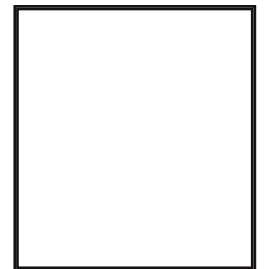


The Derbyshire Caver

No. 131

1960 - 2010
50th Anniversary
of the DCA

Breakthrough in Water Icicle Close Cavern
Serious Damage in Giants Hole
Tears All Round in Tearsall Pipe
News From Around the Peak



The newsletter of the
DERBYSHIRE CAVING ASSOCIATION

£1.50

Diary Dates

Meeting Secretary will be Graham Proudlove,
email: j1surxgor yhc ef ud1r uj 1xn
A date will be announced as soon as possible.

DCA Meetings

Saturday 26th June 2010
10:00 AM Monyash Village Hall

Saturday 30th October 2010
10:00 AM Monyash Village Hall

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## BCRA Karst Science Field Meeting, Derbyshire

June 2010  
This will be led by Professor John Gunn, and the Meeting Secretary will be Gina Moseley,  
email: j1prvhoh| Cef ud1r uj 1xn  
A date will be announced as soon as possible

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## BCRA Cave Science Field Meeting, Scoska Cave, Yorkshire Dales

September 2010  
This will be led by David Hodgson, and the

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Hidden Earth

24th - 26th September 2010
This year Hidden Earth will be held in Leek, Staffordshire.

Fight For Life - The Neil Moss Story

D# lq #e| #Gdyh#Z hee

Vr p h#z ulvwhq# r p p hqw#lqg#huhlz v# i#kh#GYG=

- Lwz dv#dvf lqdvqj #lqg#hyh# r qh#Lyh#vdonhg#kdv#ehhq#hda# #p suhvhg#z lvk#v#G#NIG#A/XW, •Yhu# z h#
- gr qh#z lvk#kh#QhloP r vv#ur p /##z dv# dslydvng#ur p #ehj lqqlqj #w #hgg\$# #P E#ESF,
- Z kdvd#vxsue#lhf h# i#lq #%1#dp #qr z #q#p | # 8vk# hdu#lqg#p hp r uhv# dp h#o r glqj #edf n#0#z r xq#ghdu# #
- z lvk#w #vhh#d#kh# #q#r on#lqg#kduh#d#lq# utz r 1#MDA#sdlq,
- %#%i dvf lqdvqj #lqg#z h#z r uk#kh#z dlq#M#K#S#hdn#Fdyhuq,
- Eu#dqw#lyhvqj \$A#kr xq#eh# q#p dlqwhdp #V#S#E#FFF,
- %vkh#luw#df f r xqv#lqf h# hr uj h#Fr r shu#duw#dv#kdv# iiuhg#dlq #hqvled#lqg# erhf wyh#df f r xqv# i#kh#
- hyhqw#p suhvhg#M#P#f #A#didut xls,
- %d#z h#Qhvhduf khg/#yr f dwyh#lq #/s#df nhg#z lvk#qvhylh#z v#ur p #vxylylqj #duw#lsdqw#lqg#p dj hv#vnhq#dv#
- vk#w#p h%#d#y#h# # uhlvled#kr xj kv#sur yr nlqj #lq #%1#D#M
- Wk#v#lqgdug# i#kh#lq lqj #v#ehw#u#k#dq# dq| #ur ihv#l r qd# #ur gxf hg#gr f xp hqvd#lq #v#vhhq# xuhqv# #
- r q#W/#lqg#k#lv,#hqr z dngj h# i#klv#xerhf w#p dwnu#lqg#hhd#r u#kh#w#u #kdyh#ur gxf hg#d#lq #z klf k#ghvhuyhv#d#
- z lghu#dxglhf h#k#dq#v#v#kh# dylqj #z r uq 1#MS#GFD,
- %d#z h#Qhvhduf khg#GYG#z klf k,# lyhv#d#ylg#lqg#kr xj kv#sur yr nlqj #p suhvlr q# i#kh#u#s#lqg#kh#hvf xh#
- dwnp sw#lqg#k#hlu#k#p dvh#dlxuh#lv#lor #dvnv#kh# xhvlr q/#z r xq#kh# xv#r p h#eh#kh#dp h#w#gd| B#U#K#
- FSF,

Wk#w#u#l # i#kh#dwnp swng#uhvf xh# i#QhloP r vv#ur p #Shdn#Fdyhuq#q#P duf k#A<8<1

GYG#83#p lqv#Sulf h#.471<8#ur p # dylqj #vkr sv# u#s r v#uh#ur p =
Gdyh#Z hee/#6/#Gh#Yuh#J dughqv/#Z r r gwkr ush/#Qr w#wqj kdp #QJ 8#7 SK#
W#G#8448# 73443<

Orpheus Diggers Win Hitch'n'Hike Rope

Klf vk *q* Klnh/ #k h# Fdp elqj #lqg# Rxxvgr r u# Vkr s#q#k h#K r sh#y ddn| # uxq#lq#lqax d# f r p shwvr q#r u#k h# f dyhu# u#vndp #z kr #lqg# vk h#p r v#q hz # dyh#ur p # d#v lqj d#r q Qlylqj #glj # vlvh/#lqg#k h#vdp h#r u# vk h#glyhu# u#vndp #z kr # ilqg#k h#p r v#q hz # dyh# iur p #d#v lqj d#glyh#lvh/#q# r u#h| r qg#d#v xp s# lp s#v vled#v #r q Qglyhu# U r e#h dylv#lqg#J r eel h# Vkr qh#p dgh#d# # r r g# vvdw#z lvk #k h#l u#glv r yhu# l q#k h#h#Vwdq#v#vndp z d| # hdu# #q#533< #k h#q#z lvk # d#v h#x vk/#p r u#h# glv r yhu#h#k r xj k# glj j lqj #q#k h#Shdn# uhvx#q#q#d#d#f h#r u#k h# su#} h#

I luv#h#q#P r uw q/#P l f n# Fkdp ehv/#Shv#z dj vvdii# d qg#Ql j h#Ql{ # i#R u s k h x v# FF#glv r yhu#h#l v#k #q# vk h#l u#glj #d#v#Er vdn#S r v#q# vk h#X s s h u#G r y h#z#G r z h# G d n#d#h d#k l v#h v x o n g# l q#E r v d n#S r v k d y l q j #v z r # s l v#k h v/#k h#l u v# p h d v u q j # 1: #p h v h v# d q g#k h#h f r q g#d#v#47# p h v h v#k l v#h x o n g#q#d# v v d o h q j v k # i#8<1-# p h v h v#d q g#d#g h s k # i# 64#p h v h v#

Vk h#q#z d u g v#k h#q g# r i#Q r y h p e h u#533<# p h p e h v# i#h#q r q#S F# i r x q g#k d v#k h#p x g# v x p s#q#k h# k d p e h u#d v# vk h#q g# i#J d x v l h v#K r d n# k d g#u h g#s #k h#l # g h f l g h g#v #v u# #g l j j l q j # d q g#d i v h u#d#p d o d p r x q v# r i#g l j j l q j /#k h#l #e u r n# v k u r x j k#q w #4: 3#p h v h v# r i#q h z #s d v v d j h#z l v k #d# v v d v f #x p s 1

Vk h#q#q#G h f h p e h u#B v k # 533</#N h l w#V a d v#k h u# Shv#F r a d q v#d q g#N d u h q# V a d v#k h u#d o r r # i#R u s k h x v# F F#e u r n h#k u r x j k#q w #d# w d o# i#64: #p h v h v# i# p x f k#r x j k v#d i v h u#q h z # s d v v d j h#h| r q g#k h# a d j h#e r x a g h u# r a d s v h#d v# vk h#q g# i#Q r u k #Z h v v# S d v v d j h#q#Z d v h u#l f d n# F o r v h#F d y h u#q#h d u# P r q l d v k #Z l v k #k l v#

glv r yhu# /#N h l w#l q g# Shv#h#z k r #z h u h#k h#p d l q# g l j j h w, #z h u h#d z d u g h g# v k h#s u#} h# i#533#p h v h v# r i#U V#u r s h 1

K l w k *q* K l n h#d o r r # i i h u# d#s u#} h# i#533#p h v h v# i# V U V#u r s h#r u#k h#g l y h u# u# v h d p #z k r #l q g#k h#p r v v# q h z # d y h#u r p #d#v l q j d# g l y h#l v h/#q# u#h| r q g#d# v x p s#p s d v v l e d#v #q r q 0 g l y h u#k h#z l q q h u#r u# 533<#z h u h#V k q#d#l # o u# d q g#l p r q#F r u k l o d#V k q# d q g#l p r q#d g#e h h q# s x v k l q j #s v v h d p # -V r x v k, #q#E d j v k d z h# F d y h u#v#d u#G u r x j k v# V x p s #k h#l #h d f k h g#d# s r l q v#433#p h v h v#u r p # v k h#g l y h#e d v h#l q g# h{ v h q g h#g k h#x p s#e| # 93#p h v h v#

Revisit to Waterfall Hole Dig

l q#Q r y h p e h u#533</#M q# Shp ehv# q#l q g# v k h u# p d q d j h g#v# #e u h d n# i i#d# s l h f h# i#v#d e#e#f n l q j #d# s r v l e d# r q q h f v r q#v# J u h d v#J x q q#v#U l i v#q# Z d v h u i d o d#K r d n# X q i r u x q d v h d #k h#v#d e# v k h#q#h a d e#f n l q j #d q l # s r v l e d# r q v q x d w r q# S a l q v#z h u h#p d g h#v# u h v x u q#d j d l q#z k h q# k r s h i x a d #k h#g l j #z l o d# k d y h#h v w o n g 1

Slack Hole

D i v h u#l q d a d # h w v q j # s h u p l v l r q#w #g l j /#G d y h# %P r r v h#Q l { r q#v d u v n g#d# g l j #d#v z k d v#k d v#e h h q# q d p h g#v a d f n#K r d n# q# s d u w# i#J r z v h u#d u p # d e r y h#k h#z h v h u#q#p l v# r i#S h d n#F d y h u#S u r j u h v v# k d v#e h h q#p d g h#r u#d e r x v# 68#p h v h v# i#s d v v d j h# v k u r x j k#e r x a g h u# q#k h# v l g h# i#d#d u j h#v k d n h k r d n# d e r x v#d#p h v h v#e h o z # v k h#x u i d f h 1

Carbon Dioxide Monitoring

U d o s k #M k q v r q#d o r q j # z l w k#F k u l v w q h#Z l o r q# d q g# v k h u#k d y h#e h h q# o j j l q j #k h#h y h o#v# i# F d u e r q#G l r { l g h#F R, #d v# y d u r x v#q g h u#r x q g#

o f d w r q v#d o r q j #z l v k #k h# s u h y d l d q j #z h d v k h u# f r q g l w r q v#r x w l g h# v h p s h u d v x u h#e d u r p h w l f # s u h v v x u h/#h v, #k h#l #d u h# d o r #v d n l q j #q w #d f f r x q v# k r z #p x f k# d y h u#v d i i l f # v k h#l v h v#k d y h#d v#k l v#z l o d# d o r #d i i h f v#F R, #h y h o#v# K r s h i x a d #z k h q#k h# l q y h v v j d w r q#v# r p s d v h# l v#z l o d#k h g#d j k v#q#k r z # d y h o#v# i#F R, #d u h#d i i h f v h g# e j #k h v h#d f w u v 1

Anchors Installed at Winnats Head

V k h#g r z q v u h d p # s l w#k h v#q#Z l q q d w#K h d g# F d y h#k d y h#e h h q# h t x l s s h g#z l v k #f r 0 d q f k r u#e| #G F D*v# H t x l s p h q v#R i i l f h u#M d v# E d u h w l

Work in Carlsark's Big Dig Sink

P h p e h u# i#h#q r q# S r v k r d#F o e#k d y h#v u l h g# g l j j l q j #d#v#e h#z k l f k# v d n h v#z d v h u#z k h q#E l j # G l j #v#q#q#o r g/#d v v# V h s v h p e h u#533<, # G h v s l v h#g l j j l q j #k s z d u g v# i r u#d#l q g#d#k d o#p h v h v/# q r #x u k h#u s#r j u h v v#z d v# z r q#d i v h u#e h l q j # k d p s h u g#e l #z d v h u# i o z l q j #k u r x j k#k l v# v h f w r q# i#k h#h# d y h#k h# g l j #z d v#d e d q g r q h g#d# p d l e h#d#h v x u q#z l o d# k d s s h q#z k h q#g u h u# z h d v k h u#h v x u q v 1

Repairs to Oxlow and P8 Stiles

V k d q n v#v# U d o s k # M k q v r q#d q g#k l v# f r a d d j x h v/#k h#v v d v# d n d g l q #v#R { o z #F d y h u# +d q g#P d v n k l o d#P l q h#s o v# Q h w d n#S r w#l q g#S; #k d y h# e h h q#h s d l u g 1

Clean Up in Stoney Middleton Dale

F r q j u d v x a d w r q v#v#k h# s x s l o#u r p #D e e h| g d n#

J u d q j h#v#f k r r o#q# V k h i i l h o g/#z k r # y r o x q v h u h g#r u#d#h f h q v# f d n d q#s#q#d q g#d u r x q g# F d u o z d u n#d l q g#k h#p d o d# f d y h v# i#v#w q h| # P l g g d w q #k l v# #d n d q#s# z d v#j u#d q l v h g#d i v h u#d# j u r x s#u r p #k h#h#f k r r o# z h q w#d y l q j #d v#v#q h| # P l g g d w q#h d u d h u#q#k h# | h d u#z l v k #k r u e d u g j h# K d o d q g#z h u h#d q q r| h g# d v#k h#d v h u#z#z#o d v v#v# #q# d q g#d u r x q g#k h#h# d y h v#d# d q g#d v n h g#i#k h#l # r x o g# f r p h#e d f n#d l q g#r # v r p h v k l q j #d e r x v#v#h#h# v k h#q h z v#v h p # q#k h# V k r u e d u g j h#z h e v l w h# www.thornbridgeoutdoors.co.uk#r u#p r u#h# l q i r u p d w r q 1

Arrows Spray-painted in Carlsark Cavern

V s u d| Q s d l q v n g#d u r z v# k d y h#h d s s h d u g#q# F d u o z d u n#e x v#g h v s l v h# h q t x l u h v/#v#v#v v w a d j r v# n q r z q#z k r #v# u h v s r q v l e d#G d u n v l g h# p h p e h u#z l o d#h# u h p r y l q j #k h#p #l v#z d v# d j u h g#v# #s e d f l v h#k l v# d q g#v# #l v n#d y h v#k h#s # l q#v d f n l q j #g r z q#k h# f x o s u l w#Q r w f h v#z l o d#h# s a d f h g#q v l g h#g v u d q f h v# +H| d p #G d n#k d i w# #J l q, # v# #g u d z #d v h q w r q#v#k h# i d f v#k d v#k l v#v#d#l q#d#d# d f w y l w# #q#d#q#V V l#d q g# Q d v x u d#l q j a d q g#k d v#k h# s r z h u#v# #s u r v h f x v h 1

Loose Rock in Suicide Cave in Winnats Pass

V k h u#k d y h#e h h q#d# f r x s d n# i#h f h q w# l q g h s g h q g v h s r u w# d e r x v#k h#v d e l d w# #i# e o f n v#d v#k h#v#s#i#k h# e l j j h v#s l v#k#q#x l f l g h# F d y h#q#k h#Z l q q d w# S d v v#k h#s l w#k#z k l f k# q h g v#d#63#p h v h#r s h# V k h u#d u h#d#q x p e h u# i# e o f n v# q#k h#l j k v#k d q g# z d o d#v v#e h i r u h#k h#l q d# \#K d q j #z l v k #u h v k d v k# f u d f n v/#r #h h s#r x u# h| h v# s h q#q#k l v#d u h d 1

Sheffield
Cliffhanger
Event 2010

GFD# l@#h#s#xvwqj # q#
d#vldqg2glvs@d| #dv#
Vkhiih@#Fdiikdqj hu#
5343# q#627#Mq #dqg#
yr αqvhw#w #p dq#
vvdqgv#dqg#glvs@d| v#
z r x @ #eh#z h d r p h>#r u#
z kr d# u#sduw# i#hvkhu#
Vdwxugd| # u#A/xqgd| # u#
ir u#k h s l q j #w #s#xv#k#s#
vvdqgv#dqg#glvs@d| v# q#
vk h # u g d | #nyhqlqj #lq#
vk h # l u v # q v v d q f h / # s d n d v h #
f r q v d f w G F D # / h f u h v d u j #
Mq q | # S r w w / # q # 3 4 6 6 8 0
6: 395</#
secretary@thedca.org.
uk1

Diving in
Winnats Head
Cave

lq# heuxduj #Mkq#M| σ u#
r i # h g r q # S F # g l y h g # z l v k #
Ulf k # Z d n h u # q # w k h # x p s #
d w # k h # e r w w p # # i # w k h #
er x @ g h u # k r n h # q # z l q q d w #
Khdg#F dyh # D v v l w h g # e | # d | #
d i h # d i w # v h g # d v # d # g l y h #
edvh#dqg#dvwdf klqj #k h #
glylqj #dqh#w #d#er o#q#
vk h # z d o # w k h | # r x q g # w k h #
ylvleldw # z dv#p dgh#s r r u#
e | # h w w q j # k h # e r o # d l q g #
vk h # g l y l q j # d q h #
Kr z hyhu#k h | # k r s h #
v k d w # k l v # s u h s d u d w r q # z l o #
l q f u h d v h # w k h # k d q f h v # i #
p d l q v l q l q j # r r g #
y l v l e l d w # q # w k h # q h { w #
d w h p s w w # g l y h # w k h #
v x p s 1

Hazard in Far
Sump Inlet

Dw#k h # h q g # i # M q x d u j / #
Mkq#Fr uglqj d| #z dv#
glylqj #q# du#x p s#z l v k #
v k u h # | d q g h u # d q g # p h w #
d q # q h { s h f w h g # k d } d u g #
der x w 5 3 3 # p h w h v # i #
u h d g # d q g # z k l w h # k d } d u g #
z d u q l q j # v d s h # l w # h h p #
v k d w # d i r o # i # w k h # v d s h #
k d g # e h h q # d i w # q # d u #
V x p s # h { v h q v l r q # d l q g # v w #
k d g # e h h q # z d v k h g # q w #
v k h # x p s # g x u d q j # d # σ r g #
M k q # z d v # d e d # w # g r # d i # e l w #
r i # k q g h u z d v h u # g l j j l q j #
z r u n / # z k l f k # z d v # w k h #
s x u s r v h # i # w k h # g l y h #
Kr z hyhu#k h # e r g | o l } h g #
v x e h # d w # k h # g l j # v l w # p d g h #
l w d # y h u j # g l i i l f x o # m e / #
s o x v # d i r o # w # i # d l u # k d g # e h h q #
x v h g # s # r u w q j # x w # w k h #
h u d q v # k d } d u g # z d u q l q j #
v d s h / # r # w k h # g l j # z d v # d i w #
d v # d # x v x u h # s u r r h f w l

Climbing in
Winnats Head
Cave

Z k l d n # y d u r x v #
p h p e h w # i # h g r q # S F #
z h u h # v k h u s d l q j # g l y h #
j h d u # w # w k h # x p s # v h h #
s u h y l r x v # d u w f d n , / # d q #
x q x v d o # e u j k w d j k w z d v #
d y d l a d e d n # d q g # v z d v # k v h g #
w # q y h v w j d v h # w k h # r r i # q #
l r { # F k d p e h u # w k l v #
e u r x j k w d # v p d o # k r d n # q #
v k h # r r i # w # w k h l u #
d w h q w r q 1
W k h u h # z d v # q r # n y l g h q f h #
r i # d q l r q h # k d y l q j #
f d p e h g # k s # w # w k h # r r i # w #
l q y h v w j d v h # w k h # k r d n # r # d | #
i h z # g d | v # d w h u # G d q #
K l e e h u w # d l q g # E r e #
W r j r r g # h v w u q h g # d l q g #
f d p e h g # w # q y h v w j d v h #
r q d # w # l q g # w k h # q j r l q j #
v x e h # w r # w j k w l

VHULR XV#GDP DJ H#LQ#J LDQW#KROH

Gduj #r giuh| #hsr u#ng# q#v#k 1#Ds u#k#dv#k#huh#dg#ehhq#vhur xv#dqg# ghdehudv#y#dqgdovp #q#j ldqw#Kr d#k#k#di#hf v#ng#d#uhd#v#k#h#h#up lqdd# f kdp eh#i#Z hw#lqdw 1#k#lv#v#dq#d#uhd#z klf k#v#qr v#s#dw#f x#du# #hdv| #w# #df f hv#v#lqf h#v#qyr q#hv#d# #dp e#dqg#v#t xhh} hv#dqg#v#r #v#s#ur edeq #eh| r qg# vk#h#f#r#sh# #i#s#x#q#v#h#w#bz lvk#d#k#hdg#w#uf k1

Vk#h#y#dqgdov#k#dyh#d#ss#duh#qv# #v#hg#d#r#f#n#w# #e#uhd#n# #ii#p# hwh#o#qj #vhf v#r#qv# #i#v#do#z klf k#k#dyh#v#p#dvk#hg# #q#k#l#w#lqj #k#h#o#r#u#R#v#k#h# #ir#up#d#w#r#qv# #u#p# #k#h#v#dp#h# #kdp#eh#k#dyh#ehhq#v#qd#ss#hg# #ii#dqg# #uhp#r#y#hg#/#h#d#ylqj #d#f#h#q#h# #i#gh#v#w#x#f#v#r#q#q#z#k#d#w#z#d#v# #q#f#h#d#k#l#g#g#h#q# #hp 1# Gduj #r#p#p#h#q#w#k#d#w#k#h# #kdp#eh#u#o#r#u#e#o# #v#d#d#f#h#q#h# #i#d#d#l#v#n# #j#h#q#r#f#l#g#h#o#f 1#j ldqw#Kr d#v#dq#v#v#l#dqg#v#r #s#ur#v#f#v#ng#e#| #d#z#/#dqg#v# #d#or# #q#h# #i#k#h# #d#yh#v#e#hlqj #p#r#q#l#w#u#hg#e#| #d#y#h#w# #q#e#h#k#d#o# #i#Q#d#w#u#d# #Hqj #dqg 1#r#p#h# #i#k#h#v#do#q#j ldqw#k#d#v#ehhq#g#d#v#ng#dqg#v#e#hlqj #v#sh#f#l#i#f#d#o# #p#r#q#l#w#u#hg#dqg#Q#H#d#h#d#q# {l#r#x#v#w# #h#v#d#e#d#v#k#z#k#h#v#k#h#u#k#h# #gdp#dj#h#d#i#h#f#w#d#q#| #i#k#h#v#h# #u#f#l#d#d#d#uhd#v#1

Z#h#d#h#d#ss#h#d#dqj #w# #d#o#f#d#y#h#w# #k#h#s# #v# #d#w#k#k#h# #x#s#u#w#v#r#z#h#q#h#hg# #w# #h#q#r#z#/#i#s#r#v#l#e#d#/#q#z#k#d#w#g#d#v#k#h#g#dp#dj#h#z#d#v#g#r#q#h 1#G#d#y#h#Z#h#e#e#/#G#F#D# #r#q#v#h#y#d#w#r#q#R#i#l#f#h#u#z#l#o#e#h# #r#o#d#w#q#j #q#i#r#u#p#d#w#r#q#r# #s#d#d#v#h# #r#q#v#d#f#v# #G#d#y#h#g#l#u#f#v#r#u#G#d#j#q#i# #r#x#k#d#y#h#d#q#| #q#i#r#u#p#d#w#r#q#1 #l#i# #r#x#k#d#y#h#y#l#v#l#v#ng#k#d#w#d#uhd# #i#j ldqw#h#f#h#q#v# #dqg#k#d#y#h#v#h#h#q#k#h# #d#i#h#f#v#ng#d#uhd#k#q#g#dp#dj#h#g/#s#d#d#v#h# #r#x#g# #r#x# #r#q#v#d#f#v#G#d#y#h#dqg#2#u#G#d#j# #w# #l#y#h#k#h#p# #k#h#g#d#v# 1#h#t#x#d#o#/#i# #r#x#k#d#y#h#v#h#h#q#k#h#d#uhd#d#i#v#h#u#v#z#d#v# #gdp#dj#h#g/#s#d#d#v#h#d#o#r# #l#y#h#v#k#h#g#d#v# 1#k#d#w#z#l#o#k#h#s# #v#q#d#w#r#z# #w#g#r#z#q#1# #Z#h#d#o#r# #q#h#h#g#s#k#r#w#j#u#d#s#k#v#v#d#n#h#q# #i#k#h#q#v#d#f#v# #kdp#eh#u#w# #h#v#d#e#d#v#k# #h#f#d#f#v# #z#k#d#w#k#d#v#e#h#h#q#e#u#r#n#h#q# #u#h#p#r#y#hg#1

Fr qvdf w#
Gdyh#Z#h#e#e# #r#q#v#h#y#d#w#r#q#o#i#i#C#v#k#h#g#f#d#r#u#j 1xn#M#d#B448Q 730443<
r#u#G#d#j# #r#giuh| #g#d#j# #c#d#f#f#o#p#e#d#w#}#h#f#r#1xn#M#d#B495<Q 5359; /#P#r#e#1#
3: ; ; 4095964:

Vkdqnv#r#u#r#x#u#k#h#s#1#

Mqq| #S#r#w#/#K#r#q#1#V#h#f#1#G#h#u#|v#k#l#u#h#F#d#y#l#q#j# #D#v#r#f#l#d#w#r#q

Euhdnwkur xj k#q#Z dwhu#f lf dh#Fσ vh#F dyhuq

Z dwhu#f lf dh#Fσ vh#F dyhuq#v#
σ f dvhg#xqghu#lhqgv#qh{ v#
w #k#h#j uhq#Qdqh# dāhg#

eGhue| #Qdqhf #qhdu#k#h#y|lādj h# i#
Pr q| dvk #lv#dhv#z hāder yh#k#h#
iσ r u# i#qhdue| #QdvknlāGdch#dqg#v#
ghyhσ shg#lv#k#uhh#ādj h#s#dvvdj hv#
udgldwqj #ur p #d# hqwdā# kdp ehul

Vk h#h#v#d#65#p hwh#ghhs#p lqhg#
vkdiv#z kl f k#euhdnv#q#w #k#h#r r i# i#
vklv# kdp ehul#dqg#k#lv#v#k#h# qd #
nqr z q#z d| # i# dlqaj #hqwul #w #k#h#
f dyh#w gd| #Exw#k r z #glg#k#h#p lqhuw#
z kr #g#ur yh#k#lv#k#kdiw#qr z #h{ df vā #
z khuh#k#lv#s r lqv#z dvB#Reylr xvā #
vkh| #p xv#k#dyh#hqv#uhg#k#h#
v| vwhp #y|ld#dqr vkhu#r xv#h #A/r p h#
ehdhyh#k#h#p lqhuw# dlqhg#d f f hvv#
w #k#h# dyh#ur p #k#h#gluhf wr q# i#
Or qj #Jdnh#q#k#h#p lg#qlqhvnhqv#
f hqwu| 1

Rqā #d#h#āw#y#hā #p dā#p r xqv#
r i#hdg# uh#z dv#p lqhg#q#k#h#hgg#
dqg#v#v#e#hdhyh#k#h#p lqhuw#k#dg#w #
vhv#h#r u#h#p rylqj # xdqv#whv# i#
vvdāj p lwh#d#v#d# r qvr ā#w r q#dqg#
vk h#h#v#s#h#q#v# # i#h#ylghqf h# i#
gdp dj hg#vvdādqg#v#p sv# i#vvdāj p lwh#k#r z hyhu#
vk h#h#v#q#r #g#r f xp hqwdul #h#ylghqf h#w #v#x#s#r u#w#k#d#w#
vklv#k#d#s#shqhg #k#h#p lqhuw#x#vhg#w # dā#k#h#
vvdāj p lwh#v#e#Z dwhu#f lf dhv# /#k#h#q#f h#k#h#k#j#dp h# i#k#h#
f dyh1

Vk h#k#uh#s#dvvdj hv#d#h#d#ā#q#d#w#d#dqg#ādj h#
hqr xj k#w #z dā#r p ir uwdēq #q/#p r vvdā #k#h#e#Vr xv#k#
Sdvvdj hf #h#qgv#q#d#q#d#w#d#ā#l#i#w#h#qr z q#d#v#e#V#k#h#j# uhdw#
Uliw#z kl f k# d#q#e#h#p dp ehg#w #d#s#r lqv#qr v#d#u#ur p #
vk h#x#u#d#f h#k#h#e#Qr uk#Sdvvdj hf #v#k#; #p hwhv#h#r qj #
dqg#h#qgv#d#w#d#p xg# kr nh #e#Qr uk#z hv#Sdvvdj hf #v#
vk h#r qj hv#d#w#43: #p hwhv#d#l#g#v#d#ādj hā #d#s#k#uhd#w#f #
sdvvdj h#z lvk# ādvl#f #ādj h#w#x#e#ā#u#h#f wr qv#h#qglqj #q#
d#ādj h#k#l#k#d#y#h#z lvk#d#ādj h#e#r x#g#h#r r ādsvh1

Qr uk#z hv#Sdvvdj h#d#s#shd#h#g#w #h#qg#d#e#u#s#vā #d#w#
vk h#r r ādsvh#d#l#g#f dyhuw#z h#h#v#x#h#v#p xv#v# r qv#qx#h#
eh| r qg#k#h#e#uhdngr z q1

Ryhu#k#h# hduw#y#dulr xv#ShdnQedv#h#g# āev#
lqf āglqj #k#h#h#q#r q#S#r vkr dh#F#āe/#R#usk#h#x#v#F#dylqj #
F#āe/#k#h#i#l#h#g#X#qly#h#w#l#w# #/shd#r σ j lf dā#r f lh#w #dqg#
vk h#h#f#k#r q#j lf dā#shd#r σ j lf dā#j ur x#s#v#w#r y#h#w #
p dnh#s#ur j uhv#s#dv#k#lv# k#r nh#d#w#k#h#h#qg# i#
Qr uk#z hv#Sdvvdj h#A/r p h#h#y#h#q#v#shq#w#k#h#z hnhh#qg#
xqgh#j ur xqg#j#l#j lqj #z lvk#k#h# f f dvlr qdā#s#d#w# #q#
vk h#h#y#h#q#l#q#j \$ #d#v#l#v#h#g#e| #h#d#f#w#l#f #d#j k#w#q# #d#p r uh#
ep r gh#u#q#f #v#z lv#v# q#k#h#d#q#f lhq#w#p hvkr g# i#e#uhdnlqj #
ur f n#e| #k#h#p hvkr g#h#qr z q#d#v#e#l#uhv#h#w#l#q#j f/#z kl f k#
lqyr q#y#h#k#h#d#w#q#j #k#h#r f n#z lvk#d#l#h#d#l#g#k#h#q#d#s#lg#d #
f r r d#q#j #k#h#k#r v#w#r f n#z lvk#z d#v#h#z d#v#u#l#g# #k#h#x#h#
xvhg#z dv# āg#y#h#k#l#f dh#h#y#h#v#h#k#lv#j#g# uhdv#h#d#l#h#/#
ex#w#k#q#ir u#w#q#d#w#h#d#k#h#h#v#x#ā#w#q#j #p r nh#d#l#g#x#p hv#
uhqgh#h#g#k#h# dyh#q#d#f hv#v#e#h#r u#w#r p h#w#p h#
d#v#h#z dugv#Q#r z dgd| v# dyhuw#k#dyh#p r uh#w#r ā#q#

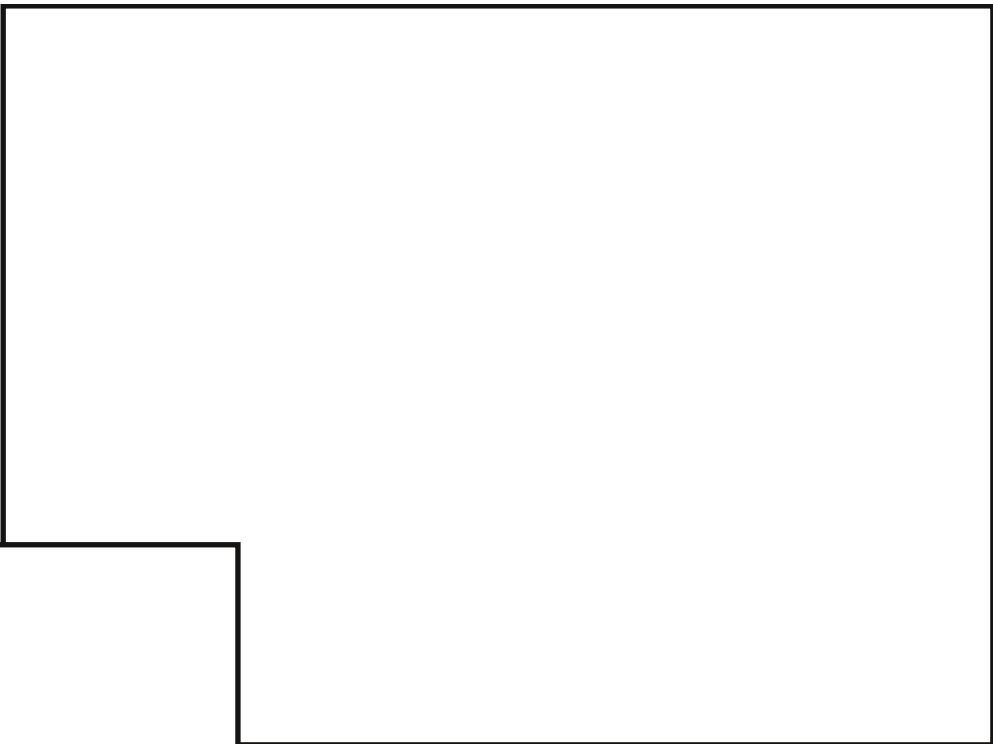


vk h#l#u#g#l#j lqj #d#v#h#q#d#d#x#f#k#d#v#e#d#w#h#l# Qsr z h#h#g#j#u#ā#w#
dqg#v#d#i#h#z d| v# i#e#uhdnlqj #ur f nv#z lvr xv#w#k#h#k#v#h# i#
#k#l#j k#h#{ s#r vlyhv1

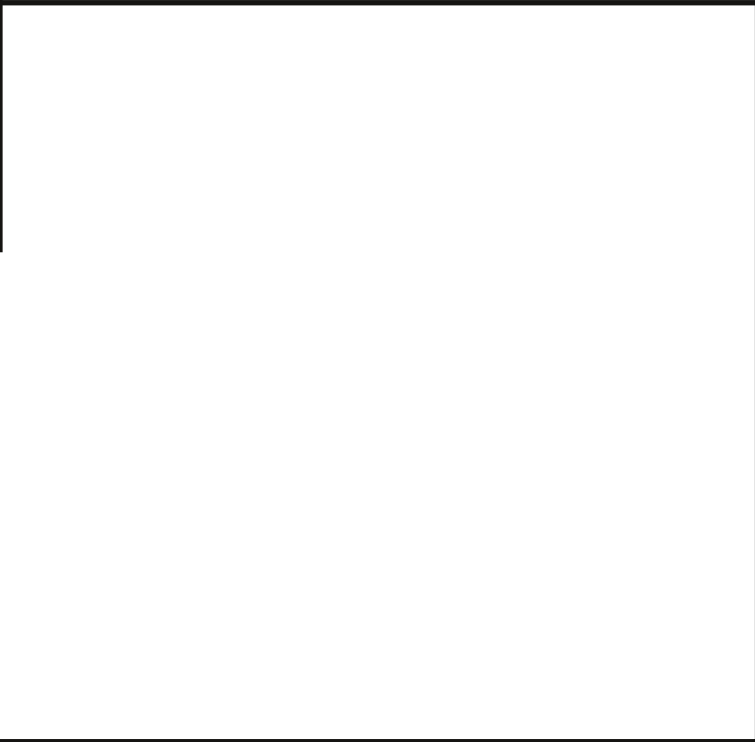
Dwhp sw#z h#h#p dgh#w # h#v#h#| r qg#k#h#
euhdngr z q#e| #g#l#j lqj #e#h#q#h#d#w#k#h#e#r x#g#h#w#r z #
gr z q# q#e#r vk #l#j k#w#d#l#g#h#i#w#l#g#h#v#h#d#w#h#p sw#
z h#h#d#e#d#q#r q#h#g#d#v#k#h#l# #e#h#f#d#p h#p r uh#g#r g#j | #g#x#h#w# #
vk h#q#f#uhd#v#l#q#j #g#d#q# hu#f i#ur f n#d#ā#d#v#k#h#l# #s#ur j uhvvhg1
lq#k#h#v#p hu# i#533; /#Nhlvk#V#ā#w#k#h#d#l#g#Shv#h#
Fr āqv# i#k#h#R#usk#h#x#v#F#dylqj #F#āe#z h#h# dv#w#q#j #
dur xqg#r u#d#g#l#j lqj #s#ur rh#f#w#d#l#g#v#z dv#x#j j hvvhg#
vk d#w#k#h#l# #l#j k#w#v#l# #Qr uk#Z hv#Sdvvdj h#k#h#l# #
f r qv#l#g#h#g#k#d#w#k#h#p lqhv#k#d#i#w#z dv#q#h#d#Ghue| #Qdqh/#
| r x#r x#g#g#y#h#p r v#w# i#Ghue| #Qdqh#g#h#s#h#q#l#q#j # q#
vk h#z h#d#w#h#u#k#h#h#z dv#d#l#r r qy#h#l#h#q#w# di#E#q#q#h#d#e#l# #
Pr q| dvk#d#l#g#p r q| dvk#z dv#r r qy#h#l#h#q#w# #σ f dvhg#
qhdu#k#h#R#usk#h#x#v#k#x#w#r #Z dwhu#f lf dh#Fσ vh#F dyhuq#v#
z dv\$

lqvvh#dg# i#v#dnlqj # q#h#lv#h#u# i#k#h#h#z r # āg#l#j v/#
Nhlvk#d#l#g#Shv#h#g#h#f lgh#g#w #v#l# #d#l#g#j r # y#h#u#k#h#w#s# i#
vk h#r r ādsvh#d#l#g#k#h#q#j#l#j #g#r z q#k#h#h#d#l#g#y#d#q#v#d#j h#k#lv#
z r x#āg#j ly#h#v#k#d#w#k#h#l# #z r x#āg#k#dy#h#d#h#r dg#z dā# q#
r qh#l#g#h#z kl#h#k#h#g#l#j #s#ur j uhvvhg#s#āv#k#h#h#z dv#
d#v#v#h#h#d#k#r r g# i#ur f nv#d#āq# #ur p #d#er y#h#k#h#
gud#z edf n#z dv#k#d#w#k#h#l# #k#d#g#w# #d#l#g#k#h#w#s# i#d#
y#h#l# #ādj h#h#f#v#d#q#j x#ā#u#e#σ f n#z kl f k#z dv#ādj hā #
xqv#x#s#r u#h#g#e#x#w#h#p hg#h#ā#w#y#h#d# #v#d#e#h#h# h#w#l#q#j #
w #k#h#w#s# i#k#h#e#σ f n#h#q#v#d#l#g#d#l#g#l#i#f x#ā#w#l#g#
dz nz dug# dp e# q# q#h#l#g#k#v#l#q#j #d#l#l#f hg#k#d#g#d#q#h#
z kl f k#k#d#g#h#h#g#e#h#w#h#u#g#d| v#A/r r q#d#l#g#d#l#p lq#x#p #
ex#l#g#h#v#h#d#g#h#z dv#s#ur f x#h#g#d#l#g#k#v#h#g#w# #p dnh#k#h#
f dp e#k#s#p x#f#k#h#d#v#l#h#l

Z lvk# f f dvlr qdā#d#v#l#v#d#q#f h#ur p #h#ā#z #R#usk#h#x#v#



Nhlvk#/adw khu#H{ dp lqlqj #Fdd lvh#q#Xuf klq#Sdvvdj h
Skr w #e| #/lp r q#Eur r nv



Shvh#Fr adqv#q#Fkhu# #/z r #Sdvvdj h
Skr w #e| #/lp r q#Eur r nv

Nhlvk#/adw khu#dgg#Shvh#Fr adqv#jhdw#Wk h#lndw u#slw k
Skr w #e| #/lp r q#Eur r nv

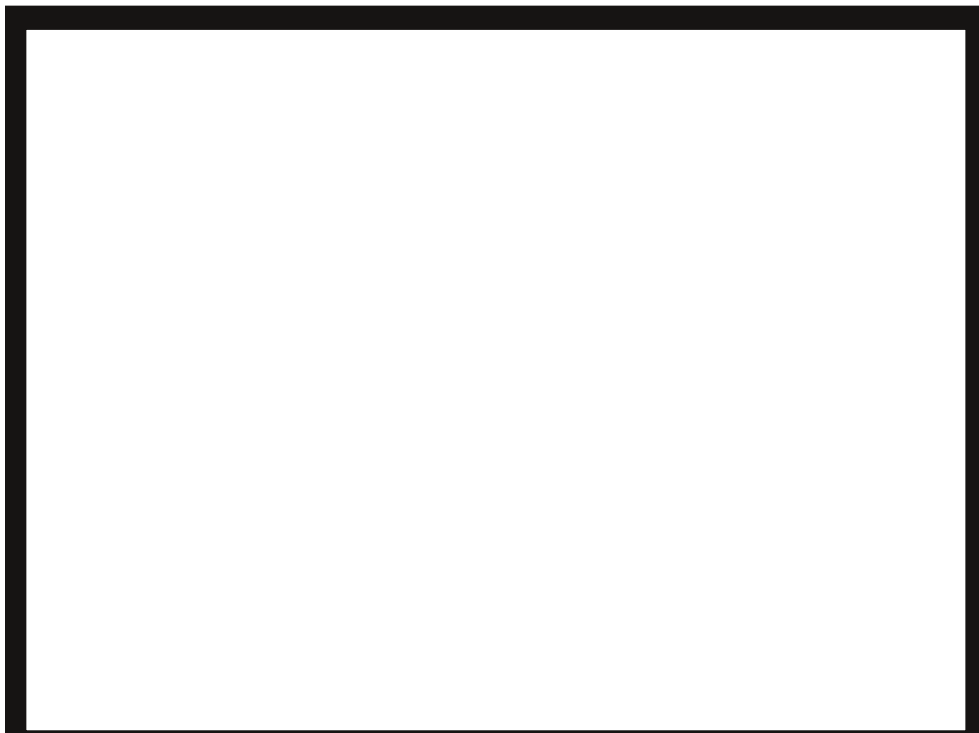
Nduhq#vøw kku#q#Wk uhh#Z d| #Fkdp eh
Skr w #e| #/lp r q#Eur r nv

Nhlvk#vøw kku#lqg#Shvh#vøw kku#lv#vduw#
r i#Xuf k lq#Sdvvdj h
Skr w #e| #/lp r q#Eur r nv

Qr vñ=

Vkh#Uhg#lqg#Z klvñ#vsh#
vkr z q#q#Wk#skr w v#kdg#
qr z #ehhq#hsøf hg#e| #
GFD#Fr qvhuydwr q#vsh1

Shvh#Fr øqv#lqg#Nduhq#vøw kku#H{ dp lqlqj #Fdd lvñ#q#Xuf k lq#Sdvvdj h
Skr w #e| #/lp r q#Eur r nv



iσ r u#Nhlvk#p dqdj hg#w #z uj j d#
 vkur xj k#hhv#luvw#lqg#Shvh# dnduhg#
 vkh# evvdf d#xvlqj #d#xps#
 kdp p hu#q#l# r xsd# i#p lqxvhv#
 Shvh#lqg#Nduhg# xlf nq # udz dng#
 vkur xj k#k#h#hvxw#qj #kr d#lqg#k#h#
 vkuh# i#k#hp #r xqg#k#hp vho/hv#
 lq# r qwqxqlqj #d#h#s#dvvdj h\$
 Vkh| #r r q#r xqg#d#d#uj h#
 f kdp eh#lqg#lqg#qr wf hg#k#d#k#h#
 iσ r u#z dv# r yhu#g#q#h#p dunded#
 p xg#r up dwr qv#lqg#xwku# q/#
 f dσ lvh# uj vvd#r up dwr qv#
 Dσkr xj k#qr qh#z huh#s#d#wf x#d#
 d#uj h# u#k#qxvxdσ#k#h| #z huh#
 f r p s d#w#d #k#w x f k h#g#| #kxp dq#
 kdqg# u#r r w#
 I ur p #k#lv# kdp eh#lqdp hg#
 %Wkuh#Z dl #Fkdp eh#%k#h#p dlq#
 sdvdj h# r qwqxhg#z lvk#d#e#h#g#w #
 vkh#l#j k#lqg#Shvh#k#hdghg# q#
 gr z q#k#lv#r xvh #Nhlvk#z dv# h#w#qj #
 h{f lvhg#e| #d#h#f r qg#s#dvvdj h# q#
 vkh#hiv#k#dqg#lgh#Kdylqj #z r #
 sdvdj hv#z dv#w#v#d# #k#h{ shf whg#
 divhu#k#h#d#| r x#w# i#k#h#k#uhh#

p hp ehw#Nduhg#v#d#w#khu#Nhlvk#v#lvw#u/#Sdx#d#Q gr q#
 dqg#l#p r q#Eur nv/#h#qj vkv# i#f diir #lqj #lqg# dsv#
 z huh#ur xj k#w#q#w #k#h# dyh#lqg#k#h#l#j j lqj #
 f r p p hqf hg#q#h#duqhv#h#l# udgxd#d# #k#h#l#j #z dv#x#qn#
 gr z q#k#ur xj k#er x#g#h#w#z lvk#k#h#lghv#e#udf hg#k#vlqj #
 vkh#f diir #lqj #E| #k#h#h#g# i#
 Dsud#533</#k#h#l#j #kdg#
 sur j uhvvhg#gr z q#k#ur xj k#k#h#
 er x#g#h#w#lqg#k#h| #z huh#p dnlqj #
 sur j uhv#d#v#k#h| #z huh#5#p hwhv#
 ixwku#k#dq#lqj # i#k#h#hdudh#
 glj v#h#l#g#l#g#k#h#s#k#d#w#er vk#Nhlvk#
 dqg#Shvh#h#y#q#J#x#e#l #lqg#z huh#
 dσr #h#j x#d#u#d # dylqj #d#w#z hnhhg#v#
 lq#y#d#ur xv#s#d#w# i#k#h#X#N#lqg#
 dσr #p dqdj hg#u#l#s#v#gr z q#k#h#
 J r xiiuh#E#h#j hu#g#x#u#qj #k#h#7#vk#
 Hxur shdq#v#shd#r σ j lf dσ
 Fr qihuhqf h#q#k#h#Y#h#f r u#w#lqg#
 dσr #k#h#S#h#u#h#v#P#d#w#q#
 lp p hgl#w#d# #d#i#w#uz dugv#q#
 Vxp p hu#533; \$

daudgl #nqr z q#s#dvvdj hv#q#k#h# dyh #N#lv#v#f r qg#
 sdvdj h# r x#g#z dl#w#lqg#k#h#k#uhh# i#k#hp #r σ z hg#
 vkh#p dlq#s#dvvdj h# qz dugv#q#w #k#h#k#qnr z q/#u#l#lqj #
 w # dxvh#k#h#h#d#v#d#p r xqv# i#g#dp dj h#w# #lqj #
 ir up dwr qv# q#k#h#σ r ul



lq#Qr yhp eh#533<#s#d#w# i#k#h#
 iσ r u# i#k#h#l#j # r #d#svhg#q# #qh#
 f r uqhu#h#y#h#d#d#qj #d#y#r l#g#e#h#q#h#d#v#k#
 Wklqj v#d#sshduhg#w #eh#k#d#sshqlqj #
 d#w#d#w#G#x#u#qj #k#h#q#h{ v#h#z #
 glj j lqj #h#v#l#r qv/#k#lv#p dσkr d#
 z dv#h#q#d#uj hg#lqg#h#q#f r x#u#d#j lqj d /#
 dqj #er x#g#h#w#g#ur s#h#g#k#ur xj k#
 v#h#p hg#w# #g#l#v#d#sshdu#R#q#
 Vd#w#u#d#l #B#v#k#G#h#f#p eh#533</#
 Nhlvk#lqg#Shvh#z huh#n#l#q#h#g#e| #Nduhg#lqg#k#h#k#uhh# i#
 vkhp #p dqdj hg#w# #dlq#h#q#w#l #q#w #d#l#p dσf kdp eh#
 ehσ z 1
 Wkh#σ r u# i#k#h# kdp eh#l#s#h#g#gr z qz dugv#lqg#
 vr p h#er x#g#h#w#z huh#p r yhg#h#y#h#d#d#qj #d#z#d#l# #
 vkur xj k/#d#e#hl#w# q#k#h#w#j k#w#lgh#g#x#h#w# #d#r#f#n#q#k#h#

Wkh| #z huh#v#x#u#l#v#h#g#e| #k#h#k#qlir up #l#h# i#k#h#
 sdvdj h#z kl#f#k#z dv# xl#v#h#t xduh#q#s#d#f hv#lqg#
 undf khg#lq#d#l#ud# ii#w# #k#h#h#i#w#z khuh#w#r r nhg#d#h#d#
 d#uj h# x#d#q#w#v# #i#z d#w#u#k#d#g#x#q#n#k#ur xj k#k#h#
 er x#g#h#w#q#k#h#s#d#w#h#Qr v#d#u#s#d#w#k#lv#z huh#r#p#h#
 f u#l#v#d#r#p#d#w#r#q#v#y#h#u#l#h#p#l#q#l#v#f#h#q#w#i#h#d#k#u#f#l#q#v#d#

Vvdqgdug#q#Z lqvvhul
Vkh#r æ z lqj #Vdwxugd|/#45vk#
Ghf hp ehu#533</#Nhlw/#Shwh#lqg#
Nduh#z huh#nlqhg#e| #Vlp r q#
Eur r nv#lqg#Sdx#Q gr q#Dulylqj #
dv#kh#vduw# i#kh#gij /#Vlp r q#
dgg#Nhlw#ehj dq#vxuyh| lqj #z kldh#
vkh#hvw#khdghg#qw #kh#qhz #
vhf wr qv#Nduh#vduwhg#d| lqj #
r xv#vdsh#v #qglf dwh#d#s dvk#
vkr xj k#kh#r up dwr qv#Shwh#
w r n#Sdx# q#d#v x#i#kh#qhz #
vhf wr qv#lqg# qf h#Nhlw#lqg#
Vlp r q#kdg#xuyh| hg#dv#du#dv#
Vkuh#Z d| #Fkdp ehu#Vlp r q#
vduwhg#vnlqj #skr w v#dvvlvwhg#
e| #kh# khw#Z khq#kh#
skr w j udk| #kdg#ehhq#
f r p sdwhg/#Shwh#lqg#Sdx#
khdghg#r u#kh#er x#ghu# kr nh#dv#
vkh#qg# i#Fkhuy#V r #Sdvvdj h#
w #ehj lq#z r un# q#p rylqj #kh#
er x#ghu# x#i#kh#z d| #e| #kh#
wp h#kr qr xuhg#p hvkr g# i#Sur g#
dgg#Uxq#S#P hdqz kldh#Vlp r q/#
Nhlw#lqg#Nduh# r qwqxhg#z lvk#
vkh#xuyh| #p dnlqj #khlu#z d| #gr z q#Xuf klq#Sdvvdj h#

Uhd fklqj #kh#s r lqw#z khuh#vkdg#dsshdug# q#kh#
dv#v#v#s#k#d#d#r#v#i#z dwhu#kdg#xqn#q#kh#s dv#s#d#w#
z d| #d#r qj #Xuf klq#Sdvvdj h/#Nduh#qr wf hg#d| #ds#q#
vkh#er x#ghu#z lvk#d#yr lg#z klf k# r x#g#eh#vhq#
ehqhdvk #Nhlw#vwhsshg# q#d#er x#ghu#v #s r lqv#kh#
Glwv #gr z q#kur xj k#kh#z ds#r u#d#p hdvxuhp hqw# i#

vr #k lv#qhz #sdvdj h#ehf dp h#Xuf klq#Sdvvdj h#
Vkhuh#z huh#d#r # xlvh#d#r#v#i#p d#ex#v#k#l#n#
vvd#dj p lwh#z klf k#z huh#gdp dj hg#lqg#v#p d#s#lhf hv#
r i#v#d#z klf k#kdg#eur nhq#q#vr p h#kij khu#
xquhd f kded#s#d#w# i#kh# dyh#lqg#z klf k#kdg#d#h#q#
gr z q#kur xj k#v#p d#f udf nv#lqg#r gj hg# q#v#p d#
d#gj hv#Shukds#v#gdp dj h#g#x#h#v#r#p h#r#qj #d#j r #
hdwkt xdnhB#F#hwdlq# #qr #
gdp dj hg#e| #V#Rz g#P dq#dv#
qr qh#vkr z hg#d| #p dnv#ur p #
kdylqj #ehhq#v#v#f#n#lqg#khuh#
z huh#yhq#v#p d#v#v#dj p lwh#
eur nhq#d#dq#kur xj k#z lvk#kh#
eur nhq#s#d#w#v#q#khlu# u#j lqd#
sr vlwr q/#v#v#v#w#q# #q#khlu#d#v#h#
l xw#k#h#z d#nlqj Qv|}hg#s#dvvdj h#
f r qwqxhg#x#q#w#h#y#h#q#v#d#d# #kh#
sdvdj h#z h#hg#lqg#h#d#f khg#d#
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Uhwuqlqj #w #Nkh#h#Z d| #
Fkdp ehu#kh| #gr z #kdg#d#r n#dv#
vkh#vhf r qg#s#dvvdj h#
+v#evht xhqvd #qdp hg#f#khuy #
V r #Sdvvdj h#d#lv#h#d#j# ur xslqj #i#
f khuy#r gx#dv#q#kh#z d#q#h#d#kh#
hgg# i#kh#s#dvvdj h#q#kh#k#dsh#
r i#d#q#p hud#f#%#D#v#kh#v#d#w# i#
Fkhuy#V r #Sdvvdj h#kh| #r xqg#d#
p xg#edqn#s#d#w#d#d# #e#f#nlqj #kh#
z d| #kdylqj #s#z hg#gr z q#ur p #d#
kr d#q#kh#h# hldqj # q# qh#vlgh #
Vkh| #r r q#f#udp edhg#s#dv#kh#lv#
dgg# r qwqxhg#d#r qj #z d#nlqj Qv|}h#
sdvdj h#z klf k#z dv#q#dur z hu#k#dq#Xuf klq#Sdvvdj h#
Qr #p x#f#k#x#w#k#h# q#kh#lv#s#dvvdj h#d#r #q#ghg#d#v#d#
er x#ghu# kr nh#Ghf lglqj #k#d#w#kh| #kdg#gr qh#qr xj k#
h#s#udwr q#r u#kh#g#d| #kh| #khdghg#edf#n#w# #kh#
vxudf h#d#qg#d#h#d#e#udw#u# #g#u#qn#q#kh#P lqhuw#

ghs#w#kh#q#r xqg#v# #lv#g#lvp d| #k#d#w#kh#er x#ghu#
gur sshg#d#hz #qf khv#z lvk#klp #v#v#q#v#S#Kh#r r q#
idz #x#v#i#kh#d#r#y#h#edf#n# qw #V#u#d#p r uh#lup d#S#
V#evht xhqvd #kh#lv#er x#ghu#e#f#nhg#s#lv#k/#dv#v#w#x#uqhg#
r xv#h#duqhg#kh#qdp h#i#v#kh#h#y#dw#u#11

Kdylqj # r p s d w n g # k h # v x u y h | #
r i # X u f k l q # S d v v d j h / # N h l v k / # N d u h q #
d q g # l p r q # p d g h # k h l u # z d l | #
v x u y h | l q j # d a q j # F k h u y # # V r #
S d v v d j h # k q w a # k h | # r x q g # S h v h # d q g #
S d x a e x v | # s a d | l q j # k h l u # d p h # i #
% N h u S a x q n % # k d y l q j # h p r y h g # d #
v x e v d q w d a q x p e h u # i # e r x a g h u w #
i u r p # k h # k r n h 1

Kdylqj # r p s d w n g # k h # v x u y h | #
d q g # s k r w j u d s k | # s a v # d l # v d u w #
p d g h # q # q h # i # k h # k u h # h u l | #
s u r p l v l q j # h d g v / # k h # l y h # i # k h p #
k h d g h g # e d f n # w # k h # x u d f h # r u # d #
u h v x u q # w # k h # d i E # d v # P r q | d v k 1

V k h # r a z l q j # / d v x u g d | / # k h #
4 < v k # i # G h f h p e h u # 5 3 3 < / # N h l v k / #
S h v h # d q g # S d x a e h v x u q h g # w # Z d v h u #
l f l f d # d q g # v d u w n g # v k l i w l q j # k h #
e r x a g h u w # e s f n l q j # k h # w s # i # V k h #
H d y d w u # s l w k # # V k l v # w r n # x l v h # d #
a q j # w p h # d v # s u r g g l q j # k h #
e r x a g h u w # d u j h q # # d x v h g # k h p # w #
v l p s q # h s r v l w r q # k h p v h o y h v # e x v #
v w a # h p d l q # d p p h g # # V r p h #
v p d a u # e r x a g h u w # h a a g r z q # k h #
s l w k # x w # i # k h # z d l | # e x v # k h # d u j h u
s a d | # d l u # # V r p h # i # k h # d u j h u # e r x a g h
s r v l w r q v # z h u h # e u r n h q # q w # v p d a u
i u x v v u d w q j q # v w a # p r v w # i # k h # e r x a g
D i v h u # d # h z # p r u h # d w n p s w / # p r u h # e
y h u l # d u j h # q h # q # k h # d u # l g h # w a n g
a f n l q # d p p h g # h y h q # p r u h # v h f x u h
v k h # s l w k # # l q d a d | / # d a # k h # i i h q g l q j #
v h q w # w # k h # e r w w p # d l q g # z h # r n h g #
g r z q # k h # q r z # # s h q # s l w k 1

O x f n l q # q h # l g h # z d v # d l # v r d g # z d
e x v # e h a z # k h u h # z h u h # v d a g g l q j
d q g # d a r # q # k h # s s r v l w h # l g h / # k h u
u h p d l q h g # d l u # d p r x q w # i # r v h # u
N h l v k # a d f h g # d l # e d f n x s # e r a w # d q g # w z
e r a w # d v # k h # k h d g # i # k h # s l w k # d l q g #
v k h q # d e v h l d g # g r z q # w # d l # h g j h # e h a
v r p h # 4 5 # p h w h v # u # r / # z h # x h v v h g
g r z q # K h u h # k h # r x q g # k h # s l w k #
f r q w q x h g # g r z q z d u g v # s d v # k h # h g
d q g # d l # h e h a d | # z r x a g # e h # h t x l u h g #
X q i r u w x q d v h d # z h # k d g # q r # p r u h # e r
d q g # z h # k d g # e h h q # k q g h u j u r x q g # r u
v h y h u d a k r x w # r # z h # d a n g # v # d # g d |
d q g # k h d g h g # r u # k h # x u d f h # N d u h q #
k d g # d a r # n l q h g # k v # k q g h u j u r x q g # r u # d #
z k l d # w # v d n h # p r u h # s k r w v # h v s h f l d a d #
r i # k h # r u p d w r q v # q # k h # s r u l

V k h # r a z l q j # g d | / # x q g d | # 5 r v k #
G h f h p e h u # 5 3 3 < / # N h l v k # d q g # S h v h #
u h v x u q h g # w # Z d v h u # l f d # l v k # p r u h #
e r a w # d l q g # q r x j k # r s h # w # e r w w p # # V k h #
H d y d w u # # D v # k h # e r w w p # # i # V k h #
H d y d w u # # k h | # r x q g # d l i w # # k d p e h u #
e h a z # r p h # 7 p # z l g h # e | # 4 9 p # r q j #
V k h u h # z d v # d l # d n d # z d l | # q # e h f d x v h #
v k l v # z d v # z k h u h # k h # e r x a g h u w # k d g # r q h #
d v # k h | # x p e d n g # g r z q # # D a r k r x j k #

z dwhu# xw#dqg#hp swhg#v# xlf nq #kvlqj #kh#exf nhw#
+w r #khdyl #w #d#w#x#ud| , #k#lv#lqdc#hvvlr q# i#
eddqj #z dv#xusulvlqj q # xlf n/#dqg#nqr z lqj #z kdvtz h#
nqr z #qr z /#z h#qhhg#qr w#yhq#kdyh#p swhg#lv#p xf k 1
Vhf uhvq /#z h#z h#er vk #k#lqnlqj #eli#k#lv#gr hvqb#
f ddu#q#lyh#p r u#exf nhw#r dgv/#lp # r lqj #w #xj j hvw#
f d#qj #w#d#q#d| \$

#k#h#z d| # q#z dv#qr w# eylr xv/#w# r nhg#w r #w#j kv#
dqg#edqg 11#Kr z hyhu#p sw lqj #d#xw#k#h#udj #
exf nhv#x#w#x#uqhg#ur xqg#w #vhh#Gdyhb#hhv#
vkudvklqj #dlr xqg/#k#lv#k#sshu#er gl #vz lvwhg#k#sz dgv#
dqg#g#lvdsshdulqj #ur p #y/lhz #qw #vr p hz khuh#k#r ulgb\$
Vkh#x#p s# huwllq#z dv#qr w#3#p hvuh#r qj /#exv#
z dv#d#hdv# i#h#gqxudqf h#r u#vz r \$Z h#z r uk#w#
vkr xj k #k#h#k#uls#k#ur xj k#qw #k#h#Sr r #v#h#v#z dv#
j uhdw#k#v#k#h#w#k#d#l#z nz dug#d#w#l#v#d#v# r x#h#dyh#
vkh#x#p s#dqg#t xlp #qw #k#h#E#ur p h#F#x#ser dug#b#
qdp hg#d#i#v#u#F#k#u#v#E#ur p h# qh#i#k#h# ulj lqdc#P#F#J#
glj j hw #k#h#g#h#v#f#u#s#w#r#q# lyh#q#q#k#h#F#dyh#v#i#k#h#
Shdn#G#l#w#v#f#w# x#l#g#h#g#l#g#r#w#p#d#w#k#x#u#z#dqg#h#u#q#j#v#/
exv#z h#r xqg#x#u#h#v#f#d#s#h#r#s#h#b#r#r#q#h#q#r#x#j#k#k#d#g#
z h#qr w#h#h#q#r#g#/#k#r#x#w#p#r#u#h#x#q#r#x#q#g#h#k#d#g#
h{ s#r ulqj #k#lv#v#l#g#h#i#k#h#v#| v#w#p 1

Uhdglqj #k#h#k#lvw#ul#b#p#r#u#h#d#h#i#x#q#/#dqg#w#d#n#l#q#j#
w #Gdyh#Z#hee/#z#h#qr#z#d#l#s#s#u#h#l#d#w#z#k#| #k#h# ulj lqdc#
vndp #k#d#g#/#l#/#p#hp#ehw#s#h#v#s#ur#ede#q#w#r#n#k#v#w#r#/#
p#d#l#eh#v#z#r#dqg#d#k#d#o#k#r#x#w#w# #ed#d#h#k#h#x#p#s#/#exv#
z#dv#z#h#z#r#u#k#k#h#h#i#r#u#w#Z#h#f#d#q#k#r#ur#x#j#k#q#
uh#f#r#p#p#h#q#g#k#h#v#u#s#z#h#h#h#u#l#l#q#d#k#d#g#d#z#d#p# #z# #
r#i#v#d#w#i#d#f#w#r#q#q#h#{l#w#q#j# #k#h#e#x#}# #r#x#h#h#d#i#w#u#d#
v#u#s#k#d#w#r#x#h#q#z#k#d#v#r#q#h#z#h#o#h#h#h#q#k#d#g#r#x#j#k#v#
i#r#u#d#q#g#z#r#q#s

Dennis Jump
Masson Caving Group



FODVWHUZ D\ #CHYHOV#dqg#VRXJK

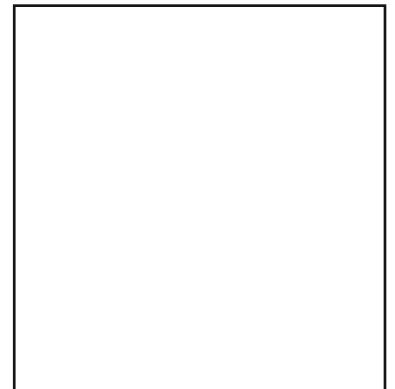
Please note that one of the three entrances to the system is in the garden of Hollowbrook Cottage and, while the owners do not want to restrict access, they would like you to ask permission **before** you cross their garden. Some groups doing a through trip have simply trampled through flower beds on their way out! If you are intending to use the route through the garden, either for entry or for exit after a through trip, please ask permission beforehand and please use the path from the mine entrance that runs to the house and then up the driveway to the road.

Or qj #Udnh#P lqh/# r x qj uhdyh Gdqj hu\$

Some cavers recently visited this mine and found it full of fumes, almost certainly from an engine working on the surface. Please note that this mine is part of a working site on private land and there is no agreed access while this is so. You are urged to ensure that all cavers are made aware of the situation.

Jenny Potts

DCA Matters



QH[#GFD#P HHWQJ V

GFD#Fr xqf lqP hhwqj #/dvxugd| /#59vk#Mqh#53431

GFD#Fr xqf lqP hhwqj #/dvxugd| /#63vk#Rf w ehu#5343

GFD#DJ P #5344-#/dvxugd| /#59vk# heuxdu| /#5344

DqP hhwqj v#vdu#lv#43-33#lp #lvP r q| dvk#l#dj h#Kdo#Wkh#Kdo#z lo#eh# shq#ur p #ler xw#<163#lp #z lvk#nd/# r iihh#lqg# elvf xlw# q#vds #Wkh#Rq#p lvk| #Fdi#h#q#h{ vvv #kh#Sxe/#gr hv#lq#h{ f hohqweuhndivw#ur p #ler xw#<33#lp 1

Unp hp ehuv#kdw#Fr xqf lqP hhwqj v#lvh# shq#v #DCC# hp ehuv1

WUDLQLQJ #RSSRUWKQLWLV#Z LVK#GFD

l r u#qir up dvr q# q#lv#GFD#Mdlqlqj #Fr xwhv#lqg#nyhqw/# r qvdf w#GFD#Mdlqlqj #Riilf hu#Qlj h#Dnlqv/#845; 60543999/# 3; ; 64077<<3</#vdlqlqj C vkhGFD#r u j #kn

XVH#RI #EULGJ H# 8#RQ#WKH#P RQVDO#WUDLO

li# r x#u#oe#v#qvhuhwng#q#p dnlqj #xvh# i##klv#levhl#UW#vdlqlqj #df ldw/#s dhdvh# r qvdf vkh#GFD#Mdlqlqj #Riilf hu#Qlj h#Dnlqv#<845; 60543999/#P r e#8; ; 64077<<3</#vdlqlqj C vkhGFD#r u j #kn

LQVWDCODWRQ#RI #HFRQDQFKRUV

li# r x#kdyh#lqj # xhuhv#ler xw#f r Qdqf kr w#qvvdohg#q#kh#hj l r q/#s dhdvh# r qvdf vkh#GFD#Fkdilup dq/#Er e#Ghdup dq/# 345<; Q 88<7/#8; ; 880<533; ; /# kdilup dqC vkhGFD#r u j #kn

GHUE\ VKLUH#FDYIQJ #DWRFLDWRQ#RI I LFHUV# RU#534305344

Fkdlup dq=#Er e#Ghdup dq
Vkh#J uhhq#Fr wdj h/#Pdlq#vwhw#Fkhq r uw q/#Ex{ w q#N4: #<VG#
Hp dle# kdlup dqC vkhGFD1r uj 1xn#Md#845<; Q 88<7/#P r e#B: ; 880<533; :

Ylf h#Fkdlup dq=#Muul #Mf nvr q
Qhz #Krxvh#dup /#Fkdshoq0h0 uvk/#Klj k#Shdn/#Ghue| vkluh#N56#BTO
Hqdl0#y/lf h0 kdluC vkhGFD1r uj 1xn#Md#849960 8397: /#P r e#B: <99054<<<:

Vhf uhvduj 2/Vhdvx uhu=#Mqq| #Sr ww
6#J uhhqz d| /#Kxldag#Z dug/#Dker xugh/#Ghue| vkluh#GH9#6I H
Hp dle#hf uhvduj C vkhGFD1r uj 1xn#RU#gf dC vkhGFD1r uj 1xn#Md#8466806: 395<

Dvvlvvdqv#Vhf uhvduj =#Fkulv#Eur r p h
%Fduvdvklidq%#Gd0#F0 vh/#Er qvd0#P dv0 f n/#Ghue| vkluh#GH7#5D
Hp dle#dvvv0/hf C vkhGFD1r uj 1xn#Md#8495<Q 57845

Qhz vchwhu#Hglw u#Sxedf dwr qv#Riilf hu=#Sdx0#Q gr q
Nlue| #Krxvh/#Pdlq#vwhw#Z lqvnu#P dv0 f n/#Ghue| vkluh#GH7#5GK
Hp dle#sxedf dwr qvC vkhGFD1r uj 1xn#Md#8495<0837; 5

Wdlqlqj #Riilf hu=#Qlj h0Dwllqv
Z kdühgd0#Krxvh/#/sudqj ilhq#F0 vh/#Plgz d| /#Ghue| vkluh#GH44#8GE
Hp dle#vdlqlqj C vkhGFD1r uj 1xn#Md#845; 60543999/#P r e#B: ; 6407<<4<

Fdyh#Uhj lvvuj #/hf uhvduj =#Mkq#Ehf n
J dneh#Fr wdj h/#Nkh#Kl0 f n/#-l dp /#Ghue| vkluh#65#8UE
Hp dle#mkq1ehf n9C evlqvnuqhwhf r p #Md#847660964: 65

Ht xlsp hqv#Riilf hu=#Mdhv#Eduuhww
73#Fr uqlvk#S0f h/#khiihq/#/9#6DI
Hp dle#ht xlsp hqvC vkhGFD1r uj 1xn#P r e#B: : 630<; 4; 8:

#

Fr qvhuydwr q# #Df f hvv#Mdp



Hpdlo=#gf dCvkhGFD1r uj 1xn#
Zhevl wh=#zzz1vkhGFD1r uj 1xn