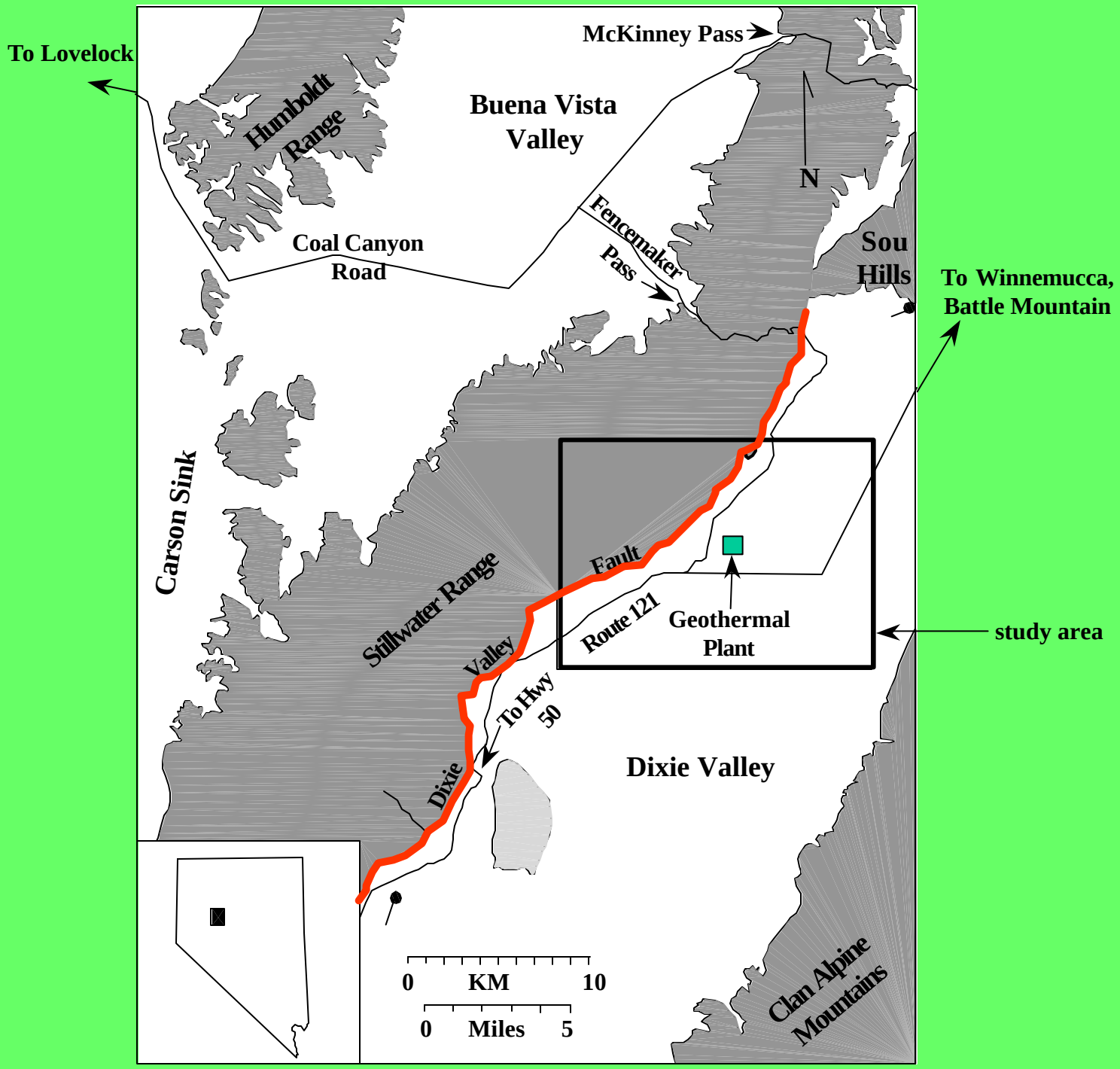
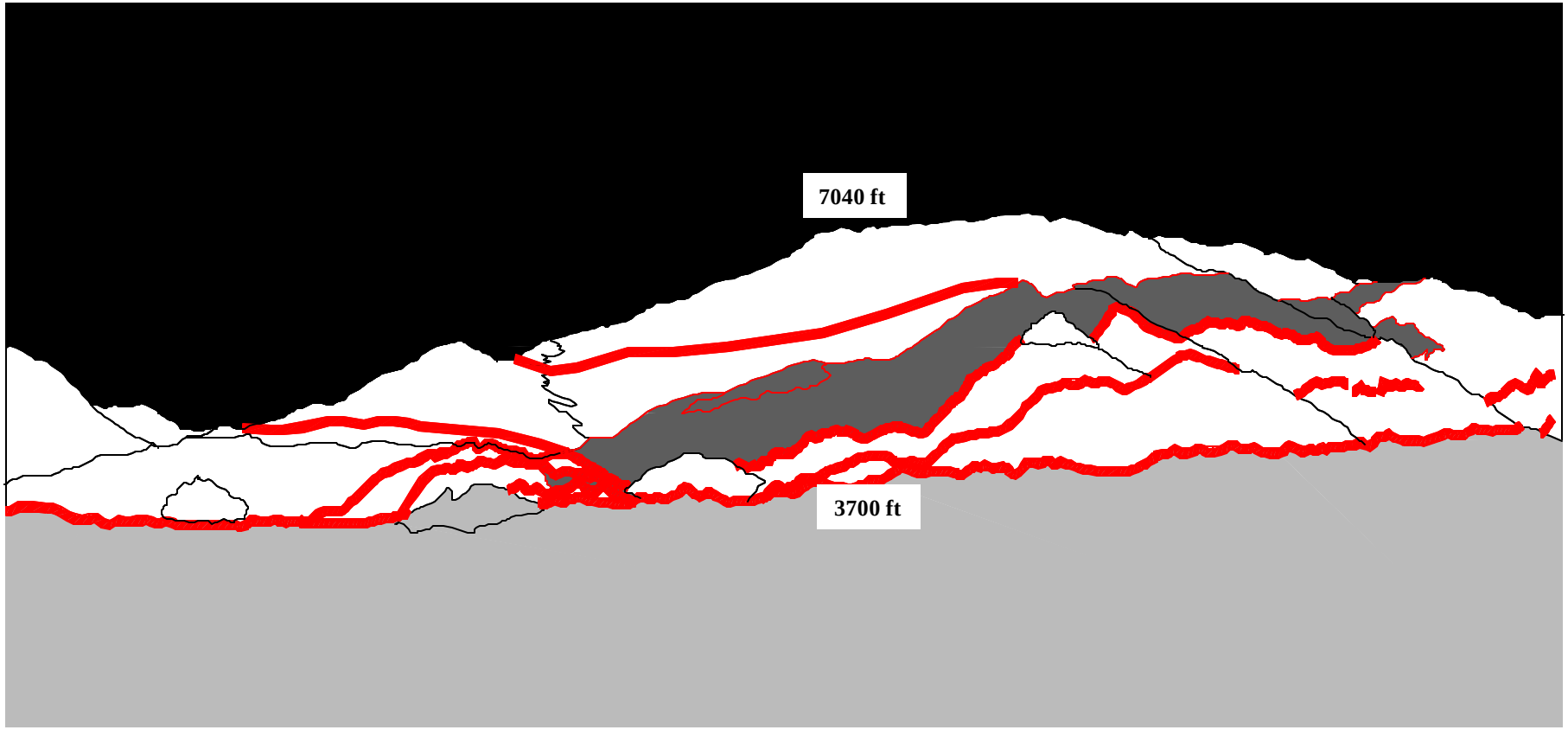
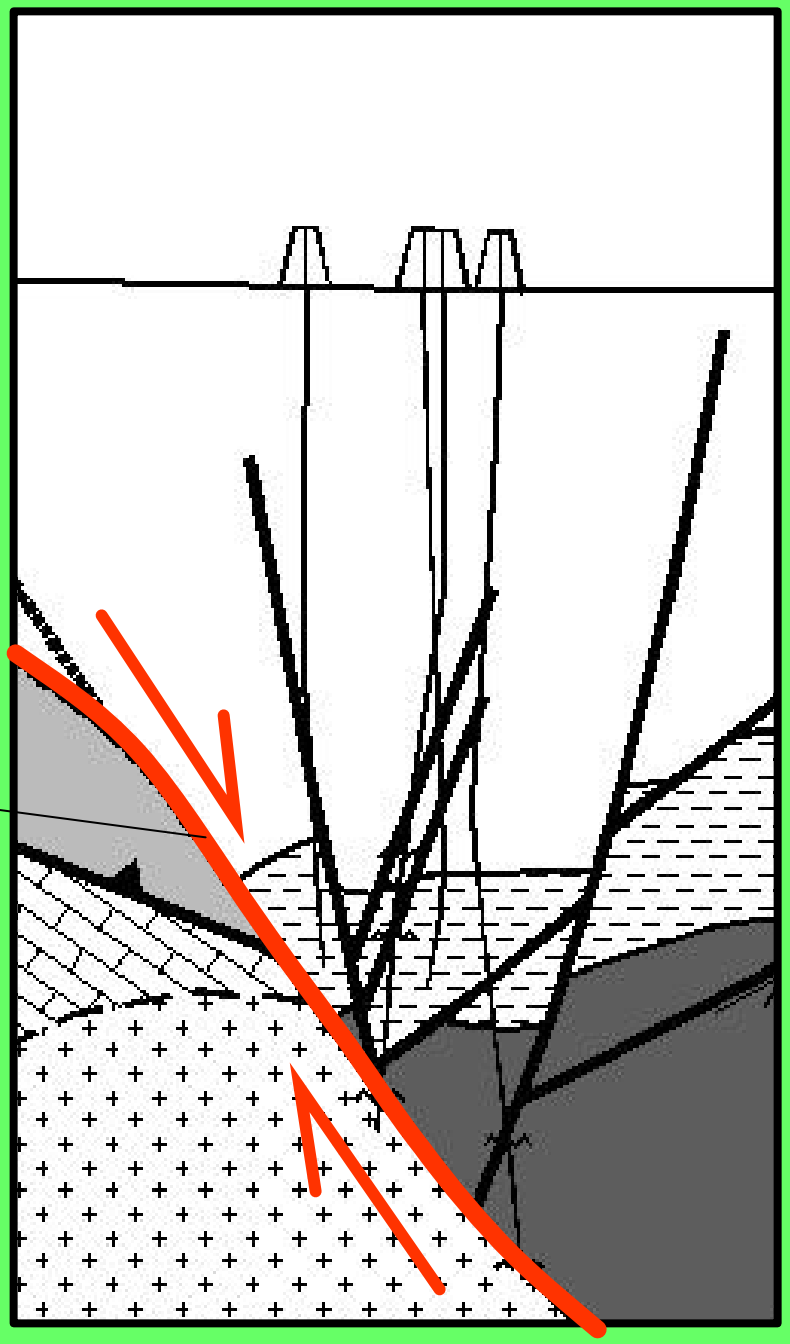
Back to Agenda


To Lovelock
McKinney Pass
Humboldt Range
Buena Vista Valley
N
Fencemaker Pass
Coal Canyon Road
Sou Hills
To Winnemucca, Battle Mountain
Carson Sink
Stillwater Range
Fault
Route 121
Geothermal Plant
study area
Valley
To Hwy 50
Dixie
Dixie Valley
0 KM 10
0 Miles 5
Clan Alpine Mountains



STILLWATER RANGE STRUCTURE

Stillwater Range = upthrown block

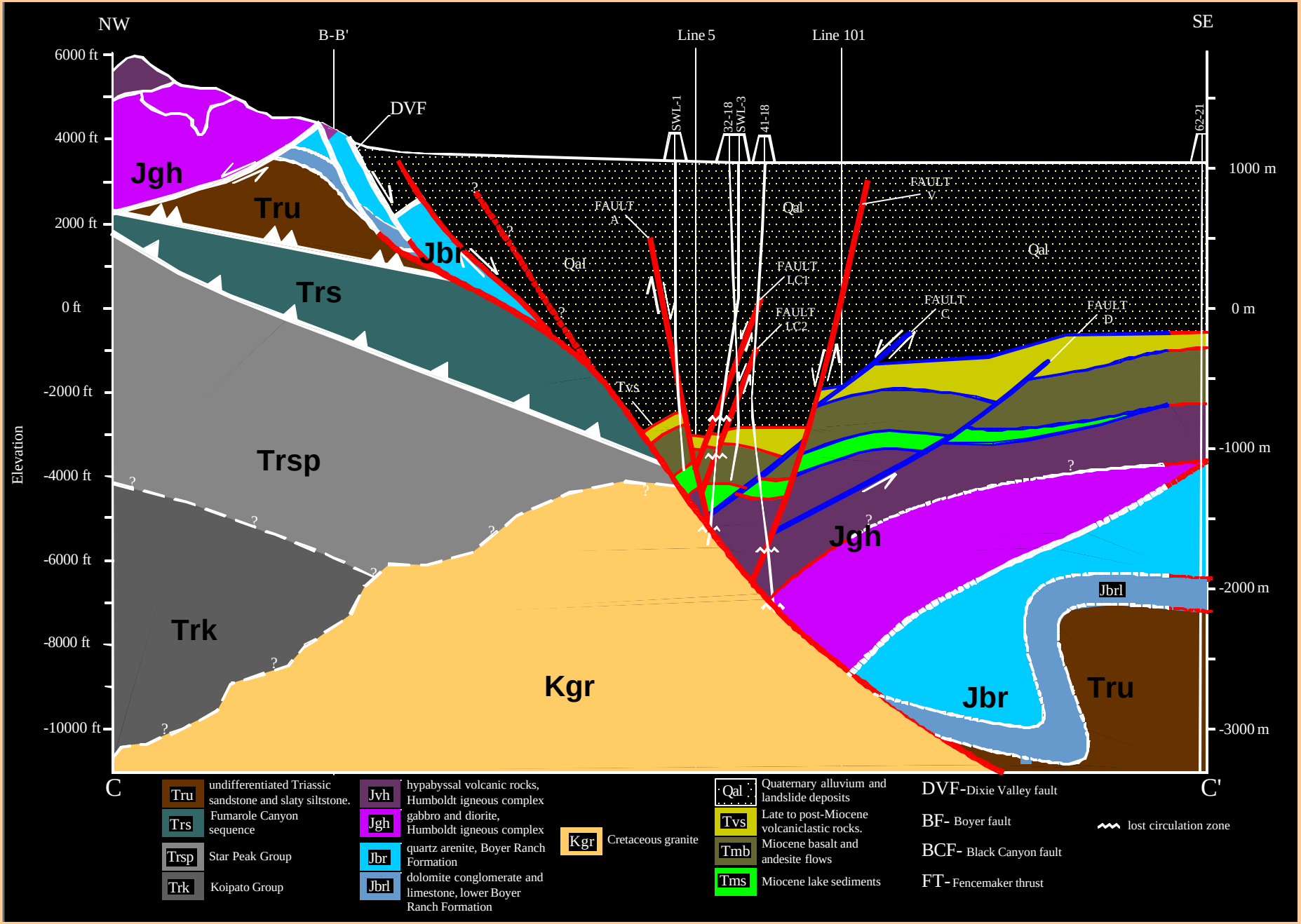


Reservoir = downthrown block

- TECTONIC STRUCTURE
- FOUR SETS OF FAULTS
- MESOZOIC TO PRESENT

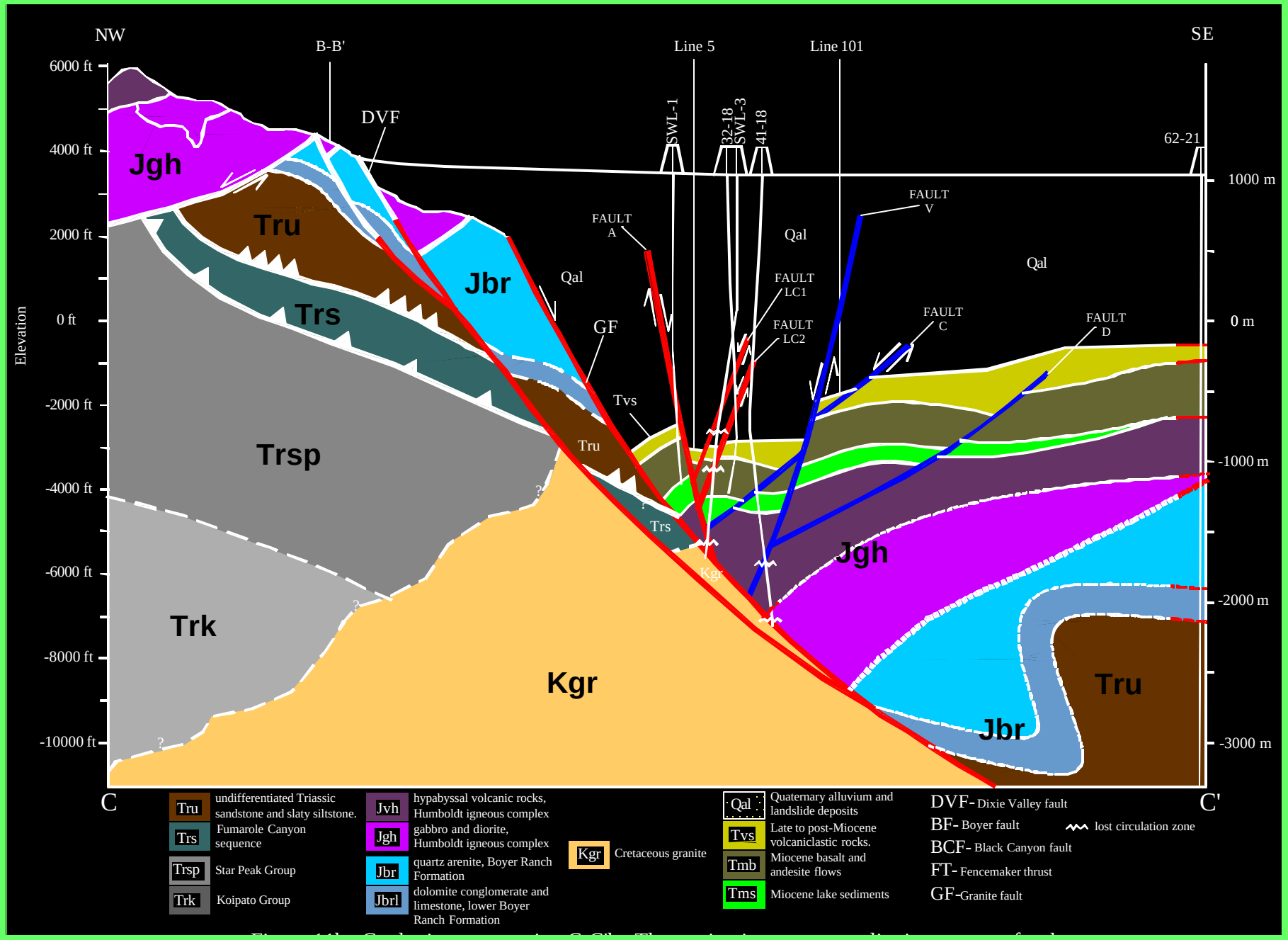
SIMILAR SUBSURFACE STRUCTURE

- Borehole logs
- Surface relationships


NW
SE
B-B'
Line 5
Line 101
6000 ft
4000 ft
2000 ft
0 ft
-2000 ft
-4000 ft
-6000 ft
-8000 ft
-10000 ft
Elevation
1000 m
0 m
-1000 m
-2000 m
-3000 m
DVF
SWL-1
32-18
SWL-3
41-18
62-21
Jgh
Tru
Jbr
Trs
Trsp
Trk
Kgr
Qal
Tvs
Jbrl
FAULT A
FAULT V
FAULT LC1
FAULT LC2
FAULT C
FAULT P
C
C'
Tru undifferentiated Triassic sandstone and slaty siltstone.
Trs Fumarole Canyon sequence
Trsp Star Peak Group
Trk Koipato Group
Jvh hypabyssal volcanic rocks, Humboldt igneous complex
Jgh gabbro and diorite, Humboldt igneous complex
Jbr quartz arenite, Boyer Ranch Formation
Jbrl dolomite conglomerate and limestone, lower Boyer Ranch Formation
Kgr Cretaceous granite
Qal Quaternary alluvium and landslide deposits
Tvs Late to post-Miocene volcaniclastic rocks.
Tmb Miocene basalt and andesite flows
Tms Miocene lake sediments
DVF-Dixie Valley fault
BF- Boyer fault
BCF- Black Canyon fault
FT- Fencemaker thrust
lost circulation zone

CONSTRAINTS ON GEOMETRY OF THE DIXIE VALLEY FAULT

- Inactive splays exposed at the surface
- Shallow basement block from seismic model
- Measured surface dip
- Dip in boreholes


NW
SE
B-B'
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SWL-1
32-18
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4000 ft
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FAULT A
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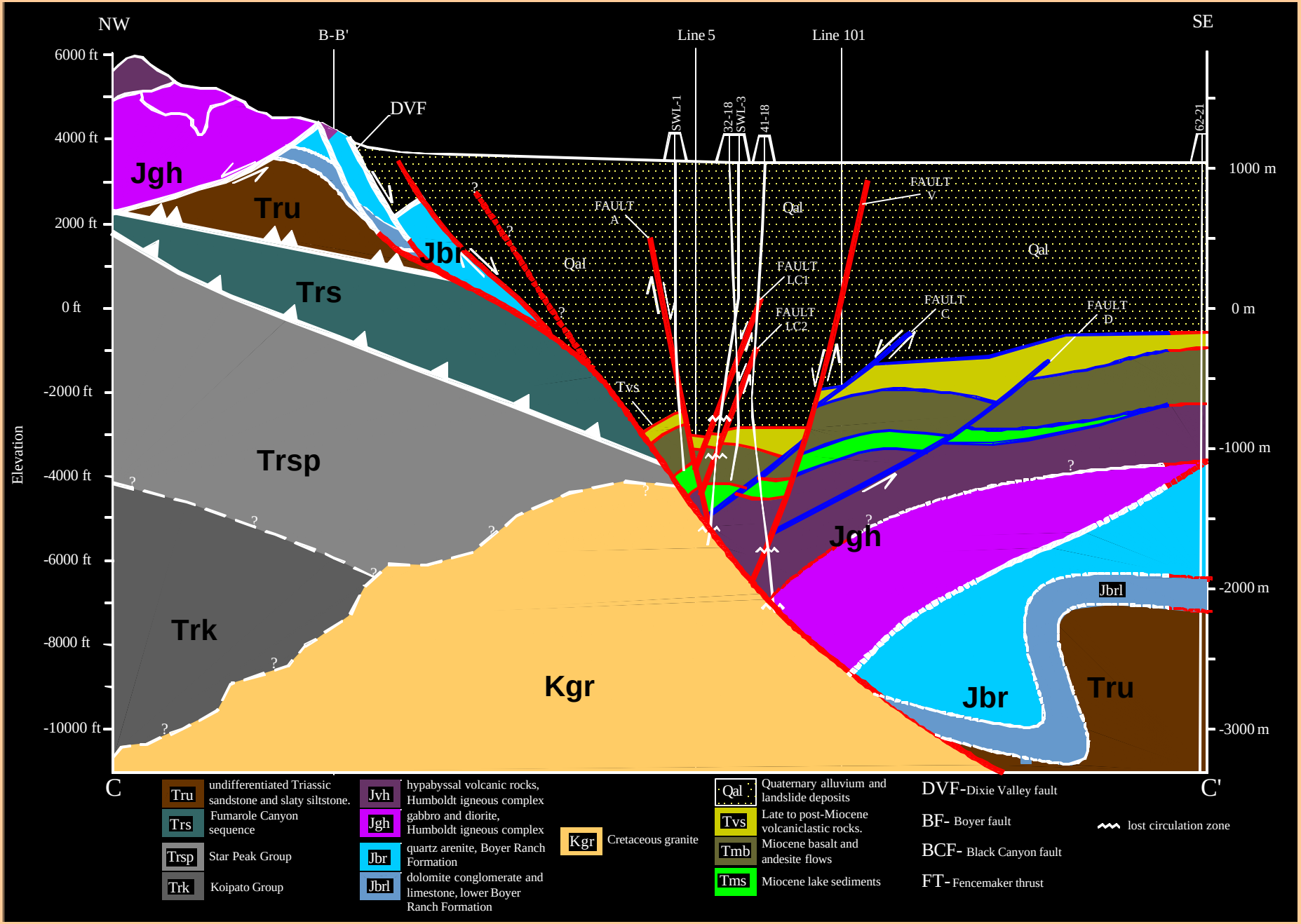
FAULT LC1
FAULT LC2
FAULT C
FAULT D
GF
C
C'
undifferentiated Triassic sandstone and slaty siltstone.
Fumarole Canyon sequence
Star Peak Group
Koipato Group
hypabyssal volcanic rocks, Humboldt igneous complex
gabbro and diorite, Humboldt igneous complex
quartz arenite, Boyer Ranch Formation
dolomite conglomerate and limestone, lower Boyer Ranch Formation
Cretaceous granite
Quaternary alluvium and landslide deposits
Late to post-Miocene volcaniclastic rocks.
Miocene basalt and andesite flows
Miocene lake sediments
DVF- Dixie Valley fault
BF- Boyer fault
BCF- Black Canyon fault
FT- Fencemaker thrust
GF-Granite fault
lost circulation zone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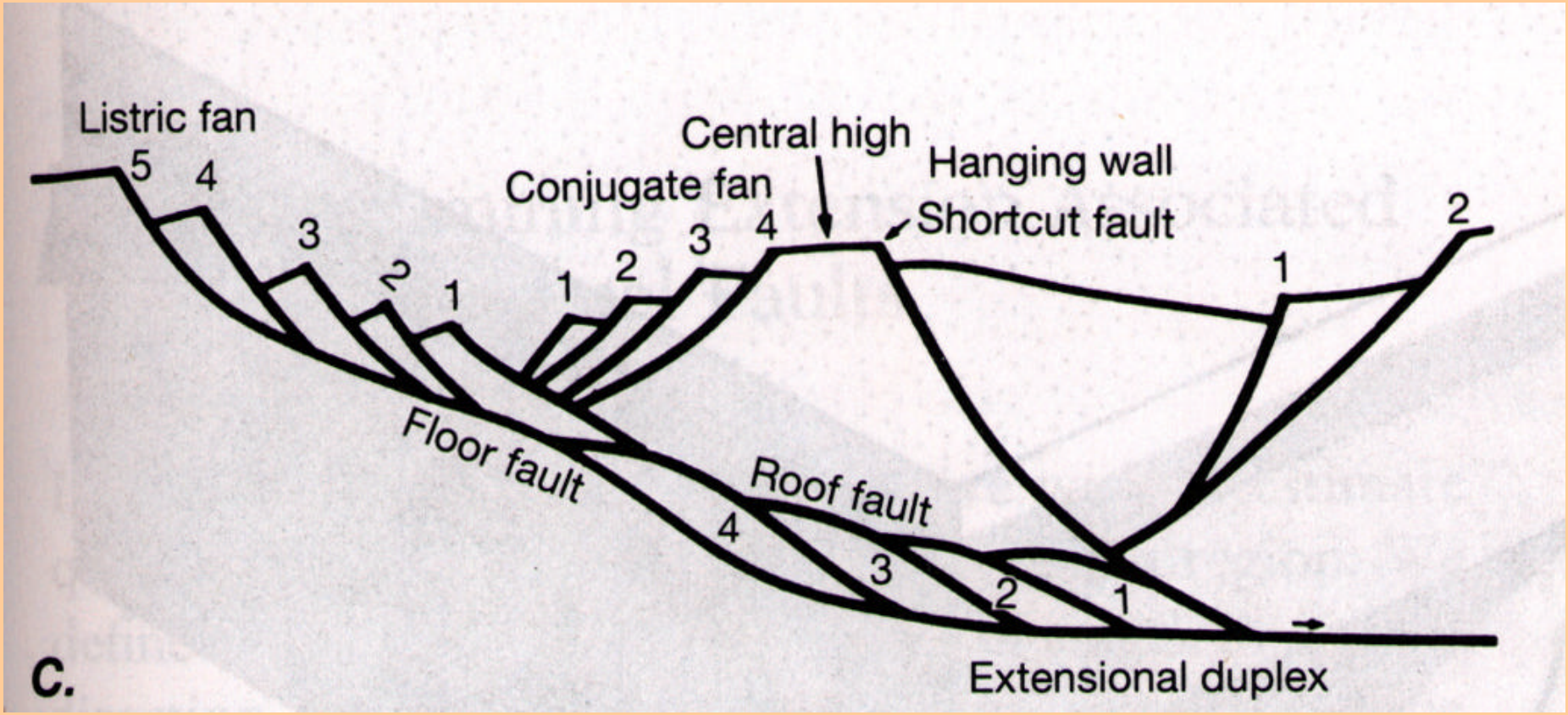
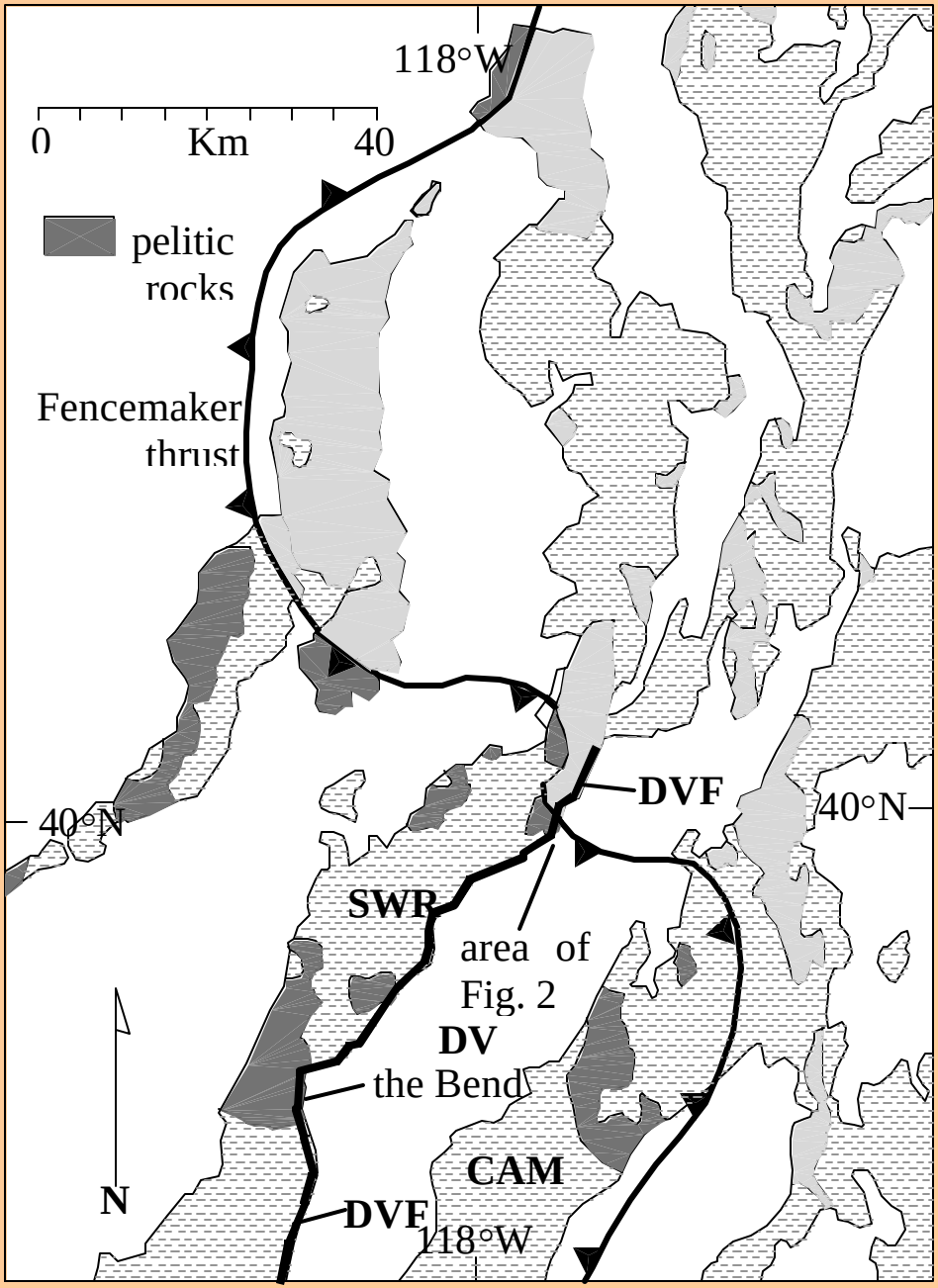
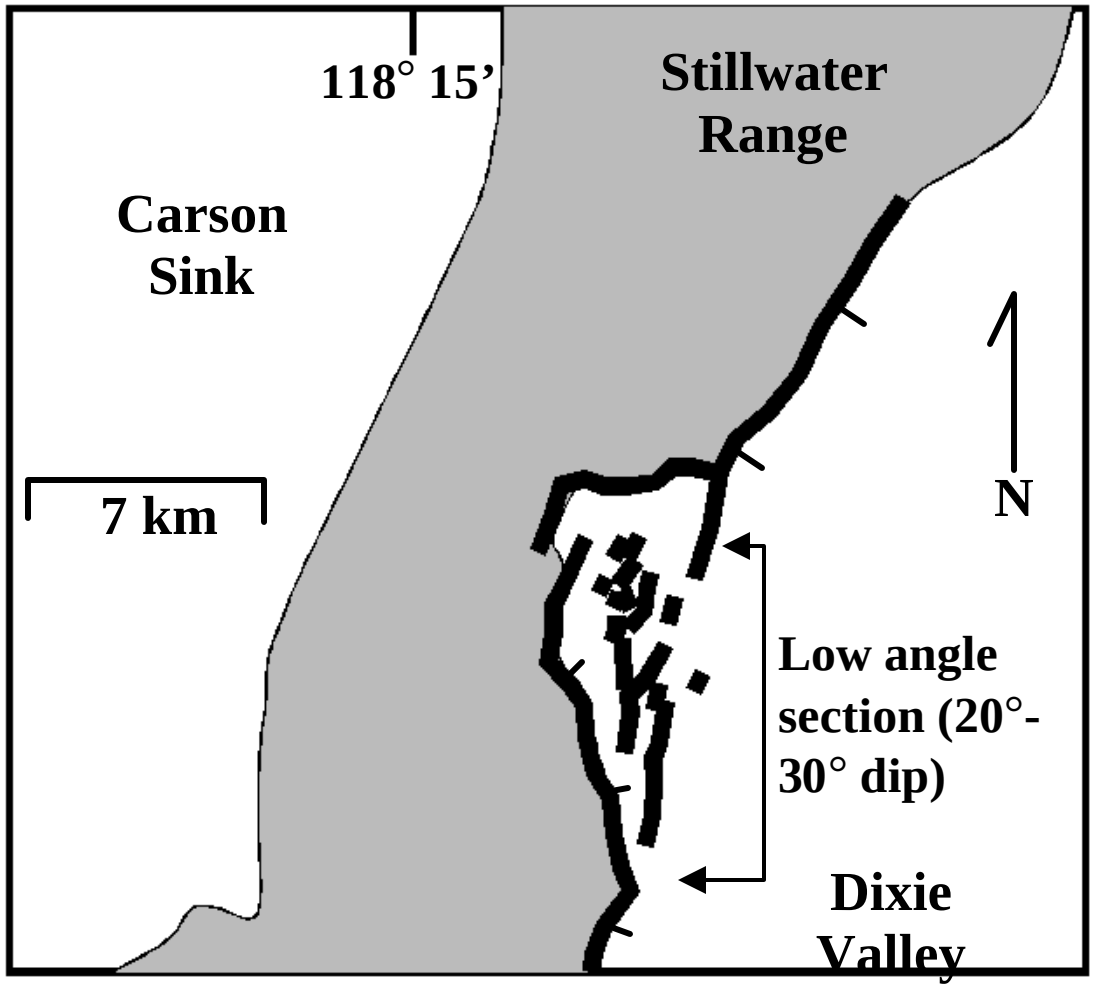
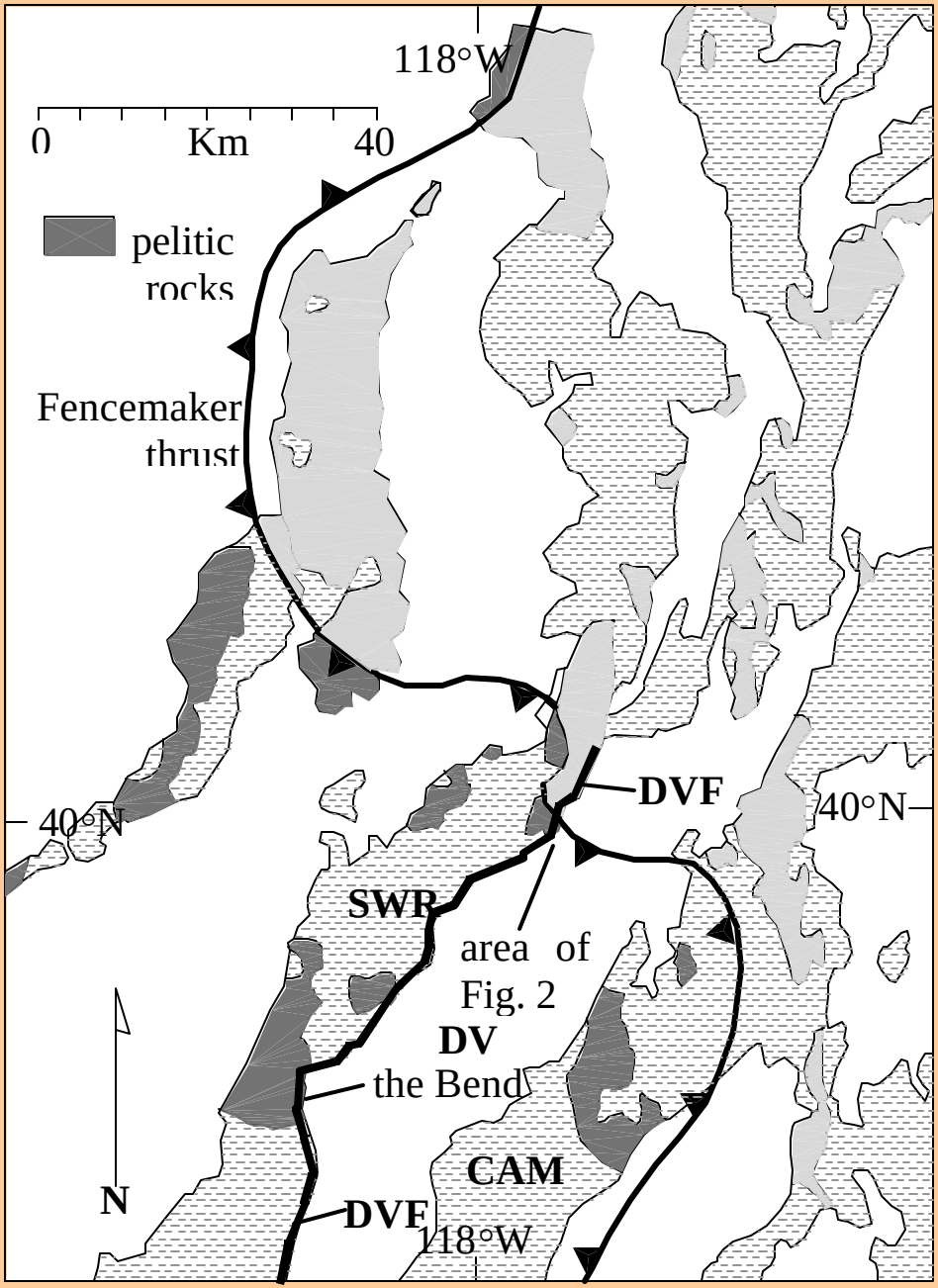

Listric fan
5
4
3
2
1
Conjugate fan
1
2
3
4
Central high
Hanging wall
Shortcut fault
1
2
Floor fault
Roof fault
4
3
2
1
C.
Extensional duplex


118°W
0
Km
40
pelitic
rocks
Fencemaker
thrust
DVF
40°N
40°N
SWB
area of
Fig. 2
DV
the Bend
CAM
N
DVF
118°W


118° 15’
Stillwater Range
Carson Sink
7 km
N
Low angle section (20°-30° dip)
Dixie Valley


118°W
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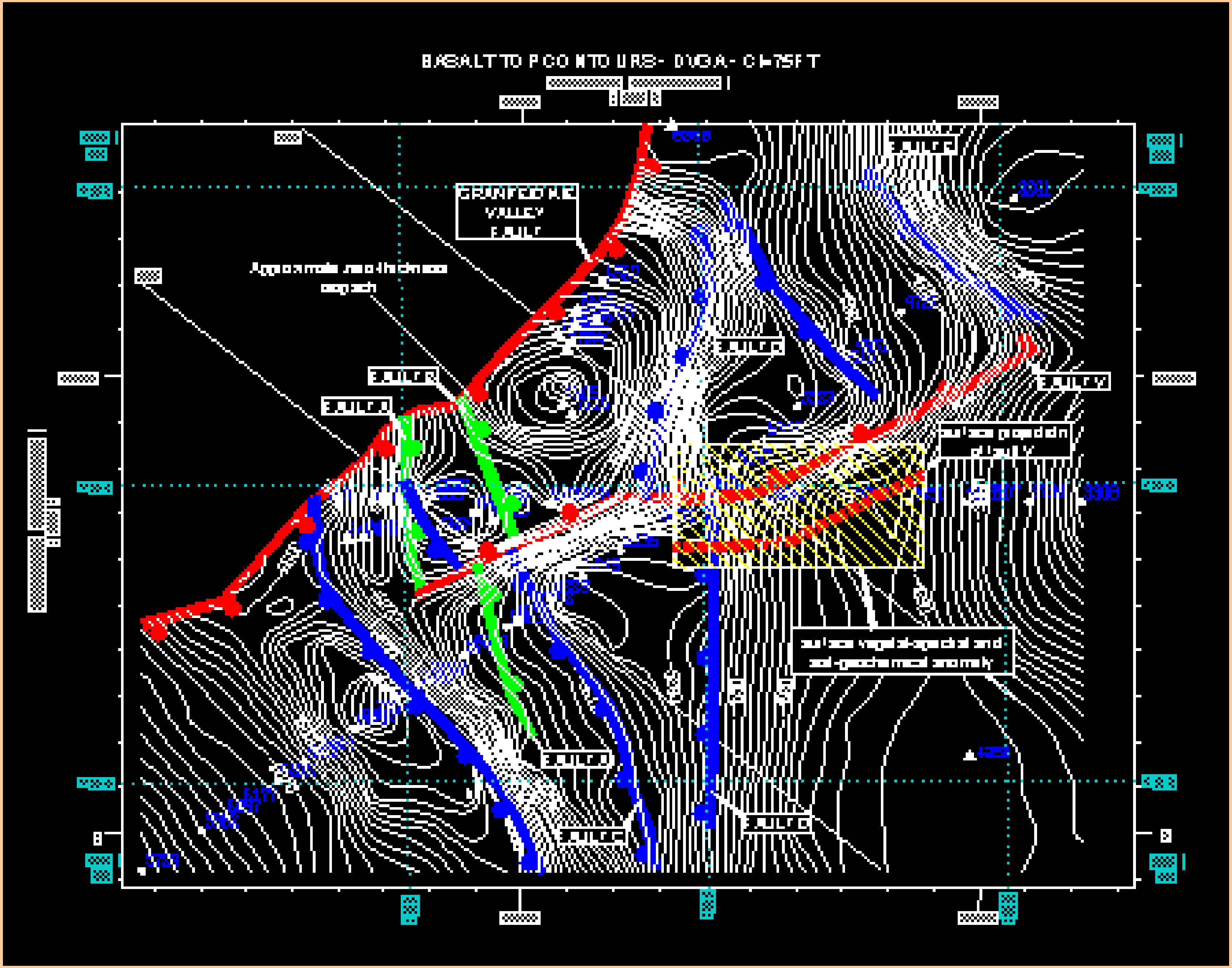
Km
40
pelitic
rocks
Fencemaker
thrust
DVF
40°N
40°N
SWB
area of
Fig. 2
DV
the Bend
CAM
N
DVF
118°W

SUMMARY

- **Tectonic Stratigraphy is Similar in Footwall and Hanging wall. This is nothing new.**
- **Shape of the master rangefront is most likely ramp-flat. This is based on structural observations.**
- **Fault sets in the Rangefront appear to be present in the subsurface**


BASALT TOP CONTOURS
VALLEY

CONCLUSIONS

- **Fault geometry may influence fracture orientation, and therefore may influence which fractures are open.**
- **The question of fault geometry is important to future studies**
- **Dave Blackwell is somewhat suspicious of seismic images**