

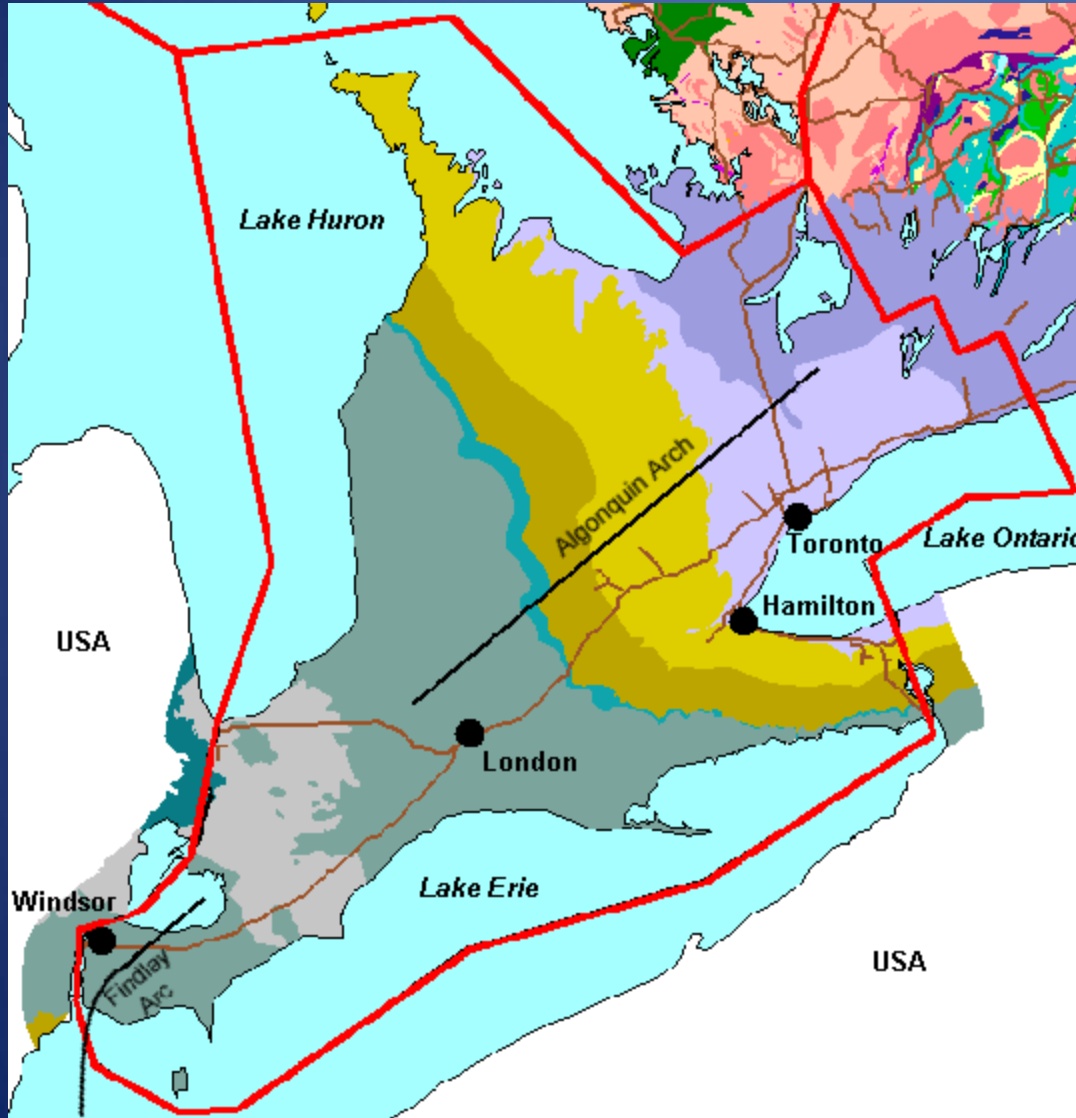
Mineral Occurrences in the Paleozoic Rocks of Southwestern Ontario

David K. Joyce
Walker Mineralogical Club

SW Ontario Mineral Occurrences

There are a number of localities that have produced excellent, unique mineral specimens, in SW Ontario

Geology



-Paleozoic marine
Sediments, max 850m thick

-Originally shales,
limestones and sandstones

-Dolomitization due to
circulating, magnesium-rich
brines transformed some
limestones to dolostones.

SW Ontario Mineral Occurrences

- sub-economic Mississippi Valley type Zn-Pb mineralization throughout region
- circulating warm brines, 250 million years ago dissolved Pb, Zn, Sr, Fe and S from metal-rich shales.
- Metals were precipitated as sulphides and sulphates in dolostones and even replaced parts of dolostones.

SW Ontario Mineral Occurrences

- Some sediments contain hydrocarbons
- present in cavities, bedding planes and joints or enclosing or included in mineral crystals.

SW Ontario Mineral Occurrences

Same strata and similar mineralizing conditions
extend into New York, Ohio, Michigan, etc.

SW Ontario Mineral Occurrences

-Above conditions resulted in a beautiful and interesting suite of well-crystallized minerals.

-sphalerite, celestine, galena, marcasite, fluorite, sulphur, calcite, etc.

-because of glaciation, no significant secondary mineralization

SW Ontario Mineral Occurrences



Montrose Rock Dumps

- Remnants of Welland Canal excavation –rock dumps
- Long-time favourite place for fluorite and sphalerite
- Recently overtaken by urban/commercial growth

SW Ontario Mineral Occurrences



Montrose Dumps –North Dump remnants in 2009
-tough collecting but was lots there (R. Mielke Photo)

SW Ontario Mineral Occurrences



Montrose Dumps –break up boulders

SW Ontario Mineral Occurrences



Montrose Dumps –break up boulders

SW Ontario Mineral Occurrences



Montrose Dumps –everything bulldozed now (M Adamowicz photo)

SW Ontario Mineral Occurrences



Montrose Dumps –Looking from the south (A. Johns photo)

SW Ontario Mineral Occurrences



Montrose Dumps, Hydrocarbon-coated Calcite -
25mm long (M. Wilson Spec. and Photo)

SW Ontario Mineral Occurrences



Montrose Dumps –best purple-blue fluorite crystals

SW Ontario Mineral Occurrences



Montrose Dumps –fluorite, calcite -13mm cube

SW Ontario Mineral Occurrences



Montrose Dumps –best purple-blue fluorite crystals -
16mm cube

SW Ontario Mineral Occurrences



Montrose Dumps, Fluorite, Dolomite -18mm cube

SW Ontario Mineral Occurrences



Montrose Dumps, Fluorite -25mm across

(M. Wilson Spec. and Photo)

SW Ontario Mineral Occurrences



Montrose Dumps, Fluorite, Calcite -25mm across

(M. Wilson Spec. and Photo)

SW Ontario Mineral Occurrences



Montrose Dumps –Sphaalerite -30mm view

SW Ontario Mineral Occurrences



Montrose Dumps –Sphaalerite -45mm field of view

SW Ontario Mineral Occurrences



Montrose Dumps, Sphalerite (M. Wilson Specimen and photo)

SW Ontario Mineral Occurrences



Montrose Dumps, Sphalerite (M. Wilson Specimen and photo)

SW Ontario Mineral Occurrences



Montrose Dumps, Calcite -25mm across (M. Wilson Spec. and photo)

SW Ontario Mineral Occurrences



Montrose Dumps, Calcite, Sphalerite -25mm tall

(M. Wilson Spec and Photo)

SW Ontario Mineral Occurrences



Montrose Dumps –Sulphur, Calcite, 30mm across

(M. Wilson specimen and photo)

SW Ontario Mineral Occurrences



Montrose Dumps, Combo Specimen (M. Wilson Spec and Photo)

SW Ontario Mineral Occurrences



Forks of Credit, Georgetown
Area
Orange Celestine

Many exposures or potential exposures

SW Ontario Mineral Occurrences



Hilltop Quarry

Georgetown

(L. Buchanan photo)

SW Ontario Mineral Occurrences



Hilltop Quarry (L. Buchanan photo)

SW Ontario Mineral Occurrences



Hilltop Quarry –finished product -sandstone

SW Ontario Mineral Occurrences



Orange Celestine, Forks of Credit, Georgetown -
20cm across

SW Ontario Mineral Occurences



Hilltop Quarry, Celestine, 9.0cm crystal

SW Ontario Mineral Occurrences

“Dundas” Quarry

“Grand-Daddy” of Collecting Localities

Low Accessibility in Recent Years

SW Ontario Mineral Occurrences



“Dundas” Quarry, aka Lafarge, Steetley, Redlands,
etc

SW Ontario Mineral Occurrences



“Dundas” Quarry

SW Ontario Mineral Occurrences



“Dundas” Quarry, Celestine Pocket in Floor

SW Ontario Mineral Occurrences



“Dundas” Quarry, Celestine, 13.0cm long

SW Ontario Mineral Occurrences



“Dundas” Quarry, Celestine, 12.0cm across

SW Ontario Mineral Occurrences



“Dundas” Quarry, Celestine, 10.5cm long

SW Ontario Mineral Occurrences



“Dundas” Quarry, Celestine, FOV 60mm across

SW Ontario Mineral Occurrences



“Dundas” Quarry, Celestine, 5.6cm tall

SW Ontario Mineral Occurrences



“Dundas” Quarry, Celestine, 6.2cm across

SW Ontario Mineral Occurrences



“Dundas” Quarry, Celestine, 10.0cm across

SW Ontario Mineral Occurrences



“Dundas” Quarry, Celestine, 10cm long

SW Ontario Mineral Occurrences



“Dundas” Quarry, Celestine, Calcite, 4.5cm across

SW Ontario Mineral Occurrences



“Dundas” Quarry, Celestine, Calcite, 5.0cm across

SW Ontario Mineral Occurrences



“Dundas” Quarry, Celestine, Calcite, Gypsum, FOV 12.0cm

SW Ontario Mineral Occurences



“Dundas” Quarry, Calcite, 5.0cm tall

SW Ontario Mineral Occurrences



“Dundas” Quarry, Calcite, 5.5cm tall

SW Ontario Mineral Occurrences



“Dundas” Quarry, Calcite, 58.0cm across

SW Ontario Mineral Occurrences



“Dundas” Quarry, Calcite, 4.8cm across

SW Ontario Mineral Occurences



“Dundas” Quarry, Sphalerite, 6.5cm across

SW Ontario Mineral Occurrences



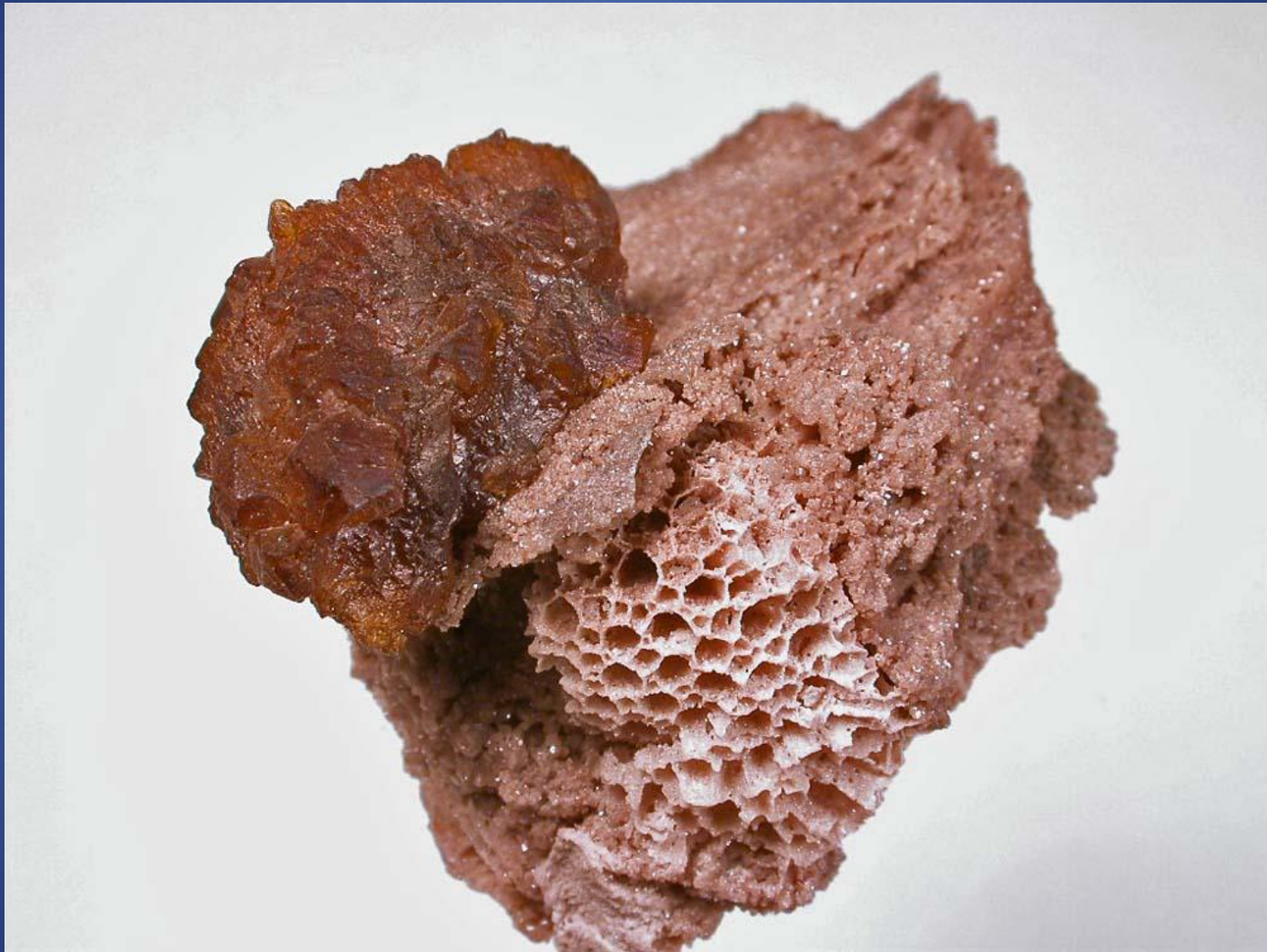
“Dundas” Quarry, Sphalerite, Dolomite, 4.5cm across

SW Ontario Mineral Occurrences



“Dundas” Quarry, Sphalerite, 4.0cm across

SW Ontario Mineral Occurrences



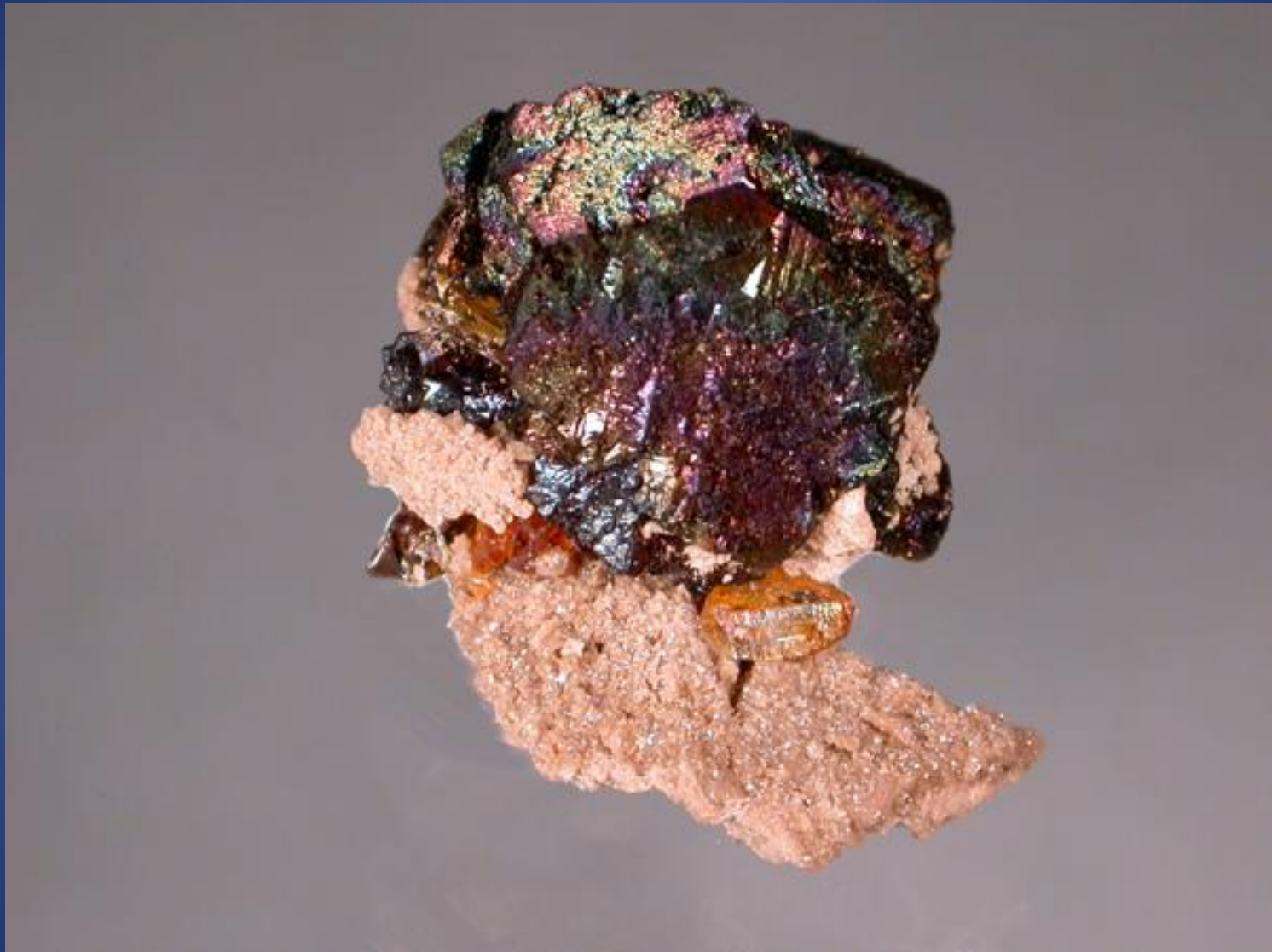
“Dundas” Quarry, Sphalerite, 4.9cm across

SW Ontario Mineral Occurrences



“Dundas” Quarry, Sphalerite, Marcasite, FOV 5.0cm

SW Ontario Mineral Occurrences



“Dundas” Quarry, Sphalerite, 2.5cm tall

SW Ontario Mineral Occurrences



“Dundas” Quarry, Sphalerite, 2.6cm tall

SW Ontario Mineral Occurrences



“Dundas” Quarry, Sphalerite, 1.0 & 1.25 ct stones
Cut by Brian Joyce

SW Ontario Mineral Occurrences



“Dundas” Quarry, Galena, 6.0cm across

SW Ontario Mineral Occurrences



“Dundas” Quarry, Galena on Celestine, FOV 4.0cm

SW Ontario Mineral Occurrences



“Dundas” Quarry, Galena, Sphalerite, Marcasite,
FOV 4.0cm

SW Ontario Mineral Occurrences



“Dundas” Quarry, Fluorite, 5.0cm across

SW Ontario Mineral Occurrences



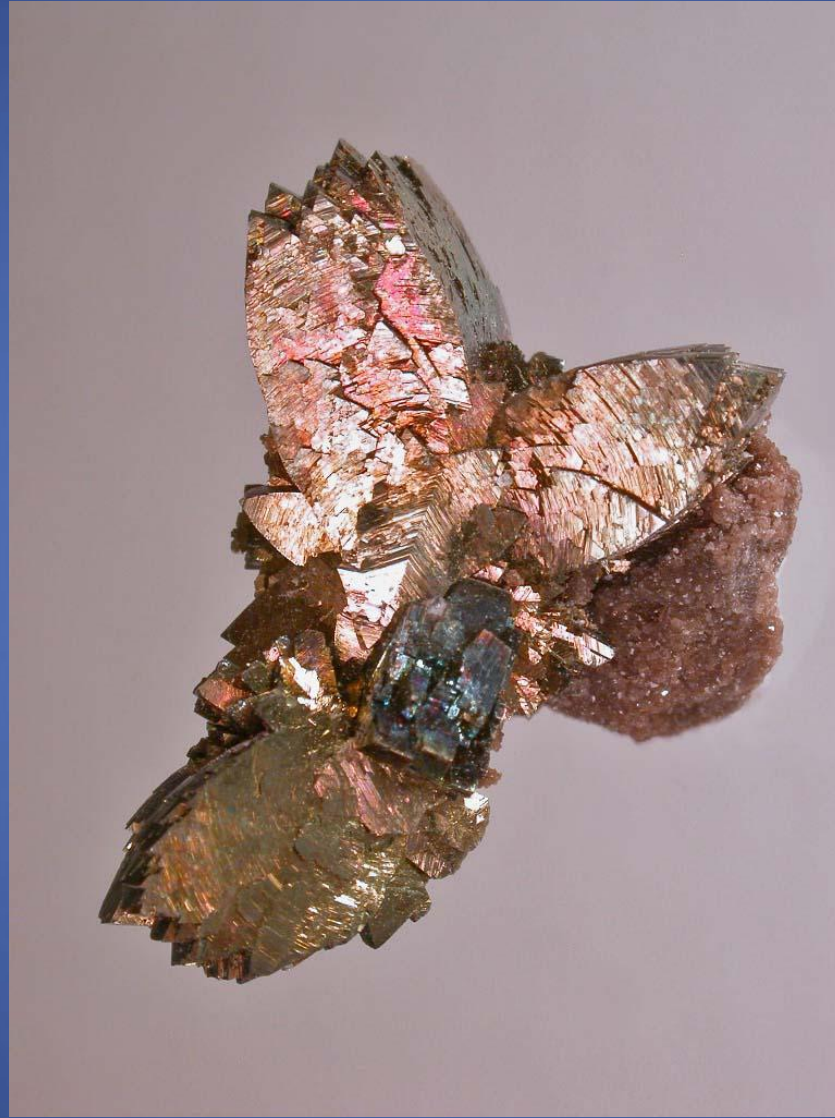
“Dundas” Quarry, Fluorite, Sphalerite, 3.5cm across

SW Ontario Mineral Occurrences



“Dundas” Quarry, Fluorite, 1.35ct, Cut by Brian Joyce

SW Ontario Mineral Occurrences



“Dundas” Quarry, Marcasite, 2.0cm tall

SW Ontario Mineral Occurrences

Flamboro Quarry

Wentworth County

Ownership Currently Under Change

SW Ontario Mineral Occurrences



Flamboro Quarry

SW Ontario Mineral Occurrences



Flamboro Quarry, Fluorite

SW Ontario Mineral Occurrences



Flamboro Quarry, Sphalerite, 3.0cm tall

SW Ontario Mineral Occurrences



Flamboro Quarry, Sphaulerite, All 4.0cm or so

SW Ontario Mineral Occurrences



Flamboro Quarry, Sphalerite. 6.0cm

SW Ontario Mineral Occurrences



Flamboro Quarry, Sphalerite, 4.0cm across

SW Ontario Mineral Occurrences



Flamboro Quarry, Galena, 3.0cm across

SW Ontario Mineral Occurrences



Flamboro Quarry, Galena, 4.4cm across

SW Ontario Mineral Occurrences



Flamboro Quarry, Fluorite, 6.0cm across

SW Ontario Mineral Occurrences



Flamboro Quarry, Fluorite, Sphalerite, 4.5cm across

SW Ontario Mineral Occurrences



Flamboro Quarry, Fluorite, Sphalerite, 6.5cm

SW Ontario Mineral Occurrences



Flamboro Quarry, Fluorite, Sphalerite, Marcasite,
5.5cm across

SW Ontario Mineral Occurrences



Flamboro Quarry, Fluorite, Sphalerite, 8.5cm across

SW Ontario Mineral Occurrences



Flamboro Quarry, Fluorite, 9.5cm across

SW Ontario Mineral Occurrences



Flamboro Quarry

SW Ontario Mineral Occurrences



Flamboro Quarry, Fluorite, Marcasite, 9.0cm across

SW Ontario Mineral Occurrences



Flamboro Quarry, Fluorite, Marcasite, 4.0cm across

SW Ontario Mineral Occurrences



Flamboro Quarry, Marcasite, Fluorite, FOV 4.5cm

SW Ontario Mineral Occurrences

Lincoln Quarry, Beamsville

Another old favourite

SW Ontario Mineral Occurrences



Beamsville Quarry (J. Glen photo)

SW Ontario Mineral Occurrences



Beamsville Quarry (J. Glen photo)

SW Ontario Mineral Occurrences



Beamsville Quarry, Galena (J. Glen photo)

SW Ontario Mineral Occurrences



Beamsville Quarry, Dolomite, Marcasite, 2.5cm across

(M. Wilson specimen and photo)

SW Ontario Mineral Occurrences



Beamsville Quarry, Sphalerite, 3,0cm tall

(M. Wilson specimen and photo)

SW Ontario Mineral Occurrences



Beamsville Quarry, Sphalerite, 2.5cm across

(M. Wilson specimen and photo)

SW Ontario Mineral Occurrences



Beamsville Quarry, Sphalesrite (M. Wilson specimen and photo)

SW Ontario Mineral Occurrences



Beamsville Quarry, Sphalerite, 7.5cm across

(D. Lapham specimen)

SW Ontario Mineral Occurrences

Walker Brothers Quarry

Gypsum, Dolomite, Sphalerite

SW Ontario Mineral Occurrences



Walker Bros. Quarry, Dolomite, 2.5cm tall (M. Wilson specimen and photo)

SW Ontario Mineral Occurrences



Walker Bros. Quarry, Gypsum, 12.0cm across

SW Ontario Mineral Occurrences



Walker Bros. Quarry, Sphalerite, 9.0cm across (D. Lapham Specimen)

SW Ontario Mineral Occurrences



Walker Bros. Quarry, Gypsum, 12.0cm across (D. Lapham Specimen)

SW Ontario Mineral Occurrences

Thorold Quarry

Sphalerite, Dolomite

SW Ontario Mineral Occurrences



Thorold Quarry

SW Ontario Mineral Occurrences

Guelph Dolime

Sphalerite

SW Ontario Mineral Occurrences



Guelph Dolime Quarry (D. Lapham Photo)

SW Ontario Mineral Occurrences



Guelph Dolime, Sphalerite, Calcite, FOV 4.0cm (D. Lapham Specimen)

SW Ontario Mineral Occurrences



Guelph Dolime, Sphalerite, Calcite, FOV 4.0cm (D. Lapham Specimen)

SW Ontario Mineral Occurrences

Windsor Area Quarries

Amherstburg Quarry

Celestine, Calcite, Sulphur

SW Ontario Mineral Occurrences



Amherstburg Quarry (B. Fulcher Photo)

SW Ontario Mineral Occurrences



Amherstburg Quarry (B. Fulcher Photo)

SW Ontario Mineral Occurrences



Amherstburg Quarry (B. Fulcher Photo)

SW Ontario Mineral Occurrences



Amherstburg Quarry (B. Fulcher Photo)

SW Ontario Mineral Occurrences



Amherstburg Quarry, In situ, Vug 20.0cm (B. Fulcher Photo)

SW Ontario Mineral Occurrences



Amherstburg Quarry, Celestine, Calcite, FOV 6.0cm

SW Ontario Mineral Occurrences

Windsor Area Quarries

McGregor Quarry

Calcite, Celestine

SW Ontario Mineral Occurrences



McGregor Quarry, Celestine, Calcite, 9.0cm across

(D. Lapham Specimen)

SW Ontario Mineral Occurrences



McGregor Quarry, Calcite, 6.0cm across (D. Lapham Specimen)

SW Ontario Mineral Occurrences



McGregor Quarry, Calcite, 10.0cm across (D. Lapham Specimen)

SW Ontario Mineral Occurrences

Inverhuron Occurrence

On shore of Lake Huron, near Inverhuron

Now in a provincial Park

Calcite, Strontianite, Celestine

SW Ontario Mineral Occurrences



Inverhuron (M. Adamowicz Photo)

SW Ontario Mineral Occurrences



Inverhuron (M. Adamowicz Photo)

SW Ontario Mineral Occurrences



Inverhuron (M. Adamowicz Photo)

SW Ontario Mineral Occurrences



Inverhuron, FOV 30.0cm (M. Adamowicz Photo)

SW Ontario Mineral Occurrences



Inverhuron, Calcite, 5.0cm tall

SW Ontario Mineral Occurrences



Inverhuron, Calcite, Crystal 2.5cm tall

SW Ontario Mineral Occurrences



Inverhuron, Calcite, Crystal 1.5cm across

SW Ontario Mineral Occurrences



Inverhuron, Calcite, Strontianite, 5.0cm across

SW Ontario Mineral Occurrences



Inverhuron, Calcite, 8.0cm tall

SW Ontario Mineral Occurrences



Inverhuron, Calcite, 7.5cm across

SW Ontario Mineral Occurrences



Inverhuron, Calcite 14.0cm across

SW Ontario Mineral Occurrences



Inverhuron

SW Ontario Mineral Occurrences

Some Lesser Known Localities

- Douglas Point
- Goat Island, Manitoulin Island
- High Falls, Manitoulin Island

SW Ontario Mineral Occurrences



Douglas Point Site, Celestine, 8.3cm across

SW Ontario Mineral Occurrences



Chalcopyrite, Celestine, High Falls, Manitoulin
Island, FOV 6.0cm

SW Ontario Mineral Occurrences



Chalcopyrite, Celestine, High Falls, Manitoulin Island

SW Ontario Mineral Occurrences



Calcite, Marcasite, Goat Island, Manitoulin Is., 9.7cm
across

SW Ontario Mineral Occurrences



Calcite, Marcasite, Goat Island, Manitoulin Is., 9.7cm
across

SW Ontario Mineral Occurrences

There is a lot of Paleozoic strata out there.

Keep looking!