

REPUBLICA DE CHILE
MINISTERIO DE OBRAS PUBLICAS
DIRECCION GENERAL DE AGUAS
DEPARTAMENTO DE HIDROLOGIA

ANALISIS Y EVALUACION DE LOS RECURSOS HIDROGEOLOGICOS

VALLE DEL RIO COPIAPO - III REGION

MODELACION DE LOS RECURSOS HIDRICOS

TOMO ANEXO 8

MODELO DE RECURSOS HIDRICOS :

- LISTADOS DE LOS MODELOS
- RESULTADOS DE LAS PASADAS DE AJUSTE

DICIEMBRE - 1987

ALAMOS Y PERALTA INGENIEROS CONSULTORES LTDA.

CON LA ASESORIA DE : IPLA LTDA. E HIDRELEC LTDA.

LISTADO DEL PROGRAMA DEL MODELO HIDROGEOLOGICO

(SIMAC 4.)

PROGRAMA / LECTURA

ALAMOS Y PERALTA

INGENIEROS CONSULTORES LTDA.

RECURSOS HIDRAULICOS

AGUAS SUBTERRANEAS

REGADIO

AGUA POTABLE E INDUSTRIAL

PROGRAMA LECTURA

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D Line# 1      7
1      PROGRAM LECTURA
2 $DEBUG
3 $LARGE
4 C*****
5 C
6 C EL PROGRAMA LECTURA ES PARTE DEL SIMAC --> SIMULADOR DE ACUIFEROS
7 C
8 C LEE LOS DATOS DE ENTRADA, HACE UNA PEQUEÑA ELABORACION PARA EL AHORRO
9 C DE MEMORIA EN ETAPA SUCEASIVAS E IMPRIME LA INFORMACION LEIDA.
10 C
11 C EL MODELO ESTA DIMENSIONADO PARA UN MALLAJE DE 32 FILAS Y 40 COLUMNAS
12 C
13 C*****
14 C
15 C  DIMENSIONAMIENTO E INICIALIZACION DE VARIABLES
16 C
17      REAL T1(40,32),T2(40,32),SF(40,32),HD(40,32),H(40,32),T(40,32,2),
18      1SF1(40,32),RD(40,32),RH(40,32),R(40,32),RDV(40,32),RV(40,32),
19      2MN(40,32)
20 C
21 C
22      REAL B(40),G(40),HDD(30,50),FD(50),HB(40,50)
23 C
24 C
25      INTEGER ICAT(40,32),IDIMX(40),IDIMY(32)
26 C
27      DIMENSION IM(300),JM(300),ID(30),JD(30),IR(150),JR(150),
28      1IV(900),JV(900),RM(50),IB(40),JB(40)
29 C
30      character esc,ff,lf,si,so,dc4
31 C
32      CHARACTER ABC(30)
33      CHARACTER*2 TITULO(30),TITULR(30)
34      character*30 pozo(60)
35 C
36 C
37      DATA T1/1280*0.0/,T2/1280*0.0/,SF/1280*0.0/,HD/1280*0.0/,
38      1H/1280*0.0/,T/2560*0.0/,SF1/1280*0.0/,RD/1280*0.0/,RH/1280*0.0/,
39      2R/1280*0.0/,RDV/1280*0.0/,RV/1280*0.0/,MN/1280*0.0/
40 C
41      DATA B/40*0.0/,G/40*0.0/,HDD/1500*0.0/
42 C
43      DATA ABC/'A','B','C','D','E','F','G','H','I','J','K','L','M',
44      1'N','O','P','Q','R','S','T','U','V','W','X','Y','Z','+', '*', ' ',
45      2'>'/'
46 C
47      esc=char(27)
48      ff=char(12)
49      lf=char(10)
50      so=char(14)
51      si=char(15)
52      dc4=char(20)
53 C
54 C APERTURA DE ARCHIVOS DE DATOS:  DATOS.PRO      =Datos de entrada
55 C                                IMPRESIO.PRO     =Para impresion de
56 C                                datos de entrada
57 C                                PROCESO.PRO      =Datos de entrada que
58 C                                emplea el programa de
59 C                                procesamiento

```



```

5 Line# 1      7      Microsoft FORTRAN77 V3.20 02/84
60 C          DICAT          =Contiene la matriz ICAT
61 C          BOMBEO.INF      =Datos para programa
62 C                          RECNETA
63 C
64      OPEN(5,FILE='DATOS.PRO')
65      OPEN(6,FILE='IMPRESIO.PRO',STATUS='NEW')
66      OPEN(7,FILE='PROCESO.PRO',STATUS='NEW')
67      OPEN(8,FILE='DICAT',STATUS='NEW')
68      OPEN(9,FILE='BOMBEO.INF',STATUS='NEW')
69 C
70 C      LECTURA TITULO
71 C
72      READ(5,10) (TITULO(I),I=1,30)
73      WRITE(7,10) (TITULO(I),I=1,30)
74      10 FORMAT(30A2)
75 C
76 C      LECTURA DATOS GENERALES
77 C
78      READ(5,20) LO,NC,NR,ERROR,nanos
79      WRITE(7,20) LO,NC,NR,ERROR,nanos
80      read(5,22) (rm(k),k=1,nanos)
81      22 format(12(a3,1x))
82      20 FORMAT(I4,2I3,F6.1,I4)
83      READ(5,30) (IDIMX(I),I=1,NC)
84      READ(5,30) (IDIMY(J),J=1,NR)
85      30 FORMAT(I5)
86      READ(5,40) FAC1,FAC2,FACSF
87      40 FORMAT(3F5.1)
88      DO 50 K=1,LO
1 89      READ(5,60) I,J,T1(I,J),T2(I,J),SF(I,J),H(I,J)
1 90      60 FORMAT(2I3,3E8.1,F8.2)
1 91      IF(T2(I,J).GT.0.0) GO TO 55
1 92      T2(I,J)=T1(I,J)
1 93      55 CONTINUE
1 94      T2(I,J)=T2(I,J)*FAC2
1 95      T1(I,J)=T1(I,J)*FAC1
1 96      SF(I,J)=SF(I,J)*FACSF
1 97      50 CONTINUE
98      2500 format(a1)
99 C
100 C      ESCRITURA DE DATOS
101 C
102      write(6,2550) esc,char(108),char(6)
103      2550 format(3a1)
104      write(6,2550) esc,char(78),char(6)
105      write(6,2500) ff
106      WRITE(6,65) (TITULO(I),I=1,30)
107      65 FORMAT(//////////,129(' '),////////,30X,30A2,////////,129(' '),
108      *////////,50X,18(' '),////,51X,'DATOS DE ENTRADA',////,50X,
109      *18(' '))
110      write(6,2500) ff
111      WRITE(6,70) LO,NC,NR,ERROR,nanos
112      70 FORMAT(////////,10X,'DATOS GENERALES',//,115('='),///,4X,
113      1'NUMERO DE MALLAS',I7,/,4X,'NUMERO DE COLUMNAS',I5,/,4X,
114      2'NUMERO DE FILAS',3X,I5,///,4X,'ERROR ADMISIBLE',F7.2,2X,
115      3'METROS',///,4X,'DURACION TOTAL DE LA SIMULACION',I5,2X,'ANGS')
116      WRITE(6,75) (IDIMX(I),I=1,NC)
117      75 FORMAT(////,21X,'DIMENSIONES DE LAS MALLAS',//,11X,'DIRECCION-I',
118      *2X,10I6,/,24X,10I6)

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D Line# 1 7 Microsoft FORTRAN77 V3.20 02/84

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119 WRITE(6,76) (IDIMY(J),J=1,NR)
120 76 FORMAT(/,11X,'DIRECCION-J',2X,10I6,/, (24X,10I6))
121 WRITE(6,80)
122 80 FORMAT(////,4X,'MALLA',5X,'TRANSMISIVIDAD',5X,'ALMACENAMIENTO',
123 *5X,'NIVEL INICIAL',5X,'CATEGORIA MALLA',/,5X,
124 *'I',2X,'J',8X,'I',,8X,'J',/)
125 C
126 C IDENTIFICACION DE LA CATEGORIA DE CADA MALLA Y ESCRITURA DE
127 C DATOS GENERALES
128 C ICAT=1...MALLA FUERA DEL MODELO
129 C ICAT=2...MALLA DE BORDE IMPERMEABLE
130 C ICAT=3...MALLA DE BORDE CON NIVEL CTE.
131 C ICAT=4...MALLA DENTRO DEL MODELO
132 C
133 DO 90 I=1,NC
134 DO 90 J=1,NR
135 ICAT(I,J)=1
136 IF(H(I,J).LE.0.0) GO TO 95
137 ICAT(I,J)=2
138 IF(T1(I,J).LE.0.0.AND.T2(I,J).LE.0.0) GO TO 95
139 ICAT(I,J)=3
140 IF(SF(I,J).GT.100.0)GO TO 95
141 ICAT(I,J)=4
142 95 WRITE(6,100) I,J,T1(I,J),T2(I,J),SF(I,J),H(I,J),ICAT(I,J)
143 100 FORMAT(3X,I3,I3,3X,F7.1,2X,F7.1,8X,F7.2,12X,F7.2,12X,I4)
144 T(I,J,2)=T1(I,J)*IDIMX(J)/(0.5*(IDIMX(I)+IDIMX(I+1)))*30.
145 T(I,J,1)=T2(I,J)*IDIMX(I)/(0.5*(IDIMY(J)+IDIMY(J+1)))*30.
146 SF(I,J)=SF(I,J)*IDIMX(I)*IDIMY(J)
147 WRITE(7,105) I,J,(T(I,J,K),K=1,2),SF(I,J),H(I,J)
148 105 FORMAT(2I3,3E10.5,F7.2)
149 90 CONTINUE
150 C
151 C ALMACENAMIENTO CATEGORIAS ICAT EN ARCHIVO DICAT
152 C
153 WRITE(8,108) ((ICAT(I,J),I=1,NC),J=1,NR)
154 108 FORMAT(24I3)
155 C
156 C MAPA DE TRANSMISIVIDADES Y COEF. DE ALMACENAMIENTO
157 C
158 CALL MAPA(0.0,NC,NR,ABC,T1,ICAT,1000,3)
159 CALL MAPA(0.0,NC,NR,ABC,T2,ICAT,1000,4)
160 CALL MAPA(0.0,NC,NR,ABC,SF,ICAT,1,5)
161 C
162 C LECTURA DE MALLAS BORDE PERMEABLE
163 C
164 read(5,150) (titulr(i),i=1,20),nb
165 write(7,150) (titulr(i),i=1,20),nb
166 DO 125 L=1,nb
167 READ(5,152) ib(L),jb(L)
168 WRITE(7,122) ib(L),jb(L)
169 READ(5,157) (hb(L,K),K=1,nanos)
170 WRITE(7,157) (hb(L,K),K=1,nanos)
171 125 CONTINUE
172 write(6,2500) ff
173 WRITE(6,153) (TITULR(I),I=1,20)
174 DO 126 L=1,nb
175 WRITE(6,161) ib(L),jb(L),(rm(K),K=1,nanos),(hb(L,K),K=1,nanos)
176 161 FORMAT(////,4X,'MALLA ',2I3,///,4X,'AND',/,
177 *T25,50(5X,A3),//,4X,'COTA PIEZOMETRICA',/,T25,50(F8.2))

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1 178 I=ib(L)
1 179 I=jb(L)
1 180 126 MN(I,J)=1.0
181 C
182 C LECTURA DE MALLAS DE BORDE
183 C
184 READ(5,110) (TITULR(I), I=1,20), NMEN, NMEE, NMES, NMEW
185 WRITE(7,110) (TITULR(I), I=1,20), NMEN, NMEE, NMES, NMEW
186 110 FORMAT(20A2,4I3)
187 READ(5,120) (IM(K), JM(K), K=1, NMEW)
188 WRITE(7,120) (IM(K), JM(K), K=1, NMEW)
189 120 FORMAT(2I3)
190 write(6,2500) ff
191 WRITE(6,130)
192 130 FORMAT(///,4X,'MALLAS EXTERIORES (I,J) NORTE-ESTE-SUR-OESTE',
193 1//,115('='))
194 WRITE(6,140) (IM(K), JM(K), K=1, NMEN)
195 L=NMEN+1
196 WRITE(6,140) (IM(K), JM(K), K=L, NMEE)
197 L=NMEE+1
198 WRITE(6,140) (IM(K), JM(K), K=L, NMES)
199 L=NMES+1
200 WRITE(6,140) (IM(K), JM(K), K=L, NMEW)
201 140 FORMAT(/////,(10(2X,2I3,2X)))
202 C
203 C LECTURA DE MALLAS CONTRASTE PIEZOMETRICO
204 C
205 READ(5,150) (TITULR(I), I=1,20), ND
206 WRITE(7,150) (TITULR(I), I=1,20), ND
207 150 FORMAT(20A2,I3)
208 WRITE(7,151) (RM(K), K=1, nanos)
209 151 FORMAT(12(A3,1X))
210 DO 152 L=1,ND
1 211 READ(5,122) ID(L), JD(L), pozo(1)
1 212 WRITE(7,122) ID(L), JD(L), pozo(1)
1 213 122 format(2i3,a30)
1 214 READ(5,157) (HDD(L,K), K=1, nanos)
1 215 WRITE(7,157) (HDD(L,K), K=1, nanos)
1 216 157 FORMAT(10F7.2)
1 217 152 CONTINUE
218 write(6,2500) ff
219 WRITE(6,153) (TITULR(I), I=1,20)
220 153 FORMAT(///// ,4X,20A2,/,115('='))
221 DO 155 L=1,ND
1 222 WRITE(6,160) ID(L), JD(L), pozo(1), (RM(K), K=1, nanos),
1 223 *(HDD(L,K), K=1, nanos)
1 224 160 FORMAT(///// ,4X,'MALLA ',2I3,5X,a30,/,4X,'AND',/,
1 225 *(T25,12(5X,A3)),/,4X,'COTA PIEZOM.OBSERVADA',/, (T25,12(F8.2)))
1 226 I=ID(L)
1 227 J=JD(L)
1 228 155 MN(I,J)=1.0
229 C
230 C DIBUJO DEL ACUIFERO CON MALLAS CONTRASTE PIEZOMETRICO
231 C
232 CALL MONOS(ABC, NC, NR, MN, ICAT, 16, TITULR)
233 C
234 C LECTURA DE MALLAS DE RIO
235 C
236 READ(5,165) (TITULR(I), I=1,20), NOR, fr

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Line# 1      7      Microsoft FORTRAN77 V3.20 02/84
237      WRITE(7,165) (TITULR(I),I=1,20),NDR,fr
238 165 FORMAT(20A1,I3,f5.2)
239      IF(NDR.EQ.0) GO TO 195
240      READ(5,170) (IR(K),JR(K),RD(IR(K),JR(K)),RH(IR(K),JR(K)),R(IR(K),
241 1JR(K)),K=1,NDR)
242      WRITE(7,172) (IR(K),JR(K),RD(IR(K),JR(K)),RH(IR(K),JR(K)),R(IR(K),
243 1JR(K))*30.0*fr,K=1,NDR)
244 170 FORMAT(2I3,2F7.2,E9.2)
245 172 FORMAT(2I3,2F7.2,E10.5)
246      write(6,2500) ff
247      WRITE(6,190)
248 190 FORMAT(///,4X,'MALLAS CON RELACION RIO-ACUIFERO',//,115('='),
249 1////,4X,'MALLA',4X,'COTA LECHO',4X,'COTA AGUA RIO',4X,
250 2'C.PERMEABILIDAD',//)
251      WRITE(6,180) (IR(K),JR(K),RD(IR(K),JR(K)),RH(IR(K),JR(K)),R(IR(K
252 1),JR(K))*fr,K=1,NDR)
253 180 FORMAT(/,3X,2I3,7X,F6.1,9X,F6.1,8X,F11.1)
254 C
255 C DIBUJO DEL ACUIFERO CON LAS MALLAS DE RIO
256 C
257      CALL MONDS(ABC,NC,NR,RD,ICAT,18,TITULR)
258 195 CONTINUE
259 C
260 C LECTURA DE MALLAS CON VERTIENTES
261 C
262      READ(5,165) (TITULR(I),I=1,20),NVER
263      WRITE(7,165) (TITULR(I),I=1,20),NVER
264      IF(NVER.EQ.0) GO TO 215
265      READ(5,200) (IV(K),JV(K),RDV(IV(K),JV(K)),K=1,NVER)
266      WRITE(7,200) (IV(K),JV(K),RDV(IV(K),JV(K)),K=1,NVER)
267 200 FORMAT(2I3,F7.2)
268      write(6,2500) ff
269      WRITE(6,210)
270 210 FORMAT(///,4X,'MALLAS CON VERTIENTES',//,115('='),////,4X,
271 1'COTA MINIMA DE VERTIMIENTO POR MALLA')
272      WRITE(6,220) (IV(K),JV(K),RDV(IV(K),JV(K)),K=1,NVER)
273 220 FORMAT(///,(5(2X,2I3,F11.2,3X),//))
274 C
275 C DIBUJO DEL ACUIFERO CON LAS MALLAS CON VERTIENTES
276 C
277      CALL MONDS(ABC,NC,NR,RDV,ICAT,22,TITULR)
278 215 CONTINUE
279 C
280 C LECTURA DATOS BOMBEO E INFILTRACIONES Y CREACION DEL ARCHIVO
281 C BOMBEO.INF CONTENIENDO LOS DATOS DE ENTRADA DEL PROGRAMA RECNETA
282 C
283      WRITE(9,230) NC,NR,nanos,(RM(K),K=1,nanos)
284 230 FORMAT(5X,'DATOS BOMBEO E INFILTRACIONES',T41,2I3,i4,/, (12A3))
285 280 READ(5,225) (TITULR(I),I=1,20),NP
286      IF(NP.EQ.0) GO TO 270
287      WRITE(9,225) (TITULR(I),I=1,20),NP
288 225 FORMAT(20A2,I5)
289      READ(5,240) FC,ICL,(FD(K),K=1,nanos)
290      WRITE(9,240) FC,ICL,(FD(K),K=1,nanos)
291 240 FORMAT(F5.2,I5,/, (12F5.3))
292      DO 250 L=1,NP
293      READ(5,262) I,J,F
294      format(2I3,e9.2)
295      250 WRITE(9,260) I,J,F

```

```

D Line# 1      7
      296      260 FORMAT(2I3,EB.3)
      297          GO TO 280
      298      270 CONTINUE
      299          END

```

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Name	Type	Offset	P	Class
ABC	CHAR*1	0		LARGE
B	REAL	0		LARGE
CHAR				INTRINSIC
DC4	CHAR*1	21		
ERROR	REAL	102		
ESC	CHAR*1	16		
FAC1	REAL	150		
FAC2	REAL	154		
FACSF	REAL	158		
FC	REAL	2124		
FD	REAL	320		LARGE
FF	CHAR*1	17		
FR	REAL	1614		
G	REAL	160		LARGE
H	REAL	0		LARGE
HB	REAL	11120		LARGE
HDO	REAL	5120		LARGE
HO	REAL	0		LARGE
I	INTEGER*4	22		
IB	INTEGER*4	0		LARGE
ICAT	INTEGER*4	0		LARGE
ICL	INTEGER*4	2128		
ID	INTEGER*4	0		LARGE
IDIMX	INTEGER*4	5120		LARGE
IDIMY	INTEGER*4	5280		LARGE
IM	INTEGER*4	5408		LARGE
IR	INTEGER*4	120		LARGE
IV	INTEGER*4	720		LARGE
J	INTEGER*4	142		
JB	INTEGER*4	4320		LARGE
JD	INTEGER*4	0		LARGE
JM	INTEGER*4	6608		LARGE
JR	INTEGER*4	7808		LARGE
JV	INTEGER*4	8408		LARGE
K	INTEGER*4	110		
L	INTEGER*4	1112		
LF	CHAR*1	18		
LO	INTEGER*4	90		
MN	REAL	5120		LARGE
NANOS	INTEGER*4	106		
NB	INTEGER*4	1108		
NC	INTEGER*4	94		
ND	INTEGER*4	1406		
NMEE	INTEGER*4	1244		
NMEN	INTEGER*4	1240		
NMES	INTEGER*4	1248		
NMEW	INTEGER*4	1252		
NP	INTEGER*4	2110		
NQR	INTEGER*4	1610		
NR	INTEGER*4	98		
NVER	INTEGER*4	1876		
P	REAL	2156		

D Line# 1 7

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POZO	CHAR*30	10240	LARGE
R	REAL	0	LARGE
RD	REAL	5120	LARGE
RDV	REAL	0	LARGE
RH	REAL	10240	LARGE
RM	REAL	20480	LARGE
RV	REAL	15360	LARGE
SF	REAL	0	LARGE
SF1	REAL	15360	LARGE
SI	CHAR*1	20	
SD	CHAR*1	19	
T	REAL	5120	LARGE
T1	REAL	0	LARGE
T2	REAL	5120	LARGE
TITULO	CHAR*2	10240	LARGE
TITULR	CHAR*2	10300	LARGE

```
300 C*****
```

```
301 SUBROUTINE MAPA(TIME,NC,NR,ABC,QH,ICAT,N,ITIPO)
```

```
302 $LARGE
```

```
303 C
```

```
304 C ESTA SUBROUTINA DIBUJA DIFERENTES MAPAS SIMBOLICOS DE ACUERDO AL
305 C VALOR DE LA VARIABLE ITIPO.
```

```
306 C ITIPO=1 MAPA PIEZOMETRICO
```

```
307 C ITIPO=2 MAPA CON VOLUMENES QUE SALEN POR VERTIENTES
```

```
308 C ITIPO=3 MAPA TRANSMISIVIDAD DIR.-I
```

```
309 C ITIPO=4 MAPA TRANSMISIVIDAD DIR.-J
```

```
310 C ITIPO=5 MAPA CDEF.ALMACENAMIENTO
```

```
311 C
```

```
312 REAL QH(40,32)
```

```
313 CHARACTER ABC(30),MAPAA(60)
```

```
314 CHARACTER*4 TITU(4,5)
```

```
315 INTEGER NUM(27),ICAT(40,32)
```

```
316 C
```

```
317 character esc,ff,lf,so,si,dc4,dc2
```

```
318 esc=char(27)
```

```
319 ff=char(12)
```

```
320 lf=char(10)
```

```
321 so=char(14)
```

```
322 si=char(15)
```

```
323 dc4=char(20)
```

```
324 C
```

```
325 DATA TITU/'PIEZ','OMET','RICO',' ','VERT','IENT','ES ',' ',
```

```
326 *'TRAN','SMIS','IVID','AD-I','TRAN','SMIS','IVID','AD-J','ALMA',
```

```
327 *'CENA','MIEN','TO %' /
```

```
328 C
```

```
329 C CALCULO DE LAS CATEGORIAS NUM(K)
```

```
330 C
```

```
331 ITOP=0
```

```
332 IBOT=1000000
```

```
333 DO 10 I=1,NC
```

```
334 DO 10 J=1,NR
```

```
335 IF(ITIPO.EQ.5) QH(I,J)=QH(I,J)*100.
```

```
336 IF(ICAT(I,J).NE.4) GO TO 10
```

```
337 IF(QH(I,J).LE.0.0) GO TO 10
```

```
338 IHD=QH(I,J)
```

```
339 IF(IHD.LT.IBOT) IBOT=IHD
```

```
340 IF(IHD.GT.ITOP) ITOP=IHD
```



```

D Line# 1      7
2   341      10 CONTINUE
      342      IF(ITOP.LE.0) GO TO 20
      343      if(itop.eq.ibot) ibot=ibot-n
      344      IBOT=IBOT/N
      345      IBOT=N*IBOT
      346      ITOP=ITOP/N
      347      ITOP=N*(ITOP+1)
      348      15 NCAT=(ITOP-IBOT)/N
      349      if(ncat.gt.26) then
      350          n=n*10
      351          go to 15
      352      endif
      353      NUM(1)=IBOT
      354      DO 40 K=1,NCAT
1   355      40 NUM(K+1)=NUM(K)*N
      356      20 CONTINUE
      357 C
      358 C   CONSTRUCCION E IMPRESION DEL MAPA SIMBOLICO
      359 C
      360      write(6,2500) si
      361      write(6,2500) ff
      362      2500 format(a1)
      363      WRITE(6,50) (TITU(K,ITIPO),K=1,4),TIME,(I,I=1,NC)
      364      50 FORMAT('MAPA',2X,4A4,15X,'TIEMPO',F10.1,/,130('='),/,/,
      365      *3X,40(I3,1X))
      366      DO 60 J=1,NR
1   367      DO 70 I=1,NC
2   368      MAPAA(I)=ABC(29)
2   369      IF(ICAT(I,J).EQ.1) GO TO 70
2   370      MAPAA(I)=ABC(30)
2   371      IF(ICAT(I,J).EQ.3) GO TO 70
2   372      MAPAA(I)=ABC(28)
2   373      IF(ICAT(I,J).EQ.2) GO TO 70
2   374      MAPAA(I)=ABC(27)
2   375      IF(QH(I,J).LE.0.0) GO TO 70
2   376      DO 80 K=1,NCAT
3   377      80 IF(QH(I,J).GT.NUM(K).AND.QH(I,J).LE.NUM(K+1)) MAPAA(I)=ABC(K)
2   378      IF(QH(I,J).LE.1.E-8) MAPAA(I)=ABC(26)
2   379      70 CONTINUE
1   380      WRITE(6,90) J,(MAPAA(I),I=1,NC)
1   381      90 FORMAT(/,I3,2X,40(A3,1X))
1   382      60 CONTINUE
      383      IF(ITOP.LE.0) GO TO 110
      384      WRITE(6,100) (ABC(I),NUM(I),NUM(I+1),I=1,NCAT)
      385      100 FORMAT(/,,4X,'*=MALLA DE BORDE IMPERMEABLE',/,4X,'>MALLA CON
      386      * NIVEL CTE.',/,4(4X,A1,'= ',I7,' - ',I7,'')/,/)
      387      IF(ITIPO.EQ.3.OR.ITIPO.EQ.4) WRITE(6,105)
      388      105 FORMAT(/,4X,'Z=MALLA CON TRANSMISIVIDAD NULA')
      389      GO TO 120
      390      110 WRITE(6,130)
      391      130 FORMAT(/,,4X,'*=MALLA DE BORDE IMPERMEABLE',/,4X,'>MALLA CON
      392      * NIVEL CTE.',/,4X,'+=MALLA SIN AFLORAMIENTOS')
      393      120 CONTINUE
      394      RETURN
      395      END

```

Name	Type	Offset	F	Class
------	------	--------	---	-------

ABC	CHAR	10	*	
-----	------	----	---	--

11-10-87
16:18:57

D Line# 1 7

Microsoft FORTRAN77 V3.20 02/84

CHAR INTRINSIC

DC2	CHAR*1	*****	
DC4	CHAR*1	2188	
ESC	CHAR*1	2183	
FF	CHAR*1	2184	
I	INTEGER*4	2198	
IBOT	INTEGER*4	2194	
ICAT	INTEGER*4	20 *	
IHD	INTEGER*4	2214	
ITIPO	INTEGER*4	28 *	
ITOP	INTEGER*4	2190	
J	INTEGER*4	2206	
K	INTEGER*4	2222	
LF	CHAR*1	2185	
MAPAA	CHAR*1	0	LARGE
N	INTEGER*4	24 *	
NC	INTEGER*4	4 *	
NCAT	INTEGER*4	2218	
NR	INTEGER*4	8 *	
NUM	INTEGER*4	0	LARGE
D	REAL	2348	
QH	REAL	16 *	
SI	CHAR*1	2187	
SO	CHAR*1	2186	
TIME	REAL	0 *	
TITU	CHAR*4	0	LARGE

396 C*****

397 SUBROUTINE MONOS(ABC,NC,NR,MN,ICAT,N,TITULR)

398 C

399 C ESTA SUBROUTINA DIBUJA MAPAS SIMBOLICOS CON LAS MALLAS DE RIO,
400 C CON VERTIENTES, PARA CONTRASTE PIEZOMETRICO, Y LOS DIFERENTES TIPOS
401 C DE BOMBEO E INFILTRACIONES.

402 C

403 REAL MN(40,32)

404 CHARACTER ABC(30), LINEA(60)

405 CHARACTER*2 TITULR(30)

406 INTEGER ICAT(40,32)

407 C

408 character esc,ff,lf,so,si,dc4,dc2

409 esc=char(27)

410 ff=char(12)

411 lf=char(10)

412 so=char(14)

413 si=char(15)

414 dc4=char(20)

415 C

416 write(6,2500) si

417 write(6,2500) ff

418 2500 format(a1)

419 WRITE(6,10) (TITULR(J),J=1,30),(I,I=1,NC)

420 10 FORMAT('MAPA CON MALLAS',2X,30A2,/,/,120(' '),/,/,4X,40(I3,1X))

421 DO 20 J=1,NR

1 422 DO 30 I=1,NC

2 423 LINEA(I)=ABC(29)

2 424 IF(ICAT(I,J).EQ.1) GO TO 30

2 425 LINEA(I)=ABC(27)

2 426 IF(MN(I,J).GT.0.0) LINEA(I)=ABC(N)

PROGRAMA RECNETA

```

Line# 1      7      Microsoft FORTRAN77 V3.20 02/84
2      PROGRAM RECNETA
3      $DEBUG
4      C*****
5      C EL PROGRAMA RECNETA ES PARTE DEL SINAC --> SIMULADOR DE ACUIFEROS.
6      C
7      C CALCULA LA RECARGA NETA POR MALLA, A PARTIR DE LOS DATOS DE LAS
8      C DIFERENTES FUENTES DE INFILTRACION Y BOMBEO.
9      C
10     C ADMITE HASTA 20 FUENTES DE INFILTRACION O BOMBEO, PUDIENDO TENER CADA
11     C UNA DE ELLAS HASTA 900 MALLAS AFECTADAS.
12     C
13     C*****
14     C
15     C DIMENSIONAMIENTO E INICIALIZACION DE VARIABLES
16     C
17     DIMENSION P(900,20), QTOT(20), QX(50), Q(40,32), FB(50,20)
18     REAL MN(40,32)
19     CHARACTER*3 RM(50)
20     CHARACTER*2 TIT(20), TITULR(20), TITUBP(20,20)
21     character esc, ff, lf, so, si, dc4, dc2
22     INTEGER IP(900,20), JP(900,20), NSP(20)
23     C
24     esc=char(27)
25     ff=char(12)
26     lf=char(10)
27     so=char(14)
28     si=char(15)
29     dc4=char(20)
30     C
31     DATA Q/1280*0.0/, QTOT/20*0.0/
32     C
33     C APERTURA DE ARCHIVOS DE DATOS: BOMBEO.INF =Datos de entrada.
34     C                                     DINFROM.PRO =Para impresion de
35     C                                     datos de entrada.
36     C                                     DATPROD.PRO =Recarga neta calculada
37     C                                     para ser usada en el
38     C                                     programa PROCESO.
39     C                                     BOMBAL.PRO =Datos para el calculo
40     C                                     del balance masico, man-
41     C                                     diante el programa BALANCE
42     C
43     OPEN(5, FILE='BOMBEO.INF')
44     OPEN(6, FILE='DINFROM.PRO', STATUS='NEW')
45     OPEN(7, FILE='DATPROD.PRO', STATUS='NEW')
46     OPEN(4, FILE='BOMBAL.PRO', STATUS='NEW')
47     C
48     C LECTURA DE BOMBEO E INFILTRACIONES
49     C
50     READ(5,110) (TIT(I), I=1,20), NO, NR, nandos, (RM(K), K=1, nandos)
51     110 FORMAT(20A2, 2I3, 14, /, (12A3))
52     write(6,2550) esc, char(100), char(6)
53     2550 format(0a1)
54     write(6,2550) esc, char(78), char(6)
55     write(6,2700) ff
56     write(6,2510) si
57     write(6,2800)
58     2800 format(///,///,50,47,'*'),///,45,' DATOS DE ENTRADA',//,
59     *31X,' VOLUMENES INFILTRADOS Y BOMBADOS AL ACUIFERO',///,

```

D Line# 1 7 Microsoft FORTRAN77 V3.20 02/84

```

50      *30X,47('*'))
51      220 READ(5,120,END=230) (TITULR(I),I=1,20),NP
52      120 FORMAT(20A2,15)
53      DO 130 I=1,NC
1 54      DO 130 J=1,NR
2 55      130 MN(I,J)=0.0
56      READ(5,140) FC,ICL,(FD(K,ICL),K=1,nanos)
57      140 FORMAT(F5.1,15,/, (12F5.1))
58      NSP(ICL)=NP
59      DO 150 L=1,NP
1 70      READ(5,160) I,J,P(L,ICL)
1 71      160 FORMAT(2I3,E8.3)
1 72      IP(L,ICL)=I
1 73      JP(L,ICL)=J
1 74      P(L,ICL)=P(L,ICL)*FC
1 75      MN(I,J)=1.0
1 76      150 QTOT(ICL)=QTOT(ICL)+P(L,ICL)
77      DO 170 I=1,20
1 78      170 TITUBP(I,ICL)=TITULR(I)
79      NP=NSP(ICL)
80      write(6,2500) so
81      write(6,2700) ff
82      2500 format(a1)
83      2700 format(a1,/, 'ALAMOS Y PERALTA Ingenieros Consultores Ltda.',/,
84      *45(' '),/)
85      write(6,2500) si
86      fdt=0.0
87      DO 190 K=1,nanos
1 22      fdt=fdt+fd0,1cl)
1 23      190 QX(K)=QTOT(ICL)*FD(K,ICL)
90      WRITE(6,180) (TITULR(I),I=1,20),QTOT(ICL)*fdt
91      180 FORMAT(3X,20A2,///,9X,'VOLUMEN TOTAL PARA EL ACUIFERO',
92      1F11.2,2X,'MILES M3/ANO',///)
93      WRITE(6,200) (RM(K),K=1,nanos),(FD(K,ICL),K=1,nanos),
94      *(QX(K),K=1,nanos)
95      200 FORMAT(/,'ANO',T20,50(5X,A3),///,'COEF.DISTRIBUCION',T21,
96      *50F8.2,///,'VOL.TOT.ANUAL',T20,50F8.1)
97      WRITE(6,210) (IP(L,ICL),JP(L,ICL),P(L,ICL),L=1,NP)
98      210 FORMAT(////,9X,'VOLUMEN TOTAL POR MALLA - MILES M3/ANO',///,
99      *(5(2X,2I3,F11.2,3X),///)
100     CALL MONOS(NC,NR,MN,ICL,TITULR)
101     GO TO 220
102     230 NCL=ICL
103 C
104 C  CALCULO DE LA RECARGA NETA POR MALLA
105 C
106     DO 240 KK=1,nanos
1 107     do 242 i=1,nc
2 108     do 242 j=1,nr
3 109     242 q(i,j)=0.0
1 110     DO 250 ICL=1,NCL
2 111     NP=NSP(ICL)
2 112     DO 250 L=1,NP
3 113     I=IP(L,ICL)
3 114     J=JP(L,ICL)
3 115     250 Q(I,J)=Q(I,J)-P(L,ICL)*1000*FD(KK,ICL)/12.
1 116     240 WRITE(7,260) KK,((Q(I,J),I=1,NC),J=1,NR)
117     260 FORMAT(1E,/, (7E11.5))
118     WRITE(1,265) NCL

```

```

C Line# 1      7
119      265 FORMAT(13)
120      DO 270 ICL=1,NCL
1 121      270 WRITE(4,280) (TITUBP(I,ICL),I=1,20),GTOT(ICL),
1 122      *(FD(K,ICL),K=1,nanos)
123      280 FORMAT(20A2,E10.4,/, (12F5.2))
124      END

```

Microsoft FORTRAN77 V3.20 02/84

Name	Type	Offset	P	Class
------	------	--------	---	-------

CHAR				INTRINSIC
------	--	--	--	-----------

DC2	CHAR*1	*****		
DC4	CHAR*1	15651		
ESC	CHAR*1	15646		
FC	REAL	15876		
FD	REAL	6446		
FDT	REAL	16000		
FF	CHAR*1	15647		
I	INTEGER*4	15652		
ICL	INTEGER*4	15880		
IP	INTEGER*4	0		LARGE
J	INTEGER*4	15868		
JP	INTEGER*4	0		LARGE
K	INTEGER*4	15672		
KK	INTEGER*4	16288		
L	INTEGER*4	15904		
LF	CHAR*1	15648		
MN	REAL	10446		
NANOS	INTEGER*4	15668		
NC	INTEGER*4	15660		
NCL	INTEGER*4	16284		
NP	INTEGER*4	15850		
NR	INTEGER*4	15664		
NSP	INTEGER*4	15566		
P	REAL	0		LARGE
Q	REAL	1326		
GTOT	REAL	16		
QX	REAL	96		
RM	CHAR*3	296		
SI	CHAR*1	15650		
SO	CHAR*1	15649		
TIT	CHAR*2	446		
TITUBP	CHAR*2	526		
TITULR	CHAR*2	486		

```

125 C*****

```

```

126      SUBROUTINE MONOS(NC,NE,MN,N,TITULR)

```

```

127 C

```

```

128 C  ESTA SUBROUTINA DIBUJA MAPAS SIMBOLICOS CON LAS MALLAS DE RIO,

```

```

129 C  CON VERTIENTES, PARA CONTRASTE PIEZOMETRICO, Y LOS DIFERENTES TIPOS

```

```

130 C  DE BOMBEO E INFILTRACIONES.

```

```

131 C

```

```

132 C

```

```

133 C  EL ARCHIVO 'DICAT' CONTIENE LA MATRIZ ICAT(I,J), QUE SE GENERA EN EL

```

```

134 C  PROGRAMA DE LECTURAS E IDENTIFICA EL TIPO DE MALLA DE QUE SE TRATA

```

```

135 C

```

```

136      REAL MN(40,32)

```

```

137      CHARACTER*30 GO, LINEA(60)

```

```

138      CHARACTER*2 TITULR(20)

```

```

D Line# 1      7      Microsoft FORTRAN77 V3.20 02/84
139      INTEGER ICAT(40,32)
140      character asc,ff,lf,so,si,dc4,dc2
141 C
142      DATA ABC/'A','B','C','D','E','F','G','H','I','J','K','L','M',
143      1/'N','O','P','Q','R','S','T','U','V','W','X','Y','Z','+', '*', ' ',
144      2/'>'//
145      asc=char(27)
146      ff=char(12)
147      lf=char(10)
148      so=char(14)
149      si=char(13)
150      dc4=char(20)
151 C
152      OPEN(3,FILE='DICAT')
153      READ(3,5) ((ICAT(I,J),I=1,NC),J=1,NR)
154      5 FORMAT(24I3)
155      write(6,2500) si
156      write(6,2500) f:
157      2500 format(a1)
158      WRITE(6,10) (TITULR(J),J=1,20), (I,I=1,NC)
159      10 FORMAT('MAPA CON MALLAS',2X,20A2,///,100(' '),//,4X,40(I3,1X))
160      DO 20 J=1,NR
161      DO 30 I=1,NC
162      LINEA(I)=ABC(29)
163      IF(ICAT(I,J).EQ.1) GO TO 30
164      LINEA(I)=ABC(27)
165      IF(MN(I,J).GT.0.0) LINEA(I)=ABC(N)
166      IF(ICAT(I,J).EQ.2) LINEA(I)=ABC(28)
167      IF(ICAT(I,J).EQ.3) LINEA(I)=ABC(30)
168      30 CONTINUE
169      WRITE(6,40) J, (LINEA(I),I=1,NC)
170      40 FORMAT(/,I3,2X,40(A3,1X))
171      20 CONTINUE
172      WRITE(6,50) ABC(N), (TITULR(I),I=1,20)
173      50 FORMAT(////,4X,'*=MALLA DE BORDE IMPERMEABLE',//,4X,
174      1/'>=MALLA CON NIVEL DTE.',//,4X,A1,'=MALLA CON ',20A2)
175      RETURN
176      END

```

Name	Type	Offset	P	Class
ABC	CHAR*1	16360		
CHAR				INTRINSIC
DC2	CHAR*1	*****		
DC4	CHAR*1	21575		
ESD	CHAR*1	21570		
FF	CHAR*1	21571		
I	INTEGER*4	21576		
ICAT	INTEGER*4	16450		
J	INTEGER*4	21580		
LF	CHAR*1	21572		
LINEA	CHAR*1	16390		
MN	REAL	3	*	
N	INTEGER*4	12	*	
NC	INTEGER*4	0	*	
NR	INTEGER*4	4	*	
SI	CHAR*1	21574		
SO	CHAR*1	21573		
TITULR	CHAR*20	16	*	

15:10:04
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13:25:04

Line# 1 7

Microsoft FORTRAN77 V3.20 02/04

Name	Type	Size	Class
MONDS			SUBROUTINE
RECNET			PROGRAM

Pass One No Errors Detected
176 Source Lines.

REGURSOS HIDRAULICOS

AGUAS SUBTERRANEAS

REGADIO

AGUA POTABLE E INDUSTRIAL

PROGRAMA PROCESO

```

1      PROGRAM PROCESO
2      $LARGE
3      $notlarge:b
4      $notlarge:g
5      $notlarge:hdo
6      $notlarge:id
7      $notlarge:im
8      $notlarge:ir
9      $notlarge:iv
10     $notlarge:jd
11     $notlarge:jm
12     $notlarge:jr
13     $notlarge:jv
14     $notlarge:nsf
15     $notlarge:qm
16     $notlarge:qr
17     $notlarge:qv
18     $notlarge:rm
19     $notlarge:st
20     $notlarge:titulo
21     $notlarge:titulr
22     C*****
23     C
24     C EL PROGRAMA PROCESO ES PARTE DEL SIMAC --> SIMULADOR DE ACUIFEROS
25     C
26     C REALIZA EL PROCESO DE SIMULACION
27     C
28     C*****
29     C
30     C  DIMENSIONAMIENTO E INICIALIZACION DE VARIABLES
31     C
32         REAL*8 HD(40,32),H(40,32),T(40,32,2),SF1(40,32),RD(40,32),
33         1RH(40,32),R(40,32),RDV(40,32),RV(40,32),DL(40,32),D(40,32)
34     C
35     C
36         REAL*8 B(40),G(40),HDO(30,50),QM(300),QR(150),QV(900),ST(50),
37         *hb(40,50)
38     C
39         REAL*8 AA,BB,CC,CDEF,D,DD,DELTA,E,ERROR,F,HA,PAL,RB,RE,TIME,W
40     C
41     C
42         INTEGER ICAT(40,32),NSF(20)
43     C
44         DIMENSION IM(300),JM(300),ID(30),JD(30),IR(150),JR(150),
45         1IV(900),JV(900),ib(40),jb(40)
46     C
47         CHARACTER*2 TITULO(20),TITULR(30)
48         CHARACTER*8 RM(50)
49     C
50     C
51         DATA HD/1280*0.0/,H/1280*0.0/,T/2560*0.0/,SF1/1280*0.0/,
52         1RD/1280*0.0/,RH/1280*0.0/,R/1280*0.0/,RDV/1280*0.0/,RV/1280*0.0/,
53         2DL/1280*0.0/,D/1280*0.0/
54     C
55         DATA B/40*0.0/,G/40*0.0/,HDO/1500*0.0/,QM/300*0.0/,
56         1QR/150*0.0/,QV/900*0.0/,ST/50*0.0/,NSF/20*0/
57     C
58     C APERTURA DE ARCHIVOS DE DATOS:  PROCESO.PRO =Datos de entrada,
59     C                                     provenientes del

```

```

D Line# 1      7      Microsoft FORTRAN77 V3.20 02/84
  60 C      programa LECTURA.
  61 C      DATPROC.PRO =Recarga neta, calculada
  62 C      en el programa RECONETA.
  63 C      DICAT      =Contiene la matriz ICAT.
  64 C      RESULT.PRO =Resultados del procesa-
  65 C      miento y datos para
  66 C      programa de balance.
  67 C
  68      OPEN(5, FILE='PROCESO.PRO')
  69      OPEN(6, FILE='DATPROC.PRO')
  70      OPEN(7, FILE='DICAT')
  71      OPEN(8, FILE='RESULT.PRO', STATUS='NEW')
  72 C
  73 C      LECTURA TITULO
  74 C
  75      READ(5,10) (TITULO(I), I=1,30)
  76      10 FORMAT(30A2)
  77 C
  78 C      LECTURA DATOS GENERALES
  79 C
  80      READ(5,20) LD, NC, NR, ERROR, nanos
  81      20 FORMAT(I4, 2I3, F6.1, I4)
  82      NDATA=NC*NR
  83      DO 50 L=1, NDATA
1  84      50 READ(5,60) I, J, (T(I, J, K), K=1, 2), SF1(I, J), H(I, J)
  85      60 FORMAT(2I3, 3E10.5, F7.2)
  86 C
  87 C      LECTURA DE MALLAS CON ENTRADAS LATERALES
  88 C
  89      read(5,150) (titulr(i), i=1,20), nb
  90      DO 125 L=1, nb
1  91      READ(5,120) ib(L), jb(L)
1  92      READ(5,157) (hb(L,K), K=1, nanos)
1  93      125 CONTINUE
  94 C
  95 C      LECTURA DE MALLAS DE BORDE
  96 C
  97      READ(5,110) (TITULR(I), I=1,20), NMEN, NMEE, NMES, NMEW
  98      110 FORMAT(20A2, 4I3)
  99      READ(5,120) (IM(K), JM(K), K=1, NMEW)
100      120 FORMAT(2I3)
101 C
102 C      LECTURA DE MALLAS CONTRASTE PIEZOMETRICO
103 C
104      READ(5,150) (TITULR(I), I=1,20), ND
105      150 FORMAT(20A2, I3)
106      READ(5,151) (RM(K), K=1, nanos)
107      151 FORMAT(12(A3, 1X))
108      DO 152 L=1, ND
1  109      READ(5,120) ID(L), JD(L)
1  110      READ(5,157) (HDC(L,K), K=1, nanos)
1  111      157 FORMAT(10F7.2)
1  112      152 CONTINUE
113 C
114 C      LECTURA DE MALLAS DE RIO
115 C
116      READ(5,165) (TITULR(I), I=1,20), NOR
117      165 FORMAT(20A2, I3)
118      IF(NOR.EQ.0) GO TO 165

```

```

D Line# 1      7      Microsoft FORTRAN77 V3.20 02/84
119      READ(5,170) (IR(K),JR(K),RD(IR(K),JR(K)),RH(IR(K),JR(K)),R(IR(K),
120      1JR(K)),K=1,NDR)
121      170 FORMAT(2I3,2F7.2,E10.5)
122      195 CONTINUE
123 C
124 C LECTURA DE MALLAS CON VERTIENTES
125 C
126      READ(5,165) (TITULR(I),I=1,20),NVER
127      IF(NVER.EQ.0) GO TO 215
128      READ(5,200) (IV(K),JV(K),RDV(IV(K),JV(K)),K=1,NVER)
129      200 FORMAT(2I3,F7.2)
130      215 CONTINUE
131 C
132 C LECTURA DE LA RECARGA NETA POR MALLA
133 C
134 C      DO 217 L=1,nanos
135 C 217 READ(6,218) K,((D(I,J,K),I=1,ND),J=1,NR)
136 C 218 FORMAT(I6,/, (7E11.5))
137 C
138 C LECTURA DE LA MATRIZ ICAT
139 C
140      READ(7,219) ((ICAT(I,J),I=1,NC),J=1,NR)
141      219 FORMAT(24I3)
142 C
143      TIME=0.0
144      COEF=1.37618
145      NSTEPS=12
146 C*****
147 C FIN ENTRADA DE DATOS
148 C
149 C EMPIEZA LA SIMULACION
150 C*****
151      DO 360 I=1,NC
152      DO 360 J=1,NR
153      360 HO(I,J)=H(I,J)
154      KK=0
155      3000 DELTA=0.1
156      KK=KK+1
157      IF(KK.GT.nanos) GO TO 5000
158 C
159 C LECTURA DE LA RECARGA NETA POR MALLA
160 C
161      READ(6,218) K,((D(I,J),I=1,ND),J=1,NR)
162      218 FORMAT(I6,/, (7E11.5))
163 C
164 C CAMBIO COTA PIEZOMETRICA EN MALLAS CON ENTRADAS LATERALES
165 C
166      do 300 l=1,nb
167      i=ib(l)
168      j=jb(l)
169      300 h(i,j)=hb(l,kk)
170 C
171 C PLANTEAMIENTO Y RESOLUCION DEL SISTEMA DE ECUACIONES
172 C DE DIFERENCIAS FINITAS
173 C
174      DO 400 ISTEP=1,NSTEPS
175      TIME=TIME+DELTA
176 C
177 C PREDICCION DE NIVELES PARA EL

```

```

D Line# 1      7
1 179 C SIGUIENTE INTERVALO DE TIEMPO
1 179 C
1 180      DO 410 I=1,NR
2 181      DO 410 J=1,NR
3 182      D=H(I,J)-H0(I,J)
3 183      HD(I,J)=H(I,J)
3 184      F=1.0
3 185      IF(DL(I,J).EQ.0.0) GO TO 420
3 186      IF(ISTEP.GT.2) F=D/DL(I,J)
3 187      IF(F.GT.5.0) F=5.0
3 188      IF(F.LT.0.0) F=0.0
3 189      420 DL(I,J)=D
3 190      410 H(I,J)=H(I,J)+D*F
1 191 C
1 192 C CALCULO DEL COEF. DE SALIDA DESDE VERTIENTES
1 193 C
1 194      IF(NVER.EQ.0) GO TO 415
1 195      DO 413 L=1,NVER
2 196      I=IV(L)
2 197      J=JV(L)
2 198      413 RV(I,J)=SF1(I,J)/DELTA
1 199      415 CONTINUE
1 200 C
1 201 C REFINAMIENTO DE LAS ESTIMACIONES
1 202 C POR EL METODO IADI
1 203 C
1 204      ITER=0
1 205      430 E=0.0
1 206      emax=0.0
1 207      imax=0
1 208      jmax=0
1 209      ITER=ITER+1
1 210      write(*,455) iter,time
1 211      455 format(/,5x,'ITERACION NUMERO=',i5,5x,'TIEMPO=',f6.2,2x,'MESES')
1 212      IF(ITER.LE.40) GO TO 440
1 213      WRITE(*,450) TIME
1 214      450 FORMAT(///,5x,'SE HA EXCEDIDO EL NUMERO MAXIMO DE ITERACIONES,40',
1 215      */,4x,'TIEMPO=',F6.2)
1 216      STOP
1 217      440 CONTINUE
1 218 C
1 219 C CALCULOS POR COLUMNAS
1 220 C
1 221 C
1 222      DO 460 II=1,NR
2 223      I=II
2 224      IF(MOD(ISTEP+ITER,2).EQ.1) I=NR-I+1
2 225      DO 470 J=1,NR
3 226      IF(ICAT(I,J).EQ.1) GO TO 465
3 227 C
3 228 C CALCULO DE LOS VECTORES B Y G
3 229 C
3 230 C EFECTO DEL RIO
3 231 C
3 232      IF(H(I,J).LT.RD(I,J)) GO TO 480
3 233      RE=RH(I,J)*R(I,J)
3 234      RE=1.0
3 235      GO TO 420
3 236      480 RE=RD(I,J)-H(I,J)

```

```

D Line# 1      7
3 237      RB=0.0
3 238      490 DD=HO(I,J)*SF1(I,J)/DELTA-Q(I,J)+RE
3 239      BB=SF1(I,J)/DELTA+R(I,J)*RB
3 240 C
3 241 C EFECTO DE LAS VERTIENTES
3 242 C
3 243      IF(H(I,J).LT.RDV(I,J)) GO TO 500
3 244      DD=DD+RDV(I,J)*RV(I,J)
3 245      BB=BB+RV(I,J)
3 246      500 CONTINUE
3 247      AA=0.0
3 248      CC=0.0
3 249      IF(J-1) 510,520,510
3 250      510 AA=-T(I,J-1,1)
3 251      BB=BB+T(I,J-1,1)
3 252      520 IF(J-NR) 530,540,530
3 253      530 CC=-T(I,J,1)
3 254      BB=BB+T(I,J,1)
3 255      540 IF(I-1) 550,560,550
3 256      550 BB=BB+T(I-1,J,2)
3 257      DD=DD+H(I-1,J)*T(I-1,J,2)
3 258      560 IF(I-NC) 570,580,570
3 259      570 BB=BB+T(I,J,2)
3 260      DD=DD+H(I+1,J)*T(I,J,2)
3 261      580 IF(J-1) 590,600,590
3 262      600 B(J)=CC/BB
3 263      G(J)=DD/BB
3 264      GO TO 470
3 265      590 W=BB-AA*B(J-1)
3 266      B(J)=CC/W
3 267      G(J)=(DD-AA*G(J-1))/W
3 268      GO TO 470
3 269      465 B(J)=0.0
3 270      G(J)=0.0
3 271      470 CONTINUE
2 272 C
2 273 C REESTIMACION DE NIVELES
2 274 C
2 275      e1=abs(h(i,nr)-g(nr))
2 276      if(e1.gt.emax) then
2 277          imax=i
2 278          jmax=nr
2 279          emax=e1
2 280      endif
2 281      E=E+ABS(H(I,NR)-G(NR))
2 282      H(I,NR)=G(NR)
2 283      N=NR-1
2 284      610 HA=G(N)-B(N)*H(I,N+1)
2 285      IF(HA.LT.0.0) HA=0.0
2 286      e1=abs(ha-h(i,n))
2 287      if(e1.gt.emax) then
2 288          imax=i
2 289          jmax=n
2 290          emax=e1
2 291      endif
2 292      E=E+ABS(HA-H(I,N))
2 293      H(I,N)=HA
2 294      N=N-1
2 295      IF(N) 460,460,610

```

```

D Line# 1      7
2 296 460 CONTINUE
1 297 C
1 298 C CALCULOS POR FILAS
1 299 C
1 300      DO 620 JJ=1,NR
2 301      J=JJ
2 302      IF(MOD(ISTEP+ITER,2).EQ.1) J=NR-J+1
2 303      DO 630 I=1,NC
3 304      IF(ICAT(I,J).EQ.1) GO TO 625
3 305 C
3 306 C EFECTO DEL RIO
3 307 C
3 308      IF(H(I,J).LT.RD(I,J)) GO TO 640
3 309      RE=RH(I,J)*R(I,J)
3 310      RB=1.0
3 311      GO TO 650
3 312 640 RE=(RH(I,J)-RD(I,J))*R(I,J)
3 313      RB=0.0
3 314 650 DD=HO(I,J)*SF1(I,J)/DELTA-Q(I,J)+RE
3 315      BB=SF1(I,J)/DELTA+R(I,J)*RB
3 316 C
3 317 C EFECTO DE LAS VERTIENTES
3 318 C
3 319      IF(H(I,J).LT.RDV(I,J)) GO TO 660
3 320      DD=DD+RDV(I,J)*RV(I,J)
3 321      BB=BB+RV(I,J)
3 322 660 CONTINUE
3 323      AA=0.0
3 324      CC=0.0
3 325      IF(J-1) 670,680,670
3 326 670 BB=BB+T(I,J-1,1)
3 327      DD=DD+H(I,J-1)*T(I,J-1,1)
3 328 680 IF(J-NR)690,700,690
3 329 690 DD=DD+H(I,J+1)*T(I,J,1)
3 330      BB=BB+T(I,J,1)
3 331 700 IF(I-1) 710,720,710
3 332 710 BB=BB+T(I-1,J,2)
3 333      AA=-T(I-1,J,2)
3 334 720 IF(I-NC)730,740,730
3 335 730 BB=BB+T(I,J,2)
3 336      CC=-T(I,J,2)
3 337 740 IF(I-1) 750,760,750
3 338 760 B(I)=CC/BB
3 339      G(I)=DD/BB
3 340      GO TO 630
3 341 750 W=BB-AA*B(I-1)
3 342      B(I)=CC/W
3 343      G(I)=(DD-AA*B(I-1))/W
3 344      GO TO 620
3 345 625 B(I)=0.0
3 346      G(I)=0.0
3 347 630 CONTINUE
2 348 C
2 349 C REESTIMACION DE NIVELES
2 350 C
2 351      ei=abs(h(nc,j)-g(nc))
2 352      if(ei.gt.emax) then
2 353          imax=nc
2 354          jmax=j

```

```

D Line# 1      7
2 355      emax=e1
2 356      endif
2 357      E=E+ABS(H(NC,J)-G(NC))
2 358      H(NC,J)=G(NC)
2 359      N=NC-1
2 360 770 HA=G(N)-B(N)*H(N+1,J)
2 361      IF(HA.LT.0.0) HA=0.0
2 362      e1=abs(h(n,j)-ha)
2 363      if(e1.gt.emax) then
2 364          imax=n
2 365          jmax=j
2 366          emax=e1
2 367      endif
2 368      E=E+ABS(H(N,J)-HA)
2 369      H(N,J)=HA
2 370      N=N-1
2 371      IF(N) 620,620,770
2 372 620 CONTINUE
1 373      write(*,621) emax,imax,jmax
1 374 621 format(' ',5x,'ERROR MAXIMO=',f6.2,5x,'MALLA I=',i3,2x,'J=',i3)
1 375      IF(E.GT.ERROR) GO TO 430
1 376 C*****
1 377 C
1 378 C BALANCE MASICO MENSUAL
1 379 C
1 380 C*****
1 381 C
1 382 C CAMBIOS EN EL ALMACENAMIENTO
1 383 C
1 384      DO 780 I=1,NC
2 385      DO 780 J=1,NR
3 386      IF(ICAT(I,J).NE.4) GO TO 780
3 387      ST(KK)=ST(KK)+SF1(I,J)*(H(I,J)-HO(I,J))
3 388 780 CONTINUE
1 389 C
1 390 C BALANCE EN LAS MALLAS EXTERIORES
1 391 C
1 392      DO 790 K=1,NMEN
2 393      I=IM(K)
2 394      J=JM(K)
2 395 790 QM(K)=QM(K)+T(I,J,1)*(H(I,J)-H(I,J+1))*DELTA
1 396      L1=NMEN+1
1 397      DO 800 K=L1,NMEE
2 398      I=IM(K)
2 399      J=JM(K)
2 400 800 QM(K)=QM(K)+ T(I-1,J,2)*(H(I,J)-H(I-1,J))*DELTA
1 401      L1=NMEE+1
1 402      DO 810 K=L1,NMES
2 403      I=IM(K)
2 404      J=JM(K)
2 405 810 QM(K)=QM(K)+T(I,J-1,1)*(H(I,J)-H(I,J-1))*DELTA
1 406      L1=NMES+1
1 407      DO 820 K=L1,NMEW
2 408      I=IM(K)
2 409      J=JM(K)
2 410 820 QM(K)=QM(K)+T(I,J,2)*(H(I,J)-H(I+1,J))*DELTA
1 411 C
1 412 C BALANCE EN LAS MALLAS DE RIO
1 413 C

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0 Line# 1      7      Microsoft FORTRAN77 V3.20 02/84
1 414      IF (NQR.EQ.0) GO TO 840
1 415      DO 830 K=1,NQR
2 416      I=IR(K)
2 417      J=JR(K)
2 418      PAL=H(I,J)
2 419      IF (H(I,J).LT.RD(I,J)) PAL=RD(I,J)
2 420      930 QR(K)=QR(K)+ R(I,J)*(RH(I,J)-PAL)*DELTA
1 421      840 CONTINUE
1 422 C
1 423 C BALANCE EN LAS MALLAS CON VERTIENTES
1 424 C
1 425      IF (NVER.EQ.0) GO TO 860
1 426      DO 850 K=1,NVER
2 427      I=IV(K)
2 428      J=JV(K)
2 429      IF (H(I,J).LT.RDV(I,J)) GO TO 850
2 430      QV(K)=QV(K)+RV(I,J)*(H(I,J)-RDV(I,J))*DELTA
2 431      850 CONTINUE
1 432      860 CONTINUE
1 433      DELTA=DELTA*COEF
1 434      400 CONTINUE
435 C
436 C ALMACENAMIENTO DE DATOS PARA DIBUJOS EN MALLAS ESCOGIDAS
437 C
438      WRITE(8,870) TIME
439      870 FORMAT(' ',5X,'DATOS PARA CONTRASTE PIEZOMETRICO',T41,F6.2)
440      WRITE(8,880) (H(ID(L),JD(L)),L=1,ND)
441      880 FORMAT(10F7.2)
442 C
443 C ALMACENAMIENTO DE DATOS PARA MAPA DE DESCENSOS
444 C
445      IF (TIME.GT.12.5) GO TO 890
446      WRITE(8,900) TIME
447      900 FORMAT(' ',5X,'DATOS PARA MAPA DESCENSOS',2X,F6.2)
448      WRITE(8,910) ((I,J,H(I,J),HO(I,J),I=1,NO),J=1,NR)
449      910 FORMAT(2I3,2F7.2)
450      890 IF (KK.EQ.nanos) WRITE(8,915) ((I,J,H(I,J),I=1,NO),J=1,NR)
451      915 FORMAT(2I3,F7.2)
452 C
453 C ALMACENAMIENTO DATOS PARA BALANCE MASICO
454 C
455      WRITE(8,920) ST(KK)
456      920 FORMAT(' ',5X,'DATOS PARA BALANCE MASICO',T41,E10.4)
457      WRITE(8,930) KK, (QM(I),I=1,NMEW)
458      IF (NQR.EQ.0) GO TO 940
459      WRITE(8,930) KK, (QR(I),I=1,NQR)
460      940 IF (NVER.EQ.0) GO TO 950
461      WRITE(8,930) KK, (QV(I),I=1,NVER)
462      930 FORMAT(15,/, (8E10.4))
463      950 CONTINUE
464      DO 960 I=1,NMEW
1 465      960 QM(I)=0.0
466      IF (NQR.EQ.0) GO TO 970
467      DO 980 I=1,NQR
1 468      980 QR(I)=0.0
469      970 IF (NVER.EQ.0) GO TO 990
470      DO 1000 I=1,NVER
1 471      1000 QV(I)=0.0
472      990 CONTINUE

```

```

D Line# 1      7
472 C
474 C FINALIZA LA SIMULACION DE UN AÑO
475 C
476          IF(KK.GE.nanos) GO TO 5000
477          GO TO 3000
478 5000 CONTINUE
479          END

```

Name	Type	Offset	P	Class
AA	REAL*8	36014		
ABS				INTRINSIC
B	REAL*8	2		
BB	REAL*8	36006		
CC	REAL*8	36022		
COEF	REAL*8	35674		
D	REAL*8	35786		
DD	REAL*8	35998		
DELTA	REAL*8	35098		
DL	REAL*8	0		LARGE
E	REAL*8	35810		
E1	REAL	36038		
EMAX	REAL	35818		
ERROR	REAL*8	35312		
F	REAL*8	35794		
G	REAL*8	322		
H	REAL*8	0		LARGE
HA	REAL*8	36046		
HB	REAL*8	10240		LARGE
HDD	REAL*8	642		
HO	REAL*8	0		LARGE
I	INTEGER*4	35232		
IB	INTEGER*4	15360		LARGE
ICAT	INTEGER*4	10240		LARGE
ID	INTEGER*4	12642		
II	INTEGER*4	35970		
IM	INTEGER*4	12762		
IMAX	INTEGER*4	35822		
IR	INTEGER*4	13962		
ISTEP	INTEGER*4	35770		
ITER	INTEGER*4	35006		
IV	INTEGER*4	14562		
J	INTEGER*4	35352		
JB	INTEGER*4	0		LARGE
JD	INTEGER*4	18162		
JJ	INTEGER*4	36054		
JM	INTEGER*4	18282		
JMAX	INTEGER*4	35826		
JR	INTEGER*4	19482		
JV	INTEGER*4	20082		
K	INTEGER*4	35356		
KK	INTEGER*4	35694		
L	INTEGER*4	35344		
L1	INTEGER*4	36180		
LG	INTEGER*4	35900		
MOD				INTRINSIC
N	INTEGER*4	36040		
NANOS	INTEGER*4	35810		
NB	INTEGER*4	35410		

C Line# 1 7

Microsoft FORTRAN77 V3.00 02/84

NC	INTEGER*4	35304	
ND	INTEGER*4	35516	
NDA	INTEGER*4	35340	
NMEE	INTEGER*4	35432	
NKEN	INTEGER*4	35428	
NMES	INTEGER*4	35436	
NMEW	INTEGER*4	35440	
NOR	INTEGER*4	35554	
NR	INTEGER*4	35308	
NSP	INTEGER*4	23582	
NSTEPS	INTEGER*4	35682	
NVER	INTEGER*4	35586	
PAL	REAL*8	36158	
Q	REAL*8	0	LARGE
QM	REAL*8	23762	
QR	REAL*8	26162	
QV	REAL*8	27362	
R	REAL*8	0	LARGE
RB	REAL*8	35990	
RD	REAL*8	0	LARGE
RDV	REAL*8	20480	LARGE
RE	REAL*8	35982	
RH	REAL*8	10240	LARGE
RM	CHAR*3	34562	
RV	REAL*8	10240	LARGE
SF1	REAL*8	0	LARGE
ST	REAL*8	34712	
T	REAL*8	0	LARGE
TIME	REAL*8	35666	
TITULO	CHAR*2	35112	
TITULR	CHAR*2	35172	
W	REAL*8	36030	

480 .

Name	Type	Size	Class
PROCES			PROGRAM

Pass One No Errors Detected
 480 Source Lines

PROGRAMA BALANCE

```

D Line# 1      7      Microsoft FORTRAN77 V3.20 02/84
60 C          cion a nivel anual .
61 C          BMASICO.PRO=Contiene solo los resultados
62 C          del balance.
63 C          CONTPIEZ.PRO= Contiene los resultados a
64 C          nivel de periodo total y el
65 C          contraste piezometrico.
66 C
67 C
68      open(1,file='salida.pro',status='new')
69      open(2,file='bmasico.pro',status='new')
70      open(3,file='contpiez.pro',status='new')
71      OPEN(4,FILE='PROCESO.PRO')
72      OPEN(5,FILE='RESULT.PRO')
73      OPEN(6,FILE='BOMBAL.PRO')
74      OPEN(7,FILE='DICAT')
75 C
76 C LECTURA DE ANTECEDENTES GENERALES
77 C
78 C
79 C LECTURA TITULO
80 C
81      READ(4,10) (TITULO(I),I=1,30)
82      10 FORMAT(30A2)
83 C
84 C LECTURA DATOS GENERALES
85 C
86      READ(4,20) LO,NC,NR,ERROR,nanos
87      20 FORMAT(I4,2I3,F6.1,I4)
88      NDATA=NC*NR
89      DO 30 L=1,NDATA
1  90      30 READ(4,40) I,J
1  91      40 FORMAT(2I3)
92 C
93 C LECTURA DE MALLAS BORDES PERMEABLES
94 C
95      read(4,70) (titulr(i),i=1,20),nb
96      DO 45 L=1,nb
1  97      READ(4,60) ib(L),jb(L)
1  98      READ(4,100) (hb(L,K),K=1,nanos)
1  99      45 CONTINUE
100 C
101 C LECTURA DE MALLAS DE BORDE
102 C
103      READ(4,50) (TITULR(I),I=1,20),NMEN,NMEE,NMES,NMEW
104      50 FORMAT(20A2,4I3)
105      READ(4,60) (IM(K),JM(K),K=1,NMEW)
106      60 FORMAT(2I3)
107 C
108 C LECTURA MALLAS CONTRASTE PIEZOMETRICO
109 C
110      READ(4,70) (TITULR(I),I=1,20),ND
111      70 FORMAT(20A2,I3)
112      READ(4,80) (RM(K),K=1,nanos)
113      80 FORMAT(12(A3,1X))
114      DO 90 L=1,ND
1  115      READ(4,62) ID(L),JD(L),pozo(1)
1  116      62 format(2i3,a30)
1  117      90 READ(4,100) (HDD(L,K),K=1,nanos)
118      100 FORMAT(10F7.2)

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D Line# 1      7      Microsoft FORTRAN77 V3.20 02/84
119 C
120 C LECTURA DE MALLAS DE RIO
121 C
122     READ(4,70) (TITULR(I),I=1,20),NOR
123     IF(NOR.EQ.0) GO TO 110
124     READ(4,60) (IR(K),JR(K),K=1,NOR)
125 110 CONTINUE
126 C
127 C LECTURA DE MALLAS CON VERTIENTES
128 C
129     READ(4,70) (TITULR(I),I=1,20),NVER
130     IF(NVER.EQ.0) GO TO 120
131     READ(4,60) (IV(K),JV(K),K=1,NVER)
132 120 CONTINUE
133 C
134 C LECTURA DATOS SOBRE FUENTES DE BOMBEO E INFILTRACIONES
135 C
136     READ(6,210) NCL
137 210 FORMAT(I3)
138     DO 220 ICL=1,NCL
1 139 220 READ(6,230) (TITUBP(I,ICL),I=1,20),OTDT(ICL),(FD(K,ICL),K=1,danos)
140 230 FORMAT(20A2,E10.4,/, (12F5.2))
141 C
142 C LECTURA MATRIZ ICAT
143 C
144     READ(7,232) ((ICAT(I,J),I=1,NC),J=1,NR)
145 232 FORMAT(24I3)
146 C
147 C IMPRESION TITULO
148 C
149     write(1,2550) esc,char(108),char(6)
150     write(1,2550) esc,char(78),char(6)
151 2550 format(3a1)
152     write(1,2600) esc,char(71)
153     write(1,2600) esc,char(69)
154     write(1,2550) esc,char(66),char(1)
155     write(1,2600) esc,so
156     write(1,886) (titulo(i),i=1,30)
157 886 format(////////,72('*'),////////,10x,30a2,////////,72('*'))
158     write(1,2600) esc,char(72)
159     write(1,2600) esc,char(70)
160     write(1,2500) dc4
161 2500 format(a1)
162 2600 format(2a1)
163 C
164 C LECTURA MENSUAL DE LOS DATOS GENERADOS POR EL PROGRAMA PROCESO
165 C
166     KK=0
167 4000 KK=KK+1
168     READ(5,125) (TITULR(I),I=1,20),TIME
169 125 FORMAT(20A2,F6.2)
170     READ(5,130) (HD(L,KK),L=1,ND)
171 130 FORMAT(10F7.2)
172 C
173 C LECTURA DATOS PARA MAPA DE DESCENSOS
174 C
175     IF(TIME.GT.12.5) GO TO 140
176     READ(5,150) (TITULR(I),I=1,20)
177 150 FORMAT(20A2)

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D Line# 1      7      Microsoft FORTRAN77 V3.20 02/84
178      READ(5,160) ((I,J,HK1(I,J),HO(I,J),I=1,NO),J=1,NR)
179      160 FORMAT(2I3,2F7.2)
180      140 IF(KK.EQ.nanos) READ(5,165) ((I,J,HK2(I,J),I=1,NO),J=1,NR)
181      165 FORMAT(2I3,F7.2)
182 C
193 C LECTURA DATOS BALANCE MASICO
184 C
185      READ(5,170) (TITULR(I),I=1,20),ST(KK)
186      170 FORMAT(20A2,E10.4)
187      READ(5,180) K,(QM(I),I=1,NMEW)
188      180 FORMAT(I5,/, (8E10.4))
189      IF(NQR.EQ.0) GO TO 190
190      READ(5,180) K,(QR(I),I=1,NQR)
191      190 IF(NVER.EQ.0) GO TO 200
192      READ(5,180) K,(QV(I),I=1,NVER)
193      200 CONTINUE
194 C
195 C SALIDA DE DATOS MENSUALES
196 C
197 C
198      write(1,2700) ff
199      2700 format(a1,/, 'ALAMOS Y PERALTA Ingenieros Consultores Ltda.',/,
200      *45(' '),/)
201      write(1,2500) si
202      WRITE(1,880) TIME/12.
203      880 FORMAT(///,4X,'BALANCE MASICO EN LAS MALLAS EXTERIORES, I - J -
204      1 Q(M3)      NORTE-ESTE-SUR-OESTE',///,4X,'TIEMPO=',F6.1,1X,'ANOS')
205      L1=1
206      L2=NMEN
207      do 901 k=L1,L2
1 208      901      qmmesn(kk)=qmmesn(kk)+qm(k)
209      WRITE(1,891) (IM(K),JM(K),QM(K),K=L1,L2)
210      L1=L2+1
211      L2=NMEE
212      do 902 k=L1,L2
1 213      902      qmmese(kk)=qmmese(kk)+qm(k)
214      WRITE(1,891) (IM(K),JM(K),QM(K),K=L1,L2)
215      L1=L2+1
216      L2=NMES
217      do 903 k=L1,L2
1 218      903      qmmess(kk)=qmmess(kk)+qm(k)
219      WRITE(1,891) (IM(K),JM(K),QM(K),K=L1,L2)
220      L1=L2+1
221      L2=NMEW
222      do 904 k=L1,L2
1 223      904      qmmeso(kk)=qmmeso(kk)+qm(k)
224      WRITE(1,891) (IM(K),JM(K),QM(K),K=L1,L2)
225      DO 900 K=1,NMEW
1 226      QMT(K)=QMT(K)+ QM(K)
1 227      900 QMMES(KK)=QMMES(KK)+QM(K)
228      QMTT=QMTT+ QMMES(KK)
229      WRITE(1,911) QMMES(KK)
230      IF(NQR.EQ.0) GO TO 940
231      write(1,2500) char(18)
232      write(1,2700) ff
233      write(1,2500) si
234      WRITE(1,920) TIME/12.
235      920 FORMAT(///,4X,'BALANCE MASICO EN LAS MALLAS DE RIO, I-J - Q(M3
236      *)      ',///,4X,'TIEMPO=',F6.1,1X,'ANOS')

```

```

D Line# 1      7      Microsoft FORTRAN77 V3.20 02/84
237      WRITE(1,891) (IR(K),JR(K),OR(K),K=1,NOR)
238 C
239      DO 930 K=1,NOR
1 240      ORT(K)=ORT(K)+ OR(K)
1 241      930 ORMES(KK)=ORMES(KK)+OR(K)
242      ORTT=ORTT+ORMES(KK)
243      WRITE(1,911) ORMES(KK)
244      940 IF(NVER.EQ.0) GO TO 960
245      write(1,2500) char(18)
246      write(1,2700) ff
247      write(1,2500) si
248      WRITE(1,980) TIME/12.
249      980 FORMAT(///,4X,'BALANCE MASICO EN LAS MALLAS CON VERTIENTES, J - J
250      *- Q(M3) ',//,4X,'TIEMPO=',F6.1,1X,'ANOS')
251      WRITE(1,891) (IV(K),JV(K),QV(K),K=1,NVER)
252      DO 950 K=1,NVER
1 253      QVT(K)=QVT(K)+QV(K)
1 254      I=IV(K)
1 255      J=JV(K)
1 256      QH(I,J)=QV(K)
1 257      950 QVMES(KK)=QVMES(KK)+QV(K)
258      QVTT=QVTT+QVMES(KK)
259      WRITE(1,911) QVMES(KK)
260      IF(LD.GE.800) GO TO 965
261      CALL MAPA(TIME,NC,NR,ABC,DH,ICAT,100000,2)
262      GO TO 960
263      965 CALL MAPA(TIME,NC,NR,ABC,DH,ICAT,300000,2)
264      960 continue
265      write(1,2500) char(18)
266      write(1,2700) ff
267      write(1,2500) si
268      WRITE(1,971) ST(KK)
269      STT=STT+ST(KK)
270 C
271 C DE MOMENTO NO SE VA A IMPRIMIR LOS VALORES MENSUALES DE LA COTA
272 C PIEZOMETRICA.
273 C
274 C      WRITE(8,990) TIME
275 C 990 FORMAT('1',///,10X,'NIVELES PIEZOMETRICOS',10X,'TIEMPO=',F6.1,1X,'
276 C      *DIAS',//,115('='))
277 C      DO 1010 I=1,NC
278 C1010 WRITE(8,1020) I,(H(I,J),J=1,NR)
279 C1020 FORMAT('0',////,I5,4X,10F8.2,///,(9X,10F8.2,///))
280 C      CALL MAPA(TIME,NC,NR,ABC,H,ICAT,20,1)
281 C
282 C      MAPA CON DESCENSOS ENTRE EL PRINCIPIO Y FINAL DEL PRIMER MES
283 C
284      IF(TIME.GT.12.5) GO TO 1025
285 C
286 C ESCRITURA TITULO ARCHIVO CONTPIEZ.PRO
287 C
288      write(3,2550) esc,char(108),char(6)
289      write(3,2550) esc,char(78),char(6)
290      write(3,2700) ff
291      write(3,2600) esc,char(71)
292      write(3,2600) esc,char(69)
293      write(3,2550) esc,char(66),char(1)
294      write(3,2600) esc,so
295      write(3,886) (titulo(i),i=1,30)

```



```

D Line# 1      7      Microsoft FORTRAN77 V3.20 02/84
296      write(3,2600) esc,char(72)
297      write(3,2600) esc,char(70)
298      write(3,2500) dc4
299      CALL DESCEN(NC,NR,HK1,HO,ICAT,ABC,time)
300 1025 CONTINUE
301 C
302 C
303 C
304      DO 1030 K=1,NMEW
1 305 1030 QM(K)=0.0
306      IF(NQR.EQ.0) GO TO 1050
307      DO 1040 K=1,NQR
1 308 1040 QR(K)=0.0
309 1050 IF(NVER.EQ.0) GO TO 1070
310      DO 1060 K=1,NVER
1 311 1060 QV(K)=0.0
312 1070 CONTINUE
313 C
314 C FINALIZA LA SIMULACION DE UN MES
315 C
316      IF(KK.lt.nanos) GO TO 4000
317 C*****
318 C
319 C SALIDA DE DATOS ANUALES
320 C
321 C*****
322      write(3,2500) char(18)
323      write(3,2700) ff
324      write(3,1081)
325 1081 FORMAT(////////,20X,39('*')),///,21X,
326      *'BALANCE MASICO TOTAL PARA EL PERIODO',///,20X,39('*'))
327 C
328      write(3,2700) ff
329      write(3,2500) si
330      WRITE(3,881) TIME/12.
331 881 FORMAT(///,4X,'BALANCE MASICO EN LAS MALLAS EXTERIORES, I - J -
332 1 Q(M3) NORTE-ESTE-SUR-OESTE',//,4X,'PERIODO=',F6.1,1X,'ANOS')
333 891 FORMAT(///,(5(2X,213,F13.0,3X)))
334      L1=1
335      L2=NMEN
336      WRITE(3,891) (IM(K),JM(K),QMT(K),K=L1,L2)
337      L1=L2+1
338      L2=NMEE
339      WRITE(3,891) (IM(K),JM(K),QMT(K),K=L1,L2)
340      L1=L2+1
341      L2=NMES
342      WRITE(3,891) (IM(K),JM(K),QMT(K),K=L1,L2)
343      L1=L2+1
344      L2=NMEW
345      WRITE(3,891) (IM(K),JM(K),QMT(K),K=L1,L2)
346      WRITE(3,911) QMTT
347 911 FORMAT(///,20X,'TOTAL=',F14.2,2X,'M3')
348 921 FORMAT(///,4X,'BALANCE MASICO EN LAS MALLAS DE RIO, I-J - Q(M3
349 *)',//,4X,'PERIODO=',F6.1,1X,'ANOS')
350 981.FORMAT(///,4X,'BALANCE MASICO EN LAS MALLAS CON VERTIENTES, I - J
351 *- Q(M3)',//,4X,'PERIODO=',F6.1,1X,'ANOS')
352      IF(NQR.EQ.0) GO TO 1030
353      write(3,2500) char(18)
354      write(3,2700) ff

```

```

D Line# 1      7      Microsoft FORTRAN77 V3.20 02/84
355      write(3,2500) si
356      WRITE(3,921) TIME/12.
357      WRITE(3,891) (IR(K),JR(K),QRT(K),K=1,NQR)
358      WRITE(3,911) QRTT
359 1090 IF(NVER.EQ.0) GO TO 1100
360      DO 1095 K=1,NVER
1 361      I=IV(K)
1 362      J=JV(K)
1 363 1095 QH(I,J)=QVT(K)
364      write(3,2500) char(18)
365      write(3,2700) ff
366      write(3,2500) si
367      WRITE(3,981) TIME/12.
368      WRITE(3,891) (IV(K),JV(K),QVT(K),K=1,NVER)
369      WRITE(3,911) QVTT
370      CALL MAPA(TIME,NC,NR,ABC,QH,ICAT,1000000,7)
371 1100 continue
372      write(3,2500) char(18)
373      write(3,2700) ff
374      write(3,2500) si
375      WRITE(3,971) STT
376 971 FORMAT(////////,125('*'),////,10X,'TOTAL CAMBIOS ALMACENAMIENTO
377      *',F16.2,2X,'M3',////,125('*'))
378 C
379      DO 1110 K=1,NMEW
1 380 1110 QMT(K)=0.0
381      IF(NQR.EQ.0) GO TO 1120
382      DO 1130 K=1,NQR
1 383 1130 QRT(K)=0.0
384 1120 IF(NVER.EQ.0) GO TO 1140
385      DO 1150 K=1,NVER
1 386 1150 QVT(K)=0.0
387 1140 CONTINUE
388 C*****
389 C
390 C RESUMEN DEL BALANCE MASICO
391 C
392 C*****
393      write(2,2500) char(18)
394      write(2,2500) sc
395      write(2,2700) ff
396      write(2,1190) (titulo(i),i=1,30)
397 1190 format(/,20x,30a2)
398      WRITE(2,1201)
399 1201 FORMAT(////,25X,27('*'),///,28X,'RESUMEN BALANCE MASICO',///,
400      *25X,27('*'))
401      write(2,2500) dc4
402      write(2,2500) si
403      write(2,1202) 1f,(RM(K),K=1,nanos)
404 1202 format(54X,'VALORES EN MILLONES M3',////,a1,
405      *2X,'AND',T30,50(4X,A3),4X,'TOTAL PERIODO',/)
406      DO 1210 K=1,nanos
1 407      QMMES(K)=QMMES(K)/1000000
1 408      qmmesn(k)=qmmesn(k)/1000000
1 409      qmmese(k)=qmmese(k)/1000000
1 410      qmmess(k)=qmmess(k)/1000000
1 411      qmmeso(k)=qmmeso(k)/1000000
1 412      QRMES(K)=QRMES(K)/1000000
1 413      QVMES(K)=-QVMES(K)/1000000

```

```

D Line# 1      7
1 414      ST(K)=ST(K)/1000000
1 415 1210 QBAL(K)=QMMS(K)+QRMES(K)+QVMES(K)-ST(K)
416      do 1211 k=1,nanos
1 417      qmtn=qmtn+qmmesn(k)
1 418      qmte=qmte+qmmese(k)
1 419      qmts=qmts+qmmess(k)
1 420      qmto=qmto+qmmeso(k)
1 421 1211 continue
422      QMTT=QMTT/1000000
423      QRTT=QRTT/1000000
424      QVTT=-QVTT/1000000
425      STT=STT/1000000
426      WRITE(2,1222) (qmmesn(K),K=1,nanos),QMTn
427 1222 FORMAT(/,2X,'MALLAS EXTERIORES NORTE',T30,50F7.2,3X,F8.2)
428      WRITE(2,1223) (qmmese(K),K=1,nanos),QMTe
429 1223 FORMAT(/,2X,'MALLAS EXTERIORES ESTE',T30,50F7.2,3X,F8.2)
430      WRITE(2,1224) (qmmess(K),K=1,nanos),QMTs
431 1224 FORMAT(/,2X,'MALLAS EXTERIORES SUR',T30,50F7.2,3X,F8.2)
432      WRITE(2,1225) (qmmeso(K),K=1,nanos),QMTo
433 1225 FORMAT(/,2X,'MALLAS EXTERIORES OESTE',T30,50F7.2,3X,F8.2)
434      WRITE(2,1221) (QMMS(K),K=1,nanos),QMTT
435 1221 FORMAT(/,2X,'MALLAS EXTERIORES TOTAL',T30,50F7.2,3X,F8.2)
436      WRITE(2,1231) (QRMES(K),K=1,nanos),QRTT
437 1231 FORMAT(/,2X,'RIO',T30,50F7.2,3X,F8.2)
438      WRITE(2,1241) (QVMES(K),K=1,nanos),QVTT
439 1241 FORMAT(/,2X,'VERTIENTES',T30,50F7.2,3X,F8.2)
440      WRITE(2,1246) (ST(K),K=1,nanos),STT
441 1246 FORMAT(/,2X,'ALMACENAMIENTO',T30,50F7.2,3X,F8.2)
442      DO 1250 ICL=1,NCL
1 443      QTOT(ICL)=QTOT(ICL)/1000
1 444      fdt=0.0
1 445      DO 1260 K=1,nanos
2 446      fdt=fdt+fd(k,icl)
2 447      QX(K)=QTOT(ICL)*FD(K,ICL)
2 448 1260 QBAL(K)=QBAL(K)+QX(K)
1 449 1250 WRITE(2,1271) (TITUBP(I,ICL),I=1,20),(QX(K),K=1,nanos),
1 450      *QTOT(ICL)*fdt
451 1271 FORMAT(/,2X,20A2,T30,50F7.2,3X,F8.2)
452      QBALT=0.0
453      DO 1280 K=1,nanos
1 454 1280 QBALT=QBALT + QBAL(K)
455      WRITE(2,1291) (QBAL(K),K=1,nanos),QBALT
456 1291 FORMAT(/,2X,'BALANCE TOTAL',T30,50F7.2,3X,F8.2,/,2X,
457      *'VALORES POSITIVOS INDICAN ENTRADAS AL ACUIFERO')
458      QMTT=0.0
459      QRTT=0.0
460      STT=0.0
461      QVTT=0.0
462      qmtn=0.0
463      qmte=0.0
464      qmts=0.0
465      qmto=0.0
466 C
467 C
468 C DIBUJOS CONTRASTE PIEZOMETRICO
469 C
470      CALL DIBUJO(ABC,nanos,ID,JD,ND,pozo,HD,HDO,RM)
471 C
472 C MAPA DE DESCENDOS DE NIVELES

```

D Line# 1 7

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473 C

474 CALL DESCEN(NC,NR,HK2,HD,ICAT,ABC,time)

475 STOP

476 END

Name	Type	Offset	P	Class
ABC	CHAR*1	0		LARGE
CHAR				INTRINSIC
DC4	CHAR*1	7		
ERROR	REAL	88		
ESC	CHAR*1	2		
FD	REAL	8000		LARGE
FDT	REAL	2566		
FF	CHAR*1	3		
HB	REAL	0		LARGE
HD	REAL	0		LARGE
HDO	REAL	6000		LARGE
HK1	REAL	12000		LARGE
HK2	REAL	17120		LARGE
HO	REAL	22240		LARGE
I	INTEGER*4	8		
IB	INTEGER*4	120		LARGE
ICAT	INTEGER*4	280		LARGE
ICL	INTEGER*4	404		
ID	INTEGER*4	0		LARGE
IM	INTEGER*4	27360		LARGE
IR	INTEGER*4	120		LARGE
IV	INTEGER*4	720		LARGE
J	INTEGER*4	124		
JB	INTEGER*4	4320		LARGE
JD	INTEGER*4	0		LARGE
JM	INTEGER*4	28560		LARGE
JR	INTEGER*4	29760		LARGE
JV	INTEGER*4	30360		LARGE
K	INTEGER*4	196		
KK	INTEGER*4	654		
L	INTEGER*4	116		
L1	INTEGER*4	1040		
L2	INTEGER*4	1044		
LF	CHAR*1	6		
LO	INTEGER*4	76		
NANQS	INTEGER*4	92		
NB	INTEGER*4	188		
NC	INTEGER*4	80		
NCL	INTEGER*4	396		
ND	INTEGER*4	288		
NDATA	INTEGER*4	112		
NMEE	INTEGER*4	204		
NMEN	INTEGER*4	200		
NMES	INTEGER*4	208		
NMEW	INTEGER*4	212		
NOR	INTEGER*4	388		
NR	INTEGER*4	84		
NVER	INTEGER*4	392		
POZO	CHAR*30	33960		LARGE
QBAL	REAL	0		LARGE
QBALT	REAL	2606		
QH	REAL	200		LARGE

D Line# 1 7

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QM	REAL	0	LARGE
QMMES	REAL	1200	LARGE
QMMESE	REAL	0	LARGE
QMMESN	REAL	1400	LARGE
QMMESO	REAL	1800	LARGE
QMMESS	REAL	1600	LARGE
QMT	REAL	0	LARGE
QMTTE	REAL	2176	
QMTN	REAL	2172	
QMTD	REAL	2184	
QMTS	REAL	2180	
QMTT	REAL	1068	
QR	REAL	1200	LARGE
QRMES	REAL	0	LARGE
QRT	REAL	0	LARGE
QRTT	REAL	1176	
QTOT	REAL	600	LARGE
QV	REAL	1800	LARGE
QVMES	REAL	0	LARGE
QVT	REAL	0	LARGE
QVTT	REAL	1288	
QX	REAL	3600	LARGE
RM	CHAR*3	3800	LARGE
SI	CHAR*1	5	
SO	CHAR*1	4	
ST	REAL	5400	LARGE
STT	REAL	1292	
TIME	REAL	658	
TITUBP	CHAR*2	5600	LARGE
TITULO	CHAR*2	6460	LARGE
TITULR	CHAR*2	6400	LARGE

```
477 C*****
478 C
479 C  FIN DEL PROGRAMA PRINCIPAL.COMIENZAN LAS SUBROUTINAS
480 C
481 C*****
482 C      SUBROUTINE DIBUJO(ABC,nanos,ID,JD,ND,pozo,HD,HDO,RM)
483 C
484 C      DIBUJOS EN NUDOS ESCOGIDOS PARA EL CONTRASTE PIEZOMETRICO
485 C
486 C      INCRE=20 , SI HAY 20 ESPACIOS ENTRE ENTEROS CONSECUTIVOS
487 C      INCRE= 5 , SI HAY 5 ESPACIOS ENTRE ENTEROS CONSECUTIVOS
488 C
489 C
490 C      DIMENSION HD(30,50),HDO(30,50),ID(30),JD(30)
491 C      CHARACTER ABC(30),ADIB(233)
492 C      CHARACTER*3 RM(50)
493 C      character*30 pozo(30)
494 C      character ff,so,dc2,si
495 C      DATA INCRE/5/
496 C      ff=char(12)
497 C      so=char(14)
498 C      si=char(15)
499 C      dc2=char(18)
500 C      write(3,2500) dc2
501 C      2500 format(a1)
502 C      write(3,2500) so
```

```

D Line# 1      7      Microsoft FORTRAN77 V3.20 02/84
503      write(3,2700) ff
504 2700 format(a1,/, 'ALAMOS Y PERALTA Ingenieros Consultores Ltda.',/,
505      *45(' '),/)
506      WRITE(3,11)
507      -11 FORMAT(////////,25X,23('*')),///,26X,'CONTRASTE PIEZOMETRICO',///
508      *,25X,23('*'))
509      write(3,2500) char(20)
510      write(3,2500) char(15)
511      DO 20 L=1,ND
1 512      write(3,2500) char(18)
1 513      write(3,2700) ff
1 514      write(3,2500) si
1 515      WRITE(3,30) ID(L),JD(L),pozo(1)
1 516 30 FORMAT(///,10X,'MALLA',2X,2I3,5X,a30,/,220('='),/)
1 517      IBOT=10000000
1 518      DO 40 K=1,nanos
2 519      IHD=HD(L,K)
2 520      IF(IHD.LT.IBOT) IBOT=IHD
2 521      if(hdo(1,k).eq.0.0) go to 40
2 522      IHDO=HDO(L,K)
2 523      IF(IHDO.LT.IBOT) IBOT=IHDO
2 524 40 CONTINUE
1 525      ITOP=IBOT+200/INCRE-1
1 526      WRITE(3,50) (I,I=IBOT,ITOP,2)
1 527 50 FORMAT(//,'NIVEL',5X,'NIVEL',6X,20(I4,6X),3X,'AND',/, 'MEDIDO',
1 528      *4X,'SIMULADO',/)
1 529      DO 60 K=1,nanos
2 530      DO 70 I=1,200
3 531      ADIB(I)=ABC(29)
3 532      J=I-1
3 533      incre1=incre*2
3 534 70 IF(J/INCRE1.EQ.J/FLOAT(INCRE1)) ADIB(I)=ABC(9)
2 535      if(hdo(1,k).eq.0.0) go to 105
2 536      LL1=INCRE*(HDO(L,K)-IBOT)+1.5
2 537      IF(LL1.le.195) then
2 538          ADIB(LL1)=ABC(15)
2 539      else
2 540          ADIB(195)=ABC(5)
2 541      endif
2 542 105 continue
? 543      LL=INCRE*(HD(L,K)-IBOT)+1.5
2 544      IF(LL.le.195) then
2 545          ADIB(LL)=ABC(28)
2 546      else
2 547          ADIB(195)=ABC(5)
2 548      endif
2 549      IF(LL.EQ.LL1) ADIB(LL)=ABC(1)
2 550      WRITE(3,110) HDO(L,K),HD(L,K), (ADIB(I),I=1,195),RM(K)
2 551 110 FORMAT(F7.2,3X,F7.2,6X,195A1,5X,A3)
2 552 60 continue
1 553      WRITE(3,121) char(10)
1 554 121 FORMAT(a1,///,2X,'o=NIVEL MEDIDO',t50,'*=NIVEL SIMULADO',
1 555      *,2X,'A=NIVELES MEDIDO Y SIMULADO COINCIDEN',t50,
1 556      *'E=VALOR FUERA DEL RANGO DEL DIBUJO')
1 557 20 CONTINUE
558      RETURN
559      END

```

D Line# 1 7

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Name	Type	Offset	P	Class
ABC	CHAR*1	0	*	
ADIB	CHAR*1	0		LARGE
CHAR				INTRINSIC
DC2	CHAR*1	2735		
FF	CHAR*1	2732		
FLOAT				INTRINSIC
HD	REAL	24	*	
HDO	REAL	28	*	
I	INTEGER*4	2966		
IBOT	INTEGER*4	2942		
ID	INTEGER*4	8	*	
IHD	INTEGER*4	2954		
IHDO	INTEGER*4	2958		
INCRE	INTEGER*4	2728		
INCRE1	INTEGER*4	3062		
ITOP	INTEGER*4	2962		
J	INTEGER*4	3058		
JD	INTEGER*4	12	*	
K	INTEGER*4	2946		
L	INTEGER*4	2886		
LL	INTEGER*4	3070		
LL1	INTEGER*4	3066		
NANOS	INTEGER*4	4	*	
ND	INTEGER*4	16	*	
POZO	CHAR*30	20	*	
RM	CHAR*3	32	*	
SI	CHAR*1	2734		
SO	CHAR*1	2733		

```
560 C*****
```

```
561 SUBROUTINE MAPA(TIME,NC,NR,ABC,QH,ICAT,N,ITIPO)
```

```
562 C
```

```
563 C ESTÁ SUBROUTINA DIBUJA DIFERENTES MAPAS SIMBOLICOS DE ACUERDO AL
```

```
564 C VALOR DE LA VARIABLE ITIPO.
```

```
565 C ITIPO=1 MAPA PIEZOMETRICO
```

```
566 C ITIPO=2 MAPA CON VOLUMENES QUE SALEN POR VERTIENTES
```

```
567 C ITIPO=3 MAPA TRANSMISIVIDAD DIR.-I
```

```
568 C ITIPO=4 MAPA TRANSMISIVIDAD DIR.-J
```

```
569 C ITIPO=5 MAPA COEF.ALMACENAMIENTO
```

```
570 C
```

```
571 REAL QH(40,32)
```

```
572 CHARACTER ABC(30),MAPAA(60)
```

```
573 CHARACTER*4 TITU(4,5)
```

```
574 INTEGER NUM(27),ICAT(40,32)
```

```
575 character ff,lf,si,so,dc4,dc2
```

```
576 ff=char(12)
```

```
577 lf=char(10)
```

```
578 si=char(15)
```

```
579 so=char(14)
```

```
580 dc4=char(20)
```

```
581 dc2=char(18)
```

```
582 C
```

```
583 DATA TITU/'PIEZ','OMET','RICO',' ','VERT','IENT','ES',' ','
```

```
584 *'TRAN','SMIS','IVID','AD-I','TRAN','SMIS','IVID','AD-J','ALMA','
```

```
585 *'CENA','MIEN','TO %'/'
```

Line# 1 7

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```

586 C
587 C  CALCULO DE LAS CATEGORIAS NUM(K)
588 C
589     ntipo=0
590     if(itipo.eq.7) then
591         ntipo=1
592         itipo=2
593     endif
594     ITOP=0
595     IBOT=1000000
596     DO 10 I=1,NC
597     DO 10 J=1,NR
598     IF(ITIPO.EQ.5) QH(I,J)=QH(I,J)*100
599     IF(ICAT(I,J).NE.4) GO TO 10
600     IF(QH(I,J).LE.0.0) GO TO 10
601     IHD=QH(I,J)
602     IF(IHD.LT.IBOT) IBOT=IHD
603     IF(IHD.GT.ITOP) ITOP=IHD
604 10  CONTINUE
605     IF(ITOP.LE.0) GO TO 20
606     IBOT=IBOT/N
607     IBOT=N*IBOT
608     ITOP=ITOP/N
609     ITOP=N*(ITOP+1)
610 15  NCAT=(ITOP-IBOT)/N
611     if(ncat.gt.26) then
612         n=n*10
613         go to 15
614     endif
615     NUM(1)=IBOT
616     DO 40 K=1,NCAT
617 40  NUM(K+1)=NUM(K)+N
618 20  CONTINUE
619 C
620 C  CONSTRUCCION E IMPRESION DEL MAPA SIMBOLICO
621 C  if(ntipo.eq.1) write(3,2500) char(18)
622     write(1,2500) char(18)
623     if(ntipo.eq.1) write(3,2700) ff
624     write(1,2700) ff
625     if(ntipo.eq.1) write(3,2500) si
626     write(1,2500) si
627 2700 format(a1,/, 'ALAMOS Y PERALTA Ingenieros Consultores Ltda.',/,
628     *45(' '),/)
629 2500 format(a1)
630     if(ntipo.eq.1) WRITE(3,51) (TITU(K,ITIPO),K=1,4),TIME/12.0,1f,
631     *(I,I=1,NC)
632     WRITE(1,51) (TITU(K,ITIPO),K=1,4),TIME/12.0,1f,(I,I=1,NC)
633 51 FORMAT('MAPA',2X,4A4,15X,'TIEMPO',F10.1,/,125('='),/,a1,
634     *5X,40(I3,1X))
635     DO 60 J=1,NR
636     DO 70 I=1,NC
637     MAPAA(I)=ABC(29)
638     IF(ICAT(I,J).EQ.1) GO TO 70
639     MAPAA(I)=ABC(30)
640     IF(ICAT(I,J).EQ.3) GO TO 70
641     MAPAA(I)=ABC(28)
642     IF(ICAT(I,J).EQ.2) GO TO 70
643     MAPAA(I)=ABC(27)
644     IF(QH(I,J).LE.0.0) GO TO 70

```



```

D Line# 1      7      Microsoft FORTRAN77 V3.20 02/84
2   645      DO 80 K=1,NCAT
3   646      80 IF(QH(I,J).GT.NUM(K).AND.QH(I,J).LE.NUM(K+1)) MAPAA(I)=ABC(K)
2   647      IF(QH(I,J).LE.1.E-8) MAPAA(I)=ABC(26)
2   648      70 CONTINUE
1   649      IF(NTIPO.EQ.1) WRITE(3,91) J,(MAPAA(I),I=1,NC)
1   650      WRITE(1,91) J,(MAPAA(I),I=1,NC)
1   651      91 FORMAT(/,I3,2X,40(A3,1X))
1   652      60 CONTINUE
        653      IF(ITOP.LE.0) GO TO 110
        654      IF(NTIPO.EQ.1) WRITE(3,102) 1f,(abc(i),num(i),num(i+1),i=1,ncat)
        655      102 FORMAT(a1,////,4X,'*=MALLA DE BORDE IMPERMEABLE',//,4X,'>=MALLA CO
        656      *N NIVEL CTE.',//,(4(4X,A1,'=(',I10,' - ',I10,'1')//))
        657      WRITE(1,101) 1f,(ABC(I),NUM(I),NUM(I+1),I=1,NCAT)
        658      101 FORMAT(a1,////,4X,'*=MALLA DE BORDE IMPERMEABLE',//,4X,'>=MALLA CO
        659      *N NIVEL CTE.',//,(4(4X,A1,'=(',I7,' - ',I7,'1')//))
        660      IF(ITIPO.EQ.3.OR.ITIPO.EQ.4) WRITE(8,105)
        661      105 FORMAT('0',/,4X,'Z=MALLA CON TRANSMISIVIDAD NULA')
        662      IF(ITIPO.EQ.3.OR.ITIPO.EQ.4) WRITE(1,106) 1f
        663      106 FORMAT(a1,/,4X,'Z=MALLA CON TRANSMISIVIDAD NULA')
        664      GO TO 120
        665      110 CONTINUE
        666      WRITE(1,131) 1f
        667      131 FORMAT(a1,////,4X,'*=MALLA DE BORDE IMPERMEABLE',//,4X,'>=MALLA CO
        668      *N NIVEL CTE.',//,4X,'+=MALLA SIN AFLORAMIENTOS')
        669      120 CONTINUE
        670      RETURN
        671      END

```

Name	Type	Offset	P	Class
ABC	CHAR*1	12	*	
CHAR				INTRINSIC
DC2	CHAR*1	3273		
DC4	CHAR*1	3272		
FF	CHAR*1	3268		
I	INTEGER*4	3286		
IBOT	INTEGER*4	3282		
ICAT	INTEGER*4	20	*	
IHD	INTEGER*4	3302		
ITIPO	INTEGER*4	28	*	
ITOP	INTEGER*4	3278		
J	INTEGER*4	3294		
K	INTEGER*4	3310		
LF	CHAR*1	3269		
MAPAA	CHAR*1	0		LARGE
N	INTEGER*4	24	*	
NC	INTEGER*4	4	*	
NCAT	INTEGER*4	3306		
NR	INTEGER*4	8	*	
NTIPO	INTEGER*4	3274		
NUM	INTEGER*4	0		LARGE
O	REAL	3508		
QH	REAL	16	*	
SI	CHAR*1	3270		
SO	CHAR*1	3271		
TIME	REAL	0	*	
TITU	CHAR*4	0		LARGE

672 C*****
673 SUBROUTINE DESOEN/NO,NR,H,HK,ICAT,ABC,TIME

D Line# 1 7

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```

674 C
675 C  ESTA SUBROUTINA DIBUJA UN MAPA CON LOS DESCENSOS DE NIVEL OCURRIDOS
676 C  ENTRE EL PRINCIPIO DE LA SIMULACION Y EL FINAL DEL PRIMER Y
677 C  ULTIMO MES SIMULADOS.
678 C
679     DIMENSION H(40,32),HK(40,32)
680     CHARACTER ABC(30)
681     character ff,lf,si,so,dc4,dc2
682     CHARACTER*3 ALIN(80),ANUM(63)
683     INTEGER ICAT(40,32)
684 C
685     DATA ANUM /'-30','-29','-28','-27','-26','-25','-24','-23','-22',
686 *'-21','-20','-19','-18','-17','-16','-15','-14','-13','-12',
687 *'-11','-10','-9','-8','-7','-6','-5','-4','-3','-2','-1','0',
688 *'1','2','3','4','5','6','7','8','9','10','11','12',
689 *'13','14','15','16','17','18','19','20','21','22','23','24',
690 *'25','26','27','28','29','30','--','++'/
691 C
692     ff=char(12)
693     lf=char(10)
694     si=char(15)
695     so=char(14)
696     dc4=char(20)
697     dc2=char(18)
698     write(3,2500) char(18)
699     write(3,2700) ff
700     write(3,2500) si
701 2700 format(a1,/, 'ALAMOS Y PERALTA Ingenieros Consultores Ltda.',/,
702 *45('-',)/)
703 2500 format(a1)
704     if(time.le.12.5) then
705         write(3,12) (i,i=1,nc)
706 12    FORMAT(///,2X,'MAPA DEL DESCENSO DE NIVELES ENTRE EL PRINCIPIO
707 *LA SIMULACION Y EL FIN DEL PRIMER AÑO',//,125('='),//,5X,
708 *40(I3,1X))
709     else
710         WRITE(3,11) (I,I=1,ND)
711 11    FORMAT(///,2X,'MAPA DEL DESCENSO DE NIVELES ENTRE EL PRINCIPIO
712 * Y EL FINAL DE LA SIMULACION ',//,125('='),//,5X,40(I3,1X))
713     endif
714     DO 20 J=1,NR
715     DO 30 I=1,ND
716     IAB =nint(H(I,J)-HK(I,J)) + 31
717     if(iab.ge.1.and.iab.le.61) alin(i)=anum(iab)
718     if(iab.le.0) alin(i)=anum(62)
719     if(iab.ge.62) alin(i)=anum(63)
720     IF(ICAT(I,J).EQ.1) ALIN(I)=ABC(29)
721     IF(ICAT(I,J).EQ.2) ALIN(I)=ABC(28)
722     IF(ICAT(I,J).EQ.3) ALIN(I)=ABC(30)
723 30 CONTINUE
724     WRITE(3,41) J, (ALIN(I),I=1,ND)
725 41 FORMAT(/,13,2X,40(A3,1X))
726 20 CONTINUE
727     WRITE(3,51)
728 51 FORMAT(/,4X,'* = MALLA DE BORDE IMPERMEABLE',/,4X,
729 *'> = MALLA CON NIVEL CTE.',/,4X,
730 *'--- = DESCENSO MAYOR QUE 30 METROS',
731 */,4X,'++ = ASCENSO MAYOR QUE 30 METROS', //,4X,
732 *'VALORES POSITIVOS INDICAN QUE EL NIVEL HA SUBIDO')

```

```

3 Line# 1      7
      733      RETURN
      734      END

```

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Name	Type	Offset	P	Class
ABC	CHAR*1	20	*	
ALIN	CHAR*3	0		LARGE
ANUM	CHAR*3	240		LARGE
CHAR				INTRINSIC
DC2	CHAR*1	3939		
DC4	CHAR*1	3938		
FF	CHAR*1	3934		
H	REAL	8	*	
HK	REAL	12	*	
I	INTEGER*4	4016		
IAB	INTEGER*4	4286		
ICAT	INTEGER*4	16	*	
J	INTEGER*4	4274		
LF	CHAR*1	3935		
NC	INTEGER*4	0	*	
NINT				INTRINSIC
NR	INTEGER*4	4	*	
SI	CHAR*1	3936		
SO	CHAR*1	3937		
TIME	REAL	24	*	

Name	Type	Size	Class
BALANC			PROGRAM
DESCEN			SUBROUTINE
DIBUJO			SUBROUTINE
MAPA			SUBROUTINE

```

Pass One      No Errors Detected
              734 Source Lines

```

REM PROGRAMA SUPERCOPE SIMULACION

REM

REM

REM DIMENSIONAMIENTO VARIABLES

REM

defini: i-n

qca qca(10,50), qcm(10,50), qcma(10,50), qca(10,50),

qca(10,50), pta(10,50), qp(10,50), pes(10,50), ppp(10,50),

dotriapo(10,50), pta(10,50), i-1, i-1, i-1, i-1, i-1, i-1, i-1,

dr(10,50), tr(10,50), bomb(10,50), bomb(10,50), qder(10,50)

rem

rem canalbet(10,50), factrio(10,50), factri(10,50), factboeb(10,50)

rem

rem canalbet(10,50), factrio(10,50), factri(10,50), factboeb(10,50)

rem

rem EXPL MODELO HIDROLOGICO

rem

rem qca : Caudales de entrada al vector i. (m³/s)

rem volboeb : Volúmenes contenidos en el embalse Lautaro

rem

rem final de cada año. (Mm³)

rem volboeb : Volúmenes contenidos en el embalse Lautaro (Mm³)

rem Para cada sector (SUPERCOP)

rem

rem qca : Caudal de salida. (Mm³/año)

rem

rem qcm : Caudal derivado por canales matrices. (Mm³/año)

rem

rem qcma : Caudal derivado por canales matrices cuando no

rem

rem es una proporción del río sino un valor fijo. (m³/s)

rem

rem alfa : Proporción del caudal de río derivado por canales matriz

rem

rem pom : Perdidas en canales matrices. (Mm³/año)

rem

rem beta : Factor de pérdidas en canales matrices.

rem

rem qca : Caudal que llega a los canales secundarios. (Mm³/año)

rem

rem pta : Perdidas en canales secundarios. (Mm³/año)

rem

rem qcma : Factor de pérdidas en canales secundarios.

rem

rem qp : Caudal disponible a nivel de predio. (Mm³/año)

rem

rem pes : Perdidas por escurrimiento superficial del caudal predial

rem

rem ppp : Perdidas por percolación profunda del caudal predial (m

rem

rem delta y deltaag : Factores de pérdidas a nivel predial.

rem

rem infir : Perdidas por infiltración del agua del río. (Mm³/año)

rem

rem eta : Factor de pérdidas por infiltración desde el río.

rem

rem qca : Capacidad máxima de los canales en bocanoma (Mm³/año)

rem

rem recio : Recuperaciones y vertientes que caen al río. (Mm³/año)

rem

rem qro : Caudales de río observados, para el contraste con

rem

rem los simulados. (m³/s)

rem

rem bombobs : Volúmenes bombeados observados por sector (Mm³/año)

rem

rem bomb : Volúmenes bombeados simulados por sector (Mm³/año)

rem

rem dr : Dotación de Riego (Mm³/año)

rem tr : Tasa de Riego (idem anterior pero incluyendo

rem la eficiencia (Mm³/año)

rem hort : Superficie cultivada con hortalizas (Ha)

rem parron : Superficie cultivada con parronales (Ha)

rem frut : Superficie cultivada con frutales (Ha)

rem prad : Superficie cultivada con praderas (Ha)

rem cereal : Superficie cultivada con cereales (Ha)

rem efior : ETP hortalizas (m³/ha/año)

```

rem      PROGRAMA SUPERCOF SIMULACION
rem
rem
rem DIMENSIONAMIENTO VARIABLES
rem
      defint i-n
      dim qrs(10,50),qcm(10,50),qcmo(10,50),pcm(10,50),_
      qcs(10,50),pcs(10,50),qp(10,50),pes(10,50),ppp(10,50),_
      dotriego(10,50),recio(10,50),infrio(10,50),qro(10,50),_
      dr(10,50),tr(10,50),bomb(10,50),bombobs(10,50),qder(10,50)
rem
      dim gri(50),alfa(10),beta(10),gama(10),deltaes(10),deltapp(10),_
      eta(10,50),volemb(50),desclag(50),vol(50),qbct(10)
rem
      dim canalbct(10,50),factrio(10,50),factcnl(10,50),factbomb(10,50)
rem
rem EXPLICACION DE LA NOMENCLATURA USADA
rem      gri : Caudales de entrada al sector 1. (m3/s)
rem      volemb : Volúmenes contenidos en el embalse Lautaro al
rem      final de cada año. (Mm3)
rem      vol : Volumen medio anual Embalse Lautaro (Mm3)
rem Para cada sector --->
rem      qrs : Caudal de salida. (Mm3/año)
rem      qcm : Caudal derivado por canales matrices. (Mm3/año)
rem      qcmo : Caudal derivado por canales matrices cuando no
rem      es una proporción del río sino un valor fijo. (m3/s)
rem      alfa : Proporción del caudal de río derivado por canales matrices.
rem      pcm : Pérdidas en canales matrices. (Mm3/año)
rem      beta : Factor de pérdidas en canales matrices.
rem      qcs : Caudal que llega a los canales secundarios. (Mm3/año)
rem      pcs : Pérdidas en canales secundarios. (Mm3/año)
rem      gama : Factor de pérdidas en canales secundarios.
rem      qp : Caudal disponible a nivel de predio. (Mm3/año)
rem      pes : Pérdidas por escurrimiento superficial del caudal predial.(l)
rem      ppp : Pérdidas por percolación profunda del caudal predial.(Mm3/año)
rem      deltaes y deltapp : Factores de pérdidas a nivel predial.
rem      infrio: Pérdidas por infiltración del agua del río. (Mm3/año)
rem      eta : Factor de pérdidas por infiltración desde el río.
rem      qbct : Capacidad máxima de los canales en bocatoma (Mm3/año)
rem      recrio: Recuperaciones y vertientes que caen al río.(Mm3/año)
rem      qro : Caudales de río observados, para el contraste con
rem      los simulados. (m3/s)
rem      bombobs : Volúmenes bombeados observados por sector (Mm3/año)
rem      bomb : Volúmenes bombeados simulados por sector (Mm3/año)
rem      dr : Dotación de Riego (Mm3/año)
rem      tr : Tasa de Riego (idem anterior pero incluyendo
rem      la eficiencia (Mm3/año)
rem      hort : Superficie cultivada con hortalizas (Ha)
rem      parron: Superficie cultivada con parronales (Ha)
rem      frut : Superficie cultivada con frutales (Ha)
rem      prad : Superficie cultivada con praderas (Ha)
rem      cereal: Superficie cultivada con cereales (Ha)
rem      evhor : ETP hortalizas (m3/ha/año)

```

```

rem          evpar : ETP parronales (m3/ha/año)
rem          evfru : ETP frutales (m3/ha/año)
rem          evprad: ETP praderas (m3/ha/año)
rem          evcereal: ETP cereales (m3/ha/año)
rem          qder : Caudal derivado por canales según derechos (Mm3/año)
rem
rem          dim kd(10),qd(10,50),hort(10,50),parron(10,50),frut(10,50),prad(10,50),_
rem              cereal(10,50),evhor(10),evpar(10),evfru(10),evprad(10),evcereal(10)
rem
rem          dim titgro$(10),rm$(50),titsec$(10)
rem
rem INICIALIZACION VARIABLES
rem
rem          efhor=0.5
rem          efparr=0.8
rem          effru=0.70
rem          efprad=0.45
rem          efcereal=0.45
rem
rem
rem APERTURA DE ARCHIVOS DE ENTRADA Y SALIDA
rem
rem          DENTRADA=Contiene los datos de entrada.
rem          RESULT =Contiene los resultados obtenidos.
rem
rem
rem
rem
rem          open "DENTRADA.BAS" for input as #1
rem          open "RESULT" for output as #2
rem
rem LECTURA DE DATOS DE ENTRADA
rem
rem          while not eof(1)
rem              input #1, titulo$
rem              'lprint titulo$
rem              input #1, nsec,nanos
rem              'lprint nsec,nanos
rem              input #1, titexpl$
rem              'lprint titexpl$
rem              for k=1 to nanos
rem                  input #1, qri(k)
rem                  'lprint using "###.##"; qri(k),
rem              next k
rem              input #1, titexpl$
rem              'lprint titexpl$
rem              for k=0 to nanos
rem                  input #1, volemb(k)
rem                  'lprint using "###.##"; volemb(k),
rem              next k

```

```

input #1, titexpl$
'lprint titexpl$
for k=1 to nanos
  input #1, vol(k)
  'lprint using "###.##"; vol(k),
next k
input #1, titexpl$
'lprint titexpl$
for k=1 to nanos
  input #1, rm$(k)
  'lprint using "\ \"; rm$(k),
next k
for i=1 to nsec
  input #1, titsec$(i)
  'lprint titsec$(i)
input #1, titexpl$
'lprint titexpl$
titexpl$=""
  input #1, alfa(i),beta(i),gama(i),deltaes(i),deltapp(i),qbct(i)
  'lprint using "###.##"; alfa(i),beta(i),gama(i),deltaes(i),deltapp(i),qbct(i)
input #1, titexpl$
'lprint titexpl$
titexpl$=""
for k = 1 to nanos
  input #1, eta(i,k)
  'lprint using "###.##"; eta(i,k),
next k
input #1, titexpl$
'lprint titexpl$
titexpl$=""
  for k=1 to nanos
    input #1, qcmo(i,k)
    'lprint using "###.##"; qcmo(i,k),
  next k
input #1, titexpl$
'lprint titexpl$
titexpl$=""
  for k=1 to nanos
    input #1, recrio(i,k)
    'lprint using "###.##"; recrio(i,k),
  next k
input #1, titexpl$
'lprint titexpl$
titexpl$=""
  for k=1 to nanos
    input #1, bombobs(i,k)
    'lprint using "###.##"; bombobs(i,k),
  next k
if i=6 then
  input #1, titexpl$
  'lprint titexpl$
  titexpl$=""
  for k=1 to nanos

```

```

        input #1, desclag(k)
        'lprint using "###.##"; desclag(k),
    next k
end if
next i
rem
rem LECTURA SUPERFICIES CULTIVADAS Y EVAPOTRANSPIRACION POR SECTOR
rem
    input #1, titexpl$
    'lprint titexpl$
    titexpl$=""
    for i=1 to nsec
        input #1, titexpl$
        'lprint titexpl$
        titexpl$=""
        'lprint "Hortalizas"
        for k=1 to nanos
            input #1, hort(i,k)
            'lprint using "#####.##";hort(i,k),
        next k
        'lprint
        'lprint "Fraderas"
        for k=1 to nanos
            input #1, prad(i,k)
            'lprint using "#####.##";prad(i,k),
        next k
        'lprint
        'lprint "Vinedos"
        for k=1 to nanos
            input #1, parron(i,k)
            'lprint using "#####.##";parron(i,k),
        next k
        'lprint
        'lprint "Frutales"
        for k=1 to nanos
            input #1, frut(i,k)
            'lprint using "#####.##";frut(i,k),
        next k
        'lprint
        'lprint "Cereales"
        for k=1 to nanos
            input #1, cereal(i,k)
            'lprint using "#####.##";cereal(i,k),
        next k
    next i
    input #1, titexpl$
    'lprint titexpl$
    for i=1 to nsec
        input #1, evhor(i),evprad(i),evpar(i),evfru(i),evcereal(i)
        'lprint evhor(i),evpar(i),evfru(i),evprad(i),evcereal(i)
    next i
rem
rem LECTURA CAUDALES CONTRASTE

```



```

input #1, titexpl$
!lprint titexpl$
input #1, nd
!lprint nd
for l=1 to nd
  input #1, titqro$(l),kd(l)
  !lprint titqro$(l),kd(l)
  for k=1 to nanos
    input #1, qro(l,k)
    !lprint using "###.##"; qro(l,k)
  next k,l
end

!
PROCESAMIENTO DE LOS CAUDALES PARA LOS DISTINTOS NUDOS Y AÑOS
!
for k=1 to nanos
  qrs(0,k)=qri(k)*365*86400/1E6
  print "stack=";fre(-2)
  print "vol.entrada=";qrs(0,k)," k=";k
  ddant = 0.0
  errr = 100.0
  do while errr > 0.2
    call demanda(k)
    for i=1 to nsec
      if i=3 then call embalse(k)
      dr(i,k)=(hort(i,k)*evhor(i)+parron(i,k)*evpar(i)+frut(i,k)*_
        evfru(i)+prad(i,k)*evprad(i)+cereal(i,k)*evcereal(i))/1E6
      tr(i,k)=(hort(i,k)*evhor(i)/efhor+parron(i,k)*evpar(i)/efparr_
        +frut(i,k)*evfru(i)/effru+prad(i,k)*evprad(i)/efprad_
        +cereal(i,k)*evcereal(i)/efcereal)/1E6
      pes(i,k)=deltaes(i)*(tr(i,k)-dr(i,k))
      ppp(i,k)=deltapp(i)*(tr(i,k)-dr(i,k))
      pcs(i,k)=tr(i,k)/(1/gama(i)-1)
      qcs(i,k)=tr(i,k)+pcs(i,k)
      pcm(i,k)=qcs(i,k)/(1/beta(i)-1)
      qcm(i,k)=qcs(i,k)+pcm(i,k)
      if qcmo(i,k) = 0.0 then
        qder(i,k)=qrs(i-1,k)*alfa(i)
      else
        qder(i,k)=qcmo(i,k)
      end if
      if qder(i,k) >= qcm(i,k) then
        bomb(i,k)=0.0
        infrio(i,k)=eta(i,k)*(qrs(i-1,k)-qcm(i,k))
        qrs(i,k)=qrs(i-1,k)-qcm(i,k)-infrio(i,k)+recio(i,k)
        if qbct(i) < qcm(i,k) then
          infrio(i,k)=eta(i,k)*(qrs(i-1,k)-qbct(i))
          qrs(i,k)=qrs(i-1,k)-qbct(i)-infrio(i,k)+recio(i,k)
        end if
      else
        infrio(i,k)=eta(i,k)*(qrs(i-1,k)-qder(i,k))
        bomb(i,k)=qcm(i,k)-qder(i,k)-bombobs(i,k)
      end if
    next i
  end do
next k

```

```

        qrs(i,k)=qrs(i-1,k)-qdar(i,k)-infrio(i,k)+recrio(i,k)
        if qbct(i) < qdar(i,k) then
            infrio(i,k)=eta(i,k)*(qrs(i-1,k)-qbct(i))
            bomb(i,k)=qcm(i,k)-qbct(i)-bombobs(i,k)
            qrs(i,k)=qrs(i-1,k)-qbct(i)-infrio(i,k)+recrio(i,k)
        end if
    end if
    canalbct(i,k) = qcm(i,k) - bomb(i,k)
    if bomb(i,k) <= 0.0 then canalbct(i,k) = qcm(i,k)
    if infrio(i,1) = 0.0 then
        factrio(i,k) = 99
    else
        factrio(i,k) = infrio(i,k)/infrio(i,1)
    end if
    if canalbct(i,1) = 0.0 then
        factcnl(i,k) = 99
    else
        factcnl(i,k) = canalbct(i,k)/canalbct(i,1)
    end if

rem
    if i=6 then qrs(i,k) = qrs(i,k)+descclag(k)
rem
next i
rem
rem  CALCULO DEMANDA AL EMBALSE
rem
loop
next k
rem

    for k = 1 to nanos
    for i = 1 to nsec
        if bomb(i,35) = 0.0 then
            factbomb(i,k) = 99
        else
            factbomb(i,k) = bomb(i,k)/bomb(i,35)
        end if
    next i,k

rem
    for i=1 to nsec
        qret = 0.0
        qrst = 0.0
        for k=1 to nanos
            qret = qret + qrs(i-1,k)
            qrst = qrst + qrs(i,k)
        next k
        lprint "Sector:",titsec$(i)
        lprint "Vol.Total Entrada (Mm3)=";using "#####.##";qret
        lprint "Vol.Total Salida (Mm3)=" ;using "#####.##";qrst
        lprint
    next i

rem
    for i=1 to nsec
        print #2, chr$(12) : print #2, chr$(18)
    
```

```

print #2, : print #2, : print #2,
print #2, "
print #2, titsec$(i)
print #2,
print #2, "
print #2, chr$(15)
print #2, : print #2, : print #2,
print #2, "AND
for k=1 to nanos
  print #2, using "\ \";rm$(k),
next k
print #2, "TOTAL PERIODO"
print #2, : print #2, .
print #2, "DEMANDA CULTIVOS
drt=0.0 : trt=0.0 : pppt=0.0 : pest=0.0 : pcmt=0.0
bombt=0.0 : infrt=0.0 : recrt=0.0 : pcost=0.0 : canalt=0.0
for k=1 to nanos
  drt=drt + dr(i,k)
  trt=trt + tr(i,k)
  pppt=pppt + ppp(i,k)
  pest=pest + pes(i,k)
  pcost=pcost + pcs(i,k)
  pcmt=pcmt + pcm(i,k)
  bombt=bombt + bomb(i,k)
  infrt=infrt + infrio(i,k)
  recrt=recrt + recrio(i,k)
  canalt=canalt + canalbt(i,k)
next k
for k=1 to nanos
  print #2, using "###.##";dr(i,k),
next k
print #2, using "#####.##";drt,
print #2, : print #2,
print #2, "TASA RIEGO
for k=1 to nanos
  print #2, using "###.##";tr(i,k),
next k
print #2, using "#####.##";trt,
print #2, : print #2, .
print #2, "INF.RIEGO PREDIAL
for k=1 to nanos
  print #2, using "###.##";ppp(i,k),
next k
print #2, using "#####.##";pppt,
print #2, : print #2,
print #2, "DERRAMES RIEGO
for k=1 to nanos
  print #2, using "###.##";pes(i,k),
next k
print #2, using "#####.##";pest,
print #2, : print #2,
print #2, "INF.CANALES SECUNDARIOS
for k=1 to nanos

```

RESUMEN BALANCE MASICO "

Valores en Millones M3"

",spc(3)

```

    print #2, using "###.##";pcv(i,k),
next k
print #2, using "#####.##";pcst,
print #2, : print #2,
print #2,"INF.CANALES MATRICES
for k=1 to nanos
    print #2, using "###.##";pcm(i,k),
next k
print #2, : print #2,
print #2,"CAUDAL DEMANDADO POR C.MATRICES (m3/s)",
for k=1 to nanos
    print #2, using "###.##";qcm(i,k)*1E6/365/86400,
next k
rem    print #2, : print #2,
rem    print #2,"CAPACIDAD CANALES EN BOCATOMA (m3/s)",
rem    for k=1 to nanos
rem        print #2, using "###.##";qcbt(i)*1E6/365/86400,
rem    next k
print #2, : print #2,
print #2,"CAUDAL DERIVADO EN BOCATOMA (Mm3)",
for k=1 to nanos
    print #2, using "###.##";canalbct(i,k),
next k
print #2, using "#####.##";canalt,
print #2, : print #2,
print #2,"CAUDAL DERIVADO EN BCT.RESPECTO 1986  %",
for k=1 to nanos
    print #2, using "###.##";factcnl(i,k),
next k
print #2, : print #2,
print #2,"BOMBEO ADICIONAL REQUERIDO
for k=1 to nanos
    print #2, using "###.##";bomb(i,k),
next k
print #2, using "#####.##";bombt,
print #2, : print #2,
print #2,"BOMBEO ADICIONAL RESPECTO MAXIMO",
for k=1 to nanos
    print #2, using "###.##";factbomb(i,k),
next k
print #2, : print #2,
print #2,"CAUDAL SALIDA RIO (m3/s)      ",
for k=1 to nanos
    print #2, using "###.##";qrs(i,k)*1E6/365/86400,
next k
print #2, : print #2,
print #2,"INFILTRACION RIO              ",
for k=1 to nanos
    print #2, using "###.##";infrio(i,k),
next k
print #2, using "#####.##";inftr,
print #2, : print #2,
print #2,"INFILTRACION RIO RESPECTO 1986  %",

```

```

    for k=1 to nanos
      print #2, using "###.##";factrio(i,k),
    next k
    print #2, : print #2,
    print #2,"INF.RIO/CAUDAL ENTRADA %      ",
    for k=1 to nanos
      print #2, using "###.##";eta(i,k),
    next k
    print #2, : print #2,
    print #2,"RECUPERACION RIO      ",
    for k=1 to nanos
      print #2, using "###.##";recrio(i,k),
    next k
    print #2, using "#####.##";recrt,
  next i

```

```

rem
rem DIBUJOS CON EL CONTRASTE DE CAUDALES
rem
rem call dibujo(nd)
rem
rem
rem TERMINA PROGRAMA PRINCIPAL Y COMIENZAN LAS SUBROUTINAS
rem
rem*****

```

```

rem CALCULO DE LA DEMANDA AL EMBALSE LAUTARO
rem

```

```

  Sub demanda(k)
    shared bomb(),volem(),vol(),qrs(),recrio(),desclag(),errr,ddant
    ddadic=0.0

```

```

    !lprint
    for i = 3 to 6
      ddadic = bomb(i,k) + ddadic
    !lprint "bomdeo=";bomb(i,k),"k=";k,"i=";i
    next i

```

```

    if ddadic > 0.0 then
      if ddadic >= volem(k) then
        volx = 0.0
      else
        volx = volem(k) - ddadic
      end if
    else

```

```

rem
rem En este caso sobra agua asi es que se embalsara todo el excedente
rem superficial que estaria pasando de Copiapo hacia aguas abajo.
rem

```

```

      ddbom = ddant/2
      ddant = ddadic
      volx = volem(k-1) + qrs(6,k) - recrio(6,k) - desclag(k) - ddbom
      if volx > 40.0 then volx = 40.0
    end if

```

```

    !lprint "ddadic=";ddadic,"Caudal super f.0p;";qrs(6,k),"Recr=";recrio(6,k),"desclag=";
    errr = abs(volx - volem(k))

```

```

    prom = (volx + volemb(k))/2
    volemb(k) = prom
    if volemb(k) < 0.0 then volemb(k) = 0.0
    if volemb(k) > 40.0 then volemb(k) = 40.0
    vol(k) = (volemb(k) + volemb(k-1))/2
rem
rem Cota de error en estimacion volumen embalsado
rem
    'lprint "error=";errr," k=";k," volemb(k-1)=";volemb(k-1),_
    '      "volemb(k)=";volemb(k)
    end sub
rem
rem SUBROUTINA QUE CALCULA EL EFECTO DEL EMBALSE LAUTARO
rem
    sub embalse(k)
    shared volemb(),qrs(),vol(),rm$( ),errr
    a=3.7683 ' a y b son los parametros de la curva de embalse
    b=0.48795
    h=a*vol(k)^b
rem
rem Calculo de la infiltracion del embalse a la napa subterranea
rem
    sact=(70 + 139.855*h)*1000 'Superficie del agua en el embalse m2
    cte=7.0*1E-09
    ainfemb=sact*cte*h*86400*365/1E6
rem
rem Calculo de la evaporacion desde el embalse
rem
    evap=2.810*(70 + 139.855*h)*1000*0.7/1E6
    if h = 0.0 then evap = 0.0
rem
rem Calculo de las filtraciones
rem
    coef1=0.2
    if h >= 14.0 then
        filtemb=0.475/5.2*h*86400*365/1E6*coef1
    else
        filtemb=0.0
    end if
    qrs2=qrs(2,k) 'Caudal de entrada al embalse Lautaro
    qre3=qrs2 + (volemb(k-1)-volemb(k)) - ainfemb - evap - filtemb
    qrs(2,k)=qre3 'Caudal de salida del embalse Lautaro
    print vol(k)
rem
    if errr <= 0.2 then
        print #2, : print #2,
        print #2, "AND ",
        print #2, using "\ \";rm$(k)
        print #2, "VOL.INICIAL EMBALSE (Mm3)=",
        print #2, using "###.##";volemb(k-1)
        print #2, "VOL.FINAL EMBALSE (Mm3)=",
        print #2, using "###.##";volemb(k)
        print #2, "Rio Copiapo Antes Embalse Lautaro (l/s)=",

```

```

print #2, using "####.##";qre2/365/86.4*1E6,
print #2, "    Rio Copiapo Despues Embalse Lautaro (1/s)=",
print #2, using "####.##";qre3/365/86.4*1e6
print #2, "Inf.Embalse (Mm3)=",
print #2, using "####.##";ainfemb,
print #2, "    Evap.Embalse (Mm3)=",
print #2, using "####.##";evap,
print #2, "    Filt.Embalse (Mm3)=",
print #2, using "####.##";filtemb

```

```
end if
```

```
end sub
```

```
rem *****
```

```
rem
rem SUBROUTINA QUE DIBUJA CONTRASTE DE CAUDALES
```

```
rem
```

```
sub dibujo(nd)
```

```
shared nanos,kd(),titgro$( ),qrs(),gro(),rm$( ),titsec$( )
```

```
dim adib$(230)
```

```
,
```

```
, DIBUJO EN NUDOS ESCOGIDOS, PARA EL CONTRASTE DE CAUDALES
```

```
,
```

```
incrc=10
```

```
print #2, chr$(18) : print #2, chr$(14) : print #2, chr$(12)
```

```
print #2, : print #2, : print #2, : print #2, : print #2, spc(25),
```

```
for i=1 to 23 : print #2, "*"; : next i
```

```
print #2, : print #2, : print #2, : print #2, spc(25),
```

```
print #2, "CONTRASTE DE CAUDALES"
```

```
print #2, : print #2, : print #2, : print #2, spc(25),
```

```
for i=1 to 23 : print #2, "*"; : next i
```

```
print #2, chr$(20)
```

```
for L=1 to nd
```

```
print #2, chr$(12) : print #2, : print #2, : print #2,
```

```
print #2, spc(15),titsec$(kd(L)) : print #2, : print #2, : print #2,
```

```
print #2, chr$(15)
```

```
print #2, spc(5),titgro$(L) : print #2,
```

```
for i=1 to 225 : print #2, "="; : next i
```

```
ibot=30000
```

```
for k=1 to nanos
```

```
gro(L,k)=gro(L,k)*1000
```

```
qre(kd(L),k)=qrs(kd(L),k)*1E6/86.4/365
```

```
if gro(L,k) > 0.0 then
```

```
ihd=qrs(kd(L),k)
```

```
ihdo=gro(L,k)
```

```
if ihd < ibot then ibot=ihd
```

```
if ihdo < ibot then ibot=ihdo
```

```
end if
```

```
next k
```

```
ibot=0 'En definitiva parece mas cuando este valor
```

```
itop=ibot+60000/incrc+400
```

```
print #2, : print #2,
```

```
print #2, "CAUDAL";spc(5);"CAUDAL";spc(2);
```

```
for i=ibot to itop step 400 : print #2, using "####"; i;spc(6); : next i
```

```
print #2, spc(9);"FIN"
```

```

print #2, "MEDIDO";spc(4);"SIMULADO"
print #2, "(1/s)";spc(5);"(1/s)"
for k=1 to nans
  ii=incra
  for i=1 to 190 : adib$(i)="":next i
  for i=1 to 190 step ii : adib$(i)="I":next i
  if qro(L,k) < 0.0 then
    LL1=fix(incra*(qro(L,k)-ibot)/400+1)
    if LL1 < 190 then
      adib$(LL1)="o"
    else
      adib$(LL1)="E"
    end if
  end if
  LL=fix(incra*(qrs(kd(L),k)-ibot)/400+1)
  if LL < 190 then
    adib$(LL)="*"
  else
    adib$(LL1)="E"
  end if
  if LL1 = LL then adib$(LL)="A"
  print #2, using "#####";qro(L,k);spc(3)
  print #2, using "#####";qrs(kd(L),k);spc(7)
  for i=1 to 190
    print #2, using "!";adib$(i),
  next i
  print #2, spc(2); using "\ \";nm$(k)
next k
print #2, : print #2, : print #2, : print #2, :
print #2, spc(2);"o = CAUDAL MEDIDO"
print #2,
print #2, spc(2);"A=CAUDALES MEDIDO Y SIMULADO COINCIDEN"
next L
end sub
rem *****
beep
print "PROGRAMA TERMINADO"
end

```

* = CAUDAL SIMU

E = VALOR FUERA

MODELO HIDROGEOLOGICO

RESULTADOS DE LAS PASADAS DE

AJUSTE

RECURSOS HIDRAULICOS

AGUAS SUBTERRANEAS

REGADIO

AGUA POTABLE E INDUSTRIAL

SECTOR N° 1.

RESUMEN BALANCE MAGICO

PASADA N° 1

VALORES EN MILLONES M3

AÑO

VALLES ENTERRONES

CICLO

VERTIENTES

ALMACENAMIENTO

IMP. RÍO JORQUERA EN CUELLA

IMP. RÍO PULIDO EN VIOLETA

IMP. RÍO MARTILAS EN CUELLA

IMP. RÍO COPALCO EN CUELLA

IMP. RÍO COPALCO EN CUELLA

IMP. CAMELOS PRINCIPALES

IMP. CAMELOS SECUNDARIOS

IMP. ATENEA NOROCCIDENTAL

IMP. RÍO MARTILAS

IMP. RÍO MARTILAS

IMP. RÍO MARTILAS

IMP. RÍO MARTILAS

IMP. RÍO MARTILAS

MODELO HIDROGEOLOGICO RIOS MANFLAS, JORQUERA Y PULIDO

RESUMEN BALANCE MASICO

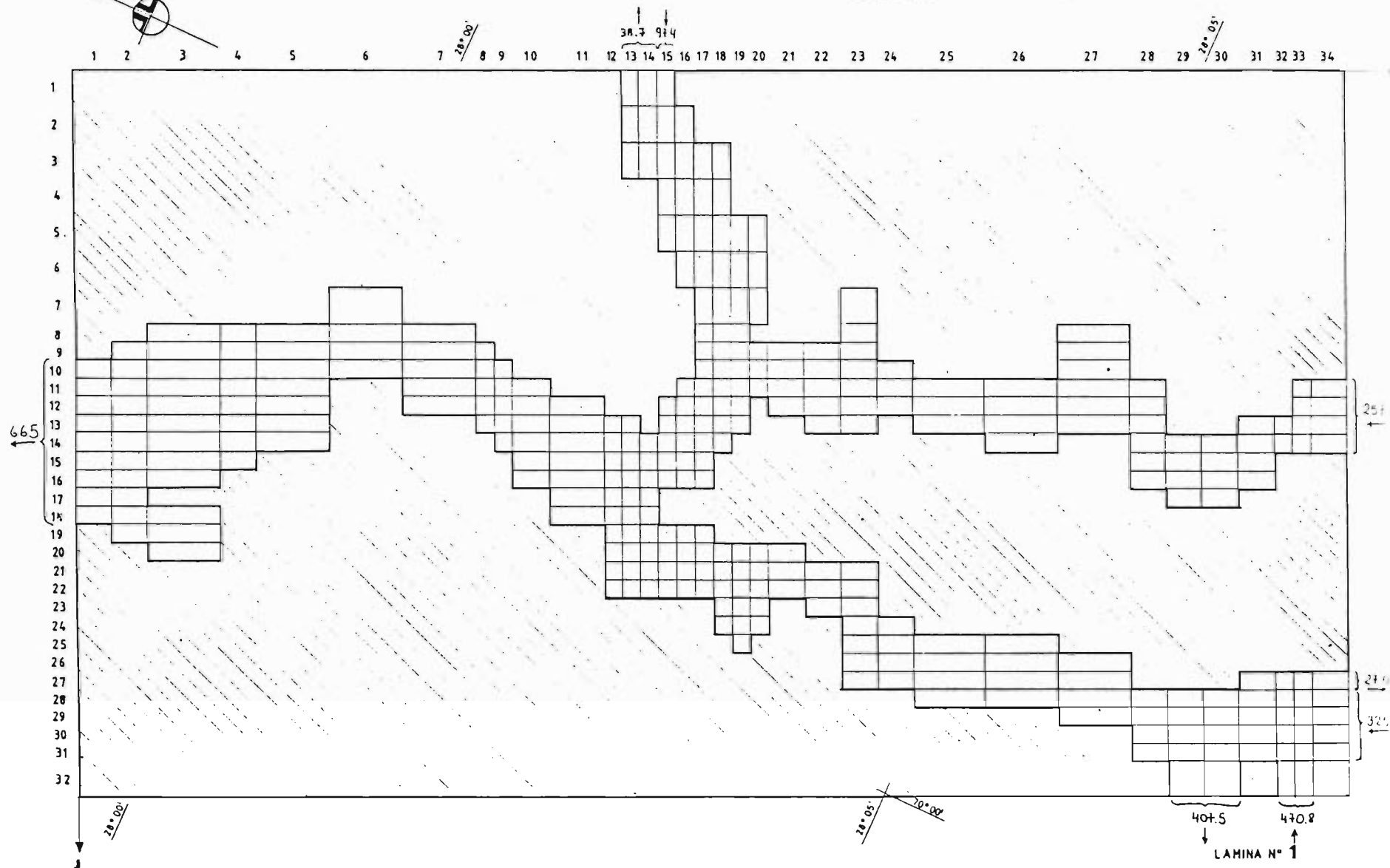
PASADA N° 1

VALORES EN MILLONES M3

ANO	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	TOTAL PERIODO
MALLAS EXTERIORES	10.77	6.40	.54	2.48	-7.52	-2.00	.67	.51	-.71	-2.05	4.28	-2.06	7.39	-2.57	3.94	-4.17	9.23	2.02	9.52	3.32	2.06	-5.33	-12.08	-9.11	-5.38	10.15
RIO	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
VERTIENTES	-1.30	-8.27	-12.06	-9.24	-13.05	-16.32	-7.17	-7.90	-12.07	-28.56	-26.27	-24.70	-21.16	-27.46	-21.46	-22.25	-25.29	-11.34	-14.14	-11.36	-19.03	-24.39	-18.93	-18.19	-15.55	-417.46
ALMACENAMIENTO	46.95	11.07	4.88	-6.07	21.36	-10.37	-31.45	43.79	-22.22	36.55	-33.87	33.04	-31.68	35.17	-36.95	34.67	-31.07	-6.69	.07	-3.20	27.80	-7.74	.76	1.29	-12.37	69.71
INF. RIO JORQUERA EN CRECID	1.60	1.61	1.66	1.58	1.69	1.52	1.51	1.43	1.40	1.40	1.49	1.75	1.57	1.52	1.46	1.43	1.46	1.43	1.43	1.60	1.47	1.61	2.03	1.86	1.54	39.06
INF. RIO PULIDO EN CRECIDA	5.03	5.96	4.80	5.49	5.96	4.25	4.56	4.10	3.64	3.64	4.95	6.43	4.56	1.64	4.33	4.56	4.41	4.41	4.56	8.97	5.18	9.90	12.92	10.98	7.74	147.97
INF. RIO MANFLAS EN CRECIDA	3.79	3.74	3.70	3.83	3.96	3.74	3.65	3.70	3.65	3.65	4.27	4.27	3.74	3.70	3.70	3.70	3.65	3.61	4.01	4.27	3.96	4.80	5.59	5.02	4.40	100.10
INF. RIO COPIAPO (JUNTA-MAN	2.48	2.94	2.52	2.69	3.05	2.02	2.13	1.81	1.56	1.56	2.27	4.22	2.23	2.23	1.95	1.99	1.99	1.91	1.99	4.25	2.34	4.61	6.59	5.49	3.55	70.37
INF. RIO COPIAPO (MANFLAS-P	4.98	5.06	5.06	6.21	6.70	4.25	4.25	3.92	3.35	3.43	5.80	9.31	4.98	4.65	4.25	4.33	4.25	4.16	5.14	8.08	5.63	10.37	16.66	13.80	8.16	156.77
INF. CANALES PRINCIPALES	.02	.01	.01	.02	.01	.01	.01	.01	.01	.01	.03	.02	.01	.01	.01	.01	.01	.01	.03	.02	.02	.04	.06	.03	.03	.45
INF. CANALES SECUNDARIOS	.15	.14	.11	.22	.12	.10	.09	.07	.06	.07	.28	.16	.11	.10	.10	.09	.09	.07	.27	.17	.21	.38	.54	.29	.29	4.27
INF. RIEGO HORTALIZAS	.01	.01	.01	.02	.01	.01	.01	.01	.01	.01	.02	.01	.01	.01	.01	.01	.01	.01	.02	.02	.02	.03	.05	.03	.03	.37
INF. RIEGO PRADERAS	.02	.02	.01	.03	.02	.01	.01	.01	.01	.01	.04	.02	.02	.01	.01	.01	.01	.01	.04	.02	.03	.05	.07	.04	.04	.57
INF. RIEGO PARRONALES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.11	.22	.45	.78	1.12	1.12	3.81
BOMBEO RIEGO 1981/86	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-2.10	-2.10	-2.10	-2.10	-2.10	-2.10	-12.61
BALANCE TOTAL	-19.42	6.56	1.47	19.41	-20.43	7.98	41.16	-36.14	23.12	-53.39	31.02	-31.60	35.16	-48.33	35.25	-44.96	30.88	6.99	12.80	20.61	-27.79	8.16	11.41	7.97	16.23	34.11

MODELO HIDROGEOLOGICO SECTOR: RIOS JORQUERA, PULIDO Y MANFLAS

PASADA N°1



BALANCE MASICO EN MALLAS EXTERIORES (Valores en millones de m3)

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

MODELO HIDROGEOLOGICO RIOS MANFLAS, JORQUERA Y PULIDO

RESUMEN BALANCE MASICO

PASADA N° 2

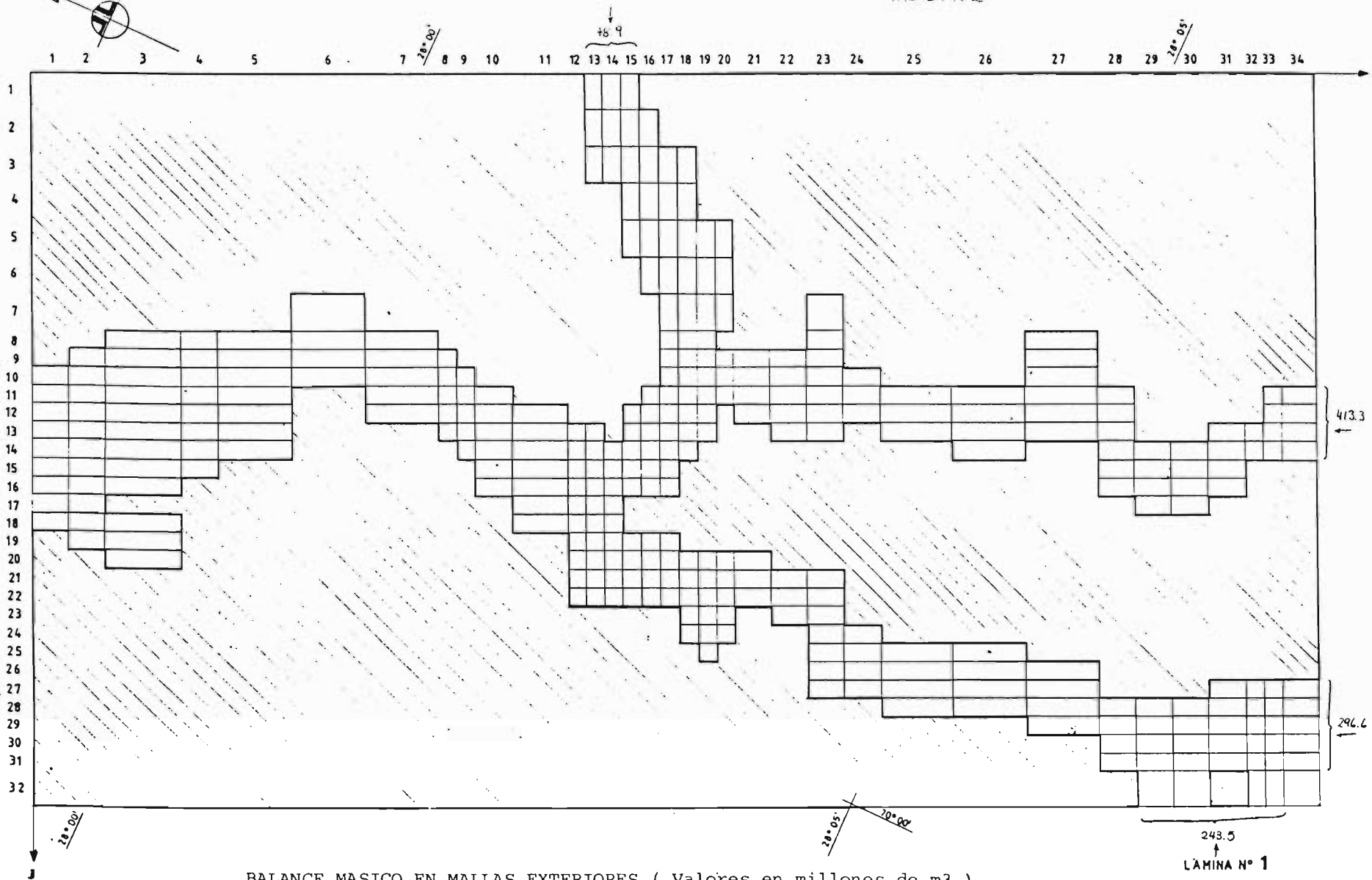
VALORES EN MILLONES M3

AÑO	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	TOTAL PERIODO
MALLAS EXTERIORES	9.77	9.44	3.71	2.00	.48	1.40	1.01	2.21	1.53	2.01	-2.22	7.84	2.82	1.73	1.18	.67	2.05	.59	.75	4.60	3.10	1.41	-1.70	-2.12	-.96	53.31
RIO	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
VERTIENTES	.00	-.88	-3.96	-4.95	-6.02	-5.37	-5.59	-4.94	-5.68	-5.13	-5.24	-6.26	-8.68	-8.26	-8.06	-7.59	-7.26	-7.13	-6.73	-7.44	-7.62	-8.88	-10.95	-11.72	-9.94	-164.26
ALMACENAMIENTO	20.51	22.89	4.24	6.29	-1.16	1.36	-2.79	2.85	-2.17	.18	-2.63	16.14	-.56	-.69	-1.92	-1.69	-.02	-3.03	1.63	3.95	.98	4.76	5.42	-1.25	-5.11	68.19
INF. RIO JORQUERA EN CRECIDA	.64	.65	.66	.63	.68	.61	.60	.57	.56	.56	.60	.70	.63	.61	.58	.57	.59	.57	.57	.65	.59	.65	.81	.74	.61	15.62
INF. RIO PULIDO EN CRECIDA	2.01	2.38	1.92	2.20	2.38	1.70	1.83	1.64	1.45	1.45	1.98	3.37	1.83	1.86	1.73	1.83	1.76	1.76	1.83	3.59	2.07	3.96	5.17	4.39	3.09	59.19
INF. RIO MANFLAS EN CRECIDA	1.51	1.50	1.48	1.53	1.58	1.50	1.46	1.48	1.46	1.46	1.71	1.71	1.50	1.48	1.48	1.48	1.46	1.44	1.60	1.71	1.58	1.92	2.24	2.01	1.76	40.05
INF. RIO COPIAPO (JUNTA-MAN)	.99	1.18	1.01	1.08	1.22	.81	.85	.72	.62	.62	.91	1.69	.89	.89	.78	.79	.79	.77	.79	1.70	.94	1.84	2.64	2.20	1.42	28.15
INF. RIO COPIAPO (MANFLAS-P)	1.99	2.02	2.02	2.48	2.68	1.70	1.70	1.57	1.34	1.37	2.32	3.72	1.99	1.86	1.70	1.73	1.70	1.67	2.06	3.23	2.25	4.15	6.66	5.52	3.27	62.71
INF. CANALES PRINCIPALES	.02	.01	.01	.02	.01	.01	.01	.01	.01	.01	.03	.02	.01	.01	.01	.01	.01	.01	.03	.02	.02	.04	.06	.03	.03	.45
INF. CANALES SECUNDARIOS	.15	.14	.11	.22	.12	.10	.09	.07	.06	.07	.28	.16	.11	.10	.10	.09	.09	.07	.27	.17	.21	.38	.54	.29	.29	4.27
INF. RIEGO HORTALIZAS	.01	.01	.01	.02	.01	.01	.01	.01	.01	.01	.02	.01	.01	.01	.01	.01	.01	.01	.02	.02	.02	.03	.05	.03	.03	.37
INF. RIEGO PRADERAS	.02	.02	.01	.03	.02	.01	.01	.01	.01	.01	.04	.02	.02	.01	.01	.01	.01	.01	.04	.02	.03	.05	.07	.04	.04	.57
INF. RIEGO PARRONALES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.11	.22	.45	.78	1.12	1.12	3.81
BOMBEO RIEGO 1981/86	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-2.10	-2.10	-2.10	-2.10	-2.10	-2.10	-12.61
BALANCE TOTAL	-3.40	-6.42	2.75	-1.02	4.32	1.12	4.77	.50	3.54	2.26	3.05	-3.15	1.69	.98	1.44	1.30	1.22	2.80	-.39	2.33	.33	-.86	-1.16	1.68	3.77	22.44

VALORES POSITIVOS INDICAN ENTRADAS AL ACUIFERO

MODELO HIDROGEOLOGICO SECTOR: RIOS JORQUERA, PULIDO Y MANFLAS

PASADA N°2



BALANCE MASICO EN MALLAS EXTERIORES (Valores en millones de m3)

LÁMINA N° 1
ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

MODELO HIDROGEOLOGICO RIOS MANFLAS, JORQUERA Y PULIDO

RESUMEN BALANCE MASICO

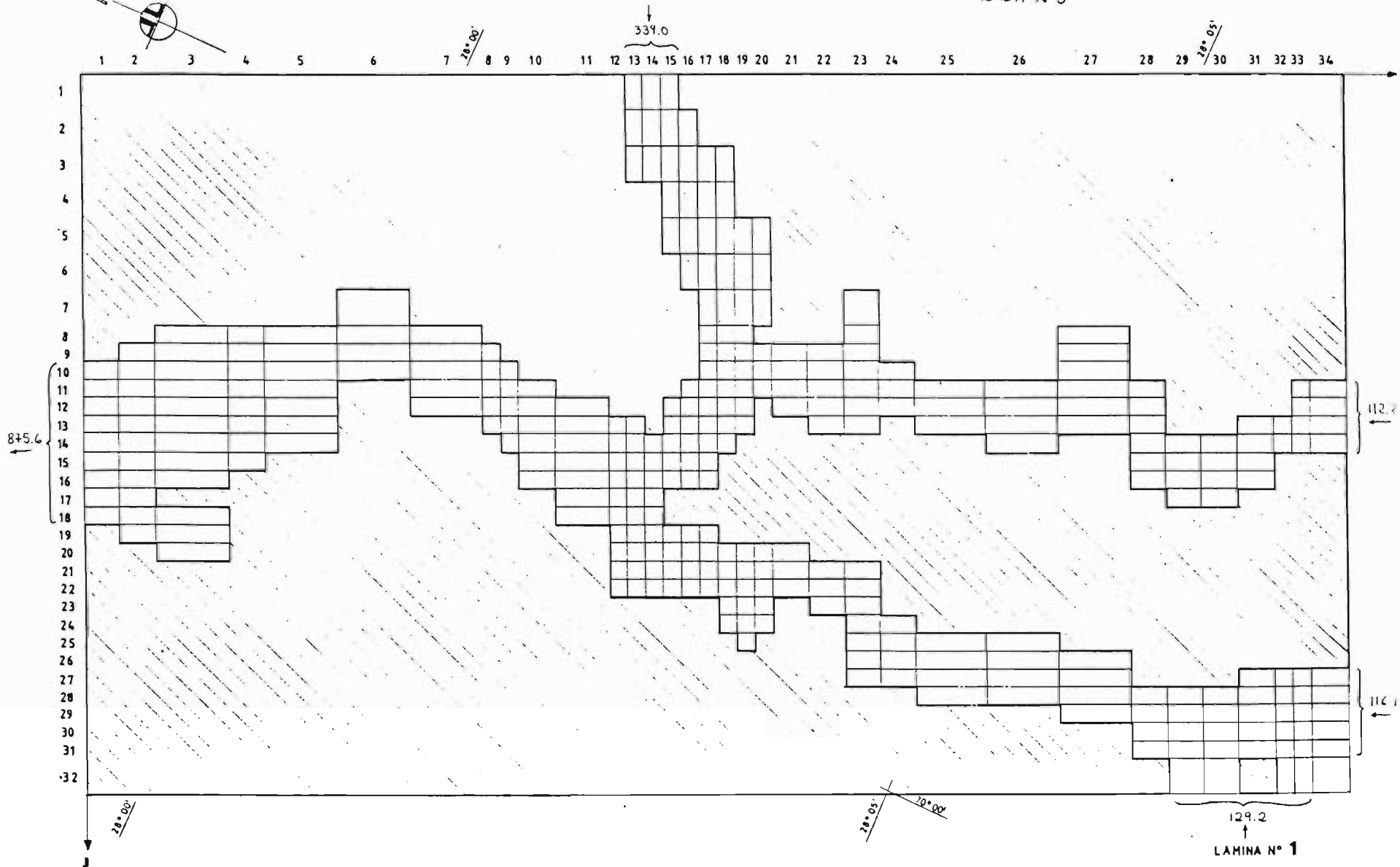
PASADA N° 3

VALORES EN MILLONES M3

ANO	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	TOTAL PERIOD.
MALLAS EXTERIORES	-11.99	-5.62	-6.22	-7.03	-7.68	-7.05	-6.82	-6.63	-6.23	-6.05	-10.09	1.09	-4.52	-6.64	-7.65	-7.95	-6.78	-7.88	-7.73	-3.25	-5.47	-6.80	-10.57	-11.90	-11.57	-179.07
RIO	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
VERTIENTES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
ALMACENAMIENTO	-4.63	2.56	1.59	1.77	1.15	-1.10	-.09	-.84	-.73	-.68	-2.02	13.22	3.18	.45	-1.58	-2.05	-.31	-2.04	-.53	6.42	.13	4.88	6.98	2.94	-2.30	26.38
INF. RIO JORQUERA EN CRECIDA	.64	.65	.66	.63	.68	.61	.60	.57	.56	.56	.60	.70	.63	.61	.58	.57	.58	.57	.57	.65	.59	.65	.81	.74	.61	15.62
INF. RIO PULIDO EN CRECIDA	2.01	2.38	1.92	2.20	2.38	1.70	1.83	1.64	1.45	1.45	1.98	3.37	1.83	1.86	1.73	1.83	1.76	1.76	1.83	3.59	2.07	3.96	5.17	4.39	3.09	59.19
INF. RIO MANFLAS EN CRECIDA	1.51	1.50	1.48	1.53	1.58	1.50	1.46	1.48	1.46	1.46	1.71	1.71	1.50	1.48	1.48	1.48	1.46	1.44	1.60	1.71	1.58	1.92	2.24	2.01	1.76	40.05
INF. RIO COPIAPO (JUNTA-MAN	.99	1.18	1.01	1.08	1.22	.81	.85	.72	.62	.62	.91	1.69	.89	.89	.78	.79	.79	.77	.79	1.70	.94	1.84	2.64	2.20	1.42	28.15
INF. RIO COPIAPO (MANFLAS-P	1.99	2.02	2.02	2.48	2.68	1.70	1.70	1.57	1.34	1.37	2.32	3.72	1.99	1.86	1.70	1.73	1.70	1.67	2.06	3.23	2.25	4.15	6.66	5.52	3.27	62.71
INF. CANALES PRINCIPALES	.02	.01	.01	.02	.01	.01	.01	.01	.01	.01	.03	.02	.01	.01	.01	.01	.01	.01	.03	.02	.02	.04	.06	.03	.03	.45
INF. CANALES SECUNDARIOS	.15	.14	.11	.22	.12	.10	.09	.07	.06	.07	.28	.16	.11	.10	.10	.09	.09	.07	.27	.17	.21	.38	.54	.29	.29	4.27
INF. RIEGO HORTALIZAS	.01	.01	.01	.02	.01	.01	.01	.01	.01	.01	.02	.01	.01	.01	.01	.01	.01	.01	.02	.02	.02	.03	.05	.03	.03	.37
INF. RIEGO PRADERAS	.02	.02	.01	.03	.02	.01	.01	.01	.01	.01	.04	.02	.02	.01	.01	.01	.01	.01	.04	.02	.03	.05	.07	.04	.04	.57
INF. RIEGO PARRONALES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.11	.22	.45	.78	1.12	1.12	3.81
BOMBEO RIEGO 1981/86	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.11	.22	.45	.78	1.12	1.12	3.81
BOMBEO RIEGO 1981/86	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-2.10	-2.10	-2.10	-2.10	-2.10	-2.10	-12.61
BALANCE TOTAL	-.01	-.27	-.57	-.60	-.13	.49	-.18	.28	.02	.19	-.19	-.72	-.71	-.27	.33	.62	-.06	.46	.01	-.55	.23	-.32	-.65	-.57	.29	-2.87

MODELO HIDROGEOLOGICO SECTOR: RIOS JORQUERA, PULIDO Y MANFLAS

PASADA N°3



BALANCE MASICO EN MALLAS EXTERIORES (Valores en millones de m3)

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

MODELO HIDROGEOLOGICO RIOS MANFLAS, JORQUERA Y PULIDO

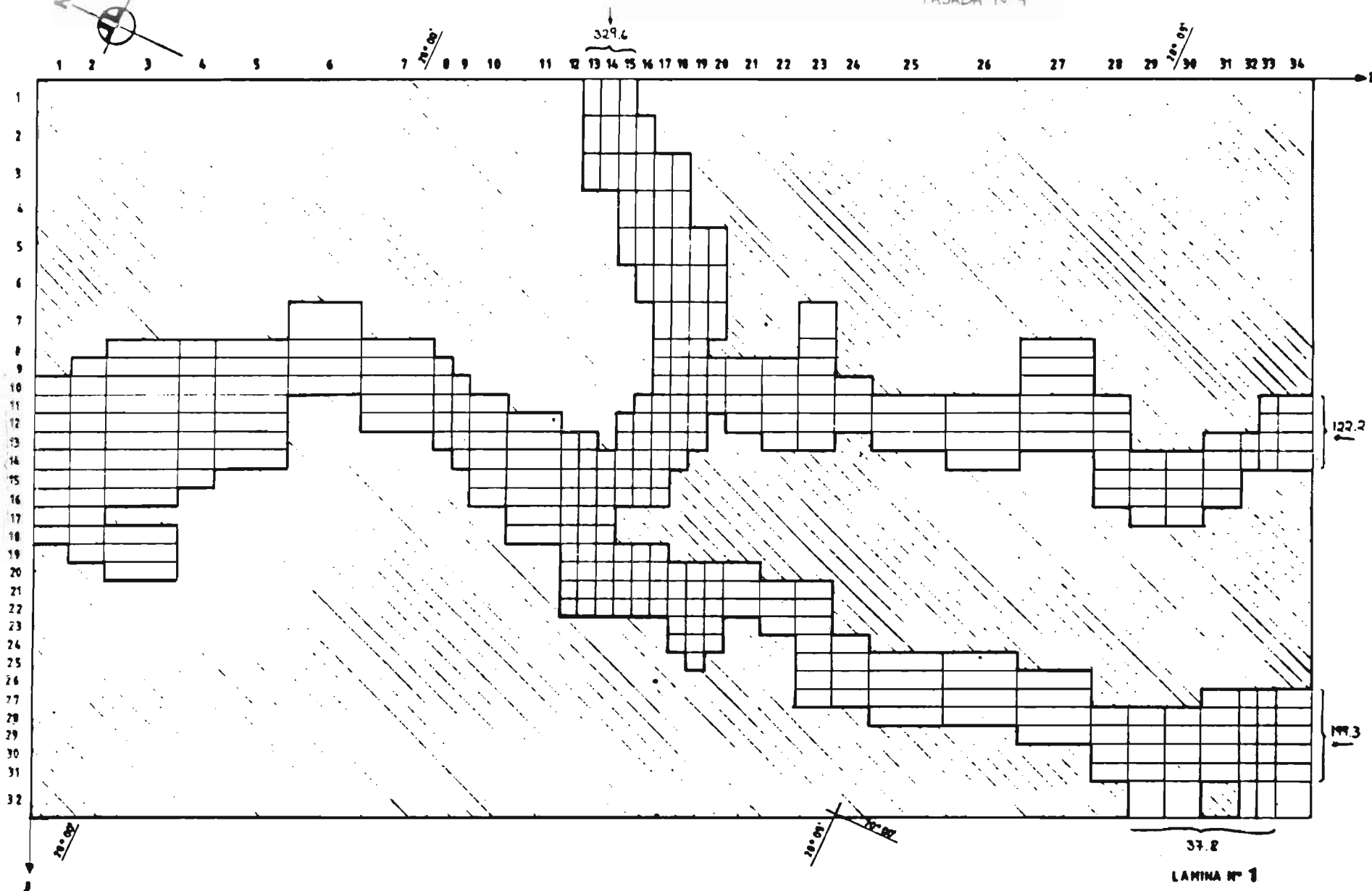
RESUMEN BALANCE MASICO

PASADA N°4

VALORES EN MILLONES M3

ANO	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	TOTAL PERIODO
MALLAS EXTERIORES	-19.44	-17.18	-16.67	-33.39	-20.92	-17.70	-16.85	-14.80	-13.89	-13.60	-37.77	-24.48	-20.55	-18.67	-18.07	-17.76	-16.51	-16.20	-34.19	-22.63	-23.56	-23.77	-28.48	-30.25	-29.87	-547.17
RIO	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
VERTIENTES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
ALMACENAMIENTO	1.37	5.84	.64	14.44	-9.15	-1.29	-1.81	-2.50	-1.62	-.66	13.21	12.54	-3.15	-2.46	-3.29	-2.77	-.72	-3.90	13.59	1.25	.79	5.14	9.41	3.42	-2.46	45.84
INF. RIO JORQUERA EN CRECIDA	.96	.97	1.00	.95	1.01	.91	.90	.86	.84	.84	.89	1.05	.94	.91	.88	.86	.88	.86	.86	.98	.88	.97	1.22	1.12	.92	23.44
INF. RIO PULIDO EN CRECIDA	3.02	3.57	2.88	3.30	3.57	2.55	2.74	2.46	2.18	2.18	2.97	5.06	2.74	2.78	2.60	2.74	2.65	2.65	2.74	5.38	3.11	5.94	7.75	6.59	4.64	88.78
INF. RIO MANFLAS EN CRECIDA	2.27	2.24	2.22	2.30	2.38	2.24	2.19	2.22	2.19	2.19	2.56	2.56	2.24	2.22	2.22	2.22	2.19	2.17	2.40	2.56	2.38	2.88	3.35	3.01	2.64	60.06
INF. RIO COPIAPO (JUNTA-MAN)	1.49	1.77	1.51	1.62	1.83	1.21	1.28	1.08	.94	.94	1.36	2.53	1.34	1.34	1.17	1.19	1.19	1.15	1.19	2.35	1.40	2.77	3.96	3.30	2.13	42.22
INF. RIO COPIAPO (MANFLAS-P)	11.27	12.25	8.16	26.74	2.12	8.16	7.19	5.06	5.06	5.06	39.85	23.52	9.14	8.16	7.19	7.19	7.19	5.06	37.72	13.23	17.31	15.35	19.27	18.45	16.33	346.03
INF. CANALES PRINCIPALES	.58	.53	.42	.87	.47	.41	.34	.27	.23	.28	1.10	.65	.45	.38	.38	.37	.35	.29	1.07	.68	.81	1.49	2.12	1.16	1.16	16.85
INF. CANALES SECUNDARIOS	.19	.18	.14	.29	.16	.13	.11	.09	.08	.09	.36	.21	.15	.13	.13	.12	.11	.10	.35	.23	.27	.49	.70	.38	.38	5.55
INF. RIEGO PARRONALES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.11	.22	.34	.34	.45	.67	.90	1.12	1.12	5.26
INF. RIEGO MORT. Y PRADERAS	.91	.91	.91	.91	.91	.97	.97	.97	.97	.97	.97	.97	.97	.97	.97	.97	.71	.58	.30	.17	.10	.03	.03	.03	.34	17.47
DOMINIO RIEGO 1981/86	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-2.10	-2.10	-2.10	-2.10	-2.10	-2.10	-12.61
BALANCE TOTAL	-.13	-.60	-.08	-.87	.69	.20	.67	.72	.22	-.38	-.91	-.46	.59	.69	.75	.67	-.42	.69	-.81	.12	.27	-.41	-.69	-.61	.15	.05

VALORES POSITIVOS INDICAN ENTRADAS AL ACUIFERO



LAMINA Nº 1
ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

RESUMEN BALANCE MASICO

PASADA N°5

VALORES EN MILLONES M3

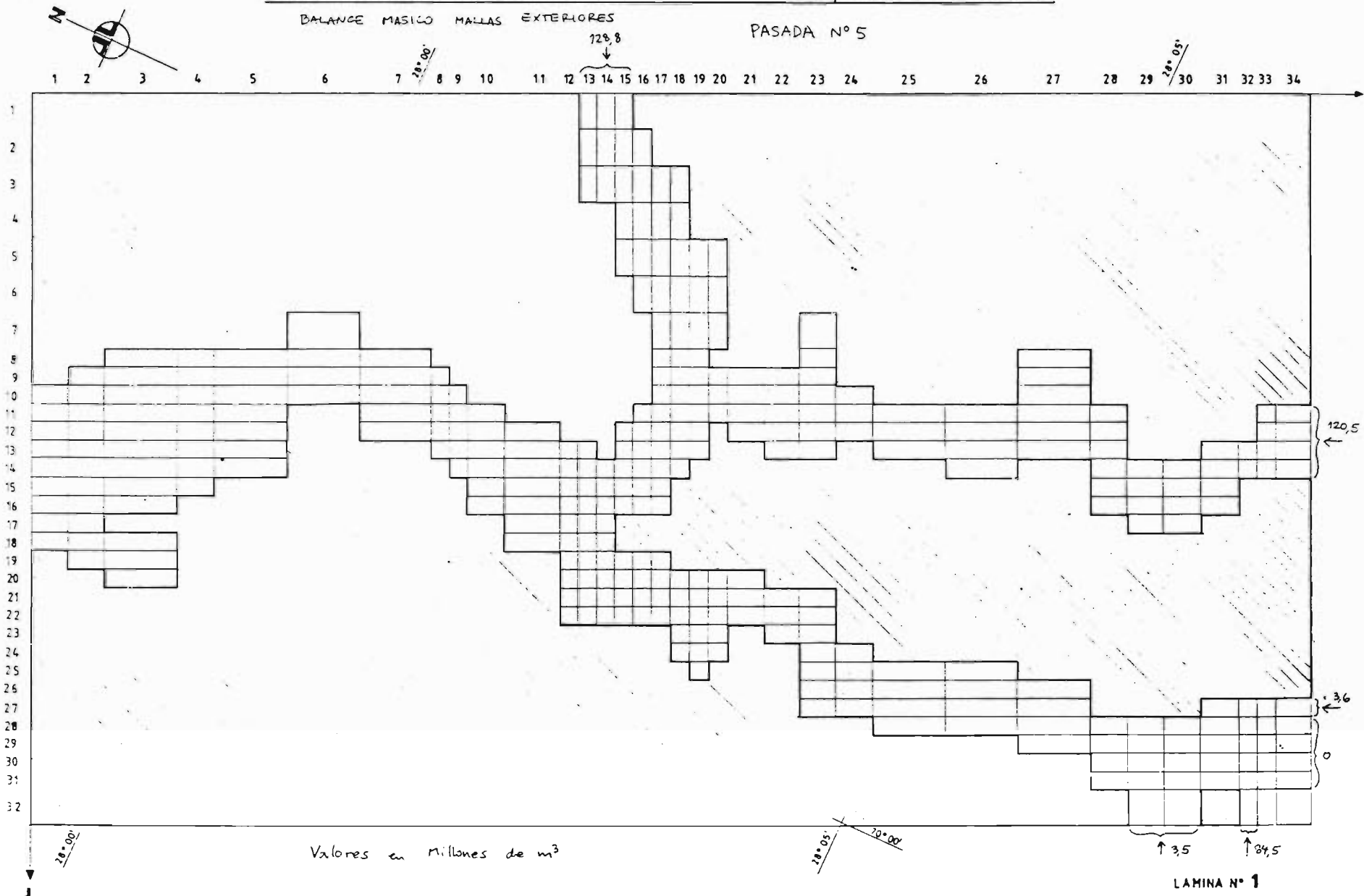
ANO	52	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	TOTAL PERIODO
MALLAS EXTERIORES	-34.95	-27.29	-23.75	-38.43	-24.59	-21.00	-19.83	-17.52	-16.23	-15.51	-38.88	-24.85	-20.69	-19.04	-18.58	-18.34	-16.98	-16.60	-34.50	-22.42	-23.51	-23.55	-27.67	-29.24	-28.95	-602.91
RIO	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
VERTIENTES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
ALMACENAMIENTO	-13.86	-5.22	-6.92	9.03	-12.59	-4.38	-4.41	-4.93	-4.03	-3.23	11.71	12.13	-3.03	-2.59	-3.54	-3.17	-1.98	-4.11	13.00	1.43	1.12	5.31	9.94	4.15	-1.61	-11.76
INF. RIO JORQUEPA EN CRECIDA	.96	.97	1.00	.95	1.01	.91	.90	.86	.84	.84	.89	1.05	.94	.91	.88	.86	.88	.86	.86	.98	.88	.97	1.22	1.12	.92	23.44
INF. RIO PULIDO EN CRECIDA	3.02	3.57	2.88	3.30	3.57	2.55	2.74	2.46	2.18	2.18	2.97	5.06	2.74	2.78	2.60	2.74	2.65	2.65	2.74	5.38	3.11	5.94	7.75	6.59	4.64	88.78
INF. RIO MANFLAS EN CRECIDA	2.27	2.24	2.22	2.30	2.38	2.24	2.19	2.22	2.19	2.19	2.56	2.56	2.24	2.22	2.22	2.22	2.19	2.17	2.40	2.56	2.38	2.88	3.35	3.01	2.64	66.06
INF. RIO COPIAPO (JUNTA-MAN)	1.49	1.77	1.51	1.62	1.83	1.21	1.28	1.08	.94	.94	1.36	2.53	1.34	1.34	1.17	1.19	1.19	1.15	1.19	2.55	1.40	2.77	3.96	3.30	2.13	42.22
INF. RIO COPIAPO (MANFLAS-P)	11.27	12.25	8.16	36.74	2.12	8.16	7.19	5.06	5.06	5.06	39.85	23.52	9.14	8.16	7.19	7.19	7.19	5.06	37.72	13.23	17.31	15.35	19.27	18.45	16.33	346.03
INF. CANALES PRINCIPALES	.58	.53	.42	.87	.47	.41	.34	.27	.23	.28	1.10	.65	.45	.38	.38	.37	.35	.29	1.07	.68	.81	1.49	2.12	1.16	1.16	16.85
INF. CANALES SECUNDARIOS	.19	.18	.14	.29	.16	.13	.11	.09	.08	.09	.36	.21	.15	.13	.13	.12	.11	.10	.35	.23	.27	.49	.70	.38	.38	5.55
INF. RIEGO PARRONALES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.11	.22	.34	.34	.45	.67	.90	1.12	1.12	5.26
INF. RIEGO HORT. Y PRADERAS	.91	.91	.91	.91	.91	.97	.97	.97	.97	.97	.97	.97	.97	.97	.97	.97	.71	.50	.30	.17	.10	.03	.03	.03	.34	17.47
BOMBEO RIEGO 1981/86	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-2.10	-2.10	-2.10	-2.10	-2.10	-12.61
BALANCE TOTAL	-.41	.34	.40	-.51	.45	-.03	.30	.43	.29	.28	-.52	-.43	.33	.45	.49	.48	.37	.50	-.53	.16	-.02	-.36	-.42	-.33	.22	1.92

VALORES POSITIVOS INDICAN ENTRADAS AL ACUIFERO

MODELO HIDROGEOLOGICO SECTOR: RIOS JORQUERA, PULIDO Y MANFLAS

BALANCE MASICO MALLAS EXTERIORES

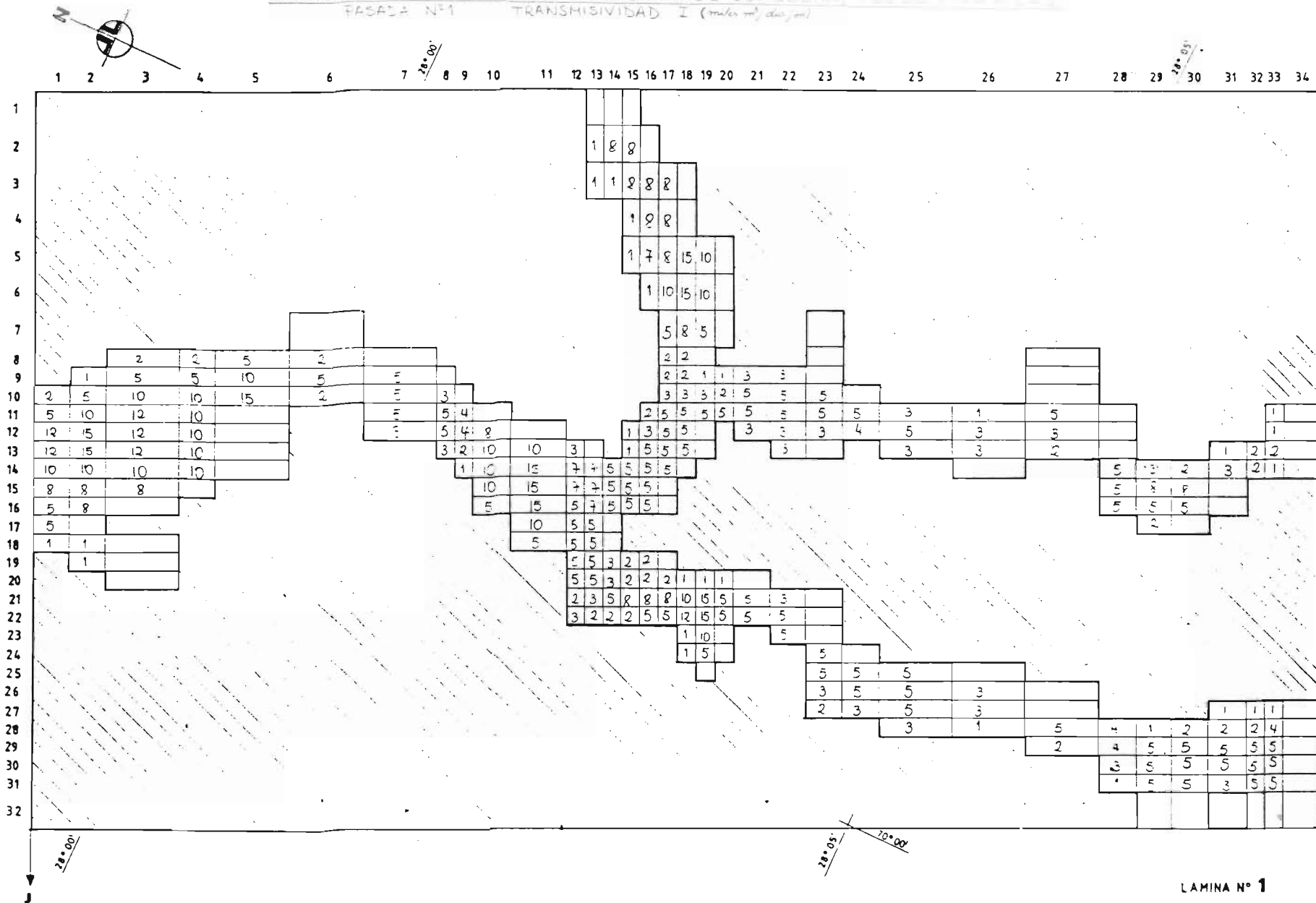
PASADA Nº 5



LAMINA Nº 1

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

MODELO HIDROGEOLOGICO SECTOR: RIOS JORQUERA, POLICO Y VAYTES
FASADA N°1 TRANSMISIVIDAD I (muler m² dia/por)

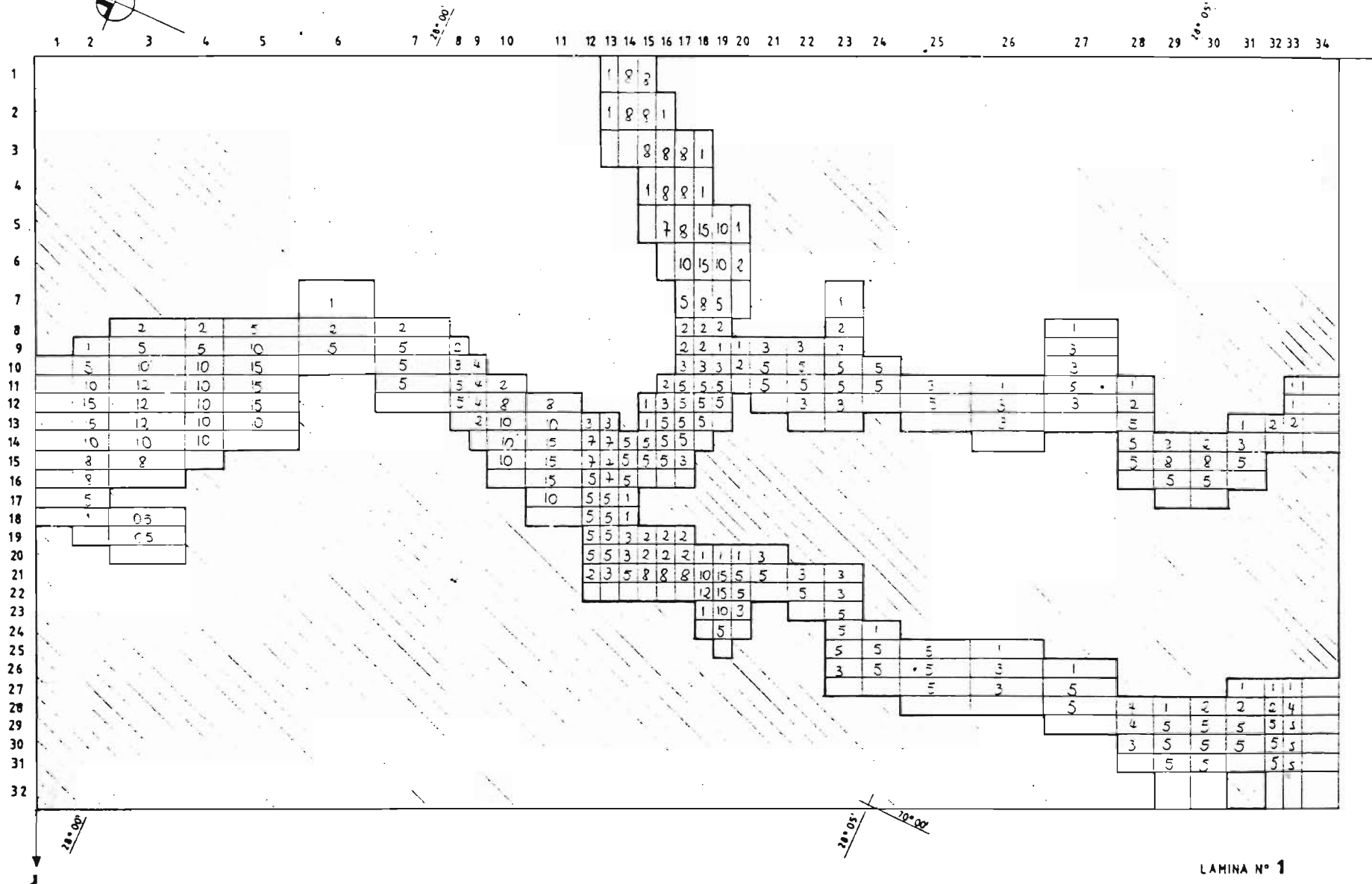


LAMINA N° 1

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

MODELO HIDROGEOLOGICO SECTOR RIOS JORQUERA, PULIDO Y MANFLAS

FASADA N° TRANSMIVIDAD J (m/da m³/da/m)

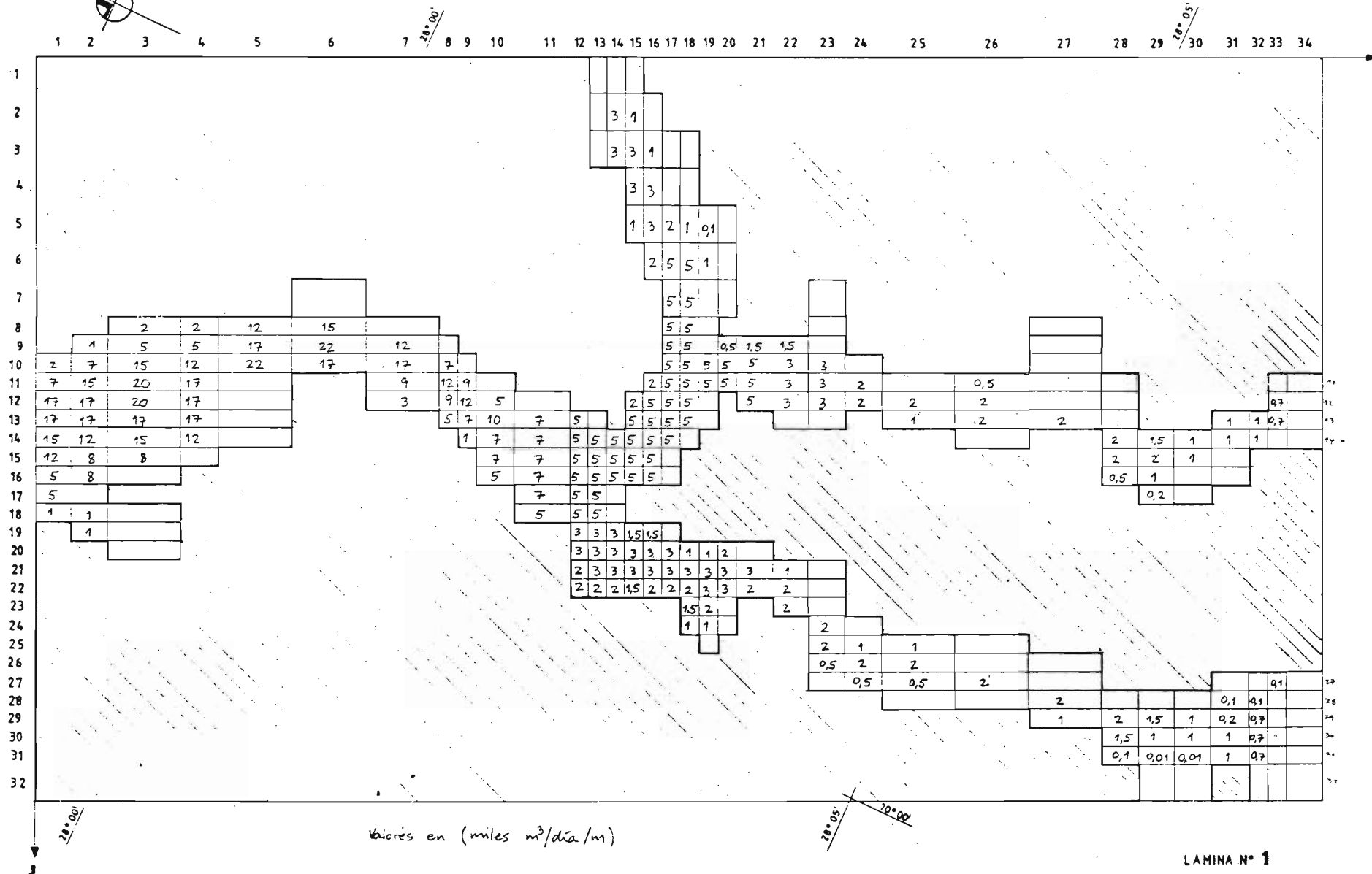


LAMINA N° 1

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA

MODELO HIDROGEOLOGICO SECTOR RUS JOPLERA, POLIDO Y MANFLAS

PASADA N°5 TRANSMISIVIDAD - I (miles m³/día/m).



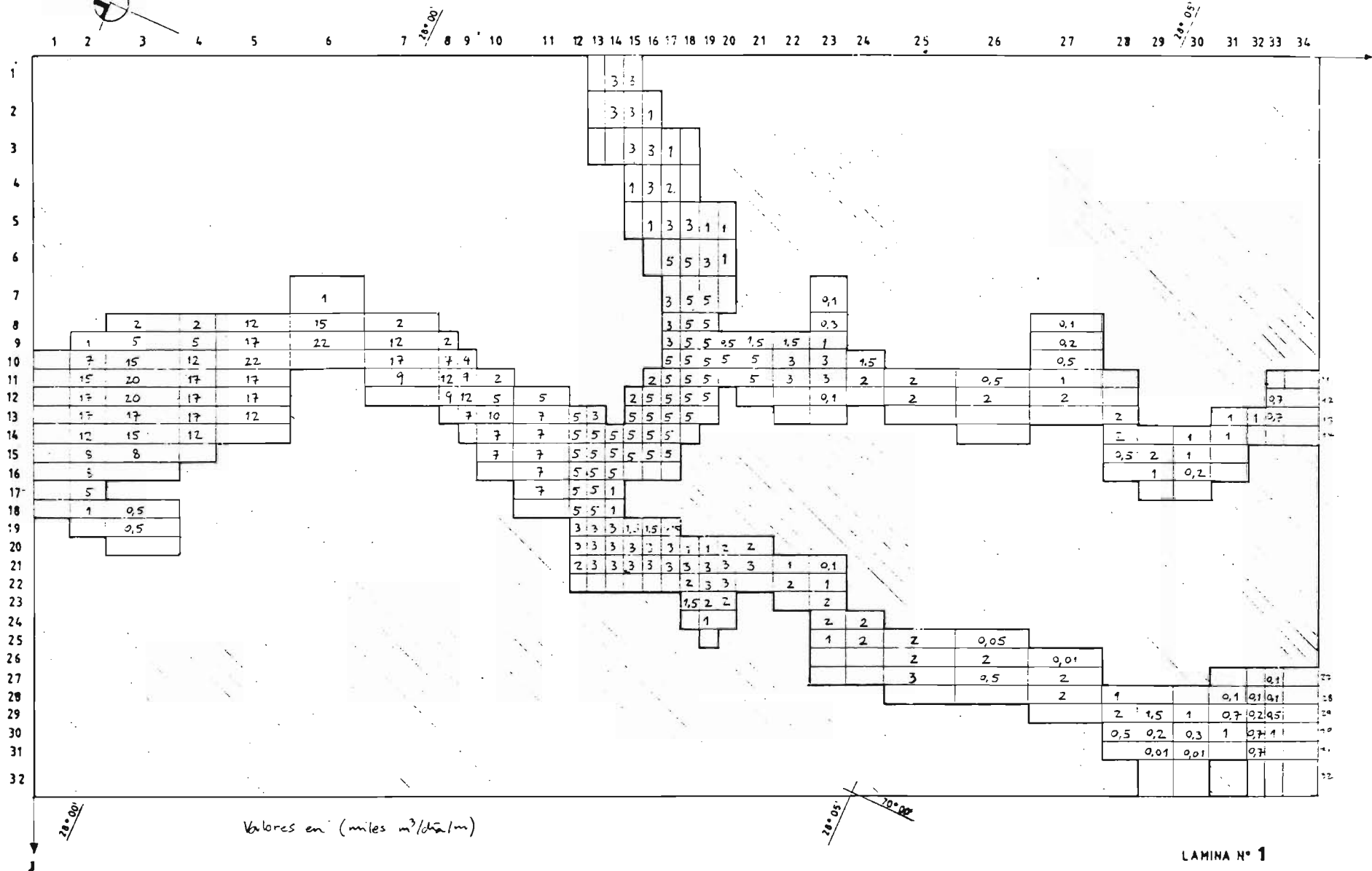
LAMINA N° 1

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

MODELO HIDROGEOLOGICO SECTOR: RIOS JORQUERA, PULIDO Y MANFLAS

PASADA N°5

TRANSMISIVIDAD - J (miles m³/dia/m)



LAMINA N° 1

ALAMOS Y PERALTA

INGENIEROS CONSULTORES LTDA.

CONTRASTE PIEZOMETRICO

SECTOR N° 1

21.11 PD20: 2800-6950 A1

P A S A D A N°1

	1209	1201	1203	1205	1207	1209	1211	1213	1215	1217	AÑO
											62
											63
											64
											65
											66
											67
											68
											69
											70
											71
1194											72
1194,37											73
1194,17											74
1193,52											75
1193,06											76
1192,45											77
1191,50											78
1190,28											79
1189,36											80
1188,22											81
1187,50											82
1186,45											83
1185,68											84
1184,54											85
1183,86											86

P A S A D A N° 5

	NIVEL	1195	1197	1199	1201	1203	1205	1207	1209	1211	1213	1215	1217	1219	1221	1223	1225	1227	1229	1231	1233	AÑO
1194	NIVEL SIMULADO																					
00	1194,45																					62
00	1194,37																					63
00	1193,15																					64
00	1193,67																					65
00	1193,19																					66
00	1191,53																					67
00	1190,39																					68
00	1187,15																					69
00	1187,99																					70
00	1187,10																					71
00	1188,56																					72
00	1191,27																					73
00	1191,24																					74
00	1190,85																					75
00	1190,25																					76
00	1189,67																					77
00	1188,99																					78
00	1188,40																					79
00	1189,47																					80
00	1191,09																					81
00	1190,65																					82
00	1192,29																					83
00	1195,00																					84
00	1196,28																					85
00	1195,98																					86

NIVEL MEDIDO

NIVEL MEDIDO Y SIMULADO COINCIDEN

NIVEL SIMULADO

E=VALOR FUERA DEL RANGO DEL DIBUJO

FECHA: 11/10/2020 10:50:50 A3

P A S A D A N° 1													ANO
NIVEL	NIVEL	1161	1162	1163	1167	1169	1171	1173	1175	1177	1179		
REFALTA	SIMULADO												
1	1154.52	1	1	1	1	1	1	1	1	1	1	62	
2	1152.85	1	1	1	1	1	1	1	1	1	1	63	
3	1152.30	1	1	1	1	1	1	1	1	1	1	64	
4	1154.16	1	1	1	1	1	1	1	1	1	1	65	
5	1168.87	1	1	1	1	1	1	1	1	1	1	66	
6	1195.76	1	1	1	1	1	1	1	1	1	1	67	
7	1174.20	1	1	1	1	1	1	1	1	1	1	68	
8	1122.79	1	1	1	1	1	1	1	1	1	1	69	
9	1154.14	1	1	1	1	1	1	1	1	1	1	70	
10	1117.23	1	1	1	1	1	1	1	1	1	1	71	
11	1139.19	1	1	1	1	1	1	1	1	1	1	72	
12	1116.57	1	1	1	1	1	1	1	1	1	1	73	
13	1136.00	1	1	1	1	1	1	1	1	1	1	74	
14	1116.82	1	1	1	1	1	1	1	1	1	1	75	
15	1192.53	1	1	1	1	1	1	1	1	1	1	76	
16	1117.05	1	1	1	1	1	1	1	1	1	1	77	
17	1198.51	1	1	1	1	1	1	1	1	1	1	78	
18	1261.70	1	1	1	1	1	1	1	1	1	1	79	
19	1204.59	1	1	1	1	1	1	1	1	1	1	80	
20	1192.42	1	1	1	1	1	1	1	1	1	1	81	
21	1215.01	1	1	1	1	1	1	1	1	1	1	82	
22	1206.77	1	1	1	1	1	1	1	1	1	1	83	
23	1204.88	1	1	1	1	1	1	1	1	1	1	84	
24	1205.05	1	1	1	1	1	1	1	1	1	1	85	
25	1199.36	1	1	1	1	1	1	1	1	1	1	86	

P A S A D A N° 5																			ANO
NIVEL	NIVEL	1161	1162	1163	1167	1169	1171	1173	1175	1177	1179	1181	1183	1185	1187	1189	1191	1193	
REFALTA	SIMULADO																		
1	1162.16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	1162.16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	1160.32	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4	1164.46	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5	1160.24	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6	1158.85	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7	1157.78	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8	1156.52	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
9	1155.67	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
10	1155.05	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
11	1160.52	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
12	1163.02	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
13	1161.28	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14	1160.31	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
15	1159.32	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
16	1158.54	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
17	1158.02	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
18	1156.92	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
19	1162.14	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
20	1161.54	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
21	1161.48	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
22	1162.64	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
23	1165.09	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
24	1165.81	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
25	1164.93	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

1=NIVEL MEDIO
2=NIVEL MEDIO Y SIMULADO COINCIDEN

1=NIVEL SIMULADO
2=VALOR FUERA DEL RANGO DEL DIBUJO

MALLA 17 5 P310: 2800-5950 AS

P A S A D A N° 1															AÑO	
NIVEL MEDIDO	NIVEL SIMULADO	1207	1209	1211	1213	1215	1217	1219	1221	1223	1225					
.00	1226.70	1	1	1	1	1	1	1	1	1	1	62				
.00	1213.81	1	1	1	1	1	1	1	1	1	1	63				
.03	1222.50	1	1	1	1	1	1	1	1	1	1	64				
.00	1212.29	1	1	1	1	1	1	1	1	1	1	65				
.00	1222.25	1	1	1	1	1	1	1	1	1	1	66				
.00	1218.44	1	1	1	1	1	1	1	1	1	1	67				
.00	1220.03	1	1	1	1	1	1	1	1	1	1	68				
.00	1231.44	1	1	1	1	1	1	1	1	1	1	69				
.00	1218.96	1	1	1	1	1	1	1	1	1	1	70				
.00	1228.18	1	1	1	1	1	1	1	1	1	1	71				
.00	1196.29	1	1	1	1	1	1	1	1	1	1	72				
.00	1226.94	1	1	1	1	1	1	1	1	1	1	73				
.00	1201.72	1	1	1	1	1	1	1	1	1	1	74				
.00	1227.24	1	1	1	1	1	1	1	1	1	1	75				
.00	1208.28	1	1	1	1	1	1	1	1	1	1	76				
.00	1229.21	1	1	1	1	1	1	1	1	1	1	77				
.00	1198.42	1	1	1	1	1	1	1	1	1	1	78				
.00	1223.27	1	1	1	1	1	1	1	1	1	1	79				
.00	1200.75	1	1	1	1	1	1	1	1	1	1	80				
.00	1220.25	1	1	1	1	1	1	1	1	1	1	81				
.00	1216.71	1	1	1	1	1	1	1	1	1	1	82				
.00	1222.04	1	1	1	1	1	1	1	1	1	1	83				
.00	1221.40	1	1	1	1	1	1	1	1	1	1	84				
.00	1220.55	1	1	1	1	1	1	1	1	1	1	85				
1207.80	1221.48	1	1	1	1	1	1	1	1	1	1	86				

P A S A D A N° 5															AÑO						
NIVEL MEDIDO	NIVEL SIMULADO	1200	1202	1204	1206	1208	1210	1212	1214	1216	1218	1220	1222	1224	1226	1228	1230	1232	1234	1236	1238
.00	1200.01	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.00	1199.33	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.00	1198.62	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.00	1198.76	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.00	1198.69	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.00	1197.64	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.00	1196.86	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.00	1196.07	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.00	1195.34	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.00	1194.76	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.00	1195.52	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.00	1197.19	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.00	1197.62	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.00	1197.25	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.00	1196.95	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.00	1196.52	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.00	1196.04	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.00	1195.65	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.00	1196.17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.00	1197.10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.00	1197.04	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.00	1197.75	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.00	1199.32	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.00	1200.28	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1207.80	1200.31	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

a=NIVEL MEDIDO

A=NIVELES MEDIDO Y SIMULADO COINCIDEN

A=NIVEL SIMULADO

E=VALOR FUERA DEL RANGO DEL DISEÑO

FOIb: 2750-6950 C3

[illegible]

P A S A D A N° 1

[illegible]

PASADA Nº 5

[illegible]

0=NIVEL SIMULADO
E=VALOR FUERA DEL RANGO DEL DIBUJO

TELEFONOS: 2231142 - 2514551

RESUMEN BALANCE MASICO
PASADA N° 1

[illegible]

MODELO HIDROGEOLOGICO LAUTARO-LA PUERTA

北京：中国文联出版社，2004。

RESOURCED BALANCE PAGE 100

PASADA N° 2

[illegible]

VALORES EN MILLONES ₡3

[illegible]

MODELO HIDROGEOLOGICO LAUTARO-LA PUERTA

RESUMEN BALANCE HÍDICO

PASADA N°3

VALORES EN MILLONES M3

ANO	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	TOTAL PERIODO
MALLAS EXTERIORES	17.96	20.30	18.68	18.72	20.47	20.79	20.53	21.21	20.93	21.01	17.56	25.96	25.03	24.00	24.38	23.44	22.91	21.82	19.93	24.10	21.81	11.62	22.31	23.04	23.65	531.77
RIO	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
VERTIENTES	-13.64	-24.40	-26.77	-26.64	-25.58	-25.33	-29.26	-28.53	-28.29	-28.54	-27.82	-26.67	-27.70	-28.32	-27.94	-28.14	-25.37	-30.76	-31.02	-27.23	-25.23	-27.20	-28.30	-27.70	-27.80	-679.36
ALMACENAMIENTO	4.32	.50	1.84	-1.62	-1.04	-.06	4.37	-3.67	2.48	-1.62	-1.13	3.52	1.64	-1.14	-1.47	.27	1.84	-1.11	1.11	-1.97	.46	5.15	-4.26	.75	-1.22	9.01
INF. RIO EN CRECIDA	.00	.27	1.79	.00	.00	.00	6.39	.98	4.20	2.16	3.08	.00	.00	.00	.00	1.61	3.62	3.31	4.47	.00	.00	.00	.00	.00	.00	32.17
INF. CANALES PRINCIPALES	.00	.01	.04	.00	.00	.00	.13	.02	.09	.05	.06	.00	.00	.00	.00	.03	.07	.07	.09	.00	.00	.00	.00	.00	.00	.00
INF. CANALES SECUNDARIOS	.00	.13	.85	.00	.00	.00	3.05	.47	2.00	1.17	1.47	.00	.00	.00	.00	.77	1.72	1.56	2.13	.00	.00	.00	.00	.00	.00	15.35
INF. RIEGO HORTALIZAS	.00	.03	.20	.00	.00	.00	.72	.11	.47	.28	.35	.00	.00	.00	.00	.18	.41	.37	.50	.00	.00	.00	.00	.00	.00	3.62
INF. RIEGO FRUTALES	.00	.00	.03	.00	.00	.00	.12	.02	.08	.05	.06	.00	.00	.00	.00	.03	.07	.06	.08	.00	.00	.00	.00	.00	.00	.59
INF. RIEGO PRADERAS	.00	.04	.24	.00	.00	.00	.86	.12	.56	.33	.41	.00	.00	.00	.00	.22	.48	.44	.60	.00	.00	.00	.00	.00	.00	4.31
INF. RIEGO PARRONALES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.42	.34	1.66	2.33	4.19	4.19	14.25
BOMBEO RIEGO 1968/74	.00	.00	.00	.00	.00	.00	-.38	-.38	-.38	-.38	-.38	-.38	-.38	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-2.66
BOMBEO RIEGO 1981/86	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-7.52	-7.52	-7.52	-7.52	-7.52	-7.52	-45.11
INF. EMBALSE LAUTARO	.00	2.00	4.00	4.00	2.00	2.00	.00	.00	.00	.00	2.00	2.00	2.00	2.00	.00	.00	.00	.00	2.00	6.00	8.00	24.00	4.00	6.00	4.00	76.00
BALANCE TOTAL	-.01	-2.24	-2.78	-2.31	-2.06	-2.47	-2.22	-2.33	-2.81	-1.96	-2.07	-2.61	-2.68	-2.17	-2.09	-2.13	-2.32	-2.01	-2.32	-2.26	-2.55	-2.56	-2.22	-2.73	-2.23	-56.43

VALORES POSITIVOS INDICAN ENTRADAS AL ACUIFERO

RESUMEN BALANCE MASICO

PASADA N° 4

VALORES EN MILLONES M3

ANO	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	TOTAL PERIODO
MALLAS EXTERIORES	24.33	25.58	23.17	28.23	28.88	29.05	28.39	28.65	28.68	28.47	24.00	31.65	31.72	30.88	31.09	30.05	30.61	29.49	25.46	24.01	22.12	17.40	25.20	25.73	26.74	679.56
RIO	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
VERTIENTES	-21.99	-39.31	-40.43	-40.36	-39.60	-39.04	-38.72	-38.76	-38.70	-38.80	-39.17	-39.74	-42.24	-43.25	-42.88	-41.89	-41.42	-41.40	-42.32	-42.31	-43.82	-45.51	-47.22	-49.04	-51.58	1030.00
ALMACENAMIENTO	13.76	1.05	.29	-1.81	-.13	-.56	.25	-.29	.19	.02	-.82	5.25	1.27	.07	-1.36	-.86	-.18	-.59	1.64	2.94	.59	2.26	-1.51	1.73	.01	23.26
INF. RIO EN CRECIDA	1.79	1.79	.89	1.79	1.79	.89	.89	.89	.89	.89	2.68	.00	.00	.89	.89	.89	.89	.89	1.79	.00	.00	.00	.00	.00	.00	21.45
INF. CANALES PRINCIPALES	3.27	3.27	3.27	3.27	3.27	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98	3.01	3.01	3.46	3.95	4.53	5.05	5.30	6.66	8.60	9.96	99.61
INF. CANALES SECUNDARIOS	2.48	2.48	2.48	2.48	2.48	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.27	2.63	2.98	3.43	3.82	4.00	5.04	6.51	7.55	75.58
INF. RIEGO PARRONALES	.14	.14	.14	.14	.14	.41	.41	.41	.41	.41	.41	.41	.41	.41	.41	.41	.41	.88	1.20	1.52	1.84	1.98	2.77	3.87	4.61	24.35
INF. RIEGO HORT. PRAD. Y FRU	1.91	1.91	1.91	1.91	1.91	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.07	2.07	1.34	1.23	1.23	1.23	1.23	1.23	1.23	1.26	44.69
BOMBEO RIEGO 1968/74	.00	.00	.00	.00	.00	.00	-.38	-.38	-.38	-.38	-.38	-.38	-.38	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-2.66
BOMBEO RIEGO 1981/86	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-7.52	-7.52	-7.52	-7.52	-7.52	-7.52	-45.11
INF. EMBALSE LAUTARO	1.76	4.08	7.68	.00	.00	.00	1.20	.80	.80	1.04	3.52	4.88	3.04	2.64	.88	1.36	.88	1.12	6.08	16.96	16.56	24.24	11.44	11.04	8.00	130.00
BALANCE TOTAL	-.09	-1.12	-1.18	-.74	-1.02	-.77	-1.10	-.75	-1.14	-1.03	-.78	-1.08	-1.37	-1.14	-.90	-1.02	-1.09	-1.00	-1.27	-1.08	-1.30	-1.13	-.88	-1.30	-.99	-25.28

VALORES POSITIVOS INDICAN ENTRADAS AL ACUIFERO

CONTRASTE PIEZOMETRICO

SECTOR N°2.

PASADA Nº 1

[illegible]

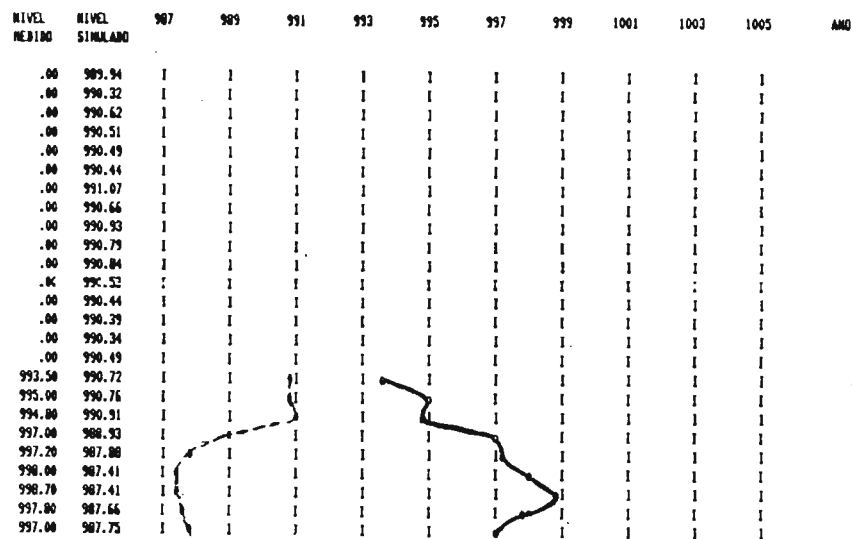
P A S A D A N° 4

[illegible]

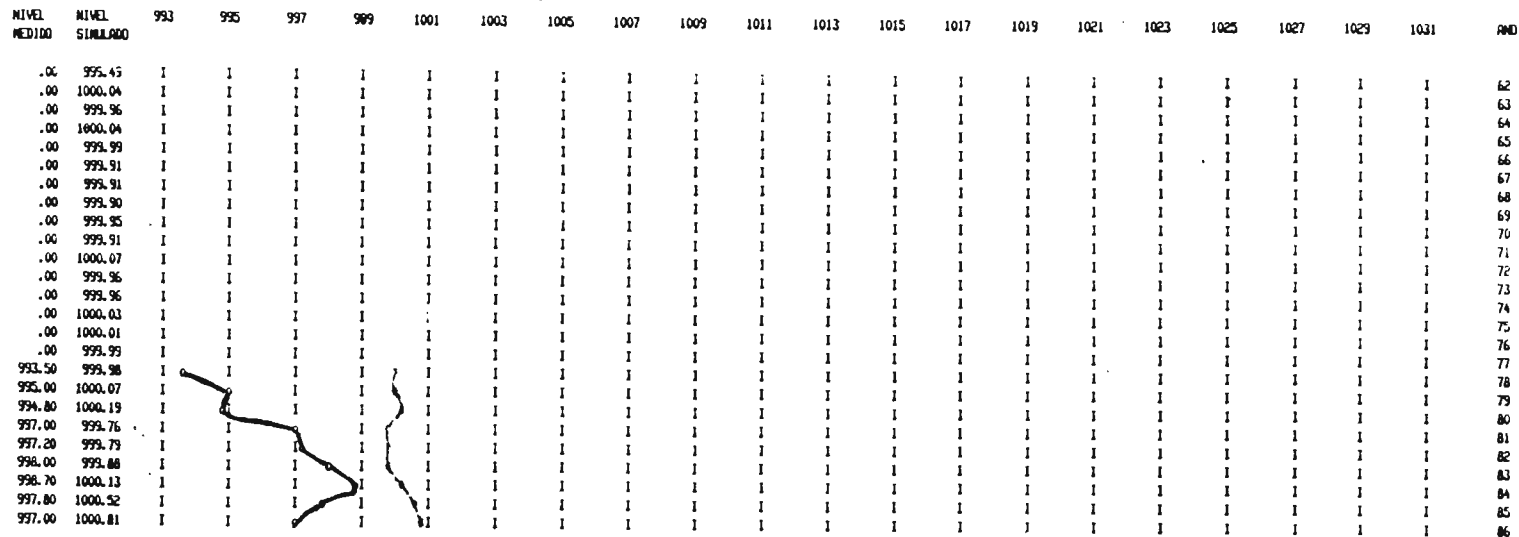
•NIVEL SIMULADO - - - -

1 4 22 11 24 2 31 20

PASADA N°1



PASADA N°4



o=NIVEL MEDIDO
-NIVELES MEDIDO Y SIMULADO COINCIDEN

o=NIVEL SIMULADO
-VALOR FUERA DEL RANGO DEL DIBUJO

NIVEL MEDIO	NIVEL SIMULADO	922	924	926	928	930	932	934	936	938	940	ANO
.00	931.54	I	I	I	I	I	I	I	I	I	I	
.00	929.06	I		I	I	I				I	I	
.00	928.03	I	I	I	I	I	I			I	I	
.00	927.30	I	I	I	I	I	I		I		I	
.00	926.84	I	I	I	I	I	I		I		I	
.00	926.41	I	I	I	I	I	I		I	I	I	
.00	927.13	I		I	I	I	I		I	I	I	
.00	926.74	I	I	I	I	I	I		I		I	
.00	926.80	I	I		I	I			I	I	I	
933.60	926.63	I		I	I		I		I		I	
932.70	926.71	I	I		I	I			I	I	I	
934.00	926.41	I	I		I	I			I	I	I	
933.50	925.99	I			I	I			I	I	I	
933.40	925.89	I	I		I	I			I	I	I	
933.80	925.73	I	I		I	I			I	I	I	
934.40	925.80	I			I	I			I	I	I	
933.70	926.19	I	I		I	I			I	I	I	
933.40	926.25	I	I		I	I			I	I	I	
933.30	926.51	I		I	I	I			I	I	I	
933.40	925.17	I			I	I			I	I	I	
933.30	924.07	I			I	I			I	I	I	
933.70	923.26	I		I	I	I			I	I	I	
934.00	922.78	I	I		I	I			I	I	I	
933.30	922.89	I			I	I			I	I	I	
933.00	922.95	I	I	I	I	I			I	I	I	

[illegible]

P A S A D A N° 1

NIVEL MEDIO	NIVEL SIMULADO	895	897	899	901	903	905	907	909	911	913	ANO
.00	900.48	I	I	I	I	I	I	I	I	I	I	62
.00	900.55	I	I	I	I	I	I	I	I	I	I	63
.00	899.88	I	I	I	I	I	I	I	I	I	I	64
.00	899.94	I	I	I	I	I	I	I	I	I	I	65
.00	899.55	I	I	I	I	I	I	I	I	I	I	66
.00	899.35	I	I	I	I	I	I	I	I	I	I	67
.00	900.35	I	I	I	I	I	I	I	I	I	I	68
.00	899.41	I	I	I	I	I	I	I	I	I	I	69
.00	900.24	I	I	I	I	I	I	I	I	I	I	70
.00	899.63	I	I	I	I	I	I	I	I	I	I	71
.00	899.85	I	I	I	I	I	I	I	I	I	I	72
.00	899.53	I	I	I	I	I	I	I	I	I	I	73
895.60	899.36	I	I	I	I	I	I	I	I	I	I	74
895.40	899.28	I	I	I	I	I	I	I	I	I	I	75
895.30	899.11	I	I	I	I	I	I	I	I	I	I	76
895.10	899.23	I	I	I	I	I	I	I	I	I	I	77
.00	899.97	I	I	I	I	I	I	I	I	I	I	78
895.00	899.42	I	I	I	I	I	I	I	I	I	I	79
895.00	899.82	I	I	I	I	I	I	I	I	I	I	80
.00	898.23	I	I	I	I	I	I	I	I	I	I	81
.00	897.97	I	I	I	I	I	I	I	I	I	I	82
.00	897.91	I	I	I	I	I	I	I	I	I	I	83
.00	898.06	I	I	I	I	I	I	I	I	I	I	84
.00	897.97	I	I	I	I	I	I	I	I	I	I	85
.00	897.90	I	I	I	I	I	I	I	I	I	I	86

P A S A D A N° 4

NIVEL MEDIO	NIVEL SIMULADO	895	897	899	901	903	905	907	909	911	913	915	917	919	921	923	925	927	929	931	933	ANO
.00	915.77	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	62
.00	916.20	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	63
.00	916.25	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	64
.00	916.26	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	65
.00	916.31	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	66
.00	916.30	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	67
.00	916.30	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	68
.00	916.30	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	69
.00	916.27	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	70
.00	916.30	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	71
.00	916.27	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	72
.00	916.30	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	73
895.60	916.29	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	74
895.40	916.30	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	75
895.30	916.24	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	76
895.10	916.19	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	77
.00	916.19	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	78
895.00	916.18	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	79
895.00	916.23	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	80
.00	916.11	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	81
.00	916.12	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	82
.00	916.14	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	83
.00	916.41	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	84
.00	916.70	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	85
.00	916.89	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	86

P A S A D A N° 1

NIVEL MEDIDO	NIVEL SIMULADO	879	881	883	885	887	889	891	893	895	897	ANO
.00	882.79	1	1	1	1	1	1	1	1	1	1	62
.00	882.90	1	1	1	1	1	1	1	1	1	1	63
.00	882.68	1	1	1	1	1	1	1	1	1	1	64
.00	882.73	1	1	1	1	1	1	1	1	1	1	65
.00	882.50	1	1	1	1	1	1	1	1	1	1	66
.00	882.70	1	1	1	1	1	1	1	1	1	1	67
.00	883.18	1	1	1	1	1	1	1	1	1	1	68
.00	882.49	1	1	1	1	1	1	1	1	1	1	69
.00	883.00	1	1	1	1	1	1	1	1	1	1	70
.00	882.71	1	1	1	1	1	1	1	1	1	1	71
.00	882.80	1	1	1	1	1	1	1	1	1	1	72
.00	882.50	1	1	1	1	1	1	1	1	1	1	73
.00	882.49	1	1	1	1	1	1	1	1	1	1	74
.00	882.46	1	1	1	1	1	1	1	1	1	1	75
.00	882.20	1	1	1	1	1	1	1	1	1	1	76
.00	882.16	1	1	1	1	1	1	1	1	1	1	77
.00	882.60	1	1	1	1	1	1	1	1	1	1	78
.00	882.27	1	1	1	1	1	1	1	1	1	1	79
879.30	882.41	1	1	1	1	1	1	1	1	1	1	80
879.50	881.97	1	1	1	1	1	1	1	1	1	1	81
879.50	881.92	1	1	1	1	1	1	1	1	1	1	82
879.60	881.99	1	1	1	1	1	1	1	1	1	1	83
879.70	882.23	1	1	1	1	1	1	1	1	1	1	84
879.80	882.20	1	1	1	1	1	1	1	1	1	1	85
879.70	882.12	1	1	1	1	1	1	1	1	1	1	86

P A S A D A N° 4

NIVEL MEDIDO	NIVEL SIMULADO	879	881	883	885	887	889	891	893	895	897	899	901	903	905	907	909	911	913	915	917	ANO
.00	889.61	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	62
.00	889.74	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	63
.00	889.78	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	64
.00	889.77	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	65
.00	889.77	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	66
.00	889.78	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	67
.00	889.77	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	68
.00	889.78	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	69
.00	889.77	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	70
.00	889.77	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	71
.00	889.77	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	72
.00	889.77	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	73
.00	889.78	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	74
.00	889.78	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	75
.00	889.59	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	76
.00	889.41	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	77
.00	889.41	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	78
.00	889.41	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	79
879.30	889.32	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	80
879.50	889.57	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	81
879.50	889.57	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	82
879.60	889.64	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	83
879.70	889.85	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	84
879.80	890.00	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	85
879.70	890.04	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	86

o=NIVEL MEDIDO
A=NIVELES MEDIDO Y SIMULADO COINCIDEN

*NIVEL SIMULADO
E=VALOR FUERA DEL RANGO DEL DIBUJO

PASADA N° 1

NIVEL MEDIO	NIVEL SIMULADO	1098	1100	1102	1104	1106	1108	1110	1112	1114	1116	ANO
.00	1100.47	I	I	I	I	I	I	I	I	I	I	62
.00	1102.18	I	I	I	I	I	I	I	I	I	I	63
.00	1100.90	I	I	I	I	I	I	I	I	I	I	64
.00	1100.42	I	I	I	I	I	I	I	I	I	I	65
.00	1101.83	I	I	I	I	I	I	I	I	I	I	66
.00	1100.66	I	I	I	I	I	I	I	I	I	I	67
.00	1104.01	I	I	I	I	I	I	I	I	I	I	68
.00	1109.73	I	I	I	I	I	I	I	I	I	I	69
.00	1103.57	I	I	I	I	I	I	I	I	I	I	70
.00	1100.78	I	I	I	I	I	I	I	I	I	I	71
.00	1099.03	I	I	I	I	I	I	I	I	I	I	72
.00	1106.07	I	I	I	I	I	I	I	I	I	I	73
.00	1106.63	I	I	I	I	I	I	I	I	I	I	74
.00	1106.10	I	I	I	I	I	I	I	I	I	I	75
.00	1105.13	I	I	I	I	I	I	I	I	I	I	76
.00	1104.54	I	I	I	I	I	I	I	I	I	I	77
.00	1105.80	I	I	I	I	I	I	I	I	I	I	78
.00	1102.96	I	I	I	I	I	I	I	I	I	I	79
.00	1103.27	I	I	I	I	I	I	I	I	I	I	80
1106.50	1106.30	I	I	I	I	I	I	I	I	I	I	81
1098.50	1105.96	I	I	I	I	I	I	I	I	I	I	82
1108.50	1106.41	I	I	I	I	I	I	I	I	I	I	83
1110.00	1106.73	I	I	I	I	I	I	I	I	I	I	84
1110.00	1106.67	I	I	I	I	I	I	I	I	I	I	85
1110.00	1106.00	I	I	I	I	I	I	I	I	I	I	86

PASADA N° 4

NIVEL MEDIO	NIVEL SIMULADO	1098	1100	1102	1104	1106	1108	1110	1112	1114	1116	1118	1120	1122	1124	1126	1128	1130	1132	1134	1136	ANO
.00	1097.56	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	62
.00	1098.02	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	63
.00	1098.85	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	64
.00	1096.87	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	65
.00	1096.94	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	66
.00	1096.80	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	67
.00	1097.12	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	68
.00	1096.93	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	69
.00	1097.00	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	70
.00	1097.07	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	71
.00	1095.78	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	72
.00	1101.62	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	73
.00	1102.21	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	74
.00	1101.88	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	75
.00	1100.59	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	76
.00	1099.98	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	77
.00	1099.87	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	78
.00	1099.10	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	79
.00	1100.13	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	80
1106.50	1105.40	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	81
1098.50	1105.21	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	82
1108.50	1107.40	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	83
1110.00	1104.44	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	84
1110.00	1104.64	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	85
1110.00	1103.55	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	86

RECURSOS HIDRAULICOS

AGUAS SUBTERRANEAS

REGADIO

AGUA POTABLE E INDUSTRIAL

SECTOR N°3 A.

11

SANTIAGO

TOLEDO 1944 - PROVIDENCIA

TELEFONOS: 2231142 - 2514551

RECUPERACIÓN DE ACUÍFERO PASADA N° 1

PASADA N° 1

VALORES EN MILLONES M3

ANO	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	TOTAL PER.1963/86
MALLAS EXTERIORES	-9.81	-10.78	-10.24	-11.96	-12.68	-11.06	-10.43	-9.68	-8.32	-8.51	-9.62	-12.52	-12.06	-9.13	-8.38	-7.51	-7.45	-7.96	-7.27	-10.19	-10.60	-11.48	-12.07	-11.57	-12.24	-121.1
RIO	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
VERTIENTES	-1.17	-1.09	-1.08	-1.09	-1.09	-1.09	-1.03	-1.13	-1.02	-1.03	-1.02	-1.03	-1.10	-1.08	-1.07	-1.06	-1.06	-1.06	-1.06	-1.03	-1.12	-1.46	-1.15	-1.80	-4.11	
ALMACENAMIENTO	.29	1.21	.29	.39	.52	-1.34	-1.16	-1.28	-1.31	-1.17	.26	.84	.07	-1.37	-1.11	-1.34	-1.14	-1.21	-1.11	1.59	.58	1.12	2.75	-1.34	-1.78	8.56
INF. RIO EN CRESCIDA	10.13	11.26	9.85	10.63	12.38	10.13	9.85	9.00	8.16	8.12	9.43	12.66	11.54	10.13	9.57	8.58	8.71	8.20	8.58	10.79	12.51	5.34	27.30	11.79	14.07	292.81
INF. CANALES PRINCIPALES	.38	.42	.27	.40	.46	.38	.37	.34	.31	.33	.35	.48	.43	.38	.36	.32	.33	.31	.32	.52	.47	.58	1.01	.86	.53	10.38
INF. CANALES SECUNDARIOS	.27	.30	.26	.28	.33	.27	.26	.24	.22	.21	.25	.33	.33	.27	.25	.23	.23	.22	.23	.36	.32	.40	.71	.60	.37	27.72
INF. RIEGO HORTALIZAS	.04	.04	.04	.04	.05	.04	.04	.03	.03	.03	.04	.05	.04	.04	.04	.03	.03	.03	.03	.05	.12	.16	.10	.28	.05	1.11
INF. RIEGO FRUTALES	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.03	.02	.02	.02	.02	.02	.02	.02	.03	.11	.13	.15	.13	.13	.59
INF. RIEGO PARRONALES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.15	.01	.51	1.18	1.51	1.51	5.15
BOMBEO RIEGO 1963/74	.00	.00	.00	.00	.00	.00	-1.13	-1.13	-1.13	-1.13	-1.13	-1.13	-1.13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-1.38
BOMBEO RIEGO 1975/80	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-1.93	-1.93	-1.93	-1.93	-1.93	-1.93	.00	.11	.00	.06	.10	.00	-10.59
BOMBEO RIEGO 1981/86	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-2.42	-2.42	-2.42	-2.42	-2.42	-2.42	-14.51
BALANCE TOTAL	.57	-1.03	-1.08	-1.09	-1.05	.00	.01	.01	.02	.00	.00	-1.04	-1.02	.02	-1.02	.02	.04	.04	.04	-1.16	-1.16	-1.14	-1.44	-1.20	.06	-1.58

VALORES POSITIVOS INDICAN ENTRADAS AL ACUIFERO

[illegible]

RESUMEN BALANCE MAGNICO

PASADA N° 3

VALORES EN MILLONES M3

ANO	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	TOTAL PERIODO
NALLAS EXTERIORES	-21.32	-11.98	-9.02	-9.19	-8.57	-8.72	-7.22	-5.73	-4.91	-5.23	-7.59	-9.35	-12.78	-11.06	-8.54	-7.39	-6.62	-5.55	-9.34	-9.23	-10.36	-19.53	-17.87	-16.14	-11.84	-255.10
RIO	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
VERTIENTES	-1.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-1.04
ALMACENAMIENTO	-15.17	-5.50	-5.76	3.07	-1.01	-1.33	-3.00	-1.13	-1.94	.77	4.07	2.37	5.68	-4.70	-1.99	-1.50	-1.51	-3.16	5.46	8.14	9.67	19.02	6.22	-5.98	-8.61	8.99
INF. RIO EN CRECIDA	7.31	7.31	5.63	9.56	7.88	6.75	5.63	4.50	3.94	3.94	10.13	16.69	14.63	9.56	8.44	7.31	6.75	5.63	12.38	17.44	18.57	37.13	21.38	9.00	5.63	257.11
INF. CANALES PRINCIPALES	.38	.42	.37	.40	.46	.38	.37	.34	.31	.30	.35	.40	.43	.38	.36	.32	.33	.31	.32	.52	.47	.58	1.02	.86	.53	10.98
INF. CANALES SECUNDARIOS	.26	.29	.26	.28	.32	.26	.26	.24	.21	.21	.25	.33	.30	.26	.25	.22	.23	.22	.22	.36	.33	.40	.71	.60	.37	7.65
INF. RIEGO HORTALIZAS	.04	.04	.04	.04	.05	.04	.04	.03	.03	.03	.04	.05	.04	.04	.04	.03	.03	.03	.03	.05	.05	.06	.10	.09	.05	1.16
INF. RIEGO FRUTALES	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.03	.02	.02	.02	.02	.02	.02	.02	.03	.03	.03	.05	.05	.03	.59
INF. RIEGO PARRONALES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.15	.30	.60	1.04	1.49	1.49	5.07
BOMBEO RIEGO 1968/74	.00	.00	.00	.00	.00	.00	-1.13	-1.13	-1.13	-1.13	-1.13	-1.13	-1.13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-8.88
BOMBEO RIEGO 1975/80	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-1.93	-1.93	-1.93	-1.93	-1.93	-1.93	.00	.00	.00	.00	.00	.00	-11.59
BOMBEO_RIEGO 1981/86	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-2.42	-2.42	-2.42	-2.42	-2.42	-2.42	-14.51
BALANCE TOTAL	1.83	-3.39	3.05	-2.26	1.77	-.93	2.85	-.60	1.41	-1.63	-1.00	-.27	-3.16	1.98	-.37	.08	.31	1.87	-3.76	-1.24	-2.72	-2.18	-2.19	-.50	2.44	-8.60

VALORES POSITIVOS INDICAN ENTRADAS AL ACUIFERO

RESUMEN BALANCE MASICO

PASADA N° 4

VALORES EN MILLONES M3

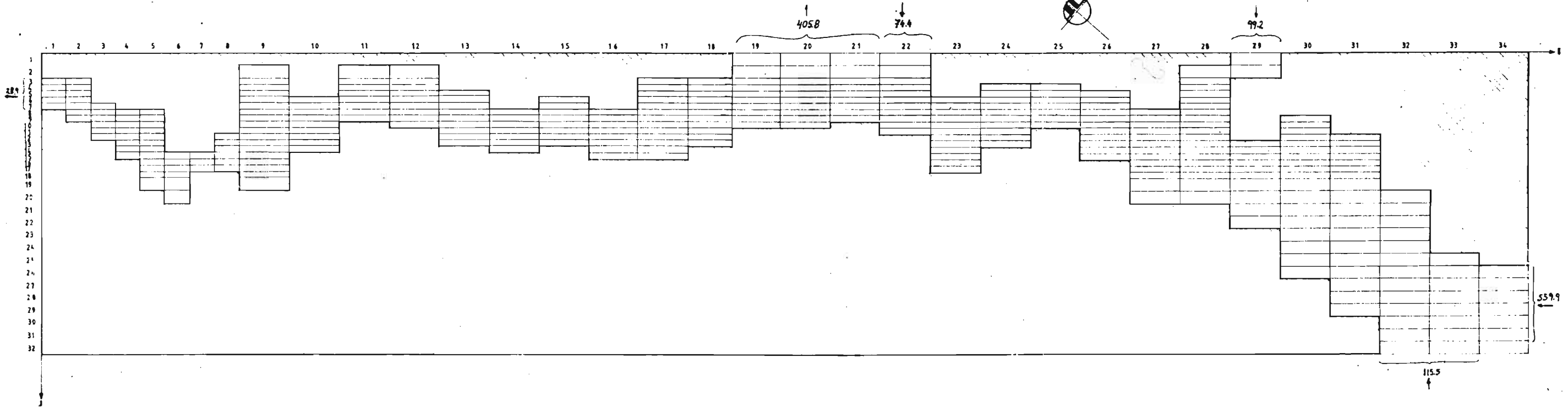
ANO	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	TOTAL PERIODO
MALLAS EXTERIORES	-18.39	-17.15	-16.46	-15.60	-15.00	-15.48	-15.11	-16.12	-17.69	-18.57	-17.55	-18.46	-19.84	-19.12	-17.08	-16.73	-16.65	-16.06	-15.31	-11.64	-12.53	-13.84	-14.71	-21.35	-21.02	-417.46
RIO	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
VERTIENTES	-.12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-.12
ALMACENAMIENTO	-4.93	-3.86	-2.92	-3.75	3.28	-.82	-4.48	-6.20	-8.38	-9.70	-10.55	-3.33	.77	.32	-2.56	-1.59	-4.47	-5.54	-7.11	7.82	12.92	11.95	34.59	23.20	-4.81	9.86
INF. RIO EN CRECIDA	9.65	9.65	9.65	8.27	13.09	11.03	8.96	7.58	6.89	6.89	5.51	13.09	17.92	18.61	13.09	13.78	11.72	10.34	8.27	17.92	24.12	23.43	46.67	41.35	12.41	370.10
INF. CANALES PRINCIPALES	2.26	2.26	2.26	2.26	2.26	2.26	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.67	1.78	1.99	2.15	2.80	3.66	46.62
INF. CANALES SECUNDARIOS	.57	.57	.57	.57	.57	.57	.41	.41	.41	.41	.41	.41	.41	.41	.41	.41	.41	.41	.40	.42	.45	.51	.55	.70	.92	12.35
INF. RIEGO PARRONALES	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.30	.39	.49	.56	.60	.81	1.11	1.88	9.33
INF. RIEGO HORT. PRAD. FRUT	1.07	1.07	1.07	1.07	1.07	.81	.81	.81	.81	.81	.81	.81	.81	.81	.81	.80	.80	.51	.37	.28	.29	.31	.33	.34	.37	17.83
BOMBEO RIEGO 1968/74	.00	.00	.00	.00	.00	.00	-.13	-.13	-.13	-.13	-.13	-.13	-.13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-.88
BOMBEO RIEGO 1975/80	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-1.93	-1.93	-1.93	-1.93	-1.93	-1.93	.00	.00	.00	.00	.00	.00	-11.59
BOMBEO RIEGO 1981/86	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-2.42	-2.42	-2.42	-2.42	-2.42	-2.42	-14.51
BALANCE TOTAL	.16	.45	.20	.51	-1.10	.20	1.23	.55	.49	.92	1.41	.87	.21	.26	-.33	-.27	.62	.73	.93	-1.10	-.67	-1.37	-1.02	-.66	.61	3.51

VALORES POSITIVOS INDICAN ENTRADAS AL ACUIFERO

MODELO HIDROGEOLOGICO SECTOR: LAUTARO - LA PUERTA

PASADA N°1

BALANCE MASICO EN MALLAS EXTERIORES (Valores en millones de m3)



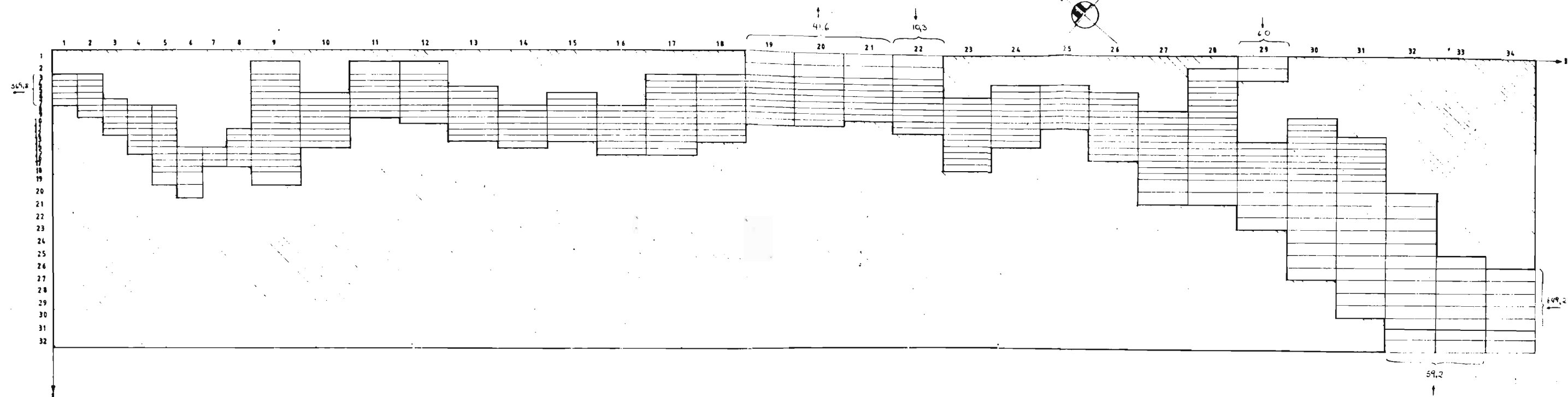
LAMINA N° 2

ALAMOS Y PERALTA
INGENIEROS CONSULTORES .TDA

MODELO HIDROGEOLOGICO SECTOR: LAUTARO - LA PUERTA

PASADA N° 3

BALANCE MASICO EN MALLAS EXTERIORES (Valores en millones de m³)



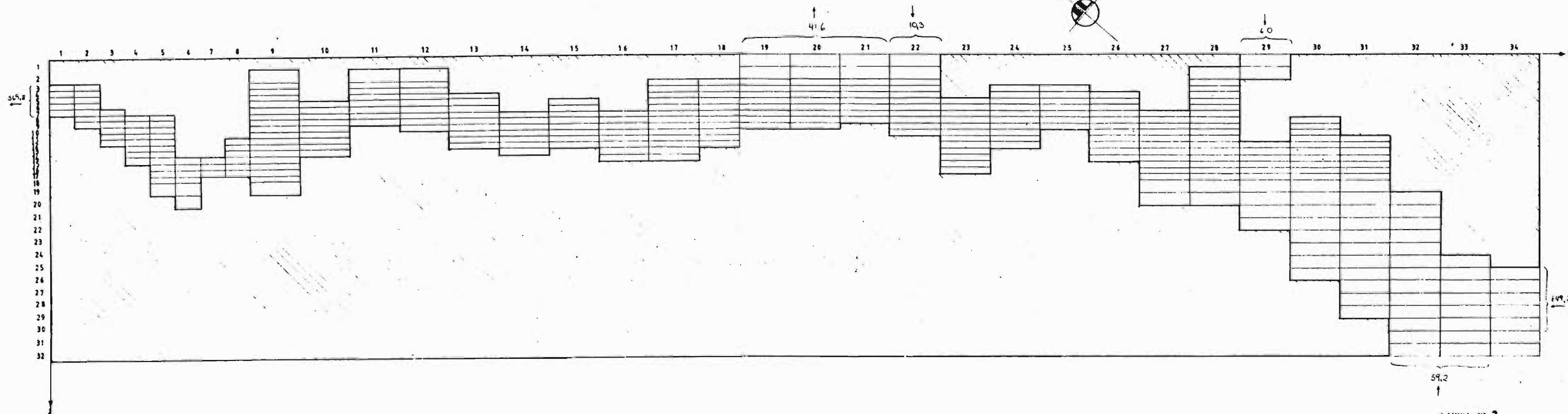
LAMINA N° 2

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

MODELO HIDROGEOLOGICO SECTOR: LAUTARO - LA PUERTA

PASADA N° 3

BALANCE MASICO EN MALLAS EXTERIORES (Valores en millones de m3)



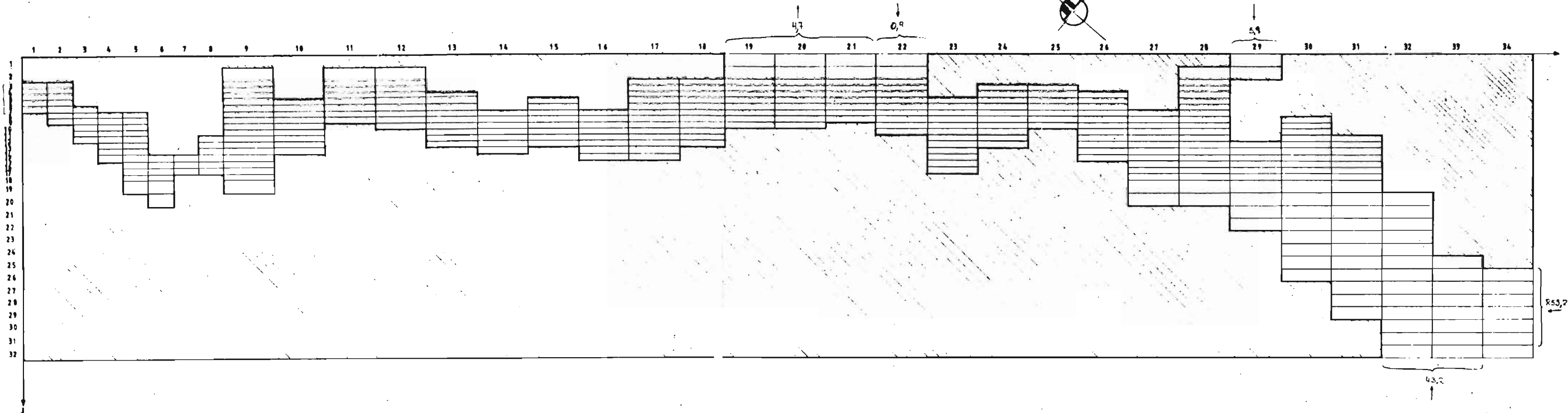
LAMINA N° 2

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA

MODELO HIDROGEOLOGICO SECTOR: LAUTARO - LA PUERTA

PASADA N° 4

BALANCE MASICO EN MALLAS EXTERIORES (Valores en millones de m³)

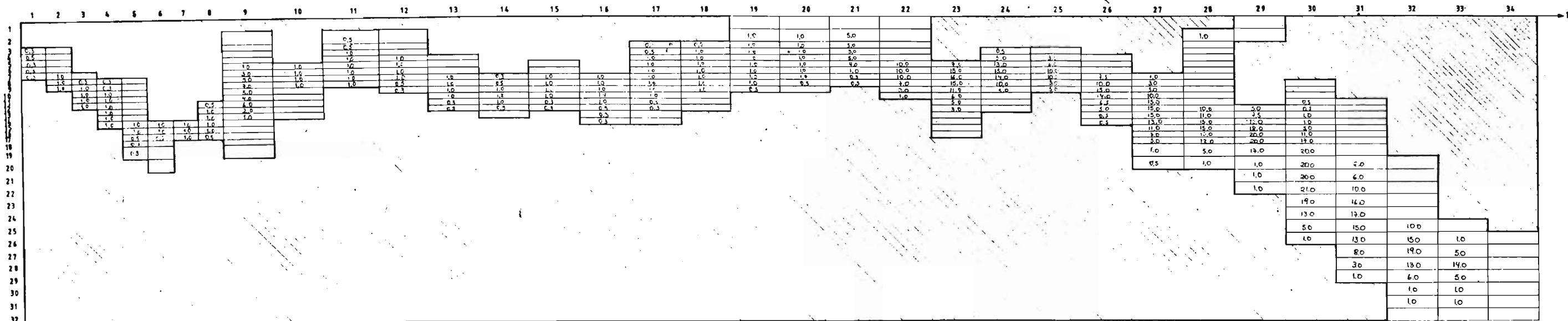


LAMINA N° 2

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

MODELO HIDROGEOLOGICO SECTOR: LAUTARO - LA PUERTA

PASADA N°1 TRANSIVISIVIDAD I (militar m³/cda/m).

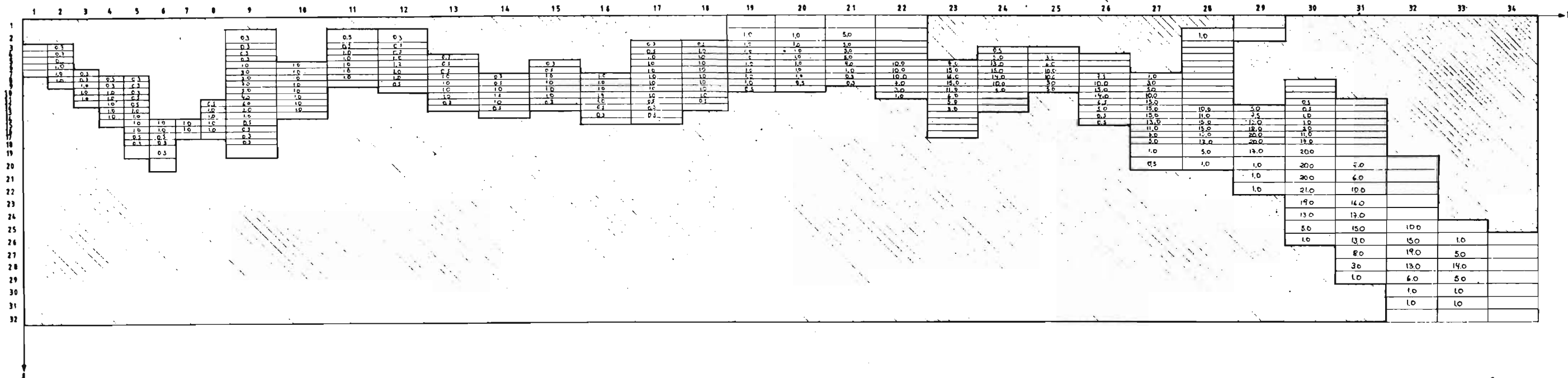


LAMINA N° 2

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA

MODELO HIDROGEOLOGICO SECTOR: LAUTARO - LA PUERTA

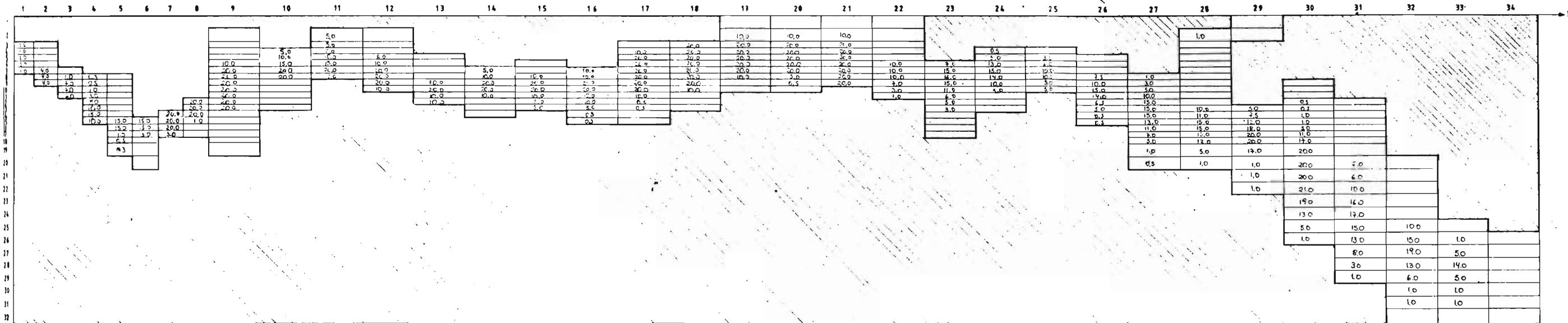
PASADA N°1 TRANSMISIVIDAD I (miles m³/dia/m).



LAMINA N° 2

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

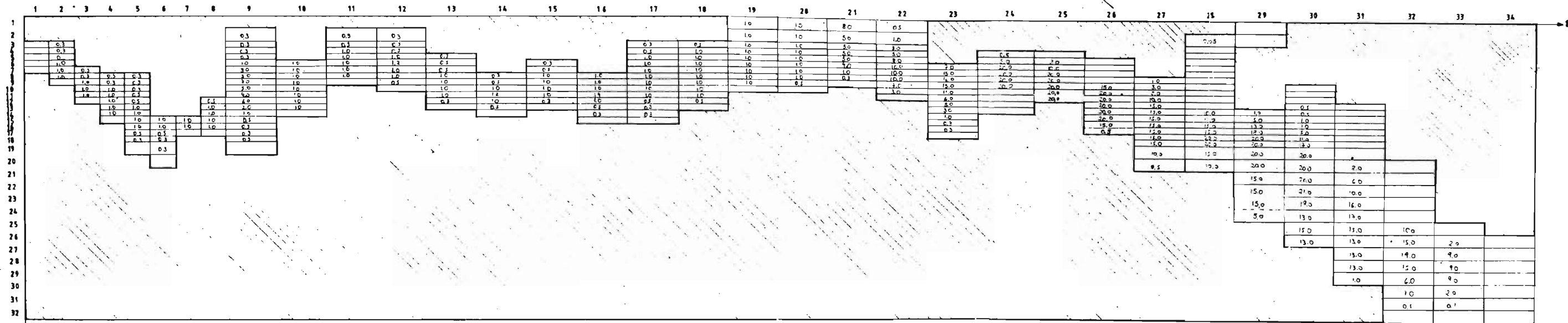
MODELO HIDROGEOLOGICO SECTOR: LAUTARO - LA PUERTA
PASADA N°4 TRANSMISIVIDAD I (milés m²/dia/m).



LAMINA N° 2

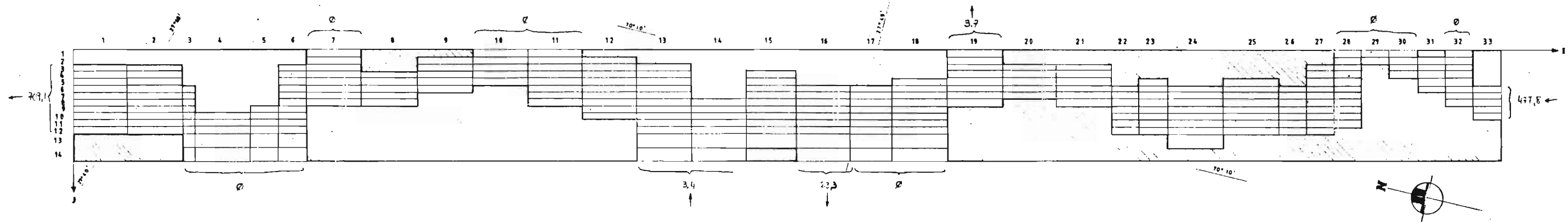
ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA

MODELO HIDROGEOLOGICO SECTOR: LAUTARO - LA PUERTA
PASADA N°1 TRANSMISIVIDAD J



MODELO HIDROGEOLOGICO SECTOR: LA PUERTA - POTRERO SECO
PASAJA Nº1

BALANCE MASICO EN LAS MALLAS EXTERIORES (Valores en millones de m³)



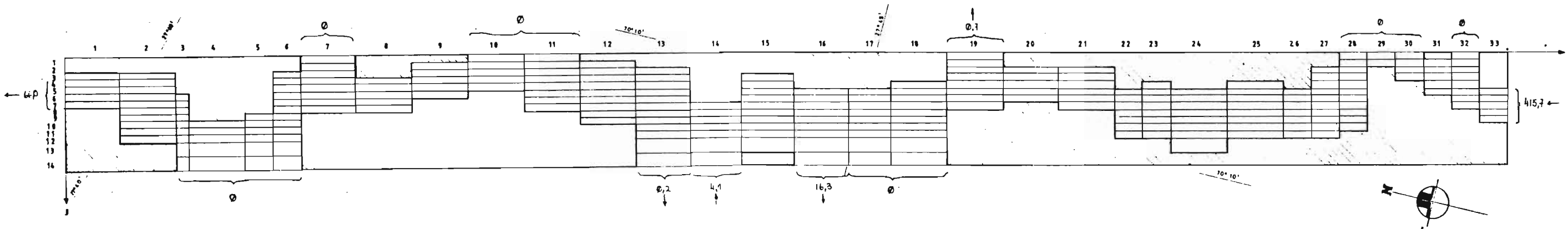
LAMINA Nº 3a

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

MODELO HIDROGEOLOGICO SECTOR: LA PUERTA - POTRERO SECO

PASADA N° 2

BALANCE MASICO EN MALLAS EXTERIORES (Valores en millones de m³)



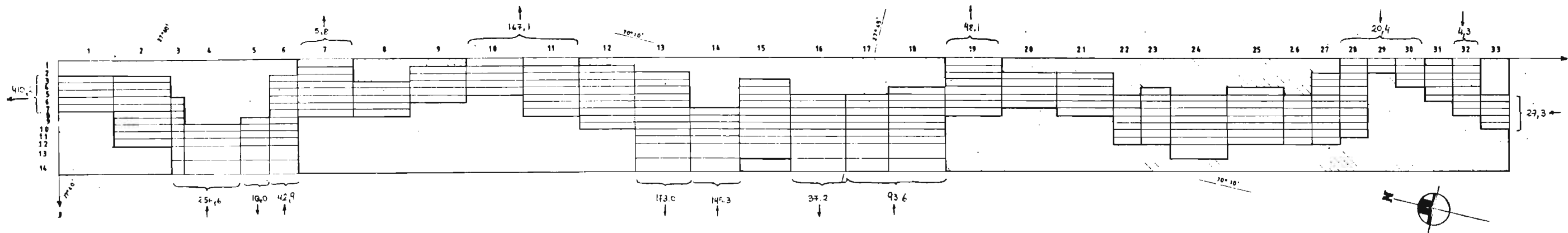
LAMINA N° 3

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA

MODELO HIDROGEOLOGICO SECTOR: LA PUERTA - POTRERO SECO

PASADA N°3

BALANCE MASICO EN MALLAS EXTERIORES (Valores en millones de m³)

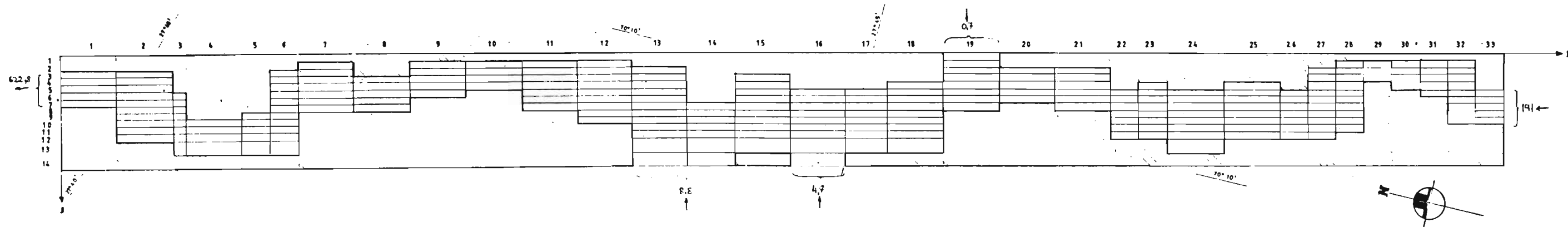


LAMINA N° 30.

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA

MODELO HIDROGEOLOGICO SECTOR: LA PUERTA - POTRERO SECO
PASADA N° 4

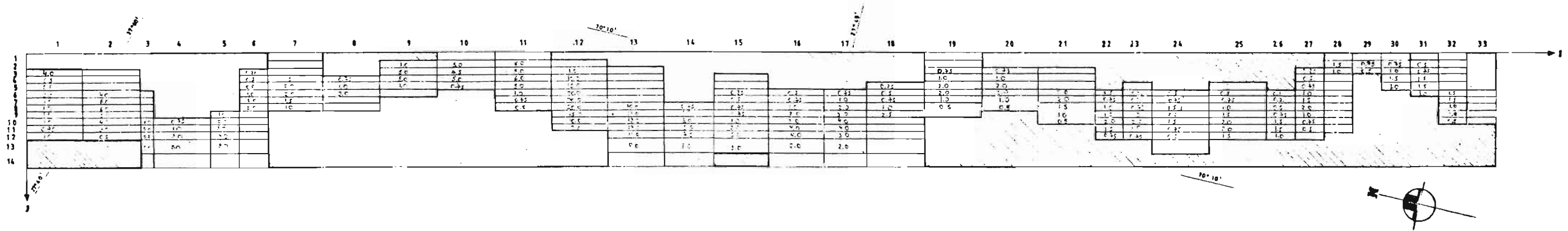
BALANCE MASICO EN MALLAS EXTERIORES (Valores en millones de m³)



LAMINA N° 3

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA

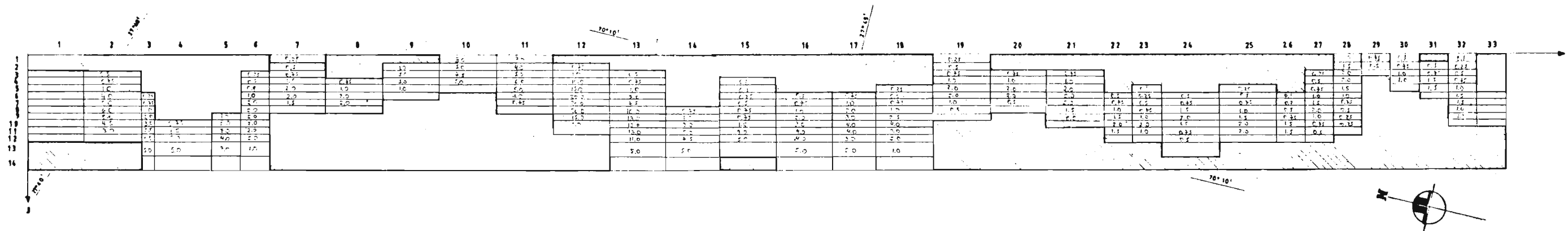
MODELO HIDROGEOLOGICO SECTOR: LA PUERTA - POTRERO SECO
PASADA N°1 TRANSMISIVIDAD I (ml/m²/dia/m)



LAMINA N° 3a

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA

MODELO HIDROGEOLOGICO SECTOR: LA PUERTA - POTRERO SECO
PASADA N°1 TRANSMISIVIDAD T (mln m³/dia/m).



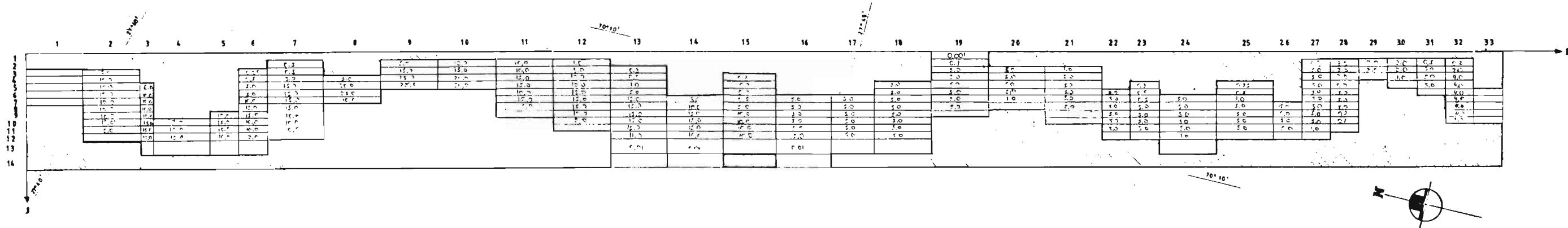
LAMINA N° 3

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

MODELO HIDROGEOLOGICO SECTOR: LA PUERTA - POTRERO SECO

PASADA N 4

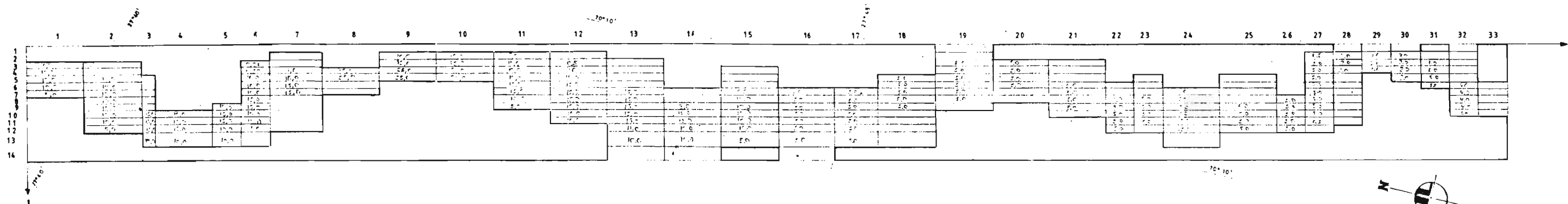
TRANSMISIVIDAD J (mlu m²/dia/m).



LAMINA N° 3a

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

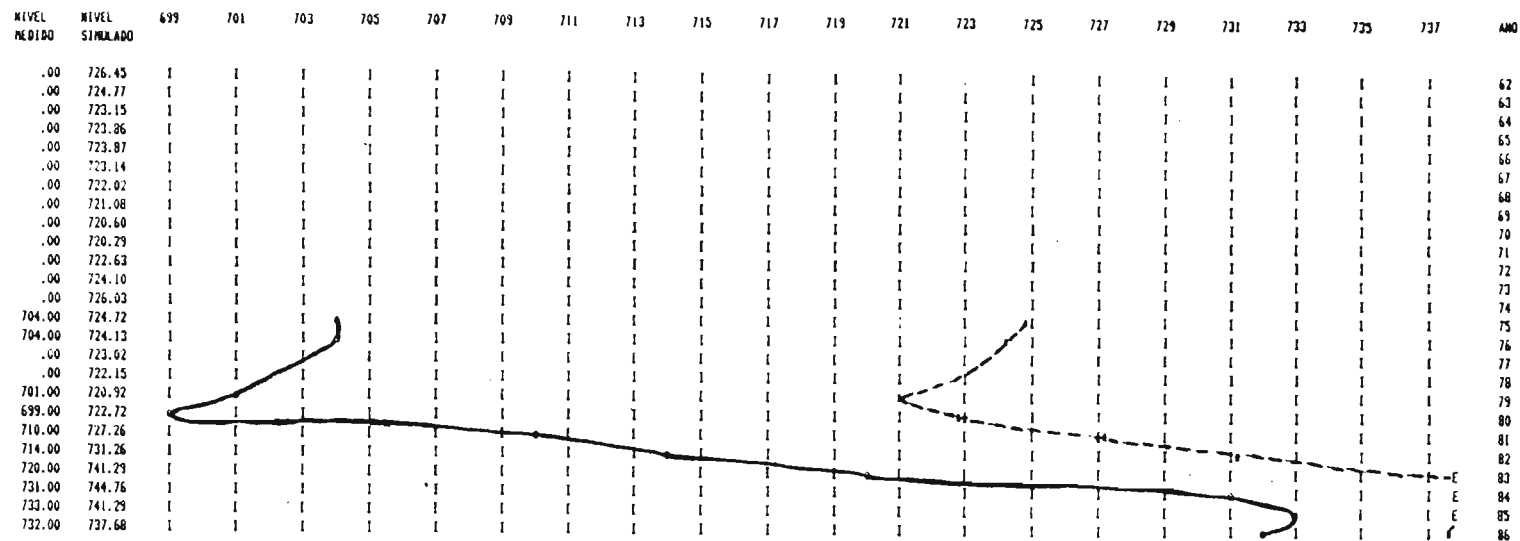
MODELO HIDROGEOLOGICO SECTOR LA PUERTA - POTRERO SECO
PASADA Nº4 TRANSMISIVIDAD I (mls m³/dia/m).



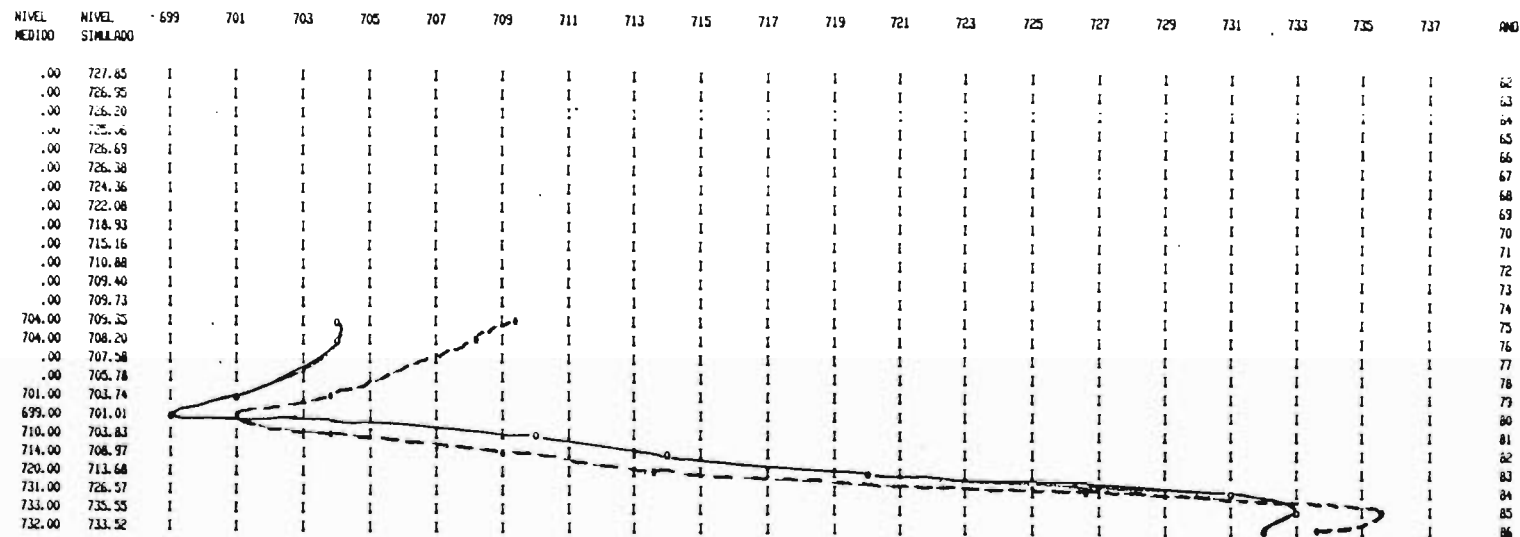
CONTRASTE PIEZOMETRICO

SECTOR N° 3A.

PASADA N° 1

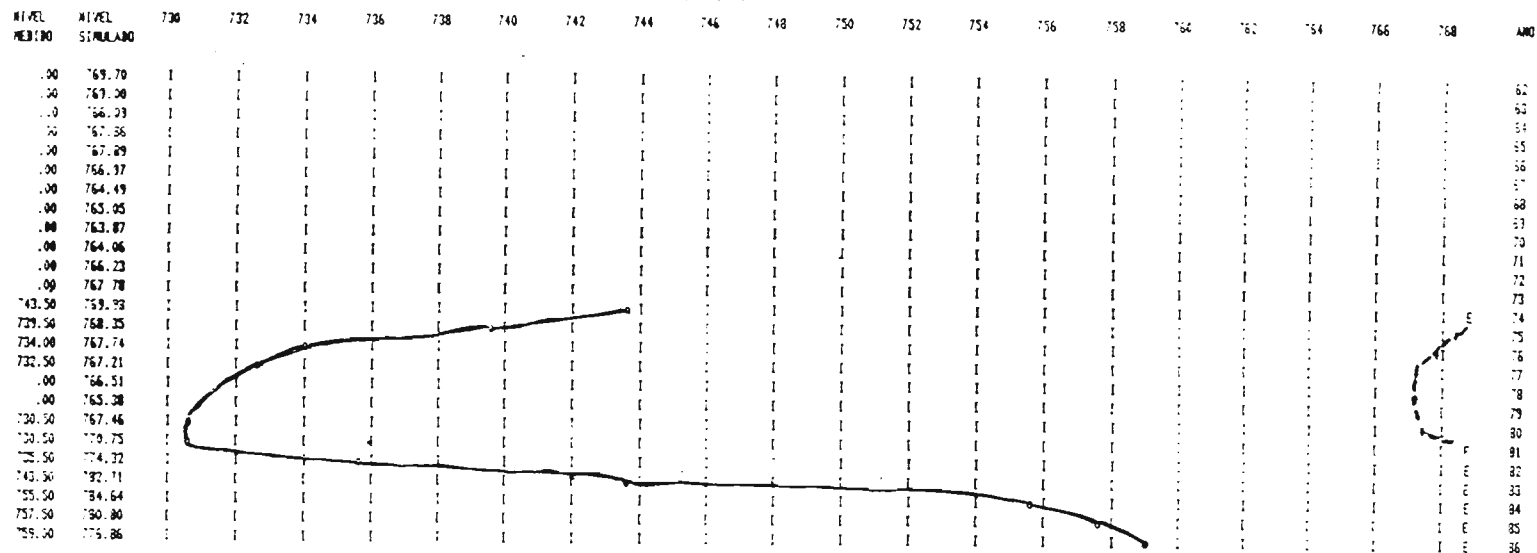


PASADA N° 4

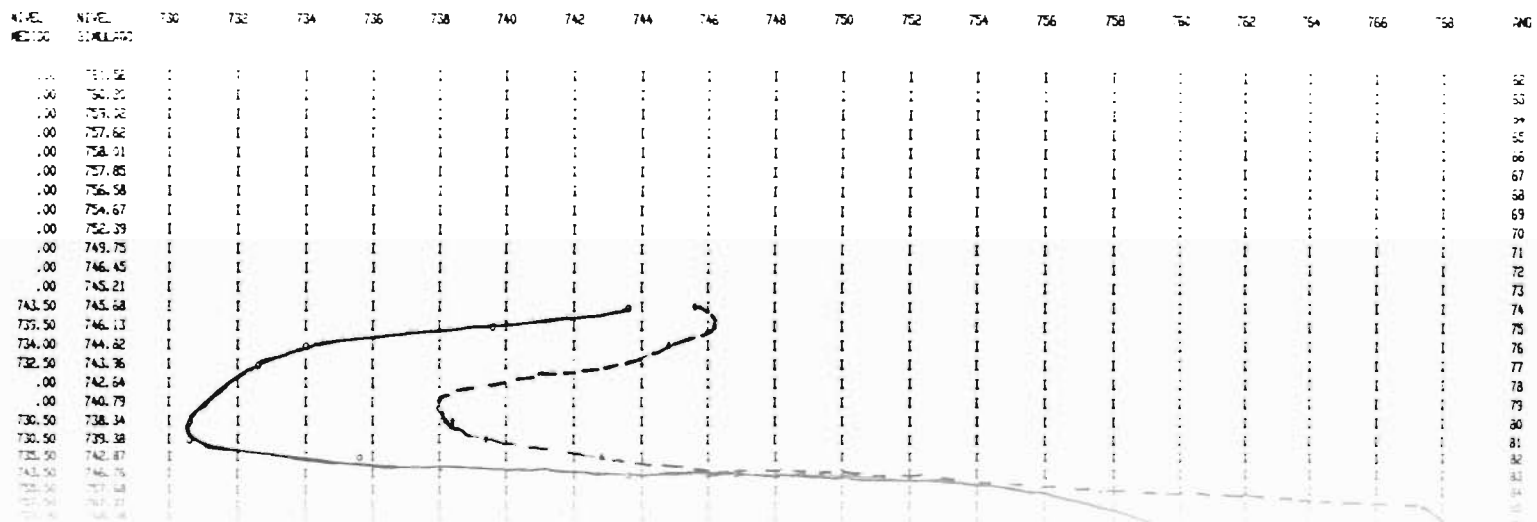


[illegible][illegible]

PASADA N° 1



PASADA N° 4



PASADA N°1

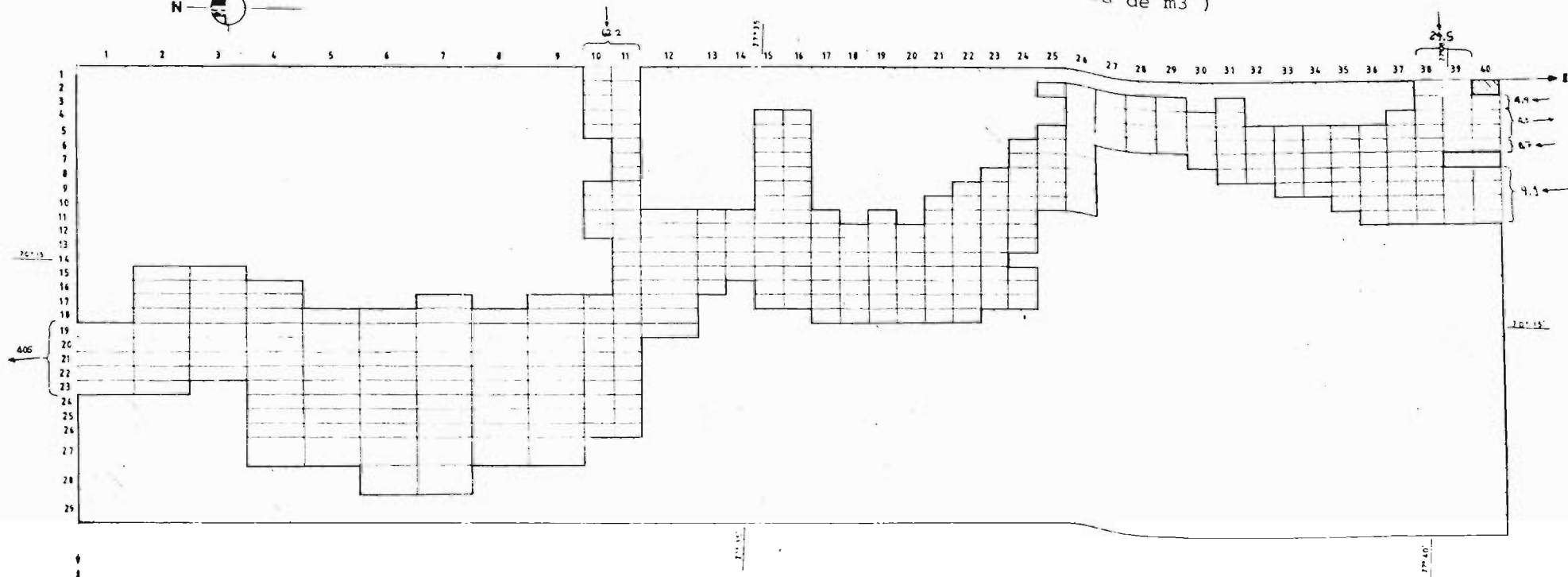
VALORES EN MILLONES \$3

[illegible]

MODELO HIDROGEOLOGICO SECTOR: POTRERO SECO - MAL PASO

Versión N° 1

BALANCE MASICO EN LAS MALLAS EXTERIORES (Valores en millones de m³)



LAMINA N° 36

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA

RESUMEN BALANCE MAGICO

PASADA N°1

VALORES EN MILLONES M3

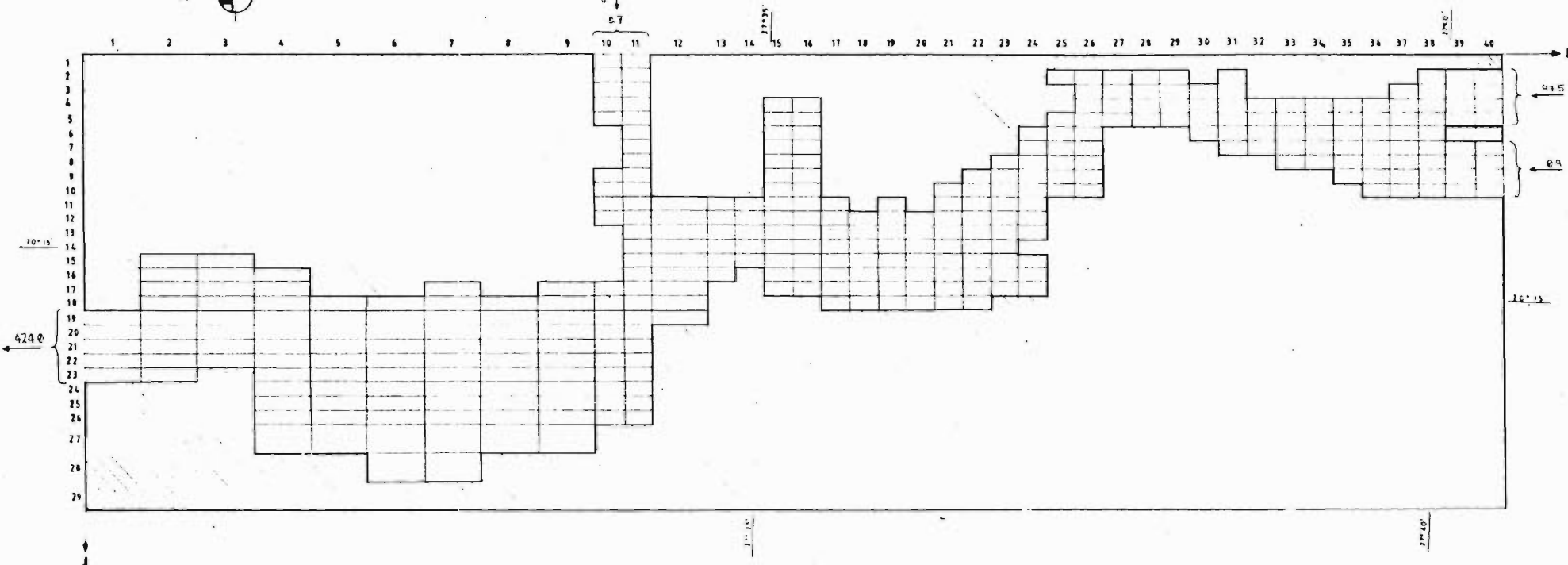
ANO	6	6	5	6	6	6	5	6	7	7	7	7	7	7	7	7	7	7	8	8	8	8	8	8	8	8	TOTAL PERIODO
MALLAS EXTERIORES	-26.11	-17.63	-16.49	-16.17	-14.67	-15.51	-12.82	-12.46	-10.43	-10.52	-8.91	-8.55	-9.89	-10.47	-10.05	-9.43	-10.35	-5.27	-10.42	-5.98	-5.18	-4.37	-10.09	-14.97	-15.72	-229.62	
RIO	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
VERTIENTES	-4.43	-1.92	-1.32	-1.46	-1.50	-1.50	-1.21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-2.40	-9.04	-9.16	-29.53	
ALMACENAMIENTO	-20.94	-8.56	-4.12	-5.30	6.69	-23.70	12.30	-25.96	8.59	-31.49	17.57	5.29	4.72	2.22	-4.32	13.47	-15.29	2.39	-9.87	25.63	-14.53	42.23	15.44	26.00	-13.15	7.54	
INF. RIO EN CRECIDA	9.40	10.44	9.14	9.92	11.48	9.40	9.14	8.35	7.57	7.44	8.74	11.74	10.70	9.40	8.37	7.96	6.09	7.70	7.96	12.79	11.61	14.22	25.32	21.14	13.05	271.57	
INF. CANALES MATRICES	2.13	2.58	1.39	2.35	3.10	2.09	1.99	1.61	1.23	1.23	1.79	3.21	2.69	2.09	1.97	1.46	1.46	1.35	1.46	3.66	3.10	4.34	9.53	7.59	3.74	69.64	
INF. CANALES SECUNDARIOS	.90	1.09	.34	.99	1.31	.88	.84	.68	.52	.52	.76	1.36	1.14	.88	.79	.62	.62	.57	.62	1.55	1.31	1.93	4.02	3.20	1.56	29.38	
INF. RIEGO HORTALIZAS	.15	.18	.14	.17	.22	.15	.14	.11	.09	.09	.13	.23	.19	.15	.13	.19	.10	.10	.10	.10	.26	.22	.21	.69	.54	.27	4.96
INF. RIEGO FRUTALES	.53	.64	.49	.58	.77	.52	.49	.40	.31	.31	.44	.80	.67	.52	.46	.36	.36	.33	.36	.91	.77	1.07	2.36	1.88	.92	17.22	
INF. RIEGO PAFONALES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.20	.39	.79	1.37	1.96	1.96	6.66	
BOMBEO RIEGO 1968/74	.00	.00	.00	.00	.00	.00	-1.39	-1.39	-1.39	-1.39	-1.39	-1.39	-1.39	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-9.73	
BOMBEO RIEGO 1975/80	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50	.00	.00	.00	.00	.00	.00	-9.90
BOMBEO RIEGO 1981/88	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-6.30	-6.30	-6.30	-6.30	-6.30	-6.30	-37.80	
BALANCE TOTAL	3.50	3.89	-1.70	2.69	-4.97	20.73	-14.64	22.96	-10.63	29.16	-16.01	2.11	-1.61	-1.15	4.89	-13.90	13.26	-4.21	8.45	-19.50	20.45	-31.95	9.05	-20.01	3.50	6.21	

VALORES POSITIVOS INDICAN ENTRADAS AL ACUIFERO

MODELO HIDROGEOLOGICO SECTOR: POTRERO SECO - MAL PASO

Figura N° 2 -

BALANCE MASICO EN LAS MALLAS EXTERIORES (Valores en millones m³)



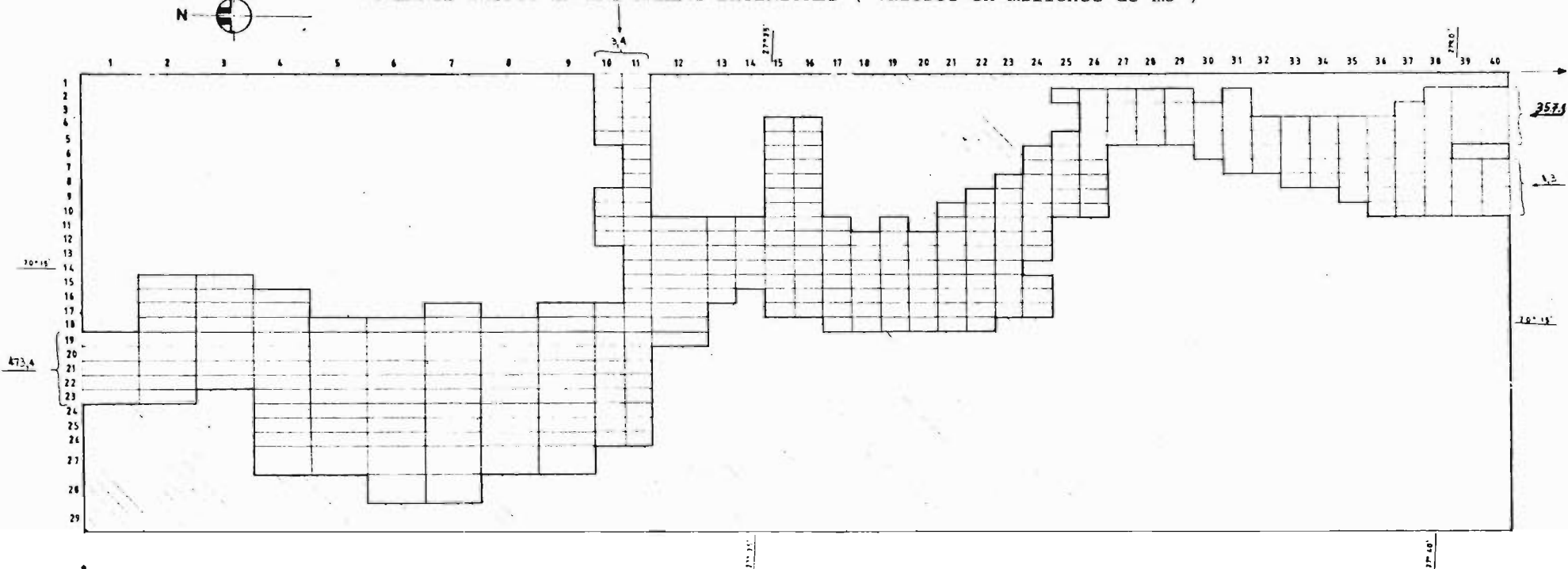
LAMINA N° 3b

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA

MODELO HIDROGEOLOGICO SECTOR: POTRERO SECO - MAL PASO

Reserva N° 2

BALANCE MASICO EN LAS MALLAS EXTERIORES (Valores en millones de m³)



LAMINA N° 3b

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA

RESUMEN BALANCE MASICO

PASADA N° 4

VALORES EN MILLONES M3

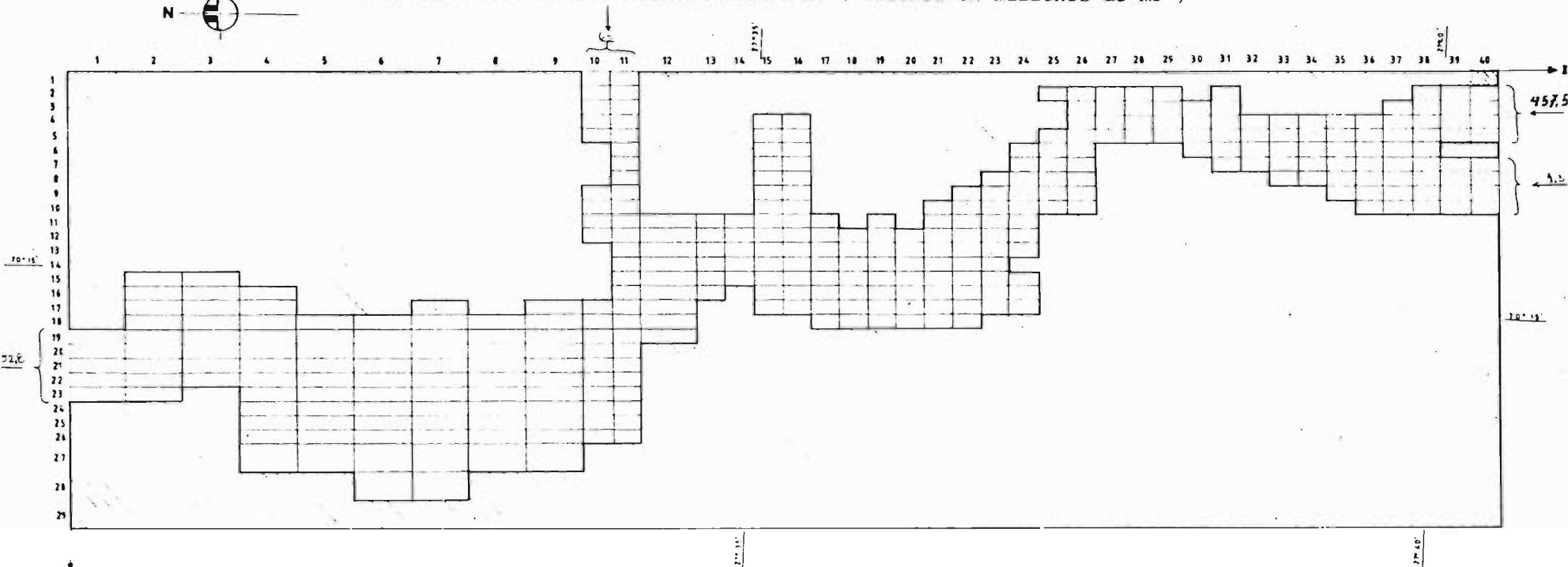
ANO	6	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7	7	8	8	8	8	8	8	8	TOTAL PERIODO
MALLAS EXTERIORES	-33.21	-17.41	-13.28	-13.83	-12.47	-11.45	-11.50	-9.38	-10.20	-8.80	-11.54	-11.66	-11.37	-15.73	-10.55	-11.36	-10.26	-8.13	-11.32	-7.87	-5.37	-9.38	-6.44	-8.36	-6.63	287.63
RIO	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
VERTIENTES	-9.29	-5.56	-2.70	-1.80	-2.05	-1.66	-.83	-.19	-.07	.00	.00	-.04	-.49	-.63	-.24	-.03	.00	.00	.00	-.01	-.43	-4.31	-13.90	-16.63	-11.53	-72.37
ALMACENAMIENTO	-35.29	-17.30	-5.74	-.29	-2.09	-2.32	-8.23	-1.80	-4.34	-.96	-.92	11.49	1.89	.89	-10.36	5.60	-12.18	2.13	-3.77	20.74	21.51	28.81	27.94	-7.05	-10.62	-2.25
INF. RIO EN CRECIDA	7.31	7.31	6.26	9.92	8.35	6.79	5.74	5.22	4.18	4.18	9.92	13.57	14.09	9.92	9.97	7.31	6.79	5.22	13.57	18.27	17.75	29.75	26.10	9.40	13.05	268.83
INF. CANALES MATRICES	2.13	2.58	1.98	2.35	3.10	2.09	1.98	1.61	1.23	1.23	1.79	3.21	2.69	2.09	1.87	1.46	1.46	1.35	1.46	3.66	3.10	4.34	9.53	7.59	3.74	69.64
INF. CANALES SECUNDARIOS	.90	1.09	.84	.99	1.31	.88	.84	.68	.52	.52	.76	1.36	1.14	.88	.79	.62	.62	.57	.62	1.55	1.31	1.83	4.02	3.20	1.53	29.38
INF. RIEGO HORTALIZAS	.15	.18	.14	.17	.22	.15	.14	.11	.09	.09	.13	.23	.19	.15	.13	.10	.10	.10	.10	.26	.22	.31	.68	.54	.27	4.96
INF. RIEGO FRUTALES	.53	.64	.49	.58	.77	.52	.49	.40	.31	.31	.44	.90	.67	.52	.46	.36	.36	.33	.36	.91	.77	1.07	2.36	1.88	.92	17.22
INF. RIEGO PARRONALES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.20	.39	.78	1.37	1.96	1.96	6.65
BOMBEO RIEGO 1968/74	.00	.00	.00	.00	.00	.00	-1.39	-1.39	-1.39	-1.39	-1.39	-1.39	-1.39	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-9.73
BOMBEO RIEGO 1975/80	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50	.00	.00	.00	.00	.00	.00	-9.00
BOMBEO RIEGO 1981/86	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-6.30	-6.30	-6.30	-6.30	-6.30	-6.30	-37.80
BALANCE TOTAL	3.81	6.13	-.53	-1.38	1.32	-.36	3.70	-1.14	-1.00	-2.91	1.00	-5.42	3.64	-5.23	10.19	-8.65	9.74	-4.20	7.06	-10.08	-10.07	-10.72	-10.52	.02	7.62	-17.64

VALORES POSITIVOS INDICAN ENTRADAS AL ACUIFERO

MODELO HIDROGEOLOGICO SECTOR: POTRERO SECO - MAL PASO

Poseído N° 4 -

BALANCE MASICO EN LAS MALLAS EXTERIORES (Valores en millones de m³)



LAMINA N° 3b

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA

RESUMEN BALANCE MASICO

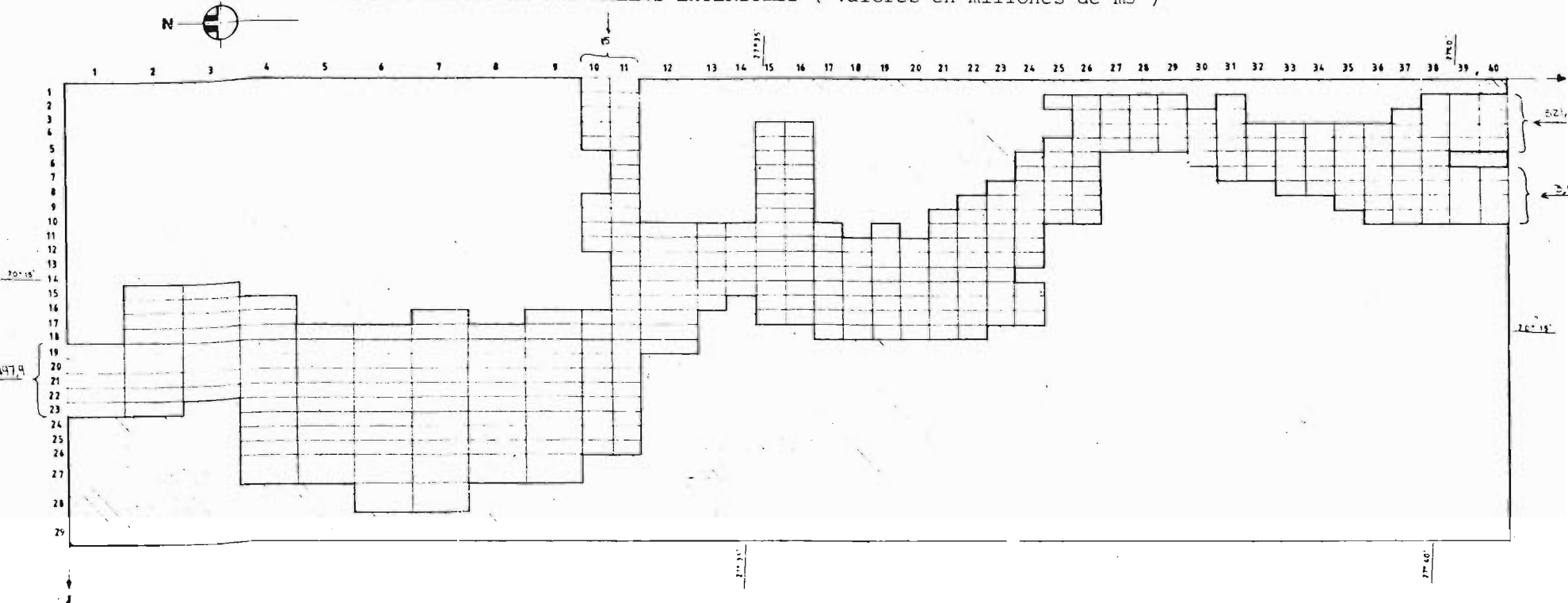
PASADA N° 5

VALORES EN MILLONES M3

[illegible]

MODELO HIDROGEOLOGICO SECTOR: POTRERO SECO - MAL PASO

BALANCE MASICO EN LAS MALLAS EXTERIORES (Valores en millones de m³)

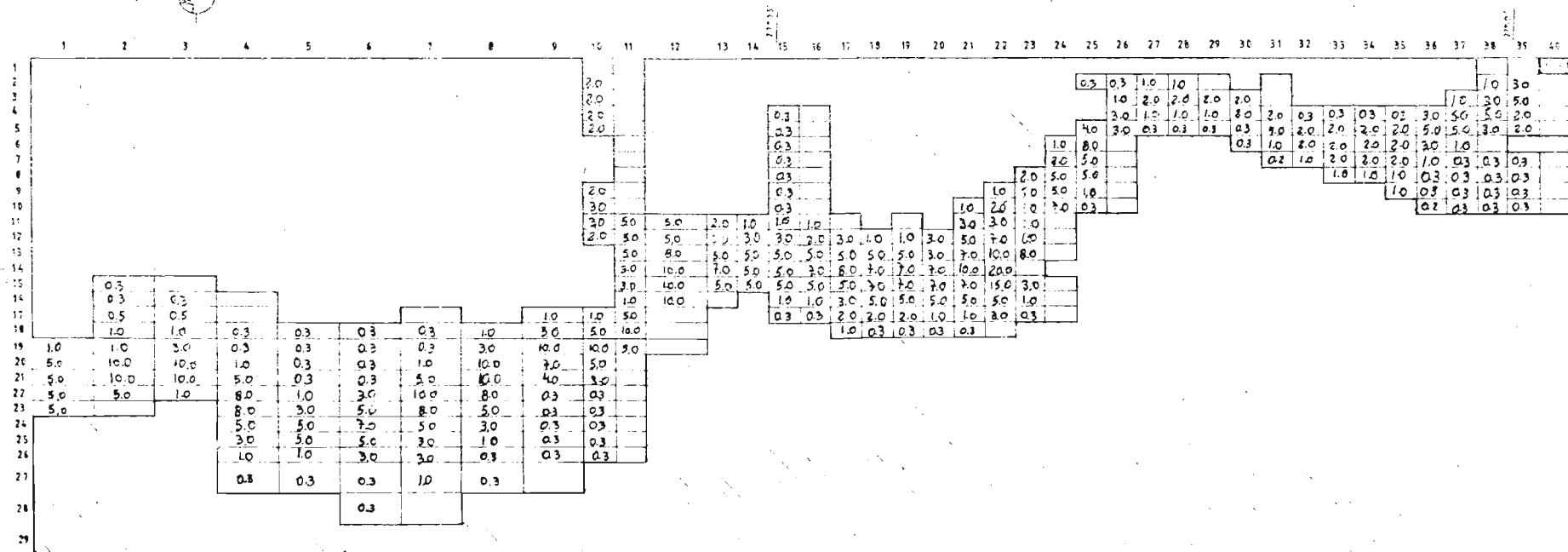


LAMINA N° 3b

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA

MODELO HIDROGEOLOGICO SECTOR: POTRERO SECO - MAL PASO

PELTA 1981 TRANSMISIVIDAD I ($m^2/m^3/dia/m$)

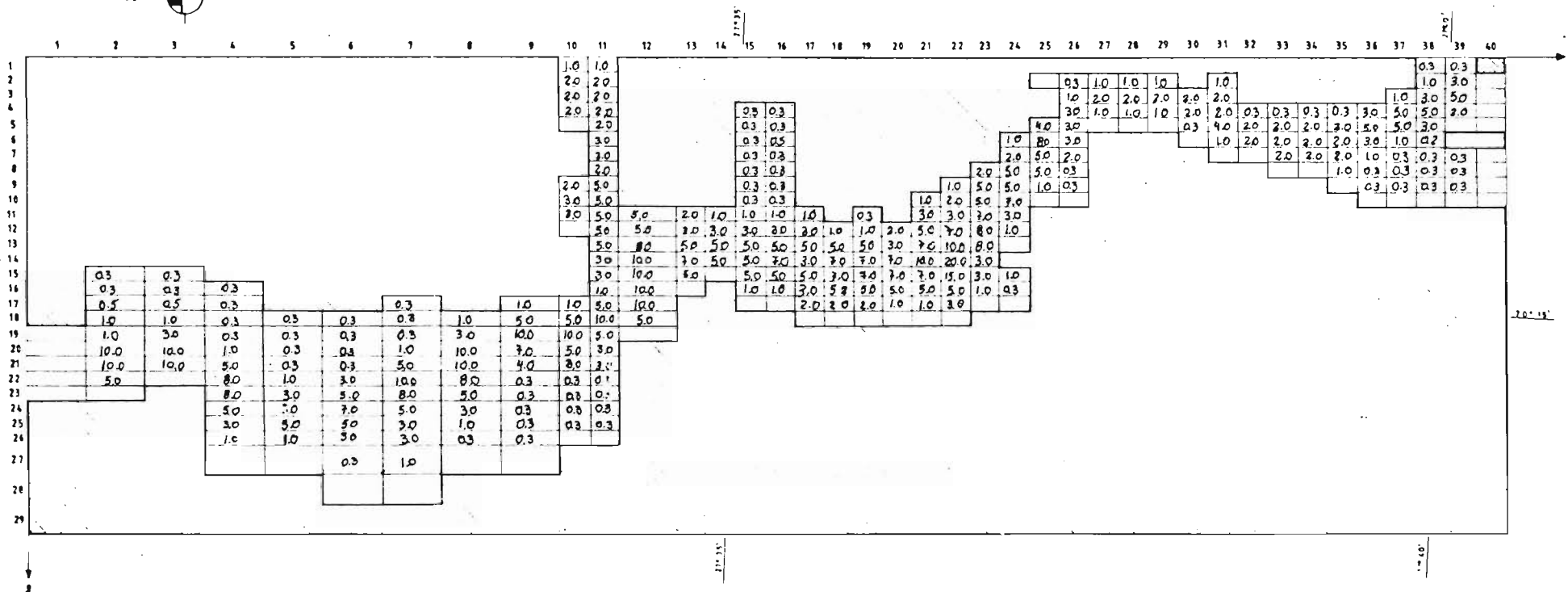


LAMINA N° 36

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA

MODELO HIDROGEOLOGICO SECTOR: POTRERO SECO - MAL PASO

FACIA 1 TRANSMISIVILIDAD $(m^3/m^2/dia/m)$.

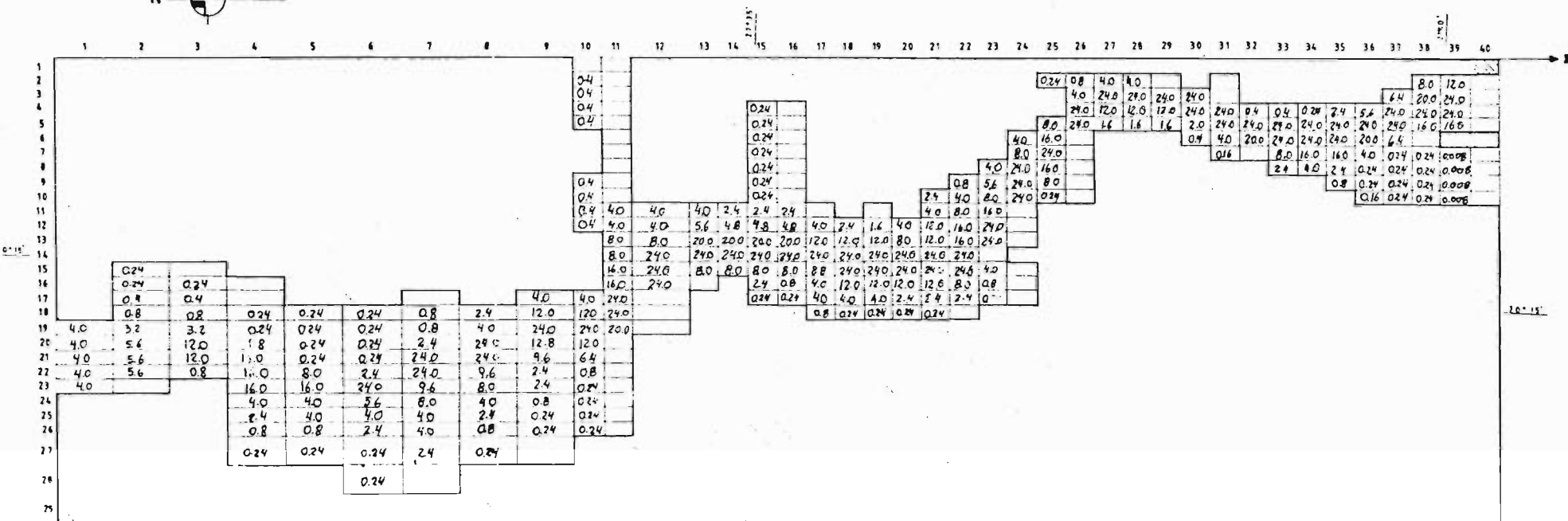


LAMINA N° 3B

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA

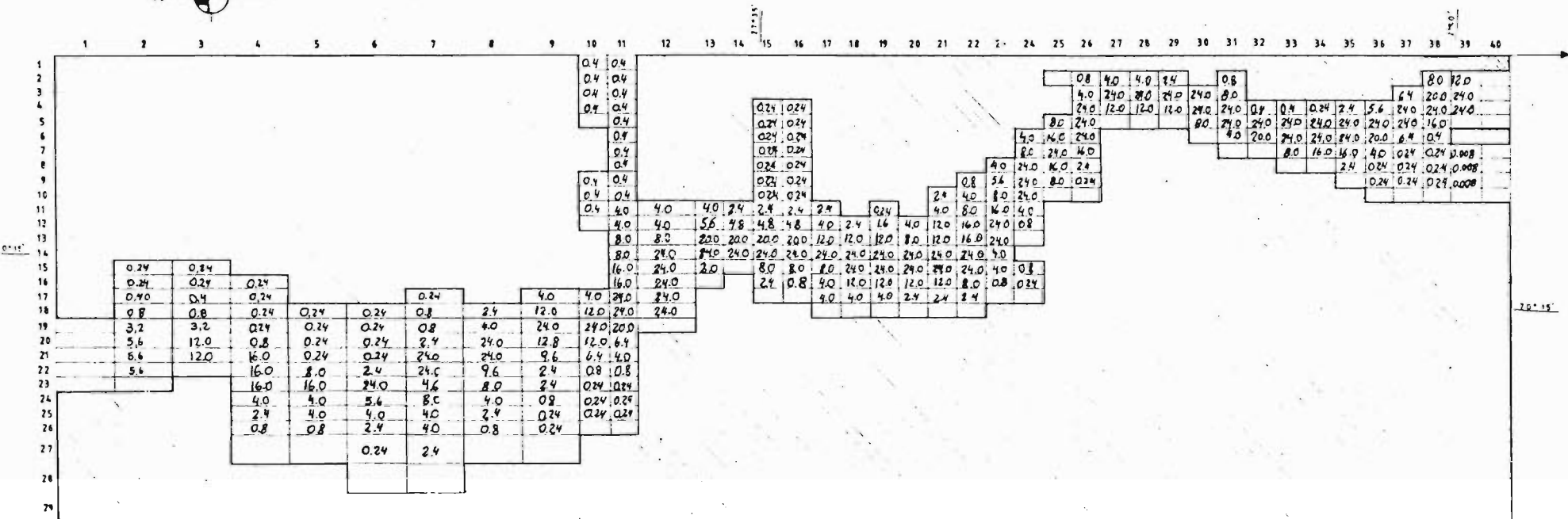
MODELO HIDROGEOLOGICO SECTOR: POTRERO SECO - MAL PASO

FIGURA N° 1 TENDENCIA DE LA I (ml/seg m²/dia/m).



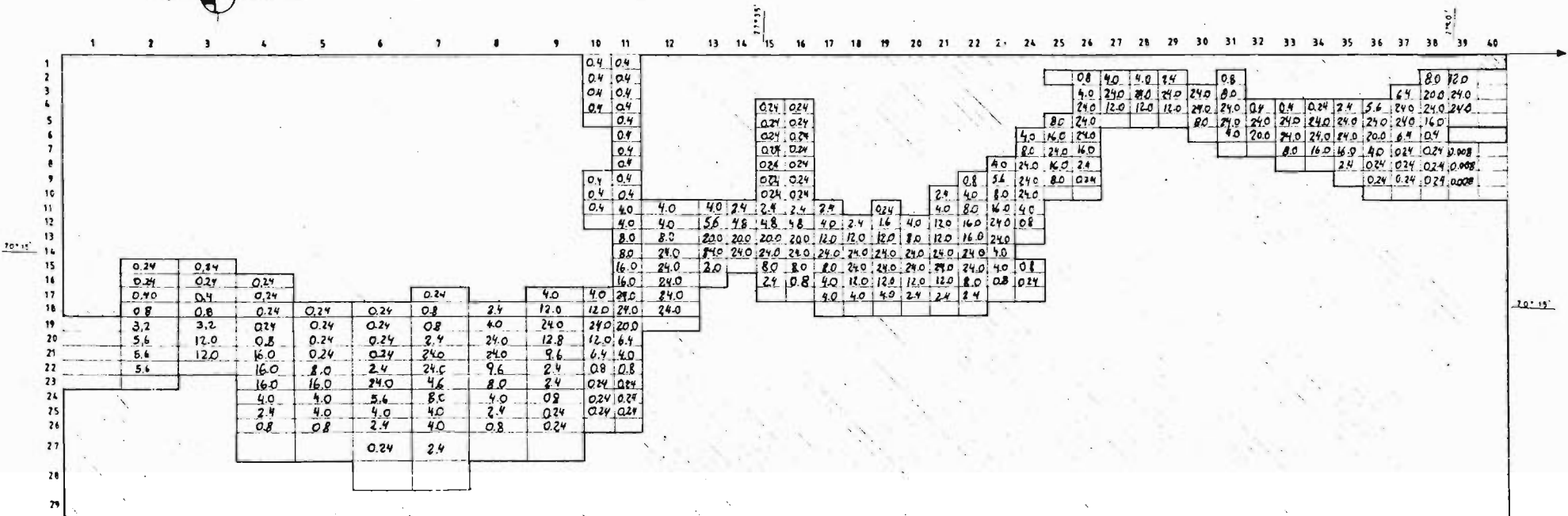
MODELO HIDROGEOLOGICO SECTOR: POTRERO SECO - MAL PASO

SECTOR N°5 TRANSMISIVILIDAD (miles m³/dia./m).



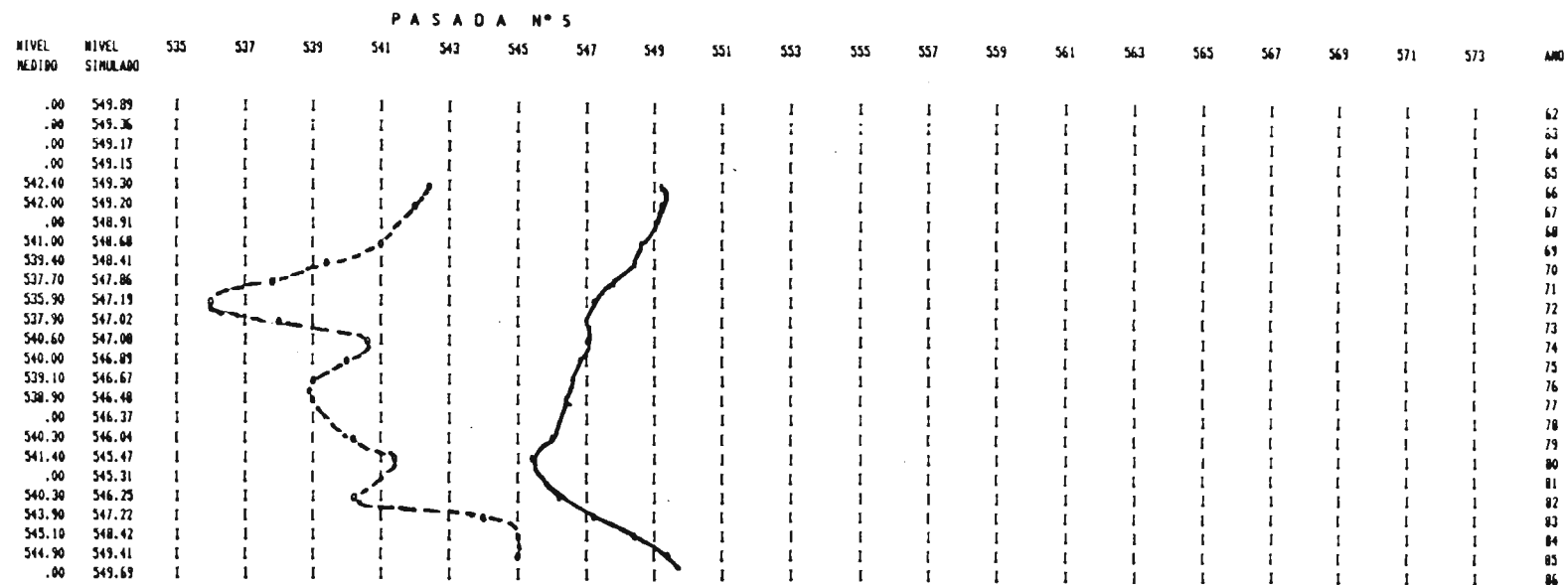
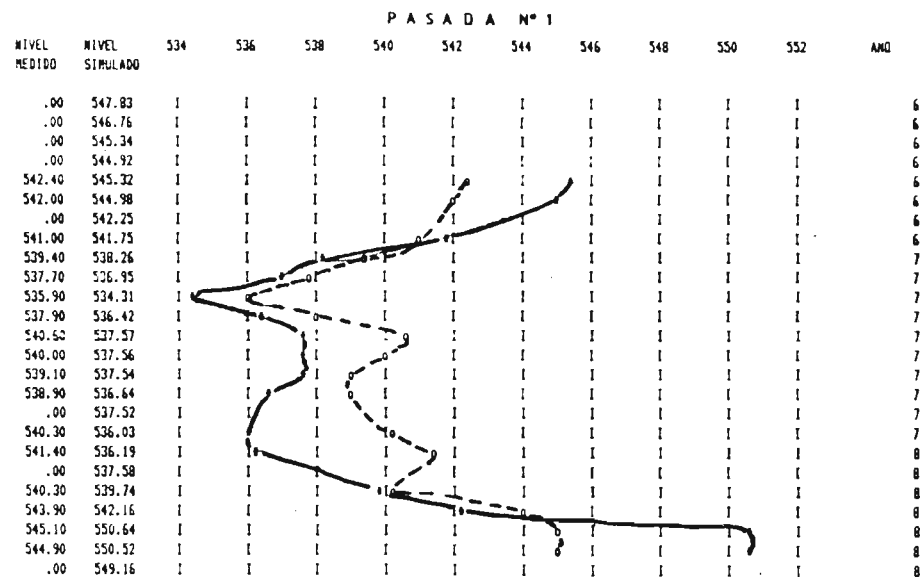
MODELO HIDROGEOLOGICO SECTOR: POTRERO SECO - MAL PASO

7x5000 N°5 TRANSMISIVILIDAD (miles m³/dia./m).



CONTRASTE PIEZOMETRICO

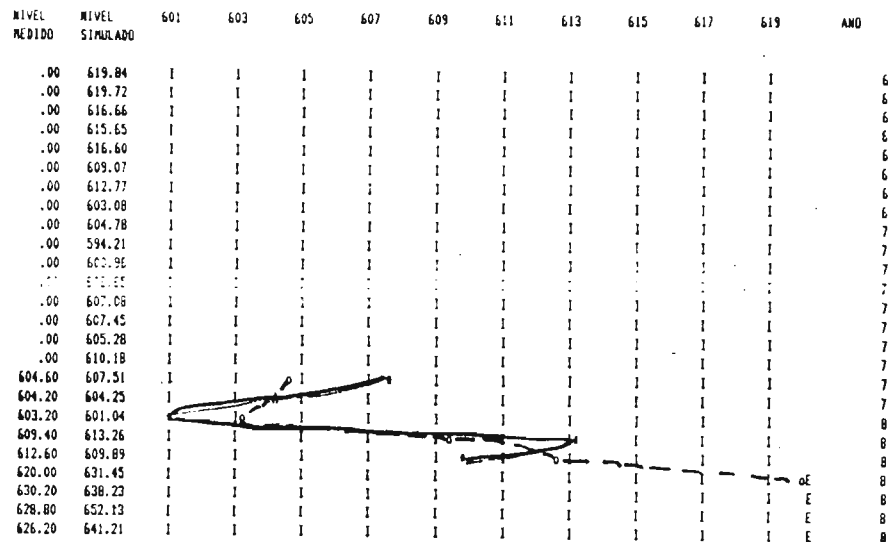
SECTOR N° 3 B.



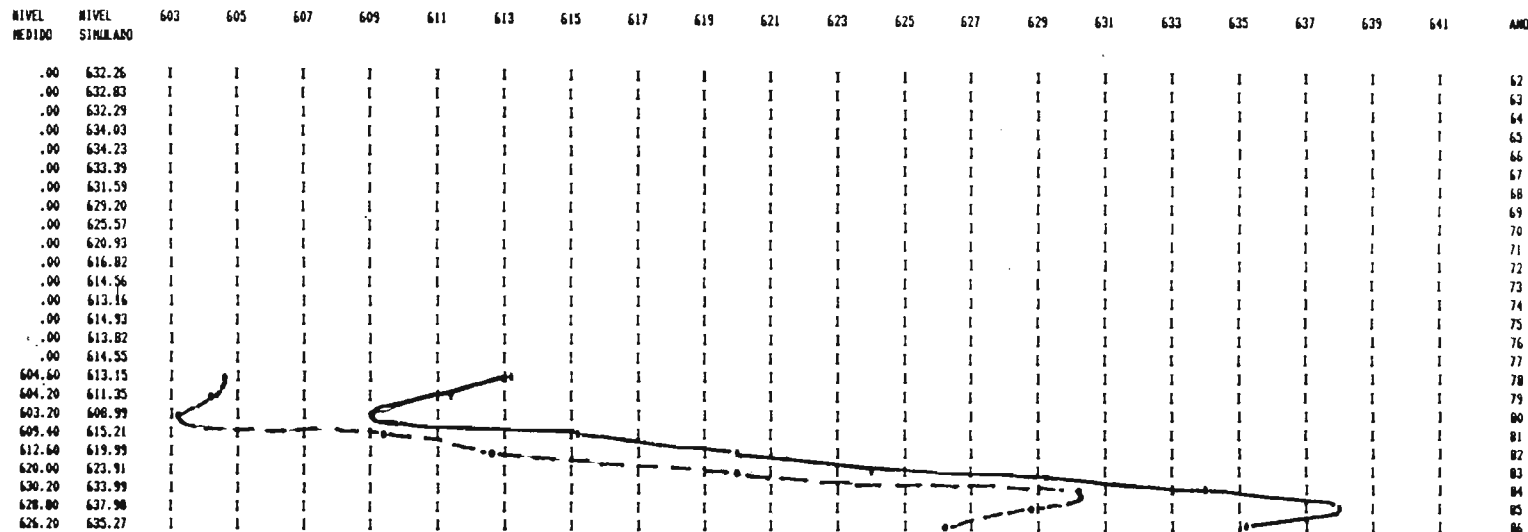
6

The figure shows a set of seven vertical dashed lines. Two paths are plotted: a solid line and a dashed line. Both paths start at the top left, move right, then down, then right again, crossing several vertical lines. The solid path ends at the bottom right, while the dashed path branches off earlier and ends higher up.

PASADA N°1

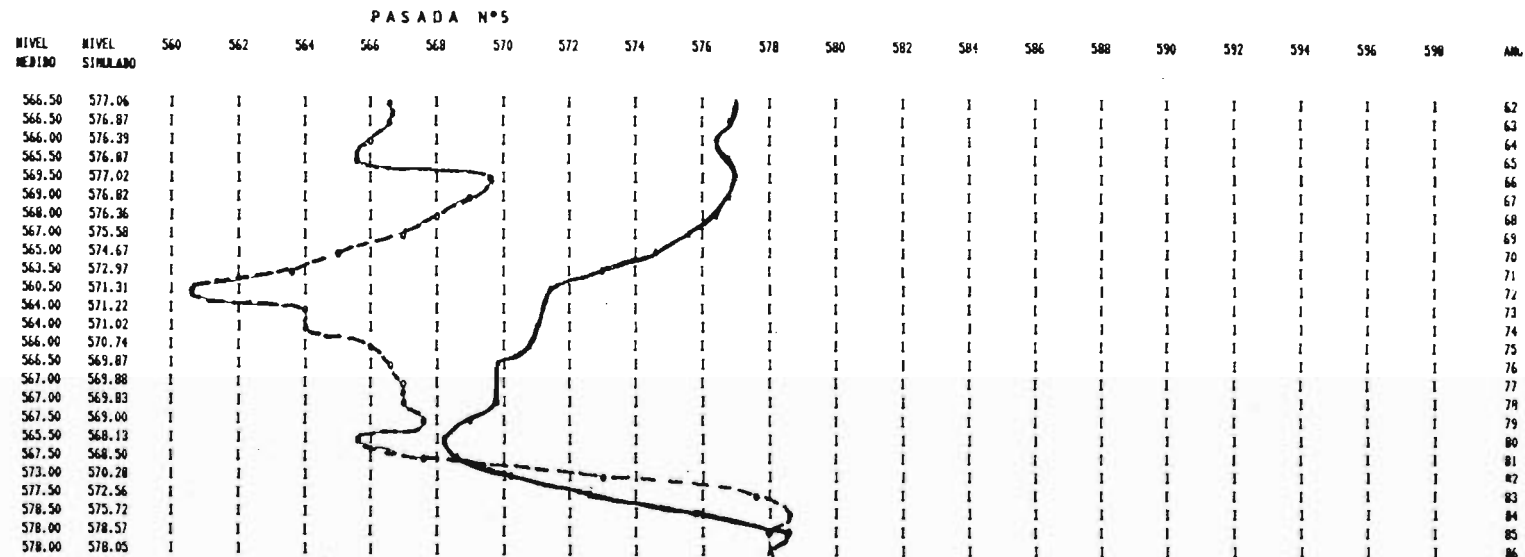
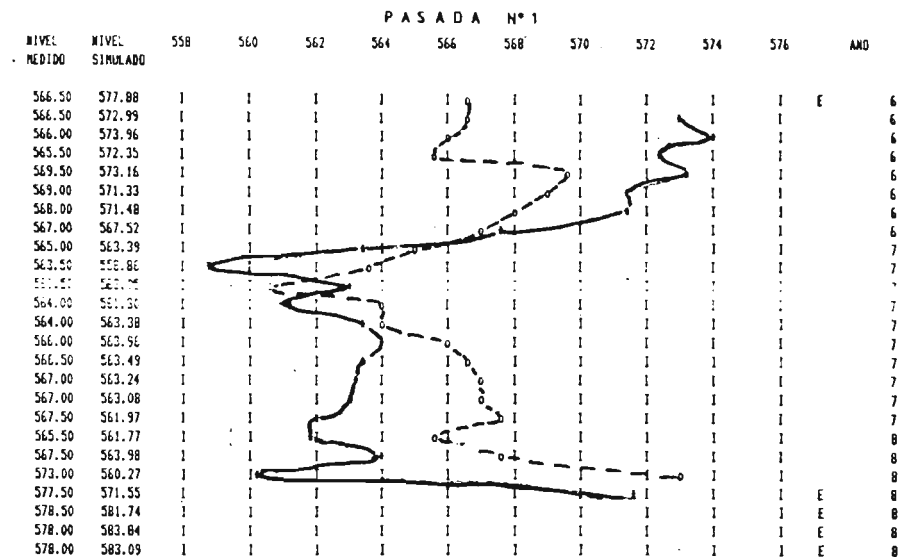


PASADA N°5



o=NIVEL MEDIDO
A=NIVELES MEDIDO Y SIMULADO COINCIDEN

o=NIVEL SIMULADO
E=VALOR FUERA DEL RANGO DEL DIBUJO



RESUMEN BALANCE MAGICO

PASADA N°1

VALORES EN MILLONES M3

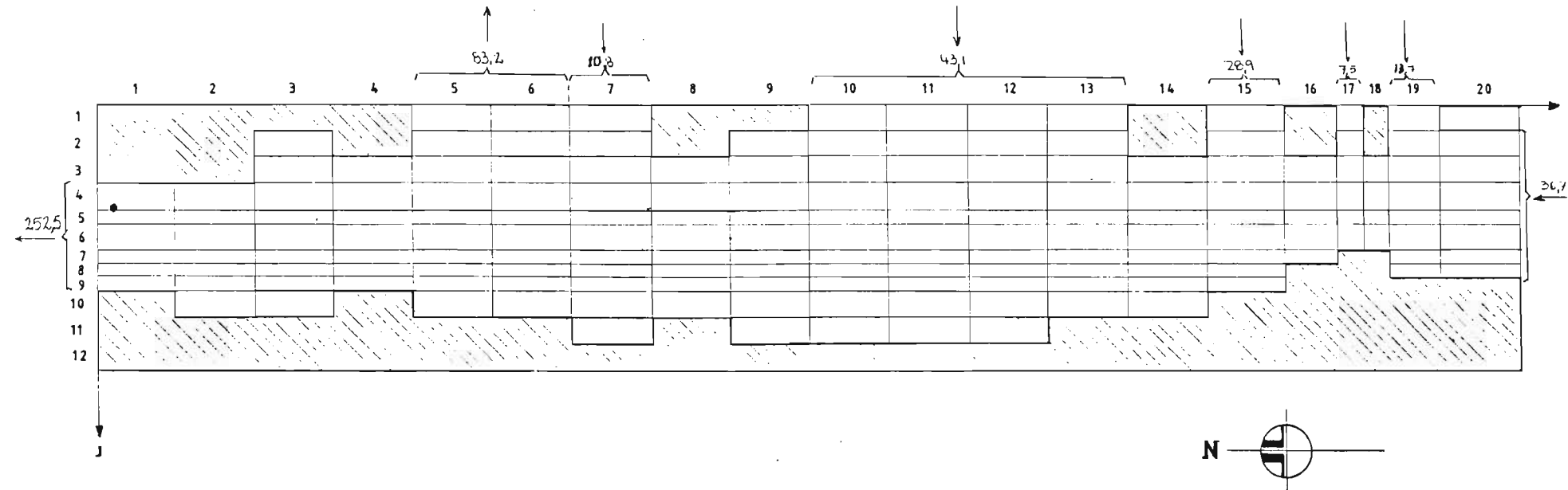
ANO	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	TOTAL PERIODO
MALLAS EXTERIORES	3.73	3.41	3.21	2.94	.34	3.12	4.24	4.76	7.27	8.21	6.92	8.47	7.86	6.00	8.00	6.91	6.97	6.84	7.55	9.91	9.30	5.41	-1.17	1.31	3.31	125.84
RIO	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
VERTIENTES	-5.79	-6.62	-6.33	-6.52	-7.18	-6.98	-6.27	-5.97	-5.53	-5.10	-5.13	-5.26	-5.25	-5.37	-5.36	-5.15	-5.19	-5.21	-5.19	-5.17	-5.23	-5.69	-6.36	-8.96	-7.78	-150.59
ALMACENAMIENTO	5.61	-1.46	1.19	-1.78	2.59	-3.17	.22	-1.02	-2.84	-1.07	1.58	-.90	1.14	.48	-2.03	.38	-.57	.43	-1.13	.46	1.12	3.58	3.98	-2.26	-.58	5.95
INF.RIO EN CRECIDA	3.56	3.52	3.45	3.41	4.15	3.60	3.37	3.26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.63	6.30	5.30	3.71	46.26
INF.CANALES MATRICES	.37	.35	.33	.32	.58	.38	.31	.26	.16	.14	.29	.38	.35	.26	.18	.15	.14	.12	.14	.39	.32	.52	1.80	1.44	.95	10.51
INF.CANALES SECUNDARIOS	.62	.59	.56	.54	.98	.65	.52	.43	.28	.23	.49	.64	.59	.43	.30	.26	.23	.20	.23	.67	.55	.88	2.06	2.45	1.45	17.85
INF.RIEGO HORTALIZAS	.57	.55	.52	.49	.91	.60	.48	.40	.25	.21	.45	.59	.55	.40	.28	.24	.21	.19	.21	.61	.51	.81	2.81	2.25	1.33	16.45
INF.RIEGO FRUTALES	.01	.01	.01	.01	.02	.02	.01	.01	.01	.01	.01	.02	.01	.01	.01	.01	.01	.00	.01	.02	.01	.02	.07	.06	.03	.43
INF.RIEGO PRADEFAS	.03	.03	.03	.03	.05	.04	.03	.02	.02	.01	.03	.03	.03	.02	.02	.01	.01	.01	.01	.04	.03	.05	.17	.13	.08	.98
BOMBEO RIEGO 1963/74	.00	.00	.00	.00	.00	.00	-2.16	-2.16	-2.16	-2.16	-2.16	-2.16	-2.16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-15.15
BOMBEO RIEGO 1975/80	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-.95	-.95	-.95	-.95	-.95	-.95	.00	.00	.00	.00	.00	.00	-5.70
BOMBEO RIEGO 1981/86	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-3.12	-3.12	-3.12	-3.12	-3.12	-3.12	-18.70
BALANCE TOTAL	-2.50	3.31	.60	2.01	-2.73	4.60	.32	1.02	3.12	2.61	-.67	3.59	.84	.32	4.51	1.11	2.00	.78	3.15	2.89	1.26	-2.05	-1.42	3.12	.44	32.23

VALORES POSITIVOS INDICAN ENTRADAS AL ACUIFERO

MODELO HIDROGEOLOGICO SECTOR: MAL PASO - PAIPOTE

Redada N° 1

BALANCE MASICO EN LAS MALLAS EXTERIORES (Valores en millones de m³)



LAMINA N° 4a

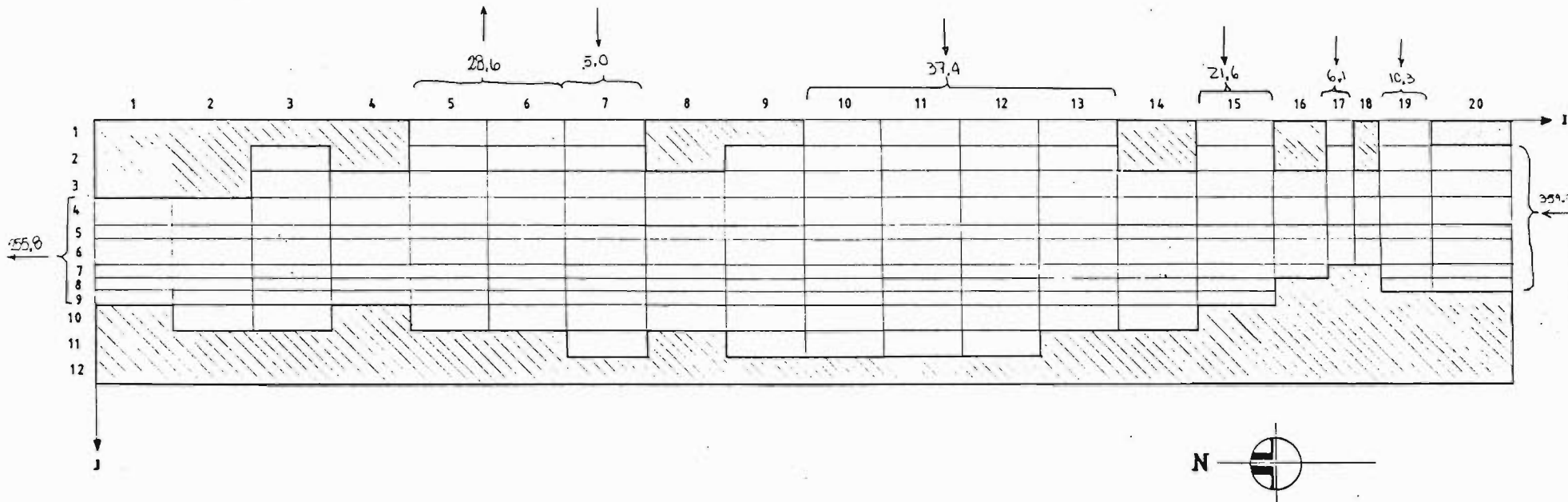
ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

[illegible]

MODELO HIDROGEOLOGICO SECTOR: MAL PASO - PAIPOTE

PANADA N° 2.

BALANCE MASICO EN LAS MALLAS EXTERIORES (Valores en millones m3)



LAMINA N° 4a

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

RESUMEN BALANCE MASICO

PASADA N° 3

VALORES EN MILLONES M3

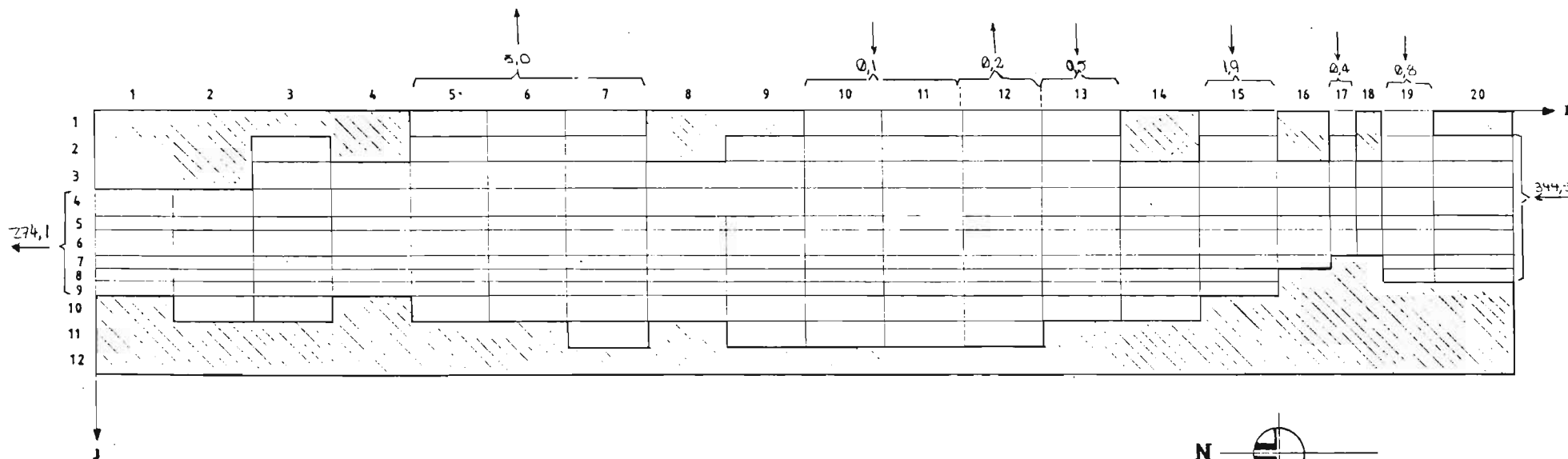
ANO	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	TOTAL PERIODO
MALLAS EXTERIORES	3.02	1.92	2.08	2.18	-.43	.35	1.80	2.80	3.08	2.43	1.69	.97	2.45	5.09	6.19	6.34	6.25	6.47	6.68	3.21	3.29	1.20	-.59	-.02	.58	69.04
RIO	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
VERTIENTES	-2.14	-5.98	-6.23	-5.86	-9.36	-9.20	-5.97	-4.13	-3.10	-2.48	-2.33	-3.54	-4.54	-2.67	-.66	-.11	-.02	.00	.00	-.98	-3.01	-6.22	-12.53	-14.70	-13.22	-118.99
ALMACENAMIENTO	7.01	.76	-.37	-.26	4.34	-2.78	-2.16	-1.68	-.98	-1.16	.19	3.00	-.25	-4.30	-1.74	-.70	-1.12	.21	-1.16	6.09	1.33	4.91	3.90	-.40	-1.02	11.65
INF.RIO EN CRECIDA	4.67	4.11	3.34	2.89	11.12	5.45	2.34	.22	.00	.00	1.00	4.23	3.45	.00	.00	.00	.00	.00	.00	5.00	2.22	9.79	11.12	11.12	11.12	93.19
INF.CANALES MATRICES	.37	.35	.33	.32	.58	.38	.31	.26	.16	.14	.29	.38	.35	.26	.18	.15	.14	.12	.14	.39	.32	.52	1.80	1.44	.85	10.51
INF.CANALES SECUNDARIOS	.62	.59	.56	.54	.98	.65	.52	.43	.28	.23	.49	.64	.59	.43	.30	.26	.23	.20	.23	.67	.55	.88	3.06	2.45	1.45	17.85
INF.RIEGO HORTALIZAS	.57	.55	.52	.49	.91	.60	.48	.40	.25	.21	.45	.59	.55	.40	.28	.24	.21	.19	.21	.61	.51	.81	2.81	2.25	1.33	16.45
INF.RIEGO FRUTALES	.01	.01	.01	.01	.02	.02	.01	.01	.01	.01	.01	.02	.01	.01	.01	.01	.01	.00	.01	.02	.01	.02	.07	.06	.03	.43
INF.RIEGO PRADERAS	.03	.03	.03	.03	.05	.04	.03	.02	.02	.01	.03	.03	.03	.02	.02	.01	.01	.01	.01	.04	.03	.05	.17	.13	.08	.98
INF.RIEGO PARRONALES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	.04	.09	.15	.21	.21	.72
BOMBEO RIEGO 1968/74	.00	.00	.00	.00	.00	.00	-.67	-.67	-.67	-.67	-.67	-.67	-.67	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-4.69
BOMBEO RIEGO 1975/80	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-4.94	-4.94	-4.94	-4.94	-4.94	-4.94	.00	.00	.00	.00	.00	.00	-29.64
BOMBEO INDUSTRIA 1981/86	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-1.30	-1.30	-1.30	-1.30	-1.30	-1.30	-7.80
BOMBEO INDUSTRIA 1962/80	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	.00	.00	.00	.00	.00	.00	-9.50
BOMBEO AGUA POTABLE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-1.82	-1.82	-1.82	-1.82	-1.82	-1.82	-1.82	-1.82	-1.82	-1.82	-1.82	-1.82	-1.82	-23.66
BALANCE TOTAL	-.35	.32	.52	.36	-.95	.56	.50	.53	.51	.54	.28	-.86	.15	.59	.80	.34	.68	-.48	1.18	-.23	-.47	-.89	-.96	.23	.34	3.23

VALORES POSITIVOS INDICAN ENTRADAS AL ACUIFERO

MODELO HIDROGEOLOGICO SECTOR: MAL PASO-PAIPOTE

LASADA N° 3.

BALANCE MASICO EN MALLAS EXTERIORES (Valores en millones de m3)



LAMINA N° 4a

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

RESUMEN BALANCE MASICO

PASADA Nº 4

VALORES EN MILLONES M3

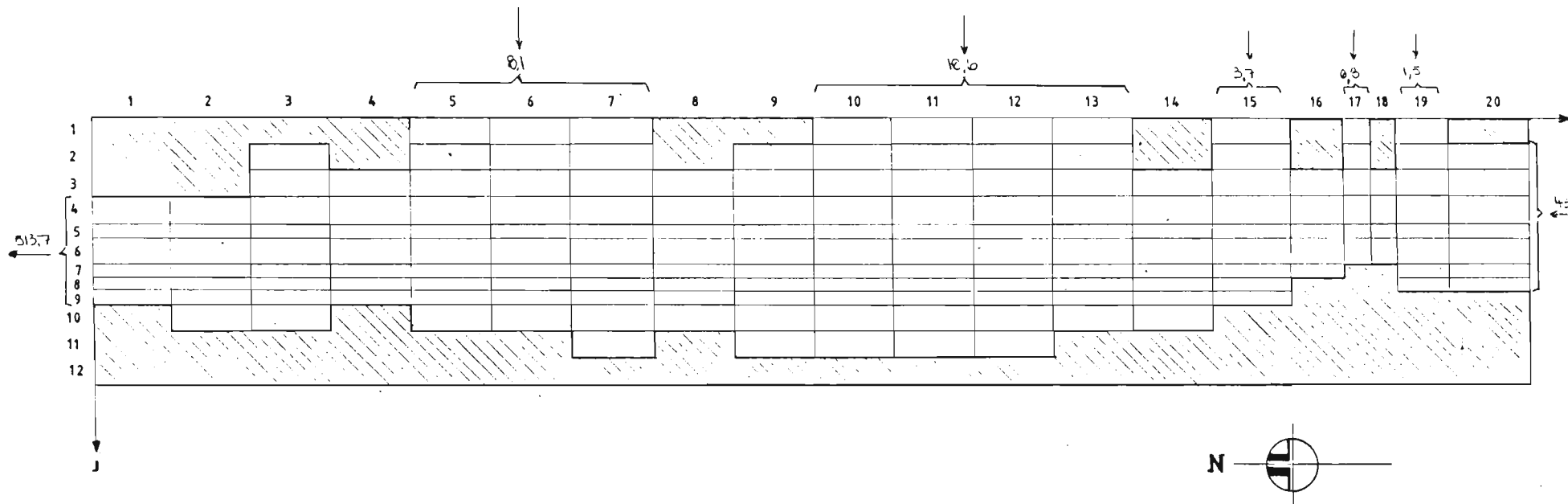
ANO	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	TOTAL PERIODO
MALLAS EXTERIORES	-8.55	-6.40	-5.80	-5.71	-4.91	-5.82	-4.36	-4.41	-3.20	-2.80	-1.89	.52	1.42	-1.04	-1.97	-1.29	-1.37	-1.32	-1.84	1.20	3.20	3.40	1.70	-1.61	-3.66	-53.19
RIC	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
VERTIENTES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
ALMACENAMIENTO	-4.06	-1.76	-1.23	-1.98	2.04	-1.77	-2.91	-2.62	-5.20	-4.97	-1.29	-1.05	1.28	.05	-1.82	-2.21	-2.47	-1.94	-1.32	-1.12	2.15	5.74	13.49	7.71	.99	-3.33
INF. RIEGO EN CRECIDA	3.56	3.50	3.45	3.41	4.15	3.69	3.37	3.26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.63	6.30	5.30	3.71	45.26
INF. CAVALES MATRICES	.37	.35	.33	.32	.55	.38	.31	.26	.16	.14	.19	.33	.25	.26	.18	.15	.14	.12	.14	.39	.52	.52	1.60	1.44	.65	10.51
INF. CAVALES SECUNDARIOS	.62	.59	.56	.54	.98	.65	.52	.43	.28	.22	.45	.64	.59	.43	.30	.26	.23	.20	.23	.67	.55	.88	3.06	2.45	1.45	17.85
INF. RIEGO HORTALIZAS	.57	.55	.52	.49	.91	.60	.48	.40	.25	.21	.45	.59	.55	.40	.28	.24	.21	.19	.21	.61	.51	.81	2.81	2.25	1.33	16.45
INF. RIEGO FRUTALES	.01	.01	.01	.01	.02	.02	.01	.01	.01	.01	.01	.02	.01	.01	.01	.01	.01	.00	.01	.02	.01	.02	.07	.06	.03	.43
INF. RIEGO PRADERAS	.03	.02	.03	.03	.05	.04	.03	.02	.02	.01	.03	.03	.03	.02	.02	.01	.01	.01	.01	.04	.03	.05	.17	.13	.08	.96
BOMBEO RIEGO 1968/74	.00	.00	.00	.00	.00	.00	-2.16	-2.16	-2.16	-2.16	-1.15	-2.16	-2.16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-15.15
BOMBEO RIEGO 1975/80	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-1.95	-1.95	-1.95	-1.95	-1.95	-1.95	.00	.00	.00	.00	.00	.00	-5.70
BOMBEO RIEGO 1981/86	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-3.12	-3.12	-3.12	-3.12	-3.12	-3.12	-18.70
BALANCE TOTAL	.67	.06	.34	.07	-1.24	.22	.51	.50	.54	.61	.50	.36	-1.49	.09	.68	.64	.75	.13	.13	-1.06	-1.64	-1.54	-1.69	-1.80	-1.21	3.07

VALORES POSITIVOS INDICAN ENTRADAS AL ACUIFERO

MODELO HIDROGEOLOGICO SECTOR: MAL PASO - PAIPOTE

PASADA 4.-

BALANCE MASICO EN MALLAS EXTERIORES (Valores en millones de m3)



LAMINA N° 4a

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

RESUMEN BALANCE MASICO

PASADA Nº 5

VALORES EN MILLONES M3

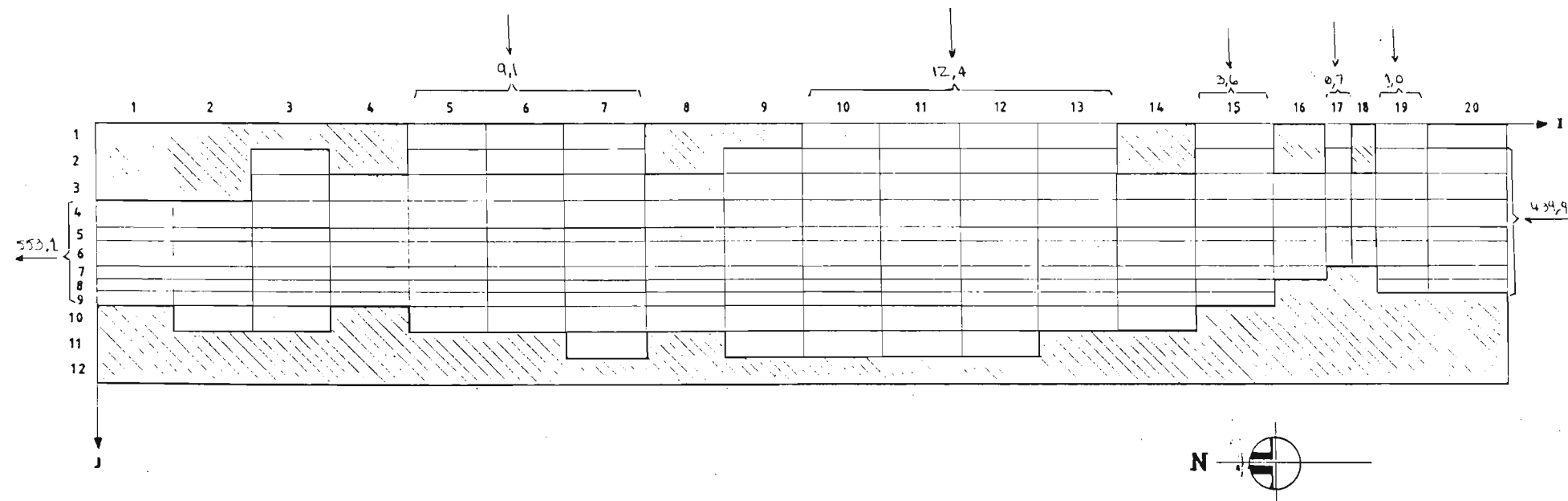
ANO	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	TOTAL PERIODO
MALLAS EXTERIORES	-10.07	-6.58	-5.12	-5.86	-5.46	-6.47	-5.92	-5.07	-4.96	-5.47	-5.31	-3.46	-1.64	-3.34	.11	.59	.91	2.07	2.04	1.07	.62	-.74	-1.17	-3.16	-5.08	-74.49
RIO	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
VERTIENTES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
ALMACENAMIENTO	-5.81	-2.21	-1.59	.77	1.73	-1.16	-2.41	-2.30	-2.04	-2.68	-1.72	1.64	.00	-2.85	-2.72	-2.44	-2.17	-.84	-2.00	4.21	4.51	6.03	7.24	4.31	.86	-3.65
INF.RIO EN CRECIDA	2.01	2.01	1.22	3.16	3.60	1.58	.43	.00	.00	.00	.79	.43	.00	.00	.00	.00	.00	.00	.00	1.58	1.58	4.03	5.61	4.39	3.60	36.03
INF.CANALES MATRICES	1.63	1.63	1.63	1.63	1.63	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.03	2.03	2.03	2.03	2.12	2.23	2.03	2.23	2.23	50.47
INF.CANALES SECUNDARIOS	1.06	1.06	1.06	1.06	1.06	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.32	1.32	1.32	1.32	1.38	1.45	1.32	1.45	1.45	32.72
INF.RIEGO HORTALIZAS	.25	.25	.25	.25	.25	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40	.49	.67	.84	1.16	1.33	11.77
INF.RIEGO FRUTALES	.13	.13	.13	.13	.13	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.24	.24	.24	.24	.24	.24	.24	.24	.07	.07	5.20
INF.RIEGO PRADERAS	.10	.10	.10	.10	.10	.39	.39	.39	.39	.39	.39	.39	.39	.39	.39	.36	.36	.36	.36	.36	.36	.36	.20	.04	.03	7.20
INF.RIEGO PARRONALES	.26	.26	.26	.26	.26	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.21	7.27
BOMBEO RIEGO 1968/74	.00	.00	.00	.00	.00	.00	-.67	-.67	-.67	-.67	-.67	-.67	-.67	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-4.69
BOMBEO RIEGO 1975/80	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-4.94	-4.94	-4.94	-4.94	-4.94	-4.94	.00	.00	.00	.00	.00	.00	-29.64
BOMBEO INDUSTRIA 1981/86	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-1.30	-1.30	-1.30	-1.30	-1.30	-1.30	-7.80
BOMBEO INDUSTRIA 1962/80	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	.00	.00	.00	.00	.00	.00	-9.50
BOMBEO AGUA POTABLE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-1.82	-1.82	-1.82	-1.82	-1.82	-1.82	-1.82	-1.82	-1.82	-1.82	-1.82	-1.82	-1.82	-23.66
BALANCE TOTAL	.69	.57	.62	-.54	-.67	.60	.59	.90	.74	.88	.87	-1.01	.20	.09	.41	.57	.47	.31	1.44	-.02	-.52	-.61	-.98	-.95	-.14	4.52

VALORES POSITIVOS INDICAN ENTRADAS AL ACUIFERO

MODELO HIDROGEOLOGICO SECTOR: MAL PASO - PAIPOTE

PASADA N° 5.-

BALANCE MASICO EN MALLAS EXTERIORES: (Valores en millones de m³)



LAHINA N° 4a

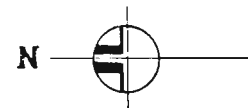
ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

MODELO HIDROGEOLOGICO SECTOR: MAL PASO - PAIPOTE

PASADA N° 1

TRANSMISIVIDAD I ($muler\ m^3/dia/m$).

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1																				
2					0.75	0.75			0.60	0.50	0.50	0.50							0.5	
3			1.0	1.0	1.0	2.5	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.25	0.50	1.0	4.0	1.0	1.0	
4	1.0	1.0	4.0	2.0	2.0	5.0	1.0	1.0	2.0	1.0	1.0	1.0	4.0	0.50	1.0	7.5	10.0	10.0	10.0	
5	2.0	2.0	2.0	2.5	3.0	7.5	7.5	7.5	5.0	4.0	5.0	10.0	10.0	3.5	5.0	10.0	5.0	5.0	7.5	
6	2.0	2.0	2.0	3.0	2.0	10.0	10.0	10.0	10.0	7.5	11.0	13.0	13.0	10.0	10.0	5.0	1.0	0.75	1.0	
7	2.0	2.0	2.0	2.5	2.0	10.5	13.0	11.0	11.0	10.0	10.0	13.0	13.0	11.0	10.0	5.0			1.0	
8	2.0	2.0	2.0	2.5	2.0	7.5	11.0	11.0	10.0	10.0	13.0	11.0	10.0	10.0	5.0				1.0	
9	2.0	2.0	2.0	2.5	2.0	5.0	7.5	7.5	7.5	13.0	13.0	10.0	7.5	5.0						
10					0.75	1.0	3.5	5.0	5.0	6.5	11.0	10.0	1.0							
11									1.0	3.5	5.0									
12																				



LAMINA N° 4 a

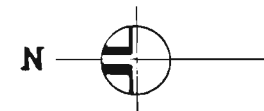
ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

MODELO HIDROGEOLOGICO SECTOR: MAL PASO - PAIPOTE

PASADA 1

TRANSMISIVIDAD T (miles m³/dia/m).

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1					0.50	0.30	0.25			0.25	0.25	0.25	0.25		0.25		0.25		0.25	
2			0.75		0.75	0.75	0.50		0.60	0.50	0.50	0.50	0.50		0.50		0.50		0.50	
3			1.0	1.0	1.0	2.5	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.25	0.50	10.0	4.0	1.0	1.0	
4		1.0	2.0	2.0	3.0	5.0	1.0	1.0	2.0	1.0	1.0	1.0	4.0	0.50	1.0	7.5	14.0	10.0	10.0	
5		2.0	2.0	3.0	3.0	7.5	7.5	7.5	5.0	4.0	5.0	10.0	10.0	3.5	5.0	10.0	5.0	5.0	7.5	
6		2.0	2.0	3.0	3.0	11.0	10.0	10.0	10.0	7.5	11.0	13.0	13.0	10.0	10.0	5.0			1.0	
7		2.0	2.0	3.0	3.0	10.0	13.0	11.0	11.0	10.0	13.0	13.0	11.0	10.0	5.0				1.0	
8		1.0	1.0	2.0	2.0	7.5	11.0	14.0	10.0	10.0	13.0	11.0	10.0	7.5	3.5					
9		1.0	1.0		1.0	5.0	7.5	7.5	7.5	7.5	13.0	10.0	7.5	3.0						
10							3.5		5.0	4.5	11.0	10.0								
11																				
12																				

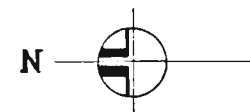


LAMINA N° 4a

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

MODELO HIDROGEOLOGICO SECTOR: MAL PASO - PAIPOTE
PASADA N°5 TRANSMISIVIDAD I (miles m³/dia/m).

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1																				
2					1.5	0.75			0.6	0.5	0.5	0.5							0.5	
3			2.0	2.0	2.0	2.5	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.25	0.5	1.0	4.0	1.0	1.0	
4	2.0	2.0	4.0	4.0	6.0	5.0	1.0	1.0	2.0	1.0	1.0	1.0	4.0	0.5	1.0	7.5	10.0	10.0	10.0	
5	4.0	2.0	4.0	4.0	4.0	7.5	7.5	7.5	5.0	4.0	5.0	10.0	10.0	3.5	5.0	10.0	5.0	5.0	7.5	
6	9.0	9.0	9.0	9.0	9.0	12.0	10.0	10.0	10.0	7.5	11.0	13.0	13.0	10.0	10.0	5.0	1.0	0.75	1.0	
7	4.0	4.0	4.0	4.0	8.0	12.0	13.0	12.0	11.0	10.0	13.0	13.0	11.0	10.0	5.0				1.0	
8	4.0	2.0	2.0	2.0	5.0	10.0	12.0	12.0	10.0	10.0	13.0	11.0	19.0	7.5					1.0	
9	5.0	2.0	2.0	5.0	2.0	5.0	7.5	7.5	7.5	7.5	13.0	10.0	7.5	5.0						
10		1.5			1.5	1.0	3.5	5.0	5.0	6.5	11.0	10.0	1.0							
11									1.0	3.5	5.0									
12																				



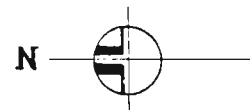
LAMINA N° 4a

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

MODELO HIDROGEOLOGICO SECTOR: MAL PASO - PAIPOTE

PASADA N° 5 TRANSMISIVIDAD J (mler m³/dlo./m).

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1					0.01	0.01	0.01			0.01	0.01	0.01	0.01		0.01		0.01			
2			1.5		1.5	0.75	0.5		0.6	0.5	0.5	0.5	0.5		0.5		0.5			
3			2.0	2.0	2.0	2.5	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.25	0.5	1.0	4.5	1.0	1.0	
4		2.0	4.0	4.0	6.0	5.0	1.0	1.0	2.0	1.0	1.0	1.0	4.0	0.5	1.0	7.5	10.0	10.0	10.0	
5		8.0	4.0	4.0	1.0	7.5	7.5	7.5	5.0	4.0	5.0	10.0	10.0	3.5	5.0	10.0	5.0	5.0	7.5	
6		9.0	9.0	9.0	4.0	12.0	10.0	10.0	10.0	7.5	11.0	13.0	13.0	10.0	10.0	5.0			1.0	
7		4.0	9.0	9.0	8.0	12.0	13.0	12.0	11.0	10.0	13.0	13.0	11.0	10.0	5.0				1.0	
8		4.0	2.0	4.0	0.0	10.0	12.0	12.0	10.0	10.0	12.0	11.0	10.0	7.5	3.5					
9		2.0	2.0		2.0	5.0	7.5	7.5	7.5	7.5	13.0	10.0	4.5	5.0						
10							3.5		5.0	6.5	11.0	10.0								
11																				
12																				



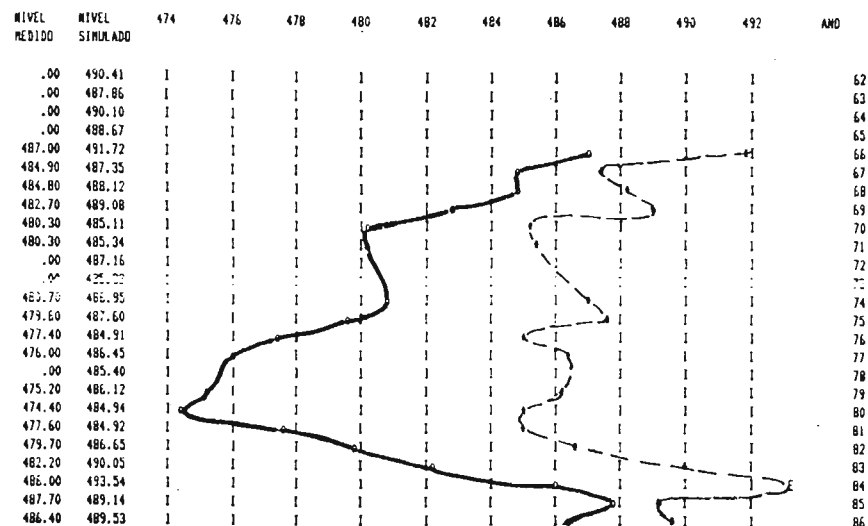
LAMINA N° 4a

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

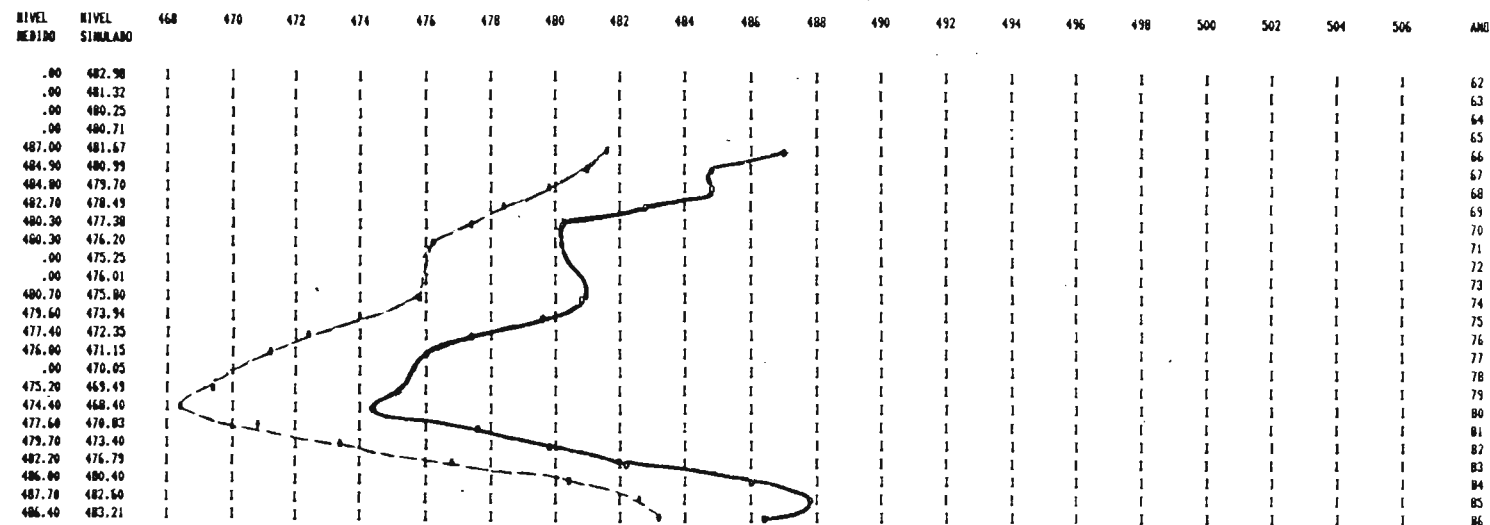
CONTRASTE PIEZOMETRICO

SECTOR N°4A.

PASADA N° 1



PASADA N° 5



o-NIVEL MEDIDO
A-NIVEL MEDIDO Y SIMULADO (COINCIDEN)

o-NIVEL SIMULADO
F-VALOR FUERA DEL RANGO DEL DIBUJO

PASADA N° 1

NIVEL MEDIDO	NIVEL SIMULADO	477	479	481	483	485	487	489	491	493	495	AÑO
.00	490.45	1	1	1	1	1	1	1	1	1	1	62
.00	487.88	1	1	1	1	1	1	1	1	1	1	63
.00	490.14	1	1	1	1	1	1	1	1	1	1	64
.00	488.69	1	1	1	1	1	1	1	1	1	1	65
.00	491.77	1	1	1	1	1	1	1	1	1	1	66
.00	487.37	1	1	1	1	1	1	1	1	1	1	67
.00	488.14	1	1	1	1	1	1	1	1	1	1	68
.00	489.12	1	1	1	1	1	1	1	1	1	1	69
480.40	485.12	1	1	1	1	1	1	1	1	1	1	70
478.70	485.36	1	1	1	1	1	1	1	1	1	1	71
477.00	487.19	1	1	1	1	1	1	1	1	1	1	72
480.40	485.34	1	1	1	1	1	1	1	1	1	1	73
.00	488.97	1	1	1	1	1	1	1	1	1	1	74
.00	487.62	1	1	1	1	1	1	1	1	1	1	75
.00	484.93	1	1	1	1	1	1	1	1	1	1	76
.00	486.48	1	1	1	1	1	1	1	1	1	1	77
.00	485.42	1	1	1	1	1	1	1	1	1	1	78
.00	486.15	1	1	1	1	1	1	1	1	1	1	79
.00	484.96	1	1	1	1	1	1	1	1	1	1	80
.00	484.91	1	1	1	1	1	1	1	1	1	1	81
.00	486.66	1	1	1	1	1	1	1	1	1	1	82
.00	490.08	1	1	1	1	1	1	1	1	1	1	83
.00	493.57	1	1	1	1	1	1	1	1	1	1	84
.00	489.14	1	1	1	1	1	1	1	1	1	1	85
.00	489.55	1	1	1	1	1	1	1	1	1	1	86

PASADA N° 5

NIVEL MEDIDO	NIVEL SIMULADO	475	477	479	481	483	485	487	489	491	493	495	497	499	501	503	505	507	509	511	513	AÑO
.00	483.01	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	62
.00	481.36	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	63
.00	480.28	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	64
.00	480.74	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	65
.00	481.70	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	66
.00	481.03	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	67
.00	479.73	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	68
.00	478.53	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	69
480.40	477.42	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	70
478.70	476.24	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	71
477.00	475.29	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	72
480.40	476.04	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	73
.00	475.83	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	74
.00	473.97	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	75
.00	472.38	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	76
.00	471.19	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	77
.00	470.08	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	78
.00	469.53	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	79
.00	468.43	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	80
.00	470.85	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	81
.00	473.42	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	82
.00	476.80	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	83
.00	480.41	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	84
.00	482.61	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	85
.00	483.23	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	86

o=NIVEL MEDIDO
A=NIVELES MEDIDO Y SIMULADO COINCIDEN

o=NIVEL SIMULADO
E=VALOR FUERA DEL RANGO DEL DIBUJO

PASADA N° 4

NIVEL MEDIDO	NIVEL SIMULADO	440	442	444	446	448	450	452	454	456	458	AÑO
.00	456.20	1	1	1	1	1	1	1	1	1	1	62
.00	456.70	1	1	1	1	1	1	1	1	1	1	63
.00	456.37	1	1	1	1	1	1	1	1	1	1	64
.00	456.39	1	1	1	1	1	1	1	1	1	1	65
.00	457.70	1	1	1	1	1	1	1	1	1	1	66
.00	456.26	1	1	1	1	1	1	1	1	1	1	67
.00	456.58	1	1	1	1	1	1	1	1	1	1	68
.00	455.21	1	1	1	1	1	1	1	1	1	1	69
442.70	453.51	1	1	1	1	1	1	1	1	1	1	70
442.10	452.20	1	1	1	1	1	1	1	1	1	1	71
.00	452.80	1	1	1	1	1	1	1	1	1	1	72
440.80	453.11	1	1	1	1	1	1	1	1	1	1	73
441.60	451.61	1	1	1	1	1	1	1	1	1	1	74
442.50	453.34	1	1	1	1	1	1	1	1	1	1	75
.00	452.55	1	1	1	1	1	1	1	1	1	1	76
.00	451.64	1	1	1	1	1	1	1	1	1	1	77
.00	451.50	1	1	1	1	1	1	1	1	1	1	78
.00	451.52	1	1	1	1	1	1	1	1	1	1	79
.00	450.64	1	1	1	1	1	1	1	1	1	1	80
.00	452.35	1	1	1	1	1	1	1	1	1	1	81
.00	452.43	1	1	1	1	1	1	1	1	1	1	82
.00	454.91	1	1	1	1	1	1	1	1	1	1	83
.00	459.19	1	1	1	1	1	1	1	1	1	1	84
.00	459.36	1	1	1	1	1	1	1	1	1	1	85
.00	458.50	1	1	1	1	1	1	1	1	1	1	86

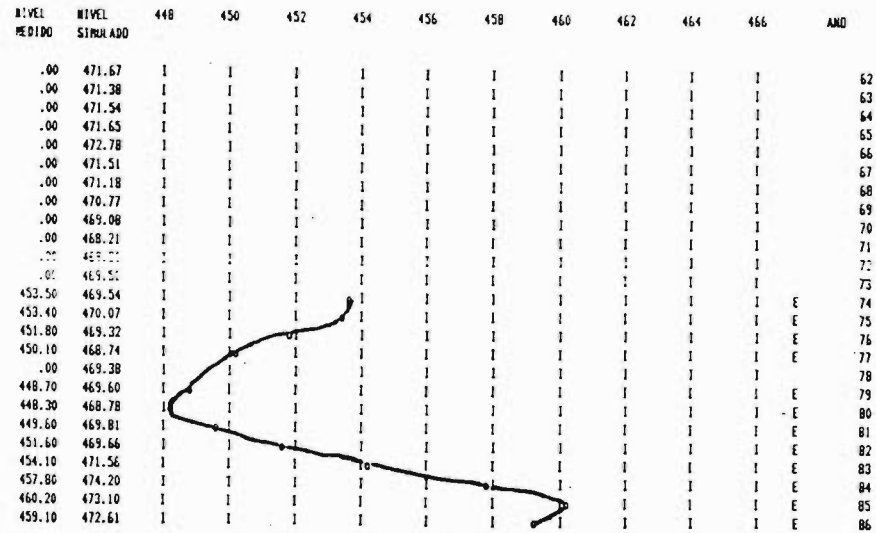
PASADA N° 5

NIVEL MEDIDO	NIVEL SIMULADO	439	441	443	445	447	449	451	453	455	457	459	461	463	465	467	469	471	473	475	477	AÑO
.00	446.01	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	62
.00	445.48	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	63
.00	444.92	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	64
.00	445.08	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	65
.00	446.05	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	66
.00	445.51	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	67
.00	444.01	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	68
.00	442.77	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	69
442.70	441.42	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	70
442.10	439.75	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	71
.00	438.79	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	72
440.80	439.75	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	73
442.60	440.14	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	74
442.50	439.00	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	75
.00	437.49	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	76
.00	435.76	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	77
.00	434.38	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	78
.00	434.05	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	79
.00	432.86	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	80
.00	435.25	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	81
.00	437.47	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	82
.00	440.63	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	83
.00	443.52	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	84
.00	448.41	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	85
.00	448.76	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	86

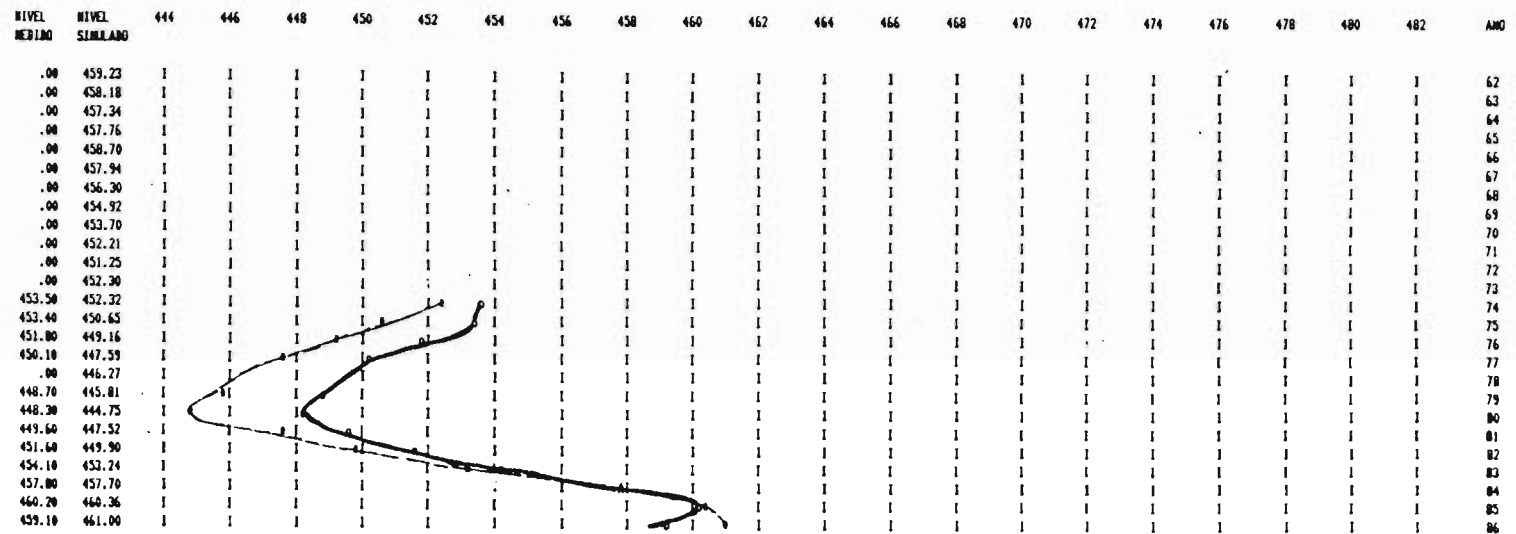
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A=NIVELES MEDIDO Y SIMULADO COINCIDEN

o=NIVEL SIMULADO
E=VALOR FUERA DEL RANGO DEL DIBUJO

PASADA N° 1



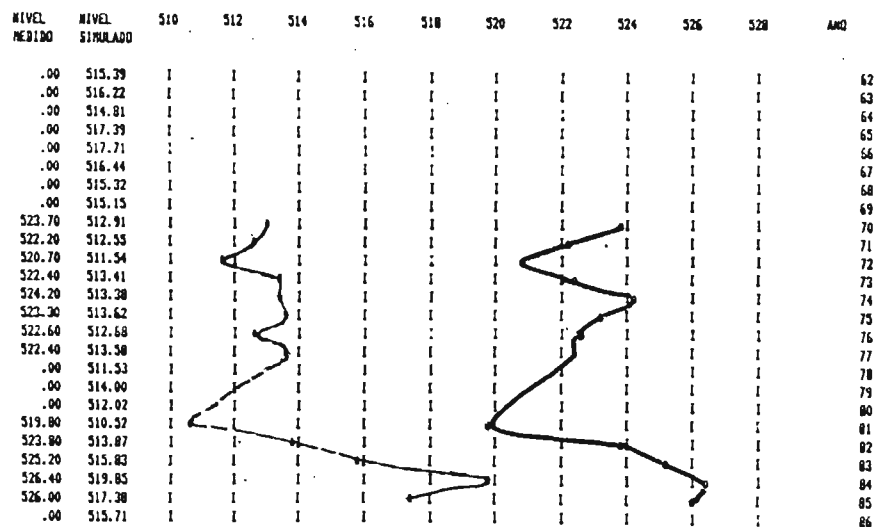
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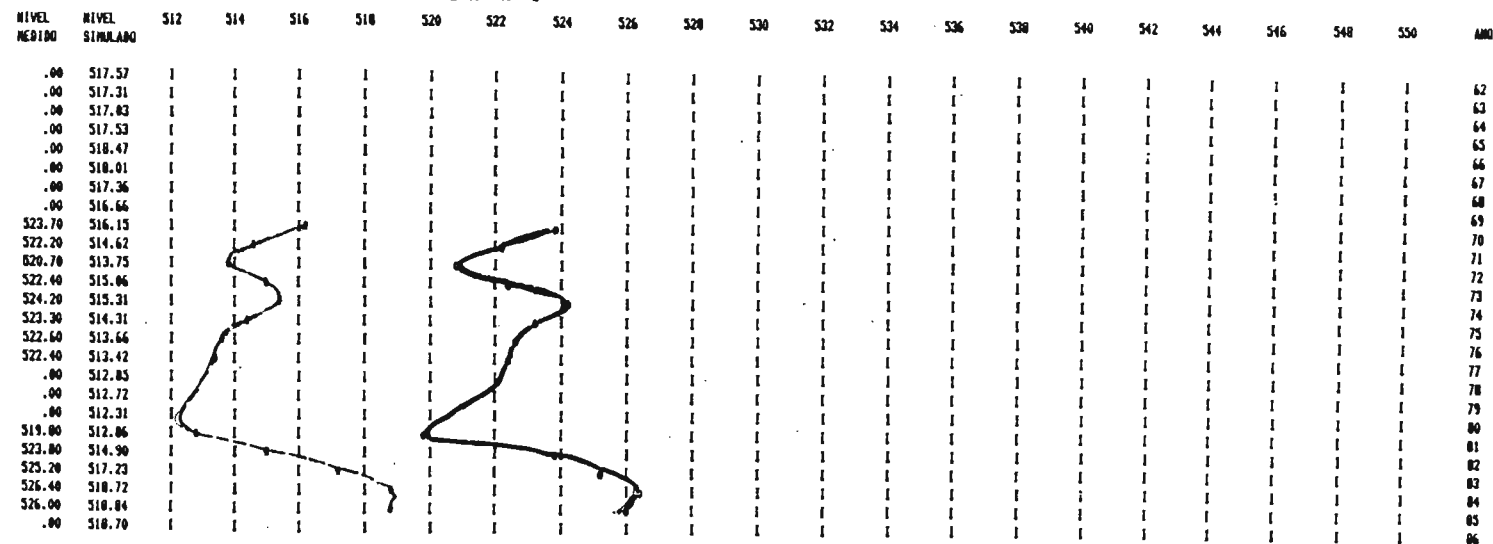
●●●●● NIVEL MEDIDO

----- NIVEL SIMULADO

PASADA N° 1



PASADA N° 5

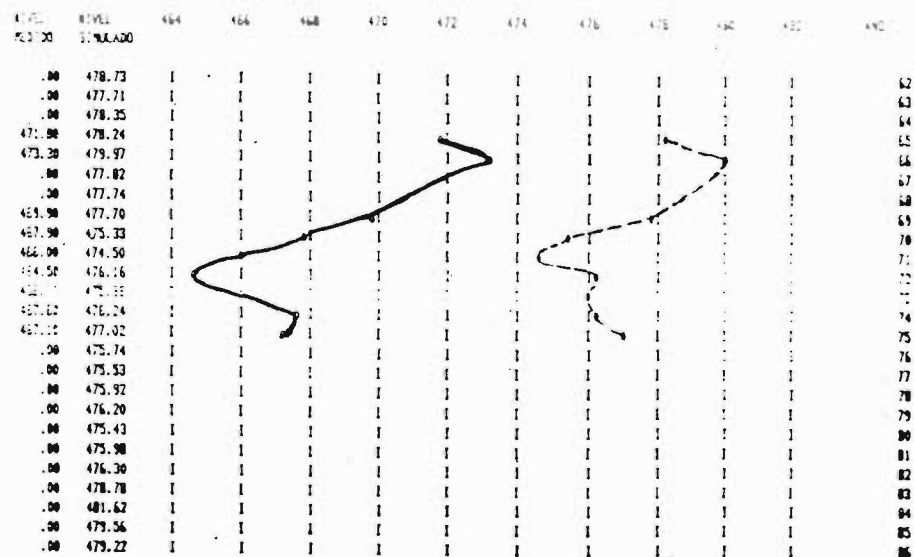


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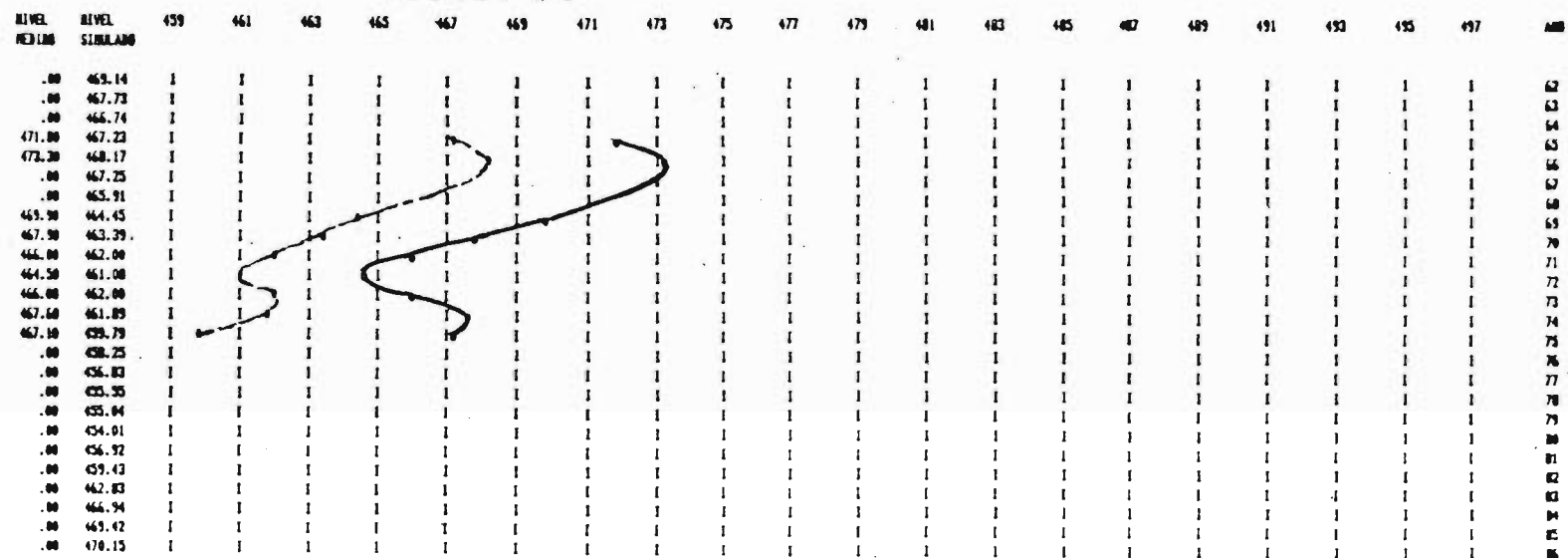
o=NIVEL SIMULADO

EL TIPO FILSA DEL PANGO DEL DIBUJO

PASADA N° 1



PASADA N° 5



• NIVEL MEDIDO ———
• NIVEL MEDIDO Y SIMULADO COINCIDEN

• NIVEL SIMULADO - - - - -
• VALOR FUERA DEL RANGO DEL DIBUJO

RECURSOS HIDRAULICOS

AGUAS SUBTERRANEAS

REGADIO

AGUA POTABLE E INDUSTRIAL

SECTOR N°4 B.

REQUERIDA DALLANDE, MAGICO

PASADA N°1

VALORES EN MILLONES M3

RESUMEN BALANCE BASICO

PASADA N° 1

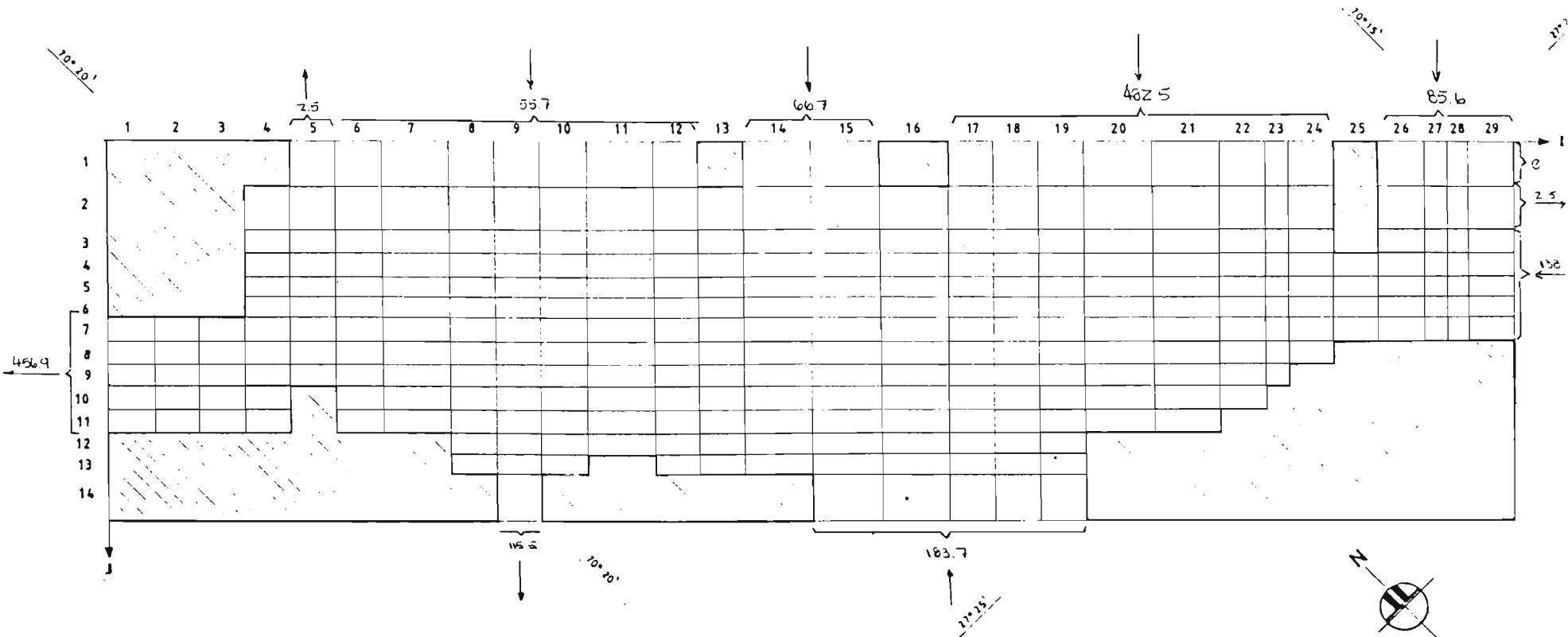
VALORES EN MILLONES M3

ANO	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	TOTAL PERIODO
MALLAS EXTERIORES	-1.17	14.10	18.27	8.64	8.69	15.59	9.97	26.79	16.75	28.92	20.29	17.70	10.34	25.16	24.67	24.86	22.05	24.28	25.80	5.01	26.63	16.86	9.83	14.82	16.24	433.09
RIEGO	-1.02	-1.02	-1.01	-1.01	-1.02	-1.01	-1.01	-1.01	-1.01	-1.01	-1.01	-1.01	-1.01	-1.01	-1.01	-1.01	-1.01	-1.01	-1.01	-1.01	-1.01	-1.01	-1.01	-1.01	-1.01	-1.31
VERTIENTES	-7.20	-8.71	-8.40	8.25	-8.82	-8.64	-8.34	-8.41	-7.60	-7.78	7.16	-7.51	-7.55	-7.98	-7.28	-7.13	-6.85	-7.01	-6.83	-7.19	-7.81	-7.04	-7.64	-7.88	-7.63	-192.63
ALMACENAMIENTO	4.66	-5.75	-1.88	5.49	-1.23	-5.56	6.67	-13.30	10.19	-12.96	9.49	-4.42	9.81	-11.98	4.09	-4.73	2.80	-2.17	-3.58	16.01	-16.74	13.82	.00	.18	-1.81	-1.80
INF. RIEGO EN CRECIDA	2.47	2.44	2.39	2.36	2.88	2.49	2.34	2.26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.82	4.37	3.68	2.57	32.07
INF. CANALES MATRICES	5.02	4.58	4.36	4.19	7.61	5.02	3.37	3.31	2.10	1.77	3.75	4.91	4.63	3.31	3.36	3.03	2.81	2.54	2.81	5.19	4.25	6.78	8.27	8.27	5.52	111.37
INF. CANALES SECUNDARIOS	2.23	2.04	1.94	1.86	3.38	2.23	1.77	1.47	.93	.78	1.67	2.18	2.06	1.47	1.50	1.35	1.25	1.13	1.25	2.30	1.89	3.02	3.68	3.68	2.45	49.51
INF. RIEGO HORTALIZAS	2.12	1.93	1.84	1.77	3.21	2.12	1.67	1.40	.88	.74	1.58	2.07	1.95	1.40	1.42	1.28	1.19	1.07	1.19	2.19	1.79	2.36	3.49	3.49	2.33	46.96
INF. RIEGO PARRONALES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.02	.03	.05	.05	.17
INF. RIEGO FRUTALES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	.03	.07	.12	.17	.17	.57
BOMBEO AGUA POTABLE	-2.03	-2.17	-2.33	-2.48	-2.63	-2.78	-2.92	-3.08	-3.30	-3.45	-3.68	-3.90	-4.13	-4.35	-4.58	-4.80	-5.03	-5.25	-5.55	-5.85	-6.22	-6.53	-6.83	-7.20	-7.50	-108.52
BOMBEO FUND. PAIPOTE	-1.31	-1.31	-1.31	-1.31	-1.31	-1.31	-1.31	-1.31	-1.25	-1.28	-1.41	-1.45	-1.49	-1.51	-1.55	-1.58	-1.62	-1.65	-1.68	-1.72	-1.76	-1.79	-1.83	-1.85	-1.90	-13.05
BOMBEO INDUSTRIAS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-1.08	-1.06	-1.14	-1.22	-1.28	-1.36	-1.44	-1.52	-1.59	1.67	-1.73	-1.81	-1.89	-1.97	-20.67
BOMBEO RIEGO 1968/81	.00	.00	.00	.00	.00	.00	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	.00	.00	.00	.00	.00	.00	-16.80
BOMBEO RIEGO 1984/86	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-1.72	-1.72	-1.72	-2.15
BALANCE TOTAL	-2.56	19.62	18.62	2.28	15.23	21.26	.26	35.52	-1.99	32.36	5.34	17.22	-5.26	28.11	12.02	20.24	9.25	15.62	19.85	-17.87	24.87	1.51	11.96	15.42	11.39	220.22

MODELO HIDROGEOLOGICO SECTOR: PAIPOTE-COPIAPO

PANDEA Nº 1

BALANCE MASICO EN LAS MALLAS EXTERIORES (Valores en millones de m³)



LAMINA Nº 4b

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

RESUMEN BALANCE MASICO

PASADA N° 2

VALORES EN MILLONES M3

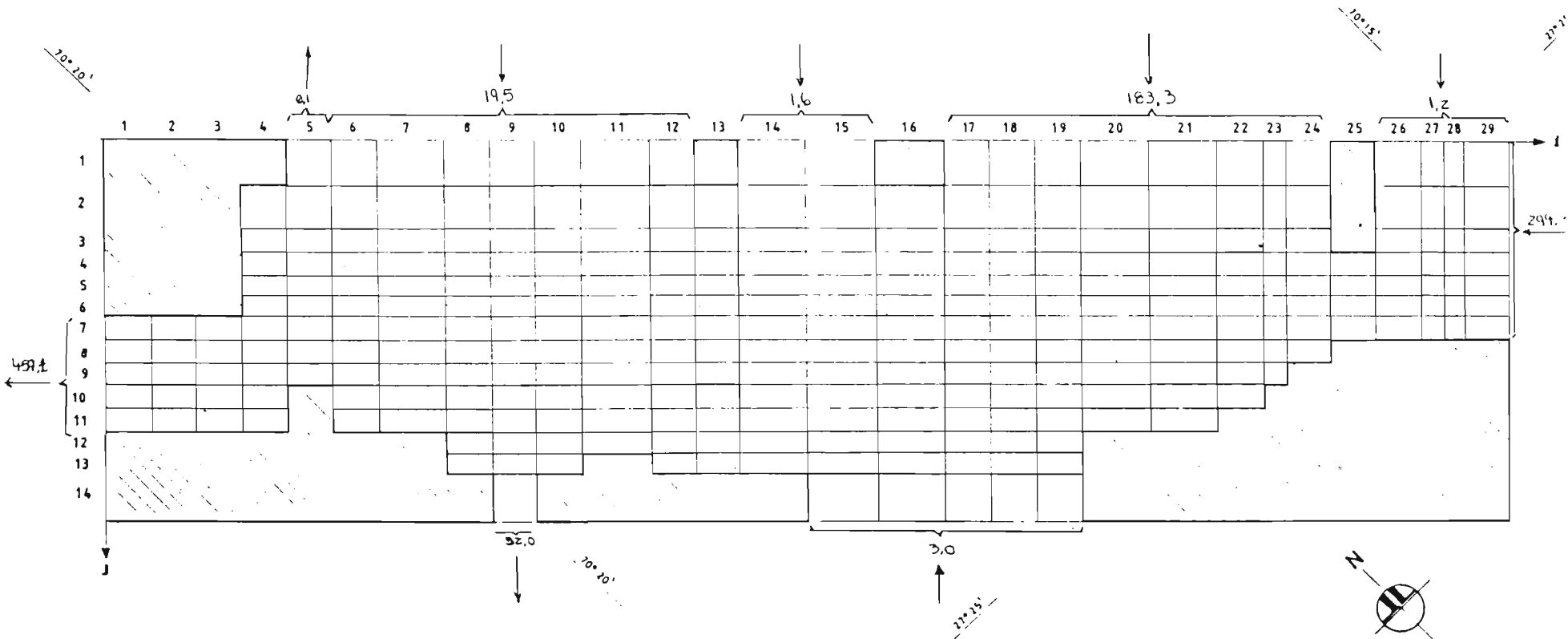
ANO	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	TOTAL PERIODO
MALLAS EXTERIORES	-5.84	-1.43	-1.45	-1.58	-2.04	-2.93	-2.30	-1.58	-1.18	-0.88	-0.29	.96	2.39	2.79	2.22	1.26	1.42	2.73	1.82	3.30	4.23	4.19	5.31	4.07	1.67	16.86
RIO	-.02	-.02	-.02	-.02	-.02	-.02	-.02	-.02	-.02	-.01	-.01	-.01	-.01	-.01	-.01	-.01	-.01	-.01	-.01	-.01	-.01	-.01	-.01	-.01	-.02	-.31
VERTIENTES	-2.35	-5.97	-6.31	-6.21	-6.48	-7.12	-6.53	-5.83	-4.95	-3.71	-2.78	-2.40	-2.45	-2.42	-2.07	-1.83	-1.48	-1.11	-.85	-.78	-.89	-1.19	-2.12	-3.60	-4.63	-86.07
ALMACENAMIENTO	.19	-.07	-.51	-1.67	7.52	-3.23	-4.34	-4.32	-8.25	-8.10	-2.58	1.29	1.64	-4.15	-2.69	-5.18	-5.02	-3.47	-2.00	3.30	3.95	10.69	15.14	11.36	-1.58	-2.08
INF.RIO EN CRECIDA	2.47	2.44	2.39	2.36	2.88	2.49	2.34	2.26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.82	4.37	3.68	2.57	32.07
INF.CANALES MATRICES	5.02	4.58	4.36	4.19	7.61	5.02	3.97	3.31	2.10	1.77	3.75	4.91	4.63	3.31	3.36	3.03	2.81	2.54	2.81	5.19	4.25	6.78	8.27	8.27	5.52	111.37
INF.CANALES SECUNDARIOS	2.23	2.04	1.94	1.86	3.38	2.23	1.77	1.47	.93	.78	1.67	2.18	2.06	1.47	1.50	1.35	1.25	1.13	1.25	2.30	1.89	3.02	3.68	3.68	2.45	49.51
INF.RIEGO MORTALIZAS	2.12	1.93	1.84	1.77	3.21	2.12	1.67	1.40	.88	.74	1.58	2.07	1.95	1.40	1.42	1.28	1.19	1.07	1.19	2.19	1.79	2.86	3.49	3.49	2.33	46.96
INF.RIEGO PARRONALES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.02	.03	.05	.05	.17
INF.RIEGO FRUTALES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	.03	.07	.12	.17	.17	.57
BOMBEO AGUA POTABLE	-2.03	-2.17	-2.33	-2.48	-2.63	-2.78	-2.92	-3.08	-3.30	-3.45	-3.68	-3.90	-4.13	-4.35	-4.58	-4.80	-5.03	-5.25	-5.55	-5.85	-6.22	-6.53	-6.83	-7.20	-7.50	-108.52
BOMBEO FUND.PAIPOTE	-.31	-.31	-.31	-.31	-.31	-.31	-.31	-.31	-.35	-.38	-.41	-.45	-.49	-.51	-.55	-.58	-.62	-.65	-.68	-.72	-.76	-.79	-.83	-.85	-.90	-13.05
BOMBEO INDUSTRIAS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-.98	-1.06	-1.14	-1.22	-1.28	-1.36	-1.44	-1.51	-1.59	-1.67	-1.73	-1.81	-1.89	-1.97	-20.67
BOMBEO RIEGO 1968/81	.00	.00	.00	.00	.00	.00	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	.00	.00	.00	.00	.00	.00	-16.80
BOMBEO 1984/86	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-.72	-.72	-.72	-2.15
BALANCE TOTAL	1.10	1.15	.61	1.25	-1.91	1.93	.80	.74	1.16	1.77	1.21	-.12	.06	3.48	1.57	2.40	2.00	1.28	-.74	-.45	-1.30	-2.17	-2.18	-2.23	.60	12.00

VALORES POSITIVOS INDICAN ENTRADAS AL ACUIFERO

MODELO HIDROGEOLOGICO SECTOR: PAIPOTE-COPIAPO

Plan N° 2.

BALANCE MASICO EN LAS MALLAS EXTERIORES (Valores en millones de m³)



LAMINA N° 4b

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

RESUMEN BALANCE MASICO

PASADA Nº 3

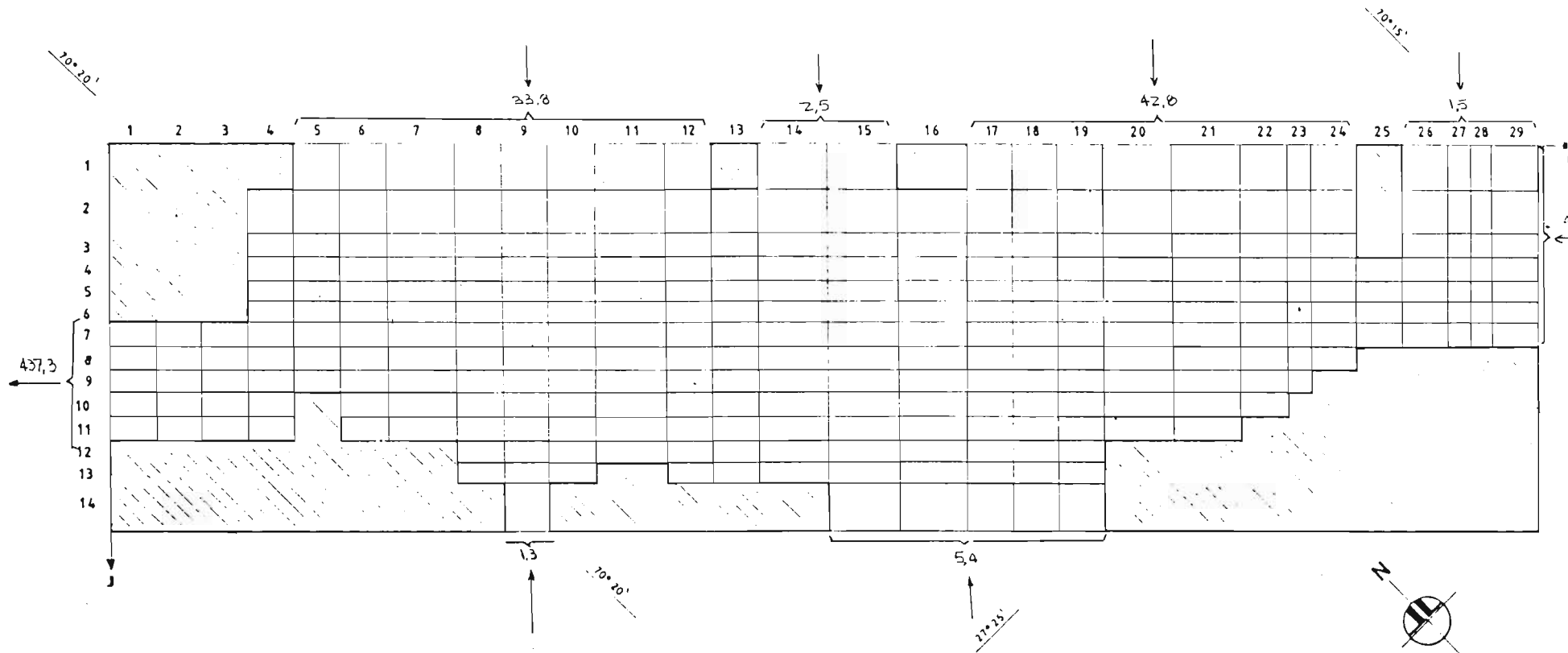
VALORES EN MILLONES M3

ANO	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	TOTAL PERIO
MALLAS EXTERIORES	-5.95	-.55	.76	.91	.18	-.45	.10	.98	1.47	1.56	1.63	2.27	3.38	3.73	2.88	2.25	2.30	3.52	2.80	4.27	4.92	4.30	5.29	4.57	3.23	50.35
RIO	-10.43	-9.53	-8.31	-7.61	-8.74	-9.09	-7.76	-6.46	-5.06	-3.77	-3.24	-3.18	-3.51	-3.38	-2.88	-2.11	-1.45	-1.06	-.87	-.86	-1.13	-2.04	-4.09	-6.56	-7.00	-120.11
VERTIENTES	-.76	-1.25	-1.12	-1.04	-1.07	-1.19	-1.10	-.93	-.70	-.44	-.35	-.33	-.35	-.36	-.33	-.27	-.19	-.09	-.01	.00	-.02	-.15	-.34	-.66	-.85	-13.91
ALMACENAMIENTO	-8.46	-3.80	-2.09	-1.55	5.63	-2.01	-4.37	-3.88	-6.39	-5.91	-.21	1.78	1.68	-2.12	-3.14	-4.05	-4.20	-2.81	-3.22	3.63	4.58	9.29	12.83	7.98	-2.41	-13.21
INF.RIO EN CRECIDA	2.47	2.44	2.39	2.36	2.88	2.49	2.34	2.26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.82	4.37	3.68	2.57	32.07
INF.CANALES MATRICES	5.02	4.58	4.36	4.19	7.61	5.02	3.97	3.31	2.10	1.77	3.75	4.91	4.63	3.31	3.36	3.03	2.81	2.54	2.81	5.19	4.25	6.78	8.27	8.27	-5.52	111.37
INF.CANALES SECUNDARIOS	2.23	2.04	1.94	1.86	3.38	2.23	1.77	1.47	.93	.78	1.67	2.18	2.06	1.47	1.50	1.35	1.25	1.13	1.25	2.30	1.89	3.02	3.68	3.68	2.45	49.51
INF.RIEGO HORTALIZAS	2.12	1.93	1.84	1.77	3.21	2.12	1.67	1.40	.88	.74	1.58	2.07	1.95	1.40	1.42	1.28	1.19	1.07	1.19	2.19	1.79	2.86	3.49	3.49	2.23	46.96
INF.RIEGO PARRONALES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.02	.03	.05	.05	.17
INF.RIEGO FRUTALES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	.03	.07	.12	.17	.17	.57
BOMBEO AGUA POTABLE	-2.03	-2.17	-2.33	-2.48	-2.63	-2.78	-2.92	-3.08	-3.30	-3.45	-3.68	-3.90	-4.13	-4.35	-4.58	-4.80	-5.03	-5.25	-5.55	-5.85	-6.22	-6.53	-6.83	-7.20	-7.50	-108.52
BOMBEO FUND.PAIPOTE	-.31	-.31	-.31	-.31	-.31	-.31	-.31	-.31	-.35	-.38	-.41	-.45	-.49	-.51	-.55	-.58	-.62	-.65	-.68	-.72	-.76	-.79	-.83	-.85	-.90	-13.05
BOMBEO INDUSTRIAS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-.98	-1.06	-1.14	-1.22	-1.28	-1.36	-1.44	-1.52	-1.59	-1.67	-1.73	-1.81	-1.89	-1.97	-20.67
BOMBEO RIEGO 1968/81	.00	.00	.00	.00	.00	.00	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	.00	.00	.00	.00	.00	-16.80
BOMBEO 1984/86	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-.72	-.72	-.72	-2.16
BALANCE TOTAL	.83	.96	1.29	1.21	-1.11	.05	.92	1.32	1.17	1.52	-.04	-.40	-.38	1.08	1.54	1.72	1.90	1.38	1.44	.12	-1.50	-1.65	-2.19	-1.97	-.22	8.98

MODELO HIDROGEOLOGICO SECTOR: PAIPOTE-COPIAPO

PASADA N° 3 -

BALANCE MASICO EN LAS MALLAS EXTERIORES (Valores en millones de m³)



LAMINA N° 4b

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

RESUMEN BALANCE MASICO

PASADA Nº 4

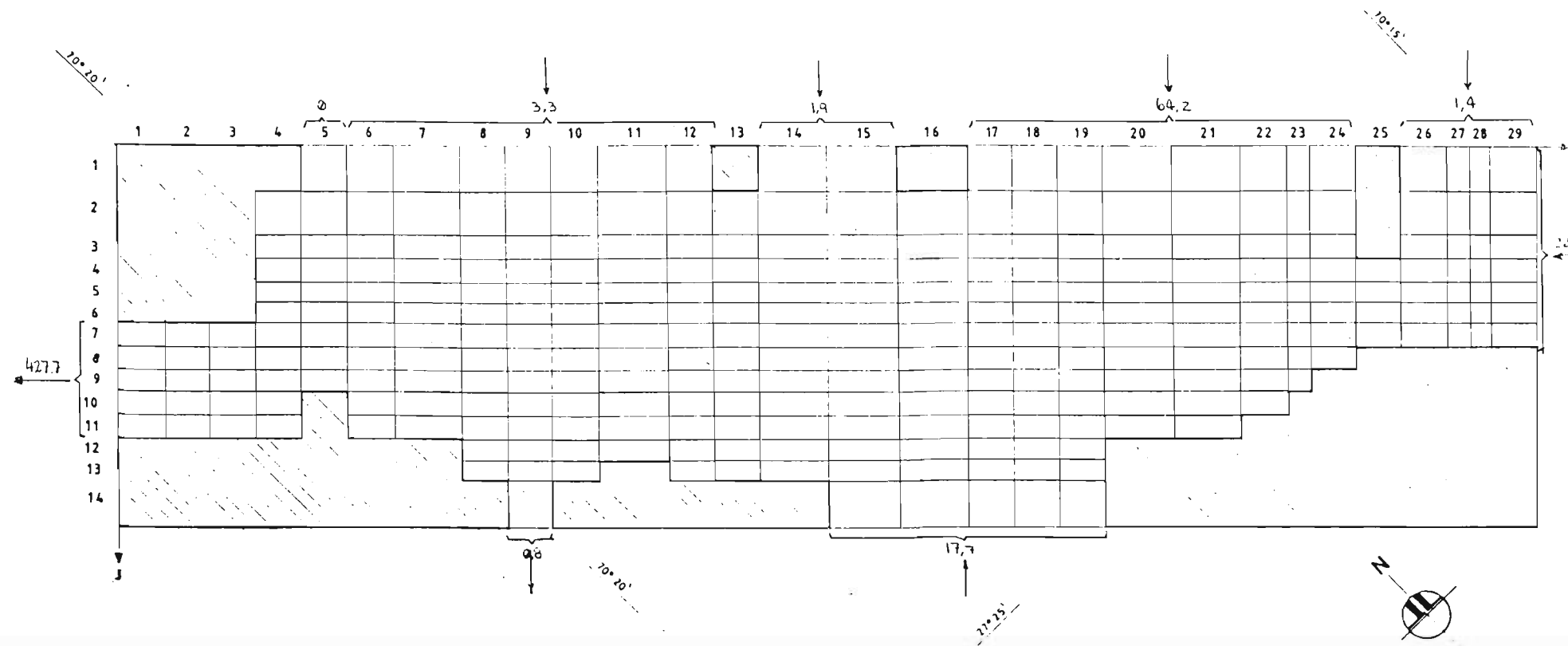
VALORES EN MILLONES M3

ANO	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	TOTAL PERIODO
MALLAS EXTERIORES	-5.99	-2.32	-1.82	-1.74	-3.56	-3.93	-2.79	-1.71	.18	.89	.51	.74	1.68	2.11	1.56	.94	.94	2.05	1.05	1.74	2.37	.54	-.66	-1.60	-1.48	-10.36
RIO	-12.71	-13.85	-13.32	-12.82	-14.74	-15.07	-13.23	-11.33	-8.23	-5.62	-4.97	-5.28	-5.75	-5.41	-4.62	-3.70	-2.73	-1.80	-1.43	-1.63	-2.44	-4.49	-9.58	-14.07	-13.75	-202.57
VERTIENTES	-1.07	-2.12	-2.03	-1.92	-2.16	-2.53	-2.14	-1.71	-1.34	-.86	-.60	-.61	-.70	-.70	-.59	-.42	-.34	-.25	-.18	-.17	-.25	-.38	-.91	-1.80	-2.11	-27.88
ALMACENAMIENTO	-.79	-1.34	-1.10	-1.30	8.01	-3.33	-5.24	-4.14	-9.80	-7.07	.47	3.12	1.27	-2.47	-3.75	-1.46	-4.38	-3.22	-2.22	5.18	4.52	12.82	17.39	7.98	-5.54	.59
INF. RIO EN CRECIDA	7.40	7.32	7.17	7.09	8.64	7.48	7.02	6.78	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.47	13.11	11.03	7.71	96.22
INF. CANALES MATRICES	7.53	6.87	6.54	6.29	11.42	7.53	5.96	4.96	3.14	2.65	5.63	7.36	6.95	4.96	5.05	4.55	4.22	3.81	4.22	7.78	6.37	10.18	12.41	12.41	8.27	167.05
INF. CANALES SECUNDARIOS	3.35	3.05	2.91	2.80	5.08	3.35	2.65	2.21	1.40	1.18	2.50	3.27	3.09	2.21	2.24	2.02	1.88	1.69	1.88	3.46	2.83	4.52	5.52	5.52	3.68	74.26
INF. RIEGO HORTALIZAS	3.17	2.90	2.76	2.65	4.01	3.17	2.51	2.09	1.33	1.12	2.37	3.11	2.93	2.09	2.13	1.92	1.78	1.60	1.78	3.28	2.69	4.29	5.23	5.23	3.49	70.44
INF. RIEGO PARRONALES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.02	.03	.05	.05	.17
INF. RIEGO FRUTALES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	.03	.07	.12	.17	.17	.57
BOMBEO AGUA POTABLE	-2.03	-2.17	-2.33	-2.48	-2.63	-2.78	-2.92	-3.08	-3.30	-3.45	-3.68	-3.90	-4.13	-4.35	-4.58	-4.80	-5.03	-5.25	-5.55	-5.85	-6.22	-6.53	-6.83	-7.20	-7.50	-108.52
BOMBEO FUND. PAIPOTE	-.31	-.31	-.31	-.31	-.31	-.31	.31	-.31	-.35	-.38	-.41	-.45	-.49	-.51	-.55	-.58	-.62	-.65	-.68	-.72	-.76	-.79	-.83	-.85	-.90	-13.05
BOMBEO INDUSTRIAS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-.98	-1.06	-1.14	-1.22	-1.28	-1.36	-1.44	-1.52	-1.59	-1.67	-1.73	-1.81	-1.89	-1.97	-20.67
BOMBEO RIEGO 1968/81	.00	.00	.00	.00	.00	.00	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	.00	.00	.00	.00	.00	-16.80
BOMBEO 1984/86	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-.72	-.72	-.72	-2.15
BALANCE TOTAL	.13	.69	.66	.86	-1.46	.23	.78	.85	1.43	1.39	-.32	-1.06	.07	.53	1.98	1.91	1.93	1.79	.58	-.06	-1.56	-1.65	-2.30	-1.72	.48	6.16

MODELO HIDROGEOLOGICO SECTOR: PAIPOTE-COPIAPO

Planon N° 4

BALANCE MASICO EN LAS MALLAS EXTERIORES (Valores en millones de m3)



LAMINA N° 4b

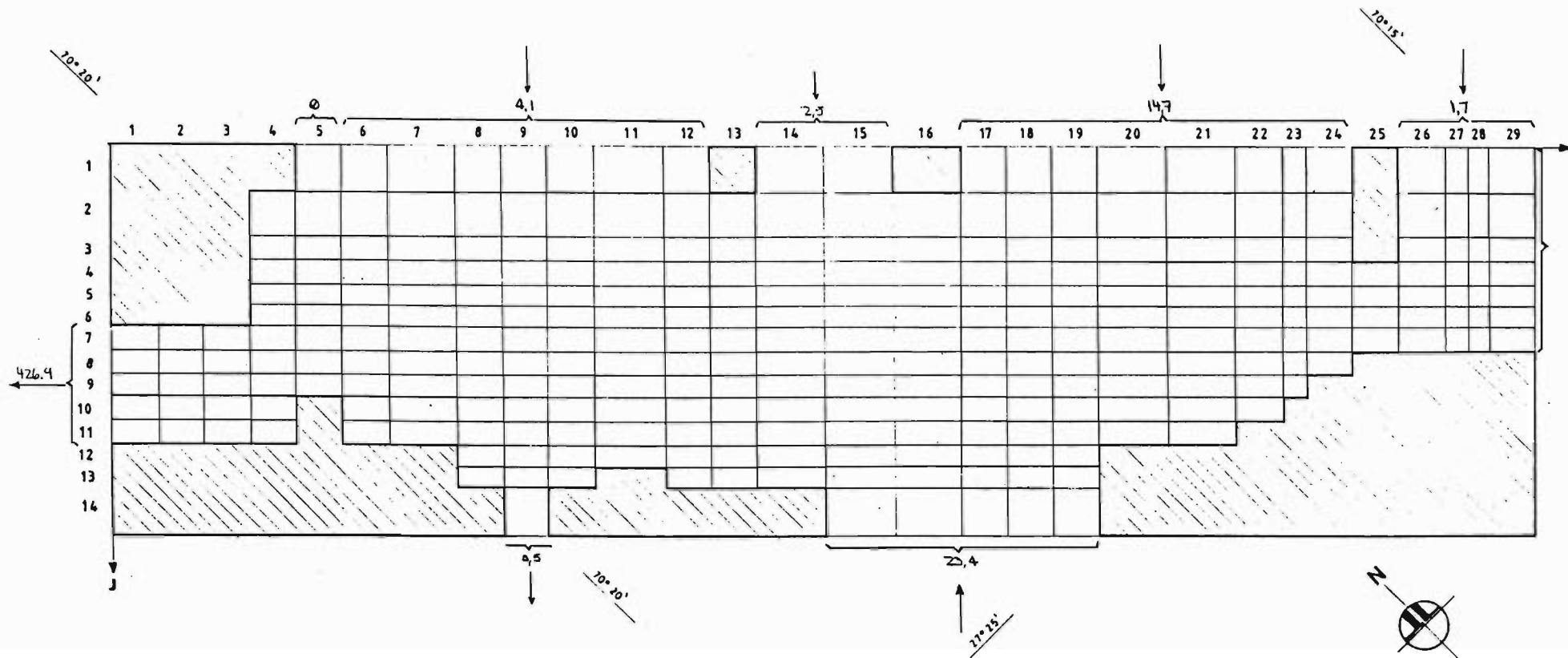
ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

ANO	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	TOTAL PERIODO	
MALLAS EXTERIORES	8.01	13.73	14.01	12.24	12.84	12.69	13.16	13.22	12.25	10.54	10.81	11.86	12.68	13.08	12.08	10.75	9.34	8.82	8.19	10.93	11.01	8.02	9.68	11.91	11.54	283.41	
RIO	-16.09	-15.13	-14.76	-15.65	-16.44	-15.82	-13.63	-11.83	-10.17	-9.07	-8.20	-8.55	-8.94	-8.73	-7.77	-6.74	-5.51	-4.30	-3.09	-4.13	-5.90	-9.63	-16.06	-19.24	-18.51	-273.89	
VERTIENTES	- .89	-1.23	-1.20	-1.24	-1.32	-1.32	-1.18	-1.02	- .88	- .73	- .60	- .54	- .64	- .64	- .55	- .43	- .34	- .29	- .24	- .23	- .30	- .50	-1.05	-1.51	-1.58	-20.44	
ALMACENAMIENTO	-6.45	- .90	- .13	1.59	1.28	-2.13	-3.33	-2.57	-2.41	-2.84	-1.96	2.68	.60	-1.16	-2.44	-2.72	-3.01	-2.66	-2.66	5.21	4.26	10.86	10.42	2.42	-2.50	- .57	
INF.RIO EN CRECIDA	3.02	3.02	1.83	4.75	5.39	2.37	.65	.00	.00	.00	.00	1.19	1.62	1.08	.00	.00	.00	.00	.00	2.37	2.37	15.86	22.23	17.37	14.24	99.38	
INF.CANALES MATRICES	1.29	1.29	1.29	1.29	1.29	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.61	1.61	1.61	1.61	1.68	1.76	1.61	1.76	1.76	39.89	
INF.CANALES SECUNDARIOS	.50	.50	.50	.50	.50	.65	.65	.65	.65	.65	.65	.65	.65	.65	.65	.65	.62	.62	.62	.62	.65	.69	.62	.69	.69	15.52	
INF.RIEGO HORTALIZAS	.15	.15	.15	.15	.15	.24	.24	.24	.24	.24	.24	.24	.24	.24	.24	.24	.24	.24	.24	.24	.30	.41	.51	.71	.81	7.18	
INF.RIEGO PARRONALES	.17	.17	.17	.17	.17	.21	.21	.21	.21	.21	.21	.21	.21	.21	.21	.21	.21	.21	.21	.21	.21	.21	.21	.21	.14	4.91	
INF.RIEGO FRUTALES	.09	.09	.09	.09	.09	.17	.17	.17	.17	.17	.17	.17	.17	.17	.17	.16	.16	.16	.16	.16	.16	.16	.16	.05	.05	3.49	
INF.RIEGO CEREALES	.91	.91	.91	.91	.91	.66	.66	.66	.66	.66	.66	.66	.66	.66	.66	.66	.66	.66	.66	.66	.66	.44	.07	.00	.00	15.65	
BOMBEO AGUA POTABLE	-2.03	-2.17	-2.33	-2.48	-2.63	-2.78	-2.92	-3.08	-3.30	-3.45	-3.68	-3.90	-4.13	-4.35	-4.58	-4.80	-5.03	-5.25	-5.55	-5.85	-6.22	-6.53	-6.83	-7.20	-7.50	-108.52	
BOMBEO FUND.PAIPOTE	- .31	- .31	- .31	- .31	- .31	- .31	- .31	- .31	- .35	- .38	- .41	- .45	- .49	- .51	- .55	- .58	- .62	- .65	- .68	- .72	- .76	- .79	- .83	- .85	- .90	-13.05	
BOMBEO INDUSTRIAS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	- .98	-1.06	-1.14	-1.22	-1.28	-1.36	-1.44	-1.52	-1.59	-1.67	-1.73	-1.81	-1.89	-1.97	-20.67	
BOMBEO RIEGO 1968/81	.00	.00	.00	.00	.00	.00	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	-1.20	.00	.00	.00	.00	.00	-16.80	
BOMBEO 1984/86	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	- .72	- .72	- .72	-2.15	
BALANCE TOTAL	1.27	1.91	.49	-1.17	- .62	.57	1.50	1.96	2.37	2.15	2.29	-1.65	.85	2.35	2.26	2.05	1.80	1.66	2.08	-2.13	-2.07	-2.49	-2.62	-1.14	.57	14.46	
VALORES POSITIVOS INDICAN ENTRADAS AL ACUIFERO																											

MODELO HIDROGEOLOGICO SECTOR: PAIPOTE-COPIAPO

PASADA N° 3

BALANCE MASICO EN LAS MALLAS EXTERIORES (Valores en millones de m³)



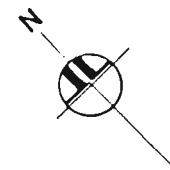
LAMINA N° 4b

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

MODELO HIDROGEOLOGICO SECTOR: PAIPOTE-COPIAPO

PASADA N°1 TRANSMICIVIDAD I ($m^3/m^2/dia/m$)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29		
1																															
2						0.25	0.25	0.5	0.5	0.5	0.75	0.75	0.75	0.9	2.5	1.0	5.0	4.0	5.0	3.0	5.0	8.0	6.5						3.0	1.0	2.0
3						0.25	0.25	0.25	0.25	0.25	0.75	1.0	1.5	2.0	5.0	11.0	10.0	15.0	10.0	10.0	3.5	2.5	4.0	3.0					5.0	0.25	
4						0.25	0.25	1.0	1.0	1.5	1.0	1.0	2.5	5.0	2.5	12.0	10.0	16.0	10.0	9.0	10.0	3.5	10.0	2.5	5.0	5.0	10.0	2.5	2.5		
5						0.5	1.0	5.0	5.0	3.0	5.0	5.0	5.0	7.0	15.0	12.0	50.0	12.0	12.0	14.0	5.0	5.0	10.0	10.0	10.0	6.5	3.5	15.0	15.0	2.5	
6						0.25	1.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	10.0	5.0	20.0	10.0	12.0	18.0	2.5	5.0	2.0	4.0	10.0	3.5	2.5	5.0	2.5	2.5	
7	1.0	0.25	0.25	1.0	5.0	5.0	6.0	2.5	5.0	1.0	13.0	15.0	20.0	25.0	25.0	18.0	12.0	14.0	10.0	4.0	10.0	10.0	2.5	3.5	5.0	1.0	2.5	2.5			
8	5.0	1.0	1.0	2.5	5.0	2.5	2.5	2.5	2.5	5.0	20.0	23.0	23.0	25.0	25.0	20.0	12.0	14.0	11.0	1.0	11.0	2.5	5.0								
9	10.0	5.0	5.0	1.0	2.5	2.5	2.5	10.0	11.0	10.0	2.0	25.0	25.0	25.0	25.0	20.0	12.0	12.0	11.0	10.0	2.5	5.0									
10	10.0	2.5	2.5			2.5	2.0	11.0	12.0	2.0	20.0	12.0	22.0	22.0	20.0	20.0	12.0	12.0	10.0	5.0	1.0										
11	5.0	5.0	5.0			5.0	2.5	11.0	12.0	15.0		12.0	5.0	22.0	20.0	15.0	12.0	12.0	10.0	5.0											
12								4.0	11.0	15.0	10.0		12.0	15.0	2.0	15.0	10.0	2.5	5.0												
13								7.0	2.5				15.0	12.0	15.0		2.5	5.0	1.0												
14																															



LAMINA N° 4b

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

MODELO HIDROGEOLOGICO SECTOR: PAIPOTE-COPIAPO

PASADA 1 TRANSMISIVIDAD J. (mlu m³/dia/m).

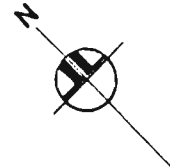
20° 20'

20° 15'

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	
1					0.25	0.25	0.25	0.25	0.25	0.2	0.5	0.5		0.75	0.75		0.75	0.75	0.9	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0		
2				0.25	0.25	0.50	0.50	0.50	0.50	0.5	0.75	0.75	0.75	0.9	2.5	1.0	5.0	4.0	5.0	3.0	5.0	8.0	6.5	5.0		3.0	1.0	1.0		
3				0.25	0.5	0.75	0.75	0.75	0.75	0.75	1.0	1.5	2.0	6.0	11.0	10.0	10.0	10.0	10.0	7.5	7.5	9.0	7.0	5.0		5.0	2.5	2.5		
4				0.25	0.75	1.0	1.5	1.5	1.0	1.0	2.5	5.0	7.5	13.0	18.0	16.0	16.0	15.0	9.0	10.0	7.5	10.0	7.5	5.0	5.0	10.0	7.5	7.5		
5				0.50	1.0	2.5	3.0	3.0	2.5	2.0	5.0	6.0	13.0	18.0	20.0	18.0	18.0	14.0	5.0	5.0	10.0	10.0	10.0	6.5	7.5	10.0	10.0	7.5		
6				0.75	1.5	4.0	4.5	4.0	4.0	3.0	9.0	9.0	15.0	20.0	23.0	18.0	18.0	14.0	9.0	5.0	6.0	9.0	10.0	7.5	7.5	5.0	5.0	5.0		
7		0.75	0.75	1.0	3.0	5.0	6.0	7.5	5.0	1.0	13.0	15.0	20.0	23.0	25.0	18.0	18.0	14.0	10.0	9.0	10.0	10.0	8.5	7.5						
8		1.0	1.0	2.5	5.0	7.5	7.5	7.5	7.5	5.0	20.0	23.0	23.0	25.0	25.0	20.0	18.0	15.0	11.0	1.0	11.0	7.5	5.0							
9		5.0	5.0	1.0		7.5	7.5	10.0	11.0	10.0	20.0	25.0	25.0	25.0	25.0	20.0	10.0	16.0	11.0	10.0	7.5	9.0								
10		7.5	7.5	7.5		7.5	9.0	11.0	13.0	20.0	20.0	23.0	23.0	23.0	23.0	20.0	15.0	15.0	10.0	5.0	1.0									
11								11.0	13.0	18.0	15.0	18.0	20.0	23.0	20.0	15.0	13.0	10.0	5.0											
12								9.0	11.0	15.0		13.0	15.0	20.0	15.0	10.0	7.5	5.0	1.0											
13								5.0							5.0	6.0	0.8	0.75	0.25											
14																														

20° 20'

17° 25'



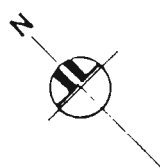
LAMINA N° 4b

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

MODELO HIDROGEOLOGICO SECTOR: PAIPOTE-COPIAPO

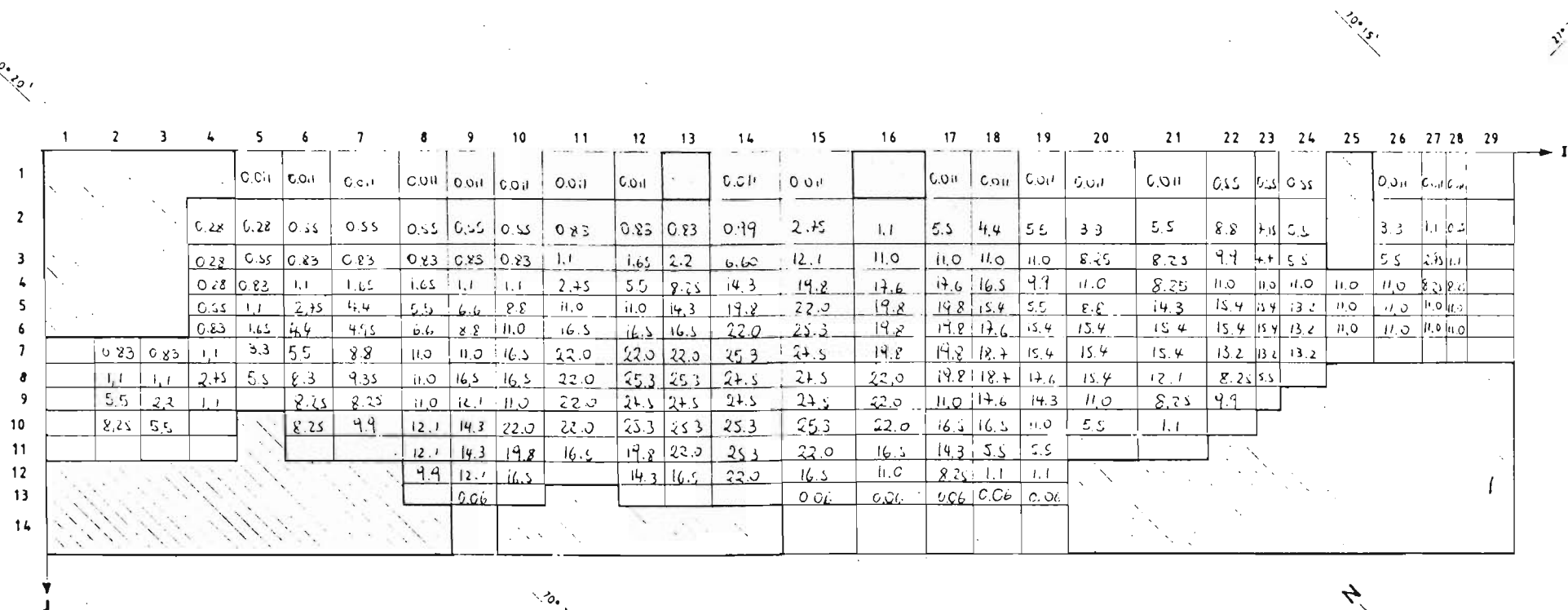
PASADA N° 5 TRANSMICIVIDAD I (m/seg³/dia/m).

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
1																													
2				5.22	0.28	0.55	0.55	0.55	0.55	0.55	0.83	0.83	0.83	0.99	2.75	1.1	5.5	4.4	5.5	3.3	5.5	8.8	7.1				3.3	1.1	0.6
3				0.28	0.55	0.83	0.83	0.83	0.83	0.83	1.1	1.65	2.12	6.6	12.1	11.0	11.0	11.0	11.0	8.25	8.25	9.9	7.7				5.5	2.8	1.1
4				0.28	0.83	1.1	1.65	1.65	1.1	1.1	2.75	5.5	8.25	14.3	19.8	17.6	17.6	16.5	9.9	11.0	8.25	11.0	11.0	11.0	11.0	11.0	11.0	8.3	8.3
5				0.55	1.1	2.75	4.4	5.5	6.6	8.8	11.0	11.0	14.3	19.8	22.0	19.8	19.8	15.4	5.5	8.8	14.3	15.4	13.2	13.2	11.0	11.0	11.0	11.0	11.0
6				0.83	1.65	4.4	4.95	6.6	8.8	11.0	16.5	16.5	16.5	23.0	25.3	19.8	19.8	17.6	15.4	15.4	15.4	15.4	13.2	13.2	13.2	11.0	11.0	11.0	11.0
7	1.1	0.83	0.83	1.1	3.3	5.5	8.8	11.0	11.0	16.5	22.0	22.0	22.0	25.3	27.5	19.8	17.6	18.7	15.4	15.4	15.4	15.4	13.2	13.2	13.2	5.5	1.1	0.8	3.3
8	5.5	1.1	1.1	2.75	5.5	8.3	9.35	11.0	16.5	16.5	22.0	25.3	25.3	27.5	27.5	22.0	19.3	18.7	17.6	15.4	12.1	8.25	5.5						
9	11.0	5.5	2.2	1.1	5.5	8.3	8.25	11.0	12.1	11.0	22.0	27.5	27.5	27.5	27.5	22.0	11.0	17.6	14.3	11.0	8.25	9.9							
10	11.0	8.3	5.5			8.3	9.7	12.1	14.3	22.0	22.0	25.3	25.3	25.3	25.3	22.0	16.5	16.5	11.0	5.5	1.1								
11	5.5	5.5	5.5			5.5	8.25	12.1	14.3	19.8	16.5	19.8	22.0	25.3	22.0	16.5	14.3	5.5	5.5	8.25									
12								9.9	12.1	16.5	11.0	14.3	16.5	22.0	16.5	11.0	8.25	1.1											
13								7.15	8.25			11.0	11.0	16.5	12.1	8.25	1.1	1.1											
14																													



MODELO HIDROGEOLOGICO SECTOR: PAIPOTE-COPIAPO

PASADA N°5 TRANSMISIVIDAD J (mln m³/da/m).



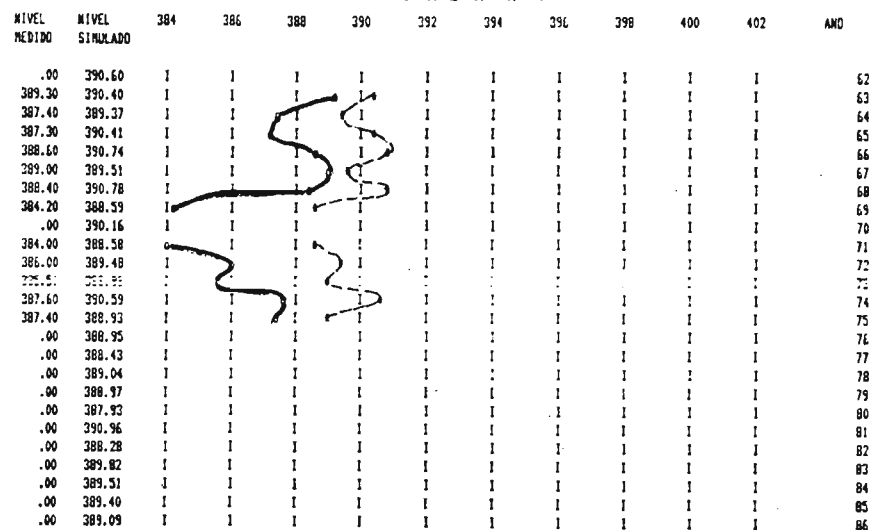
LAMINA N° 4b

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

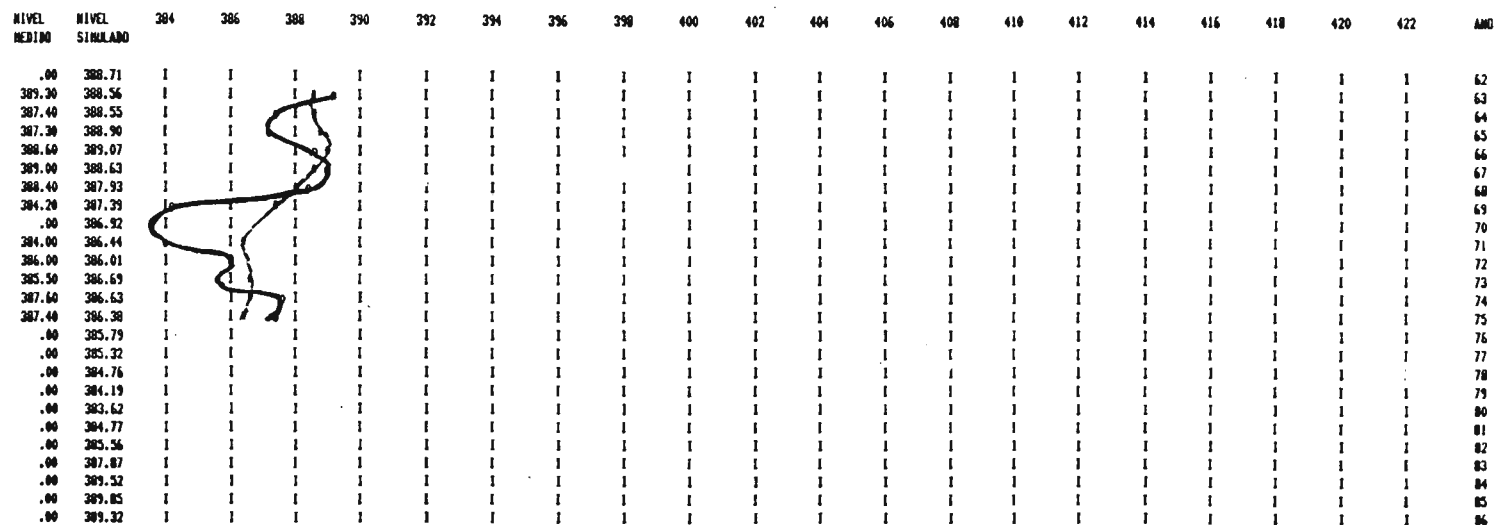
CONTRASTE PIEZOMETRICO

SECTOR N° 4 B.

PASADA N° 1

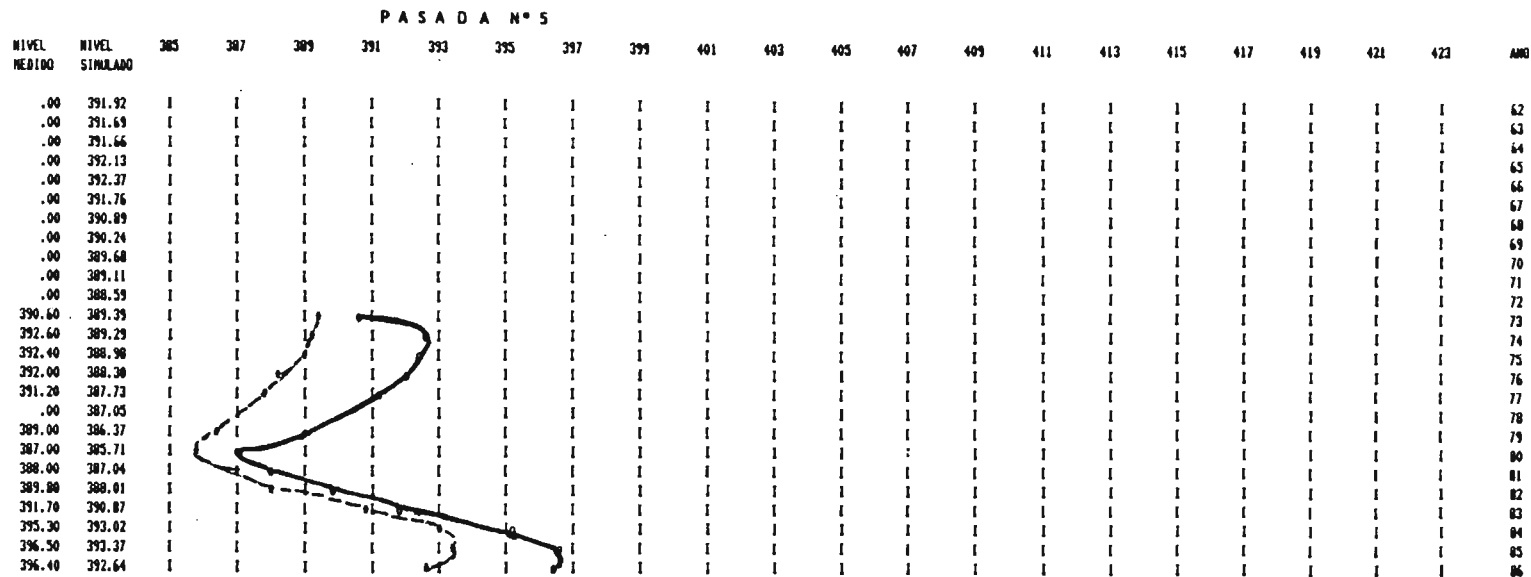
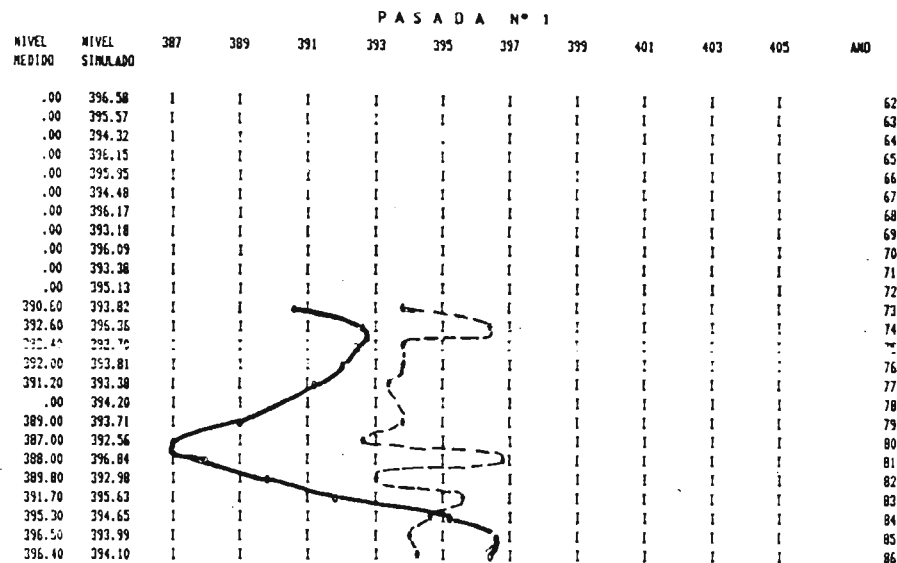


PASADA N° 5



•NIVEL MEDIDO
A=NIVEL MEDIDO Y SIMULADO COINCIDEN

•NIVEL SIMULADO
E=VALOR FUERA DEL RANGO DEL DIBUJO



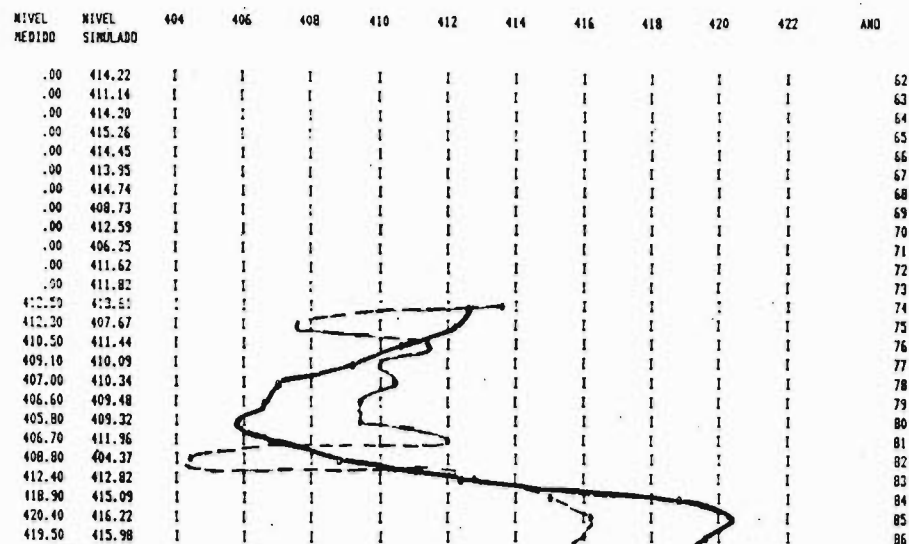
PASADA N° 1

NIVEL MEDIDO	NIVEL SIMULADO	394	396	398	400	402	404	406	408	410	412	ANO
.00	396.41	I	I	I	I	I	I	I	I	I	I	62
398.00	395.48	I	I	I	I	I	I	I	I	I	I	63
398.20	394.19	I	I	I	I	I	I	I	I	I	I	64
398.00	396.13	I	I	I	I	I	I	I	I	I	I	65
398.40	395.90	I	I	I	I	I	I	I	I	I	I	66
398.70	394.37	I	I	I	I	I	I	I	I	I	I	67
398.30	396.17	I	I	I	I	I	I	I	I	I	I	68
.00	393.02	I	I	I	I	I	I	I	I	I	I	69
.00	396.11	I	I	I	I	I	I	I	I	I	I	70
.00	393.26	I	I	I	I	I	I	I	I	I	I	71
.00	395.17	I	I	I	I	I	I	I	I	I	I	72
.00	393.71	I	I	I	I	I	I	I	I	I	I	73
.30	396.42	I	I	I	I	I	I	I	I	I	I	74
.30	392.62	I	I	I	I	I	I	I	I	I	I	75
.00	393.81	I	I	I	I	I	I	I	I	I	I	76
.00	393.39	I	I	I	I	I	I	I	I	I	I	77
.00	394.26	I	I	I	I	I	I	I	I	I	I	78
.00	393.74	I	I	I	I	I	I	I	I	I	I	79
.00	392.50	I	I	I	I	I	I	I	I	I	I	80
.00	396.94	I	I	I	I	I	I	I	I	I	I	81
.00	392.90	I	I	I	I	I	I	I	I	I	I	82
.00	395.79	I	I	I	I	I	I	I	I	I	I	83
.00	394.72	I	I	I	I	I	I	I	I	I	I	84
.00	394.00	I	I	I	I	I	I	I	I	I	I	85
.00	394.20	I	I	I	I	I	I	I	I	I	I	86

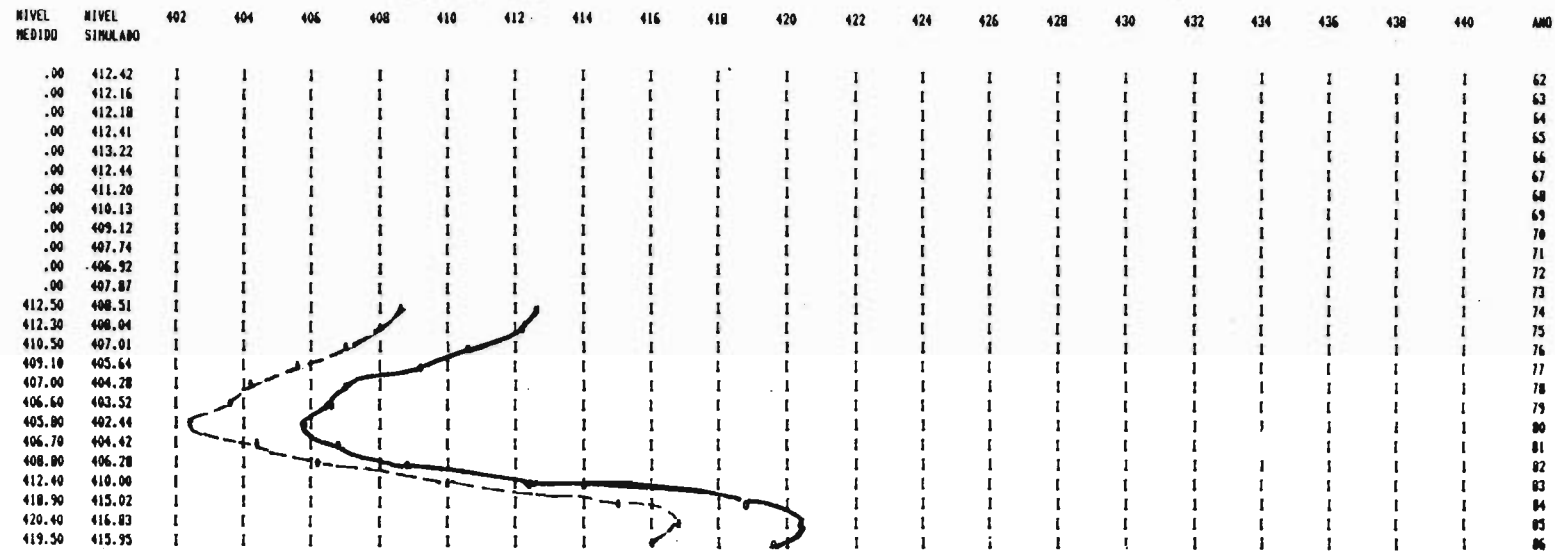
PASADA N° 5

NIVEL MEDIDO	NIVEL SIMULADO	390	392	394	396	398	400	402	404	406	408	410	412	414	416	418	420	422	424	426	428	ANO
.00	391.85	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	62
398.00	391.65	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	63
398.20	391.62	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	64
398.00	392.09	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	65
398.40	392.33	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	66
398.70	391.72	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	67
398.30	390.86	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	68
.00	390.22	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	69
.00	389.68	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	70
.00	389.10	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	71
.00	388.59	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	72
.00	389.40	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	73
.00	389.30	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	74
.00	389.00	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	75
.00	388.32	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	76
.00	387.75	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	77
.00	387.08	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	78
.00	386.40	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	79
.00	385.75	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	80
.00	387.10	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	81
.00	388.06	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	82
.00	390.93	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	83
.00	393.05	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	84
.00	393.39	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	85
.00	392.67	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	86

PASADA N° 1

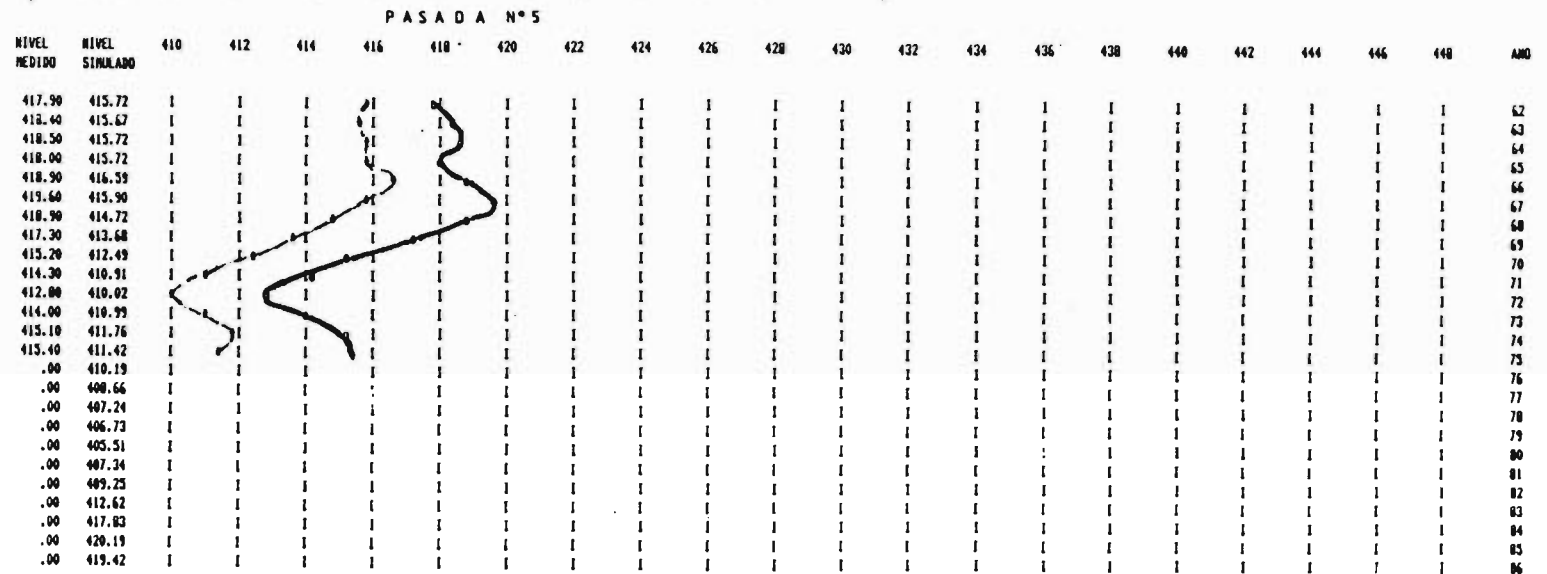
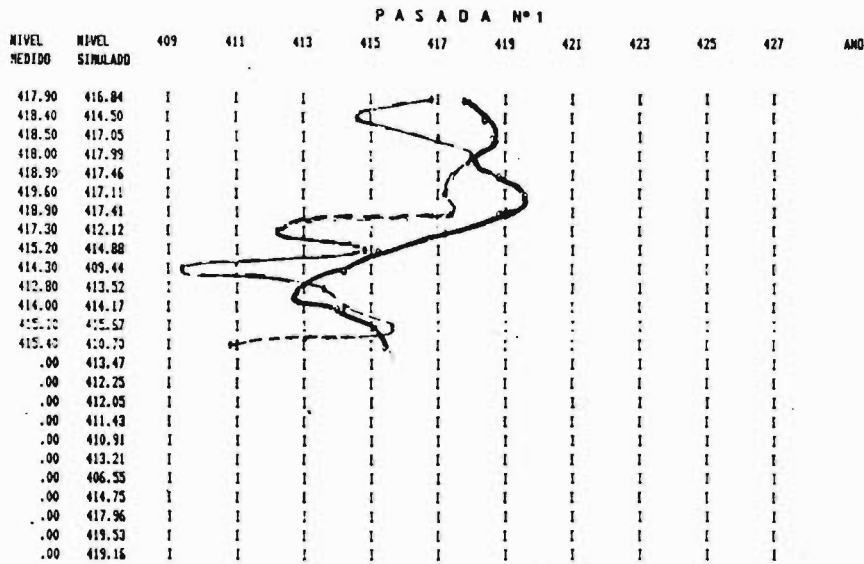


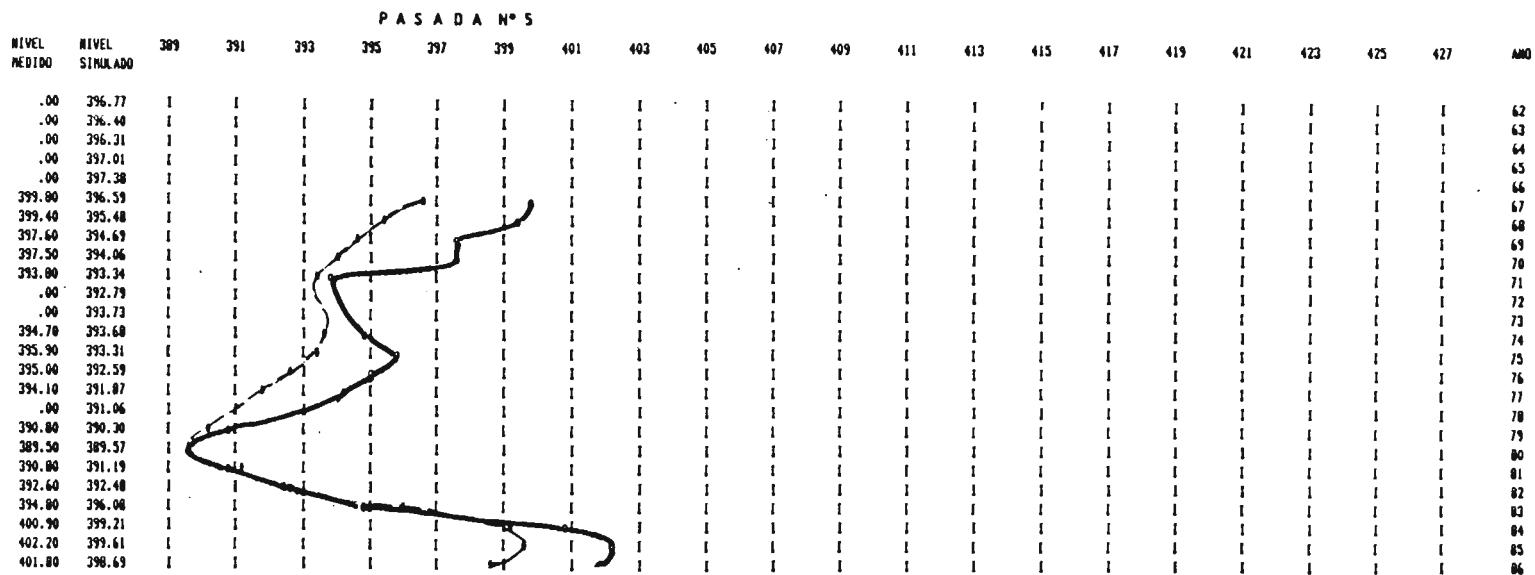
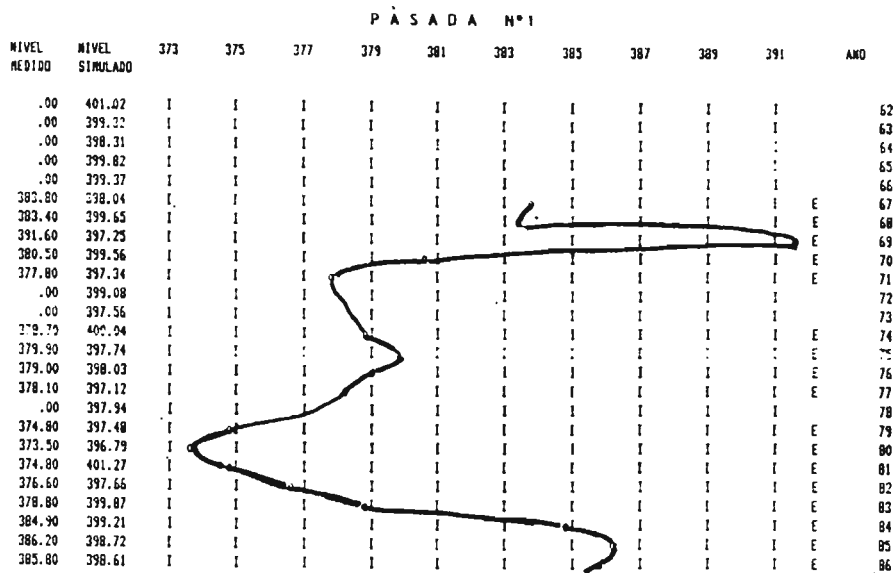
PASADA N° 5

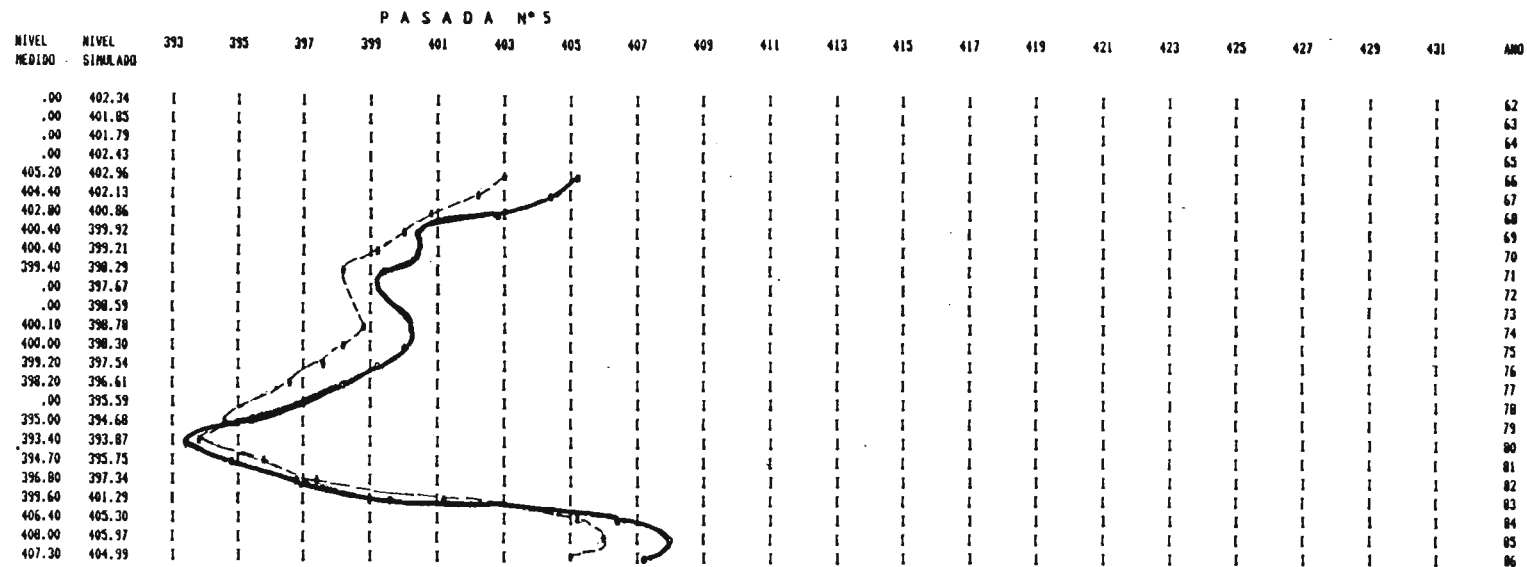
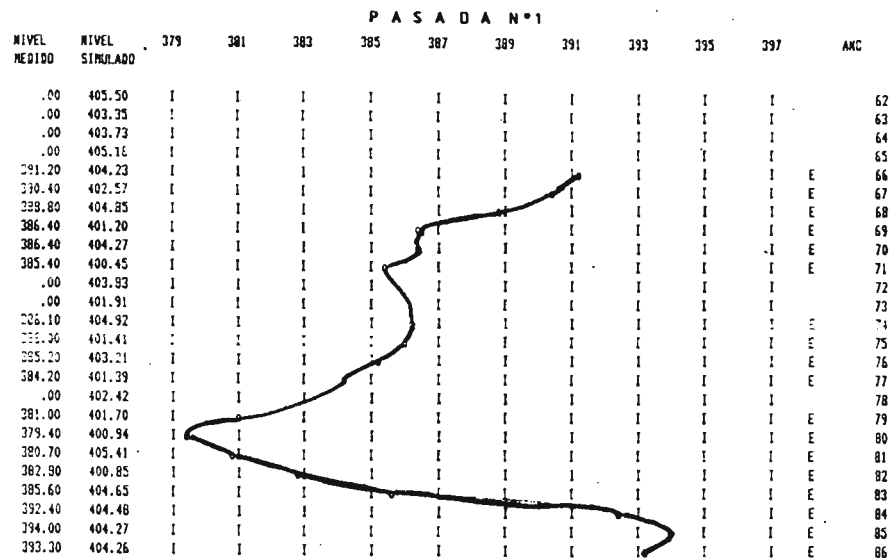


NIVEL MEDIDO

NIVEL SIMULADO

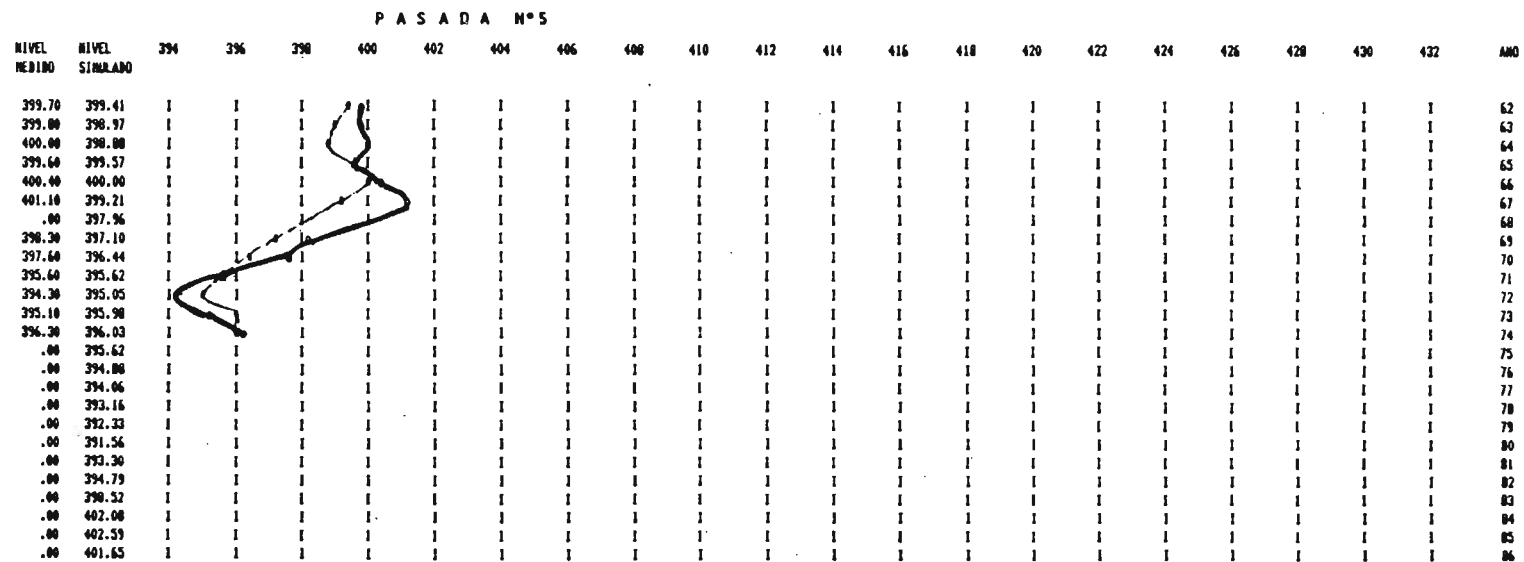
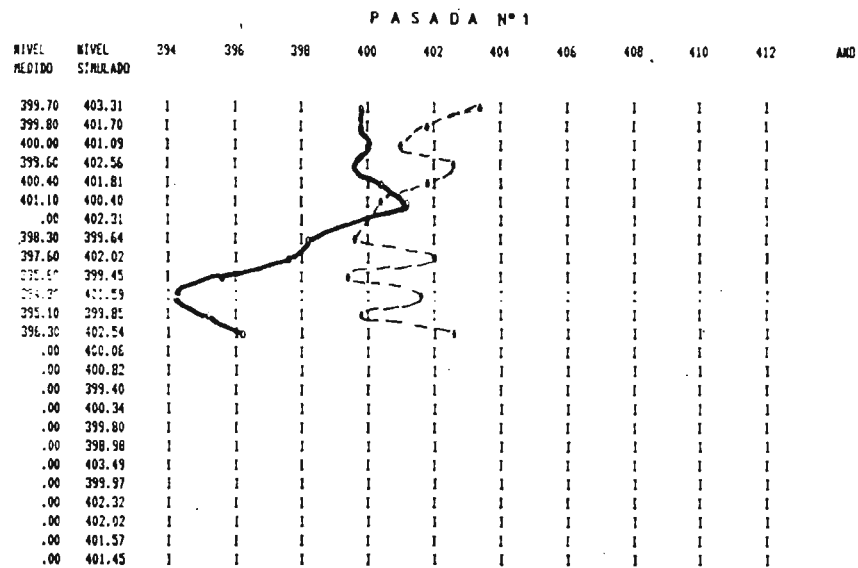






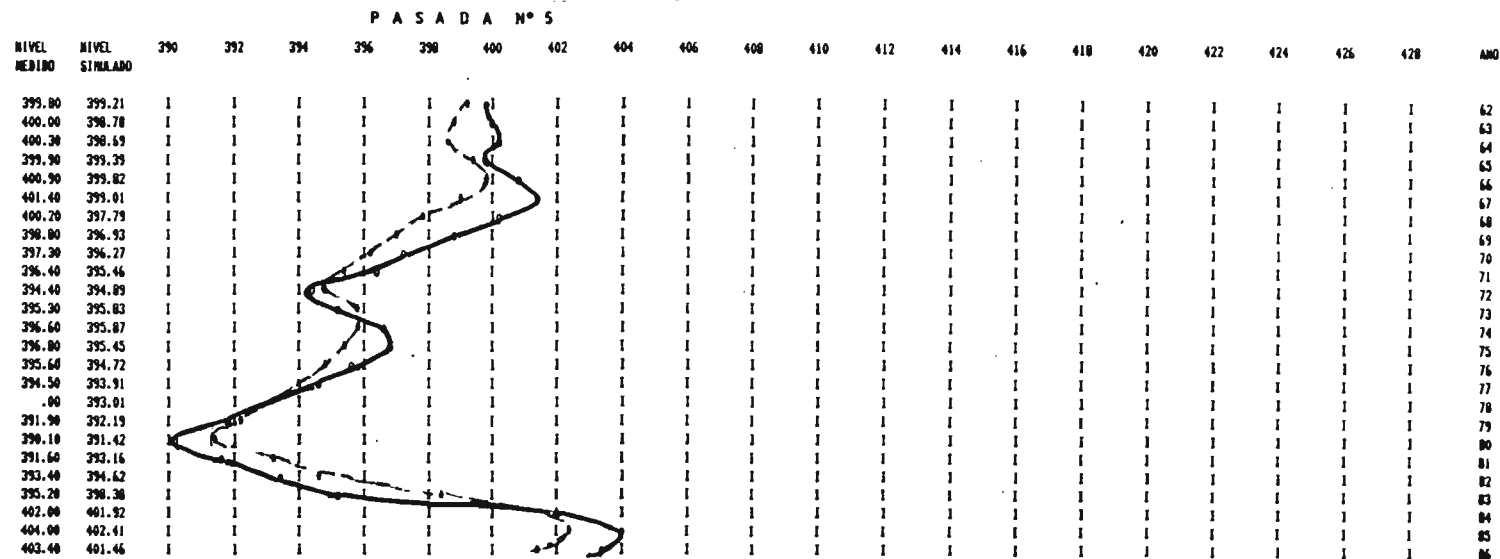
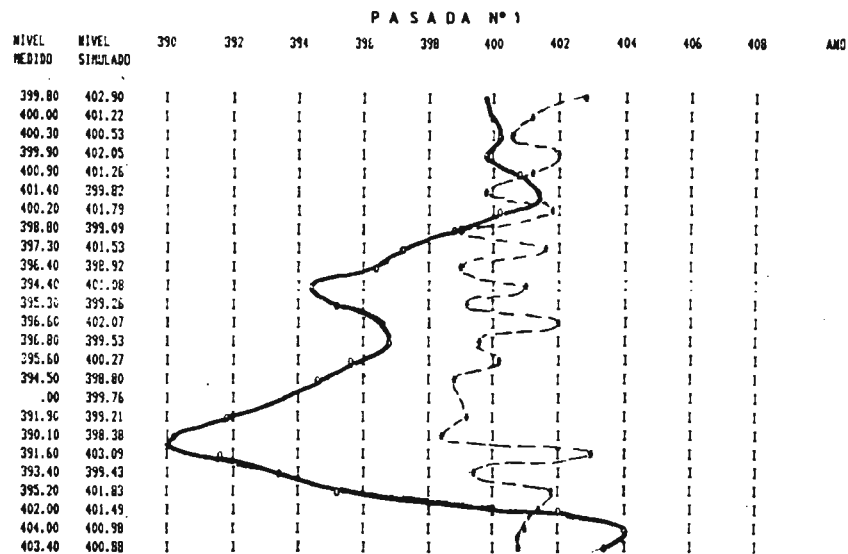
o=NIVEL MEDIDO
A=NIVELES MEDIDO Y SIMULADO COINCIDEN

o=NIVEL SIMULADO
E=VALOR FUERA DEL RANGO DEL DIBUJO



●=NIVEL MEDIDO
▲ NIVEL MEDIDO Y SIMULADO COINCIDEN

---=NIVEL SIMULADO
E=VALOR FUERA DEL RANGO DEL DIBUJO



o=NIVEL MEDIDO
 A=NIVELES MEDIDO Y SIMULADO COINCIDENTE

- - - - -NIVEL SIMULADO
 E=VALOR FUERA DEL RANGO DEL DIBUJO

NIVEL MEDIDO	NIVEL SIMULADO	393	395	397	399	401	403	405	407	409	411	ANO
399.00	403.49	I	I	I				I	I	I	I	62
399.40	401.65	I	I	I				I	I	I	I	63
399.50	401.23	I	I	I				I	I	I	I	64
399.10	402.79	I	I	I				I	I	I	I	65
400.00	401.87	I	I	I				I	I	I	I	66
400.60	400.26	I	I	I				I	I	I	I	67
397.90	402.50	I	I	I				I	I	I	I	68
397.20	399.49	I	I	I				I	I	I	I	69
396.40	402.15	I	I	I				I	I	I	I	70
394.60	399.13	I	I	I				I	I	I	I	71
393.80	401.68	I	I	I				I	I	I	I	72
393.90	399.65	I	I	I				I	I	I	I	73
.00	402.70	I	I	I				I	I	I	I	74
.00	399.86	I	I	I				I	I	I	I	75
.00	400.91	I	I	I				I	I	I	I	76
.00	399.20	I	I	I				I	I	I	I	77
.00	400.25	I	I	I				I	I	I	I	78
.00	399.65	I	I	I				I	I	I	I	79
.00	398.76	I	I	I				I	I	I	I	80
.00	403.55	I	I	I				I	I	I	I	81
.00	399.64	I	I	I				I	I	I	I	82
.00	402.44	I	I	I				I	I	I	I	83
.00	402.15	I	I	I				I	I	I	I	84
.00	401.67	I	I	I				I	I	I	I	85
.00	401.62	I	I	I				I	I	I	I	86

[illegible]

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PASADA N° 1

NIVEL MEDIDO	NIVEL SIMULADO	393	395	397	399	401	403	405	407	409	411	ANO
400.10	402.61	I	I	I	I	I	I	I	I	I	I	62
399.60	400.88	I	I	I	I	I	I	I	I	I	I	63
399.80	400.15	I	I	I	I	I	I	I	I	I	I	64
399.40	401.69	I	I	I	I	I	I	I	I	I	I	65
400.10	400.99	I	I	I	I	I	I	I	I	I	I	66
400.90	399.42	I	I	I	I	I	I	I	I	I	I	67
400.20	401.42	I	I	I	I	I	I	I	I	I	I	68
398.20	398.72	I	I	I	I	I	I	I	I	I	I	69
396.80	401.17	I	I	I	I	I	I	I	I	I	I	70
394.80	398.56	I	I	I	I	I	I	I	I	I	I	71
393.60	400.70	I	I	I	I	I	I	I	I	I	I	72
394.70	398.83	I	I	I	I	I	I	I	I	I	I	73
.00	401.70	I	I	I	I	I	I	I	I	I	I	74
.00	393.15	I	I	I	I	I	I	I	I	I	I	75
.00	399.67	I	I	I	I	I	I	I	I	I	I	76
.00	398.38	I	I	I	I	I	I	I	I	I	I	77
.00	399.37	I	I	I	I	I	I	I	I	I	I	78
.00	398.82	I	I	I	I	I	I	I	I	I	I	79
.00	397.99	I	I	I	I	I	I	I	I	I	I	80
.00	402.72	I	I	I	I	I	I	I	I	I	I	81
.00	399.09	I	I	I	I	I	I	I	I	I	I	82
.00	401.47	I	I	I	I	I	I	I	I	I	I	83
.00	401.12	I	I	I	I	I	I	I	I	I	I	84
.00	400.59	I	I	I	I	I	I	I	I	I	I	85
.00	400.49	I	I	I	I	I	I	I	I	I	I	86

PASADA N° 5

NIVEL MEDIDO	NIVEL SIMULADO	393	395	397	399	401	403	405	407	409	411	413	415	417	419	421	423	425	427	429	431	ANO
400.10	399.12	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	62
399.60	398.69	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	63
399.80	398.64	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	64
399.40	399.21	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	65
400.10	399.74	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	66
400.90	398.93	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	67
400.20	397.68	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	68
398.20	396.83	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	69
396.80	396.17	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	70
394.80	395.36	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	71
393.60	394.79	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	72
394.70	395.74	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	73
.00	395.77	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	74
.00	395.36	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	75
.00	394.62	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	76
.00	393.81	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	77
.00	392.92	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	78
.00	392.10	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	79
.00	391.34	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	80
.00	393.08	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	81
.00	394.55	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	82
.00	398.36	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	83
.00	401.90	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	84
.00	402.36	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	85
.00	401.40	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	86

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PASADA N° 1

NIVEL MEDIO	NIVEL SIMULADO	378	380	382	384	386	388	390	392	394	396	ANO
.00	387.72	I	I	I	I	I	I	I	I	I	I	62
.00	387.94	I	I	I	I	I	I	I	I	I	I	63
.00	387.04	I	I	I	I	I	I	I	I	I	I	64
.00	387.80	I	I	I	I	I	I	I	I	I	I	65
.00	388.30	I	I	I	I	I	I	I	I	I	I	66
.00	387.07	I	I	I	I	I	I	I	I	I	I	67
.00	388.31	I	I	I	I	I	I	I	I	I	I	68
.00	386.23	I	I	I	I	I	I	I	I	I	I	69
.00	387.38	I	I	I	I	I	I	I	I	I	I	70
.00	386.13	I	I	I	I	I	I	I	I	I	I	71
.00	386.85	I	I	I	I	I	I	I	I	I	I	72
.00	386.51	I	I	I	I	I	I	I	I	I	I	73
.00	387.99	I	I	I	I	I	I	I	I	I	I	74
.00	385.51	I	I	I	I	I	I	I	I	I	I	75
.00	385.62	I	I	I	I	I	I	I	I	I	I	76
.00	386.08	I	I	I	I	I	I	I	I	I	I	77
.00	386.66	I	I	I	I	I	I	I	I	I	I	78
.00	386.75	I	I	I	I	I	I	I	I	I	I	79
378.00	385.59	I	I	I	I	I	I	I	I	I	I	80
378.50	388.34	I	I	I	I	I	I	I	I	I	I	81
379.00	385.84	I	I	I	I	I	I	I	I	I	I	82
.00	387.19	I	I	I	I	I	I	I	I	I	I	83
.00	387.20	I	I	I	I	I	I	I	I	I	I	84
.00	387.12	I	I	I	I	I	I	I	I	I	I	85
.00	386.54	I	I	I	I	I	I	I	I	I	I	86

PASADA N° 5

NIVEL MEDIO	NIVEL SIMULADO	378	380	382	384	386	388	390	392	394	396	398	400	402	404	406	408	410	412	414	416	ANO
.00	385.47	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	62
.00	385.38	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	63
.00	385.38	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	64
.00	385.64	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	65
.00	385.77	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	66
.00	385.46	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	67
.00	384.88	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	68
.00	384.44	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	69
.00	384.07	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	70
.00	383.67	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	71
.00	383.32	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	72
.00	383.87	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	73
.00	383.84	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	74
.00	383.64	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	75
.00	383.15	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	76
.00	382.77	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	77
.00	382.32	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	78
.00	381.85	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	79
378.00	381.37	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	80
378.50	382.34	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	81
379.00	382.96	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	82
.00	384.77	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	83
.00	385.98	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	84
.00	386.28	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	85
.00	385.98	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	86

VACCINES IN MILLIONS INC.

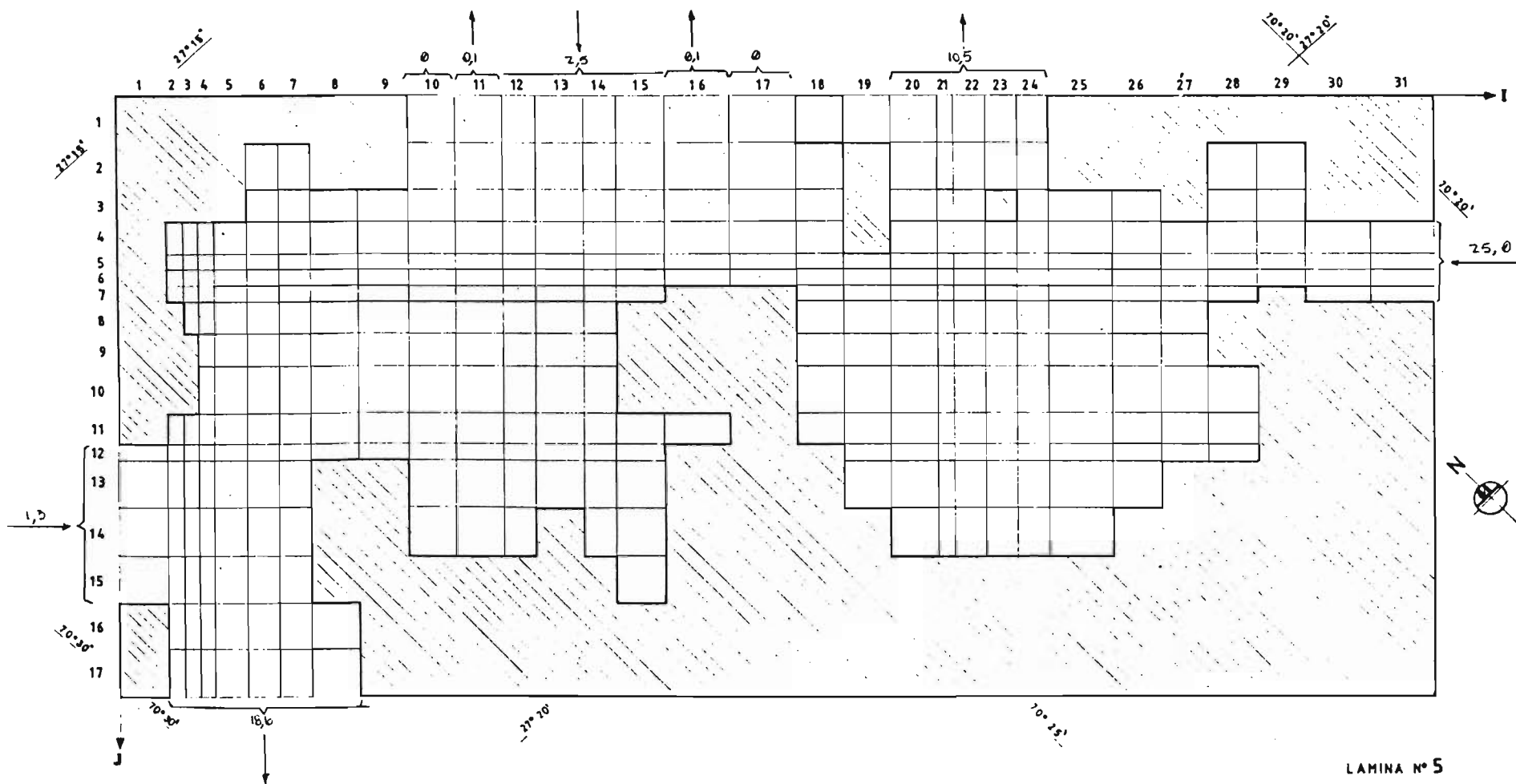
VALORES EN MILLONES M3

[illegible]

MODELO HIDROGEOLOGICO SECTOR: COPIAPO - PIEDRA COLGADA

PASADA N° 1

BALANCE MASICO EN LAS MALLAS EXTERIORES (Valores en Millones de m3)



LAMINA N° 5

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

RESUMEN BALANCE MASICO

PASADA Nº 2

VALORES EN MILLONES M3

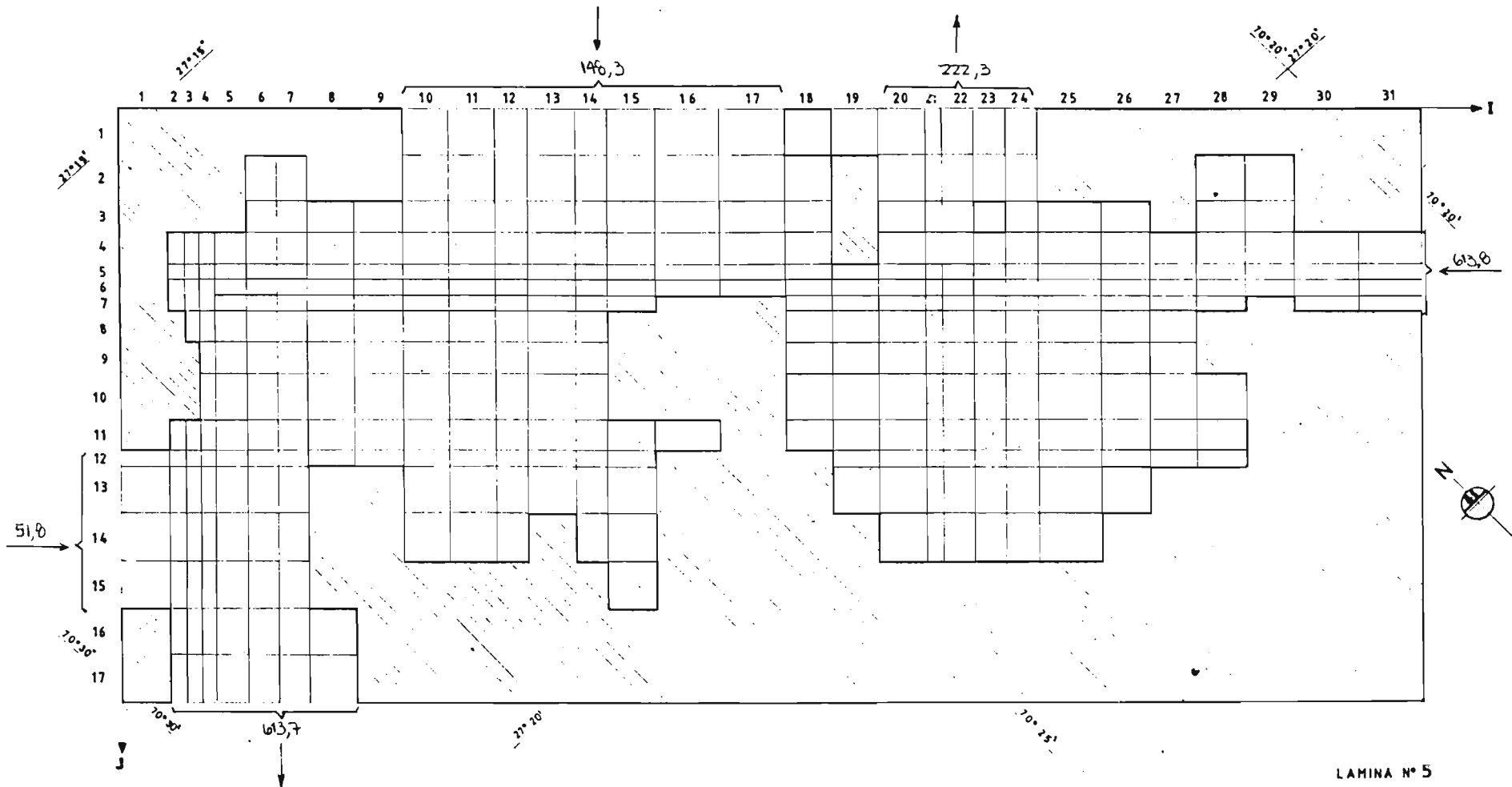
ANO	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	TOTAL PERIODO
MALLAS EXTERIORES	8.91	6.23	4.96	3.99	3.36	3.25	3.25	2.99	1.65	1.69	1.48	2.46	2.83	1.99	3.00	3.41	4.04	4.29	3.22	5.07	3.70	2.79	-1.11	-1.18	2.12	78.40
RIO	-3.41	-4.13	-4.47	-4.59	-4.63	-4.56	-4.67	-4.18	-3.63	-3.51	-3.42	-3.47	-3.12	-3.12	-3.01	-2.90	-2.54	-2.40	-1.80	-1.68	-1.99	-2.29	-3.97	-6.30	-5.92	-89.71
VERTIENTES	-1.75	-1.50	-1.60	-1.67	-1.69	-1.70	-1.71	-1.55	-1.34	-1.27	-1.24	-1.23	-1.15	-1.14	-1.12	-1.07	-1.05	-1.03	1.00	1.00	1.00	-1.02	-1.32	-1.27	-1.57	-9.98
ALMACENAMIENTO	17.82	4.33	3.40	1.27	1.87	-1.35	1.31	-2.01	-1.66	-3.73	1.82	-4.34	3.47	1.25	-2.28	-2.81	-3.80	-1.44	-4.50	-1.41	2.19	5.29	19.18	-1.24	-6.02	28.12
INF.CANALES MATRICES	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.21	3.02	2.83	2.64	3.02	3.02	3.21	2.83	2.64	2.45	2.25	1.89	2.45	2.64	3.02	3.40	3.77	3.77	78.50
INF.CANALES SECUNDARIOS	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.15	1.08	1.01	1.95	1.08	1.08	1.15	1.01	1.95	1.99	1.91	1.68	1.88	1.95	1.08	1.22	1.35	1.35	28.12
INF.RIEGO HORTALIZAS	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.15	1.08	1.01	1.94	1.08	1.08	1.15	1.01	1.94	1.88	1.81	1.67	1.88	1.94	1.08	1.21	1.35	1.35	28.04
INF.RIEGO PARRONALES	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.19	1.37	1.75	1.31	1.87	1.87	6.36
INF.RIO EN CRECIDA	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	11.35	9.46	1.00	20.81	
BOMBEO AGUA POTABLE	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-1.60	-1.60	-1.60	-1.60	-1.60	-1.60	-1.60	-1.60	-1.60	-14.40
BOMBEO RIEGO 1962/81	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	1.00	1.00	1.00	1.00	1.00	-81.00
BOMBEO RIEGO 1976/81	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-2.67	-2.67	-2.67	-2.67	-2.67	-2.67	1.00	1.00	1.00	1.00	1.00	-16.02
BOMBEO RIEGO 1982/84	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-2.10	-2.10	-2.10	1.00	1.00	-9.30
BOMBEO RIEGO 1985/86	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-6.19	-6.19	-12.36
BALANCE TOTAL	-10.65	-1.31	-1.18	-1.11	-1.41	1.26	-1.01	1.73	1.48	2.44	-2.51	4.22	-2.78	-1.06	1.29	1.06	1.14	-2.14	1.83	-1.12	-1.27	-2.58	-10.69	2.51	1.21	-20.66

VALORES POSITIVOS INDICAN ENTRADAS AL ACUIFERO

MODELO HIDROGEOLOGICO SECTOR: COPIAPO - PIEDRA COLGADA

PASADA N° 2

BALANCE MASICO EN LAS MALLAS EXTERIORES (Valores en Millones de m³)



LAMINA N° 5

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

MODELO HIDROGEOLOGICO SECTOR COPIAPO - PIEDRA COLGADA

RESUMEN BALANCE MASICO

PASADA N° 3

VALORES EN MILLONES M3

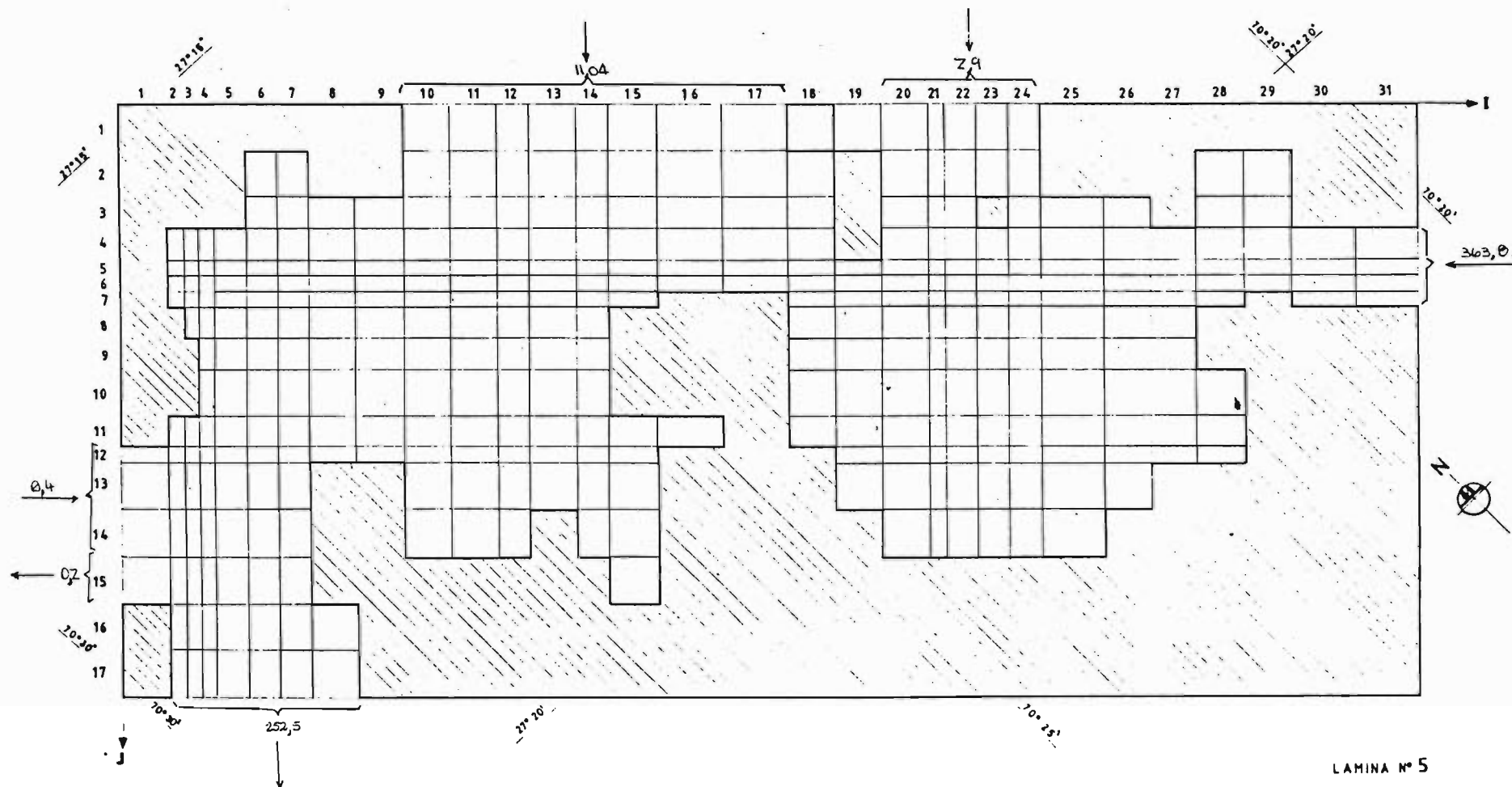
AND	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	TOTAL PERIOD
MALLAS EXTERIORES	-2.29	1.57	2.31	2.89	3.44	3.93	4.17	4.07	3.68	3.58	3.86	4.06	4.17	4.32	4.53	4.56	4.40	4.83	3.60	4.28	4.46	4.83	6.36	7.26	6.80	101.66
RIO	-9.65	-9.08	-8.15	-7.63	-6.99	-6.53	-6.13	-5.55	-4.47	-4.32	-4.09	-3.89	-3.69	-3.50	-3.35	-3.14	-2.87	-2.58	-1.95	-1.72	-1.82	-2.03	-3.28	-3.98	-5.09	-115.47
VERTIENTES	-4.74	-5.06	-4.49	-4.33	-4.16	-4.03	-3.92	-3.74	-3.39	-3.24	-3.22	-3.13	-3.07	-2.97	-2.92	-2.80	-2.63	-2.47	-2.08	-1.88	-1.88	-2.01	-2.55	-3.25	-3.44	-81.41
ALMACENAMIENTO	2.51	-13.05	-10.18	-12.21	-9.65	-5.13	-3.37	-13.79	-2.25	-7.92	-3.73	-1.88	-2.59	-1.00	-6.39	-4.22	-12.90	-4.08	-9.31	-3.60	.78	2.45	16.13	17.57	-.40	-88.19
INF.CANALES MATRICES	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.21	3.02	2.83	2.64	3.02	3.02	3.21	2.83	2.64	2.45	2.26	1.89	2.45	2.64	3.02	3.40	3.77	3.77	78.50
INF.CANALES SECUNDARIOS	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.15	1.08	1.01	.95	1.08	1.08	1.15	1.01	.95	.88	.81	.68	.88	.95	1.08	1.22	1.35	1.35	28.12
INF.RIEGO HORTALIZAS	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.15	1.08	1.01	.94	1.08	1.08	1.15	1.01	.94	.88	.81	.67	.88	.94	1.08	1.21	1.35	1.35	28.04
INF.RIEGO PARRONALES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.19	.37	.75	1.31	1.87	1.87	6.36
INF.RIO EN CRECIDA	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	11.35	9.46	.00	20.81
BOMBEO AGUA POTABLE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-1.60	-1.60	-1.60	-1.60	-1.60	-1.60	-1.60	-1.60	-1.60	-14.40
BOMBEO RIEGO 1962/81	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	.00	.00	.00	.00	.00	-81.00
BOMBEO RIEGO 1976/81	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-2.67	-2.67	-2.67	-2.67	-2.67	-2.67	.00	.00	.00	.00	.00	-16.02
BOMBEO RIEGO 1982/84	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-3.10	-3.10	-3.10	.00	.00	-9.30
BOMBEO RIEGO 1985/86	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-6.18	-6.18	-12.36
BALANCE TOTAL	-14.76	2.90	2.27	5.56	4.35	.92	-.08	10.01	-.80	4.74	.77	.04	1.13	.30	2.78	.64	7.69	-.57	3.80	.35	.19	-.42	-1.80	-7.52	-.77	21.72

VALORES POSITIVOS INDICAN ENTRADAS AL ACUIFERO

MODELO HIDROGEOLOGICO SECTOR: COPIAPO - PIEDRA COLGADA

PASADA N° 3.-

BALANCE MASICO EN LAS MALLAS EXTERIORES (Valores en millones de m3)



LAMINA N° 5

Período de 25 años / 1962 - 1986

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

RESUMEN BALANCE ANUAL

PASADA Nº 4

VALORES EN MILLONES MD

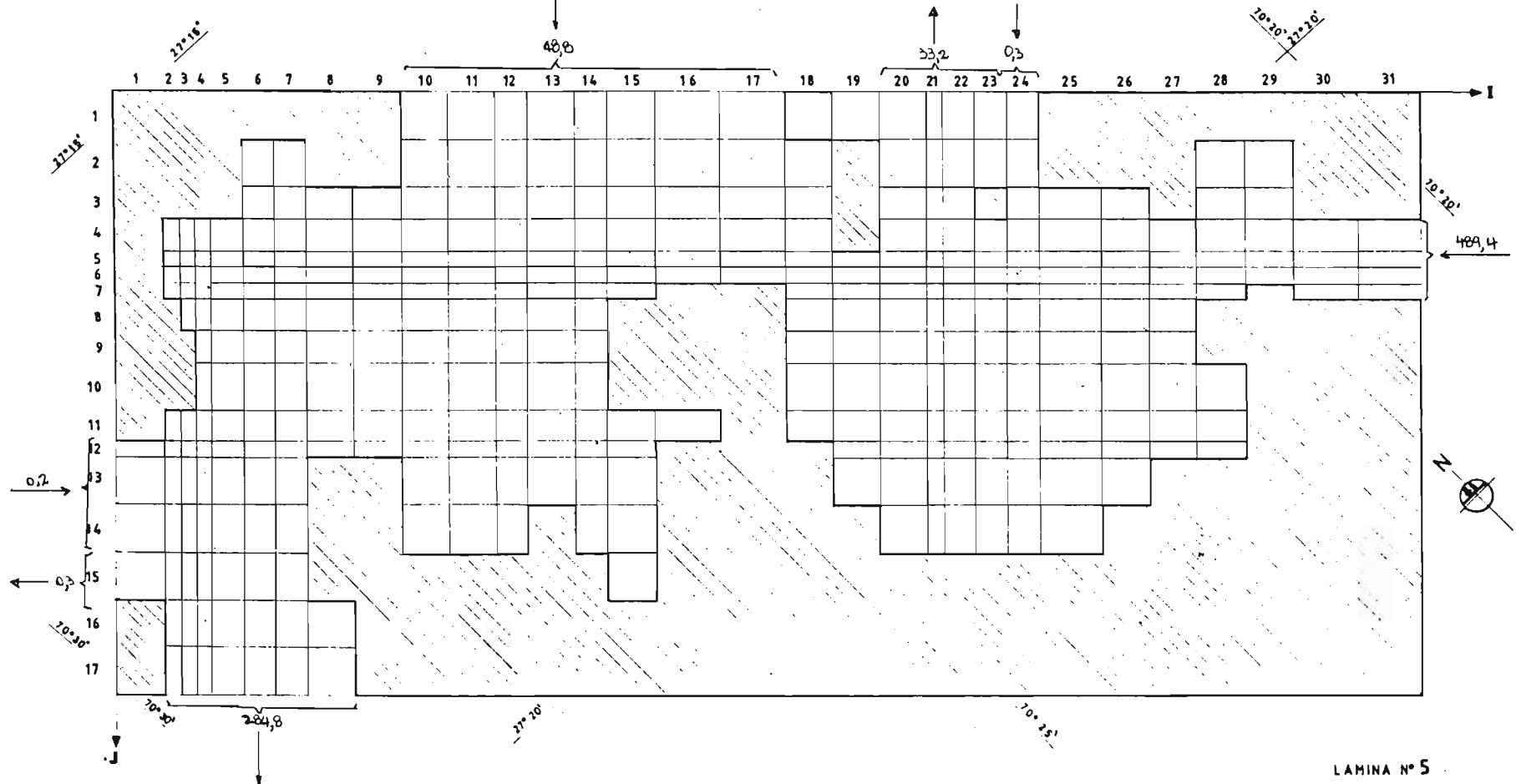
ANO	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	TOTAL PERIODO
MALLAS EXTERIORES	10.74	10.97	11.31	10.93	11.33	11.32	11.25	9.80	9.27	7.32	6.35	6.16	7.43	4.98	6.54	4.02	3.55	3.85	-2.98	-1.59	1.66	2.14	20.54	25.10	23.75	220.19
RIO	-5.77	-9.52	-9.81	-9.19	-9.45	-8.88	-9.15	-8.73	-8.27	-7.96	-7.58	-7.02	-6.55	-6.29	-5.75	-5.32	-4.50	-3.67	-2.76	-2.26	-1.98	-1.91	-2.71	-4.75	-6.41	-160.23
VERTIENTES	-4.60	-5.17	-5.01	-4.58	-4.85	-4.57	-4.74	-4.70	-4.28	-4.22	-4.06	-3.95	-3.75	-3.64	-3.55	-3.40	-3.18	-2.96	-2.52	-2.22	-2.01	-1.97	-2.34	-3.20	-3.85	-94.08
ALMACENAMIENTO	13.87	-1.71	-2.04	-3.96	-1.97	-1.52	1.05	-2.94	-4.39	-6.78	-6.30	-8.02	-1.50	-7.01	-5.43	-11.39	-14.24	-9.91	-31.03	-7.89	-2.71	-3.66	32.79	39.80	17.04	-29.84
INF.CANALES MATRICES	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.21	3.02	2.83	2.64	3.02	3.02	3.21	2.83	2.64	2.45	2.26	1.89	2.45	2.64	3.02	3.40	3.77	3.77	78.50
INF.CANALES SECUNDARIOS	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.15	1.08	1.01	.95	1.08	1.08	1.15	1.01	.95	.68	.81	.68	.88	.95	1.08	1.22	1.35	1.35	28.12
INF.RIEGO HORTALIZAS	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.15	1.08	1.01	.94	1.08	1.08	1.15	1.01	.94	.88	.81	.67	.88	.94	1.08	1.21	1.35	1.35	28.04
INF.RIEGO PARRONALES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.19	.37	.75	1.31	1.87	1.67	6.56
INF.RIO EN CRECIDA	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	11.35	9.46	.00	20.81
BOMBEO AGUA POTABLE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-1.60	-1.60	-1.60	-1.60	-1.60	-1.60	-1.60	-1.60	-1.60	-14.40
BOMBEO RIEGO 1962/81	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	.00	.00	.00	.00	.00	-81.00
BOMBEO RIEGO 1976/81	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-2.67	-2.67	-2.67	-2.67	-2.67	-2.67	.00	.00	.00	.00	.00	-16.02
BOMBEO RIEGO 1982/84	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-3.13	2.19	-3.13	.00	.00	-9.36
BOMBEO RIEGO 1985/86	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-6.18	-6.18	-12.36
BALANCE TOTAL	-15.06	14.	.95	3.16	.39	.51	-1.27	.76	2.24	2.72	5.47	4.36	-1.25	3.50	.81	4.50	6.00	4.73	7.69	-1.10	-1.02	3.15	-3.51	-12.66	-2.99	24.48

VALORES POSITIVOS INDICAN ENTRADAS AL ACUÍFERO

MODELO HIDROGEOLOGICO SECTOR : COPIAPO - PIEDRA COLGADA

PASADA N° 4.-

BALANCE MASICO EN LAS MALLAS EXTERIORES (Valores en millones de m3)



LAMINA N° 5

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

REQUEN BALANCE MASICO

PASADA N°5

VALORES EN MILLONES M3

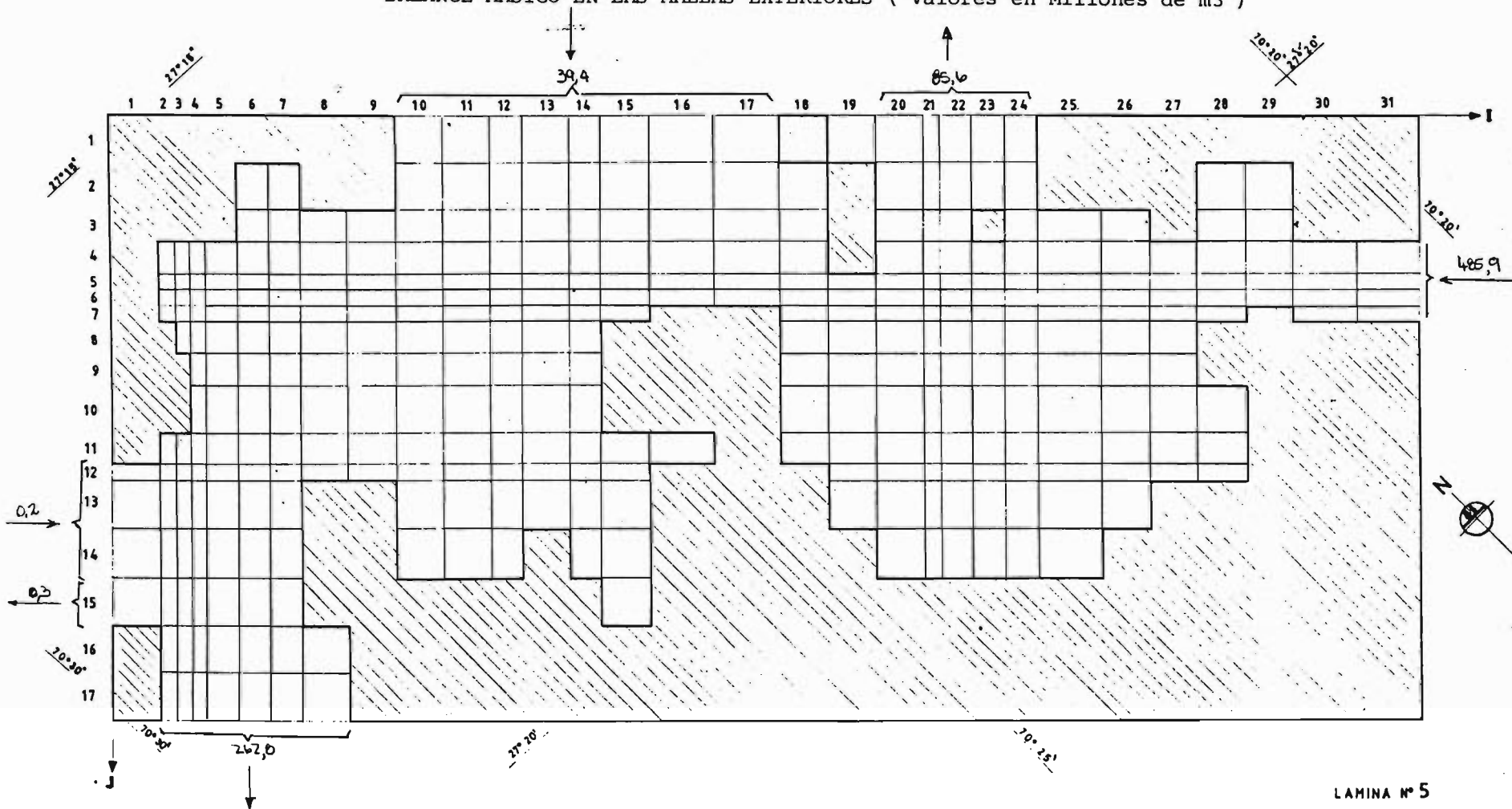
ANO	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	TOTAL PERIODO
MALLAS EXTERIORES	10.72	10.20	9.80	8.52	8.65	8.66	8.68	7.36	6.93	4.63	5.70	3.06	5.22	3.94	5.09	2.72	2.37	2.92	-3.84	-6.01	-2.30	-7.72	13.99	16.47	17.62	152.29
RIO	-9.10	-9.86	-9.99	-9.79	-9.78	-9.76	-9.71	-9.33	-8.85	-8.57	-8.24	-7.97	-7.25	-7.21	-6.77	-6.29	-5.59	-5.08	-3.92	-3.29	-3.14	-3.04	-4.64	-7.87	-9.47	-184.50
VERTIENTES	-3.67	-4.79	-4.87	-4.82	-4.80	-4.82	-4.78	-4.58	-4.31	-4.20	-4.10	-4.04	-3.82	-3.73	-3.67	-3.52	-3.31	-3.14	-2.73	-2.45	-2.32	-2.30	-2.78	-3.88	-4.56	-95.96
ALMACENAMIENTO	4.10	1.97	1.01	-1.33	.14	-1.18	-1.13	-3.31	-3.68	-6.28	-4.81	-7.01	-3.00	-3.43	-6.15	-7.31	-9.56	-7.91	-14.73	-15.31	-5.66	-4.41	48.36	28.94	8.70	-1.10
INF.CANALES MATRICES	5.66	5.66	5.66	5.66	5.66	5.66	5.66	4.81	4.53	4.25	3.96	4.53	4.53	4.81	4.25	3.96	3.68	3.40	2.83	3.68	3.96	4.53	5.09	5.66	5.66	117.75
INF.CANALES SECUNDARIOS	2.03	2.03	2.03	2.03	2.03	2.03	2.03	1.72	1.62	1.52	1.42	1.62	1.62	1.72	1.52	1.42	1.32	1.22	1.01	1.32	1.42	1.62	1.83	2.03	2.03	42.18
INF. RIEGO HORTALIZAS	2.02	2.02	2.02	2.02	2.02	2.02	2.02	1.72	1.62	1.52	1.41	1.62	1.62	1.72	1.52	1.41	1.31	1.21	1.01	1.31	1.41	1.62	1.82	2.02	2.02	42.04
INF. RIEGO PARRONALES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.19	.37	.75	1.31	1.87	1.87	6.35
INF. RIO EN CRECIDA	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	34.06	28.28	.00	62.44
BOMBEO AGUA POTABLE	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-1.60	-1.60	-1.60	-1.60	-1.60	-1.60	-1.60	-1.60	-1.60	-14.40
BOMBEO RIEGO 1962/81	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	.00	.00	.00	.00	.00	-81.00
BOMBEO RIEGO 1976/81	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-2.67	-2.67	-2.67	-2.67	-2.67	-2.67	.00	.00	.00	.00	.00	-16.02
BOMBEO RIEGO 1982/84	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-3.10	-3.10	-3.10	.00	.00	-9.30
BOMBEO RIEGO 1985/86	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-6.18	-6.18	-12.36
BALANCE TOTAL	-4.48	-7.76	-7.31	.91	-4.41	-4.09	-4.02	.96	1.08	1.38	.91	1.78	.79	.64	1.37	1.29	1.12	1.12	.76	1.74	.02	2.18	-2.40	-2.04	-1.31	10.62

VALORES POSITIVOS INDICAN ENTRADAS AL ACUIFERO

MODELO HIDROGEOLOGICO SECTOR: COPIAPO - PIEDRA COLGADA

PASADA Nº 5 -

BALANCE MASICO EN LAS MALLAS EXTERIORES (Valores en Millones de m³)



LAMINA Nº 5

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

MODELO HIDROGEOLOGICO SECTOR COPIAPO - PIEDRA COLGADA

RESUMEN BALANCE MASICO

PASADA N° 6

VALORES EN MILLONES M3

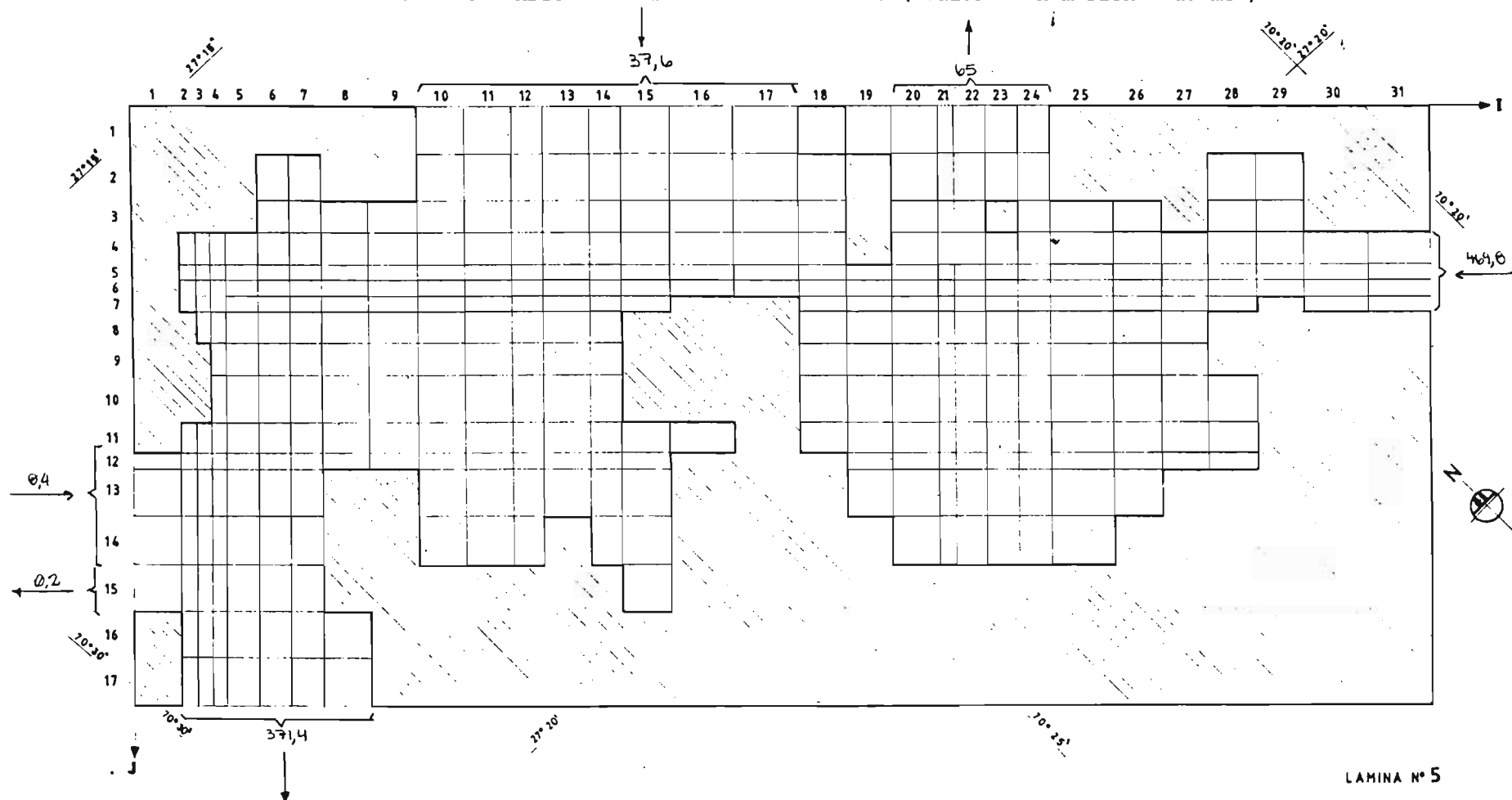
AND	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	TOTAL PERIODO
MALLAS EXTERIORES	7.49	7.17	6.79	5.25	4.74	4.35	4.43	3.45	3.28	2.36	3.36	1.44	3.03	2.20	3.33	2.32	1.47	2.86	-4.26	-5.27	-2.72	-3.37	3.27	6.40	7.91	71.26
RIO	-7.79	-8.24	-8.15	-8.25	-8.27	-8.43	-8.34	-7.84	-7.13	-6.61	-6.22	-5.87	-5.16	-4.79	-4.36	-3.78	-2.97	-2.53	-1.64	-1.23	-1.16	-1.27	-3.87	-7.73	-9.45	-141.10
VERTIENTES	-2.80	-3.51	-3.54	-3.53	-3.55	-3.55	-3.56	-3.35	-3.09	-2.91	-2.83	-2.74	-2.51	-2.37	-2.30	-2.20	-1.95	-1.77	-1.29	-1.00	-.92	-.94	-1.77	-3.07	-3.71	-64.75
ALMACENAMIENTO	3.98	2.93	.96	2.64	2.63	2.09	-1.18	-4.12	-7.24	-9.24	-6.21	-6.01	-4.20	-4.46	-7.13	-8.96	-11.34	-8.78	-13.92	-12.96	-4.07	8.77	71.75	27.13	9.20	22.26
INF.CANALES MATRICES	3.17	3.17	3.17	3.17	3.45	2.09	2.09	2.09	1.81	1.47	1.81	1.81	1.19	1.19	1.19	1.19	1.19	1.47	1.64	1.64	1.70	1.87	3.40	5.04	5.66	57.69
INF.CANALES SECUNDARIOS	1.89	1.89	1.89	1.89	2.10	1.25	1.25	1.25	1.08	.88	1.08	1.08	.71	.71	.71	.71	.71	.88	.98	.98	1.01	1.12	2.03	3.01	3.38	34.48
INF.RIEGO HORTALIZAS	.58	.58	.58	.58	.86	1.71	1.71	1.71	1.42	1.14	1.42	1.42	.86	.86	.86	.86	.86	.86	.86	.86	.86	.86	1.42	1.71	1.99	27.40
INF.RIEGO PARRONALES	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.11	.16	.16	.16	.20	.38	.64	.71	3.48
INF.RIEGO CEREALES	1.09	1.09	1.09	1.09	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	4.36
INF.RIO EN CRECIDA	3.95	3.95	2.97	5.93	7.01	8.00	5.93	3.95	.99	.00	1.98	2.97	2.97	2.97	1.98	.99	.00	.00	.00	.99	1.98	15.01	68.93	25.97	8.99	178.39
BOMBEO AGUA POTABLE	.00	.00	.00	.00	.00	.00	.60	.00	.00	.00	.00	.00	.00	.00	.00	.00	-1.60	-1.60	-1.60	-1.60	-1.60	-1.60	-1.60	-1.60	-1.60	-14.40
BOMBEO RIEGO 1962/81	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	-4.05	.00	.00	.00	.00	.00	-81.00
BOMBEO RIEGO 1976/81	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-2.67	-2.67	-2.67	-2.67	-2.67	-2.67	.00	.00	.00	.00	.00	-16.02
BOMBEO RIEGO 1982/84	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-3.10	-3.10	-3.10	.00	-9.30
BOMBEO RIEGO 1985/86	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-6.18	-6.18	-12.36
BALANCE TOTAL	-.39	-.82	-.15	-.50	-.29	-.65	.70	1.39	1.61	1.56	2.82	2.12	1.30	1.22	1.88	2.38	2.38	2.35	2.05	1.77	.27	-.01	-2.67	-2.95	-1.49	15.87

VALORES POSITIVOS INDICAN ENTRADAS AL ACUIFERO

MODELO HIDROGEOLOGICO SECTOR: COPIAPO - PIEDRA COLGADA

PASADA N° 6.-

BALANCE MASICO EN LAS MALLAS EXTERIORES (Valores en millones de m³)



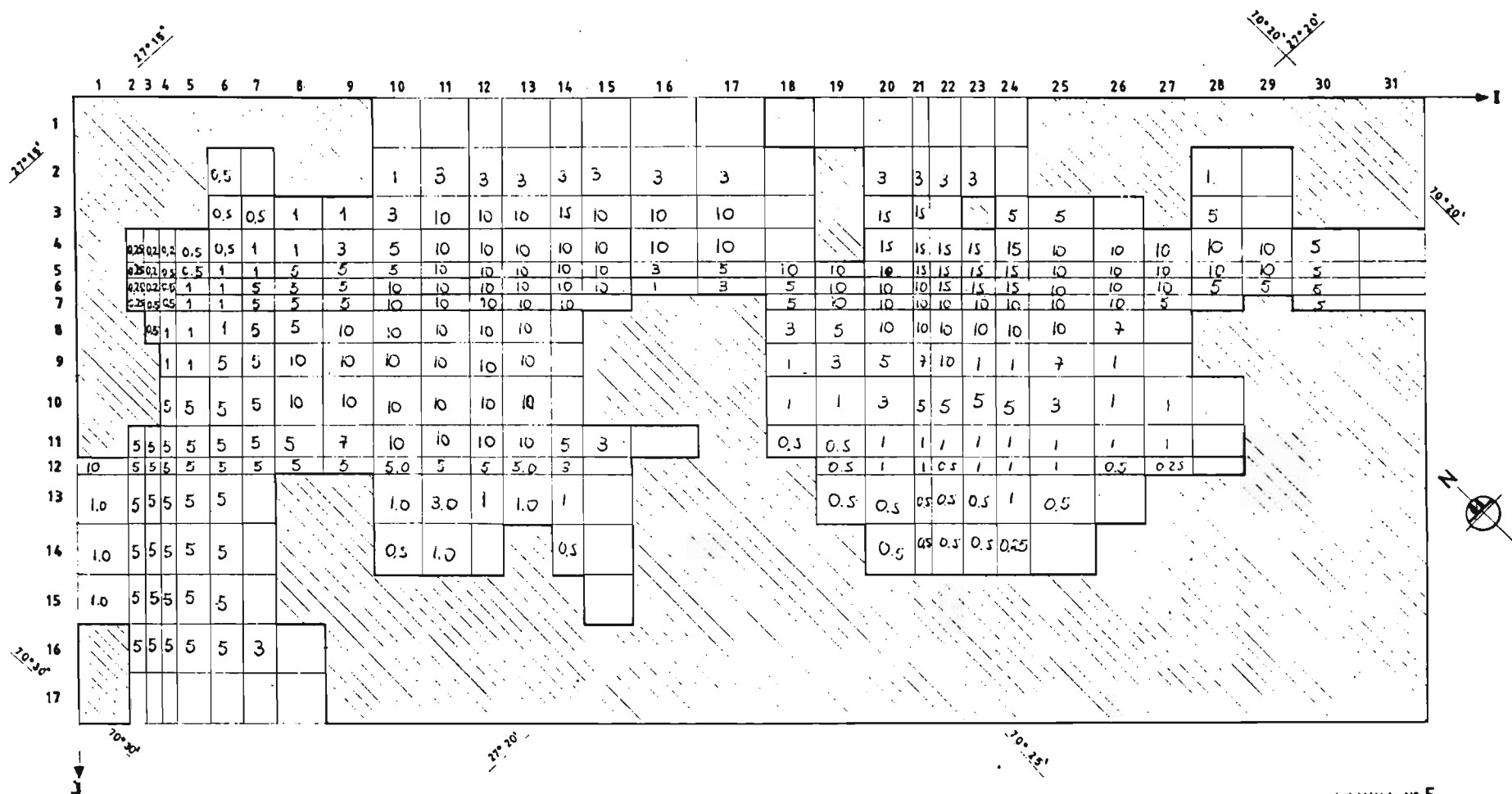
LAMINA N° 5

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

MODELO HIDROGEOLOGICO SECTOR: COPIAPO - PIEDRA COLGADA

PASADA N°1

TRANSMISIVIDAD I (miles m³/dia/m).



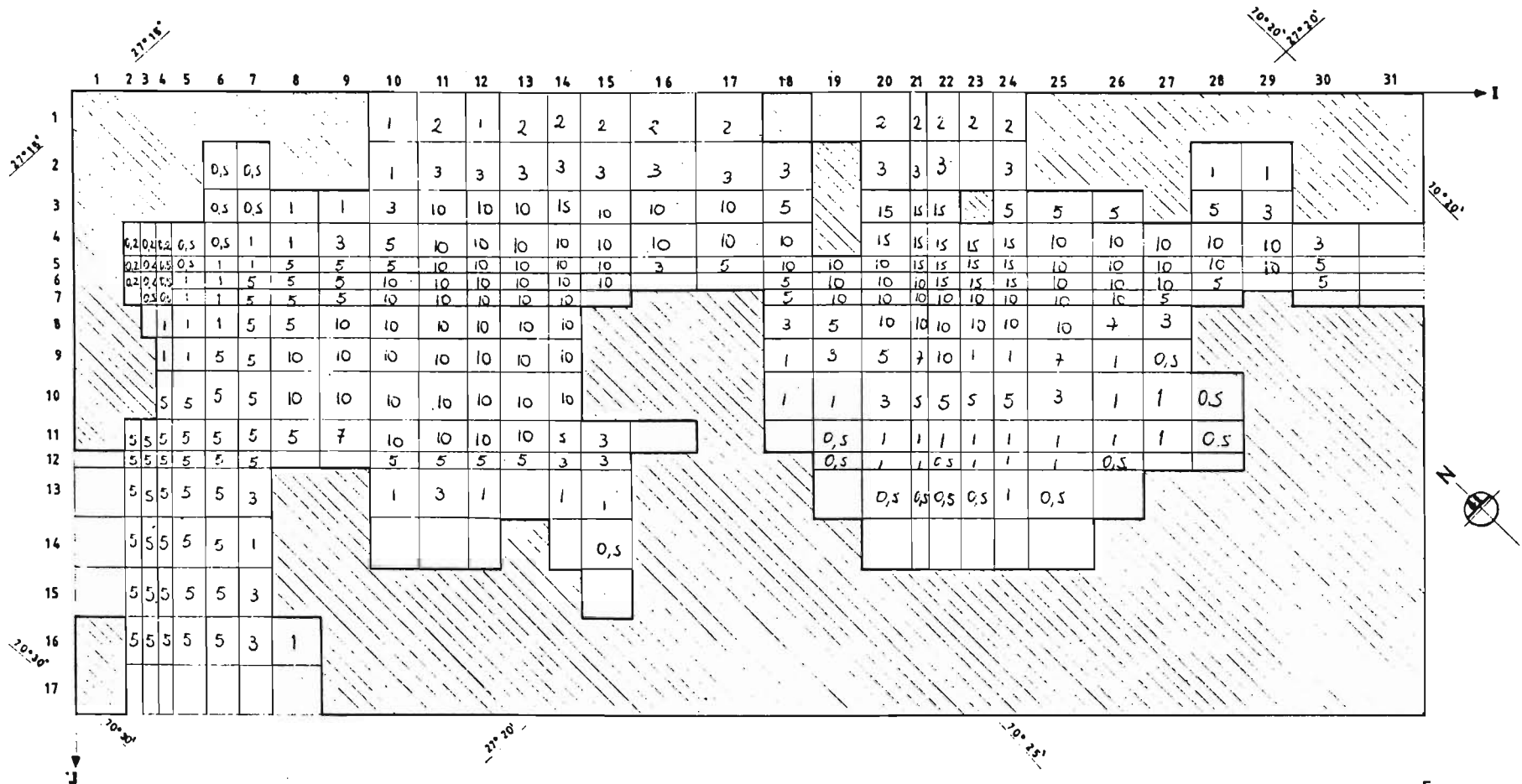
LAMINA N° 5

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

MODELO HIDROGEOLOGICO SECTOR: COPIAPO - PIEDRA COLGADA

PASADA N°1

TRANSMISIVIDAD J (mler m³/dia/m).



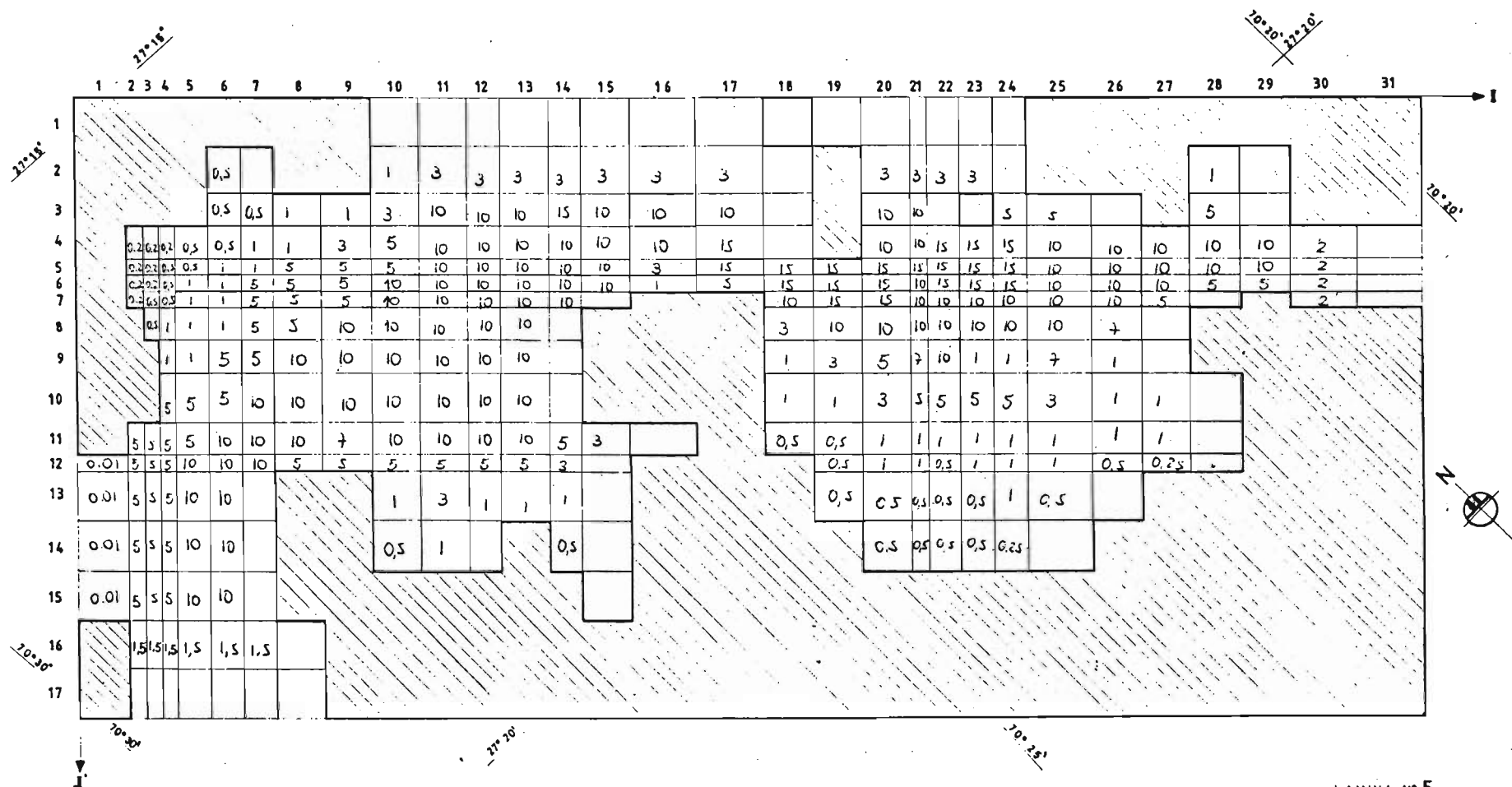
LAMINA N° 5

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

MODELO HIDROGEOLOGICO SECTOR: COPIAPO - PIEDRA COLGADA

PASADA N° 6

TRANSMISIVIDAD I ($m^3/m^3/dia/m$).



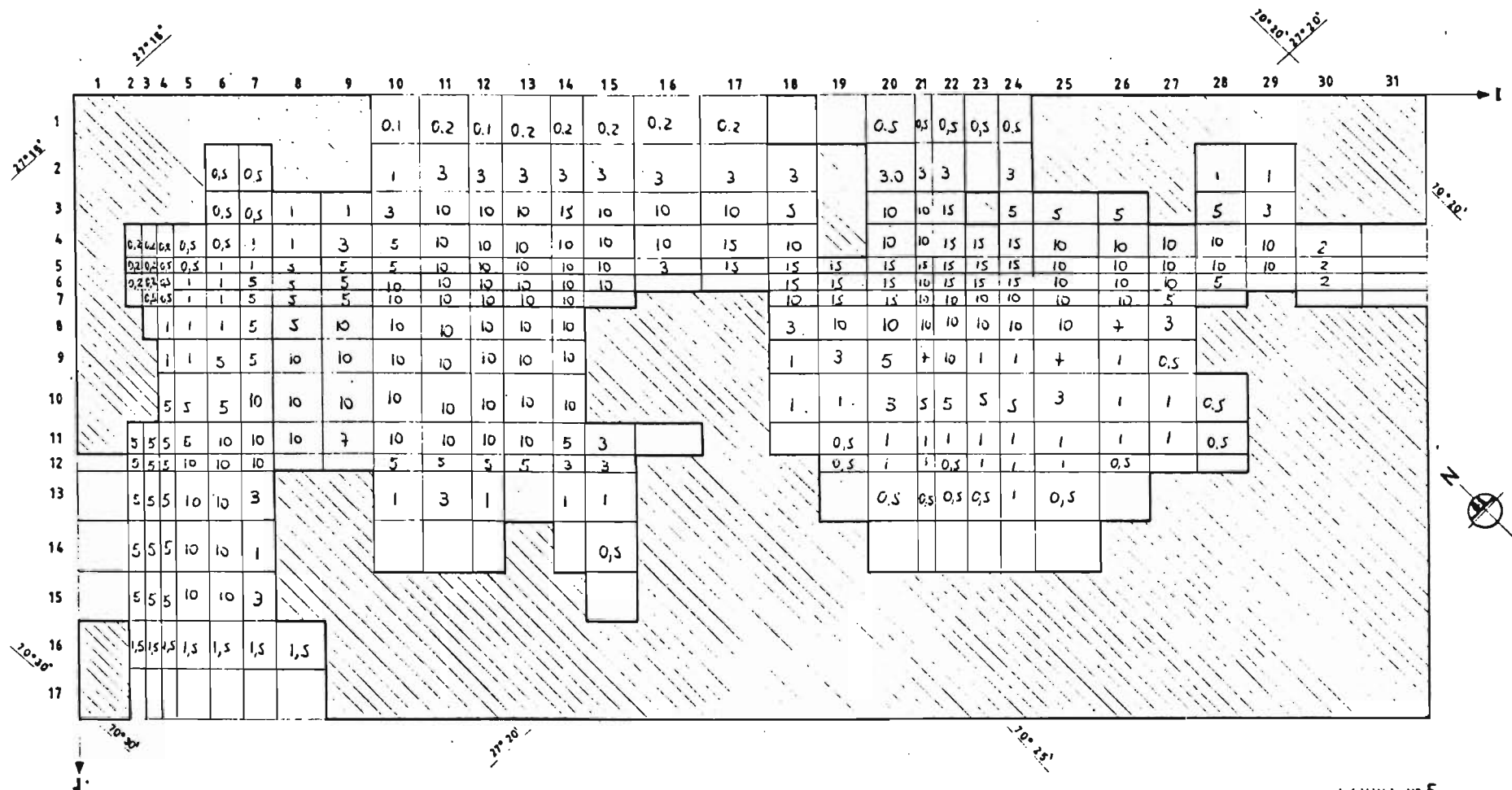
LAMINA N° 5

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

MODELO HIDROGEOLOGICO SECTOR: COPIAPO - PIEDRA COLGADA

PASADA N°6

TRANSMISIVIDAD J ($m^3/dia/m$).



LAMINA N° 5

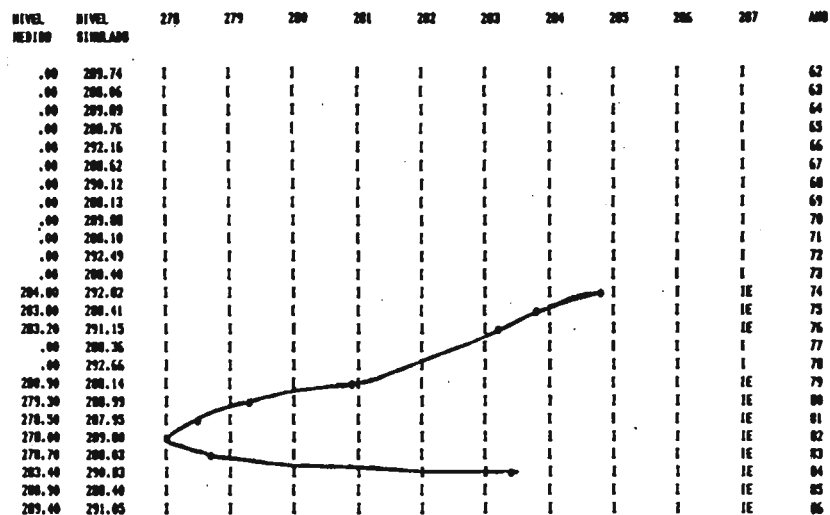
ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

ALAMOS Y PERALTA Ingenieros Consultores Ltda.

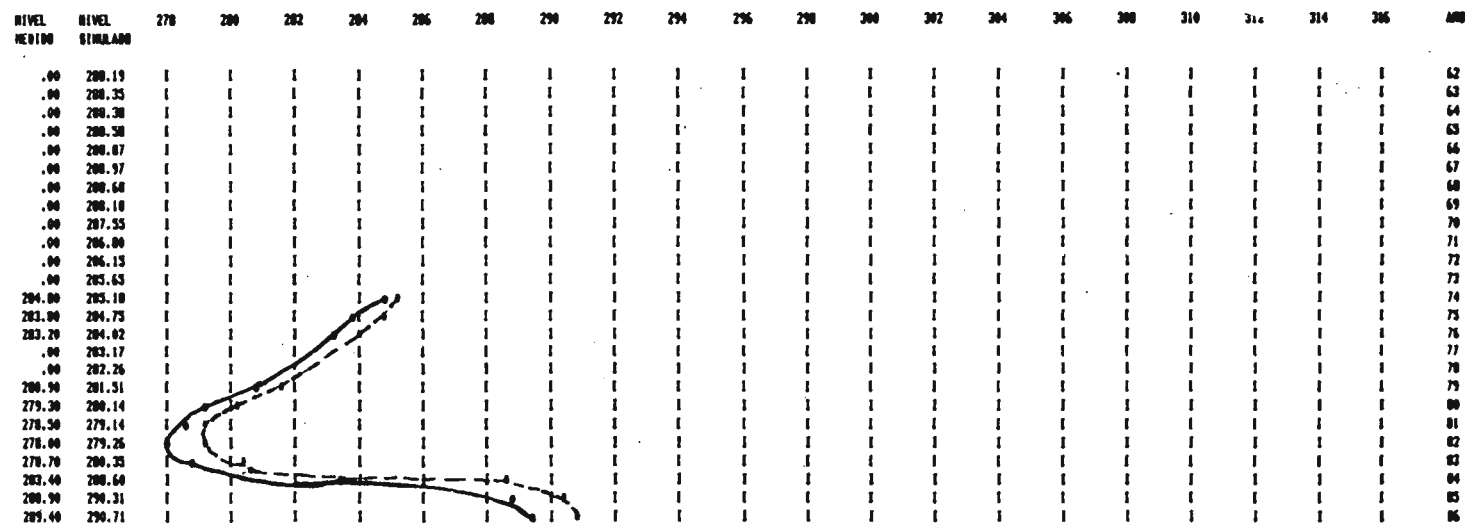
CONTRASTE PIEZOMETRICO

SECTOR N° 5

PASADA N° 1



PASADA N° 6



— NIVEL MEDIO
— NIVEL MEDIO Y SIMULADO COINCIDEN

--- NIVEL SIMULADO
E=VALOR FUERA DEL RANGO DEL DIBUJO

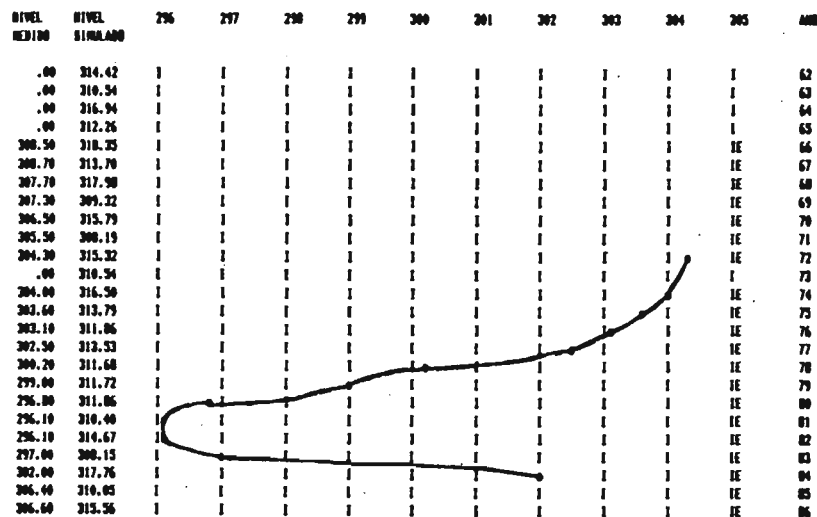
PASADA N° 1

NIVEL MEDIO	NIVEL SIMULADO	207	208	209	210	211	212	213	214	215	216	ANO
.00	296.35	1	1	1	1	1	1	1	1	1	1	62
.00	294.33	1	1	1	1	1	1	1	1	1	1	63
.00	297.22	1	1	1	1	1	1	1	1	1	1	64
.00	295.33	1	1	1	1	1	1	1	1	1	1	65
.00	298.00	1	1	1	1	1	1	1	1	1	1	66
.00	295.74	1	1	1	1	1	1	1	1	1	1	67
.00	297.72	1	1	1	1	1	1	1	1	1	1	68
.00	293.96	1	1	1	1	1	1	1	1	1	1	69
.00	297.07	1	1	1	1	1	1	1	1	1	1	70
.00	294.25	1	1	1	1	1	1	1	1	1	1	71
.00	298.30	1	1	1	1	1	1	1	1	1	1	72
.00	295.31	1	1	1	1	1	1	1	1	1	1	73
.00	299.14	1	1	1	1	1	1	1	1	1	1	74
.00	295.76	1	1	1	1	1	1	1	1	1	1	75
.00	296.48	1	1	1	1	1	1	1	1	1	1	76
.00	295.56	1	1	1	1	1	1	1	1	1	1	77
.00	298.28	1	1	1	1	1	1	1	1	1	1	78
207.00	295.27	1	1	1	1	1	1	1	1	1	1	79
207.10	295.35	1	1	1	1	1	1	1	1	1	1	80
.00	294.02	1	1	1	1	1	1	1	1	1	1	81
.00	297.13	1	1	1	1	1	1	1	1	1	1	82
.00	294.05	1	1	1	1	1	1	1	1	1	1	83
.00	298.33	1	1	1	1	1	1	1	1	1	1	84
.00	295.30	1	1	1	1	1	1	1	1	1	1	85
.00	297.42	1	1	1	1	1	1	1	1	1	1	86

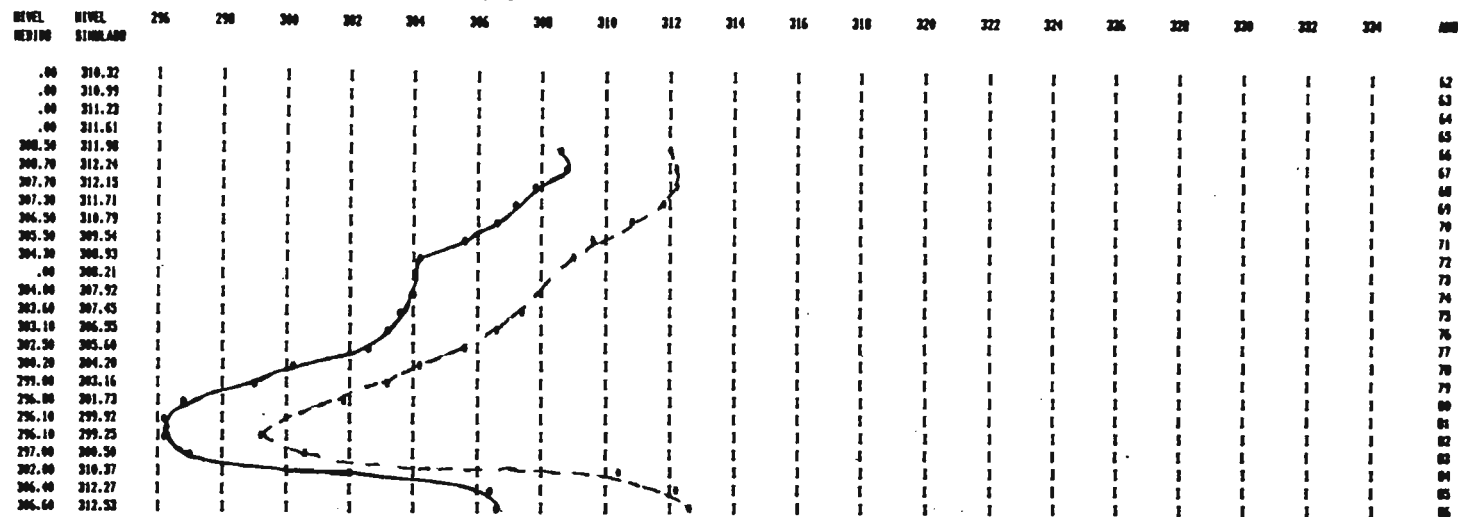
PASADA N° 6

NIVEL MEDIO	NIVEL SIMULADO	207	209	211	213	215	217	219	301	303	305	307	309	311	313	315	317	319	321	323	325	ANO
.00	296.31	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	62
.00	296.91	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	63
.00	297.02	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	64
.00	297.32	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	65
.00	297.68	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	66
.00	297.03	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	67
.00	297.60	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	68
.00	297.05	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	69
.00	296.31	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	70
.00	295.29	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	71
.00	294.64	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	72
.00	294.12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	73
.00	293.71	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	74
.00	293.21	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	75
.00	292.41	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	76
.00	291.41	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	77
.00	290.30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	78
207.00	209.48	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	79
207.10	207.07	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	80
.00	206.39	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	81
.00	206.43	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	82
.00	207.71	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	83
.00	297.37	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	84
.00	298.90	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	85
.00	299.10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	86

PASADA N° 1



PASADA N° 6



o=NIVEL MEDIO
A=NIVELES MEDIO Y SIMULADO COINCIDEN

o=NIVEL SIMULADO
E=VALOR FRECU DEL RANGO DEL DIBUJO

PASADA N° 1

NIVEL MEDIO	NIVEL SIMULADO	300	301	302	303	304	305	306	307	308	309	AMB
.00	307.96											62
.00	304.05											63
304.70	310.01										IE	64
304.50	306.71											65
302.20	311.57										IE	66
300.10	307.62											67
300.20	310.93										IE	68
.00	303.72											69
.00	309.20											70
.00	303.76											71
.00	309.37											72
.00	303.50											73
.00	310.56											74
.00	307.71											75
.00	306.15											76
.00	307.26											77
.00	306.73											78
.00	306.02											79
.00	306.22											80
.00	303.20											81
.00	300.47											82
.00	303.79											83
.00	311.00											84
.00	303.10											85
.00	300.00											86

PASADA N° 6

NIVEL MEDIO	NIVEL SIMULADO	300	302	304	306	308	310	312	314	316	318	320	322	324	326	328	330	332	334	336	338	AMB
.00	304.76																					62
.00	305.29																					63
304.70	305.60																					64
304.50	305.97																					65
302.20	306.34																					66
300.10	306.30																					67
300.20	306.46																					68
.00	305.97																					69
.00	305.13																					70
.00	303.90																					71
.00	303.33																					72
.00	302.70																					73
.00	302.37																					74
.00	301.07																					75
.00	300.95																					76
.00	299.96																					77
.00	298.69																					78
.00	297.72																					79
.00	296.23																					80
.00	294.60																					81
.00	294.13																					82
.00	293.30																					83
.00	303.09																					84
.00	306.60																					85
.00	306.90																					86

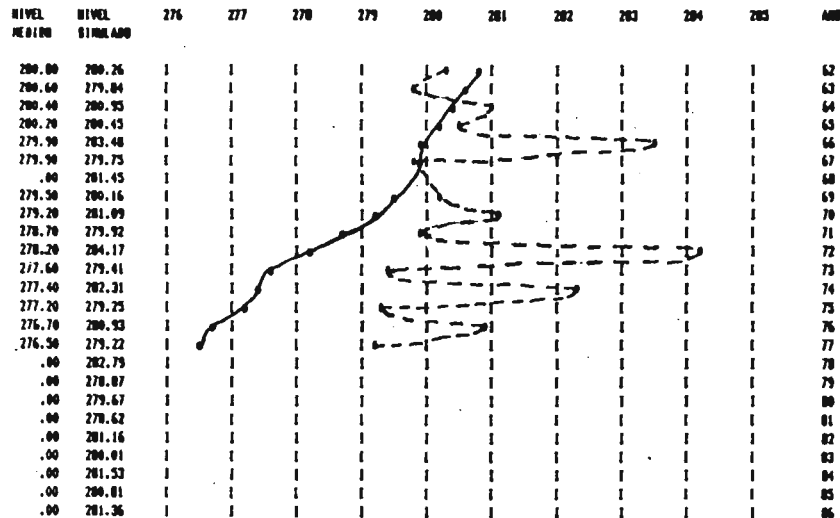
PASADA Nº 1

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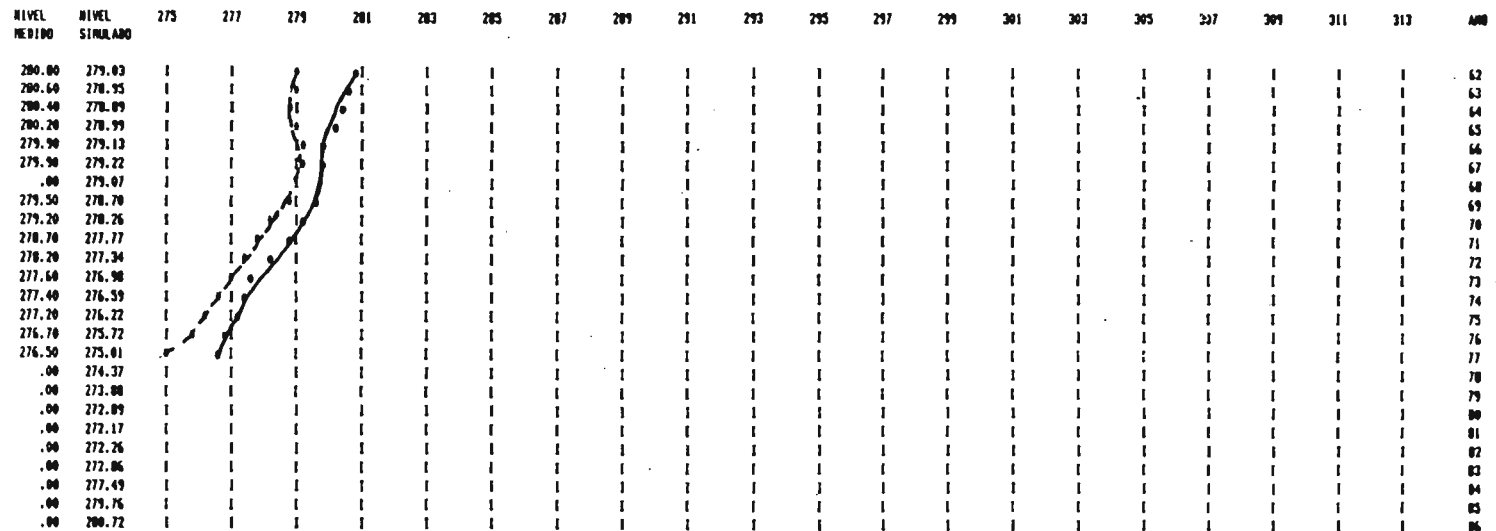
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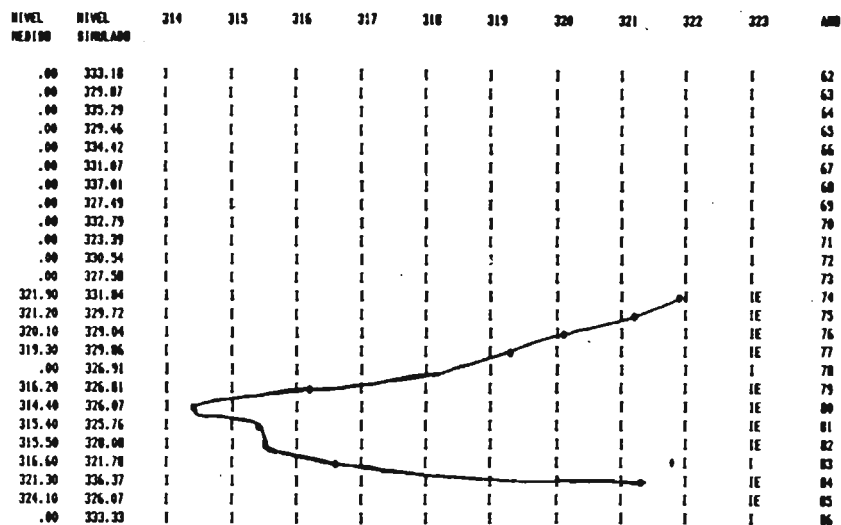
PASADA N° 1



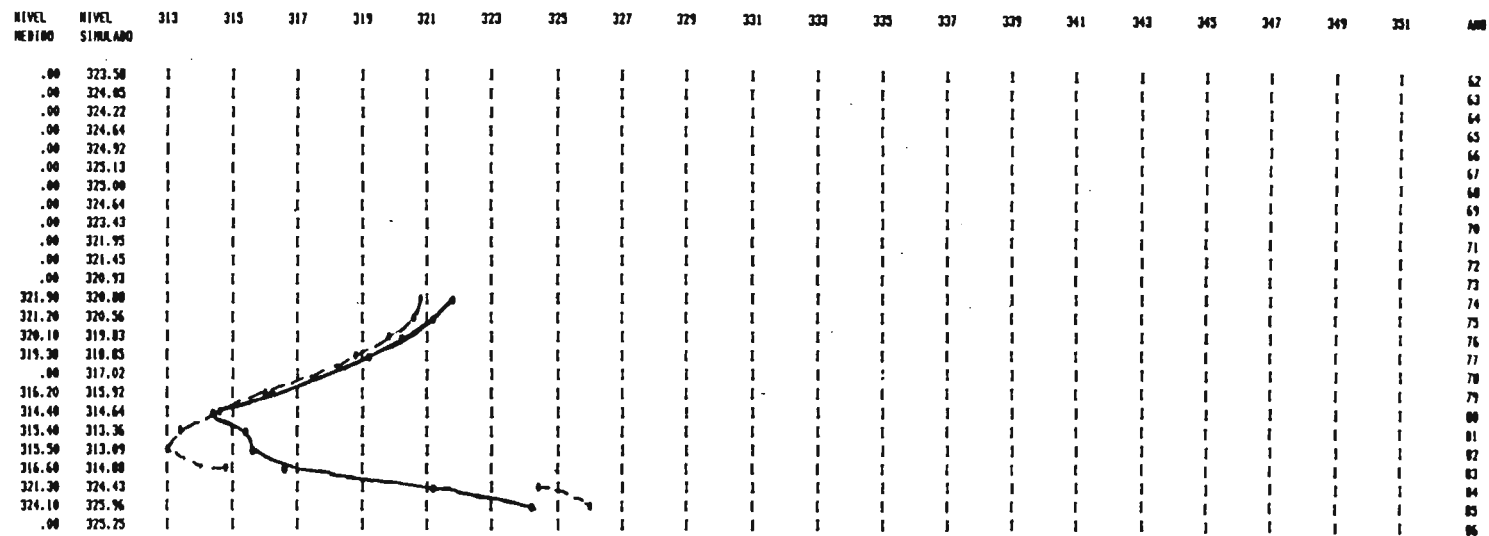
PASADA N° 6



PASADA N° 1



PASADA N° 6



o=NIVEL MEDIO

o=NIVEL SIMULADO

o=NIVEL MEDIO o=NIVEL SIMULADO

o=NIVEL MEDIO o=NIVEL SIMULADO

PASADA N° 1

NIVEL MEDIDO	NIVEL SIMULADO	302	303	304	305	306	307	308	309	310	311	ANO
.00	317.80	I	I	I	I	I	I	I	I	I	I	62
.00	314.38	I	I	I	I	I	I	I	I	I	I	63
.00	320.65	I	I	I	I	I	I	I	I	I	I	64
.00	315.45	I	I	I	I	I	I	I	I	I	I	65
.00	321.66	I	I	I	I	I	I	I	I	I	I	66
.00	317.39	I	I	I	I	I	I	I	I	I	I	67
.00	321.63	I	I	I	I	I	I	I	I	I	I	68
.00	312.95	I	I	I	I	I	I	I	I	I	I	69
.00	319.11	I	I	I	I	I	I	I	I	I	I	70
.00	310.69	I	I	I	I	I	I	I	I	I	I	71
.00	318.26	I	I	I	I	I	I	I	I	I	I	72
.00	313.04	I	I	I	I	I	I	I	I	I	I	73
305.90	319.51	I	I	I	I	I	I	I	I	I	IE	74
305.30	316.97	I	I	I	I	I	I	I	I	I	IE	75
304.80	315.51	I	I	I	I	I	I	I	I	I	IE	76
304.30	316.45	I	I	I	I	I	I	I	I	I	IE	77
.00	314.47	I	I	I	I	I	I	I	I	I	I	78
.00	314.57	I	I	I	I	I	I	I	I	I	I	79
.00	314.49	I	I	I	I	I	I	I	I	I	I	80
.00	313.10	I	I	I	I	I	I	I	I	I	I	81
302.10	317.41	I	I	I	I	I	I	I	I	I	IE	82
302.60	310.21	I	I	I	I	I	I	I	I	I	I	83
.00	321.50	I	I	I	I	I	I	I	I	I	I	84
.00	312.78	I	I	I	I	I	I	I	I	I	I	85
.00	319.22	I	I	I	I	I	I	I	I	I	I	86

PASADA N° 6

NIVEL MEDIDO	NIVEL SIMULADO	301	303	305	307	309	311	313	315	317	319	321	323	325	327	329	331	333	335	337	339	ANO
.00	312.79	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	62
.00	313.44	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	63
.00	313.71	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	64
.00	314.10	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	65
.00	314.45	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	66
.00	314.72	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	67
.00	314.66	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	68
.00	314.30	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	69
.00	313.40	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	70
.00	312.15	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	71
.00	311.51	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	72
.00	310.82	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	73
305.90	310.50	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	74
305.50	310.06	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	75
304.80	309.06	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	76
304.30	308.13	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	77
.00	306.74	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	78
.00	305.65	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	79
.00	304.30	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	80
.00	302.65	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	81
302.10	301.98	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	82
302.60	303.07	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	83
.00	311.73	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	84
.00	314.30	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	85
.00	314.73	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	86

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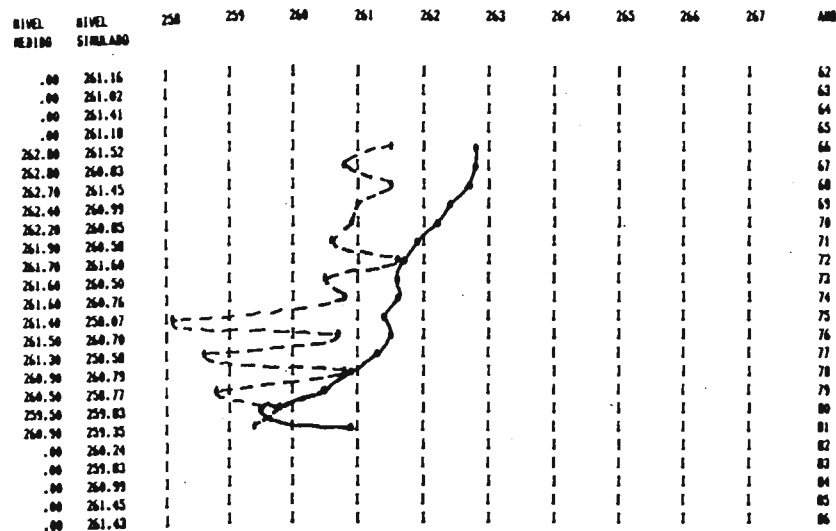
PASADA N° 1

NIVEL MEDIO	NIVEL SIMULADO	325	326	327	328	329	330	331	332	333	334	ANO
.00	332.02											62
.00	328.53											63
.00	334.10											64
.00	328.13											65
.00	333.37											66
.00	329.04											67
.00	335.00											68
.00	326.04											69
327.10	331.72											70
.00	321.93											71
.00	329.51											72
325.90	326.30											73
325.60	330.04											74
.00	328.57											75
.00	327.00											76
.00	328.75											77
.00	325.81											78
.00	325.77											79
.00	325.07											80
.00	324.62											81
.00	327.20											82
.00	328.45											83
.00	325.40											84
.00	324.76											85
.00	332.20											86

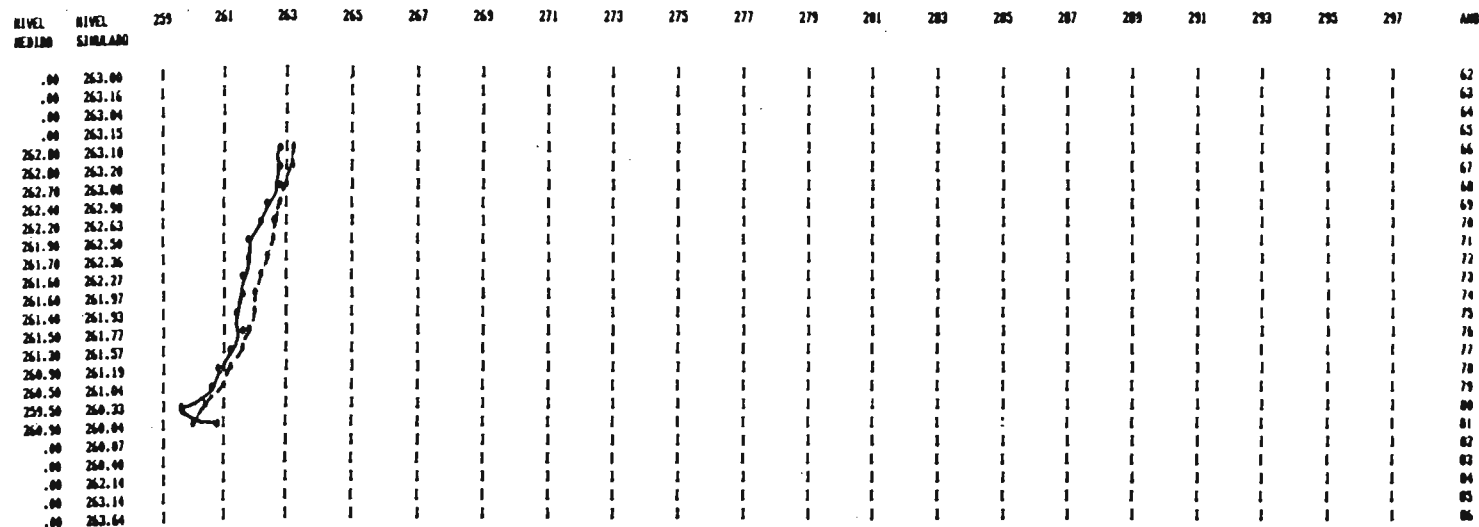
PASADA N° 6

NIVEL MEDIO	NIVEL SIMULADO	320	322	324	326	328	330	332	334	336	338	340	342	344	346	348	350	352	354	356	358	ANO
.00	322.64																					62
.00	323.16																					63
.00	323.32																					64
.00	323.76																					65
.00	324.05																					66
.00	324.27																					67
.00	324.13																					68
.00	322.75																					69
327.10	322.54																					70
.00	321.06																					71
.00	320.50																					72
325.90	320.05																					73
325.60	320.00																					74
.00	319.67																					75
.00	318.90																					76
.00	317.91																					77
.00	316.00																					78
.00	315.00																					79
.00	313.71																					80
.00	312.38																					81
.00	312.10																					82
.00	313.95																					83
.00	323.05																					84
.00	325.12																					85
.00	324.25																					86

PASADA N° 1



PASADA N° 6



o=NIVEL MEDIO
 A=NIVELES MEDIO Y SIMULADO COINCIDEN

o=NIVEL SIMULADO
 E=VALOR FUERA DEL RANGO DEL DIBUJO

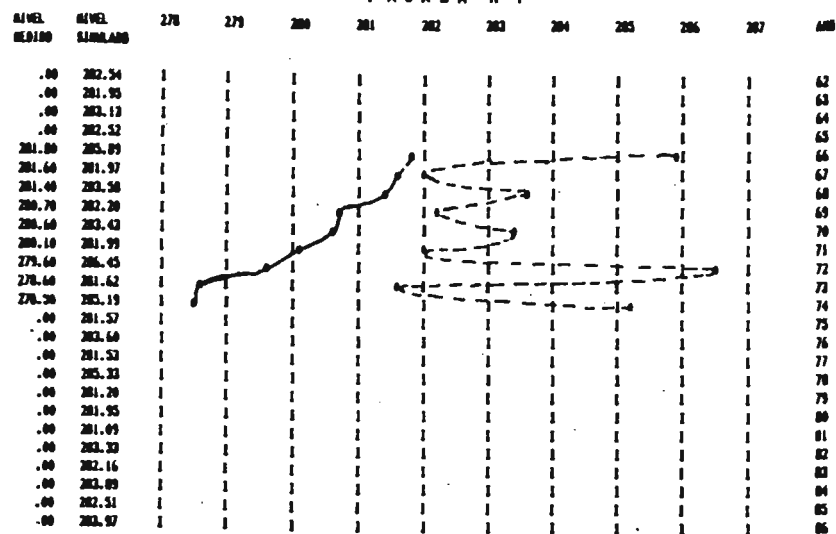
PASADA N° 1

NIVEL MEDIO	NIVEL SIMILAR	252	253	254	255	256	257	258	259	260	261	AMB
.00	256.62											62
.00	256.54											63
.00	256.74											64
.00	256.61											65
.00	256.76											66
.00	256.39											67
.00	256.73											68
.00	256.37											69
.00	256.15											70
.00	255.99											71
.00	256.51											72
.00	255.95											73
.00	255.93											74
.00	253.95											75
.00	255.91											76
.00	254.28											77
.00	255.77											78
.00	254.46											79
.00	254.78											80
.00	254.58											81
252.70	254.97											82
252.60	254.73											83
253.90	256.04											84
255.50	256.70											85
255.30	256.60											86

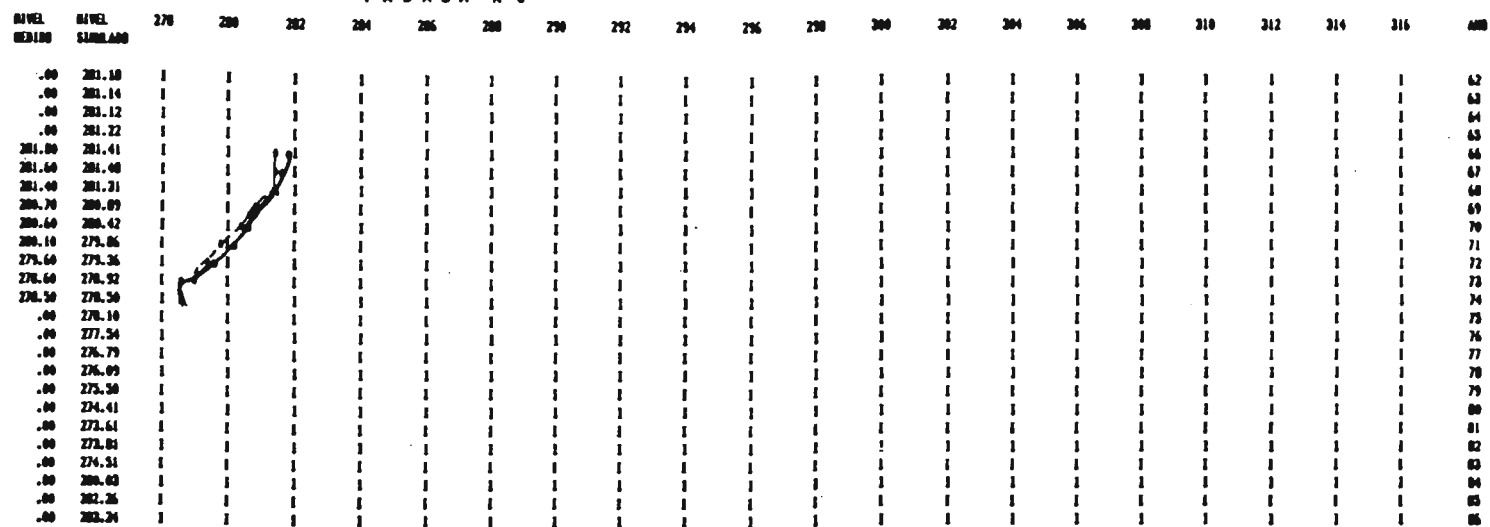
PASADA N° 6

NIVEL MEDIO	NIVEL SIMILAR	252	254	256	258	260	262	264	266	268	270	272	274	276	278	280	282	284	286	288	290	AMB
.00	259.04																					62
.00	259.95																					63
.00	259.87																					64
.00	259.93																					65
.00	259.90																					66
.00	259.96																					67
.00	259.88																					68
.00	259.70																					69
.00	259.45																					70
.00	259.34																					71
.00	259.24																					72
.00	259.18																					73
.00	258.90																					74
.00	258.87																					75
.00	258.76																					76
.00	258.62																					77
.00	258.79																					78
.00	258.18																					79
.00	257.48																					80
.00	257.27																					81
252.70	257.28																					82
252.60	257.51																					83
253.90	259.00																					84
255.50	259.87																					85
255.30	260.24																					86

PASADA N° 1



PASADA N° 6



— NIVEL MEDIO
— NIVEL MEDIO Y SIMULADO CRUCIADOS

--- NIVEL SIMULADO
--- VALOR FUERA DEL RANG. DEL DIBUJO

PASADA N° 1

NIVEL MEDIO	NIVEL SIMULADO	252	253	254	255	256	257	258	259	260	261	AMB
.00	256.62											62
.00	256.54											63
.00	256.74											64
.00	256.61											65
.00	256.76											66
.00	256.39											67
.00	256.73											68
.00	256.27											69
.00	256.15											70
.00	255.95											71
.00	256.51											72
.00	255.95											73
.00	255.93											74
.00	255.95											75
.00	255.91											76
.00	254.28											77
.00	255.77											78
.00	254.46											79
.00	254.70											80
.00	254.58											81
252.70	254.97											82
252.60	254.73											83
253.30	256.04											84
253.50	256.70											85
253.30	256.60											86

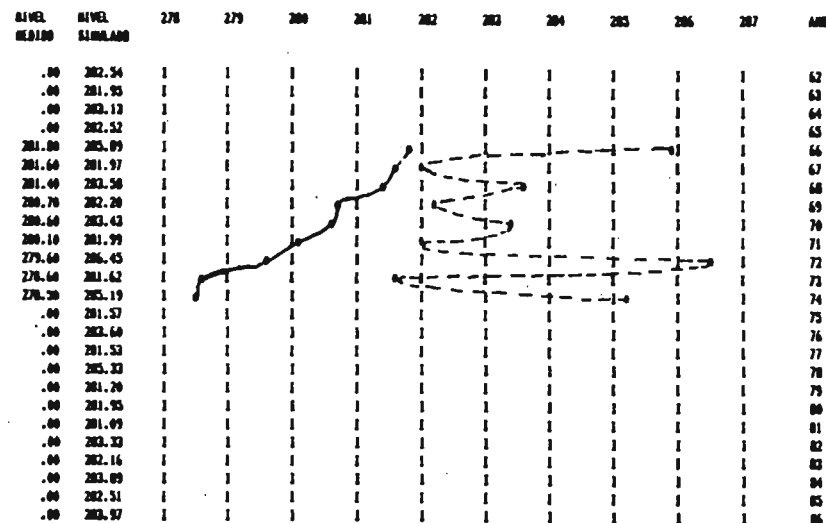
PASADA N° 6

NIVEL MEDIO	NIVEL SIMULADO	252	254	256	258	260	262	264	266	268	270	272	274	276	278	280	282	284	286	288	290	AMB
.00	259.84																					62
.00	259.95																					63
.00	259.87																					64
.00	259.93																					65
.00	259.90																					66
.00	259.96																					67
.00	259.88																					68
.00	259.70																					69
.00	259.45																					70
.00	259.34																					71
.00	259.24																					72
.00	259.18																					73
.00	258.90																					74
.00	258.87																					75
.00	258.76																					76
.00	258.62																					77
.00	258.29																					78
.00	258.18																					79
.00	257.40																					80
.00	257.27																					81
252.70	257.28																					82
252.60	257.51																					83
253.30	259.00																					84
253.50	259.87																					85
253.30	260.24																					86

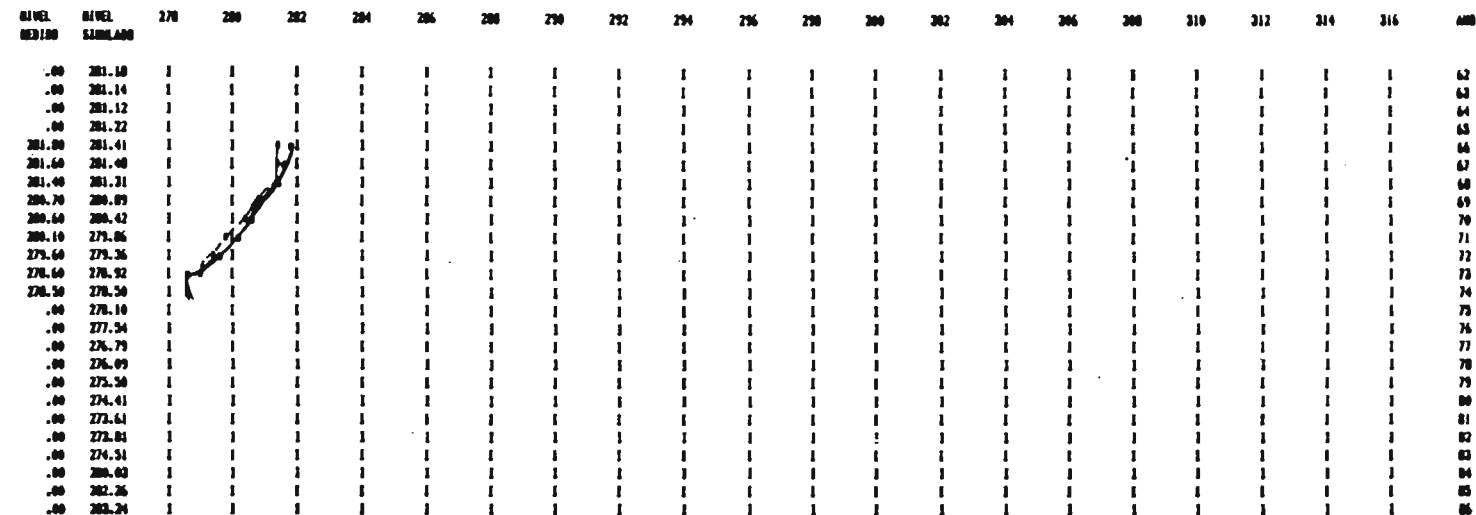
 o=NIVEL MEDIO
 A=VALORES MEDIO Y SIMULADO COINCIDEN

 o=NIVEL SIMULADO
 E=VALOR FUERA DEL RANGO DEL SIGLAS

PASADA N° 1



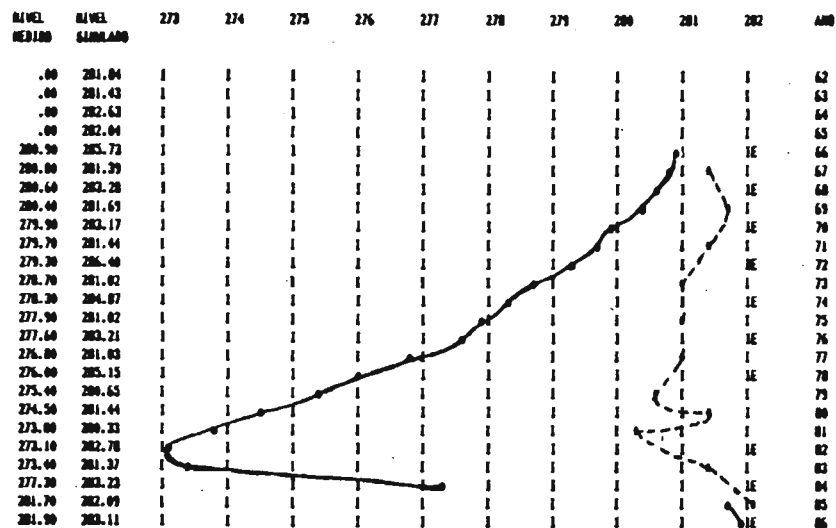
PASADA N° 6



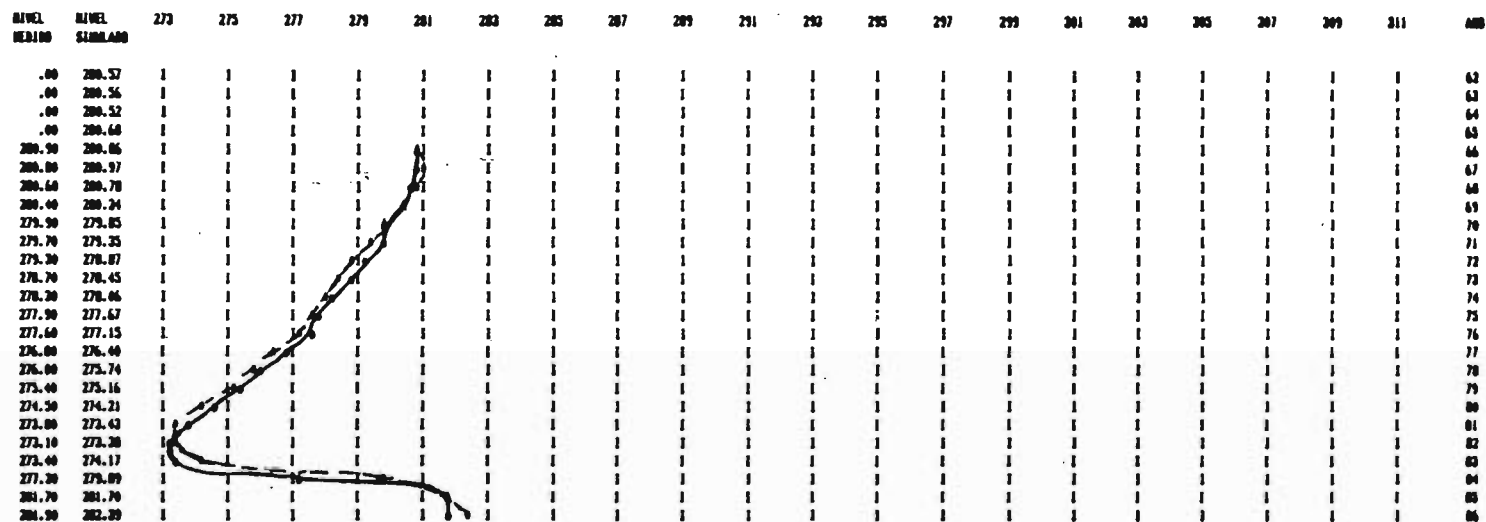
● NIVEL MEDIO
○ NIVEL MEDIO Y SIMULADO COINCIDEN

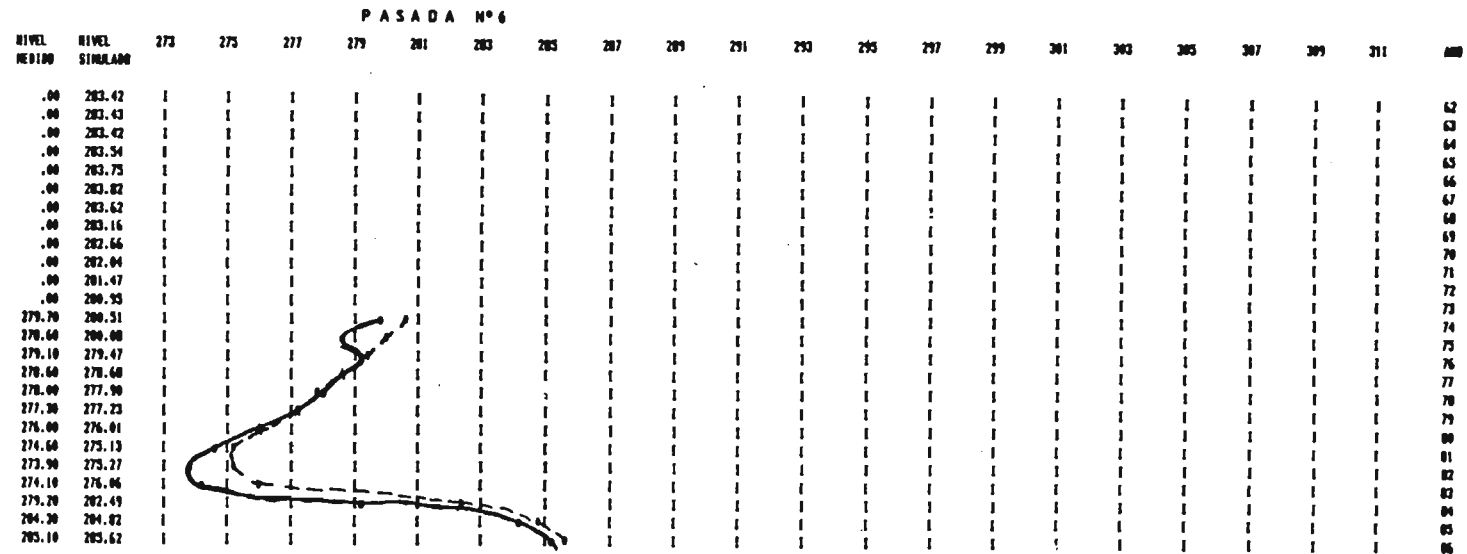
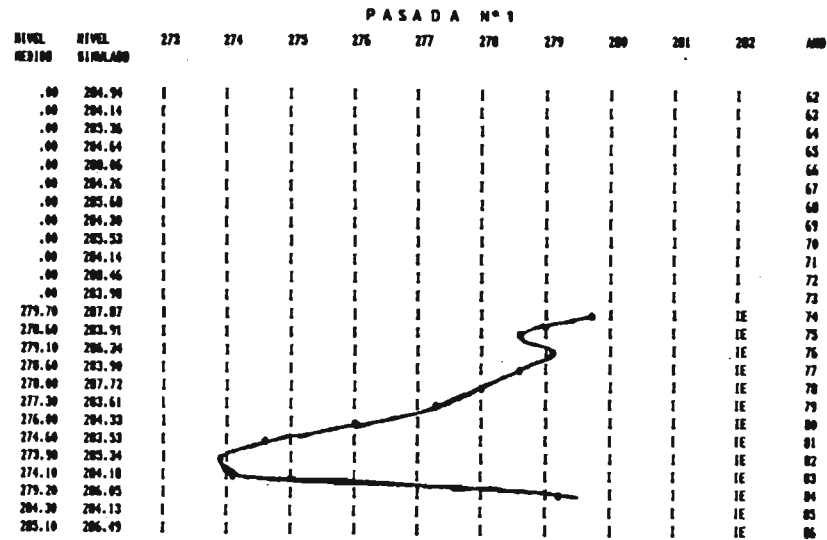
○ NIVEL SIMULADO
○ VALOR FUERA DEL RANGUE DEL DIBUJO

PASADA Nº 1



PASADA Nº 6





RECURSOS HIDRAULICOS

AGUAS SUBTERRANEAS

REGADIO

AGUA POTABLE E INDUSTRIAL

SECTOR N° 6.

RESUMEN BALANCE MAGICO

PASADA N° 1

CHILE 1955 DE JULIO AL AGO

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	02	03	04	05	06	TOTAL
PRECIPITACION	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
EVAPORACION	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
RECARGO	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
AGUAS SUBTERRANEAS	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
REGADIO	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
AGUA POTABLE E INDUSTRIAL	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00

VALORES POSITIVOS INDICAN ENTRADA AL ACUIFERO

MODELO HIDROGEOLOGICO SECTOR PIEDRA COLGADA - ANGOSTURA

RESUMEN BALANCE MASICO

PASADA N° 1

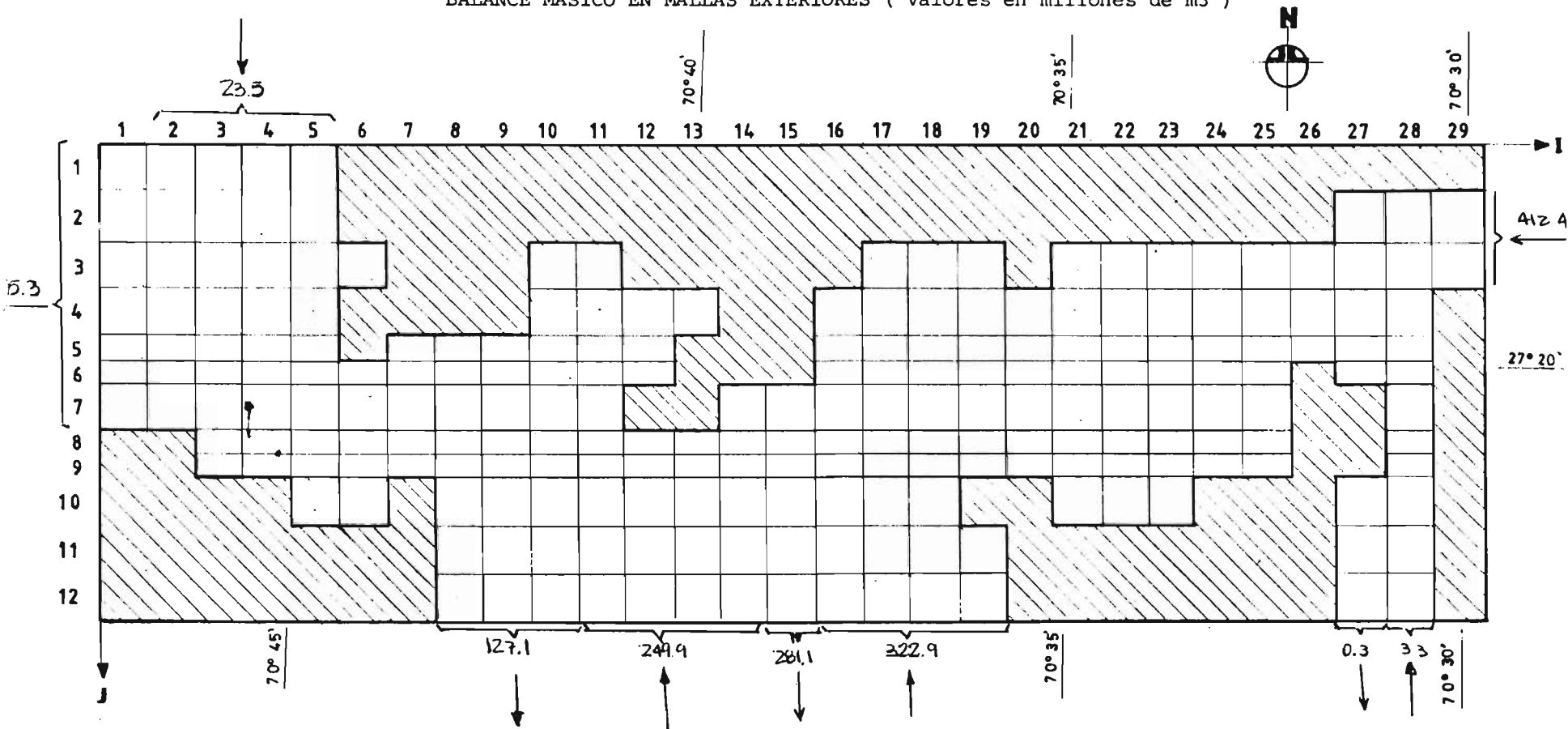
VALORES EN MILLONES M3

[illegible]

MODELO HIDROGEOLOGICO SECTOR: PIEDRA COLGADA - ANGOSTURA

PASADA N° 1

BALANCE MASICO EN MALLAS EXTERIORES (Valores en millones de m³)



LAMINA N° 6

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

RESUMEN BALANCE MASICO

PASADA Nº 2

VALORES EN MILLONES M3

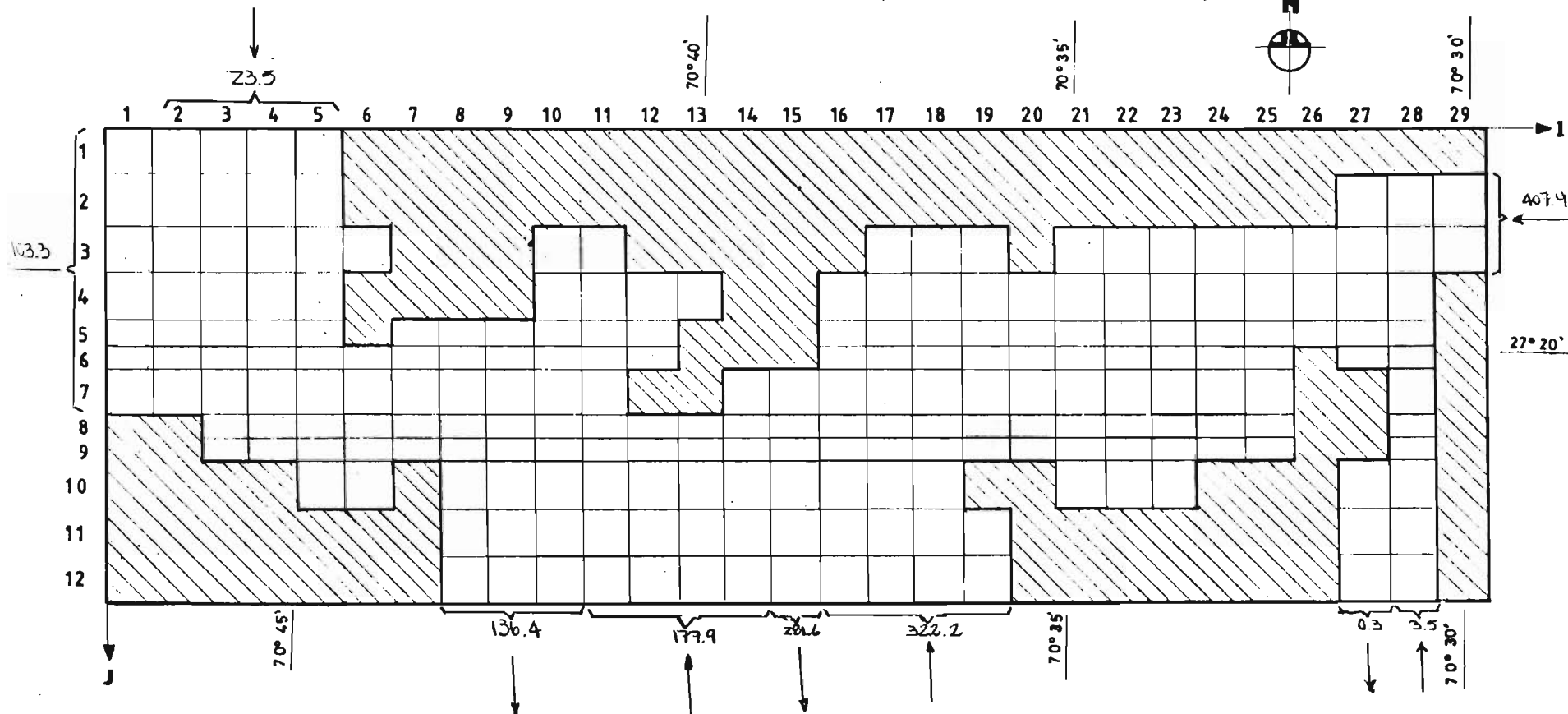
ANO	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	TOTAL PERIODO
MALLAS EXTERIORES	20.45	16.59	16.44	16.52	16.54	16.72	16.76	16.53	16.27	16.56	16.63	16.80	15.81	15.87	16.38	16.78	16.49	16.85	15.92	16.54	16.64	15.80	16.47	15.98	15.25	413.60
RIO	-8.86	-11.18	-11.30	-11.30	-11.29	-11.23	-11.21	-11.08	-11.00	-10.89	-10.86	-10.77	-10.75	-10.76	-10.38	-10.20	-10.10	-9.98	-9.75	-9.64	-9.61	-9.72	-10.32	-11.19	-11.39	-264.75
VERTIENTES	-4.36	-10.51	-11.29	-11.28	-11.27	-11.03	-10.91	-10.53	-10.25	-9.91	-9.74	-9.51	-9.33	-9.33	-8.52	-7.92	-7.76	-7.53	-7.18	-6.82	-6.77	-6.86	-7.77	-10.02	-11.16	-227.55
ALMACENAMIENTO	12.67	1.22	-1.24	-1.14	-1.08	-1.25	-1.07	-1.49	-1.32	-1.34	-1.04	-1.32	-1.09	.00	-1.12	-1.38	-1.49	-1.36	-1.56	-1.26	-1.18	.68	2.75	2.52	.41	13.51
INF.CANALES MATRICES	4.38	4.38	4.38	4.38	4.38	3.95	3.95	3.51	3.51	3.07	3.07	2.63	2.19	2.19	1.75	1.32	1.32	.88	.44	.44	.44	.44	2.19	4.38	4.38	67.95
INF.CANALES SECUNDARIOS	1.61	1.61	1.61	1.61	1.61	1.45	1.45	1.29	1.29	1.13	1.13	.97	.81	.81	.64	.48	.48	.32	.16	.16	.16	.16	.81	1.61	1.61	24.99
INF.RIEGO FRUTALES	.85	.85	.85	.85	.85	.85	.85	.85	.85	.85	.85	.85	.85	.85	.85	.85	.85	.85	.85	.85	.85	.85	.85	.85	.85	21.13
INF.RIEGO HORTALIZAS	.81	.81	.81	.81	.81	.73	.73	.65	.65	.57	.57	.49	.41	.41	.32	.24	.24	.16	.08	.08	.08	.08	.41	.81	.81	12.57
BOMBEO 1962/82	-3.24	-3.24	-3.24	-3.24	-3.24	-3.24	-3.24	-3.24	-3.24	-3.24	-3.24	-3.24	-1.62	-1.62	-1.62	-1.62	-1.62	-1.62	-1.62	-1.62	-1.62	.00	.00	.00	.00	-52.48
BOMBEO 1976/86	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-1.75	-1.75	-1.75	-1.75	-1.75	-1.75	-1.75	-1.75	-1.75	-1.75	-1.75	-19.25
BOMBEO 1962/86	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50	-12.50
BALANCE TOTAL	-1.53	-2.40	-2.01	-2.01	-2.03	-2.05	-2.06	-2.04	-2.11	-2.02	-2.07	-1.97	-2.05	-2.09	-1.71	-1.94	-1.86	-1.96	-1.79	-2.00	-1.90	-2.18	-2.37	-2.35	-2.31	-50.80

VALORES POSITIVOS INDICAN ENTRADAS AL ACUIFERO

MODELO HIDROGEOLOGICO SECTOR: PIEDRA COLGADA - ANGOSTURA

PASADA N° 2.-

BALANCE MASICO EN MALLAS EXTERIORES (Valores en millones de m³)



LAMINA N° 6

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

RESUMEN BALANCE MASICO

PASADA N° 3

VALORES EN MILLONES M3

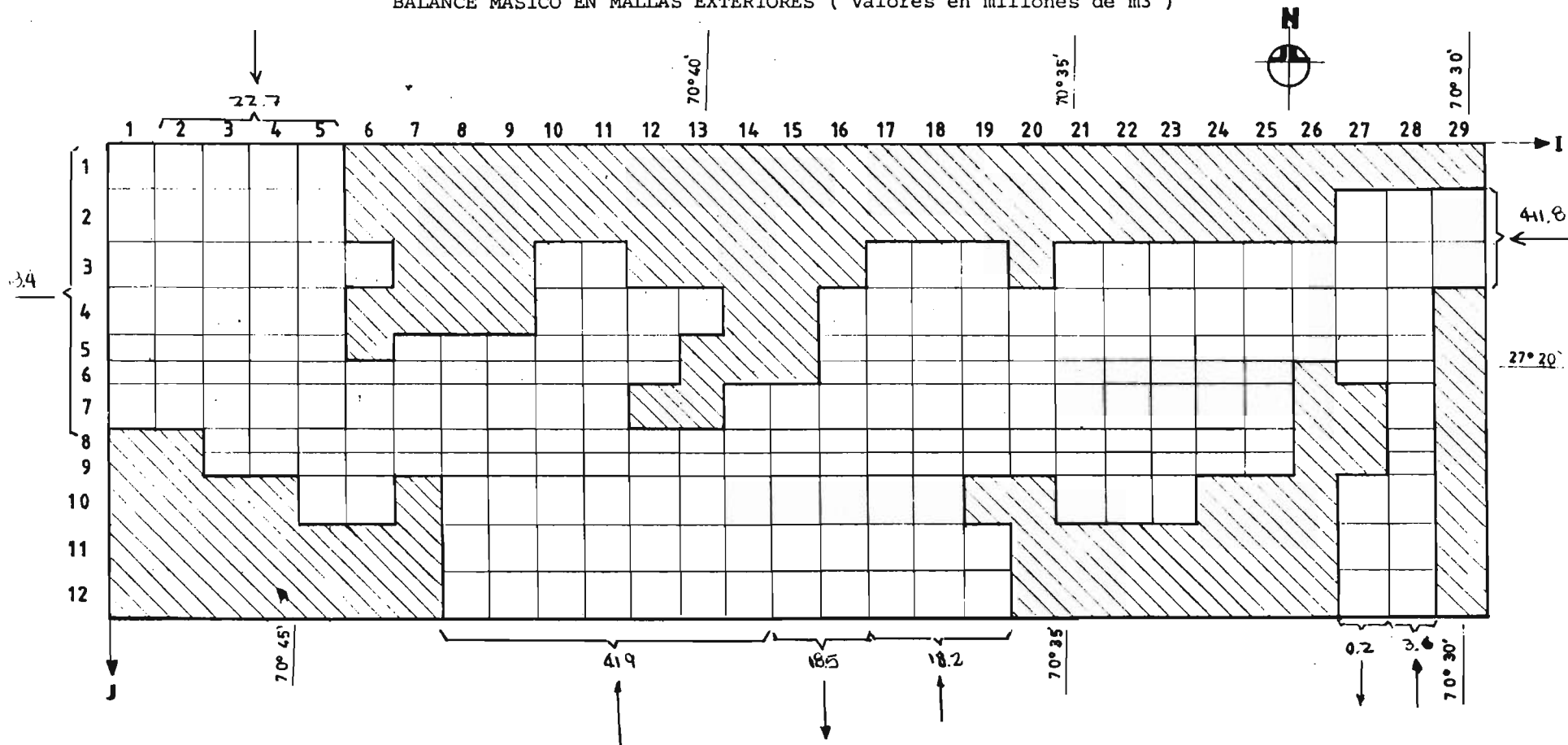
ANO	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	TOTAL PERIODO
MALLAS EXTERIORES	18.71	18.06	18.04	18.07	18.11	18.09	18.13	17.73	17.63	18.03	18.19	18.25	17.10	17.17	17.49	17.36	16.78	16.71	16.09	16.03	15.82	15.17	17.32	18.39	17.46	435.95
RIO	-11.22	-14.86	-15.32	-15.36	-15.35	-15.39	-15.35	-15.21	-14.78	-14.35	-14.13	-14.06	-14.21	-14.21	-13.74	-13.31	-13.06	-12.90	-12.73	-12.57	-12.45	-12.67	-13.24	-14.25	-14.82	-349.54
VERTIENTES	-2.98	-6.44	-6.88	-6.94	-6.95	-7.03	-7.00	-6.85	-6.29	-5.70	-5.39	-5.30	-5.37	-5.41	-5.07	-4.67	-4.42	-4.23	-4.06	-3.88	-3.75	-3.86	-4.34	-5.10	-5.81	-133.70
ALMACENAMIENTO	7.83	.81	-.12	-.16	-.13	.01	-.10	-.33	-.79	-.58	-.31	-.10	.17	-.05	-.76	-.80	-.83	-.52	-.80	-.52	-.46	.68	2.33	2.16	.73	7.35
INF.CANALES MATRICES	2.24	2.24	2.24	2.24	2.24	2.34	2.21	2.16	1.64	1.20	1.03	1.03	1.03	.90	.90	.63	.63	.63	.63	.63	.63	.80	1.03	1.25	1.58	34.07
INF.CANALES SECUNDARIOS	1.92	1.92	1.92	1.92	1.92	2.00	1.90	1.85	1.41	1.03	.88	.88	.88	.77	.77	.54	.54	.54	.54	.54	.54	.69	.88	1.07	1.35	29.23
INF.RIEGO FRUTALES	.44	.44	.44	.44	.44	.51	.51	.51	.51	.51	.51	.51	.51	.51	.51	.51	.51	.51	.51	.51	.51	.51	.51	.51	.53	12.45
INF.RIEGO HORTALIZAS	.12	.12	.12	.12	.12	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.25	.37	.50	.68	4.81
INF.RIEGO PRADERAS	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	.68	.33	.20	.20	.20	.20	.20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	10.14
INF.RIEGO CEREALES	.19	.19	.19	.19	.19	.19	.19	.19	.12	.10	.06	.06	.06	.06	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.02
BOMBEO 1962/82	-3.24	-3.24	-3.24	-3.24	-3.24	-3.24	-3.24	-3.24	-3.24	-3.24	-3.24	-3.24	-1.62	-1.62	-1.62	-1.62	-1.62	-1.62	-1.62	-1.62	-1.62	.00	.00	.00	.00	-53.48
BOMBEO 1976/86	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-1.75	-1.75	-1.75	-1.75	-1.75	-1.75	-1.75	-1.75	-1.75	-1.75	-1.75	-19.25
BOMBEO 1962/86	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-.50	-12.50
BALANCE TOTAL	-1.13	-1.85	-1.85	-1.88	-1.87	-1.89	-1.89	-1.86	-1.87	-1.86	-1.93	-1.92	-1.93	-1.93	-1.84	-1.87	-1.90	-1.93	-1.93	-1.94	-1.96	-2.04	-2.04	-2.05	-2.00	-47.15

VALORES POSITIVOS INDICAN ENTRADAS AL ACUIFERO

MODELO HIDROGEOLOGICO SECTOR: PIEDRA COLGADA - ANGOSTURA

PASADA N° 3.-

BALANCE MASICO EN MALLAS EXTERIORES (Valores en millones de m³)



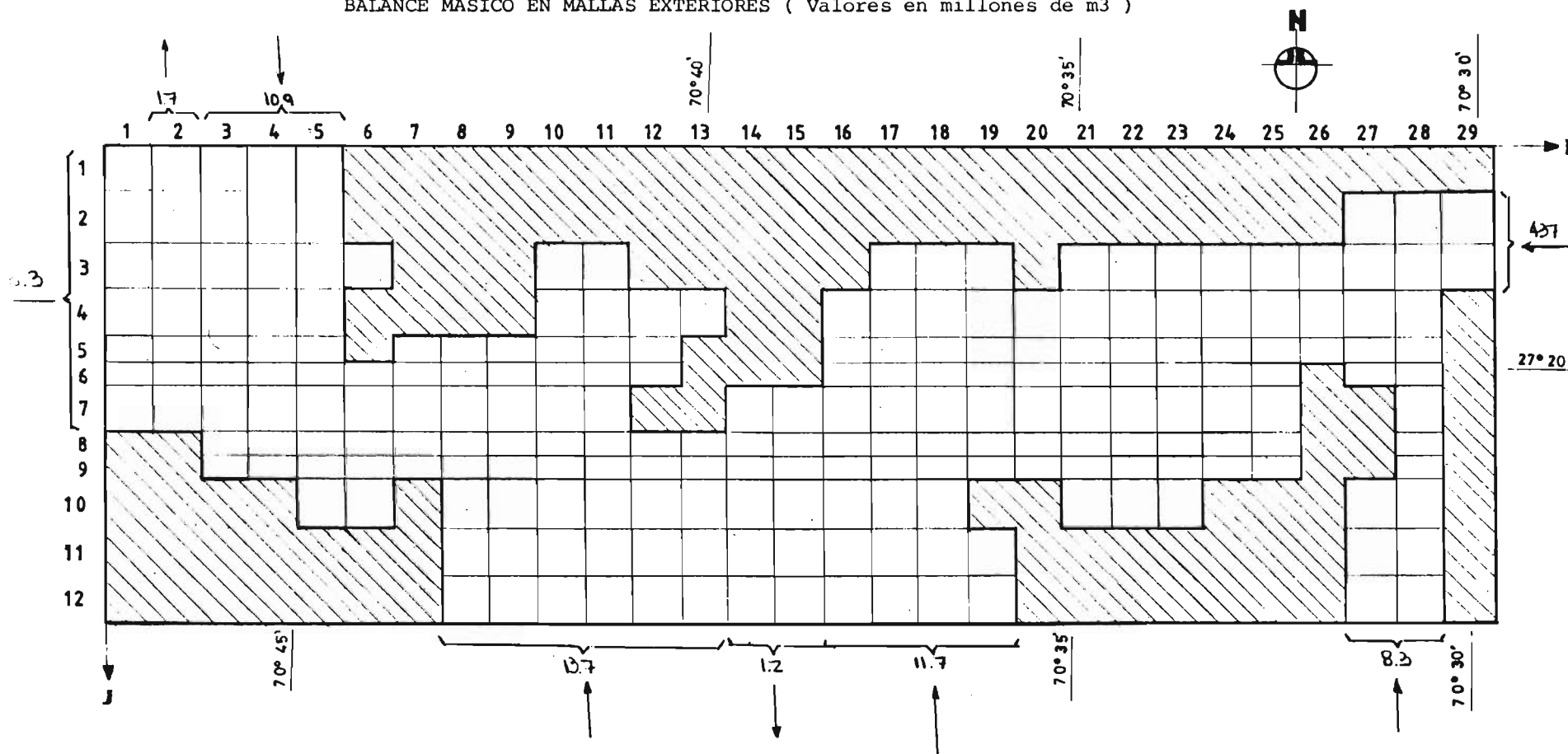
LAMINA N° 6

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

MODELO HIDROGEOLOGICO SECTOR: PIEDRA COLGADA - ANGOSTURA

PASADA N° 4.-

BALANCE MASICO EN MALLAS EXTERIORES (Valores en millones de m3)



LAMINA N° 6

ALAMOS Y PERALTA
INGENIEROS CONSULTORES LTDA.

MODELO HIDROGEOLOGICO SECTOR PIEDRA COLGADA - ANGOSTURA

RESUMEN BALANCE MASICO

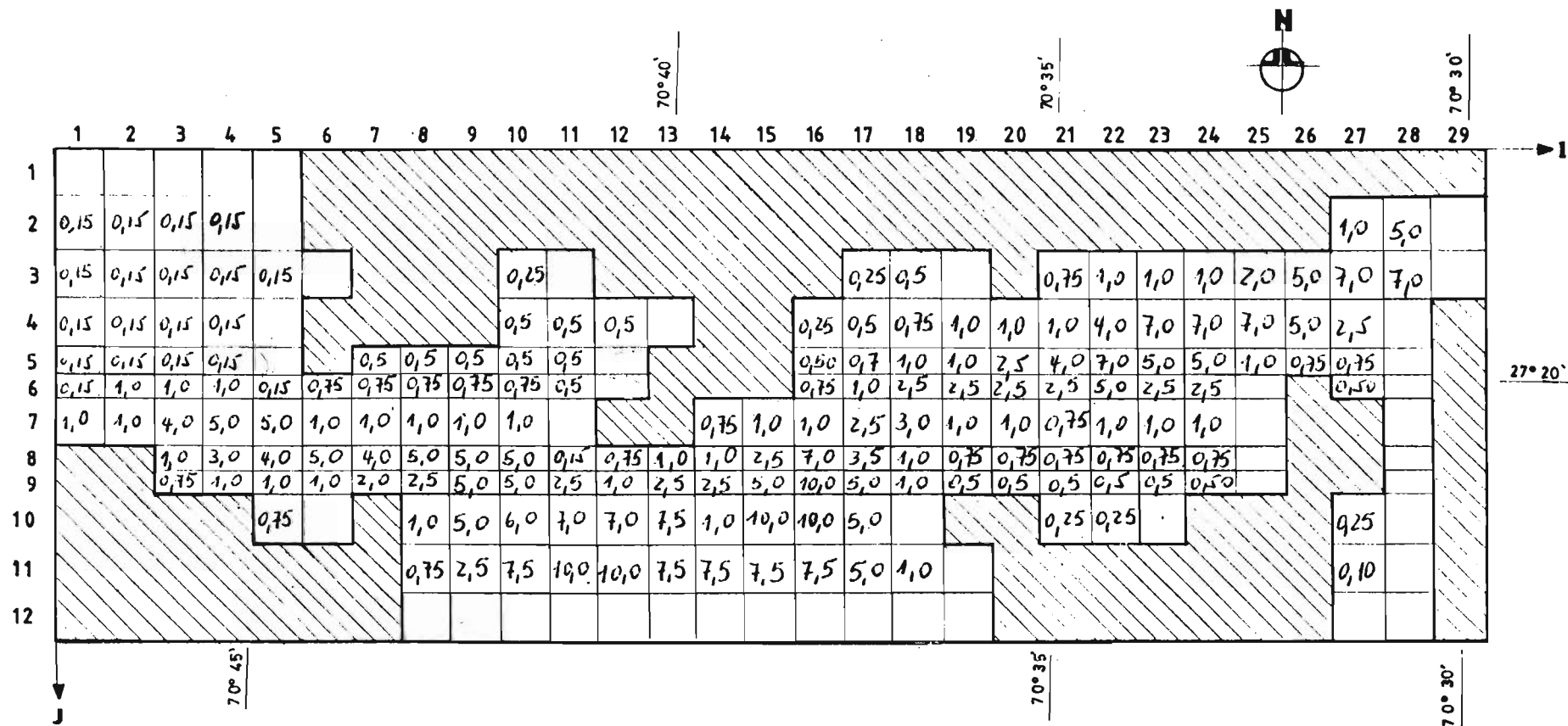
PASADA N° 4

VALORES EN MILLONES M3[illegible]

MODELO HIDROGEOLOGICO SECTOR: PIEDRA COLGADA - ANGOSTURA

PASADA N°1

TRANSMISIVIDAD I (mler $m^3/dia/m$)



LAMINA N° 6

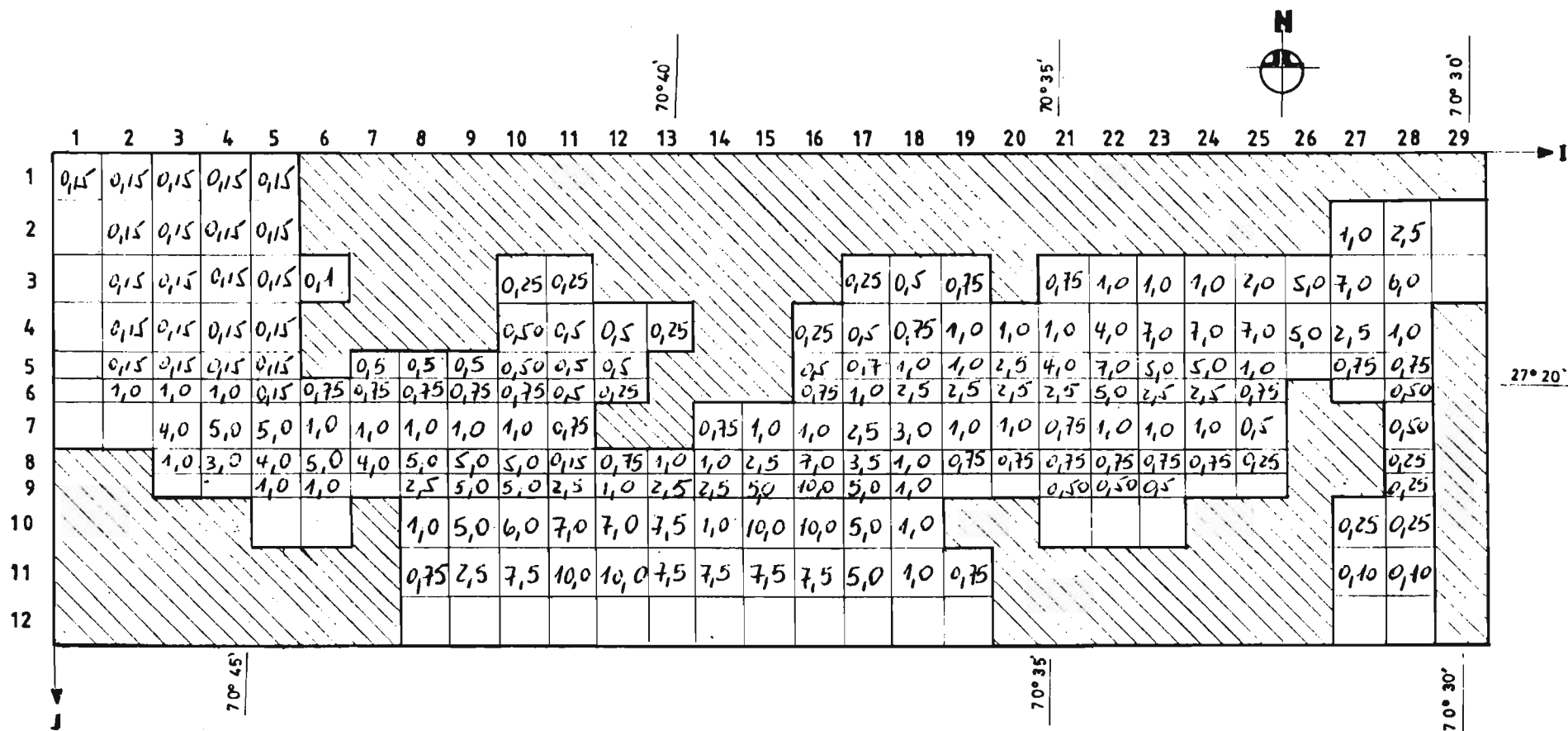
ALAMOS Y PERALTA

INGENIEROS CONSULTORES LTDA.

MODELO HIDROGEOLOGICO SECTOR: PIEDRA COLGADA - ANGOSTURA

PASADA N° 1

TRANSMISIVIDAD J (miles m^3 /dia/m).



LAMINA N° 6

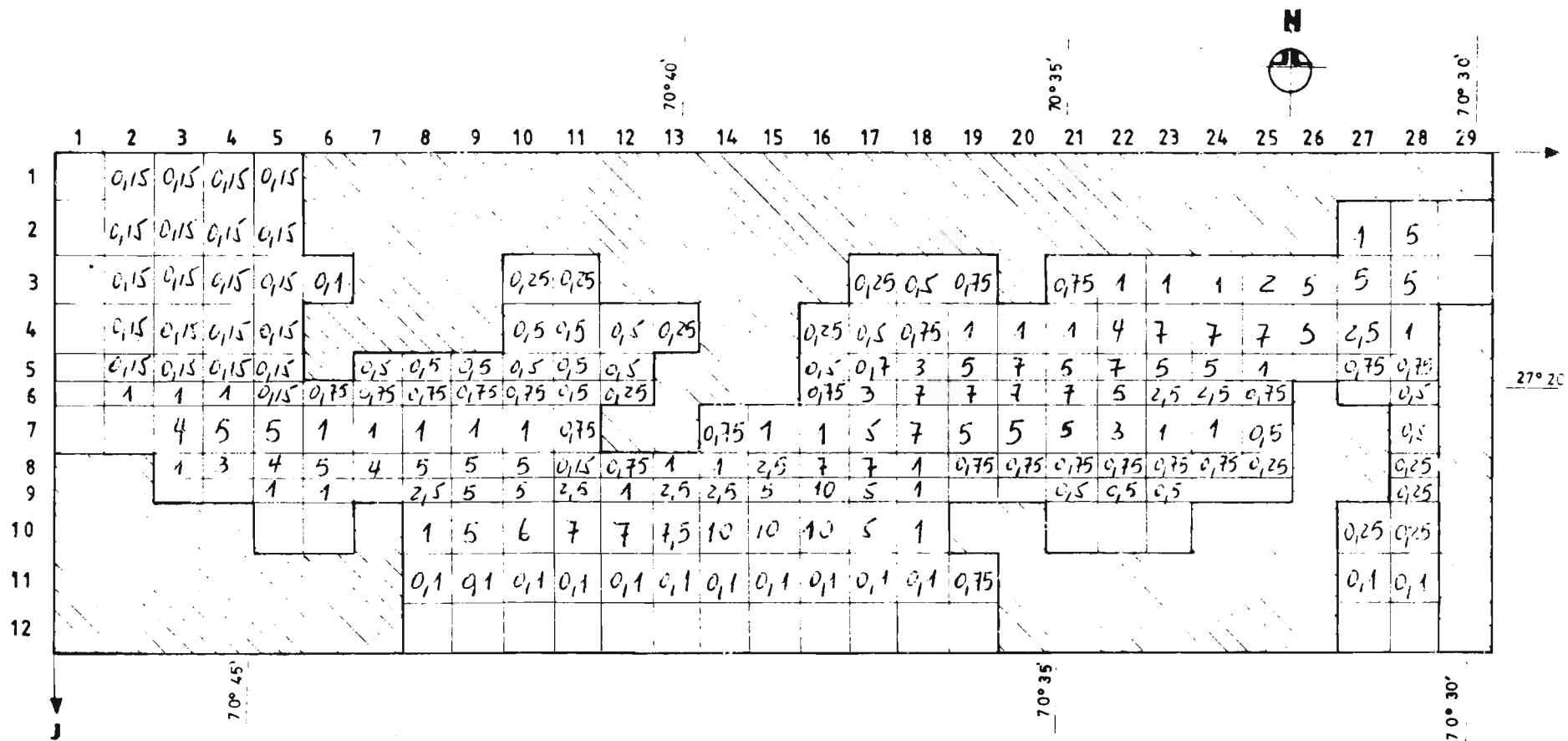
ALAMOS Y PERALTA

INGENIEROS CONSULTORES LTDA.

MODELO HIDROGEOLOGICO SECTOR: PIEDRA COLGADA - ANGOSTURA

PASADA N° 4

TRANSMISIVIDAD J (miles m³/dia/m).



LAMINA N° 6

ALAMOS Y PERALTA

INGENIEROS CONSULTORES

AMOS Y PERALTA Ingenieros Consultores Ltda.

CONTRASTE PIEZOMETRICO

SECTOR N° 6

PASADA N° 1

NIVEL MEDIO	NIVEL SIMULADO	218	220	222	224	226	228	230	232	234	236	ANO
218.60	221.79	1	1	1	1	1	1	1	1	1	1	62
218.30	222.12	1	1	1	1	1	1	1	1	1	1	63
.00	222.10	1	1	1	1	1	1	1	1	1	1	64
.00	222.10	1	1	1	1	1	1	1	1	1	1	65
.00	222.10	1	1	1	1	1	1	1	1	1	1	66
.00	222.01	1	1	1	1	1	1	1	1	1	1	67
.00	222.00	1	1	1	1	1	1	1	1	1	1	68
.00	221.73	1	1	1	1	1	1	1	1	1	1	69
.00	221.56	1	1	1	1	1	1	1	1	1	1	70
.00	221.45	1	1	1	1	1	1	1	1	1	1	71
.00	221.46	1	1	1	1	1	1	1	1	1	1	72
.00	221.31	1	1	1	1	1	1	1	1	1	1	73
.00	221.30	1	1	1	1	1	1	1	1	1	1	74
.00	221.26	1	1	1	1	1	1	1	1	1	1	75
.00	220.42	1	1	1	1	1	1	1	1	1	1	76
.00	220.18	1	1	1	1	1	1	1	1	1	1	77
.00	219.96	1	1	1	1	1	1	1	1	1	1	78
.00	219.76	1	1	1	1	1	1	1	1	1	1	79
.00	219.06	1	1	1	1	1	1	1	1	1	1	80
.00	218.87	1	1	1	1	1	1	1	1	1	1	81
.00	218.81	1	1	1	1	1	1	1	1	1	1	82
.00	219.09	1	1	1	1	1	1	1	1	1	1	83
.00	220.39	1	1	1	1	1	1	1	1	1	1	84
.00	221.70	1	1	1	1	1	1	1	1	1	1	85
.00	221.89	1	1	1	1	1	1	1	1	1	1	86

PASADA N° 1

NIVEL MEDIO	NIVEL SIMULADO	218	220	222	224	226	228	230	232	234	236	238	240	242	244	246	248	250	252	254	256	ANO
218.60	219.26	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	62
218.30	219.35	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	63
.00	219.54	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	64
.00	219.66	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	65
.00	219.72	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	66
.00	219.84	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	67
.00	219.79	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	68
.00	219.53	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	69
.00	218.75	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	70
.00	218.10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	71
.00	217.69	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	72
.00	217.52	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	73
.00	217.66	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	74
.00	217.62	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	75
.00	216.57	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	76
.00	215.82	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	77
.00	215.11	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	78
.00	214.64	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	79
.00	214.01	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	80
.00	213.57	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	81
.00	213.17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	82
.00	213.61	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	83
.00	215.24	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	84
.00	216.99	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	85
.00	217.06	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	86

o=NIVEL MEDIO
A=NIVELES MEDIO Y SIMULADO COINCIDEN

o=NIVEL SIMULADO
E=VALOR FUERA DEL RANGO DEL DIBUJO

PASADA N° 1

NIVEL MEDIDO	NIVEL SIMULADO	229	231	233	235	237	239	241	243	245	247	ANO
.00	230.59	I	I	I	I	I	I	I	I	I	I	62
.00	230.79	I	I	I	I	I	I	I	I	I	I	63
.00	230.75	I	I	I	I	I	I	I	I	I	I	64
.00	230.75	I	I	I	I	I	I	I	I	I	I	65
233.90	230.75	I	I	I	I	I	I	I	I	I	I	66
233.80	230.69	I	I	I	I	I	I	I	I	I	I	67
.00	230.68	I	I	I	I	I	I	I	I	I	I	68
235.50	230.30	I	I	I	I	I	I	I	I	I	I	69
235.20	229.97	I	I	I	I	I	I	I	I	I	I	70
235.30	229.90	I	I	I	I	I	I	I	I	I	I	71
234.60	229.91	I	I	I	I	I	I	I	I	I	I	72
234.80	229.81	I	I	I	I	I	I	I	I	I	I	73
.00	229.68	I	I	I	I	I	I	I	I	I	I	74
.00	229.65	I	I	I	I	I	I	I	I	I	I	75
.00	229.40	I	I	I	I	I	I	I	I	I	I	76
.00	229.27	I	I	I	I	I	I	I	I	I	I	77
.00	228.92	I	I	I	I	I	I	I	I	I	I	78
.00	228.81	I	I	I	I	I	I	I	I	I	I	79
.00	227.76	I	I	I	I	I	I	I	I	I	I	80
.00	227.63	I	I	I	I	I	I	I	I	I	I	81
.00	227.59	I	I	I	I	I	I	I	I	I	I	82
.00	227.84	I	I	I	I	I	I	I	I	I	I	83
.00	229.42	I	I	I	I	I	I	I	I	I	I	84
.00	230.85	I	I	I	I	I	I	I	I	I	I	85
.00	231.01	I	I	I	I	I	I	I	I	I	I	86

PASADA N° 4

NIVEL MEDIDO	NIVEL SIMULADO	226	228	230	232	234	236	238	240	242	244	246	248	250	252	254	256	258	260	262	264	ANO
.00	228.24	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	62
.00	228.25	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	63
.00	228.35	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	64
.00	228.42	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	65
233.90	228.46	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	66
233.80	228.52	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	67
.00	228.50	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	68
235.50	228.14	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	69
235.20	227.51	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	70
235.30	227.16	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	71
234.60	226.94	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	72
234.80	226.84	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	73
.00	226.82	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	74
.00	226.80	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	75
.00	226.41	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	76
.00	225.79	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	77
.00	224.96	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	78
.00	224.47	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	79
.00	223.68	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	80
.00	223.21	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	81
.00	222.77	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	82
.00	223.12	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	83
.00	225.29	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	84
.00	227.35	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	85
.00	227.86	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	86

[illegible][illegible]

PASADA N°1

NIVEL MEDIDO	NIVEL SIMULADO	201	203	205	207	209	211	213	215	217	219	ANO
.00	207.48	I	I	I	I	I	I	I	I	I	I	62
.00	207.80	I	I	I	I	I	I	I	I	I	I	63
.00	207.83	I	I	I	I	I	I	I	I	I	I	64
203.00	207.83	I	I	I	I	I	I	I	I	I	I	65
202.80	207.83	I	I	I	I	I	I	I	I	I	I	66
.00	207.76	I	I	I	I	I	I	I	I	I	I	67
.00	207.76	I	I	I	I	I	I	I	I	I	I	68
202.40	207.67	I	I	I	I	I	I	I	I	I	I	69
202.10	207.64	I	I	I	I	I	I	I	I	I	I	70
202.30	207.58	I	I	I	I	I	I	I	I	I	I	71
202.20	207.58	I	I	I	I	I	I	I	I	I	I	72
201.70	207.49	I	I	I	I	I	I	I	I	I	I	73
.00	207.49	I	I	I	I	I	I	I	I	I	I	74
.00	207.47	I	I	I	I	I	I	I	I	I	I	75
.00	207.10	I	I	I	I	I	I	I	I	I	I	76
.00	206.93	I	I	I	I	I	I	I	I	I	I	77
.00	206.84	I	I	I	I	I	I	I	I	I	I	78
.00	206.70	I	I	I	I	I	I	I	I	I	I	79
.00	206.46	I	I	I	I	I	I	I	I	I	I	80
.00	206.36	I	I	I	I	I	I	I	I	I	I	81
.00	206.31	I	I	I	I	I	I	I	I	I	I	82
.00	206.42	I	I	I	I	I	I	I	I	I	I	83
.00	206.97	I	I	I	I	I	I	I	I	I	I	84
.00	207.61	I	I	I	I	I	I	I	I	I	I	85
.00	207.73	I	I	I	I	I	I	I	I	I	I	86

PASADA N°4

NIVEL MEDIDO	NIVEL SIMULADO	201	203	205	207	209	211	213	215	217	219	221	223	225	227	229	231	233	235	237	239	ANO
.00	202.58	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	62
.00	203.11	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	63
.00	203.46	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	64
203.00	203.64	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	65
202.80	203.71	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	66
.00	203.84	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	67
.00	203.77	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	68
202.40	203.64	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	69
202.10	203.11	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	70
202.30	202.54	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	71
202.20	202.13	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	72
201.70	201.92	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	73
.00	202.03	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	74
.00	201.98	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	75
.00	201.35	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	76
.00	200.73	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	77
.00	200.25	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	78
.00	199.86	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	79
.00	199.45	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	80
.00	199.11	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	81
.00	198.81	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	82
.00	199.04	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	83
.00	199.87	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	84
.00	200.97	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	85
.00	201.98	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	86

PASADA N° 1

NIVEL MEDIDO	NIVEL SIMULADO	233	235	237	239	241	243	245	247	249	251	ANO
.00	234.77	I	I	I	I	I	I	I	I	I	I	62
240.60	234.87	I	I	I	I	I	I	I	I	I	I	63
240.50	234.85	I	I	I	I	I	I	I	I	I	I	64
240.30	234.85	I	I	I	I	I	I	I	I	I	I	65
240.10	234.85	I	I	I	I	I	I	I	I	I	I	66
240.20	234.81	I	I	I	I	I	I	I	I	I	I	67
.00	234.80	I	I	I	I	I	I	I	I	I	I	68
240.20	234.37	I	I	I	I	I	I	I	I	I	I	69
239.90	233.96	I	I	I	I	I	I	I	I	I	I	70
239.80	233.92	I	I	I	I	I	I	I	I	I	I	71
239.40	233.92	I	I	I	I	I	I	I	I	I	I	72
.00	233.87	I	I	I	I	I	I	I	I	I	I	73
.00	233.58	I	I	I	I	I	I	I	I	I	I	74
.00	232.66	I	I	I	I	I	I	I	I	I	I	75
.30	232.53	I	I	I	I	I	I	I	I	I	I	76
.00	232.46	I	I	I	I	I	I	I	I	I	I	77
.00	232.04	I	I	I	I	I	I	I	I	I	I	78
.00	232.98	I	I	I	I	I	I	I	I	I	I	79
.00	231.73	I	I	I	I	I	I	I	I	I	I	80
.00	231.65	I	I	I	I	I	I	I	I	I	I	81
.00	231.63	I	I	I	I	I	I	I	I	I	I	82
.00	231.87	I	I	I	I	I	I	I	I	I	I	83
.00	233.64	I	I	I	I	I	I	I	I	I	I	84
.00	235.11	I	I	I	I	I	I	I	I	I	I	85
.00	235.20	I	I	I	I	I	I	I	I	I	I	86

PASADA N° 4

NIVEL MEDIDO	NIVEL SIMULADO	232	234	236	238	240	242	244	246	248	250	252	254	256	258	260	262	264	266	268	270	ANO
.00	233.75	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	62
240.60	233.74	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	63
240.50	233.79	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	64
240.30	233.83	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	65
240.30	233.84	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	66
240.20	233.88	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	67
.00	233.87	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	68
240.20	233.44	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	69
239.90	232.88	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	70
239.80	232.70	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	71
239.40	232.58	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	72
.00	232.53	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	73
.00	232.41	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	74
.00	232.40	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	75
.00	232.21	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	76
.00	231.65	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	77
.00	230.74	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	78
.00	230.24	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	79
.00	229.36	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	80
.00	228.87	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	81
.00	228.40	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	82
.00	228.71	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	83
.00	231.27	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	84
.00	233.54	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	85
.00	233.81	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	86

• NIVEL MEDIDO
• NIVEL MEDIDO FUERA DEL RANGO DEL DESEMPEÑO

• NIVEL SIMULADO
• NIVEL SIMULADO FUERA DEL RANGO DEL DESEMPEÑO

PASADA N° 1

NIVEL MEDIDO	NIVEL SIMULADO	235	237	239	241	243	245	247	249	251	253	ANO
237.10	237.76	1	1	1	1	1	1	1	1	1	1	62
.00	237.82	1	1	1	1	1	1	1	1	1	1	63
.00	237.81	1	1	1	1	1	1	1	1	1	1	64
236.90	237.81	1	1	1	1	1	1	1	1	1	1	65
.00	237.81	1	1	1	1	1	1	1	1	1	1	66
.00	237.79	1	1	1	1	1	1	1	1	1	1	67
.00	237.79	1	1	1	1	1	1	1	1	1	1	68
236.10	237.32	1	1	1	1	1	1	1	1	1	1	69
235.90	236.86	1	1	1	1	1	1	1	1	1	1	70
.00	236.84	1	1	1	1	1	1	1	1	1	1	71
.00	236.84	1	1	1	1	1	1	1	1	1	1	72
.00	236.82	1	1	1	1	1	1	1	1	1	1	73
.00	236.44	1	1	1	1	1	1	1	1	1	1	74
.00	236.43	1	1	1	1	1	1	1	1	1	1	75
.00	236.38	1	1	1	1	1	1	1	1	1	1	76
.00	236.35	1	1	1	1	1	1	1	1	1	1	77
.00	235.89	1	1	1	1	1	1	1	1	1	1	78
.00	235.86	1	1	1	1	1	1	1	1	1	1	79
.00	234.47	1	1	1	1	1	1	1	1	1	1	80
.00	234.43	1	1	1	1	1	1	1	1	1	1	81
.00	234.42	1	1	1	1	1	1	1	1	1	1	82
.00	234.51	1	1	1	1	1	1	1	1	1	1	83
.00	236.40	1	1	1	1	1	1	1	1	1	1	84
.00	237.89	1	1	1	1	1	1	1	1	1	1	85
.00	237.93	1	1	1	1	1	1	1	1	1	1	86

PASADA N° 4

NIVEL MEDIDO	NIVEL SIMULADO	235	237	239	241	243	245	247	249	251	253	255	257	259	261	263	265	267	269	271	273	ANO
237.10	236.47	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	62
.00	236.46	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	63
.00	236.49	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	64
236.90	236.51	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	65
.00	236.52	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	66
.00	236.54	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	67
.00	236.53	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	68
236.10	236.08	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	69
235.90	235.54	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	70
.00	235.44	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	71
.00	235.37	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	72
.00	235.34	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	73
.00	235.04	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	74
.00	235.04	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	75
.00	234.93	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	76
.00	234.40	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	77
.00	233.45	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	78
.00	232.95	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	79
.00	232.01	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	80
.00	231.52	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	81
.00	231.04	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	82
.00	231.20	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	83
.00	233.95	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	84
.00	236.31	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	85
.00	236.47	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	86

P A S A D A N° 1

NIVEL MEDIDO	NIVEL SIMULADO	218	220	222	224	226	228	230	232	234	236	ANO
218.10	219.28	10	0	1	1	1	1	1	1	1	1	62
.00	219.35	1	1	1	1	1	1	1	1	1	1	63
.00	219.54	1	1	1	1	1	1	1	1	1	1	64
.00	219.54	1	1	1	1	1	1	1	1	1	1	65
.00	219.54	1	1	1	1	1	1	1	1	1	1	66
.00	219.44	1	1	1	1	1	1	1	1	1	1	67
.00	219.44	1	1	1	1	1	1	1	1	1	1	68
.00	219.21	1	1	1	1	1	1	1	1	1	1	69
.00	219.06	1	1	1	1	1	1	1	1	1	1	70
.00	218.99	1	1	1	1	1	1	1	1	1	1	71
.00	219.01	1	1	1	1	1	1	1	1	1	1	72
.00	218.87	1	1	1	1	1	1	1	1	1	1	73
.00	218.98	1	1	1	1	1	1	1	1	1	1	74
.00	218.93	1	1	1	1	1	1	1	1	1	1	75
.00	218.46	1	1	1	1	1	1	1	1	1	1	76
.00	218.24	1	1	1	1	1	1	1	1	1	1	77
.00	218.04	1	1	1	1	1	1	1	1	1	1	78
.00	217.87	1	1	1	1	1	1	1	1	1	1	79
.00	217.26	1	1	1	1	1	1	1	1	1	1	80
.00	217.08	1	1	1	1	1	1	1	1	1	1	81
.00	217.03	1	1	1	1	1	1	1	1	1	1	82
.00	217.38	1	1	1	1	1	1	1	1	1	1	83
.00	218.50	1	1	1	1	1	1	1	1	1	1	84
.00	219.61	1	1	1	1	1	1	1	1	1	1	85
.00	219.80	1	1	1	1	1	1	1	1	1	1	86

P A S A D A N° 4

NIVEL MEDIDO	NIVEL SIMULADO	216	218	220	222	224	226	228	230	232	234	236	238	240	242	244	246	248	250	252	254	ANO
218.10	216.27	10	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	62
.00	216.40	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	63
.00	216.61	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	64
.00	216.74	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	65
.00	216.80	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	66
.00	216.91	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	67
.00	216.87	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	68
.00	216.64	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	69
.00	215.96	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	70
.00	215.37	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	71
.00	214.98	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	72
.00	214.80	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	73
.00	215.03	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	74
.00	215.00	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	75
.00	214.30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	76
.00	213.61	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	77
.00	212.93	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	78
.00	212.47	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	79
.00	211.88	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	80
.00	211.45	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	81
.00	211.07	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	82
.00	211.55	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	83
.00	213.02	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	84
.00	214.64	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	85
.00	215.50	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	86

MODELO HIDROLOGICO ANUAL RESULTADOS DE LA PASADA DE AJUSTE FINAL

SIMULACION EMBALSE LAUTARO

AND 71					
VOL.INICIAL EMBALSE (Mm3)=	0.00				
VOL.FINAL EMBALSE (Mm3)=	0.00				
Rio Copiapo Antes Embalse Lautaro (l/s)=	682.32	Rio Copiapo Despues Embalse Lautaro (l/s)=	629.64		
Inf.Embalse (Mm3)=	1.07	Evap.Embalse (Mm3)=	0.59	Filt.Embalse (Mm3)=	0.00
AND 72					
VOL.INICIAL EMBALSE (Mm3)=	0.00				
VOL.FINAL EMBALSE (Mm3)=	1.90				
Rio Copiapo Antes Embalse Lautaro (l/s)=	2270.41	Rio Copiapo Despues Embalse Lautaro (l/s)=	2066.18		
Inf.Embalse (Mm3)=	3.54	Evap.Embalse (Mm3)=	1.00	Filt.Embalse (Mm3)=	0.00
AND 73					
VOL.INICIAL EMBALSE (Mm3)=	1.90				
VOL.FINAL EMBALSE (Mm3)=	0.10				
Rio Copiapo Antes Embalse Lautaro (l/s)=	1333.68	Rio Copiapo Despues Embalse Lautaro (l/s)=	1199.25		
Inf.Embalse (Mm3)=	4.88	Evap.Embalse (Mm3)=	1.16	Filt.Embalse (Mm3)=	0.00
AND 74					
VOL.INICIAL EMBALSE (Mm3)=	0.10				
VOL.FINAL EMBALSE (Mm3)=	0.50				
Rio Copiapo Antes Embalse Lautaro (l/s)=	1064.19	Rio Copiapo Despues Embalse Lautaro (l/s)=	926.09		
Inf.Embalse (Mm3)=	3.02	Evap.Embalse (Mm3)=	0.93	Filt.Embalse (Mm3)=	0.00
AND 75					
VOL.INICIAL EMBALSE (Mm3)=	0.50				
VOL.FINAL EMBALSE (Mm3)=	0.00				
Rio Copiapo Antes Embalse Lautaro (l/s)=	1027.61	Rio Copiapo Despues Embalse Lautaro (l/s)=	931.82		
Inf.Embalse (Mm3)=	2.64	Evap.Embalse (Mm3)=	0.88	Filt.Embalse (Mm3)=	0.00
AND 76					
VOL.INICIAL EMBALSE (Mm3)=	0.00				
VOL.FINAL EMBALSE (Mm3)=	0.10				
Rio Copiapo Antes Embalse Lautaro (l/s)=	920.19	Rio Copiapo Despues Embalse Lautaro (l/s)=	872.58		
Inf.Embalse (Mm3)=	0.87	Evap.Embalse (Mm3)=	0.53	Filt.Embalse (Mm3)=	0.00
AND 77					
VOL.INICIAL EMBALSE (Mm3)=	0.10				
VOL.FINAL EMBALSE (Mm3)=	0.00				
Rio Copiapo Antes Embalse Lautaro (l/s)=	965.19	Rio Copiapo Despues Embalse Lautaro (l/s)=	905.81		
Inf.Embalse (Mm3)=	1.33	Evap.Embalse (Mm3)=	0.64	Filt.Embalse (Mm3)=	0.00
AND 78					
VOL.INICIAL EMBALSE (Mm3)=	0.00				
VOL.FINAL EMBALSE (Mm3)=	0.00				
Rio Copiapo Antes Embalse Lautaro (l/s)=	956.19	Rio Copiapo Despues Embalse Lautaro (l/s)=	911.75		
Inf.Embalse (Mm3)=	0.87	Evap.Embalse (Mm3)=	0.53	Filt.Embalse (Mm3)=	0.00
AND 79					
VOL.INICIAL EMBALSE (Mm3)=	0.00				
VOL.FINAL EMBALSE (Mm3)=	1.00				
Rio Copiapo Antes Embalse Lautaro (l/s)=	682.32	Rio Copiapo Despues Embalse Lautaro (l/s)=	595.92		
Inf.Embalse (Mm3)=	1.13	Evap.Embalse (Mm3)=	0.60	Filt.Embalse (Mm3)=	0.00

SIMULACION EMBALSE LAUTARO

AND 62				
VOL.INICIAL EMBALSE (Mm3)=	0.30			
VOL.FINAL EMBALSE (Mm3)=	0.00			
Rio Copiapo Antes Embalse Lautaro (l/s)=	1412.30	Rio Copiapo Despues Embalse Lautaro (l/s)=	1342.28	
Inf.Embalse (Mm3)=	1.78	Evap.Embalse (Mm3)=	0.73	Filt.Embalse (Mm3)= 0.00
AND 63				
VOL.INICIAL EMBALSE (Mm3)=	0.00			
VOL.FINAL EMBALSE (Mm3)=	2.00			
Rio Copiapo Antes Embalse Lautaro (l/s)=	1480.59	Rio Copiapo Despues Embalse Lautaro (l/s)=	1253.31	
Inf.Embalse (Mm3)=	4.09	Evap.Embalse (Mm3)=	1.07	Filt.Embalse (Mm3)= 0.00
AND 64				
VOL.INICIAL EMBALSE (Mm3)=	2.00			
VOL.FINAL EMBALSE (Mm3)=	0.00			
Rio Copiapo Antes Embalse Lautaro (l/s)=	1069.14	Rio Copiapo Despues Embalse Lautaro (l/s)=	842.17	
Inf.Embalse (Mm3)=	7.71	Evap.Embalse (Mm3)=	1.45	Filt.Embalse (Mm3)= 0.00
AND 65				
VOL.INICIAL EMBALSE (Mm3)=	0.00			
VOL.FINAL EMBALSE (Mm3)=	0.00			
Rio Copiapo Antes Embalse Lautaro (l/s)=	1672.72	Rio Copiapo Despues Embalse Lautaro (l/s)=	1668.35	
Inf.Embalse (Mm3)=	0.00	Evap.Embalse (Mm3)=	0.14	Filt.Embalse (Mm3)= 0.00
AND 66				
VOL.INICIAL EMBALSE (Mm3)=	0.00			
VOL.FINAL EMBALSE (Mm3)=	0.00			
Rio Copiapo Antes Embalse Lautaro (l/s)=	1429.40	Rio Copiapo Despues Embalse Lautaro (l/s)=	1425.04	
Inf.Embalse (Mm3)=	0.00	Evap.Embalse (Mm3)=	0.14	Filt.Embalse (Mm3)= 0.00
AND 67				
VOL.INICIAL EMBALSE (Mm3)=	0.00			
VOL.FINAL EMBALSE (Mm3)=	0.10			
Rio Copiapo Antes Embalse Lautaro (l/s)=	1065.90	Rio Copiapo Despues Embalse Lautaro (l/s)=	1058.37	
Inf.Embalse (Mm3)=	0.00	Evap.Embalse (Mm3)=	0.14	Filt.Embalse (Mm3)= 0.00
AND 68				
VOL.INICIAL EMBALSE (Mm3)=	0.10			
VOL.FINAL EMBALSE (Mm3)=	0.00			
Rio Copiapo Antes Embalse Lautaro (l/s)=	947.19	Rio Copiapo Despues Embalse Lautaro (l/s)=	891.71	
Inf.Embalse (Mm3)=	1.23	Evap.Embalse (Mm3)=	0.62	Filt.Embalse (Mm3)= 0.00
AND 69				
VOL.INICIAL EMBALSE (Mm3)=	0.00			
VOL.FINAL EMBALSE (Mm3)=	0.00			
Rio Copiapo Antes Embalse Lautaro (l/s)=	664.32	Rio Copiapo Despues Embalse Lautaro (l/s)=	622.00	
Inf.Embalse (Mm3)=	0.81	Evap.Embalse (Mm3)=	0.52	Filt.Embalse (Mm3)= 0.00
AND 70				
VOL.INICIAL EMBALSE (Mm3)=	0.00			
VOL.FINAL EMBALSE (Mm3)=	0.00			
Rio Copiapo Antes Embalse Lautaro (l/s)=	574.32	Rio Copiapo Despues Embalse Lautaro (l/s)=	532.00	
Inf.Embalse (Mm3)=	0.81	Evap.Embalse (Mm3)=	0.52	Filt.Embalse (Mm3)= 0.00

SIMULACION EMBALSE LAUTARO

AND 80				
VOL.INICIAL EMBALSE (Mm3)=	1.00			
VOL.FINAL EMBALSE (Mm3)=	3.60			
Rio Copiapo Antes Embalse Lautaro (l/s)=	2175.73	Rio Copiapo Despues Embalse Lautaro (l/s)=	1857.26	
Inf.Embalse (Mm3)=	6.15	Evap.Embalse (Mm3)=	1.30	Filt.Embalse (Mm3)= 0.00
AND 81				
VOL.INICIAL EMBALSE (Mm3)=	3.60			
VOL.FINAL EMBALSE (Mm3)=	2.30			
Rio Copiapo Antes Embalse Lautaro (l/s)=	1697.50	Rio Copiapo Despues Embalse Lautaro (l/s)=	1130.10	
Inf.Embalse (Mm3)=	17.08	Evap.Embalse (Mm3)=	2.12	Filt.Embalse (Mm3)= 0.00
AND 82				
VOL.INICIAL EMBALSE (Mm3)=	2.30			
VOL.FINAL EMBALSE (Mm3)=	5.50			
Rio Copiapo Antes Embalse Lautaro (l/s)=	2173.72	Rio Copiapo Despues Embalse Lautaro (l/s)=	1476.61	
Inf.Embalse (Mm3)=	16.69	Evap.Embalse (Mm3)=	2.09	Filt.Embalse (Mm3)= 0.00
AND 83				
VOL.INICIAL EMBALSE (Mm3)=	5.50			
VOL.FINAL EMBALSE (Mm3)=	30.00			
Rio Copiapo Antes Embalse Lautaro (l/s)=	4278.40	Rio Copiapo Despues Embalse Lautaro (l/s)=	2315.19	
Inf.Embalse (Mm3)=	24.38	Evap.Embalse (Mm3)=	4.30	Filt.Embalse (Mm3)= 8.73
AND 84				
VOL.INICIAL EMBALSE (Mm3)=	30.00			
VOL.FINAL EMBALSE (Mm3)=	30.00			
Rio Copiapo Antes Embalse Lautaro (l/s)=	5335.49	Rio Copiapo Despues Embalse Lautaro (l/s)=	4449.18	
Inf.Embalse (Mm3)=	11.56	Evap.Embalse (Mm3)=	5.39	Filt.Embalse (Mm3)= 11.00
AND 85				
VOL.INICIAL EMBALSE (Mm3)=	30.00			
VOL.FINAL EMBALSE (Mm3)=	22.00			
Rio Copiapo Antes Embalse Lautaro (l/s)=	2291.83	Rio Copiapo Despues Embalse Lautaro (l/s)=	1682.76	
Inf.Embalse (Mm3)=	11.12	Evap.Embalse (Mm3)=	5.29	Filt.Embalse (Mm3)= 10.79
AND 86				
VOL.INICIAL EMBALSE (Mm3)=	22.00			
VOL.FINAL EMBALSE (Mm3)=	17.00			
Rio Copiapo Antes Embalse Lautaro (l/s)=	1993.80	Rio Copiapo Despues Embalse Lautaro (l/s)=	1464.36	
Inf.Embalse (Mm3)=	8.04	Evap.Embalse (Mm3)=	4.51	Filt.Embalse (Mm3)= 9.15

SECTOR MANFLAS JOQUERA Y PULIDO - PASTILLO

Valores en Millones M3

[illegible]

RESUMEN BALANCE MASICO

SECTOR: COPIAPO - PIEDRA COLGADA

Valores en Millones M3

ANO	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	TOTAL PERIODO
DEMANDA CULTIVOS	5.95	5.95	5.95	5.95	6.53	4.32	4.32	4.32	3.75	3.18	3.75	3.75	2.60	2.60	2.60	2.60	2.60	3.44	4.04	4.04	4.23	4.69	8.58	13.18	14.83	127.77
TASA RIEGO	12.14	12.14	12.14	12.14	13.29	7.98	7.98	7.98	6.83	5.69	6.83	6.83	4.54	4.54	4.54	4.54	4.54	5.58	6.34	6.34	6.58	7.15	12.94	19.16	21.65	220.42
INF.RIEGO PREDIAL	3.09	3.09	3.09	3.09	3.38	1.83	1.83	1.83	1.54	1.26	1.54	1.54	0.97	0.97	0.97	0.97	0.97	1.07	1.15	1.15	1.17	1.23	2.18	2.99	3.41	46.33
DERRAMES RIEGO	3.09	3.09	3.09	3.09	3.38	1.83	1.83	1.83	1.54	1.26	1.54	1.54	0.97	0.97	0.97	0.97	0.97	1.07	1.15	1.15	1.17	1.23	2.18	2.99	3.41	46.33
INF.CANALES SECUNDARIOS	0.93	0.93	0.93	0.93	1.02	0.61	0.61	0.61	0.52	0.43	0.52	0.52	0.35	0.35	0.35	0.35	0.35	0.43	0.48	0.48	0.50	0.55	0.99	1.46	1.65	16.85
INF.CANALES MATRICES	2.73	2.73	2.73	2.73	2.99	1.80	1.80	1.80	1.54	1.28	1.54	1.54	1.02	1.02	1.02	1.02	1.02	1.26	1.43	1.43	1.48	1.61	2.91	4.31	4.87	49.63
CAUDAL DEMANDADO POR C.MATRICES (m3/s)	0.50	0.50	0.50	0.50	0.55	0.33	0.33	0.33	0.28	0.23	0.28	0.28	0.19	0.19	0.19	0.19	0.19	0.23	0.26	0.26	0.27	0.30	0.53	0.79	0.89	
CAPACIDAD CANALES EN BOCATOMA (m3/s)	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	
BOMBEO ADICIONAL REQUERIDO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-4.58	-3.40	0.00	0.00	0.00	0.00	0.00	0.00	-7.98
BOMBEO EXISTENTE	4.05	4.05	4.05	4.05	4.05	4.05	4.05	4.05	4.05	4.05	4.05	4.05	4.05	4.05	6.72	6.72	6.72	6.72	6.72	6.72	3.10	3.10	3.10	6.18	6.18	
CAUDAL SALIDA RIO (m3/s)	0.29	0.31	0.31	0.33	0.37	0.38	0.34	0.26	0.23	0.19	0.21	0.21	0.21	0.19	0.16	0.14	0.12	0.07	0.03	0.05	0.03	0.21	1.62	1.19	0.45	
INFILTRACION RIO	4.00	4.00	3.00	6.00	7.00	8.00	6.00	4.00	1.00	0.00	2.00	3.00	3.00	3.00	2.00	1.00	0.00	0.00	0.00	1.00	2.00	15.00	69.00	26.00	9.00	179.00
INF.RIO/CAUDAL ENTRADA %	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.60	0.50	0.70	
RECUPERACION RIO	8.00	8.00	8.00	8.00	8.00	8.00	8.00	7.16	6.55	5.71	5.65	5.67	4.70	4.73	4.10	3.90	3.75	2.07	1.09	1.05	0.66	0.82	5.00	12.00	10.00	140.61

RESUMEN BALANCE MASICO

SECTOR MALPASO - COPIAPO

Valores en Millones M3

ANO	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	TOTAL PERIODO
DEMANDA CULTIVOS	4.61	4.61	4.61	4.61	4.61	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	5.98	5.98	5.98	5.98	5.98	6.34	6.59	6.14	6.79	6.47	145.93
TASA RIEGO	8.44	8.44	8.44	8.44	8.44	11.28	11.28	11.28	11.28	11.28	11.28	11.28	11.28	11.28	11.28	11.08	11.08	11.08	11.08	11.08	11.81	12.21	11.09	12.27	11.96	269.68
INF.RIEGO PREDIAL	1.92	1.92	1.92	1.92	1.92	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.55	2.55	2.55	2.55	2.55	2.73	2.81	2.47	2.74	2.75	61.87
DERRAMES RIEGO	1.92	1.92	1.92	1.92	1.92	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.55	2.55	2.55	2.55	2.55	2.73	2.81	2.47	2.74	2.75	61.87
INF.CANALES SECUNDARIOS	3.04	3.04	3.04	3.04	3.04	4.07	4.07	4.07	4.07	4.07	4.07	4.07	4.07	4.07	4.07	3.99	3.99	3.99	3.99	3.99	4.26	4.40	4.00	4.42	4.31	97.23
INF.CANALES MATRICES	3.17	3.17	3.17	3.17	3.17	4.23	4.23	4.23	4.23	4.23	4.23	4.23	4.23	4.23	4.23	4.15	4.15	4.15	4.15	4.15	4.43	4.58	4.16	4.60	4.48	101.09
CAUDAL DEMANDADO POR C.MATRICES (m3/s)	0.46	0.46	0.46	0.46	0.46	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.61	0.61	0.61	0.61	0.61	0.65	0.67	0.61	0.68	0.66	
CAPACIDAD CANALES EN BOCATOMA (m3/s)	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	
BOMBEO ADICIONAL REQUERIDO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	5.16	4.28	0.00	0.00	0.00	-1.85	0.78	2.00	2.03	3.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.18
BOMBEO EXISTENTE	0.00	0.00	0.00	0.00	0.00	0.00	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	6.15	6.15	6.15	6.15	6.15	1.20	0.00	0.00	0.72	0.72	0.72	
CAUDAL SALIDA RIO (m3/s)	0.67	0.69	0.65	0.77	0.88	0.71	0.61	0.49	0.34	0.25	0.37	0.40	0.34	0.32	0.28	0.23	0.19	0.16	0.16	0.31	0.34	0.96	4.18	2.42	1.31	
INFILTRACION RIO	5.00	5.00	3.00	8.00	9.00	4.00	1.00	0.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.00	4.00	20.00	28.00	22.00	18.00	134.00
INF.RIO/CAUDAL ENTRADA X	0.50	0.50	0.50	0.50	0.50	0.56	0.50	0.50	0.00	0.00	0.20	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.50	0.50	0.20	0.30	0.50	
RECUPERACION RIO	15.00	16.00	16.00	15.00	18.00	18.00	16.00	14.00	9.00	6.00	3.00	5.00	8.00	8.00	6.50	5.00	3.50	2.50	1.50	2.00	3.00	6.00	16.00	22.00	20.00	255.00

SECTOR PASTILLO - EMBALSE LAUTARO

Valores en Millones M3

[illegible]

RESUMEN BALANCE MASICO

SECTOR EMBALSE LAUTARO -- SAN ANTONIO

Valores en Millones M3

ANO	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	TOTAL PERIODO
DEMANDA CULTIVOS	2.94	2.94	2.94	2.94	2.94	4.05	4.05	4.05	4.05	4.05	4.05	4.05	4.05	4.05	4.05	4.02	4.02	4.62	5.58	6.63	7.60	8.09	10.66	14.31	16.77	137.52
TASA RIEGO	6.08	6.08	6.08	6.08	6.08	7.52	7.52	7.52	7.52	7.52	7.52	7.52	7.52	7.52	7.52	7.45	7.45	7.29	8.37	9.69	10.90	11.51	14.73	19.29	22.39	224.62
INF.RIEGO PREDIAL	1.57	1.57	1.57	1.57	1.57	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.72	1.72	1.33	1.40	1.53	1.65	1.71	2.03	2.49	2.81	43.55
DERRAMES RIEGO	1.57	1.57	1.57	1.57	1.57	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.72	1.72	1.33	1.40	1.53	1.65	1.71	2.03	2.49	2.81	43.55
INF.CANALES SECUNDARIOS	1.38	1.38	1.38	1.38	1.38	1.71	1.71	1.71	1.71	1.71	1.71	1.71	1.71	1.71	1.71	1.69	1.69	1.65	1.90	2.20	2.47	2.61	3.34	4.38	5.08	50.99
INF.CANALES MATRICES	1.86	1.86	1.86	1.86	1.86	2.31	2.31	2.31	2.31	2.31	2.31	2.31	2.31	2.31	2.31	2.28	2.28	2.23	2.57	2.97	3.34	3.53	4.52	5.92	6.87	68.90
CAUDAL DEMANDADO POR C.MATRICES (m3/s)	0.30	0.30	0.30	0.30	0.30	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.36	0.36	0.35	0.41	0.47	0.53	0.56	0.72	0.94	1.09	
CAPACIDAD CANALES EN BOCATOMA (m3/s)	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	
BOMBEO ADICIONAL REQUERIDO	0.00	0.00	1.35	0.00	0.00	1.52	2.71	5.26	6.12	5.19	0.00	-0.20	2.39	2.71	3.27	2.85	2.80	5.54	0.00	-1.26	-2.69	0.00	0.00	8.24	15.06	60.87
BOMBEO EXISTENTE	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.00	0.00	0.00	0.00	0.00	0.00	5.43	5.43	5.43	5.43	5.43	5.43	
CAUDAL SALIDA RIO (m3/s)	1.14	1.12	0.84	1.59	1.35	0.99	0.75	0.51	0.34	0.41	1.61	1.47	1.38	0.91	0.77	0.60	0.61	0.39	1.39	1.65	1.76	3.53	6.27	3.08	1.98	
INFILTRACION RIO	2.00	2.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	3.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	24.00
INF.RIO/CAUDAL ENTRADA X	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.00	0.00	0.05	0.05	0.05	0.05	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	
RECUPERACION RIO	5.00	7.00	9.00	9.00	9.00	9.00	5.00	3.50	0.00	0.00	0.00	20.00	23.00	9.00	5.00	0.00	0.00	0.00	0.00	27.00	23.00	56.00	80.00	60.00	30.00	390.50

RESUMEN BALANCE MASICO

SECTOR SAN ANTONIO - LA PUERTA

Valores en Millones M3

ANO	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	TOTAL PERIODO
DEMANDA CULTIVOS	1.79	1.79	1.79	1.79	1.79	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	2.44	2.93	3.45	3.94	4.16	5.43	7.23	8.46	69.34
TASA RIEGO	3.77	3.77	3.77	3.77	3.77	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.46	3.46	4.02	4.57	5.23	5.84	6.12	7.70	9.95	11.51	115.24
INF.RIEGO PREDIAL	0.99	0.99	0.99	0.99	0.99	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.79	0.82	0.89	0.95	0.98	1.13	1.36	1.53	22.95
DERRAMES RIEGO	0.99	0.99	0.99	0.99	0.99	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.79	0.82	0.89	0.95	0.98	1.13	1.36	1.53	22.95
INF.CANALES SECUNDARIOS	0.83	0.83	0.83	0.83	0.83	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.88	1.00	1.15	1.28	1.34	1.69	2.18	2.53	25.30
INF.CANALES MATRICES	1.01	1.01	1.01	1.01	1.01	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	1.07	1.22	1.40	1.56	1.64	2.06	2.66	3.08	30.85
CAUDAL DEMANDADO POR C.MATRICES (m3/s)	0.18	0.18	0.18	0.18	0.18	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.19	0.22	0.25	0.28	0.29	0.36	0.47	0.54	
CAPACIDAD CANALES EN BOCATOMA (m3/s)	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	
BOMBEO ADICIONAL REQUERIDO	0.21	0.33	1.62	0.00	0.00	0.43	1.58	2.70	3.53	3.20	0.00	0.00	0.00	0.85	1.50	2.30	2.28	4.15	0.24	0.00	-1.75	0.00	0.00	2.75	5.67	31.61
BOMBEO EXISTENTE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.09	2.09	2.09	2.09	2.09	2.09	
CAUDAL SALIDA RIO (m3/s)	1.60	1.58	1.35	2.05	1.81	1.48	1.27	1.07	0.92	0.92	1.92	2.04	1.85	1.40	1.29	1.08	0.99	0.77	1.81	2.29	2.32	4.13	7.03	3.84	2.76	
INFILTRACION RIO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
INF.RIO/CAUDAL ENTRADA %	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
RECUPERACION RIO	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	18.00	15.00	23.00	20.00	20.00	20.00	18.00	15.00	14.00	20.00	28.00	26.00	28.00	34.00	34.00	34.00	547.00

RESUMEN BALANCE MASICO

SECTOR LA FUERTA - MALPASO

Valores en Millones M3

ANO	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	TOTAL PERIODO
DEMANDA CULTIVOS	6.81	6.81	6.81	6.81	6.81	5.25	5.25	5.25	5.25	5.25	5.25	5.25	5.25	5.25	5.25	5.21	5.21	5.86	6.51	7.23	8.31	8.90	11.67	15.58	25.52	186.60
TASA RIEGO	12.79	12.79	12.79	12.79	12.79	9.22	9.22	9.22	9.22	9.22	9.22	9.22	9.22	9.22	9.22	9.11	9.11	9.04	9.42	9.94	11.36	12.17	15.69	20.65	33.18	295.80
INF.RIEGO PREDIAL	2.99	2.99	2.99	2.99	2.99	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.95	1.95	1.59	1.45	1.36	1.52	1.63	2.01	2.53	3.83	54.60
DERRAMES RIEGO	2.99	2.99	2.99	2.99	2.99	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.95	1.95	1.59	1.45	1.36	1.52	1.63	2.01	2.53	3.83	54.60
INF.CANALES SECUNDARIOS	1.07	1.07	1.07	1.07	1.07	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.76	0.76	0.75	0.79	0.83	0.95	1.02	1.31	1.72	2.77	24.68
INF.CANALES MATRICES	4.21	4.21	4.21	4.21	4.21	3.03	3.03	3.03	3.03	3.03	3.03	3.03	3.03	3.03	3.03	3.00	3.00	2.98	3.10	3.27	3.74	4.00	5.16	6.80	10.92	97.36
CAUDAL DEMANDADO POR C.MATRICES (m3/s)	0.57	0.57	0.57	0.57	0.57	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.40	0.42	0.45	0.51	0.55	0.70	0.93	1.49	
CAPACIDAD CANALES EN BOCATOMA (m3/s)	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	
BOMBEO ADICIONAL REQUERIDO	3.14	3.34	5.50	0.00	1.25	0.00	-0.34	1.53	2.91	2.95	0.00	0.00	0.00	0.00	-2.39	-0.63	0.22	2.16	0.00	0.00	0.00	0.00	0.00	0.00	12.49	32.12
BOMBEO EXISTENTE	0.00	0.00	0.00	0.00	0.00	0.00	1.52	1.52	1.52	1.52	1.52	1.52	1.52	3.43	3.43	3.43	3.43	3.43	3.43	8.72	8.72	8.72	8.72	8.72	8.72	
CAUDAL SALIDA RIO (m3/s)	0.78	0.77	0.67	0.97	1.02	0.84	0.71	0.53	0.40	0.43	0.90	0.83	0.64	0.48	0.40	0.35	0.35	0.29	0.63	0.89	0.93	1.97	5.06	2.98	1.79	
INFILTRACION RIO	14.00	14.00	12.00	19.00	16.00	13.00	11.00	10.00	10.00	8.00	19.00	26.00	27.00	19.00	20.00	17.00	15.00	12.00	26.00	35.00	34.00	68.00	60.00	18.00	25.00	548.00
INF.RIO/CAUDAL ENTRADA %	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.50	0.40	0.40	0.50	0.60	0.60	0.70	0.70	0.70	0.70	0.60	0.60	0.60	0.60	0.30	0.20	0.40	
RECUPERACION RIO	3.00	3.00	3.00	3.00	8.00	6.00	5.00	3.00	2.00	1.00	0.00	1.00	2.00	3.00	4.00	4.00	4.00	4.00	2.00	5.00	6.00	17.00	20.00	20.00	20.00	149.00

RESUMEN BALANCE MASICO

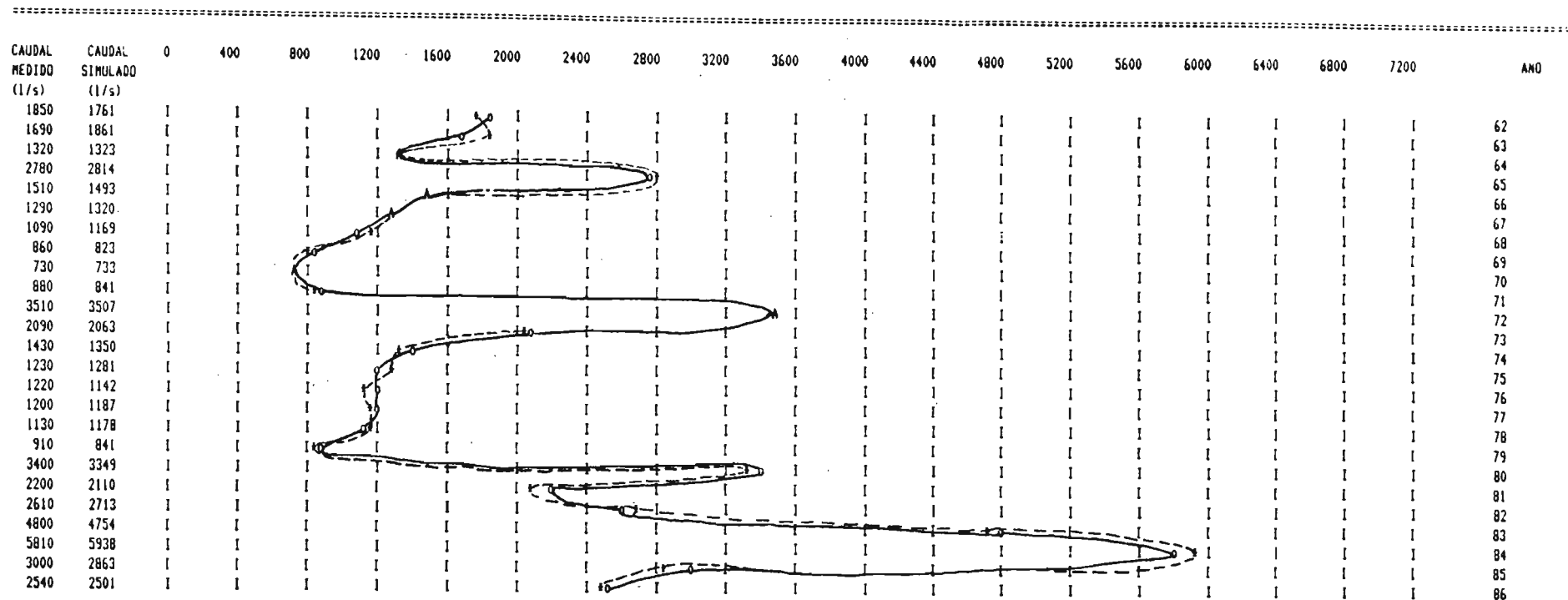
SECTOR PIEDRA COLGADA - ANGOSTURA

Valores en Millones M3

ANO	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	TOTAL PERIODO
DEMANDA CULTIVOS	4.67	4.67	4.67	4.67	4.67	4.88	4.63	4.53	3.46	2.54	2.17	2.17	2.17	1.92	1.92	1.37	1.37	1.37	1.37	1.37	1.37	1.76	2.26	2.76	3.54	72.25
TASA RIEGO	10.27	10.27	10.27	10.27	10.27	10.71	10.15	9.93	7.55	5.50	4.68	4.68	4.68	4.13	4.13	2.90	2.90	2.90	2.90	2.90	2.90	3.70	4.69	5.69	7.25	156.27
INF.RIEGO PREDIAL	2.80	2.80	2.80	2.80	2.80	2.91	2.76	2.70	2.05	1.48	1.26	1.26	1.26	1.11	1.11	0.77	0.77	0.77	0.77	0.77	0.77	0.97	1.22	1.47	1.86	42.01
DERRAMES RIEGO	2.80	2.80	2.80	2.80	2.80	2.91	2.76	2.70	2.05	1.48	1.26	1.26	1.26	1.11	1.11	0.77	0.77	0.77	0.77	0.77	0.77	0.97	1.22	1.47	1.86	42.01
INF.CANALES SECUNDARIOS	0.91	0.91	0.91	0.91	0.91	0.94	0.89	0.88	0.67	0.49	0.41	0.41	0.41	0.36	0.36	0.26	0.26	0.26	0.26	0.26	0.26	0.33	0.41	0.50	0.64	13.77
INF.CANALES MATRICES	2.26	2.26	2.26	2.26	2.26	2.35	2.23	2.18	1.66	1.21	1.03	1.03	1.03	0.91	0.91	0.64	0.64	0.64	0.64	0.64	0.64	0.81	1.03	1.25	1.59	34.33
CAUDAL DEMANDADO POR C.MATRICES (m3/s)	0.43	0.43	0.43	0.43	0.43	0.44	0.42	0.41	0.31	0.23	0.19	0.19	0.19	0.17	0.17	0.12	0.12	0.12	0.12	0.12	0.12	0.15	0.19	0.24	0.30	
CAPACIDAD CANALES EN BOCATOMA (m3/s)	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	
BOMBEO ADICIONAL REQUERIDO	0.45	-0.14	-0.06	-0.71	-1.87	-1.81	-1.26	0.94	-1.17	-2.58	0.00	0.00	0.00	0.00	-3.44	0.00	0.00	-2.14	-1.16	-1.72	-1.00	0.00	0.00	0.00	0.00	-17.68
BOMBEO EXISTENTE	3.74	3.74	3.74	3.74	3.74	3.74	3.74	3.74	3.74	3.74	3.74	3.74	2.12	2.12	3.87	3.87	3.87	3.87	3.87	3.87	3.87	2.25	2.25	2.25	2.25	
CAUDAL SALIDA RIO (m3/s)	0.14	0.14	0.13	0.11	0.13	0.13	0.15	0.12	0.12	0.13	0.14	0.14	0.13	0.14	0.12	0.13	0.13	0.12	0.13	0.11	0.11	0.20	1.56	1.09	0.29	
INFILTRACION RIO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
INF.RIO/CAUDAL ENTRADA %	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
RECUPERACION RIO	4.42	4.42	4.10	3.47	4.10	4.10	4.73	3.78	3.78	4.10	4.10	4.10	3.78	3.78	3.78	3.47	4.10	3.78	4.10	3.47	3.47	4.42	4.42	4.42	4.42	100.61

SECTOR MANFLAS JORQUERA Y PULIDO - PASTILLO

Rio Copiapo en Pastillo



o = CAUDAL MEDIDO —————

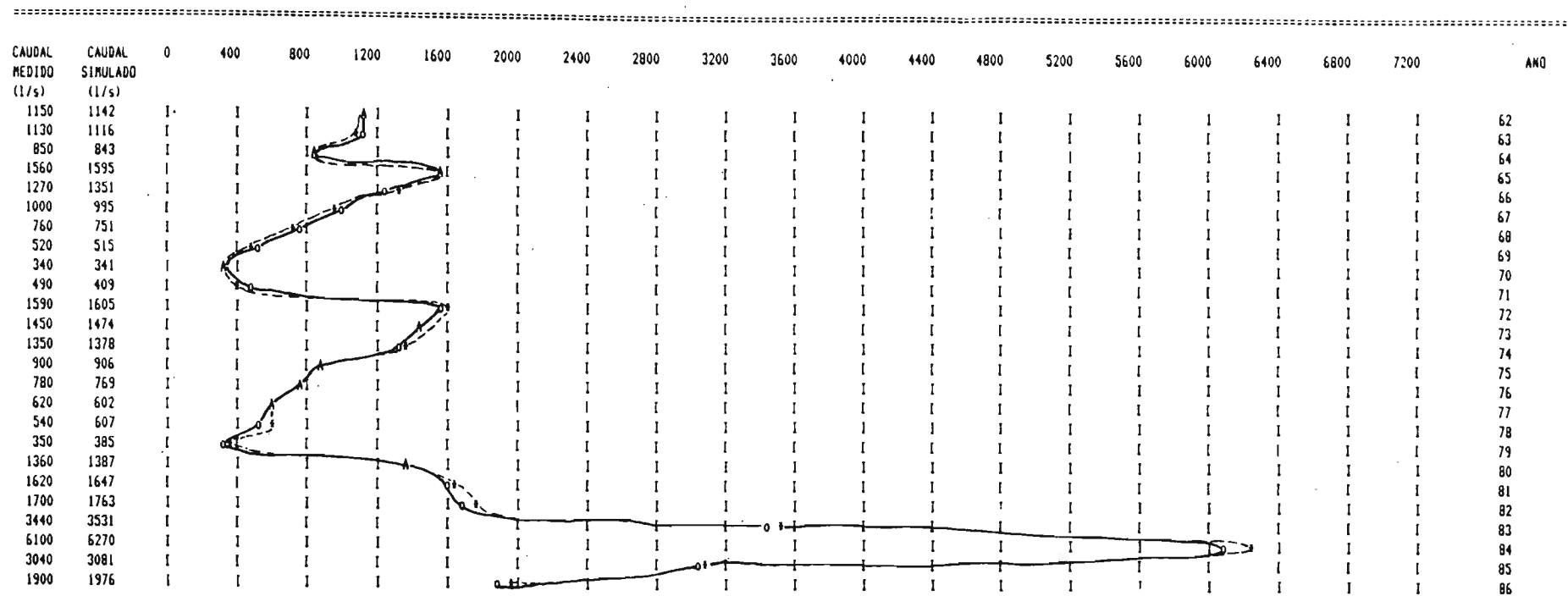
* = CAUDAL SIMULADO - - - - -

A=CAUDALES MEDIDO Y SIMULADO COINCIDEN

E = VALOR FUERA DEL RANGO DEL DIBUJO

SECTOR EMBALSE LAUTARO - SAN ANTONIO

Rio Copiapo en San Antonio



o = CAUDAL MEDIDO —————

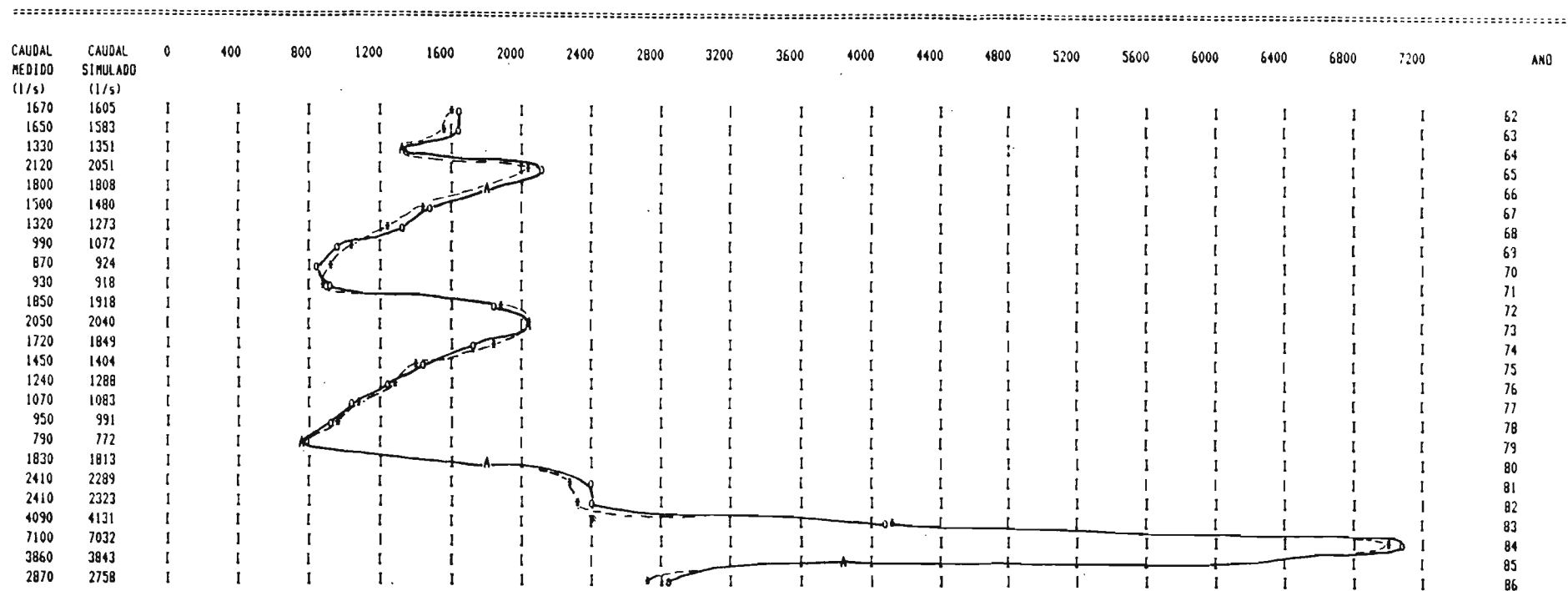
* = CAUDAL SIMULADO - - - - -

A=CAUDALES MEDIDO Y SIMULADO COINCIDEN

E = VALOR FUERA DEL RANGO DEL DIBUJO

SECTOR SAN ANTONIO - LA PUERTA

Rio Copiapo en La Puerta



o = CAUDAL MEDIDO —————

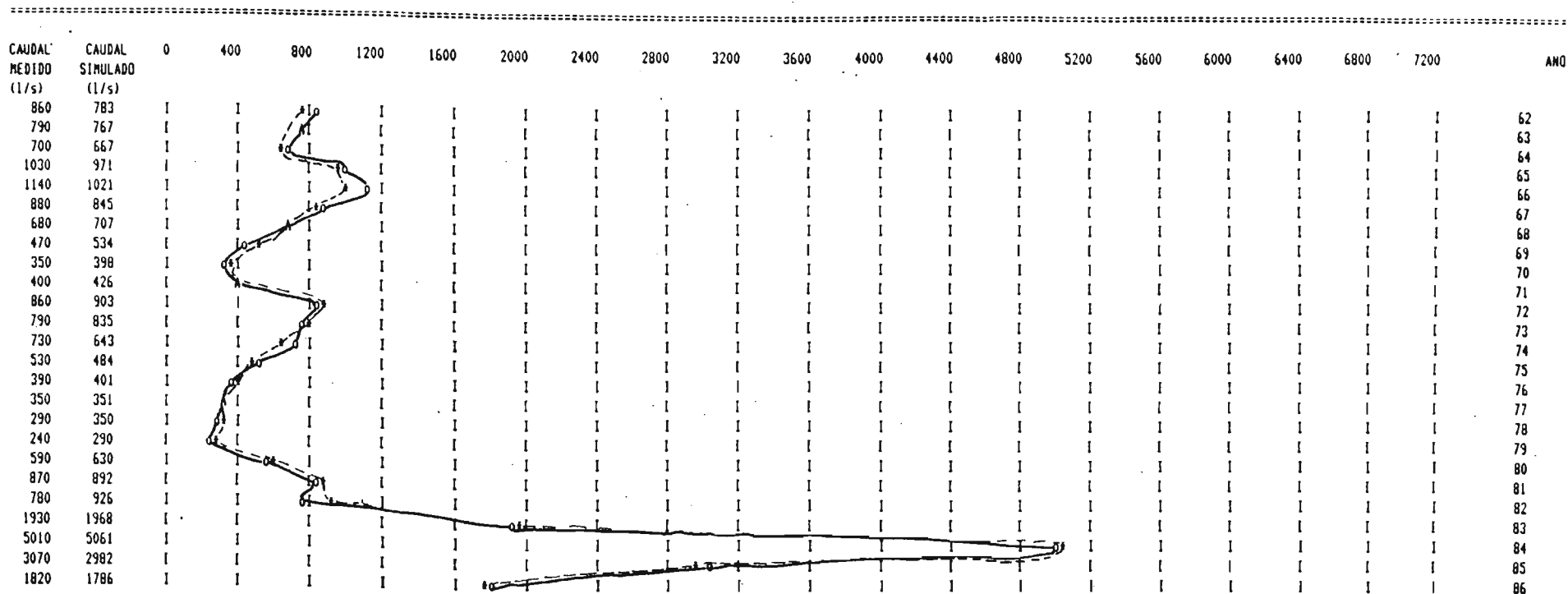
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A=CAUDALES MEDIDO Y SIMULADO COINCIDEN

E = VALOR FUERA DEL RANGO DEL DIBUJO

SECTOR LA PUERTA - MALPASO

Rio Copiapo en Malpaso



o = CAUDAL MEDIDO ———

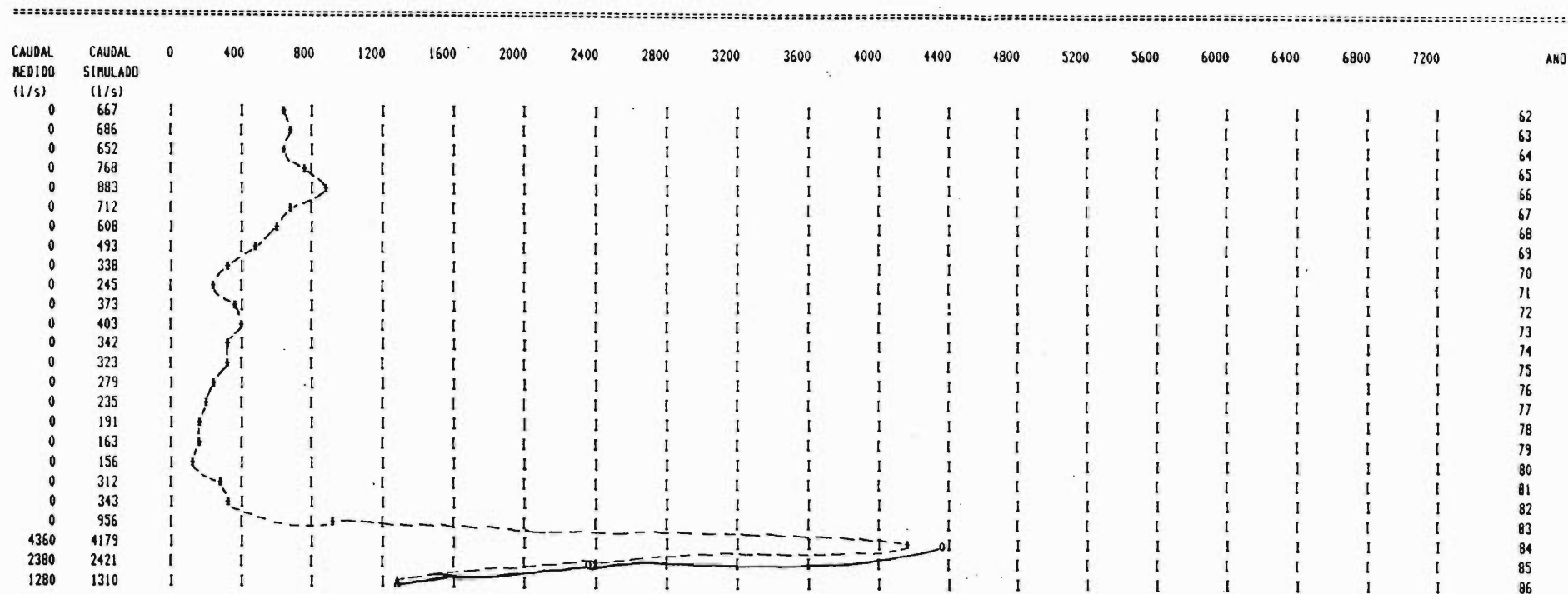
o = CAUDAL SIMULADO - - - -

A=CAUDALES MEDIDO Y SIMULADO COINCIDEN

E = VALOR FUERA DEL RANGO DEL DIBUJO

SECTOR MALPASO - COPIAPO

Rio Copiapo en Copiapo



o = CAUDAL MEDIDO ———

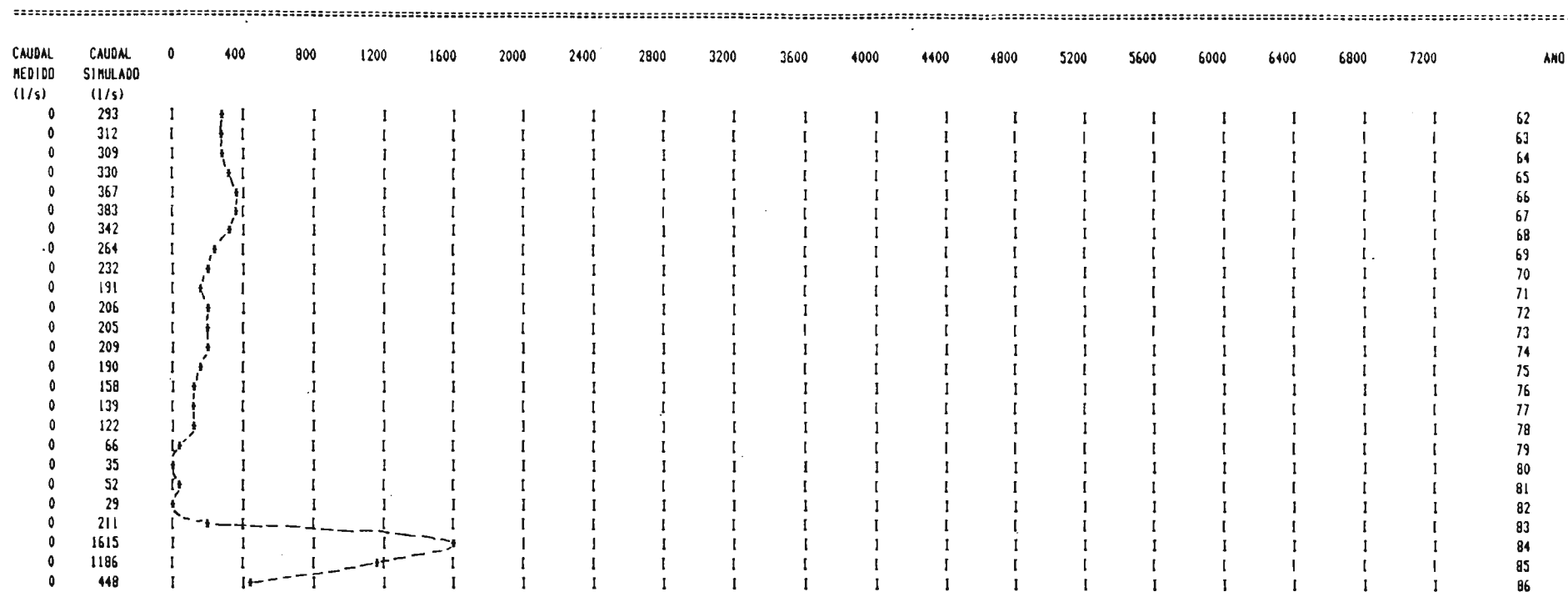
* = CAUDAL SIMULADO - - - -

A=CAUDALES MEDIDO Y SIMULADO COINCIDEN

E = VALOR FUERA DEL RANGO DEL DIBUJO

SECTOR COPIAPO - PIEDRA COLGADA

Rio Copiapo en Piedra Colgada



o = CAUDAL MEDIDO ———

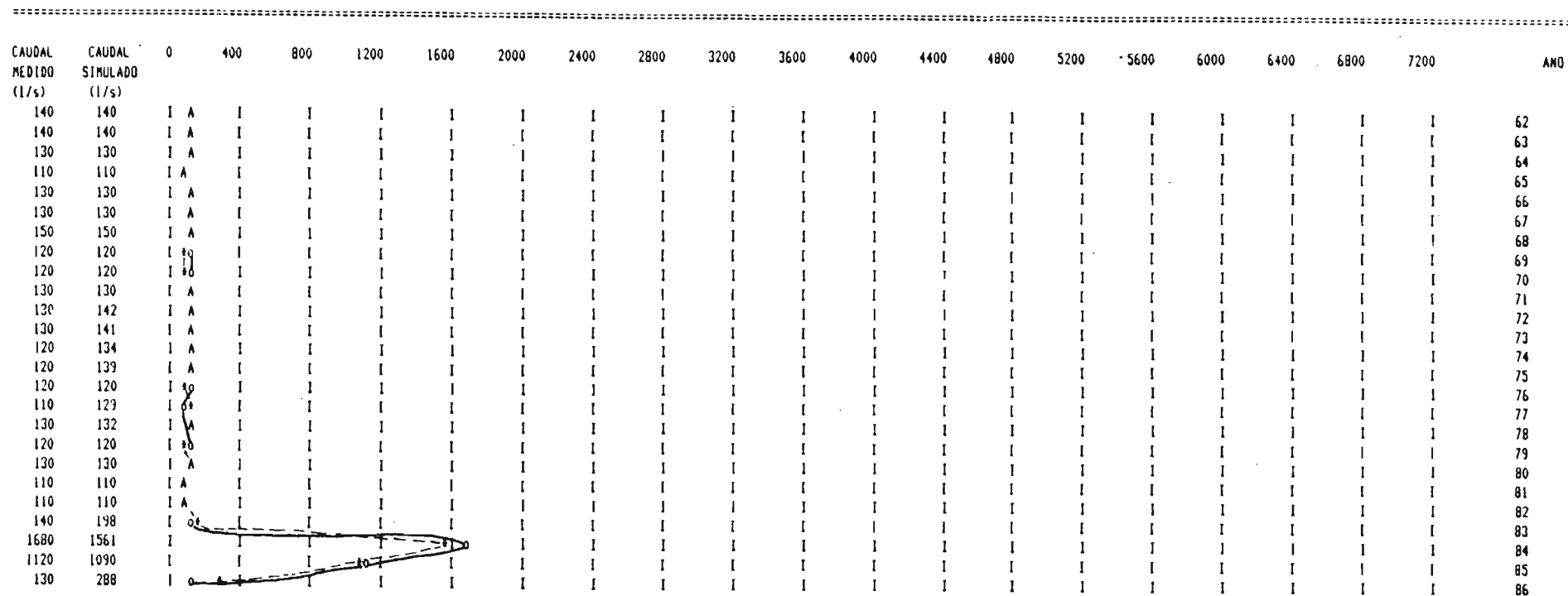
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A=CAUDALES MEDIDO Y SIMULADO COINCIDEN

E = VALOR FUERA DEL RANGO DEL DIBUJO

SECTOR PIEDRA COLGADA - ANGOSTURA

Rio Copiapo en Angostura



o = CAUDAL MEDIDO ———

* = CAUDAL SIMULADO - - - -

A=CAUDALES MEDIDO Y SIMULADO COINCIDEN

E = VALOR FUERA DEL RANGO DEL DIBUJO

MODELO HIDROLOGICO MENSUAL RESULTADOS DE LA PASADA DEL AJUSTE FINAL

Calend.	Caudal (m³/s)
ENE	200
FEB	100
MAR	1300
ABR	1000
MAY	1100
JUN	1200
JUL	1000
AUG	1100
SEP	1200
OCT	1000
NOV	1100
DIC	1000

SECTOR MANFLAS JORQUEKA Y PULIDO - PASTILLO

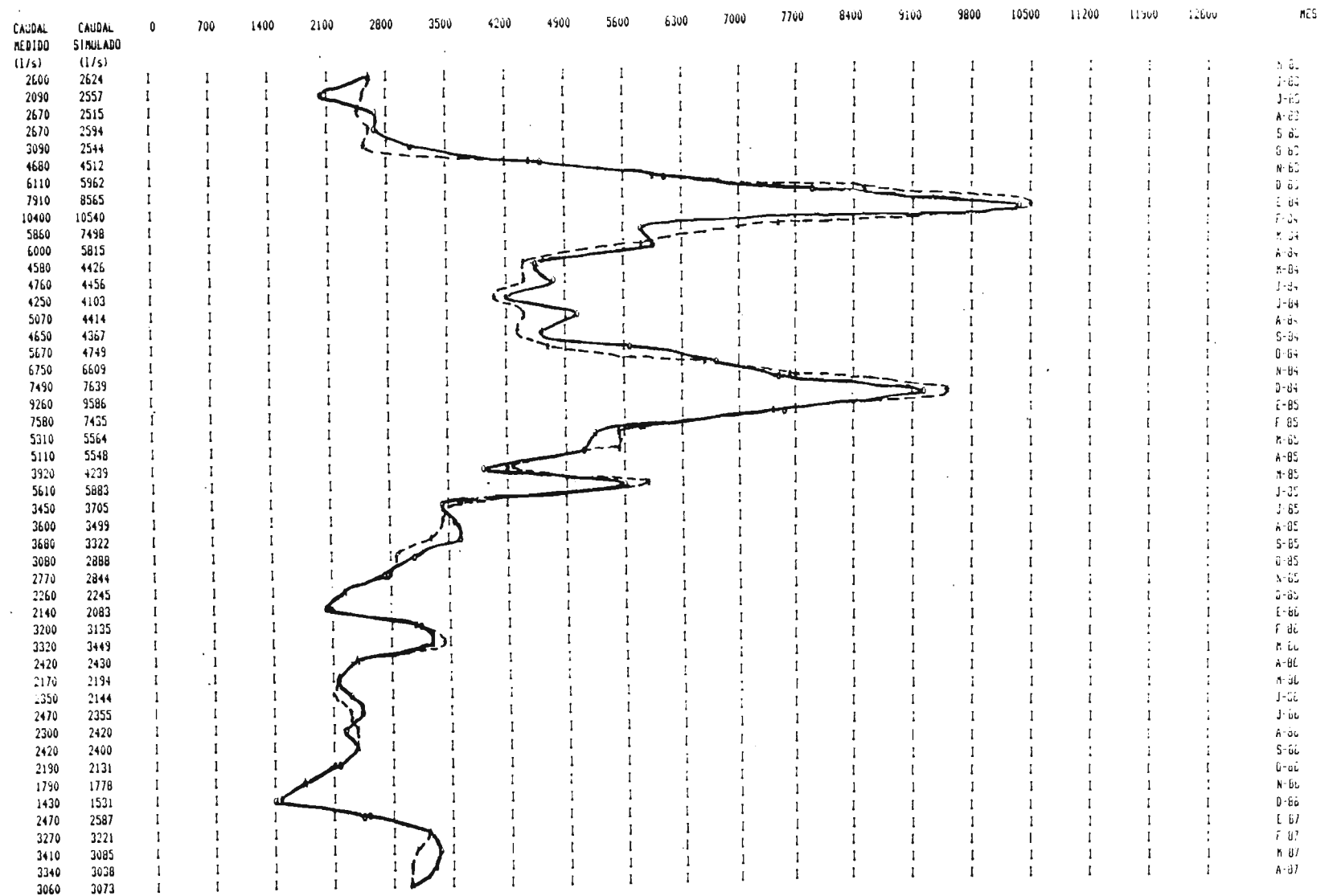
Q = CAUDAL MEDIDO ———

* = CAUDAL SIMULADO - - - -

A=CAUDALES MEDIDOS Y SIMULADO COINCIDEN

E = VALOR FUERA DEL RANGO DEL DIBUJO

Rio Copiapo en Pastillo

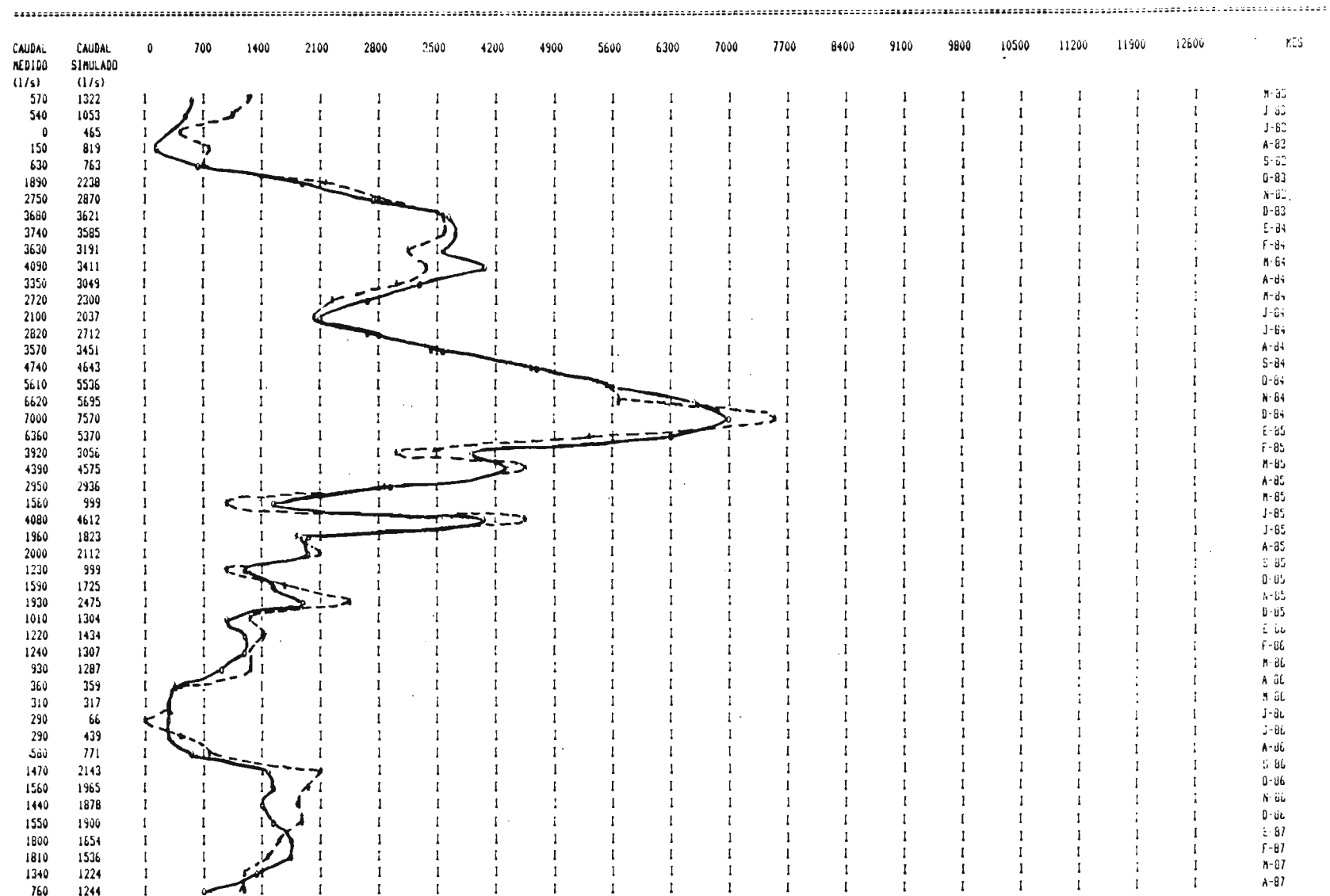


Q = CAUDAL SIMULADO — — — —

Rio Copiapo en descarga Embalse Lautaro

A=CAUDALES MEDIDO Y SIMULADO COINCIDEN

E = VALOR FUERA DEL RANGO DEL DIBUJO



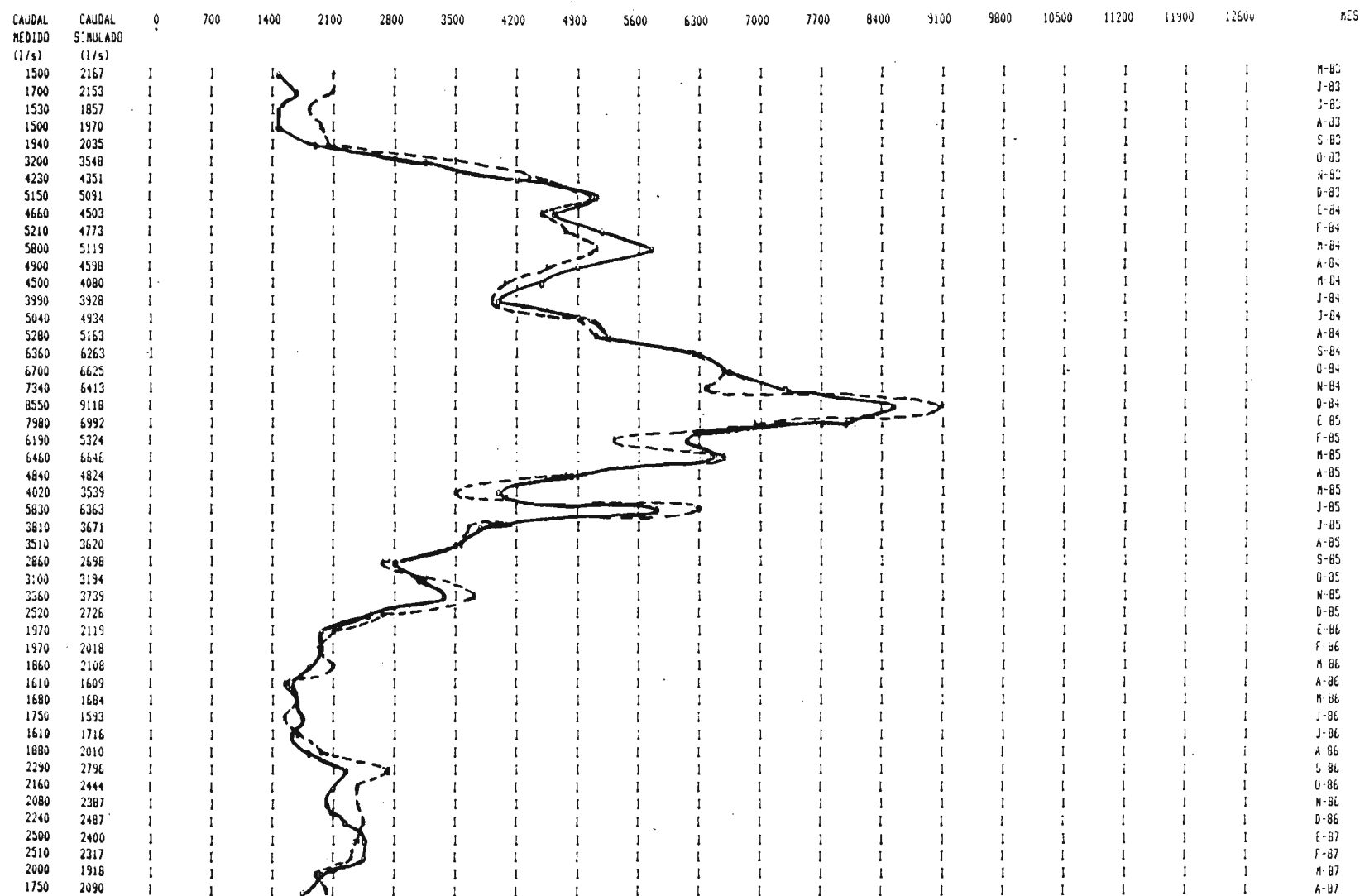
o = CAUDAL MEDIDO —————

* = CAUDAL SIMULADO - - - - -

A=CAUDALES MEDIDO Y SIMULADO COINCIDEN

E = VALOR FUERA DEL RANGO DEL OIBUJO

Rio Copiapo en San Antonio

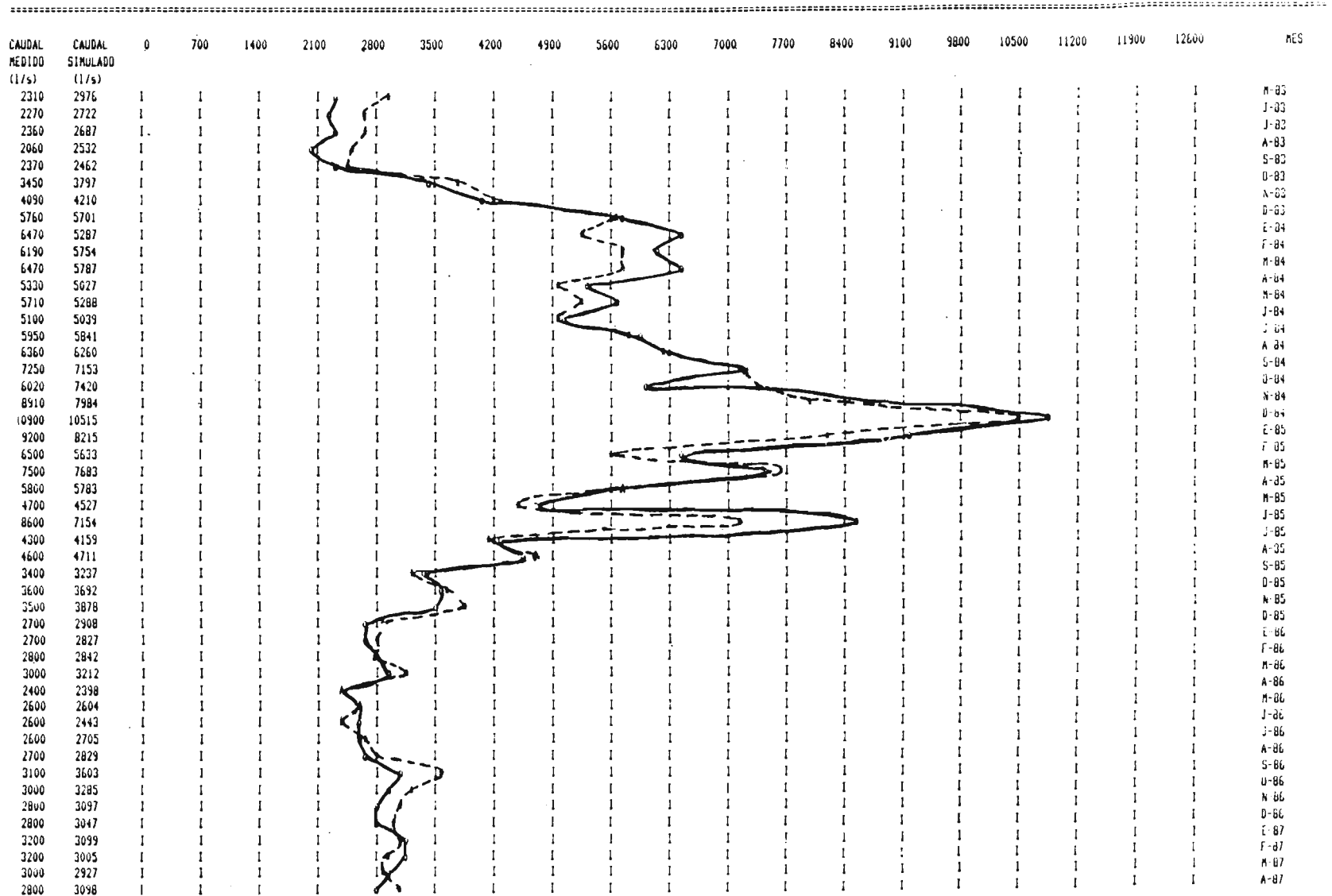


* = CAUDAL SIMULADO — — — —

A=CAUDALES MEDIDO Y SIMULADO COINCIDEN

E = VALOR FUERA DEL RANGO DEL DIBUJO

Rio Copiapo en La Puerta

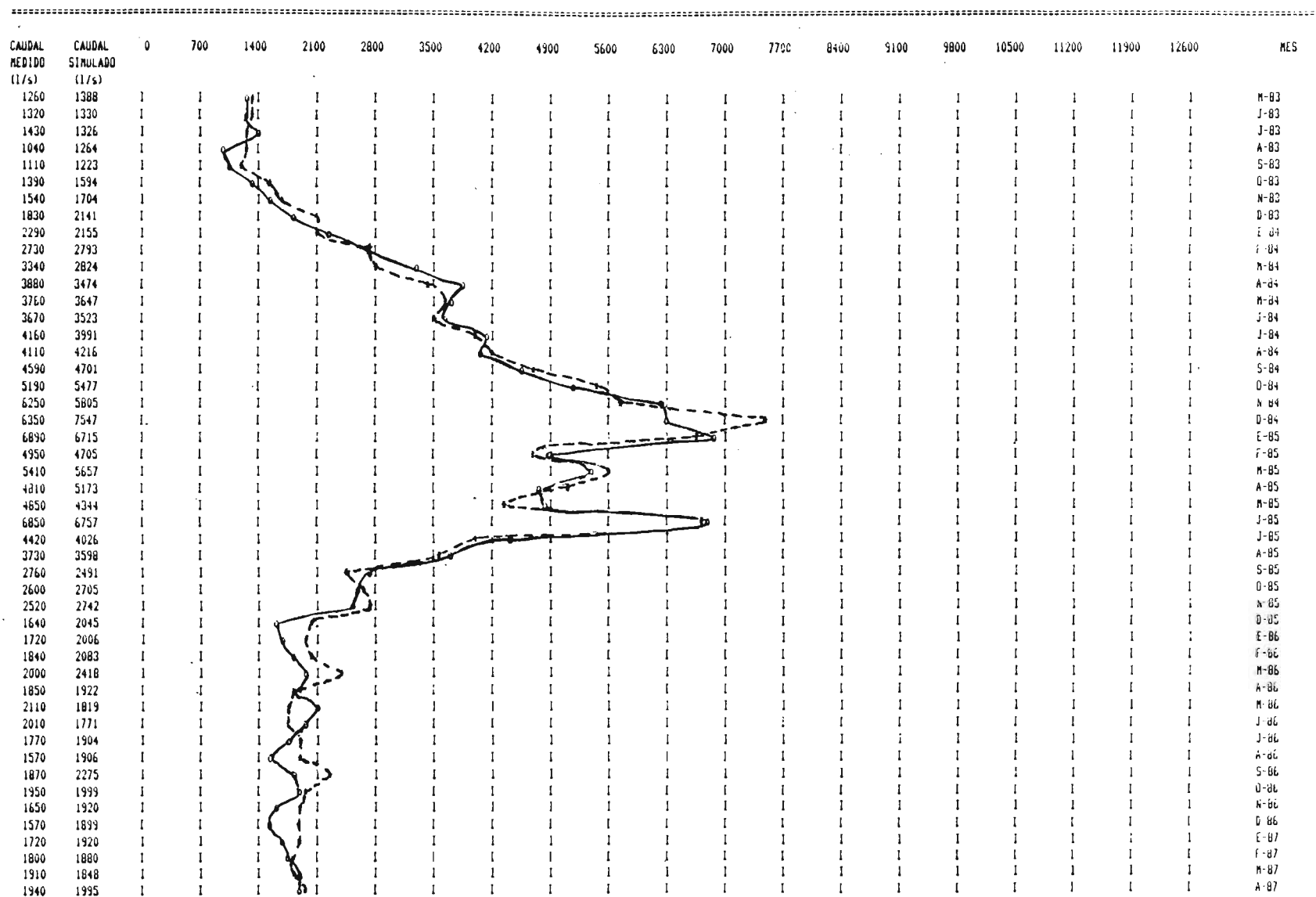


• = CAUDAL SIMULADO — — — —

Rio Copiapo en Malpaso

A=CAUDALES MEDIDO Y SIMULADO COINCIDEN

E = VALOR FUERA DEL RANGO DEL DIBUJO

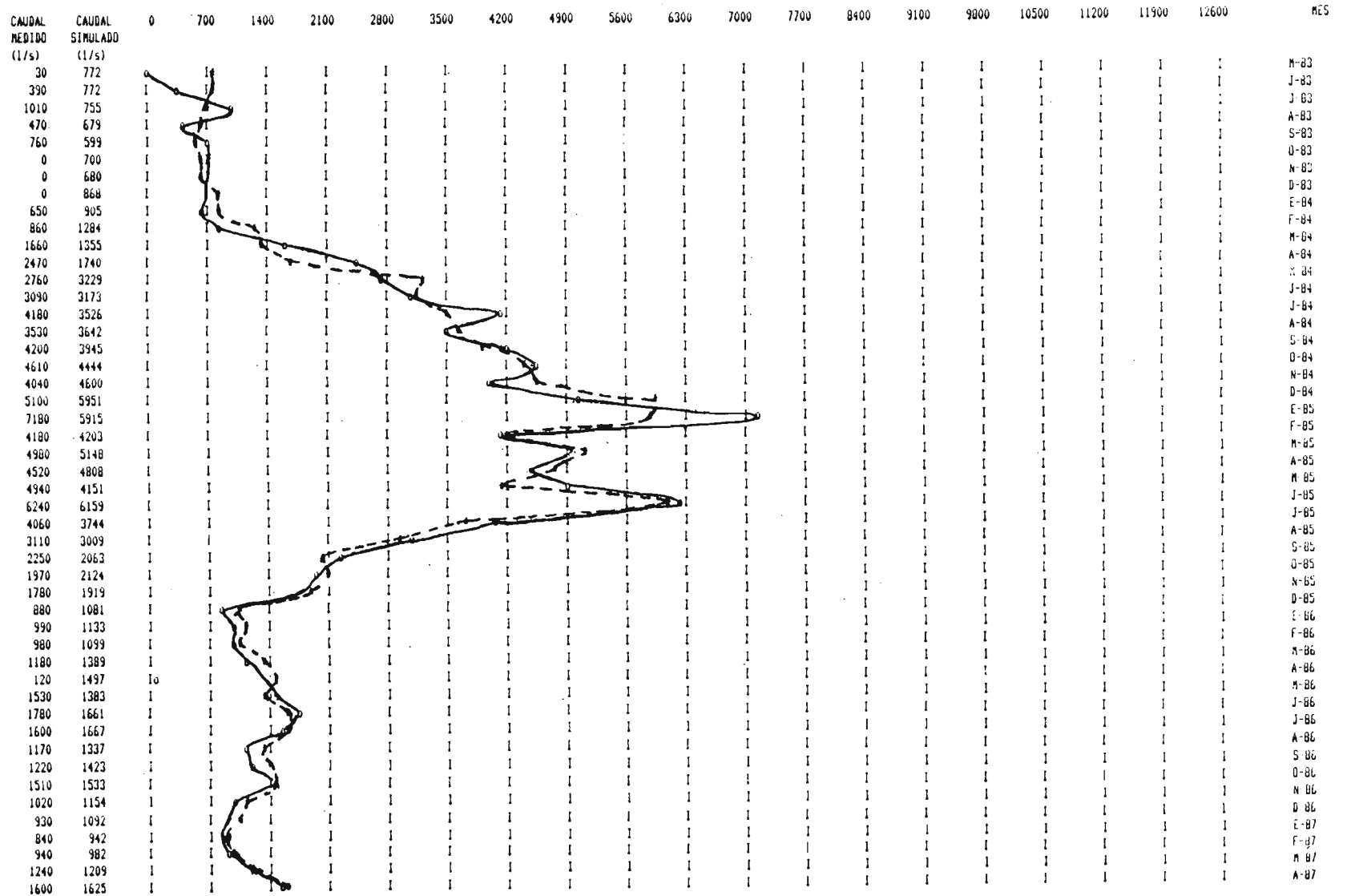


† = Caudal simulado

A=CAUDALES MEDIDO Y SIMULADO COINCIDEN

E = VALOR FUERA DEL RANGO DEL DIBUJO

Rio Copiapo en Copiapo



Rio Copiapo en Piedra Colgada

* = CAUDAL SIMULADO - - - -

E = VALOR FUERA DEL RANGO DEL DIBUJO

[illegible]

♦ = CAUDAL SIMULADO — — — —

Rio Copiapo en Angostura

A=CAUDALES MEDIDO Y SIMULADO COINCIDEN

E = VALOR FUERA DEL RANGO DEL DIBUJO

