

**Photos made south-west of assumed Impact Structure ( Pilbara Area 2 ) - from Mr Carl Brauhart ( Geologist )**  
 ( --> by clicing on the GPS data the Google Earth website with the photo description is coming up ! )

Photo No.	Titel	GPS datas	Description
01A	Panorama Unconformity	<a href="#">21° 5' 56.02" S 119° 11' 5.72" E</a>	Oldest emergent landsurface recognised anywhere on earth: Coonterunah Group unconformably overlain by 3.46 Ga Warrawoona Group.
02A	Pillow Basalt	<a href="#">21° 6' 13.07" S 119° 11' 28.78" E</a>	Pillow basalt in the Euro Basalt. Minor fault at north-western of outcrop with dextral movement indicators
03A	Regional Fault	<a href="#">21° 6' 34.82" S 119° 11' 39.54" E</a>	Basin bounding fault between Soansville Group turbidite sediments (left) and Lalla Rookh Sandstone (fluvial sandstone and conglomerate) right - facing N
04A	Sulphate Encrustations	<a href="#">21° 8' 55.52" S 119° 12' 17.85" E</a>	Sulphate encrustation in Sulphur Springs Creek downstream from the Sulphur Springs Gossan
05A	Olistostome Breccia	<a href="#">21° 8' 57.78" S 119° 12' 19.20" E</a>	Debris Flow: part of the submarine mass flow that overlies the Sulphur Springs Cu-Zn deposit. Blocks several metres across exposed in hillside to north.
06A	Marker Chert	<a href="#">21° 8' 59.17" S 119° 12' 19.26" E</a>	Marker Chert comprising silicified volcanoclastic and turbiditic sediment and bedding parallel silica veins ("chert veins"). Overlies Sulphur Springs Cu-Zn deposit
07A	Gossan Breccia	<a href="#">21° 9' 3.02" S 119° 12' 15.57" E</a>	Siliceous gossan fragments in a matrix of ferruginous gossan: primary ore texture or weathering phenomenon?: Sulphur Springs Gossan.
08A	Siliceous Gossan	<a href="#">21° 9' 2.82" S 119° 12' 13.94" E</a>	Siliceous gossan: Sulphur Springs Gossan
09A	Ferruginous Gossan	<a href="#">21° 9' 2.88" S 119° 12' 11.44" E</a>	View to north over the Sulphur Springs Gossan and close-up of ferruginous gossan: Sulphur Springs Gossan
10A	Footwall Dacite	<a href="#">21° 9' 2.88" S 119° 12' 11.44" E</a>	Chlorite-quartz altered footwall dacite stratigraphically below the Sulphur Springs Cu-Zn deposit: Member of the Kangaroo Caves Formation.
11A	Basalt low-temp	<a href="#">21° 9' 17.54" S 119° 12' 24.07" E</a>	Feldspar-sericite-quartz altered pillow basalt from Kangaroo Caves Formation and hyaloclastite breccia. Breccia = basalt blobs in matrix of glass fragments and formed from submarine lava fountain
12A	Basalt mod-temp	<a href="#">21° 9' 31.36" S 119° 12' 16.82" E</a>	Basalt from Kangaroo Caves Formation with moderate temperature "background" alteration which is a chlorite-albite-Kfeldspar-carbonate assemblage - typical submarine alteration
13A	Basalt high-temp	<a href="#">21° 9' 31.36" S 119° 12' 16.82" E</a>	Basalt from Kangaroo Caves Formation with high temperature chlorite-quartz alteration where all feldspar has been destroyed and most base metals have been leached
14A	Epidosite	<a href="#">21° 9' 57.50" S 119° 12' 3.62" E</a>	Microdiorite near the base of the Kangaroo Caves Formation with epidote spots. Also known as epidosite, this high temperature alteration is associated with base metal leaching
15A	Alteration spots in Andesite	<a href="#">21° 9' 58.42" S 119° 12' 10.26" E</a>	Andesite near the base of the Kangaroo Caves Formation with chlorite-carbonate-hematite spots: hydrated and carbonated epidote spots
16A	Granophyric Granite	<a href="#">21° 10' 4.51" S 119° 11' 57.04" E</a>	Granophyric granite in the carapace of the Strelley Granite. This quench texture indicates fluid saturation during crystallisation
17A	Miarolitic Cavities	<a href="#">21° 10' 5.15" S 119° 11' 55.69" E</a>	Miarolitic cavities in upper carapace of the Strelley Granite. This texture indicates fluid saturation during crystallisation
18A	Chlorite altered granite	<a href="#">21° 10' 42.34" S 119° 12' 17.87" E</a>	Chlorite-quartz altered granophyric granite at the top of a feldspar-destructive alteration zone in the carapace of the Strelley Granite
19A	Sericite altered granite	<a href="#">21° 10' 44.84" S 119° 12' 13.75" E</a>	Sericite-quartz altered granophyric granite in the lower parts of a feldspar-destructive alteration zone in the carapace of the Strelley Granite
20A	Granite Andesite Contact	<a href="#">21° 11' 30.31" S 119° 12' 43.82" E</a>	Intrusive contact between the Strelley Granite and andesite of the Kangaroo Caves Formation.
21A	Cu-Zn-Sn vein	<a href="#">21° 11' 39.72" S 119° 12' 40.42" E</a>	Granite-hosted Cu-Zn-Sn-Ag-Bi bearing vein-style mineralisation. Hosted by the outer phase of the Strelley Granite, these veins lie in structures that can be traced down into the inner phase granite
22A	Altered equigranular granite	<a href="#">21° 11' 35.51" S 119° 12' 14.50" E</a>	Background (chlorite - alkali feldspar - sericite) altered outer phase Strelley Granite. Medium grained equigranular granite below the granophyric carapace
23A	Greisen Hill	<a href="#">21° 11' 58.68" S 119° 11' 47.50" E</a>	Quartz-topaz-muscovite (greisen) alteration along a linear structure in the outer phase of the Strelley Granite
24A	Inner-outer-granite contact	<a href="#">21° 12' 5.31" S 119° 11' 40.03" E</a>	Contact between the inner porphyritic phase (bottom of photo) and outer equigranular phase of the Strelley Granite. Minor pegmatite along contact
25A	Molybdenite Greisen	<a href="#">21° 12' 5.31" S 119° 11' 40.03" E</a>	Molybdenite-bearing greisen on linear fault zone in the inner phase of the Strelley Granite
26A	Felsic magma mingling	<a href="#">21° 13' 3.62" S 119° 9' 58.24" E</a>	Lobate contacts between aplitic granite and inner phase of the Strelley Granite which indicate magma mingling

<b>27A</b>	Magma mingling zone	<a href="#">21° 13' 5.54" S 119° 9' 25.12" E</a>	Magma mingling between granitic and doleritic magmas. See intermediate hybrid rock 100 m west of waypoint. Resorbed quartz phenocrysts mantled by hornblende. Alternative outcrop 722840E 7649730N
<b>28A</b>	Hanging-wall rhyodacite	<a href="#">21° 12' 21.18" S 119° 14' 26.23" E</a>	Calc-alkaline rhyodacite dome in the hangingwall to the Kangaroo Caves Cu-Zn deposit. Trace element geochemistry unlike rest of Kangaroo Caves Formation. Cut by low temperature black silica veins
<b>29A</b>	Neptunian Dykes	<a href="#">21° 12' 14.43" S 119° 14' 15.79" E</a>	Upper surface of Marker Chert where cracks have been filled with overlying sandy sediment. Indicates hiatus between Marker Chert and overlying sedimentation
<b>30A</b>	Dacite	<a href="#">21° 12' 17.57" S 119° 14' 6.39" E</a>	Amygdaloidal dacite of the Kangaroo Caves Formation. Dacite lobes (30A) have glassy margins (30B). View downstream shows footwall dacite, Marker Chert, hanging wall rhyodacite, and turbidite
<b>31A</b>	Kangaroo Caves Gossan	<a href="#">21° 12' 26.50" S 119° 14' 18.14" E</a>	Ferruginous gossan which has a small aerial extent. Disseminated and stringer mineralisation in dacite is more widespread
<b>32A</b>	Footwall Dacite	<a href="#">21° 12' 26.22" S 119° 14' 15.80" E</a>	Strongly chlorite-quartz altered dacite below the Kangaroo Caves Cu-Zn deposit
<b>33A</b>	Bernts Gossan	<a href="#">21° 13' 43.56" S 119° 16' 32.08" E</a>	Siliceous gossan with breccia textures and ex-barite veins. Admire the view up the Shaw River!
<b>34A</b>	Stromatolites	<a href="#">21° 13' 56.18" S 119° 16' 55.19" E</a>	Laminated algal carbonate unit which is partly silicified. Domal stromatolites
<b>35A</b>	Dacite chert peperite contact	<a href="#">21° 15' 23.29" S 119° 14' 38.62" E</a>	Peperite (35B) where lobate clasts of dacite lie in a matrix of glass rich volcaniclastic sandstone. Dacite autobreccia (35C) contains clasts of dacite in a dacite matrix. Compare and contrast
<b>36A</b>	Alteration spots in rhyolite	<a href="#">21° 17' 35.66" S 119° 11' 14.06" E</a>	Chlorite-carbonate-hematite alteration spots in rhyolite (Kangaroo Caves Formation). Indicates high temperature alteration and metal leaching
<b>37A</b>	Panorama - Rhyolite pumice breccia	<a href="#">21° 18' 27.31" S 119° 11' 11.98" E</a>	Feldspar-bearing background-altered rhyolitic pumice breccia
<b>38A</b>	Panorama -Rhyolite Chl-Qz altered	<a href="#">21° 18' 20.64" S 119° 11' 12.57" E</a>	Feldspar destructive chlorite-quartz alteration in rhyolitic pumice breccia
<b>39A</b>	Spherulitic Dacite - Panorama	<a href="#">21° 19' 13.71" S 119° 10' 15.97" E</a>	Spherulitic dacite (Kangaroo Caves Formation) which is background altered (39A) on one side of the road and chlorite-quartz altered on the other. Spherulites are a devitrification texture
<b>40A</b>	Graded pumice breccia beds - Panorama	<a href="#">21° 19' 12.46" S 119° 11' 2.21" E</a>	Rhyolitic pumice breccia mass flow deposits with graded volcaniclastic sandstone tops. Nearby there are intrusions of amygdaloidal rhyolite domes
<b>41A</b>	Panorama - Anomaly 45 Gossan	<a href="#">21° 19' 41.09" S 119° 10' 45.03" E</a>	Road cutting facing south. Traverse up hill from gossanous rhyolite pumice breccia, amygdaloidal rhyolite, Marker Chert, deformed sedimentary hangingwall
<b>42A</b>	Jamesons Gossan - Panorama	<a href="#">21° 20' 30.52" S 119° 11' 49.74" E</a>	Malachite staining on ferruginous Jamesons gossan
<b>43A</b>	Sill sediment complex - Panorama	<a href="#">21° 20' 23.43" S 119° 12' 1.90" E</a>	Rhyolite sills intruded into turbiditic sedimentary pile. Faulted contact with siltstone unit has dextral movement indicators
<b>44A</b>	Folded Turbidite Sequence	<a href="#">21° 18' 42.24" S 119° 12' 40.04" E</a>	Spectacular folding in turbiditic sediments of the Corboy Formation (Soansville Group). Lineation parallel to fold plunge. Lode casts. Is the outcrop in 44A an anticline? Look for sedimentary facings
<b>45A</b>	Folded Turbidite Sequence	<a href="#">21° 18' 47.22" S 119° 13' 2.25" E</a>	Spectacular folding in turbiditic sediments of the Corboy Formation (Soansville Group)
<b>46A</b>	Unconformity - Panorama	<a href="#">21° 18' 47.22" S 119° 13' 2.25" E</a>	Deformed Soansville Group turbiditic sedimentary sequence unconformably overlain by Hardey Formation (Fortescue Group) of cobble conglomerate and sandstone
<b>47A</b>	Folded Turbidite Sequence - Panorama	<a href="#">21° 19' 18.53" S 119° 11' 48.96" E</a>	Photo speaks for itself
<b>48A</b>	ChevronFolds - Panorama	<a href="#">21° 19' 9.15" S 119° 11' 40.98" E</a>	Chevron folding in siltstone-shale units of the Pincunah Hill Formation (Soansville Group)