COMUNE DI MONASTIR – CAPOLUOGO **02302023IR50**
VERIFICA E CALCOLO RETE GPL (P = 0.5 BAR) **STATO DI PROGETTO**
TABULATO DI CALCOLO ESEGUITO CON:

- **MARTE - Marte GAS**
  MG001 - Modulo statico/flusso termico stazionario v. 1
  Copyright (C) 2000_2005 DEK s.r.l.

DATI GENERALI

Numero di nodi		193
Numero di rami		261
Numero di cabine di salto		0
Nome del gas		propane
Peso molecolare	(kg/kmole)	44.0940
Fattore di compressibilita'	(-)	0.9820
Viscosita' dinamica	(cP)	0.0081
Temperatura media di flusso	(°C)	11.0000
Pressione atmosf. a quota zero	(mBar Ass.)	1013.2500
Peso Molecolare dell'aria	(kg/kmole)	28.9700
Temperatura dell'aria	(°C)	11.0000
Precisione finale sulle portate	(Smc/h)	0.0033

TABELLA DEI MATERIALI

Nome	Tipo	Area (m2)	Diametro int.(mm)	Scabrez. (micron)	Spessore (mm)	Lunghezza (m)
PES5 110	Circolare	0.006	90.000	10.000	0.000	665.81
PES5 125	Circolare	0.008	102.200	10.000	0.000	1103.92
PES5 160	Circolare	0.013	130.800	10.000	0.000	140.61
PES5 75	Circolare	0.003	61.200	10.000	0.000	10435.54
PES5 90	Circolare	0.004	73.600	10.000	0.000	5832.44
					Lunghezza totale (m)	18178.32

RIASSUNTO PER CONDOTTO

Gruppo	Lungh. gruppo
PES5 110	665.8053
PES5 125	1103.9156
PES5 160	140.6149
PES5 75	10435.5437
PES5 90	5832.4447
Lungh. totale:	18178.3242

DATI DEI NODI

Nodo	Quota s.l.m. (m)	Pressione (mBar)	Portata (Smc/h)
1	0.00	0.00	0.00
10	0.00	0.00	0.00
100	0.00	0.00	0.00
101	0.00	0.00	0.00
102	0.00	0.00	0.00
103	0.00	0.00	0.00
104	0.00	0.00	0.00

105	0.00	0.00	0.00
106	0.00	0.00	0.00
107	0.00	0.00	0.00
108	0.00	0.00	0.00
109	0.00	0.00	0.00
11	0.00	500.00	0.00
110	0.00	0.00	0.00
111	0.00	0.00	0.00
112	0.00	0.00	0.00
113	0.00	0.00	0.00
114	0.00	0.00	0.00
115	0.00	0.00	0.00
116	0.00	0.00	0.00
117	0.00	0.00	0.00
118	0.00	0.00	0.00
119	0.00	0.00	0.00
12	0.00	0.00	0.00
120	0.00	0.00	0.00
121	0.00	0.00	0.00
122	0.00	0.00	0.00
123	0.00	0.00	0.00
124	0.00	0.00	0.00
125	0.00	0.00	0.00
126	0.00	0.00	0.00
127	0.00	0.00	0.00
128	0.00	0.00	0.00
129	0.00	0.00	0.00
13	0.00	0.00	0.00
130	0.00	0.00	0.00
131	0.00	0.00	0.00
132	0.00	0.00	0.00
133	0.00	0.00	0.00
134	0.00	0.00	0.00
135	0.00	0.00	0.00
137	0.00	0.00	0.00
138	0.00	0.00	0.00
139	0.00	0.00	0.00
14	0.00	0.00	0.00
140	0.00	0.00	0.00
141	0.00	0.00	0.00
142	0.00	0.00	0.00
143	0.00	0.00	0.00
144	0.00	0.00	0.00
145	0.00	0.00	0.00
146	0.00	0.00	0.00
147	0.00	0.00	0.00
148	0.00	0.00	0.00
149	0.00	0.00	0.00
15	0.00	0.00	0.00
150	0.00	0.00	0.00
151	0.00	0.00	0.00
152	0.00	0.00	0.00
153	0.00	0.00	0.00
154	0.00	0.00	0.00
155	0.00	0.00	0.00
156	0.00	0.00	0.00
157	0.00	0.00	0.00
158	0.00	0.00	0.00
159	0.00	0.00	0.00
16	0.00	0.00	0.00
160	0.00	0.00	0.00
161	0.00	0.00	0.00
162	0.00	0.00	0.00

163	0.00	0.00	0.00
164	0.00	0.00	0.00
165	0.00	0.00	0.00
166	0.00	0.00	0.00
167	0.00	0.00	0.00
168	0.00	0.00	0.00
169	0.00	0.00	0.00
17	0.00	0.00	0.00
170	0.00	0.00	0.00
171	0.00	0.00	0.00
172	0.00	0.00	0.00
173	0.00	0.00	0.00
174	0.00	0.00	0.00
175	0.00	0.00	0.00
176	0.00	0.00	0.00
177	0.00	0.00	0.00
178	0.00	0.00	0.00
179	0.00	0.00	0.00
18	0.00	0.00	0.00
180	0.00	0.00	0.00
181	0.00	0.00	0.00
182	0.00	0.00	0.00
183	0.00	0.00	0.00
184	0.00	0.00	0.00
185	0.00	0.00	0.00
186	0.00	0.00	0.00
187	0.00	0.00	0.00
188	0.00	0.00	0.00
189	0.00	0.00	0.00
19	0.00	0.00	0.00
190	0.00	0.00	0.00
191	0.00	0.00	0.00
192	0.00	0.00	0.00
193	0.00	0.00	0.00
194	0.00	0.00	0.00
195	0.00	0.00	0.00
196	0.00	0.00	0.00
197	0.00	0.00	0.00
2	0.00	0.00	0.00
20	0.00	0.00	0.00
21	0.00	0.00	0.00
22	0.00	0.00	0.00
23	0.00	0.00	0.00
24	0.00	0.00	0.00
25	0.00	0.00	0.00
26	0.00	0.00	0.00
27	0.00	0.00	0.00
28	0.00	0.00	0.00
29	0.00	0.00	0.00
3	0.00	0.00	0.00
30	0.00	0.00	0.00
31	0.00	0.00	0.00
32	0.00	0.00	0.00
33	0.00	0.00	0.00
34	0.00	0.00	0.00
35	0.00	0.00	0.00
36	0.00	0.00	0.00
37	0.00	0.00	0.00
38	0.00	0.00	0.00
39	0.00	0.00	0.00
4	0.00	0.00	0.00
40	0.00	0.00	0.00
41	0.00	0.00	0.00

42	0.00	0.00	0.00
43	0.00	0.00	0.00
44	0.00	0.00	0.00
45	0.00	0.00	0.00
46	0.00	0.00	0.00
47	0.00	0.00	0.00
48	0.00	0.00	0.00
49	0.00	0.00	0.00
5	0.00	0.00	0.00
50	0.00	0.00	0.00
51	0.00	0.00	0.00
52	0.00	0.00	0.00
53	0.00	0.00	0.00
54	0.00	0.00	0.00
55	0.00	0.00	0.00
56	0.00	0.00	0.00
57	0.00	0.00	0.00
58	0.00	0.00	0.00
59	0.00	0.00	0.00
6	0.00	0.00	0.00
60	0.00	0.00	0.00
61	0.00	0.00	0.00
62	0.00	0.00	0.00
63	0.00	0.00	0.00
64	0.00	0.00	0.00
65	0.00	0.00	0.00
66	0.00	0.00	0.00
67	0.00	0.00	0.00
68	0.00	0.00	0.00
69	0.00	0.00	0.00
70	0.00	0.00	0.00
71	0.00	0.00	0.00
72	0.00	0.00	0.00
73	0.00	0.00	0.00
74	0.00	0.00	0.00
75	0.00	0.00	0.00
76	0.00	0.00	0.00
77	0.00	0.00	0.00
78	0.00	0.00	0.00
79	0.00	0.00	0.00
80	0.00	0.00	0.00
81	0.00	0.00	0.00
82	0.00	0.00	0.00
83	0.00	0.00	0.00
84	0.00	0.00	0.00
85	0.00	0.00	0.00
86	0.00	0.00	0.00
87	0.00	0.00	0.00
88	0.00	0.00	0.00
89	0.00	0.00	0.00
9	0.00	0.00	0.00
90	0.00	0.00	0.00
91	0.00	0.00	0.00
92	0.00	0.00	0.00
93	0.00	0.00	0.00
95	0.00	0.00	0.00
96	0.00	0.00	0.00
97	0.00	0.00	0.00
98	0.00	0.00	0.00
99	0.00	0.00	0.00

DATI DEI RAMI ----------

Ramo	Nodo iniziale	Nodo finale	Materiale	Lunghezza (m)	Portata (Smc/h)
1	1	2	PES5 75	67.70	2.09
10	18	19	PES5 75	26.50	0.82
100	108	107	PES5 75	55.41	1.71
101	109	108	PES5 75	93.03	2.87
102	5	109	PES5 90	67.47	2.08
103	110	5	PES5 90	74.08	2.29
104	102	110	PES5 90	57.52	1.78
105	110	108	PES5 75	72.11	2.23
106	111	112	PES5 90	30.84	0.95
107	109	197	PES5 90	140.52	4.34
108	112	84	PES5 90	45.49	1.40
109	104	102	PES5 90	158.69	4.90
11	20	21	PES5 75	138.93	4.29
110	98	104	PES5 75	41.32	1.28
111	1	98	PES5 90	35.61	1.10
112	100	1	PES5 90	36.33	1.12
113	113	100	PES5 90	39.97	1.23
114	114	113	PES5 90	51.63	1.59
115	3	114	PES5 75	64.45	1.99
116	115	114	PES5 75	64.85	2.00
117	116	44	PES5 75	60.60	1.87
118	106	116	PES5 75	11.72	0.36
119	116	85	PES5 75	88.59	2.73
12	22	23	PES5 75	17.82	0.55
120	117	86	PES5 75	63.04	1.95
121	46	117	PES5 75	64.71	2.00
122	118	46	PES5 90	56.05	1.73
123	119	118	PES5 75	98.10	3.03
124	57	32	PES5 75	101.86	3.14
125	120	57	PES5 75	39.84	1.23
126	121	120	PES5 75	34.24	1.06
127	122	121	PES5 75	43.99	1.36
128	123	122	PES5 75	44.61	1.38
129	124	123	PES5 75	72.85	2.25
13	22	24	PES5 90	33.97	1.05
130	125	124	PES5 75	52.87	1.63
131	12	125	PES5 75	53.30	1.64
132	126	12	PES5 75	45.79	1.41
133	117	126	PES5 75	43.47	1.34
134	127	128	PES5 75	24.67	0.76
135	129	127	PES5 75	56.21	1.73
136	130	129	PES5 75	41.89	1.29
137	58	130	PES5 75	34.49	1.06
138	127	122	PES5 75	126.86	3.92
139	123	131	PES5 75	132.12	4.08
14	23	25	PES5 75	107.87	3.33
140	132	123	PES5 75	81.57	2.52
141	133	132	PES5 90	37.91	1.17
142	122	133	PES5 75	81.62	2.52
143	125	49	PES5 75	92.88	2.87
144	134	125	PES5 75	70.96	2.19
145	135	134	PES5 90	57.95	1.79
146	132	135	PES5 90	87.09	2.69
148	63	70	PES5 75	72.35	2.23
149	137	63	PES5 75	78.37	2.42
15	26	27	PES5 75	123.27	3.80
150	121	129	PES5 75	124.13	3.83
151	138	121	PES5 75	81.72	2.52
152	133	138	PES5 90	34.15	1.05
153	138	92	PES5 90	53.93	1.66

154	139	120	PES5 75	83.09	2.56
155	138	139	PES5 90	31.98	0.99
156	139	55	PES5 90	42.76	1.32
158	130	120	PES5 75	122.58	3.78
159	140	55	PES5 75	64.78	2.00
16	28	26	PES5 75	111.15	3.43
160	124	50	PES5 75	108.44	3.35
161	135	124	PES5 75	74.30	2.29
162	141	24	PES5 90	70.77	2.18
163	142	141	PES5 90	25.22	0.78
164	143	142	PES5 75	160.28	4.95
165	144	143	PES5 75	59.80	1.85
166	145	144	PES5 90	65.82	2.03
167	146	145	PES5 90	77.96	2.41
168	147	146	PES5 90	13.28	0.41
169	148	147	PES5 90	14.99	0.46
17	29	28	PES5 90	70.46	2.17
170	78	148	PES5 75	113.54	3.50
171	149	78	PES5 75	169.31	5.23
172	150	149	PES5 90	54.97	1.70
173	151	150	PES5 90	71.29	2.20
174	152	54	PES5 110	63.68	1.97
175	152	150	PES5 110	189.03	5.83
176	153	146	PES5 75	20.67	0.64
177	154	153	PES5 75	80.30	2.48
178	155	154	PES5 75	34.28	1.06
179	155	38	PES5 75	68.69	2.12
18	30	29	PES5 90	71.04	2.19
180	156	157	PES5 75	61.48	1.90
181	158	156	PES5 75	108.19	3.34
182	159	158	PES5 75	62.18	1.92
183	144	159	PES5 90	138.75	4.28
184	158	43	PES5 75	8.54	0.26
185	160	143	PES5 75	107.44	3.32
186	161	160	PES5 75	40.18	1.24
187	162	163	PES5 75	77.87	2.40
188	159	162	PES5 75	62.40	1.93
189	160	162	PES5 75	12.37	0.38
19	31	30	PES5 90	60.53	1.87
190	141	147	PES5 75	118.37	3.65
191	25	141	PES5 75	29.72	0.92
192	164	22	PES5 90	119.92	3.70
193	151	164	PES5 90	130.30	4.02
194	149	148	PES5 90	87.62	2.70
195	164	149	PES5 75	148.29	4.58
196	142	165	PES5 90	101.35	3.13
197	21	143	PES5 75	59.78	1.84
198	166	20	PES5 90	139.24	4.30
199	167	166	PES5 90	71.46	2.21
2	3	4	PES5 75	54.21	1.67
20	32	33	PES5 75	47.59	1.47
200	168	167	PES5 90	44.26	1.37
201	169	168	PES5 75	107.00	3.30
202	170	169	PES5 75	49.01	1.51
203	171	170	PES5 75	131.50	4.06
204	172	171	PES5 90	43.33	1.34
205	118	172	PES5 90	96.84	2.99
206	163	118	PES5 75	63.10	1.95
207	169	173	PES5 75	111.99	3.46
208	170	161	PES5 75	24.60	0.76
209	168	171	PES5 90	45.24	1.40
21	34	32	PES5 75	133.05	4.11
210	66	174	PES5 90	30.50	0.94

211	48	12	PES5 75	82.94	2.56
212	119	48	PES5 75	56.17	1.73
213	174	119	PES5 75	117.02	3.61
214	51	174	PES5 90	42.88	1.32
215	131	51	PES5 125	17.28	0.53
216	128	131	PES5 125	44.54	1.37
217	137	128	PES5 125	71.34	2.20
218	35	137	PES5 125	116.72	3.60
219	28	35	PES5 125	68.76	2.12
22	35	34	PES5 75	100.96	3.12
220	62	28	PES5 110	69.87	2.16
221	175	62	PES5 110	47.75	1.47
222	60	175	PES5 90	128.68	3.97
223	176	177	PES5 75	112.68	3.48
224	172	178	PES5 75	85.93	2.65
225	126	87	PES5 75	66.00	2.04
226	47	126	PES5 75	71.60	2.21
227	88	134	PES5 90	23.54	0.73
228	179	180	PES5 75	36.21	1.12
229	180	181	PES5 75	107.18	3.31
23	36	35	PES5 75	70.31	2.17
230	182	180	PES5 90	57.16	1.76
231	18	182	PES5 90	58.28	1.80
232	183	18	PES5 90	82.39	2.54
233	90	183	PES5 90	74.88	2.31
234	184	185	PES5 90	42.98	1.33
235	186	92	PES5 90	67.75	2.09
236	184	186	PES5 90	187.92	5.80
237	187	186	PES5 75	120.73	3.73
238	187	89	PES5 75	62.07	1.92
239	183	187	PES5 75	41.78	1.29
24	37	36	PES5 75	69.86	2.16
240	185	183	PES5 90	58.40	1.80
241	182	185	PES5 75	87.92	2.71
242	180	188	PES5 75	69.40	2.14
243	159	45	PES5 90	123.20	3.80
244	42	156	PES5 75	33.92	1.05
245	16	189	PES5 75	39.76	1.23
246	167	16	PES5 75	89.95	2.78
247	189	190	PES5 75	81.21	2.51
248	190	166	PES5 75	37.04	1.14
249	191	111	PES5 75	41.75	1.29
25	38	39	PES5 125	79.49	2.45
250	108	191	PES5 75	69.65	2.15
251	176	95	PES5 110	41.92	1.29
252	175	176	PES5 110	52.06	1.61
253	135	90	PES5 90	32.88	1.01
254	153	192	PES5 75	83.53	2.58
255	193	144	PES5 75	22.98	0.71
256	194	193	PES5 75	34.37	1.06
257	195	194	PES5 75	86.68	2.67
258	192	195	PES5 75	35.50	1.10
259	145	193	PES5 75	81.47	2.51
26	40	38	PES5 125	78.01	2.41
260	194	156	PES5 75	63.37	1.96
261	195	157	PES5 75	45.18	1.39
262	196	53	PES5 75	129.64	4.00
263	20	165	PES5 90	86.39	2.67
264	197	111	PES5 90	146.06	4.51
265	132	91	PES5 75	59.41	1.83
27	41	40	PES5 125	11.00	0.34
28	42	41	PES5 125	59.59	1.84
29	43	42	PES5 125	107.26	3.31

3	5	6	PES5 75	47.01	1.45
30	44	43	PES5 125	18.51	0.57
31	45	44	PES5 125	87.65	2.71
32	46	45	PES5 125	45.84	1.41
33	47	46	PES5 125	40.34	1.25
34	48	47	PES5 125	50.92	1.57
35	49	48	PES5 125	46.20	1.43
36	50	49	PES5 125	48.35	1.49
37	51	50	PES5 125	33.11	1.02
38	52	53	PES5 125	29.72	0.92
39	39	52	PES5 125	18.14	0.56
40	54	10	PES5 160	64.47	1.99
41	53	54	PES5 125	31.13	0.96
42	55	56	PES5 75	50.06	1.54
43	57	55	PES5 90	85.40	2.64
44	58	57	PES5 90	123.51	3.81
45	34	58	PES5 90	62.95	1.94
46	26	34	PES5 90	66.97	2.07
47	59	26	PES5 90	69.16	2.13
48	60	59	PES5 90	49.39	1.52
49	59	61	PES5 75	69.79	2.15
5	9	10	PES5 160	49.99	1.54
50	62	59	PES5 75	121.99	3.76
51	63	64	PES5 75	93.89	2.90
52	36	63	PES5 75	82.30	2.54
53	29	36	PES5 75	70.42	2.17
54	65	29	PES5 75	75.97	2.34
55	66	67	PES5 90	72.39	2.23
56	64	66	PES5 75	57.27	1.77
57	68	69	PES5 75	47.71	1.47
58	70	68	PES5 75	62.17	1.92
59	37	70	PES5 75	68.25	2.11
6	9	11	PES5 160	26.16	0.81
60	30	37	PES5 75	72.11	2.23
61	71	30	PES5 75	71.52	2.21
62	72	73	PES5 90	56.61	1.75
63	74	72	PES5 90	91.22	2.82
64	73	75	PES5 90	52.90	1.63
65	75	31	PES5 90	73.53	2.27
66	31	76	PES5 75	94.53	2.92
67	67	74	PES5 90	61.29	1.89
68	69	67	PES5 75	37.63	1.16
69	74	14	PES5 90	152.54	4.71
7	12	13	PES5 75	67.46	2.08
70	77	78	PES5 75	9.81	0.30
71	52	77	PES5 75	77.32	2.39
72	79	52	PES5 110	67.62	2.09
73	80	79	PES5 110	24.70	0.76
74	81	80	PES5 90	174.07	5.37
75	82	81	PES5 90	128.88	3.98
76	83	82	PES5 90	67.51	2.08
77	84	83	PES5 90	4.03	0.12
78	85	84	PES5 90	76.27	2.35
79	86	85	PES5 90	30.94	0.95
8	14	15	PES5 90	85.85	2.65
80	87	86	PES5 90	49.30	1.52
81	13	87	PES5 90	42.20	1.30
82	88	13	PES5 90	34.08	1.05
83	89	90	PES5 75	71.62	2.21
84	91	89	PES5 75	32.85	1.01
85	92	91	PES5 75	62.44	1.93
86	93	92	PES5 75	28.50	0.88
87	56	93	PES5 75	45.12	1.39

89	95	96	PES5	75	85.27	2.63
9	16	17	PES5	75	42.62	1.32
90	97	98	PES5	90	89.01	2.75
91	99	97	PES5	110	8.41	0.26
92	80	99	PES5	110	17.33	0.53
93	100	101	PES5	75	130.57	4.03
94	102	81	PES5	75	91.76	2.83
95	103	102	PES5	75	97.23	3.00
96	104	105	PES5	75	154.54	4.77
97	97	104	PES5	110	83.43	2.57
98	82	106	PES5	75	103.47	3.19
99	107	82	PES5	75	35.44	1.09

RISULTATI DEI NODI ------------------------

Nodo	Pressione (mBar)	Portata entr. (Smc/h)
1	470.20	0.00
10	492.97	0.00
100	470.14	0.00
101	470.11	-0.00
102	466.49	-0.00
103	466.48	0.00
104	470.19	0.00
105	470.14	-0.00
106	463.52	-0.00
107	464.25	0.00
108	464.35	0.00
109	464.39	0.00
11	500.00	561.00
110	465.22	0.00
111	463.82	-0.00
112	463.69	0.00
113	470.11	0.00
114	470.08	0.00
115	470.08	-0.00
116	463.45	0.00
117	460.38	-0.00
118	460.88	0.00
119	458.53	0.00
12	458.53	-0.00
120	455.06	0.00
121	455.15	-0.00
122	455.34	0.00
123	455.65	0.00
124	456.39	0.00
125	457.40	0.00
126	459.57	-0.00
127	455.40	0.00
128	455.61	0.00
129	455.15	0.00
13	458.54	0.00
130	455.03	0.00
131	455.99	0.00
132	455.48	0.00
133	455.32	0.00
134	457.33	-0.00
135	456.02	0.00
137	455.28	0.00
138	455.17	0.00
139	455.10	0.00
14	454.91	0.00

140	455.06	-0.00
141	467.82	-0.00
142	466.94	0.00
143	464.95	0.00
144	465.63	0.00
145	466.56	0.00
146	468.77	0.00
147	469.24	0.00
148	470.18	-0.00
149	472.82	0.00
15	454.91	-0.00
150	475.46	0.00
151	474.09	0.00
152	484.01	0.00
153	468.74	-0.00
154	469.93	0.00
155	470.49	0.00
156	466.22	-0.00
157	466.40	0.00
158	464.24	0.00
159	463.56	0.00
16	462.42	0.00
160	462.87	0.00
161	462.45	0.00
162	462.86	-0.00
163	461.69	0.00
164	471.85	-0.00
165	465.58	0.00
166	462.78	0.00
167	462.37	-0.00
168	462.11	0.00
169	462.13	0.00
17	462.42	0.00
170	462.21	0.00
171	461.86	-0.00
172	461.49	0.00
173	462.11	0.00
174	456.09	-0.00
175	454.76	0.00
176	454.74	0.00
177	454.72	0.00
178	461.48	0.00
179	455.08	0.00
18	455.15	0.00
180	455.08	0.00
181	455.06	0.00
182	455.12	0.00
183	455.23	0.00
184	455.16	-0.00
185	455.17	0.00
186	455.16	0.00
187	455.23	-0.00
188	455.08	-0.00
189	462.48	-0.00
19	455.15	0.00
190	462.66	0.00
191	463.99	0.00
192	467.17	0.00
193	466.02	-0.00
194	466.19	0.00
195	466.58	0.00
196	481.51	0.00
197	464.03	0.00

2	470.19	-0.00
20	464.56	0.00
21	464.78	0.00
22	468.87	0.00
23	468.72	0.00
24	468.51	0.00
25	467.98	0.00
26	454.80	0.00
27	454.77	0.00
28	454.86	0.00
29	454.85	0.00
3	470.06	-0.00
30	454.85	0.00
31	454.84	-0.00
32	454.89	-0.00
33	454.88	0.00
34	454.88	0.00
35	454.95	0.00
36	454.93	0.00
37	454.92	0.00
38	471.74	0.00
39	475.52	0.00
4	470.06	0.00
40	469.08	0.00
41	468.71	0.00
42	466.72	0.00
43	464.23	-0.00
44	463.79	0.00
45	462.15	-0.00
46	460.80	0.00
47	459.72	0.00
48	458.54	0.00
49	457.55	0.00
5	464.73	0.00
50	456.67	0.00
51	456.18	0.00
52	476.39	0.00
53	481.54	0.00
54	487.03	0.00
55	455.06	0.00
56	455.09	0.00
57	454.99	0.00
58	454.95	0.00
59	454.76	0.00
6	464.73	0.00
60	454.75	-0.00
61	454.76	-0.00
62	454.78	-0.00
63	455.10	0.00
64	455.39	0.00
65	454.85	-0.00
66	455.64	0.00
67	455.16	0.00
68	455.05	0.00
69	455.10	0.00
70	455.02	0.00
71	454.84	-0.00
72	454.89	0.00
73	454.86	0.00
74	454.97	0.00
75	454.85	0.00
76	454.83	0.00
77	473.33	-0.00

78	472.96	0.00
79	472.72	0.00
80	471.40	0.00
81	466.60	0.00
82	464.20	0.00
83	463.56	0.00
84	463.52	-0.00
85	462.02	-0.00
86	460.77	0.00
87	459.56	-0.00
88	457.82	0.00
89	455.33	0.00
9	497.58	0.00
90	455.61	0.00
91	455.33	0.00
92	455.17	0.00
93	455.13	0.00
95	454.74	-0.00
96	454.73	0.00
97	470.90	0.00
98	470.29	0.00
99	471.07	0.00

RISULTATI DEI RAMI ----------

	Portate di ramo (Smc/h)				
Ramo	Ingresso	Uscita	Distrib.	Pressione min. (mBar)	Velocita' max in modulo (m/s)
1	2.09	0.00	2.09	470.1941	0.1305
10	0.82	-0.00	0.82	455.1495	0.0516
100	8.92	7.21	1.71	464.2485	0.5591
101	4.81	1.94	2.87	464.3482	0.3019
102	25.24	23.16	2.08	464.3872	1.0939
103	28.98	26.69	2.29	464.7340	1.2555
104	55.70	53.92	1.78	465.2220	2.4115
105	24.95	22.72	2.23	464.3482	1.5636
106	21.81	20.86	0.95	463.6915	0.9460
107	18.34	14.00	4.34	464.0310	0.7952
108	20.86	19.46	1.40	463.5222	0.9048
109	58.84	53.94	4.90	466.4947	2.5410
11	-5.20	-9.49	4.29	464.5607	0.5947
110	10.45	9.17	1.28	470.1852	0.6525
111	-15.73	-16.83	1.10	470.1988	0.7267
112	-12.52	-13.64	1.12	470.1359	0.5891
113	-7.26	-8.49	1.23	470.1073	0.3667
114	-5.66	-7.26	1.59	470.0810	0.3134
115	-1.67	-3.66	1.99	470.0633	0.2287
116	-0.00	-2.00	2.00	470.0768	0.1250
117	-14.38	-16.25	1.87	463.4515	1.0194
118	15.37	15.01	0.36	463.4515	0.9643
119	29.39	26.65	2.73	462.0170	1.8439
12	19.61	19.06	0.55	468.7247	1.2257
120	-15.27	-17.22	1.95	460.3784	1.0823
121	17.71	15.71	2.00	460.3784	1.1129
122	12.91	11.18	1.73	460.7971	0.5612
123	-33.33	-36.36	3.03	458.5303	2.2853
124	7.38	4.23	3.14	454.8863	0.4654
125	8.30	7.07	1.23	454.9923	0.5239
126	10.89	9.83	1.06	455.0586	0.6873
127	13.88	12.52	1.36	455.1545	0.8755
128	17.98	16.61	1.38	455.3429	1.1343
129	22.58	20.33	2.25	455.6506	1.4235

13	37.04	35.99	1.05	468.5110	1.6009
130	31.51	29.88	1.63	456.3869	1.9854
131	33.40	31.75	1.64	457.3983	2.1025
132	34.45	33.03	1.41	458.5313	2.1671
133	30.98	29.64	1.34	459.5673	1.9479
134	-19.42	-20.18	0.76	455.3955	1.2728
135	-12.47	-14.20	1.73	455.1502	0.8961
136	-9.69	-10.98	1.29	455.0334	0.6929
137	-8.73	-9.80	1.06	454.9540	0.6183
138	5.21	1.30	3.92	455.3429	0.3288
139	-7.70	-11.78	4.08	455.6506	0.7429
14	19.06	15.73	3.33	467.9781	1.1914
140	-7.53	-10.05	2.52	455.4784	0.6339
141	-21.01	-22.18	1.17	455.3182	0.9675
142	4.03	1.51	2.52	455.3182	0.2541
143	-6.21	-9.08	2.87	457.3983	0.5721
144	-4.26	-6.45	2.19	457.3346	0.4066
145	-54.58	-56.37	1.79	456.0162	2.4558
146	-25.40	-28.08	2.69	455.4784	1.2245
148	7.35	5.11	2.23	455.0193	0.4636
149	10.42	8.01	2.42	455.1035	0.6577
15	3.80	-0.00	3.80	454.7749	0.2401
150	2.34	-1.49	3.83	455.1483	0.1478
151	3.24	0.71	2.52	455.1545	0.2042
152	22.52	21.46	1.05	455.1692	0.9823
153	2.71	1.05	1.66	455.1656	0.1183
154	4.92	2.36	2.56	455.0586	0.3107
155	15.52	14.53	0.99	455.0979	0.6769
156	9.61	8.29	1.32	455.0593	0.4191
158	-0.11	-3.89	3.78	455.0334	0.2456
159	-0.00	-2.00	2.00	455.0551	0.1262
16	5.60	2.17	3.43	454.7986	0.3537
160	-8.23	-11.58	3.35	456.3869	0.7299
161	-13.24	-15.54	2.29	456.0162	0.9795
162	-33.81	-35.99	2.18	467.8151	1.5560
163	-69.78	-70.56	0.78	466.9447	3.0519
164	-21.73	-26.68	4.95	464.9454	1.6700
165	24.01	22.17	1.85	464.9454	1.5044
166	43.64	41.61	2.03	465.6297	1.8892
167	64.16	61.75	2.41	466.5563	2.7733
168	71.57	71.16	0.41	468.7678	3.0926
169	97.62	97.16	0.46	469.2401	4.2160
17	-0.83	-3.00	2.17	454.8537	0.1309
170	37.22	33.72	3.50	470.1775	2.3204
171	-2.38	-7.60	5.23	472.8232	0.4740
172	85.12	83.42	1.70	472.8232	3.6629
173	-49.75	-51.95	2.20	474.0863	2.2356
174	-142.90	-144.87	1.97	484.0140	4.1370
175	142.90	137.07	5.83	475.4561	4.0891
176	-6.36	-7.00	0.64	468.7412	0.4377
177	27.90	25.42	2.48	468.7412	1.7429
178	28.96	27.90	1.06	469.9255	1.8083
179	-28.96	-31.08	2.12	470.4919	1.9390
18	-1.08	-3.27	2.19	454.8476	0.1427
180	-9.91	-11.81	1.90	466.2169	0.7393
181	-28.35	-31.69	3.34	464.2384	1.9846
182	-21.60	-23.52	1.92	463.5550	1.4749
183	46.18	41.90	4.28	463.5550	2.0005
184	4.83	4.57	0.26	464.2324	0.3030
185	-29.25	-32.57	3.32	462.8735	2.0413
186	-21.41	-22.65	1.24	462.4499	1.4218
187	28.00	25.60	2.40	461.6938	1.7578
188	23.71	21.79	1.93	462.8586	1.4876

189	6.60	6.22	0.38	462.8586	0.4143
19	-1.52	-3.39	1.87	454.8414	0.1477
190	-21.94	-25.60	3.65	467.8151	1.5997
191	15.73	14.81	0.92	467.8151	0.9838
192	60.34	56.64	3.70	468.8730	2.6031
193	49.75	45.73	4.02	471.8474	2.1429
194	66.61	63.91	2.70	470.1775	2.8716
195	-14.61	-19.19	4.58	471.8474	1.1965
196	43.10	39.97	3.13	465.5820	1.8654
197	-9.49	-11.33	1.84	464.7776	0.7103
198	-38.21	-42.51	4.30	462.7789	1.8426
199	-24.46	-26.67	2.21	462.3735	1.1574
2	1.67	-0.00	1.67	470.0607	0.1045
20	1.47	-0.00	1.47	454.8848	0.0927
200	-25.67	-27.04	1.37	462.1085	1.1737
201	3.57	0.27	3.30	462.1085	0.2240
202	8.54	7.02	1.51	462.1281	0.5360
203	-8.06	-12.12	4.06	461.8576	0.7609
204	-31.26	-32.60	1.34	461.4925	1.4157
205	-25.62	-28.61	2.99	460.8817	1.2428
206	25.60	23.65	1.95	460.8817	1.6082
207	3.46	-0.00	3.46	462.1099	0.2170
208	-20.65	-21.41	0.76	462.2111	1.3444
209	25.94	24.54	1.40	461.8576	1.1262
21	1.34	-2.76	4.11	454.8769	0.1744
210	-43.14	-44.08	0.94	455.6392	1.9221
211	2.23	-0.33	2.56	458.5313	0.1405
212	-0.68	-2.41	1.73	458.5303	0.1520
213	-30.40	-34.01	3.61	456.0898	2.1413
214	15.01	13.68	1.32	456.0898	0.6542
215	-89.36	-89.90	0.53	455.9864	2.0326
216	-76.21	-77.58	1.37	455.6116	1.7545
217	-53.83	-56.03	2.20	455.2829	1.2674
218	-39.80	-43.41	3.60	454.9548	0.9820
219	-26.99	-29.11	2.12	454.8586	0.6588
22	6.37	3.25	3.12	454.8781	0.4019
220	-16.23	-18.39	2.16	454.7819	0.5366
221	-11.08	-12.55	1.47	454.7550	0.3664
222	1.90	-2.07	3.97	454.7531	0.0904
223	3.48	-0.00	3.48	454.7208	0.2195
224	2.65	-0.00	2.65	461.4835	0.1666
225	2.84	0.80	2.04	459.5573	0.1785
226	9.86	7.65	2.21	459.5673	0.6199
227	52.84	52.11	0.73	457.3346	2.3009
228	0.00	-1.12	1.12	455.0803	0.0705
229	3.31	-0.00	3.31	455.0649	0.2087
23	-2.15	-4.32	2.17	454.9277	0.2728
230	8.33	6.57	1.76	455.0812	0.3635
231	7.51	5.71	1.80	455.1188	0.3276
232	10.87	8.33	2.54	455.1500	0.4742
233	25.09	22.78	2.31	455.2343	1.0945
234	-2.72	-4.05	1.33	455.1597	0.1767
235	-0.79	-2.88	2.09	455.1612	0.1256
236	2.72	-3.08	5.80	455.1556	0.1342
237	6.01	2.29	3.73	455.1612	0.3794
238	-6.58	-8.49	1.92	455.2341	0.5357
239	0.73	-0.56	1.29	455.2339	0.0459
24	-0.61	-2.77	2.16	454.9181	0.1748
240	-9.39	-11.19	1.80	455.1671	0.4881
241	-2.62	-5.33	2.71	455.1188	0.3366
242	2.14	0.00	2.14	455.0761	0.1351
243	39.79	35.98	3.80	462.1463	1.7259
244	27.30	26.26	1.05	466.2169	1.7094

245	-6.67	-7.89	1.23	462.4223	0.4955
246	-2.57	-5.35	2.78	462.3735	0.3359
247	-7.89	-10.40	2.51	462.4822	0.6528
248	-10.40	-11.54	1.14	462.6649	0.7245
249	13.60	12.31	1.29	463.8183	0.8532
25	-200.01	-202.46	2.45	471.7424	4.5183
250	15.75	13.60	2.15	463.9904	0.9877
251	3.93	2.63	1.29	454.7368	0.1146
252	9.01	7.40	1.61	454.7394	0.2629
253	39.74	38.73	1.01	455.6143	1.7329
254	31.78	29.21	2.58	467.1736	1.9871
255	29.29	28.58	0.71	465.6297	1.8348
256	14.76	13.70	1.06	466.0228	0.9242
257	14.91	12.23	2.67	466.1895	0.9335
258	29.21	28.11	1.10	466.5772	1.8279
259	18.11	15.60	2.51	466.0228	1.1340
26	-166.52	-168.93	2.41	469.0776	3.7796
260	-2.52	-4.48	1.96	466.1895	0.2805
261	13.20	11.81	1.39	466.4026	0.8265
262	0.00	-4.00	4.00	481.5127	0.2480
263	-37.31	-39.97	2.67	464.5607	1.7316
264	14.00	9.50	4.51	463.8183	0.6073
265	10.75	8.91	1.83	455.3265	0.6780
27	-166.18	-166.52	0.34	468.7069	3.7325
28	-164.35	-166.18	1.84	466.7219	3.7258
29	-133.73	-137.04	3.31	464.2324	3.0765
3	1.45	-0.00	1.45	464.7325	0.0910
30	-137.73	-138.30	0.57	463.7871	3.1100
31	-118.77	-121.48	2.71	462.1463	2.7326
32	-153.34	-154.76	1.41	460.7971	3.4850
33	-145.58	-146.82	1.25	459.7166	3.3093
34	-134.15	-135.72	1.57	458.5368	3.0614
35	-128.08	-129.50	1.43	457.5524	2.9234
36	-117.50	-119.00	1.49	456.6694	2.6881
37	-104.90	-105.92	1.02	456.1779	2.3942
38	-405.91	-406.83	0.92	476.3940	9.0533
39	-202.46	-203.02	0.56	475.5211	4.5282
40	-556.66	-558.65	1.99	487.0332	7.5260
41	-410.83	-411.79	0.96	481.5394	9.1315
42	-3.26	-4.80	1.54	455.0593	0.3032
43	-6.91	-9.55	2.64	454.9923	0.4165
44	-2.80	-6.61	3.81	454.9540	0.2883
45	-9.59	-11.53	1.94	454.8781	0.5031
46	-9.43	-11.50	2.07	454.7986	0.5017
47	-5.67	-7.80	2.13	454.7603	0.3404
48	-1.90	-3.42	1.52	454.7546	0.1495
49	2.15	0.00	2.15	454.7551	0.1359
5	560.19	558.65	1.54	492.9692	7.5231
50	3.67	-0.09	3.76	454.7603	0.2319
51	-9.46	-12.36	2.90	455.1035	0.7797
52	-7.58	-10.12	2.54	454.9277	0.6385
53	-4.79	-6.96	2.17	454.8537	0.4394
54	-0.00	-2.34	2.34	454.8472	0.1480
55	29.02	26.78	2.23	455.1572	1.2656
56	-12.36	-14.13	1.77	455.3924	0.8910
57	-5.04	-6.51	1.47	455.0543	0.4108
58	-3.12	-5.04	1.92	455.0193	0.3179
59	-6.13	-8.23	2.11	454.9181	0.5195
6	-560.19	-561.00	0.81	497.5823	7.5209
60	-4.52	-6.74	2.23	454.8476	0.4254
61	-0.00	-2.21	2.21	454.8421	0.1393
62	7.05	5.30	1.75	454.8641	0.3076
63	9.86	7.05	2.82	454.8910	0.4304

64	5.30	3.67	1.63	454.8495	0.2314
65	3.67	1.40	2.27	454.8414	0.1601
66	2.92	-0.00	2.92	454.8298	0.1841
67	19.11	17.22	1.89	454.9661	0.8338
68	-6.51	-7.67	1.16	455.1028	0.4841
69	7.36	2.65	4.71	454.9127	0.3210
7	-0.69	-2.77	2.08	458.5313	0.1746
70	45.13	44.82	0.30	472.9648	2.8126
71	47.51	45.13	2.39	473.3333	2.9552
72	-153.29	-155.38	2.09	472.7237	4.4687
73	-152.53	-153.29	0.76	471.4031	4.4196
74	-59.33	-64.70	5.37	466.5996	2.7918
75	-47.76	-51.74	3.98	464.2029	2.2397
76	-33.23	-35.31	2.08	463.5585	1.5310
77	-33.10	-33.23	0.12	463.5222	1.4413
78	-50.20	-52.56	2.35	462.0170	2.2799
79	-75.90	-76.86	0.95	460.7666	3.3375
8	2.65	0.00	2.65	454.9089	0.1156
80	-57.16	-58.68	1.52	459.5573	2.5505
81	-56.66	-57.96	1.30	458.5409	2.5212
82	-52.84	-53.89	1.05	457.8187	2.3456
83	-11.42	-13.63	2.21	455.3341	0.8600
84	-1.92	-2.93	1.01	455.3265	0.1850
85	-8.91	-10.83	1.93	455.1656	0.6835
86	-6.20	-7.08	0.88	455.1289	0.4465
87	-4.80	-6.20	1.39	455.0868	0.3910
89	2.63	-0.00	2.63	454.7280	0.1661
9	1.32	-0.00	1.32	462.4211	0.0826
90	30.02	27.28	2.75	470.2893	1.2960
91	87.29	87.03	0.26	470.9044	2.5196
92	87.83	87.29	0.53	471.0665	2.5345
93	4.03	0.00	4.03	470.1085	0.2517
94	-4.76	-7.59	2.83	466.4947	0.4753
95	0.00	-3.00	3.00	466.4823	0.1879
96	4.77	0.00	4.77	470.1419	0.2979
97	57.01	54.44	2.57	470.1852	1.6457
98	18.56	15.37	3.19	463.5154	1.1641
99	7.21	6.11	1.09	464.2029	0.4519