

8SF OBUBMDSF F OJH BOE EJBHOPTUDUFTUJOH QPS GFUBM
DI SPN PTPN BNB OE HF OF UD DPOE JUPOT

7 CKFDUMFT (FTU_ MOY QZ` U UZ` QZPCP` [\Y] bUPQ
NPbUQ[Z `TO`QQ] Y Y QZPCP_ O`QZUS NZP
PUMSZ[M



<BCN7IPGDPOUFOUT

#ž BMlQZ`_aY Y Me#####&
\$ž EaY Y Me [R'Qq Y Y OZPMUj Z_#####(
%ž 6UQa_ Uj Z NIP ^Qq Y Y OZPMUj Z_#####"
%ž# B^OZMNK`Q`_R^ ^OT^Y [_ Y QNCa\X UPlQ_#####

3\OZPld 0 ///\$+
3\OZPld 3 k G\PMUZS 5[Y Y U'OO? OY NO^TU/\$" #* Z\$" #+f///\$+
3\OZPld 4 I [Y OZh: QXT 5[Y Y U'OO? OY NO^TU ///\$+
3\OZPld 5 AbQbLc [R'TQ6CbQ\Y OZ` MZP DcbLc B^'OO_R ^'TU_E'MOY OZ` ///\$-
3\OZPld 6 8aX6UOMY O^ ///%
3\OZPld 7 5[Z_UPO'MUJ Z_R ^;ZP\$OZ[a_MZP 5aXa^M* MZP >ZSaU`OM* 6UbO`QB[\aX'UJ Z_ ///#
3\OZPld 8 6U[^PO^_4MCP [Z 7 TZUJe ///\$
3\OZPld 9 6CRZUJ Z_MZP 3NN^CbUMJ Z_ ///%

7bQ'e NNMle TM M_Y NKO TN CO [RTNBUZS MOT^Y [_] Y N^ ^SOZO WQ ZPUU Zz B'OZMINX_O'OOZUS R^ ^
_] Y OOT^Y [_] Y N^ N^P SOZO WQ ZPUU Z_ U [R^O^P Pa^US \^OSZM^e^ [\^ bUPO^TQc [Y N^ c UT
Y [^OZR^ ^Y MU Z MN [a^ TO^aZN [^Z NNMlež 3X_aO^ `Q_`US _] [a^P NOV^P^MOUBSZ N^P [Z^ aZPO^M^OZ
c TOZ `TQc [Y N^ TM NCOZ UR^ ^Y CP MN [a^ `TOZMa^O [R^ TO_ O'OOZUS `Q_ f^ `TO [_ UNO^Q_aX_ f^ N^P
`TO [\^U Z_ N^ N^ N^O^ [TOž

FTONM^O^ \^Z OX^O [R^ ^OZMINX_O'OOZUS U_ [[R^O^M^N^O^ O^R^O^U^O^N^P^M^O^O^ UNO^`Q_` UZ [^PO^` [^
UPOZ^Ue c [Y OZ c UT N^ UZ^O^M^O^P^O^T^N^O^O [RTNBUZS M^N^M^e c UT MOT^Y [_] Y N^ ^SOZO WQ ZPUU Zz
FTQ_Qc [Y OZ MO^TOZ R^ X^ c CP a\ c UT SOZO WQ aZ_OX^ZS N^P [R^O^P P^U^SZ [_] W^O_`US R^ ^M^P^O^R^Z^U^O
N^ c Ož 5a^OZ^X^ [Z^ N^ UZ^b^M^U^O^`Q_` /Ož M^ Z^U^O^OZ^`Q_ U [^O [^U Z^O^b^U^X^ _M^ \^X^S^f^i^O^N^ P^U^SZ [_O^M
SOZO WQ [^O^Y [_] Y N^O^ ZPUU Z UZ N^ aZN [^Z

FTU_`MOY OZ`_aY Y MUQ_`OQ Y Y OZPMUJ Z_R` ^\`OZMNX_O`OOZLS R` ^OT`Y [_] Y N`M`P SOZO W
Q ZPUJ Z_R` ^\`OSZM` c [Y OZ M`P`TQ`M`Z O`_U` T OSOZ O`M`N` \a`X`M`J`Z`I [Y OZ c UT M`L`U`O`O`M`CP
O`M`O`O` [RTM`U`S`M`O`T`U`P` c UT M`O`T`Y [_] Y N`X` ^SOZO W Q ZPUJ Z /O`S`Z`T`M`U`S`T`M`P`M`M`M`e c UT M
Q ZPUJ Z [^PaQ` [M`R`M` U`E`T`U` [^e [R`M`Q` ZPUJ Z fi_T [a`P` ^O`O`U`O`Z`P`U`P`a`M`U`CP` Q` aZ`O`X`Z`S`R` [Y M
O`Z`L`O`M`Z` c UT M` \` ^\`U`M`O`O`N`O` ^U`Q` \`O`P`O`M`N`E` \`U` ^` [^\`OSZM`Z`e`z`

1/

: FDPN N FOE BUJO"	/ SBEF BOE TVOOPSUOH SFGSFOFT
3000`MNDQRA`ŽXZO_0'OOZUS`Q`_RĚ ^OT^Y [_]Y OQ ZPUU Z_Ů _OQ ZP`^Y Q`Q'UZ0&PQ MiiY MOZNX_Q'aY _0'OOZUS/? 3 ě 38B ě j : 59 ě G7% ě ! Ž; ZTUNZfiNŮPI NfiOR6@3ŽNMCP_0'OOZUSž FTOQ[\Ů] Z [ROR6@3ŽNMCP_0'OOZUS M_M_OQ ZPŽ Ľ^`Q` _] [aŮ NO PUQa__OP c UT NŮc [Y OZ M	5[Z_OZ_a_ŽNMCP ^OQ Y Y OZPMU Z
: FDPN N FOE BUJO\$	/ SBEF BOE TVOOPSUOH SFGSFOFT

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+BSSFSTDSFFOJHQP SJQI FSJFE HFOFUDEJTPSEFST	
/ PPE OSBDUJDF OPUF	/ SBEF BOE TVOOPSIJH SFGSFODFT
B^OQ ZOO\UJ Z _O^OOZUS U \^OPO^MWO^ [M^OZ^M^M^O^O^OOZUS R^ ^ TO^UM^O^SOZO W^OQ ZPUUJ Z _M^ TU \ [^O^ U^M^M^ c _Y [^O [\^U Z _R^ ^ O^M^O^Q a \XQ\U Z O^PUS \^OZY \XZ^ M^UJ Z SOZO W^O^S^Z [_Uz	9 [[P \^M^O^O^Z [^O /Q Z _OZ_a_ŽNMOPfi
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3XQ a \XQ _U^ OZPUS [TMOO^U^OZ [^c T [MQ \^OSZM^ t _T [a^P TMO M^M^O^R^R^M^ U^ TU [^e^ M^OZ c UT M^O^c [UPOZ^ U^e^ZS ^O^M^O^c UT TO^UM^O^SOZO W^O^U [^PO^ ŽFT [_O^UPOZ^ U^O^P c UT M^M^ U^ TU [^e [RM _CO^O^U^TO^U^P PU [^PO^ _T [a^P NO [R^O^P ^O^O^M^ [M^SOZO W Q aZ _O^ZS _O^b^O^R^ ^UZR^ ^Y M^UJ Z M^ a^ O^M^O^ _O^OOZUS M^P \^OZ^M^ PUSZ [_U! \^OZY \XZ^ M^UJ Z SOZO W^O^S^Z [_U R^ ^TOQ ZPUUJ Zz	5 [Z _OZ_a_ŽNMOP ^OQ Y Y OZPMUJ Z
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5M^O^ _O^OOZUS R^ ^TOY [^OQ Y Y [Z OY [Z SOZ^O^SOZO W^OQ ZPUUJ Z _ /OZ^O^ _W^O^M^ _U [_L^M^Y a_Ca^M^M^ \Tel R^M^O^J _eZP^ Y Q TMOY M^S^ N^Z [\MT^O^fiU M^M^O^O^Z 3a_ ^M^M^P UZ @c L^O^M^P /U^ TO \^M^O^ _O [^z: ZR^ ^Y M^UJ Z [Z O^M^O^ _O^OOZUS R^ ^TOY [^OQ Y Y [Z SOZO W^OQ ZPUUJ Z _ T^M^O^O^ O^U^O^ /OZ^O^ _W^O^M^ _U [_L^M^Y a_Ca^M^ M^ \Tel R^M^O^J _eZP^ Y Q fi_T [a^P NO [R^O^P [M^c [Y OZ \XZ^ZUS M \^OSZM^O^ [^UZ^ TORU^ ^Y O^O^ [R^ ^OSZM^O^z [Y M^ c M^ UZSY [^O UZR^ ^Y M^UJ Z M^ a^ O^M^O^ _O^OOZUS _T [a^P NOS^OZ^ TO [\ \ ^aZUe [TMO^M^ [^OPO^M^O^P UCa_ UJ Z M^ a^ O^M^O^ _O^OOZUS c UT M^ UZR^ ^Y O^ OZ^O^M^ ŽFT^O^O^O^ _M^P XY U^M^UJ Z _ [R^ Q^ UZS^ M^P M^e M^ [O^M^O^ Q _ _ _T [a^P NO PUCa_ O^z	5 [Z _OZ_a_ŽNMOP ^OQ Y Y OZPMUJ Z
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3X\ ^OSZM^ c [Y OZ _T [a^P NO [R^O^P N^M^O^ _O^OOZUS R^ ^T^M^ OY UM O^M^O^ _M^a_ Ne M^R^M^ [P O^M^ UZM^UJ Z M^ UZU^M^ ^O^O^ M^UJ Zz EO^OOZUS c UT _CO^O^O^M^ M^ R^ ^TMOY [S^ N^Z [\MT^O^ /_a^O^ M^: B>5 [^ 7B9 M^P TMOY [S^ N^Z [\MT^e SOZO6@3 `Q^ UZSfi_T [a^P NO Q Z _UPO^O^ UZ TIST ^U^O^TZ^O [^ \ \a^M^UJ Z S^ a _z	9^M^O^5

Ž/ , JTDVTTJPO BOE SFDPN N FOE BUJ POT

FTQR Ğ c LZS _OO Ũ Z Qa NMP _ [Z QMOT 'OO Y Y OZPMU Z _aY Y MUOP QMWOž

ŽŁ 8SF OBLUMFTUT QPSD SPN PTPN F BOFVQVLEJFT

8SF OBLUMFTUT QPSD SPN PTPN F BOFVQVLEJFT	
: FDPN N FOE BUJ POT	/ SBEF BOE TVOOPSUOH SF SF ODF T
3X\ 'OSZM' c [Y OZ _T [aX NQ\ ' bUPCP c UT LZR 'Y MUJ Z MIP TMBO ' Ũ Qe MODO _ [_O'OOZ LZS ' Q _R ' ^RO NMO' Y [_ [Y QMIP SOZO WD Q ZPUU Z ž B' OZMIX O'OOZ LZS [\ ' Ũ Z _T [aX NQPU Qa _OP MIP [RRO'OP LZ ' TORU _ ' Ũ Y Q _ Q' c TOZ Qb Q\ [_ ŨWOž	> Qb Q; ; ž % 9 ' MPO 5 &

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- %#ž# 3X\ 'OSZM' c [Y OZ _T [aX NQ NMP bUPCP [R' TON NMO NMO Qe [RUZ bQ ' Ũ SMUJ Z _R ' ^ ' OZMIX MIP
PUWSZ [_ Ũ M QM e M \ [_ ŨWOZ \ ' OSZM Qe [N\ c ' Ũ Q' [PU Qa _ TO [\ ' Ũ Z _ NMO NMO NMO NMP
RMOXIMOMZ LZR 'Y CP OT [ŨOž 3Z LZR 'Y CP OT [ŨO Ũ dNMCP [Z ' OQb M' VZ [c XPSQ Q Z _ Ũ ' OZ'
c UT ' TOPOCU Ũ Z Y MWO h bV\ Q pž
- %#ž\$ FTQ [RRO' [R ' O'OOZ LZS _T [aX NQY MPO' [N\ Q' \ \ Q Ũ Q' \ \ CO Ũ Q [R' TOOQZ ŨO Ũ h \ O'OO \ Ũ Z [R
c TM ' TQ Ũ XWO e OT [ŨO _ Y IST' NOž; ' Ũ Q _ OZ ' Ũ X TM ' TOc [Y M Ũ Z [' PO Ũ WCP [R' TO
[\ \ [^ aZ Ũ e [RZP [a' M [a' ' TQ TQXT [RTO' RO a ž; ' Ũ Z [' Q T Ũ X [\ ' Q a \ \ [_ QM Q a ^ Q [R
MO Ũ Z \ Ũ ^ [' TU LZR 'Y MUJ Z NOZS \ ' bUPCPž
- %#ž% E [Y Qc [Y OZ Y M e Y MWOZ LZR 'Y CP POU Ũ Z Z [' ' [\ ' O'OO c UT M e ' Q ' Ũ Sz 5 [aZ _ OXZS
_T [aX R Ğ c M _T MCP POU Ũ Z ž Y MWSY [POX c TO'OTQXT \ ' RO _ Ũ Z N\ PU Qa _ LZR 'Y MUJ Z
NMCP [Z ' TQ Ũ Q Ũ Q' Ũ QMIP ' Q \ CO R ' ^ ' TOc [Y M h bV\ Q Ũ M' Ũ ZS M M' NS' OCP Q a ^ Q [R
MO Ũ Z ž
- %#ž& ;ZR 'Y MUJ Z _T [aX NQ Q' Y Y aZ Ũ WCP a LZS OQ M' Ũ Y \ X MIP Q' Z _ Ũ ' OZ' X M Sa MS Qc TOZ
PU Qa _ LZS LZ bQ ' Ũ SMUJ Z } c UT Q Z R Y MUJ Z ' TM ' TO LZR 'Y MUJ Z TM NCOZ aZPO' _ [[P MIP c UT
' TM aZPO' _ MIPUZS P [QaY OZ ' CPž
- %#ž' ;ZR 'Y MUJ Z _T [aX NQ \ ' bUPCP LZ MR 'Y M' TM Ũ Q M e [aZPO' _ MIP MIP MOO ŨWO [\ ' OSZM'
' c [Y OZ R [Y Qa Xa ' M e MIP XZ Sa Ũ ' Ũ M e P Ũ Q' Q NMO S' [aZP _ Ũ O a P UZS ; Z PUSOZ [a _
c [Y OZ f MIP c [Y OZ c UT M PPU Ũ Z N X Z OCP / aOT M \ Te Ũ X _ OZ [' e [^ X M Z LZS P Ũ R Qa X ŨO f ž 3Z
Ũ ' O' Ũ LZS _ O' b Ũ _T [aX NQY MPO NMO NMO Qc TO' Q Ũ Ũ ' Q' a Ũ CP / CO [3 \ \ OZ P d i 7 f ž](#)
- %#ž(;ZR 'Y MUJ Z _T [aX Ũ O a PO' TOR Ğ c LZS.
M 3 PQ O' Ũ Ũ Z [R' TOQ ZPU Ũ Z _ ' TM O M' MIP O M Z [' NQ PQ CO CP ' T' [aST ' Ũ PPU Ũ Z N X
' O'OOZ LZS \ ' OO _ Q MIP PQ N\ [R' TO' Q ' LZS \ ' OO ž FTU _T [aX Ũ O a PO LZR 'Y MUJ Z
M [a' \ TOZ [' e \ Ũ b M Ũ M Ũ Qe [RO' Y [_ [Y M Q ZPU Ũ Z _ MIP ' TO P Ũ R Qa X ŨO Ũ NOZS
M MO [\ ' O P Ũ ' TO Qd' OZ' [RO RCO [Z M M' Ũ Qa X M N M e ž
Nž 3 PU Qa _ Ũ Z [R' TO P Ũ R O' OZ CO _ NO c OOZ _ O'OOZ LZS MIP PUWSZ [_ Ũ ' Q' _ ž
Qž 3 P b M' NSQ _ MIP P Ũ N P b M' NSQ [R' TO P Ũ R O' OZ ' e \ Q [R' Q' _ NMO NMO / MWS LZ [M
MOQ aZ ' ' TOSQ _ MUJ Z [R' TO \ ' OSZM Qe f ž
Pž B' Ũ Ũ W M \ CO _ [R' Q' LZS / Ũ O a P UZS ' TO' Ũ LZS [R' Q' _ MIP ' TO M \ ' dY MOQ _ _
LZ b [X CPž
Qž FTQ \ [_ ŨWO e ' TM ' TO _ O'OOZ LZS MIP PUWSZ [_ Ũ ' M Tc M e Y M e ' Qb Q M Z [Y M Q _ [' TO'
' TM ' T [_ Q Q Ũ CO CPž
Rž 6 Q M [R a \ \ [^ S' [a \ _ MIP _ [a' OO [R R a ^ TO' LZR 'Y MUJ Z / CO: [c _ [POUPO [Z
[M' OZMIX Q' R ^ O' Y \[_ \[Y N MIP SOZO WD Q ZPUU Z _ MIP 3Z' OZMIX
' O'OOZ LZS R ^ 6 \[c Z eZP' Y O MIP \[' TO' Q ZPUU Z _ @c: LQ MIP ž](#)

Sz FTOaZPO^_MIPUS`TMI URMOT^Y [_]Y Q[^SOZQWQ ZPUU Z U_PUUSZ[_CP Me [Y MZ
 ONI OT[[_Qc TQTQ^` Q Z`LzaQ [^`OY LZMO`TO\`OSZNI QeZ! TOQMOQ ZPUU Z TM
 NOOZ PUUSZ[_CP \MOZ`_T[aX NOSUWZ_aRRQOZ`UZR`Y MIU Z `OSMPUS`TONU U X Set
 M [OUMU Z f MIP U \XOMU Z _[R T M P U S Z [_U Pa`US \`OSZNI Qe` TOZQc N [`Z \O U P
 MIP NQe [ZPI UZ [`PO^` Y MROUZR`Y CP PCOUU Z _MM a``TQJ [\`U Z`z
 %##Z FTO`_T[aX NQNZ M_a`MZQ`TM `OSMPXO _[R`TQJ PCOUU Z c [Y OZ c U X N O [RRO`CP
 Q aZ_OXZS MIP `COOUBO [ZS [LZS OMOMIP_a \ \ `^z; Z`TQOMQ [RQ Z`LzaUS`TO\`OSZNI Qe
 c [Y OZ MIP`TQJ \M`ZO^`_T[aX NO \` [bUPC c UT M \` \`UMONM`OZMNXOMOC UT
 LZPUBPaM XJCP \`O M M U J Z _R`^N U`T MIP ZQ Z M N X Y M Z S O Y O Z`zFTO [\`U Z [RZQ Z M N X
 \M X M U B O O M O _T [aX N O P U G a _CP R`^Q Z P U U Z _c T O`O`T O \` S Z [_U U \ [[^MIP \M X M U J Z U
 M`O N X _W [\`U Z z; R`T Q e O T [[_Q`O Y LZ M U J Z f`T Q e Z O O P` [V Z [c`T M`T O Y [P O [R`O Y LZ M U J Z
 Y M N O U Z R a O Z O O P N e S Q`M U J Z M N S O U Z X Z O c U T E`M O X X e`z

Za 8SFOBUBMDSFFOJCHUFTUJ QPSGFUBMNI SPN PTPN F BOE HFOFUDDPCEJUPOT

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EO`OOZUS [^PUUSZ [_W`Q`USR`^RO`N`OT`Y [_]Y M MIP SOZQW Q ZPUU Z _U b [XaZ`Me MIP _T[aX [Zx NOaZPO^`MROZ M MZ UZR`Y CP PCOUU Z Ne`TO\`OSZNI`c [Y MZ	5 [Z_OZ_a`ZNMCP `OQ Y Y OZPMUJ Z
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;RM`O`OOZUS`Q`:`Q`aX LZPUMQ`MZ LZ`O`Q`MCP OTM`OQ [RMO`T`Y [_]Y Q [^SOZQWQ ZPUU Z f`TQc [Y MZ _T[aX T N O M O O _` [SOZQW Q aZ_OXZSR`^Ra`^TO`UZR`Y MIU Z MIP_a \ \ `^z FTONMNMNO [\`U Z _R`^ \`OZMNXPUSZ [_U _T[aX N O P U G a _CP MIP [RRO`CPz	5 [Z_OZ_a`ZNMCP `OQ Y Y OZPMUJ Z
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B`OZ`Q``Q`aZ_OXZSR`^OR6@3ZNMCP`O`OOZUS`_T[aX LZO`APOUZR`Y CP PCOUU Z Y M N S `OSMPUS`Q`USR`^RO`N`O`MIP`O`O`T`Y [_]Y Q MZOa`X`U`PeZ`FTO [\`OZ`U`X`R`^ [`TO`a`Z`M`W`O`MCP`RZ`P`U`S`_ [R`O`O`b`M`O`O` Y`M`O`Z`N`X`T`O`N`X`T`L`Z`O`A`P`U`S`Y`M`O`Z`M`S`O`Z [Y`W`O`Y`N`M`X`O`O`f`_T[aX N O LZO`APOUZ`^`OZ`Q``Q`aZ_OXZS	5 [Z_OZ_a`ZNMCP `OQ Y Y OZPMUJ Z



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 \ [_\NOQMP U MY MZO` TMOZ_a'Q_OQV aZPO`^ M PUSZ FTOMD U Z ` [NO`MVOZ [Z `TONMU [R
 MIZ ['Y NX'Q_aX_U MPCOU U Z R ` ^` TOQ a\XOQ ZOOZCP NMCP [Z `TOUZ R ` Y MU Z SUBOZ c UT PaX
 Q aZ_OXZS_a\ \ [^z

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 Y MOZMNXSQ aX'M [aZPY QMa'QY OZ` [RRO'NZaOTM` 'M_XaOOZOb M P Y MOZMNX_Q'aY Y MVO`_ [
 SQO'VOMZ [bO'NKOTMCO [R 'U [Y e \$#z5McaXU Z_R ` ^` U [Y e #%M P #+ MONX [UZQ ^ ['MCP UZ` [
 `TOR\ ` 'Y Q`Q`_O'Q Y NUZCP _O'OOZUS MS ['UTY ž58FE U `TO` M PMP [ROMOU Y [_ PCbOX \CP
 Q aZ` 'U f PaQ` [U_PaM\N P bM` NSQ [RTIST _OZ_UUbuJe M P QM% PQ OOU U ZžFTO'QOMQX [`TO
 NPPU U Z M\N P bM` NSQ [RM [a`UZ QaX'M [aZP QdM Y UZMU Z M##L" k #%&(c OQV UZO&PUZS
 Q ZRUY MU Z [RRO'NZaY NO' SQ` MU Z f bUMUJe M P _ `aOa'N PcbOX \Y OZ` ž

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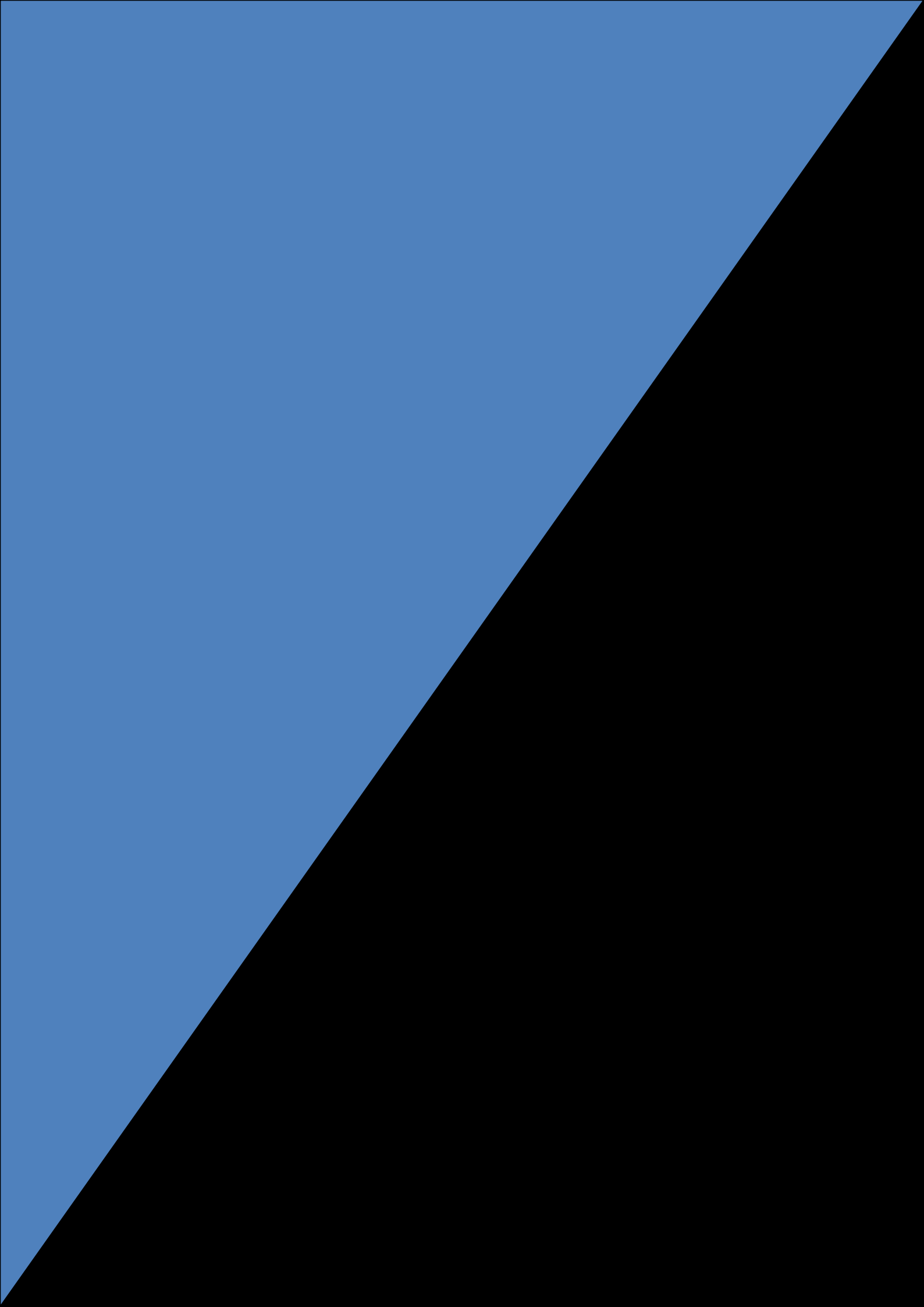
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[COa'fz;` c M_LZUUX6 bNXP MCP NZP OZL0W6 LY \XOY OZ` CP M_MZ dNpbMZCOOP [^_0Q ZPMe_0'00ZUS`Q`
R`^c [Y OZ M_LZ0'0MCP XVOXT [[P [RTNBZS MOTUP c UT NZCa\X UPeNMCP [Z Y MOZNMNSG \`U] ^
MNZ ['Y NX_0'00ZUS 'Q_aX! aX'M] aZP U'0SaXMUe [^^`U] ^TU ['e [RNZCa\X UPež 6MIMMOZ [c NBNBNDQ
[Z U_a_QUZ`TOSOZ0'NM\ \aXMU Z! _aSSQ_ 'UZS Q] aMX`Q` \O'R` 'Y NZ00OTMND O'U_ \0Z_ OZ_ UUBUe
NZP _\COBROR]efiNa` M] c O'OTMZ00 [RNZ M'ROOP R0_a_ SUBOZ NZ MNZ ['Y NX_0'00ZUS 'Q_aX
/M\`Y dY MO6 & " ff M] c [aX NOQd\COOP R] Y U_a_QUZ Xc Q'\`CbXOZ00\ \aXMU Z_ž`!#`!\$#
6USZ [_\0`Q_ 'UZS c UT M' ZU] 00Z`Q_U [^OT ['U] Zl0bUX6 _M' \XZS_T [aX NO'0Q] Y Y OZPCP \`U] ^` [
PCRZUUBQY NZNSOY OZ` PCOU] Z_ UZ_ QMO_ [R_a_ \COOP NZCa\X UPe [Z 0R6@3žNMCP_0'00ZUSž

I [Y OZ_T [aX MX [NQM: MQ`TMNQ c 00Z #` [(" [R0R6@3`Q`_ MOaZ`Q\ [^MNOZ`\$! [Y OZ c UT
_aOT MbZ [ONX6 'Q_aX M\QM` [TNBOMTISTO`'MO [RRO NMNZ ['Y M'U0_/Ož` 'UX UPeff`\$% NZP`TO'QR` 'O
_T [aX TNBQR` X] c a\ M_Q_ Y OZ` UZO6PUZS PQ'MXCP aX'M] aZP/URZ [`MXONPe \O'R` 'Y CPfzFTQe_T [aX
NO [RRO'CP`TONBNBNDQ\ \`U] Z_ [RPUUSZ [_\0`Q_ 'UZS '0\QMI0R6@3`Q_ 'UZS/_a000_ PaXUZ M\`Y dY MO6
' "' fi [^M' NXOZMlbbQR` 'Y [R_0'00ZUS _aOT M] Q] Y NZCP R0_` 'Y Q`Q`_0'00ZUSž

? [_ 0R6@3_0'00ZUS`Q`_ [RRO'RO NX Cd NZP_Cd OT`Y [_] Y QNZCa\X UPe POCO] Z UZ NPPU] Z` [`
'`U] Y U0_ \$# #+ NZP #%žFTO'QTM] T [c CbOY NCOZ Z [\`000POZ` R` ^\ \aXMU Z_0'00ZUS R` ^_Cd
OT`Y [_] Y OQ ZPU] Z_PaQ` [`TQNbMUMNDQNZP a_aNX6 Y UP \TOZ [`e\Ož0R6@3 NMCP_0'00ZUS R` ^
_Cd OT`Y [_] Y Q_U NX [X0_ M0Ca`MO`TM R` ^`TOMa` [_] Y Q] UZ0'0MO_`TORXQ\ [_UUBQ`M0G NZP ONZ
NOQ ZR` aZPCP Ne aZPOX6UZS Y MOZNMNZP \XMOZ`NXRMD [^/_aOT M] Y MOZNMNSOZ`Q'MCP _] Y Ml0
Y [_NDU] Y NZP Q ZRZCP \XMOZ`NX Y [_NDU] Y fž`\$& B'OZ`Q` Q` aZ_0XZS R` ^0R6@3_0'00ZUS_T [aX UZO6PO
UZR` 'Y CP PCOU] Z Y MNZS 'OSMPUS`Q_ 'UZS R` ^RO NX Cd NZP_Cd OT`Y [_] Y QNZCa\X UPež! [Y OZ

-



+POVFOUPOBMV iCBOEFE° 3BSZPUZQJHk a_Q_GaXa^CP R M X O X ` [\^Q\MO_`N\CPY QMITMO
OT^Y [_Y Q_R ^Y W^_Q \WUZ_\OOU Zz5T^Y [_Y QZaY NO^XZS^T^N\ZPUZS\M^O^Z N\ZP
[^TQ^\Te_W\OTMMO^U^W_MObUaN\K^M_Q_CPNeMOe^[SOZO WJ^ž;` UPOZ`WQ_OTM^SO_UZ
OT^Y [_Y QZaY NO^M_c O^M_aNOT^Y [_Y N^Q^M^ZSOY OZ`_P[c Z ` [' Ž#" Y OSNMMO_UZ
_UQž

: BOJE BOFVOVLEZ UFTUT I G

3.5.1 Population-based reproductive carrier screening

+BSSFSTDSFFOJHGPSJCI FSJFE HFOFUDEJTPSEFST	
/ PPE OSBJUDF OPUF	/ SBFE BOE TVOOPSIJH SFQSFODFT
B'OCQ ZOCAN'UJ Z _O'OOZUZS U \^OCOMNDQ [M'OZMINX O'OOZUZS R ^ TOUMNDQSOZO WOC ZPUUJ Z_M' TU \^ 'OZ' UWXE NXX c_Y ['O [\^ UJ Z_R ^ OMM'W'Q a \XQ _J UZOaPUZS \^OZY \XZ' MIUJ Z SOZO WOPUSZ [_Uz	9 [[P \^ MO WOC Z [' Q /Q Z_OZ_a_ZNMQPfi
: FDPN N FOEBUJPOŁz	/ SBFE BOE TVOOPSIJH SFQSFODFT
3XXQ a \XQ _J OZPUZS \^ TMOOTUP'OZ [^c T [MO \^ OSZM' t _T [aX TMO MOCaXRY Ue TU [^e \^ MVOZ c UT MblOc \^ UPOZ' UeUZS \^OXMUBQ_c UT TOUMNDQSOZO WOPU ['PO^_zFT [_Q UPOZ' UROP c UT MRY Ue TU [^e [RM _\COBUDZTO'UCPU ['PO^_T [aX NO [RRO'CP \^OCOMNX [MSOZO W Q aZ_OXZS _O'blOC R ^UZ R ^Y MIUJ Z MN a' OMM'W' O'OOZUZS NZP \^OZMINX PUSZ [_U \^ OZY \XZ' MIUJ Z SOZO WOPUSZ [_U R ^ TOQ ZPUUJ Zz	5 [Z_OZ_a_ZNMQP \^OC Y Y OZPMUJ Z
: FDPN N FOEBUJPOŁ!	/ SBFE BOE TVOOPSIJH SFQSFODFT
5MM'W' O'OOZUZS R ^ TOY ['OQ Y Y [Z oY [Z [SOZ Wp SOZO WOC ZPUUJ Z _ /OSzGe \^ WRM [_U] \^ ZNXY a_GaXMM' \^ Tel RNSUQJ _eZP' Y Q TMOY NSX NIZ [\^ MTW_fiU NBNXNDQZ 3a_ \^ XMMZP UZ @C LONXZP UZ \^ TO \^ UBMIO _CO [^z: ZR ^Y MIUJ Z [Z OMM'W' O'OOZUZS R ^ TOY ['OQ Y Y [Z SOZO WOC ZPUUJ Z _ TMNRCO OTUP' OZ /OSzGe \^ WRM [_U] \^ ZNXY a_GaXMM' \^ Tel RNSUQJ _eZP' Y Q fi_T [aX NO [RRO'CP \^ NXC [Y OZ \^ XZUZS M \^ OSZM'Ge [^Z \^ TORJ _ \^ Y Q _Q [R \^ OSZM'Gez I [Y M c M' UZSY ['O UZ R ^Y MIUJ Z MN a' OMM'W' O'OOZUZS _T [aX NOSUBOZ \^ TO [\^ aZUe [TMOY ['OQPO NXP PUca _UJ Z MN a' OMM'W' O'OOZUZS c UT M UZ R ^Y CP OZ WOXzFTONOCRU _NZP XY UMUJ Z _ [R' Q _UZSI NZP M e M [OMM'Q Q _ _ _T [aX NQPUca _OPz	5 [Z_OZ_a_ZNMQP \^OC Y Y OZPMUJ Z
: FDPN N FOEBUJPOŁ"	/ SBFE BOE TVOOPSIJH SFQSFODFT
3X \^ OSZM' c [Y OZ _T [aX NO [RRO'CP NM'W' O'OOZUZS R ^ TM' M_OY UM OMM'W' _Ma_Ne MraXNX [P QdMY UZ MIUJ Z M UZ UWX \^ O' OZ' MIUJ Zz EO'OOZUZS c UT _\COBUDZTO'UMNDQPU ['POz; \^ P [Q_Z [\^ 'OZ' [\^ Q _UZS M UZ PWBPaNX c UT M _^ ZSRMY Ue TU [^e [RMZ [c Z [\^ [_WNO SOZO WOC ZPUUJ Z k \^ TOQ \^ Q \^ XQ _T [aX NO [RRO'CP PUCC \^OCOMNX [M \^ COXU OZ WOXSOZO W _O'blOC	9 \^ MO 5

B'OCQ ZOCAN'UJ Z [\^ \^ OZMINXSOZO W O'OOZUZS [RQ a \XQ _c UXP OZ' Ue \^ T [_Qc UT M UZ O'OM'CP XVOXT [[P [RSBUZS NUS T [MOTUP c UT M \^ COBUDZTO'UMNDQPU ['POz; \^ P [Q_Z [\^ 'OZ' [\^ Q _UZS M UZ PWBPaNX c UT M _^ ZSRMY Ue TU [^e [RMZ [c Z [\^ [_WNO SOZO WOC ZPUUJ Z k \^ TOQ \^ Q \^ XQ _T [aX NO [RRO'CP PUCC \^OCOMNX [M \^ COXU OZ WOXSOZO W _O'blOC

; U_Q^LY MQP`TMNKLZPUBPaM^MOQMM^R^AMXQM^T^OOOZLONK^CbO^O^OOO^_bOQOTUP^T [P
PU [^PO^Z^? [_ [R^TQ_QMQM^ [_ [Y^N^Y^Q^N^Z^S^URN^T^Y^O^Y^NO^ [R^M^Q^a^X^Q^M^O^Q^M^O^ [R^M
Y^a^M^U^Z^Z [Z^O^S^O^Q^Q^ \e [R^M^ \COOR^O^S^O^Q^ \M^N^ M^P^URN^T^ \M^ [Z^T^O^Y^a^M^U^Z^T^T^O^ [R^ \^Z^S^c^U^K
P^C^O^X^ \ M^Y^O^P^L^O^N^K^ \S^Z^U^R^O^N^ \S^O^Z^O^W^Q^Z^P^U^J^Z^Z^ \Z^Z^V^Z^P^ \^O^O^ _b^O^Q^Z^P^U^J^Z^ [O^C^a^c^T^O^Z^M^c [Y^M^
O^M^O^ \M^Y^a^M^U^Z^Z^ \M^S^O^Q^ [Z^T^O^J^Z^O^T^Y^ [_ [Y^O^Z^;R^T^Q^ \M^Q^ \T^U^Y^a^M^U^Z^Z^ [Z^T^O^ [Z^T^O^c^U^K
P^C^O^X^ \ M^Y^O^P^L^O^N^K^ \S^Z^U^R^O^N^ \S^O^Z^O^W^Q^Z^P^U^J^Z^Z

FTOQMM^O^R^Q^ aOZ^e [R^O^O^ \M^Z^ \^O^O^ _b^O^Q^Z^P^U^J^Z^ _U^T^I^S^T^O^ \^Z^ \COOR^O^O^T^Z^O^ \ \a^X^M^U^Z^ _O^S^Z^e^ _W
R^M^ [_U^Z^ @ [^T^O^Z^ 7a^ [\CO^Z^ \M^P^ 3^T^V^O^Z^M^U^O^c^ / ^T^M^M^O^Y^ \M^T^M^O^Y^ [S^X^N^Z^ [\M^T^O^ _Z^E [a^T^Z^M^
3^ _U^Z^ / \M^P^F^M^Z^E^M^O^T^ _P^U^Q^M^O^U^Z^ 3^T^V^O^Z^M^U^O^c^ _Z^

3 ZaY NO^ [R^O^M^O^ \^O^O^O^Z^S^ \^O^ _C^O^U^ \c^U^T^U^Z^ 3a^ \^M^M^U^M^ [^M^O^ \^O^M^P^U^e^ M^O^O^ _U^W^O^R^ [Y [b^O^ \^O^M^f^i^ N^a^
G^a^ \^O^Z^ \^e^ \^T^O^Q^O^M^O^S^O^Z^O^N^K^ Z^ [\ R^a^Z^P^O^P^ N^e^ \^T^O^ \a^N^X^O^T^O^M^X^T^ _e^ \^O^Y^ \^U^O^Z^M^O^O^ _U^W^O^ [Z^X^ [Z^M^a^ \^O^ \^M^a^
N^M^U^f^z

;Z^R^ \^Y^ M^U^J^Z^ [Z^O^M^O^ \^O^O^O^Z^S^ \^R^ \^T^O^Y^ [\^O^Q^Y^Y^ [Z^S^O^Z^O^W^Q^Z^P^U^J^Z^ \^T^M^N^R^O^O^O^T^U^P^ \^O^Z^ \^O^S^Z^
e^ _W^O^R^M^ [_U^f^ _U^Z^N^X^Y^ a^G^a^X^M^M^ [\T^e^f^ R^N^S^U^O^J^ _e^Z^P^ [Y^G^f^T^ [a^X^N^O^ [R^R^O^P^ [\ M^K^c^ [Y^O^Z^ \^X^Z^Z^S^ M^
 \^O^S^Z^M^O^e^ [\^U^ \^T^O^R^ _ \^Y^ \^O^ \^R^ \^O^S^Z^M^O^e^z^ [_Y^M^c^M^ \^Z^S^Y^ [\^O^U^Z^ \^Y^ M^U^J^Z^M^ [a^ \^O^M^O^ \^
 \^O^O^O^Z^S^ _T^ [a^X^N^O^S^U^B^O^Z^ \^T^O^ [\ \ [^a^Z^U^e^ [\ T^M^O^M^Y^ [\^O^P^O^N^O^P^U^C^a^ _U^J^Z^M^ [a^ \^O^M^O^ \^O^O^O^Z^S^
c^U^T^M^ _U^Z^ \^Y^O^P^O^X^Z^O^W^Z^ \^F^T^O^N^O^Z^O^R^J^ _M^P^X^Y^ _U^M^U^J^Z^ [R^ \^O^ _U^Z^S^I^ _M^P^M^e^M^ [_O^M^O^P^Q^ _ _T^ [a^X^N^O^
P^U^C^a^ _O^P^z

AZ^O^Z^ \^O^ _O^O^O^Z^S^ \^R^ \^O^M^O^ _M^a^ _c^T^O^Q^N^ [\^T^Y^O^Y^N^O^ _ [R^M^Q^ a^ \^X^Q^M^O^ \^Q^ _O^P^ _Y^ a^X^M^Q^ a^ \^e^ _M^P^
O^M^O^T^ _S^U^B^O^Z^ \^T^O^ \^O^ _a^X^N^O^N^O^N^Z^P^U^B^P^a^M^K^ _U^ \^O^R^ \^M^O^M^Y^ [\^O^O^M^O^ _c^ _U^K^N^O^P^O^O^O^P^M^P^ \^T^O^ \^O^ _a^X^
c^ _U^K^N^O^N^O^N^O^N^O^U^Z^ M^Y^ [\^O^ \^Y^O^e^ R^M^T^U^J^Z^z^: [c^C^O^O^f^U^U^ \^O^Q^ _S^Z^U^O^P^ \^T^M^U^U^Y^ [\^O^O^Q^Z^ [Y^ _O^N^K^ [
a^Z^P^O^ \^M^O^o^c^ [_Z^ \^O^ _O^O^O^Z^S^ _p^k^ \^O^ _ \^T^O^R^O^Y^ N^O^R^ _ _M^P^ \^T^O^Z^ [Z^X^ \^O^ _ \^T^O^Y^ N^O^ \^M^Z^O^ _T^ [a^X^ _T^O^
N^O^R^ _a^Z^P^ [_N^O^M^O^M^O^ [R^T^O^ _ \COOR^O^M^a^ [_ [Y^M^ \^O^O^ _b^O^Q^Z^P^U^J^Z^ / _f^i^N^O^Z^S^ \^O^O^O^O^P^ \^R^ \^Z^F^T^O^ _a^Z^Z^
M^ [a^Z^P^Z^Y^O^ [R^ \^O^O^O^Z^S^ \^O^ _ _M^P^ \^T^O^M^ _W^O^ _M^O^P^ _S^O^ _M^U^Z^M^N^S^O^M^R^Z^N^X^P^U^S^Z^ [_U^M^O^Y^ \ [^M^
R^M^ [_ _ [Q^Z^ _P^O^c^T^O^Z^ _P^C^O^P^U^Z^S^N^O^c^O^O^Z^ [Z^O^Z^ \^O^ [\^c^ [_Z^ \^O^ \^O^M^O^ \^O^O^O^Z^S^Z

I^U^T^ \^T^O^U^Z^ \^ [P^a^O^U^J^Z^ [R^Z^O^c^ _S^O^Z^ [Y^ _O^ _Q^] a^O^Z^O^Z^S^ \^O^O^Z^U^] a^O^Z^ \^O^M^O^ \^O^O^O^Z^S^ \^R^ \^M^Y^ a^X^U^a^P^O^ [R^
 \^O^O^O^ _b^O^Q^Z^P^U^J^Z^ _U^Z^ [c^M^N^O^N^O^N^O^R^ \^Q^ a^ \^X^ _c^T^ [T^M^O^Z^ [R^M^Y^ _U^e^T^U^ [\^e^ [R^M^S^O^Z^O^W^P^U^] \^P^O^Z^#^ \^F^T^U^
 _ [_Z^O^N^K^O^P^ _O^O^ _M^P^O^P^ \^O^M^O^ \^O^O^O^Z^S^ _P^ _T^ [a^X^ [Z^X^N^O^ [R^R^O^P^ _U^Z^ \^T^O^Q^Z^ \^O^f^ [R^c^O^X^Z^P^O^R^Z^O^P^O^Z^O^N^K^
 _M^T^c^M^ _R^ \^ \^O^Z^M^P^ \ [_Z^O^ _S^O^Z^O^W^Q^ a^Z^O^X^Z^S^I^M^a^ \ [\$&^ [R^M^P^a^X^ _c^ _U^K^Q^ _ \ [_U^W^O^R^ \^M^X^O^M^
 [Z^O^ \^O^O^ _b^O^P^U^] \^P^O^Z^\$^S

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=>= O^ \^O^ / 2080^4 / 49</O^<

;R^M^c^ [Y^M^ _M^P^ [\^T^O^ \^M^Z^O^ \^T^M^O^M^R^Y^ _U^e^T^U^ [\^e^ [R^M^M^ [c^Z^ [\^a^ _CO^O^P^ _S^O^Z^O^W^P^U^] \^P^O^Y^O^S^Z^
R^N^S^U^O^J^ _e^Z^P^ [Y^G^f^ _O^e^ _W^O^R^M^ [_U^f^i^ \^O^R^ \^T^O^Q^ a^ \^X^ [_CO^O^M^U^ _O^Z^O^N^K^ _S^O^Z^O^W^ _O^b^W^O^ \^O^R^O^M^O^e^
 _U^J^ \^ [\^O^S^Z^M^O^e^f^i^ [_M^Q^ _ \^O^ \^ [P^a^O^ _W^O^ _U^W^ _M^P^ \^T^O^M^O^N^O^M^U^O^e^ [R^S^O^Z^O^W^ _O^ _Z^S^ \ [R^a^ \^T^O^ \^O^R^Z^O^
 \^O^ \^ [P^a^O^ _W^O^ _U^W^Z^A^ _U^J^Z^ _R^ \^ \^O^Z^Y^ \^X^ _M^U^J^Z^ _S^O^Z^O^W^P^U^S^Z^ [_U^M^P^i^ [\^ \^O^Z^M^N^X^P^U^S^Z^ [_U^ _T^ [a^X^N^O^
P^U^C^a^ _O^P^z

I "fii" &<08, > 6/4 289-4 19<2080>4 / 49</0<=>? = 0 >0/ 98 >30-, =4 9110> 6?6< =9?8/
, - 89<7, 640=

B^OZMINXPUSZ[_U_R^Y a`MIJ Z_UZ SOZQ_XZVOP`[_\COJROPU[^PO^_U_Ga^OZ`X NBNKNDQIZ 3a_`^MMUM
R^_Y OSOZQ_a_LZS`^MPUJ ZMX_Q] aOZQZSY OT[P_ž 7dMY \XQ_UZ0&PQ0e_`W0RW[_U_Y a`MIJ Z \NZOX
_O^OZLZS NZP i f'ž SOZQ_Q] aOZQZS R^R^N^O^O^T[SOZLON[c OX fL fL SOZQ_Q] aOZQZS R^[_UNQ R^N^K
MOT[ZP^[\X^MUM[^O^M^U^_eZ[_[_U^M^P^M^S^O^Q^P^`Q^LZS R^Y a`MIJ Z_UZ SOZQ_OVA_LZS @[_[ZM^
_eZP^Y Ož

I UT`TOUZ`^ [PaOJ Z [RZQ: SOZ[Y W_Q] aOZQZS`O^T^Z] aQ} U U_M^W^M^O^P`TM \^OZMINXPUSZ[_U
R^Y a`MIJ Z_UZ Y aXUXO SOZQ_c U^N^O^Y [^Q^O^M^P^U^

4. Governance

žĹ 9VBNMZ) TTVSBODF

/"/. !/?., >98 19<30, 63: <910=48, 6=4@9@/ 4B: <08, > 6= <00842

: QNXT \^f RQ_UJ ZNX CMUZS R^ \^OSZM^ c [Y OZ _T[aP aZPO^ MWQ Z^ UZaZS CPaOMUJ Z ^OSMPUZS
[\^UJ Z_NBNMNDOR^ \^OZMNX_O^OOZUS NZP PUSZ[_Uf NZP _T[aP.

: N0Qa\ž [žPMQVZ [c XPSOMM[a^ `TQCa^OZ^ _O^OOZUS Y [PNXUQ_NBNMNDQNZP UZ c TM
Q^UZS`TQc OMZ NQY \XOY OZ^CPž

4QNMXQ [\^f bPQO\^OžNP \[_žQ_ UZ R^ Y MUJ ž _a\ [^ NZP Q aZ_OXZSI UZOaPUZSc ^U^OZ
^Q [a^Ož ž

BN^OYMOUZ Q Z^ UZaZS \^f RQ_UJ ZNXPcOX \Y OZ^ /5B6fiNZP Q a^_Q_`TM \^f bPQCa^OZ^
CbPQOZODNMCP UZ R^ Y MUJ Z [Z \^OZMNX_O^OOZUS NZP PUSZ[_Už

: QNXT \^f RQ_UJ ZNX \^f bPUZS OMQ^ [\^OSZM^ c [Y OZ c UKNQZCRJ R^f Y aZPO^ MWZS _J Y OY [PaQ_ [R
^TQ@aOTM^f^M^ žOOZQe AZXZO>CMZUS B^f S^M^ /@FA>Bfi [SNM^ M^ aZPO^ _NZPUS [R^TQ Q Y \XduUQ
[R\^OZMNX_O^OOZUS NZP PUSZ[_U UZ ^TOR^ _ NZP _OQ ZP ^Y Q_ O_ [R\^OSZM^Ož EOO
[T^ _!!OQVZUSZaOTM^M žCPažM!](#)

/"/. ~ &0<19<7, 8.0; ?, 64C => 8/, <f=, 8/ 7 9849<42: <9.0=0=

+ 3, >, <0>30; ?, 64C => 8/, <f=19<: <08, > 6= <00842: <92< 7 ž

4 \$, -9< >9<, ... <0/4, >98

3X^M^f ^M^f ^Q_ aZPO^ MWZS \^OZMNX_O^OOZUS Y a^` NQMO^OPUCP Ne^`TQ@MUJ ZNX3_ [OMUJ Z
[RFQ_ UZS 3a^T [^UQ_ /@3F3fiUZ 3a^` ^N^M^M^P; Z^ OZMUJ ZNX3OO^OPUMUJ Z @Q: LQV^ZP /; 3@LfiUZ
@Q: LQV^ZPž

FT [_Qc T [aZPO^ MWQ \^OZMNX^ Q_ UZSI c TQ TQ^XMM [^M [^e [^aX^M [aZP aZU_ _T [aP
aZPO^ MWQ [bO^N^M^P^U^M^P Y [ZU [^ZS [R^TQ \^OZMNX_O^OOZUS \^f S^M^ _NZP \M^OYMOUZ
Qd^OZM^] aM^e M_ a^M^O^M^O^U^U^ž

3X^M^T [X^ Se XMM [^M [^Q_ UZ 3a^` ^N^M^O^O^U^U^S RaZPUZS bUM^ OP^O^MOY a^` NQMO^OPUCP Ne^`TQ
@MUJ ZNX3_ [OMUJ Z [RFQ_ UZS 3a^T [^UQ_ /@3F3fiD5B3 >MM [^M [^e 3OO^OPUMUJ Z B^f S^M^ ž
FTQ E^ NZPMP_ MQ_ O Ne^`TQ@MUJ ZNXBMT [X^ Se 3OO^OPUMUJ Z 3PbU [^e 5 [aZQX^@B335fiFTQ
E^ NZPMP_ MQ^M^CP [Z^`TQ UZ^ OZMUJ ZNX^ NZPMP; EA # #+- E^ NZPMP R^ ^? OP^O^M^M^ [^M [^Q_ ž
; Z @Q: LQV^ZP XMM [^M [^Q_ MQ^M^O^OPUCP bUM3@L a_ UZS^`TQ_ M^f Q; EA # #+- M^`TQ
NMU/T^ _!!c c c ž^O^M^CPažM! BN^OZ^` !>M^Z3OO^OPUMUJ Zfiž

E[Z[S'MTQ^ \Qf' Y UZSY QPWN%aX'M[aZP QdMf UZMfJ Z_Y a_` NO_aUMN6] aMURCPf UZb[XbCP
UZ M'OXbMz' MZPM\^ \^UMQ5[Z`UaUZSB^f RQ_U ZM%6CbOX \Y OZ` \^f S'MY MZPNQ^OSU`O'OP
[Z`TQDCSU`Q^f R300'OPUCPE[Z[S'MTQ^_TOP Ne? QPUMQ3a_`^MUM8[^Ra^TQ^UZf' Y MfJ Zf
\XMQQ Z`M0`TQ? QPUMQ3a_`^MUM [^TQ3a_`^MUM E[Z[S'MTQ^300'OPUMfJ Z DCUSU`ež
3X[\Q'M[^_T[aXPNQOQ^URCP` [\Qf' Y `TQ@F_OV UZ 3a_`^MUMZP\M^WMQZ 'OSaXM
MfPUZA \Q'M[^_ \Qf' Y UZSZMfNfN[ZQ[^PaOa_bOZ[_a_M_Q_Y OZ`_T[aXPNQ_aUMN6
`^MURCP MZP OQ^URCP` [\Qf' Y `TU_M_Q_Y OZ` /OSzNe \M^WMUZS UZ `TQ@aOTM
F^M_xaOQZQe AZXZQ>QVZUSB^f S'MY /@FA>Bfi

5. References

1.

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Ž/ 7U FSTVHFTUFE ŠBEJOH

1. D[eM5[XCSQ[RAN_Q ^WMZ_MIP 9eZMOQ X SU_ž\$" #&ž@[ZŽZbMlbbQB^OZMVMFQ_`LZS R^ ^ 5T^Y [_] Y M3NZ[^Y Mle a_LZS? MOZM^BMY M6@3/EOOZ`URD;Y \MO BMQ^@[ž# fi
2. AOVQ_† 6žKM[Z† Kž=[fXc _VU BžDCS[POE[a_MI? žž4M† TMI ž>žbM POZ 3WQY† 7EžQ M 5[aZ_OZS R^ ^Z[ZŽZbMlbbQ\^OZMVM Q_`LZS/@,Bffi c TM \^OSZM` c [Y OZ Y M c M ` [VZ[c ž GX^M[aZPAN_Q 9eZOO X \$" #&/&&#fi#Ž ž
3. 7Pc MP_ <9† 8OPY M 9† 9[XNO'S † 9^OSS 3DI @ [^ [Z ? 7† D[_Q@5† Q M 7d\M POP OM^O^ _O^OZLZS L^ ^O^† PaO lOY CPWZOŽ [L^ _` [Q Z_LPO^: M L^ _MOY OZ` [R^TO3Y O^WM 5[XCSQ[R ? CPWM^9OZQ lO_MIP 9OZ[Y lO† 3Y O^WM 5[XCSQ[RAN_Q ^WMZ_MIP 9eZMOQ X SU_† @MIJ ZM E[ODe [R9OZQ lO5[aZ_OX^ † B^VMVMCaMle 8[aZPMIJ Z† MPE[ODe R^ ^? MOZM^BQ M ? CPWZOžAN_Q 9eZOO X \$" # # \$ /%i(' %Ž \$ž

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5XZLONXB'f RQ_ [^-Z: eQ` k D3@L5A9 Y OY NO^	AN`Q 'W_ NZP 9eZMOC X Se	: CNP [R: IST DUWAN`Q 'W_+ D[eNX B'UZOO3X'CP [Y OZ NZP 4MNU`z 5XZLONXB'f RQ_ [' AN`Q 'W_ NZP 9eZMOC X Se GZLBO^_Ue [REePZQe
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6^5'MS EVUPY ['Q	? OY NO^
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