

# MINE4910

A ]b]b[ ' ]b'U'; `cVU`9bj ]fcb a Ybh

HYfa " z&\$&%



7ci fgY`Cj Yfj JYk

GHJZZ7cbHJW`8YHU]`g

7cbj Ybcfg

B Ua Y	9a U]`	5j U]`UV]`]m	@cWU]cb	D\cbY
7Uf]rc`HUVY`]b	<a href="#">WUJVV`]b4 i bgk "YXi "Ui</a>	H\i fgXUmg fP) . \$\$-%+. \$\$Ł	C`X`A U]b 6i ]X]b[ ž @Yj Y`%ž Fcca`%) - 7	Ž*%&`-' , ) +- ( *

GWcc`7cbHJW`bZcfa Uh]cb

GWcc`cZA ]bYfU`g`UbX`9bYf[ mF Ygci fWg

C`X`A U]b`6i ]X]b[ ž@Yj Y`%ž%) -`fP %) Ł

I BGK`GMBB9MBGK`(&\$) &`5I GHF 5@5

[9b\[ \]bYYf\]b\[ `Gfi XYbhGYfj \]Wg`](#)

9.`a`YfY`"hYUW`]b[ 4 i bgk "YXi "Ui

K`:`k k k`"Yb[ ]bYYf]b[ `i bgk "YXi "Ui #a ]bYfU`g!YbYf[ mF Ygci fWg

7ci fgY'8YHJ]`g

I b]hg'cZ7fYX]h\*`

Gi a a UfmicZ\hY'7ci fgY

H\]g'Wci fgY'dfcj ]XYg'ghi XYb]g'k ]h' h\Y'hc'c'g'bYW'ggUfmic'a YYh'h\Y'W\U'Yb[ Yg'cZk cf\_]b[ 'Zc'f'a ]b]b[ Wca dUb]Yg'Ug'a ]b]b[ 'Yb[ ]bYYfg'UbX'a UbU[ Yfg]'b'Ub ]b]hYfbU]hc'bU'fUbX#cf'fYa c'h' '5i ghfU'Ub'gY]h]b[ "'H\Y Zc'W'g'k ]' VY'cb'XYj Y'cd]b[ 'Wci bh]Yg'UbX'Ub'U]a 'k ]' VY'hc'XfUk 'Wca dUf]gcbg'VY'hk YYb'h\Y'5i ghfU'Ub UbX' ]b]hYfbU]hc'bU'Wcb'h\i hg"'H\Y'Wci fgY'k ]' XfUk 'YI h'bg]j' Y'mcb'WUgY'ghi X]Yg"'#k ]' d'fcj ]XY'Ub ]b]hYfbU]hc'bU' dYfgdYW]j Y'cZa ]b]b[ / [ cj YfbUbW'UbX'fY[ i 'U'hc'fmiZ'Ua Yk cf\_g/Z'bUbW]b[ /a ]b]b[ 'Wca dUb]Yg Ug'U[ Yb]g'cZ\W'Ub[ Y/W'cgg!W' h' fU'a UbU[ Ya Ybh'[ YbXYf/ga U'!gW'Y'a ]b]b[ /]bX][ Ybci g'Wca a i b]h]Yg/ \YU'h' UbX'gUZ]m]ggi Yg/UbX'h\Y' ]bZi YbW'cZ7\ ]bU'UbX' #X]U"

7ci fgY'5]a g

H\]g'Wci fgY'U]a g'hc' d'fcj ]XY'ghi XYb]g'k ]h' h\Y'hc'c'g'bYW'ggUfmic'a YYh'h\Y'W\U'Yb[ Yg'cZk cf\_]b[ 'Zc'f a ]b]b[ 'Wca dUb]Yg'Ug'a ]b]b[ 'Yb[ ]bYYfg'UbX'a UbU[ Yfg]'b'Ub ]b]hYfbU]hc'bU'gY]h]b[ "

7ci fgY '@YUfb]b[ 'Ci hWca Yg

5ZYf'gi W'W'ggZ 'mWca d'Y]b[ 'h\]g'Wci fgY'Z'mci 'g\ci 'X'VY'UVY'hc.

@YUfb]b[ 'Ci hWca Y	

&" @YWh fYg'UbX'hi hcf]U'g. Dfc YWhk cf\_k ]`'VY'gi ddcfHk'k ]h'k YY\_'mWcbgi 'hUhj Y'UbX'jbZcfa Uhcb!

5ggYgga Ybh

5ggYgga YbhUg_	K Y][ \h		

h\ub'(\$\$\$k cfxg'fYl Wl X)b[ 'fYZfYbW'gk Ug'k Y''Ug'U'&) !a ]bi h' [ fci d'dfYgYbHjcb' ]b'hY'5J -9"  
#X]j ]Xi U'a Uf\_g'k ]''VY'U''cWJhX'VUgYX'cb'dYYf'fUj]b[ g'h'fci [ \ 'A ccX'Y"

F i Vf]Wg'Zcf'h\]g'UggYgga YbhUfY'U'gc'Zci bX'cb'A ccX'Y"

H\]g'Ugg][ ba Ybh]g'gi Va ]h'X'h'fci [ \ 'Hi fb]h]b'UbX'ghi XYb'g'Xc'b'chigYY'Hi fb]h]b'g]a ]'Uf]mifYdcf'g"

5ggYgga Ybh'W]h'f]U

f Bch'. F i Vf]Wg'Zcf'h\]g'UggYgga YbhUfY'Zci bX'cb'A ccX'Y"

5ggYgga Ybh' . '9bX'cZ7ci fgY'E i ]n

GhUfh'XU'Y . '9I Ua 'DYf]cX

8i Y'XU'Y . '9I Ua 'DYf]cX

H\Y'Z]bU''YI Ua ' ]g'W'a d'cgYX'cZYggU'm'hdY'ei Yg'h]c'bg'hc'h'gh'h'Y'i bXYfg'h]bX]b[ 'cZU''h'Y'a U'h'f]U'g"

H\]g'Ugg][ ba Ybh]g'gi Va ]h'X'h'fci [ \ 'Hi fb]h]b'UbX'ghi XYb'g'Xc'b'chigYY'Hi fb]h]b'g]a ]'Uf]mifYdcf'g"

5ggYgga Ybh'W]h'f]U

f Bch'. H\Y'Z]bU''YI Ua 'k ]''VY'cb' ]bY'j ]U'h'Y' #gdYfU'D'Uh'Z'fa ""







F Ygci fWg

DfYgWfjVYX`F Ygci fWg`

BchiUj UjUV`Y

F YWca a YbXYX`F Ygci fWg

BchiUj UjUV`Y

Gi Va ]gg]cb 'cZ5ggYgga YbhiHUg\_g

H\Y'GWcc`\Ug'XYj Y'cdYX'U'[ i ]XY'j bY'fc \Y'd'mci 'k \Yb'gi Va ]h]b[ 'U'W'i fgY'Ugg][ ba YbH'



## 5 WUXYa ]W< cbYgmiUbX`D`U[ ]Uf]ga

Mci f`YWñ fYf`UbX`hY`I b]j Yfg]mík ]`YI dYWñmci f`gi Va ]H`X`Ugg][ ba Ybñg`UfY`hfi`mimci f`ck b`k cf\_"I BGK \Ug`j Yfm`WYUf`[ i ]XY`bYg`cb`k \Uhd`U[ ]Uf]ga ]g`UbX`\ck`hc`Uj`c]X`]H`D`U[ ]Uf]ga ]g`i`g]b[ `hY`k cfXg`cf ]XYUg`cZch`Yfg`UbX`dfYg`Ybñ]b[ `h`Ya`Ug`mci f`ck b`D`U[ ]Uf]ga ]g`U`hmd`Y`cZ]bñY`YWñ U`h`Y`Z`ñ`ñ`Wb`hU`\_Y a Ubm`Zcfa g`z`Zca`X`Y`]VYfU`h`W`X`Y`U`h]b[ `hc`U`W`W`X`Y`b`h`U`m`i`W`d`m]b[ `Zca`U`gci f`W`k ]h`ci h`U`W`b`ck`Y`X[ Ya Ybñ`H`Y`I b]j Yfg]mì\Ug`UXcd`h`X`Ub`Y`Xi`W`h]j`Y`U`dd`f`c`U`W`hc`d`U[ ]Uf]ga`UbX`\Ug`XYj`Y`cd`Y`X`U`f`Ub[ Y`c`Z`f`Y`gci f`W`g`hc`gi`d`d`c`f`h`g`h`X`Y`b`ñ]"5`h`Y`X`Y`h]j`g`c`b`d`U[ ]Uf]ga`z`b`W`i`X]b[ `gca`Y`i`g`Y`Z`f`Y`gci f`W`g`z`W`b`V`Y`Z`ci`b`X`U`h`[k`k`k`"gh`XYbñi`bgk`"YXi`"Ui`#d`U\[ \]Uf\]ga`"](#)

5`A`]b]b[ `9b[ ]b`Y`Y`f]b[ `gh`XYbñg`UfY`f`Yei`]f`Y`X`hc`W`ca`d`Y`h`U`g`h`XYbñXYWUfU`h]cb`Z`c`f`U`W`X`Y`a`]W]b`h`[`f]m`k`\]W`]g`ci`h]b`Y`X`]b`h`Y`U`gg][ ba YbñW`z`j`Y`f`g`\Y`Y`h]"6`m`g][ b]b[ `h]g`XYWUfU`h]cb`z`mci`U[ f`Y`Y`h`U`h`mci`f`k`cf\_]g`mci`f`ck`b`cf][ ]b`U`k`cf\_"

z`mci`b`Y`Y`X`gca`Y`U`X`X]h]cb`U`gi`d`d`c`f`h`k`]h`mci`f`k`f]h]b[ `g\_]`g`z`d`Y`U`g`Y`W`c`b`h`U`W`h`h`Y`@`Y`U`f`b]b[ `7`Y`b`h`Y`c`f`j`]Y`k`gca`Y`c`Z`h`Y`f`Y`gci`f`W`g`cb`h`Y]f`k`Y`V`g]h`Y`[k`k`k`"Wi`bgk`"YXi`"Ui`"](#)H`Y`@`Y`U`f`b]b[ `7`Y`b`h`Y`]g`X`Y`g][ b`Y`X`hc`\`Y`d`mci`]a`d`f`c`j`Y`mci`f`U`W`X`Y`a`]W`k`f]h]b[ `UbX`W`ca`a`i`b]W`h]cb`g\_]`g`"Gca`Y`g`h`XYbñg`i`g`Y`h`Y`7`Y`b`h`Y`g`Y`f] ]W`g`V`Y`W`i`g`Y`h`Y`m`U`f`Y`Z]b`X]b[ `h`Y]f`U`gg][ ba Ybñg`U`W`U`Y`b[ Y`z`c`h`Y`f`g`V`Y`W`i`g`Y`h`Y`m`k`U`b`h`c`]a`d`f`c`j`Y`Ub`U`f`Y`U`X`m`gi`W`W`g`g`Z`U`W`X`Y`a`]W`d`Y`f`z`c`fa`Ub`W`"

5 WUXYa ]W=Zcfa Uh]cb

7 ci fgY`F Ygi `hg

: cf`XYHU]g`cb`l BGK `UggYgga Ybhd`Wzd`YUgY`j ]g]h [k k "gh XYbhi bgk "YXi "Ui #UggYgga Ybh](#)



K Y`UW\_bck `YX[ Y`hY`6YXY[ U`dYcd`Y`k \c`UfY`hY`hfUX]hcbU`W ghcX]Ubg`cZhY`UbXg`cb`k \]W`l B GK  
? Ybg]b[ hcb`Wla di g`lg`cW]hYX"

5ddYbX|l . '9b[ ]bYYfg'5i ghfU`U'f95E'DfcZYgg]cbU`'9b[ ]bYYf'7ca dYhYbWm  
 GHUbXUfX

Dfc[ fUa 'hYbXYX'@YUfb]b[ 'Ci hWta Yg	
? bck `YX[ Y'UbX'g_]`VUgY	
D9%"%7 ca dfY\Ybg]j YzhYcfmVUgYX'i bXYfghUbX]b[ 'cZhY'i bXYfd]bb]b[ 'bUh fU`UbX d\mg]WU`gWYbWg'UbX'hY'Yb[ ]bYYf]b[ 'Z bXUa YbH'g'Udd`]WUV'Y'hc'hY'Yb[ ]bYYf]b[ 'X]gWd`]bY	
D9%"&'7 cbWdh U`i bXYfghUbX]b[ 'cZhY'a UhYa Uh]Wg'z'bi a Yf]WU`UbU'mg]g'ghUhgh]Wg'z'UbX Wta di h'f'UbX']bZ'fa Uh]cb'gWYbWg'k \]W' i bXYfd]b'hY'Yb[ ]bYYf]b[ 'X]gWd`]bY	
D9%" " 'h!XYdh'i bXYfghUbX]b[ 'cZgdYWU`]ghVcX]Yg'cZ_bck `YX[ Y'k ]h]b'hY'Yb[ ]bYYf]b[ X]gWd`]bY	
D9%"('8]gWfba YbhcZ_bck `YX[ Y'XYj Y`cda YbhUbX'fYgYUfW'X]fYW]cbg'k ]h]b'hY Yb[ ]bYYf]b[ 'X]gWd`]bY	
D9%" ) ? bck `YX[ Y'cZYb[ ]bYYf]b[ 'XYg][ b'dfUW]W'UbX'WcbhYi h U`ZUW'c'fg]a dUW]b[ 'hY Yb[ ]bYYf]b[ 'X]gWd`]bY	
D9%"* 'i bXYfghUbX]b[ 'cZhY'gW'cdY'z'df]bWd`Yg'z'bcfa g'z'UW'W'ci bHUV`]h]Yg'UbX'Vci bXg'cZ gi gh]bUV'Y'Yb[ ]bYYf]b[ 'dfUW]W' ]b'hY'gdYW]ZWX]gWd`]bY	
9b[ ]bYYf]b[ 'Udd`]WU]h]cb'UV`]jm	
D9%"%5dd`]WU]h]cb'cZYghUV`]g\YX'Yb[ ]bYYf]b[ 'a Yh'cXg'hc'Wta d'Yi'Yb[ ]bYYf]b[ 'dfcV'Ya gc`]b[	
D9%"&'&'i YbhUdd`]WU]h]cb'cZYb[ ]bYYf]b[ 'h'W]b]ei Yg'z'hc'g'UbX'fYgci fW'g	
D9%" " '5dd`]WU]h]cb'cZgmg]Ya Uh]WYb[ ]bYYf]b[ 'gmb'hYg]g'UbX'XYg][ b'dfcW'ggYg	
D9%"('5dd`]WU]h]cb'cZgmg]Ya Uh]WUdd'fcUW'Yg'hc'hY'W'cbXi W'h]UbX'a UbU[ Ya YbhcZYb[ ]bYYf]b[ dfc'YW'g	
DfcZYgg]cbU`UbX'dYfgcbU`Uhf]Vi hYg	
D9' "%9h]WU`W'cbXi W'h]UbX'dfcZYgg]cbU`UW'W'ci bHUV`]jm	
D9' "&'9ZYW]j Y'cfU`UbX'k f]hYb'Wta a i b]WU]h]cb`]b'dfcZYgg]cbU`UbX`UmXca U]bg	
D9' " '7fYUh]j Y'z']bbcj Uh]j Y'UbX'dfc!UW]j Y'XYa YUbcif	
D9' "( 'DfcZYgg]cbU`i gY'UbX'a UbU[ Ya YbhcZ]bZ'fa Uh]cb	
D9' ") 'CfXYf'ma UbU[ Ya YbhcZgY'z'UbX'dfcZYgg]cbU`W'cbXi W'h	
D9' "*" '9ZYW]j Y'hYUa 'a Ya VYfg\]d'UbX'hYUa ``YUXYfg\]d	