

**THE UNITED REPUBLIC OF TANZANIA
PRESIDENT'S OFFICE
REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT
(PO-RALG)
MKINGA DISTRICT COUNCIL**



**MEMORANDUM OF UNDERSTANDING
SIGNED BETWEEN
MKINGA DISTRICT COUNCIL
AND
THE THREE DONORS**

Mr. Joseph Einweg (Water Project Germany)

Mrs. Ilga Schnell-Falsch (Water Project Austria)

Mrs. Inge Dunst (Water Project Austria)

**FOR THE IMPLEMENTATION OF MBUYUNI VILLAGE
PIPED WATER SUPPLY SCHEME
(EXTENSION OF MAPATANO WATER PROJECT)**

SEPTEMBER 2017

**MEMORANDUM OF UNDERSTANDING BETWEEN
M KINGA DISTRICT COUNCIL
AND
THE THREE DONORS**

Mr. Joseph Einweg (Water Project Germany)

Mrs. Ilga Schnell-Falsch (Water Project Austria)

Mrs. Inge Dunst (Water Project Austria)

**FOR THE IMPLEMENTATION OF MBUYUNI VILLAGE
PIPED WATER SUPPLY SCHEME**

(THE EXTENSION OF MAPATANO VILLAGE WATER SUPPLY PROJECT)

Memorandum of Understanding (MoU) between Mkinga District Council on one part and the three Donors **Mr. Joseph Einweg (Water Project Germany)**, **Mrs. Ilga Schnell-Falsch (Water Project Austria)** and **Mrs. Inge Dunst (Water Project Austria)** on the other part is a signed agreement for the purpose of constructing a piped water supply scheme with the broad objective of providing efficient, affordable and sustainable water supply service to the population living in Mbuyuni Village in Mkinga District.

WHERE AS after being satisfied with the objectives of the proposed Mbuyuni Village Piped Water Supply Scheme, both Mkinga District Council and the three Donors have expressed their willingness to finance its implementation;

WHERE AS in recognition of the importance and contribution of the water supply to the social and economic development of Mkinga District and Tanzania as a whole, the District Council has developed a water supply support framework for the construction of Mbuyuni Village Piped Water Supply Scheme which is an extension of Mapatano Village Piped Water Supply Scheme. And the three Donors has expressed their willingness to finance its implementation;

WHERE AS the construction of Mbuyuni Village Piped Water Supply Scheme which will costs approximately TZS 149,007,990.00 (VAT Exclusive) will be funded through a joint pooled financing mechanism between Mkinga District Council and the three Donors;

WHERE AS the financial contributions by Mkinga District Council towards the implementation of the said water project is TZS 29,007,990.00 and the three Donors will contribute the sum of TZS 120,000,000.00

WHEREAS the three Donors have committed to abide to the principle of Harmonization and strive for the highest degree of the effective implementation of project which aims at attaining the Value for Money and the project should be implemented within the agreed Time Frame.

UNDERLYING PRINCIPLES

1. Good governance and accountability of the District Council towards the implementation of the water project, including an active fight against corruption;
2. The District Commissioner for Mkinga District will ensure that Mkinga District Council sufficiently fulfil the roles and responsibilities in the implementation of the project (as per MoU);
3. All parties will provide their share for the financing of the water project as committed;
4. Villagers will participate fully in the excavation of trenches for the laying of pipes and back fill after the pipes have been laid and connected;
5. The villagers will not be paid for the labour they will do during the construction of the project;
6. The three Donors will inform Mkinga District Council on the project disbursement made through fund releases to the Water Account of the project Village (Mbuyuni Village);
7. The District Commissioner has agreed to facilitate exemption of all eligible expenditures for goods, works and services financed under this project from all taxes imposed directly by the Government of Tanzania;
8. The District Council (Mkinga) will prepare a consolidated implementation report and share with the three Donors;
9. The Donors will disburse project funds to the Water Project Account:-

9.1 Account Name: JUHUDI JUMUIYA YA WATUMIAJI MAJI

9.2 Account Number: 41710009071

9.3 Name of the Bank: NMB Bank PLC

9.4 Name of the Bank Branch: NMB Madaraka Branch

9.5 Bank Swift Code: NMIBTZTZ

10. To avoid project construction costs to increase beyond the estimated amount, the fund disbursement from the Donor shall be three times. The first disbursement of fund shall cover part of the costs to purchase piping materials & fittings from the industry and the transport costs of the materials to the site about 400km (TZS 80,000,000.00). The Second disbursement of fund will be TZS 25,000,000 and will be disbursed upon successfully completion of the first disbursement. The third and last disbursement will follow after all delivered materials on site (Pipes and Fittings) are installed to the satisfaction of the engineer and will amount to TZS 15,000,000.00
11. There will be a Water Meter at Mapatano village (off take to Mbuyuni) and at the inlet of the storage tank at Mbuyuni for the purpose of monitoring water leakage from the pipeline between the two villages;
12. Any withdrawal of funds from the account done by the Water Committee will be accompanied with the signed minutes of the meeting conducted for deciding fund withdrawal from the village and submitted to Mkinga District Council for approval;
13. There will be joint supervision mission on a partnership basis which will review the implementation progress of the project and it will involve the District Council and the three Donors;
14. For sustainability of the project, the District Council will form and register a Community Owned Water Supply Organisation (COWSO) in accordance to Clause 31 to 40 of the Water Supply and Sanitation Act No. 12 of 2009 of the United Republic of Tanzania;
15. The water quality monitoring issues are not part and parcel of this Mou

16. This MoU will become effective on the date of signature by Mkinga District Council and the three Donors;
17. This MoU will remain in effect until the end of the implementation of the stated project which is planned to be constructed within two years starting from the financial year 2017/2018;
18. The parties to this MoU will furnish to each other all such information in relation to the water project as will be reasonably requested in a timely manner;
19. All communications and documents submitted to any party and by any part will be in the English language;
20. This MoU may be amended at any time with the written agreement of the parties hereto

Signed by the duly authorized representative of the parties as hereunder:

The District Executive Director (Mkinga District Council) Mr. Rashid Karim Gembe	Signature: <i>Rashid Karim Gembe</i>
	Date: 01/11/2017
The District Water Engineer (Mkinga District Council) Eng. Michael Gregory Ndunguru	Signature: <i>Michael Gregory Ndunguru</i>
	Date: 01/11/2017
The Village Chairman (Mbuyuni Village) Mr. Zibirwani Kiondo Mbwambo	Signature: <i>Z. Mbwambo</i>
	Date: 01/11/2017
The Water Committee Chairman (Water User Committee) Mrs. Hellena Adam Mwifusi	Signature: <i>H. Adam</i>
	Date: 01/11/2017
The District Commissioner (Mkinga District) Mr. Yona L. Maki	Signature: <i>Yona L. Maki</i>
	Date: 06/11/2017
Mr. Joseph Einweg (Water Project Germany)	Signature: <i>Joseph Einweg</i>
	Date: 10.10.2017
Mrs. Ilga Schnell-Falch (Water Project Austria)	Signature: <i>Ilga Schnell-Falch</i>
	Date: 11.10.2017
Mrs. Inge Dunst (Water Project Austria)	Signature: <i>Inge Dunst</i>
	Date: 10.10.2017

16. This MoU will become effective on the date of signature by Mkinga District Council and the three Donors;
17. This MoU will remain in effect until the end of the implementation of the stated project which is planned to be constructed within two years starting from the financial year 2017/2018;
18. The parties to this MoU will furnish to each other all such information in relation to the water project as will be reasonably requested in a timely manner;
19. All communications and documents submitted to any party and by any part will be in the English language;
20. This MoU may be amended at any time with the written agreement of the parties hereto

Signed by the duly authorized representative of the parties as hereunder:

The District Executive Director (Mkinga District Council) Mr. Rashid Karim Gembe	Signature: <i>Rashid Karim Gembe</i>
	Date: 01/11/2017
The District Water Engineer (Mkinga District Council) Eng. Michael Gregory Ndunguru	Signature: <i>Michael Gregory Ndunguru</i>
	Date: 01/11/2017
The Village Chairman (Mbuyuni Village) Mr. Zihirwani Kiondo Mbwambo	Signature: <i>Zihirwani Kiondo Mbwambo</i>
	Date: 01/11/2017
The Water Committee Chairman (Water User Committee) Mrs. Hellena Adam Mwifusi	Signature: <i>Hellena Adam Mwifusi</i>
	Date: 01/11/2017
The District Commissioner (Mkinga District) Mr. Yona L. Maki	Signature: <i>Yona L. Maki</i>
	Date: 01/11/2017
Mr. Joseph Einweg (Water Project Germany)	Signature: <i>Joseph Einweg</i>
	Date: 10.10.2017
Mrs. Ilga Schnell-Falzh (Water Project Austria)	Signature: <i>Ilga Schnell-Falzh</i>
	Date: 11.10.2017
Mrs. Inge Dunst (Water Project Austria)	Signature: <i>Inge Dunst</i>
	Date: 10.10.2017

Enclosure:

MBUYUNI WATER SUPPLY SCHEME FINAL DOC 19 BASIC DESIGN INFORMATION.pdf

MBUYUNI WATER SUPPLY SCHEME FINAL DOC 19 BILL OF QUANTITIES.pdf

MBUYUNI WATER SUPPLY SCHEME FINAL DOC 19 HYDRAULIC DESIGN.pdf

MBUYUNI WATER SUPPLY SCHEME FINAL DOC 19 SURVEY DATA.pdf

WATER USAGE CONTRACT BETWEEN MUNICIPALITY OF MAPATANO AND MBUYUNI

46

AFISA MTENDAJI KIJITI CHA MAPATANO

S. L. P 6005

MKINGA

6/9/2017

DWE
Kwa hatua
stahiji
8/9/2017



KWA

MH DC

WILAYA YA MKINGA

YAH: KUWASILISHA MUHTASARI WA MKUTANO MKUU
MAALUMU WA KIJITI CHA MAPATANO 6/9/2017

Kwa heshima na tahadhima namba kukuwasilishia
Muhtasari wa kujadili Ombi la Kijiji cha mbuguni kuunganisha
maji kutoka kijiji cha mapatano kuenda Kijiji cha mbuguni
Kwa kusoma muhtasari huo utaelewa zaidi.
Asante.

ESTHER R. NYAKALI

AFISA MTENDAJI KIJITI
CHAMBA

NAKALA

MKURUGENZI MTENDAJI HALMASHA
URI YA WILAYA YA MKINGA.

MUHTASARI WA MKUTANO MKUU MAALUMU KITI CHA MAPATANO
ULIOFANYIKA 6/9/2017

AGENDA ZA MKUTANO:

1. KUFUNGUUA MKUTANO
- (2) OMBI LA KITI CHA MBUYUNI KUINGA MATI KUTOKA KITI CHA MAPATANO KWENDA KITI CHA MBUYUNI:
- (3) KUFUNGA MKUTANO:

MUHT: NO 1/ 2017 AGENDA NO 1 — KUFUNGUUA MKUTANO:

Mwenyekiti wa Mkutano ndugu ALLY MFAUME DAD alifungua Mkutano mnamo Saa 8:30 Mchana Kwa Kuwashukua wote waliohudhuria Kwenye Mkutano, Kisha alitamka mkutano nimefungua.

MUHT: NO 2/2017 AGENDA NO 2 — OMBI LA KITI CHA MBUYUNI
KUINGANISHA MATI KUTOKA KITI CHA MAPATANO KWENDA
KITI CHA MBUYUNI:

Katika agenda hii Apisa Mtendaji wa Kijiji Cha Mapatano alisoma barua ya maombi toka Kijiji Cha Mbuyuni iliyokuwa inaomba maji. Walimsikiliza kwa makini na kuipokea vizuri barua hii. Kisha mwenyekiti alifafanua kidego na wananchi waliitikia vizuri, pia MH DIWANI alifafanua kwa kuongeza zaidi na wananchi waliitikia vizuri.

MAONI YA WANANCHI:

Wananchi walitoa maoni kwa kusema, Wenzetu wa Kijiji Cha Mbuyuni inabidi wachangie Mradi huu Kama Sisi tulivyo Changia. Pia waliongeza kwa kusema kwa sasa wamze kuchimba mitaro mahali ambapo mabonaka yafapita ili Maji yasiunganishwe kuanza mpaka tukabidhiwe. Pia waliongeza kwa kuomba ushirikishwaji mapema ufanyike.

MAAZIMIO:

Wananchi wa Kijiji Cha Mapatano waliadhimia kuapamaji, Wako tayari Ndege Zetu wa Kijiji Cha Mbuguni Kuunga maji Kuenda Katika Kijiji Bhaa.

MUHT NO 1/2017/18 AGENDA NO:3 KUFUNGA MKUTANO:

Mwenyekiti wa Mkutano alifunga Mkutano mnamo Saa 10:00 Jini kwa kuwashukuru wananchi wote walioku dhuria, Kuenye mkutano na kutamka mkutano umefugwa.

As.

SAWI YA KATIBU



As. Mwenyekiti

MWIKI WA MKUTANO:

T.	UINA	WASHIFA	SINI
261)	ALLY MFAUME	MWENYERITI - MKUTANO	Ally
(2)	ESTHER R. NYAKALI	/MTENDATI KITI MAPATANO	Ally
(3)	AMBROSI KIJOGOO	MTUMBE	Kijogoo
(4)	JUMANNE KUSHOKA	-II-	Ally
(5)	AMOS EMANUEL	M/KITI WA MAJI	Ally
(6)	KASIMILI MISUJI	MWANANCHI	Ally
(7)	ISAYA PETRO MPETE	MTUMBE	Ally
(8)	ISAYA P. MPETE		
(8)	NTAMA SALIMU	MWANANCHI	Ally
(9)	LAURENT BALAGOMA	-II-	L.B. KAWATA
(10)	THERESIA MELIKIOLI	-II-	Machia
(11)	MWANAISHA HUSSEIN	-II-	M.H.
(12)	JOHN ROMANUS	-II-	Ally
(13)	SALIMU MOHAMED	-II-	Ally
(14)	ABDALAH RAJABU	-II-	Ally
(15)	RAMADHANI KASIMILI	-II-	Ally
(16)	SILAJI BAKARI	-II-	Ally
(17)	PAULO SOLISI	MTUMBE	Ally
(18)	JAMBU WASIA	-II-	Ally
(19)	ALLO SALIMU	MWANANCHI	Ally
(20)	HAMAZI SAIDI	-II-	Ally
21)	HUSSEIN	??	Ally
22)	LUSI YICIA	II	Ally
23)	BAKARI KIBWANA	-II-	Ally
24)	SEIF A. KUMBA	DIN/MAPATANO	Ally
25)	KEHEMA STAMBU	MTUMBE MAJI	R. STAMBU
26)	JOSEPH DADI		Ally
27)	ALCI H. NCOMA	MKULIMA STADI	Ally
8	SAAD MAJATIA	MWANANCHI/TANZANIA	Ally
9	JUMAA MKWATU	MWANANCHI	Jumaa R. MKWATU
7	MWANGI MNYEJO	M/KITI	Ally
	MARIAMU MNYEJO	M/KITI	Ally
	RAMADHAN SAID	MWANANCHI	Ally
	JUMANNE KUSHOKA		Ally

34 ZUKAR AHMADI
 35 DANIEL JOHNASI
 36 LUS PAULO
 37 MOSHI RASHID
 38 HUSSEIN JUMA
 39 SHENKWA MACHEMBO
 40 AHMAD ALI
 41 BLASINA HUSSEIN
 42 MWANGULO JOHSEK
 43 WALESI KAMWE
 44 AMODI RAKARI
 45 KISMA HUSSEIN
 46 MINTAJI HASANI
 47 AHMAD SALIMU
 48 ELISHA EDWINI
 49 ALI AHMAD

MWAZANCHI

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nyumbe masi

MWAZANCHI

MWANANCHI

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A. Salim

E.E

As



Übersetzung 1. Seite:

Vorsitzender des Dorfes Mapatano

Postfach 6005

Mkinga

6. September 2017

An den Bezirksrat des Bezirkes Mkinga

Einreichen der Zusammenfassung der besonderen Hauptversammlung des
Dorfes Mapatano vom 6. September 2017

Mit Respekt und Zufriedenheit möchte ich Ihnen die Zusammenfassung des
Anliegens des Dorfes Mbuyuni zur Lektüre zukommen lassen. Es geht um das
Gesuch des Dorfes Mbuyuni um Anschluss der Wasserleitung vom Dorf
Mapatano zum Dorf Mbuyuni. Anhand der Zusammenfassung werden Ihnen
die Details klarer ersichtlich.

Danke

Unterschrift Esther R. Nyakali

Text

Vorsitzender des Bezirkrates von Mkinga

Übersetzung 2. Seite:

Zusammenfassung der ausserordentlichen Hauptversammlung, Dorf
Mapatano, erstellt am 6.9.2017

Traktanden

1. Eröffnung der Versammlung
2. Gesuch des Dorfes Mbuyuni um Wasseranschluss von Mapatano nach Mbuyuni
3. Schliessen der Versammlung

Zu 1. 2017 Traktandum 1 – Eröffnung der Versammlung:

Der Vorsteher der Versammlung, Herr ALLY MFAUME DAD eröffnete die Versammlung nachmittags um 14:30 Uhr mit Dank an alle, welche sich an der Versammlung eingefunden haben und er erklärt die Versammlung als eröffnet.

Zu 2. 2017 Traktandum 2 – Gesuch des Dorfes Mbuyuni um Wasseranschluss von Mapatano nach Mbuyuni

In diesem Traktandum hat der Vorsitzende des Dorfes Mapatano das Gesuch des Dorfes Mbuyuni um Wasseranschluss zur Kenntnis genommen. Sie haben ihm sehr genau zugehört und das Gesuch gut aufgenommen. Weiter erläuterte der Vorsteher den Sachverhalt und die Bürger reagierten gut darauf. Auch der geschätzte Rat (Diwani) erläuterte noch weitere Details und die Bürger quittierten einvernehmlich.

Ansichten der Bürger:

Die Bürger vertraten die Meinung, ihr vom Dorf Mbuyuni müssten zum Projekt etwas beitragen, wie wir es auch getan haben. Weiter fügten sie hinzu, sie sollen mit dem Graben beginnen, da wo einst die Leitungen durchführen sollen. Die Leitungen sollen aber noch nicht zusammengefügt werden, solange sie nicht übergeben wurden. Weiter fuhren sie fort, zu bitten, dass es mit der Vereinigung (Verlobung) zügig vorangeht.

Übersetzung 3. Seite:

Schlussfolgerung:

Die Bürger des Dorfes Mapatano haben zusammen gefeiert, sie seien bereit, dass die Leute von Mbuyuni und ihr Dorf sich „wassermässig verbinden“. (Sie freuen sich auf die gute Zusammenarbeit.)

Zu 3. 2017 Traktandum 3 – Schliessen der Versammlung

Der Vorsitzende der Versammlung schloss die Versammlung abends um 16:00 Uhr, indem er sich bei allen Teilnehmern bedankte. Er erklärte die Versammlung für geschlossen.

Stempel und Unterschriften des Sekretärs und des Vorsitzenden

Übersetzung 4. und 5. Seite:

Präsenzliste der Teilnehmer mit Funktion und Unterschrift

MUHITASARI WA KIKAO CHA PAMIBA HALMASHAURI YA KIJITI CHA MAPATANO, HALMASHAURI YA KIJITI CHA MBUYUNI NA UONGOZI NGAZI YA WILAYA KUCHOKETI LEO TAREHE 30/8/2017

AGENDA ZA KIKAO

1. KUFUNGUUA KIKAO
2. UTAMBULISHO
3. OMBI LA KIJITI CHA MBUYUNI KUUNGA MATAI KUTOKA KIJITI CHA MAPATANO KUENDA KIJITI CHA MBUYUNI
4. KUFUNGA KIKAO.

MUHTI NO 1/2017 - AGENDA NO 1 - KUFUNGUUA KIKAO

Mwenyekiti wa Kikao ndugu ALY MFAUME DAA alifungua kikao mnamo saa 6:00 mchana kwa kuwashukumu wote waliokhudhuma kwenye kikao, kisha alitamka kikao kimefunguliwa.

MUHTI NO 1/2017/18 AGENDA NO 2 - UTAMBULISHO.

Kwa kuwa tulikuwa halmashauri mbili tofauti na wageni toka Halmashauri ya wilaya ililazimika kuwe na agenda ya utambulisho na Salamu mbalimbali, wajumbe walijitambulisha kwa makuindi-makuindi.

MUHTI NO 1/2017/18 AGENDA NO 3 - OMBI LA KIJITI CHA MBUYUNI KUUNGA MATAI KUTOKA KIJITI CHA MAPATANO KUENDA KIJITI CHA MBUYUNI

Katika agenda hii Afisa mtendaji wa Kijiji cha Mapatano alisoma barua ya maombi toka Kijiji cha Mbuyuni iliyokuwa inalenga kuomba maji michango ya wajumbe: wajumbe alisema sisi wanahalmashauri ya Kijiji cha Mapatano, watu wa Mbuyuni ni ndugu zetu, rafiki zetu wa kamba sana hivyo

hatuwere kuwanyima maji, kwa sababu tunatambua huduma hii ni muhimu sana kwa jamii, lakini tuliwaelekeza wafuate taratibu kuomba maji hayo kwa maandishi.

Hapo Mhe. Mkuu wa wilaya aliuagiza uongozi wa Kijiji cha Mbuyuni kuandika barua hiyo ya maombi na kuwasilisha kwa mwenyekiti wa kikao wa Kijiji cha Mapatano na baada ya kupokea barua hii afisa mtendaji wa Kijiji cha Mapatano aliisoma barua hiyo mbele ya wajumbe.

MIAZIMIO

Wajumbe wa Kijiji cha Mapatano walilidhia ombi hilo la maji kuenda Mbuyuni ili watalipeleka kwenye mkutano mkuu. Kuenda kuwafahamisha wananchi wote.

MUHI NO 1/2017/18 AGENDA NO 4 - KUFUNGA KIKAO

Mwenyekiti wa Kikao alifunga Kikao mnamo Saa 8:00 mchana kuwashukuru wajumbe wote waliishuhudia kwenye Kikao na kutamka Kikao kimefungwa.

Mkuungwa

SANI YA KATIBU



Mwenyekiti

MWIKITI WA KIKAO

Mimi YONA MAKI, DC MUMUNGA
nimeshuhudia muhtasari
kuu wa Kuwapatia Mbuyuni
maji
Dc MUMUNGA

MUHITASARI WA KIKAO CHA PAMWA, HAZIMASHAURI YA KIJITI CHA MAPATANO
NA HIKITI CHA MBUYUNI NA UONGOZI NGAZI YA WILAYA AMBACHO
KILIKETI LEO PAREHE 26/8/2017.

JINA KAMILI	CHEO	ANAKOTOKA	SAJINI
1. SEIFU ALI KUMBA	DIWANI	MAPATANO	Bund
2. SALIMU S. RAMADHANI	/WEO	MAPATANO	Samu
3. ZIHRWANI K. MBWAMBO	MW/KIT-MBU	MBUYUNI	Mbwamba
4. AMY -M. SAA	MWONEKTI	MAPATANO	Amu
5. NAISIE M. MAINOTA	VEO	MAPATANO	Mhanya.
5. FATUMA O. SELIMANI	VAO	MBUYUNI	Amade
7. ESTER R. NYAKALI	VAO	MAPATANO	
8. JUMANINGO S. KICHENGO	MJUMBE	MBUYUNI	Lamingo.
9. BAKARI P. JUMBE	MJUMBE	MBUYUNI	Bakari
10. SIFA SAMWELI	MJUMBE	MBUYUNI	SIFA
11. TIMOTH CHALAMPA	Mjumba	MBUYUNI	Chalampa
12. AMOS EMANUEL	M/KIT MASH	MAPATANO	Amos
13. ATHUMANI ISSA	M. MASH	MAPATANO	
14. LYDIA S. KIMBO	KATIBU MASH	MAPATANO	L.S. KIMBO
15. NAILEDI LUKERO	MJUMBE	MBUYUNI	Quinigi
16. JUDITHI SAMWELI	MJUMBE	MBUYUNI	J. Samweli
17. HELENA ADAMU	Mkatimaji	MBUYUNI	H. Adamu
18. SOFIA RAMADHANI	Mjumba	MBUYUNI	S. Ramadha
19. ZAINA NG'ANZI	MJUMBE	MAPATANO	Z. NG'ANZI
20. REHEMA STANBULI	MJUMBE	MAPATANO	R. STANBULI
21. HEMEDI ALIMASI	MJUMB	MBUYUNI	H.T.
22. MARIAMU AMINI	MJUMBE	MBUYUNI	M.A.
23. MOSHI RASHIDI	MJUMBE-M.	MAPATANO	M.R.
24. ISAYA P. MPETE	MJ.H. RIZISI	MAPATANO	Isaya
25. RAFAELI KASIPANO	MJUMBE	MBUYUNI	RAFAELI
26. MAIKO T. MAPUNDA	MJUMBE	KIJITI MBUYUNI	Maikoo
27. VICTA E. VICTA	MJUMBE	MAPATANO	VICTA
28. PAULO SOLISI	MJUMBE	MAPATANO	SOLISI
29. EYSAUEL MTEPA	MJUMBE	MBUYUNI	Eyssa
30. BAKARI S. MNGOMA	VEO	KIUMBO	Bakari
31. MTUA RIGABU KIVOO	MW/KIT	MAPATANO	MTUA
32. JUMANINGO KICHENGO	MW/KIT	MAPATANO	JUMANINGO

Übersetzung 6. Seite:

Zusammenfassung (Protokoll) der gemeinsamen Sitzung des Gemeinderates von Mapatano, des Gemeinderates von Mbuyuni und der „Führungsliga“ des Bezirkes, welche heute am 30. 08.2017 stattfand.

Traktanden der Sitzung

1. Sitzung eröffnen
2. Anwesenheiten
3. Gesuch des Dorfes Mbuyuni um Wasseranschluss von Mapatano nach Mbuyuni
4. Sitzung schliessen

Zu 1. Sitzung eröffnen

Der Vorsitzende der Sitzung Herr ALLY MFAUME DAD hat die Sitzung um 12:00 Uhr eröffnet indem er sich bei allen bedankte, die sich eingefunden haben. Er erklärte die Sitzung für eröffnet.

Zu 2. Anwesenheiten

Da zwei getrennte Gemeinderäte mit Gästen aus dem Bezirksrat anwesend sind, mussten sich die Mitglieder einander vorstellen (identifizieren). Sie stellten sich in Gruppen vor.

Zu 3. Gesuch des Dorfes Mbuyuni um Wasseranschluss von Mapatano nach Mbuyuni

Bei diesem Traktandenpunkt las der Vorsteher von Mapatano das Gesuch aus dem Dorf Mbuyuni vor, welches zum Ziel hat, sich um Wasser zu bewerben, Wortmeldungen von Mitgliedern: Mitglieder haben gesagt, dass wir vom Gemeinderat von Mapatano die Bürger von Mbuyuni als Mitbürger betrachten, unsere willkommenen Freunde.

Übersetzung 7. Seite:

Wir können ihnen selbstverständlich keinesfalls Wasser vorenthalten. Wir erkennen, dass das Anliegen sehr wichtig ist für die Gemeinschaft, aber wir haben sie überzeugt, dieses Anliegen schriftlich zu formulieren, um die Ordnung im Verfahren einzuhalten (Dienstweg einhalten).

Der verehrte Herr Vorsitzende des Bezirkes hatte die Gemeinderäte von Mbuyuni gebeten, einen Brief zu schreiben und zusammen mit dem Sitzungsprotokoll an den Gemeinderat von Mapatano einzureichen und nachdem der Gemeinderat dieses Gesuch erhielt, hat er es seinen Mitbürgern vorgelesen.

Schlussfolgerung

Die Delegierten des Dorfes Mapatano sind mit dem Gesuch um Wasser einverstanden, aber sie würden das Anliegen zur Hauptversammlung bringen, um alle Leute zu informieren.

Zu 4. Sitzung schliessen

Der Vorsitzende der Sitzung schloss die Sitzung um 14:00 Uhr am Nachmittag indem er sich bei allen Teilnehmern bedankte. Er erklärte die Sitzung als geschlossen.

Unterschrift Sekretär

Unterschrift Vorsitzender

Handschriftlich:

Ich, Yuna Maki, DC Mkinga (? Wahrscheinlich District Council von Mkinga?), habe diese Zusammenfassung betreffend Wassergesuch von Mbuyuni beglaubigt.

Unterschrift

DC Mkinga

Übersetzung 8. und 9. Seite:

Zusammenfassung der gemeinsamen Sitzung der Gemeinderäte von Mapatano und Mbuyuni mit der Bezirksführungsebene, welche stattfand am 30. August 2017.

Präsenzliste der Teilnehmer mit Titel, Funktion und Unterschrift





Population 2014	2100
Population 2034	2500
Water Demand 2014 (L/D)	63000
Water Demand 2034 (L/D)	75000
Public Water Points	12
Water Demand 2034 (L/S)	2
STORAGE TANK CAPACITY (LITRES)	28.125,00

THE UNITED REPUBLIC OF TANZANIA

PRESIDENT'S OFFICE LOCAL GOVERNMENT AND REGIONAL ADMINISTRATION

MKINGA DISTRICT COUNCIL

**COST
ESTIMATES FOR
THE
CONSTRUCTION
OF MBUYUNI
PIPED WATER
SUPPLY
SCHEME
(EXTENSION OF
MAPATANO
WATER
PROJECT)**



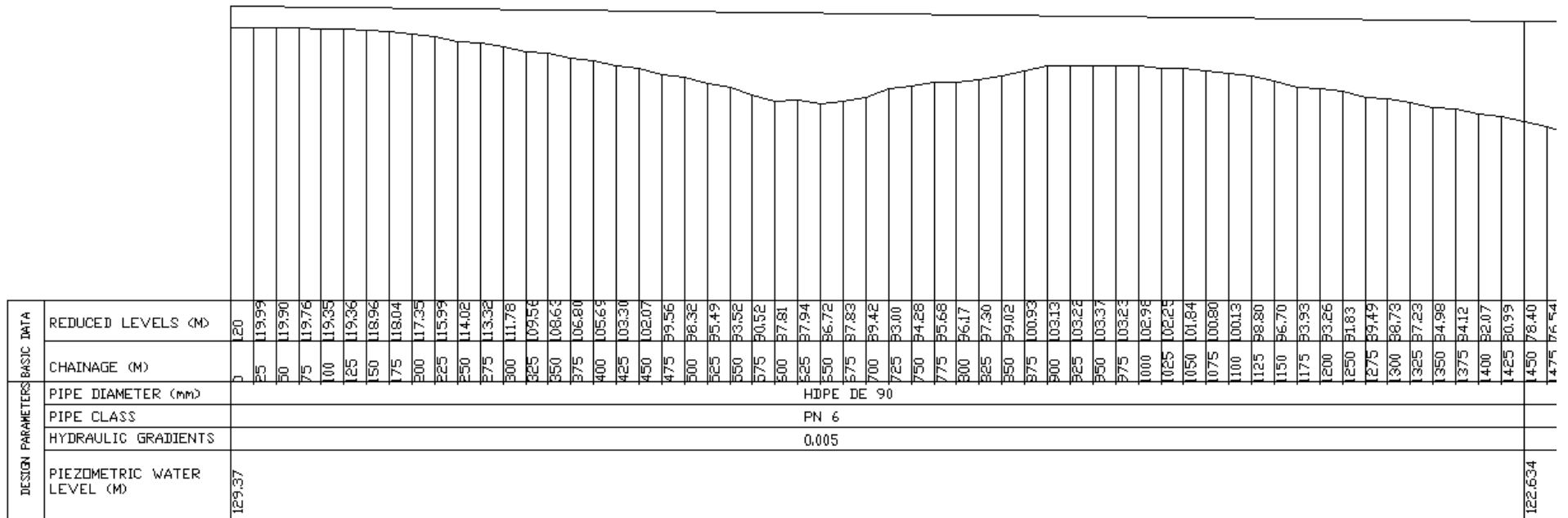
September 16

2016

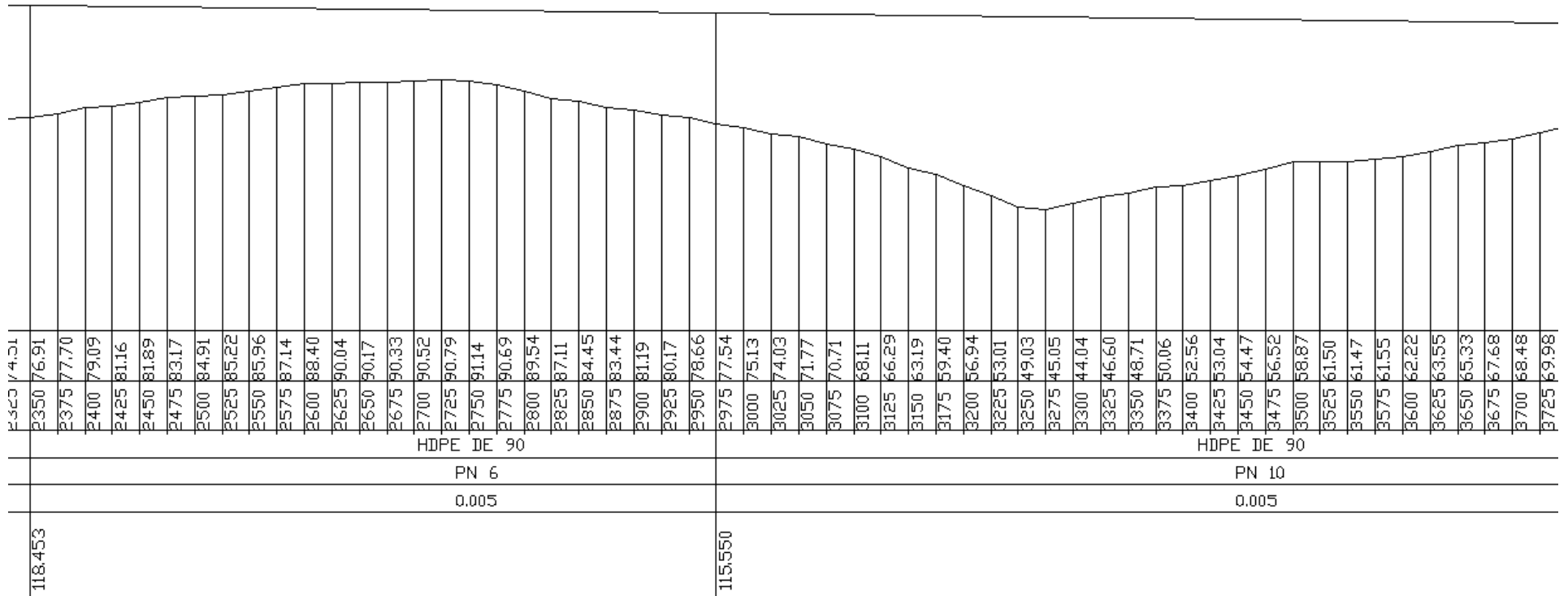
BILLS OF QUANTITIES FOR THE CONSTRUCTION OF MBUYUNI PIPED WATER SUPPLY SCHEME					
1	Water Supply Network				
1.1	Procure the following Piping Materials and fittings for the construction water supply network				
1.1.1	90 mm HDPE PN 10	m	6675	12,000.00	80,100,000.00
1.1.2	50mm HDPE PN 10	m	300	4,000.00	1,200,000.00
1.1.3	32mm HDPE PN 10	m	300	2,800.00	840,000.00
1.1.4	Automatic Air Valve DE 32mm	Pc	3	210,000.00	630,000.00
1.1.5	Sluice Valve DE 90mm	Pc	2	800,000.00	1,600,000.00
1.1.6	Sluice Valve DE 110mm	Pc	2	900,000.00	1,800,000.00
1.1.7	PE Connector DE 90mm	Pc	50	60,000.00	3,000,000.00
1.1.8	PE Adaptor DE 110mm	Pc	4	70,000.00	280,000.00
1.1.9	PE Adaptor DE 90mm	Pc	10	50,000.00	500,000.00
1.1.10	PE Adaptor DE 32mm	Pc	6	9,000.00	54,000.00
1.1.11	PE Adaptor DE 50mm	Pc	4	15,000.00	60,000.00
1.1.12	PE TEE DE 110mm	Pc	1	60,000.00	60,000.00
1.1.13	PE TEE DE 90mm	Pc	2	50,000.00	100,000.00
1.1.14	Gate Valve DE 50mm	Pc	2	50,000.00	100,000.00
	Sub – Total 1.1 (Carried forward to summary)				90,324,000.00
1.2	Procure the following materials for the construction of 4 Public Water Points				
1.2.1	G.S Pipe DE 32mm	Pc	8	60,000.00	480,000.00
1.2.2	Plain Socket DE 32mm	Pc	4	960.00	3,840.00
1.2.3	R.Socket DE 32x25mm	Pc	8	960.00	7,680.00
1.2.4	Elbow DE 32mm	Pc	24	1,120.00	26,880.00
1.2.5	GS Tee DE 32mm	Pc	4	1,800.00	7,200.00
1.2.6	Bib cork DE 25mm uk	Pc	8	15,000.00	120,000.00
1.2.7	Union DE 32mm	Pc	4	1,500.00	6,000.00
1.2.8	Nipple DE 32mm	Pc	24	960.00	23,040.00
1.2.9	Gate valve DE 32mm uk	Pc	4	20,000.00	80,000.00
1.2.10	PE Adaptor DE 32mm	Pc	8	5,500.00	44,000.00
	Sub – Total 1.2 (Carried forward to summary)				798,640.00
1.3	Transport cost for piping materials about 400km distance from the Manufacturing Industry to Mbuyuni Village	Sum	1	9,000,000.00	9,000,000.00
1.4	Supply materials (Gravel, Sand and Cement) to the site and using Local Artisan to construct 4 Public Water Points and 8 valve chambers as will be directed by the Engineer	Sum	1	6,000,000.00	6,000,000.00
1.5	Labour Charges and Project Administration Costs (Construction and Supervision)				
1.5.1	2 Technicians (Pipe Line work) for 20 Days	Days	40	50,000.00	2,000,000.00
1.5.2	Engineer on Site	Days	4	70,000.00	280,000.00
1.5.3	Driver on Site	Days	4	50,000.00	200,000.00
1.5.4	Fuel for Transport	Litres	160	2,500.00	400,000.00
	Sub – Total 1.5 (Carried forward to summary)				2,880,000.00

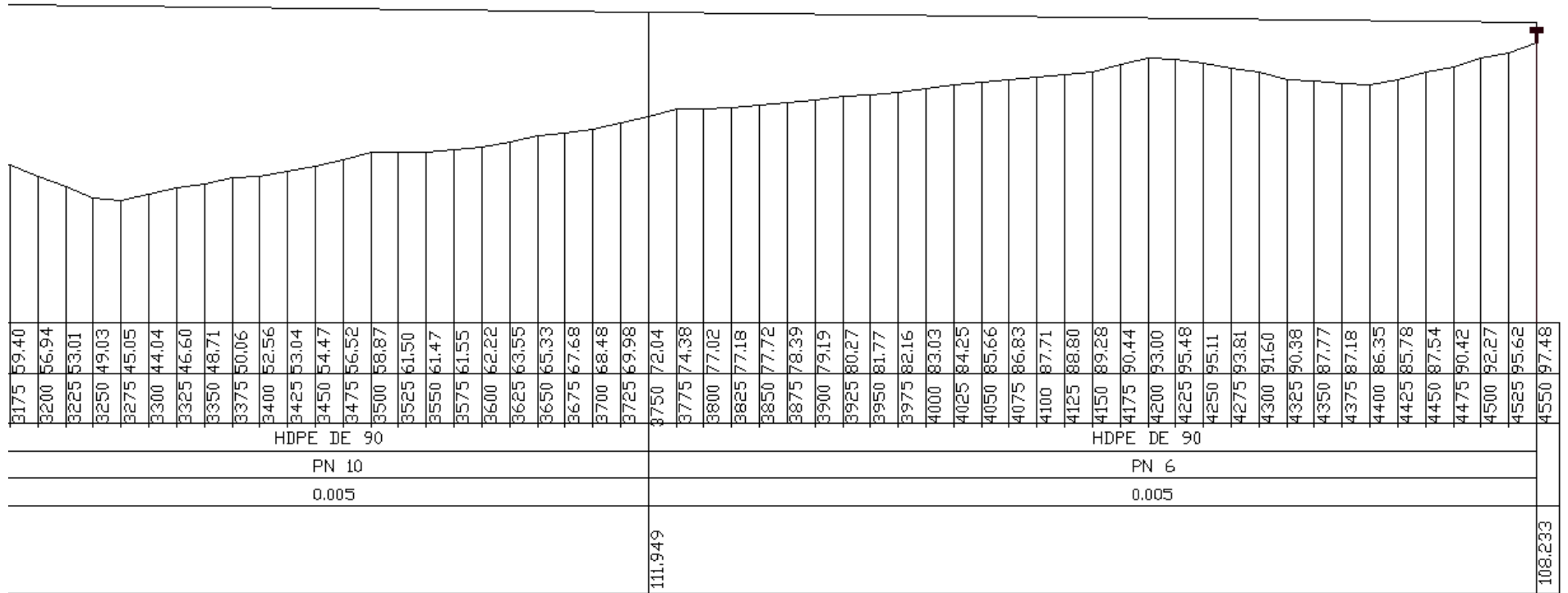
2: Construction of 45m3 Storage Tank on a 6m Raiser (To be done by the Contractor)					
2.1	Preliminary and General costs				
2.1.1	Mobilization of major items of equipment and tools, and demobilization on completion of works.	Sum	1	3,000,000.00	3,000,000.00
2.1.2	Site accommodation and storage	sum	1	3,000,000.00	3,000,000.00
2.1.3	Provide water for work	Sum	1	1,000,000.00	1,000,000.00
	Sub – Total 2.1 (Carried forward to summary)				7,000,000.00
2.2	Civil Works				
2.2.1	Site clearance	M²	84	1,000.00	84,000.00
2.2.2	General excavation in soft Formation Not exceed 1.5m	M³	31	6,000.00	186,000.00
2.2.3	Rock excavation depth not exceeding 1m(provisional)	M³	13.33	25,000.00	333,250.00
2.2.4	300mm thick hardcore in foundation	M³	4.8	45,000.00	216,000.00
2.2.5	Reinforced concrete mix 1:2:4 in foundation slab, 230mm thick	M³	3.5	350,000.00	1,225,000.00
2.2.6	Foundation Backfilling	M³	24	6,000.00	144,000.00
2.2.7	100mm plain in situ concrete mix 1:3:6 in floor bed	M²	7.1	250,000.00	1,775,000.00
2.2.8	Allow sump for block curing	Item	1	1,200,000.00	1,200,000.00
2.2.9	Reinforced concrete block work in cement sand mortar 1:3,wall thickness as per drawing	M²	132	60,000.00	7,920,000.00
2.2.10	Screed to floor slab surface 1:3 Cement, Sand mortar inclinatn of 2% to washout outlet.(mix 1:50 water proof cement to Ordinary Portland cement)	M²	14	20,000.00	280,000.00
2.2.11	Screed to internal walls surface 1:3 cement,sand mortar, 25mm thick (mix 1:50 water proof cement to Ordinary Portland cement)	M²	44.8	20,000.00	896,000.00
2.2.12	Pointing External walls surface 1:3 cement sand mortar	M²	120.7	5,000.00	603,500.00
2.2.13	Reinforced concrete mix 1:2:4 in floor slabs, 250mm thick	M³	5.2	350,000.00	1,820,000.00
2.2.14	Reinforced concrete mix 1:2:4 in roof slabs 100mm thick	M³	2.1	350,000.00	735,000.00
2.2.15	Supply and fix mild stee Bar with diameter;				-
	R . 12	Kg	300	3,500.00	1,050,000.00
	R. 10	Kg	1296	3,500.00	4,536,000.00
	Binding wire	Kg	40	3,500.00	140,000.00
2.2.16	Fair finish to roof slab as per specification	M²	20.6	2,000.00	41,200.00
2.2.17	screed to roof slab top surface mix 1:4, steel toweled, 20 to 110mm thick to from 2% inclination at the top	M²	20.6	9,000.00	185,400.00
2.2.18	Allow for scarfoding	sum	1	600,000.00	600,000.00
2.2.19	Allow formwork	M²	20	50,000.00	1,000,000.00
2.2.20	Roofing felt to provide free movement for roof slab	Roll	4	120,000.00	480,000.00
2.2.21	Allow Bitumen for top end of Tank raiser Vs Tank slab and Tank end Vs roof slab.	Lt	55	10,000.00	550,000.00
2.2.22	Allow for ladders painted with rust proof paint and Aluminium paint as per drawing	No.	2	800,000.00	1,600,000.00
2.2.23	Provide for locking device	No.	1	85,000.00	85,000.00
2.2.24	Supply and installation of hardwood door frame and single panel door top external dimension 1000 x 1800mm complete with iron mongery mortice lock painted with green oil paint	No	1	600,000.00	600,000.00
2.2.25	Construction of leak tight joints for inlet, outlet, overflow and washout pipes as per drawing	No.	4	150,000.00	600,000.00
2.2.26	Manhole cover heavy duty 600mm x 600mm	No.	1	120,000.00	120,000.00
2.2.27	Plumbing work for storage tank as per drawing	sum	1	4,000,000.00	4,000,000.00
	Sub – Total 2.2 (Carried forward to summary)				33,005,350.00
TOTAL					149,007,990.00
Add 18% VAT					26,821,438.20
GRAND TOTAL					175,829,428.20

MBUYUNI WATER SUPPLY SCHEME _ PROFILE



[illegible]





Transmission System for Mbuyuni Water Supply Scheme																			
Source name					ZIGI RIVER														
Total distance from Offtake Point (m)							4575												
Flow to the Supply Pipe (L/S)							2,00												
MBUYUNI STORAGE TANK							45 m3												
NAME OF TRANSMISSION MAIN												Mbuyuni Piped Water Supply							
POINTS OF TRANSMISSION										From RES 1 to									
Ref. Point							Pipe Selection									STATIC			
Name	LABEL	Chainage in m	Ground Elevation	Distance in m	Distance in Km	Design Flow (Q) in l/s	Material	Class	Diameter (ID)	Velocity in m/s	Hyd. Grad	Headloss (m)	Piezometric Level (m)	Residual Head (m)	WATER HEAD (m)	Remarks			
ST 1		0	120	0,0	0	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,000	129,37	9,37	9,37	Existing			
	Pipe P1	25	119,99	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	129,254	9,264	9,38				
	Pipe P1	50	119,895	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	129,138	9,243	9,475				
	Pipe P1	75	119,761	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	129,022	9,261	9,609				
	Pipe P1	100	119,346	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	128,905	9,559	10,024				
	Pipe P1	125	119,358	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	128,789	9,431	10,012				
	Pipe P1	150	118,958	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	128,673	9,715	10,412				
	Pipe P1	175	118,043	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	128,557	10,514	11,327				
	Pipe P1	200	117,348	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	128,441	11,093	12,022				
	Pipe P1	225	115,989	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	128,325	12,336	13,381				
	Pipe P1	250	114,024	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	128,209	14,185	15,346				
	Pipe P1	275	113,321	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	128,092	14,771	16,049				
	Pipe P1	300	111,781	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	127,976	16,195	17,589				
	Pipe P1	325	109,561	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	127,860	18,299	19,809				
	Pipe P1	350	108,627	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	127,744	19,117	20,743				
	Pipe P1	375	106,797	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	127,628	20,831	22,573				
	Pipe P1	400	105,692	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	127,512	21,820	23,678				
	Pipe P1	425	103,302	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	127,396	24,094	26,068				
	Pipe P1	450	102,072	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	127,280	25,208	27,298				
	Pipe P1	475	99,562	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	127,163	27,601	29,808				
	Pipe P1	500	98,316	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	127,047	28,731	31,054				
	Pipe P1	525	95,49	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	126,931	31,441	33,88				

Pipe P1	550	93,518	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	126,815	33,297	35,852	
Pipe P1	575	90,522	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	126,699	36,177	38,848	
Pipe P1	600	87,81	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	126,583	38,773	41,56	
Pipe P1	625	87,938	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	126,467	38,529	41,432	
Pipe P1	650	86,715	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	126,350	39,635	42,655	
Pipe P1	675	87,832	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	126,234	38,402	41,538	
Pipe P1	700	89,417	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	126,118	36,701	39,953	
Pipe P1	725	92,997	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	126,002	33,005	36,373	
Pipe P1	750	94,279	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	125,886	31,607	35,091	
Pipe P1	775	95,679	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	125,770	30,091	33,691	
Pipe P1	800	96,169	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	125,654	29,485	33,201	
Pipe P1	825	97,299	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	125,537	28,238	32,071	
Pipe P1	850	99,015	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	125,421	26,406	30,355	
Pipe P1	875	100,925	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	125,305	24,380	28,445	
Pipe P1	900	103,125	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	125,189	22,064	26,245	
Pipe P1	925	103,215	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	125,073	21,858	26,155	
Pipe P1	950	103,37	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	124,957	21,587	26	
Pipe P1	975	103,225	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	124,841	21,616	26,145	
Pipe P1	1000	102,975	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	124,724	21,749	26,395	
Pipe P1	1025	102,25	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	124,608	22,358	27,12	
Pipe P1	1050	101,842	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	124,492	22,650	27,528	
Pipe P1	1075	100,802	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	124,376	23,574	28,568	
Pipe P1	1100	100,132	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	124,260	24,128	29,238	
Pipe P1	1125	98,804	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	124,144	25,340	30,566	
Pipe P1	1150	96,704	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	124,028	27,324	32,666	
Pipe P1	1175	93,929	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	123,911	29,982	35,441	
Pipe P1	1200	93,259	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	123,795	30,536	36,111	
Pipe P1	1225	91,833	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	123,679	31,846	37,537	
Pipe P1	1250	89,493	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	123,563	34,070	39,877	
Pipe P1	1275	88,733	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	123,447	34,714	40,637	
Pipe P1	1300	87,233	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	123,331	36,098	42,137	
Pipe P1	1325	84,983	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	123,215	38,232	44,387	
Pipe P1	1350	84,118	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	123,099	38,981	45,252	
Pipe P1	1375	82,073	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	122,982	40,909	47,297	

Pipe P1	1400	80,993	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	122,866	41,873	48,377	
Pipe P1	1425	78,398	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	122,750	44,352	50,972	
Pipe P1	1450	76,535	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	122,634	46,099	52,835	
Pipe P2	1475	72,855	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	122,518	49,663	56,515	
Pipe P2	1500	70	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	122,402	52,402	59,37	
Pipe P2	1525	67,17	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	122,286	55,116	62,2	
Pipe P2	1550	65,395	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	122,169	56,774	63,975	
Pipe P2	1575	62,7	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	122,053	59,353	66,67	
Pipe P2	1600	61,99	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	121,937	59,947	67,38	
Pipe P2	1625	59,935	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	121,821	61,886	69,435	
Pipe P2	1650	58,503	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	121,705	63,202	70,867	
Pipe P2	1675	55,333	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	121,589	66,256	74,037	
Pipe P2	1700	53,288	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	121,473	68,185	76,082	
Pipe P2	1725	49,383	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	121,356	71,973	79,987	
Pipe P2	1750	47,168	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	121,240	74,072	82,202	
Pipe P2	1775	44,858	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	121,124	76,266	84,512	
Pipe P2	1800	41,813	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	121,008	79,195	87,557	
Pipe P2	1825	42,748	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	120,892	78,144	86,622	
Pipe P2	1850	44,488	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	120,776	76,288	84,882	
Pipe P2	1875	44,203	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	120,660	76,457	85,167	
Pipe P2	1900	42,973	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	120,543	77,570	86,397	
Pipe P2	1925	40,933	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	120,427	79,494	88,437	
Pipe P2	1950	40,463	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	120,311	79,848	88,907	
Pipe P2	1975	39,463	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	120,195	80,732	89,907	
Pipe P2	2000	40,473	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	120,079	79,606	88,897	
Pipe P2	2025	44,153	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	119,963	75,810	85,217	
Pipe P2	2050	47,858	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	119,847	71,989	81,512	
Pipe P2	2075	51,008	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	119,731	68,723	78,362	
Pipe P2	2100	54,724	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	119,614	64,890	74,646	
Pipe P2	2125	56,799	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	119,498	62,699	72,571	
Pipe P2	2150	60,334	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	119,382	59,048	69,036	
Pipe P2	2175	63,034	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	119,266	56,232	66,336	
Pipe P2	2200	65,034	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	119,150	54,116	64,336	
Pipe P2	2225	68,199	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	119,034	50,835	61,171	

	Pipe P2	2250	69,509	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	118,918	49,409	59,861	
	Pipe P2	2275	72,034	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	118,801	46,767	57,336	
	Pipe P2	2300	72,899	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	118,685	45,786	56,471	
	Pipe P2	2325	74,514	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	118,569	44,055	54,856	
	Pipe P2	2350	76,914	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	118,453	41,539	52,456	
	Pipe P3	2375	77,699	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	118,337	40,638	51,671	
	Pipe P3	2400	79,094	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	118,221	39,127	50,276	
	Pipe P3	2425	81,164	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	118,105	36,941	48,206	
	Pipe P3	2450	81,894	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	117,988	36,094	47,476	
	Pipe P3	2475	83,169	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	117,872	34,703	46,201	
	Pipe P3	2500	84,914	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	117,756	32,842	44,456	
	Pipe P3	2525	85,224	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	117,640	32,416	44,146	
	Pipe P3	2550	85,964	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	117,524	31,560	43,406	
	Pipe P3	2575	87,144	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	117,408	30,264	42,226	
	Pipe P3	2600	88,404	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	117,292	28,888	40,966	
	Pipe P3	2625	90,044	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	117,175	27,131	39,326	
	Pipe P3	2650	90,169	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	117,059	26,890	39,201	
	Pipe P3	2675	90,329	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	116,943	26,614	39,041	
	Pipe P3	2700	90,519	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	116,827	26,308	38,851	
	Pipe P3	2725	90,789	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	116,711	25,922	38,581	
	Pipe P3	2750	91,139	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	116,595	25,456	38,231	
	Pipe P3	2775	90,689	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	116,479	25,790	38,681	
	Pipe P3	2800	89,544	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	116,362	26,818	39,826	
	Pipe P3	2825	87,114	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	116,246	29,132	42,256	
	Pipe P3	2850	84,454	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	116,130	31,676	44,916	
	Pipe P3	2875	83,439	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	116,014	32,575	45,931	
	Pipe P3	2900	81,194	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	115,898	34,704	48,176	
	Pipe P3	2925	80,174	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	115,782	35,608	49,196	
	Pipe P3	2950	78,664	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	115,666	37,002	50,706	
	Pipe P3	2975	77,539	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	115,550	38,011	51,831	
	Pipe P4	3000	75,134	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	115,433	40,299	54,236	
	Pipe P4	3025	74,030	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	115,317	41,287	55,34	
	Pipe P4	3050	71,775	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	115,201	43,426	57,595	
	Pipe P4	3075	70,705	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	115,085	44,380	58,665	

	Pipe P4	3100	68,110	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	114,969	46,859	61,26	
	Pipe P4	3125	66,290	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	114,853	48,563	63,08	
	Pipe P4	3150	63,190	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	114,737	51,547	66,18	
	Pipe P4	3175	59,400	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	114,620	55,220	69,97	
	Pipe P4	3200	56,940	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	114,504	57,564	72,43	
	Pipe P4	3225	53,010	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	114,388	61,378	76,36	
	Pipe P4	3250	49,030	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	114,272	65,242	80,34	
	Pipe P4	3275	45,050	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	114,156	69,106	84,32	
	Pipe P4	3300	44,040	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	114,040	70,000	85,33	
	Pipe P4	3325	46,600	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	113,924	67,324	82,77	
	Pipe P4	3350	48,710	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	113,807	65,097	80,66	
	Pipe P4	3375	50,062	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	113,691	63,629	79,308	
	Pipe P4	3400	52,562	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	113,575	61,013	76,808	
	Pipe P4	3425	53,042	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	113,459	60,417	76,328	
	Pipe P4	3450	54,472	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	113,343	58,871	74,898	
	Pipe P4	3475	56,517	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	113,227	56,710	72,853	
	Pipe P4	3500	58,872	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	113,111	54,239	70,498	
	Pipe P4	3525	61,502	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	112,994	51,492	67,868	
	Pipe P4	3550	61,472	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	112,878	51,406	67,898	
	Pipe P4	3575	61,552	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	112,762	51,210	67,818	
	Pipe P4	3600	62,222	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	112,646	50,424	67,148	
	Pipe P4	3625	63,552	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	112,530	48,978	65,818	
	Pipe P4	3650	65,327	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	112,414	47,087	64,043	
	Pipe P4	3675	67,677	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	112,298	44,621	61,693	
	Pipe P4	3700	68,482	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	112,182	43,700	60,888	
	Pipe P4	3725	69,962	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	112,065	42,103	59,408	
	Pipe P4	3750	72,042	25	0,025	2,00	HDPE PE 90	PN10	75	0,5	0,005	0,116	111,949	39,907	57,328	
	Pipe P5	3775	74,377	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	111,833	37,456	54,993	
	Pipe P5	3800	77,017	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	111,717	34,700	52,353	
	Pipe P5	3825	77,177	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	111,601	34,424	52,193	
	Pipe P5	3850	77,721	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	111,485	33,764	51,649	
	Pipe P5	3875	78,386	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	111,369	32,983	50,984	
	Pipe P5	3900	79,191	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	111,252	32,061	50,179	
	Pipe P5	3925	80,266	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	111,136	30,870	49,104	

	Pipe P5	3950	81,766	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	111,020	29,254	47,604	
	Pipe P5	3975	82,156	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	110,904	28,748	47,214	
	Pipe P5	4000	83,028	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	110,788	27,760	46,342	
	Pipe P5	4025	84,253	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	110,672	26,419	45,117	
	Pipe P5	4050	85,659	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	110,556	24,897	43,711	
	Pipe P5	4075	86,829	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	110,439	23,610	42,541	
	Pipe P5	4100	87,709	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	110,323	22,614	41,661	
	Pipe P5	4125	88,799	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	110,207	21,408	40,571	
	Pipe P5	4150	89,279	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	110,091	20,812	40,091	
	Pipe P5	4175	90,444	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	109,975	19,531	38,926	
	Pipe P5	4200	93,004	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	109,859	16,855	36,366	
	Pipe P5	4225	95,484	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	109,743	14,259	33,886	
	Pipe P5	4250	95,114	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	109,626	14,512	34,256	
	Pipe P5	4275	93,814	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	109,510	15,696	35,556	
	Pipe P5	4300	91,604	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	109,394	17,790	37,766	
	Pipe P5	4325	90,379	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	109,278	18,899	38,991	
	Pipe P5	4350	87,769	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	109,162	21,393	41,601	
	Pipe P5	4375	87,179	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	109,046	21,867	42,191	
	Pipe P5	4400	86,349	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	108,930	22,581	43,021	
	Pipe P5	4425	85,779	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	108,813	23,034	43,591	
	Pipe P5	4450	87,539	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	108,697	21,158	41,831	
	Pipe P5	4475	90,416	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	108,581	18,165	38,954	
	Pipe P5	4500	92,266	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	108,465	16,199	37,104	
	Pipe P5	4525	95,621	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	108,349	12,728	33,749	
ST 2	Pipe P5	4550	97,481	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	108,233	10,752	31,889	TANK
	Pipe P5	4575	100,806	25	0,025	2,00	HDPE PE 90	PN6	75	0,5	0,005	0,116	108,117	7,311	28,564	