

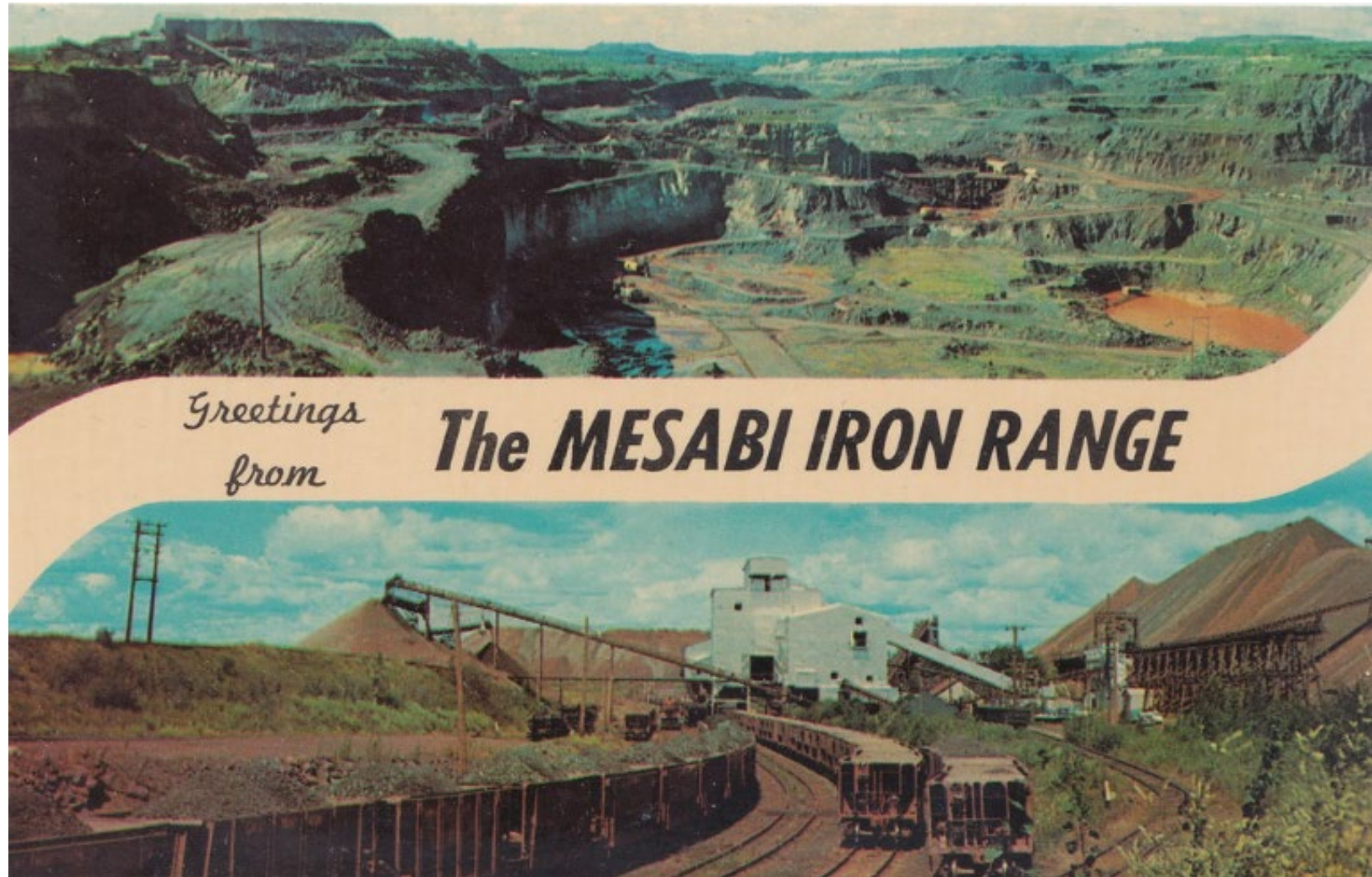
The Iron Range: Uniqueness and Opportunities for Brownfield Redevelopment

OR...WE ARE DIFFERENT AND SO ARE OUR BROWNFIELDS



UNIQUENESS'S

- Locations and Towns proximate to historic underground mines and open pits
- Limited Land for Development - Land Use, Ownership, and Encumbrances
- Re-development of available land requires knowledge of mining history
- Brownfield Economics – Larger funding gaps and multiple agency support



Locations and their legacy impacts



A Look at the Land: Land Use, Ownership, and Encumbrances

LAND INFORMATION PORTAL

Welcome, MarinucciJ

Search Results Details Map

Layer List

- ☒ Labels
- ☐ Administrative Boundaries
- ☐ Addresses
- ☐ Ownership
- ☐ Public Lands
- ☒ Cadastral
- ☐ Economic Development
 - ☐ Housing Projects
 - ☐ Development Opportunities
 - ☐ Development Programs & Areas
 - ☐ Historic Sites and Districts
 - ☐ Transportation
 - ☐ Utilities
 - ☒ Environmental Concerns
 - ☒ MPCA Sites
- ☐ Emergency Operations
- ☐ Market Activity
- ☐ Property Health Indicators
- ☐ Zoning

Map View: Aerial imagery showing land use, ownership, and encumbrances. Labels include BALKAN, CHISHOLM, and HIBBING. Roads shown include Hwy 5, Hwy 73, Hwy 169, and 4th Ave SE. A search bar at the top right allows for address or tax PIN lookup. The bottom status bar shows coordinates (47.46125 -92.96493 Degrees) and a scale bar (0.4mi).

A Look at the Land: Public Land

LAND INFORMATION PORTAL

Welcome, MarinucciJ

Search Results Details Map

Layer List

- ☒ Labels
- ☐ Administrative Boundaries
- ☐ Addresses
- ☐ Ownership
- ☒ Public Lands
- ☒ Cadastral
- ☐ Economic Development
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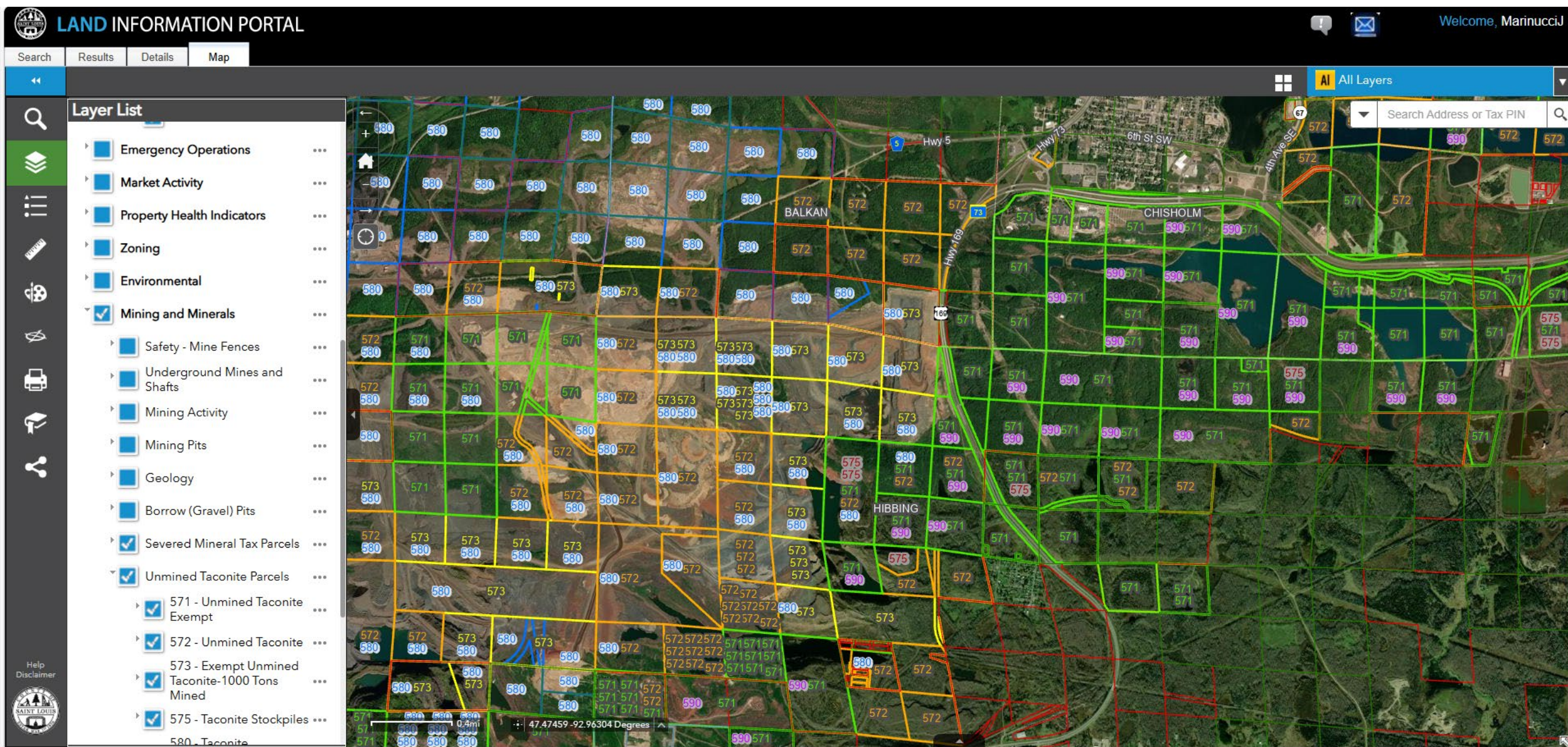
All Layers

Search Address or Tax PIN

Map view showing land parcels overlaid on an aerial image. The map displays various colored overlays representing different land categories. Labels for 'BALKAN', 'CHISHOLM', and 'HIBBING' are visible. Roads shown include Hwy 5, Hwy 73, Hwy 169, and Hwy 67. A scale bar indicates 0.4mi. Coordinates are displayed as 47.47332 -92.96184 Degrees.

Help Disclaimer

A Look at the Land: Severed Minerals



A Look at the Land: Iron Formation

LAND INFORMATION PORTAL

Welcome, MarinucciJ

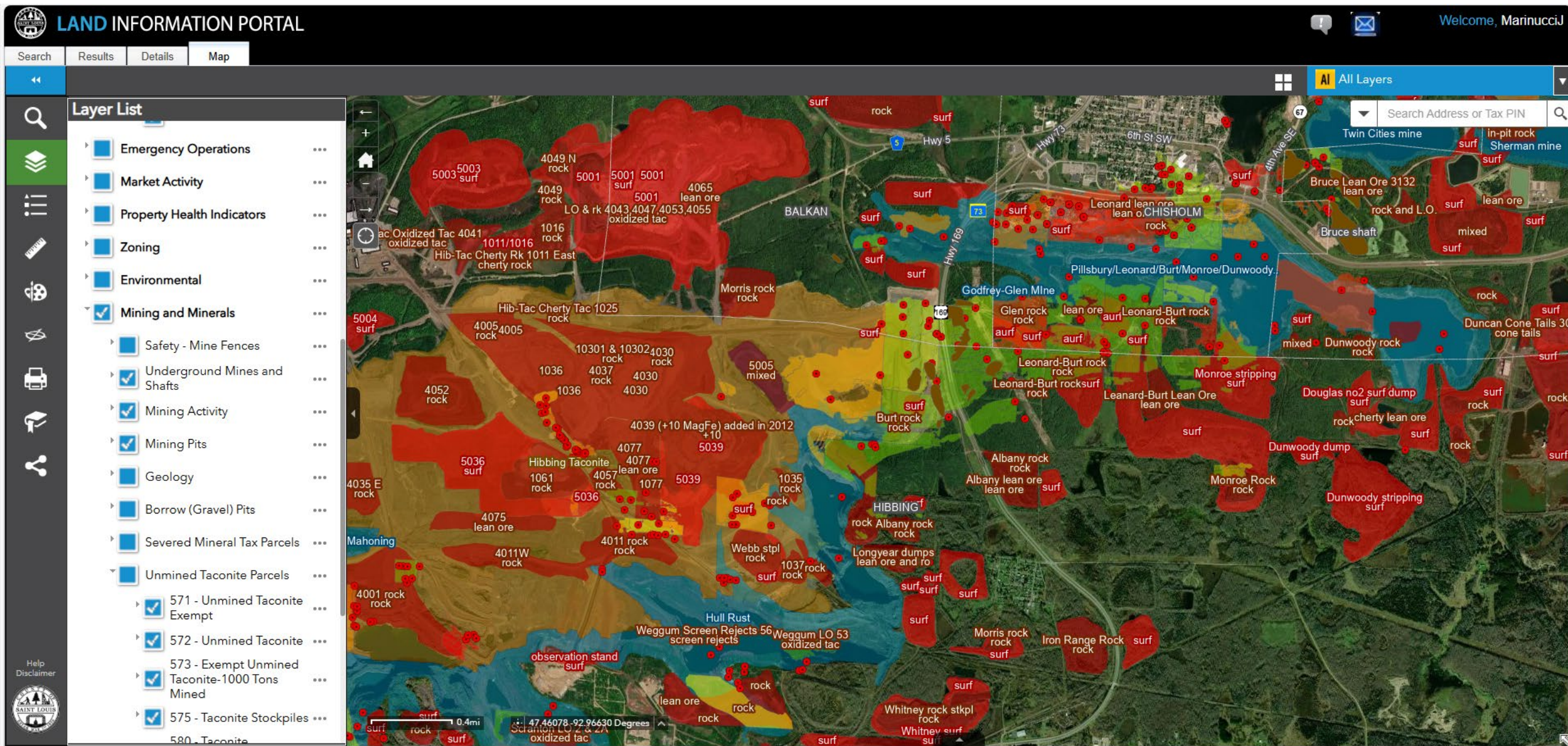
Search Results Details Map

Layer List

- Emergency Operations ...
- Market Activity ...
- Property Health Indicators ...
- Zoning ...
- Environmental ...
- ☒ Mining and Minerals ...
 - Safety - Mine Fences ...
 - Underground Mines and Shafts ...
 - Mining Activity ...
 - Mining Pits ...
 - ☒ Geology ...
 - Borrow (Gravel) Pits ...
 - Severed Mineral Tax Parcels ...
 - Unmined Taconite Parcels ...
 - ☒ 571 - Unmined Taconite Exempt ...
 - ☒ 572 - Unmined Taconite ...
 - ☒ 573 - Exempt Unmined Taconite-1000 Tons Mined ...
 - ☒ 575 - Taconite Stockpiles ...
 - 580 - Taconite ...

Map View: Aerial imagery with a yellow overlay indicating the Biwabik Iron Formation. Labels on the map include BALKAN, CHISHOLM, HIBBING, Hwy 5, Hwy 73, Hwy 169, 6th St SW, and 4th Ave SE. A scale bar shows 0.4mi and coordinates are 47.47082 -92.96768 Degrees.

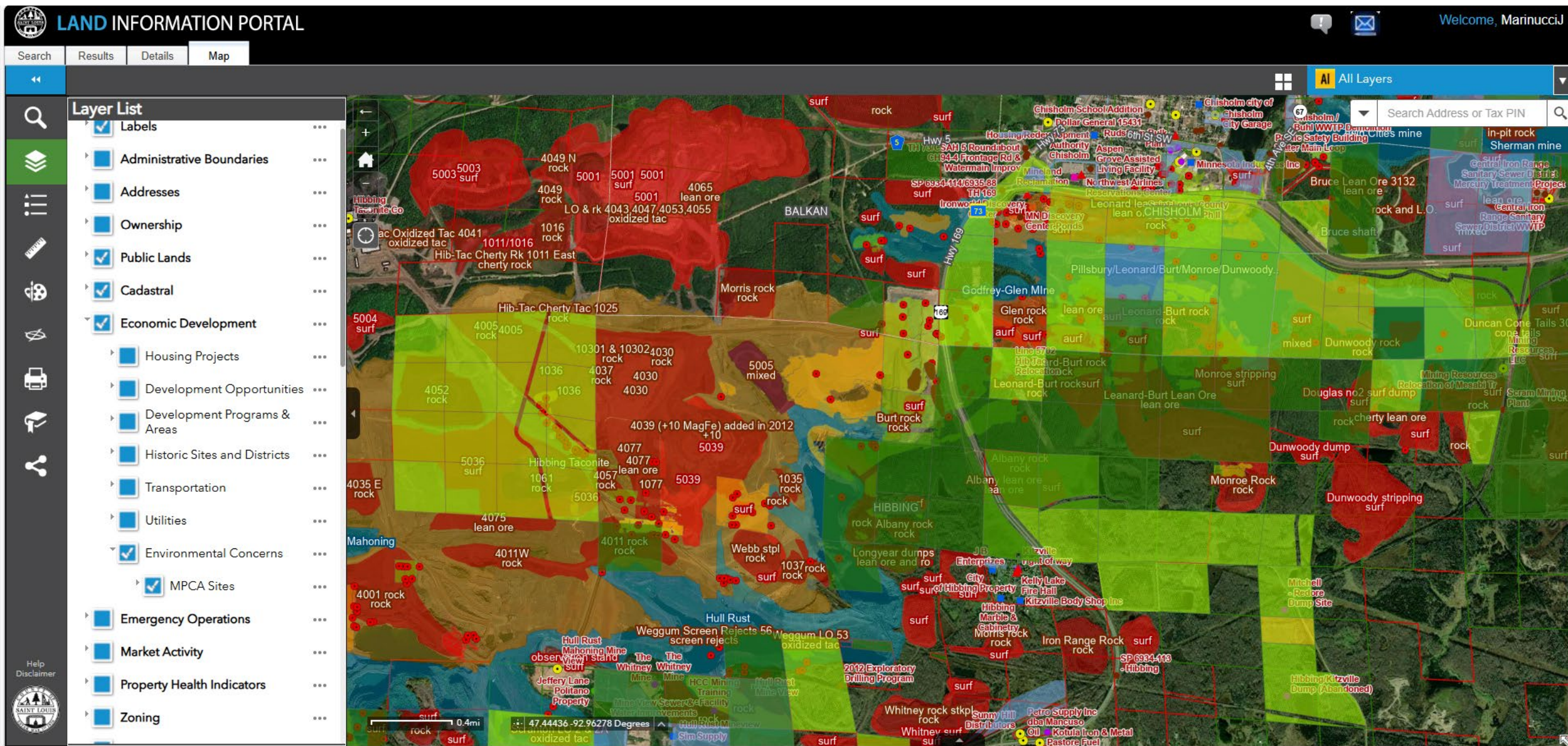
A Look at the Land: Mining Features



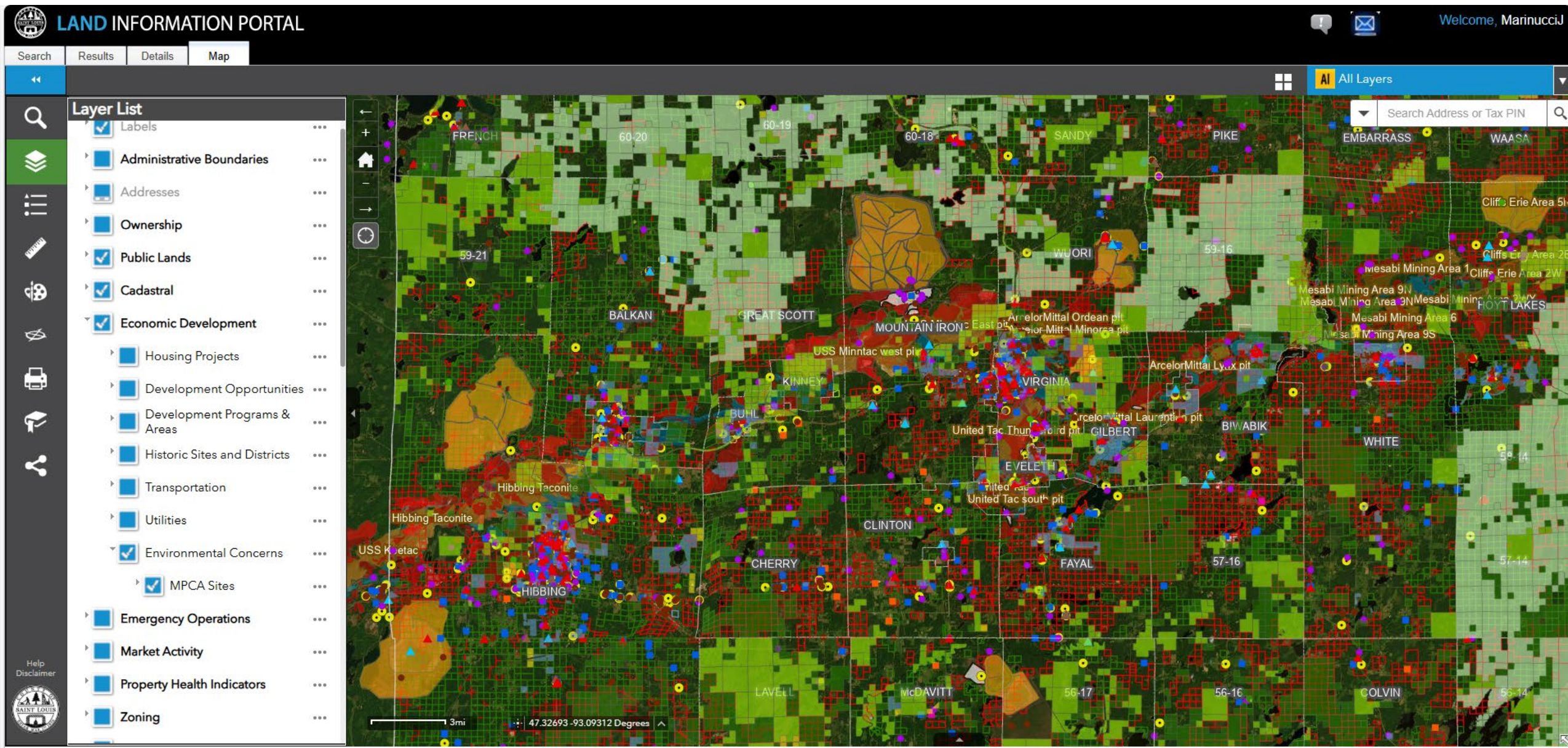
A Look at the Land: “What’s in my backyard?” MPCa



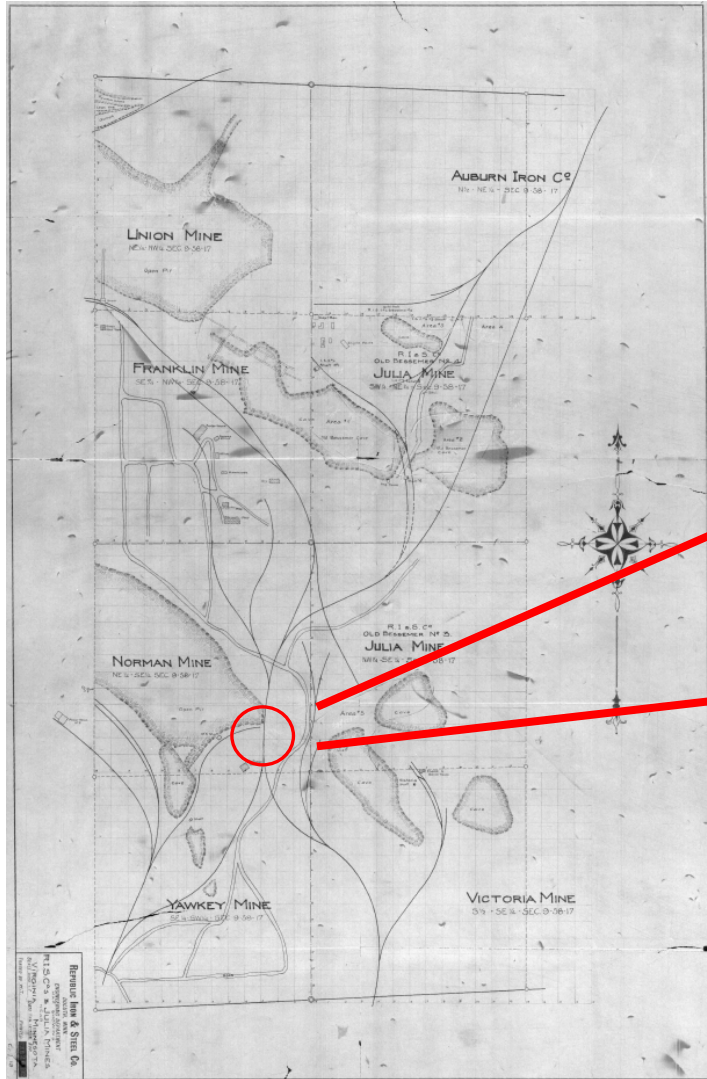
A Look at the Land: Land Use, Ownership, and Encumbrances



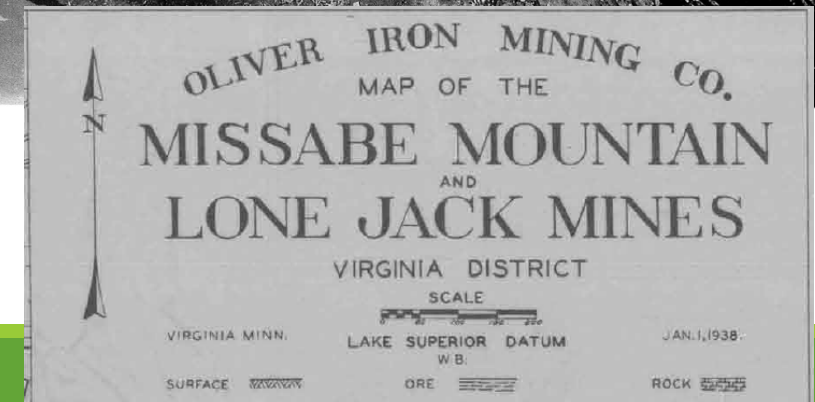
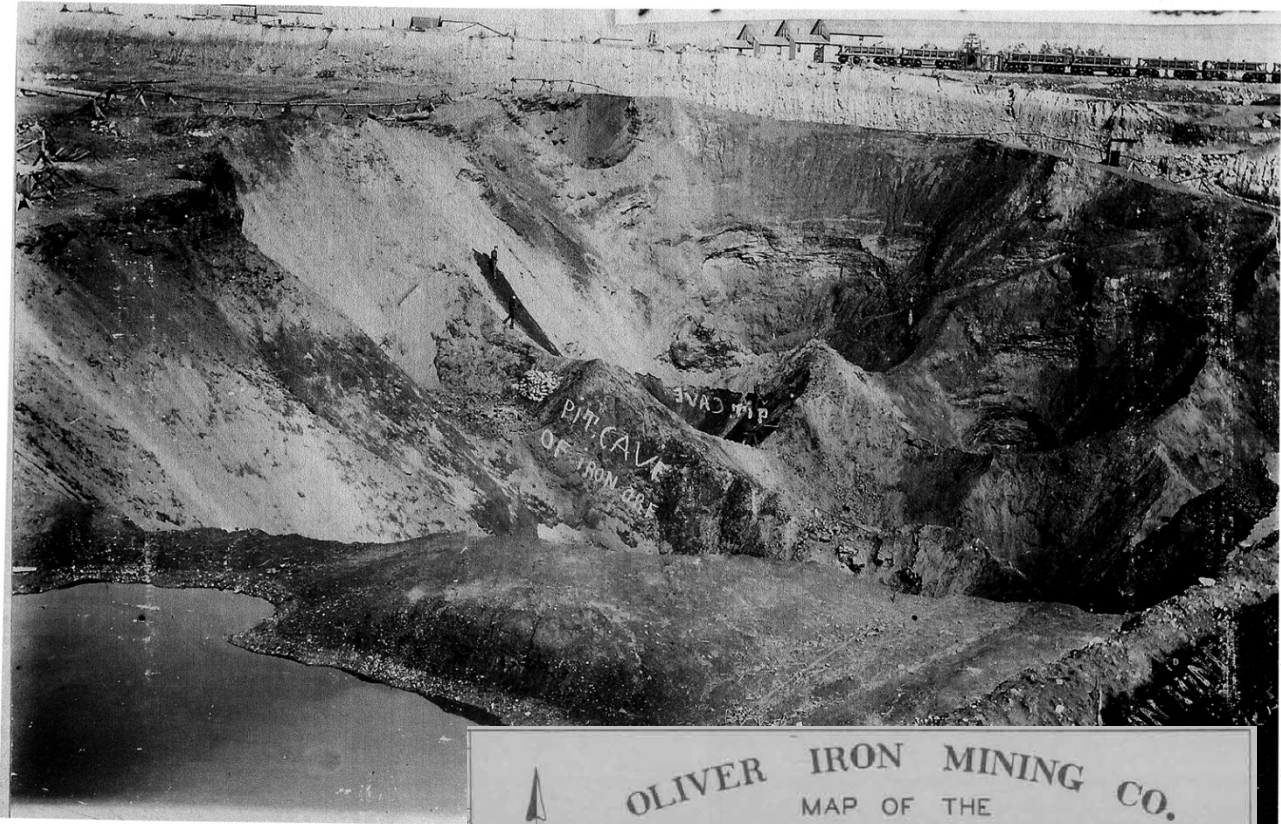
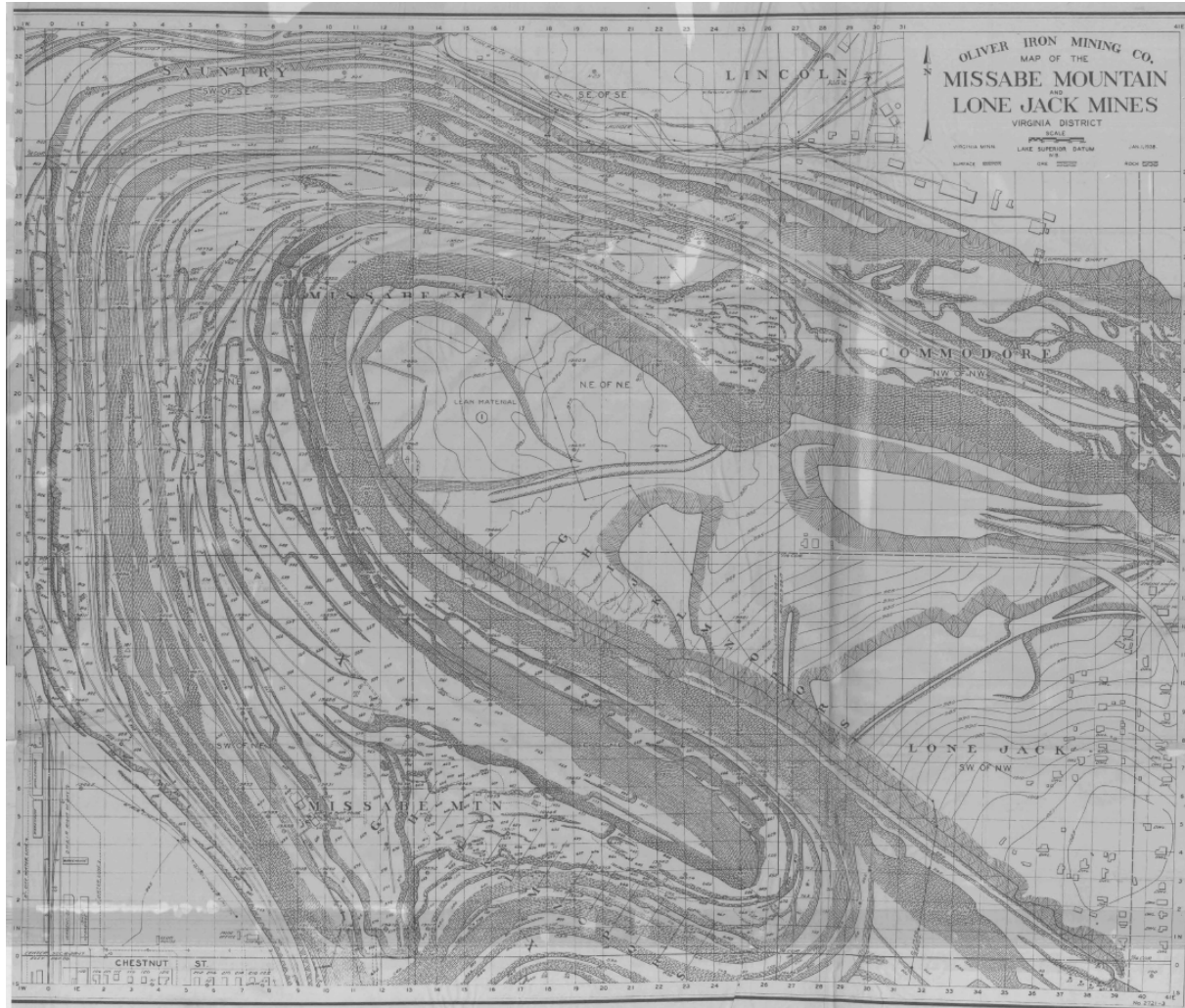
A Look at the Land: Land Use, Ownership, and Encumbrances

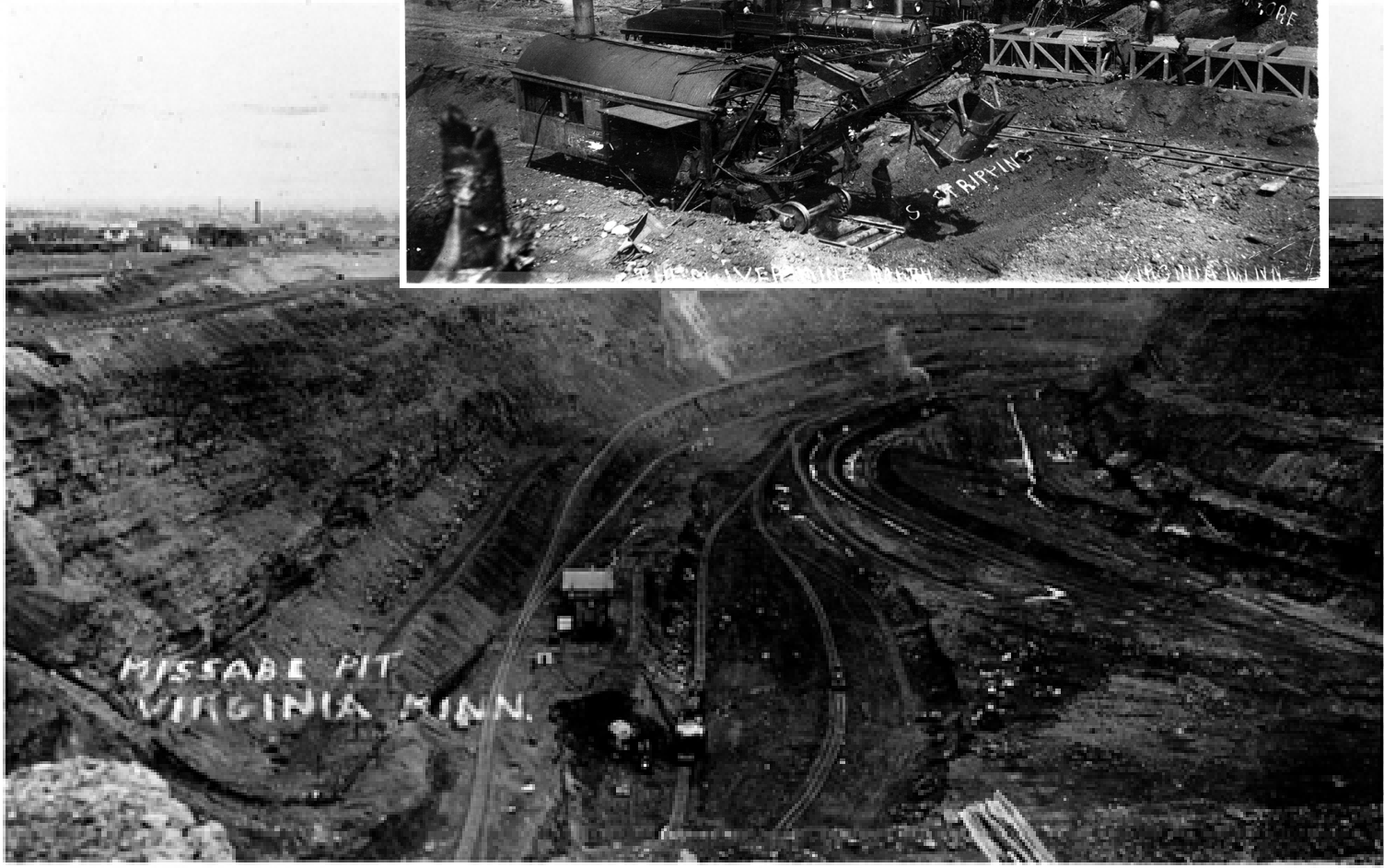


Environmental Assessment Requires Knowledge of Mining History



Environmental Assessment Requires Knowledge of Mining History





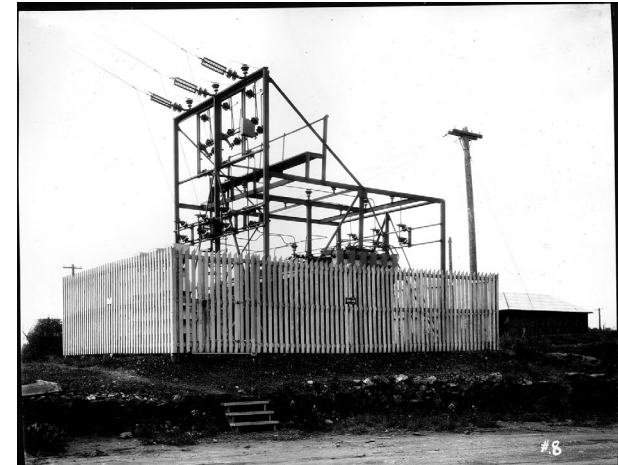
Environmental Assessment Requires Knowledge of Mining History

Practices

- Coal locomotives, steam shovels etc.
- Electrical Power Generation
- Substations
- Foundry's
- Carpenter shops
- Paint Shops
- Coal Tar Hot Dipping (treated timbers and RR ties)
- Equipment Maintenance
- Machining and weld shops
- Fueling

Potential Contaminants

- Polyaromatic Hydrocarbons (PAH)
- Polychlorinated Biphenyls (PCB)
- Dioxanes/Furans
- Cyanide
- Priority Metals (Sb, As, Be, Cd, Cr, Cu, Pb, Hg, Ni, Se, Ag, Ti, Zn)
- Volatile Organic Compounds (Solvents)
- Petroleum (GRO/DRO)
- Explosives
- Asbestos
- Dibromo-chloropropane



Brownfield Economics – Larger Funding Gaps and Multiple Agency Support Needed

The Perfect World – No Real or Perceived Releases

Step 1 Buy Land \$\$ ☹️ ➡️ Land Appreciates \$\$ 😊

Step 2 Develop Business improvements or Public Space ☹️ ➡️ Improvements Appreciate and business is profitable \$\$ 😊

- 2 Smiles/2 Frowns
- Private investment is leveraged early in the process
- Few regulatory or funding agency's required
- Little to zero gap funding is needed (enticement funding)
- Jobs and tax base are created with a minimum of public investment

Brownfield Economics – Larger Funding Gaps and Multiple Agency Support Needed

The World with Perceived or Real Releases

Step 1 Site Assessment 😞 ➡ SI/RAP 😞 ➡ Obtain appropriate administrative or legal protections that attach to the Land and the entity 😞

Step 2 Buy Land \$\$ 😞 ➡ Land Appreciates 😊

Step 3 Develop Business improvements or Public Space with a CCP 😞 ➡ Improvements Appreciate and business is profitable 😊

- Two smiles/six frowns
- Private investment is discouraged early in the process without public investment
- Multiple funding and regulatory agency's are involved.
- Gap Funding can be overcome by appreciation and/or profitability
- Jobs and Tax base typically require the gap funding

Brownfield Economics – Larger Funding Gaps and Multiple Agency Support Needed

The World with Perceived or Real Releases on the Iron Range

Step 1 Site Assessment 😞 → SI/RAP 😞 → Obtain appropriate administrative or legal protections that attach to the Land and the entity 😞

Step 2 Buy Land \$\$ 😞 → Land may not appreciate 😞

Step 3 Develop Business improvements or Public Space with a CCP 😞 → Improvements may not appreciate but business is profitable 😊

- One smile/eight frowns
- Private investment is discouraged early in the process without public investment
- Multiple funding and regulatory agency's are involved.
- Gap Funding can be overcome by profitability - the one smile is totally driven by the business potential or value of public space.

East Range Clinic to Waschke Auto Plaza Virginia, MN

Prior to the clinic – A part of the
Historical Oliver Shops

Funding Stack:

- Phase I and Phase II – City of
Virginia
- RAP and CCP – DEED
- Geotechnical corrections-DEED
- Land purchase
- Construction – Waschke



Figure 1. Non-active site identified for potential Brownfield redevelopment. East Range Clinic prior to demolition.



Figure 2. Same site following redevelopment into expanded economically viable business. Waschke Auto Plaza – June 2019.

Hibbing Mine View

In the late 1890s, the 157-acre site was originally developed with residential house and operations buildings in support of the Hull Rust Mahoning open pit mine. Relocation of the residences began in 1910s. Oliver Mining Company shops and the DM&IR rail corridor encompassed the site from the late 1890s until the 1960s.

<https://webapp.pca.state.mn.us/wimn/site/215941/documents>

Mining Potential:
12M tons of ore= 3.6M tons of pellets

Pellet Value \$360,000,000

Production Tax Benefit: \$11,732,400

Note: These are rough estimates and only realized if the land is mined.



Gilbert Dump

Historic city dump, operated from about the 1920s until the early 1970s. The property is now surrounded by active taconite mining, removal of the dump opened area for mining.

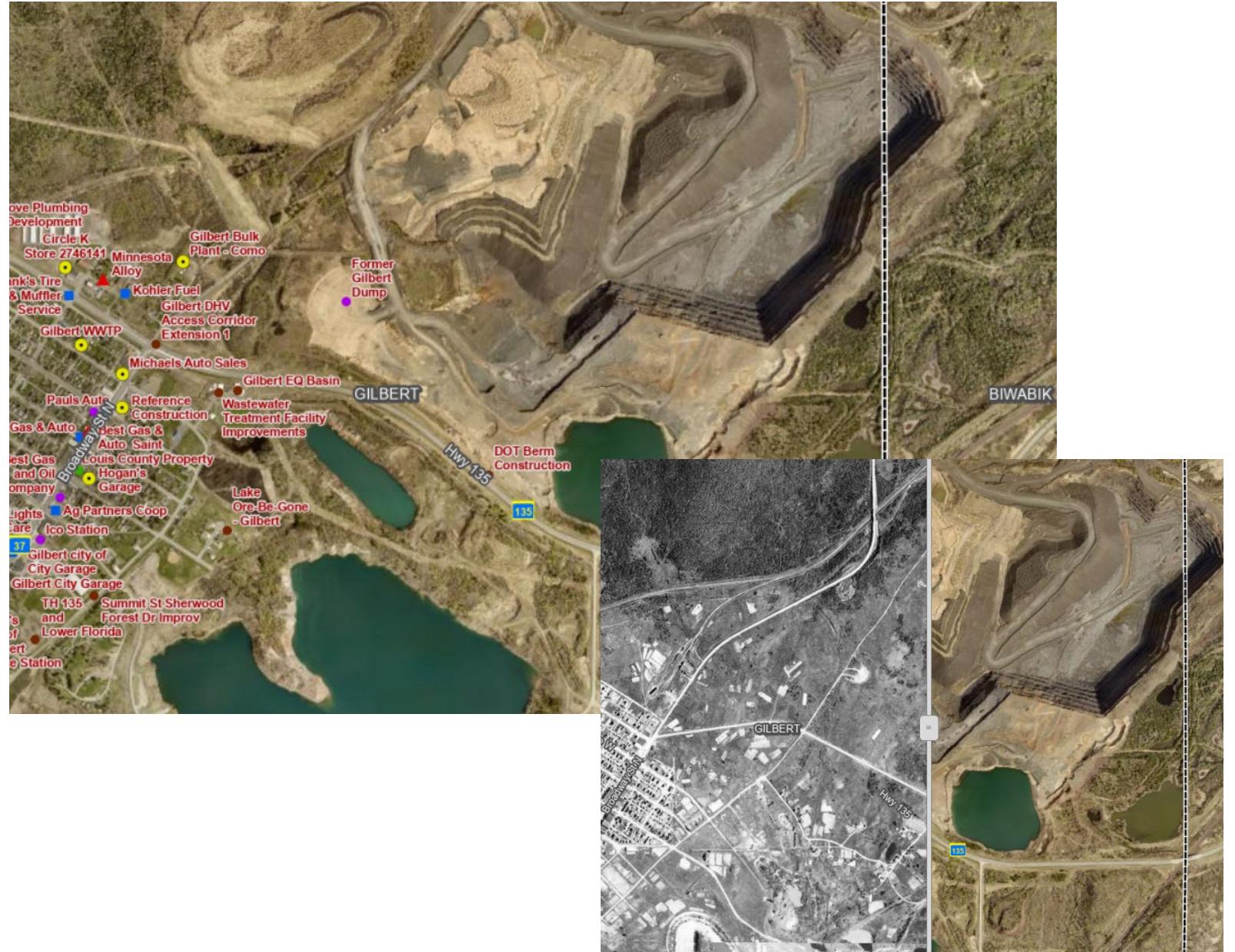
<https://webapp.pca.state.mn.us/wimn/site/187288>

Mining Potential:
400,000 tons of ore=120,000 tons of pellets

Pellet Value \$12,000,000

Production Tax Benefit: \$391,080

Note: These are rough estimates and only realized if the land is mined.



FORMER LTV – LARGEST BROWNFIELD IN THE COUNTRY

2001 LTV filed for bankruptcy

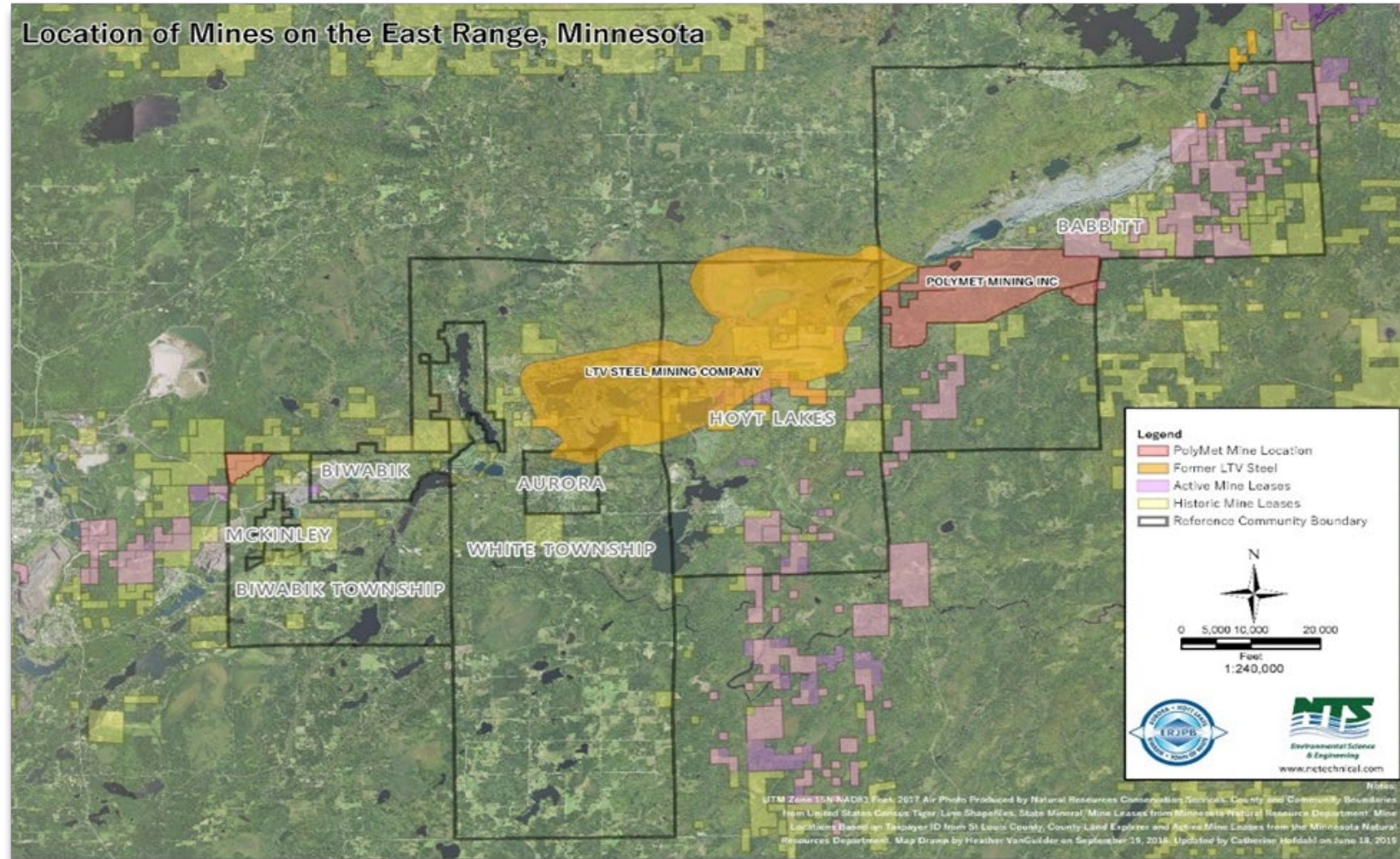
Minn rules 6130.4100 prohibited demolition of the infrastructure and required a Closure Plan

The VIC program was included in the closure plan specifically to position for future re-use.

About 50 areas of concern were identified.

Today CE, New Range and SDI have assessed, and in some cases, cleaned up many of the AOC.

Other than Petro fund reimbursements, all private investment.



Punch Lines

- Most Iron Range Communities are landlocked.
- Most Iron Range Cities are proximate to historical mining lands that must be used for economic development.
- Understanding the historical mining process and records is key the assessment practice.
- Transient historical operators and complex surface and mineral ownerships make it very difficult to find RPs. Voluntary programs along with the economic development goal is the only way to address environmental issues.
- The economic driver is modern mining (all kinds😊)