# REGIONE PUGLIA
## Comune di Serracapriola
## Provincia di Foggia

Studio di Ingegneria
Ing. Nicola Roselli - Termoli (CB)
email ing.nicolaroselli@gmail.com

ATLAS RE
Energy for the Future

PROGETTO DEFINITIVO

PROGETTO PER LA COSTRUZIONE ED ESERCIZIO DI UN IMPIANTO AGRIVOLTAICO NECESSARIO ALLA PRODUZIONE DI ENERGIA ELETTRICA DA FONTE FOTOVOLTAICA CON ASSOCIATO IMPIANTO APIARIO E DELLE RELATIVE OPERE ED INFRASTRUTTURE CONNESSE DELLA POTENZA NOMINALE MASSIMA DI 46632 KW E POTENZA IN A.C. DI 40000 KW, SITO NEL COMUNE DI SERRACAPRIOLA (FG)



TITOLO TAVOLA

# RELAZIONE IDROGEOLOGICA

PROGETTAZIONE

PROGETTISTI
Ing. Nicola ROSELLI
Ing. Rocco SALOME

PROGETTISTI PARTI ELETTRICHE
Per.Ind. Alessandro CORTI

CONSULENZE E COLLABORAZIONI
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Dott. Massimo MACCHIAROLA
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Archeol. Gerardo FRATIANNI
Geol. Vito PLESCIA

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P.IVA 10307690965

Dott. VITO FRANCESCO PLESCIA
ORDINE GEOLOGI REGIONE MOLISE
ALBO SEZ.A N.39
Geologo Specialista

SPAZIO RISERVATO AGLI ENTI

| 4.2.4 | FILE | CODICE PROGETTO | SCALA |
|---|---|---|---|
| | 1YLY2F7_4.2.4_RelazioneIdrogeologica | 1YLY2F7 | |

| REVISIONE | DATA | DESCRIZIONE REVISIONE | REDATTO | VERIFICATO | APPROVATO |
|---|---|---|---|---|---|
| A | 16/01/2023 | EMISSIONE | PLESCIA | LIMES7 | LIMES7 |
| B | | | | | |
| C | | | | | |
| D | | | | | |
| E | | | | | |
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&$57$ 3$, '(//$ )$6&,$ ', 5,$66(772 )/8%,$/(  6FDOD

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                        7$92/( $//(*$7( )250$72 $

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7$9   3/$1,0(75,$ 8%,&$=,21( $5(( $//2 678',2  6FDOD

7$9   &$57$ *(2025)2/2*,&$ ,03,$172 $*5,92/7$,&2 6FDOD

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7$9   &$57$ 3$, '(/5,6&+,2 ,'5$8/,&2 ,03,$172 $*5,92/7$,&2 6F

7$9   &$57$ 3$, )$6&,$ '(/5,$66(772 )/89,$/( ,03,$172 $*5,92/7
6FDOD

7$9   &$57$ *(2/2*,&$ ,03,$172 $*5,92/7$,&2 6FDOD

7$9   &$57$ /,72/2*,&$ ,03,$172 $*5,92/7$,&2 6FDOD
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678',2 ', *(2/2*,$ *(27(&1,&$ ( 6,60,&$

35(0(66$

3HU FRQWR GHOOD 6RFLHWj /,0(6 6 5 / FRQ VHGH LQ
*HRORJR 3OHVFLD 9LWR )UDQFHVFR LVFULWWR DOO¶$OE
5HJLRQH 0ROLVH DO Qƒ VH] $ ³*HRORJL 6SHFLDOLVWL´
GHO SURJHWWR GHILQLWLYR DXWRUL]]D]LRQH XQLFD DL VH
GL XQ LPSLDQWR DJULYROWDLFR QHFHVVDULR DOOD SURG
DVVRFLDWR LPSLDQWR DSLDULR H GHOOH UHODWLYH RSHU
PDVVLPD GL .: H SRWHQ]D LQ D F GL .: GD UHDO
)* LQ ORFDOLWj 6SDQGLWXUR 1HL VLWL DOOR VWXGLR
FRQVWDWDUH OR VWDWR GHL OXRJKL LQ VHJXLWR VRQR
VDUDQQR LQWHUHVVDWH GDOO LQWHUYHQWR FKH LQ TXH
WHUULWRULR LQ FXL VLSUHYRQRVOWDjULHUHQWHDVWDWR P
)LQDOLWj GHVOWDWRXHOOD GL ULOHYDUH H VWXGLDUH
RJJHWWR GL FRQRVFHUH OH FRQGL]LRQL PRIRORJLFKH
IDOGH LGULFKH VXSHUILFLDOL H SURIRQGH GL DFFHUWDU
OD SURIRQGLWj GHOOD IDOGD IUHDWLFD q VWDWD HIIHWW
VRQR VWDWL FHQVLWL TXDWWUR SR]]L XQR UHDOL]]DWR G
FHQVLWL GD ,VSUD DPELHQWH SRVL]LRQDWL VXOO¶LQ
UHGD]LRQH GHOOH FDUWH WHPDWLFKH q VWDWR XWLOL]]D
GHOOD FDUWD JHRORJLFD XIILFLDOH L GDWL FDUWRJUD
GHOO¶DXWRULWj GL EDFLQR 3$, GHO ) )RUWRUH 'L VHJ
FRQVLGHUD]LRQL HPHUVH GDOOR VWXGLR HIIHWWXDWR


Legenda

- Area a disposizione per campo agrivoltaico
- Campo agrivoltaico
- Cabina MT campo agrivoltaico
- Futura stazione Terna
- Linea Mt

,148$'5$0(172 7232*5$),&2 ( *(2025)2/2*,&2 '(//( $5(( 2**(77
'(// ,17(59(172

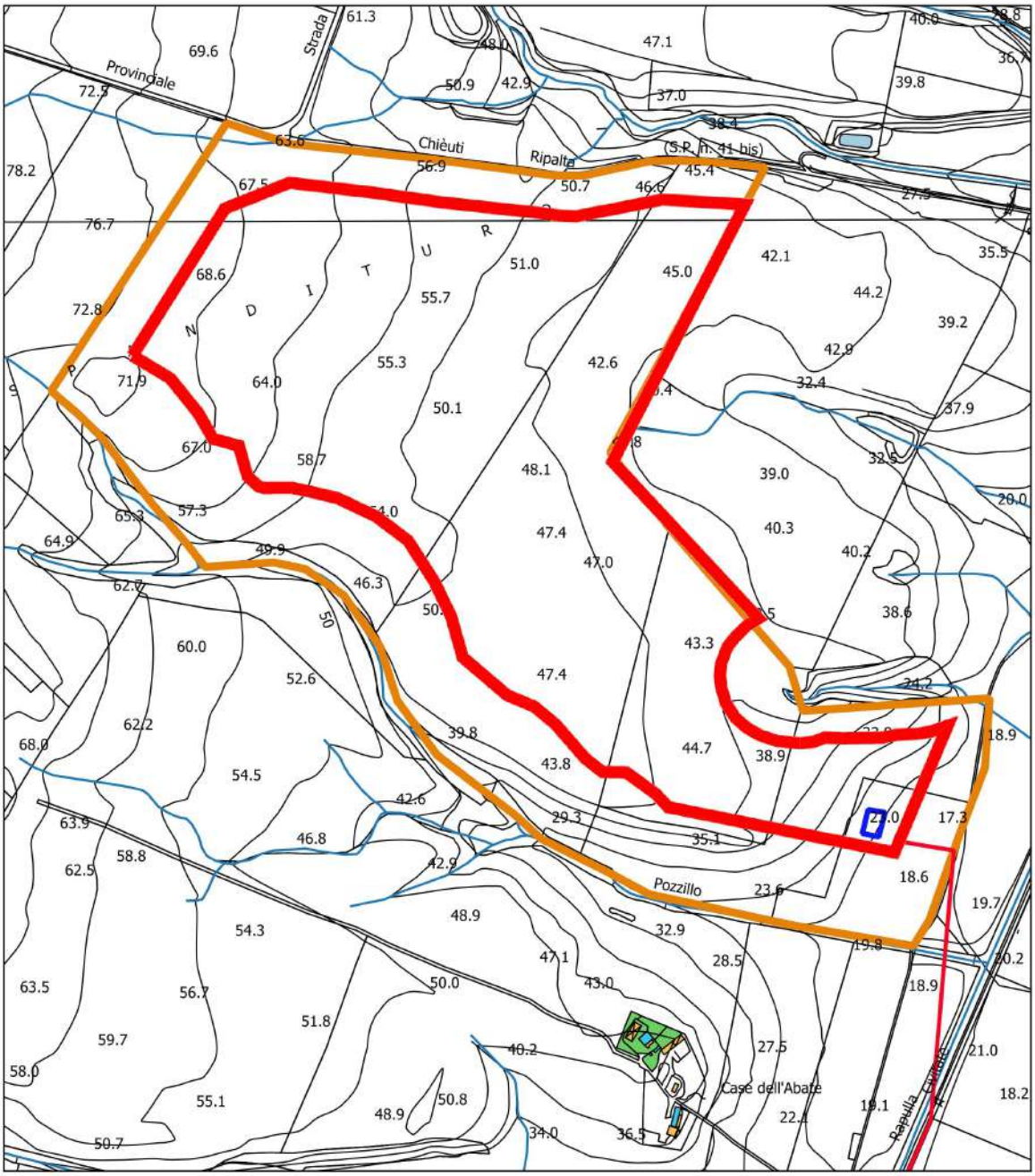
,O WHUULWRULR LQWHUHVVDWR GDO SUHVHQWH VWXG

Qƒ 6DQ 6HYHUR H QHOOH &DUWH 7HFQLFKH 5HJL

DOOD VFDOD

LQWHUHVVDWD GDL SDQQHOOL IRWRYROWDLFL ULHQWUD Q
D QRUG GDOOD 0DVVHULD &KLDQWLQHOOH DG HVW GDOOD
VXG GDOOH &DVH GHOO¶$EDWH HG LQILQH DG RYHVW GDO
DSSDUWHQJRQR DO EDFLQR LGURJUDILFR GHO ) )RUWRUH
YHUVR (VW HG DOWLPHWULFDPHQWH q SRVWD D TXRWH PL
SHQGHQ]D PDVVLPD GHO TXDVL SLDQHJJLDQWH (VVD q
R PHQR HVWHVH FKH ORFDOPHQWH IDQQR VSDUWLDFTXH
HQWUDPEL WULEXWDUH GHO ) )RUWRUH ,Q WDOL DUHH
QDWXUDOPHQWH FRQGL]LRQDWD GDOOD QDWXUD GHO VXE
GHOOH FDUWH 3$, GDOOD OHWWXUD GHOOH FDUWH JHRP
ULVXOWDQR LQWHUHVVDWH GD SHULFRORVLWj H ULVFKL
LGURJHRORJLFR LQ TXDQWR O¶DUHH SUHVHQWDQR XQD ED
IHQRPHQL IUDQRVL 3HUWDQWR QHOOH DUHH DOOR VWXGL
IUDQRVL LQ DWWR R SRWHQ]LDOL IHQRPHQL TXLHVFHQWL
UXVFHOODPHQWR DFFHOHUDWR

,O WHUULWRULR LQWHUHVVDWR GDOO¶LPSLDQWR DJU
SUHVHQWD VWDELOH H SULYR GL IHQRPHQRORJLH HYHUVLY
QHOOH FDUWH GHO ULVFKLR H SHULFRORVLWj LGUDXOLFD
$VVHWWR ,GURJHRORJLFR 9HG 7DYROH

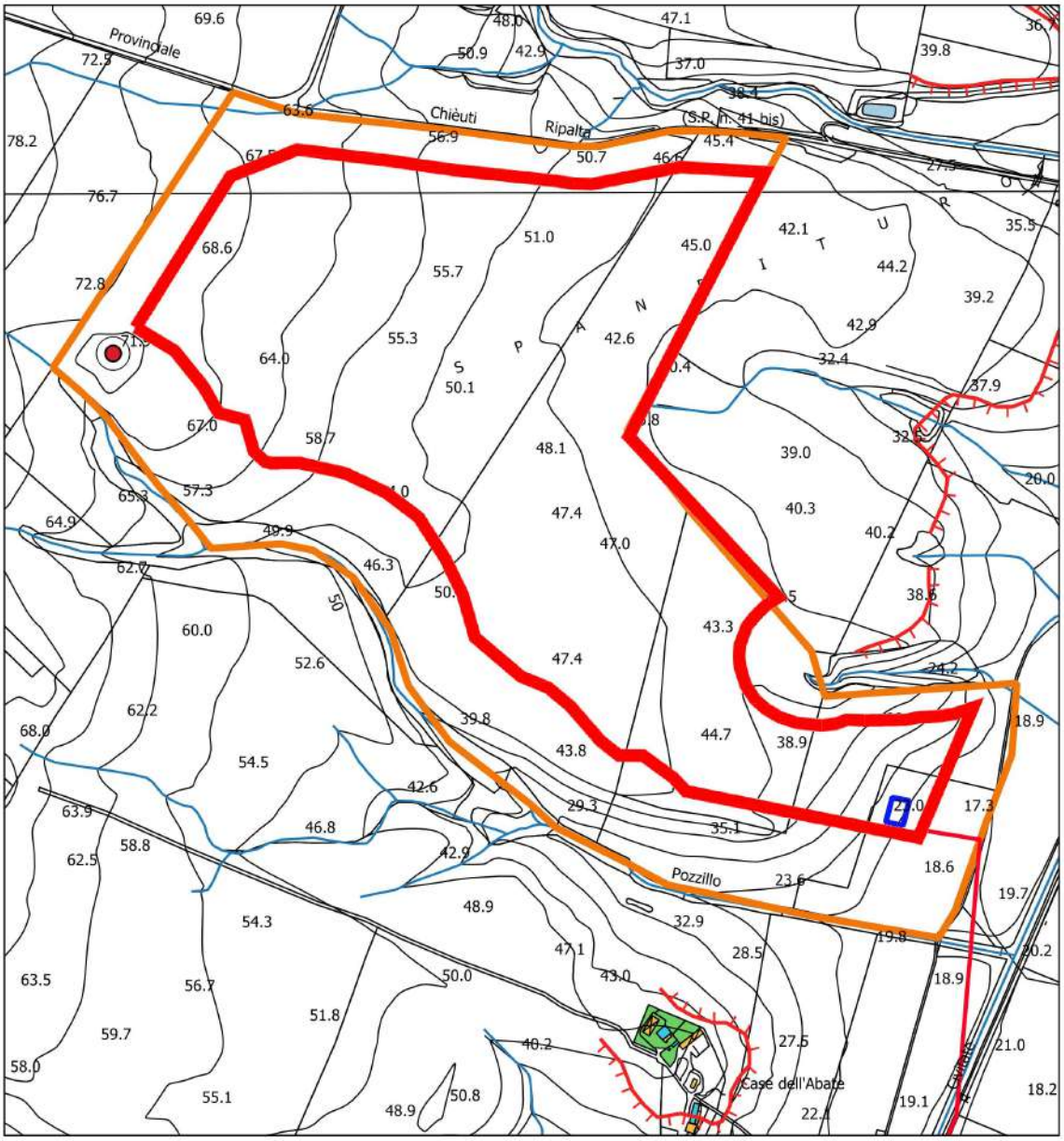



PLANIMETRIA UBICAZIONE IMPIANTO AGRIVOLTAICO

Legenda

- Area a disposizione per campo agrivoltaico
- Campo agrivoltaico
- Cabina MT campo agrivoltaico
- Sottostazione Terna
- Linea Mt

Scala 1 : 8.000




CARTA GEOMORFOLOGICA IMPIANTO AGRIVOLTAUCO

Legenda

- Area a disposizione per campo agrivoltaico
- Campo agrivoltaico
- Cabina MT campo agrivoltaico
- Futura stazione Terna
- Linea Mt

geomorfologia

- 382_reticolo
- 382_orli_terrazzo_morfologico
- 382_nicchie
- 382_vette
- 382_punti_sommitali
- 382_corpi_frana
- 382_creste
- 382_cave

Scala 1 : 8.000

/D JHROORJLD GHO WHUULWRULR LQWHUHVVDWR GDOO'
WHUUHQL GL RULJLQH PDULQD OD FXL HWj q FRPSUHVD V
7DY 'DO EDVVR YHUVR O¶DOWR VL VXVVHJXRQR
)250$=,21, ', *(1(6, 0$5,1$

$UJLOOH GL6LOPRQWDWWHFGRL DUJLOOH PDUQRVH VLOWRV
VXSHUILFLH SHU DOWHUD]LRQH FRQ YHOL GL VL W H UDUH
IUHTXHQWL DOOD VRPPLWj GHOOD IRUPD]LRQH FKH SDVVD
6HUUDFDSULROD %DQFKL GL VDEELD SRWHQWL TXDOFKH G
PHGLD GHOOD IRUPD]LRQH /R VSHVVRUH q GL GLIILFLOH Y
'DL GDWL GL SHUIRUD]LRQH VL GHVXPH FKH VLD PROWR QR
GHOO¶RUGLQH GHL PHWUL QHOOD ]RQD IUD 6HUUDF
VSRQGH GHO ) )RUWRUH DG RYHVW GHOO¶DUHH DOOR V
0HGLR

6DEELH GL 6/HU6DEELH GL6HUUDFDSULROD VRQR FRVW
JLDOOADVWUH TXDU]RVH LQ JURVVL EDQFKL D OXRJKL VRQ
FHPHQWDWH DUJLOOH ELDQFDVWUH R YHUGH FKLDUR 1R
HOHPHQWL SUHYDOHQWHPHQWH DUHQDFHL H FDOFDUHR P
0RQWHVHFFR DOOH TXDOL SDVVDQR JUDGXDOPHQWH SHU
OLPLWH IUD OH GXH IRUPD]LRQL q VWDWR SRVWR FRQYH
SRWHQWL FDUDWWHUL]]DWL GDOOD SUHVHQ]D GL LQWHUF
SL• JURVVRODQD 2YH LO SDVVDJJLR q SL• QHWWR OH 6
PRUIRORJLFD VXOOH WHQHUH DUJLOOH VRWWRVWDQWL /
FLUFD P GLYHQWD TXL SL• FRQVLGHUHYROH $IILRUD VX
VWXGLR /¶HWj q DVFULYLELOH DO &DODEULDQR 3OLRFHQH

&RQJORPHUDWL GL &RQ&DOFDUHQLWL GD OHQWL H OHWW
WDOYROWD FRQ OLYHOOL GL FRQJORPHUDWL FRPSDWWL
LQFURFLDWD HG LQWHUFDOD]LRQL GL DUJLOOH YHUGDVW
WUDWWDQGRVL GL PDWHULDOH SURYHQLHQWH GDOOH IRU

PDUQRVL GL DUHQDULH H ORFDOPHQWH GL FULVWDOOLQ
DEEDVWDQ]D SURQXQFLDWR q LO JUDGR GL DSSLDWWLPH
SDVVDJJLR DOOH VRWWRVWDQWL 6DEELH GL 6HUUDFDSU
GLVFRUGDQ]D DQJRODUH QHOOH ]RQH SL• LQWHUQH /R V
SURVVLPD DOOD FRVWD TXL VL RVVHUYDQR JOL DIILRUD
VFDUSDWD GL DEUDVLRQH PDULQD VSHFLH QHL SUHVVL G
QDWXUD GHO VHGLPHQWR H OD ORFDOH SUHVHQ]D QHL O
IRUPD]LRQH UDSSUHVHQWL OD IDVH ILQDOH GHOOD UHJ
DOOXYLRQDPHQWR , &RQJORPHUDWL Gu &DPSRPDULQR
VXSHUILFLDOH SHU DOWHUD]LRQH 1HO IRJOLR ULOHYDWH
VWXGLR /¶HWj q DVFULYLELOH DO 3RVWFDODEULDQR &DOD
)250$=,21, ', *(1(6, &217,1(17$/(

&RSHUWXUH IOXYLR ODFXVWUL GHL, SODLHDSQRDVOLWWL HVXSHULRU
VRQR FRVWLWXLWL SUHYDOHQWHPHQWH GD JKLDLH VDEE
VXSHUILFLDOH GL WHUUH QHUH 4XHVWL WHUUHQL QRQ
GHSRVL]LRQH OD GLVWULEX]LRQH H OD GLYHUVD DOWH]
LGURJUDILFD FKH OL KD GHWHUPLQDWL QRQ SUHVHQWDVV
IRVVH DQFRUD EHQH LPSRVWDWD 3UREDELOPHQWH VL WU
HURVLRQH FDUDWWHUL]]DWH GDOOD SUHVHQ]D GL GHS
HVVHQ]LDOPHQWH ODFXVWUH VL DOWHUQDYDQR HSLVRGL
VXSHUILFLH HURVD GHOOD VHULH PDULQD 3OLRFHQLFR &
&RQJORPHUDWL GL &DPSRPDULQR 1HOO¶DUHD GHOOH RR
QHOOD ]RQD D 6 GL 8UXUL H VXSHUDQR L P GL TXRWD
JLDOOODVWUH FRQ FLRWWRODPH GL PHGLD GLPHQVLRQH
SXOYHUXOHQWR GD TXHVWD ]RQD HVVL GHJUDGDQR UDS
6DFFLRQH H GHO ) )RUWRUH DVVXPHQGR XQ FDUDWWHU
DQGDPHQWR ORQJLWXGLQDOH VSHFLH OXQJR LO YHUVR
FKLDUDPHQWH GHOLPLWDELOL GDJOL DIILRUDPHQWL GHL &

q SUHVHQWH QHOOD¶DUHD VHPLFHQWUDOH GHO WHUULWR
GHO FDPSR DJULYROWDLFR /¶HWj q DVFULYLELOH DO 3OHL
&RSHUWXUH IOXYLDOL GHJK,L/DIRUSL•QH R 6L QWHHUHDH]Q WD
VDEELRVH VSHVVR ULFRSHUWH GD WHUUH QHUH DG DO
DOOXYLRQDOL LQWHUPHGL KDQQR XQD QDWXUD OLWRORJL
WHUUD]]L DQDORJD q LQIDWWL OD SURYHQLHQ]D GHO FO
PRUIRORJLFD FDUDWWHUL]]DWD GD XQ PDUFDWR IHQRP
SUHYDOHQWHPHQWH IOXYLDOH SHU TXHVWL GHSRVLWL ,O
HVWHVR OXQJR LO ) )RUWRUH RYH GD XQD TXRWD GL
SURJUHVVLYDPHQWH ILQR D IRQGHUVL FRQ L WHUUD]]L SL
GHSRVLWL DOOXYLRQDOL LQGLFDWL FRPH q PROWR SL• PD
FKH LO FRUVR GHJOL DOYHL DWWLYL VL VLD VSRVWDWR JU
'HWWD IRUPD]LRQH DIILRUD QHOOD SDUWH FHQWUDOH GH
FDPSR DJULYROWDLFR /¶HWj q DVFULYLELOH DO 3OHLVWR
$OOXYLRQL SUHYDOHQWHPHQWH OLPRVL DWWLYL VL GHS
VDEELH SURYHQLHQWL HVVHQ]LDOPHQWH GDOO¶HURVLRQH
) )RUWRUH D TXHVWR PDWHULDOH ILQH VL LQWHUFDOD
DSSHQQLQLFD /R VSHVVRUH VXSHUD L PW VROR UDUD
GHOOD IRUPD]LRQH FRVWLWXLWD GD VDEELH ORFDOPHQW
0RQWHVHFFR 4XHVWH DOOXYLRQL WHUUD]]DWH FRVWLWXL
GH PHWUL ULVSHWWR DOO¶DOYHR DWWXDOH $IILRUD QHO
DVFULYLELOH DO 3OHLVWRFHQH VXSHULRUH 2ORFHQH
$OOXYLRQL QRQ DWWULEXLWL GD GHSRVLWL FRQ HOHPHQ
VDEELH H DUJLOOH FRQ SUHYDOHQ]D GL GHWULWL ILQL 2
OXQJR LO ) )RUWRUH /¶HWj q DVFULYLELOH DOO¶2ORFHQ
RVSLWD WHUUHQL DSSDUWHQHQWL DOOH &RSHUWXUH IOXY
GHOOH &RSHUWXUH IOXYLR ODFXVWUL GHL SLDQDOWL H GH
,QROWUH q GD PHWWHUH LQ HYLGHQ]D FRPH OD GLYHUVD
WHUUULWRULR VL ULIOHWWH VSHVVR VXOOH IRUPH PRUIRO

YHUVDQWL 4XLQGL D IRUPH PRUIRORJLFKH GROFL FRPH
DFFOLYL VL SRVVRQR DVVRFLDUH WHUUHQL WHQHUL PI
IRUPD]LRQL FRQJORPHUDWLFKH FHPHQWDWH H IRUPD]LRQL
VSRUJHQ]H H SHQGLL SLXWWRVWR ULSLGL 4XHVWH FRQ
JHQHUDOH HVWHVD LQ WXWWR LO WHUULWRULR SRVWR C
HVWHQGHUH OD YLVLRQH JHRORJLFD FRPH GHVFULWWR L
FRPSOHWD H JOREDOH GHOOD PRUIRORJLD GHOO¶LGURJHR
DG LQWHUYHQLUH

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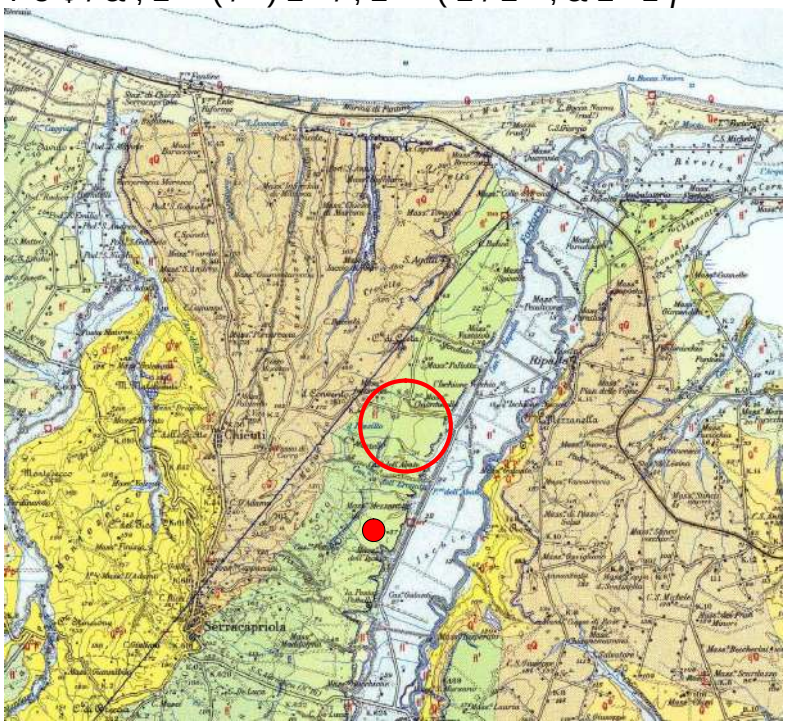


&DPSR DJULYROWDLFR

$UHD 7HUQD

*KLDLH VDEELH H DUJLOOH GL IRQGRYDOOH DWWXDOL 2OI

$OOXYLRQL SUHYDOHQWHPHQWH OLPRVR DUJLOORVH GHO ,

&RSHUWXUH )OXYLR ODFXVWUL GHO ,,ƒ 2UGLQH GHL 7HUUD]

&RSHUWXUH )OXYLR ODFXVWUL GHO ,ƒ 2UGLQH GHL 7HUUD]]L 3O

&RQJORPHUDWL GL &DPSRPDULQR &DODEULDQR 7HUPLQDOH

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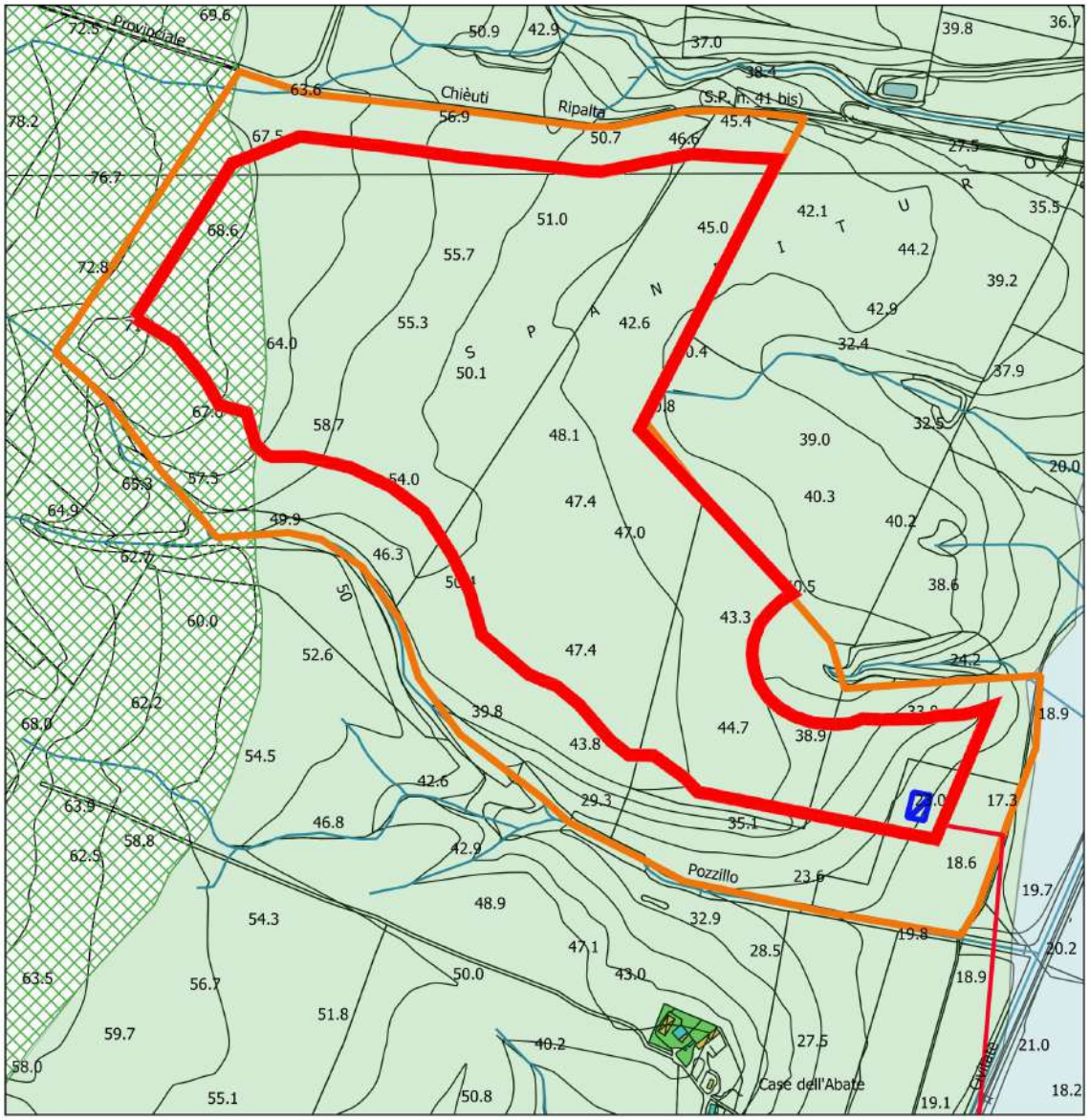
6FDOD




CARTA GEOLOGICA IMPIANTO AGRIVOLTAICO

Legenda

- Area a disposizione per campo agrivoltaico
- Campo agrivoltaico
- Cabina MT campo agrivoltaico
- Futura stazione Terna
- Linea Mt

geologia

- Ghiaie, sabbie e argille dei fondovalle attuali (a)
- Alluvioni prevalentemente limoso-argillose del IV Ordine dei Terrazzi
- Coperture Fluviali del II° Ordine dei terrazzi
- Coperture fluviale I° Ordine, ghiaie e sabbie,limi e argille. (Pleistocene).
- Conglomerati di Campomarino. (Calabriano Terminale).
- Sabbie di Serracapriola. (Calabriano-Pliocene Superiore).
- Argille di Montesecco, argilla scistosa, argilla marnosa. (Pliocene)).

Scala 1 : 8.000

(//(0(17, *(2/2*,&2 675877785$/,

/LWRORJLD GHO VXEVWUDWR

3HU TXDQWR ULJXDUGD O¶DVVHWWR OLWRWHFQLFR OR WHUPLQL ULFRQRVFLXWL LQ DIILRUDPHQWR GD SHFXOLDU 7DY 'L VHJXLWR VRQR GHVFULWWH OH XQLWj OLWRWHFQ SL• R PHQR RPRJHQHR

8QLWj OLWRWHFQLFD FRVWLWXLWD GD GHSRVLWL VFL DUJLOORVL H VDEELRVL ULJXDUGD OD IRUPD]LRQH GHO ,9 VDEELH H DUJLOOH GHL IRQGRYDOOH DWWXDOL 'HWWD XQ JUDQXODUH HG XQD ULVRVWD PHFFDQLFD GHO WLSR QRQ PHGLR

8QLWj OLWRWHFQLFD FRVWLWXLWD GD GHSRVLWL VF ULJXDUGD OD IRUPD]LRQH GHOOH FRSHUWXUH IOXYLDOL OLWRWHFQLFD SUHVHQWD XQ FRPSRUWDPHQWR GHO WLSR HODVWLFR ,O JUDGR GL SHUPHDELOLWj ULVXOWD LQ JHQH

8QLWj OLWRWHFQLFD D SUHYDOHQWH FRPSRQHQWH VL GHOOH 6DEELH GL 6HUUDFDSULROD H OD IRUPD]LRQH GH OLWRWHFQLFD SUHVHQWD XQ FRPSRUWDPHQWR GHO WLSR HODVWLFR ,O JUDGR GL SHUPHDELOLWj ULVXOWD LQ JHQH

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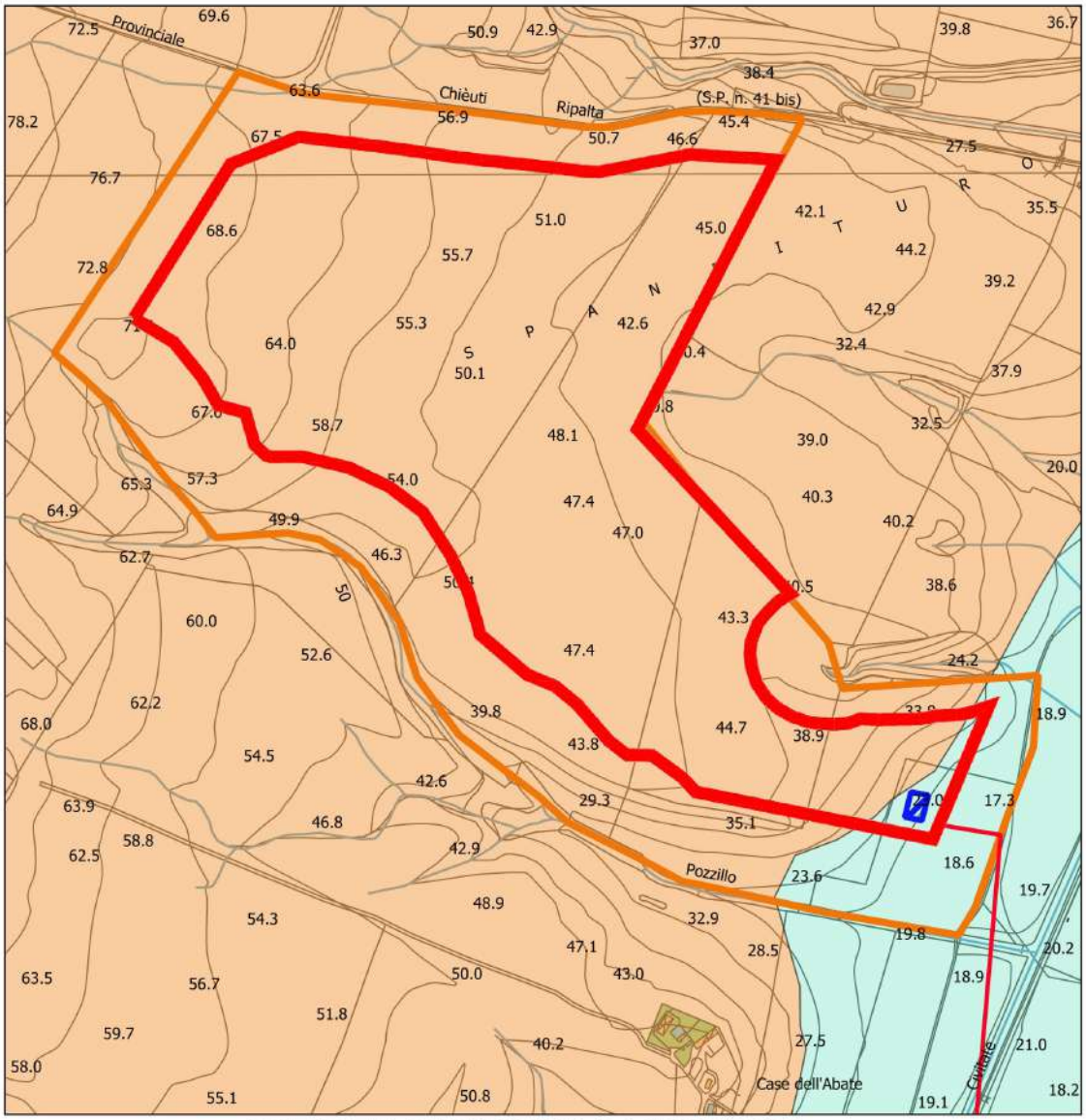



CARTA LITOLOGICA IMPIANTO AGRIVOLTAICO

Legenda

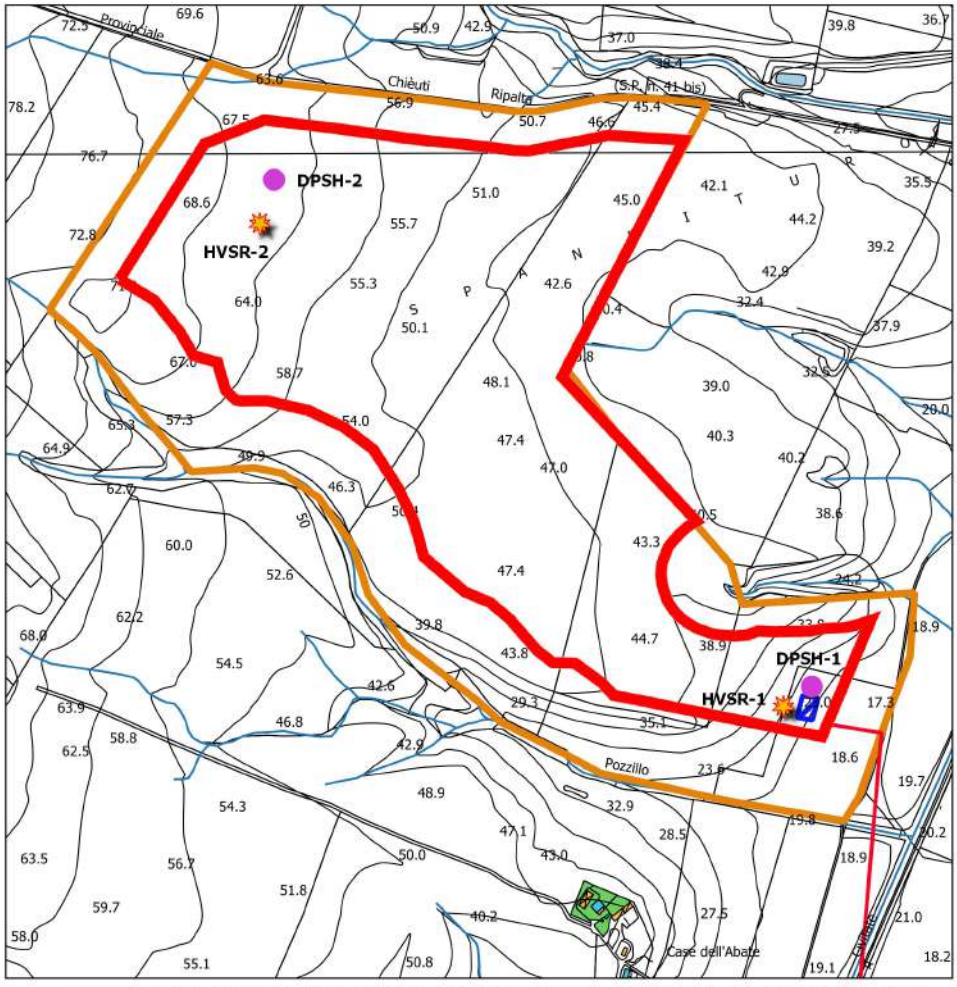
- Area a disposizione per campo agrivoltaico
- Campo agrivoltaico
- Cabina MT campo agrivoltaico
- Futura stazione Terna
- Linea Mt

Litologia

- Depositi sciolti a prevalente componente pelitica
- Depositi sciolti a prevalente componente sabbioso-ghiaiosa
- Unit a prevalente componente argillosa
- Unit a prevalente componente ruditica
- Unit a prevalente componente siltoso-sabbiosa e/o arenitica

Scala 1 : 8.000

1HO WHUULWRULR LQ HVDPH FRPH JLj GHVFULWWR DO q VWDWD HIIHWWXDWD XQD FDPSDJQD GL LQGDJLQL JHRJQ FXL XQR HIIHWWXDWR GDOO¶(1, SHU ULFHUFKH LGURF 'RFXPHQWD]LRQH ,635$ SRVL]LRQDWL D QRUG GHO WHU DIILRUDQWL 9HG $OO VWUDWLJUDILH SR]]L /H LQGDJ SHQHWURPHWULFKH GLQDPLFKH VSLQWH ILQR D ULILXWR V




PLANIMETRIA UBICAZIONE INDAGINI GEOGNOSTICHE IMPIANTO AGRIVOLTAICO

Legenda

- Area a disposizione per campo agrivoltaico
- Campo agrivoltaico
- Cabina MT campo agrivoltaico
- Sottostazione Terna
- DPSH
- Prova sismica HVSR

Scala 1 : 8.000

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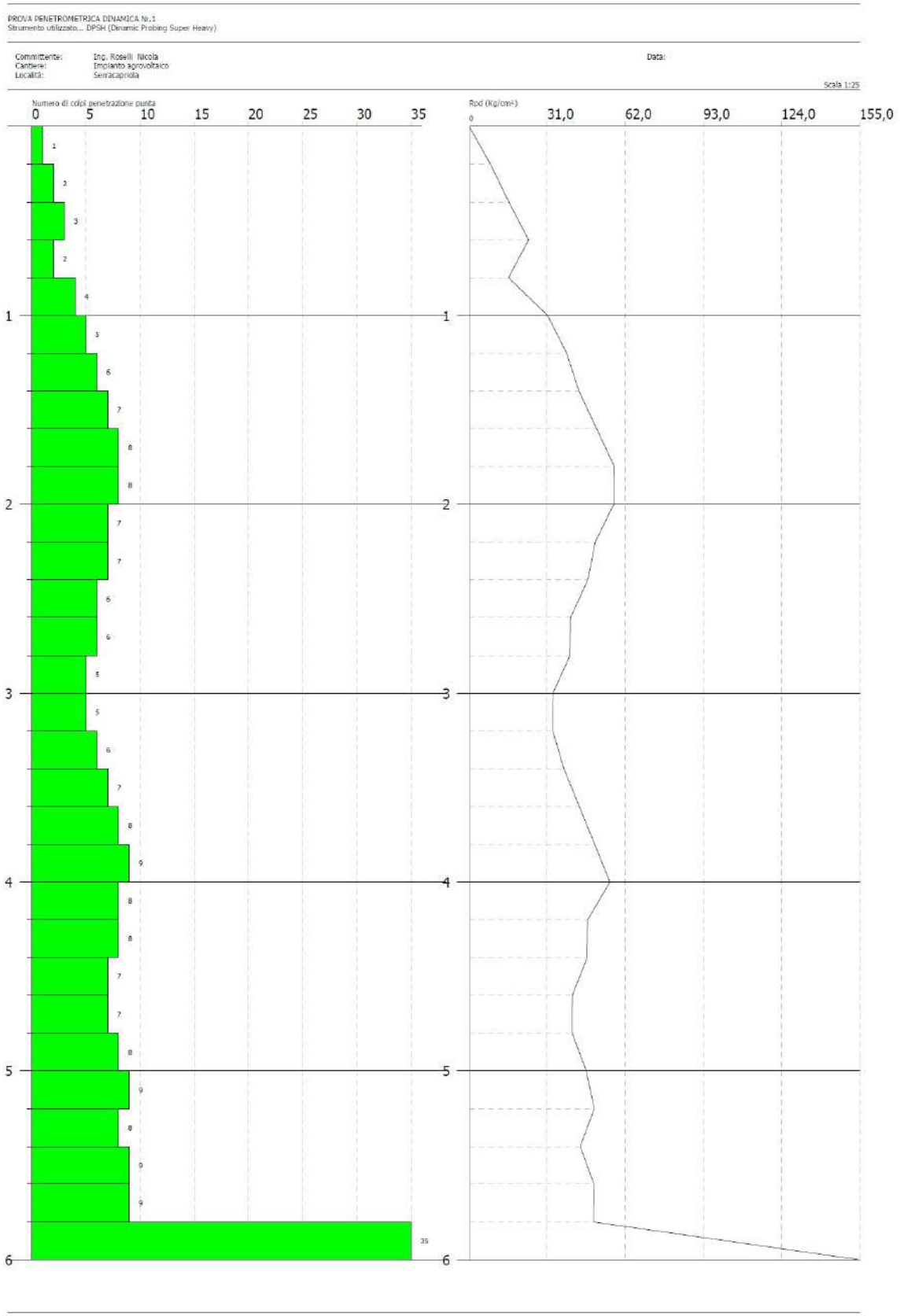
W Œ } À ‰ v š Œ } u š Œ ] ] v u ] } v š ] v µ

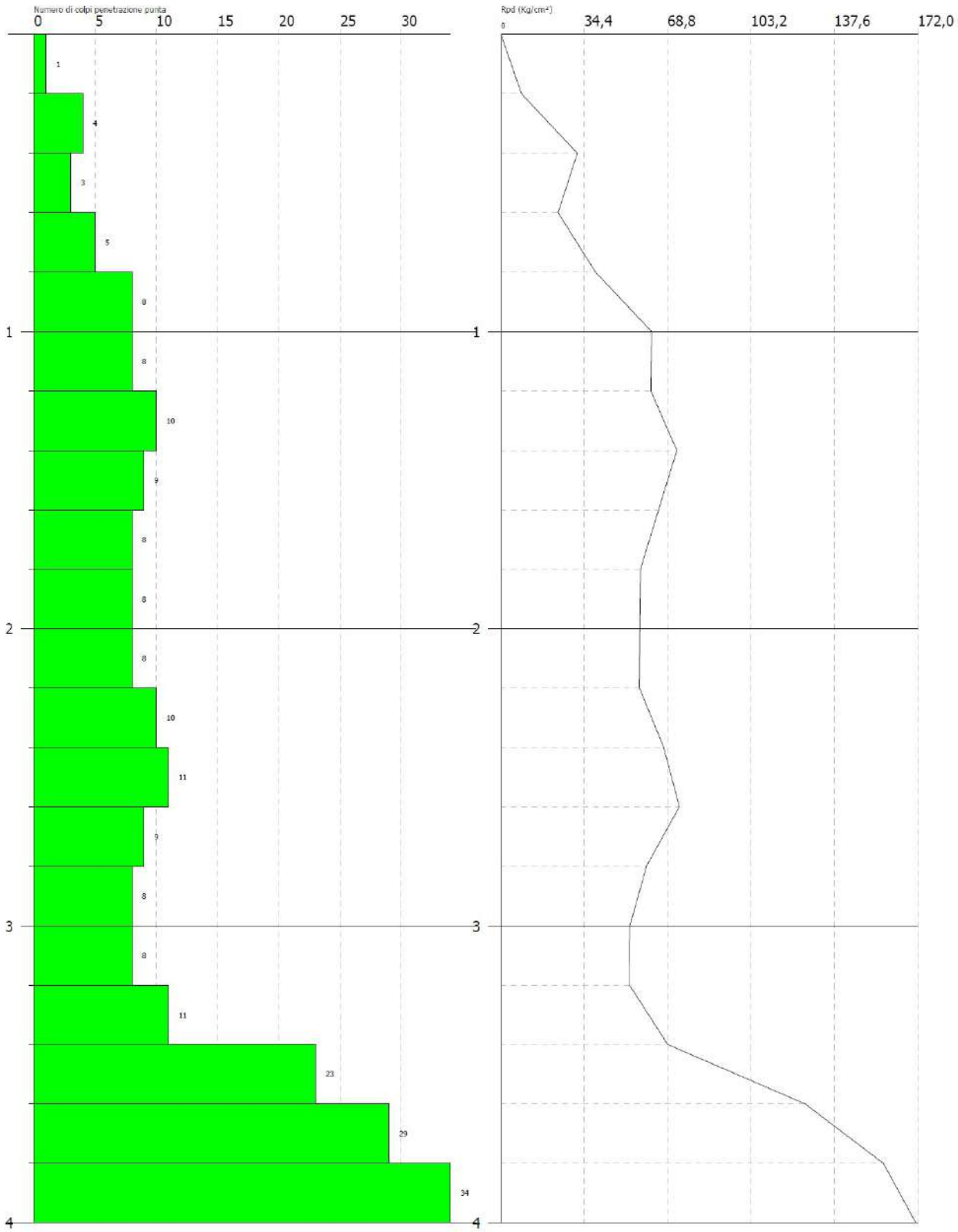

PROVA PENETROMETRICA DINAMICA N°.1
Strumento utilizzato... DPSH (Dinamic Probing Super Heavy)
Committente: Ing. Roselli Nicola
Cantiere: Impianto agrovoltaico
Località: Serracapriola
Data:
Scala 1:25
Numero di colpi penetrazione punta
0 5 10 15 20 25 30 35
Rpd (Kg/cm²)
0 31,0 62,0 93,0 124,0 155,0
1 2 3 4 5 6

PROVA PENETROMETRICA DINAMICA Nr.2
Strumento utilizzato... DPSH (Dinamic Probing Super Heavy)

Committente: Ing. Roselli Nicola
Cantiere: Impianto agrovoltaico
Località: Serracapriola

Data:

Scala 1:17



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PW 7HPUWUHQR YHJHWDOH OLPRVR VDEELRVR FRQ

PW 6DEEWLH OLPRVH FRQ UDUH LQFOXVLRQL JK

PW 6DEEWLH OLPRVH FRQ LQFOXVLRQL JKLDLR

PW 6DEEWLH FRQ JKLDLH D OXRJKL OLPRVH

&$5$77(5,==$=,21( *(27(&1,&$ 3529$ 3(1(7520(75,&$ '36+

| –"ƒ– | "'^ä • | –"ƒ–' •'– | " ¨ | M •‰'Ž' †ïƒ––"‹–' ‹•–‡"•' ₁ | ‡† •'†—Ž' ‡†'•‡–"‹…' ‰ .!.• | Žƒ••‹^‹…ƒœ‹'‡•' †‹ Ž—•‡ †‡Ž˜'Ž—•‡ †‡Ž –‡""‡•' •ƒ––"' – ↵ | J Ž—•‡ †‡Ž˜'Ž—•‡ †‡Ž –‡""‡•' •ƒ––"' – ↵ | J™ ‡•' †‹ ˜'Ž—•‡ †‡Ž –‡""‡•' •ƒ––"' – ↵ | ï '‹—••'• | •'†—Ž' †‹ ††^'"•ƒœ‹'•‡ ƒŽ –ƒ‰Ž‹' †‹•ƒ•…' ‰ .!.• |
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| t | särr uäxr | {äx | utäs | ty | vÿäs‡••ƒ–' | ‘…‘ säyt | sä{t | räuv | wvväzs | |
| u | uäxræwäzr | stäu | uyäzw | tzäwz | '†‡"ƒ–ƒ•‡•–‡ ƒ††‡••ƒ– | wtäyu | sä{u | sä{u | räuu | xzyäyv |
| v | wäzræxärr | wtäxv | ztäxw | vuäs | 'Ž–' ƒ††‡••ƒ– | suwäw{täwr | täwr | rätw | tx{yävu | |

$VVHQ]D GL IDOGD

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| –"ƒ– | "'^ä • | –"ƒ–' •'– | " ¨ | M •‰'Ž' †ïƒ––"‹–' ‹•–‡"•' ₁ | ‡† •'†—Ž' ‡†'•‡–"‹…' ‰ .!.• | Žƒ••‹^‹…ƒœ‹'‡•' †‹ Ž—•‡ †‡Ž˜'Ž—•‡ †‡Ž –‡""‡•' •ƒ––"' – ↵ | J Ž—•‡ †‡Ž˜'Ž—•‡ †‡Ž –‡""‡•' •ƒ––"' – ↵ | J™ ‡•' †‹ ˜'Ž—•‡ †‡Ž –‡""‡•' •ƒ––"' – ↵ | ï '‹^^‹…‹‡•–‡ †‹ '‹—••' | •'†—Ž' †‹ ††^'"•ƒœ‹'•‡ ƒŽ –ƒ‰Ž‹' †‹•ƒ•…' ‰ .!.• |
|---|---|---|---|---|---|---|---|---|---|---|
| sæ | rärræ | räzr | väz{ | träwv | tuäwx | '…' ƒ†‡ä‡s‡–'säwu | | sáz{ | räuv | tzzä{z |
| t | räzr uävr | suävt | vrärx | t{äs{ | '†‡"ƒ–ƒ•‡•–‡ ƒstrÿtäu‡x– | | säzv | sá{v | räuu | yvxävw |
| u | uävræuäzr | u{äs | ysäxv | u{ätt | ††‡us‡tä'zr | | tätr | táwr | rätz | tru{äxy |
| v | uäzræwärr | wsäsv | zsäuu | vtäy | 'Ž–' ƒ††‡••ƒ– | vr{äst | tätv | táwr | rätw | txtwäst |

$VVHQ]D GL IDOGD

,Q EDVH DOOD ULFHUFD HIIHWWXDWD HG DL ULVXOWDWL GH
IDOGH 0HQWUH D QRUG GHOO¶DUHD GHSXWDWD DG RVSLW
QHOO¶DFTXLIHUR SRURVR VXSHUILFLDOH DOOH SURIRQGLW

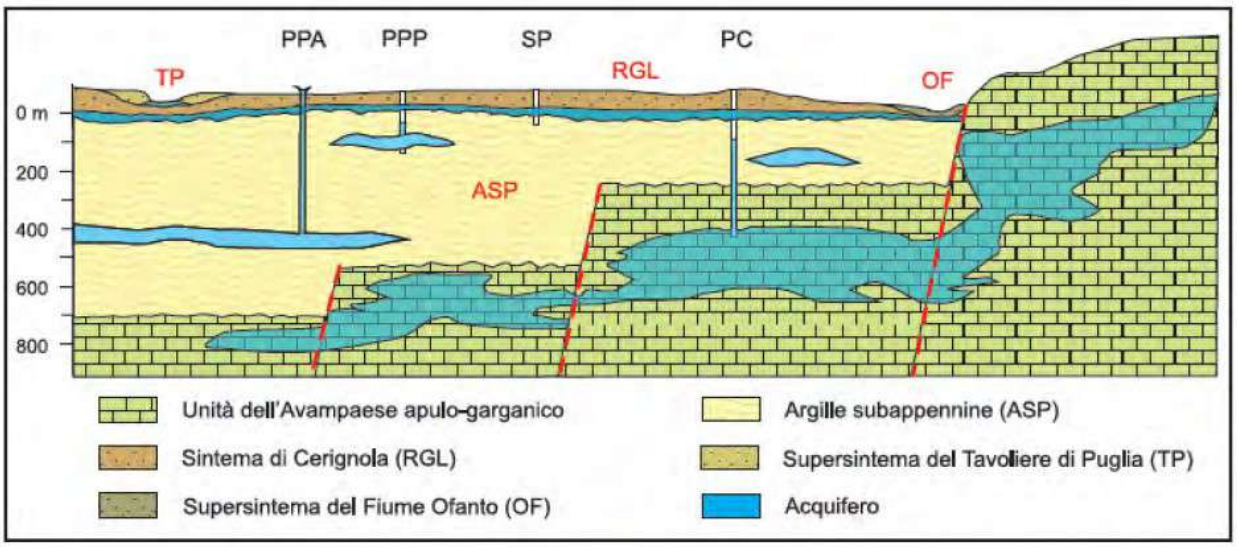
E 3R]]R QHO WHUULWRULR SRVWR D QRUG GL 6HUUDFDSU
D PW

F 3R]]R QHO WHUULWRULR SRVWR D QRUG GL 6HUUDFDSU
D PW

G 3R]]R QHO WHUULWRULR SRVWR D QRUG GL 6HUUDFDSU
D PW H D

## ,'52*(2/2*,$

/¶DFTXD GHOOH SUHFLSLWD]LRQL DWPRVIHULFKH LQ SD
LQ SDUWH VFRUUH VX GL HVVR HURGHQGROR H VFDYDQGR
GLVHJQR FKH ULVXOWD GD TXHVWD D]LRQH SDWWHUQ GL
ROWUH FKH GDOOD ORUR GLVSRVL]LRQH 1HO WHUULWRUL
FRQYHUJHQWH ULFRQGXFLELOH D IRUPD]LRQL SOLRFHQLFK




6FKHPD LGURORJLFR GHO 7DYROLHUH GL 3XJOLD
/HJHQGD

3& $FTXLIHUR IHVVXUDWR FDUVLFR SURIRQGR 333
33$ DFTXLIHUR SRURVR SURIRQGR DUWHVLDQR 63

## $&48,)(52 )(6685$72 &$56,&2 352)21'2

/¶XQLWj SL• SURIRQGD WURYD VHGH QHOOH URFFH FDO
DSSHQQLQLFD HG q LQ FRQWLQXLWj QHO VHWWRUH VXG R
GL DFTXLIHUR OD FLUFRODZLRQH LGULFD VRWWHUUDQHD
QXPHURVH IDJOLH FKH GLVORFDQR OH XQLWj VHSROWH
IUDWWXUD]LRQH H FDUVLILFD]LRQH GHOOH URFFH FDOFDU

## $&48,)(52 325262 352)21'2

6L ULQYLHQH QHL OLYHOOL VDEELRVR OLPRVL H LQ PL
QHOOD VXFFHVVLRQH DUJLOORVD SOLRSOHLVWRFHQLFD $
VSD]LDOH H OD JHRPHWULD GL TXHVWL FRUSL LGULFL QR

, OLYHOOL DFTXLIHUL VRQR FRVWLWXLWL GD FRUSL GLVFR
YDULDELOL WUD L P H L P GDO SLDQR FDPSDJQD $S
PW HG LO ORUR VSHVVRUH QRQ VXSHUD OH SRFKH
ULQYHQJRQR DFTXH FRQQDWH DVVRFLDWH D LGURFDUEXU
GHOOD WHPSHUDWXUD *f*& H SHU OD ULFRUUHQWH SU
LQ SUHVVLRQH H SUHVHQWD TXDVL VHPSUH FDUDWWHUL
HVVHQGR YDULDELOH GD OXRJR D OXRJR ULVXOWD VHPSU
,Q JHQHUH OD SURGXWWLYLWj WHQGH D GLPLQXLUH UDSL
IDFHQGR UHJLVWUDUH LQ DOFXQL FDVL LO FRPSOHWR H
SRVVRQR FRVWLWXLUH VROWDQWR GHOOH OLPLWDWH IRQ
PROWR OHQWD

$&48,)(52 325262 683(5),&,$/(

/¶DFTXLIHUR SRURVR VXSHUILFLDOH VL ULQYLHQH QHL
FRQWLQXLWj ODWHUDOH OH IRUPD]LRQL DUJLOORVH SOHL
DFTXD HYLGHQ]LDQR O¶HVLVWHQ]D GL XQD VXFFHVVLRQH
HG DFTXLIHUL LQWHUFDODWL GD OLYHOOL OLPR DUJLOORV
, GLYHUVL OLYHOOL LQ FXL O¶DFTXD IOXLVFH FRVWLWXLV
OXRJR DG XQ XQLFR VLVWHPD DFTXLIHUR ,Q OLQHD JHQH
SUHYDOJRQR QHOOH DUHH SL• LQWHUQH VYROJRQR LO UXI
VL IDQQR SL• IUHTXHQWL HG DXPHQWDQR GL VSHVVRUH OH
FKH VYROJRQR LO UXROR GL DFTXLWDUGR 1H ULVXOWD
QHOOH DUHH SL• LQWHUQH HG LQ SUHVVLRQH PDQ PDQR
SRWHQ]LDOLWj UHDOH GHOOD IDOGD HVVHQGR VWUHWW
VWUDWLJUDILFR YDULD VHQVLELOPHQWH GD ]RQD D ]RQ
SUHIHUHQ]LDOPHQWH GRYH LO WHWWR GHOOH DUJLOOH IR
GHL WHUUHQL SHUPHDELOL q PDJJLRUH H GRYH OD ORUR
PRGDOLWj GL DOLPHQWD]LRQH GHOOD IDOGD VXSHUILFL
SUHFLSLWD]LRQL 2OWUH FKH GDOOH DFTXH GL LQILOWUD
GHOOD IDOGD VXSHUILFLDOH FRQWULEXLVFDQR DQFKH L F

SHUPHDELOH 3HU OH FRQVLGHUD]LRQL VX PHQ]LRQDWH H
QHOOH DUHH RJJHWWR GL VWXGLR TXHVWL XOWLPL ULHQ
YLVWD LGURJHRORJLFR OD SUHVHQ]D GL WHUUHQL VDEE
SRURVLWj SRJJLDQWL VXOOH DUJLOOH JULJLR D]]XUUH
SHUPHDELOL SHUPHWWH O¶LQVWDXUD]LRQH GL XQD IDOGD
FRQWDWWR WUD L GXH OLWRWLSL ,GURJUDILFDPHQWH C
)RUWRUH $ FRQIHUPD GL WXWWR FLz VRQR VWDWL YLVLR
ULFHUFKH LGURFDUEXUL WUH SR]]L SHU ULFHUFKH GL DFTX
WHUUHQL DOOR VWXGLR QHL YDUL WLSL GL WHUUHQL D

D 3R]]R (1, GHQRPLQDWR 6DQ 1LFDQGUR QHO WHUULW
VDODWD ULQYHQXWD D PW

E 3R]]R QHO WHUULWRULR SRVWR D QRUG GL 6HUUDFDSU
D PW

F 3R]]R QHO WHUULWRULR SRVWR D QRUG GL 6HUUDFDSU
D PW

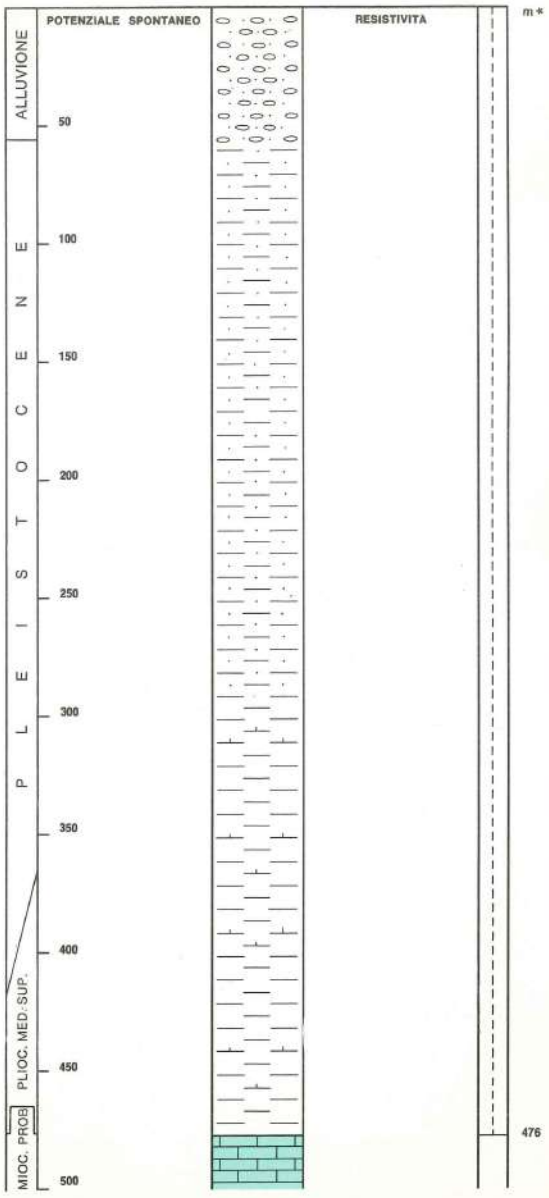
G 3R]]R QHO WHUULWRULR SRVWR D QRUG GL 6HUUDFDSU
D PW H D

'DOOD OHWWXUD VWUDWLJUDILFD GHL SR]]L FHQVLWL L F
HVVHQ]LDOPHQWH VFLROWL R GHEROPHQWH FHPHQWDWL
ULWHQHUVL PROWR SHUPHDELOL SHU SRURVLWj

# Pozzo: SANNICANDRO 2 (1963)

**Comune: SERRACAPRIOLA (FOGGIA)**
**I.G.M. F° 155 I S.O.**
**Lat. 41° 53' 31"**
**Long. 2° 47' 49"** Est da Monte Mario

Quota del piano campagna: + m 12




**ELEMENTI DI VALUTAZIONE**
- Mancanti
- Insufficienti
- Incerti

**LITOLOGIA**
- Ciottoli e ghiaia
- Sabbia
- Argilla
- Argilla sabbiosa
- Marna
- Calcare

**FLUIDI IN STRATO**
- Acqua dolce
- Acqua salmastra
- Acqua salata

**PERMEABILITÀ**
- Buona
- Discreta
- Nulla

* Le profondità sono riferite al piano campagna

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Sistema Nazionale per la Protezione dell'Ambiente

**Istituto Superiore per la Protezione e la Ricerca Ambientale**

## Archivio nazionale delle indagini nel sottosuolo (Legge 464/1984)

### Dati generali

**Codice:** 206398
**Regione:** PUGLIA
**Provincia:** FOGGIA
**Comune:** SERRACAPRIOLA
**Tipologia:** PERFORAZIONE
**Opera:** SONDAGGIO GEOGNOSTICO
**Profondità (m):** 60.00
**Quota pc slm (m):** 116.00
**Anno realizzazione:** 1999
**Numero diametri:** 1
**Presenza acqua:** SI
**Portata massima (l/s):** ND
**Portata esercizio (l/s):** ND
**Numero falde:** 1
**Numero filtri:** 0
**Numero piezometrie:** 0
**Stratigrafia:** SI
**Certificazione(*):** NO
**Numero strati:** 17
**Longitudine WGS84 (dd):** 15.214719
**Latitudine WGS84 (dd):** 41.876231
**Longitudine WGS84 (dms):** 15° 12' 52.100" E
**Latitudine WGS84 (dms):** 41° 52' 34.44" N

**(*)Indica la presenza di un professionista nella compilazione della stratigrafia**

### Ubicazione indicativa dell'area d'indagine


### DIAMETRI PERFORAZIONE

| Progr | Da profondità (m) | A profondità (m) | Lunghezza (m) | Diametro (mm) |
|---|---|---|---|---|
| 1 | 0.00 | 60.00 | 60.00 | 101 |

### FALDE ACQUIFERE

| Progr | Da profondità (m) | A profondità (m) | Lunghezza (m) |
|---|---|---|---|
| 1 | 35.00 | 45.00 | 10.00 |

### STRATIGRAFIA

| Progr | Da profondità (m) | A profondità (m) | Spessore (m) | Età geologica | Descrizione litologica |
|---|---|---|---|---|---|
| 1 | 0.00 | 0.60 | 0.60 | | MATERIALE DI RIPORTO |
| 2 | 0.60 | 1.50 | 0.90 | | TERRENO VEGETALE BRUNASTRO CON ELEMENTI LAPIDEI |
| 3 | 1.50 | 5.00 | 3.50 | | GHIAIE E CIOTTOLI POLIGENICI SUBARROTONDATI E, TALORA, BLOCCHI CON SABBIE DEBOLMENTE LIMOSE; A LUOGHI INCLUSIONI CARBONATICHE BIANCASTRE FARINOSE DI ORIGINE EVAPORITICA |
| 4 | 5.00 | 22.00 | 17.00 | | GHIAIE E CIOTTOLI ETEROMETRICI SUBARROTONDATI, TALORA CEMENTATI, CON SABBIE A GRANULOMETRIA DA MEDIO-GROSSOLANA A MEDIO-FINE |
| 5 | 22.00 | 24.50 | 2.50 | | GHIAIE E CIOTTOLI POLIGENICI DA SUBARROTONDATI A SUBANGOLOSI CON SCARSA MATRICE SABBIOSA, TALORA CEMENTATI |
| 6 | 24.50 | 27.00 | 2.50 | | SABBIE LIMOSO-ARGILLOSE GIALLASTRE, A LUOGHI CON GHIAIA, SEGNATAMENTE AL TETTO |
| 7 | 27.00 | 28.00 | 1.00 | | LIMI ARGILLOSI CON SABBIA GRIGIO-GIALLASTRI PIUTTOSTO COMPATTI |
| 8 | 28.00 | 29.50 | 1.50 | | SABBIE LIMOSO-ARGILLOSE GIALLASTRE, TALORA CON ORIZZONTI DEBOLMENTE GHIAIOSI |
| 9 | 29.50 | 31.00 | 1.50 | | SABBIE LIMOSE PER LO PIU' DEBOLMENTE ARGILLOSE |

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| | | | | | |
|---|---|---|---|---|---|
| 10 | 31,00 | 36,00 | 5,00 | | GHIAIE E CIOTTOLI ETEROMETRICI POLIGENICI IN MATRICE SABBIOSO-LIMOSA, A LUOGHI DEBOLMENTE CEMENTATI |
| 11 | 36,00 | 40,00 | 4,00 | | SABBIE CON GHIAIA E SUBORDINATI CIOTTOLI, AL LETTO LIMOSE |
| 12 | 40,00 | 41,00 | 1,00 | | SABBIE LIMOSE GIALLASTRE, TALORA CON GHIAIA |
| 13 | 41,00 | 44,40 | 3,40 | | SABBIE LIMOSE GIALLASTRE PASSANTI TALORA A SABBIE SCIOLTE, OCCASIONALMENTE CON GHIAIA |
| 14 | 44,40 | 45,00 | 0,60 | | SABBIE LIMOSE DEBOLMENTE ARGILLOSE |
| 15 | 45,00 | 47,00 | 2,00 | | LIMI ARGILLOSI CON SABBIA DI COLORE GRIGIASTRO PIUTTOSTO COMPATTI |
| 16 | 47,00 | 50,20 | 3,20 | | LIMI SABBIOSO-ARGILLOSI GRIGIASTRI BEN ADDENSATI |
| 17 | 50,20 | 60,00 | 9,80 | | LIMI ARGILLOSI CON SABBIA GRIGIASTRI, TALORA CON INTERCALAZIONI DECIMETRICHE DI LIMI SABBIOSO-ARGILLOSI E, FINANCHE, SABBIE LIMOSO-ARGILLOSE |

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## Archivio nazionale delle indagini nel sottosuolo (Legge 464/1984)

### Dati generali

**Codice:** 206400
**Regione:** PUGLIA
**Provincia:** FOGGIA
**Comune:** SERRACAPRIOLA
**Tipologia:** PERFORAZIONE
**Opera:** SONDAGGIO GEOGNOSTICO
**Profondità (m):** 42,00
**Quota pc slm (m):** 80,00
**Anno realizzazione:** 1999
**Numero diametri:** 1
**Presenza acqua:** SI
**Portata massima (l/s):** ND
**Portata esercizio (l/s):** ND
**Numero falde:** 1
**Numero filtri:** 0
**Numero piezometrie:** 0
**Stratigrafia:** SI
**Certificazione(*):** NO
**Numero strati:** 11
**Longitudine WGS84 (dd):** 15,229161
**Latitudine WGS84 (dd):** 41,880669
**Longitudine WGS84 (dms):** 15° 13' 44,98" E
**Latitudine WGS84 (dms):** 41° 52' 50,41" N

**(*)Indica la presenza di un professionista nella compilazione della stratigrafia**

### Ubicazione indicativa dell'area d'indagine


### DIAMETRI PERFORAZIONE

| Progr | Da profondità (m) | A profondità (m) | Lunghezza (m) | Diametro (mm) |
|---|---|---|---|---|
| 1 | 0,00 | 42,00 | 42,00 | 101 |

### FALDE ACQUIFERE

| Progr | Da profondità (m) | A profondità (m) | Lunghezza (m) |
|---|---|---|---|
| 1 | 11,00 | 32,00 | 21,00 |

### STRATIGRAFIA

| Progr | Da profondità (m) | A profondità (m) | Spessore (m) | Età geologica | Descrizione litologica |
|---|---|---|---|---|---|
| 1 | 0,00 | 0,30 | 0,30 | | MATERIALE DI RIPORTO |
| 2 | 0,30 | 1,60 | 1,30 | | TERRENO VEGETALE BRUNASTRO CON GHIAIA E CIOTTOLI |
| 3 | 1,60 | 3,20 | 1,60 | | GHIAIE E CIOTTOLI POLIGENICI SUBARROTONDATI CON SABBIE |
| 4 | 3,20 | 4,00 | 0,80 | | GHIAIE E CIOTTOLI CON SABBIE PIU' O MENO LIMOSE |
| 5 | 4,00 | 8,50 | 4,50 | | GHIAIE E CIOTTOLI POLIGENICI SUBARROTONDATI IN MATRICE SABBIOSA PER LO PIU' ABBONDANTE |
| 6 | 8,50 | 9,40 | 0,90 | | SABBIE GIALLASTRE TALORA CEMENTATE CON GHIAIE E RARI CIOTTOLI |
| 7 | 9,40 | 15,00 | 5,60 | | SABBIE GIALLASTRE PER LO PIU' SCIOLTE, A LUOGHI DEBOLMENTE LIMOSE O AL CONTRARIO GHIAIOSE, TALORA CON SOTTILI ORIZZONTI CEMENTATI |
| 8 | 15,00 | 17,50 | 2,50 | | SABBIE GIALLASTRE DEBOLMENTE LIMOSE, TALORA CON SOTTILI ORIZZONTI CEMENTATI. N.B. IL CAMPIONATORE RAYMOND DURANTE L'ESECUZIONE DELLA PROVA S.P.T. HA PROBABILMENTE INTERCETTATO UN ELEMENTO LAPIDEO |
| 9 | 17,50 | 21,50 | 4,00 | | SABBIE LIMOSE GIALLASTRE PIUTTOSTO COMPATTE, OCCASIONALMENTE CON LIVELLI CM DA SCARSAMENTE A BEN CEMENTATI |

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| | | | | | |
|---|---|---|---|---|---|
| 10 | 21,50 | 32,00 | 10,50 | | SABBIE FINI CON LIMO DI COLORE GRIGIASTRO BEN ADDENSATE, TALORA CON INTERCALAZIONI DECIMETRICHE DI SABBIE LIMOSO-ARGILLOSE |
| 11 | 32,00 | 42,00 | 10,00 | | LIMI ARGILLOSI CON SABBIA GRIGIASTRI, NELLE ASSISE SUPERIORI CON OCCASIONALI INTERCALAZIONI DECIMETRICHE DI SABBIE LIMOSO-ARGILLOSE; AL LETTO, A PROFONDITA' MAGGIORI DI M 41.40 E' STATA RINVENUTA UNA |

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## Archivio nazionale delle indagini nel sottosuolo (Legge 464/1984)

### Dati generali

**Codice:** 206399
**Regione:** PUGLIA
**Provincia:** FOGGIA
**Comune:** SERRACAPRIOLA
**Tipologia:** PERFORAZIONE
**Opera:** SONDAGGIO GEOGNOSTICO
**Profondità (m):** 50,00
**Quota pc slm (m):** 38,00
**Anno realizzazione:** 1999
**Numero diametri:** 1
**Presenza acqua:** SI
**Portata massima (l/s):** ND
**Portata esercizio (l/s):** ND
**Numero falde:** 2
**Numero filtri:** 0
**Numero piezometrie:** 0
**Stratigrafia:** SI
**Certificazione(*):** NO
**Numero strati:** 12
**Longitudine WGS84 (dd):** 15,231939
**Latitudine WGS84 (dd):** 41,886789
**Longitudine WGS84 (dms):** 15° 13' 54.99" E
**Latitudine WGS84 (dms):** 41° 53' 12.44" N

**(*)Indica la presenza di un professionista nella compilazione della stratigrafia**

### Ubicazione indicativa dell'area d'indagine


### DIAMETRI PERFORAZIONE

| Progr | Da profondità (m) | A profondità (m) | Lunghezza (m) | Diametro (mm) |
|---|---|---|---|---|
| 1 | 0,00 | 50,00 | 50,00 | 101 |

### FALDE ACQUIFERE

| Progr | Da profondità (m) | A profondità (m) | Lunghezza (m) |
|---|---|---|---|
| 1 | 4,00 | 10,00 | 6,00 |
| 2 | 40,00 | 50,00 | 10,00 |

### STRATIGRAFIA

| Progr | Da | A | Spessore | Età | Descrizione litologica |
|---|---|---|---|---|---|

| | profondità (m) | profondità (m) | (m) | geologica | |
|---|---|---|---|---|---|
| 1 | 0,00 | 1,60 | 1,60 | | TERRENO VEGETALE BRUNASTRO, TALORA CON CIOTTOLI, SEGNATAMENTE ALLA SOMMITA' |
| 2 | 1,60 | 5,10 | 3,50 | | SABBIE LIMOSE BRUNASTRE PASSANTI AL ROSSASTRO CON GHIAIE POLIGENICHE PER LO PIU' FINI, COMPATTE, AL TETTO ALTERATE, A LUOGHI DEBOLMENTE CEMENTATE |
| 3 | 5,10 | 8,00 | 2,90 | | SABBIE GIALLASTRE DEBOLMENTE LIMOSE, TALORA CON GHIAIA, OCCASIONALMENTE CEMENTATE |
| 4 | 8,00 | 10,00 | 2,00 | | SABBIE LIMOSE GIALLASTRE, TALORA DEBOLMENTE ARGILLOSE |
| 5 | 10,00 | 15,00 | 5,00 | | LIMI SABBIOSO-ARGILLOSI GRIGIASTRI |
| 6 | 15,00 | 18,00 | 3,00 | | LIMI ARGILLOSI CON SABBIA GRIGIASTRI, TALORA CON FRUSTOLI CARBONIOSI |
| 7 | 18,00 | 26,40 | 8,40 | | LIMI SABBIOSO-ARGILLOSI COMPATTI |
| 8 | 26,40 | 28,10 | 1,70 | | LIMI SABBIOSO-ARGILLOSI, A LUOGHI CON INTERCALAZIONI CENTIMETRICHE SABBIOSO-LIMOSE |
| 9 | 28,10 | 31,00 | 2,90 | | LIMI SABBIOSO-ARGILLOSI GRIGIASTRI COMPATTI |
| 10 | 31,00 | 35,00 | 4,00 | | LIMI ARGILLOSI CON SABBIA GRIGIASTRI BEN ADDENSATI, AL LETTO SI OSSERVA UN INCREMENTO DELLA FRAZIONE FINE |
| 11 | 35,00 | 45,00 | 10,00 | | LIMI ARGILLOSI CON SABBIA, TALORA CON PASSAGGI DM PIU' O MENO GRADUALI A LIMI SABBIOSO-ARGILLOSI, PIU' FREQUENTI NELLE ASSISE INFERIORI |
| 12 | 45,00 | 50,00 | 5,00 | | LIMI ARGILLOSI CON SABBIA |

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,O 3URJHWWR 3$, q ILQDOL]]DWR DO PLJOLRUDPHQWR VWDELOLWj JHRPRUIRORJLFD LQGLYLGXD H QRUPD SHU O' ULVFKLR LGUDXOLFR H OH DUHH D SHULFRORVLWj H ULVFKL /H DUHH D SHULFRORVLWj LGUDXOLFD LQGLYLGXDWH GDO GL ULVFKLR LQ

```
$5(( $ 3(5,&2/26,7$¶ ,'5$8/,&$
    $UHH D SHULFRORVLWj LGUDXOLFD DOWD ± 3,
    $UHH D SHULFRORVLWj LGUDXOLFD PRGHUDWD ± 3,
    $UHH D SHULFRORVLWj LGUDXOLFD EDVVD ± 3,
        $5(( $ 3(5,&2/26,7$¶ *(2025)2/2*,&$
    $UHH D SHULFRORVLWj GD IUDQD HVWUHPDPHQWH HOHY
    $UHH D  SHULFRORVLWj GD IUDQD  HOHYDWD  ± 3)
     $UHH D  SHULFRORVLWj GD IUDQD  PRGHUDWD  ± 3)
            $5(( $ 5,6&+,2 ,'5$8/,&2
    $UHH D ULVFKLR LGUDXOLFR PROWR HOHYDWR ± 5,
    $UHH D ULVFKLR LGUDXOLFR HOHYDWR ± 5,
    $UHH D ULVFKLR LGUDXOLFR PHGLR ± 5,
    $UHH D ULVFKLR LGUDXOLFR PRGHUDWR ± 5,
            $5(( $ 5,6&+,2 )5$1$
    $UHH D ULVFKLR IUDQD PROWR HOHYDWR ± 5
    $UHH D ULVFKLR IUDQD HOHYDWR ± 5
    $UHH D ULVFKLR IUDQD PHGLR ± 5
    $UHH D ULVFKLR IUDQD PRGHUDWR ± 5
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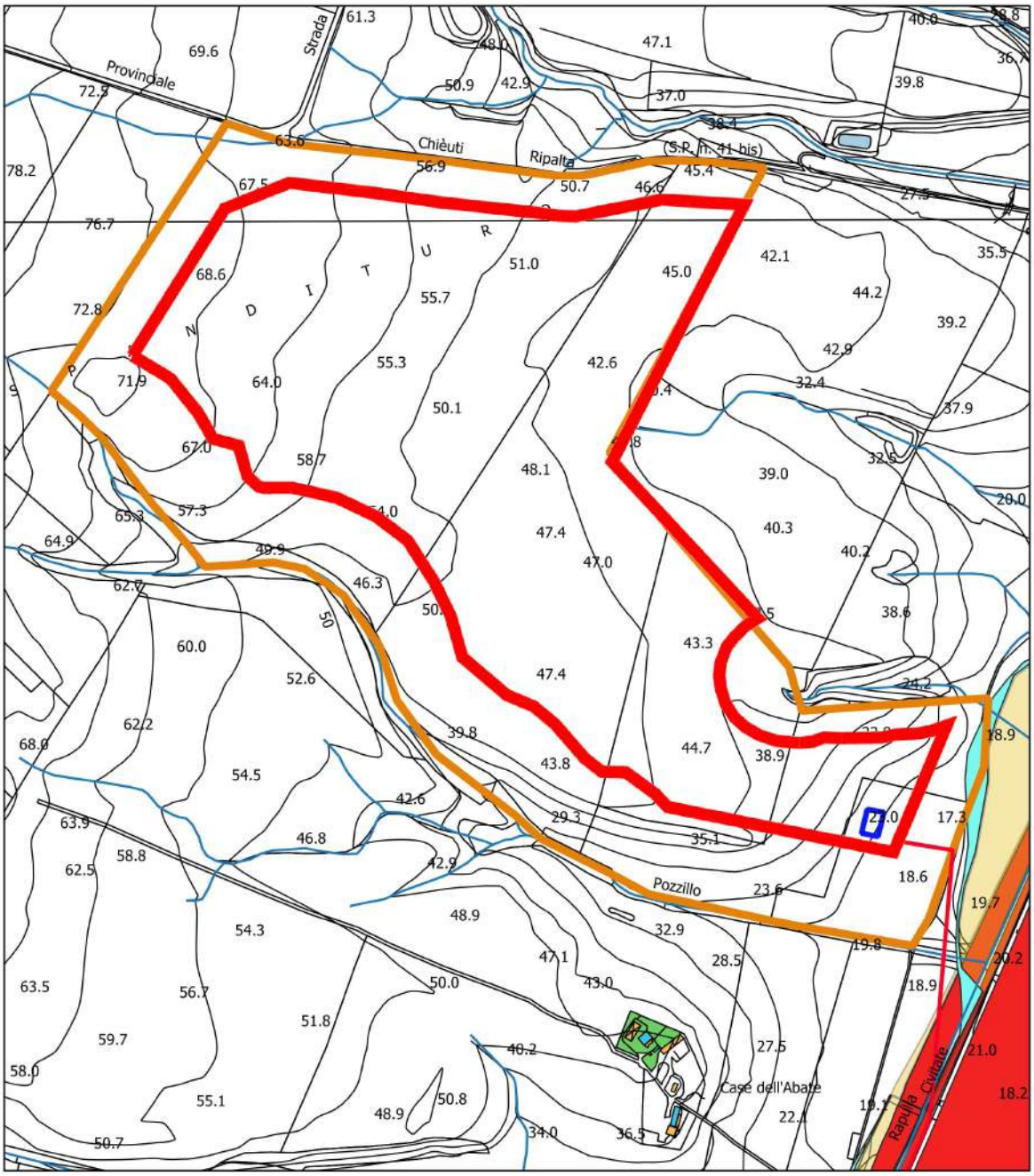
1HOOH DUHH DOOR VWXGLR 9HG 7DY GDOOH YHUL LGUDXOLFD H SHULFRORVLWj GD IUDQD HG q DVVHQWH LO ULVSHWWDWD OD GLVWDQ]D SUHYLVWD QHOOH QRUPH 3$, )




CARTA PAI DELLA PERICOLOSITA' IDRAULICA IMPIANTO AGRIVOLTAICO

Legenda

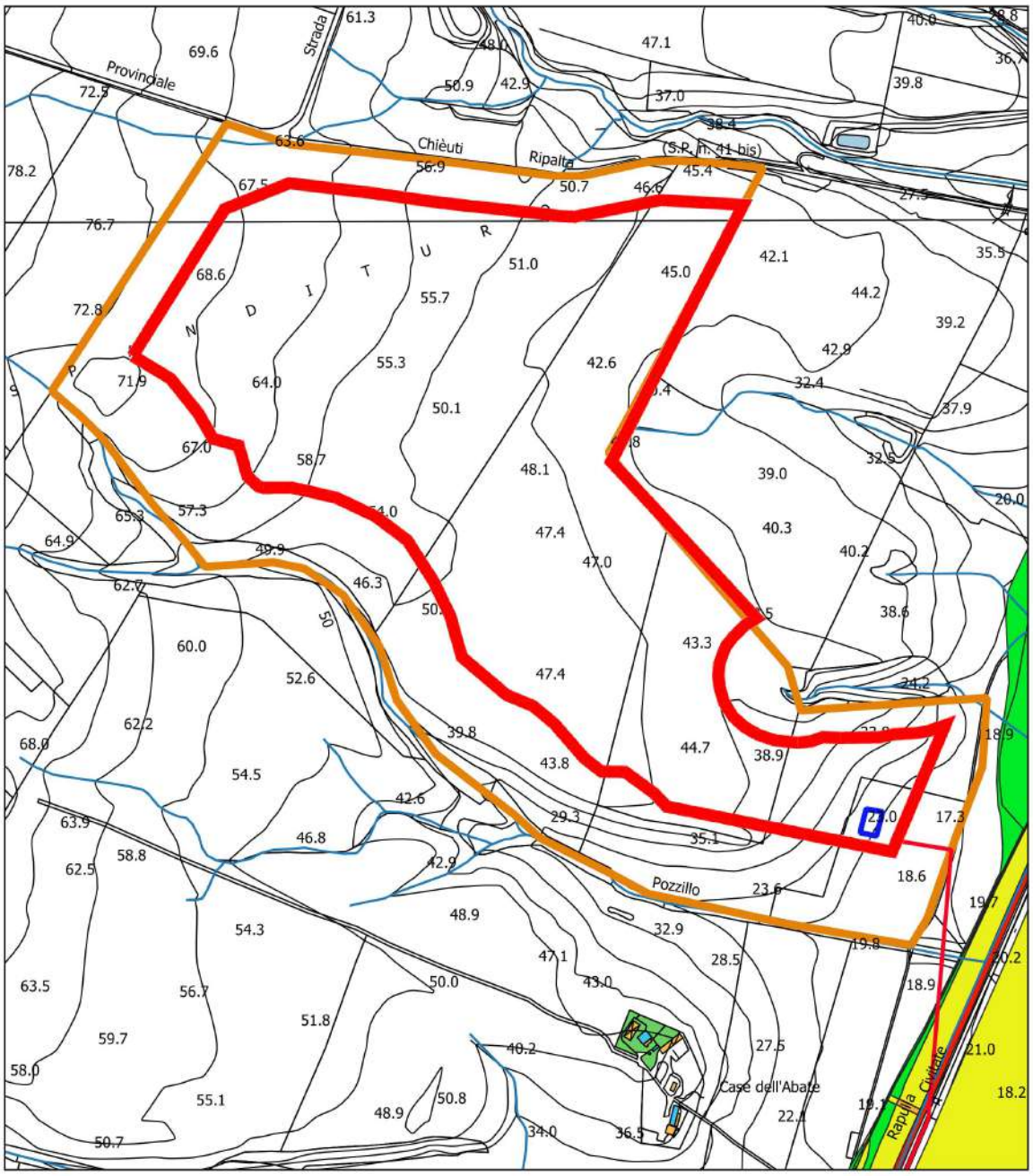
- Area a disposizione per campo agrivoltaico
- Campo agrivoltaico
- Cabina MT campo agrivoltaico
- Sottostazione Terna
- Linea Mt

PAI Fortore

Pericolosita_idraulica

- PI3
- PI2
- PI1

Scala 1 : 8.000




CARTA PAI DEL RISCHIO IDRAULICO IMPIANTO AGRIVOLTAICO

Legenda

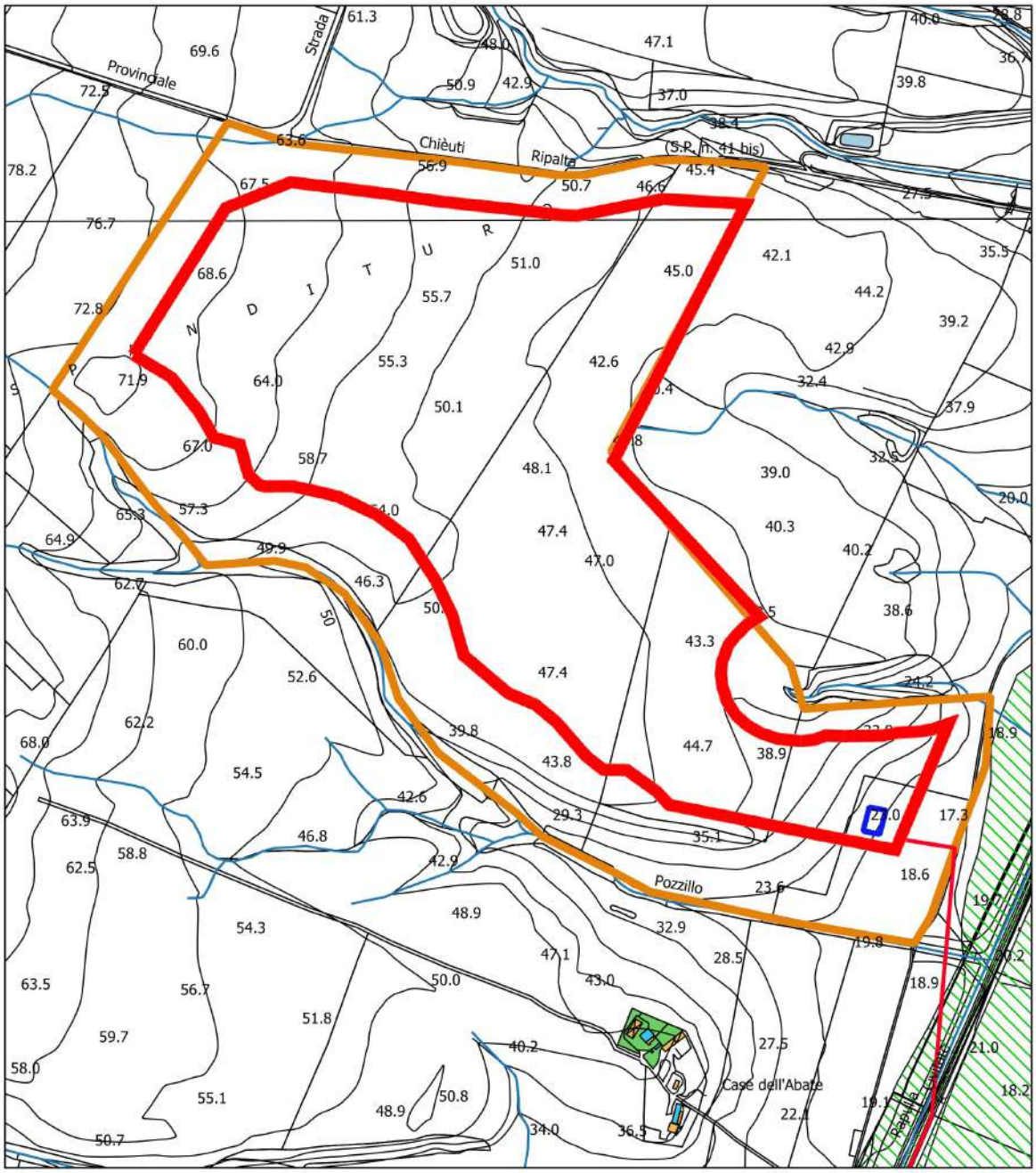
- Area a disposizione per campo agrivoltaico
- Campo agrivoltaico
- Cabina MT campo agrivoltaico
- Sottostazione Terna
- Linea Mt

PAI Fortore

Rischio_idraulico

- RI4
- RI3
- RI2
- RI1

Scala 1 : 8.000




CARTA PAI FASCIA DI RIASSETTO FLUVIALE IMPIANTO AGRIVOLTAICO

Legenda

- Area a disposizione per campo agrivoltaico
- Campo agrivoltaico
- Cabina MT campo agrivoltaico
- Sottostazione Terna
- Linea Mt

PAI Fortore

- Fascia di riassetto fluviale

Scala 1 : 8.000

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/D 5HJLRQH 3XJOLD FRQ 'HOLEHUD Qƒ GHO

$FTXH DL VHQVL GHOO¶DUWLFROR GHO 'HFUHWR OHJL

UDJJLXQJLPHQWR GHJOL RELHWWLYL GL TXDOLWj GHL FRU

VLVWHPD LGULFR VXSHUILFLDOH H VRWWHUUDQHR

&RQ WDOH 3LDQR YHQJRQR DGRWWDWH DOFXQH PLVXUH GL

D 0LVXUH GL WXWHOD TXDOL TXDQWLWDWLYD GHL FRUSL L

E 0LVXUH GL VDOYDJXDUGLD SHU OH ]RQH GL SURWH]LRQ

F 0LVXUH LQWHJUDWLYH DUHD GL ULVSHWWR GHO FDQDO

6L WUDWWD GL SUHVFUL]LRQL D FDUDWWHUH LPPHGLDWDP

3XEEOLFL QRQFKp SHU L VRJJHWWL SULYDWL

,QROWUH LO SHUVHJXLPHQWR GHOO¶RELHWWLYR GL 7XW

DOO¶LQGLYLGXD]LRQH GL SDUWLFRODUL SHULPHWUD]LRQL

q TXHOOR GL ULGXUUH PLWLJDUH H UHJRODPHQWDUH OH

VYROJHUH LQ WDOL DUHH 'OOO¶DQDOLVL GHOOD FDUWRJU

LQ DUHH VRWWRSRVWH D YLQFROLVWLFD

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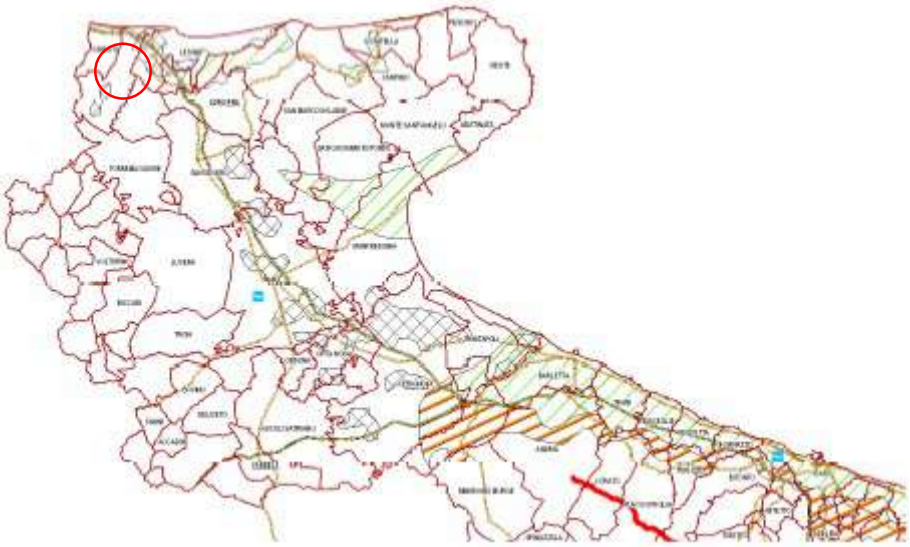

$UHD DOOR VWXGLR

&DQDOH SULQFLSDOH GHOO¶DFTXHGRWWR SXJOL

$UHH GL WXWHOD SHU DSSURYYLJLRQDPHQWR L

$UHH GL WXWHOD TXDOL TXDQWLWDWLYD

$UHH YXOQHUDELOL DOOD FRQWDPLQD]LRQH VD

$UHH GL WXWHOD TXDQWLWDWLYD

=RQH GL SURWH]LRQH VSHFLDOH LGURJHRO

$UHD [D]OOR VWXGLR =RQD GL SURW

=RQD GL SURWH]LRQH VSHFLDOH LGURJHRORJLF

=RQD GL SURWH]LRQH VSHFLDOH LGURJHRORJLF

&DUWD GHOO¶DSSURYYLJLRQDPHQWR LGUL

$UHD DOOR VWXGLR

$FTXH VXSHUILFLDOL GHVWLQDWH DOOD SURGX]L

5HJLPH RUGLQDULR 5HJLPH HPHUJHQ]LL

&RUSL LGULFL FDOFDUHL FUHWDFHL XWLOL]]DW

*DUJDQR FHQWUR RULHQWDOH

0XUJLD FRVWLHUD

$OWD PXUJLD

0XUJLD EUDGDQLFD

&DUWD GHOOH DUHH VHQVLELOL

$UHD DOOR VWXGLR

3HULPHWUD]LRQH DUHD VHQVLELOH

%DFLQR DUHD VHQVLELOH

&21&/86,21,

,Q VHGH SUHOLPLQDUH q VWDWR GDWR XQ TXDGUR WI
ULFDGRQR L VLWL LQ HVDPH ( VWDWD SRL DQDOL]]DWD C
VWUHWWR GHO WHUULWRULR FLUFRVWDQWH H GHOO¶DUH
JHRORJLFKH VHGLPHQWDULH OD FXL HWj q FRPSUHVD WU
7DY 'DO EDVVR YHUVR O¶DOWR VL VXVVHJXRQR

)250$=,21, ', *(1(6, 0$5,1$

$UJLOOH GL6LOWVWRQHWWHFRGL DUJLOOH PDUQRVH VLOWRV
VXSHUILFLH SHU DOWHUD]LRQH FRQ YHOL GL VL W H UDUH
IUHTXHQWL DOOD VRPPLWj GHOOD IRUPD]LRQH FKH SDVVD
6HUUDFDSULOD /¶HWj q DVFULYLELOH DO &DODFULDQR 3(

6DEELH GL 6/HUG6DEESHLRO6HUUDFDSULOD VRQR FRVW
JLDOODVWUH TXDU]RVH LQ JURVVL EDQFKL D OXRJKL VRQ
FHPHQWDWH DUJLOOH ELDQFDVWUH R YHUGH FKLDUR 1R
HOHPHQWL SUHYDOHQWHPHQWH DUHQDFHL H FDOFDUHR P
VXSHULRUH

&RQJORPHUDWL 6RQ&DOFDUHQLWL GD OHQWL H OHWW
WDOYROWD FRQ OLYHOOL GL FRQJORPHUDWL FRPSDWWL
LQFURFLDWD HG LQWHUFDOD]LRQL GL DUJLOOH YHUGDVW
WUDWWDQGRVL GL PDWHULDOH SURYHQLHQWH GDOOH IRU
PDUQRVL GL DUHQDULH H ORFDOPHQWH GL FULVWDOOL
7HUPLQDOH

)250$=,21, ', *(1(6, &$17,1(17$/(

&RSHUWXUH IOXYLR ODFXVWUL GHL,SGLHDSRDOLWL HVXSHULRU
VRQR FRVWLWXLWL SUHYDOHQWHPHQWH GD JKLDLH VDEE
VXSHUILFLDOH GL WHUUH QHUH 4XHVWL WHUUHQL QRQ
GHSRVL]LRQH OD GLVWULEX]LRQH H OD GLYHUVD DOWH]
LGURJUDILFD FKH OL KD GHWHUPLQDWL QRQ SUHVHQWDVV

IRVVH DQFRUD EHQH LPSRVWDWD 4XHVWD IRUPD]LRQH LQ
DJULYROWDLFR /¶HWj q DVFULYLELOH DO 3OHLVWRFHQH P
&RSHUWXUH IOXYLDOL GHO JK,L DLRUSL•QH R HQWHUHH]Q
VDEELRVH VSHVVR ULFRSHUWH GD WHUUH QHUH DG DO
DOOXYLRQDOL LQWHUPHGL KDQQR XQD QDWXUD OLWRORJL
WHUUD]]L DQDORJD q LQIDWWL OD SURYHQLHQ]D G
'HWWD IRUPD]LRQH LQWHUHVVD JUDQ SDUWH GHO FDPSR
PHGLR 6XSHULRUH
$OOXYLRQL SUHYDOHQWHPHQWH OLPRVL DUJLOORVL GL
VDEELH SURYHQLHQWL HVVHQ]LDOPHQWH GDOO¶HURVLRQH
) )RUWRUH D TXHVWR PDWHULDOH ILQH VL LQWHUFDOD
DSSHQQLQLFD /¶HWj q DVFULYLELOH DO 3OHLVWRFHQH VX
$OOXYLRQL QRQ DWWXDOL GD GHSRVLWL FRQ HOHPHQ
VDEELH H DUJLOOH FRQ SUHYDOHQ]D GL GHWULWL ILQL 2
OXQJR LO ) )RUWRUH /¶HWj q DVFULYLELOH DOO¶2ORFHQ
RVSLWD WHUUHQL DSSDUWHQHQWL DOOH &RSHUWXUH IOXY
GHOOH &RSHUWXUH IOXYLR ODFXVWUL GHL SLDQDOWL H GH
3HU TXDQWR ULJXDUGD O¶DVVHWWR OLWRWHFQLFR OR
WHUPLQL ULFRQRVFLXWL LQ DIILRUDPHQWR GD SHFXOLDU
$OO 'L VHJXLWR VRQR GHVFULWWH OH XQLWj OLWRWH
SL• R PHQR RPRJHQHR

8QLWj OLWRWHFQLFD FRVWLWXLWD GD GHSRVLWL VFL
DUJLOORVL H VDEELRVL ULJXDUGD OD IRUPD]LRQH GHO ,9
VDEELH H DUJLOOH GHL IRQGRYDOOH DWWXDOL 'HWWD XQ
JUDQXODUH HG XQD ULVRVWD PHFFDQLFD GHO WLSR QRQ
PHGLR

8QLWj OLWRWHFQLFD FRVWLWXLWD GD GHSRVLWL VF
ULJXDUGD OD IRUPD]LRQH GHOOH FRSHUWXUH IOXYLDOL

OLWRWHFQLFD SUHVHQWD XQ FRPSRUWDPHQWR GHO WLSR
HODVWLFR ,O JUDGR GL SHUPHDELOLWj ULVXOWD LQ JHQH

8QLWj OLWRWHFQLFD D SUHYDOHQWH FRPSRQHQWH VL
GHOOH 6DEELH GL 6HUUDFDSULROD H OD IRUPD]LRQH GH
OLWRWHFQLFD SUHVHQWD XQ FRPSRUWDPHQWR GHO WLSR
HODVWLFR ,O JUDGR GL SHUPHDELOLWj ULVXOWD LQ JHQH

8QLWj OLWRWHFQLFD D SUHYDOHQWH FRPSRQHQWH D
0RQWHVHFFR 'HWWD XQLWj OLWRWHFQLFD SUHVHQWD
PHFFDQLFD GHO WLSR QRQ HODVWLFR ,O JUDGR GL SHUPI
'DO SXQWR GL YLVWD JHRPRUIRORJLFR HG LGURJHRORJLF
SUHVHQWD SRFR DFFOLYH DOWLPHWULFDPHQWH q SRVWD
V O P FRQ SHQGHQ]D PDVVLPD GHO TXDVL SLDQHJJL
3$, GDOOD OHWWXUD GHOOH FDUWH JHRPRUIRORJLFKH H
LQWHUHVVDWH GD SHULFRORVLWj H ULVFKLR JHRPRUIROR
TXDQWR O¶DUHH SUHVHQWDQR XQD EDVVLVVLPD SHQGHQ
IUDQRVL 3HUWDQWR QHOOH DUHH DOOR VWXGLR HG LQ TX
DWWR R SRWHQ]LDOL IHQRPHQL TXLHVFHQWL IHQRPHQ
UXVFHOODPHQWR DFFHOHUDWR 9HG 7DYROH

,QILQH q VWDWR VWXGLDWR LO SLDQR GHOOD LQWHUIH
RELHWWLYL GL TXDOLWj GHL FRUSL LGULFL SL• LQ JHQ
VXSHUILFLDOH H VRWWHUUDQHR

&RQ WDOH 3LDQR YHQJRQR DGRWWDWH DOFXQH PLVXUH GI
D 0LVXUH GL WXWHOD TXDOL TXDQWLWDWLYD GHL FRUSL I
E 0LVXUH GL VDOYDJXDUGLD SHU OH ]RQH GL SURWH]LRQ
F 0LVXUH LQWHJUDWLYH DUHD GL ULVHWWR GHO FDQDO
'DOO¶DQDOLVL GHOOD FDUWRJUDILD DOOHJDWD DO SLDQR
YLQFRLVWLFD

$ FRQFOXVLRQH GL TXDQWR VRSUD HVSRVWR H GDOOH U
GHGXFH FKH OH DUHH H O¶LQWHUYHQWR SURSRVWR GDO S
QRQ SUHVHQWDQR SHULFRORVLWj

7DQWR 'RYHYDVL ,/ *(2/2*2

'RWW 9LWR ) 3/(

%LEOLRJUDILD

5(*,21( 38*/,$ &DUWD 7HFQLFD 5HJLRQDOH & 7 5 HOHPHQW
DOOD VFDOD

5HJRODPHQWR 5HJLRQDOH 0DU]R Q H GDOOD / 5 GH
OHWW E H $UW FRPPD ELV

0LQLVWHUR GHOO¶,QGXVWULD GHO &RPPHUFLR H GHOO¶$U
6HUYL]LR *HRORJLFR G¶,WDOLD ± 1RWH LOOXVWUDWLYH GH
6DQ 6HYHUR

1RWH LOOXVWUDWLYH GHOOD FDUWD JHRORJLFD DOOD VFD

1RWH LOOXVWUDWLYH GHOOD FDUWD JHRORJLFD DOOD VFD

$XWRULWj GL %DFLQR ) )RUWRUH

,O 'LSDUWLPHQWR 6HUYL]LR *HRORJLFR G¶,WDOLD LQ ,635$
3URJHWWR ,)), ,QYHQWDULR GHL )HQRPHQL )UDQRVL LQ ,W

(1, $FTXH GROFL VRWWHUUDQHH ³,QYHQWDULR GHL GDWL
LQ ,WDOLD´

' 0 H GHOOD &LUFRODUH GHO & 6 // 33 Q GHO

$ / / ( * $ 7 ,

3529$ 3(1(7520(75,&$ ',1$0,&$

&RPPLWWHQWH ,QJ 5RVHOOL 1LFROD
&DQWLHUH ,PSLDQWR DJULYROWDLFR
/RFDOLWj 6HUUDFDSULROD )*

&DUDWWHULVWLFKH 7HFQLFKH 6WUXPHQWDOL 6RQGD '36+ 'LQDPLF 3URELQJ

5LI 1RUPH ',1
3HVR 0DVVD EDWWHQWH .J
$OWH]]D GL FDGXWD OLEHUD P
3HVR VLVWHPD GL EDWWXWD .J
'LDPHWUR SXQWD FRQLFD PP
$UHD GL EDVH SXQWD FPð
/XQJKH]]D GHOOH DVWH P
3HVR DVWH D PHWUR .J P
3URIRQGLWj JLXQ]LRQH SULPD DVWD P
$YDQ]DPHQWR SXQWD P
1XPHUR FROSL SHU SXQWD 1
&RHII &RUUHOD]LRQH
5LYHVWLPHQWR IDQJKL 1R
$QJROR GL DSHUWXUD SXQWD *f

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'<1$0,& 352%,1*

'36+

1RWH LOOXVWUDWLYH 'LYHUVH WLSRORJLH GL SHQHWURP
/D SURYD SHQHWURPHWULFD GLQDPLFD FRQVLVWH QHOO¶
FRQVHFXWLYL [UDQGR LO QXPHUR GL FROSL 1 QHFHVVDUL
/H 3URYH 3HQHWURPHWULFKH 'LQDPLFKH VRQR PROWR GL
JHRWHFQLFL GDWD OD ORUR VHPSOLFLWj HVHFXWLYD HFF

/D ORUR HODERUD]LRQH LQWHUSUHWD]LRQH H YLVXDO
SDUDPHWUL]]DUH´ LO VXROR DWWUDYHUVDWR FRQ XQ¶LPP
UDIIURQWR VXOOH FRQVLVWHQ]H GHL YDUL OLYHOOL DW
JHRJQRVWLFL SHU OD FDUDWWHUL]]D]LRQH VWUDWLJUDIL
ULFRQRVFHUH DEEDVWDQ]D SUHFLVDPHQWH OR VSHVVRUH
H VXSHUILFL GL URWWXUD VXL SHQGLL H OD FRQVLVWHQ]D

/¶XWLOL]]R GHL GDWL ULFDYDWL GD FRUUHOD]LRQL LQGL
FRPXQTXH HVVHUH WUDWWDWR FRQ OH RSSRUWXQH FDXW
DFTXLVLWH LQ ]RQD

(OHPHQWL FDUDWWHULVWLFL GHO SHQHWURPHWUR GLQDPL

SHVR PDVVD EDWWHQWH 0
DOWH]]D OLEHUD FDGXWD +
SXQWD FRQLFD GLDPHWUR EDVH FRQR ' DUHD EDVH
DYDQ]DPHQWR GSHQHWUD]LRQH
SUHVHQ]D R PHQR GHO ULYHVWLPHQWR HVWHUQR ID

&RQ ULIHULPHQWR DOOD FODVVLILFD]LRQH ,660)( GHL

WDEHOOD VRWWR ULSRUWDWD VL ULOHYD XQD SULPD VXG

PDVVD EDWWHQWH

WLSR /(**(52 '3/

WLSR 0(',2 '30
WLSR 3(6$17( '3+
WLSR 683(53(6$17( '36+

&ODVVLILFD]LRQH ,660)( GHL SHQHWURPHWUL GLQDPLFL

| 7LSR | 6LJOD GL ULIHULPHQWR | SURIRQGLWj GL SHQHWUD]LRQH 0 NJ | GHGOJD EDWWHQWH P |
|---|---|---|---|
| /HJJHUR | '3/ /LJKW | 0 d | |
| 0HGLR | '30 0HGLXP | | 0 |
| 3HVDQWH | '3+ | +HDY\ 0 | |
| 6XSHU SHVDQWH +HDY\ | '6X SHU | 0t | |

SHQHWURPHWUL LQ XVR LQ ,WDOLD

,Q ,WDOLD ULVXOWDQR DWWXDOPHQWH LQ XVR L VHJXHQWL WLSL GL

,660)(

',1$0,&2 683(53(6$17( 7LSR (0,/,$

0DVVD EDWWHQWH 0 NJ DOWH]]D FDGXWD S+XQWD FRQLFD ' PP DUHD EDVH
FRQLFD ƒ ƒ GLDPHWUR ' PP DUHD EDVH
EHQWRQLWLFR WDORUD SUHYLVWR

&RUUHOD]LRQH FRQ 1VSW

3RLFKp OD SURYD SHQHWURPHWULFD VWDQGDUG 637 UDS
HFRQRPLFL SHU ULFDYDUH LQIRUPD]LRQL GDO VRWWRVXRO
ULJXDUGDQR L YDORUL GHO QXPHUR GL FROSL 1VSW RWWH
QHFHVVLWj GL UDSSRUWDUH LO QXPHUR GL FROSL GL XQD
GD

1VSW 1

'RYH

$ 4 / 4637

LQ FXL 4 q O¶HQHUJLD VSHFLILFD SHU FROSR H 4VSW q TXH
/¶HQHUJLD VSHFLILFD SHU FROSR YLHQH FDOFRODWD FRPH

4 0 ˜+ / $˜*˜0 0

LQ FXL

0 SHVR PDVVD EDWWHQWH

0¶ SHVR DVWH

+ DOWH]]D GL FDGXWD

$ DUHD EDVH SXQWD FRQLFD

G SDVVR GL DYDQ]DPHQWR

9DOXWD]LRQH UHVLVWHQ]D GLQDPLFD DOOD SXQWD 5SG
)RUPXOD 2ODQGHVL

5SG 0 ˜+ / >$˜+˜0 3 @ 0 ˜+˜1 / >$˜*˜0 3 @

5SG UHVLVWHQ]D GLQDPLFD SXQWD DUHD $
H LQILVVLRQH GHO1HGLD SHU FROSR
0 SHVR PDVVD EDWWHQWH DOWH]]D FDGXWD +
3 SHVR WRWDOH DVWH H VLVWHPD EDWWXWD

0HWRGRORJLD GL (ODERUD]LRQH

/H HODERUD]LRQL VRQR VWDWH HIIHWWXDWH PHGLDQWH
3URELQ*HR6WUXFWXUH 6RIWZDUH
,O SURJUDPPD FDOFROD LO UDSSRUWR GHOOH HQHUJLH W
WUDPLWH OH HODERUD]LRQL SURSRVWH GD 3DVTXDOLQL
)UDQNRZVN\

3HUPHWWH LQROWUH GL XWLOL]]DUH L GDWL RWWHQXWL
HVWUDSRODUH XWLOL LQIRUPD]LRQL JHRWHFQLFKH H JHRO
8QD YDVWD HVSHULHQ]D DFTXLVLWD XQLWDPHQWH DG XQ
VSHVVR GL RWWHQHUH GDWL XWLOL DOOD SURJHWWD]LRQ
WDQWL GDWL ELEOLRJUDILFL VXOOH OLWRORJLH H GL GD
SRFKH SURYH GL ODERUDWRULR HVHJXLWH FRPH UDSSUH
GLVXQLIRUPH H R FRPSOHVVD

,Q SDUWLFRODUH FRQVHQWH GL RWWHQHUH LQIRUPD]LRQL

O¶DQGDPHQWR YHUWLFDOH H RUL]]RQWDOH GHJOL LQ

OD FDUDWWHUL]]D]LRQH OLWRORJLFD GHOOH XQLWj V

L SDUDPHWUL JHRWHFQLFL VXJJHULWL GD YDUL DXWR

GHOOH UHVLVWHQ]D DOOD SXQWD

9DOXWD]LRQL VWDWLVWLFKH H FRUUHOD]LRQL

(ODERUD]LRQH 6WDWLVWLFD

3HUPHWWH O¶HODERUD]LRQH VWDWLVWLFD GHL GDWL QXPH
YDORUL UDSSUHVHQWDWLYL GHOOR VWUDWR FRQVLGHUDW
GHOOR VWUDWR GDWR FRPXQTXH PDJJLRUPHQWH XWLOL]]

0HGLD

0HGLD DULWPHWLFD GHL YDORUL GHO QXPHUR GL FRSS
GRYH Q q LO QXPHUR GL OHWWXUH

3UHVVLRQH DPPLVVLELOH

3UHVVLRQH DPPLVVLELOH VSHFLILFD VXOO¶LQWHUVWUDWR
DVWH R QR FDOFRODWD VHFRQGR OH QRWH HODERUD]LRQ
GL VLFXUH]]D JHQHUDOPHQWH FKH FRUULVSRQGH D
IRQGD]LRQL SDUL D FRQ XQD JHRPHWULD IRQGDOH VWDQ
G PW

&RUUHOD]LRQL JHRWHFQLFKH WHUUHQL LQFRUHQWL

/LTXHID]LRQH

3HUPHWWH GL FDOFRODUH XWLOL]]DQGR GDWL 1VSW L
SUHYDOHQWHPHQWH VDEELRVL
$WWUDYHUVR 6O+D 0U,1 *D]LRQH LQ GL FDELOH D WHUUHQL VDE
ULVXOWD SRVVLELOH VRODPHQWH VH 1VSW GHOOR VWU
FDOFRODWR FRQ6+,0Q1*ERUD]LRQH GL

&RUUH]LRQH 1VSW LQ SUHVHQ]D GL IDOGD
1VSW FRUUHWWR î 1VSW
1VSW q LO YDORUH PHGLR QHOOR VWUDWR
/D FRUUH]LRQH YLHQH DSSOLFDWD LQ SUHVHQ]D GL ID
OD FRUUH]LRQH YLHQH HVHJXLWD VH WXWWR OR VW

$QJROR$WWULWR
3HFN +DQVRQ 7KRUQEXUQ 0H\HUKRI &RUUHOD]LRQ
PW FRUUHOD]LRQH YDOLGD SHU WDEELH RUL]]RQWDOL
VWRULFD PROWR XVDWD YDOHYROH SHU SURI PW
IDOGD WHQVLRQL W PT
0H\HUKRI &RUUHOD]LRQL YDOLGH SHU VWXGL D
WHUUHQL GL ULSRUWR VFLROWL H FROWUL GHWULWLFK
6RZHUV $QJROR GL DWWULWR LQ JUDGL GL YDOLGR
PW VRSUD IDOGD H PWW SHU WHUUHQL LQ IDOGD
'H 0HOOR &RUUHOD]LRQH YDOLGD SHU WHUUHQL SUH
PRGLILFD VSHULPHQWDOH GL GDWL FRQ DQJROR GL D
0DOFHY $QJROR GL DWWULWR LQ JUDGL YDOLGR S
! P H SHU YDORUL GL DQJROR GL DWWULWR *
6FKPHUWPDQQ $QJROR GL DWWULWR JUDGL SHU
YDORUL VSHVVR WURSSR RWWLPLVWLFL SRLFKp GHVXQ
6KLRL )XNXQL 52$' %5,'*( 63(&,),&$7,21 $QJROR GL
SHU VDEELH VDEELH ILQL R OLPRVH H OLPL VLOWRVL
VRSUD IDOGD H ! PW !SHU PWHUUHQL LQ IDOGD
6KLRL )XNXQL -$3$1(6( 1$7,21$/( 5$,/:$< $QJROR G
SHU VDEELH PHGLH H JURVVRODQH ILQR D JKLDLRVH

$QJROR GL DWWULWR LQ JUDGL 2ZDVDNL ,ZDVDNL Y
JURVVRODQHRJQKGLDRRWWHLPDOL SHU SURI ! PW VRSUD
IDOGD V! W PT
0H\HUKRI &RUUHOD]LRQH YRQLGLSHUPHUDQL
SURIRQGLWj PW H FRQ GL OLPR ! D SURIRQGLW
0LWFKHOO H .DWWL &RUUHOD]LRQH YDOLGD SHU

'HQVLWj UHODWLYD
*LEEV +ROW] FRUUHOD]LRQH YDOLGD SHU TXDOX
YLHQH VRYUDVWLPDWR RWWDYR VWHPDWRPL
6NHPSWRQ HODERUDWR DFEHDEOHGDSHQLDPLUR VV
TXDOXQTXH SUHVVLRQH HIILFDFH SHU JKLDLH LO YDOR
VRWWRVWLPDWR
0H\HUKRI
6FKXOW]H 0HQ]HQEDFK JKLDSHRUPHWURREGLHYDQLHR SHU
YDORUH GL SUHVVLRQH HIILFDFH LQ GHSRVLWL 1& SHU
SHU OLPL VRWWRVWLPDWR

0RGXOR 'L (RXQJ
7HU]DJKL HODERUD]LRQHVDEEOLGDFKHQ]DEERQDSLSXHULW
SUHVVLRQH HIILFDFH
6FKPHUWPDQQ FRUUHOD]LRQH YDOLGD SHU YDUL
6FKXOW]H 0HQ]HQEDFK FRUUHOD]LRQH YDOLGD SHU Y
' $SSROORQLD HG DOWUL FRUUHOD]LRQH YDOLGI
%RZOHV FRUUHOD]LRQH YDOLGD SHU VDEEOD DUJ
VDEEOD PHGLD VDEEOD H JKLDLD

0RGXOR (GRPHWULFR
%HJHPDQQ HODERUD]LRQH GHVXQWD GD HVSHULH
OLPR FRQ VDEEOD VDEEOD H JKLDLD
%XLVPDQQ 6DQJOHUDW FRUUHOD]LRQH YDOLGD SHU V
)DUUHQW YDOLGD SHU VDEEOH WDORUD DQFKH SH
VSHULPHQWDOH GL GDWL
0HQ]HQEDFK H 0DOFHY YDOLGD SHU VDEEOD ILQH VDE

6WDWR GL FRQVLVWHQ]D

&OD VVLILFD]LRQH $ * ,

3HVR 9RORXPH *DPPD

0H\HUKRI HG DOWUL YDOLGD SHU VDEELH JKLDLH OL

3HVR GL YROXPH VDWXUR

%RZOHV 7HU]DJKL 3HFN &RUUHOD]LRQH YD

PDWHULDOH SDUL WD PEUHFD SHU SHVR GL YROXPH VHFFR

D 1VSW

0RGXOR GL SRLVVRQ

x &OD VVLILFD]LRQH $ * ,

3RWHQ]LDOH GL 6WUHXWWXUH XWLOL]]DWH RLQH

6HHG ,GULVV 7DOH FRUUHOD]LRQH q YDOLGD V

VDEELRVL UDSSUHVHQWD LO UDSSRUWR WUD LO QXPHUR

FRQVROLGD]LRQH SHU OD YDOXWD]LRQH GHO SRWHQ]L

JKLDLRVL DWWUDYHUVR JUDILFL GHJOL DXWRUL

9HORFLWj RQGH 9HORFLWj GL IDVH

7DOH FRUUHOD]LRQH q YDOLGD VRODPHQWH SHU WHUU

0RGXOR GL GHIRUPD]LRQH GL WDJOLR

2KVDNL ,ZDVDNL ± HODERUD]LRQH YDOLGD SHU VDEEL

5REHUWVRQ H &DPSDQHOOD H ,PDL 7RQRXFKL

SHU VDEEHUH WHQVLRQL OLWRVWDWLFKH FRPSUHVH WUD

0RGXOR GL URWD]LRQH

1DYIDF HODERUD]LRQH YDOLGD SHU VDEEELH

5HVLVWHQ]D DOOD SXQWD 4GFHO 3HQHWURPHWUR 6WDWLFR

5REHUWVRQ 4F

&RUUHOD]LRQL JHRWHFQLFKH WHUUHQL FRHVLYL

&RHVLRQH QRQ GUHQDWD

%HQDVVL 9DQQHOOL FRUUHOD]LRQL VFDWXULWH GD
681'$

7HU]DJKL 3HFN FRUUHOD]LRQH YDOLGD SHU D
DUJLOOH OLPRVH VLOWRVH PHGLDPHQWH SODVWLFI

7HU]DJKL 3H&XN PLQ PD[

6DQJOHUDW GD GDWL 3HQHWU 6WDWLFR SHU WHUUHQ
SHU DUJLOOH VHQVLWLYH FRQ VHQVLWLYLWj ! SHU D
EDVVD SODVWLFLWj

6DQJOHUDW SHU DUJLOOH OLPRVH VDEELRVH SRFR F
SHQHWURPHWULFKH FROSL SHU UHVLVWHQ]H SHQH
FRPXQTXH TXHOOD GHOOH DUJLOOH SODVWLFKH GL 6
8 6 ' 0 6 0 8 6 'HVLJQ 0DQXDO 6RLO 0HFKDQLFV &RH
OLPRVH H DUJLOOH GL EDVVD PHGLD HG DOWD SODVWL
6FKPHUWPDQQ &X .J FPT YDORUL PLQLPL YDOLG
1F H 4F 1VSW
6FKPHUWPDQQ &X .J FPT YDORUL PLQLPL YDOLG
)OHWFKHU $UJLOOD GL &KLFDJR &RHVLRQH QR
YDOLGL SHU DUJLOOH D PHGLR EDVVD SODVWLFLWj
+RXVWRQ DUJLOOD GL PHGLD DOWD SODVWLFLWj
6KLRL )XNXQL YDOLGD SHU VXROL SRFR FRHUHQW
%HJHPDQQ
'H %HHU

5HVLVWHQ]D D3HQHWUD]LRQH VXOOD WHUUD
5REHUWVRQ 4F

0RGXOR (GRPHWULFR &RQILQDWR

6WURXG H %XWOHU SHU OLWRWLSL D PHGLD SOD
PHGLR DOWD SODVWLFLWj GD HVSHULHQ]H VX DUJLOO

6WURXG H %XWOHU SHU OLWRWLSL D PHGLR EDV
DUJLOORVL D PHGLR EDVVD SODVWLFLWj ,3 GD H
9HVLF FRUUHOD]LRQH YDOLGD SHU DUJLOOH PRO
7URILPHQRY 0LWFKHOO H *DUGQHU 0RGXOR &RQ
SHU OLWRWLSL DUJLOORVL H OLPRVL DUJLOORVL UDS
%XLVPDQQ 6DQJOHUDW YDOLGD SHU DUJLOOH FRPSDV
DUJLOOH VDEELRVH 1VSW

0RGXOR 'L (≪RXQJ

6FKXOW]H 0HQ]HQEDFK 0LQ H 0D[ FRUUHOD]LRQH
FRQ , 3 !
' $SSROORQLD HG DOWUL FRUUHOD]LRQH YDOLG

6WDWR GL FRQVLVWHQ]D

&ODVVLILFD]LRQH $ * ,

3HVR9RGLXPH *DPPD
0H\HUKRI HG DOWUL YDOLGD SHU DUJLOOH DUJLOOH

3HVR GL YROXPH VDWXUR
&RUUHOD]LRQH %RZOHV 7HU]DJKL 3HFN
SHVR VSHFLILFR GHO PDWHULDOH SDUL D FLUFD *
1VSW D 1VSW

3529$ 1U

6WUXPHQWR XWLOL]]DWR '36+ 'LQDPLF 3URELQJ 6XSHU +HDY\
3URYD HVHJXLWD LQ GDWD
3URIRQGLWj SURYD PW
)DOGD QRQ ULOHYDWD

7LSR HODERUD]LRQH 1U &ROSL 0HGLR

| 3URIRQG | 1U &R | &DOFRO ULGX]L VRQGD | 5HV GL ULGRV .J FPð | 5HV GL .J FPð | 3UHV DPPLVV FRQ ULC +HUPLQ 2ODQG .J FPð | 3UHV DPPLVVLELOH +HUPLQLHU 2ODQGHVL .J FPð |
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67,0$ 3$5$0(75, *(27(&1,&, 3529$ 1U

7(55(1, ,1&2(5(17,
'HQVLWj UHODWLYD

| 'HVFUL]LR | 1VSW | 3URI 6W P | 1VSW FRU SUHVHQ]I | &RUUHOD | 'HQVLWj UHODWL |
|---|---|---|---|---|---|
| > @ 6WUI | | | | 6NHPSWF | |
| > @ 6WUI | | | | 6NHPSWF | |
| > @ 6WUI | | | | 6NHPSWF | |
| > @ 6WUI | | | | 6NHPSWF | |

678',2 ', *(2/2*,$ *(27(&1,&$ 6,60,&$

$QJROR GL UHVLVWHQ]D DO WDJOLR

| 'HVFUL]LR | 1VSW | 3URI 6W P | 1VSW FRU SUHVHQ]I | &RUUHOD | $QJROR G DWWUI f |
|---|---|---|---|---|---|
| > @ 6WUI | | | | 6KLJRXLNXQL 52$' %5,' 63(&,),&$7 | |
| > @ 6WUI | | | | 6KLJRXLNXQL 52$' %5,' 63(&,),&$7 | |
| > @ 6WUI | | | | 6KLJRXLNXQL 52$' %5,' 63(&,),&$7 | |
| > @ 6WUI | | | | 6KLJRXLNXQL 52$' %5,' 63(&,),&$7 | |

0RGXOR (GRPHWULFR

| 'HVFUL]LR | 1VSW | 3URI 6W P | 1VSW FRU SUHVHQ]I | &RUUHOD | 0RGXOR (GRPHWULFR .J FPð |
|---|---|---|---|---|---|
| > @ 6WUI | | | | %HJHPDQ *KLDL VDE | |
| > @ 6WUI | | | | %HJHPDQ *KLDL VDE | |
| > @ 6WUI | | | | %HJHPDQ *KLDL VDE | |
| > @ 6WUI | | | | %HJHPDQ *KLDL VDE | |

&ODVVLILFD]LRQH $*,

| 'HVFUL]LR | 1VSW | 3URI 6W P | 1VSW FRU SUHVHQ]I | &RUUHOD | &ODVVLILFD]LRQ $*, |
|---|---|---|---|---|---|
| > @ 6WUI | | | | &ODVVLI $ * , | 6&,2/72 |
| > @ 6WUI | | | | &ODVVLI $ * , | 32& $''(16$72 |
| > @ 6WUI | | | | &ODVVLI $ * , | 02'(5$7$0( 17( $''(16$72 |
| > @ 6WUI | | | | &ODVVLI $ * , | 02/72 $''(16$72 |

3HVR XQLWj GL YROXPH

| 'HVFUL]LR | 1VSW | 3URI 6W P | 1VSW FRU SUHVHQ]I | &RUUHOD | *DPPD W Pñ |
|---|---|---|---|---|---|
| > @ 6WUI | | | | 0H\HUKRI | |
| > @ 6WUI | | | | 0H\HUKRI | |
| > @ 6WUI | | | | 0H\HUKRI | |
| > @ 6WUI | | | | 0H\HUKRI | |

3HVR XQLWj GL YROXPH VDWXUR

| 'HVFUL]LR | 1VSW | 3URI 6W P | 1VSW FRU SUHVHQ]I | &RUUHOD | *DPPD 6DWXUR W Pñ |
|---|---|---|---|---|---|
| > @ 6WUI | | | | 7HU]D3JH | |
| > @ 6WUI | | | | 7HU]D3JH | |
| > @ 6WUI | | | | 7HU]D3JH | |
| > @ 6WUI | | | | 7HU]D3JH | |

0RGXOR GL 3RLVVRQ

| 'HVFUL]LR | 1VSW | 3URI 6W P | 1VSW FRU SUHVHQ]I | &RUUHOD | 3RLVVRQ |
|---|---|---|---|---|---|
| > @ 6WUI | | | | $ * | |
| > @ 6WUI | | | | $ * | |
| > @ 6WUI | | | | $ * | |
| > @ 6WUI | | | | $ * | |

0RGXOR GL GHIRUPD]LRQH D WDJOLR GLQDPLFR

| 'HVFUL]LR | 1VSW | 3URI 6W P | 1VSW FRU SUHVHQ]I | &RUUHOD | * .J FPð |
|---|---|---|---|---|---|
| > @ 6WUI | | | | 2KVDNL SXC | |
| > @ 6WUI | | | | 2KVDNL SXC | |
| > @ 6WUI | | | | 2KVDNL SXC | |
| > @ 6WUI | | | | 2KVDNEL SXC | |

3529$ 1U

6WUXPHQWR XWLOL]]DWR '36+ 'LQDPLF 3URELQJ 6XSHU +HDY\
3URYD HVHJXLWD LQ GDWD
3URIRQGLWj SURYD PW
)DOGD QRQ ULOHYDWD

7LSR HODERUD]LRQH 1U &ROSL 0HGLR

| 3URIRQG | 1U &R | &DOFROI ULGX]LR &KL | 5HV GL ULGRW .J FPð | 5HV GL .J FPð | 3UHV DPPLVVLI ULGX]L +HUPLQ 2ODQG .J FPð | 3UHV DPPLVVLELOH +HUPLQLHU 2ODQGHVL .J FPð |
|---|---|---|---|---|---|---|
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67,0$ 3$5$0(75, *(27(&1,&, 3529$ 1U

7(55(1, ,1&2(5(17,
'HQVLWj UHODWLYD

| 'HVFUL]LR | 1VSW | 3URI P | 6W | 1VSW FRU SUHVHQ]I | &RUUHOI | 'HQVLWj UHODWL |
|---|---|---|---|---|---|---|
| > @ 6WUI | | | | | 6NHPSWF | |
| > @ 6WUI | | | | | 6NHPSWF | |
| > @ 6WUI | | | | | 6NHPSWF | |
| > @ 6WUI | | | | | 6NHPSWF | |
| | | | | | | |

$QJROR GL UHVLVWHQ]D DO WDJOLR

| 'HVFUL]LR | 1VSW | 3URI P | 6W | 1VSW FRU SUHVHQ]I | &RUUHOI | $QJROR G *f | DWWUI |
|---|---|---|---|---|---|---|---|
| > @ 6WUI | | | | | 6KL)RXLN XQL 52$' %5,' 63(&,),&$7 | | |
| > @ 6WUI | | | | | 6KL)RXLN XQL 52$' %5,' 63(&,),&$7 | | |
| > @ 6WUI | | | | | 6KL)RXLN XQL | | |

678',2 ', *(2/2*,$ *(27(&1,&$ 6,60,&$

| | | | | | |
|---|---|---|---|---|---|
| | | | | 52$' %5,' 63(&,),&$7 | |
| > @ 6WUI | | | | 6KLIRXLNXQL 52$' %5,' 63(&,),&$7 | |

0RGXOR (GRPHWULFR

| 'HVFUL]LR | 1VSW | 3URI 6W P | 1VSW FRU SUHVHQ]I | &RUUHOD | 0RGXOR (GRPHWULFR .J FPð |
|---|---|---|---|---|---|
| > @ 6WUI | | | | %XLVPDQ ( | V |
| > @ 6WUI | | | | %XLVPDQ ( | V |
| > @ 6WUI | | | | %XLVPDQ ( | V |
| > @ 6WUI | | | | %XLVPDQ ( | V |

&ODVVLILFD]LRQH $*,

| 'HVFUL]LR | 1VSW | 3URI 6W P | 1VSW FRU SUHVHQ]I | &RUUHOD | &ODVVLILFD]LRQ $*, |
|---|---|---|---|---|---|
| > @ 6WUI | | | | &ODVVLI $ * , | 32&2 $''(16$72 |
| > @ 6WUI | | | | &ODVVLI $ * , | 02'(5$7$0( 17( $''(16$72 |
| > @ 6WUI | | | | &ODVVLI $ * , | $''(16$72 |
| > @ 6WUI | | | | &ODVVLI $ * , | 02/72 $''(16$72 |

3HVR XQLWj GL YROXPH

| 'HVFUL]LR | 1VSW | 3URI 6W P | 1VSW FRU SUHVHQ]I | &RUUHOD | *DPPD W Pñ |
|---|---|---|---|---|---|
| > @ 6WUI | | | | 0H\HUKRI | |
| > @ 6WUI | | | | 0H\HUKRI | |
| > @ 6WUI | | | | 0H\HUKRI | |
| > @ 6WUI | | | | 0H\HUKRI | |

3HVR XQLWj GL YROXPH VDWXUR

| 'HVFUL]LR | 1VSW | 3URI 6W P | 1VSW FRU SUHVHQ]I | &RUUHOD | *DPPD 6DWXUR W Pñ |
|---|---|---|---|---|---|
| > @ 6WUI | | | | 7HU]D3JH | |
| > @ 6WUI | | | | 7HU]D3JH | |
| > @ 6WUI | | | | 7HU]D3JH | |
| > @ 6WUI | | | | 7HU]D3JH | |

0RGXOR GL 3RLVVRQ

| 'HVFUL]LR | 1VSW | 3URI 6W P | 1VSW FRU SUHVHQ]I | &RUUHOD | 3RLVVRQ |
|---|---|---|---|---|---|
| > @ 6WUI | | | | $ * | |
| > @ 6WUI | | | | $ * | |
| > @ 6WUI | | | | $ * | |
| > @ 6WUI | | | | $ * | |

0RGXOR GL GHIRUPD]LRQH D WDJOLR GLQDPLFR

| 'HVFUL]LR | 1VSW | 3URI 6W P | 1VSW FRU SUHVHQ]I | &RUUHOI | * .J FPð |
|---|---|---|---|---|---|
| > @ 6WUI | | | | 2KVDNL SXC | |
| > @ 6WUI | | | | 2KVDNL SXC | |
| > @ 6WUI | | | | 2KVDNL SXC | |
| > @ 6WUI | | | | 2KVDNL SXC | |