



SRAP5107

F YgYUfVX `Dfc ^VWh

HYfa `CbY`##`&\$&%

7ci fgY'8YHJ]`g

7fYX]hDc]bHg`*`

Gi a a UfmcZh\Y'7ci fgY

H\]g:]g'U'%&I C7'F YgYUfVX'Dfc'YWhWci fgY" Mci 'k]`Ybfc`]b'U'*'i cWWci fgY']b'YUWX'cZfk c'gi WWggj] Y
H'fa g'k]h'U'fYgi`hfYdcfH'X'VmU'g]b['Y'[fUXY'UhH\Y'YbX'cZh\Y'gYWcbX'*'i cWWci fgY"

≠idfcj]XYg'mci 'k]h'h\Y'cddcfh b]mhc Wca d'YH'Ub]bXj]]Xi U'fYgYUfVX'dfc'YWh'5g'U'fYgYUfVX'Wci fgYž]h]g
XYg][bYX'hc'U'ck' mci 'hc'Udd'miH\Y'_bck'YX[Y'mci '\Uj Y [U]bYX'h\fc [\ci hmc i f'dYf]cX'cZgh XmiUbXž]Z
Wca d'YH'X'gi WWggž `mž'hc']a dfcj Y'mci f'dfcgdYWhcZUWV dhUbwV']bhc'fYgYUfVX'XY[fYY'dfc[fUa g'Uh

5ggYgga Ybh

5ggYgga YbhHUg_g

5ggYgga YbhHUg_	K Y][\h	8i Y'8UH'	Gh XYbh@YUfb]b[Ci hWta Yg'5ggYggYX
F YgYUfW' Dfc YW'i	%'\$ \$i	&' #\$(#&\$&%%%) - 'DA	%ž' &ž'

5ggYgga Ybh8YHU]`g

5ggYgga Ybh% F YgYUfW' Dfc YW'h

8YHU]`g.

8Yg][bžXYj Y`cda YbhUbX'dfYdUfUH]cb'cZ]bXj]]Xi U`fYgYUfW' dfc YW'icZ%'\$ \$ \$ \$! '%&ž\$ \$ \$ 'k cfXg'i bXYf
UWUXYa]Wgi dYfj]g]cb"

F YgYUfW' fYdcfng'k]`VY'a Uf_YX'Vmik c'Yi Ua]bYfg'k \c'k]`dfYdUfY'k f]hYb'fYdcfng" H\YgY'fYdcfng'UbX
bi a Yf]W' [fUXYg'k]`VY'fY'YUgYX'k]h]b'rk c'k YY_g'cZgi Va]gg]cb'cZhY'fYdcff'

Hi fb]h]b'gYh]b[. H\]g]g'bchU'Hi fb]h]b'Ugg][ba Ybh

F Ygci fWg

DfYgWf]VYX`F Ygci fWg`

GF 5D) %\$+`H\Yg]g`Gi Va]gg]cb`ϕZcfa Uh]cb

5ggYgga YbhHJg_	@Yb[h	K Y][\h	8i Y`XUW
:]bU`hYg]g	%!%&z\$\$\$`k cfXg	%%\$i	HYfa `%'`5df)`&\$&% HYfa `&`*`5i [i gh&\$&% HYfa `.`%`Bcj Ya VYf &\$&%

[DfYgYbhUh\]cb`\[i \]XY`\]bYg](#)

H\Y`Zc`ck]b[`UFY`hY`dfYgYbhUh]cb`fYei]fYa Ybhg`Zc`fa UghYfg`hYgYg`H\YgYg`hUhXc`bchWcbZcfa`hc`hYgY`fYei]fYa Ybhg`k]`VY`fYh`fbYX`Zc`f`Ua YbXa YbhUbX`fYgi Va]gg]cb`

[Zcj Yf`dU\[Y](#)

ϕWl XY`U`Wcj Yf`dU[Y`k]h`mci f`hYg]g`ghUh]b[.

- H\Y`h]hY`cZhY`hYg]g

K c f X "] a] h

H \ Y ' h Y g] g ' g \ c i ' X ' V Y ' V Y h k Y Y b ' % \$! % & z \$ \$ \$ k c f X g z ' b c h] b W i X] b [' h Y ' V] V '] c [f U d \ m # F Y Z Y f Y b W ' '] g h ' ' 5 d d Y b X] W g k] ' ' b c h V Y ' W e i b h X '] b ' h Y ' k c f X ' ' Y b [h z ' V i h i h Y m W b ' c b ' m V Y ' i g Y X ' z c f ' a U h f] U ' ' g i W X ' U g ' W] h W ' ' g d Y Y W X Y g f Y Z Y f f Y X ' h c ' Y i h Y b g] j Y ' m] b ' h Y ' h Y g] g z ' g h U h g h W ' ' h U V ' Y g z ' W f c b c ' c [] W ' '] g h g ' c Z] a d c f h U b h X U h g ' U b X ' Y j Y b h g z U b h g ' c Z U g ' a c g Z W Y V b 5 g i d V a] h m X g z c f U W X Y a] W i g f X] h d f Y b] c U g ' i a] b b h g X Y j Y c d Y X] b ' h U h Y i h ' 5 b m g i W X U d d Y b X] W g ' k] ' ' V Y ' W e i b h X ' k] h] b ' h Y ' k c f X ' ' Y b [h "

F Y Z Y f Y b W] b [

[5ggYgga Ybhg'g\ci 'X'VY'fYZfYbWX'jb'UWwcfXUbW'k \]h'hY'E UZaa^aXE aU\[S^E U\]W UWe D V W W U \] Y 9g\[VWZ Uj U\]UV'Y'Uh\hdg.#gcWU'gWYbW'g"Ufhg"i bgk "YXi "Ui #gh XYbhg#Ygci fW'g#dc'WYgl\[i \]XY' \]bYg#](#)

Gi Va]gg]cb'cZ'hYgYg

D'YUgY'gi Va]hmc i f'hYg]g'Y'W'fcb]WU'mhc'GC GG' < cbc i fg'5Xa]b' [\cbci fg!gcgg4 i bgk "YXi "Ui](#) 'k]h' mci f gi dYf]]gcf'Wcd]YX']b'cb' Bcj Ya VYf' % ž & \$ & \$ "

'Bc' \UfX'Wcdmgi Va]gg]cb']g'fYei]fYX" D'YUgY'Ybgi fY' hUhmci f'bUa Y'UbX'gh XYbh-8' bi a VYf'UfY'cb Yj YfmdU[Y'cZmci f'gi Va]gg]cb"

D'YUgY'bc'hY' K \Yb'mci'gi Va]hUb'UggYgga YbhUhl B G K ž mci 'UfY'UW'bck'YX[]b['hUhmci '\Uj Y i bXYfg'hcX'UbX'UV]YX'Vmi h Y 'l b] j Yfg]hmfYei]fYa Ybhg']b' hY' dYdUfU]cb'cZ'hUhUggYgga Ybh]hYa ž]b fYgdY'W'icZ'gh XYbhUWUXYa]Wa]g'W'cbXi W'ici h]bYX']b' hY' E fgVW f 5 a VWBa fUk'UbX'E fgVW f? [eUa' VgUf BdaUWgdWēžVc'h'cZk \]W' UfY'Uj U]UV'Y'Uh' [\hdg.#gh XYbh'i bgk "YXi "Ui #W'cbXi W'](#)

Mci 'UfY'U'gc'XY\

i f'ck 'k c

F Yhi fb 'cZ'Ugg][ba Ybhg

9`YWfcb]Wgi Va]gg]cbg'k]`VY`fYhi fbYX'j]U`Ya U]'k]h`k f]hYb`ZYXVUW_`Zca `YI Ua]bYfg"

H\Yg]g'UggYgga YbhdfcW\Xi fy

ᄃ`Wcbgi `hU]cb'k]h`h\Y`fY`Yj UbhGi dYfj]gcf`h\Y`7 ci fgY`7 cbj Ybcf'k]`Uddc]bhk c`YI Ua]bYfg`Zcf`YUW
h\Yg]g'gi Va]hYX`"I b`Ygg`h\Y`fY`UfY`gdYV\U`W]fW a ghUbwWg`fYei]f]b[`h\Y`Uddc]bha YbhicZYI hYfbU`
YI Ua]bYfgz`h\YgY`YI Ua]bYfg'k]`VY`XfUk b`Zca `Ua cb[`h\Y`UWUXYa]WghUZZcZ`h\Y`GWcc`"9I Ua]bYfg'k]`
VY`dfcj]YX'k]h`h\Y`h\Yg]g'hc`VY`YI Ua]bYX'hc[Y`h\Y`f'k]h`h\Y`A Uf_]b[`7 f]hYf]U`UbX`A Uf_]b[`F Ydcfh: cfa "

H\Y`9I Ua]bYfg`fYdcfng`UbX`a Uf_g`a i ghVY`fYhi fbYX'hc`h\Y`7 ci fgY`7 cbj Ybcf`Vmi`h\Y`Xi Y`XUH`zi gi U`m
rk c`k YY_g`UZf`h\Y`XUH`Zcf`gi Va]gg]cb`cZ`h\Y`h\Yg]g"

C b`fYW]dhcZ`h\Y`fYdcfng`Zca `YI Ua]bYfg`h\Y`7 ci fgY`7 cbj Ybcf'k]`dfcWYX`Ug`Zc`ck g.

- %` Z`h\Y`a Uf_g`gi Va]hYX`Vmi`h\Y`YI Ua]bYfg`Xc`bchX]ZYf`Vma c`fY`h\Ub`b]bY`a Uf_g`UbX`UfY`k]h`b`h\Y`
gUa Y`[fUXY`WUHY[cfmz`h\Y`a Uf_]`U`cWUHYX`k]`VY`h\Y`Uj YfU[Y`cZ`h\Y`rk c`a Uf_g"
- &" Z`h\Y`a Uf_g`gi Va]hYX`X]ZYf`Vma c`fY`h\Ub`b]bY`a Uf_g`k]h`b`U`WUHY[cfmcf`X]ZYf`]b`[fUXY`
WUHY[cf]Ygzh`h\Y`7 ci fgY`7 cbj Ybcf'k]`Uddc]bhU`h`fX`YI Ua]bYf`H\Y`7 ci fgY`7 cbj Ybcf'k]`
Uj YfU[Y`h\Y`a Uf_g`cZ`h\Y`rk c`YI Ua]bYfg`WcgYghc`YUW`ch\Yf` Z`bYW`ggUfmz`cb`fYW]dhcZ`h\Y`
fYdcfh`UbX`a Uf_]`cZ`h\Y`h`fX`YI Ua]bYf`h\Y`7 ci fgY`7 cbj Ybcf'k]`Wcbg]XYf`h\Y`h\YfY`a Uf_g`UbXz`Z`
h\Y`fY`UfY`Uf[Y`X]gWYdUbW]Ygzh`Wcbgi `hk]h`U`h\YfY`YI Ua]bYfg`hc`gYY_]U[fYYa Ybhcb`U`Z]bU`
a Uf_"
- ' "` ᄃ`h\Y`Yj Ybhbc`U[fYYa Ybh]g`fYUWYX`U`fYdcfng`k]`VY`Zcfk UfYX`hc`h\Y`8Ydi hmi<YUX`cZGWcc`
f@YUfb]b[/ `HYUW]b[E`UbX`Dcgh`fUXi UH`Dfc[fUa `7 cbj Ybcfg`Zcf`XYH`fa]bU]cb`cZ`h\Y`Z]bU`a Uf_`
Zcf`h\Y`h\Yg]g"

8YH`fa]bU]cb`cZ:]bU`5ggYgga Ybh

H\Y`7 ci fgY`7 cbj Ybcf'k]`bch]Zmghi XYbhg`cZ`h\Y`ci hWca Y`cZ`h\Y]f`UggYgga YbhUbX`dfcj]X`YX!]XYbh]ZYX`
Wcd]Yg`cZ`h\Y`YI Ua]bYf`g`fYdcfng"

7 f]hYf]U`cZ'9j U`i Uh]cb

5`][ba Ybh`hY`YI hYbhlc`k \]Wk`]XYUg`UfY`dfYgYbhYX`Wc`YfYbhmUbX`k]h`WYUf`dfc[fYgg]cb`Zca`fYgYUfWk
ei Ygh]cb`h]fci [\`h`Wc`bW] g]cb

5f[i a Ybh`hY`YI hYbhlc`k \]Wk`hY`Uf[i a Ybh]g`XYj`Y`cdYX`]b`U`WYUf`UbX`Wc`YfYbhk Um

9j]XYbWk. `ck`UbX`h`k \UhXY[fY`hY`Yj]XYbWk`gci fWk`Zca`Ui`hcf]h]Yg`]b`hY`Z]Y`X`cf`XUfU`Wc`YWk`]g
]bhY[fUfYX`UbX`i`gYX`h`gi`ghU]b`hY`Uf[i a Ybh

5bU`mg]g. `hY`YI hYbhcZfYZYW]j`Y`UggYgga`Ybh/`UddfU]gU`cZghfYb[h]g/`]a`]h]cbg`cZdfYj`]ci`g`k`cf`
UbX`#f`ck`b`k`cf`_/X]gW]d`]bY`dUfUX][`a`g`UbX`a`Y`h`c`X`c`c`[]Yg`UbX`hY]f`Udd`]W]h]cb`h`hY`fYgYUfWk`ei`Ygh]cb
gci`fWg`Z`XUfU`UbX`Z]bX]b[g

æ d`]W]h]cbg`UbX`7`cbW]i`g]cbg. `ghU]h`a`YbhcZ`hY`a`YUb]b[`UbX`fY`Yj`UbWk`cZ`Z]bX]b[g`h`c`hY`f
fYgYUfWk`#UbX`cf`hY`cf]Yg`dfYj`U`Ybh]b`hY`Z]Y`X

7 fYUh]j]m/`æXYdYbXYbWk. `hY`YI hYbhcZ]bbcj`Uh]`Y`cf`]a`U[]bUh]j`Y`UddfUWkYg`h`hY`hYg]g

7`cb]f]Vi`h]cb`h`hY`Z]Y`X. `XYh`fa`]bUh]cb`cZ`hY`dc`hY`b]U`]m]cZ`Z]bX]b[g`]b`]XYbh]Z]b[`U[`Ud`cf`UXj`UbW]b[
_bck`YX[`Y`k`]h]b`hY`X]gW]d`]bY

DfYgYb]h]cb. `i`gY`cZ`Ub[i`U[`Y`#Uf]m]UbX`UWUXYa`]W]c]b]Ybh]cbg`gi`Wk`Ug`fY`Z]fYbW]b[

F`YWc`a`a`YbXYX`F`Ygci`fWk`g

7`ci`fgY`9j`U`i`Uh]cb`UbX`8Yj`Y`cda`Ybh

Gi Va]gg]cb 'cZ5ggYgga YbhiHUg_g

Hi fb]h]b 'Gi Va]gg]cb

≠mci 'YbWci bHYf'U'dfcV'Ya 'k \Yb'UH'Ya dh]b['hc'gi Va]hirci f'Ugg][ba Ybhi'fci [\ 'Hi fb]h]bž'd'YUgY
HY'Yd\cbY'9I HYfbU'Gi ddcfhcb'- ' ,) " ' ' %cf'Ya U] 'h'Ya 'cb'YI HYfbU'HY'gji ddcfh i bgk "YXi "Ui "'Gi ddcfh

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

D`U[]Uf]ga]g`i]b[`hY`k cfXg`cf]XYUg`cZc`hYfg`UbX`dFYgYb]b[`hYa`Ug`mci`f`ck`b" `hWUb`hU`Y`a`Ubm`Z`fa`g`Z`ca`XY`]VYfUHY`VX`YU]b[`hc`UW]XYb]U`m`W`dm]b[`Z`ca`U`gci`f`W`k`]h`ci`hUW`bck`YX[Ya`Yb]h`

I`B`G`K`]`f`ci`d`g`d`U[]Uf]ga]bhc`hY`Z`c`ck`]b[`W]hY[`cf]Yg.

7`cdm]b[`i`g]b[`hY`gUa`Y`cf`j`Yfmg]a`]Uf`k`cfXg`hc`hY`cf][`]bU`hY`hcf`]XYU`k`]h`ci`hUW`bck`YX[]b[`hY`gci`f`W`cf`i`g]b[`ei`c`hU]cb`a`Uf`_g`"H`]g`U`gc`Udd`]Yg`hc`]a`U[`Yg`Z`Uf`h`UbX`XYg][`b`d`fc`Y`W`g`Z`Ug`k`Y`U`g`d`f`Y`g`Y`b`hU]cb`g`k`Y`f`Y`g`ca`Y`cb`Y`d`f`Y`g`Y`b`hU]cb`g`k`]XYUg`cf`k`cfXg`k`]h`ci`h`W`Y`X`]h`

~~hUddfcdf]UHY`dUfUd`fUg]b[`7`U]b[]b[`U`Z`k`k`cfXg`UbX`d`fUgYg`k`Y`a`c`g`h`m`f`Y`hU]b]b[`hY`cf][`]bU`g`h`f`i`W`f`Y`UbX`#`c`f`d`fc[`f`Y`g`g]c`b`c`Z`]XYUg`c`Z`h`Y`cf][`]bU`Z`UbX`]b`Z`ca`U`h]c`b`k`]h`ci`hUW`bck`YX[Ya`Yb]h`H`]g`U`gc`Udd`]Yg`]b`d`f`Y`g`Y`b`hU]cb`g`k`Y`f`Y`g`ca`Y`cb`Y`d`U`f`U`d`f`U`g`Y`g`U`b`c`h`Y`f`g`]XYUg`cf`k`cfXg`k`]h`ci`h`W`Y`X`]h`UbX`hc`d`]Y`W`]b[`hc[`Y`h`Y`f`ei`c`h`Y`g`UbX`d`U`f`U`d`f`U`g`Y`g`]bhc`U`b`Y`k`k`c`Y`Z`k`]h`ci`hUddfcdf]UHY`f`Y`Z`f`Y`b`W]b["~~

7`c`i`g]c`b`k`cf_]b[`k`]h`c`h`Y`fg`Vi`hdUgg]b[`c`Z`h`Y`k`cf_]Ug`U`d`Y`fg`cb`g`]bX]j`]Xi`U`k`cf_]7`c`i`g]c`b`U`gc`]b`Wi`XYg`d`fc`j`X]b[`mci`f`k`cf_]hc`U`b`c`h`Y`f`g`h`i`XY`b`h`V`Y`Z`c`f`Y`h`Y`Xi`Y`X`U`h`Z`c`f`Z`c`f`h`Y`di`f`d`c`g`Y`c`Z`h`Ya`d`U[]Uf]g]b[`U`h`U`b`m`h`a`Y`Z`d`U`m]b[`U`b`c`h`Y`f`d`Y`fg`cb`hc`d`Y`f`Z`ca`U`b`U`W`X`Y`a`]W`h`U`g`_`Z`g`h`U`]b[`c`f`U`W`e`i`]f]b[`U`b`c`h`Y`f`d`Y`fg`cb`g`U`W`X`Y`a`]W`k`cf_]U`b`X`W`e`d`m]b[`]Z`c`Z`Y`f]b[`hc`W`e`a`d`Y`h`U`b`c`h`Y`f`d`Y`fg`cb`g`k`cf_]c`f`g`Y`Y_]b[`d`U`m`a`Y`b`h`Z`c`W`e`a`d`Y`h]b[`U`W`X`Y`a`]W`k`cf_]`

~~hUddfcdf]UHY`W]hU]cb.`7`]h]b[`gci`f`W`g`k`Y`W`U`j`Y`b`c`h`V`Y`Y`b`f`Y`U`X`Z`k`]h`ci`hUW`bck`YX[]b[`hY`g`Y`W`e`b`X`U`f`m`gci`f`W`Z`ca`k`Y`W`_`bck`YX[Y`c`Z`h`Ya`U`g`V`Y`Y`b`c`V`hU]b`Y`X"~~

- i bXYfgHUbX'mci f'f][\hg'UbX'fYgdcbg]V]]hYg'Ug'U'gh XYbhUhl BGK
- VY'Uk UfY'cZd'U[]Uf]ga ž'Wcdmf][\hžI BGK 'Gh XYbh7cXY'cZ7cbXi WñUbX'5WwdfUV'Y'I gY'cZ I BGK '⇒H'F Ygci fW'g'Dc`]Wñ

5 WUXYa]WbZcfa Uh]cb

: cf`YggYbh]U`gh XYbh]bZcfa Uh]cb`fY`Uh]b[`tc.

- fYei Ygh]Zcf`YI H`bg]cb/
- `Uh`gi Va]gg]cbg`[i]XY`]bYg/
- fYj]Yk `cZa Uf_g/
- I B GK `<YU`h`UbX`GUZY`midc`]WYg/
- YI Ua]bUh]cb`dfcW`Xi fYg/
- gdYW]U`W`bg]XYfUh]cb`]b`hY`Yj YbhcZ]`bYgg`cf`a]gUXj Ybh fY/
- gh XYbhYei]mUbX`X]gUV`]m/
- UbX`c`hYf`YggYbh]U`UWUXYa]W]bZcfa Uh]cbž`gYY