MPCA/EPA Meeting

Cliffs Erie – Hoyt Lakes Mine Site & Tailings Basin

March 30, 2016

Minnesota Pollution Control Agency

EPA-R5-2018-005870_0002468

History

- Operated 1950s to 2000
  - Erie Mining Company / LTVSMC
- 2001 – LTV Bankruptcy
  - State Master Agreement
    - Multiple Signatories
      - State, MPCA, MDNR, IRRRB, Cleveland Cliffs, Minn Power, LTV
    - State Goal of Brownfield Redevelopment
    - Reclamation/Closure of Areas Not Redeveloped
    - Permits Reissued to Cliffs Erie LLC for Closure
    - Corporate Guarantee - Cleveland Cliffs / Cliffs Natural Resources

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History

- 2005 – 2007 Property Transfers / Agreements
  - Mesabi Nugget LLC Sale(2005)
    - Area 1
  - Mesabi Mining LLC Sale (2007) Steel Dynamics
    - Areas 6, 9 and 2WX
  - PolyMet Various Agreements (2005-6)
    - Plant Site, Tailings Basin, Area 5
    - Contracts Between Cliffs Erie and PolyMet (MPCA is Not Involved)
    - Cliffs Erie Continues to Hold Permits

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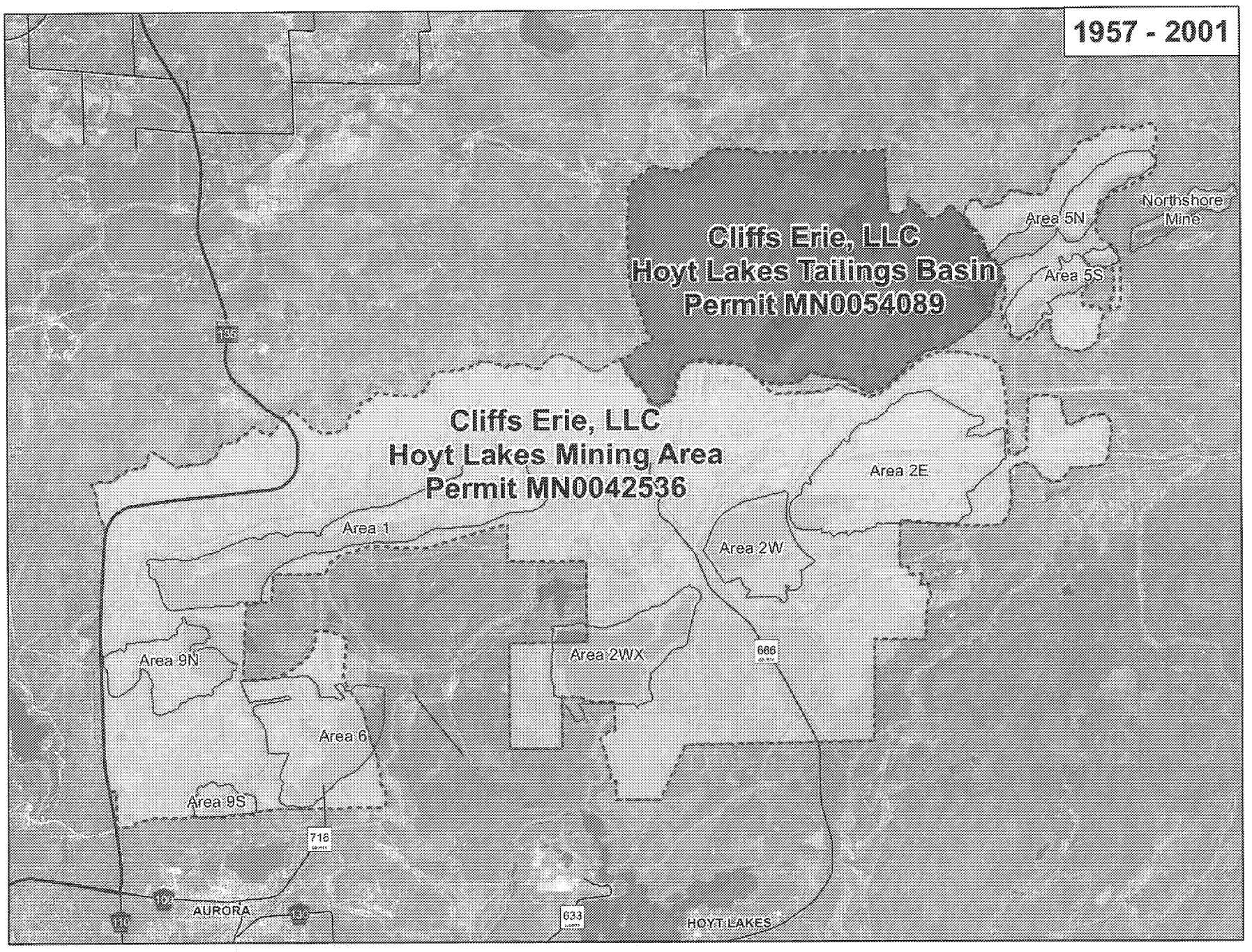

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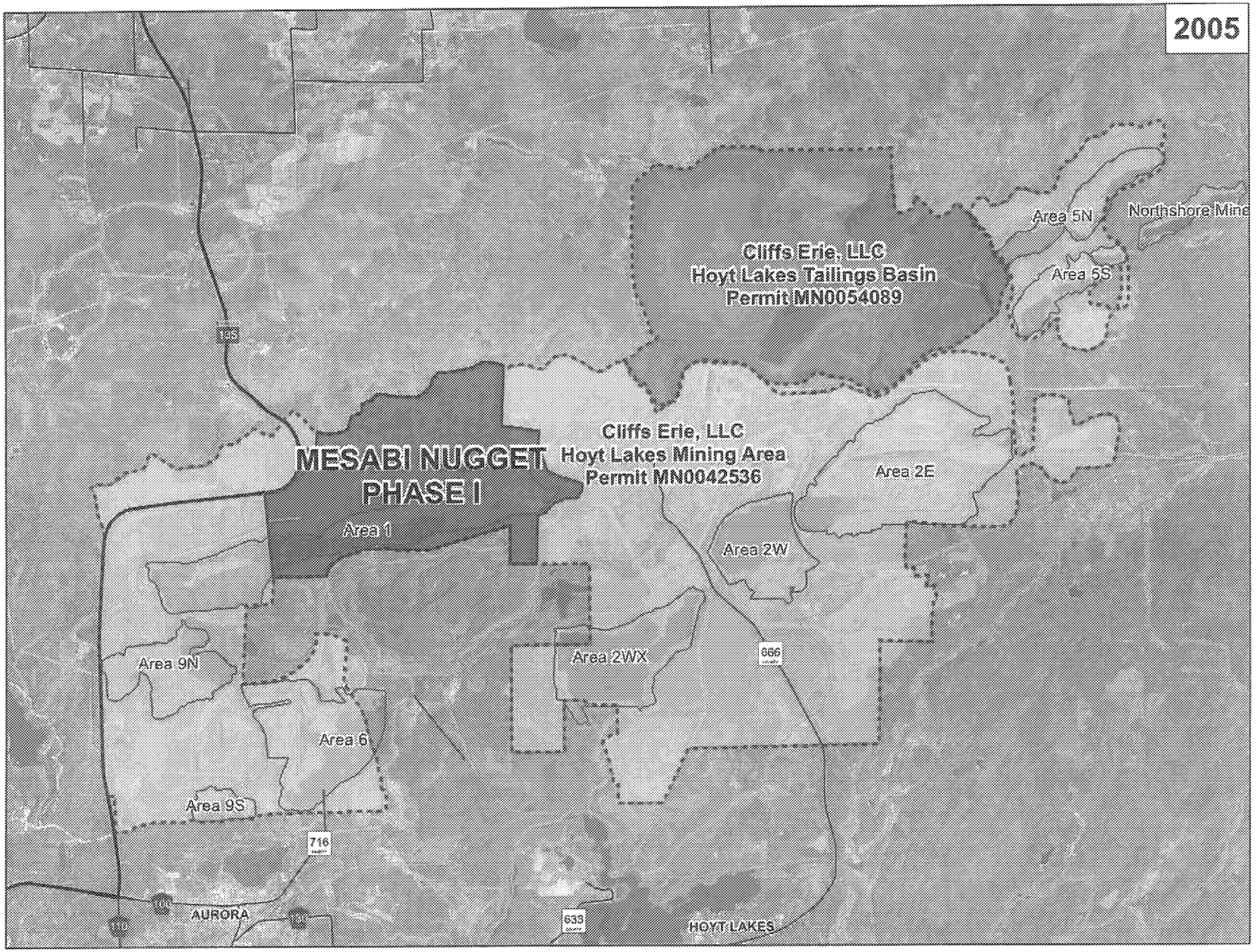
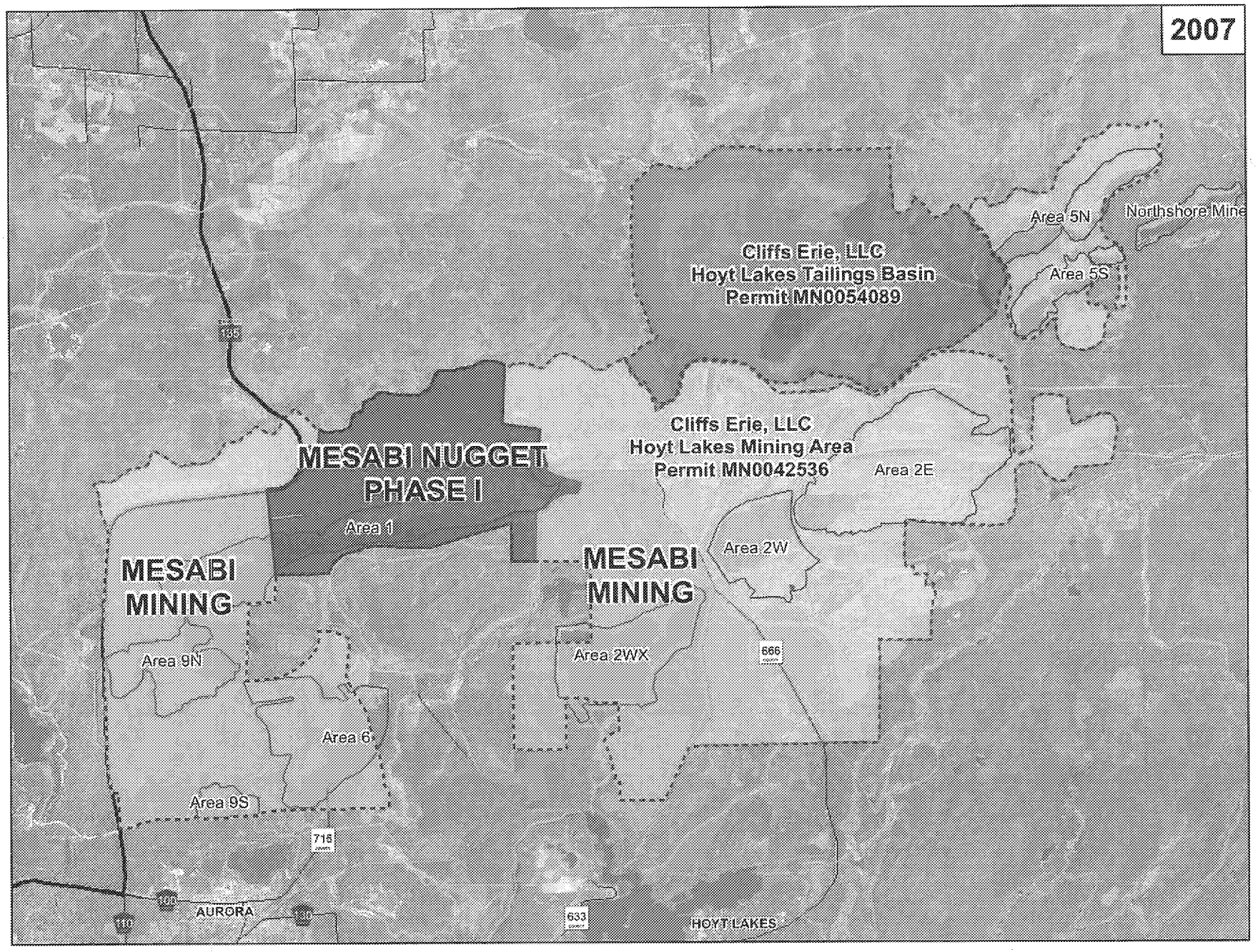

2005
Cliffs Erie, LLC
Hoyt Lakes Tailings Basin
Permit MN0054089
Area 5N
Northshore Mine
Area 5S
135
Cliffs Erie, LLC
Hoyt Lakes Mining Area
Permit MN0042536
MESABI NUGGET
PHASE I
Area 1
Area 2E
Area 2W
Area 2WX
666
Area 9N
Area 6
Area 9S
716
AURORA
633
HOYT LAKES



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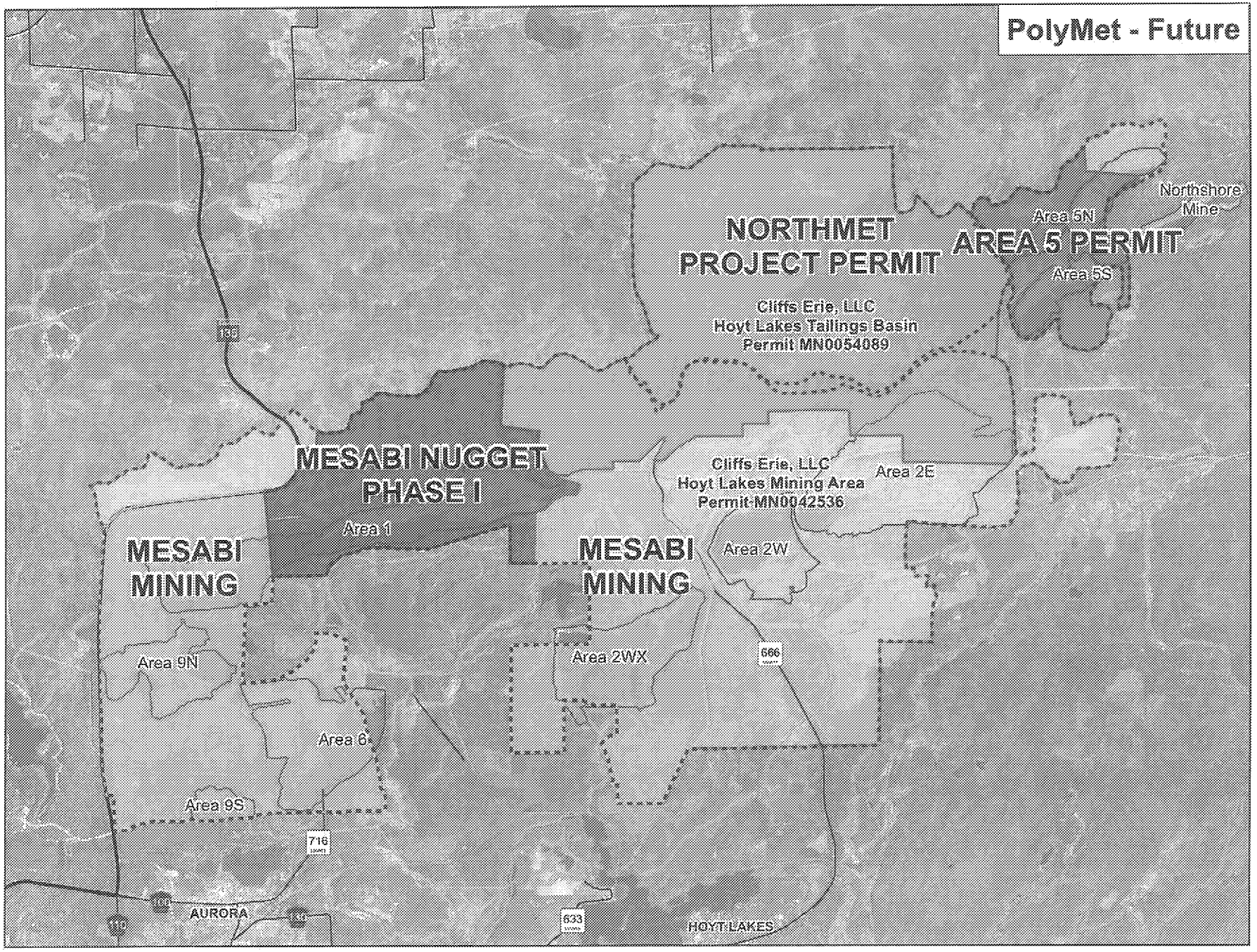

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Background

- Remaining Cliffs Erie LLC Permits for Hoyt Lakes Site:
  - MN0042536 (Hoyt Lakes Mine Area)
  - MN0054089 (Hoyt Lakes Tailings Basin Area)
- Reissued in 2001 for Closure Only
- Expired but Administratively Extended
- Dunka Mine Permit
  - Part of State Master Agreement, But Not Part of This Discussion

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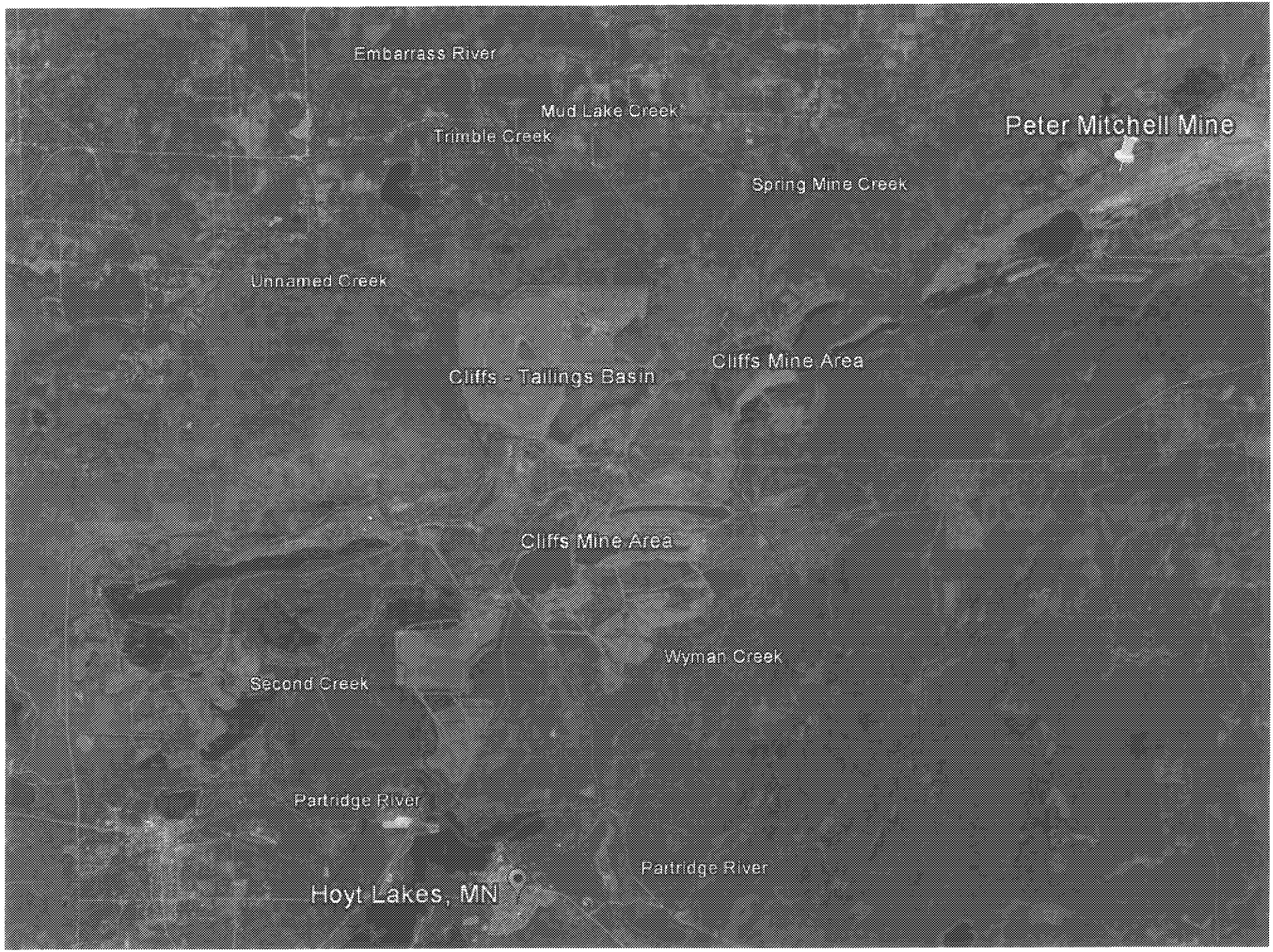
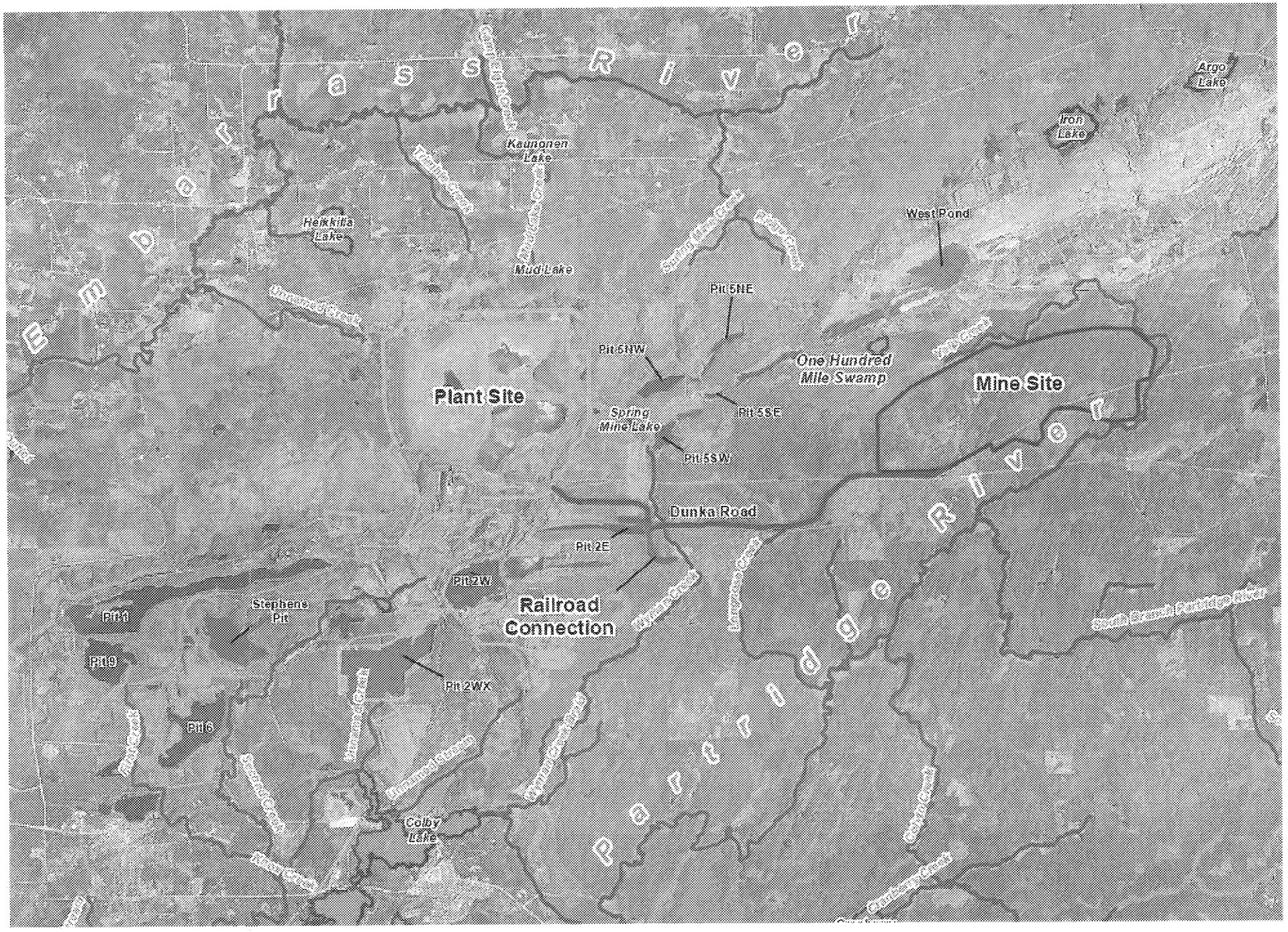

Embarrass River
Mud Lake Creek
Trimble Creek
Peter Mitchell Mine
Spring Mine Creek
Unnamed Creek
Cliffs Mine Area
Cliffs - Tailings Basin
Cliffs Mine Area
Wyman Creek
Second Creek
Partridge River
Partridge River
Hoyt Lakes, MN



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Background/History

- Consent Decree – April 2010
  - In Response to 60-Day Notice for Citizens Lawsuit
  - Addresses Alleged Permit Violations:
    - TSS, Turbidity, D. Iron, Boron and pH at the TB
    - pH and Temperature at the Mining Area
    - Also Included the Dunka Mine

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Background/History

- Consent Decree – April 2010 (cont.)
  - 'Bridge' to Reissuance of Permits
    - Also Addresses 'Parameters of Concern'
      - Sulfate, TDS, Specific Conductance, Alkalinity, Hardness
  - Required:
    - Short-term Mitigation
    - Field Studies
    - Longer-term Mitigation
- Consent Decree Remains In Effect

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Original Permitting Strategy

- Reorganize the 2 Existing Permits into 3 Reissued Permits
  - Reissue Existing TB Permit to Cliffs Erie
  - Separate Area 5 from the Existing Mining Area Permit and Issue 'New' Permit to Cliffs Erie
  - Reissue Remaining Portion of Existing Mining Area Permit to Cliffs Erie
- All 3 permits 'Major' Permits
- Would Include Appropriate Effluent Limits and Compliance Schedules (as needed)

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Original Permitting Strategy

- Advantages
  - Would Include New Regulatory Requirements
    - Monitoring, Limits, Schedules
  - Would Incorporate Remaining Applicable Requirements from Consent Decree
  - Goal of Facilitating the Potential Transfer of Relevant Permits to PolyMet
    - TB Permit as Part of Overall NorthMet NPDES/SDS Permit
    - Area 5 Closure Permit

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Definitions

- NorthMet = The Proposed Nonferrous Mining Project
  - Includes:
    - New Mining Area
    - Re-use of Existing Cliffs Erie Plant Area
    - Deposition of Nonferrous Tailings in Existing Tailings Basin
  - Does Not Include:
    - Legacy-only Tailings/Seepage at Tailings Basin
    - Area 5
  - Legacy Tailings/Seepage Becomes Part of NorthMet Project Upon Permitting and Operation of NorthMet
- PolyMet = The Corporation Proposing the NorthMet Project
- PolyMet ≠ NorthMet

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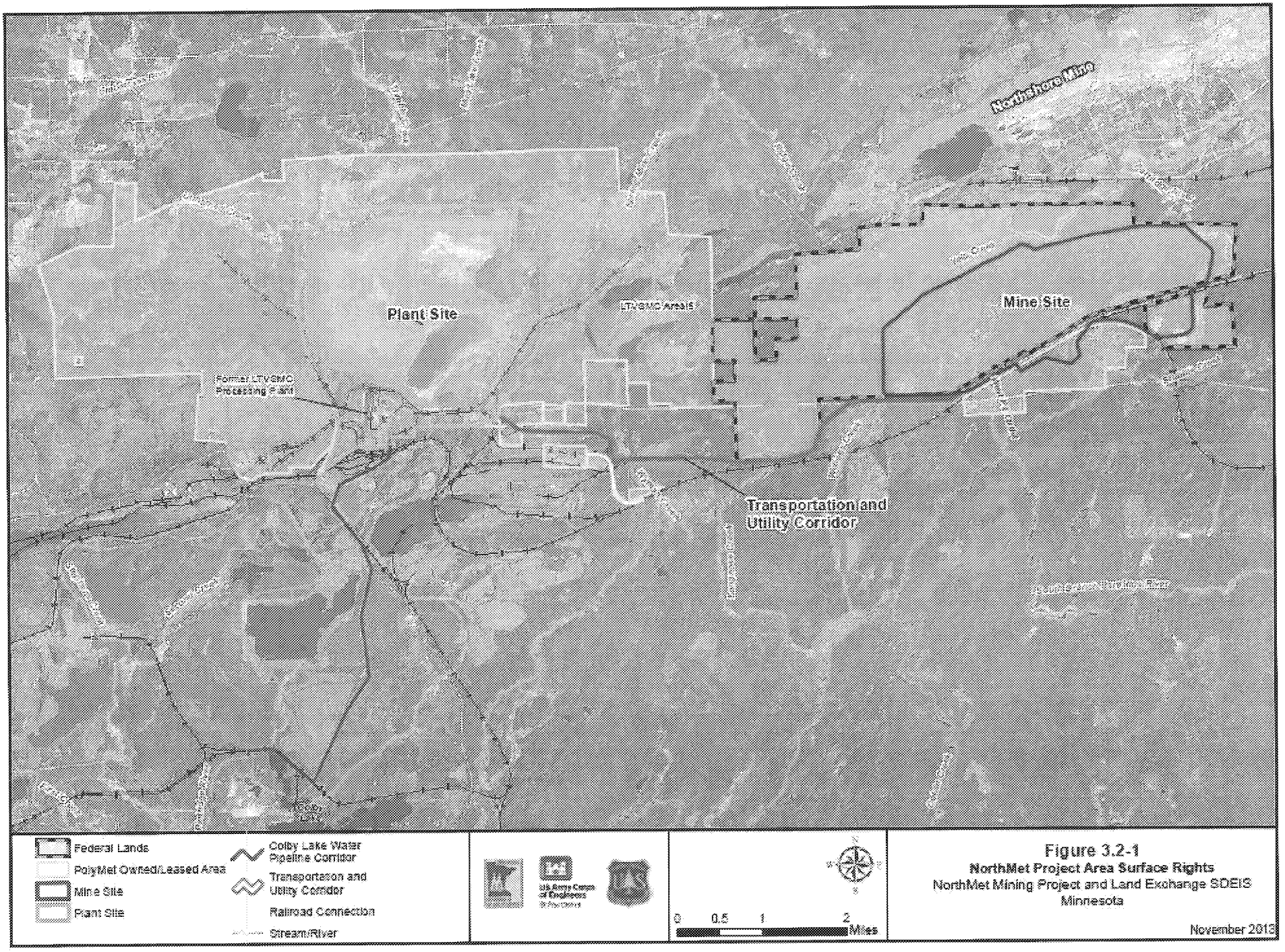

Figure 3.2-1
NorthMet Project Area Surface Rights
NorthMet Mining Project and Land Exchange SDEIS
Minnesota

November 2013

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Permitting Barriers

- Sulfate and Wild Rice
  - Uncertainty with Existing Rule
    - We know the WQS is 10 mg/L, but…
    - Where?
      - What is a Wild Rice Production Water?
    - When?
      - When is Wild Rice "Susceptible to Damage…"
  - 2011 State Legislation
    - Require MPCA to Study and If Appropriate, Revise the Current Standard
  - 2015 State Legislation
    - Until the Study is Complete and Revised Standard is Adopted (Jan 2018)
      - Cannot Include Sulfate Effluent Limits
      - Cannot Require Expenditure of Money for Sulfate Treatment for WR
      - Permittee Can Agree to 'Additional Conditions' (i.e., 10 mg/L)

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2015 Minn. Laws 1st Sp. Sess. Ch. 4, Art. 4, Sec 136

Sec. 136.
WILD RICE WATER QUALITY STANDARDS.

(a) Until the commissioner of the Pollution Control Agency amends rules refining the wild rice water quality standard in Minnesota Rules, part 7050.0224, subpart 2, to consider all independent research and publicly funded research and to include criteria for identifying waters and a list of waters subject to the standard, implementation of the wild rice water quality standard in Minnesota Rules, part 7050.0224, subpart 2, shall be limited to the following, unless the permittee requests additional conditions:

(1) when issuing, modifying, or renewing national pollutant discharge elimination system (NPDES) or state disposal system (SDS) permits, the agency shall endeavor to protect wild rice, and in doing so shall be limited by the following conditions:

(i) the agency shall not require permittees to expend money for design or implementation of sulfate treatment technologies or other forms of sulfate mitigation; and

(ii) the agency may require sulfate minimization plans in permits; and

(2) the agency shall not list waters containing natural beds of wild rice as impaired for sulfate under section 303(d) of the federal Clean Water Act, United States Code, title 33, section 1313, until the rulemaking described in this paragraph takes effect.

(b) Upon the rule described in paragraph (a) taking effect, the agency may reopen permits issued or reissued after the effective date of this section as needed to include numeric permit limits based on the wild rice water quality standard.

(c) The commissioner shall complete the rulemaking described in paragraph (a) by January 15, 2018.

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Permitting Barriers

- Compliance Schedules and/or Variances
  - Are Compliance Schedules Allowed?
    - Pre-1977 WQS
    - EPA has Indicated 'Yes'
  - CWA Requirement Related to Compliance Date
    - Need a Specified 'ASAP' Date for Final Effluent Limits
    - Such Date Unknown at Cliffs Sites – Unique and Complex Systems
  - Uncertainty on Criteria for EPA Approval of a Potential Variance

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Permitting Barriers

- 'Deep Seepage'
  - NPDES vs SDS
  - Where is the Point of Compliance?
  - How is a Compliance/'Effluent' Limit Determined?

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PolyMet NorthMet Project

- Original Goal
  - Transfer 2 of the 3 Reissued Cliffs Permits to PolyMet
- Additional Potential Barriers Identified
- Today's Focus is on the Tailings Basin
  - Only Part of Remaining Cliffs Erie Property Directly Related to the NorthMet Nonferrous Project

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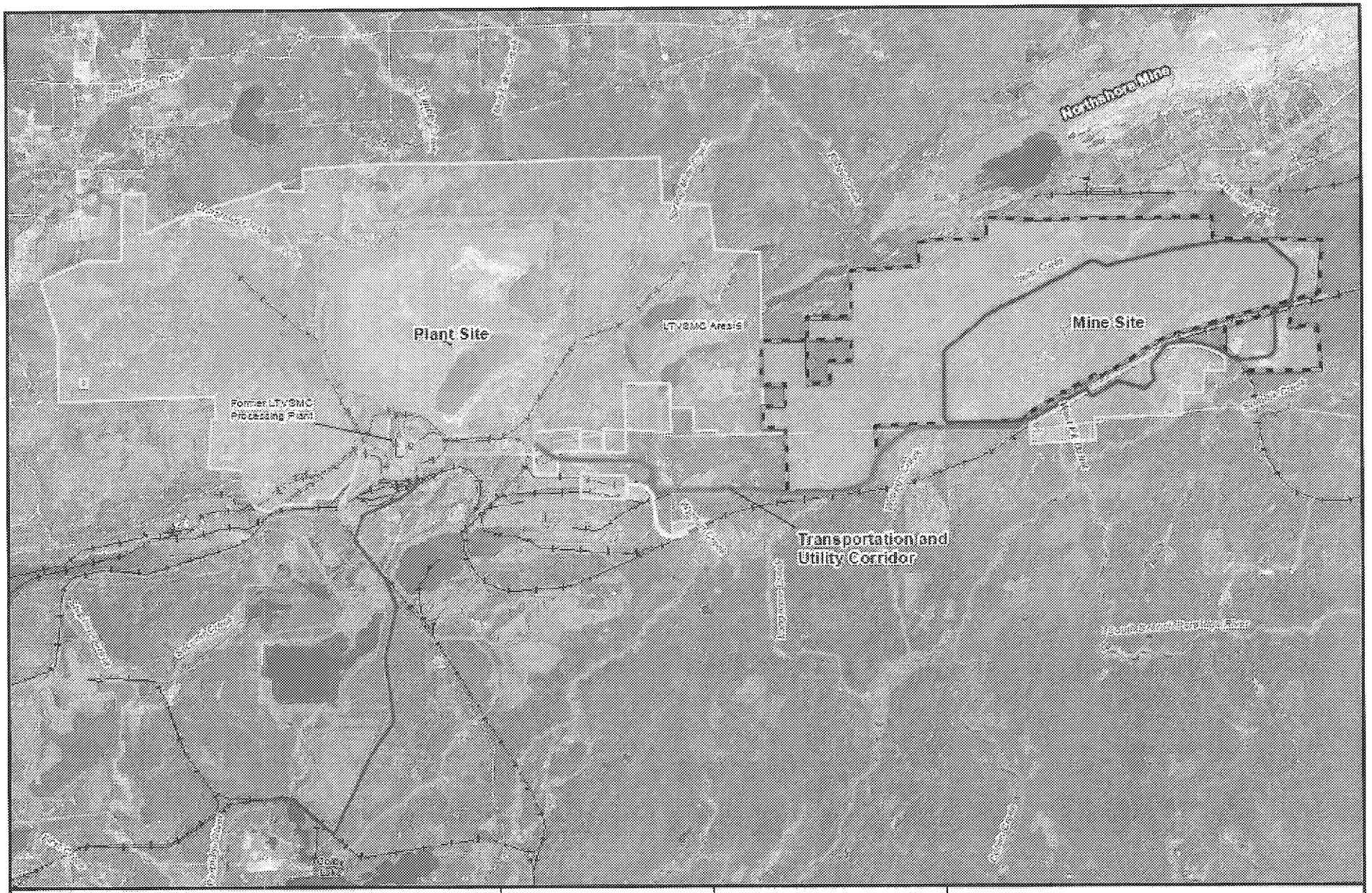

Figure 3.2-1
NorthMet Project Area Surface Rights
NorthMet Mining Project and Land Exchange SDEIS
Minnesota

November 2013

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Proposed NorthMet Project

- Key Engineering Controls at the TB
  - Groundwater Containment System (aka 'The Trench')
    - Captures Surface and Deep Seepage
    - Returns Seepage to Tailings Basin for Re-use
  - Reverse Osmosis WWTP
    - Treats Excess Basin Water for Discharge
    - Capable of Meeting 10 mg/L Sulfate
    - PolyMet has Agreed to Meet the Wild Rice Standard
  - Stream Augmentation
    - Treated Effluent Routed for Diffuse Discharge
    - Maintain Stream and Wetland Hydrology
    - Minimize Water Level Fluctuations

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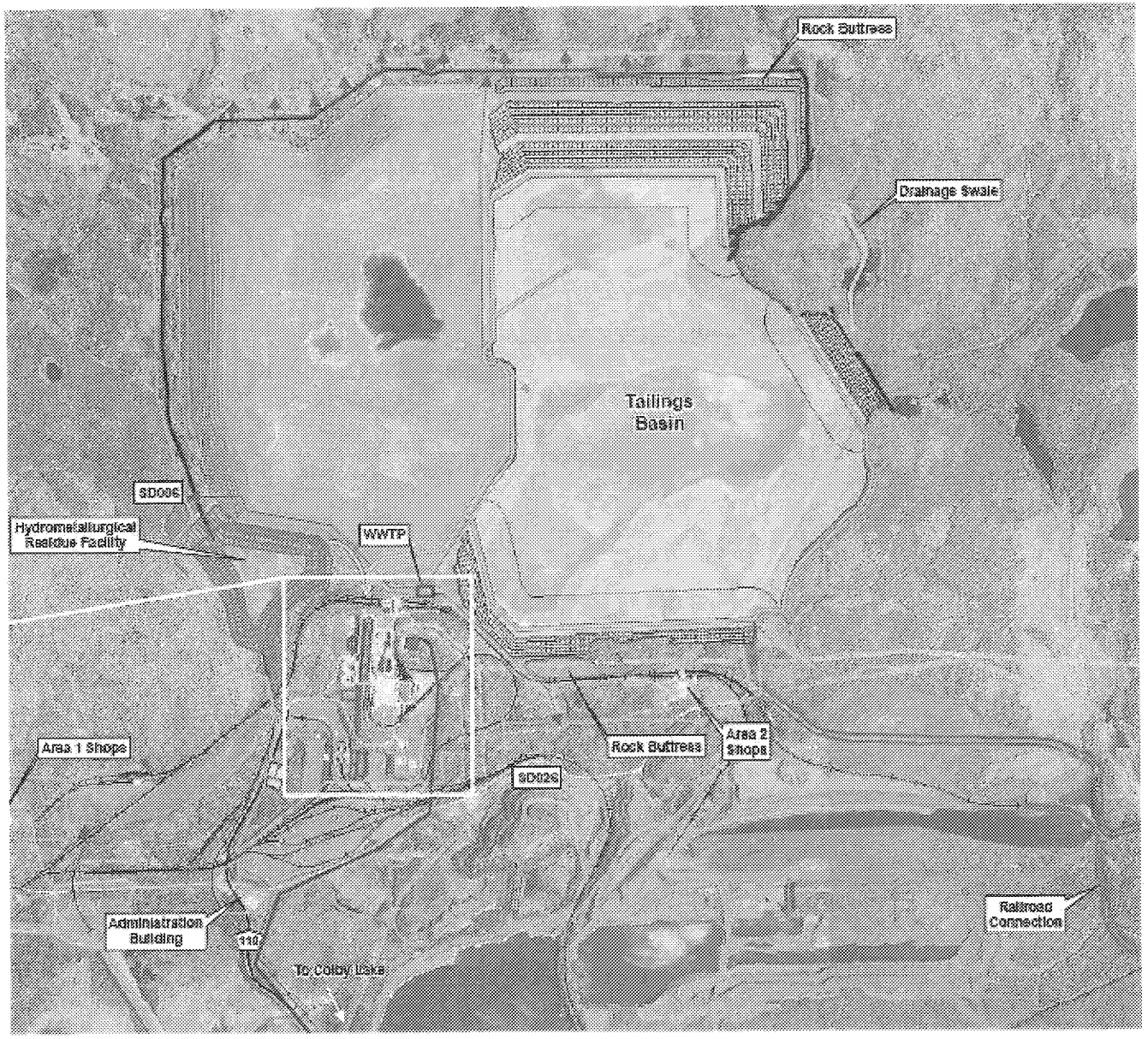

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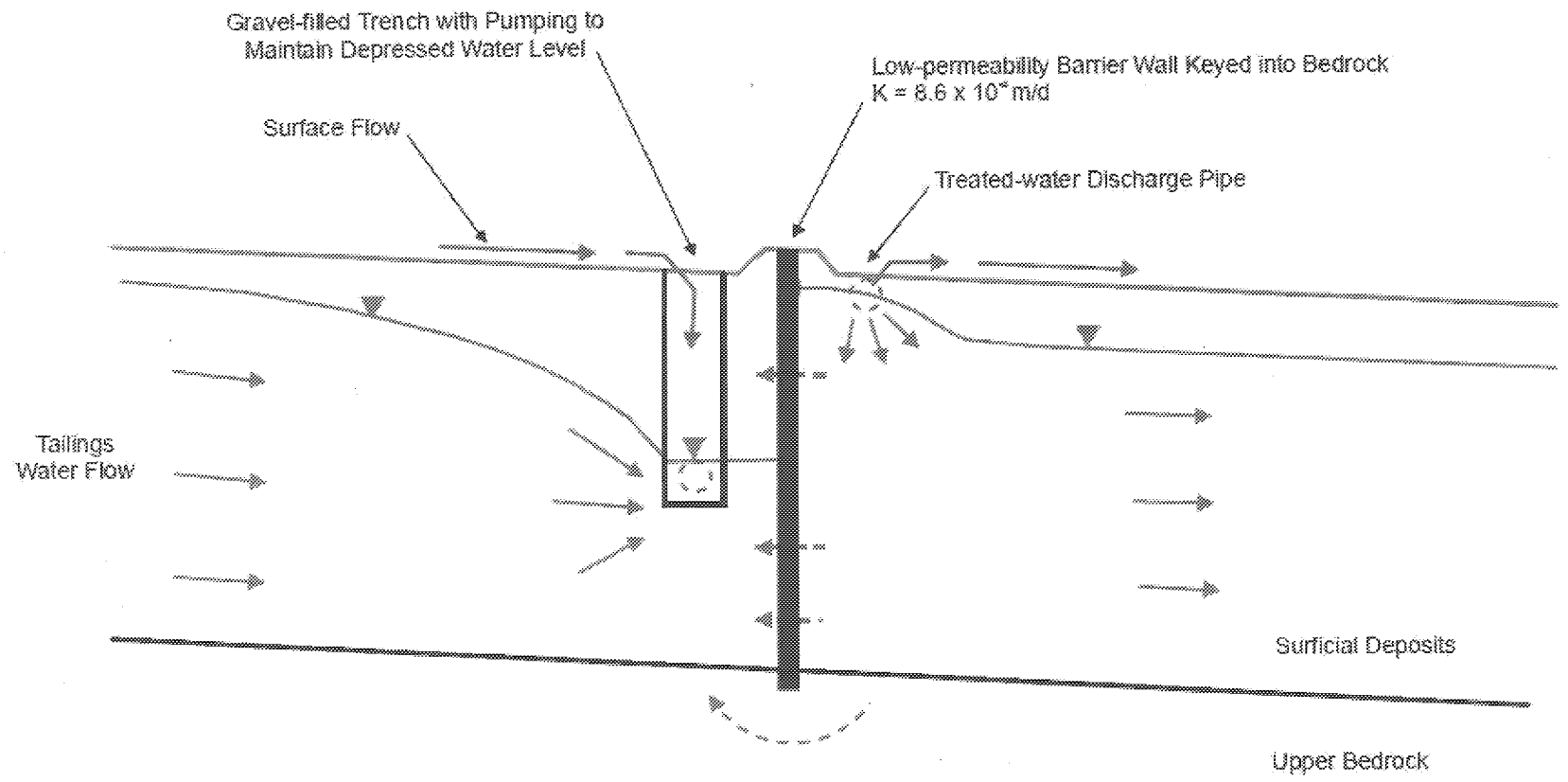

Not to Scale

Groundwater Flow
Very low Groundwater Flow
Surface Water Flow
Water Return Pipe

Figure 5.2.2-14
North/Northwest and West Tailings Basin Containment System Diagram
NorthMet Mining Project and Land Exchange FEIS
Minnesota

November 2015

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Proposed NorthMet Project

- Engineering Controls Designed as Part of NorthMet Project
  - It is Not a 'Mitigation'
  - However, They Will Also Resolve Legacy Issues
- They Were Not Designed for a Legacy/Closure-Only Scenario
  - NorthMet Involves a Complex Water Management Strategy Not Directly Applicable to Legacy-Only

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Barriers – NorthMet TB Permitting

- New NorthMet TB Permit Would Include NorthMet (Non-Ferrous) Tailings
  - New Source
  - However, There is Also an Existing Legacy WQ Impact/Exceedance of WQS
  - Limitations on Use of:
    - Permit Compliance Schedule
    - Variance

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Barriers – NorthMet TB Permitting

- New NorthMet TB Permit Would Require Final Limits Upon Issuance
  - Complicating Factors
    - Construction of Trench and WWTP Completed 1-2 Yrs After Permit Issued
      - Will Not Meet Final Limits Before Construction Completed
    - Initiation of Construction May Be Delayed
      - Will Not Meet Final Limits If Construction Delayed
    - Even If Construction Completed Immediately
      - Still a Lag Time in Compliance Downstream
  - Compliance Schedule is Not Allowed

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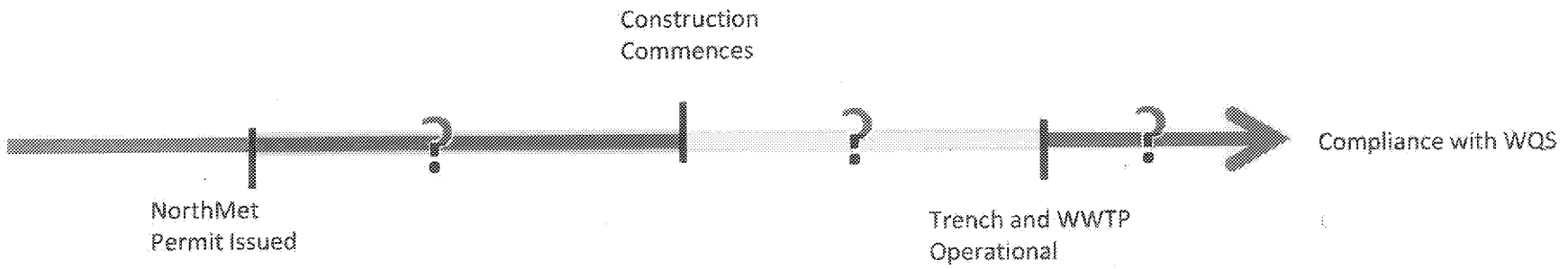
NorthMet Construction to Operation Timeline



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Barriers – NorthMet TB Permitting

- Legacy (Ferrous) Contributions Until Such Time That NorthMet Trench and WWTP Operational
  - Sulfate and Wild Rice
    - Uncertainty on Existing Standard
    - Sulfate Legislation Restrictions
      - PolyMet Is Not Requesting 'Additional Conditions' for Non-NorthMet (i.e., Legacy) Permits

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Next Steps

- Meet with EPA Again in April
- Present A Strawman Permitting Path Forward
  - Attempt to Address the Barriers
  - Solicit EPA Feedback

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Discussion / Questions?

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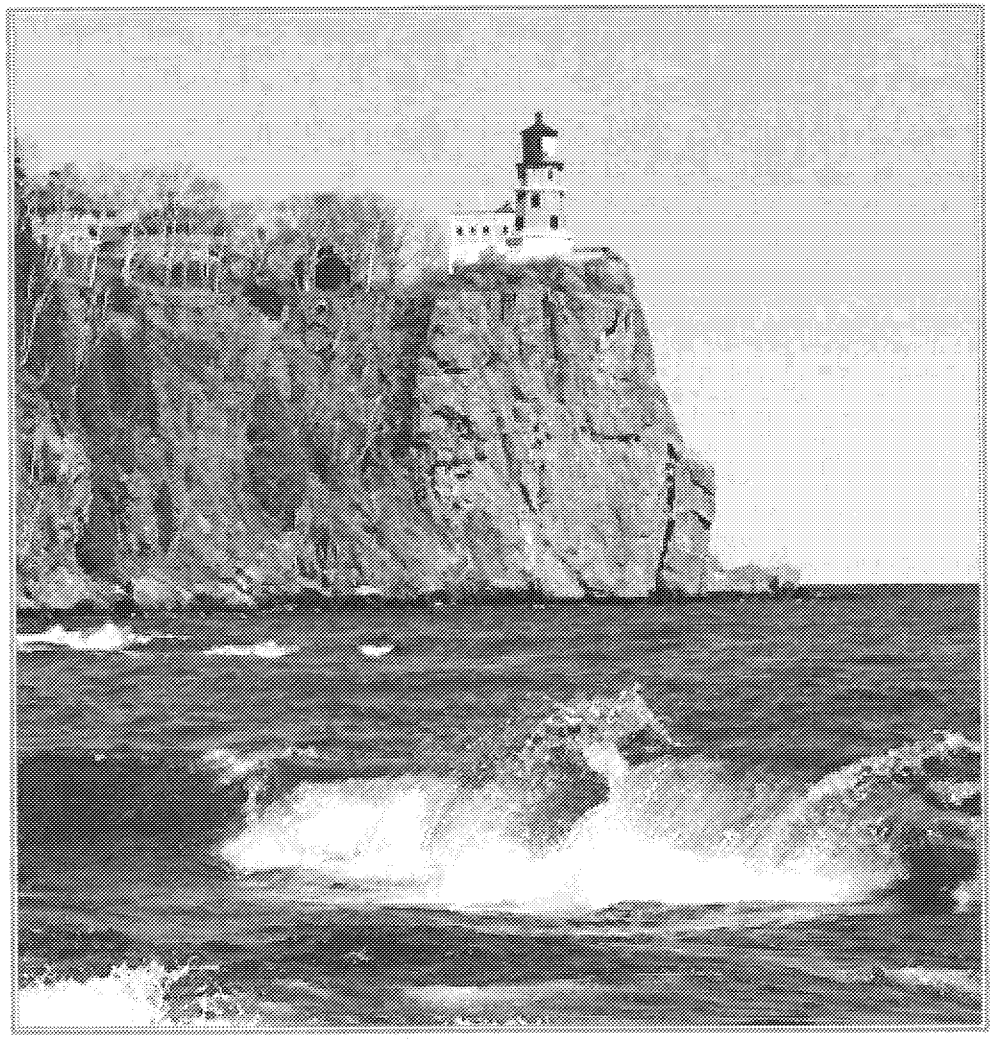

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