

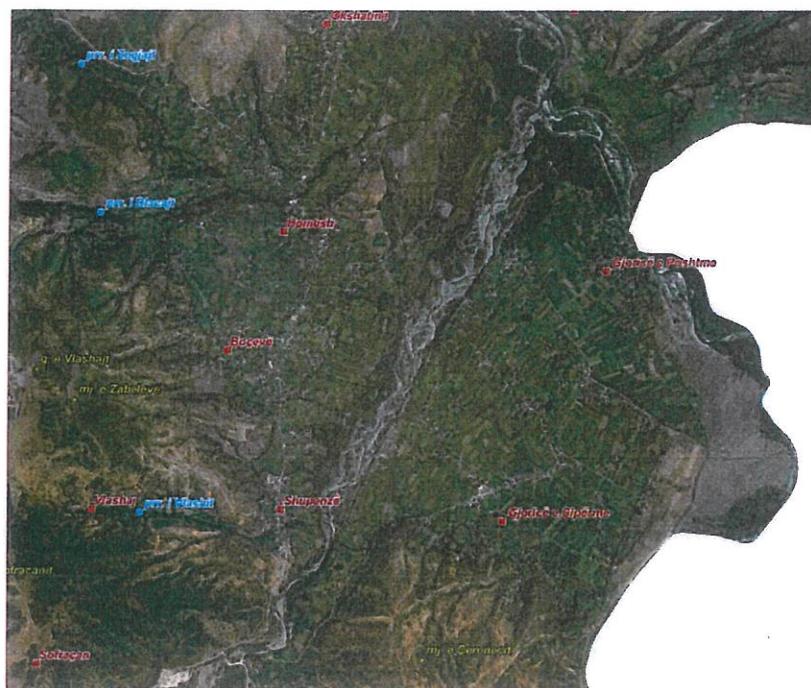
## RELACION TEKNIK:

**"NDERTIM I RRJETIT TE KANALIZIMEVE TE UJERAVE TE ZEZA FSHATRAT GJORICE E SIPERME DHE GJORICE E POSHTME, NJSIA ADMINISTRATIVE GJORICE, BASHKIA BULQIZE"**

### 1. Qëllimi

Ky projekt zbatimi konsiston në ndertimin e rrjetit te kanalizimeve te ujerave te ndotura si dhe trajtimin e tyre permes impianteve te trajtimit te ujcrave te ndotura per fshatin Gjorice, pjesë te Bashkise Bulqize.

Sipas të dhënave të detyrës së projektimit, imazhi satelitor si me poshtë tregon planvendosjen e objektit :



### 2. Vendndodhja

Ndertimi i rrjetit te kanalizimeve do te realzohet ne funksion te objekteve te banimit te fshatrave Gjorice e Siperme dhe Gjorice e Poshtme, Njesia Administrative Gjorice, Bashkia Bulqize. Rrjeti i ri do te ndertohet duke shfrytezuar rruget e ekzistuese te qytetit :





### 3. Informacioni per Zonen e Projektit

Ndertimi i rrjetit te kanalizimeve te kesaj zone dhe impianti i trajtimit te ujrale te ndotura do i sherbeje nje popullsie rezidente dhe jo te cilet deri me tani arrijne ne nje numer prej 2952 banore. Cdo lagje apo grup objektesh do te kete rrjetin e vecuar te kanalizimeve te ujrale te zesa ku do te lidhen me kolektorin kryesor per ne impiantin e pastrimit.

Ne hartimin e projektit eshte bere inspektimi i terrenit si dhe eshte hartuar plani i i kanalizimit i ndare nga ujrat e shiut.

Aktualisht shkarkimi i ujerave te ndotura te qytetit eshte mjaft kaotike, dhe si mjedis prites jane shfrytezuar kanalet e kullimit.

Pasojat e kesaj situate jane:

- Probleme Mjedisore dhe rreziqe higjeno-sanitare ne lidhje me shkarkimin e patrajtuar te ujrale te perdonura;
- Mos respektimin e ligjeve dhe normave ne fuqi per shkarkimin e ujerave te ndotura ne mjedis



#### **4. Gjendja ekzistuese**

Aktualisht nuk kanë një rrjet kanalizimesh, si për ujërat e zëza ashtu edhe për ujërat e shiu. Ujërat e përdorura shkarkohen në cisterna/gropa septike të ndërtuara individualisht për secilën shtëpi, ose ne kanalin kullues të fushës.

Popullsia rezidente ne baze te dhenave te Bashkise se Bulqizes vlerohet rreth 2952 banore.

Siperfaqja ku shtrihet linja kryesore dhe sekondare ka relief me pjerresi qe e lejon trasimin e rrjetit me veterojedhje. Ujrat e zëzu le rrijelit perfshire grumbullimin e te gjithe ujrat e përdorura: a. Ujra te zëza komunale -jane ato ujra qe dalin nga banosat ,nga ndertesat administrative,ndertesat shoqerore dhe komunale.

b. Ujra te zëza teknologjike-jane ato ujra qe dalin nga zhvillimi i proceseve te ndryshme teknologjike te prodhimit pas përdorimit te ujrate pastra

#### **5. Kushtet Klimatike dhe Hidrologjike te Zones**

Bashkia e Bulqizës ka një sipërfaqe prej 678.51 km<sup>2</sup>. Gjithë territori i bashkisë shtrihet nga 300 m, deri në 2000 m lartësi mbi nivelin e detit.

Bashkia e Bulqizës shtrihet në rajonin verilindor të Shqipërisë. Në kordinatat 41037' gjërësi gjeografike veriore ( njësia administrative Shupenzë), 41021'30'' gjatësi gjeografike veriore (njësia administrative Trebishtë), 20018'50'' gjërësi gjeografike lindore, 20007'30'' gjatësi gjeografike lindore (njësia administrative Martanesh). Në veri kufizohet me bashkinë Dibër, në lindje me Republikën e Maqedonisë së Veriut, në jug-perëndim me bashkinë Tiranë, në jug me bashkinë Librazhd dhe në perëndim me bashkinë Klos. Qendra e kësaj bashkie është qyteti i Bulqizës. Gjatësia e vijës kufitare është 120 km. Nga këto gjatësia e vijës kufitare me bashkinë e Dibrës është 25 km, me bashkinë e Librazhdit 29 km, me Republikën e Maqedonisë 30 km, me bashkinë e Klosit 23 km dhe me bashkinë e Tiranës,13km.

Bashkia e Bulqizës ka në përbërje 7 njësi administrative të cilat janë:  
Bulqizë, Martanesh, Fushë-Bulqizë, Zerqan, Gjoricë, Ostren dhe Trebisht.

Oferta gjeografiko-natyrore është një nga elementët e rëndësishëm të zhvillimit turistik. Potenciali natyror përbën bazën e potentialit turistik primar pasi ai ka të bëjë si dhe në çfarë mënyre mjedisit gjeografik natyror ndikon në zhvillimin e turizmit në bashkinë Bashkisë.

##### **5.1 NDËRTIMI GJEOLLOGJIK DHE GJEOMORFOLOGJIK I BULQIZËS**

Nga pikëpamja gjeologjike, Bulqiza, bën pjesë në zonën tektonike të Mirditës dhe në zonën tektonike të Krasta-Cukalit, e cila shtihet në formën e një rripi nga Labinoti në Dibër. Ndërtimi gjeologjik i Bulqizës përfaqësohet nga shkëmbinjtë magmatik në masën 65% si dhe ato terrigen dhe sedimentar. Kjo larmi litologjike kushtëzon coptimin e madh horizontal dhe vertikal, kontrastet e theksuara hipsometrike si dhe tipet e shumtë të reliefit litologjik. Strukturat janë të shumëlojshme dhe të ndërlikuara.

Në formimin e veçorive strukturore të zonës, rol të rëndësishëm kanë luajtur levizjet e fushishme



diferencuese (ngritëse dhe ulëse), ku si rezultat i tyre kemi shfaqjen e horsteve dhe grabeneve, të cilat janë të përfaqësuara nga malet përrreth dhe luginat. Në këtë zonë mund të themi se reliivi është më shumë rezultat i tektonikës shkëputëse sesa asaj rrudhosëse. Por gjithashtu në bashkinë e Bulqizës ndodhet dhe shkëputja tektonike me drejtim të kundërt me ato normale (veriperëndim juglindje), por jugperëndim-verilindje, e cila përfaqësohet nga thyerja Qafë Buall-Bulqizë-Vajkal.

## RELIEVI

Bashkia e Bulqizës karakterizohet nga një relief kodrinor-malor. Si rezultat i larmisë litologo-strukturore si dhe faktorëve të morfodinamikës së jashtme (klima dhe hidrografia), bashkia e Bulqizës ka një relief të kërmishëm ku malet janë të gërmohet me luginat. Në njëzishtë e relijeve të Bulqizës përmendim: malin e Lopës, mali e Homeshit, mali i Dhoksit, mali i Kaptinës, lugina e Bulqizës, lugina e Planit të Bardhë, lugina e Valit etj. Në përgjithësi mbizotëron reliivi i lartë mbi 1000 m. Përsa i përket illojeve të relijeve, janë të pranishëm reliivi strukturoro-eroziv, reliivi karstik, reliivi erozivo-denudues si dhe reliivi akullnajor.

Relievi strukturoro-eroziv është i përfaqësuar nga horsetet dhe grabenet, të cilat, siç e theksuanë dhe më lart, janë rezultat i lëvizjeve diferencuese vertikale (shkëputëse). Relievi karstik është i përhapur më shumë në pjesën jugperëndimore të rrethit të Bulqizës, ku dhe masivet karbonatike janë më të përhapura. Ndërsa reliivi akullnajor është i përfaqësuar nga format akullnajore siç janë morenat dhe liqenat akullnajore (liqenet e Balgjajt, liqenet e Kasnisë, liqeni i Zi etj.).

Lugina e Bulqizës dhe e Planit të Bardhë ndahen mes tyre nga qafa e Buallit. Lugina e Bulqizës i përket pellgut ujëmbledhës të Drinit të Zi, ndërsa ajo e Planit të Bardhë pellgut të Matit.

Lugina e është formuar nga shkëputja tektonike, e cila kalon tërthor masivit ultrabazik të Bulqizës. Ka një gjatësi rreth 25 km dhe gjendet në lartësinë 600-800 m mbi nivelin e detit. Lugina rrethohet nga shpate malore të thepisura. Ajo përbëhet nga sektori i sipërm dhe sektori i poshtëm, të cilat kanë tipare të veçanta morfollogjike.

Sektori i sipërm është i përfshirë nga lëvizje ulëse, gjë e cila dëshmohet nga depozitimet proluviale-aluvionale kuaternare, mungesa e tarracave lumore, karakteri i rrafshët i saj etj. Në sektorin e poshtëm (Vajkalit) lugina ngushtohet dhe vende-vende merr formën e grykës. Aty shfaqen dhe nivelet e tarracave, lugina bëhet më e drejtë, që lidhet me përfshirjen e këtij sektori nga lëvizjet ngritëse. Zgjerohet pasi bashkohet me Zallin e Okshtunit dhe hyn në zgjerimin e madh të Dibrës. Në këtë luginë, sidomos në sektorin e sipërm të saj, ka kone të depozitimt fluvioglaciari, sepse përrenjtë vazhdojnë të sjellin sasira të mëdha materialesh. Malësia e Martaneshit ka peizazh akullnajor, veçanërisht në lartësite mbi 1500-1600 m, me liqenat akullnajore si: liqeni i Zi, liqeni i Bardhë, i Dhoksit etj. Përvec malit të Lopës, Dhoksit, ngrihen edhe maja të tjera si Kaptinës (1873 m), Tri Gjepurave (1774 m). Luginat më karakteristike janë: lugina e Batrës, Theknës, Lenës. Ndërtimi gjeologjik i kësaj lugine është kryesishët nga magmatikët

Malësia e Gollobordës shtrihet në pjesën lindore të bashkisë të Bulqizës. Karakterizohet nga një relief i valëzuar me kurize te ulëta dhë të gjerryera nga erozioni i përrenjve. Luginat në këtë malësi kanë pamjen e gropave të mbyllura e të sheshta, si: fusha e Klenjës, Sterblevës dhe Studnës si edhe lugina e Okshtunit. Ndërsa në pjesën lindore shtrihet vargmali i Raducit (2064 m) dhe maja e Zezë (2257 m).

Zgjerimi i Dibrës ndodhet në lartësinë 400-500 m mbi nivelin e detit dhe ka një gjatësi prej 8 km dhe gjersi 4-5 km. Pjesë e këtij zgjerimi në bashkisë e Bulqizës janë fushat dhe kodrat e Shupenzës dhe Gjoricës, me një relief fushor e kodrinor të valëzuar. Gjenden të përhapura tokat e kafejta, të kafejta livadhore dhe aluvionale (të formuara nga depozitimet e prurjeve të ngurta të lumenjve).



## 5.2 KLIMA

Në bashkinë e Bulqizës dallohet zona klimatike mesdhetare paramalor dhe mesdhetare malore e cila karakterizohet nga dimër i ftohtë me temperaturo nën 0 gradë C dhe me reshje të pakta.

- Temperatura mesatare shumevjeçare është 11.4 gradë C
- Temperatura mesatare shumëvjeçare e korrikut është 19.3 gradë C, e janarit është 1.1 gradë C.
- Temperatura më e lartë është regjistruar 38 gradë C.
- Temperatura më e ulët e regjistruar është -22 gradë C.

Klima e kësaj luginë është mjaft e ftohtë, gjë e cila lidhet jo vetëm me lartësinë e madhe mbi nivelin e detit, por dhe me erën e fortë që frys. Duke qenë e hapur nga lindja, nëpër të depërtion murlani nga lugina e Drinit të Zi. Këtu erërat lindore kanalizohen dhe forcohen dhe vazhdojnë rrugën për në luginën e Matit, pasi Qafa e Buallit ka lartësi të vogël relative. Prandaj në luginën e Bulqizës dhe në Qafën e Buallit pothuajse vazhdimit frys erë. Kjo luginë përshkohet nga Zalli i Bulqizës që merr degë të shumta nga e majta dhe e djathta, dhe derdhet më pas në Drinin e Zi.

Reshjet në këtë rreth janë nën mesataren e vendit. Mesatarja vjetore shumëvjeçare arrin 1187 mm në vit. Stina më e lagësht është dimri (dhjetori). Muajt më të thatë janë koriku dhe gushti. Pjesa më e madhe e reshjeve bie në formën e dëborës. Ditët me reshje gjatë vitit zgjasin 120 ditë nga këto me dëborë deri në 40 ditë. Era më dominuese veçanërisht për luginën e Bulqizës është Murlani, një erë e thatë kontinentale dhe karakteristike për këtë zone. Drejtimi i saj kryesor është lindja. Meqë vjen nga kontinenti është e thatë dhe e ftohtë dhe në situata të caktuara sinoptike është e fortë, duke shkaktuar shpesh dëme dhe duke sjell temperature shumë të ulëta. Krahas "murlanit" tipike për zonën janë edhe erërat e shpatit, luginës me emërtim të ndyshme sipas fshtarave apo krahinave.

## 5.3 HIDROGRAFIA

Bulqiza paraqitet me një rrjet hidrografik mjaft të pasur. Lumi kryesor që rrjedh në territorin që përfshin kjo bashki është Drini i Zi. Lumi Drin përshkon 6.85 km në territorin e bashkisë Bulqizës. Ky lum buron nga liqeni i Ohrit, pas daljes nga ky liqen në qytetin e Strugës vazhdon rrugën nëpër një sërë grykash të ngushta të cilat mbarojnë në Urën e Spilesë. Arteri kryesor i Drinit, pasi kalon në kufijt shtetëror të vendit është Zalli i Bulqizës. Zalli i Bulqizës, i cili buron në liqenet e Balgjajt, merr me vete shumë përrenj të vegjël e përroska. Formohet nga bashkimi i ujërave të pérroit të Okshtunit dhe pérroit të Dushajt. Ky lumë e ka gjatësinë e shtratit 46.5 km, sipërfaqja e pellgut ujëmbledhës 484 km<sup>2</sup>, lartësinë mesatare 1150 km dhe rënie 25m/km.

Zalli i Okshtunit ka fillimin e tij në serinë e përrenjve malorë që zbresin nga shpatet VL të maleve të Mirakës (1751 m) dhe Kaptinë (1873 m). Përoi i Dushaj formohet nga bashkimi i rrëkeve që zbresin nga shpatet lindore të malit të Lopës (2020 m) si dhe nga shpatet perëndimore të malit të Alamanit (2097 m). Pas kësaj ujrat e pérroit të Dushaj rrjedhin në drejtim lindor të cilin e ruajnë deri në bashkimin me ujërat e Zallit të Okshtunit. Pas këtij bashkimi ai merr emrin Zalli i Bulqizës. Ky lumë vazhdon të rrjedh në drejtim verior dhe derdhet në Drinin e Zi.

## 6. Trasimi i rrjetit te Kanalizimeve dhe Llogaritjet Hidraulike

### 6.1 Trasimi i rrjetit te magjistratit dhe sekondar



Ndertimi i rrjetit te KUZ qe perfshin trasimin e linjes se magjistralit kryesor dhe sekondar eshte sipas planit me te pershtatshem urbanistik duke shmangur sa me shume e�e prishjet ne rruget kryesore dhe carjet ne trup rruge. Duke ditur qe trasimi i rrjetit eshte nje nga proceset me te veshtira dhe me shume perjegjesi ne projektimin e rrjetit te kanalizimit sepse kostoja e tij perben 70-90% te kostos se gjithe sistemit te kanalizimit , kemi marre parasysh qe per projektimin e rrjetit ne zonen tone. Ne planimetri jane shnuar te gjitha ndertesat ekzistuese,rruget,sheshet dhe pika me ulet e shkarkimit ne te cilin do te shkarkohen kanalizimet qe do i drejtoje per ne ITUN. Trasimi duhet te jete nje zgjidhje te thjeshte dhe sa me ekonomike duke siguruar gjatesite minimale te rrjetit, diametra minimale te tubave dhe thellesi minimale te vendosjes se lyre.

Gjate trasimit kemi shfrytezuar pjerresit natyrore te terrenit per te bere te mundur vendosjen e tubave ne thellesi minimale,dhe per te caktuar drejtimet kryesore te rrjedhjeve te ujerave te ndotura. Ne vizatimin e planimetrise te rrjetit drejtimi i levizjes se ujt tregohet me shigjeta te kuqe sipas degezimeve perkatese, pervec kesaj jane paraqitur dhe te detajuara vendosja e pusetave dhe jane shtruar tubacionet pergjate gjithe rrjetit sipas dimensioneve dhe llojeve perkatese (shih planimetrine).

## 6.2 Llogaritjet e prurjeve karakteristike

Te dhenat per llogaritjen e prurjes mesatare ne kohe te thatë

- Popullsia per tu shrbyer sotë **N=2952 banor**
- **Norma e shteses vjetore se popullsise "r"**

Me qellim llogaritjen e shteses se popullsise jane grumbulluar te dhena mbi popullsine pran Bashkine Bulqize. Ne forme Tabelare te dhenat e popullsise ne harkun kohor te 10 viteve :

	Gjorica e Siperme	Gjorice e Poshtme
Viti 2000	1480	1397
Viti 2005	1468	1362
Viti 2010	1541	1384
Viti 2015	1574	1407
Viti 2020	1548	1411

Shtesa e Popullsise llogaritet :

$$PR = \frac{\text{Popullsia Viti Aktual} - \text{Popullsia Viti fillojne Te dhenat}}{\text{Popullsia Vitin kur fillojne te dhenat}} \cdot 100$$

Shtesa vjetore e popullsise :

$$r = \frac{PR}{Nr. Viteve te Ku Kemi Te Dhena}$$



Shtesa vjetore e popullsise per Gjoricen e Siperme :

$$r_1 = \frac{\left(\frac{1548-1480}{1480}\right) * 100}{21} = 0.21 \%$$

Shtesa vjetore e popullsise per Gjoricen e Poshtme :

$$r_2 = \frac{\left(\frac{1411-1397}{1397}\right) * 100}{21} = 0.047 \%$$

Me qellim llogaritjen e te gjithe Njesise Administrative pranojme si shtese vjetore te popullsise mesataren :

$$r_{mes} = \frac{r_1 + r_2}{2} = \frac{0.21 + 0.047}{2} = 0.13\%$$

- **Jetëgjatësia e veprës**  $t=25$ vjet
- **Norma e përdorimit për ujë të pijshëm**

Vlera e mesiperme lidhet drejtperdrejt me vlerat e prurjeve te ujerave te ndotura. Sipas nje vlersimi te me poshtem, eshte percaktuar norma :

Perdorimi	I/ditë
WC	90-100
Dushe dhe Bide	30-35
Lavatriçe	40-45
Kuzhina	20-25

**Totali 180 I/ditë**

- **Koeficienti i reduktimit** i cili merr parasysh faktin qe jo i gjith uji i konsumuar nga rrjeti i ujesjellesit perfundon ne rrjetin e kanalizimeve te ujerave te ndotura. Sasia e ujit te konsumuar ka perdorime te vecanta ose shfaqen humbje ne rrjetin e brendshem te objekteve te banimit. Pranojme vlera te koeficientit te reduktimit  $0.8 < \psi < 0.9$
- **Infiltrimet**

Perdorimi i materialeve HDPE dhe guarnicionet elastomere kane reduktuar ndjeshem koeficientin e infiltrimeve ne rrjetin e kanalizimeve. Gjithesesi me qellim vlersimin edhe te imperfektioneve te ndertimit te rrjetit te kanalizimeve, ekzislojne sugjerime ne literature vlerat te infiltrimeve ne varesi te diametrit te tubacionit.

Zakonisht vlerat e infiltrimeve llogariten :

$$Q=550 \text{ I/ditë/cm diametri/km}$$



## Vazhdojme me llogaritjet e prurjeve karakteristike :

Popullsia ne fund te periudhes se projektit:

$$N_n = N \cdot (1 + r)^t$$

$$N_2 = 2952 \cdot (1 + 0.0013)^{25} = 3057 \text{ banorë}$$

Prurja mesatare ne kohë te thatë :

$$Q_{mes} = \frac{N_2 \cdot n \cdot \psi}{86400} = \frac{3057 \cdot 180 \cdot 0.8}{86400} = 5 \text{ l/sek}$$

### - Shperndarja e prurjes per gjate 24 orave

Shkarkimi i prurjes se ujerave te ndotura me origjine urbane varion gjate oreve te dites, po ashtu gjate oreve te nates, si dhe gjate stineve te ndryshme te vitit. Prurjet minimale ditore verehen kryesisht gjate oreve 02 :00 deri ne 06 :00, ndersa prurja maksimale midis oreve 11 :00-15:00.

Prurjen maksimale (ne kohë te thatë) do ta percaktojme përmes formules :

$$Q_{max} = K \cdot Q_{mes}$$

Ku koeficienti i pikut "K" llogaritet sipas formules :

$$K = 15.85 \cdot N^{-0.167} = 15.85 \cdot (3057)^{-0.167} = 4.14$$

$$Q_{max} = 4.14 \cdot 5 = 20.7 \text{ l/sek}$$

Mbi bazën e prurjes llogaritese, do të bëjme dimensionimin e kolektorit. Mund të percaktojme si kushte projektimi:

- Shpejtësia maksimale e lejuar  $V < 5 \text{ m/sek}$
- Kushtet e raportit te mbushjes h/d jane :

$\Phi$  (150- 300) është  $h/d = 0.6 \text{ m}$

$\Phi$  (350-450) është  $h/d = 0.7 \text{ m}$

$\Phi$  (500-900) është  $h/d = 0.75 \text{ m}$

$\Phi > 900$  është  $h/d = 0.8 \text{ m}$

Kushtet e shpejtësise se lejuar janë :

$\Phi - 500$  është  $V_{min} = 0.75 \text{ m/s}$

$\Phi$  (550-1000) është  $V_{min} = 0.8 \text{ m/s}$

$\Phi > 1000$  është  $V_{min} = 1 \text{ m/s}$

Formula e cila shfrytezohet per llogaritjen e rrjedhes ne kanale te hapur, tombino me seksione terthore te cfare do lloje forme eshte formula e Manning :

$$Q = V \cdot A$$



$$V = \frac{k}{n} \left( \frac{A}{P} \right)^{\frac{2}{3}} S^{\frac{1}{2}}$$

Nga ekuacioni i mesiperm, peraktojme :

$k = 1$

A= siperfaqja e seksionit terthor

P= perimetri i lagur

Q=prurja

S=pjerresia (m/m)

V=shpejtesia mesatare ne tombino, ose kanal i hapur

n = koeficient i ashpersise i Manningut, i cili eshte ne varesi te materialit qe perben tombinon, ose kanalin e hapur.

Nga literatura, meqenese ne rastin tone perzgjedhim tubacion HDPE brinjëzuar do te kemi nje vlore te koeficientit te Manningut **n=0.013**, kjo e vleresuar ne kushtet kur tubacioni eshte ne kushte shfrytezimi, dhe shfaqen depozitime, qe mund te irisin ashpersine e tubacionit.

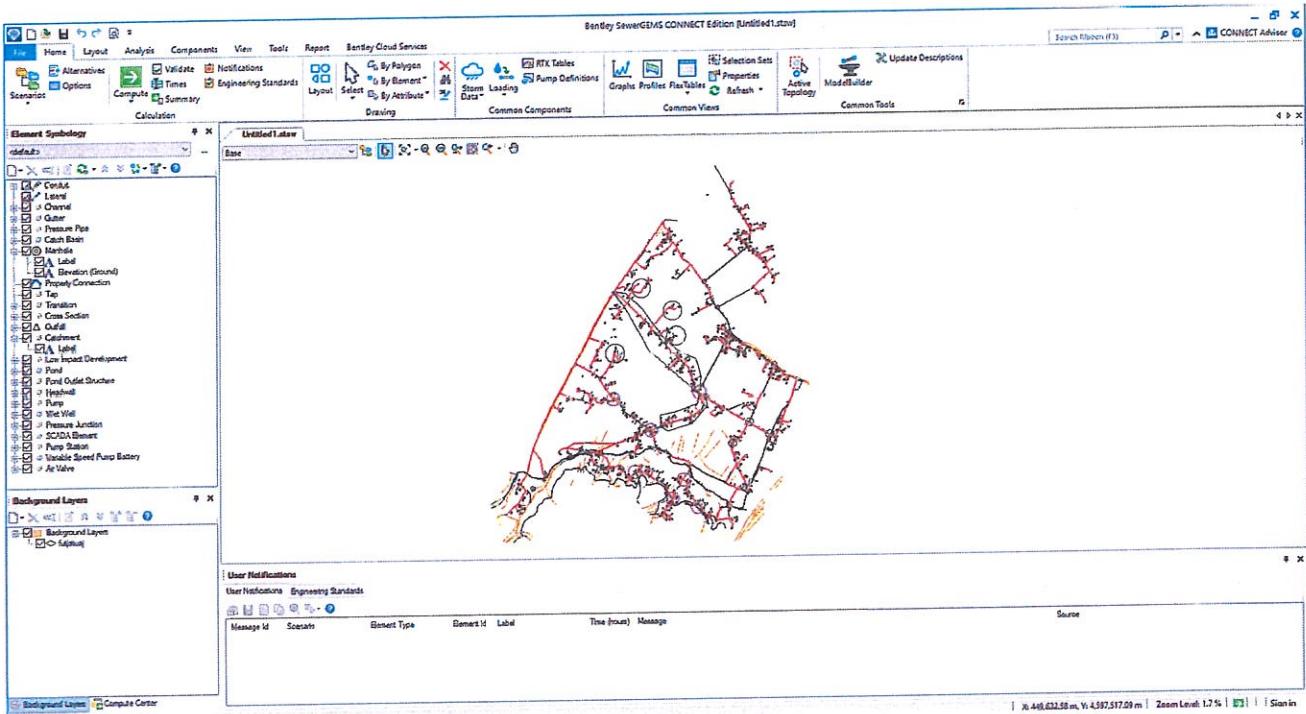
## 7. Modeli Hidraulik

Modeli i zgjedhur per projektin final (Sistemi Sewer-GEMS i Ujrave te Zeza ) ekzekuton llogaritjet hidraulike ne gjendje te ngurte bazuara ne Ekuacionin e Energjise dhe Principin, nepermjet supozimit per regjime te ndryshme rrjedhje (rrjedhje me presion dhe/ose rrjedhje me gravitet qe ndryshon gradualisht). Skema baze e llogaritjeve hidraulike nepermjet modelit te zgjedhur mund te pershkruhet shkurtimisht si me poshte:

- ✓ Ngarkesat e popullates gjenerohen dhe kryhen llogaritjet e tubacionit.
- ✓ Ngarkesat e perftuara vleresoheren ne biefin e poshtem nepermjet rrjetit te tubacionit.
- ✓ Humbjet per lartesi llogariten ne biefin e siperperm rrjetit te tubacionit.

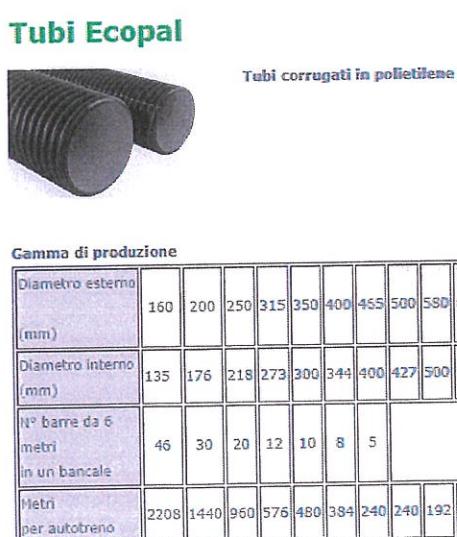
Pamja e modelit hidraulik :





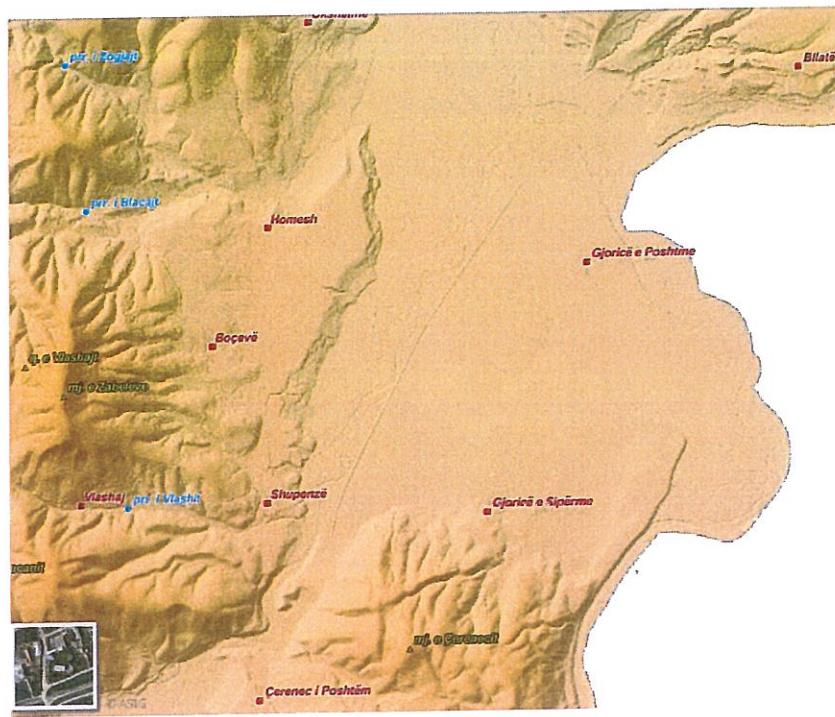
(Pamje e dritares dialoguese mbi modelin llogarites ne software SEWERGEMS)

Skema eshte modeluar me diametrat e brendshem te tubacioneve sipas normes EN 13476 tipi B:



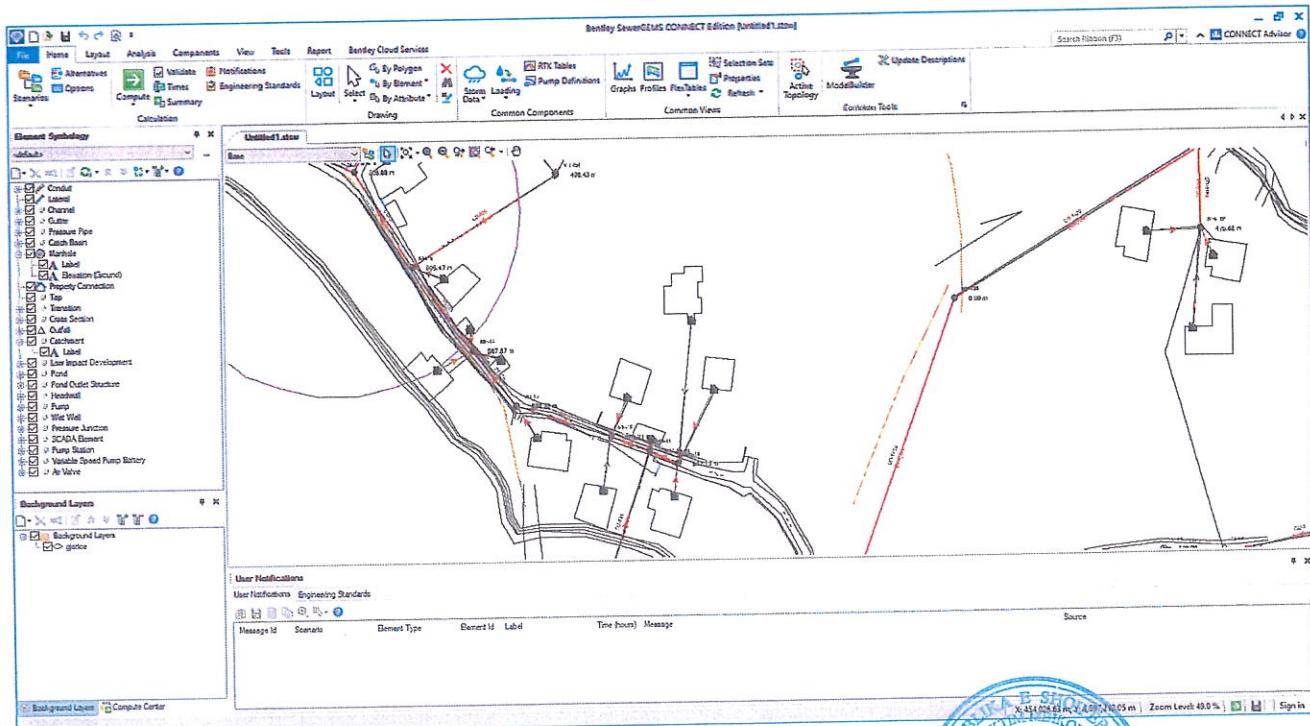
Per efekt te reliefit i cili nderthur kuatat e larta te zones se Gjorices se Siperme dhe pjesen Fushore te Gjorices se Poshtme, zgjidhja eshte realizuar permes disa skemave te vecanta te kanalizimeve.





Pamje 3D e reliefit (burimi "ASIG")

Modeli i ndertuar na lejon te aplikojme ngarkesat e cdo objekti ne rjet ne varesi te pozicionimit te pusetes me te afert :



## 8- Te dhena mbi pusetat dhe punimet e germimit

1. Materiali i tubacioneve te ujrate te zeza eshte HDPE SN8. Tubacionet HDPE jane te favorizuar ne avantazhe si me poshte:

- Jane rezistente ndaj korrozionit
- Jane fleksibel dhe duktil
- Kane jetegjatesi te madhe deri ne 50-100 vjet
- Pikat e bashkimit te tyre jane rezistente nqs bashkohen ne temperaturat te larta
- Kane impakt te ulet ne mjedis
- Jane mjaft te lehte edhe per tu rehabilituar ne rast demtirnesh

2. Pusetat qe do realizohen jane prej betoni me kapak gize .

Thellesia e kanaleve ne funksion te diametrave jane:

Diametri i Tubave	Thellesia (m)	Gjeresia (m)
<200mm	1	0.6
250-400	1.5-3.5m	0.6-1
500-630	1.8-7	1.2-1.5

Thellesite e pusetave variojne nga 1.2 m minimum duke perfshire paketen asfaltike deri ne 4 m maksimumi . Vendosja e pusetave eshte realizuar ne perputhje me kushtet e BS EN 752 te distancave minimale dhe maksimale ne funksion te diametrit perkates te tubit .

Diametri i tubacionit (mm)	Distanza midis pusetave (m)
<=675	80
>675 dhe <=105	100
>1050	120

## 9- Trajtimi i Ujerave te Ndotura

Me qellim trajtimin e ujerave te ndotura per komunitete te vogla (popullsi deri 3000 banore) ne baze "Kushte Teknike Të Projektit dhe Ndërtimit për furnizimin me ujë dhe kanalizimin" sipas VKM Nr.83 Df.10.2.2021 kemi perzgjedhur dekantuesit "Imhoff"

Dekantuesi kryen funksionet e me poshtme:

- a) Veçimin e grimcave te ngurta ne gjendje pezull (qe fillimisht kane kaluar ne një trajtim paraprak, kalim ne shufra metalike) dhe ky veçim realizohet vetem per shkak te forcave te rendeses
- b) Largimin e yndyrnave nga uji i ndotur
- c) Tretje anaerobe te fraksionit organic te depozitimeve te grumbulluara gradualisht

Rendimenti i pritshem i trajtimit ten je dekantuesi "Imhoff" nese zbatohet me rigorozitet kushtet e instalimit:

- BOD – COD (nga 25-35%)
- SS (grimcat e ngurta pezull te sedimentueshme) 85-90%



- SST (grimcat pezull total) nga 55-65%

Instalimi i dekantuesve "Imhoff" eshte i mjaftueshem per realizimin e trajtimit primar, i cili eshte ne perputhje me objektivat e cilesise se kerkuar ne rastin e mjediseve pritese jo te ndjeshme te cilil zoterojne aftesi holimi te porhershme te biomases organike.

### **9-1 Pershkrimi I Vaskave dhe Procesi I Trajtimit**

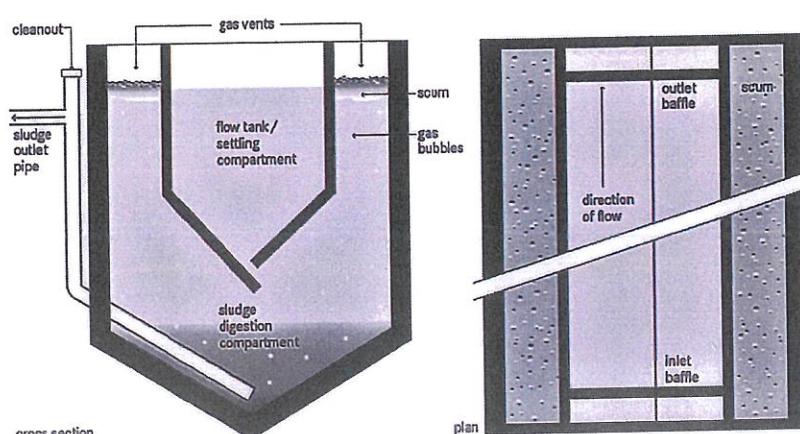
Dekantuesit "Imhoff" te zhvilluara qysh nga viti 1904, jane te perbera nga dy dhoma:

- Dhoma e siperme e sedimentimit dhe kthjellimit te ujit
- Dhoma e poshtme e akumulimit dhe tretjes anaerobike

Grimcat e ngurta sedimentojne nje hapje e cila ben komunikimin e dy dhomave me njera tjetren. Ne dhomen e tretjes, grimcat e sedimentuara pesojne nje fermentim anaerob (pa prani ajri) dhe per pasoje nje stabilizim e cila lejon ne kete menyre llumrat qe te largohen dhe te depozitohen pa shkaktuar problem.

Procesi i tretjes anaerobe transformon nje pjese te substancave organike te sedimentuara ne uje, monoksid karboni (CO) si dhe gaz metan (gaz biologjik). Gjeometria e ketyre vaskave eshte projektuar e tilde per te evituar qe gazrat e formuar ne zonen e tretjes te mund te interferojne me zonen ku realizohet sedimentimi

Ndryshe nga gropat septike te zakonshme, rjedha e ujit te ndotur qe del prej ketyre vaskave eshte mjaft i kthjellet, dhe ku nuk shfaqen fenomenet e kalbezimit.



**Detaj i skemes se Dekantuesit "Imhoff"**

### **9-2 Projektimi i Volumit te Dekantuesve "Imhoff"**

Bazuar ne skemen e rrjetit te kanalizimeve te projektuar, ku jane parashikuar 6 pika shkarkimi te ndryshme, kemi ndjekur hapat e meposhtme per llogariljen e volumeve te ketyre veprave.

- 1- Llogaritja e Prurjes Mesatare se ujerave te Ndotura



Nga modeli Hidraulik i ndertuar kemi percaktuar prurjen mesatare te ujerve te ndotura per secilen prej pikave te shkarkimit.

Emertimi I Pikave te Shkarkimit	Pjezometri Hydraulic Grade (m)	Prurja Mesatare (Total Out) (L/s)	Prurja Maksimale (Total Out) (L/s)	Prurja Maksimale (System Sanitary) (L/day)
O-2	443.73	0.82	3.395	293,310.73
O-4	451.39	0.1	0.414	35,769.60
O-6	457.2	0.09	0.373	32,192.64
O-7	471.19	0.19	0.787	67,962.24
O-8	453.07	0.04	0.166	14,307.84
O-9	447.5	6.37	26.372	2,278,523.46

- **Llogarisim dhomen e sedimentimit :**

$$V_{sed.} = t \cdot Q_{max} \text{ (m}^3\text{)}$$

Ku  $t$  = koha e qendrimit e cila sipas "Kushteve teknike te Projektimit" percaktohet **1-1.5ore**

- **Llogarisim dhomen e tretjes anaerobe :**

Projektimi i dhomes se trejtes anaerobe realizohet duke u bazuar ne prodhimin e llumit per banore si dhe ne shpeshtin e largimit te llumit. Ne rastin e largimit te llumit çdo gjate muaj duhet te caktohet :

- Prodhimi i llumit primar vlerohet ne vleren 90 l/banore per sezonin 6 mujor

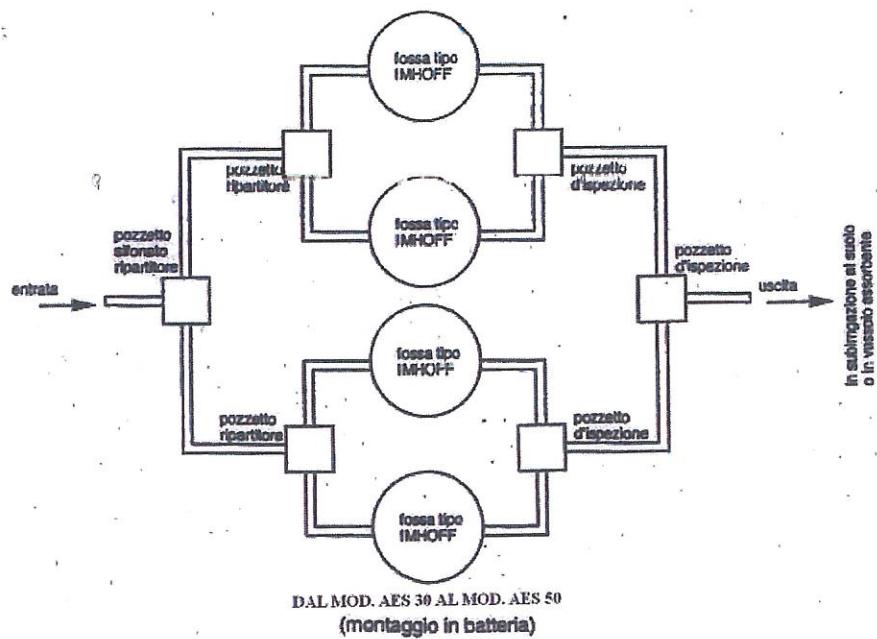
Periudha e largimit te llumit eshte 2 here ne vit. Periudha gjashte mujore e grumbullimit konsiderohet si periudha minimale per te arritur stabilizimin aerob te mjaftueshem ne temperature te ulet.

Ne vijim ne menyre te permbledhur volumi i dekantuesve "Imhoff" te llogaritur

- **Demanues  $V=246 \text{ m}^3$**

Ne kete rast me qellim realizimin e volumit te sedimentimit dhe trejtes, kemi perzgjedhur instalimin e 4 dekantues identike me volum total  $V=58\text{m}^3$  te cilat do te instalohen prane njera tjeter. Dekantuesit do te jene ne forme drejtkendore b/a sipas skemes se meposhtme :





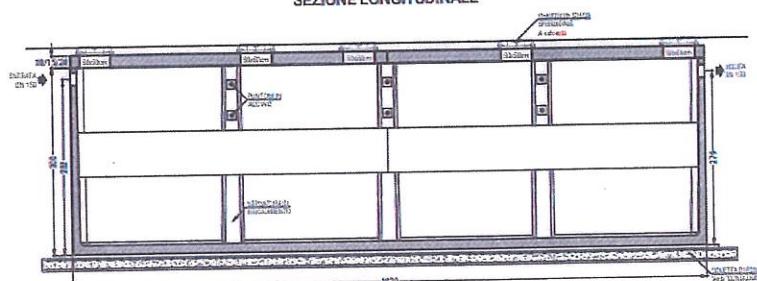
Rrjedha perpara se te hyje ne secilen vaske, do te duhet te kaloje ne zgare metalike fine me qellim mbajtjen e mbeturinave me dimensione qe mund te bllokojne hapsiren qe realizon komunikimin e dy dhomave me njera tjetren.

#### IMHOFF63000 - VASCA IMHOFF MONOBLOCCO PREFABBRICATA IN C.A.V.

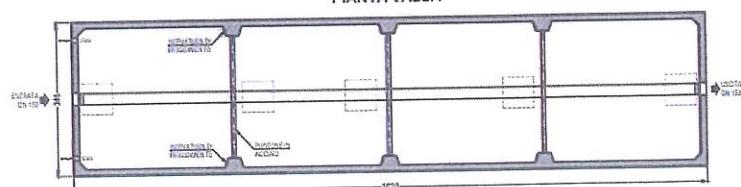
cm. 246x1020xh300 + 10/15/20 cop.

marcata CE - conforme alla norma UNI EN 12566-1

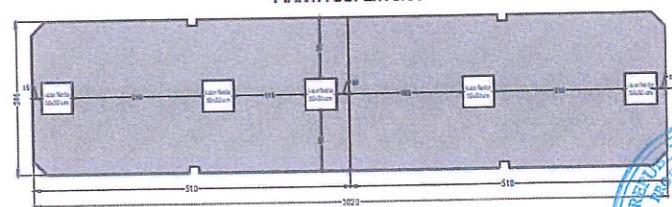
SEZIONE LONGITUDINALE



PIANTA VASCA

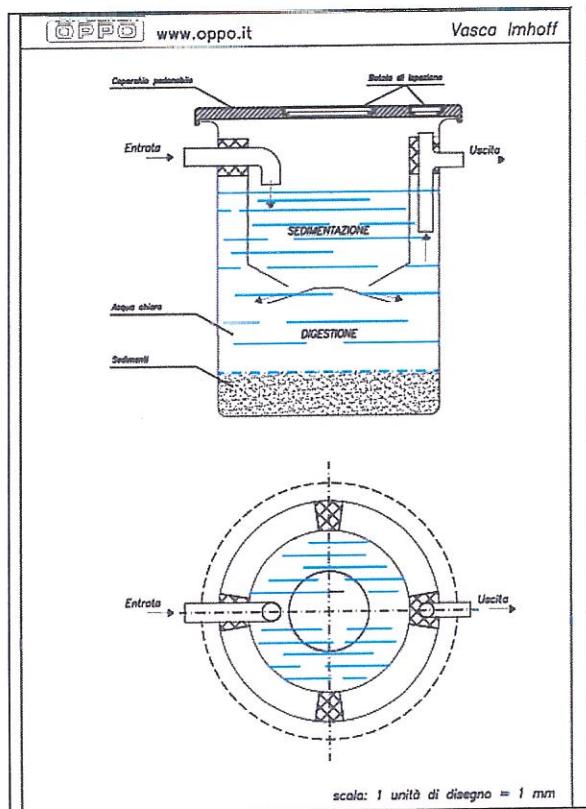


PIANTA COPERTURA



### - Demantues $V=4.5 \text{ m}^3$

Dekantuesit e perzgjedhur per te realizuar volume te tilla, do te shfrytezohen per objekte individuale. Dekantuesit do te jene material polietileni sipas skemes :



### 9-3 Menaxhimi dhe funksionimi

Dekantuesit te tipit qe kemi prezatuar dhe pershtatur ne kete projekt jane lehtesish te menaxhueshem. Ata nuk kerkojne nje staf teper te kualifikuar dhe shpeshtia e inspekteve eshte e kufizuar ne vetem nje here ne javë. Tabela e meposhtme jep me detaje veprimtarite e ndryshme se bashku me shpeshtine e inspektimit nga stafet dhe oret vjetore te punes qe nevojitet per keto veprimtari.

	Shpeshtia	Ore/vit
<b>Para-trajtimi</b>		
Trajtimi mekanik me zgara	1 here/jave	9
<b>Dekantuesi Imhoff</b>		
Largimi i materialeve notuese	1 here/jave	13
Thyerja e kores se llumit	1 here/jave	6
Largimi i llumit	1 here/ 6 muaj	2
Inspektim i pergjithshem	1 here/jave	10
Mirembajtja e zonave perreth impiantit dhe kanalit te daljes	1 here/muaj	36
Ngjarije te paparashikuara,	1 here/jave	24



monitorimi dhe plotesimi i tyre ne register		
Gjithsej		100 ore/vit

#### 9-4 Pamje Instalimi

Me poshte disa shembuj instalimi te ketyre Dekantuesve :





PERGATITI  
ING.GEZIM ISLAMI

• ERA LD-G •

SUBELKA E SHQIPERISE  
PROJEKTIM MBUKYUQE  
KOLAUDIM

K36306784K  
TIRANE - ALBANIA

## REZULTATET E LLOGARITVE

ID	Label	Start Node	Invert (Start) (m)	Stop Node	Invert (Stop) (m)	Length (Scaled) (m)	Pierresia (Calculated) (m/m)	Diametri i Brendshem	Koeficient Manning's n	Shpejtuesia e plotë (m/s)	Q e plotë (l/s)	Flow / Capacity (%)	Shtylla e Mjusqes	Conduit Description	Size	Material	Elevation Ground (Start) (m)	Elevation Ground (Stop) (m)	Përurja (l/s)
																	Prerri	Shkallë	
32	CO-2	MH-1	500.18	MH-2	489.97	53.5	0.004	218	0.013	0.18	25.975	1.4	5.4	Circle - 213.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	501	501.47	0.124
35	CO-4	MH-3	505.68	MH-4	499.97	55.8	0.096	218	0.013	0.38	128.132	0.1	3.2	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	506.5	501.48	0.041
36	CO-6	MH-4	500.3	MH-2	499.97	12.1	0.028	218	0.013	0.35	68.599	0.5	4.9	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	501.48	501.47	0.124
50	CO-20	MH-10	506.32	MH-11	506.27	10.8	0.004	218	0.013	0.18	26.103	1.4	6	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	507.13	507.45	0.124
52	CO-22	MH-11	506.27	MH-12	506.22	14	0.004	218	0.013	0.22	26.103	2.8	7.4	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	507.45	508.21	0.128
54	CO-24	MH-12	506.22	MH-13	506.08	33.9	0.004	218	0.013	0.24	26.103	3.8	8.1	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	508.21	508.72	0.331
56	CO-26	MH-13	506.08	MH-14	505.99	23.8	0.004	218	0.013	0.25	26.103	4.2	8.3	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	508.72	507.87	0.373
58	CO-28	MH-14	505.99	MH-15	505.66	35.1	0.009	218	0.013	0.36	39.949	3.7	8.4	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	507.87	506.47	0.497
60	CO-30	MH-15	505.66	MH-16	503.17	38	0.065	218	0.013	0.74	105.555	1.5	6.8	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	506.47	503.99	0.538
62	CO-32	MH-16	502.34	MH-17	502.67	81.7	0.004	218	0.013	0.18	26.103	1.4	7.2	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	503.99	506.16	0.124
64	CO-34	MH-17	502.67	MH-18	502.71	9.3	0.004	218	0.013	0.18	26.103	1.4	5	Circle - 218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	506.16	5CS.05	0.124
66	CO-36	MH-18	502.71	MH-19	502.81	24.8	0.004	218	0.013	0.16	26.103	0.9	4.6	Circle - 218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	505.05	503.98	0.083
68	CO-38	MH-19	502.81	MH-20	503.04	24	0.01	218	0.013	0.22	41.179	0.6	3.7	Circle - 218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	503.98	503.86	0.083
70	CO-40	MH-16	502.34	MH-21	501.7	15.6	0.042	218	0.013	0.67	84.172	2.3	7.9	Circle - 218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	503.99	502.51	0.662
72	CO-42	MH-21	500.81	MH-22	491.69	91.1	0.1	218	0.013	0.96	130.516	1.8	10.6	Circle - 218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	502.51	492.51	0.787
74	CO-44	MH-22	491.69	MH-23	488.93	41.4	0.067	218	0.013	0.86	106.609	2.4	11.1	Circle - 218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	492.51	489.75	0.869
76	CO-46	MH-23	488.93	MH-24	487.01	26.8	0.072	218	0.013	0.9	110.548	2.6	11.8	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	489.75	487.83	0.952
78	CO-48	MH-24	487.01	MH-25	483.71	42.5	0.078	218	0.013	0.98	115.135	2.9	9.7	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	487.83	484.52	0.118
80	CO-50	MH-25	482.59	MH-26	478.36	42.4	0.1	218	0.013	1.1	130.54	2.8	13.3	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	484.52	479.17	1.242
82	CO-52	MH-26	478.36	MH-27	476.41	21.4	0.091	218	0.013	1.06	124.439	3	13.3	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	479.17	477.23	1.242
84	CO-54	MH-27	476.41	MH-28	474.6	40.3	0.045	218	0.013	0.86	87.45	4.6	17	Circle - 228.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	477.23	475.71	1.366
86	CO-56	MH-28	474.6	MH-29	472.08	76.1	0.033	218	0.013	0.98	75.098	11.9	17.1	Circle - 228.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	475.71	472.9	3.022
88	CO-58	MH-29	472.08	MH-30	469.42	79.8	0.033	218	0.013	0.99	75.39	11.9	20.5	Circle - 228.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	472.9	470.24	3.022
90	CO-60	MH-30	469.42	MH-31	467.98	18.9	0.076	218	0.013	1.32	113.879	8	15.9	Circle - 228.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	470.24	468.8	3.064
92	CO-62	MH-31	467.98	MH-32	466.66	53.8	0.024	218	0.013	0.89	64.586	14.1	17.7	Circle - 228.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	468.8	467.48	3.064
94	CO-64	MH-32	466.66	MH-33	464.76	95.6	0.02	218	0.013	0.83	58.287	15.6	21.8	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	467.48	465.58	3.064
96	CO-66	MH-33	464.76	MH-34	464.46	74	0.004	218	0.013	0.47	26.103	34.8	23.3	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	465.58	465.77	3.064
98	CO-68	MH-34	464.46	MH-35	464.14	81.3	0.004	218	0.013	0.47	26.103	35.8	23.4	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	465.77	466.12	3.146
100	CO-70	MH-35	464.14	MH-36	463.88	64.9	0.004	218	0.013	0.47	26.103	35.8	23.2	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	466.12	465.34	3.146
102	CO-72	MH-36	463.72	MH-37	463.72	34.1	0.005	218	0.013	0.5	27.884	34.4	22.1	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	465.34	464.54	3.229
104	CO-74	MH-37	463.72	MH-38	462.77	64.2	0.015	218	0.013	0.76	50.326	19	19.1	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	464.54	463.59	3.229
106	CO-76	MH-38	462.77	MH-39	462.01	47.2	0.004	218	0.013	0.78	52.199	18.4	22.7	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	463.59	463.02	3.229
108	CO-78	MH-39	462.2	MH-40	462.01	11.5	0.004	218	0.013	0.48	26.103	38.1	24.2	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	463.12	463.2	3.353
110	CO-80	MH-40	462.01	MH-41	461.97	70.2	0.005	218	0.013	0.46	28.875	23.8	19.2	Circle - 218.0 mm	I-DPE Di-250mm	Tubacion HDPE SN8	464.25	464.66	2.318
112	CO-82	MH-41	461.97	MH-42	462.6	41	0.016	218	0.013	0.43	26.103	25.9	19.6	Circle - 218.0 mm	I-DPE Di-250mm	Tubacion HDPE SN8	464.66	465.28	2.277
114	CO-84	MH-42	462.6	MH-43	463.16	76	0.007	218	0.013	0.43	26.103	25.9	20	Circle - 218.0 mm	I-DPE Di-250mm	Tubacion HDPE SN8	465.28	465	2.277
116	CO-86	MH-43	463.16	MH-44	463.22	15	0.004	218	0.013	0.46	26.103	31.5	21	Circle - 218.0 mm	I-DPE Di-250mm	Tubacion HDPE SN8	467.01	465.63	0.207
118	CO-88	MH-44	463.22	MH-45	463.43	39.8	0.005	218	0.013	0.48	30.16	24	20.6	Circle - 218.0 mm	I-DPE Di-250mm	Tubacion HDPE SN8	464.04	464.25	2.443
120	CO-90	MH-45	463.43	MH-46	463.78	70.2	0.005	218	0.013	0.46	28.875	23.8	19.2	Circle - 218.0 mm	I-DPE Di-250mm	Tubacion HDPE SN8	464.25	464.66	2.318
122	CO-92	MH-46	463.78	MH-47	463.99	53.9	0.004	218	0.013	0.43	26.103	25.9	19.6	Circle - 218.0 mm	I-DPE Di-250mm	Tubacion HDPE SN8	464.66	465.28	2.277
124	CO-94	MH-47	463.99	MH-48	464.18	47.4	0.004	218	0.013	0.43	26.103	25.9	20	Circle - 218.0 mm	I-DPE Di-250mm	Tubacion HDPE SN8	465.28	465	2.277
127	CO-96	MH-49	471.84	MH-5C	468.38	33.4	0.074	218	0.013	0.5	112.275	0.3	3.3	Circle - 218.0 mm	I-DPE Di-250mm	Tubacion HDPE SN8	472.66	470.55	0.124
129	CO-98	MH-50	469.38	MH-51	468.72	32.6	0.02	218	0.013	0.41	58.473	0.6	4.4	Circle - 218.0 mm	I-DPE Di-250mm	Tubacion HDPE SN8	470.55	469.54	0.124
131	CO-100	MH-51	468.72	MH-52	466.19	45.6	0.056	218	0.013	0.48	97.261	0.5	5	Circle - 218.0 mm	I-DPE Di-250mm	Tubacion HDPE SN8	469.54	467.01	0.165
133	CO-102	MH-52	466.19	MH-53	464.82	55.3	0.025	218	0.013	0.39	65.034	0.9	5.8	Circle - 218.0 mm	I-DPE Di-250mm	Tubacion HDPE SN8	467.01	465.63	0.207
135	CO-104	MH-53	464.82	MH-54	463.9	11.5	0.08	218	0.013	0.65	116.485	0.7	5	Circle - 218.0 mm	I-DPE Di-250mm	Tubacion HDPE SN8	465.63	464.72	0.29
137	CO-106	MH-54	463.9	MH-55	463.51	29.4	0.013	218	0.013	0.35	47.855	1.8	6.6	Circle - 218.0 mm	I-DPE Di-250mm	Tubacion HDPE SN8	464.72	464.32	0.29

138	CO-108	MH-55	463.51	MH-44	463.22	38.9	0.007	218	0.013	0.3	35.312	2.8	14.4	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	464.32	464.04	0.331	
142	CO-112	MH-41	461.97	MH-57	461.83	34.6	0.004	218	0.013	0.58	25.79	74.8	34.3	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	463.13	463.09	6.5	
144	CO-114	MH-57	461.83	MH-58	461.66	43.2	0.004	218	0.013	0.58	26.103	74.8	33.9	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	463.09	463.23	6.583	
146	CO-116	MH-58	461.66	MH-59	461.55	25.1	0.004	218	0.013	0.6	27.02	72.3	34	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	463.23	463.43	6.583	
148	CO-118	MH-59	461.55	MH-60	461.42	32.4	0.004	218	0.013	0.58	26.103	75.8	34.5	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	463.43	462.96	6.665	
150	CO-120	MH-60	461.42	MH-61	461.35	18.1	0.004	218	0.013	0.58	26.103	75.8	34.9	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	462.96	462.48	6.665	
152	CO-122	MH-61	461.35	MH-62	461.22	33.4	0.004	218	0.013	0.58	25.337	79.4	35.3	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	462.48	462.11	6.831	
154	CO-124	MH-62	461.22	MH-63	461.13	21.5	0.004	218	0.013	0.59	26.103	79.1	35.4	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	462.11	462.23	6.955	
156	CO-126	MH-63	461.13	MH-64	461.03	27.2	0.004	218	0.013	0.59	26.103	80.5	35.7	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	462.23	462.03	7.079	
158	CO-128	MH-64	461.03	MH-65	460.85	41.9	0.004	218	0.013	0.6	26.103	81.4	36	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	462.03	461.74	7.162	
160	CO-130	MH-65	460.85	MH-66	460.71	36.9	0.004	218	0.013	0.6	26.103	82.8	36.3	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	461.74	461.84	7.286	
162	CO-132	MH-66	460.71	MH-67	460.61	26.2	0.004	218	0.013	0.6	26.103	83.8	36.5	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	461.84	461.93	7.369	
164	CO-134	MH-67	460.61	MH-68	460.49	29.1	0.004	218	0.013	0.6	26.103	84.7	36.6	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	461.93	462.16	7.452	
166	CO-136	MH-68	460.49	MH-69	460.18	76.3	0.004	218	0.013	0.61	26.103	85.7	36.8	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	462.16	461.99	7.535	
168	CO-138	MH-69	460.18	MH-70	460.08	27.1	0.004	218	0.013	0.61	26.103	86.1	37.6	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	461.99	462.16	7.576	
170	CO-140	MH-70	460.08	MH-71	459.88	48.8	0.004	218	0.013	0.62	26.103	92.7	38.5	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	462.16	462.07	8.156	
172	CO-142	MH-71	459.88	MH-72	459.5	94.5	0.004	218	0.013	0.62	26.103	93.7	39	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	462.07	461.97	8.239	
174	CO-144	MH-72	459.5	MH-73	459.3	30.3	0.004	218	0.013	0.63	26.103	97.4	39.5	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	461.97	461.79	8.57	
176	CO-146	MH-73	459.3	MH-74	459.13	63	0.004	218	0.013	0.63	26.103	97.4	39.5	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	461.79	461.76	8.57	
178	CO-148	MH-74	459.13	MH-75	458.97	40.3	0.004	218	0.013	0.63	26.103	97.4	39.5	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	461.76	461.5	8.57	
180	CO-150	MH-75	458.97	MH-76	458.82	37.4	0.004	218	0.013	0.63	26.103	97.9	39.7	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	461.5	461.33	8.611	
182	CO-152	MH-76	458.82	MH-77	458.54	68.9	0.004	218	0.013	0.63	26.103	98.8	39.8	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	461.33	461.1	8.694	
184	CO-154	MH-77	458.54	MH-78	458.34	49.5	0.004	218	0.013	0.63	26.103	98.8	39.9	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	461.1	461.6	8.694	
185	CO-156	MH-78	458.34	MH-79	458.15	49.6	0.004	218	0.013	0.62	25.851	99.8	39.9	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	461.6	461.64	8.694	
188	CO-158	MH-79	458.15	MH-80	458.03	29	0.004	218	0.013	0.63	26.103	98.8	39.8	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	461.64	461.31	8.694	
191	CO-160	MH-81	458.43	MH-82	458.18	20.9	0.012	218	0.013	0.63	26.103	98.8	39.8	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	461.25	459.35	0.041	
193	CO-162	MH-82	458.18	MH-83	458.68	34.6	0.015	218	0.013	0.63	26.103	98.8	39.9	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	459.35	459.73	0.249	
195	CO-164	MH-83	458.68	MH-84	458.48	45.9	0.004	218	0.013	0.62	25.851	99.8	39.9	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	459.73	460.57	0.207	
197	CO-166	MH-84	458.48	MH-85	458.33	85.4	0.004	218	0.013	0.63	26.103	10.4	5.7	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	460.57	460.51	0.24	
199	CO-168	MH-85	458.33	MH-86	458.31	60.3	0.008	218	0.013	0.63	36.755	0.3	3.8	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	460.51	460.63	0.041	
203	CO-172	MH-87	458.34	MH-88	458.15	48.9	0.004	218	0.013	0.63	49.758	0.3	3	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	459.16	459.41	0.041	
205	CO-174	MH-88	458.15	MH-89	457.93	53.6	0.004	218	0.013	0.63	26.103	0.5	4	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	459.41	459.18	0.041	
207	CO-176	MH-89	457.93	MH-90	457.79	36	0.004	218	0.013	0.63	26.103	1.4	6.1	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	459.18	459.23	0.124	
209	CO-178	MH-90	458.41	MH-91	458.15	22.3	0.004	218	0.013	0.63	26.103	1.9	5.2	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	459.23	459.31	0.166	
211	CO-180	MH-91	458.5	MH-92	458.94	36.6	0.012	218	0.013	0.63	45.293	1.1	5.2	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	459.31	459.75	0.166	
213	CO-182	MH-92	458.94	MH-93	459.23	64.5	0.005	218	0.013	0.62	27.871	1.8	5.1	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	459.75	460.05	0.166	
215	CO-184	MH-93	459.23	MH-94	459.55	63	0.005	218	0.013	0.64	29.174	0.4	4.2	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	460.05	460.6	0.041	
217	CO-186	MH-94	459.55	MH-95	459.63	20.9	0.004	218	0.013	0.63	26.103	0.5	2.9	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	460.6	460.81	0.041	
219	CO-188	MH-95	459.63	MH-96	460.33	42.9	0.016	218	0.013	0.62	52.73	0.2	2.7	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	460.81	461.15	0.041	
223	CO-192	MH-97	458.26	MH-98	454.55	39.1	0.018	218	0.013	0.63	55.42	0.9	6.8	Circle - 218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	456.08	455.72	0.166	
225	CO-194	MH-98	454.55	MH-99	454.49	13.1	0.004	218	0.013	0.62	26.103	4.7	8.8	Circle - 218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	455.72	455.34	0.14	
227	CO-196	MH-99	454.49	MH-100	454.27	55.2	0.004	218	0.013	0.63	26.103	4.7	8.8	Circle - 218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	455.34	455.46	0.14	
229	CO-198	MH-100	454.27	MH-101	454.18	23.1	0.004	218	0.013	0.62	26.103	4.7	8.1	Circle - 218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	455.46	455.63	0.141	
231	CO-200	MH-101	452.1	MH-102	451.76	451.76	83.8	0.004	218	0.013	0.62	26.103	92.7	38.4	Circle - 218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	455.76	455.34	0.156
233	CO-202	MH-102	451.76	MH-103	451.62	35.1	0.004	218	0.013	0.62	26.103	92.7	36.2	Circle - 218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	455.34	455.1	0.156	
235	CO-204	MH-103	451.62	MH-104	451.45	42.5	0.004	218	0.013	0.62	44.292	0.9	31.5	Circle - 218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	455.1	455.5	0.156	
237	CO-206	MH-104	451.45	MH-105	451.34	9.6	0.012	218	0.013	0.63	26.103	3.3	8.1	Circle - 218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	455.5	455.24	0.29	
240	CO-208	MH-106	451..54	MH-107	451.17	39.6	0.004	218	0.013	0.62	26.103	2.8	7.2	Circle - 218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	453.24	453.6	0.248	
242	CO-210	MH-107	451.17	MH-108	451.89	48.6	0.004	218	0.013	0.62	26.103	2.8	7.2	Circle - 218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	453.6	454.19	0.166	
244	CO-212	MH-108	451.89	MH-109	452.12	55.9	0.004	218	0.013	0.62	26.103	1.9	6.3	Circle - 218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	454.19	454.55	0.166	
246	CO-214	MH-109	452.12	MH-110	452.41	73.3	0.004	218	0.013	0.62	26.103	1.9	5.7	Circle - 218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	454.55	454.51	0.166	
248	CO-216	MH-110	452.41	MH-111	452.1	9.3	0.004	218	0.013	0.62	26.103	1.9	5.7	Circle - 218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	454.51	454.95	0.083	
250	CO-218	MH-111	453.7	MH-112	454.13															

2522	CO-2220	MH-112	454..3	MH-113	454.25	14.8	0.008	218	0.013	0.16	36.987	0.3	3.1	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	454.95	455.11	0.041
254	CO-2222	MH-113	454.25	MH-114	454.28	8.2	0.004	218	0.013	0	26.103	0	1.3	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	455.11	455.1	0
258	CO-2226	MH-115	453.78	MH-116	453.37	64.4	0.006	218	0.013	0.15	32.975	0.4	4.2	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	454.6	454.55	0.041
260	CO-228	MH-116	453.37	MH-117	454	48.6	0.013	218	0.013	0.2	47.016	0.3	4	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	454.55	454.82	0.041
2683	CO-236	MH-120	453.46	MH-121	453.29	41.7	0.004	218	0.013	0.6	26.103	83.8	36.5	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	456.02	455.82	7.369
270	CO-238	MH-121	453.29	MH-122	453.03	64.2	0.004	218	0.013	0.6	26.103	84.7	36.7	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	455.82	455.77	7.452
272	CO-240	MH-122	453.03	MH-123	452.75	71	0.004	218	0.013	0.61	26.103	86.1	37	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	455.77	455.52	7.576
273	CO-242	MH-123	452.75	MH-101	452.1	162.7	0.004	218	0.013	0.61	26.103	87.5	37.7	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	455.52	455.63	7.7
275	CO-244	MH-124	454.85	MH-125	454.19	22.1	0.003	218	0.013	0.32	71.551	0.3	4.1	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	455.37	455.37	0.083
278	CO-246	MH-125	454.19	MH-126	454.15	8.8	0.004	218	0.013	0.18	26.103	1.4	5.1	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	455.37	455.24	0.124
280	CO-248	MH-126	454.15	MH-127	453.9	71.9	0.004	218	0.013	0.17	24.428	1.5	13.6	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	455.24	456.01	0.124
282	CO-250	MH-127	453.9	MH-128	453.87	39.8	0.001	218	0.013	0.1	11.336	3.3	28.8	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	456.01	456.39	0.124
284	CO-252	MH-128	453.87	MH-129	453.73	35.3	0.004	218	0.013	0.59	25.985	80.8	35.8	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	456.39	456.32	7.079
286	CO-254	MH-129	453.73	MH-130	453.5	57.5	0.004	218	0.013	0.6	26.103	81.9	36.2	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	456.32	456.07	7.204
287	CO-256	MH-130	453.5	MH-120	453.46	11.2	0.004	218	0.013	0.6	26.103	83.8	36.4	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	456.07	456.04	7.369
290	CO-258	MH-131	464.69	MH-132	464.85	40.2	0.004	218	0.013	0.34	26.103	11.3	13	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	466.4	466.84	0.994
292	CO-260	MH-132	464.85	MH-133	465.22	93.6	0.004	218	0.013	0.34	26.103	11.3	13.3	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	466.84	468.41	0.994
294	CO-262	MH-133	465.22	MH-134	465.39	40.7	0.004	218	0.013	0.33	26.103	10.8	13.2	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	468.41	469.1	0.952
296	CO-264	MH-134	465.39	MH-135	465.43	11.4	0.004	218	0.013	0.32	26.103	9.9	12.8	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	469.1	469.8	0.869
298	CO-266	MH-135	468.53	MH-136	469.23	42	0.007	218	0.013	0.48	53.496	3.4	8.4	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	469.3	470.36	0.621
300	CO-268	MH-136	469.23	MH-137	469.4	42.4	0.004	218	0.013	0.29	26.103	7.1	9.9	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	470.36	470.58	0.621
302	CO-270	MH-137	469.4	MH-138	469.94	29	0.019	218	0.013	0.44	56.281	2.2	9.1	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	470.58	470.76	0.414
304	CO-272	MH-138	469.94	MH-139	470.2	39.8	0.007	218	0.013	0.3	33.424	3.3	7.5	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	470.76	471.02	0.373
306	CO-274	MH-139	470.47	MH-140	470.47	36.2	0.007	218	0.013	0.3	35.33	2.8	7.2	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	471.02	471.34	0.331
308	CO-276	MH-140	470.47	MH-141	470.62	38.5	0.004	218	0.013	0.23	26.103	3.3	7.2	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	471.34	471.44	0.29
310	CO-278	MH-141	470.62	MH-142	471.82	26.2	0.046	218	0.013	0.49	88.286	0.7	6.4	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	471.44	473	0.207
312	CO-280	MH-142	471.82	MH-143	473.18	34.9	0.039	218	0.013	0.4	81.471	0.5	4.7	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	473	474	0.124
316	CO-284	MH-144	465.77	MH-145	465.5	7.8	0.035	218	0.013	0	77.131	0	0	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	466.59	466.32	0
318	CO-286	MH-145	465.5	MH-146	464.68	65.6	0.012	218	0.013	0	46.126	0	0	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	466.32	465.5	0
320	CO-288	MH-146	464.68	MH-147	462.92	63	0.028	218	0.013	0	69.096	0	0	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	465.5	463.73	0
322	CO-290	MH-147	462.92	MH-148	461.55	84.3	0.016	218	0.013	0	52.572	0	0	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	463.73	462.37	0
324	CO-292	MH-148	461.55	MH-149	461	82.8	0.007	218	0.013	0	33.349	0	0	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	462.37	461.82	0
326	CO-294	MH-149	459.9	MH-150	459.94	7.9	0.004	218	0.013	0.44	26.103	27.3	19.3	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	461.73	461.73	2.401
328	CO-296	MH-150	459.94	MH-151	460.1	40.1	0.004	218	0.013	0.44	26.103	27.3	20.5	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	461.73	461.89	2.401
330	CO-298	MH-151	460.1	MH-152	460.55	63	0.004	218	0.013	0.44	26.103	27.3	20.5	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	461.89	462.28	2.401
332	CO-300	MH-152	460.55	MH-153	460.47	29.4	0.004	218	0.013	0.43	26.103	26.4	20.3	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	462.28	462.27	2.348
334	CO-302	MH-153	460.47	MH-154	460.63	40.6	0.004	218	0.013	0.43	26.103	26.4	20.1	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	462.27	462.46	2.318
336	CO-304	MH-154	460.63	MH-155	460.71	19.2	0.004	218	0.013	0.43	26.103	25.4	20	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	462.46	462.4	2.256
338	CO-306	MH-155	460.71	MH-156	460.76	13.3	0.004	218	0.013	0.43	26.103	25.4	19.8	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	462.4	462.33	2.236
340	CO-308	MH-156	460.76	MH-157	460.82	15.6	0.004	218	0.013	0.42	26.103	24.9	19.7	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	462.33	462.26	2.194
342	CO-310	MH-157	460.82	MH-158	460.9	18.7	0.004	218	0.013	0.42	26.103	24	19.4	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	462.26	462.24	2.111
344	CO-312	MH-158	460.9	MH-159	461.01	28.1	0.004	218	0.013	0.42	26.103	24	19.3	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	462.24	462.28	2.111
346	CO-314	MH-159	461.01	MH-160	461.12	28.2	0.004	218	0.013	0.41	26.103	22.1	18.9	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	462.28	462.22	1.946
348	CO-316	MH-160	461.12	MH-161	461.15	7	0.004	218	0.013	0.41	26.103	22.1	18.5	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	462.22	462.22	1.946
350	CO-318	MH-161	461.15	MH-162	461.24	23.4	0.004	218	0.013	0.54	61.487	3.2	13.1	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	462.91	464.01	0.662
352	CO-320	MH-162	461.24	MH-163	461.28	8.2	0.004	218	0.013	0.41	26.103	22.1	18.5	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	464.01	464.91	0.538
354	CO-322	MH-163	461.28	MH-164	461.49	53	0.004	218	0.013	0.41	26.103	22.1	18.5	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	464.91	465.4	0.538
356	CO-324	MH-164	461.49	MH-165	461.87	51.3	0.004	218	0.013	0.4	27.011	18.2	16.2	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	462.69	462.91	1.656
358	CO-326	MH-165	461.87	MH-166	462.09	51.3	0.004	218	0.013	0.54	61.487	3.2	13.1	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	462.91	464.01	0.662
360	CO-328	MH-166	462.09	MH-167	463.19	49.6	0.022	218	0.013	0.41	26.103	22.1	18.5	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	464.01	464.91	0.538
362	CO-330	MH-167	463.19	MH-168	464.09	79.5	0.011	218	0.013	0.4	43.879	3.6	9	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	464.91	465.4	0.538
364	CO-332	MH-168	464.09	MH-169	464.58	27	0.018	218	0.013	0.47	59.338	2.3	8.2	Circle - 218.0 mm	HDPE Di-250mm	Tubacion HDPE SN8	465.4	465.24	0.455

368	CO-336	MH-170	465.42	MH-171	466.49	59.3	0.018	218	0.013	0.42	55.483	2	7.5	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	466.24	467.67	0.373
370	CO-338	MH-171	466.49	MH-172	466.84	34.4	0.01	218	0.013	0.29	41.46	1.5	6.2	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	467.67	467.56	0.207
372	CO-340	MH-172	466.84	MH-173	469.48	57.1	0.041	218	0.013	0.45	83.535	0.6	5	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	467.66	470	0.166
374	CO-342	MH-173	469.18	MH-174	469.94	81.3	0.009	218	0.013	0.24	39.774	0.9	4.4	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	470	471	0.124
376	CO-344	MH-174	469.94	MH-175	470.18	61.2	0.004	218	0.013	0.18	25.103	1.4	4.5	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	471	471	0.124
378	CO-346	MH-176	467.89	MH-177	466.49	23.3	0.06	218	0.013	0.34	101.214	0.1	4.7	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	468.71	467.67	0.041
381	CO-348	MH-177	465.23	MH-178	463.85	41.9	0.033	218	0.013	0.37	74.85	0.5	7.9	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	466.C5	465.03	0.124
383	CO-350	MH-178	463.85	MH-179	463.57	70.4	0.004	218	0.013	0.31	26.103	8.5	11.1	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	465.03	464.46	0.745
385	CO-352	MH-179	463.57	MH-180	463.14	55.6	0.008	218	0.013	0.4	36.358	6.8	11.1	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	464.46	463.95	0.828
412	CO-378	MH-190	466.99	MH-194	465.81	58.7	0.02	218	0.013	0.49	58.425	2.7	7.7	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	467.81	466.53	0.538
413	CO-380	MH-194	465.81	MH-178	463.85	97.3	0.02	218	0.013	0.49	58.579	2.7	10.1	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	466.63	465.03	0.538
416	CO-382	MH-195	466.68	MH-196	495.32	37.7	0.036	218	0.013	0.34	78.456	0.3	2.9	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	497.5	496.5	0.083
418	CO-384	MH-196	495.32	MH-197	493.68	38.1	0.043	218	0.013	0.37	85.629	0.3	5.4	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	496.5	494.5	0.083
420	CO-386	MH-197	493.68	MH-198	493.49	48.3	0.004	218	0.013	0.23	26.103	3.3	7.6	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	494.5	494.6	0.29
428	CO-394	MH-201	435.32	MH-202	485.12	50.9	0.004	218	0.013	0.28	26.103	6.1	9.2	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	486.-4	487	0.083
430	CO-396	MH-202	435.82	MH-203	486.18	21.3	0.017	218	0.013	0.26	53.737	0.5	3.1	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	487	487	0.083
436	CO-402	MH-206	493.8	MH-197	493.68	64.2	0.1	218	0.013	0.6	130.514	0.4	6.1	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	504.13	494.5	0.166
438	CO-404	MH-207	439.18	MH-198	493.74	54.4	0.1	218	0.013	0.6	130.514	0.4	3.7	Circle -218.0 mm	HDPE C-250mm	Tubacion HDPE SN8	500	494.6	0.166
442	CO-408	MH-208	470.73	MH-209	470.11	109.6	0.006	218	0.013	0.35	31.004	7.5	10.7	Circle -218.0 mm	HDPE C-250mm	Tubacion HDPE SN8	471.55	470.93	0.787
446	CO-412	MH-210	466.99	MH-211	466.19	201.7	0.004	218	0.013	0.34	26.103	11.3	13.3	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	468.77	467.23	0.994
448	CO-414	MH-211	466.19	MH-212	465.62	141.1	0.004	218	0.013	0.34	26.114	11.3	12.5	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	467.23	466.44	0.994
450	CO-416	MH-212	465.62	MH-213	463.83	120.6	0.015	218	0.013	0.53	50.285	5.9	10.7	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	466.44	464.65	0.994
452	CO-418	MH-213	463.05	MH-214	462.79	65	0.004	218	0.013	0.35	26.103	13.2	13.5	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	464.65	463.77	1.159
454	CO-420	MH-214	462.79	MH-215	462.22	62.4	0.009	218	0.013	0.47	39.528	8.7	13.8	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	463.77	463.77	1.159
456	CO-422	MH-215	462.22	MH-216	461.88	85.4	0.004	218	0.013	0.36	26.103	14.6	15.1	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	463.77	462.97	1.283
458	CO-424	MH-216	461.88	MH-217	461.58	73.3	0.004	218	0.013	0.36	26.103	14.6	14.3	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	462.97	462.52	1.283
460	CO-426	MH-217	461.58	MH-218	461.04	85.9	0.006	218	0.013	0.43	32.768	11.6	14.3	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	461.86	461.86	1.283
462	CO-428	MH-218	461.04	MH-219	460.89	37	0.004	218	0.013	0.36	26.103	14.6	15.1	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	461.86	462.72	1.283
464	CO-430	MH-219	460.89	MH-220	460.73	40.4	0.004	218	0.013	0.36	26.103	14.6	14.1	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	462.72	462.54	1.283
466	CO-432	MH-220	457.93	MH-221	457.84	52.2	0.002	273	0.013	0.47	30.794	96.1	37.9	Circle -273.0 mm	HDPE D-315mm	Tubacion HDPE SN8	462.54	462.31	0.977
468	CO-434	MH-221	457.84	MH-222	457.77	93.1	0.002	344	0.013	0.44	54.003	54.8	29.2	Circle -344.0 mm	HDPE D-400mm	Tubacion HDPE SN8	462.31	461.52	0.977
470	CO-436	MH-222	457.77	MH-223	457.58	82.6	0.001	344	0.013	0.44	53.078	55.8	26.1	Circle -344.0 mm	HDPE D-400mm	Tubacion HDPE SN8	461.52	459.7	0.977
474	CO-440	MH-224	457.06	MH-225	456.58	119.7	0.004	344	0.013	0.54	88.097	35	23.2	Circle -344.0 mm	HDPE D-400mm	Tubacion HDPE SN8	459	458.79	1.283
475	CO-442	MH-225	456.58	MH-226	456.26	81	0.004	344	0.013	0.54	88.097	35	23.2	Circle -344.0 mm	HDPE D-400mm	Tubacion HDPE SN8	458.79	457.66	1.283
478	CO-444	MH-226	456.26	MH-227	455.94	80.4	0.004	344	0.013	0.54	88.097	35	23.2	Circle -344.0 mm	HDPE D-400mm	Tubacion HDPE SN8	457.66	457.34	1.283
480	CO-446	MH-227	455.94	MH-228	455.75	46.3	0.004	344	0.013	0.64	88.097	35	22.3	Circle -344.0 mm	HDPE D-400mm	Tubacion HDPE SN8	457.34	457.01	1.283
481	CO-448	MH-228	455.75	MH-105	451.25	55.4	0.081	344	0.013	1.83	397.239	7.8	26.2	Circle -344.0 mm	HDPE D-400mm	Tubacion HDPE SN8	457.01	455.5	1.283
482	CO-450	MH-80	458.03	MH-220	457.93	26.6	0.004	218	0.013	0.63	98.8	44.4	10	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	461.31	462.54	0.634
485	CO-452	MH-229	463.63	MH-230	463.11	33.9	0.016	218	0.013	0.25	51.398	0.5	4.1	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	464.45	464.29	0.083
487	CO-454	MH-230	463.11	MH-231	462.95	40.6	0.004	218	0.013	0.18	26.103	1.4	4.5	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	464.29	464.09	0.124
489	CO-456	MH-231	462.95	MH-232	462.29	39.7	0.017	218	0.013	0.29	53.063	0.7	4.5	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	464.66	464.66	0.041
490	CO-458	MH-232	462.29	MH-215	462.22	17.8	0.004	218	0.013	0.18	26.103	1.4	2.2	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	464.11	463.58	0.041
493	CO-460	MH-233	464.26	MH-234	463.23	38.3	0.027	218	0.013	0.38	67.773	0.7	5.2	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	463.58	463.08	0.166
495	CO-462	MH-234	463.23	MH-235	463.16	46.3	0.004	218	0.013	0.19	26.103	1.9	5.7	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	464.4	464.02	0.166
496	CO-464	MH-235	463.16	MH-213	463.05	26.6	0.004	218	0.013	0.41	41.51	4.1	2.2	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	462.16	462.39	0.58
499	CO-466	MH-236	463.84	MH-237	462.93	42.8	0.021	218	0.013	0.23	60.245	0.2	2.2	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	464.66	464.11	0.041
501	CO-468	MH-237	462.93	MH-238	462.4	43.8	0.012	218	0.013	0.19	45.584	0.3	4	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	464.11	463.58	0.041
503	CO-470	MH-238	462.4	MH-239	462.16	59.1	0.004	218	0.013	0.19	26.103	1.9	5.7	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	463.58	463.08	0.166
506	CO-472	MH-70	460.08	MH-241	460.51	42.8	0.01	218	0.013	0.19	26.103	1.9	10.1	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	464.02	464.02	0.166
508	CO-474	MH-241	460.73	MH-242	460.51	54.8	0.004	218	0.013	0.27	26.103	5.6	9.2	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	462.39	462.74	0.497
510	CO-476	MH-242	460.85	MH-243	460.85	30.7	0.004	218	0.013	0.27	26.103	5.2	9.4	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	462.74	462.58	0.495
512	CO-478	MH-243	460.85	MH-244	460.94	21.8	0.004	218	0.013	0.26	26.103	4.7	9	Circle -218.0 mm	HDPE D-250mm	Tubacion HDPE SN8	462.58	462.74	0.414
514	CO-480	MH-244	460.94	MH-245	461.09	39.1	0.004	21											

516	CO-482	MH-245	461.09	MH-246	461.14	12.2	0.004	218	0.013	0.25	26.103	4.7	8.8	Circle -218.0 mm	HDPE Di-250mm	Tubacón HDPE SN8	463	463	0.414
517	CO-484	MH-246	461.14	MH-239	461.33	45.6	0.004	218	0.013	0.19	26.103	4.2	8.5	Circle -218.0 mm	HDPE Di-250mm	Tubacón HDPE SN8	463	463	0.373
519	CO-486	MH-239	461.33	MH-247	461.38	12.4	0.004	218	0.013	0.18	26.103	1.4	5.3	Circle -218.0 mm	HDPE Di-250mm	Tubacón HDPE SN8	463	463	0.166
521	CO-488	MH-247	461.38	MH-248	461.56	46.8	0.004	218	0.013	0.16	26.103	0.9	4.6	Circle -218.0 mm	HDPE Di-250mm	Tubacón HDPE SN8	462.94	462.94	0.124
523	CO-490	MH-248	461.56	MH-249	461.77	51.7	0.004	218	0.013	0.21	54.497	0.2	3.2	Circle -218.0 mm	HDPE Di-250mm	Tubacón HDPE SN8	462.95	462.95	0.083
525	CO-492	MH-249	461.77	MH-250	462.94	66.9	0.017	218	0.013	0.25	51.201	0.5	4.5	Circle -218.0 mm	HDPE Di-250mm	Tubacón HDPE SN8	463.68	463.58	0.083
527	CO-494	MH-251	462.87	MH-238	462.4	30.4	0.015	218	0.013	0.34	59.081	0.8	5.2	Circle -218.0 mm	HDPE Di-250mm	Tubacón HDPE SN8	461.4	461.5	0.166
530	CO-496	MH-252	460.58	MH-253	460.32	12.7	0.02	218	0.013	0.19	26.103	1.9	6	Circle -218.0 mm	HDPE Di-250mm	Tubacón HDPE SN8	461.5	461.59	0.166
532	CO-498	MH-253	460.32	MH-254	460.11	53.1	0.004	218	0.013	0.19	26.103	1.7	22.9	Circle -218.0 mm	HDPE Di-250mm	Tubacón HDPE SN8	461.59	461.97	0.29
533	CO-500	MH-254	460.11	MH-72	459.5	39.8	0.015	218	0.013	0.37	50.972	1.7	22.9	Circle -218.0 mm	HDPE Di-250mm	Tubacón HDPE SN8	461.56	461.32	0.053
536	CO-502	MH-255	460.74	MH-256	460.14	19.3	0.031	218	0.013	0.33	72.87	0.3	4.5	Circle -218.0 mm	HDPE Di-250mm	Tubacón HDPE SN8	461.32	459.91	0.248
538	CO-504	MH-256	460.14	MH-257	459.99	36.2	0.029	218	0.013	0.44	70.185	1.1	6.2	Circle -218.0 mm	HDPE Di-250mm	Tubacón HDPE SN8	459.91	459.67	0.331
540	CO-506	MH-257	459.99	MH-258	458.85	22.8	0.011	218	0.013	0.34	42.563	2.3	7.2	Circle -218.0 mm	HDPE Di-250mm	Tubacón HDPE SN8	459.91	459.51	0.455
542	CO-508	MH-258	458.85	MH-259	457.7	23.6	0.019	218	0.013	0.48	61.099	2.2	12.7	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	458.51	458.07	2.236
544	CO-510	MH-259	457.7	MH-260	457.25	457.09	0.004	218	0.013	0.74	56.824	11.7	19.1	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	458.51	458.25	2.443
546	CO-512	MH-260	457.25	MH-261	457.09	18.9	0.004	218	0.013	0.44	26.103	27.8	20.7	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	458.07	458.28	2.443
548	CO-514	MH-261	457.09	MH-262	457.02	13.7	0.004	218	0.013	0.44	26.103	27.8	21.1	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	458.25	458.49	2.443
550	CO-516	MH-262	457.02	MH-263	456.96	456.96	0.004	218	0.013	0.45	26.103	30.1	21.5	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	458.19	458.16	2.55
552	CO-518	MH-263	456.96	MH-264	456.89	18.4	0.004	218	0.013	0.45	26.103	30.1	21.7	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	458.16	458.23	2.65
554	CO-520	MH-264	456.89	MH-265	456.72	41	0.004	218	0.013	0.45	26.103	31.1	21.9	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	458.23	458.28	2.732
556	CO-522	MH-265	456.72	MH-266	456.65	19.2	0.004	218	0.013	0.46	26.103	31.5	22.3	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	458.28	457.94	2.774
558	CO-524	MH-266	456.65	MH-267	456.5	36.8	0.004	218	0.013	0.46	26.103	32.9	22.5	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	457.94	457.36	2.898
560	CO-526	MH-267	456.5	MH-268	456.38	28.8	0.004	218	0.013	0.46	26.103	32.9	22.7	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	457.36	457.69	2.898
562	CO-528	MH-268	456.38	MH-269	456.27	28.9	0.004	218	0.013	0.46	26.103	33.9	22.5	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	457.69	457.43	2.981
564	CO-530	MH-269	456.27	MH-270	456.12	32.3	0.005	218	0.013	0.49	27.812	31.8	22.6	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	457.43	456.94	2.981
566	CO-532	MH-270	456.12	MH-271	455.97	39	0.004	218	0.013	0.47	26.103	34.8	22	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	456.94	456.95	3.064
568	CO-534	MH-271	455.97	MH-272	455.35	44.8	0.014	218	0.013	0.73	48.277	21.6	21.6	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	456.95	456.17	3.146
570	CO-536	MH-272	455.35	MH-273	454.43	49.9	0.019	218	0.013	0.85	56.175	19.2	19.9	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	456.17	455.25	3.643
572	CO-538	MH-273	454.43	MH-274	453.44	55.5	0.018	218	0.013	0.84	55.069	19.6	22.6	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	455.25	454.26	3.643
575	CO-540	MH-274	453.43	MH-276	454.49	12.9	0.011	218	0.013	0.22	43.166	0.6	4.1	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	456.44	456.66	0.083
577	CO-542	MH-276	455.49	MH-277	455.29	48.1	0.004	218	0.013	0.18	26.103	1.4	5.7	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	456.66	457.03	0.124
579	CO-544	MH-277	455.29	MH-278	454.43	49.9	0.019	218	0.013	0.85	56.175	19.2	19.9	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	457.03	457.3	0.207
581	CO-546	MH-278	455.2	MH-279	453.17	38.2	0.004	218	0.013	0.22	26.103	2.8	7.4	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	457.3	457.76	0.248
583	CO-548	MH-279	455.05	MH-280	454.82	58.2	0.004	218	0.013	0.24	26.103	3.8	8.4	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	457.76	457.15	0.331
585	CO-550	MH-280	454.82	MH-281	454.52	72.8	0.004	218	0.013	0.26	26.103	4.7	8.1	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	457.15	456.74	0.414
587	CO-552	MH-281	453.49	MH-282	453.33	41	0.004	218	0.013	0.21	26.103	2.4	6.6	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	457.03	456.37	0.455
589	CO-554	MH-282	453.33	MH-283	453.17	38.6	0.004	218	0.013	0.34	26.103	11.8	14.1	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	456.37	455.68	1.035
591	CO-556	MH-283	453.17	MH-284	453.08	22.9	0.004	218	0.013	0.36	26.103	13.6	13.8	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	455.68	454.49	1.201
593	CO-558	MH-284	453.08	MH-285	452.94	9	0.016	218	0.013	0.58	51.702	7.1	20.3	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	454.49	453.96	1.242
595	CO-560	MH-285	452.94	MH-286	453.09	38.8	0.004	218	0.013	0.27	26.103	5.2	18.5	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	453.96	453.05	0.455
597	CO-562	MH-286	453.09	MH-287	453.21	28.2	0.004	218	0.013	0.24	26.103	3.8	8.6	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	453.05	452.27	0.331
599	CO-564	MH-287	453.21	MH-288	453.3	22.8	0.004	218	0.013	0.23	26.103	3.3	7.7	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	452.27	452.3	0.207
601	CO-566	MH-288	453.89	MH-289	454.03	35.2	0.004	218	0.013	0.19	26.103	1.9	5.2	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	452.3	451.42	0
603	CO-568	MH-290	453.34	MH-288	453.3	26	0.004	218	0.013	0.18	26.103	1.4	6.2	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	452.22	452.25	0.124
605	CO-570	MH-291	451.85	MH-292	451.01	18.8	0.004	218	0.013	0.16	35.266	0.3	3.4	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	452.27	452.27	0.041
608	CO-572	MH-292	451.09	MH-293	451.01	18.8	0.004	218	0.013	0.16	26.103	0.9	4.9	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	452.3	451.42	0.083
610	CO-574	MH-293	451.01	MH-294	450.54	70.9	0.007	218	0.013	0.25	33.852	1.8	6	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	451.42	451.42	0.207
612	CO-576	MH-294	450.54	MH-295	450.6	16.9	0.004	218	0.013	0	26.103	0	3.2	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	451.42	451.42	0
622	CO-586	MH-295	450.19	MH-3CQ	449.98	51.9	0.004	218	0.013	0.56	26.103	63.5	31.4	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	451.24	451.19	5.589
624	CO-588	MH-300	449.98	MH-3C1	449.92	15.2	0.004	218	0.013	0.56	26.103	63.5	31.7	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	451.19	451.35	5.589
626	CO-590	MH-301	449.92	MH-3C2	449.52	99.5	0.004	218	0.013	0.56	26.103	65.9	32.1	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	451.35	451.29	5.796
628	CO-592	MH-302	449.52	MH-3C3	449.45	16.9	0.004	218	0.013	0.56	26.103	66.4	32.1	Circle -218.0 mm	HDPE D-250mm	Tubacón HDPE SN8	451.29	451.11	5.837
630	CO																		

632	CO-596	MH-304	449.31	MH-305	449.13	47	0.004	218	0.013	0.56	26.103	66.4	32.1	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE SN8	450.87	450.81	5.837
633	CO-598	MH-305	449.13	MH-306	449.04	21.7	0.004	218	0.013	0.56	26.103	66.4	33.4	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE SN8	450.81	450.74	5.837
634	CO-610	MH-311	448.49	MH-312	448.45	16.9	0.002	218	0.013	0.47	20.05	91.3	38.3	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE SN8	449.68	449.63	6.169
646	CO-612	MH-312	448.45	MH-313	448.36	39.7	0.002	218	0.013	0.47	19.639	93.2	38.7	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE SN8	450.63	450.63	6.169
648	CO-612	MH-313	448.36	MH-314	448.29	32.1	0.002	218	0.013	0.46	19.275	95	39.1	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE SN8	450.63	450.95	6.169
650	CO-614	MH-313	448.36	MH-315	448.27	9.8	0.002	218	0.013	0.45	18.598	98.4	38.7	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE SN8	450.95	450.9	6.169
652	CO-616	MH-314	448.29	MH-316	448.19	34.3	0.002	218	0.013	0.47	19.927	91.9	39	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE SN8	450.9	450.95	6.169
654	CO-618	MH-315	448.27	MH-316	448.19	52.6	0.002	218	0.013	0.45	18.875	98.9	39.3	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE SN8	450.96	450.64	6.293
655	CO-620	MH-316	448.19	MH-317	448.08	448.08	0.002	218	0.013	0.47	19.651	95	37.8	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE SN8	450.64	450.56	6.293
658	CO-622	MH-317	448.08	MH-318	448.02	28.2	0.002	218	0.013	0.18	40.654	0.3	2.4	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE SN8	450.56	450.67	0.041
660	CO-624	MH-318	448.02	MH-319	449.85	47.9	0.001	218	0.013	0.44	33.98	55.3	29.9	Circle - 273.0 mm	HDPE Di-315mm	Tubación HDPE SN8	450.56	450.25	6.334
662	CO-626	MH-318	448.02	MH-320	447.95	32.3	0.002	273	0.013	0.42	31.578	60.3	31.6	Circle - 273.0 mm	HDPE Di-315mm	Tubación HDPE SN8	450.25	450.4	6.417
664	CO-628	MH-320	447.95	MH-321	447.88	39.7	0.002	218	0.013	0.23	26.103	3.3	6.8	Circle - 258.0 mm	HDPE Di-250mm	Tubación HDPE SN8	450.4	450.51	0.29
666	CO-630	MH-321	447.87	MH-322	449.61	59.7	0.004	218	0.013	0.23	26.103	3.3	7.4	Circle - 223.0 mm	HDPE Di-250mm	Tubación HDPE SN8	450.51	450.55	0.29
668	CO-632	MH-322	449.51	MH-323	449.73	29.3	0.004	218	0.013	0.27	33.601	2.6	7	Circle - 238.0 mm	HDPE Di-250mm	Tubación HDPE SN8	450.55	450.6	0.29
670	CO-634	MH-323	449.51	MH-324	449.78	8.5	0.007	218	0.013	0.29	35.723	2.4	6.5	Circle - 228.0 mm	HDPE Di-250mm	Tubación HDPE SN8	450.6	451.07	0.29
672	CO-636	MH-324	449.57	MH-325	450.25	62.7	0.007	218	0.013	0.23	26.103	3.3	7.9	Circle - 218.0 mm	HDPE Di-315mm	Tubación HDPE SN8	450.4	450.57	6.707
674	CO-638	MH-325	447.88	MH-326	447.83	33	0.002	273	0.013	0.41	29.269	68	33.1	Circle - 273.0 mm	HDPE Di-315mm	Tubación HDPE SN8	450.4	450.51	0.29
676	CO-640	MH-326	447.83	MH-327	447.79	30	0.001	273	0.013	0.39	27.45	72.5	32.9	Circle - 235.0 mm	HDPE Di-315mm	Tubación HDPE SN8	450.57	450.55	0.29
678	CO-642	MH-327	449.48	MH-328	449.57	23.8	0.004	218	0.013	0.25	26.103	5.2	8.5	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE SN8	450.55	450.57	0.455
680	CO-644	MH-328	449.57	MH-329	449.71	33.8	0.004	218	0.013	0.23	26.103	4.2	8.8	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE SN8	450.57	450.72	0.373
682	CO-646	MH-329	449.71	MH-330	449.76	13	0.004	218	0.013	0.23	26.103	3.3	7.9	Circle - 218.0 mm	HDPE Di-315mm	Tubación HDPE SN8	450.72	451.26	0.29
684	CO-648	MH-330	449.76	MH-331	449.85	22.1	0.004	218	0.013	0.19	26.103	1.9	6.6	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE SN8	451.03	451.03	0.166
686	CO-650	MH-327	447.79	MH-332	447.72	39.2	0.002	273	0.013	0.44	31.757	67.3	33.6	Circle - 273.0 mm	HDPE Di-315mm	Tubación HDPE SN8	450.55	450.34	7.204
688	CO-652	MH-332	447.72	MH-333	447.67	35.1	0.001	273	0.013	0.41	28.362	77.5	34.9	Circle - 273.0 mm	HDPE Di-315mm	Tubación HDPE SN8	450.34	450.06	7.411
690	CO-654	MH-333	447.67	MH-334	447.65	11	0.002	273	0.013	0.45	32.086	68.9	36.4	Circle - 273.0 mm	HDPE Di-315mm	Tubación HDPE SN8	450.06	449.81	7.452
692	CO-656	MH-334	447.65	MH-335	447.6	31	0.002	273	0.013	0.43	30.208	73.2	43.7	Circle - 273.0 mm	HDPE Di-315mm	Tubación HDPE SN8	449.81	449.03	7.452
694	CO-658	MH-335	447.6	MH-336	447.55	27.3	0.002	273	0.013	0.45	32.195	68.7	57.6	Circle - 273.0 mm	HDPE Di-315mm	Tubación HDPE SN8	449.03	448.37	7.452
696	CO-660	MH-336	447.55	MH-337	447.53	18.1	0.001	273	0.013	0.37	24.971	88.6	69	Circle - 273.0 mm	HDPE Di-315mm	Tubación HDPE SN8	448.37	448.55	7.452
698	CO-662	MH-337	447.53	MH-338	447.51	10.5	0.002	273	0.013	0.45	32.813	67.4	75.7	Circle - 273.0 mm	HDPE Di-315mm	Tubación HDPE SN8	448.55	450.2	7.452
700	CO-664	MH-338	447.51	MH-339	447.52	14.2	0.029	344	0.013	1.53	23.054	23.7	46	Circle - 344.0 mm	HDPE Di-400mm	Tubación HDPE SN8	450.2	450.37	18.92
702	CO-666	MH-339	447.92	MH-340	448.26	87.6	0.004	344	0.013	0.75	85.794	64.7	30.4	Circle - 344.0 mm	HDPE Di-400mm	Tubación HDPE SN8	450.37	451.33	18.92
704	CO-668	MH-340	448.26	MH-341	448.36	74.8	0.004	344	0.013	0.76	88.202	63.7	31.6	Circle - 344.0 mm	HDPE Di-400mm	Tubación HDPE SN8	451.33	451.6	18.92
706	CO-670	MH-341	448.56	MH-342	448.76	49	0.004	344	0.013	0.76	89.009	63.1	31.4	Circle - 344.0 mm	HDPE Di-400mm	Tubación HDPE SN8	451.6	452.09	18.92
708	CO-672	MH-342	448.76	MH-343	449.02	65.3	0.004	344	0.013	0.75	87.878	63.9	31.4	Circle - 344.0 mm	HDPE Di-400mm	Tubación HDPE SN8	452.09	452.5	18.92
710	CO-674	MH-343	449.02	MH-344	449.26	32.8	0.004	344	0.013	0.77	91.014	61.7	31.2	Circle - 344.0 mm	HDPE Di-400mm	Tubación HDPE SN8	452.5	452.58	18.92
712	CO-676	MH-344	449.16	MH-345	449.56	101	0.004	218	0.013	0.75	87.643	64.1	31.2	Circle - 344.0 mm	HDPE Di-400mm	Tubación HDPE SN8	452.58	452	18.92
714	CO-678	MH-345	449.56	MH-346	449.68	30.5	0.004	218	0.013	0.75	87.327	64.3	31.6	Circle - 344.0 mm	HDPE Di-400mm	Tubación HDPE SN8	452	452.84	0.207
716	CO-680	MH-346	449.56	MH-347	451.9	31	0.006	218	0.013	0	26.103	0	2.1	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE SN8	452.32	452.31	0
726	CO-682	MH-347	451.41	MH-348	451.26	36.3	0.004	218	0.013	0.16	26.103	0.9	4.9	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE SN8	452.31	452.2	0.033
728	CO-684	MH-348	451.41	MH-349	449.94	49	0.004	344	0.013	0.19	26.103	1.9	5.8	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE SN8	452.2	451.99	0.166
730	CO-686	MH-349	449.94	MH-346	449.68	64.2	0.004	344	0.013	0.24	31.136	2	6.2	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE SN8	451.99	451.82	0.166
732	CO-688	MH-350	451.14	MH-351	453	35.7	0.019	218	0.013	0.22	31.096	0.7	3.8	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE SN8	452.9	452.08	0.166
735	CO-690	MH-351	451.5	MH-352	451.41	23	0.004	218	0.013	0.26	43.705	0.8	4.5	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE SN8	454.18	453.55	0.124
737	CO-700	MH-352	451.9	MH-358	451.81	23.9	0.004	218	0.013	0.18	26.103	1.4	5	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE SN8	453.55	453.61	0.124
739	CO-702	MH-358	450.14	MH-359	449.94	49	0.004	344	0.013	0.19	89.018	63.1	31.2	Circle - 344.0 mm	HDPE Di-400mm	Tubación HDPE SN8	454.11	454.11	18.92
740	CO-704	MH-359	449.94	MH-346	449.68	64.2	0.004	344	0.013	0.24	88.619	63.4	31.5	Circle - 344.0 mm	HDPE Di-400mm	Tubación HDPE SN8	454.11	452.84	18.92
743	CO-706	MH-360	453.67	MH-361	453	35.7	0.019	218	0.013	0.22	31.337	0.7	3.8	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE SN8	454.49	454.18	0.124
745	CO-708	MH-361	453	MH-362	452.73	24.6	0.011	218	0.013	0.26	43.705	0.8	4.5	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE SN8	454.49	453.55	0.124
747	CO-710	MH-362	452.73	MH-363	452.66	31.1	0.013	218	0.013	0.22	26.103	2.8	6.4	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE SN8	454.5	454.28	0.124
749	CO-712	MH-363	452.66	MH-364	451.05	24	0.006	218	0.013	0.22	31.136	2	6.2	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE SN8	452.84	452.84	0.124
750	CO-714	MH-364	451	MH-365	450.79	55.7	0.004	344	0.013	0.22	31.096	1.6	6.1	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE SN8	454.49	455.48	0.124
752	CO-716	MH-364	451	MH-365	450.59	47.8	0.004	344	0.013	0.18	26.103	1.4	5	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE SN8	455.48	455.04	18.671
754	CO-718	MH-365	450.59	MH-367	450.44	36.6	0.004	344	0.013	0.19	26.103	1.4	5.8	Circle - 218.0 mm	HDPE Di-400mm	Tubación HDPE SN8	454.5	454.75	18.671
756	CO-720	MH-366	450.59	MH-367	450.44	36.6	0.004	344	0.013	0.16	89.179	62.1	31.2	Circle - 344.0 mm	HDPE Di-400mm	Tubación HDPE SN8	454.5	454.75	18.671

757	CO-722	MH-367	455.44	MH-358	450.14	75.7	0.004	344	0.013	0.75	87.691	63.2	31.3	Circle - 344.0 mm	HDPE D-40Cmm	Tubación HDPE SN8	454.75	454.15	18.671	
760	CO-724	MH-368	459.9	MH-369	460.2	75.8	0.004	218	0.013	0.3	26.103	7.5	11.3	Circle - 23.0 mm	HDPE D-25Cmm	Tubación HDPE SN8	461.25	462.07	0.662	
762	CO-726	MH-369	460.2	MH-370	460.33	31.2	0.004	218	0.013	0.3	26.103	7.5	11	Circle - 23.0 mm	HDPE D-25Cmm	Tubación HDPE SN8	462.07	462.21	0.662	
764	CO-728	MH-370	460.33	MH-371	460.46	33.5	0.004	218	0.013	0.27	26.103	5.6	10.3	Circle - 23.0 mm	HDPE D-25Cmm	Tubación HDPE SN8	462.21	462.55	0.497	
766	CO-730	MH-371	460.46	MH-372	460.6	35	0.004	218	0.013	0.23	26.103	3.3	8.5	Circle - 23.0 mm	HDPE D-25Cmm	Tubación HDPE SN8	462.55	462.8	0.29	
768	CO-732	MH-372	460.6	MH-373	460.76	39	0.004	218	0.013	0.21	26.103	2.4	6.9	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	462.8	462.78	0.207	
770	CO-734	MH-373	460.76	MH-374	460.95	47.7	0.004	218	0.013	0.16	26.103	0.9	5.2	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	462.78	461.77	0.083	
772	CO-736	MH-368	459.9	MH-375	459.65	62.6	0.004	218	0.013	0.31	26.103	8.5	12.1	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	461.75	461.1	0.745	
774	CO-738	MH-375	459.65	MH-376	459.59	14.2	0.004	218	0.013	0.32	26.103	9.9	12.8	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	461.1	461.07	0.869	
776	CO-740	MH-376	459.59	MH-377	459.56	9.7	0.004	218	0.013	0.33	26.103	10.8	13.6	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	461.07	461.16	0.952	
778	CO-742	MH-377	459.56	MH-378	459.44	28.8	0.004	218	0.013	0.35	26.103	12.7	14.1	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	461.16	460.94	1.118	
780	CO-744	MH-378	459.44	MH-379	459.29	37.8	0.004	218	0.013	0.35	26.103	12.7	14.6	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	460.94	460.9	1.118	
782	CO-746	MH-379	459.29	MH-380	459.12	41.3	0.004	218	0.013	0.36	26.103	14.6	15.1	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	460.9	460.89	1.283	
784	CO-748	MH-380	459.12	MH-381	458.94	47	0.004	218	0.013	0.36	26.103	14.6	15.2	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	460.39	460.39	1.283	
786	CO-750	MH-381	458.94	MH-382	458.89	10.6	0.004	218	0.013	0.37	26.103	15.1	15.3	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	460.8	460.81	1.325	
788	CO-752	MH-382	458.89	MH-383	458.66	57.1	0.004	218	0.013	0.37	26.103	15.1	15.3	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	460.31	460.57	1.325	
790	CO-754	MH-383	458.66	MH-384	458.52	35.6	0.004	218	0.013	0.37	26.103	15.1	14.4	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	460.57	460.42	1.325	
792	CO-756	MH-384	458.52	MH-385	458.94	9.4	0.004	218	0.013	0.53	26.103	52.7	28.7	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	460.42	460.28	4.937	
794	CO-758	MH-385	458.67	MH-386	456.63	9.4	0.004	218	0.013	0.53	26.103	54.1	2.9	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	460.28	460.28	4.761	
796	CO-760	MH-386	456.63	MH-387	456.43	48.7	0.004	218	0.013	0.53	26.103	54.6	28.1	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	459.83	459.83	4.802	
798	CO-762	MH-387	456.43	MH-388	456.29	35.1	0.004	218	0.013	0.53	26.103	54.6	29.3	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	459.83	459.72	4.802	
800	CO-764	MH-388	456.29	MH-389	456.14	38.1	0.004	218	0.013	0.54	26.103	56	29.7	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	459.72	459.5	4.927	
802	CO-766	MH-389	456.14	MH-390	455.87	68.2	0.004	218	0.013	0.54	26.103	57.9	30.1	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	459.5	459.15	5.092	
804	CO-768	MH-390	455.87	MH-391	455.74	31.6	0.004	218	0.013	0.55	26.103	59.3	30.5	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	459.15	458.9	5.216	
806	CO-770	MH-391	455.74	MH-392	455.61	32.6	0.004	218	0.013	0.55	26.103	60.7	30.7	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	458.9	458.93	5.341	
808	CO-772	MH-392	455.61	MH-393	455.5	27	0.004	218	0.013	0.55	26.103	60.7	30.7	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	458.93	458.93	5.341	
810	CO-774	MH-393	455.5	MH-394	455.39	28.2	0.004	218	0.013	0.55	26.103	60.7	30.9	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	458.65	458.65	5.341	
812	CO-776	MH-394	455.39	MH-395	455.38	2.8	0.004	218	0.013	0.55	26.103	61.7	31.5	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	458.65	458.63	5.423	
814	CO-778	MH-395	455.38	MH-396	457.46	30.1	0.004	218	0.013	0.24	26.103	3.8	7.3	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	458.63	458.67	0.331	
816	CO-780	MH-396	457.46	MH-397	457.56	23.8	0.004	218	0.013	0.22	26.103	2.8	7.4	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	458.67	458.74	0.248	
818	CO-782	MH-397	457.56	MH-398	456.23	39	0.017	218	0.013	0.32	26.103	0.9	5.8	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	458.74	459.05	0.166	
821	CO-784	MH-398	456.23	MH-399	456.13	72.4	0.012	218	0.013	0.23	26.103	45.295	0.5	4.8	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	457.82	457.31	0.083
823	CO-786	MH-399	456.13	MH-401	456.02	27.3	0.004	218	0.013	0.21	26.103	2.4	7.1	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	457.31	457.12	0.207	
825	CO-788	MH-401	456.02	MH-402	455.81	50.8	0.004	218	0.013	0.24	26.103	3.8	7.3	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	457.12	457.12	0.331	
827	CO-790	MH-402	455.13	MH-403	454.98	36.1	0.004	218	0.013	0.58	26.103	72	33.7	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	457.12	456.55	6.334	
829	CO-792	MH-403	454.98	MH-404	454.81	42	0.004	218	0.013	0.58	26.103	73	33.8	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	456.55	456.55	6.447	
831	CO-794	MH-404	454.81	MH-405	454.71	24.8	0.004	218	0.013	0.58	26.103	73	33.9	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	456.55	456.41	6.417	
833	CO-796	MH-405	454.71	MH-406	454.57	35.5	0.004	218	0.013	0.58	26.103	73.4	33.9	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	456.41	456.45	6.458	
835	CO-798	MH-406	454.57	MH-407	454.39	45.3	0.004	218	0.013	0.58	26.103	73.4	34.2	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	456.45	456.45	6.458	
837	CO-800	MH-407	454.39	MH-408	454.53	10.7	0.013	218	0.013	0.3	47.188	1	19.6	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	456.56	456.56	0.166	
839	CO-802	MH-408	454.53	MH-409	454.71	44.3	0.004	218	0.013	0.19	26.103	1.9	5.2	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	456.36	456.14	0.166	
841	CO-804	MH-409	454.71	MH-410	454.98	67.1	0.004	218	0.013	0.18	26.103	1.4	5.3	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	456.14	455.79	0.124	
843	CO-806	MH-406	454.39	MH-411	454.32	17.8	0.004	218	0.013	0.58	26.103	75.8	34.5	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	456.56	456.44	6.655	
845	CO-808	MH-411	454.32	MH-412	454.24	19.5	0.004	218	0.013	0.58	26.103	75.8	34.9	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	456.44	456.47	6.655	
847	CO-810	MH-412	455.13	MH-413	455.31	46.1	0.004	218	0.013	0.19	26.103	1.9	5.2	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	456.47	456.13	0.166	
849	CO-812	MH-412	454.24	MH-414	454.05	47.6	0.004	218	0.013	0.59	26.103	79.1	33.3	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	456.47	456.55	6.935	
850	CO-814	MH-414	454.05	MH-128	453.87	29	0.006	218	0.013	0.69	32.643	63.2	33.5	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	456.55	456.39	6.935	
853	CO-816	MH-415	459.1	MH-416	458.96	34	0.004	218	0.013	0.18	26.103	1.4	5	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	456.91	460.21	6.124	
854	CO-818	MH-416	458.96	MH-385	458.89	18.5	0.004	218	0.013	0.18	26.103	1.4	4.5	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	456.21	460.28	0.124	
857	CO-820	MH-417	450.59	MH-418	460.77	52.5	0.007	218	0.013	0.24	34.063	1.4	4.9	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	456.21	461.95	0.166	
859	CO-822	MH-418	450.77	MH-419	461	41.9	0.006	218	0.013	0.22	30.612	1.6	5.1	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	456.95	461.81	0.166	
860	CO-824	MH-417	459.28	MH-149	459	113.4	0.002	218	0.013	0.2	20.342	4.8	15.4	Circle - 23.0 mm	HDPE D-250mm	Tubación HDPE SN8	461.21	461.82	0.331	
863	CO-826	MH-																		



971	CO-936	MH-474	523.18	MH-467	522.31	27.6	0.058	218	0.013	0.62	107.358	0.8	5	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	524	522.13	0.29
974	CO-938	MH-475	515.8	MH-476	506.68	32.6	0.28	218	0.013	0.79	218.273	0.2	3	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	5-7	507.5	0.124
976	CO-940	MH-476	506.38	MH-477	502.78	42.3	0.013	218	0.013	0.7	128.972	0.7	6.7	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	507.5	503.6	0.29
977	CD-942	MH-477	502.22	MH-461	506.43	13.3	0.004	218	0.013	0.38	47.496	2.3	10.3	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	503.6	503.03	0.373
979	CO-944	MH-476	506.38	MH-478	506.58	13.3	0.004	218	0.013	0.19	26.103	1.9	6	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	507.5	508.74	0.166
981	CO-946	MH-478	506.43	MH-479	506.58	38	0.004	218	0.013	0.19	26.103	1.9	5.7	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	508.74	507.76	0.166
983	CO-948	MH-479	506.58	MH-480	507.33	20.3	0.032	218	0.013	0.33	73.574	0.3	4.5	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	507.76	508.05	0.083
990	CO-954	MH-480	505.18	MH-484	504.1	35.4	0.031	218	0.013	0.32	72.283	0.3	3.7	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	506	505.28	0.083
992	CO-956	MH-484	504.1	MH-485	503.82	69.2	0.004	218	0.013	0.16	26.103	0.9	4.1	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	505.28	505.57	0.083
994	CO-958	MH-485	503.82	MH-486	503.66	39.6	0.004	218	0.013	0.16	26.103	0.9	3.7	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	505.57	504.71	0.083
996	CO-960	MH-486	503.66	MH-487	497.95	62	0.092	218	0.013	0.47	125.315	0.2	3.4	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	504.71	498.77	0.083
998	CO-962	MH-487	497.95	MH-488	497.83	13.6	0.009	218	0.013	0.21	38.89	0.6	3.5	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	498.77	498.65	0.083
1000	CO-964	MH-488	497.83	MH-489	497.67	19.5	0.008	218	0.013	0.2	37.654	0.7	5.1	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	498.65	498.48	0.083
1002	CO-966	MH-489	497.67	MH-490	497.1	25.2	0.023	218	0.013	0.44	62.024	1.6	6	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	498.48	497.91	0.331
1004	CO-968	MH-490	497.1	MH-491	496.04	40.4	0.026	218	0.013	0.46	66.841	1.5	7.4	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	497.91	496.85	0.331
1006	CO-970	MH-491	496.04	MH-492	493.95	48.8	0.043	218	0.013	0.62	85.42	1.7	8.4	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	496.85	494.76	0.497
1008	CO-972	MH-492	493.95	MH-493	492.3	20.2	0.082	218	0.013	0.8	117.999	1.4	6.7	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	492.76	493.19	0.538
1010	CO-974	MH-493	492.3	MH-494	489.89	24.1	0.1	218	0.013	0.85	130.514	1.2	8.9	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	495.19	490.71	0.538
1012	CO-976	MH-494	489.89	MH-495	488.01	61.3	0.031	218	0.013	0.59	72.231	2.6	9.5	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	490.71	488.83	0.621
1014	CO-978	MH-495	488.01	MH-496	486.61	16.6	0.084	218	0.013	0.87	119.871	1.7	7.6	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	488.83	487.43	0.704
1016	CO-980	MH-496	486.41	MH-497	485.55	36	0.004	218	0.013	0.22	26.103	2.8	6.4	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	487.43	486.73	0.248
1018	CO-982	MH-497	485.55	MH-498	488.8	43.9	0.074	218	0.013	0.5	112.117	0.3	5.5	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	486.73	489.61	0.124
1022	CO-986	MH-499	490.43	MH-500	489.69	12.3	0.059	218	0.013	0.46	100.574	0.4	5.2	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	491.25	490.87	0.124
1024	CO-988	MH-500	489.69	MH-501	486.43	41.7	0.078	218	0.013	0.65	115.459	0.7	7	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	490.87	487.25	0.29
1026	CO-990	MH-501	486.43	MH-502	484.53	56.1	0.034	218	0.013	0.56	76.05	1.8	8.3	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	487.25	485.73	0.455
1067	CO-1032	MH-522	488.18	MH-202	485.82	59.6	0.04	218	0.013	0.44	82.163	0.6	4	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	489	487	0.166
1075	CO-1040	MH-525	470.85	MH-526	469.11	39.5	0.044	218	0.013	0.93	86.568	6.1	15.8	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	47.67	469.93	1.78
1077	CO-1042	MH-527	486.38	MH-502	485.3	45.3	0.253	218	0.013	0.76	207.531	0.2	3	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	485.78	485.73	0.124
1079	CO-1044	MH-528	499.2	MH-500	490.06	29.8	0.307	218	0.013	0.87	228.637	0.2	3.4	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	500.4	490.87	0.166
1081	CO-1046	MH-529	502.02	MH-491	496.04	59.8	0.1	218	0.013	0.56	130.514	0.3	6.1	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	504.36	496.95	0.124
1084	CO-1048	MH-530	506.12	MH-531	502.19	39.3	0.1	218	0.013	0.39	130.514	0.1	1.9	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	509.49	503.01	0.041
1085	CO-1050	MH-531	501.23	MH-489	497.67	35.7	0.1	218	0.013	0.6	130.514	0.4	5.7	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	503.01	498.48	0.166
1094	CO-1058	MH-532	451.18	MH-536	450.24	40.7	0.023	218	0.013	0.24	62.722	0.2	2.7	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	452	451.42	0.041
1096	CO-1060	MH-533	450.14	MH-537	451.04	24.6	0.004	218	0.013	0.13	26.103	0.5	3.9	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	451.42	451.33	0.041
1098	CO-1062	MH-537	450.14	MH-538	449.67	57.6	0.008	218	0.013	0.25	37.197	1.3	6.8	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	451.33	450.96	0.166
1100	CO-1064	MH-538	449.67	MH-539	449.43	60.3	0.004	218	0.013	0.26	26.103	4.7	9	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	450.96	450.84	0.414
1102	CO-1066	MH-539	449.43	MH-540	449.33	24.5	0.004	218	0.013	0.27	26.103	5.2	8.5	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	450.84	450.85	0.455
1104	CO-1068	MH-540	448.82	MH-541	448.7	28.4	0.004	218	0.013	0.27	26.103	5.2	9.7	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	450.85	450.48	0.455
1106	CO-1070	MH-541	448.7	MH-542	448.61	23.1	0.004	218	0.013	0.29	26.103	6.6	10.6	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	450.48	450.6	0.58
1108	CO-1072	MH-542	448.61	MH-543	448.36	62.6	0.004	218	0.013	0.3	26.103	7.5	12.2	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	450.6	450.19	0.652
1110	CO-1074	MH-543	448.36	MH-544	448.18	45.4	0.004	218	0.013	0.34	26.103	11.3	13.6	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	453.19	450.95	0.994
1112	CO-1076	MH-544	448.18	MH-545	448.09	23.3	0.004	218	0.013	0.34	26.103	12.2	14.2	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	449.52	449.41	0.414
1114	CO-1078	MH-545	448.09	MH-546	447.93	38	0.004	218	0.013	0.36	26.103	13.6	14.7	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	443.97	449.8	1.201
1116	CO-1080	MH-546	447.93	MH-547	447.85	21.7	0.004	218	0.013	0.36	26.103	14.1	13.9	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	449.8	449.71	1.242
1118	CO-1082	MH-547	446.59	MH-548	446.64	12.3	0.004	218	0.013	0.28	26.103	6.1	14.3	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	449.71	449.65	0.538
1120	CO-1084	MH-548	446.64	MH-549	446.76	30.5	0.004	218	0.013	0.28	26.103	6.1	6.4	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	449.65	449.52	0.538
1122	CO-1086	MH-549	446.76	MH-550	446.83	17.6	0.004	218	0.013	0.26	26.103	4.7	9.4	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	449.52	449.41	0.414
1124	CO-1088	MH-550	446.83	MH-551	446.86	7.7	0.004	218	0.013	0.24	26.103	3.8	8.4	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	449.41	449.18	0.331
1126	CO-1090	MH-551	446.86	MH-547	446.64	25.2	0.004	218	0.013	0.21	26.103	2.4	7.1	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	449.18	448.92	0.207
1128	CO-1092	MH-552	446.96	MH-553	447.03	16.9	0.004	218	0.013	0.21	26.103	2.4	6.4	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	448.92	448.86	0.207
1130	CO-1094	MH-553	447.03	MH-554	447.1	17.8	0.004	218	0.013	0.21	26.103	2.4	6.4	Circle - 218.0 mm	HDPE 3i-250mm	Tubación HDPE SN8	448.92	448.86	0.207
1132	CO-1096	MH-554	447.1	MH-555	447.35	61.7	0.004	218	0.										

1136	CO-1100	MH-557	448.32	MH-554	447.68	23.3	0.027	218	0.013	0.25	68.33	0.2	2.1	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	449.14	448.86	0.041
1138	CO-1102	MH-558	448.47	MH-551	448	19.8	0.024	218	0.013	0.33	64.18	0.6	3.7	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	449.29	449.18	0.124
1141	CO-1104	MH-559	449.18	MH-560	448.82	57	0.006	218	0.013	0.15	33.034	0.4	3.4	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	450	450	0.041
1143	CO-1106	MH-560	448.82	MH-561	448.59	55.6	0.004	218	0.013	0.16	26.403	0.9	4.6	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	450	450.46	0.083
1145	CO-1108	MH-561	448.59	MH-562	448.39	52.2	0.004	218	0.013	0.18	26.103	1.4	5	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	450.46	450.46	0.124
1147	CO-1110	MH-562	448.39	MH-563	448.22	42.4	0.004	218	0.013	0.18	26.103	1.4	5	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	450.7	449.95	0.124
1149	CO-1112	MH-563	448.22	MH-564	448.02	48.4	0.004	218	0.013	0.18	26.103	1.4	5.3	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	449.95	449.94	0.124
1151	CO-1114	MH-564	448.02	MH-565	447.89	32.8	0.004	218	0.013	0.19	26.103	1.9	6	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	449.94	449.84	0.166
1152	CO-1116	MH-565	447.89	MH-547	447.69	51.7	0.004	218	0.013	0.21	26.103	2.4	5.8	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	449.84	449.71	0.207
1154	CO-1118	MH-566	449.67	MH-565	448.66	22.6	0.045	218	0.013	0.3	87.161	0.1	2	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	450.49	449.84	0.041
1156	CO-1120	MH-567	449.73	MH-564	448.76	38.9	0.025	218	0.013	0.24	64.982	0.2	2.1	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	450.55	449.94	0.041
1172	CO-1136	MH-574	448.98	MH-575	448.61	8.1	0.046	218	0.013	0.38	88.47	0.3	3.7	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	449.8	449.79	0.083
1174	CO-1138	MH-575	448.61	MH-576	448.56	14	0.004	218	0.013	0.16	26.103	0.9	4.6	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	449.79	450	0.083
1176	CO-1140	MH-576	448.56	MH-577	448.48	19.1	0.004	218	0.013	0.18	26.103	1.4	5.7	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	450	450	0.124
1178	CO-1142	MH-577	448.48	MH-578	448.16	79	0.004	218	0.013	0.21	26.103	2.4	6.6	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	449.17	449.17	0.207
1180	CO-1144	MH-578	448.16	MH-579	448.07	23.6	0.004	218	0.013	0.22	26.103	2.8	6.4	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	449.17	449.12	0.248
1182	CO-1146	MH-579	448.94	MH-580	446.08	34.2	0.004	218	0.013	0.43	26.103	20.3	25.4	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	449.19	449.19	0.236
1184	CO-1148	MH-580	446.08	MH-581	446.23	36.1	0.004	218	0.013	0.42	26.103	24	19.5	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	449.19	449.36	0.111
1186	CO-1150	MH-581	446.23	MH-582	446.35	28.4	0.004	218	0.013	0.42	26.103	23.1	19.1	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	449.36	449.35	0.209
1187	CO-1152	MH-582	446.35	MH-547	446.59	60.9	0.004	218	0.013	0.41	26.103	22.6	18.8	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	449.55	449.71	1.987
1189	CO-1154	MH-583	449.18	MH-580	448.01	70.1	0.017	218	0.013	0.29	53.405	0.7	3.8	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	450	449.19	0.124
1192	CO-1156	MH-584	444.23	MH-585	444.36	31.5	0.004	218	0.013	0.48	26.103	38.1	24.3	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	447.17	447.34	3.353
1194	CO-1158	MH-585	444.36	MH-586	444.47	29.1	0.004	218	0.013	0.48	26.103	37.7	24.2	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	447.34	447.43	3.312
1196	CO-1160	MH-586	444.47	MH-587	444.51	9.2	0.004	218	0.013	0.48	26.103	37.2	24	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	447.43	447.46	3.271
1198	CO-1162	MH-587	444.51	MH-588	444.82	77.1	0.004	218	0.013	0.47	26.103	36.2	23.7	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	447.46	447.87	3.188
1200	CO-1164	MH-588	444.82	MH-589	444.96	33.9	0.004	218	0.013	0.47	26.103	35.3	23.4	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	447.87	448.12	3.105
1202	CO-1166	MH-589	444.96	MH-590	445.05	23.1	0.004	218	0.013	0.47	26.103	34.4	23.1	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	448.12	448.25	3.022
1204	CO-1168	MH-590	445.05	MH-591	445.27	55.8	0.004	218	0.013	0.46	26.103	32.5	22.7	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	448.25	448.43	2.857
1206	CO-1170	MH-591	445.27	MH-592	445.38	27.2	0.004	218	0.013	0.46	26.103	31.5	22.2	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	448.43	448.44	2.774
1208	CO-1172	MH-592	445.38	MH-593	445.45	30.6	0.004	218	0.013	0.45	26.103	31.1	21.9	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	448.63	448.63	2.732
1210	CO-1174	MH-593	445.45	MH-594	445.66	39.2	0.004	218	0.013	0.45	26.103	30.6	21.8	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	448.63	448.62	2.691
1212	CO-1176	MH-594	445.66	MH-595	445.74	19.4	0.004	218	0.013	0.45	26.103	30.6	21.7	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	448.55	448.55	2.681
1214	CO-1178	MH-595	445.74	MH-596	445.92	45.7	0.004	218	0.013	0.45	26.103	30.1	21.6	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	448.55	448.85	2.65
1215	CO-1180	MH-596	445.92	MH-597	445.94	6	0.004	218	0.013	0.44	26.103	28.2	21.2	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	448.85	449.12	2.484
1218	CO-1182	MH-597	448.43	MH-598	447.61	29.1	0.028	218	0.013	0.31	69.499	0.4	4.1	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	449.25	448.79	0.083
1219	CO-1184	MH-598	447.61	MH-596	447.46	36.4	0.004	218	0.013	0.18	26.103	1.4	4.5	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	448.79	448.85	0.124
1221	CO-1186	MH-599	449.1	MH-545	448.79	41.5	0.008	218	0.013	0.16	35.973	0.3	2.4	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	449.92	449.97	0.041
1224	CO-1188	MH-600	449.38	MH-601	449.23	38.9	0.004	218	0.013	0.18	26.103	1.4	5.3	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	450.2	450.5	0.124
1226	CO-1190	MH-601	449.23	MH-602	449.15	19.4	0.004	218	0.013	0.19	26.103	1.9	6.3	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	450.5	450.6	0.166
1228	CO-1192	MH-602	449.15	MH-603	448.69	115.1	0.004	218	0.013	0.22	26.103	2.8	6.8	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	450.6	450.14	0.248
1229	CO-1194	MH-603	448.69	MH-543	448.36	19	0.017	218	0.013	0.4	54.294	1.8	10	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	450.14	450.19	0.331
1231	CO-1196	MH-604	451.18	MH-537	450.14	37.3	0.028	218	0.013	0.31	68.901	0.4	4.1	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	452	451.33	0.083
1233	CO-1198	MH-605	449.18	MH-540	448.82	91.4	0.004	218	0.013	0	26.103	0	4.6	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	450	450.85	0
1236	CO-1200	MH-606	450.3	MH-607	450.05	63.1	0.004	218	0.013	0.13	26.103	0.5	5	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	451.48	451.38	0.041
1238	CO-1202	MH-607	450.05	MH-608	449.7	87	0.004	218	0.013	0.22	26.103	2.8	6.8	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	451.38	450.75	0.248
1239	CO-1204	MH-608	449.7	MH-311	448.49	54.2	0.022	218	0.013	0.44	61.602	1.6	22.4	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	450.75	451.77	0.589
1241	CO-1206	MH-285	452.94	MH-609	451.52	28.5	0.05	218	0.013	1.36	92.183	17.7	22.2	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	453.96	452.33	5.506
1243	CO-1208	MH-609	451.52	MH-610	451.29	10.6	0.021	218	0.013	1.01	60.263	27.1	28.4	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	452.33	452.11	5.506
1245	CO-1210	MH-610	451.29	MH-611	450.95	62	0.005	218	0.013	0.62	30.585	54.2	30.2	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	452.11	451.77	0.589
1247	CO-1212	MH-611	450.95	MH-612	450.62	82.6	0.004	218	0.013	0.56	26.103	63.5	31.4	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	451.77	451.56	0.589
1248	CO-1214	MH-612	450.62	MH-299	450.19	107	0.004	218	0.013	0.56	26.103	63.5	31.4	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	451.56	451.24	0.589
1251	CO-1216	MH-613	457.05	MH-614	456.36	21.3	0.032	218	0.013	0.33	74.363	0.3	3.7	Circle - 218.0 mm	HDPE S/N8	Tubación HDPE S/N8	457.87	457.54	0.083
1253	CO-1218	MH-614																	

1255	CO-1220	MH-615	456.26	MH-616	456.19	17.6	0.004	218	0.013	0.25	26.103	4.2	8.8	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	457.35	457.43	0.373
1257	CO-1222	MH-616	456.19	MH-617	456.12	18.9	0.004	218	0.013	0.27	26.103	5.2	8.7	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	457.23	457.21	0.455
1258	CO-1224	MH-617	456.12	MH-272	455.35	35.6	0.021	218	0.013	0.49	60.417	2.4	15.3	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	457.21	456.17	0.497
1261	CO-1226	MH-618	457.3	MH-619	456.42	26	0.034	218	0.013	0.37	75.931	0.5	4.5	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	458.11	457.59	0.124
1263	CO-1228	MH-619	456.42	MH-620	456.29	32.1	0.004	218	0.013	0.18	26.103	1.4	5.7	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	457.59	457.47	0.124
1264	CO-1230	MH-620	456.29	MH-615	456.26	5.8	0.004	218	0.013	0.21	26.103	2.4	7.3	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	457.47	457.35	0.207
1267	CO-1232	MH-621	459.41	MH-622	458.34	58.1	0.018	218	0.013	0.21	55.902	0.2	3.2	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	460.22	459.52	0.041
1268	CO-1234	MH-622	458.34	MH-262	457.02	58.3	0.023	218	0.013	0.33	62.174	0.6	12.8	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	459.52	458.19	0.124
1270	CO-1236	MH-623	457.48	MH-266	456.65	27.9	0.03	218	0.013	0.36	71.531	0.5	13.3	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	458.3	457.94	0.124
1272	CO-1238	MH-624	471.98	MH-134	467.92	51.5	0.079	218	0.013	0.44	115.905	0.2	2.7	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	472.8	469.1	0.083
1275	CO-1240	MH-625	465.64	MH-626	465.54	23.9	0.004	218	0.013	0	26.103	0	2.5	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	466.46	467.71	0
1276	CO-1242	MH-626	465.54	MH-135	465.43	28	0.004	218	0.013	0.18	26.103	1.4	8.7	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	467.71	469.35	0.124
1278	CO-1244	MH-627	471.98	MH-137	469.4	28.3	0.091	218	0.013	0.58	124.641	0.4	7.7	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	472.8	470.58	0.166
1280	CO-1246	MH-628	481.44	MH-175	470.18	112.6	0.1	218	0.013	0.39	130.514	0.1	3.7	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	483	471	0.041
1283	CO-1248	MH-629	455.16	MH-630	454.48	30.1	0.023	218	0.013	0.29	62.307	0.4	4.1	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	455.96	455.66	0.083
1284	CO-1250	MH-630	454.48	MH-122	454.33	35	0.004	218	0.013	0.18	26.103	1.4	4.5	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	455.77	455.77	0.124
1287	CO-1252	MH-631	455.81	MH-632	454.9	48.9	0.019	218	0.013	0.33	56.212	0.9	5.5	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	456.63	456.08	0.166
1289	CO-1254	MH-632	454.9	MH-633	454.77	32.6	0.004	218	0.013	0.21	26.103	2.4	5.8	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	456.08	455.89	0.207
1290	CO-1256	MH-633	454.77	MH-98	454.55	11.1	0.02	218	0.013	0.37	58.757	1	7	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	455.72	455.72	0.207
1293	CO-1258	MH-634	452.22	MH-635	451.48	46.9	0.016	218	0.013	0.26	52.154	0.5	4.1	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	453.04	452.66	0.083
1295	CO-1260	MH-635	451.48	MH-636	451.02	100.3	0.005	218	0.013	0.19	27.722	1.3	4.8	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	452.56	451.84	0.124
1297	CO-1262	MH-636	451.02	MH-637	450.62	48.1	0.009	218	0.013	0.26	38.061	1.3	5.2	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	451.38	451.13	0.166
1298	CO-1264	MH-637	450.62	MH-301	450.53	22	0.004	218	0.013	0.19	26.103	1.9	5.2	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	451.45	451.35	0.166
1301	CO-1266	MH-638	454.57	MH-639	454.32	61.7	0.004	218	0.013	0.18	26.103	1.4	5.7	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	455.39	456.17	0.124
1303	CO-1268	MH-639	454.32	MH-640	454.16	40.6	0.004	218	0.013	0.21	26.103	2.4	6.9	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	455.97	455.97	0.207
1305	CO-1270	MH-640	454.16	MH-641	454.06	26.2	0.004	218	0.013	0.23	26.103	3.3	7.9	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	455.97	455.84	0.29
1307	CO-1272	MH-641	454.06	MH-642	453.93	32.8	0.004	218	0.013	0.25	26.103	4.2	8.3	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	455.84	455.78	0.373
1309	CO-1274	MH-642	453.93	MH-643	453.81	29.6	0.004	218	0.013	0.25	26.103	4.2	8.5	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	455.78	455.78	0.373
1311	CO-1276	MH-643	453.81	MH-644	453.63	43.2	0.004	218	0.013	0.26	26.103	4.7	9.2	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	456.19	456.19	0.414
1312	CO-1278	MH-644	453.63	MH-281	453.49	36.1	0.004	218	0.013	0.27	26.103	5.6	11.3	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	456.17	455.97	0.497
1314	CO-1280	MH-645	456.45	MH-277	455.85	58	0.01	218	0.013	0.22	42.172	0.6	3.3	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	457.03	457.03	0.083
1317	CO-1282	MH-646	460.71	MH-647	460.46	61.8	0.004	218	0.013	0.13	26.103	0.5	3.6	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	461.53	461.17	0.041
1319	CO-1284	MH-647	460.46	MH-648	460.29	42.9	0.004	218	0.013	0.16	26.103	0.9	4.9	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	461.7	461.6	0.083
1321	CO-1286	MH-648	460.29	MH-649	460.13	40.7	0.004	218	0.013	0.19	26.103	1.9	6.1	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	461.6	461.5	0.166
1322	CO-1288	MH-649	460.13	MH-431	459.96	32.4	0.005	218	0.013	0.24	29.519	2.5	6.2	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	461.5	460.78	0.248
1325	CO-1290	MH-550	466.96	MH-551	466.47	33.9	0.014	218	0.013	0.28	49.641	0.7	5.2	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	467.78	467.65	0.124
1327	CO-1292	MH-551	466.47	MH-652	466.81	38.4	0.009	218	0.013	0.21	38.569	0.6	4.9	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	467.65	467.59	0.083
1329	CO-1294	MH-652	466.81	MH-653	466.93	31.3	0.004	218	0.013	0.16	26.103	0.9	3.8	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	467.5	468.11	0.083
1341	CO-1306	MH-653	470.38	MH-659	468.82	62.9	0.022	218	0.013	0.38	60.719	1	5.8	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	471	470	0.207
1342	CO-1308	MH-659	468.82	MH-657	468.56	66.3	0.004	218	0.013	0.21	26.103	2.4	5.8	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	470	469.56	0.207
1344	CO-1310	MH-660	467.35	MH-653	466.93	12.9	0.035	218	0.013	0.34	77.092	0.3	3.7	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	468.2	468.11	0.083
1350	CO-1316	MH-663	450.05	MH-607	450.3	54.3	0.009	218	0.013	0.28	38.962	1.6	6.1	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	451.35	451.38	0.207
1352	CO-1318	MH-664	450.94	MH-606	450.3	38.3	0.017	218	0.013	0.21	53.378	0.2	2.7	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	451.75	451.48	0.041
1354	CO-1320	MH-665	450.49	MH-344	450.34	37.2	0.004	218	0.013	0	26.103	0	0	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	451.31	452.58	0
1356	CO-1322	MH-666	450.65	MH-331	449.85	52.9	0.015	218	0.013	0.2	50.835	0.2	4	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	451.47	451.03	0.041
1359	CO-1324	MH-667	449.23	MH-668	449.14	22.4	0.004	218	0.013	0.13	26.103	0.5	3.6	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	450.05	450.32	0.041
1361	CO-1326	MH-668	449.14	MH-669	449.02	30.2	0.004	218	0.013	0.16	26.103	0.9	4.6	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	450.32	450.29	0.083
1362	CO-1328	MH-669	449.02	MH-332	448.96	15.8	0.004	218	0.013	0.18	26.103	1.4	4.5	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	450.29	450.34	0.124
1364	CO-1330	MH-670	449.51	MH-327	449.29	55.5	0.004	218	0.013	0.13	26.103	0.5	2.7	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	450.33	450.55	0.041
1366	CO-1332	MH-671	449.33	MH-320	449.07	48.7	0.005	218	0.013	0.14	30.181	0.4	3.6	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	450.15	450.25	0.041
1369	CO-1334	MH-672	455.46	MH-673	454.93	20	0.026	218	0.013	0.25	67.077	0.2	4	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	456.11	456.11	0.041
1370	CO-1336	MH-673	454.93	MH-130	454.74	47.7	0.004	218	0.013	0.19	26								

1375	CO-1340	MH-675	456.41	MH-676	456.24	43	0.004	218	0.013	26.103	0.5	3.6	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	458.21	458.39	0.041	
1376	CO-1342	MH-676	456.24	MH-394	456.17	16.6	0.004	218	0.013	26.103	0.9	3.7	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	458.39	458.65	0.083	
1378	CO-1344	MH-677	482.5	MH-28	474.6	78.9	0.1	218	0.013	0.56	130.514	0.3	12.3	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	483.32	475.71	0.124
2417	CO-1348	MH-679	452.73	MH-111	452.45	70.9	0.004	218	0.013	0.13	26.103	0.5	4.3	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	453.55	454.51	0.041
2549	CO-1350	MH-680	455.31	MH-395	455.38	16.8	0.004	218	0.013	0.56	26.103	65.4	32.1	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	456.43	458.63	5.755
2641	CO-1352	MH-681	454.96	MH-682	454.29	39.3	0.017	218	0.013	0.21	53.901	0.2	3.7	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	455.78	455.47	0.041
2642	CO-1354	MH-682	454.29	MH-283	454.22	16.6	0.004	218	0.013	0.18	26.103	1.4	4.5	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	455.68	455.47	0.124
2688	CO-1356	MH-583	451.35	MH-292	451.09	30	0.009	218	0.013	0.17	38.189	0.3	3.3	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	452.16	452.27	0.041
2738	CO-1358	MH-684	462.18	MH-685	461.6	34.2	0.017	218	0.013	0.26	53.76	0.5	3.7	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	463	462.78	0.083
2739	CO-1360	MH-685	461.6	MH-159	461.01	43.6	0.014	218	0.013	0.27	48.123	0.8	11.7	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	462.73	462.28	0.124
2741	CO-1362	MH-686	462.18	MH-157	460.82	16.5	0.082	218	0.013	0.46	118.456	0.2	11.4	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	463	462.26	0.083
3124	CO-1366	MH-688	463.39	MH-689	463.02	38.2	0.01	218	0.013	0.22	40.531	0.6	4.2	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	464.21	464.2	0.083
3126	CO-1368	MH-689	463.02	MH-690	462.87	36.8	0.004	218	0.013	0.18	26.103	1.4	4.9	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	464.2	464.18	0.124
3127	CO-1370	MH-690	462.87	MH-166	462.09	28.7	0.027	218	0.013	0.38	68.168	0.7	10.8	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	464.13	462.91	0.166
3143	CO-1372	MH-691	462.71	MH-164	461.49	30.6	0.04	218	0.013	0.36	82.626	0.3	10.9	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	463.53	462.67	0.083
3257	CO-1374	MH-692	448.45	MH-590	447.07	65.1	0.021	218	0.013	0.32	60.059	0.6	3.7	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	449.27	448.25	0.124
3295	CO-1376	MH-693	451.29	MH-376	450.59	55	0.031	218	0.013	0.32	72.498	0.3	8.2	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	462.11	461.07	0.083
3301	CO-1378	MH-694	461.03	MH-377	459.56	63.7	0.023	218	0.013	0.29	62.827	0.4	8.7	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	461.85	461.16	0.083
3311	CO-1380	MH-695	461.78	MH-371	451.37	29	0.014	218	0.013	0.31	48.911	1	4.5	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	462.5	462.55	0.166
3322	CO-1382	MH-696	461.46	MH-697	451.22	21.9	0.011	218	0.013	0.22	43.605	0.6	4.5	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	462.23	462.23	0.083
3324	CO-1384	MH-697	461.22	MH-698	461.19	6.6	0.004	218	0.013	0.19	26.103	1.9	5.7	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	462.4	462.43	0.166
3325	CO-1386	MH-698	461.19	MH-370	461.09	25.4	0.004	218	0.013	0.19	26.103	1.9	5.2	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	462.43	462.21	0.166
3694	CO-1388	MH-699	461.69	MH-59	461.55	38.9	0.003	218	0.013	0.14	21.943	1.1	19.5	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	462.15	463.43	0.083
3740	CO-1392	MH-680	455.31	MH-402	455.13	46.6	0.004	218	0.013	0.57	26.103	66.8	32.9	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	458.43	457.12	5.879
3743	CO-1394	MH-274	453.44	MH-285	452.94	58.9	0.009	218	0.013	0.65	38.137	29	25.2	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	454.26	453.96	3.726
3776	CO-1396	MH-198	493.49	MH-700	491.68	59.4	0.03	218	0.013	0.54	72.002	1.9	8.2	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	494.6	492.5	0.455
3779	CO-392(2)	MH-701	487.66	MH-166	461.55	38.9	0.003	218	0.013	0.85	130.514	1.2	9.2	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	488.5	486.14	0.538
3780	CO-1398	MH-700	491.68	MH-701	487.66	78.5	0.051	218	0.013	0.68	93.427	1.7	7	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	492.5	488.5	0.538
3784	CO-410(1)	MH-209	470.9	MH-702	467.11	131.1	0.023	218	0.013	0.57	62.331	3.7	11.8	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	470.93	467.93	0.787
3785	CO-410(2)	MH-702	467.11	MH-210	466.99	29.7	0.004	218	0.013	0.34	26.103	11.3	13.3	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	467.93	468.77	0.994
3786	CO-1400	MH-657	468.56	MH-702	467.11	23.3	0.1	218	0.013	0.31	44.891	1.4	9.3	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	469.56	467.93	0.207
3788	CO-1402	MH-651	466.47	MH-703	466.11	90.3	0.004	218	0.013	0.21	26.103	2.4	5.8	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	467.05	467.17	0.207
3790	CO-1406	MH-502	484.53	MH-524	475.38	57.5	0.159	218	0.013	1.04	164.661	1	6.6	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	485.73	476.2	0.58
3792	CO-1408	MH-496	484.02	MH-704	474.18	98.4	0.1	218	0.013	1.05	130.514	2.4	9.3	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	487.43	475	1.076
3794	CO-1410	MH-704	474.18	MH-705	472.18	116.9	0.017	218	0.013	0.57	53.994	5.9	12.4	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	475	473	1.076
3796	CO-1038(1)	MH-524	475.38	MH-706	471.74	38.9	0.094	218	0.013	0.86	126.263	1.4	12.2	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	476.2	472.56	0.58
3797	CO-1038(2)	MH-706	471.74	MH-575	470.85	12.4	0.072	218	0.013	1.1	110.814	4.8	12.2	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	472.56	471.67	1.78
3798	CO-1412	MH-705	472.18	MH-706	471.74	10.5	0.042	218	0.013	0.81	84.377	4.2	14.2	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	473	472.56	1.201
3803	CO-1414	MH-526	469.11	MH-707	464.99	69.2	0.06	218	0.013	1.06	100.705	5.6	12.8	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	469.93	465.81	1.904
3804	CO-1416	MH-707	464.99	MH-48	464.18	105.4	0.008	218	0.013	0.51	36.183	15.6	18	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	465.81	465	0.373
3811	CO-372(2)	MH-710	467.67	MH-190	466.99	10.9	0.033	218	0.013	0.67	103.192	1.2	8	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	468.49	467.81	0.414
3820	CO-1422	MH-709	468.67	MH-710	467.67	10	0.1	218	0.013	0.77	130.514	0.8	7.3	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	470	468.49	0.373
3813	CO-1424	MH-188	474.46	MH-709	469.18	29.3	0.18	218	0.013	0.93	175.252	0.6	5.3	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	475.65	474.68	1.035
3814	CO-1426	MH-180	463.14	MH-166	462.09	216.6	0.005	218	0.013	0.34	28.689	8.6	14.2	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	463.95	462.91	0.828
3823	CO-1428	MH-131	464.69	MH-711	454.18	93	0.005	218	0.013	0.38	30.463	10.1	12.2	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	466.4	455	1.035
3818	CO-1430	MH-711	464.18	MH-712	463.3	51.6	0.017	218	0.013	0.56	53.903	5.7	10.7	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	459.7	459.75	9.977
3820	CO-1432	MH-712	463.3	MH-713	461.86	104.1	0.014	218	0.013	0.52	48.534	6.3	12.1	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	464.12	462.68	1.035
3822	CO-1434	MH-713	461.86	MH-716	461.66	34.2	0.006	218	0.013	0.39	31.574	9.7	12.1	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	462.68	462.48	1.035
3823	CO-1436	MH-716	461.66	MH-442	460.55	70.4	0.016	218	0.013	0.55	51.909	5.9	12.3	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	462.48	461.37	1.035
3825	CO-338(1)	MH-223	457.58	MH-715	457.46	30.4	0.004	218	0.013	0.63	87.494	33.8	23	Circle - 218.0 mm	HDPE S/NB	Tuaci <u>on</u> HDPE S/NB	459.7	459.75	9.977
3826	CO-438(2)	MH-715	457.46	MH-224	450.06	100.2	0.004	218	0.013	0.63	88.007	35	23.2	Circle - 218.0 mm	HDPE S/NB	Tu			

3832	CO-1444	MH-716	450.85	MH-717	450.46	97.6	0.004	218	0.013	0.23	26.103	3.3	6.8	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	451.67	451.37	0.29
3833	CO-1446	MH-717	450.46	MH-325	450.25	9.4	0.022	218	0.013	0.42	61.318	1.4	6.3	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	451.07	451.07	0.29
3834	CO-1448	MH-294	450.54	MH-538	449.67	217.4	0.004	218	0.013	0.21	26.103	2.4	7.6	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	451.42	450.96	0.207
3835	CO-1450	MH-584	444.23	MH-718	444.16	18.5	0.004	218	0.013	0.48	26.103	38.6	24.4	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	447.17	447.15	3.395
3836	CO-1452	MH-718	444.16	MH-719	444.05	27.6	0.004	218	0.013	0.48	26.103	38.6	24.4	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	447.15	447.11	3.395
3838	CO-1454	MH-719	444.05	MH-720	443.97	20.3	0.004	218	0.013	0.48	26.103	38.6	24.4	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	447.11	446.79	3.395
3840	CO-1455	MH-720	443.97	MH-721	443.88	22.2	0.004	218	0.013	0.48	26.103	38.6	24.4	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	446.79	446.61	3.395
3842	CO-1458	MH-721	443.88	O-2	443.68	48.7	0.004	218	0.013	0.48	26.103	38.6	23	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	446.61	446.5	3.395
3844	CO-1462	MH-721	443.88	O-4	451.38	40.6	0.004	218	0.013	0.26	26.103	4.7	8.1	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	452.99	452.15	0.414
3848	CO-1462	MH-106	451.54	MH-106	451.54	444.11	0.009	218	0.013	0.27	38.624	1.6	6.6	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	457.17	466.9	0.207
3850	CO-1404(1)	MH-703	465.11	MH-722	465.72	444.4	0.014	218	0.013	0.28	48.384	0.8	6	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	467.2	466.9	0.124
3852	CO-1464	MH-651	466.38	MH-722	465.72	47.1	0.014	218	0.013	0.31	36.638	3	7.1	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	459.23	458	0.373
3859	CO-1468	MH-90	457.79	O-6	457.18	77	0.008	218	0.013	0.92	201.302	0.4	4.2	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	501.47	484	0.248
3877	CO-1470	MH-2	459.97	MH-724	483.18	70.6	0.238	218	0.013	0.84	177.452	0.4	4.3	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	484	475.66	0.248
3878	CO-1472	MH-724	482.8	MH-188	474.84	43.1	0.185	218	0.013	0.96	130.514	1.8	8	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	487	479	0.787
3912	CO-406(1)	MH-202	483.99	MH-726	478.18	58.1	0.1	218	0.013	0.96	130.514	1.8	10.7	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	479	471.55	0.787
3913	CO-406(2)	MH-726	476.75	MH-208	470.73	60.2	0.1	218	0.013	0.24	26.103	3.8	7.8	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	466.5	466.2	0.331
3924	O-1404(2)	MH-722	465.72	MH-727	465.01	178.9	0.004	218	0.013	0.25	28.694	3.5	13.8	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	466.2	465	0.331
3925	O-1404(2)	MH-727	465.01	MH-448	464.18	177.8	0.005	218	0.013	0.28	60.362	0.4	3.7	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	501	500.9	0.083
3945	CO-1478	MH-728	500.18	MH-729	499.72	21.5	0.021	218	0.013	0.26	45.445	0.8	4.7	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	500.0	500	0.124
3947	CO-1480	MH-729	499.72	MH-730	499.18	44.5	0.012	218	0.013	0.4	66.63	0.9	7.6	Circle - 213.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	500	497	0.207
3949	CO-1482	MH-730	499.18	MH-731	496	122.1	0.026	218	0.013	1.17	180.986	1.2	7.3	Circle - 213.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	497	472	0.745
3951	CO-1484	MH-731	496	O-7	471.18	129.1	0.192	218	0.013	0.43	92.744	0.4	4.9	Circle - 213.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	503	502	0.124
3952	CO-1486	MH-533	502.18	MH-532	500.82	26.9	0.05	218	0.013	0.66	128.766	0.6	7.9	Circle - 213.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	502	497	0.248
3953	CO-1488	MH-532	500.82	MH-731	496	49.5	0.097	218	0.013	0.4	96.566	0.3	6.6	Circle - 213.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	498.97	497	0.083
3954	CO-1490	MH-534	498.15	MH-731	496	39.3	0.055	218	0.013	0.52	96.4	0.6	7.6	Circle - 213.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	502	497	0.207
3955	CO-1492	MH-687	501.18	MH-731	496	95	0.055	218	0.013	0.35	69.142	0.5	4.7	Circle - 213.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	504	502	0.124
3958	CO-1494	MH-732	502.17	MH-687	501.18	35.3	0.028	218	0.013	0.16	26.103	0.9	4.1	Circle - 213.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	503.5	504	0.083
3960	CO-1496	MH-733	502.32	MH-732	502.17	36.9	0.004	218	0.013	0.31	92.139	0.1	3.2	Circle - 213.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	504	503.5	0.041
3962	CO-1498	MH-734	503.18	MH-733	502.32	17.3	0.05	218	0.013	0.39	130.514	0.1	1.9	Circle - 213.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	477	472	0.041
3963	CO-1500	MH-735	476.18	O-7	471.07	51.2	0.1	218	0.013	0.15	31.541	0.4	2.5	Circle - 213.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	462.95	462.78	0.041
3970	CO-1504	MH-55	462.04	MH-373	461.6	75.5	0.006	218	0.013	0.49	130.514	0.2	4.3	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	502	500	0.083
3972	CO-1504	MH-678	500.93	MH-730	499.18	17.5	0.1	218	0.013	0.19	26.103	1.9	5.2	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	454.55	454.44	0.166
3989	CO-1506	MH-116	453.37	O-8	453.06	77.6	0.004	218	0.013	0.51	22.594	76.7	36.3	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	450.74	450.39	5.837
4016	CO-1508	MH-306	449.04	MH-736	448.7	113.1	0.003	218	0.013	0.45	19.152	38	1.9	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	450.39	449.68	5.837
4017	CO-1510	MH-736	448.7	MH-311	448.49	97.5	0.002	218	0.013	0.45	19.152	38	1.9	Circle - 218.0 mm	HDPE Di-250mm	Tubación HDPE S/N8	450.39	449.68	5.837
4219	CO-1512	MH-338	447.51	Zgare VTP (instalim metallike)	447.48	63.5	0	427	0.013	0.38	54.972	142.4	51.2	Circle - 427.0 mm	HDPE Di-500mm	Tubación HDPE S/N9	450.2	450.2	26.372
4221	CO-1514	alm Zgare	447.48	V26	447.47	23	0	427	0.013	0.36	51.687	151.4	51.9	Circle - 427.0 mm	HDPE Di-500mm	Tubación HDPE S/N10	450.2	449.92	26.372
4223	CO-1516	Vp6	447.47	MH-740	447.43	105	0	427	0.013	0.35	48.382	161.7	51.7	Circle - 427.0 mm	HDPE Di-500mm	Tubación HDPE S/N11	449.92	448.55	26.372
4225	CO-1518	MH-740	447.43	MH-741	447.4	100	0	427	0.013	0.32	42.935	182.3	49.1	Circle - 427.0 mm	HDPE Di-500mm	Tubación HDPE S/N12	448.55	447.92	26.372
4227	CO-1520	MH-741	447.4	C-9	447.39	59	0	427	0.013	0.25	32.272	242.5	36.5	Circle - 427.0 mm	HDPE Di-500mm	Tubación HDPE S/N13	447.92	448	26.372