

# Index

Pages numbers in *italics* refer to figures or tables.

adularia-sericite gold deposits of Marmato, Colombia 4, 167–81  
Cauco–Romeral fault system 167, 168, 171, 180  
deformation events 171, 171, 180  
fluid inclusions  
  distribution 177, 179  
  hydrothermal veins 177–8  
  microthermometry data 178–9, 180  
  quartz phenocrysts in dacite 176–7  
geological framework of Marmato District 168–70, 168, 169  
hydrothermal alteration 172, 173–4, 176  
  propylitization 176, 180  
  sericitization 176  
  zonation 179–80  
mineral assemblages 174–6, 179–80  
mineralization 171–6  
  boiling 179  
  occurrence 171–4  
  ore grades 174  
  vein petrography 174–6  
Obispo Fault 168, 171  
petrography 170  
regional geology 167–8  
vein geometry 171  
volcanic host rocks 169–70

Ballinalack Zn–Pb deposit 316, 317  
basin evolution and structural control of  
  mineralization, central Ireland 277–301  
  basin development 279, 288–90, 299–300  
  faulting and mineralization 289–90, 289  
  syn-depositional faulting 288–9  
basin reconstruction, present day 279, 280–4  
  basement configuration 282, 283–4, 283  
  information base 280–2, 280  
  isopachs 284, 285, 287  
  structural style 280, 282–3  
basin restorations 279, 284–7, 284, 286  
  decompaction 285, 285  
  depositional settings 285–6  
  sequential geo-modelling 287  
chronostratigraphic uncertainties 281–2, 299–300  
Dublin Basin 278, 290  
environment-of-deposition maps 284, 285–6  
faults 283, 283, 290, 300  
  influence on mineralization 289–90, 289, 300, 301  
  syn-sedimentary 279, 284, 288–9, 300  
fluid flow 277–8, 279, 300–1  
geological setting 278–9  
geophysical data 280  
hydrogeological numerical simulations 279, 290–9  
  flux rates 299  
  model idealizations 290, 292–4, 293  
  numerical simulator (HYDRO) 294  
  simulation results 294–9, 295–8  
Munster Basin 279, 290, 292, 297, 298–9  
putative hydrogeological systems 277–8

stratigraphy and lithostratigraphic units 278–9, 281–2, 281  
Waulsortian Limestones 277, 278, 284  
*see also* structural controls; structural localization  
Boulder–Lefroy Fault, Eastern Goldfields 124, 125–6, 126, 197, 202–3, 207, 208

capacity dimension *see* fractal dimension  
Castello Branco, Portugal, vein system 7–8, 15  
Coscuez emerald deposit, Colombia 4, 184–5, 184

*D*-values *see* power-law distributions  
Dublin Basin 234, 235, 239–40, 240, 278, 290, 309

Eastern Goldfields Province, Yilgarn Block, Australia 123–38, 126, 197–209

faults and faulting  
  Boulder–Lefroy Fault 124, 125–6, 126, 197, 202–3, 207, 208  
  Cauco–Romeral Fault system 167, 168, 171, 180  
  dilatational jogs 105–20, 134, 136, 185, 191, 193, 194  
  episodic slip (stick-slip) 4, 117, 134–6, 135  
  extensional regimes  
    Dublin Basin 239–40, 309  
    Irish Zn–Pb deposits 233–43, 268–9, 279, 283–4, 288–90, 290, 300–1, 313  
    Kambalda 205–6, 207–8, 208  
    Kutai Basin 225, 227–8, 230  
    quartz fibres 23–5, 23, 24, 26, 37  
  Fairy Hill Fault system 241–2, 241  
  hydrothermal breccia 183–94  
  implosion breccias 156, 191, 193  
  Keel Fault system 318  
  Keith–Kilkenny shear zone 125  
  Killoran Fault system 306, 309, 317  
  Lorrha Fault system 242  
  Obispo Fault 168, 171  
  Playa Fault 126  
  Witwatersrand 156–60, 156

fluid flow in basement rocks, Irish Zn–Pb deposits 5, 247–72  
  basement permeability 271–2  
  basement veins 250–5  
    age of formation 268–9  
    classification 250–1  
    mineralogy 252–5, 269  
    relation to basement faults 268–9  
    type 1 veins 251, 252–4, 269  
    types 2 and 3, veins 251, 254–5, 254, 269  
    vein geometry 254, 255

fluid inclusions 250, 257–72, 258, 265, 269–70  
  alkali geothermometry 267–8, 267, 268  
  analytical methods 255–7  
  classification 257  
  crush-leach analysis method 255  
  decrepitation analysis methods 255–7  
  fluid inclusion chemistry 264–7, 265, 266, 270–1, 272  
  fluid inclusion preservation 263  
  microthermometry 250, 255, 262, 263–4, 263, 265, 268

- fluid flow in basement rocks, fluid inclusions  
(*continued*)  
Navan sphalerite data  
type 1 veins 257–61, 261, 262, 262  
type 2 veins 257–63, 261, 262, 263–4, 263, 270  
type 3, veins 261–2, 262, 263–4  
geological setting 248–50  
mineralization 248–50  
regional geology 248, 249  
mineral deposits  
Lisheen 249–50, 255, 268, 269–70  
Navan 249–50, 268, 269–70  
Silvermines 248–50, 255, 259, 261, 263–5, 268, 269  
Tynagh 249–50, 268, 269–70  
ore genesis models 271–2
- fluid flow dynamics, deformational controls in  
mesothermal gold systems 4, 123–38  
Boulder–Lefroy fault system 124, 125–6, 126, 197  
dilatant jogs 134, 136  
episodic deformation and flow 134–7, 135  
influence on mineralization 136–7  
flow localization 130–2, 131, 134, 137  
fluid fluxes 129–30  
fluid migration patterns 130  
mesothermal gold deposit styles 125–9  
network connectivity 130–2, 133  
percolation 125  
networks 132–4  
ore deposition 132–4  
threshold 132, 134, 137  
permeability  
anisotropy 134  
below seismic-aseismic transition 134, 137  
deformational controls 125, 130–1  
regeneration by deformation 130–1
- fluid flow localization 3, 5, 9–10, 69–70, 158  
connected vein network development 9–10, 14–15  
deformational controls 130–2, 134  
dilatational jogs 134  
multifractal descriptions 77–9, 80  
numerical modelling 70–80  
*see also* fluid pathways
- fluid inclusions  
dolomitized limestones, Irish Midlands 307  
epithermal gold deposits, Colombia 176–9, 177, 180  
Irish base metal deposits 250, 250, 257–72, 258,  
261–3, 265–8, 269–70  
quartz veins, Anglesey 21, 22–3
- fluid pathways in and around dilatational jogs 4,  
105–20  
brittle failure 4, 108, 115  
differential stress 106  
fluid migration  
flow patterns associated with jog evolution  
115–17, 116  
flow variations resulting from increased fault  
loading 117–20  
fluid accumulations 112, 114, 115  
fluid flow nets 112–14, 113  
relations to mineralization 112, 114, 120  
response to mean stress gradients 112, 113, 117  
sites of high fluid through-flow 112–14  
stick-slip faulting 117  
under static fault regime 108–15, 110, 115
- photoelastic modelling 105, 106–20  
mean stress distribution 4, 109–14, 111, 113,  
115–17, 120  
methodology 105–8, 107  
second order fractures, orientation and  
distribution 108–9, 108, 110  
superimposed mean stress 114–20, 116, 118, 119
- fluidized hydrothermal breccia in dilatant faults during  
thrusting 183–94  
breccia  
internal structure 187–90, 189, 190, 191  
layering 187–90, 190, 191  
petrography 185–7, 189  
structural setting 185  
textures and microtextures 187
- brecciation process 4, 190–3, 194  
hydrothermal replacement 190–1  
links with thrust and fault dilations 185, 186,  
190–1, 192, 193  
multistage pattern 191–3, 192, 194  
transport by fluidization 190–1, 192
- definition of fluidization 183  
dilatational structures (jogs) 185, 191, 193, 194  
fluid pressures 191–3, 193  
geological background 183–4, 184  
hybrid shear–dilatational failure 191–2, 194  
hydraulic fracturing 191–3  
regional structure 185, 187  
stratigraphy 185, 187  
thrust geometry 185, 191  
thrust propagation 191–3, 192, 194  
*see also* thrust-fracture network evolution
- fractal analysis 7, 14, 61  
box-counting procedures 30, 141, 142, 144–8  
fractal dusts 4, 141, 147, 148, 149, 150–1  
multifractal analysis of flow localization 77–9, 78, 80  
percolation properties of veins 7–15  
quartz vein spacing 27, 30, 31  
roll-off 31, 144–7, 150  
vein systems 3, 36, 40  
*see also* fractal distribution of gold mines; power law  
distributions; vein systematics in line samples
- fractal dimension (*D*) *see* power-law distributions
- fractal distribution of gold mines, Zimbabwe 4, 141–51  
data analysis  
box-counting methods 141–4, 144, 145, 146  
roll-off problems 144–7, 150  
data sets 141–4, 142, 143, 144  
exploration implications 148–50  
fractal relationships 142–7, 150–1  
applications in exploration 148–9  
deviations 147–8  
greenstone belts 148, 148, 150  
previous studies 147
- fracture network modelling, Irish groundwater  
resources 4, 83–103  
flowing fractures 91–7  
hydraulic properties 86, 90–1, 95–7, 97, 102  
identification 91–2  
intensity 84, 92–3, 93, 94, 95, 97, 101  
orientation 84, 94, 94  
size 84, 94–5  
spatial distribution 84, 95, 96  
transmissivity 95, 97, 102

- fracture geometry 84–6, 92–5  
geological and geographical background, Newcastle West 86–9, 88, 89  
resistivity surveys 88  
stratigraphy and lithology 87, 87, 93  
structure 87–9  
hydrogeological conceptual model 89–91, 90, 91  
modelling methodology 83–6, 85, 91, 102  
numerical model 91–103  
calibration 97, 99  
flow simulations 97–102, 98, 100, 101  
yield 99, 102  
optimal borehole location and characteristics 97–103  
site characterization 84  
structural lineaments 88
- fracture networks  
backbone structures 9, 10, 132–4, 133, 137  
connectivity 3, 130, 132, 133  
development model 9–10, 14–15  
dilatational jogs 105–20, 134  
infinite clusters 9 10, 14  
*see also* fracture network modelling; fracture networks and stress localization of flow
- fracture networks and stress localization of flow 2–4, 69–80  
critical differential stress 3–4, 73–7, 77  
fractal analysis 77–9, 78, 80  
hydraulic conductivity  
critical differential stress level 73–5, 78, 79, 80  
localization 76–9, 80  
principal stress orientation 75–7, 76, 77  
response to stress changes 73–5, 74, 76  
mineralization 79–80  
modelling methodology 70–3, 70, 71  
flow rate (conductivity) calculations 72–3  
geometry and connectivity of networks 70–2, 71  
loading schemes 72, 72, 75–6  
material properties 70, 72  
UDEC modelling 70, 80
- Galmoy Zn–Pb deposit 233, 234, 237, 238–9, 289, 303, 306, 317
- gold mineralization  
epithermal 57–66, 167–81  
mesothermal 123–38  
Witwatersrand 153–63  
*see also* mineral deposits
- gravity lineaments and Irish base metal deposits 313–20  
Bouguer anomaly 315–19, 315  
gravity lineaments 315, 316  
magnitude and orientation 317, 318, 319  
horizontal gravity gradients 315, 316  
frequency distribution 316, 317  
gradient correlations with lithofacies 318–19  
gradients at deposit sites 317  
relation to basement horst and graben 319  
spatial correlations with base metal deposits 316–17
- Keel Fault System 316  
Navan mineralization age 314  
regional geology 313–14, 314  
Waulsortian mudbank facies 313, 318–20
- groundwater resources *see* fracture network modelling
- Guanajuato gold deposit 39, 45, 51, 57–66, 58, 59
- Harberton Bridge Zn–Pb deposit 289, 319
- jogs, dilatant 105–20, 134, 136, 185, 187, 191, 193, 194
- Kambalda–Kalgoorlie region, Yilgarn Craton, Western Australia 123–38, 126, 197–209  
Keel Zn–Pb deposit 289, 300, 316  
Killoran Fault system 307, 309, 317  
Krafla Fissure Swarm, Iceland 203–4, 204, 205, 206  
comparisons with Kambalda trough structures 205–7, 207  
Kutai Basin, East Kalimantan *see* structural controls
- La Codosera, Western Spain, mineralised vein system 8–9, 13, 13, 46
- line sampling 7–8, 35–54, 60–1, 64  
multiline sampling 61, 63–4  
stockwork sampling 61, 63, 64–5
- Lisheen Zn–Pb deposit  
age of mineralization 303, 306–9  
fluid flow in basement rocks 249–50, 255, 268, 269–70  
gravity gradients 317  
structural localization 233, 234, 237, 238–9
- Marmato gold deposits *see* adularia-sericite gold deposits
- mineral deposits 4–5, 79–80  
emerald deposits, Colombia 4, 183–94  
gold 4, 13  
Curraghinalt, Northern Ireland 13, 13, 38–9, 51, 53  
Eastern Goldfields Province, Yilgarn Block 125, 128–9, 134  
Elandsrand Gold Mine, Witwatersrand, South Africa 153–63  
Golden Mile, Yilgarn Craton 125, 128, 130  
Guanajuato mining district, Mexico 57–66, 58, 59  
Kalgoorlie–Kambalda area, Yilgarn Block, Australia 123–38  
Kelian, Kutai Basin 214, 216, 220, 221, 229  
La Codosera area, Spain 8–9, 13, 13, 46  
Le Châtelet, Central France 39, 53  
Marmato gold district, Colombia 167–81  
Mount Muro, Kutai Basin 214, 220, 228, 229  
Pine Creek Inlier, Australia 132–3  
Porgera, Papua New Guinea 134  
St Ives goldfield, Yilgarn Craton 125–9, 126, 127, 128  
Zimbabwe craton 141–51  
nickel, Kambalda, Yilgarn Craton 4, 197–209  
tin/wolfram, Caceres district, Spain 13–14, 14  
zinc/lead, Irish Midlands 5 233–43, 247–72, 303–9, 313–20
- mineral fibres *see* quartz fibres
- mineralization age of base metal deposits, Rathdowney Trend 303–9  
diagenetic history of host rocks 306–9  
dolomitized limestones 306–9, 307  
K–Ar dating 303  
Killoran Fault 306, 309

- mineralization age of base metal deposits,  
Rathdowney Trend (*continued*)  
mineral deposits 305  
Galmoy 303, 306  
Lisheen 303, 306–9, 306  
Navan 303–4, 306, 308, 309  
Silvermines 303–5  
Tynagh 303–5  
palaeogeothermal gradients 308–09  
Regional Dolomite 306–09  
regional geology 305  
relation of mineralization to faulting 309  
stratigraphy of mineralization host rocks 303–6, 305  
Waulsortian limestones 303, 306–9
- modelling  
numerical  
groundwater resources 83–103  
hydrogeological simulations 290–9, 293, 295–8  
UDEC code 70, 80  
photoelastic 4, 105–20  
*see also* fracture network modelling
- Mohr stress diagrams 25, 26  
Munster Basin 279, 290, 292, 297, 298–9  
Muzo emerald deposit, Colombia 4, 184–5, 184
- Navan Zn–Pb deposit  
age of mineralization 303–4, 306, 308, 309, 314  
fluid flow in basement rocks 249–50, 268, 269–70  
structural localization 233, 234, 238, 289
- Newcastle West area, geological background 87–9  
Newton Cashel Zn–Pb deposit 316, 317
- nickel ore troughs in volcanic rocks, Kambalda 4,  
197–209  
Boulder–Lefroy Fault 197, 202, 203, 207, 208  
Kambalda Dome 197, 200, 201, 202, 203, 203, 208  
Krafla Fissure Swarm, Iceland 203–4, 204, 205  
comparison with Kambalda Troughs 205–7, 207,  
208  
graben and tension fractures 203, 204, 205, 206,  
207, 208  
Lunnon Basalt–Kambalda Komatiite contact 199,  
203, 205  
Lunnon Trough 202, 203, 203  
ore troughs (Kambalda Troughs)  
comparison with Krafla graben structures 205–7,  
207, 208  
deformation events 199, 205, 207–8  
flow channels 202  
graben structures 207, 209  
linear geometry 198, 199, 200, 203, 207–8  
localized fissure eruptions 201  
post-ore deformation models 202–3  
pre-existing volcanic topography (kipukas) 201,  
202  
syn-volcanic extensional model 205–6, 207–8,  
208  
thermal erosion 201–2, 202  
previous work 197–202  
regional structure 197–8, 199  
stratigraphy 197, 198
- Northern Volcanic Zone, Iceland 198, 203–4, 204,  
205
- Obispo Fault 168, 171
- percolation properties of veins and fractal analysis 3,  
7–15  
infinite clusters 9, 10, 14  
vein thickness distributions  
damage zones of faults 10–13, 12, 13  
fracture network development 9–10  
ore grades 13–14  
rock alteration 15
- permeability, deformational controls 2–3, 69–70,  
130–1, 134–6
- photoelastic modelling 4, 105–20
- power-law (fractal) distributions ( $D$ ) 4, 7, 9, 10, 30–1,  
62, 64–6  
flow localization 77–9, 78, 80  
gold mines in Zimbabwe 4, 141–51  
Kolmogorov model 43, 48–9, 50  
variations in vertical flow rates 77–9, 78, 80  
vein sizes 3, 7–15, 40, 42–7, 57  
vein spacing 3, 42–4, 47–8, 50  
vein thickness 3, 7–15, 40, 42, 45–7, 48, 50–4, 62–6
- quartz fibres 20–3, 20, 21, 23, 29, 31, 36  
orientation of extension direction 23–5, 23, 24,  
26, 37
- quartz vein populations, Anglesey 17–31  
deposition conditions 22–3, 31  
fractal spacing 27, 30, 31  
geological setting 17–20, 18  
geometry and orientation 17–20, 19, 20, 31  
length–width relationships 27–30, 28, 29, 31  
population systematics 26–7  
quartz fibres *see* quartz fibres  
vein development and orientation 20, 24–6, 24, 25,  
31  
vein mineralogy 20–3, 21  
vein spacing 30–1
- Rathdowney Trend, Ireland 238, 239, 303–9  
Rickardstown Zn–Pb deposit 314, 317
- seismic-aseismic transition 134–5
- Silvermines Zn–Pb deposit  
age of mineralization 303–5  
fluid flow in basement rocks 248–50, 255, 259, 261,  
263–5, 268, 269  
gravity gradients 317  
structural localization 233, 234, 237, 238–9, 240–1,  
289–90
- statistical analysis of vein distribution  
coefficient of variation 35, 42–3, 42, 48, 50  
cumulative vein density 64, 64  
cumulative vein spacing 42, 47–8  
cumulative vein thickness 7–9, 8, 11, 42, 45–7, 62–4,  
65  
mass function ( $M(r)$ ) 35, 43, 44, 48–9, 51  
staircase plots 41–2, 44–5  
strain function 43–4, 49, 51, 54
- stockworks  
Guanajuato district 58–9  
sampling 61, 63, 64–5
- structural controls on hydrocarbon and mineral  
deposits, Kutai Basin 213–30  
basement structure 4, 216–20, 230  
cleavage 219–20

- fracture patterns (lineaments) 216–20, 218, 219  
 joint data 218, 220  
 multiple deformation episodes 219–20  
 shear zones 219–20
- gold deposits 213, 214, 216, 220, 221, 228, 229, 230
- gravity interpretation (Bouguer maps) 220–3, 221  
 Belayan Axis 221, 227  
 Kedang Kepala High 221  
 Kedang–Kepala Axis (Bengelon lineament) 221, 223, 227, 228  
 Kutai Lakes Gravity High 220–1  
 Helmut–Khombeng horst block 227, 229
- lithostratigraphy 215, 216
- magnetic anomalies 223
- SAR (synthetic aperture radar) 216–20, 217  
 structural interpretation 216–18, 218, 222, 223–5
- Tertiary geology of basin 213–30  
 evolution 226, 227–30  
 extensional faulting 213, 216, 225, 227–8, 230  
 genesis of mineral and hydrocarbon deposits 4, 227–30  
 geoseismic profiles 223, 224, 225–7, 228  
 Gongnyay and Gergaji Anticlines 222, 223–4, 225, 228  
 graben structures 227–9  
 integration of data sets 225–7  
 inversion of extensional system 229–30  
 rifting 216, 218, 229  
 volcanic episodes 216, 218–19, 220, 229  
 Wahau Anticline 222, 223–4, 227, 228  
*see also* basin evolution; structural localization
- structural localization of syndiagenetic Zn–Pb deposits, Irish Midlands 5, 233–43
- Carboniferous stratigraphy and structure 233–6, 235  
 Arundian Stage 233, 234–6  
 Chadian stage 233, 234  
 Courceyan stage 233, 234  
 Hercynian orogeny 233, 236, 236, 239  
 Holkerian–Brigantian stages 236
- Crinkill prospect 241–2, 241
- Dublin Basin 234, 235, 239–40, 240
- Fairy Hill Fault system 241–2, 241
- Fairy Hill Inlier 240–2, 241
- geochronometric scale 234  
 implications for exploration 242–3
- Lorrha Fault system 242
- mineral deposits 233, 234, 237, 238–9, 240–1, 242
- mineral exploration 242–3  
 palaeogeography 235, 236
- Rathdowney Trend 238, 239
- Shannon Trough 234
- structural control of Zn–Pb deposits 236–9  
 fault geometry 238  
 fault patterns 238–9, 238
- Variscan deformation 236, 236, 239–43, 240
- Waulsortian Limestone 234, 239  
*see also* basin evolution; structural controls
- thrust-fracture network evolution and gold mineralization, Witwatersrand 4, 153–63  
 fault rocks 156–60, 156
- fracture geometries 159–61  
 imbrication 156, 160, 161–3  
 implosion breccias 156  
 layer-parallel shearing 159, 163  
 shallow fractures, early 159  
 shallow fractures, late 161  
 steep fractures 159–61
- geological setting 153–6, 154  
 pseudotachylites 158  
 structural siting of gold 158–9
- thrust architecture and structural styles 154, 155, 156  
 thrust fracture system evolution 160, 161–3
- Ventersdorp Contact Reef 153, 154  
 contact with lavas (palaeotopography) 156, 159, 159, 161, 162  
 fracture patterns 155, 158, 160–1, 161, 162, 163  
 mineralization 156, 158–9, 159–61, 160, 161, 162, 163  
*see also* fluidized hydrothermal breccia
- Tynagh Zn–Pb deposit  
 age of mineralization 305–7  
 fluid flow in basement rocks 249–50, 268, 269–70  
 structural localization 233, 234, 237, 238–9, 289
- vein size, scaling systematics, Guanajuato mining district 57–66  
 data collection and processing 59–62  
 fault patterns 58–9, 60, 61  
 geological background 57–9  
 line sampling strategies 60–5, 62  
 stratigraphy 57–8, 59  
 structural controls on mineralization 58–9, 61  
 vein thickness distribution 62–6, 63
- vein systematics in line samples, influence of layering 35–54  
 analytical techniques 41–4  
 extrapolation from line samples 52, 54  
 fractal properties 36, 40, 42–3  
 ore mineralization 53  
 sample localities and geological settings 36–9, 38  
 sampling technique 39  
 stress distribution 52–3, 54  
 synthetic data sets 36, 39–41, 40, 54  
 vein data 36–9, 44–50
- vein systems (arrays; populations) 7, 36  
 carbonate, South Head, Wick 12–13  
 clusters 9, 10, 14, 30–1, 35, 42–3, 53–4, 66  
 in damage zones of faults 10–13, 12, 13  
 fractal properties 3, 36, 40  
 mineralized  
 Caceres district, Spain 13–14, 14  
 Curraghinalt, Northern Ireland 13, 13, 38–9, 51, 53  
 Guanajuato, Mexico 39, 45, 51, 57–66  
 La Codosera, Spain 8–9, 13, 46  
 Le Châtelet, Central France 39, 49, 51, 53  
 Mace Head, Ireland 38
- quartz  
 Anglesey 17–31  
 Burren, Ireland 38, 47, 50  
 Castello Branco, Portugal 7–8, 15  
 Kilve, Somerset 11, 11  
 Millook Haven/Crackington Haven, North Cornwall 12, 36–7, 45, 48, 53  
 Ogmores, South Wales 38

- vein systems (arrays; populations), quartz (*continued*)  
 Three Cliffs Bay, South Wales 38  
 Westward Ho!, North Devon 38, 45, 48, 49
- thickness distributions 7–15, 8, 10, 35, 50–2, 62–6  
 fractal dimension (power-law scaling exponent)  
 3, 7–15, 8, 15, 35, 50–2, 62–6  
 fracture networks 9–13  
 mineralized veins 13–14, 15  
 statistical analysis 41–2, 45–7
- vein spacing 30–1, 35  
 analytical techniques 42, 47–8  
 power-law (fractal) distribution 3, 30–1, 42–4, 47–8  
 stratabound and non-stratabound 3, 36, 45, 46,  
 47–9, 49, 51–3, 52
- Waulsortian Limestones and equivalents 277–8,  
 303  
 dolomitization 306–7, 308, 309  
 groundwater resources 87  
 mineralization host rocks in Shannon and Dublin  
 Basins 234, 239, 303, 313  
 sedimentation influenced by tectonics 318–20
- Witwatersrand 153–63
- Yilgarn Block (Craton), Australia 124–30, 124, 126,  
 134–6, 197–209