount
32.01	50 KL 10 M Staging	Job		1712500.00	
32.02	50 KL 12 M Staging	Job		1788750.00	
32.03	75 KL 10 M Staging	Job		2150000.00	
32.04	75 KL 12 M Staging	Job		2150000.00	
32.05	100 KL 12 M Staging	Job		2242500.00	
32.06	100 KL 16 M Staging	Job		2886250.00	
32.07	150 KL 12 M Staging	Job		3073750.00	
32.08	150 KL 16 M Staging	Job		3241250.00	3241250
32.09	175 KL 12 M Staging	Job		3457500.00	
32.10	175 KL 16 M Staging	Job		3441250.00	
32.11	200 KL 12 M Staging	Job		3732500.00	
32.12	200 KL 16 M Staging	Job		3843750.00	
32.13	200 KL 18 M Staging	Job		4040000.00	
32.14	225 KL 12 M Staging	Job		4105000.00	
32.14.1	225 KL 14 M Staging	Job		4170000.00	
32.15	250 KL 12 M Staging	Job		4587000.00	
32.16	300 KL 12 M Staging	Job		4537500.00	
32.17	300 KL 16 M Staging	Job		4877500.00	
32.18	350 KL 14 M Staging	Job		5508750.00	
32.19	400 KL 14 M Staging	Job		6093750.00	
32.20	400 KL 16 M Staging	Job		6830000.00	
32.21	500 KL 14 M Staging	Job		7021250.00	
32.22	25 KI 10 M Staging	Job		7457500.00	
32.23	25 KI 12 M Staging	Job		1296250.00	
32.24	For 2 m Staging (5% additional per Meter)	Rm	1.00	162062.50	162063
<p>Supply of all materials labour T&F etc. for complete construction of R.C.C. Over Head Tank of following capacity and staging above ground level with main components, including cost of soil testing and assuming bearing capacity of soil as 8 MT, with supply of design and drawings. All the water retaining components of OHT shall be casted in M-30 concrete and minimum grade of concrete of foundation and staging should be M-25 with approved cement, coarse sand and stone grit as per I.S. 11682 and I.S.456 Seismic effects and wind load should be taken into consideration as per I.S. 1893 for earthquake resistance and I.S. 875 part-III for wind load on structure and including 1M wide RCC staircase, 1 m wide R.C.C. M30 balcony, M.S. ladder made of 50x50x6 mm angle section and 20mm plain M.S. bars with hand rails of 20mm medium class G.I. pipes, One aluminum ladder inside the tank from top dome to bottom dome, R.C.C. railing with 20mm dia medium class G.I. pipe (in 3 rows) on both sides of stair case, supported on 50x50x6mm M.S. angle section, spaced at intervals not more than 1.5m, Proper ventilator at top dome in circular shape of 1.2 m dia, Water level indicator fabricated with sensor connecting to automation, Lighting conductor as per I.S.S.2309 or its latest amendments of latest electricity rules, consisting of proper elevation rod with 5 or more fork points as prescribed in ISS 2309-1969 and ISS 3013-1966, C.I. manhole of min 60x60cm size with locking arrangement, Supply, fixing, jointing of D.L/D/F Pipes of appropriate size with D.L/D/F specials conforming to IS 8329/2000 as vertical pipes for inlet, outlet, overflow and washout as per latest / relevant I.S. specifications with all jointing materials for proper completion of work, Construction of bed blocks in 1:2:4 PCC with cement, coarse sand and approved stone grit, Construction of washout / overflow chamber and chambers for sluice / butter fly valves as per departmental type design and drawing, Supply of 200 mm dia PVC pipe as per I.S.- 4985/2000 for disposal of water from overflow and washout chamber to suitable point outside the water works compound, Painting of all concrete surface and steel pipe works with three coats of</p>					

BoQ Item No.	Description	Unit	Qty	Rate	Amount
33.00	Excavation:- and rising main trenches including lift upto 1.50 m and lead upto 50 m and refilling watering, ramming of the excavated earth into the trench and also disposal of surplus earth upto 50m from the center of the trenches including supply of all material labour, T&P etc complete as per instructions of Engineer -in-charge.				
34.00	Ordinary Soil	Cum	4039.43	214.61	866901
35.00	Mixed Soil with Kankar	Cum	1020.39	249.27	254353
36.00	Soft Rock	Cum		943.82	
37.00	Hard Rock	Cum		1319.18	
Additional	Disposal of Surplus Earth top 300 mm ht.	Cum			
38.00	Sand Bedding:- Sand Bedding in trenches in layers not exceeding 10 cm. in depth, consolidating each deposited layer by ramming and watering complete as per instructions of Engineer.	Cum		1656.00	
39.00	Retaining Wall:- Construction of Retaining Wall for Protection Survey, Investigation, Soil Testing, Planning, construction, commissioning etc. as per design and drawing provided by the contractor all in accordance with the relevant latest I.S. Codes and approved by the Engineer as per conditions of the bid documents. The design and drawings provided by the contractor should be vetted by any IIT Institute or Government Engineering College approved by the Engineer, on contractor's cost. For construction of R.C.C. retaining wall including excavation of earth in hard rock/soft rock/ Kankar /morrum /bajri etc. for foundation, Plain Cement Concrete 1:4:8 (one cement four fine aggregates and eight coarse aggregates) and supply of steel as per drawing including bending, binding with all type of binding materials including wastage of steel Reinforced Cement Concrete (M20) 1:1½:3(one cement one and half fine aggregates and three coarse aggregates) including cost of all arrangement of shuttering, scaffolding and water with supply of all materials, labors T&P etc. required for proper completion of works as per the directions of the Engineer (Provisional)	Cum		16400.00	
40.00	Ductile Iron Pipes:- Supply of following sizes (D.I.) pipes for rising main/distribution system conforming to latest/relevant I.S. 8329/2000 Specifications with all joining materials such as specials conforming to latest/relevant I.S. specifications, suitable for D.I pipes, as per IS-1239/2000 and IS 8329/2000 or their latest amendment including F.O.R, destination and all taxes and insurance etc. with loading, unloading and carting up to site of work, also including specials for these pipes and lowering them into the trenches and laying true to alignment and gradient and jointing etc. complete (including testing of pipe lines and cutting of pipes for making up the length but excluding the cost of trenches), all complete as per instructions of Engineer -in-charge.				
40.01	Ductile Iron Pipe (K-9)	m		3877.6	
40.02	250 mm dia Ductile Iron K-9	m		3103.5	
40.03	200 mm dia Ductile Iron K-9	m		2332.32	
40.04	150 mm dia Ductile Iron K-9	m		1728.48	
40.05	125 mm dia Ductile Iron K-9	m		1411.41	
40.06	100 mm dia Ductile Iron K-9	m		1191.41	
40.07	80 mm dia Ductile Iron K-9	m	35.00	905.41	41699

BQ Item No.	Description	Unit	Qty	Rate	Amount
40.08	300 mm dia Ductile Iron K-7	m		3151.6	
40.09	250 mm dia Ductile Iron K-7	m		2564.5	
40.10	200 mm dia Ductile Iron K-7	m		1848.32	
40.11	150 mm dia Ductile Iron K-7	m		1497.48	
40.12	125 mm dia Ductile Iron K-7	m		1301.41	
40.13	100 mm dia Ductile Iron K-7	m		1007.11	
40.14	80 mm dia Ductile Iron K-7	m		909.49	
41	Supply of following sizes pipes for distribution system conforming to latest relevant I.S. 4984/1995 Specifications with all joining materials and specials conforming to latest/relevant I.S. specifications including F.O.R. destination and all taxes and insurance etc. with loading, unloading and carting up to site of work, also including specials for these pipes and lowering them into the trenches and laying true to alignment and gradient and joining etc. complete (including testing of pipe lines and cutting of pipes for making up the length but excluding the cost of trenches) all complete as per instructions of Engineer - in-charge.				
41.01	90 mm dia HDPE Pipe PN6, PE 100	m	173.00	229.5	39704
41.02	75 mm dia HDPE Pipe PN6, PE 100	m	658.00	169.2	111334
41.03	63 mm dia HDPE Pipe PN6, PE 100	m	5091.00	125.8	640448
42.00	Valves:- Supply and carting up to site of work of the following dia DI butterfly /sluice valves, class I, working pressure 10 Kg/cm ² conforming to IS: 780/1969 or its latest amendments, including valve fittings & dismantling joints as per requirement F.O.R. destination, and lowering them into the already prepared trenches, fixing in position and joining them with pipelines and testing etc. complete and also including supply of joining materials etc. complete including all taxes and insurance, as per instructions of Engineer - in-charge.				
42.01	Sluice valve - 300 mm dia	Nos		64042.00	
42.02	Sluice valve - 250 mm dia	Nos		48109.00	
42.03	Sluice valve - 200 mm dia	Nos		27304.00	
42.04	Sluice valve - 150 mm dia	Nos		17626.00	
42.05	Sluice valve - 125 mm dia	Nos	3.00	14505.00	43515
42.06	Sluice valve - 100 mm dia	Nos	5.00	14455.00	72275
42.07	Sluice valve - 80 mm dia	Nos	2.00	12401.00	24802
42.07.2	Sluice valve - 50 mm dia	Nos.		10650.00	
42.08	Scour valve - 80 mm dia	Nos	5.00	10160.84	50804
42.09	Scour valve - 100 mm dia	Nos		12535.28	
42.10	Scour valve - 150 mm dia	Nos		17625.57	
42.11	Scour valve - 200 mm dia	Nos		27304.03	
42.12	Scour valve - 250 mm dia	Nos		48109.48	
42.13	Pressure Relief Valve	Nos			
42.14	PRV 80 mm dia	Nos		54219.00	
42.15	PRV 100 mm dia	Nos		80025.00	
42.16	PRV 150 mm dia	Nos		124575.00	
42.17	Single / Double ball type Air Valve:- Supply and installation, testing etc. of single/double ball type air valve conforming to latest/relevant I.S. specifications including all taxes and insurance, carting up to site of work and lowering them into the trenches, fixing in position and joining them with pipelines and testing etc. complete (including supply of joining materials and Valve fittings etc complete) as per instructions of Engineer.				
42.18	20 mm	Nos	5.00	10229.21	51146
42.19	50 mm	Nos		23170.33	
42.20	80 mm	Nos		23170.33	

BoQ Item No.	Description	Unit	Qty	Rate	Amount
42.21	150 mm	Nos		41024.88	
42.22	Supply of under ground sluice valve fire type consisting of 80 mm dia sluice valve, 80mm dia tail pieces, 80mm dia duck foot bend and 80 mm dia standard makes iron coupling with cap and etc. complete conforming to latest/relevant IS specifications including all taxes and insurance up to site of work and lowering them into the trenches, fixing in position and joining them with pipelines and testing etc. complete (including supply of joining materials and Valve fittings etc. complete as per instructions of Engineer -in - charge.	Nos	5.00	24500.00	122500
43.00	Valve Chambers:- Construction of following type chambers as per department type design and drawing including Heavy duty M.S. Manhole Cover and all materials, labour, T&P etc complete for proper completion of work as per instructions of Engineer -in - charge.				
43.01-43.02	Sluice Valve Chamber (Masonry Type):- Dia upto 200 mm - 1000 (L) x 1200 (W) x 1300 (H) mm	No.	10.00	25800.00	258000
43.03	Sluice Valve Chamber (Surface Box Type):- Dia upto 200 mm - 1000 (L) x 1200 (W) x 1300 (H) mm	No.		5000.00	
43.04	Fire Hydrant chamber (800 (L) X 1250 (W) X 1000 (H) mm)	No.	5.00	18500.00	92500
43.05	Air Valve Chamber				
43.06	350 (L) x 350 (W) x 500 (H) mm	No.	5.00	9000.00	45000
43.07	Scour Valve Chamber				
43.08	dia upto 200 mm - 1000 (L) x 1200 (W) x 1300 (H) mm	No.	5.00	29670.00	148350
43.09	PRV Valve Chamber - 1000 (L) x 1200 (W) x 1300 (H) mm	No.		28380.00	
44.00	Design and construct Thrust Block made in R.C.C. with cement, coarse sand & 20 mm gauge stone ballast in proportion of 1:1.5:3, for pipe line, including supply of MS reinforcement wrought to equired shape as necessary, its bending, fixing & binding the same with 0.50 mm thick binding wire in position & necessary centering & shuttering including curing and supply of all materials, labour, T & P etc. required for proper completion of the work and as per specifications for RCC work as per instructions of Engineer -in - charge.				
44.01	Reinforced Cement Concrete:- Design and construct Thrust Block made in Reinforced Cement concrete (1:1.5:3), with graded stone chips (20 mm nominal size) excluding shuttering and reinforcement, as per technical requirements.	Cum	0.40	13656.33	5408
44.02	Shuttering:- Providing shuttering for Thrust block using approved stout props and thick hard wood planks of approved thickness with required bracing for concrete works curved or straight including fitting fixing and striking out after completion of works.	Sqm	4.80	420.00	2016
44.03	Reinforcement of Thrust Block:- Providing reinforcement of Thrust block for reinforced concrete work including distribution bars, stirrups, binders etc. initial straightening and removal of loose rust (if necessary), cutting to requisite length, hooking and bending to correct shape, placing in proper position and binding with wire at every inter-section, complete as per drawing and direction.	MT	0.03	109838.98	2789
45.00	Staff Quarter / Office Room:- Provide all materials labour, T&P etc. and construct single room staff quarter / office room at water works site identified by the Engineer-in-charge as per department type design and specifications of civil works laid down in the bid document, including all material labour, T&P etc complete for proper completion of work as per instructions of Engineer -in - charge. (Drawing No.D-7)	No	1.00	970600	970600

BOQ Item No.	Description	Unit	Qty	Rate	Amount
46.00	Recharge Mechanism:- Water recharge Mechanism within the water works campus	Sqm	4.00	52500.00	210000
47.00	Backfilling of Earth:- Backfilling of abandoned tube well with available Earth	Cum	107.00		
48.00	Assess replacement items				
48.01	Pumping Plant:- SITC of Pumping plant including pumps with motors, starter, panel, cable, complete in all respect with all required material T&P labour etc.				
48.02	1 HP	Nos	32518.98		
48.03	2 HP	Nos	35843.14		
48.04	3 HP	Nos	46249.21		
48.05	5 HP	Nos	65037.95		
48.06	7.5HP	Nos	228500.00		
48.07	10 HP	Nos	230200.00		
48.08	12.5 HP	Nos	238800.00		
48.09	15 HP	Nos	252100.00		
48.10	17.5 HP	Nos	276504.56		
48.11	20 HP	Nos	295500.00		
48.12	25 HP	Nos	334043.48		
48.13	30 HP (discharge 1000 LPM Head 62 m)	Nos	366163.04		
48.14	35 HP	Nos	393723.70		
48.15	40 HP	Nos	426547.83		
48.16	Turbidity & Chlorine analyzer	Nos	273000.00		
48.17	Hydrostatic Level Sensor:- Providing and installation hydrostatic level sensor at all tubewell pumping system including all accessories etc. complete in all respect as per instructions of Engineer -in-charge.	Nos	126000.00		
48.18	3Mtr. Long Column Pipe				
48.19	32 mm Dia size - MS pipe	Nos	1500.00		
48.20	40 mm dia size - MS pipe	Nos	2000.01		
48.21	50 mm dia size - MS pipe	Nos	2763.00		
48.22	65 mm Dia size - MS pipe	Nos	3200.01		
48.23	80 mm Dia size - MS pipe	Nos	4200.00		
48.24	100 mm Dia size - MS pipe	Nos	4701.00		
48.25	150 mm Dia size - MS pipe	Nos	6501.00		
49.00	Tubewell Automation System:- Installation of suitable capacity simple T.W. automation system to control operation of the pumping plant with respect to high/low water level in OHT with RTU panel, 7" HMI screen, surge device including energy meter inside the pump house with arrangement for communication of data with GSM and GPRS system to show required parameters including all accessories etc. complete in all respect as per instructions of Engineer -in-charge. Dismantling of Roads:- Dismantling of Following type of surfaces including sorting out and stacking of serviceable materials and disposal of unserviceable materials upto a distance of 50m as per instructions of Engineer -in-charge.	Job	1.00	375000	375000
50.01	B.O.E. Surface charge.				
50.02	Bituminous Surface	Sqm	1083.30	100.00	108330
50.03	Interlocking Road	Sqm	199.86	200.00	39972
50.04	C.C. Road	Sqm	96.33	155.00	31785
51.00	Restoration of Roads:- Restatement of the following type of road surface with old and new materials including supply of all materials, labour, T&P etc. required for proper completion of the work as per instructions of Engineer -in-charge.				
51.01	B.O.E. Surface (50% of existing bricks to be reused)	Sqm	1083.30	350	379156
51.02	Bituminous surface	Sqm	199.86	1534.82	306745
51.03	Interlocking Road	Sqm	1070.5		

Boq Item No.	Description	Unit	Qty	Rate	Amount
51.04	C.C. Road	Sqm	96.33	1560.71	150341
52.00	Nala/Culvert Crossing:- Provision for following types of Culvert crossing -along the alignment of pipe line complete as per instructions of Engineer -in -charge. (casing of pipe is done by concreting)				
52.01	Nala/Culvert Crossing (width -3.5 m) upto Dia 300 mm	Nos	2.00	19000	38000
52.02-52.03	Trenchless Crossings:- Survey site Investigation Planning , design Drawings as per State Road taking NOC for trenchless crossing of National highway road and Railway track(crossing length 15m to 25m), Road for of required dia Rising main pipe with casing pipe as required for proper completion of work required size of MS casing pipe as per drawing and as per (IS:3589 & made from confining to IS:2062) with 750 Micron PU coating internally and 250 micron anti corrosive bituminous paint externally by trenchless technology method at an average depth 3.60 mt from normal ground level up to top of casing pipe including excavation & filling of Pit, Dewatering arrangement, Supporting system for soil, also including supply and fixing of 2 no Sluice valve ISI Mark, construction of sluice valve chamber etc. all complete work including supply & fixing specials in carrier pipe over main pipe, as per specification given in the bid documents including supply of all materials, labour T&P etc. for proper completion of work as per instruction of Engineer.				
52.04	Railway Line crossing (Upto Dia 350 mm)	Nos	60000	40000	27000
52.05	National Highway road crossing (Upto Dia 350 mm)	Nos	1.00	40000	40000
52.06	State Highway road crossing (Upto Dia 350 mm)	Nos	1.00	27000	27000
52.07	Road Crossing:- Excavation in foundation of trench of proper size in soil mixed with moorum, Shingle, Kanhar, soft rock, hard rock, including refilling, dressing and ramming earth or sand or bajri, ballast, including providing, supply, carting, lowering, laying and jointing of casing pipe of RCC NP-3 with appropriate size, with rubber ring joint, sand filling in gap inside RCC pipe, insertion of distribution pipe into the casing pipe including supply of T&P, including concrete of 150 mm thick in with 40mm gauge brick ballast local sand and cement in proportion of 8:4:1, provision for barricading, labour for traffic diversion etc. Complete for proper completion of work as per instruction of Engineer.				
52.08	50 mm dia. Pipe	Nos	1400		
52.09	100 mm dia. Pipe	Nos	1700		
52.10	150 mm dia. Pipe	Nos	2000		
52.11	200 mm dia. Pipe	Nos	2400		
52.12	250 mm dia. Pipe	Nos	3600		
52.13	300 mm dia. Pipe	Nos	3900		
52.14	350 mm dia. Pipe	Nos	4386		
52.15	400 mm dia. Pipe	Nos	4700		
52.16	450 mm dia. Pipe	Nos	5200		
52.17	500 mm dia. Pipe	Nos	6200		
52.18	600 mm dia. Pipe	Nos	7600		

BQ Item No.	Description	Unit	Qty	Rate	Amount
53.00	Functional House Tap Connection:- Making house connection should be done atleast 2 m inside the boundary wall with provision of tap from distribution line to outer wall of house, with supply of 1 m G.I. pipe (15 mm) (above ground) & average 5 mtr. MDPE Pipe (20 mm) (below ground) including specials, saddle, Tap,etc. of suitable size, T&F etc. including excavation, laying and joining for proper completion of work as per instructions of Engineer as per Dwg 12 (excluding road restoration)	Nos.	334.00	3500	1169000
54.00	Stand Post:- Construction of single tap pillar type stand post as per type design	Nos.	12.00	10000	120000
55.00	Operation and Maintenance:- Completion including staff required for operation and maintenance, chemicals, all materials, specials T & P for operation and maintenance, excluding electricity charges. (2% of Capex cost for first year of O&M) Note:- 6% Inflation Factor considered for arriving the O&M Cost from Second Year onwards. Cost of DPR Preparation @ 1% of CAPEX Cost of DPR	Rs			
56.01	150mm	Nos.	150000		
56.02	200mm	Nos.	190000		
56.03	250mm	Nos.	225000		
56.04	300mm	Nos.	260000		
56.05	350mm	Nos.	330000		
56.06	400mm	Nos.	420000		
56.07	450mm	Nos.	500000		
56.08	500mm	Nos.	550000		
A1-56.09	100mm	Nos.	100000		
A1-56.10	80mm	Nos.	80000		
57.00	Soft Starter :-	Nos.	1.00	80000	80000
57.01	soft starter with RS485 port -400V,7.5KW Rating	Nos	60000		
57.02	soft starter with RS485 port -400V,15KW Rating	Nos	70000		
57.03	soft starter with RS485 port -400V,22KW Rating	Nos	85000		
57.04	soft starter with RS485 port -400V,30KW Rating	Nos	100000		
57.05	soft starter with RS485 port -400V,45KW Rating	Nos	125000		
57.06	soft starter with RS485 port -400V,55KW Rating	Nos	140000		
57.07	soft starter with RS485 port -400V,75KW Rating	Nos	150000		
57.08	soft starter with RS485 port -400V,90KW Rating	Nos	175000		
57.09	soft starter with RS485 port -400V,110KW Rating	Nos	225000		
57.10	soft starter with RS485 port -400V,132KW Rating	Nos	250000		
57.11	soft starter with RS485 port -400V,220KW Rating	Nos	275000		
57.12	soft starter with RS485 port -400V,250KW Rating	Nos	325000		
57.13	soft starter with RS485 port -400V,312KW Rating	Nos	375000		
57.14	soft starter with RS485 port -400V,450KW Rating	Nos	550000		
58.01	100 Amp rating	Nos	45000		
58.02	125 Amp rating	Nos	50000		
58.03	160 Amp rating	Nos	70000		
58.04	200 Amp rating	Nos	70000		
58.05	250 Amp rating	Nos	120000		
58.06	315 Amp rating	Nos	135000		
58.07	400 Amp rating	Nos	140000		
58.08	500 Amp rating	Nos	150000		
58.09	630 Amp rating	Nos	190000		
59.00	Radar type Level transmitter	Nos	1.00	120000	120000
60.00	Control Panel:- control panel for all power equipments with IP 54 protection	Nos	1.00	120000	120000

Break up of Cost

Sl. No.	Sub Head	Total Cost of work	Building	R.C.C. Reservoir	Pipe Line	Machinery	Misc.
A.	Civil works :						
1	Pump house & Chlorinating room	4,04,000	4,04,000				
2	Rising Main	71,161			71,161		
3	R.C.C. Over head tank (___ KLV ___ m staging)	43,56,019		43,56,019			
4	Distribution System	66,70,418		66,70,418			
5	Approach Road	16,81,966	16,81,966				
6	Boundary Wall and approach road	8,72,280	8,72,280				
7	Staff Quarter	9,70,600	9,70,600				
8	Surveying and designing	2,10,826					2,10,826
	(Total A)	1,31,37,887	39,28,846	1,10,26,437	71,161	-	2,10,826
B.	E&M works:						
1	Cost of Tubewell construction	15,98,455				15,98,455	
2	Cost of pumping plant and Chlorinating Plant	12,53,200				12,53,200	
3	Solar plant	19,09,600				19,09,600	
4	Electrification of pump house, SCADA	11,25,000				11,25,000	
	Total (B)	58,86,255	-	-	-	58,86,255	-
	G. Total (A+B)	1,87,90,542	39,28,846	1,10,26,437	71,161	58,86,255	2,10,826