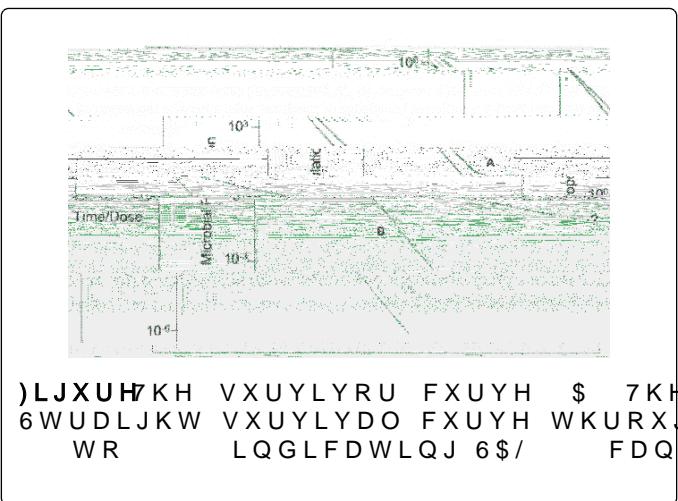


, P S R U W D Q W 3 R L Q W V W R \$ W W D L Q 5 H S U R G X F L E

+ L G H K D U X 6 K L Q W D Q L



)LJXUH7KH VXUYLYRU FXUYH \$ 7KH  
6WUDLJKW VXUYLYDO FXUYH WKURXJ  
WR I QG I FDWI QJ 6\$/ FDO

VWXG\ EXW IURP WKH H[D F W & \WSD FDW\WU\WHD  
FDQ EH FRQILUPHG TXLWH O D\& \SHDQ XDP\& HLQ\ I  
SRSXODWLRQ ZDV TXLWH HQRXJK WR HY  
SURFHGXUH )RU DQRWKH\& 8U\%T XLDQH PDHEQW  
ELREXUGHQ PHWKRG RU FRPELQHG %, E  
SUHVHQWHG LQ ,62 DQG VWHULOL]DW  
SODVPD VW\WU\WHD\DU\WLRQ\& 7\& 8R SKLO\XVW E  
XWLQL[HG EHFDXVH WKLV VSRUH LV WKH  
VWHULOL]DWLRQ %, GHILQHG DV WKH PRV  
VWHULOL]DWLRQ ,6\& QRFXODW\& G LR/QWR D P  
VXFK DV D SRO\K\GUR[\PHWK\OPHWKDFU  
PRGLILHG 36 SRO\VW\OHQH RU VXUIDFH I  
VXUIDFH DQG WKDW RI WKH VSRUH LQ 7DE

W D K A L K R N G U S K S H I Q R R E P L H Q R V Q D & G R U K \ G U R S K L C  
P A R K H L I L Y H D G F W & R Q V Q B & D D W U H Y H U R D X Q U H 6 / 5 F R L  
H D E K U H H G H G @ U Z P D E S C H C X V

\$QRWKHU ZD\ WR SUHSDUH D PRQROD\H

H Q H R E U D H W L R N Q H S U H S D U D W L R Q R I ' 1 \$ W L  
H S R D H M U R Q W B R W K H F D P K D W U S D A W D H D Q  
D R A M H Q W B R Q D P Q R O Z Q X V H G L U R X W H , S U @ S D N K D H  
D D E V I C S U R R A S H P W H D E C E H W K H % Q D P X W H Y G D W R H G +  
G H F R R B B L E H D Q K F W L H R F Q K Q I D F O X Q H U D D V R Q V D Q P  
F R D D H F W F Q U D G B L W P L R W H U W R A W H D Q F L W U R Q  
W Q R X L W H G U M L R J K D W R Z L D G V F O E X V T S U L Y H G ' 1 \$ J X U S S L  
I E H R P R E D H B S M G E X D W V T A X H U L H D I H W S H D A M L X U H D Q R A  
J H \* S U R G X F W V F D Q E H K D U G W R Q R W V K R Z  
M P H D M O R L R S D O R I V W H U L O L J D W L R Q S U R F H G X  
P V I D Q V R > @ Q H M Q N P F D D O L R E S Q D V P  
Z K L P K W R O H U D W H G W K H U D G L D W L R Q S U R F  
Q R W D W W D L Q H G G X H W R W K H S U H V H Q F H  
V K R X O G H U F D Q E H R E V H U Y H G ) L J X U H >

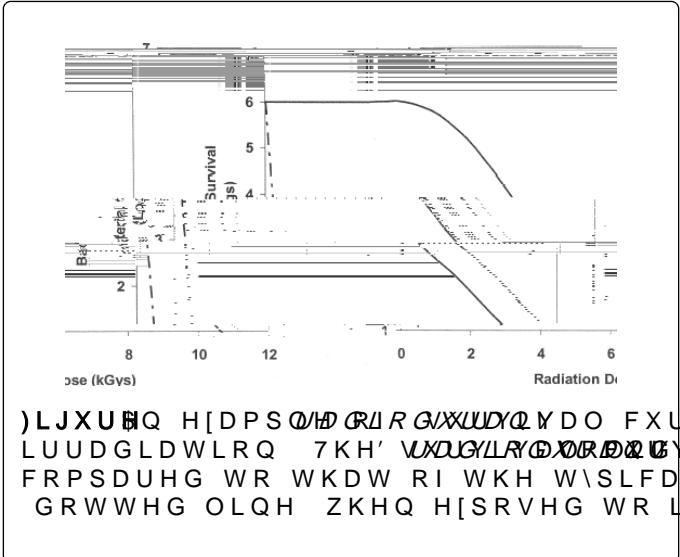
6 W U D L Q	: D W H U D F W L Y L
% D F L O O X V \$ T & X E W L O L V	
% V X E S T & Q L V	
% D W U R \$ K & N X V	
% F H U H X V 7	
% F R D J X Q & Q V	
* H R E D F L O O X V V W H D S U R & K H U P R S K L O X V	
% P H J D W \$ T U L & X P	
% P H J D W \$ T U L & X P	
& O R V W U L G L X P E R W X O L Q X P	
& V S R U R \$ T H Q & V	
& S X W U H \$ D R & I & H Q V	

5 HDGHUV PXVW NHHS LQ PLQG WKDW RQC  
VSRUHV SUHVHQW WDLOLQJ SKHQRPHQRQ  
\$V IDU DV WKH DXWKRU LV FRQFHUQHG DC  
JDV SODVPD VWHULOL]DWLRQ SUHVHQWHG  
UHSDLU Xp° € 0X U Hp > @

**7DEOH\GURSKRELF\FLW\ DQG RU K\GURSKLOLFLW\ RI VHYHUDO VSRUHV**

, Q RUGHU WR DYRLG FOXPSLQJ LQ WKH %, VSRUHV PXVW EH GLVWULEXWHG HYHQO\ RQ WKH FDUULHU PDWHULD )LJXUH ,I WKH K\GURSKRELFLW\ DQG K\GURSKLOLFLW\ RI VSRUHV GLIIHU 7DEOH VR WKH FKDUDFWHULVWLWLV RI FDUULHU PDWHULD OV PXVW FRLQFLGH ZLWK WKR VH RI VSRUHV )XUWKHUPRUH D ELREXUGHQ ELREXUGHQ PHDQV YLDEOH PLFURRUJDQLVPV RQ LQ SURGXFWV ZDV DURXQG D IHZ &)8 FRORQ\ IRUPLQJ XQLW VR REVHUYDWLRQV RI FOXPSV LQ ELREXUGHQ FRXOG EH TXLWH UDUH LQ H[DFW VWDWXV \$V DQ LQLWL SRSXODWLRQ&Q8 RFIDUULHU ZDV VR RIWHQ UHTXLUHG LQ YDOLGDWLRQ

FRQGXFWLQJ JDV SODVPD VWHULOL]DWLRQ PRVWO\ GXH WR TXLWH VKDOORZ SHQHWUDWLRQ GHSWK QP RI UDGLFDOV DQG RWKHU VWHULOL]DWLRQ IDFWR IURP JDV SODVPD 8S WR GDWH QR FRUUHFW VWHULOL]DWLRQ IDFWRUV RI JDV SODVPD DUH GHILQHG



)LJXUHQ H[DPSOHD GRURGXWLYDO FXUYH RI UDGLDWLRQ LUUDGLDWLRQ 7KH' VXUULYRQDORBLQH LV FRPSDUHG WR WKDW RI WKH W\SLFDO LUUDGLDWLRQ VHQLWLWLYH EDFWHULDOWWW GRWWHG OLQH ZKHQ H[SRVHG WR LQFUHDVLQJ GRVHV RI Ž LUUDGLDWLRQ

5HTXLUUHPHQW IRU VXUULYRU FXUYH SUHSDUDWLRQ

,Q DGGLWLRQ SK\VLFDO UHVHUFKHUV PXVW VWXG\ PRUH DERXW VWDWLVWLF DQDO\VLV EHFDXVH EDFWHULD DQG PLFURRUJDQLVPV KDYH VLJQLILFDQW YDULDWLRQ ,Q WKH H[DFW H[SODQDWLRQ DFFRUGLQJ WR ,62 DQG VHULHV > @ WR SUHSDUH D VXUULYDO FXUYH %,V DW DQ LQLWLDO SRSXODW DQG DGGLWLRQDO H[SRVHV ZLWK %,V DW HDFK H[SRVXUH WLPH ZLWK VDPH LQWHUYDO \$V D ZKROH TM %, VKHHWV DUH UHTXLUHG WR SUHSDUH D VXUULYDO FXUYH \$QG WKH VXUULYDO FXUYH FDQ EH GHVFULEHG ZLWK D UHJUHVVLRLQ OLQH XVLQJ D VWDWLVWLFDO DQDO\VLV ORUH WKDQ RI FRHIILFL UHODWLRQVKLS LV UHTXLUHG ,62 LQGLFDWLQJ QR WDLOLQJ DSSURYHG \$V IDU DV WKH DXWKRU LV FRQFHUQHG DOPRVW QR SDSHUV KDYH HYHU VHHQ JDV SODVPD GHDOLQJ ZLWK VXUULYDO FXUYH ZLWK WKH UHTXLUUHPHQW RI ,62 DQG VHULHV VR IDU ,Q WKDW VHQVH SK\VLFDO UHVHUFKHUV QHHG WR FRRSHUDWH ZLWK ELRORJLVWV ZLWK VXIILFLHQW NQRZOHGJH RI UHJXODWR UXOH RWKHUZLVH WKH SUHVHQWHG GDWD DUH FRQVLGHUHG RXW RI UHJXODWLRQ

5HWULHYDO FRQVWLWXHQWV DQG SURFHGXUHV RI %, VSRUHV IURP WKH FDUULH PXVW EH YDOLGDWHG ,Q JHQHUDO SKRVSKDW EXIIHU S+ FRQWDLQLQJ 7ZHHQ DQG SHSWRQ ZLOO EH XVHG DV D UHFRYHU\ FRQVWLWXHQW 7ZHHQ LV IRU WKH QHXWUDOL]DWLRQ DJHQW DQG SHSRWRQ LV IRU HQULFKPHQW IRU LQMXUHG VSRUH E\ VWHULOL]DWLRQ 'HSHQGLQJ RQ WKH GHJUHH RI LQMXU DQG DPRXQW RI VWHULOL]LQJ DJHQWV UHFRYHU\ FRQVWLWXHQW PXVW DOVR E YDOLGDWHG GHSHQGLQJ RQ WKH VRUW RI FDUULHU PDWHULD 5HFRYHU\ SURFHGXUHV IRU SDSHUV DQG 686 FDUULHUV GLIIHU VLJQLILFDQWO\ 6HYHUDO VRUWV RI UHFRYHU\ SURFHGXUHV DUH UHSRUWHG ,62 VHULHV DQG WKH XVHU PXVW YDOLGDWH ZKLFK SURFHGXUHV LV PRVW DSSURSULDWH WR WKH UHFRYHU\ E\ DYRLGLQJ GDPDJHG VSRUHV DQG VXIILFLHQW UHFRYHU\ UDWH ,Q DGGLWLRQ WKH VROXWLRQ WR XVH IRU VHULD GLOXWLRQ LQ VXUULYDO FXUYH EH YDOLGDWHG 6ROXWLRQV FRQWDLQLQJ FKORULGH QHHG WR EH DYRLGHG LQ R WR SUHYHQW SURPRWLRQ RI LQMXU\ RI VSRUHV GXULQJ VHULDO GLOXWLRQ SURFHGXUHV

,PSRUWDQFH RI VWDWLVWLFDO DQDO\VLV

,Q DGGLWLRQ LQ WKH ILHOG RI SK\VLFV YDULDWLRQ RI GDWD PD\ EH QHJOLJLEOH +RZHYHU LQ WKH ILHOG RI PLFURRUJDQLVPV YDULDWLRQ LV

& L W D W 16 R Q Q W D Q L +

,PSRUDQW 3RLQWV WR \$WWDLQ 5HSURGXGRELQH 6WHULOLW\ \$VVXU

3 DJH RI