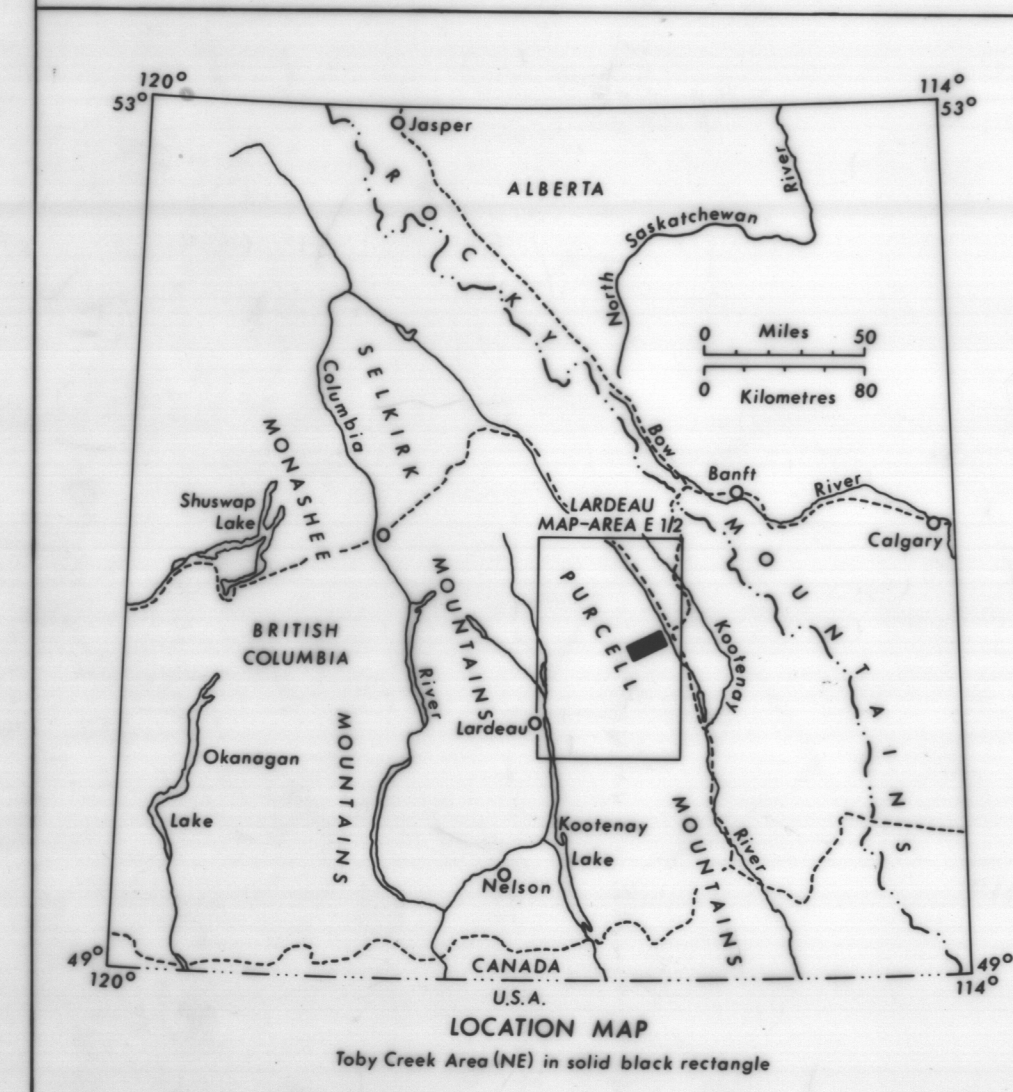
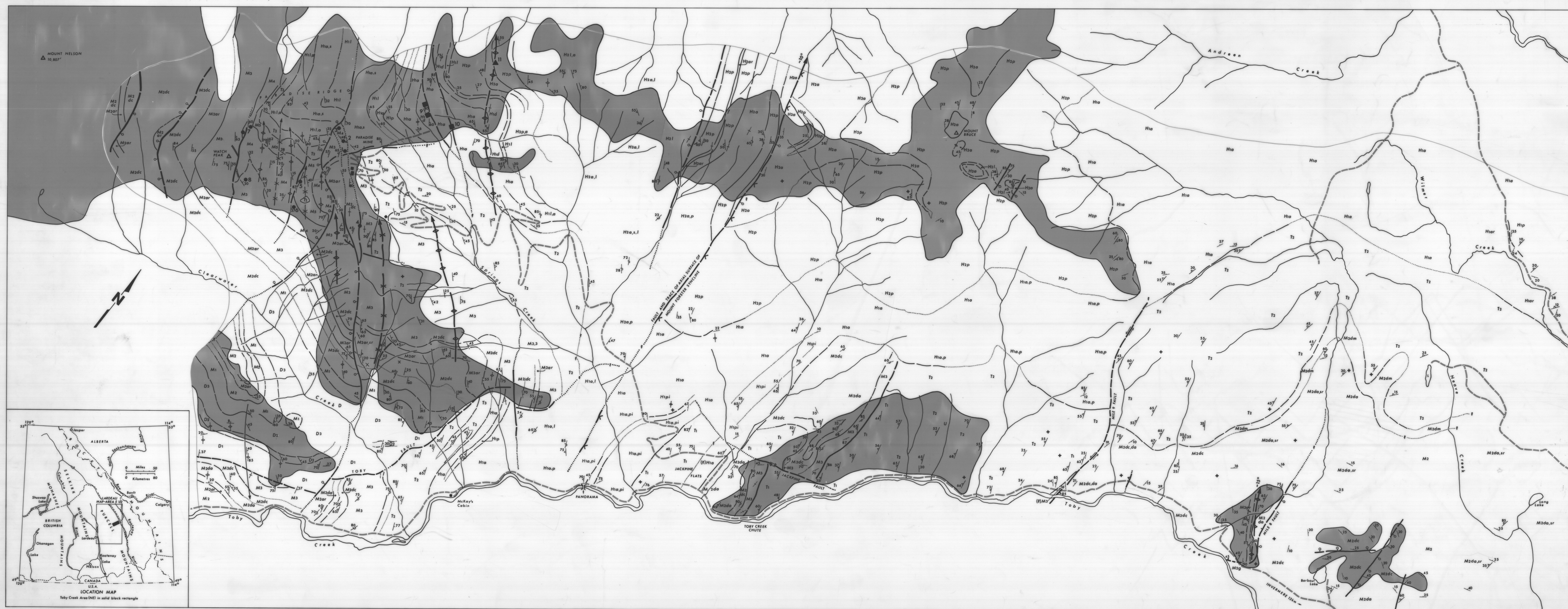


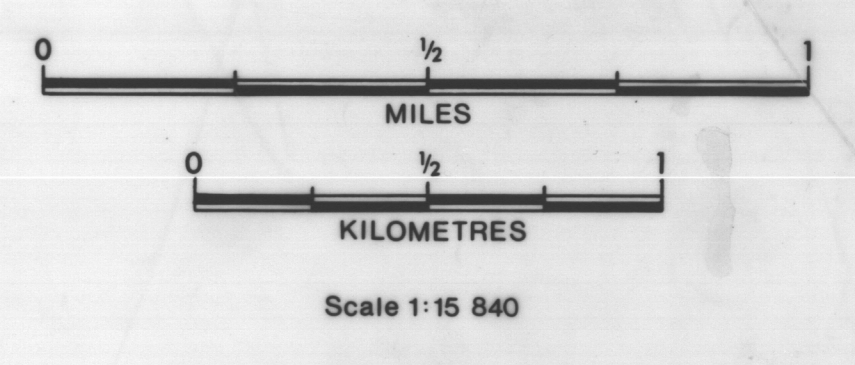
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BRITISH COLUMBIA  
DEPARTMENT OF MINES AND PETROLEUM RESOURCES

PRELIMINARY MAP NO. 23  
AUGUST 1976

**GEOLOGY OF TOBY CREEK AREA**  
BY SURAN A. ATKINSON

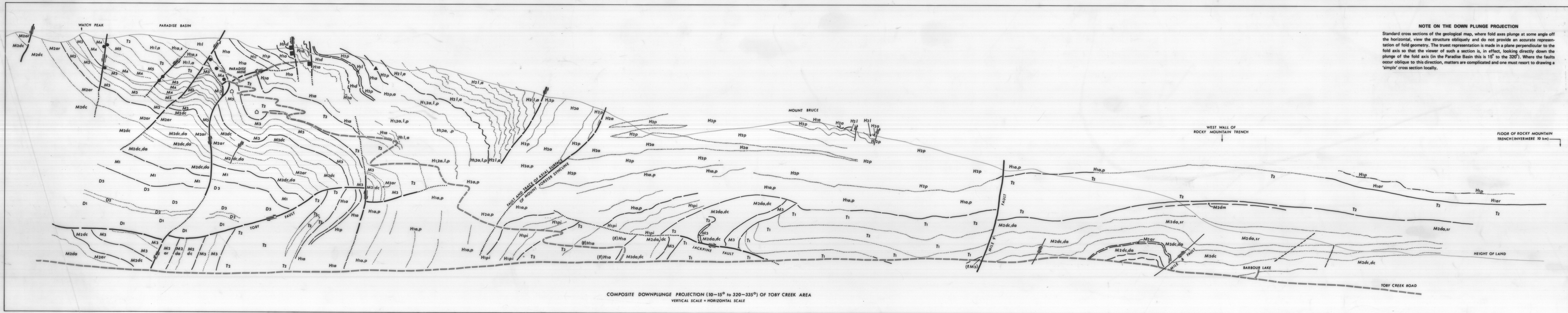


**LEGEND**

- LATE PROTEROZOIC**
- HADRYNIAN**
- WINDERMERE SUPERGROUP**
- HORSESHOE CREEK GROUP**
- H2 QUARTZ (FELDSPAR) PEBBLESTONE (H); LIMESTONE, ARGILLACEOUS LIMESTONE, LIMY MUDSTONE (H); ARGILLITE, MUDSTONE (H)
- M1 ARGILLITE, MUDSTONE (H); LIMESTONE, LIMY MUDSTONE, ARGILLACEOUS AND SILTY LIMESTONE (H); QUARTZ (FELDSPAR) PEBBLESTONE (H); PEBBLESTONE FINING UPWARD CYCLES WITH ARGILLITE RIP-UP INTRACLASTS AT BASE (H); BUFF DOLOMITE (H); SILTSTONE, FINE SANDSTONE (H)
- TOBY FORMATION**
- T3 CONGLOMERATIC LIMESTONE
- T2 CONGLOMERATIC OR PEBBLY MUDSTONE (CLASTS UP TO APPROXIMATELY 30%); MINOR SANDSTONE LENSES
- T1 CONGLOMERATE (BOULDER, COBBLE CLASTS 30%)
- UNCONFORMITY**
- HELIKIAN**
- PURELL SUPERGROUP**
- MOUNT NELSON FORMATION**
- M5 GREEN SILTSTONE, GREYWACKE; BLACK SHALE, ARGILLITE
- M4 GREY LAMINATED DOLOMITE WITH BLACK CLAY LENSES AND LAYERS
- M3 UPPER WHITE ORTHOQUARTZITE
- M2 DOLOMITE PHASE
- dc GREY DOLOMITE, MAY BE STROMATOLITIC OR CERTY, ASSOCIATED COLTIC AND BRACCIOID DOLOMITE
- ar RED ARGILLITE
- do ARGILLACEOUS DOLOMITE (PINK TO ORANGE); INTER-BEDDED ARGILLITE
- sr RED SILTSTONE, SANDSTONE (DOLOMITIC)
- g GREY TO BLACK ARGILLITE, GREYWACKE
- dm MOTTLED GREY DOLOMITE
- M1 LOWER WHITE ORTHOQUARTZITE, ALSO GREEN
- DUTCH CREEK FORMATION**
- D3 BLACK AND GREEN ARGILLITE, SLATE
- D2 GREYWACKE, GREEN AND BLACK SILTSTONE AND ARGILLITE
- D1 BLACK, GREEN, AND GREY ARGILLITE; FINE-GRAINED SILTSTONE
- (BASE OF THIS FORMATION NOT WITHIN MAP-AREA)
- NOTE: ROCK COLOURS REFER TO WEATHERED SURFACES

**SYMBOLS**

- GEOLOGIC CONTACT: DEFINED, APPROXIMATE, PROJECTED
- FAULT: DEFINED, APPROXIMATE, PROJECTED (SYMBOLS ON DOWNDROPPED SIDE)
- FOLD: TRACE OF AXIAL SURFACE - ANTICLINE: UPRIGHT, OVERTURNED - SYNCLINE: UPRIGHT, OVERTURNED
- BEDDING: TOPS KNOWN: HORIZONTAL, INCLINED, OVERTURNED
- TOPS UNKNOWN
- CLEAVAGE: INCLINED, VERTICAL
- AREAS OF EXTENSIVE OUTCROP
- LIMITS OF GEOLOGICAL MAPPING
- LEAD-ZINC OCCURRENCE
- COPPER SHOWING
- BARITE OCCURRENCE



**NOTE ON THE DOWN PLUNGE PROJECTION**

Standard cross sections of the geological map, where fold axes plunge at some angle to the horizontal, view the structure obliquely and do not provide an accurate representation of fold geometry. The truest representation is made in a plane perpendicular to the fold axis so that the viewer of such a section is, in effect, looking directly down the plunge of the fold axis (in the Paradise Basin this is 12° to the 200°). Where the faults occur oblique to this direction, matters are complicated and one must resort to drawing a 'vertical' cross section locally.

COMPOSITE DOWNPLUNGE PROJECTION (10°-18° to 220°-235°) OF TOBY CREEK AREA  
VERTICAL SCALE = HORIZONTAL SCALE

**MINERAL SHOWINGS IN THE TOBY CREEK AREA (H)**

No.	Location	Workings	Mineralization Host Rock - Mode of Occurrence	Status
1	Map workings of old		Dolomite M4 replacement	77,000 tons produced
2	Paradise mine, head of	Adits open	Pb-Zn-Ag vein	
3	Spring Creek	Open adits	Pb-Zn-Ag vein	
4	Spring, SE side of	Open adits	Mineralized fault breccia, quartzite M3, dolomite M2	Produced 7
5	South-central Paradise Basin	Trench, open adits	Dolomite M4-ultra M5 contact, Pb-Zn-Ag vein, vein 7	Produced 1
6	Ridge, SW Paradise Basin	Trenches	Pb-Zn-Ag Dolomite M4, vein	Occurrence
7	Ridge, NW Paradise Basin	Trenches	Pb-Zn-Ag Dolomite M4, vein	Occurrence
8	Ridge, SW Paradise Basin	Trench	Pb-Zn-Ag Quartzite M3, vein	Occurrence
9	Ridge, 1 km NE of	Trench	Cu	Quartz vein breccia in Horse-shoe Creek Formation (H2)
10	Paradise mine			
11	N side of ridge, 2 km	Trenches	Ba Vein, Horse-shoe Creek Formation (H2)	Produced 1