



NCC LTD.

SOIL SAMPLE COLLECTION REPORT

SWSM PROJECT - GORAKHPUR, UP



1	Name of the Block-	GOLA	
2	Name of the Gram Panchayat-	POKHARIGAON	
3	Name of the Borewell Village-		
4	Name of the Revenue Village-		
5	Drilling Dia of Bore Hole/	For Housing Pipe (Dia- 200 mm/300 mm)-	200
		For Plain/Slotted 150 mm dia-	150
6	Drilling Depth(For Housing Pipe-	36.25
		For Plain/Slotted Pipe-	91.41/18.09
7	Total Drilling Depth (m)-	170M	
8	Electrical Logging Test Depth	165M	

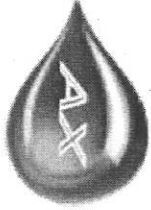
Sl no.	Date of Sample Collection	Type of Soil Sample	Depth of Sample Collection (m)	Remarks
1	12-09-2021	CLAY	0 - 3	
2	12-09-2021	CLAY	3 - 6	
3	12-09-2021	FINE SAND	6 - 9	
4	12-09-2021	FINE SAND	09 - 12	
5	12-09-2021	SANDY CLAY	12 - 15	
6	12-09-2021	SANDY CLAY	15 - 18	
7	12-09-2021	SANDY CLAY	18 - 21	
8	12-09-2021	SANDY CLAY	21 - 24	
9	13-09-2021	CONCRETE CLAY	24 - 27	
10	13-09-2021	CONCRETE CLAY	27 - 30	
11	13-09-2021	CONCRETE CLAY	30 - 33	
12	13-09-2021	CONCRETE CLAY	33 - 36	
13	13-09-2021	FINE SAND	36 - 39	
14	13-09-2021	FINE SAND	39 - 42	
15	13-09-2021	FINE SAND	42 - 45	
16	13-09-2021	SANDY CLAY	45 - 48	
17	13-09-2021	SANDY CLAY	48 - 51	
18	13-09-2021	SANDY CLAY	51 - 54	
19	13-09-2021	SANDY CLAY	54 - 57	
20	13-09-2021	MEDIUM SAND	57 - 60	
21	14-09-2021	MEDIUM SAND	60 - 63	
22	14-09-2021	MEDIUM SAND	63 - 66	
23	14-09-2021	MEDIUM SAND	66 - 69	
24	14-09-2021	MEDIUM SAND	69 - 72	
25	14-09-2021	MEDIUM SAND	72 - 75	
26	14-09-2021	MEDIUM SAND	75 - 78	
27	14-09-2021	CONCRETE CLAY	78 - 81	
28	14-09-2021	CONCRETE CLAY	81 - 84	
29	14-09-2021	CONCRETE CLAY	84 - 87	
30	14-09-2021	SANDY CLAY	87 - 90	
31	15-09-2021	SANDY CLAY	90 - 93	
32	15-09-2021	SANDY CLAY	93 - 96	
33	15-09-2021	SANDY CLAY	96 - 99	
34	15-09-2021	CLAY	099 - 102	

35	15-09-2021	CLAY	102 - 105	
36	15-09-2021	CLAY	105 - 108	
37	15-09-2021	CONCRETE CLAY	108 - 111	
38	15-09-2021	CONCRETE CLAY	111 - 114	
39	15-09-2021	CONCRETE CLAY	114 - 117	
40	15-09-2021	MEDIUM SAND	117 - 120	
41	15-09-2021	MEDIUM SAND	120 - 123	
42	16-09-2021	MEDIUM SAND	123 - 126	
43	16-09-2021	MEDIUM SAND	126 - 129	
44	16-09-2021	MEDIUM SAND	129 - 132	
45	16-09-2021	MEDIUM SAND	132 - 135	
46	16-09-2021	MEDIUM SAND	135 - 138	
47	16-09-2021	MEDIUM SAND	138 - 141	
48	16-09-2021	SANDY CLAY	141 - 144	
49	16-09-2021	CLAY	144 - 147	
50	16-09-2021	CLAY	147 - 150	
51	16-09-2021	CLAY	150 - 153	
52	16-09-2021	CLAY	153 - 156	
53	16-09-2021	CLAY	156 - 159	
54	16-09-2021	CLAY	159 - 162	
55	16-09-2021	CLAY	162 - 165	
56	16-09-2021	CLAY	165 - 170	



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Handwritten signature
CLIENT



Aqua Xplore

(Groundwater Assessment & Allied Services)

243/5, New Colony Jiyamau, Hazratganj, Lucknow - 226001

Mob. 9918202546 / 9889323322, Email-aquaxploreko@gmail.com

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

Ref 902 - P / AX - 2021

Date 02.09.2021

Geophysical Borehole Logging Report

Name of the site : Pokharigaon , Block- Gola

District : Gorakhpur

Date : 02.09.2021

Depth logged : 160.0 mbgl

Depth drilled : 170.0 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	32.0--42.0	10.0	Good all
2	50.0--78.0	28.0	
3	125.0--140.0	15.0	

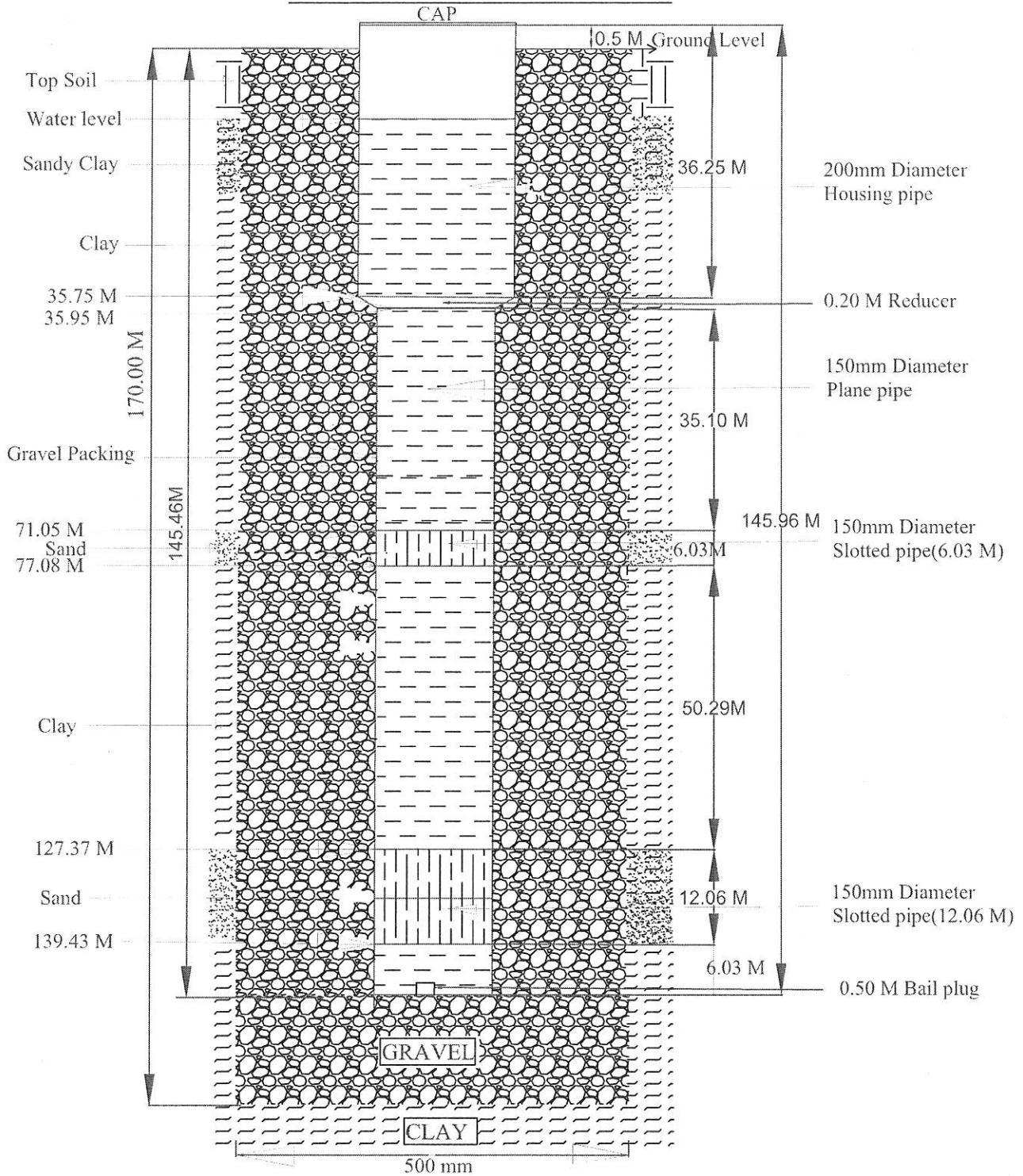
Note. No suitable zones were encountered below 140.0 mbgl till depth logged.

for Aqua Xplore

CC;

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

TUBE WELL ASSEMBLY



(Signature By)
NCC LTD.

(Signature Of)
TPI
(Jal Nigam)

(Signature Of)
JE/AE
(Jal Nigam)

(Signature Of)
(EE)
(Jal Nigam)

Depth of Tube well :- 170 M

Lowering of Tube well assembly :- 145.96 M

Plane/Housig pipe :- 36.25 M

Plane pipe :- 91.62 M

Slotted pipe :- 18.09 M

Required Discharge :- LPM

Project Name
Implementation of Rural Water Supply Projects in the Gorakhpur District
of Gorakhpur Division Uttar pradesh under jeevan mission
Name of Block :- GOLA
Name of Village :- **POKHARIGAON**
Name of Client
Executive Director , SWSM Lucknow
State Water & sanitation Mission , 6 Rana Pratap Marg
Lucknow - 2260001 . Uttar Pradesh .
Name of Contractor
NCC Limited
Ansal API. Sector - C2/183. Sushant Gold City. Near SJ,



NCC LTD.
STATE WATER AND SANITATION MISSION
CLIENT: JJM / SWSM / DWSM
CONSULTANT: Medhaj Techno Concepts Private Ltd.
SIEVE ANALYSIS OF PEA GRAVELS (1.6 mm to 4.8 mm)
(As per IS : 460)

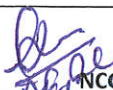
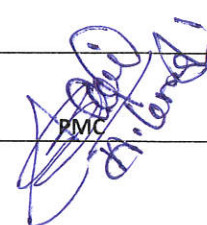



Date of Testing : 27-08-2021
Test report no : Ncc/ckp-5/0c/04



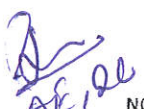

SL NO.	DESCRIPTION	OBSERVATIONS
1	Source of material :	
2	Location :	Block Name- Gola- G.P Name- Pokhari gasn.
3	Date of sampling :	26-08-2021
4	Lab. Test no :	04
5	Sample no. :	01
6	Total wt. of sample (gm) :	1000 gm

SIEVE ANALYSIS

IS Sieve Size	Wt. retained (gm)	Cumulative wt. Retained (gm)	Cumulative % wt. Retained	% passing	Specific limit
6.3 mm	0	0	0	100	OK
4.75 mm	48	48	4.8	95.2	OK
2.36 mm	902	950	95	5	OK
1.18 mm	48	998	99.8	0.2	OK
Pan	0 ±				

 NCC LTD.   CLIENT

1.2 mm

	NCC LTD.		
	STATE WATER AND SANITATION MISSION		
	CLIENT: JJM / SWSM / DWSM		
CONSULTANT: Medhaj Techno Concepts Private Ltd.			
SPECIFIC GRAVITY OF PEA GRAVELS- 1.6 mm to 4.8 mm			
As per IS : 2386 (Part-3)			
Date of Testing-	27-08-2021		
Test report no -	NCC/GRV-S/8/04		
SL NO.	DESCRIPTION	OBSERVATIONS	
1	Source of material :	Nainital, Uttarakhand.	
2	Location :	NAME OF THE BLOCK -	6706 -
		NAME OF THE GRAM PANCHAYAT -	Pokhariyaon -
3	Date of sampling :	26-08-2021	
4	Lab. Test no :	04	
5	Sample no :	01	
SPECIFIC GRAVITY TEST AT ROOM TEMPERATURE			
6	Weight of the Jar, W1 (gm)=	252 gm	
7	Weight of Jar + Gravel, W2 (gm)=	445 gm	
8	Weight of Jar + Gravel + Water, W3 (gm)=	846 gm	
9	Weight of the Jar + Water, W4 (gm)=	724 gm	
10	Specific Gravity =	$\frac{W2 - W1}{(W2 - W1) - (W3 - W4)} = \frac{193}{193 - 122} \Rightarrow 2.7$	=
Note : The Specific Gravity should not be less than 2.5			
 NCC LTD.		 CLIENT	



TECHPRO ENGINEERS PVT. LTD.

(Laboratory Division)

Lab Add. 131, Ram Ganga Housing Society, Naramau, Kanpur- 209217,
Tel.: 0512-2525759, 09793209918, Web site: www.techproindia.com
e-mail: tepllab@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/2020-21/117

Dated: 11.10.2021

TEST REPORT

Name of Customer	:	Jal Nigam, Gorakhpur
Project	:	SWSM-JJM Project (Har Ghar Jal Mission) at Gorakhpur.
Reference No.	:	SWSM-UP/GKP/QC/TPE/001
Sample supplied to Lab by	:	Customer representative
Name of Contractor/ Agency	:	NCC Ltd.
Sample Particulars	:	Pea-Gravel

Sample Receipt Date	:	08-10-2021	Job No.	:	MT117/1
Condition of sample	:	Satisfactory	SRF No.	:	2021/55
Type of Sample	:	Pea-Gravel	ULR No.	:	NA
Source of sample	:	Lalkuan (Uttarakhand)	Period of Testing	:	08/10/2021 to 11/10/2021

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:

(Technical Manager)



Approved By:

Arvind Kumar Garg
(Quality Manager)



TECHPRO ENGINEERS PVT. LTD.

(Laboratory Division)

Lab Add. 131, Ram Ganga Housing Society, Naramau, Kanpur- 209217,

Tel.: 0512-2525759, 09793209918, Web site: www.techproindia.com

e-mail: teplab@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

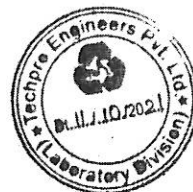
I. PHYSICAL TEST RESULT

Sample Unique ID: MT117/1

Sl. No.	Particular of Test	Test-1 Passing %	Test-2 Passing %	Avg. Passing %	Test Method	Remark	
1.0	Sieve Analysis (% by weight)	6.3 mm	100	100	100	IS 2386 (Part-1)-1963, RA- 2016	-
		4.75 mm	49.928	52.412	51.17		
		3.35 mm	18.992	23.930	21.461		
		2.00 mm	13.116	17.926	15.521		
		1.18 mm	6.412	8.016	7.214		
		0.600 mm	2.562	3.410	2.986		
		0.300 mm	0.164	0.818	0.491		
		0.150 mm	0.134	0.354	0.244		
		0.075 mm	0.092	0.254	0.173		
2.0	Elongation Index (% by weight)	0.0	0.0	0.0	IS 2386 (Part-1)-1963, RA- 2016	Partical Size >6.3	
3.0	Hardness Test (Number)	7.40	8.66	8.00	IS 13630 (Part-13)-2006	-	
4.0	Specific Gravity	2.66	2.66	2.66	IS 2386 (Part-3)-1963, RA- 2016	-	

Checked By:

(Technical Manager)



Approved By:

Arvind Kumar Garg
(Quality Manager)



TECHPRO ENGINEERS PVT. LTD.

(Laboratory Division)

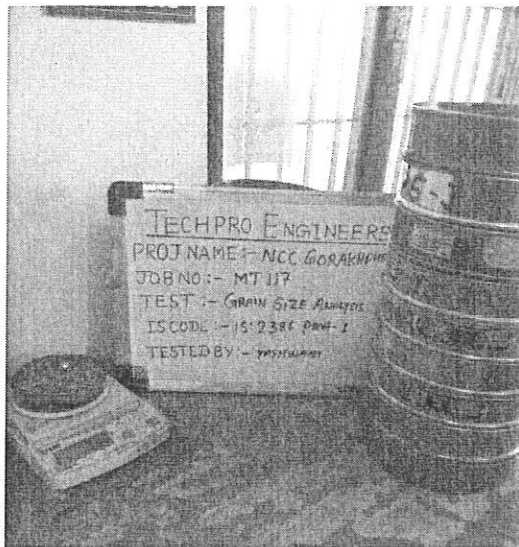
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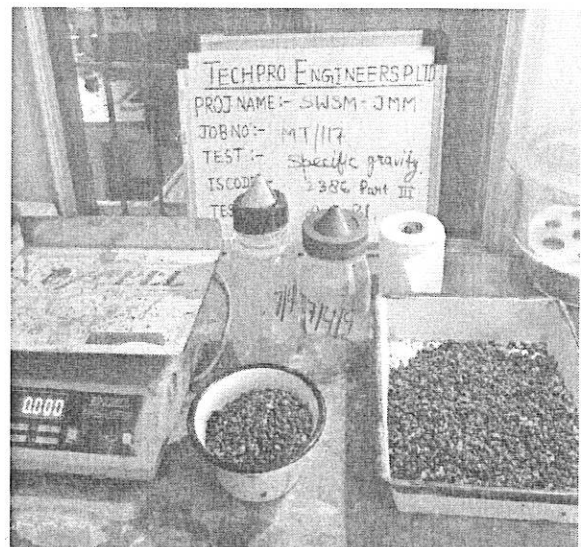
e-mail: tepllab@gmail.com, info@techproindia.com,

Doc No.: TEQR-36C, Issue No.: 02, Issue Date: 18/08/20, Rev. No. : 01, Rev. Date: 10/12/2020

PHOTOGRAPHS



SIEVE ANALYSIS



SPECIFIC GRAVITY



HARDNESS TEST

Checked By:

(Technical Manager)



Approved By:

Arvind Kumar Garg
(Quality Manager)

END OF REPORT

CIN :U28111DL2006PTC148810

ISO 9001:2015

DADU PIPES (P) LIMITED

Manufacturers & Exporters of MS ERW Black Pipes, Steel Tubular Poles & Hollow Sections



Corporate Office : C-101, Dadu Dayal House, RDC, Raj Nagar, Ghaziabad-201002 (U.P.) India.

Email : info@dadupipes.com, Website : www.dadupipes.com

Regd. Office : B-231, Okhla Industrial Area, Phase-1, New Delhi-110020

Contractor Name: NCC Limited

Client Name: State Water and Sanitation Mission

Project Name: Gorakhpur South Project

PO No.: NCC/ROK/SWSMUP-G(S)/PO/23 Dt.: 19.08.2021

TECHNICAL DATASHEET OF STEEL TUBES USED FOR WATER WELLS

S.No.	Parameter	Unit	Requirement	Vender data
1.	Name of Manufacturer			M/S Dadu Pipes Ltd.
2.	Ref IS No.		IS:4270-2001	IS:4270-2001
3.	Type		ERW/HFIW	ERW/HFIW
4.	Ends (Plain/Bevel/Screwed)		Plain	Plain
5.	Size	mm	300mm, 200mm, 150mm	300mm, 200mm, 150mm
6.	Specified Thickness	mm	7.1mm	7.1mm
7.	Tolerance on thickness	%	As per BIS	As per BIS
8.	Tolerance on OD	mm	± 1% of OD	± 1% of OD
9.	Length of Pipe	Mtr	As per order	As per order
10.	Tolerance on Mass	%	± 10%	± 10%
11.	Tensile strength	MPa	410 MPa (Min.)	410 MPa (Min.)
12.	Yield Strength	MPa	235 MPa (Min.)	235 MPa (Min.)
13.	Elongation percent	%	15% (Min.)	15% (Min.)
14.	Flattening Test	%	On weld = 66% remaining On material = 33% remaining	On weld = 66% remaining On material = 33% remaining
15.	Embossing details	--	Embossing on every metre of Manufacturer Name/logo, IS:4270, Grade & ISI Logo with CM/L No. and Size, Thickness, Grade & Batch No. stenciling on each pipe	Embossing on every metre of Manufacturer Name/logo, IS:4270, Grade & ISI Logo with CM/L No. and Size, Thickness, Grade & Batch No. stenciling on each pipe
16.	Bituminous Coating	°C	At 0°C & 65°C	At 0°C & 65°C
17.	Bead Height	%	60% Max. of specified thickness	60% Max. of specified thickness
18.	Straightness	mm	Max. 1 in 600 of any length	Max. 1 in 600 of any length
19.	Make of Steel		Tata/SAIL/Reputed make	SAIL TC to be submitted
20.	Chemical composition certificate	%	As per IS: 10748, Grade-3	Raw material certificate & manufacturer test certificate to be provided
21.	Leak Proof Test	MPa	7 MPA for at least 5 sec.	7 MPA for at least 5 sec.

For Dadu Pipes (P) Ltd.

Auth. Signatory



Recommended for approval with condition that
negotiable tolerance is not allowed

A.E.
C.D. (E/M) UPJN
Gorakhpur



अधीक्षण अभिलेख
23वां मण्डल (वि०
उ० प्र० जल नि.
अयोध्या

DADU PIPES PVT. LTD.

A-72, Industrial Area, Sikandrabad, Bulandshahar (U.P)

QUALITY PLAN FOR ERW M.S. ERW PIPES (DADU MAKE)

SIZE :- 100 MM NB TO 300 MM NB CONFORMING AS PER IS:4270-2001.

Contractor Name:- NCC Limited.

Client Name:- UP Jal Nigam

Project Name:- State Water & Sanitation Mission Gorakhpur

DOCUMENT NO. DPFL/OP/01

REV. 0

NO. OF PAGES 2

PAGE NO. 1/2

Sr. NO.	COMPONENT/ OPERATION	CHARACTERISTICS	CLASS	TYPE OF CHECK	EXTENT OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORDS	Scope of Inspection		REMARKS	
									DPFL	TPI (If Any)		
1	2	3	4	5	6	7	8	9	10	11	12	
1	RAW MATERIALS H.R. CIRCULAR SHEET	1	MAJOR	CHEMICAL ANALYSES	VERIFICATION OF SUPPLIER T.C	IS:10748 & IS:4270	AS PER IS:4270	SUPPLIER T.C & DPFL TEST REPORT	SUPPLIER/ DPFL QC	R		
		2	MAJOR	MECHANICAL	DPFL QC REPORT		---DO---	---DO---	DPFL QC	R		
		3	MAJOR	DIMENSIONAL		100%	---DO---	---DO---	DPFL TEST REPORT	---DO---	R	
		4	MINOR	VISUAL	VISUAL	100%	---DO---	---DO---	---DO---	---DO---	R	
2	IN PROCESS INSPECTION	1	CRITICAL	DIMENSIONAL	ONE HOUR PRODUCTION	AS PER IS:4270	---DO---	DPFL TEST REPORT	DPFL QC	R		
			--DO--		---DO---		---DO---	---DO---	---DO---	R		
			MINOR		---DO---		---DO---	---DO---	---DO---	---DO---	R	
			--DO--		---DO---		---DO---	---DO---	---DO---	---DO---	R	
			--DO--		---DO---		---DO---	---DO---	---DO---	---DO---	R	
			--DO--		VISUAL	---DO---		---DO---	---DO---	---DO---	R	
			--DO--		VISUAL	---DO---		---DO---	---DO---	---DO---	R	
			--DO--		VISUAL	---DO---		---DO---	---DO---	---DO---	R	
2	CRITICAL	MECH. TEST	TWO SAMPLE PER SHIFT		---DO---	---DO---	---DO---	---DO---	R			
3	TENSILE STRENGTH PRESSURE / LEAK TEST		--DO--		---DO---		---DO---	---DO---	---DO---	R		
		MAJOR	HYDRAULIC TEST	100%	---DO---		---DO---	DPFL TEST REPORT	---DO---	R		
4	WORKMANSHIP & PROTECTIVE COATING	MAJOR	VISUAL	RANDOM		AS PER IS:4270	AS PER IS:4270	REPORT	---DO---	R		

AE. EE3

S. NO.	COMPONENT/ OPERATION	CHARACTERISTICS	CLASS	TYPE OF CHECK	EXTENT OF CHECK	PAGE NO.					REMARKS
						REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORDS	TEST DIFF.	TEST (IF ANY)	
1	2	3	4	5	6	7	8	9	10	11	12
5	FINAL INSPECTION	1 DIMENSIONAL	MAJOR	MEASUREMENT & VISUAL	IS:4111:2003	— DO —	— DO —	— DO —	— DO —	W	
		2 TENSILE & BEND/FLATTENING	CRITICAL	MECHANICAL TEST	As Per IS:4275	— DO —	— DO —	— DO —	— DO —	W	
		3 LEAK TEST	MAJOR	HYDRAULIC TEST	5%	AS PER IS:4275	AS PER IS:4275	— DO —	— DO —	W	
		4 IDENTIFICATION & MARKING	MAJOR	VISUAL	— DO —	— DO —	— DO —	— DO —	— DO —	R	
		5 WORKMANSHIP	MAJOR	VISUAL	— DO —	— DO —	— DO —	— DO —	— DO —	W	

NOTE : WE GIVE OUR MANUFACTUR TEST CERTIFICATE.

R = REVIEW OF DOCUMENT

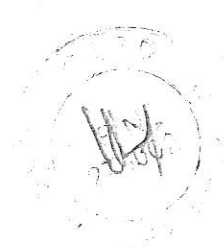
W = WITNESS

V = VERIFICATION

PREPARED BY—

Deep Nandan Singh
QUALITY CONTROL ENGINEER
DADU PIPES (P) LIMITED

APPROVED BY—



Recommended

A.E.
C.D. (E/M) UPJN
Gorakhpur

अधीक्षण अभियन्ता
23वाँ मण्डल (वि. 0. 2. 11)
उ० प्र० जल निगम
अयोध्या

TUV INDIA PRIVATE LIMITED

INSPECTION RELEASE NOTE / CERTIFICATE

IRN -8116448356-NCC/ROK/SWSMUP-G(S)/PO/23- Sr. No 1.- Rev. 00



TUV India Control Or SAP Number:	8116448356	Date:	01-09-2021
Project Name & Location	SWSM-Gorakhpur-South Project Gorakhpur (U.P)	TUV India Branch Name:	Noida
TUV India Client Name:	M/S. DADU PIPES PVT LTD	End User Name:	NCC LIMITED
Contractor Name & Location	NCC LIMITED		
Vendor Name & Location:	M/s. Dadu Pipes (P) Ltd. A-72, Ind. Area, Sikandrabad Bulandshahar (U.P)	P.O. Number: (Client PO on Vendor)	NCC/ROK/SWSMUP-G(S)/PO/23 DT:-19.08.2021
Sub Vendor Name & Location: (If applicable)	Not Applicable	P.O. Number: (If applicable - Vendor PO on Sub Vendor)	Not Applicable

Item Description:

PO Item No.	Item Code Item Description	UOM	P.O. Quantity	Offered Quantity	Accepted Quantity	Cumulative accepted Quantity
1	300 MM Dia MS ERW Plain pipe 6 Mtr Length, WT:7.1 MM Thick as per IS:4270 Plain end	Mtrs	462	474	462	462
2	200 MM Dia MS ERW Plain pipe 6 Mtr Length, WT:7.1 MM Thick as per IS:4270 Plain end	Mtrs	36	48	36	36
3	150 MM Dia MS ERW Plain pipe 6 Mtr Length, WT:7.1 MM Thick as per IS:4270 Plain end	Mtrs	180	192	180	180
4	MS ERW PLAIN END SLOTTED PIPE 150 MM Dia, Wt:7.10 mm conforming to IS:4270(Slotting as per IS:8110 & Zig Zag slots of length 75 mm x width 1.20 mm. & 780 Slot (+/- 10%) per Mtr	Mtrs	162	162	162	162

Reference Documents:

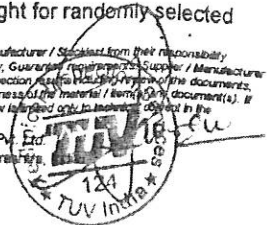
Sr. No.	Document Name	Client Document Number	Vendor Document Number	Approval Status
1)	PR / MR / ARM	Not Applicable	Not Applicable	Not Applicable
2)	QAP / ITP / QCP	DPPL/443/QP/01 Rev 0	Not Applicable	Approved by client
3)	Drawing(s)	Not Applicable	Not Applicable	Not Applicable
4)	Datasheet(s)	Not Applicable	Not Applicable	Not Applicable
5)	Procedure(s)	Not Applicable	Not Applicable	Not Applicable
6)	Others (Specify)	IS 4270, IS 8110, IS 4711	Not Applicable	Approved

Stages Witnessed: (For PO sr.no 4- Scope as per QAP sr. no 3.1, 3.4,3.5 only & All for rest)

- 1) Total offered quantity verified.
- 2) QAP Sr.No 3.5 Visual inspection done for surface defects, workmanship and protective coating for all items- found satisfactory.
- 3) QAP Sr.No 3.1 Final dimension inspection done Thickness, Outer Diameter, Length & weight for randomly selected

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EXECUTIVESUMMARY

SalientFeatures

· Nameofthestate	UTTARPRADESH
· NameoftheDistrict	GORAKHPUR
· NameoftheTehsil	GOLA
· NameoftheBlock	GOLA
· NameoftheProgramme	Under Jal Jeevan Mission
· NameoftheGP	ProgrammePOKHARIGAON
· No.of Village/Habitations	2/2

Table1:ListofVillageandHabitations

S.No	District Name	SubDistrictName	Block Name	GramPanchayatName	2011 Census Code	Revenue VillageName	HabitationsName
1	GORAKHPUR	GOLA	GOLA	POKHARI GAON	187739	POKHARI GAON	POKHARIGAON
2					187740	KALANI	KALANI

VillagePopulationSummary

Table2:Population,SC/STandHouseholdDataGP/
VILLAGE-POPULATIONDETAILS

S.NO	DESCRIPTION	GROWTH FACTORWRTY-2011	POPULATION	SC/ST	HOUSEHOLDS
1.	AsperCensus 2011	1	1776	492	281
2.	InitialStage2022	1.24	2200 ✓	609	348 ✓
3.	MiddleStage2037	1.58	2800	775	443
4.	UltimateStage2052	1.97	3500 ✓	969	554

· Rateofwatersupply	:	64.7LPCD(added15%lossesover55LPCD)
· NatureofSources	:	Groundwater
· SourceofDevelopment	:	Tube-Well
· DailyWaterDemandSummary	:	
a) Baseyear2022	:	142KLD
b) Intermediateyear2037	:	181KLD
c) Designyear2052	:	227KLD
· NumberofTubewells	:	1 No.
· NatureofTreatments	:	ChlorinatorthroughHDPETank (100L)and meteringpump(0-6LPH) Dosing
· AverageDosing Capacity	:	0.5 PPM
· Pumping plantforTubeWell	:	
a) No.andTypeofPlant	:	1NumberofSubmersiblePump
b) AnticipatedDischarge	:	500 LPM ✓
c) TotalworkingHead	:	41 M ✓
d) Motor(HP)	:	12.5 HP
· ServiceStorage	:	
a) Quantity	:	1No.
b) Capacity	:	150KL ✓
c) Staging	:	12M ✓

PipelineSummary

Table3:RisingMainSummary

PipelineType	Details of tubewell	TubewellLocation	Material	Class	Diameter(mm)-OD	Length(m)
RisingMains	New TubeWell	In Water Works	DI	K-9	100	35
TotalLength(m)						35

Table4:DistributionSummary

PipelineType	Material	Class	Diameter(mm)	Length(m)
DistributionMains	HDPE	PN-6PE100	63	9,790
DistributionMains	HDPE	PN-6PE100	75	779
DistributionMains	HDPE	PN-6PE100	90	17
DistributionMains	HDPE	PN-6PE100	110	238
DistributionMains	HDPE	PN-6PE100	125	0
DistributionMains	HDPE	PN-6PE100	140	20
DistributionMains	HDPE	PN-6PE100	160	0
DistributionMains	HDPE	PN-6PE100	180	0
DistributionMains	HDPE	PN-6PE100	200	0
TotalLength(m)				10,844

Instrumentdetail

Two nos. of sluice valves have been provided at the outlet of each tubewell. One will be placed at rising main to OHT and another will be placed at the inlet of the bypass chamber. One Sluice valve of required size has been provided at each of OHSR inlet pipe, Outlet pipe, Washout Pipe and for bypass arrangement. For multi village scheme, one number of sluice valve has been provided at the entry of each village. Air valve of required size has been provided at required regular intervals in main distribution line from OHT to village entry point. Also, one sluice valve type fire hydrant consisting of 80mm dia sluice valve has been provided inside the OHSR campus boundary.

Table 25: Valve Abstract

Type of Instrument	Size (mm)	Instruments Quantity (No)				
		Rising Main	OHT	Emergency By-pass in OHT	Fire-Hydrants	Distribution
Sluice Valve	200					
	150		1 (E)			
	125					1
	100		2			1
	80	2 (E)				8
Air Valve	20					8
	50					8
	80					
	150					
Scour Valve	80					8
	100					
	150					
	200					
	250					
Flow Meter	80	1				
	100					
	150					
	200					
	250					
	300					
	350					
	400					
450						
Check Valve	80	1				
Fire Hydrant					3	

1.16 Design of drilling and size of pipes for construction of Tubewell

Discharge Required for Tube Well 500 LPM

Size of Pipes (Screens/Slotted Pipes)

For discharge of 500, As per IS Code recommended size of Slotted pipe is 150mm. Hence, we adopted 150mm dia MSSlotted pipe for construction of tubewell.

Estimate for Pokharigaon Gram Panchayat
Water Supply Scheme
Under - SWSM
Block- Gola, District- Gorakhpur

BOQ Item No.	Description	Unit	Qty	Rate	Amount
	Survey, Design & Preperation of DPR				
1.01	All the works including Hydrological survey, topographical survey, Design charges including preparation and approval of DPR	LS	1.00	249765.00	249765
2.00	Drilling of Borehole for Tubewell construction by DC/RC/DTH Rig Machine including transportaion, crection, dismantling of Rig and assosiated T&P complete in all respect including required all material labour etc.				
	RIG Transportation for Tube Well Construction				
2.01	Transportation, Installation Dismantling of Rig machine and logging of bore hole	Job	1.00	159478.88	159479
	Tube Well Construction- Drilling of Borehole				
2.03	DC/RC Drilling up to 100Mtr.				
2.04	400 MMØ	Mtr.		1638.27	
2.05	450 MMØ	Mtr.		1834.20	
2.06	500 MMØ	Mtr.	100.00	2013.00	201300
2.07	600 MMØ	Mtr.		2422.00	
2.08	DC/RC Drilling from 101 Mtr. To 200 Mtr.Deep				
2.09	450 MMØ	Mtr.		1960.88	
2.10	500 MMØ	Mtr.	80.00	2144.00	171520
2.11	600 MMØ	Mtr.		2510.25	
2.12	DC/RC 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	DC/RC 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)	Mtr.		1250.00	
2.22	Development / Flushing of tubewell	Hr.		2900.00	
	Tubwell Assembly (Supply + Fittings & Specials)				
3.01	MSERW plain pipe,As per IS 4270				
3.02	100 MMØ	Mtr.		927.50	
3.03	150 MMØ	Mtr.	109.00	1900.00	207100
3.04	200 MMØ	Mtr.	36.00	2550.00	91800
3.05	300 MMØ	Mtr.		3800.00	
3.06	MSERW 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, bail plug, reducer, well cap, girder & support structure	LS	1.00	32295.00	32295
3.12	MS fittings such as ring & centre guide	RM	163.00	471.68	76884
	Tubwell Assembly Lowering Works				
	Lowering of above assembly with welding of parts complete in all respect with all required material, T&P, labour, etc.				
4.01	Lowering up to 100 Mtr. Deep				
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 Plain/Slotted Pipe	Mtr.		472.00	
4.06	Lowering from 101 Mtr. To 200 Mtr. Deep				
4.07	150 MMØ MSERW Plane/Slotted Pipe	Mtr.	63.00	376.00	23688

BOQ Item No.	Description	Unit	Qty	Rate	Amount
4.08	200 MMØ MSERW Plane/Slotted Pipe	Mtr.		499.19	
4.09	300 MMØ MSERW Plane/Slotted Pipe	Mtr.		745.58	
4.10	Lowering from 201 Mtr. To 300 Mtr. Deep				
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				
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	
	Supply and Packing of Gravel Works				
5.00	Supply and unconsolidated packing of gravel with suitable size	Cum	47.00	7500.00	352500
	Development of Tube well				
6.01	Tranportation, Installation Dismantling of 150 PSI Compressor	Job		42120.00	
6.02	Charges for Development by 150 PSI Compressor per hour	Hr.		2544.52	
6.03	Tranportation, Installation Dismantling of 250/400/600 PSI Compressor	Job	1.00	42120.00	42120
6.04	Charges for Development by 250 PSI Compressor per hour	Hr.		3027.00	
6.05	Charges for Development by 400 PSI Compressor per hour	Hr.	60.00	3154.10	189246
6.06	Charges for Development by 600 PSI Compressor per hour	Hr.		4062.20	
6.07	Tranportation, Installation Dismantling of 0.5 Cusec OP Unit and Yield test, water test	Job		22321.28	
6.08	Charges for Development of TW by 0.5 Cusec OP Unit	Hr.		785.42	
6.09	Tranportation, Installation Dismantling of 1 Cusec to 3 Cusec OP Unit and Yield test, water test	Job	1.00	67225.00	67225
6.10	Charges for Development of TW by 1 cusec OP Unit	Hr.	100.00	959.00	95900
6.11	Charges for Development of TW by 3 cusec OP Unit	Hr.		1196.00	
6.12	Tranportation, Installation Dismantling of 2 Cusec OP Unit and Yield test, water test	Job		89317.00	
6.13	Charges for Development of TW by 2 cusec OP Unit	Hr.		1119.00	
	Pumping Plant:-				
7.00	SITC of Pumping plant including pumps with motors starter, pannel, cable, complete in all respect with all required material T&P labour etc.				
7.01	1 HP	Nos		32518.98	
7.02	2 HP	Nos		35843.14	
7.03	3 HP	Nos		46249.21	
7.04	5 HP	Nos		65037.95	
7.05	7.5HP	Nos		228500	
7.06	10 HP	Nos		230200	
7.07	12.5 HP	Nos	1.00	238800	238800
7.08	15 HP	Nos		252100	
7.09	17.5 HP	Nos		276504.56	
7.10	20 HP	Nos		295500	
7.11	25 HP	Nos		334043.48	
7.12	30 HP	Nos		366163.04	
7.13	35 HP	Nos		393723.7	
7.14	40 HP	Nos		426547.83	
7.15	Variation in HP due to change of site locations increased/decreased in per HP of the proposed pumping plants.	Rate/HP		30467	
8.00	Pressure Transmitter	Nos	1.00	43120	43120
	Electrically operated Sluice Valve:-				
A.I - 9.00	Electrically operated Sluice Valve PN 1.0 dia 80 mm	Nos	2.00	125000	250000
9.00	Electrically operated Sluice Valve PN 1.0 dia 100 mm	Nos		125000	
9.01	Electrically operated Sluice Valve PN 1.0 dia 150 mm	Nos	1.00	125000	125000
9.02	Electrically operated Sluice Valve PN 1.0 dia 200 mm	Nos		150000	
	Check Valve:-				
A.I - 9.03	Check Valve PN 10 DPCV dia 100 mm	Nos	1.00	27519.8	27519.8
9.03	Check Valve PN 1.0 DPCV dia 100 mm	Nos		27519.8	
9.04	Check Valve PN 1.0 DPCV dia 150 mm	Nos		51145.45	
9.05	Check Valve PN 1.0 DPCV dia 200 mm	Nos		73485.9	
	Dismantling Joint :-				

BOQ Item No.	Description	Unit	Qty	Rate	Amount
9.06	Dismantling Joint PN 1.0 dia 100 mm	Nos	1.00	3923.92	3924
9.07	Dismantling Joint PN 1.0 dia 150 mm	Nos	1.00	5605.6	5606
9.08	Dismantling Joint PN 1.0 dia 200 mm	Nos		7367.36	
9.09	SITC of Chain Pulley Blocks				
9.10	1 Tonne	Nos	1.00	46305	46305
9.11	2 Tonne	Nos		58432.5	
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	Stabalizer				
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		127777.78	
12.05	15 KVA	Nos		166111.11	
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.	30.00	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(1w+1s) 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 for400 KLD/ 500 LPM	LS		8062500	
16.00	Iron Removal Plant:- Supplying, installation, testing, commissioning of Iron removal plant which includes vessel, media, piping valves etc. for required capacity including transportation and labour charges as complete. Rates for400 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 for400 KLD/ 500 LPM	LS		9000000	
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 for400 KLD/ 500 LPM	LS		13125000	

BOQ Item No.	Description	Unit	Qty	Rate	Amount
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	22.00	86800	1909600
21.00	Boundary Wall:- Construction of 1.3 m high and 115mm thick boundary wall with 230 mmx230 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	125.20	6400	801280
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 1.35mx0.23mx0.23m with ornamental brick work 115mm 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.	232.20	1070.5	248570
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	46.44	2800	130032
26.00	Construction of WBM:- Construction of WBM by providing grade materials, spreading in uniform layers including watering and compaction complete.	Cum	58.05	3029	175833
27.00	Earth Filling:- Earth filling work for proper leveling of water work site, in accordance 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 carriage 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	Semicircular Drain:- Provision for inside semicircular drain 200mm dia including supply of all materials, labour and T & P etc. complete.	Rmt	156.50	1607.14	251517

BOQ Item No.	Description	Unit	Qty	Rate	Amount
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 T&P etc complete as per instructions of Engineer -in - charge.	Job	1.00	597000	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 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 T&P etc complete as per instructions of Engineer -in - charge.	Job		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
32.00	OHT:- Supply of all materials labour T&P 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, Lightening conductor as per I.S.S.2309 or its latest amendments of latest electricity rules, consisting of proper elevation				
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		2242500.00	
32.05	100 KL 12 M Staging	Job		2886250.00	
32.06	100 KL 16 M Staging	Job		3073750.00	
32.07	150 KL 12 M Staging	Job	1.00	3241250.00	3241250
32.08	150 KL 16 M Staging	Job		3457500.00	
32.09	175 KIL12 M Staging	Job		3441250.00	
32.10	175 KL 16 M Staging	Job		3732500.00	
32.11	200 KL 12 M Staging	Job		3843750.00	
32.12	200 KL 16 M Staging	Job		4040000.00	
32.13	200 KL 18 M Staging	Job		4105000.00	
32.14	225 KL 12 M Staging	Job		4170000.00	
32.15	250 KL 12 M Staging	Job		4537500.00	
32.16	300 KL 12 M Staging	Job		4877500.00	
32.17	300 KL 16 M Staging	Job		5508750.00	

BOQ Item No.	Description	Unit	Qty	Rate	Amount
32.18	350 KL 14 M Staging	Job		6093750.00	
32.19	400 KL 14 M Staging	Job		6830000.00	
32.20	400 KL 16 M Staging	Job		7021250.00	
32.21	500 KL 14 M Staging	Job		7457500.00	
32.22	25 Kl 10 M Staging	Job		1296250.00	
32.23	25 Kl 12 M Staging	Job		1363750.00	
32.24	For 2 m Staging (5% additional per Meter)	Rm		162062.50	
33.00	Excavation:- Excavation of earth in ordinary soil (loam, clay or sand) for pipe line 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	3855.14	214.61	827351
35.00	Mixed Soil with Kankar	Cum	3855.14	249.27	960970
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	9.29	1656.00	15381
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 betted 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/ Kanker /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 jointing 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.				
	Ductile Iron Pipe (K-9)				
40.01	300 mm dia Ductile Iron K-9	m		3877.6	
40.02	250 mm dia Ductile Iron K-9	m		3103.5	

BOQ Item No.	Description	Unit	Qty	Rate	Amount
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	35.00	1191.41	41699
40.07	80 mm dia Ductile Iron K-9	m		905.41	
	Ductile Iron Pipe (K-7)				
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	HDPE Pipes PN6, PE 100:- Supply of following sizes pipes for distribution system conforming to latest/ relevant I.S. 4984/1995 Specifications with all jointing 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 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.				
41.01	90 mm dia HDPE Pipe PN6, PE 100	m	17.00	229.5	3902
41.02	75 mm dia HDPE Pipe PN6, PE 100	m	779.00	169.2	131807
41.03	63 mm dia HDPE Pipe PN6, PE 100	m	9790.00	125.8	1231582
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/cm2 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 jointing them with pipelines and testing etc. complete and also including supply of jointing materials etc. complete including all taxes and insurance, as per instructions of Engineer -in -charge.				
	Isolating Sluice Valve				
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	1.00	14505.00	14505
42.06	Sluice valve - 100 mm dia	Nos	3.00	14455.00	43365
42.07	Sluice valve - 80 mm dia	Nos	8.00	12401.00	99208
42.07.1	Sluice valve - 65 mm dia	Nos.		10650.00	
42.07.2	Sluice valve - 50 mm dia	Nos.		9700.00	
	Scour Valve				
42.08	Scour valve - 80 mm dia	Nos	8.00	10160.84	81287
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				
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	

BOQ Item No.	Description	Unit	Qty	Rate	Amount
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 jointing them with pipelines and testing etc. complete (including supply of jointing materials and Valve fittings etc complete) as per instructions of Engineer.				
42.18	20 mm	Nos	8.00	10229.21	81834
42.19	50 mm	Nos		23170.33	
42.20	80 mm	Nos		23170.33	
42.21	150 mm	Nos		41024.88	
42.22	Fire Hydrant:- Supply of under ground sluice valve type fire hydrant 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 I.S.specifications including all taxes and insurance up to site of work and lowering them into the trenches, fixing in position and jointing them with pipelines and testing etc. complete (including supply of jointing materials and Valve fittings etc. complete as per instructions of Engineer -in -charge.	Nos	3.00	24500.00	73500
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.	3.00	18500.00	55500
43.05	Air Valve Chamber				
43.06	350 (L) x 350 (W) x 500 (H) mm	No.	8.00	9000.00	72000
43.07	Scour Valve Chamber				
43.08	dia upto 200 mm - 1000 (L) x 1200 (W) x 1300 (H) mm	No.	8.00	29670.00	237360
43.09	PRV Valve Chamber - 1000 (L) x 1200 (W) x 1300 (H) mm	No.		28380.00	
44.00	Design and construct Thrust Block:- 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 required 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	0.64	13656.33	8740
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	6.40	420.00	2688

BOQ Item No.	Description	Unit	Qty	Rate	Amount
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	3515
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 drawing 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
46.00	Recharge Mechanism:- Water recharge Mechanism within the water works campus	Sqm	16.00	52500.00	840000
47.00	Backfilling of Earth:- Backfilling of abandoned tube well with available Earth	Cum		107.00	
48.00	Assest replacement items				
48.01	Pumping Plant:- SITC of Pumping plant including pumps with motors, starter, pannel, 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 iwth RTU panel , 7" HMI screen , surge device including enrgy 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.	Job	1.00	375000	375000

BOQ Item No.	Description	Unit	Qty	Rate	Amount
50.00	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.				
50.01	B.O.E. Surface	Sqm	1206.00	100.00	120600
50.02	Bituminous Surface	Sqm	2503.00	200.00	500600
50.03	Interlocking Road	Sqm	620.00	155.00	96100
50.04	C.C. Road	Sqm	35.00	329.96	11549
51.00	Restoration of Roads:- Reinstatement 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	1206.00	350	422100
51.02	Bituminous surface	Sqm	2503.00	1534.82	3841654
51.03	Interlocking Road	Sqm	620.00	1070.5	663710
51.04	C.C. Road	Sqm	35.00	1560.71	54625
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 manual and vetting / checked from State Road Divisional Office and 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 mtr 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	
52.05	National Highway road crossing (Upto Dia 350 mm)	Nos		40000	
52.06	State Highway road crossing (Upto Dia 350 mm)	Nos		27000	
52.07	Road Crossing:- Excavation in foundation of trench of proper size in soil mixed with moorum, Shingle, Kankar, 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 encasing 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	

BOQ Item No.	Description	Unit	Qty	Rate	Amount
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	
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&P etc. including excavation, laying and jointing for proper completion of work as per instructions of Engineer as per Dwg 12 (excluding road restoration)	Nos.	348.00	3500	1218000
54.00	Stand Post:- Construction of single tap pillar type stand post as per type design	Nos.	6.00	10000	60000
55.00	Operation and Maintenance:- Operation and Maintenance for 10 years of water supply schemes after 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.	Rs			
55.01	Cost of DPR Preparation @ 1% of CAPEX Cost of DPR	%			
56.00	Electromagnetic flow meters				
A.I - 56.02	80 mm	Nos	1.00	80000	80000
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	
57.00	Soft Starter :-				
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	
58.00	Auto Phase Reversal Unit:-				
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		120000	
58.05	250 Amp rating	Nos		135000	
58.06	315 Amp rating	Nos		140000	

BOQ Item No.	Description	Unit	Qty	Rate	Amount
58.07	400 Amp rating	Nos		150000	
58.08	500 Amp rating	Nos		190000	
58.09	630 Amp rating	Nos		225000	
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
61.00	Cabling for Tube Well:- complete cabling for tubewell including all power and control cables of all equipments at pumphouse and OHT	Nos	1.00	60000	60000
62.00	Master Control PLC:- Master control plc with CPU, SCADA software including GSM / GPRS modem, necessary firewall, ethernet switch, CCTV system	Nos		2665000	
63.00	Installation testing and commissioning	Nos	1.00	60000	60000
Additional Items					
A.I - 1	110 mm dia HDPE Pipe PN6, PE 100	m	238.00	326.71	77757
A.I - 2	125 mm dia HDPE Pipe PN6, PE 100	m		414.95	
A.I - 3	140 mm dia HDPE Pipe PN6, PE 100	m	20.00	513.86	10277
A.I - 4	160 mm dia HDPE Pipe PN6, PE 100	m		663.92	
A.I - 5	180 mm dia HDPE Pipe PN6, PE 100	m		829.93	
A.I - 6	200 mm dia HDPE Pipe PN6, PE 100	m		1016.89	
A.I - 7	Supply Installation of Display board of Size 2M X 1 M for Providing details of proposal of water supply scheme	LS	1.00	25000	25000
A.I - 8	Provision for arboriculture for development of water works	LS	1.00	50000	50000
A.I - 9	Battery 12 V 150 Ah (SITC)	Nos		92800	
A.I - 10	9 Watts Solar Street/Yard Lights inbuilt with all accessories	Nos	4.00	30000	120000
	Hiring of DG Set of Capacity 25 KVA for 15 HP Pump for a lean period of 45 Days	Month		115144	
A.I - 11	SITC of DG for Electricity support				
A.I - 11 -1	7.5 KVA	Nos		240000	
A.I - 11 -2	10 KVA	Nos		260000	
A.I - 11 -3	15 KVA	Nos		306000	
A.I - 11 -4	20 KVA	Nos	1.00	370000	370000
A.I - 11 -5	25 KVA	Nos		389000	
A.I - 11 -6	30 KVA	Nos		405000	
A.I - 11 -7	40 KVA	Nos		483000	
A.I - 11 -8	45 KVA	Nos		495000	
A.I - 11 -9	50 KVA	Nos		555000	
A.I - 11 -10	62.5 KVA	Nos		569000	

246.08

Estimate for Pokharigaon Gram Panchayat						
Water Supply Scheme						
Under - SWSM						
Block- Gola, District- Gorakhpur						
Form "J" - Comprehensive Scheme						
Sr. No.	Description of Work	Amount (Rs. in Laacs)	%	Amount (Rs. in Laacs)	Govt. of U.P. Share	Govt. of India Share
1	2	3	4	5	6	7
214.87	1	253.46		253.46	215.78	
0.30	2	253.46	-0.14%	-0.35	300	
214.57				253.46	214.95	
4.29	3	253.11	2.00%	5.06	93	
218.86				219.28	123.03	123.03
26.26	4	246.07	12.00%	29.53	14.76	14.76
27.36	5	246.07	12.50%	30.76	30.76	
272.48	Grand Total (A+B+C)			306.35	168.56	137.80

TOTAL POPULATION A (ULTIMATE YEAR 2052)	3500
PER CAPITA COST (NET COST+CONTIGENCY+GST)	7031

PREPARED BY

CHECKED BY



Alm
[Signature]
 J.E(T) Assistant Engineer

[Signature]
 Member Secretary
 Executive Engineer
 U.P. Jal Nigam
 Construction Division
 Gorakhpur

[Signature]
 A.E.

[Signature]

[Signature]
 Checked And Found Ok
 Recommended For Approval
 Technical Cell (SWSM), Lucknow

[Signature]
 EXECUTIVE ENGINEER
 CONSTRUCTION DIVISION
 (E/M) U.P. JAL NIGAM
 GORAKHPUR

144.78

Estimate for Pokharigaon Gram Panchayat		
Water Supply Scheme		
Under - SWSM		
Block- Gola, District- Gorakhpur		
General Abstract of Cost (Comprehensive)		
Estimate Number	Description of Sub-Estimate	Amount (Rs. Lacs)
(A) Civil Works		
E-1	Construction of Pump House	5.97
E-2	Pipelines - Raw Water Rising Main	0.70
E-3	Construction of Over Head Tank - 1 Nos	35.68
E-4	Pipelines - Distribution Network	83.09 112.76
E-5	Construction of Boundary Wall	8.72
E-6	Construction of Approach Road & Ancilliary Civil Works	47.36
E-7	Construction of Staff Quarters	9.71
E-8	Suvey, Investigation & Preparation of Detailed Project Report	2.13 2.50
Net Cost of the Civil Works of the Scheme		154.21 192.80 154.21
(B) Electrical & Mechanical Works		
E-9	Drilling Construction & Development of Tube Well - 1 Nos	17.93
E-10	Pumping Plant & Chlorination Plant	12.39
E-11	Solar Power Plant	19.10
E-12	Electrical & Instrumentation	11.25
Net Cost of the Electrical & Mechanical Works of the Scheme		60.66
Total Net Cost of the Scheme (A + B)		214.87 253.46 214.87