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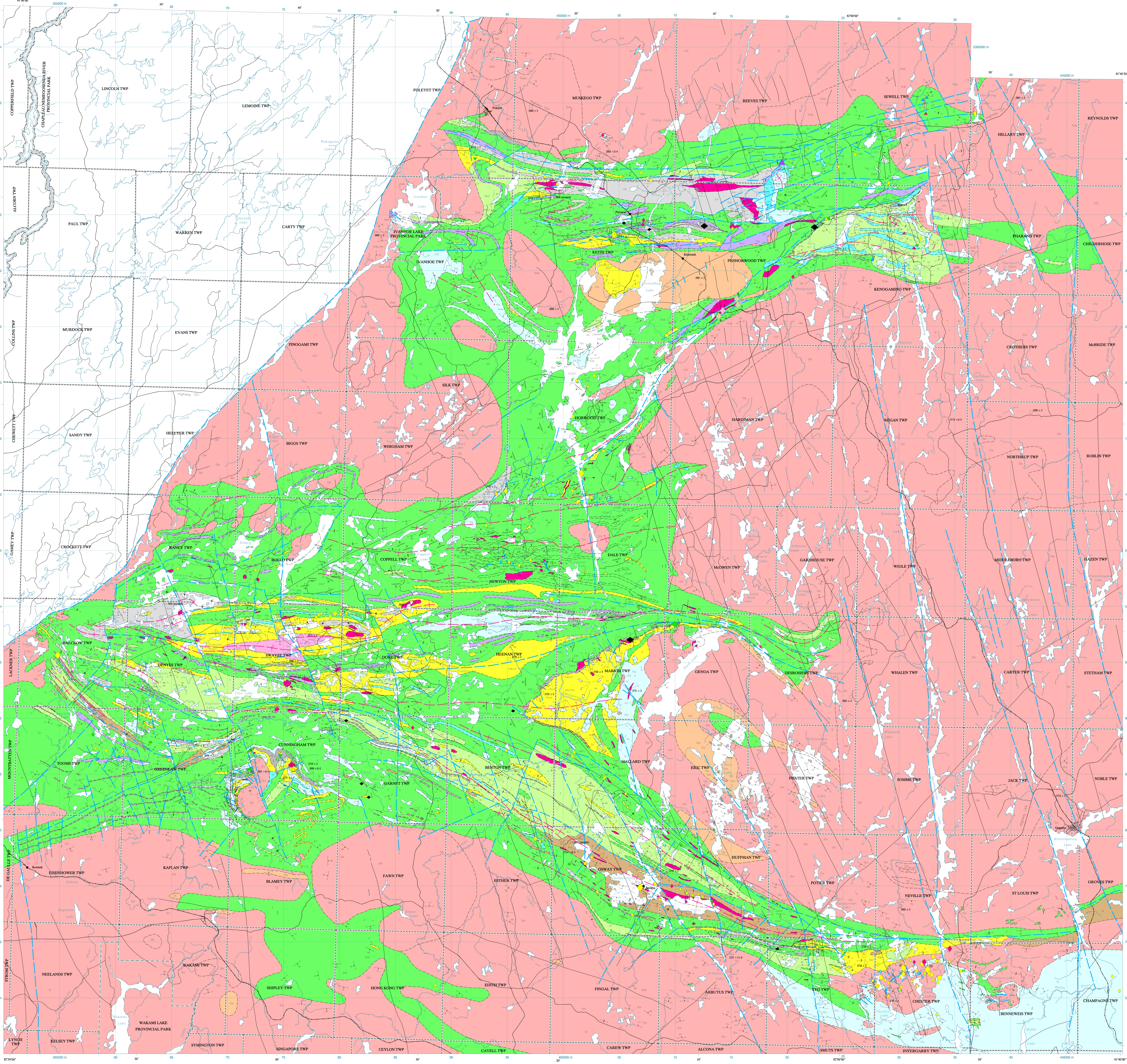


LEGEND[abc]

PHANEROZOIC

CENOZOIC

QUATERNARY

PLEISTOCENE AND RECENT
Sand, gravel, clay and wetland deposits

UNCONFORMITY

PRECAMBRIAN

PROTEROZOIC

15 Diabase Dikes
- 15a Matachewan (2452 Ma) (NW)
- 15b Biscotasing (2167 Ma) (ENE)
- 15c Sudbury (1238 Ma) (WNW)
- 15d Abitibi (1140 Ma) (ENE)

INTRUSIVE CONTACT

ARCHEAN

NEOARCHEAN

13 Alkalic Intrusive Suite
- 13a Syenite, monzonite, granite
- 13b Diorite, syenodiorite, monzogabbro, hornblendite
- 13c Schistose-textured

12 Felsic to Intermediate Intrusive Suite
- 12a Tonalite, granodiorite, trondhjemite
- 12b Granite, quartz monzodiorite, quartz diorite
- 12c Schistose-textured

11 Porphyry Suite
- 11a Porphyry
- 11b Quartz and/or feldspar porphyry
- 11d Tonalite, granodiorite

10 Mafic Intrusive Rocks
- 10a Diorite, gabbro, melagabbro
- 10b Porphyritic
- 10c Anorthositic gabbro, leucogabbro
- 10d Granophyre

9 Ultramafic Intrusive Rocks
- 9a Peridotite, pyroxenite
- 9c Schistose-textured

INTRUSIVE CONTACT

8 Timiskaming-Type Clastic Metasedimentary Rocks
- 8a Arenite
- 8b Wacke
- 8c Conglomerate
- 8d Mudstone, siltstone
- 8e Schistose-textured

UNCONFORMITY

7 Chemical Metasedimentary Rocks
- 7a Iron formation
- 7b Oxide facies
- 7c Sulphide facies
- 7d Silicate facies, chert
- 7e Graphite facies

6 Clastic Metasedimentary Rocks
- 6a Arenite
- 6b Wacke
- 6c Conglomerate
- 6d Mudstone, siltstone
- 6f Schistose-textured

5 Alkalic to Calc-Alkalic Metavolcanic Rocks/Intrusions
- 5a Massive flows
- 5b Porphyritic flows
- 5c Tuff
- 5d Breccia, pyroclastic breccia

4 Felsic (to Intermediate) Metavolcanic Rocks/Intrusions
- 4a Massive flows
- 4b Tuff, lapilli tuff
- 4c Tuff breccia, pyroclastic breccia
- 4d Porphyritic
- 4e Spherulitic
- 4f Schistose-textured
- 4C Calc-alkalic
- 4T Tholeiite

3 Intermediate (to Felsic) Metavolcanic Rocks/Intrusions
- 3a Massive flows
- 3b Pillowed flows
- 3c Variolitic flows
- 3d Hyaloclastite, flow breccia
- 3e Amygdaloidal flows
- 3f Tuff, lapilli tuff
- 3g Tuff breccia, pyroclastic breccia
- 3h Schistose-textured
- 3C Calc-alkalic
- 3T Tholeiite

2 Mafic (to Intermediate) Metavolcanic Rocks/Intrusions
- 2a Massive flows
- 2b Pillowed flows
- 2c Variolitic flows
- 2d Hyaloclastite, flow breccia
- 2e Amygdaloidal flows
- 2f Tuff, lapilli tuff
- 2g Tuff breccia, pyroclastic breccia
- 2h Schistose-textured
- 2C Calc-alkalic
- 2F High-iron tholeiite
- 2M High-magnesium tholeiite
- 2T Tholeiite

1 Ultramafic (to Mafic) Metavolcanic Rocks/Intrusions
- 1a Massive flows/intrusions
- 1b Polysutured flows
- 1c Spinifex-textured flows
- 1d Pillowed flows
- 1f Schistose-textured
- 1B Basaltic komatiite
- 1K Komatiite
- 1O Olivine-spinifex

a This is a compilation legend.
b Units preceded by "G" are based on interpretation from aeromagnetic maps, those preceded by "D" are based on drilling information.
c Rocks are subdivided lithologically and the order does not imply age relationships within or among groups.

Mineral Deposit Type

- Felsic to Intermediate Intrusion-Associated Deposits
- Alkalic Intrusion-Associated Deposits
- Mafic to Ultramafic Volcanic and Intrusion-Associated Deposits
- Sediment-Associated Deposits
- Vein/Replacement Deposits
- Volcanic-Associated Deposits
- Unknown Hard Rock Deposit Type

Mineral Deposit Size

- Mine
- Prospect
- Occurrence

Mineral Deposit Commodity*

- Ag ± (Au, Cu, Pb, Zn, Mo, Co, Ni, Fe)
- asbe ± (Cu)
- Au ± (Ag, Cu, Bi, Mo, Pb, Zn, asbe)
- bari ± (Cu, fluo)
- Cu ± (Ag, Au, grap, Ni, Pt, Zn, Fe, Mo, Pb)
- Fe ± (Au, Cu, Pb, Zn, Ti)
- Mo ± (Bi, Au, Ag)
- Ni ± (Cu, Fe, Co)
- Pb ± (Cu, Zn)
- sili
- talc ± (soap, mgmt)
- Zn ± (Ag, Au, Cu, Pb, Fe, Cd, Ni, Zn)

*Abbreviations used for commodities:

Ag = silver; asbe = asbestos; Au = gold; bari = barite; Bi = bismuth; Cd = cadmium; Co = cobalt; Cu = copper; Fe = iron; fluo = fluorite; grap = graphite; mgmt = maghemite; Mo = molybdenum; Ni = nickel; Pb = lead; Pt = platinum; sili = silica; soap = soapstone; Ti = titanium; Zn = zinc

PAST AND PRESENT PRODUCING MINES

1. PENHORWOOD MINE (PRODUCING)
2. HALCROW–SWAYZE PROSPECT
3. JEROME
4. RAVENA
5. REEVES MINE
6. ROSEVAL SILICA
7. ROSEVAL SILICA NO. 2
8. ROSEVAL SILICA NO. 3
9. CLAIM S19970
10. GOMAK
11. JOBURKE
12. SMITH–THORNE

CREDITS

Geological compilation and interpretation by J.A. Ayer and N.F. Trowell.

Compilation of mineral deposit data by J.A. Ayer, N.F. Trowell and L. Valade.

Preparation of base map by L. Valade.

Preparation of geophysical imagery by L. Valade.

GIS compilation of data by L. Valade and M. Nevills.

To enable the rapid dissemination of information, this map has not received a technical edit. Discrepancies may occur for which the Ontario Ministry of Northern Development and Mines does not assume liability. Users should verify critical information.

Issued 2002.

Information from this publication may be quoted if credit is given. It is recommended that reference to this map be made in the following form:

Ayer, J.A. and Trowell, N.F. 2002. Geological compilation of the Swayze area, Abitibi greenstone belt; Ontario Geological Survey, Preliminary Map P.3511, scale 1:100 000.

Ontario

Ontario Geological Survey

MAP P.3511

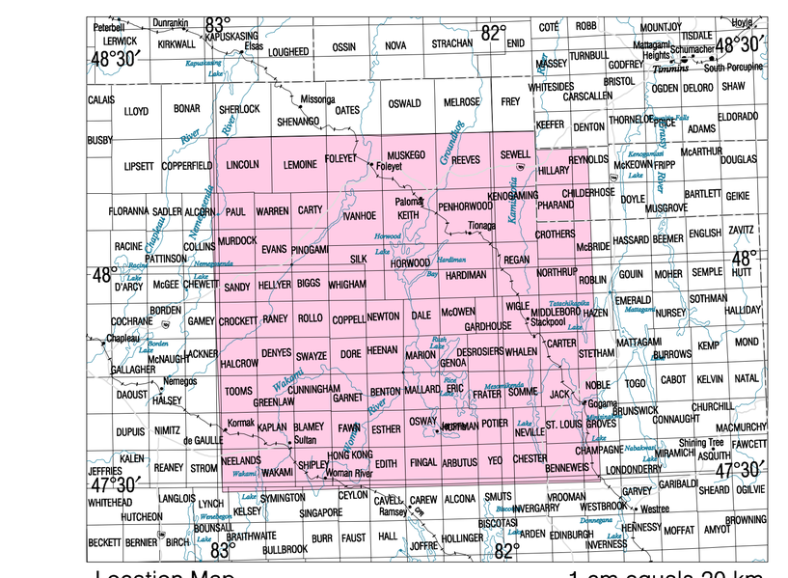
PRECAMBRIAN GEOLOGY

GEOLOGICAL COMPILATION OF THE SWAYZE AREA, ABITIBI GREENSTONE BELT

Scale 1:100 000

2000 m 0 2 4 km

NTS References: 41 O/7, 8, 9, 10, 11, 14, 15, 16; 41 P/5, 12, 13; 42 A/4, 5; 42 B/1, 2, 3, 6, 7, 8



Location Map 1 cm equals 20 km

THE ABITIBI SUBPROVINCE

The Abitibi Subprovince is an 800 by 300 km Archean "granite-greenstone" domain situated along the southern margin of the Superior Province. It is dominated by supracrustal and granitoid rocks with a range of ages from 2.75 to 2.67 Ga (Jackson and Fyon 1991). Historically, the Abitibi greenstone belt was considered to be that portion of the Abitibi Subprovince extending to the western margin of the extensive granitoid complexes west of Timmins. New mapping and geochronological evidence (Heather et al. 1995) shows that the Swayze greenstone belt contains many of the structures and stratigraphic ages typical of the Abitibi belt in the Timmins–Kirkland Lake area and is now interpreted to represent a deeper erosional level of a once-continuous Abitibi greenstone belt extending to the Kapuskasing Structural Zone.

The Abitibi greenstone belt is one of the world's largest, best preserved and most economically productive greenstone belts in the world.

The Swayze map sheet covers the area from approximately 15 km east of Gogama as far west as the Kapuskasing Structural Zone, and from the southern margin of the 1:100 000 Timmins map sheet (P.3379) to approximately 20 km south of Gogama. Rocks are classified on the basis of their dominant lithology using textures, structures and both approximate and specific compositions to refine the classification. Geological information has been primarily compiled from previous mapping. New interpretations of the extent of lithological units, specifically in the areas lacking outcrop, have greatly benefited from the use of the reprocessed geophysical data for this area (Gupta 1995, 1996). As well, geochemical data have allowed for the further subdivision of the metavolcanic rocks.

Significant gold occurrences and past-producing gold mines indicate the area's potential for gold mineralization. Copper-zinc mineralization is found in association with sulphide facies iron formation and with metavolcanic sequences. Potential exists for nickel-copper-platinum in the ultramafic/komatiitic rocks identified in the area. Industrial minerals including barite and silica have been produced in the past, while the Penhorwood Mine is presently producing talc.

SYMBOLS

- Geological contact
- Fault
- Dike
- Anticline
- Syncline
- Bedding; facing direction known from crossbedding (inclined, overturned)
- Bedding; facing direction known from grading (inclined, vertical)
- Bedding; facing direction known from grading (overturned, magnitude of dip uncertain)
- Bedding; facing direction known from sedimentary structures other than grading and crossbedding (vertical, overturned)
- Bedding; pillows, facing direction known (trend only, overturned)
- Bedding; pillows, facing direction known (overturned and magnitude of dip uncertain)
- Bedding; unsubdivided, facing direction unknown (inclined, vertical)
- Compositional layering; unknown generation (inclined, vertical)
- Foliation, defined by minerals; unkown generation (inclined, vertical, trend only)
- Schistosity (inclined)
- 2719±2Ma Geochronological sample location and result

SOURCES OF INFORMATION

This geological compilation of the Swayze area is the fourth in a series of 1:100 000 maps and GIS data sets of the Abitibi Subprovince in Ontario being compiled over the next few years.

This geological map of the Swayze area was compiled from published maps and reports of the Ontario Geological Survey and the Geological Survey of Canada. In addition, information from unpublished reports and maps on file with the Ontario Geological Survey, university theses, papers in professional journals, geophysical maps and satellite images were incorporated. Maps and reports that were extensively consulted include Ayer 1995, Breaks 1978, Heather and Shore 1999 and Heather 2001.

Geological interpretation was further enhanced by utilizing the Earth Resources and Land Information System (ERLIS) databases such as the Assessment File Resource Inventory (AFRI), the Drill Hole (DH) database, the Lithogeochemical (LGC) database and the Mineral Deposit Inventory (MDI) database. Other data sets used include satellite imagery including Landsat Thematic Mapper images and Digital Elevation Model (DEM) produced by the Ministry of Natural Resources, Ontario.

Base map assembled by the Ontario Geological Survey. A vector mosaic of Ontario Digital Topographic Data Base 1:20 000 Ontario Basic Mapping Program (OBM) maps was digitally compiled at a scale of 1:50 000 based on the Universal Transverse Mercator (UTM) projection and grid system, Zone 17, North American Datum 1927.

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Jackson, S.L. and Fyon, J.A. 1991. The western Abitibi Subprovince in Ontario; *in* Geology of Ontario, Ontario Geological Survey, Special Volume 4, Part 1, p.404-482.

Magnetic declination in 2001 through the center of the map area was 9°43′W. Mean annual change is 0.8′ easterly.

Geology not tied to surveyed lines.