



United States Department of the Interior



Bureau of Land Management

Eastern States
7450 Boston Boulevard
Springfield, Virginia 22153
<http://www.es.blm.gov>

IN REPLY REFER TO:
3506(934)JES

November 2, 2011

CERTIFIED MAIL 7010 1060 0000 5208 0444

NOTICE

Aquila Resources Inc.
Attn: Theodore A. DeMatties
34898 University Ave.
Cambridge, MN 55008

:
:
:
:

Exploration License
Application

Exploration Plan Approved; **Additional Requirements**

On February 1, 2011, Aquila Resources Inc. filed an application for a Federal exploration license which was assigned serial number WIES 56777. The application was filed in accordance with 43 CFR 3506.

The exploration plan submitted with the application has been approved by our Northeastern States Field Office. Issuance of the license is recommended.

We have received proof of publication for the Notice published in the Medford *The Star News*, September 1, 2011, September 8, 2011, and September 15, 2011. No one elected to participate in the exploration program.

The license may be issued subject Aquila Resources Inc.'s acceptance of the Bureau of Land Management's operational requirements (43 CFR 3590). Attached for signature are three copies of the exploration license which include the following:

1. The terms of the license, pages 1-5;
2. Special stipulations for WIES 56777, pages 6-10; and
3. The exploration plan, pages 11-40.

Execution of the license is on page 5, and the special stipulations on page 10, will indicate concurrence with all the above items.

Additionally, an exploration license bond in the amount of \$20,000 must be filed in this office before the license may be issued. An exploration license bond form is attached.

Please execute and return all three copies of the attached license and bond within 60 days. Please note that the person who executes the license on behalf of Aquila Resources Inc. must be authorized to act in that capacity. The issue date of the exploration license will be the date it is signed on behalf of the United States; and, a copy, originally executed by both parties will then be returned to you.

This is an interlocutory notice from which no appeal may be taken. If compliance is not made with this notice within the time allowed, a final decision will be issued that may be appealed. If you have any questions regarding your exploration license application, please contact Jennifer Spencer, Land Law Examiner, at 703-440-1604.



Kemba Anderson-Artis
Supervisory Land Law Examiner
Division of Natural Resources

2 Attachments

- 1 – 3 Copies of Exploration License with stipulations
- 2 – Exploration License Bond Form

CC:

Aquila Resources Inc.
E807 Gerue Street
Stephenson, MI 49887
Attn: Thomas Quigley

copy

Serial Number: WIES 56777
Issue Date: _____
Expiration Date: _____
Page 1 of 40

**UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
EXPLORATION LICENSE**

This license, entered into on _____, by the United States of America the licensor, through the Bureau of Land Management (BLM), and

Aquila Resources, Inc.
908 2nd Street
Menominee, MI 49858

the licensee, is hereby issued under the authority of Section 302(b) of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1732(b)) and is subject to all applicable Federal, state and local laws and regulations including Title 43 CFR Part 3506 and Title 43 CFR Part 3590.

Sec. 1. RIGHTS UNDER LICENSE - This license confers the right to perform exploration operations in accordance with the terms and conditions of this license, the approved exploration plan, and applicable regulations in the following-described lands situated in the Chequamegon National Forest, state of Wisconsin:

T. 32 N., R. 2 W., 4th P.M., Wisconsin
Sec. 2: All;
Sec. 3: NE, W2SE, SESW;
Sec. 4: E2, SW, N2NW, SWNW;

T. 33 N., R. 2 W., 4th P.M., Wisconsin
Sec. 25: E2, SW, N2NW, SENW;
Sec. 26: All;
Sec. 27: NENE, S2NE, SENW, E2SW, SESE;
Sec. 28: E2, SW;
Sec. 33: S2S2, NWSE, NENE, N2NW;
Sec. 34: All;
Sec. 35: E2, S2NW, S2SW, NESW;
Sec. 36: N2, SW, N2SE;

Containing 5,560.00 acres, more or less.

This license is for a period of three years, is not subject to extension, and shall confer no right to lease. The license shall not be subject to renewal, and will automatically terminate on the expiration date of _____.

The issuance of this license shall not preclude the issuance of a lease at such time and to such persons as are deemed appropriate by the BLM State Director or his delegated representative, hereafter called the "Authorized Officer." If a lease is issued, the lands embraced in such lease shall be eliminated from the license upon the date of issuance of such lease. A licensee may not remove for sale any resource from the deposits subject to this license, but he may remove a reasonable amount of resource for analysis and study.

Sec. 2. EXPLORATION - The licensee shall diligently explore the lands by drilling, excavating, or by geophysical or geochemical surveying or other acceptable methods. The licensee is entitled to use for exploration purposes so much of the surface of the licensed lands as is reasonably necessary for such operations in accordance with the approved exploration plan which is attached to and made a part of this license.

Sec. 3. FEES – Fees for exploration licenses are administered in accordance with 43 CFR Part 2920.

Sec. 4. BOND - The licensee shall file with the appropriate Bureau of Land Management office a bond in the amount of \$20,000 to ensure compliance with the terms of the license, the exploration plan, and the regulations. An increase in the bond may be required by the licensor at any time during the life of the license to reflect changed conditions.

Sec. 5. OPERATIONS - Operations may begin at any time after issue date of this license; however, before conducting any operations, the licensee must notify the Field Manager, Bureau of Land Management, Northeastern States Field Office and Forest Supervisor, Chequamegon National Forest.

(a) Licensee shall comply with all regulations of the Secretary of the Interior.

(b) Licensee shall comply with stipulations developed by the Department of Agriculture attached to the license, and the provisions of the operating regulations (43 CFR 3590) and all orders issued pursuant thereto. Copies of the operating regulations may be obtained from the Bureau of Land Management.

(c) Licensee shall allow inspection of the premises and operations by duly authorized representatives of the Department of Interior, as wells as the Department of Agriculture, and shall provide for the free ingress or egress of Government officers and for users of the lands under authority of the United States.

Sec. 6. MULTIPLE USE -

(a) Valid existing rights acquired prior hereto on the lands described herein will not be adversely affected hereby.

(b) The granting of this license will not preclude the issuance of other licenses, permits, or leases, or other development of the same lands.

(c) Operations hereunder shall not unreasonably interfere with or endanger operations under any other authorized use pursuant to the provisions of any other act.

(d) The Government reserves the right to sell or otherwise dispose of the surface of the Federal lands under existing law or laws hereafter enacted, insofar as such disposal will not materially interfere with the rights of the licensee.

(e) The licensee shall permit access to all facilities for inspection of the exploration work on behalf of the Secretary of the Interior, as well as the Department of Agriculture, and to make a report, on demand, of all matters pertaining to the character, progress, and results of such work.

(f) The licensee shall observe such conditions as to the use and occupancy of the surface of the lands as provided by law, in case any of said lands shall have been or may be entered or patented with a reservation of mineral deposits to the United States.

Sec. 7. PROTECTION OF SURFACE, NATURAL RESOURCES, AND IMPROVEMENTS -

(a) The licensee agrees to take such reasonable steps as may be needed or as required by the Authorized Officer, or the Forest Supervisor, to prevent operations on the licensed lands from unnecessarily:

(i) causing or contributing to soil erosion or damaging crops, including forage, and timber growth thereon, or on Federal or non-Federal lands in the vicinity;

(ii) polluting air and water;

(iii) damaging improvements owned by the United States or other parties. Upon any partial or total relinquishment or the cancellation or expiration of this license, or at any other time prior thereto when required and to the extent deemed necessary by the licensor to fill any pits, drillholes, ditches and other excavations, remove or cover all debris, and so far as reasonably possible, restore the surface of the licensed lands and access roads to their former condition, including the removal of structures as, and if, required. The licensor may prescribe the steps to be taken and restoration to be made with respect to the licensed lands and improvements thereon whether or not owned by the United States.

(b) The licensee further agrees that when conditions warrant, such as high fire danger, inclement weather, or flash flooding, operations under this license may be temporarily suspended by the Authorized Officer.

Sec. 8. RELINQUISHMENT OF THE LICENSE - The licensee may relinquish this license, in whole or part, by filing in the proper BLM office a written relinquishment which shall be effective as of the date it is filed, subject to the continued obligation of the licensee and his surety to comply with the terms and conditions and special stipulations of the license, the exploration plan, and the regulations.

Sec. 9. REVOCATION OF LICENSE - This license may be revoked for noncompliance with the terms and conditions of the license, the plan, or the regulations, after the licensee has been notified of such violation and the licensee has failed to correct the violation within the time specified by such notice.

Sec. 10. MODIFICATION OF LICENSE OR EXPLORATION PLAN - The terms and conditions of this license may, when unforeseen conditions warrant, be modified or adjusted by the Authorized Officer. The Authorized Officer may, when unforeseen conditions warrant, approve changes in the exploration plan.

Sec. 11. EQUAL OPPORTUNITY CLAUSE - This license is subject to the provisions of Executive Order No. 11246 of September 24, 1965, as amended, which sets forth the nondiscrimination clauses. A copy of this order may be obtained from the signing officer.

Sec. 12. CULTURAL RESOURCES -

(a) Prior to surface disturbing activities, the Authorized Officer may require a survey of all or part of the licensed land to provide an inventory of any historical, cultural, and archeological values. The survey shall be conducted by a qualified professional archeologist, approved by the Authorized Officer, and a report of the survey shall be submitted to the Authorized Officer. The exploration operations may be conditioned on the approval of the survey report and the approval of measures to protect the historical, cultural, and archeological values. The cost of any survey or measures to protect such values discovered as a result of the survey shall be borne by the licensee and items and features of historical, cultural, or archeological value shall remain under the jurisdiction of the United States.

(b) If any items or features of historical, cultural, or archeological value are discovered during exploration operations, the licensee shall immediately notify the Field Manager, BLM Northeastern States Field Office, as well as the Forest Supervisor, and shall not disturb such items or features until the licensee is issued instructions. If the licensee is ordered to take measures to protect any items or features of historical, cultural, or archeological value discovered during exploration operations, the cost of the measures shall be borne by the licensee and such items and features shall remain under the jurisdiction of the United States. The Government shall evaluate such discoveries and appropriate mitigating measures not later than ten working days after notification.

Sec. 13. DATA SUBMITTAL AND CONFIDENTIALITY - The licensee shall furnish to the Field Manager, BLM Northeastern States Field Office, copies of all data (including, but not limited to, geological, geophysical, and drilling analyses) obtained during exploration. The licensee shall submit such data and, where appropriate, the methods by which the data were gathered, at such time and in such form as required by the Field Manager, BLM Northeastern States Field Office, the Authorized Officer, or as specified in the license, or the plan. The confidentiality of all data submitted shall be maintained until after the areas involved have been leased or until such time as the Field Manager, BLM Northeastern States Field Office, determines that making the data available to the public would not damage the competitive position of the licensee, whichever comes first. The licensee may be required to collect and report ground water data to the Authorized Officer.

Sec. 14. UNLAWFUL INTEREST - No member of, or Delegate to, Congress, or Resident Commissioner, after his election or appointment, or either before or after he has qualified and during his continuance in office, and no officer, agent, or employee of the Department of the Interior, as well as the Department of Agriculture, except as otherwise provided by law, shall be admitted to any share or part in this license or derive any benefit that may arise therefrom; and the provisions of Section 3741 of the Revised Statutes of the United States, as amended (41 U.S.C. Sec. 22), and Sections 431, 432 and 433, Title 18 U.S.C., relating to contracts, enter into and form a part of this license so far as the same may be applicable.

THE UNITED STATES OF AMERICA

Date

Nov. 28 2011
Date

By _____
Deputy State Director
Division of Natural Resources

Aquila Resources, Inc.

By Thomas J. [Signature]

Title President CEO

Chequamegon-Nicolet Stipulations and Notifications To Be Attached to BLM License WIES 56777

<i>Stipulations and Notifications (FSM2820) – USDA Forest Service – Chequamegon-Nicolet National Forest</i>	
S1.	<p>Pursuant to the provisions of the Act of March 4, 1917 (16 USC 520), Section 402 of the Re-organization Plan No.3 of July 16, 1946 (60 Stat. 1097, 1099), the Act of August 7, 1935 (30 USC 352), and the National Environmental Policy Act of 1969 (42 USC 4321 et seq.) as said authorities have been or may hereafter be amended, no mineral development of any type is authorized hereby, and consent to the issuance of this prospecting permit as required by law and regulation (43 CFR 3500.9-1(b)) is given subject to the express stipulation that no mineral lease may be issued for the land under permit without the prior consent of the Forest Service, USDA and the proper rendition of an environmental analysis in accordance with the National Environmental Policy Act of 1969, the findings of which shall determine whether and under what terms and conditions for the protection of the land involved the lease may be issued.</p>
S2a.	<p>All work and any operations authorized under this permit shall be done according to an approved operating plan on file with the District Ranger, 850 N. 8th Street Hwy 13, Medford, Wisconsin 54451. Operating plans are written and submitted by the permittee and must be approved in writing by the Bureau of Land Management with Forest Service review and consultation prior to any ground activity.</p> <p>Operating plan review and approval generally takes 30 to 60 days, but may take longer when surveys are required prior to surface disturbance. Review of an operating plan will include review of the potential effects of the site-specific activity and identification of any additional reasonable and prudent mitigation measures needed to reduce or prevent effects. Operating plans will be site specific and will include the permit stipulations and notifications that apply for each drilling site and road location.</p> <p>Operating plans will contain information the Forest Officer determines reasonable for assessment of (1) public safety, (2) environmental damage, and (3) for protection of surface resources. At a minimum, operating plans will include:</p> <ol style="list-style-type: none"> a. Steps taken to provide for public safety. b. Location and extent of areas to be occupied during operations. c. Operation methods including size and type of equipment. d. Capacity, character, standards of construction and size of all structures and facilities to be built. e. Location and size of areas where vegetation will be destroyed or soil laid bare. f. Steps taken to prevent and control soil erosion. g. Steps taken to prevent water pollution. h. Character, amount, and time of use of explosives or fire, including safety precautions during their use. i. Program proposed for rehabilitation and revegetation of disturbed land. j. An estimated time frame for any construction or drilling requests so that coordination between other permit holders or contract holders for surface uses can be established.

<i>Stipulations and Notifications (FSM2820) – USDA Forest Service – Chequamegon-Nicolet National Forest</i>	
S2b.	<p>All applicable federal and state laws apply to prospecting operations on National Forest System land. These include but are not limited to:</p> <ul style="list-style-type: none"> • Wisconsin Regulations -144.80; Water, Sewage, Refuse, Mining and Air Pollution, Subchapter V. • Wisconsin Regulations -144.76, Water, Sewage, Mining, and Air Pollution, Subchapter IV. • Wisconsin Department of Natural Resources, Section NR130-06(1) Procedures for all metallic mineral exploration drill hole abandonment. • U.S. Army Corps of Engineers 404 Permit Process. <p>Copies of all permits obtained by the permittee from the state or other federal agencies may be required for operating plan review and approval.</p>
S3.	<p>In areas that have not had cultural resource surveys completed and prior to earth or vegetation disturbance within a permit area (Section 106 of the National Historic Preservation Act) cultural resource surveys will be conducted to identify sites that could be eligible for listing on the National Register of Historic Places. These reports must be reviewed and approved as complete by the State Historic Preservation Officer.</p> <p>If cultural sites are present, the following standards apply .If the site is not evaluated or it is evaluated and found eligible, there will be no earth or vegetation disturbance permitted on the site. If drilling or road construction is proposed near cultural sites, the site boundaries will be flagged or marked on the ground by qualified Forest Service personnel so that the permittee can avoid them. If a site is found during prospecting activity that was not found during the survey, prospecting activity will cease until the District Ranger has been notified and site protection measures have been identified. This would be done in consultation with the Forest Archaeologist and the State Historic Preservation Officer.</p>
S4.	<p>There will be no drilling or construction of sump pits or storage of fuel/drilling substances within 100' of perennial, intermittent, or ephemeral rivers and streams, ponds, lakes, seeps, or springs.</p>
S5.	<p>Upon notification to the Medford-Park Falls Ranger District of the specific location of a drill site and prior to drilling activity, a search will be made for large stick nests or other signs of Northern Goshawk or Red-shouldered hawk activity up to 500 feet from the proposed drill site if located in suitable habitat. Nests of red-shouldered hawk and northern goshawk will be protected in the following manner, if found prior to drilling activity: The nest site will be incorporated into a stand with a minimum size of 30 acres. This will be designated as a nesting territory. Within this territory, there will be no surface occupancy from February 15th through August 1st.</p>
S6.	<p>Drilling, road use, and road construction will be permitted within a floodplain only during dry or frozen conditions. Possibility of early thaws, heavy rains and periods of warm weather will be considered in a decision on when to allow occupancy within a floodplain.</p>

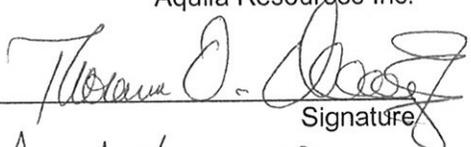
<i>Stipulations and Notifications (FSM2820) – USDA Forest Service – Chequamegon-Nicolet National Forest</i>	
S7.	<p>Prospecting activity will avoid wetlands where possible. The final decision concerning which wetlands can be avoided will be made during review and approval of a site-specific operating plan provided by the permittee. If drilling operations are allowed within a wetland, at a minimum the following mitigation applies:</p> <p>a. There will be no dredging permitted within wetlands. There will be no placement of dredge or permanent fill material within a wetland. If some temporary fill material is needed, filter fabric will be used as a base. The fill material and fabric would be removed following completion of drilling unless the Forest Service identified it as needed for future management and access. No sump pits will be allowed in wetlands. Recirculation tanks will be used.</p> <p>b. Drilling, road use, and road construction can occur within a wetland only after these surfaces have been frozen enough to provide access and use without breaking through the frozen layer. Road lengths within wetlands will be kept to a minimum.</p>
S8.	If water table depths are less than 15 feet on any drilling site (generally wetlands and floodplains), then sump pits will be prohibited and re-circulation tanks must be used. The bottom of the sump pit must be several feet above ground water. Depth of the water table will be determined when the sump hole is dug.
S9.	On all soils, drill site road access, temporary road construction, and drilling will be limited to dry or frozen conditions. Evidence of rutting on access roads would lead to road closures until conditions improve (the road dries out or freezes).
S10.	The existing transportation system will be used for access to drilling sites. New construction can only occur when there is no other existing access route to the drill site. New road corridors will follow natural contours and require a minimum of cut and fill. Roads will be constructed to the lowest standard needed to access the drill site. This may mean limiting construction of roads to a standard that would allow access only during frozen or very dry conditions, limiting widths of the corridors, etc. The Forest Service will identify specific guidelines for construction of access routes during operating plan review and approval.
S11.	<p>A USFS representative will review site specific operating plans and inspect the proposed locations to identify currently listed TES and RFSS plant and animal species inhabiting the area and to identify any specific Forest Plan standards and guidelines needed for protection.</p> <p>Minerals activities within 100-500 feet of RFSS plant and animal sites will be limited to practices that maintain habitat and micro-habitat conditions. Animal sites are defined as active nest, active den, or evidence of breeding activity.</p>
N1.	Forest Service personnel will make inspections of the drilling and construction operations. The designated agent who is doing the inspections has authority to temporarily suspend or modify operations in whole or in part due to emergency forest conditions such as; fire danger, unsafe situations and environmental concerns. All site visits and inspections will be documented along with any identified actions needed for compliance with license terms and forwarded to BLM for action.
N2.	A Wisconsin Department of Natural Resources water permit will be obtained by the permittee prior to implementing any activity that will affect navigable waters.
N3.	Approaches onto existing roads will be designed and constructed to prevent drainage problems and road damage. Culverts and gravel approaches may be needed.
N4.	Roads, culverts, and bridges will be designed to allow fish passage in perennial streams.
N5.	Road fill and road surfaces will be stabilized and maintained during and following construction to minimize erosion and sedimentation. Vegetation, weed free mulch, riprap, and retaining walls will be used as needed.

Stipulations and Notifications (FSM2820) – USDA Forest Service – Chequamegon-Nicolet National Forest	
N6.	<p>Any temporary roads used or constructed for the purpose of prospecting will be closed/decommissioned after use is completed. Road decommissioning must render a road inaccessible to all motorized traffic, including all-terrain vehicles. Effectively preventing motorized vehicles from gaining access to any portion of a decommissioned road may involve obstructing access at several points along the road.</p> <p>Render a road inaccessible by reclaiming the first 300 feet (or the distance necessary to prevent viewing the road from an intersecting or adjacent travelway). Use a combination of closure devices, including but not limited to berms, boulders, and downed trees, when rendering a road inaccessible.</p> <p>Remove any temporary stream crossings and rehabilitate streambeds and banks.</p>
N7.	Temporary sediment traps will be used near lakes and streams during and immediately after road construction to minimize sedimentation.
N8.	Fuel, Lubricant, Waste, and Spills: Use “Wisconsin Forestry Best Management Practices for Water Quality Field Manual”, PUB FR-093 2010, Chapter 9 BMPs directions and maintain a spill containment and clean-up kit appropriate for the materials on the core drilling operation. Report all hazardous substance spills immediately.
N9.	There will be no unattended fuel storage within wetlands or floodplains. Fuel storage containers should be kept on an upland site where practical.
N10.	In floodplains, if the Forest Service identifies the need to abandon the drilling site because of a potential flood threat, then the rod casing will be sealed with a watertight, threaded or welded cap.
N11.	Any spills or releases of oils, fuels, or other toxic or hazardous materials must be reported and remediated per Wisconsin spill law. 5.144.76 Wis. Statutes. Diversion of surface water, disposal of hazardous wastes, sump water treatment, will be subject to Wisconsin Statutes in Chapter 144.8. Abandonment of drill holes will follow Wisconsin Chapter NR130. Drilling and abandonment aides will be on The State of Wisconsin approved list.
N12.	Sump Pit Construction: Stockpile topsoil in a separate pile from subsoil excavation. Completed sump pits will be fenced or flagged for safety until they are back filled. When sump use is completed, the cuttings and bentonite will be allowed to settle for at least 2 days and then the sump water can be pumped out on the surrounding ground surface. The sump pit will then be back filled with subsoil first and topsoil last and seeded if required by the Forest Service representative.
N13.	All bare soils must be revegetated upon completion of the project. To encourage natural revegetation and control soil erosion, use any/or combination of: weed free mulch, silt fence, and native or desirable non-native plant species. Seeding mixes will be approved by the Forest Service.
N14.	THERE IS NO N14 IN THE 2004 EA/DN – Renumber subsequent notifications following final edits.
N15.	The permittee will pay the assessed value of timber removed from the National Forest System land.
N16.	<p>Slash (tree tops or other vegetation and brush) from prospecting activity will be treated in the following manner: Slash within the clearing limits of Forest Road 111,112, 114, and along the North Fork Yellow River will be removed.</p> <p>Slash from the clearing limits to a distance of 100 feet away from the clearing limits of Forest Road 111, 112, and 114 will be lopped and scattered to a height not to exceed 24 inches.</p> <p>Slash up to a distance of 150 feet away from the bank of the North Fork Yellow River will be lopped and scattered to a height not to exceed 24 inches.</p>
N17.	There will be no removal of supercanopy (trees that stick out above the surrounding vegetation) red or white pine along the North Fork of the Yellow River. There will be no removal of any healthy American Elm or Butternut in the permit application area.

Stipulations and Notifications (FSM2820) – USDA Forest Service – Chequamegon-Nicolet National Forest

N18.	When a drilling site is proposed within 1/4 mile of any temporary or permanent residence, the permittee must identify how noise will be mitigated to fall within Environmental Protection Agency (EPA) recommended guidelines for noise in residential areas when an operating plan is submitted. Types of mitigation could include, but are not limited to: drilling when residences are unoccupied, drilling during daytime only, putting up a barrier fence to reduce noise, etc. Noise mitigation is not needed when a residence is not occupied. [EPA recommends that outside noise in residential areas should not exceed a Ldn of 55 dB (A). (55 decibels on the A weighted scale. Ldn = a day/night average noise level). From EPA publication 550/9-79-100. Protective Noise Levels, Condensed Version of EPA Levels Document, Nov. 1978, page 24.]
N19.	No burning of any type of garbage or waste will be permitted. All solid waste generated from operations will be handled in accordance with State Solid Waste Management rules (Chapter 144.43, Wisc. Stat.). Burying of drill rods, cables, empty drums or other waste in sumps or other areas of the Forest is prohibited. Containers will be in place for garbage generated by work crews and all waste will be removed for proper disposal at state or federally approved landfills.
N20.	If any federally threatened, endangered, or candidate species, or Regional Forester Sensitive Species are encountered in the area after operating plan approval, a USFS representative will review site specific operating plans and identify specific Forest Plan standards and guidelines needed for protection.
N21.	The area has known populations of non-native, invasive plants (weeds), primarily located adjacent to roads and openings. Known site locations of non-native, invasive species will be avoided when possible. If it is determined necessary to impact sites of known weed locations the mitigation will be to operate in the winter or clean all wheeled or tracked equipment that could pickup and spread weed seed or material prior to moving the equipment out of the area. Insure, to the extent practicable, that gravel sources do not contain non-native invasive plant species.

Aquila Resources Inc.



 Signature

 President CEO

 Title

APPLICATION FOR AN EXPLORATION LICENSE

Bend Copper-Gold Deposit Area

Chequamegon National Forest

Taylor County, Wisconsin

U.S.A.



APPLICATION FOR AN EXPLORATION LICENSE

Bend Copper-Gold Deposit Area

Chequamegon National Forest

Taylor County, Wisconsin

U.S.A.

Prepared by

Aquila Resources Inc.

February, 2011



EXPLORATION LICENSE APPLICATION

INTRODUCTION

Pursuant to the Code of Federal Regulations (CFR), Title 43, Subpart 3506, Aquila Resources, Inc. (Aquila) hereby requests from the Bureau of Land Management (BLM) an “exploration license” for approximately 5,560 acres of federal mineral lands that control the Bend copper-gold deposit, located within the Chequamegon National Forest, Taylor County, Wisconsin (Figs.1, 2 and 3). In support of Aquila’s application, the following report has been prepared which briefly summarizes the geology and potential ore reserves of the deposit based on historic exploration programs completed by the former Jump River Joint Venture (JRJV, Chevron and Wisconsin Mineral Resources) and Royal Standard Minerals (RSM). It presents recommendations concerning exploration, metallurgical and environmental studies as well as an exploration plan as prescribed in Subpart 3505, Section 3505.45 of the Code of Federal Regulations (CFR), Title 43. The exploration plan described herein is designed to confirm, prove-up and expand potential copper-gold ore reserves, discover new reserves and advance the project towards a federal lease and mine permitting.

Exploration data for this summary report is mainly derived from JRJV’s 1991 preference right lease application (PRLA) and supporting 1992 report. These data were generated from seven drilling campaigns that extended from 1986 through 1992. A total of 33 diamond drillholes, 1 wedge-offset and 1 rotary hole were completed by JRJV (Fig.4). Of these 22 holes contain 36 significant mineralized intercepts that are potentially ore grade and ore thicknesses (Fig.5). In February 1991, JRJV submitted a PRLA for Prospecting Permit ES 34425 that controlled federal mineral lands covering most of the deposit; by the fall of 1991, BLM ruled favorably on the PRLA as meeting requirements of a “preliminary valuable mineral discovery”. Since that time, the PRLA was assigned to RSM. Although some drilling was completed (5 holes) after 1992, RSM did not significantly advance the PRLA. Currently, RSM has relinquished all rights to the deposit and completed most of the drillhole reclamation required at the site; RSM remains responsible for 4 drillholes which it plans to reclaim (plug) in the winter of 2012.

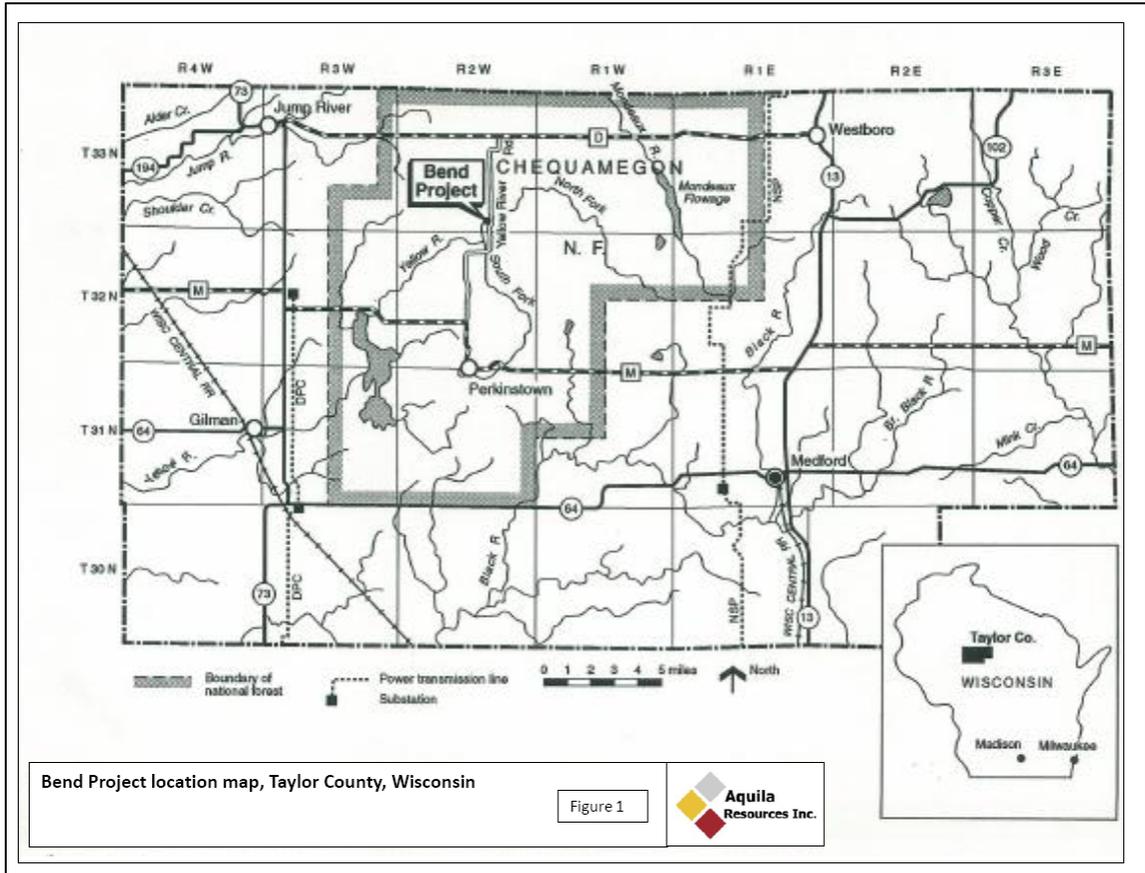
BEND COPPER-GOLD VMS DEPOSIT

Location and Land Status

The Bend copper-gold deposit is located in north-central Wisconsin within the Medford Ranger District of the Chequamegon National Forest, in Sections 34 and 35, T33N, R24W, Taylor County; it is approximately 19 miles north-northwest of Medford, the county seat (Fig. 1). The deposit was discovered by JRJV in 1986 after testing a blind airborne electromagnetic (AEM) anomaly (Fig. 6).

The Bend deposit - prospect area consists of both federal and private mineral lands (surface ± mineral estates). Most of the identified deposit to is controlled by federally

owned surface and mineral estates where the surface is administered by the U.S. Forest Service and minerals by BLM (Figs. 2 and 3). However, severed private mineral rights do



occur in the prospect area. Most of these were owned by the former Soo Line Rail Road through its subsidiary Tri-State Realty Company (now Canadian Pacific Railway). In addition, several land parcels with both private surface and mineral estates are present; of these, the Butman Estate (surface and mineral estates), was recently deeded to the federal government.

At the time of this report there were no active federal prospecting permits or private mineral leases in the Bend deposit - prospect area. It is understood that RSM has relinquished its rights to all federal prospecting permits, the PRLA and Tri-State lease. Aquila's request for an exploration license covers approximately 5,320 acres of federal mineral lands which control most of the identified Bend copper-gold resource, its potential extensions, and related AEM anomalies that may represent additional ore reserves (Fig. 6). Specific lands requested are shown in Table 1.

Table 1 Federal mineral lands requested for Aquila’s exploration license (see Figs. 2 and 3 for locations)

T33N, R2W					Approximate acres	
Section 36:						
N1/2, SW1/4, N1/2SE1/4					560	
Section 35:						
E1/2, S1/2NW1/4, S1/2SW1/4, NE1/4SW1/4					520	
Section 34:						
All					640	
Section 33:						
S1/2S1/2, NW1/4SE1/4, NE1/4NE1/4, N1/2NW1/4					320	
Section 28:						
E1/2, SW1/4					480	
Section 27:						
NE1/4NE1/4, S1/2NE1/4, SE1/4NW1/4, E1/2SW1/4, SE1/4SE1/4					280	
Section 26:						
All (includes the Butman estate that was deeded to BLM)					600	
Section 25:						
E1/2, SW1/4, N1/2NW1/4, SE1/4NW1/4					600	
					Total:	~4,040 acres
T32N, R2W						
Section 2						
All					640	
Section 3						
NE1/4, W1/2SE1/4, SE1/4SW1/4					280	
Section 4:						
E1/2, SW1/4, N1/2NW1/4, SW1/4NW1/4					600	
					Total:	~1,520 acres

Regional Geology

The Bend copper-gold deposit is one of at least 14 Proterozoic-aged (1.88 Ga) volcanogenic massive sulfide (VMS) copper-zinc-gold-silver deposits and occurrences discovered in the Penokean volcanic belt (PVB) of northern Wisconsin-eastern Michigan during the late 1960’s through 2001. At least three districts where deposits tend to cluster have been identified; a fourth may be emerging in eastern Michigan (Fig.7). These districts likely account for well over 100 million short tons of base-precious-metal bearing massive sulfide mineralization. It is interesting to note that in this prolific belt only one deposit, Flambeau (Cu-Au), has actually been permitted and placed into production (1993-1997). The newest discovery (2001) is the Back-Forty deposit (Zn-Cu-Au) located in Michigan and controlled by Aquila. Aquila with its joint venture partner Hudson Bay Mining Company is currently advancing the property towards mine permitting. The Bend deposit is located within the Ladysmith district situated at the western end of the belt (Fig.7).

Property Geology and Mineralization.

Bend is a near vertical, subcropping VMS deposit of Early Proterozoic age, covered by 100 to 120 feet of glacial tills of the Chippewa end moraine. Potential ore is hosted in a quartz-crystal felsic tuff (XT unit) that is substantially altered and mineralized with sulfide minerals and low-grade gold values. The crystal tuff is stratigraphically overlain

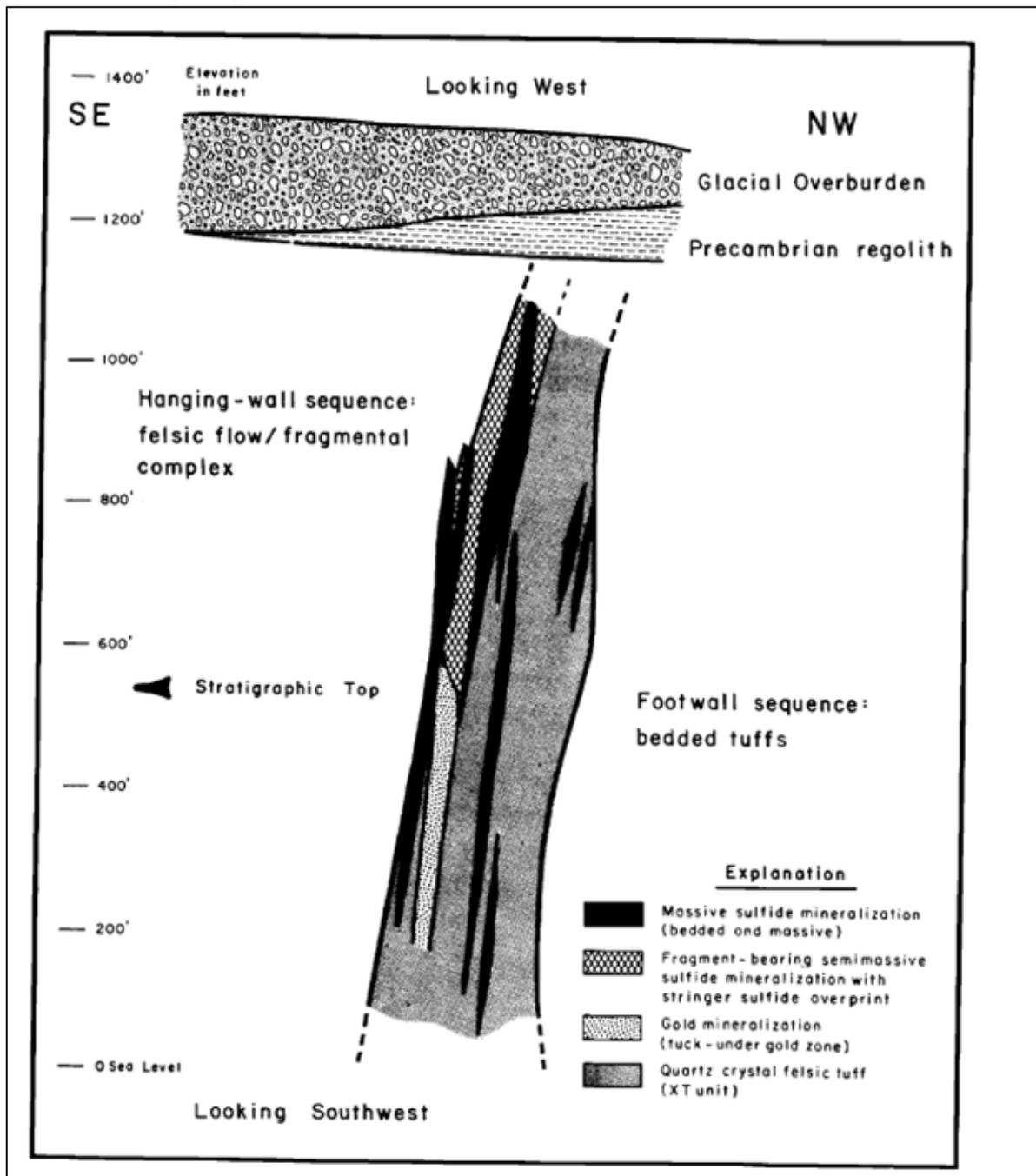
The strike length of the known deposit is approximately 1,100 feet, at the subcrop, increases to 1,800 feet at a depth of 1,000 feet. The deposit has been partially drill-tested to a depth of 2,500 (Figs.5 and 9).

Copper ores are contained in two stacked cupriferous massive ($\geq 50\%$) to semi-massive ($\geq 30\%$) pyritic lenses and associated stringer sulfide mineralization developed at several stratigraphic levels in the crystal tuff (XT) unit (Figs. 9, 9A and 10). In the center of the deposit the pyritic lenses are connected by a fragment – bearing semi-massive sulfide zone (debris apron) that has been overprinted by copper and gold stringer mineralization. Here the copper zone may total over 70 feet in thickness (Figs. 9A, 11 and 12). The stratigraphically higher (upper) lens contains the highest copper grades in the deposit. Ore minerals are predominately pyrite and chalcopyrite with lesser amounts of tetrahedrite – tennantite, bornite, arsenopyrite, and chalcocite and rare native gold and silver. The copper zone contains accessory amounts of gold and silver reported as gold and silver telluride minerals.

In addition to the copper zone, two semi-conformable ore-grade ($>0.10\text{opt}$) pyritic gold assay zones have been identified stratigraphically below each lens (Tuck-under and Lower gold zones). These zones contain minor copper and silver (Figs. 9A, 13, 14 and 15). The Lower zone hosts structurally controlled high-grade gold (multiple ounce/ton) sulfide mineralization associated with late quartz-carbonate veining. The extent of this vein system remains unknown. In addition, widespread, low-grade ($\pm 0.03\text{opt}$) gold values have been detected throughout the disseminated sulfide halo that envelopes both the copper and gold zones. These values may contribute to the overall gold resource assuming a coherent zone(s) can be demonstrated.

Several vertical drillholes (B95-20 and -21) constructed by RSM in 1995 intersected the subcropping massive sulfide lenses at the glacial till interface. Results from this drilling indicate that the lenses have not been glacially scoured or polished but rather a regolith (Precambrian weathering surface) has developed and is preserved locally. The regolith forms a thin ($\leq 50'$) cap over the lenses (Fig. 9A). However, both massive sulfide lenses do not exhibit any significant oxidation or supergene enrichment in copper or gold values below the regolith. Minor supergene chalcocite after chalcopyrite is present.

Fig.9A Vertical geologic section 49235E



Copper-Gold Resources

Ore reserve estimates were made by JRJV in 1992 using standard polygonal and cross-sectional methods. Longitudinal projections are presented in Figures 11 thru 15 for both the copper and gold zones. The estimates are based on extensive sampling, check sampling (quality control) and specific gravity measurements of the mineralized horizons and summarized in Table 3 below.

Table 3 Copper -gold resources and potential underground reserves (source: JRJV 1992 PRLA report).

	Geologic Resource*					Mineable Diluted Reserve*				
	Tonnage**	Cu	Ag	Au	Tonnage**	Cu	Ag	Au		
	000 tons	(%)	(opt)	(opt)	000 tons	(%)	(opt)	(opt)		
Copper Zone	3,102	2.41	0.5	0.046	3,567	2.19	0.46	0.042		
Gold Zone	1,351	0.31	0.09	0.152	1,596	0.31	0.08	0.134		
Total	4,453				5,164					
Less Pillars					-1,033					
Net Minable					4,131					
Average Grade		1.74	0.37	0.078		1.61	0.34	0.078		
** Tonnage is in short tons										
* U.S.G.S resource classification (U.S.G.S Circular 831, 1980)										
This resource is not NI-43-101 compliant										

The average grade of each zone indicated above can be increased by raising the cutoff grade with a consequent reduction in tonnage. The concentration of high-grade ores in the thickest and near-surface portion of the deposit is an important economic feature that would allow for the possibility of optimizing a mine plan to improve rates of return.

It should be noted that these resource/reserve categories defined by JRJV are based on the 1980 U.S. Geological Survey classification. The category of JRJV's "geologic resource" would be considered "indicated" with a reasonable degree of confidence in ore grade - thickness continuity. However, because these drilling data are now considered historic (even though the data is well documented), their estimates would not likely be considered compliant with the Canadian NI 43-101 resource classification. Additional new in-fill drilling would be required to meet the NI 43-101 standards.

Metallurgy

At the request of JRJV, preliminary metallurgical studies were done by Lakefield Laboratories and Mountain States R&R in Tucson in 1990-91. These studies indicated no insurmountable metallurgical problems with either ore type. However, substantial additional metallurgical work will be required to optimize recoveries. The studies suggest that processing may be done by flotation alone or some combination of flotation and cyanidation.

Conceptual Mine Plan

As part of the PRLA, JRJV requested American Mine Services to prepare a conceptual mine plan for the resource/reserve identified at Bend up to 1991. A modeled tonnage of approximately 2.743 million diluted short tons (does not include additional tonnage identified after 1991) that contained 295,000 ounces of gold and 80.4 million pounds of copper. An annual mining rate of 310,000 tons of ore with an 8.8 year mine life was envisioned plus a 1.5 years for mine construction.

Underground mining methods would be employed. Specifically sublevel-longhole-open stoping with delayed backfill. Both the copper and gold zones would be mined concurrently but processed separately. Copper ore would be treated by conventional flotation (92% recovery) and gold ores by a combination of flotation and cyanidation to achieve a high recovery rate (92.9%). The tailing area will be in a “closed loop” with their respective mill circuits. Reclamation will be ongoing during the life of the mine. The mine-mill complex would require approximately 148 acres; actual disturbance would be approximately 100 acres.

1992 Economic Studies

Initial economic studies by JRJV in 1992 suggest the tonnages and grades in the estimated resource/reserve (Table 3) were marginal at \$1.25 copper/lb and \$400/oz gold. At the time it was thought that the economics could be improved by raising the cutoff grades, or by increasing the tonnage and/or grade based on additional drilling. Under current market conditions, copper (\geq \$4.00/lb) and gold (\geq \$900/oz) prices have improved dramatically the economics of the known resource and, with additional drilling, likely will render it commercially viable.

Conclusions

Conclusions made by the JRJV concerning additional exploration of the deposit include the following.

- 1) The last round of drilling on the property indicated that the eastern end of the deposit may represent the edge of a marginal basin where copper-bearing sulfide horizons may thicken. This is supported by the presence of chalcopyrite stringer overprinting that may indicate proximity to a second, flanking hydrothermal discharge vent, which may increase the grades of primary sulfides deposited in the basin. This possible eastern extension of the deposit could add substantial amounts of potential ore to the indicated resource. JRJV begin testing the basin with one drillhole in 1992 (DDH-B92-16).
- 2) On the western side of the deposit, drilling has not yet closed off the down plunge extensions of either the copper or lower gold zones. In 1997, RSM began deep drilling (DDH-B97-22) on the west side of the deposit to evaluate the down-plunge area.

Recommendations

Recommendations made by the JRJV to advance the deposit include the following:

- 1) Additional drilling of the eastern basin area and western side of the deposit (down plunge).
- 2) Continue metallurgical studies and review engineering parameters used in the initial financial projections.
- 3) Begin environmental baseline studies on the property in anticipation of moving forward the PRLA and permitting process.

EXPLORATION PLAN

Introduction

Aquila hereby submits the following plan of operation for continuing advanced exploration of the Bend deposit and surrounding federal lands within the proposed license block.

The principal offices of Aquila are at:

E807 Gerue St
Stephenson, MI 49887
Att: Thomas Quigley, President
Phone: (877) 753-9602

Local management of the exploration program will be under the supervision of Theodore DeMatties, Geological Consultant at:

34,898 University Ave.
Cambridge, Minnesota 55008
Cell: (763) 232- 8281

to whom all notices and orders are to be delivered.

Phase 1 Data Compilation

The first phase of exploration will involve compilation of all data generated by JRJV and RSM since the discovery of the deposit. BLM will likely have copies of the PRLA and quarterly reports submitted by both companies. In addition, all core drilled on the PRLA lands would be collected from RSM (assumed holder of the core) by Aquila and transported to a new facility in Medford or Aquila's Michigan core facility. This drill core would then be relogged and reanalyzed before a new drilling program is initiated. These data would be used to produce new geologic maps, sections and a 3-D model of the deposit that would help guide the drilling program.

Concurrently, all previous drillhole collar location on the property would be surveyed using a high resolution differential GPS unit (Locus system). Also the Tri-State mineral estate boundary on the east side of the deposit would be surveyed and marked in the field.

Phase 2 Exploration Program of the Deposit

An initial drilling program of 25,000 – 30,000 feet (15 HQ-size holes with wedge-offsets) will be required to confirm, begin proving-up and possibly expand the identified resource (Figs. 16 and 17). Of particular interest would be evaluating the eastern marginal basin and western down-plunge extent of the deposit by in-fill drilling. The bulk of the identified resource would be confirmed by drilling mostly twin holes of previously drilled (historic) holes.

The new large diameter (2.5”) drilling program will provide up-to date information on the size and grade of the resource, its metallurgy and potential economics, all of which will provide a higher confidence level for the deposit. These new data coupled with the historic drilling results should be sufficient to complete a formal NI 43-101-compliant resource estimate.

Concurrently, preliminary environmental baseline studies as outlined by JRJV would be initiated. This may include several groundwater monitoring wells.

As the program proceeds, additional holes will likely be required. Location of these holes will depend on the results of the Phase 2 drilling.

Logistics of Phase 2 Diamond Drilling Program

A location map showing a proposed drill sites is shown in Figure 16; all of the sites are located on federal land. The proposed operation will be completed in stages over a year or longer. Many of the sites are on high ground and can be accessed during the summer; others require freeze-up conditions only. Access to the drill sites will be mostly by pre-existing drill roads constructed by JRJV and RSM (Fig. 16).

Each proposed drill site would affect an area approximately 50 by 50 feet of surface unless otherwise specified. However, because many of the holes are twins of the JRJV or RSM drillholes, the same site will likely be used (Fig.16). Where suitable, each site may accommodate more than one drillhole (wedge-offset) in order to minimize surface disturbance. Drillhole orientations will be mostly inclined; hole depths will range from 600 feet to greater than 2,500 feet. Drilling results will also determine whether all the proposed sites are utilized during the exploration program.

Within the site, all or part of the area will be cleared of vegetation to accommodate the drill rig (with sump pit). Small trees and shrubs cut during construction of the sites and new access roads will be lopped and scattered to lie within 30" of the ground. Any uprooted stumps will be scattered and not be visible from any major roads. Any timber cutting that may be required will be done in accordance with U.S. Forest Service regulations and any salvageable timber will be stacked at the side of the site.

Disturbance at drill sites will be limited to the cleared area and will include a 20' x 20' by 10' - deep pit (maximum size) to contain returned water and drill cuttings. The sump pit would be constructed by a tract-mounted backhoe. However, if the area is low and swampy, above-surface stock tanks may be used instead of the sump pit. Tanks would be regularly cleaned of cuttings and hauled to an approved sump pit constructed on higher ground. No structures or facilities will be built on the site.

All existing or new roads if needed will be constructed and maintained by Aquila, or by its contractors, in compliance with Forest Service engineering and design specifications. New access is by upgraded trail, approximately 10 feet wide. When required, water bars or culverts will be used to control surface runoff and erosion. Gravel

will not be added to the drill sites or access roads without the express consent of the Forest Service.

Areas constructed as drill sites will be open to federal officials, hired contractors and their employees, and employees of Aquila. In the interest of public safety, unauthorized personnel will be restricted from entering operation areas.

Experienced contractors will conduct drilling operations. Standard skid/tract or truck-mounted diamond-bit core drill rig(s) will be used to do the drilling. Support equipment will include a skid mounted rod dray, a D-8 or comparable dozer, and a two- or three-axle flatbed truck for transporting water, pipe, and other equipment. Four-wheel-drive pickups will be used to transport personnel and service the drill rig(s). Vehicles and drills will be equipped with the required fire-fighting equipment.

The proposed source of drill water will be the nearby north fork of the Yellow River. Water will likely be trucked to drill sites or possibly pumped from the river. In either case, water will be obtained only from a site previously approved by the U.S. Forest Service. Approximately 1,000 gallons per day will be required under normal drilling conditions; though as much as 2,000 gallons per day may be required if intensely fractured rock is encountered. To protect subsurface groundwater, only additives specifically approved by Wisconsin Department of Natural Resources (DNR) will be used with drilling water during construction of the hole. Further protection of groundwater is achieved during the drilling operation by 1) sealing off the upper portion of the drillhole with steel casing which is driven down and into the bedrock 2) use of additional bentonite in highly fractured areas in the bedrock to prevent loss of water from the hole (bentonite forms a sleeve in the fractured bedrock that holds in the fluid) and 3) collection of the drilling fluid in a sump pit and recirculation during the operation.

During drilling, trash will be stored in suitable containers and removed from the site for disposal. No explosives or firearms will be permitted on the project. Fires will be permitted only in specific heating devices (salamanders, cook stoves, etc.) and all state and federal fire laws and regulations will be observed to prevent and suppress fires in the areas of operation.

Upon completion of drilling operations, all equipment will be removed, the sump pit immediately backfilled, and the sites restored as soon as weather conditions permit. In accordance with restoration procedures outlined by the District U.S. Forest Ranger, drill sites and access roads will be restored through surface grading and reseeded. Seeding and fertilizing will be used where deemed necessary by the District Ranger. Drillholes will be permanently abandoned by sealing the entire hole according to DNR regulations. Some holes may be temporarily abandoned (capped) and left open in order to conduct down-hole geophysical surveys and sealed at a later time.

Because of the location of the proposed exploration activity, minimal contact with the public is anticipated. However, the District Ranger will be given advance notification of

any activity that could involve hazards to public safety and suitable action will be taken to protect the public as agreed to by Aquila and the District Ranger.

Although cultural resource surveys are conducted over the areas where the surface is likely to be disturbed by prospecting activities, no guarantee can be made that all sites will be identified by standard survey techniques. If, during the course of surface disturbance, any artifacts, cultural features, or other archaeological remains are discovered, representatives of, or contractors for, Aquila will immediately cease operations and notify the U.S. Forest Service so the potential significance of the material can be assessed and a possible plan for mitigation prepared.

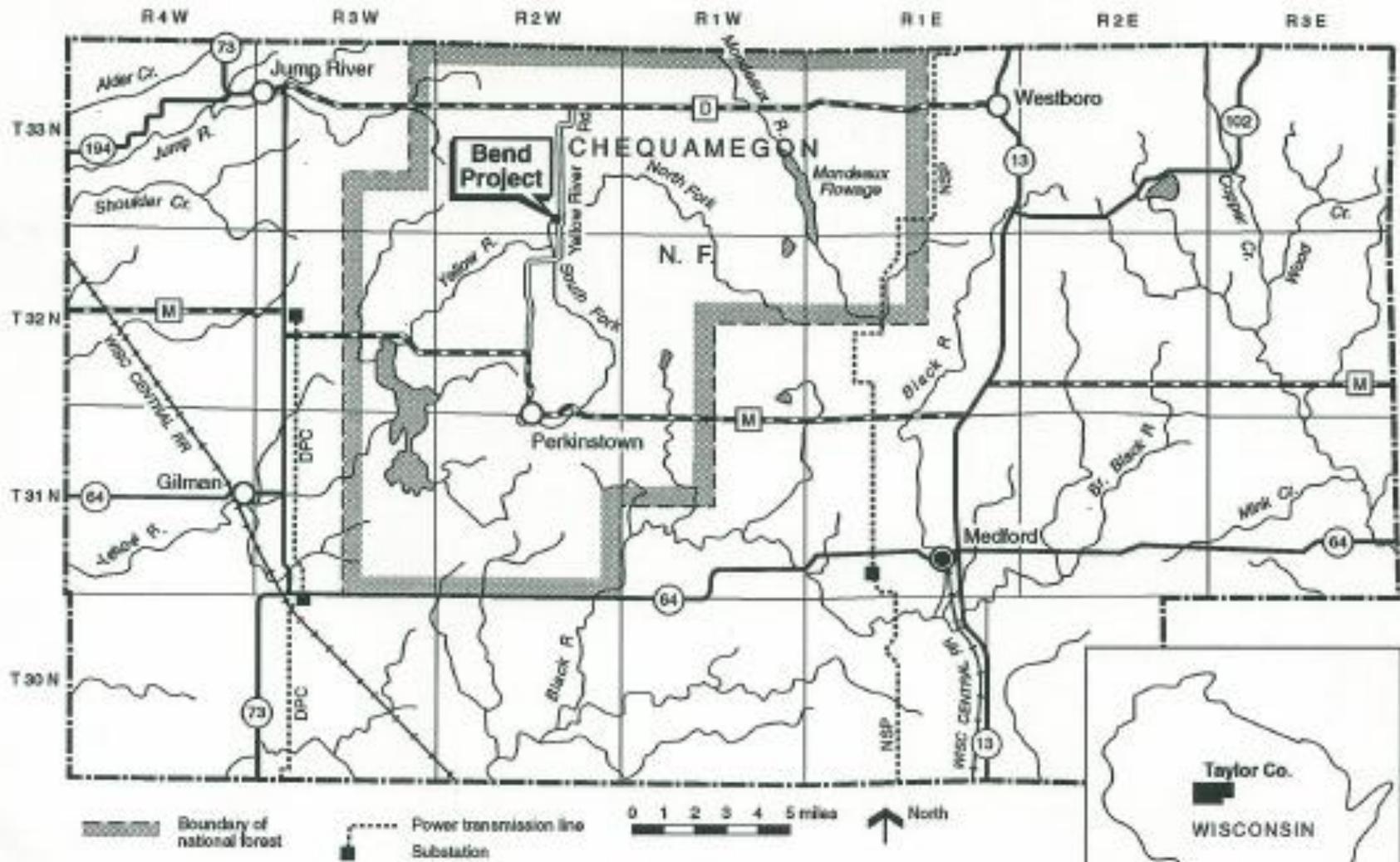
Phase 3 General Exploration Program

Additional AEM anomalies identified in the proposed exploration license block will be evaluated by ground geophysical follow-up and drilling (Fig.5). The timing of this exploration may be concurrent with the Phase 2 drilling program or later. The amount of drilling will depend on results of the geophysical evaluation and ranking of each target. Drilling procedures will be similar to those in the Phase 2 program.

Logistics of the Geophysical Surveys

Initial evaluation of the target anomaly will involve ground geophysical surveys on both federal and private (Tri-State) mineral estates. Because of wet ground conditions in many areas, some of this work would be completed during the winter. Before the surveys can be conducted, a control grid must be established. This involves the clearing of underbrush where needed to make straight, regularly spaced grid lines about 3 feet wide that can be traversed on foot. Grid lines which are spaced 400 to 800 feet apart can be as long as 5000 feet and oriented perpendicular to a predetermined measured baseline. Regularly spaced stations (100' apart) along each line are measured, staked and marked with an identifying grid co-ordinate; ends of each line as well as portions of the baseline are surveyed by GPS.

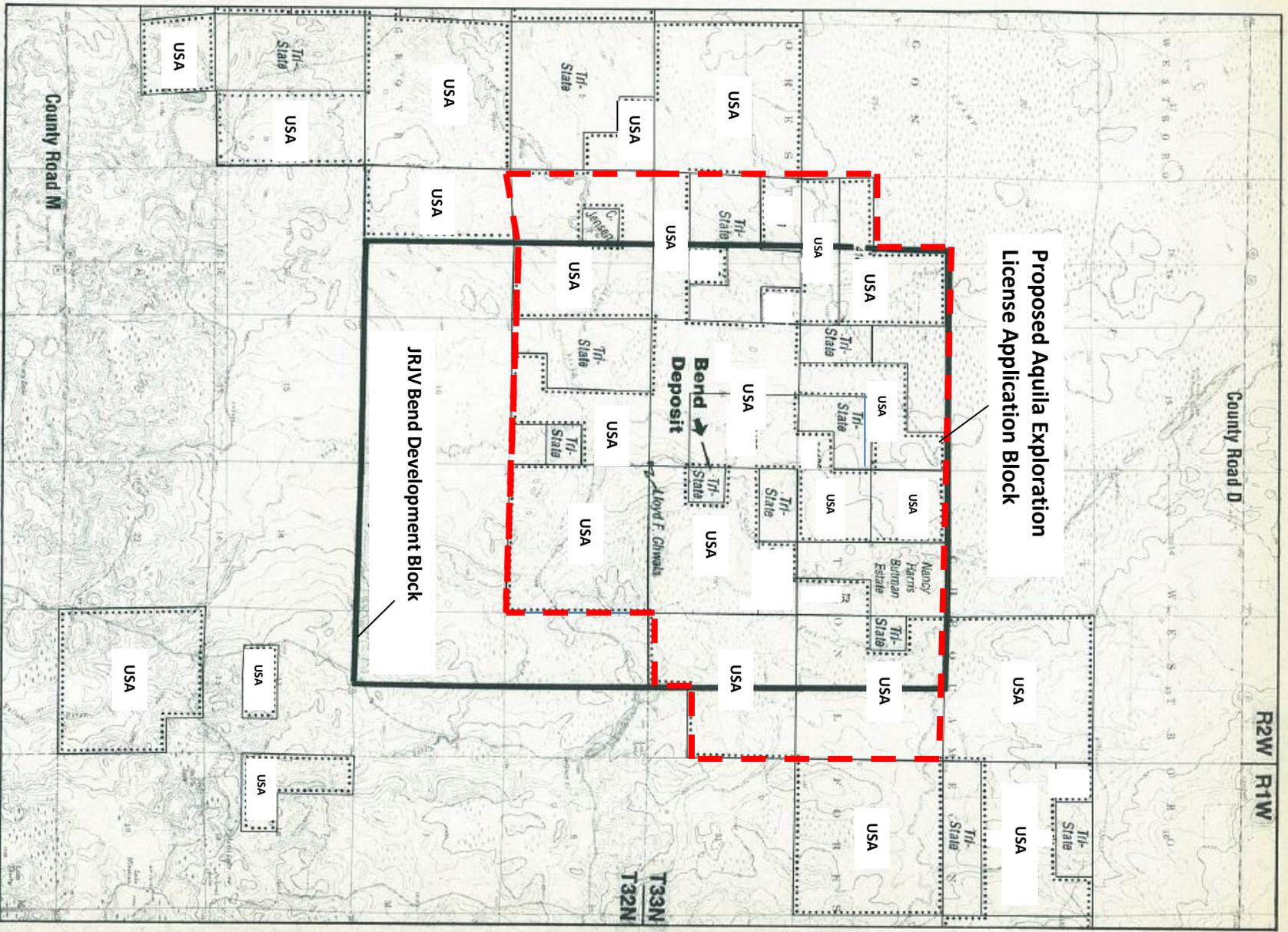
Once the grid is located and established, Aquila personnel or its contractors will conduct a series of different geophysical surveys. This includes various geophysical measurements are taken at regular intervals along grid lines of the earth's magnetic, electrical, and/or gravitational fields using hand-held instruments. If warranted, soil geochemical surveys will be carried out utilizing a hand-held auger that is capable of collecting one-half pound soil samples along selected grid lines. Since field personnel collect all of the measurements on foot, there is little or no surface disturbance. Support vehicles will consist of four-wheel-drive pickups or snowmobiles that will be driven only on existing winter roads/trails. In the event that the results of this exploration work are negative, no further work will be conducted. However, if the work is positive, one or more drillhole sites would be proposed to evaluate further the target.



Bend Project location map, Taylor County, Wisconsin

Figure 1

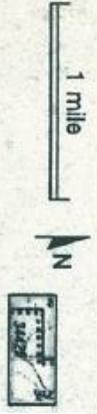




Proposed Aquila Exploration License Application Block

JRJV Bend Development Block

Bend Deposit



Former JRJV prospecting permits

Explanation

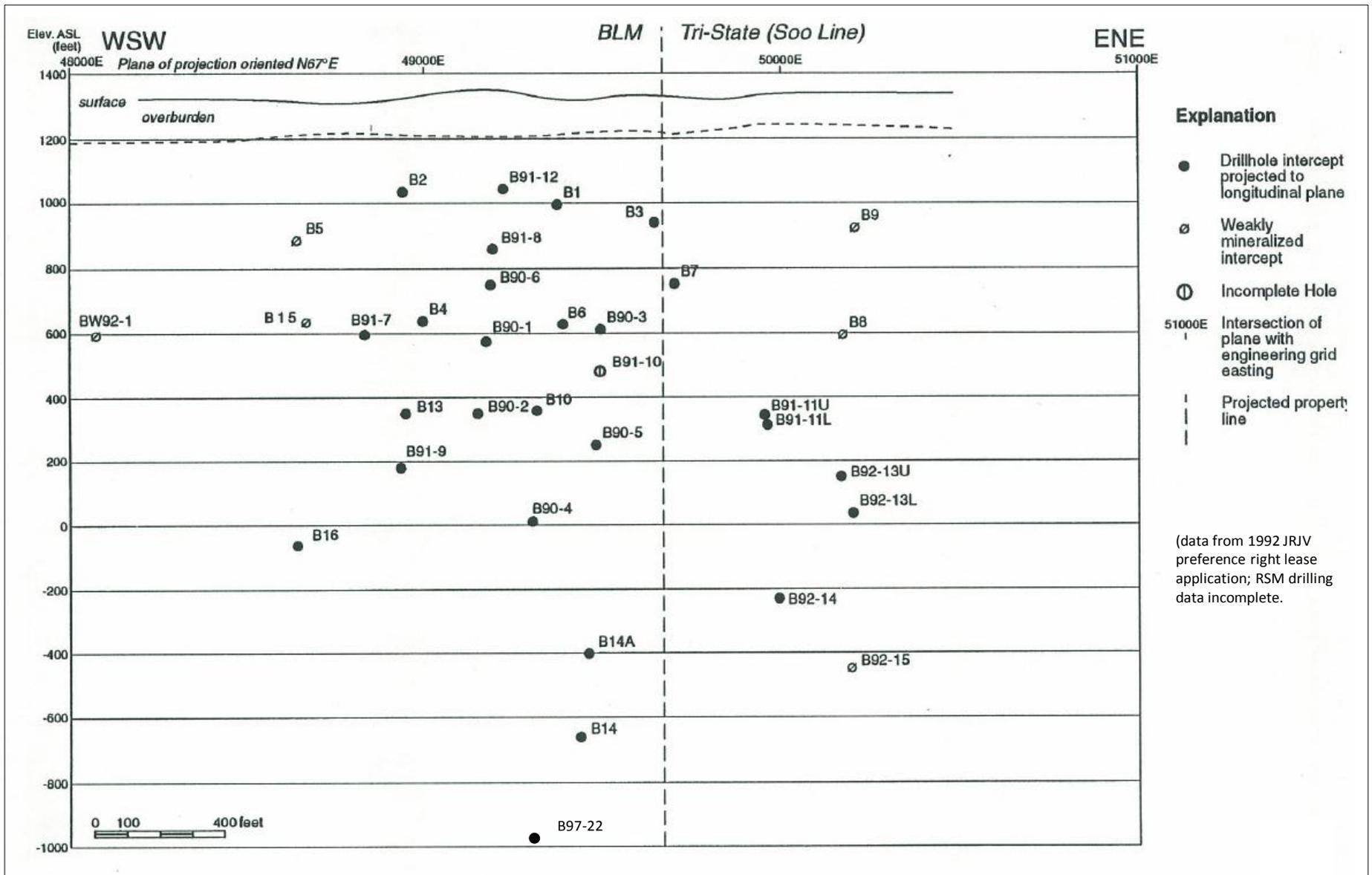
Former JRJV private leases

Blank were not leased

Apparent mineral ownership
(from 1992 R/V preference right lease application)

Figure 3

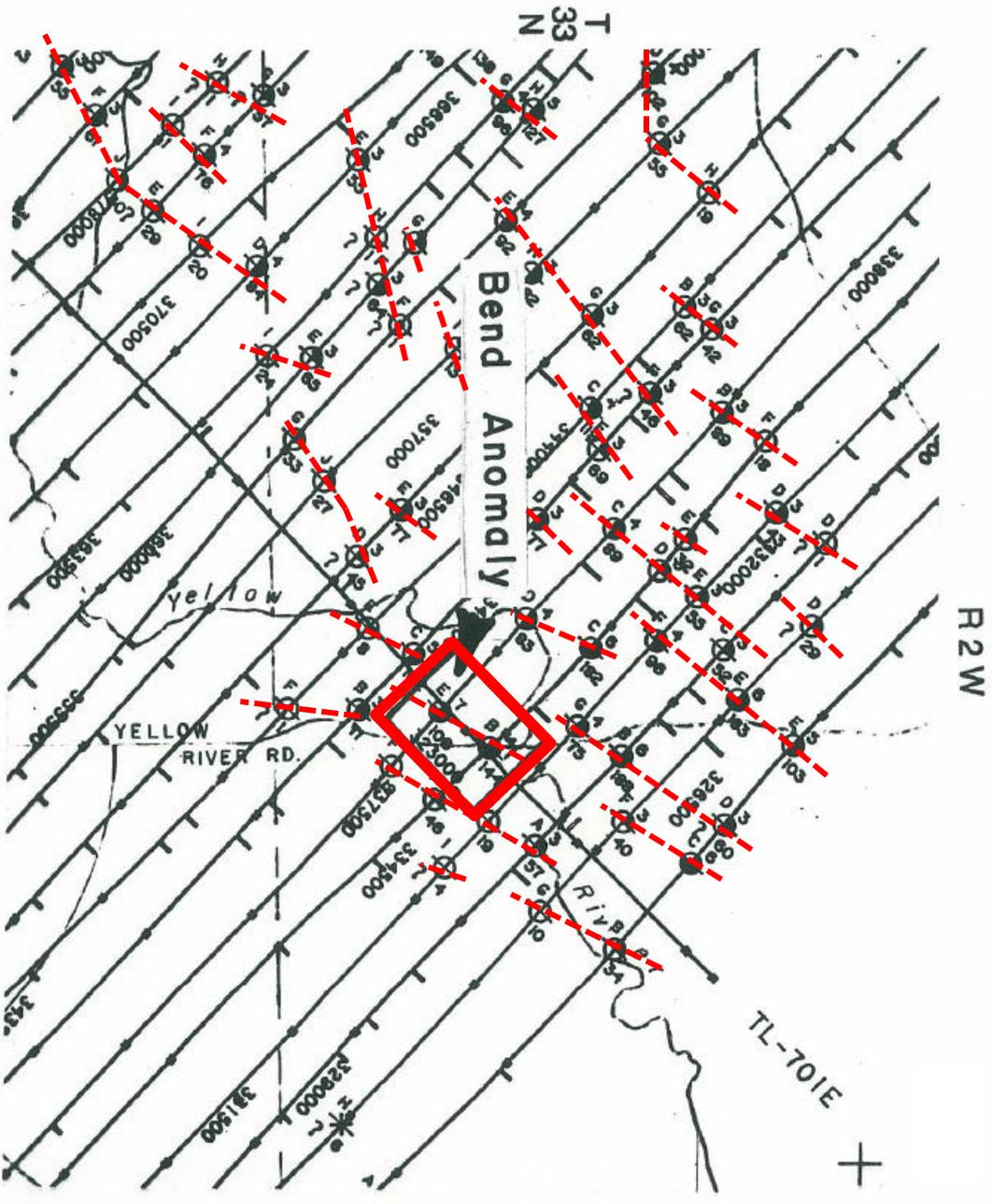




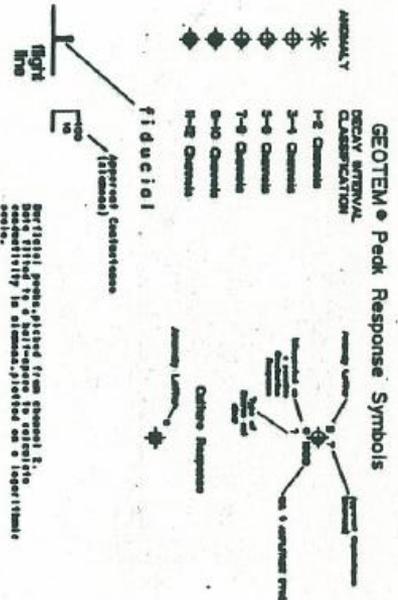
Longitudinal projection of copper-gold sulfide mineralization

Figure 5





(data from 1992JRVJ
 preference right lease
 application)



Plan map of Bend airborne electromagnetic (AEM) anomaly map (GEOTEM survey)

Figure 6



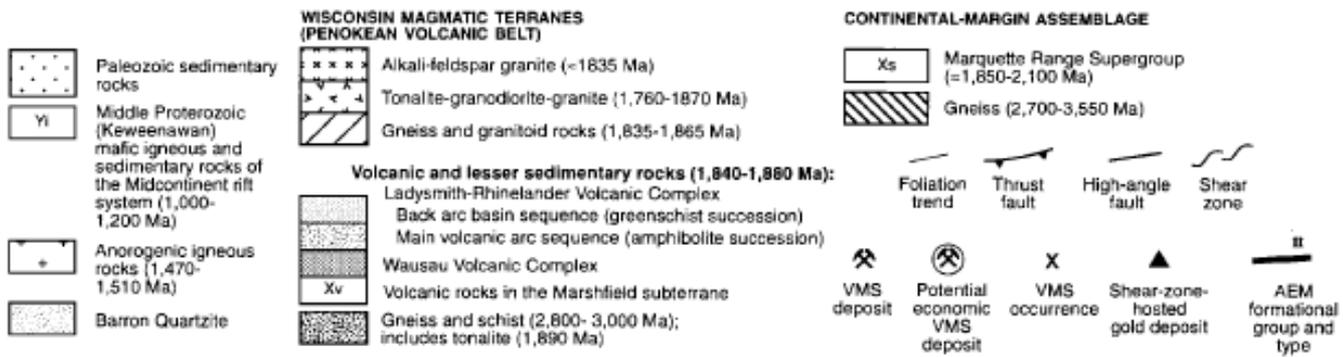
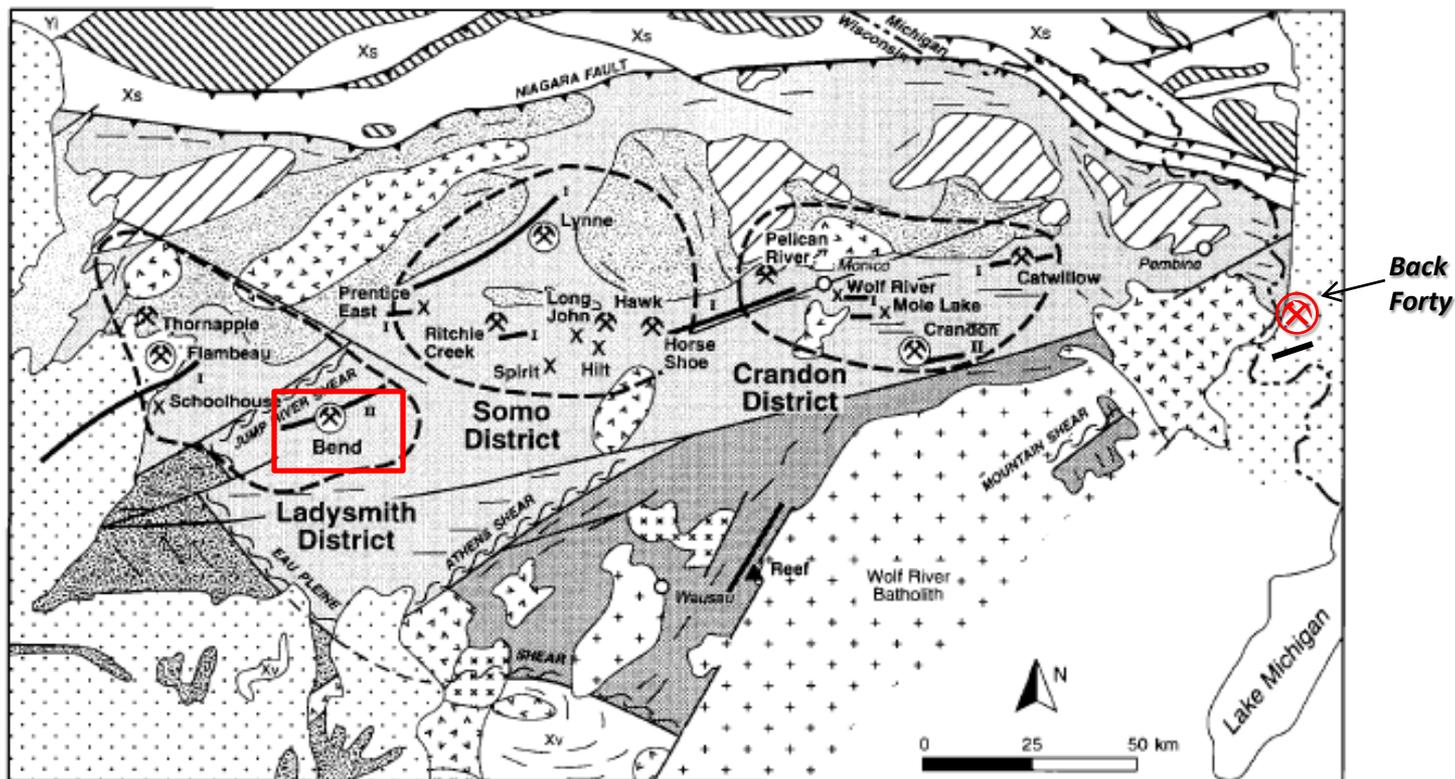
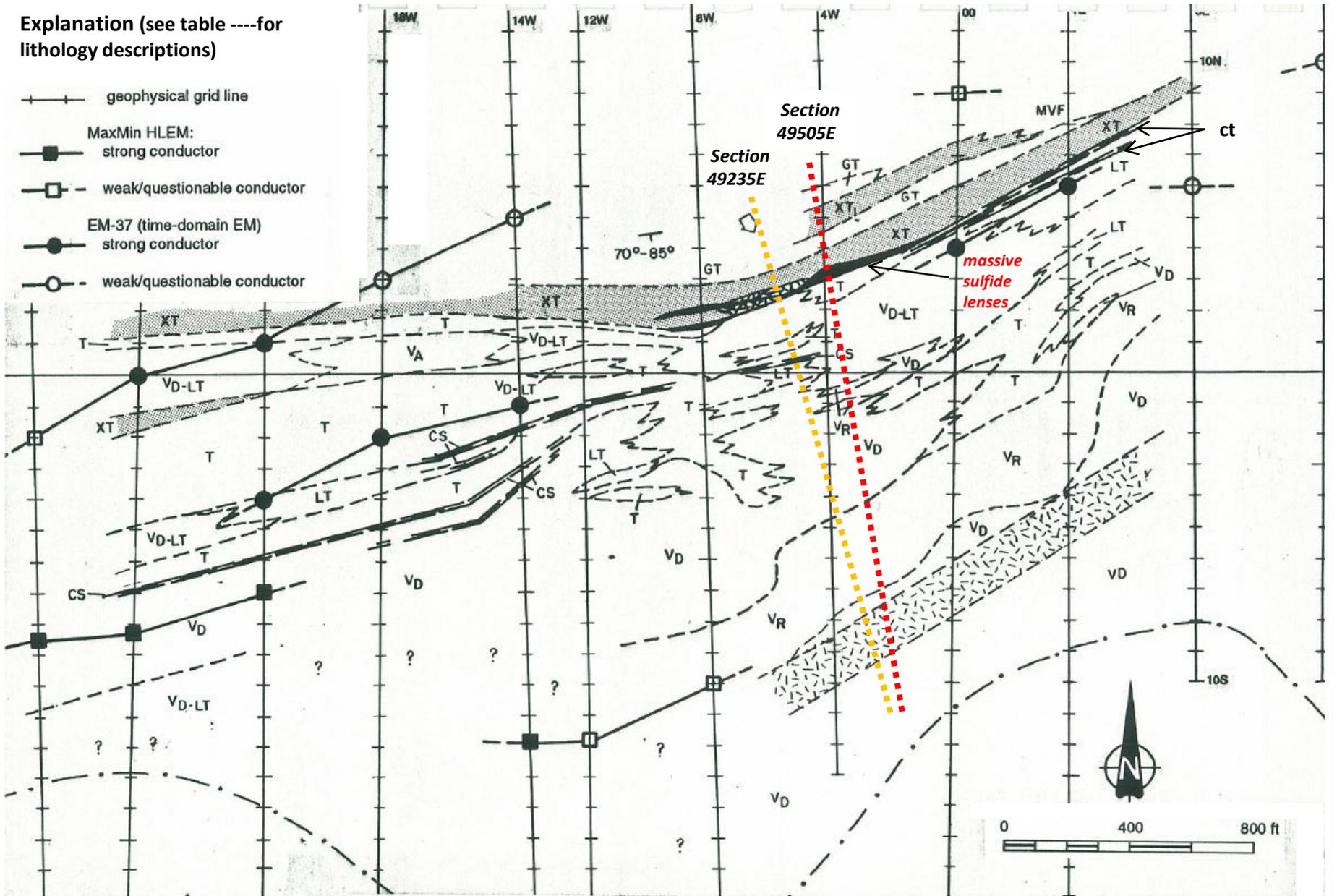


Figure 7 Geologic map of northern Wisconsin showing major volcanic complexes, distribution of volcanogenic massive sulfide deposits and occurrences, and major ore-related meta-argillite formational groups (modified from Sims et al., 1989).

Explanation (see table ----for lithology descriptions)

- +— geophysical grid line
- MaxMin HLEM:
strong conductor
- weak/questionable conductor
- EM-37 (time-domain EM)
strong conductor
- weak/questionable conductor



Geology subcrop map

(data from 1992 JRJV preference right lease application)

Figure 8



VOLCANIC UNITS

HANGING-WALL SEQUENCE (FELSIC FLOW-FRAGMENTAL COMPLEX)

- V_D** INTERMEDIATE TO FELSIC FLOWS (dacite to rhyodacite) Greenish gray, fine- to medium-grained, thin- to thick bedded, fractured and healed (quartz and carbonate), porphyritic (feldspar phenocrysts) and non-porphyrific metavolcanic flows and flow breccias. Interflow tufts and sediments and interbedded siliceous and metavolcanic flows occur locally.
- V_A** INTERMEDIATE TO BASALTIC (andesite to basaltic andesite) Dark greenish gray, fine- to medium-grained, massive, commonly porphyritic (feldspar and ferromagnesian mineral phenocrysts) metavolcanic flows and/or subvolcanic intrusives.
- V_R** FELSIC FLOWS (rhyolite) Light gray to pinkish-white, fine- to medium-grained, massive, fractured and healed, very hard, commonly porphyritic (blue quartz eyes and feldspar phenocrysts), siliceous metavolcanic flows, subvolcanic intrusives, and flow breccias; localized well-developed flow banding?; locally, weakly mineralized and altered.

V_{D-LT} INTERBEDDED FLOWS AND INTERFLOW PYROCLASTIC BEDS Dominantly thin, intermediate to felsic metavolcanic flows (V_D), flow breccias, and carbonate-rich interflow metatuffs and lapilli metatuffs.

- LT** INTERMEDIATE TO FELSIC LAPILLI TUFFS
Greenish gray, medium- to coarse-grained, thin- to thick-bedded, carbonate-rich coarse metatuffs, lapilli metatuff, and tuff breccias. Normal graded bedding is common. Intercalated thin intermediate to felsic metavolcanic flows (V_D) locally.
- T** INTERMEDIATE TO FELSIC FINE AND COARSE TUFFS
Light to dark greenish gray, fine- to medium-grained, thinly bedded to laminated metatuffs and associated tuffaceous meta-sediments. Black meta-argillite laminations locally.
- CS** TUFFACEOUS SEDIMENTS Dark gray to black, fine-grained, laminated, commonly graphitic, chlorite-rich meta-argillite. Commonly sulfide-bearing. Chert laminations common.
- CT** CHERTY TUFF Fine-grained, finely laminated cherty and hematitic metatuff. Chert component greater than 50%. Thin massive-sulfide beds may be present.

MINERALIZED SEQUENCE

- XT** ALTERED AND MINERALIZED QUARTZ-CRYSTAL FELSIC TUFF Medium to light gray, fine- to medium-grained, poorly bedded, well-foliated (schistose), crystal-bearing (blue quartz eyes) quartz-sericite schist. Well-developed tuffaceous texture is preserved. Widespread stockwork sulfide mineralization is characteristic, consisting of up to 30% (commonly 18-10%) pyrite ± chalcopyrite as disseminations, cross-cutting veinlets, and conformable bands. This unit hosts copper- and gold-bearing massive to semimassive and stringer mineralization.
- XT₁₋₃** ALTERED AND MINERALIZED CRYSTAL FELSIC TUFFS Medium to light gray, fine- to medium-grained, poorly to well-bedded, weakly to well-foliated (schistose), crystal-bearing (quartz and feldspar crystals), locally fragmental quartz-sericite (feldspar) schists and semi-schists. Widespread disseminated sulfides (pyrite ± chalcopyrite) and conformable massive to semimassive sulfide bands. Crystal tuff units are separated by thin argillite (CS) and felsic tuff (GT) beds. Unit XT₃ hosts copper-bearing fragmental massive sulfide and stringer sulfide mineralization.
- FOOTWALL SEQUENCE
- GT** BEDDED FELSIC TUFF Gray to greenish gray, fine-grained, thinly to thickly laminated, well-foliated (schistose) sericite schist. Commonly contains disseminated pyrite, up to 5%.
- MVF** INTERMEDIATE TO MAFIC FLOWS AND INTERFLOW SEDIMENTS (andesite) Dark greenish gray, fine- to medium-grained, locally laminated, foliated (schistose) chlorite schist. Carbonate alteration common.
- V_N** MAFIC FLOW(S) (basalt) Dark greenish gray, aphanitic to fine-grained, non-foliated, fractured and healed, nonporphyritic (massive) metavolcanic flows and/or subvolcanic intrusives

INTRUSIVE UNITS

- + +** SUBVOLCANIC INTRUSIVE Dark gray, medium-grained, equigranular, massive, fractured and healed, intermediate to mafic dike or sill.

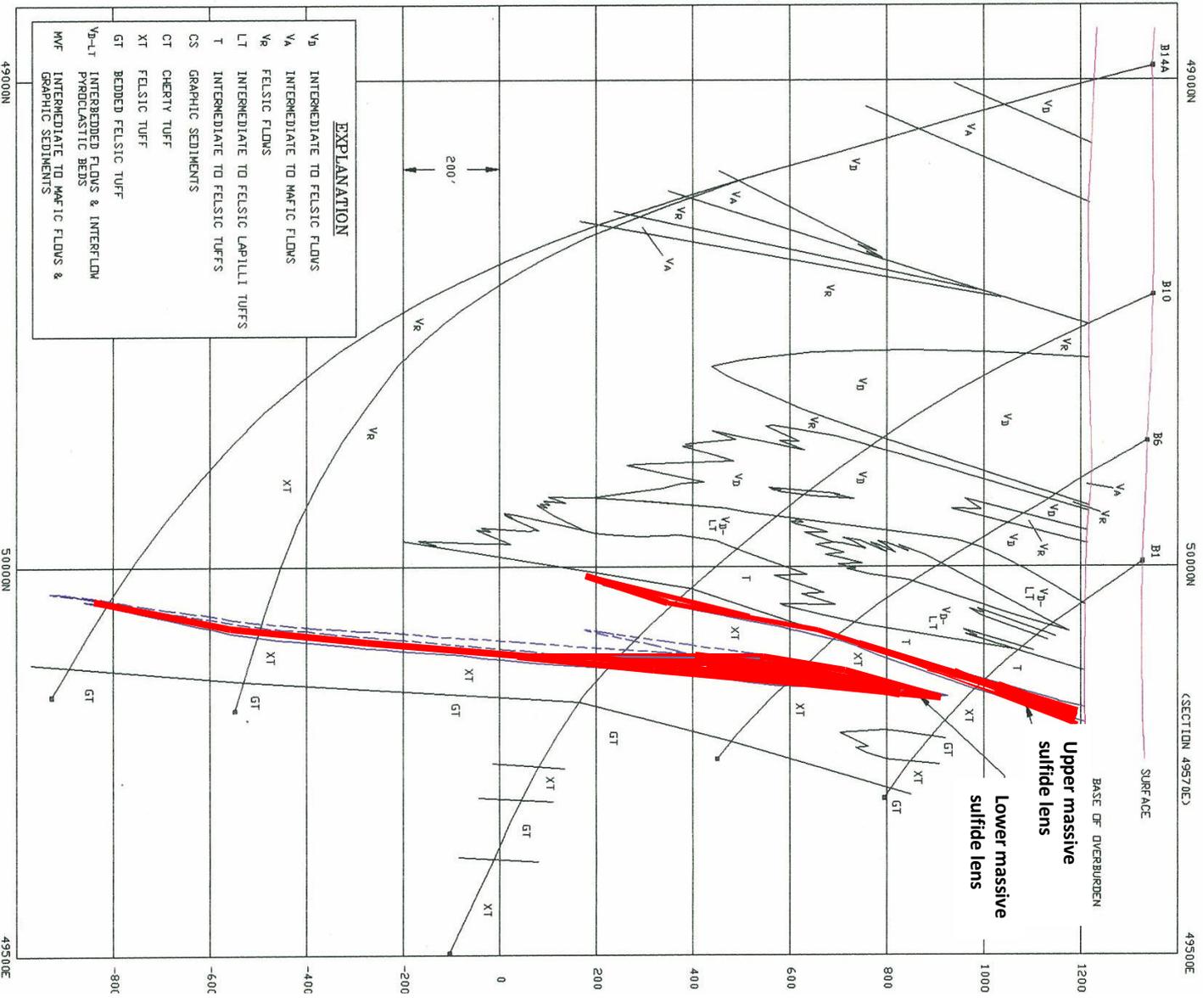
Description of lithologic units

(data from 1992 JRVV preference right lease application)

Table 2



BEND PROJECT GEOLOGIC CROSS SECTION

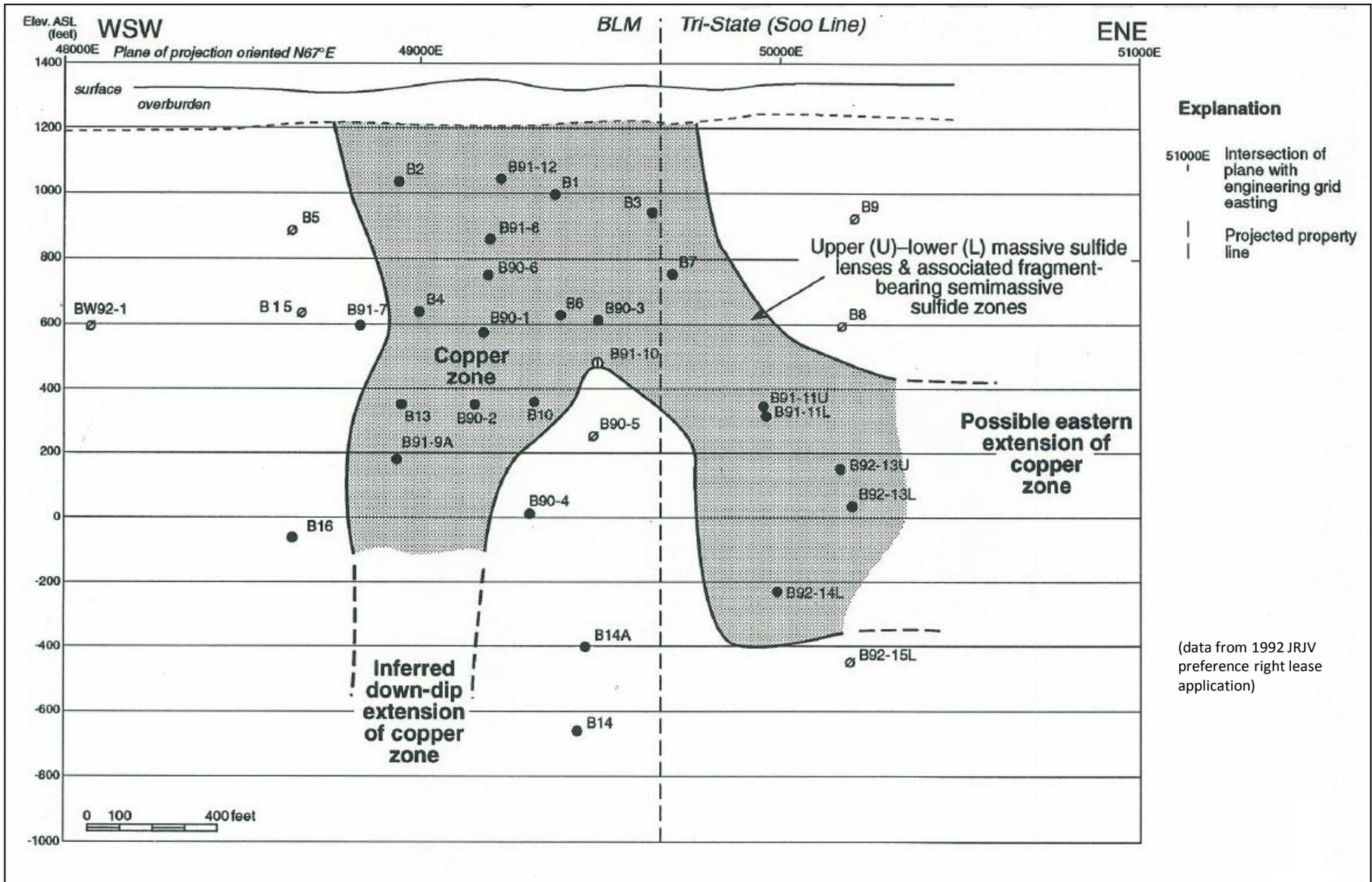


Vertical geological Section 49505 E

Figure 9

(data from 1992 JRVV preference right lease application)

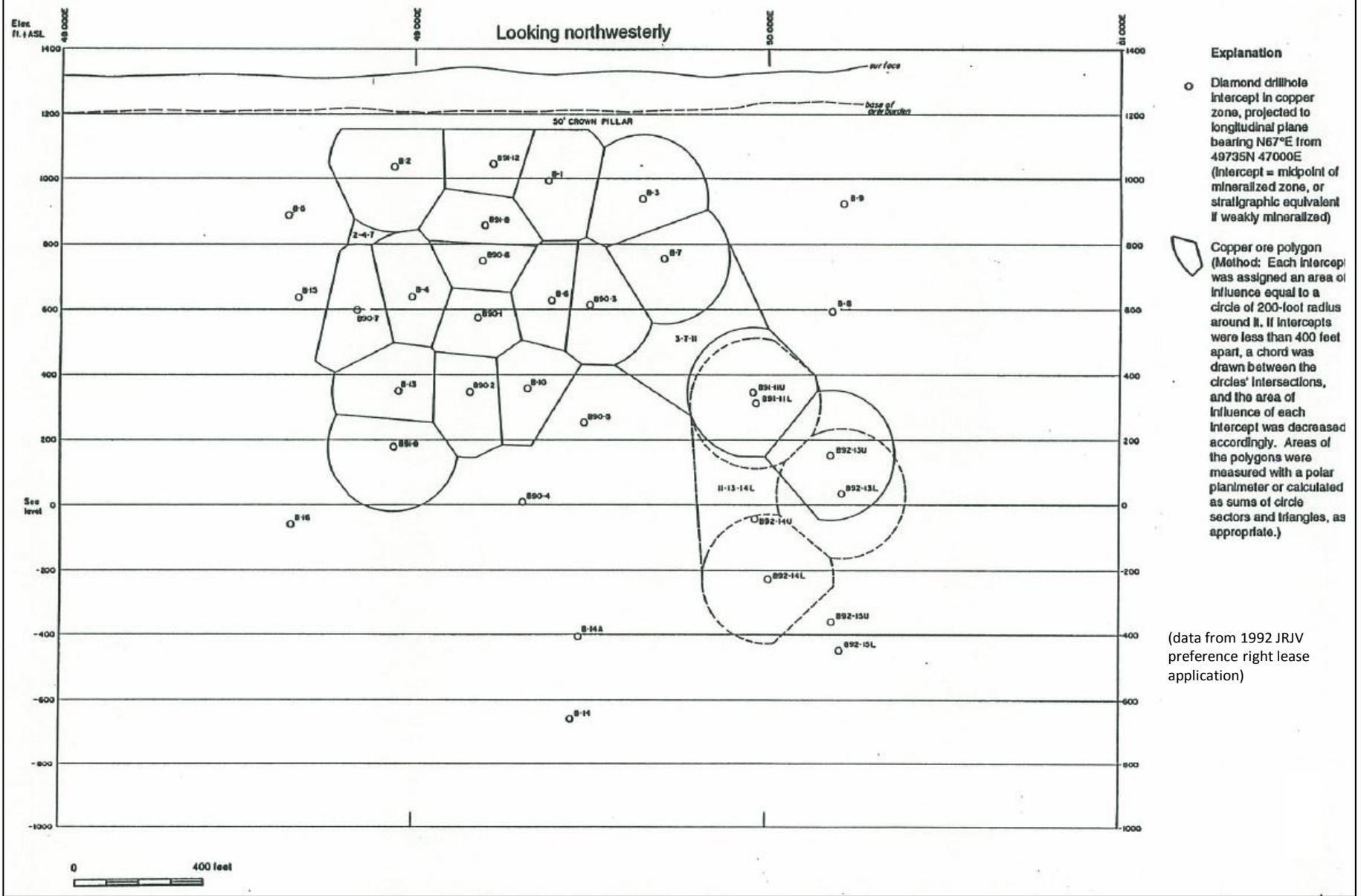




Longitudinal projection of the estimated copper zone

Figure 10

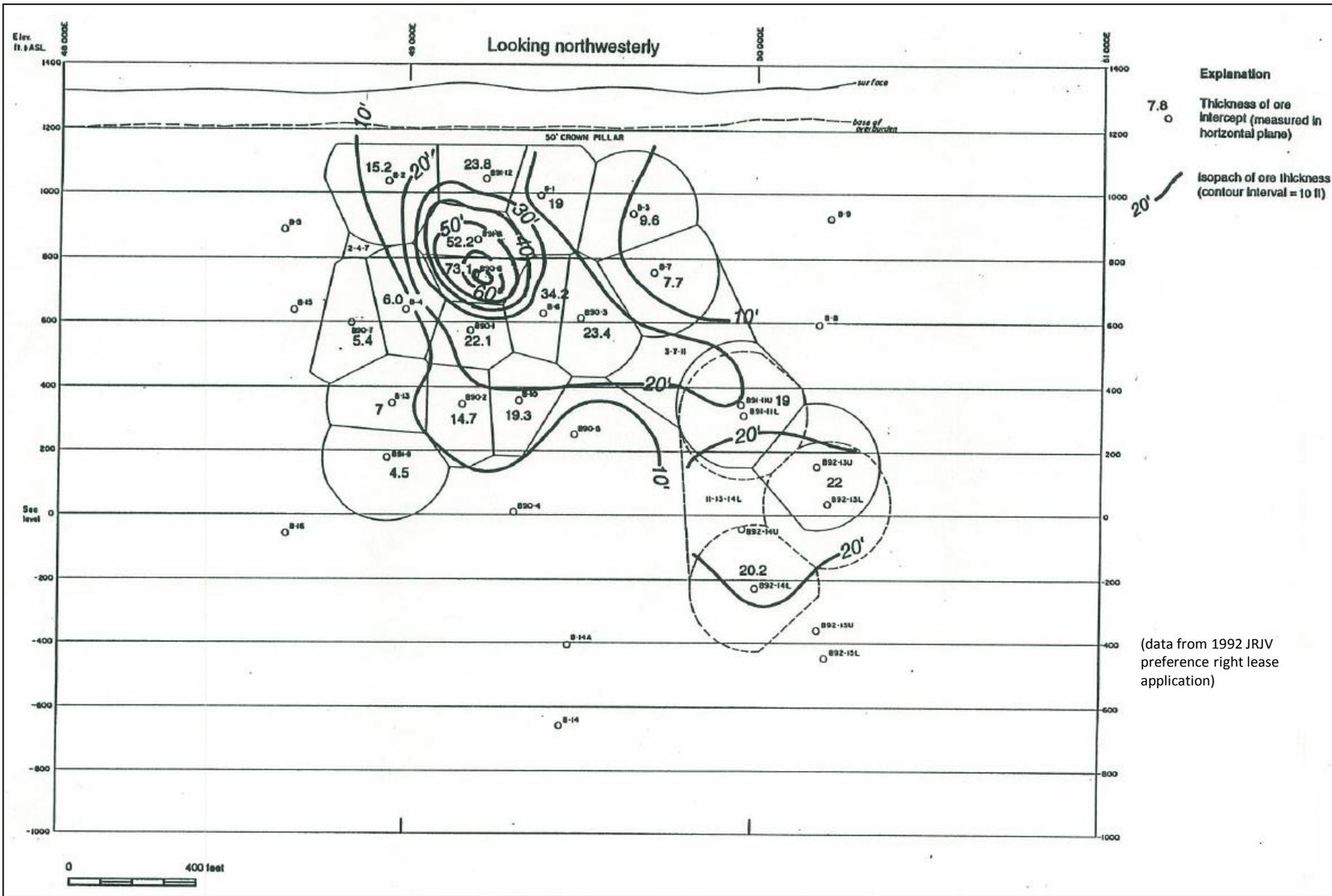




Longitudinal projection of ore polygons for the copper zone

Figure 11

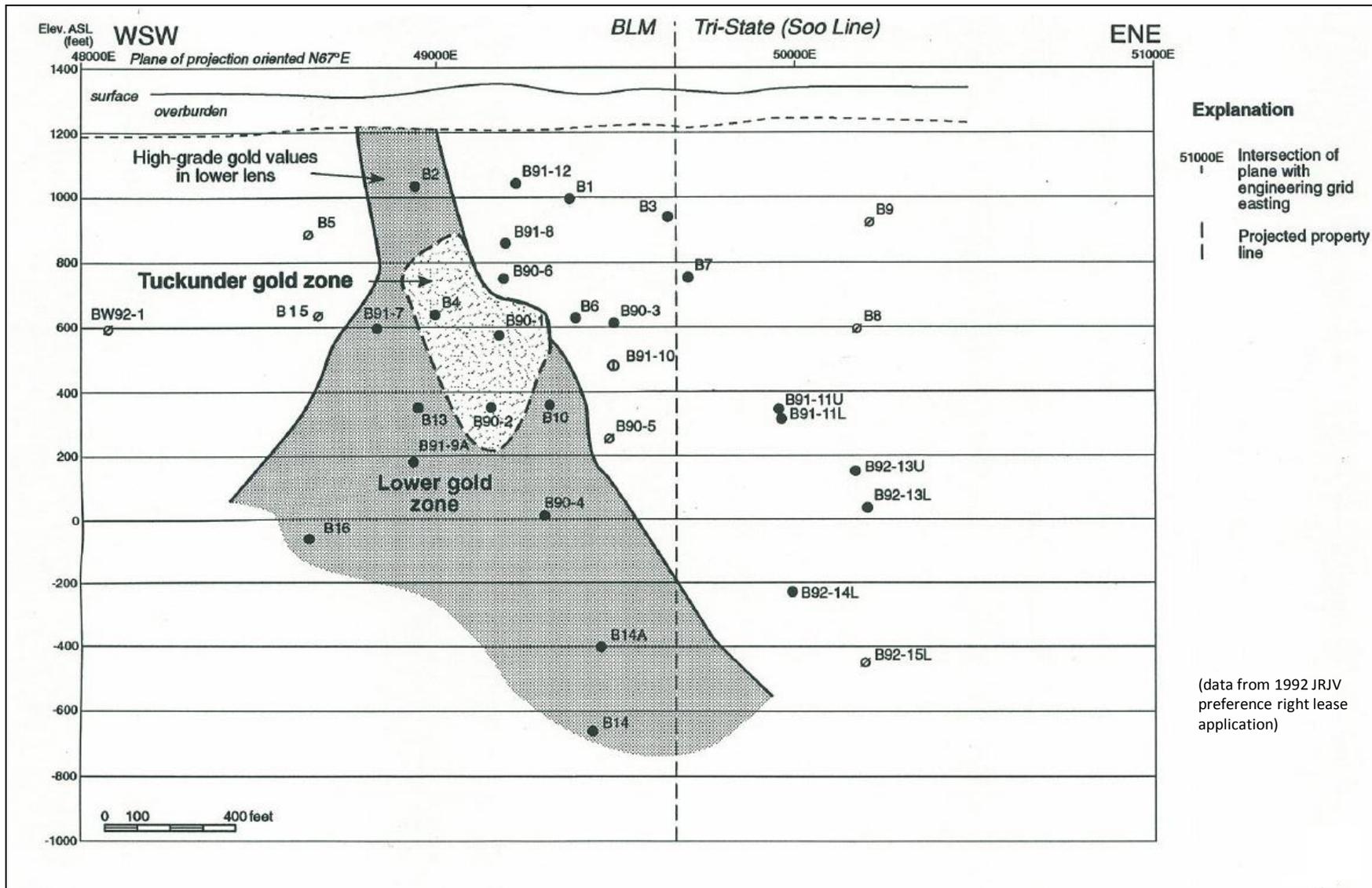




Isopach of the copper zone thickness
(measured in horizontal plane)

Figure 12

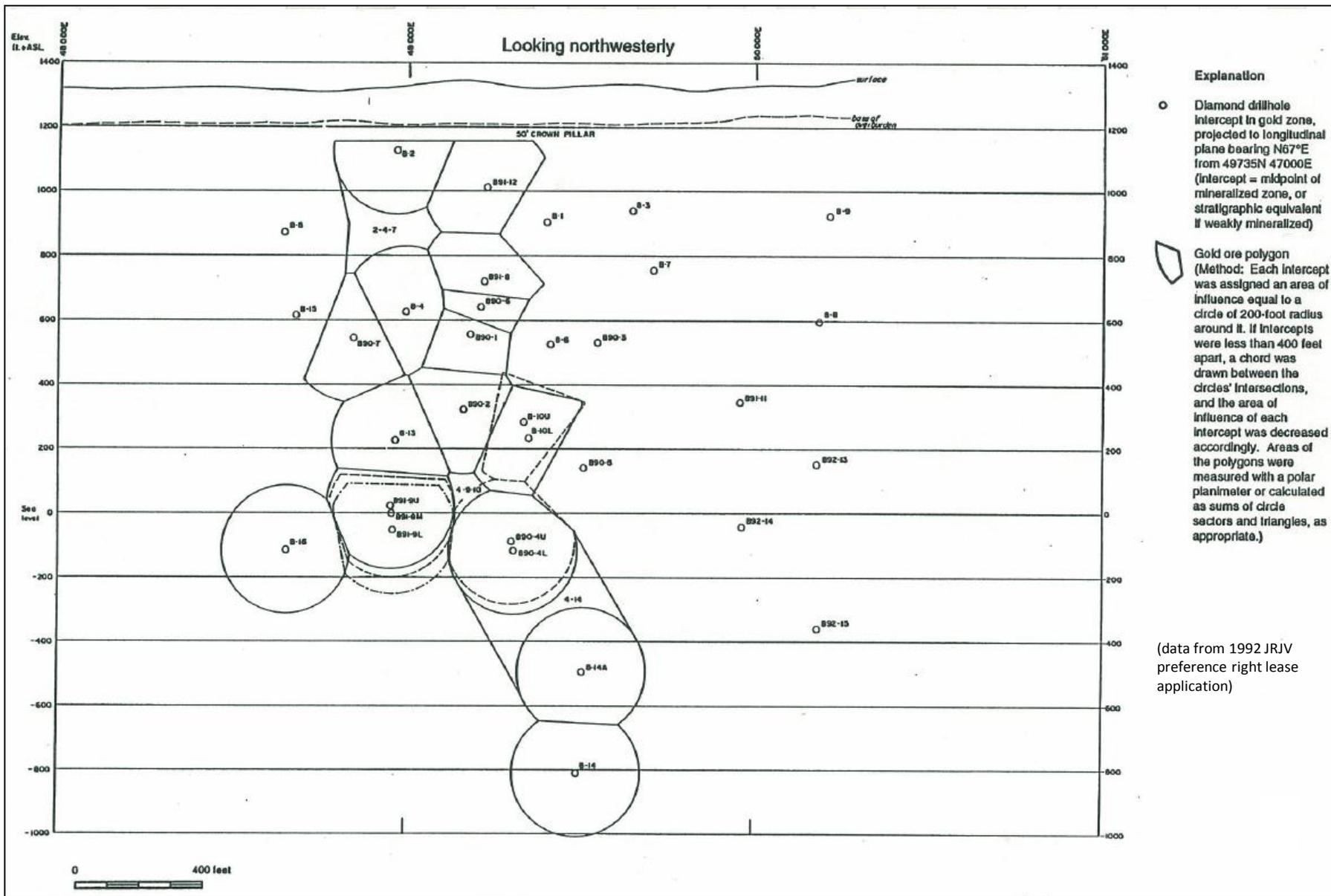




Longitudinal projection of the estimated gold zones

Figure 13



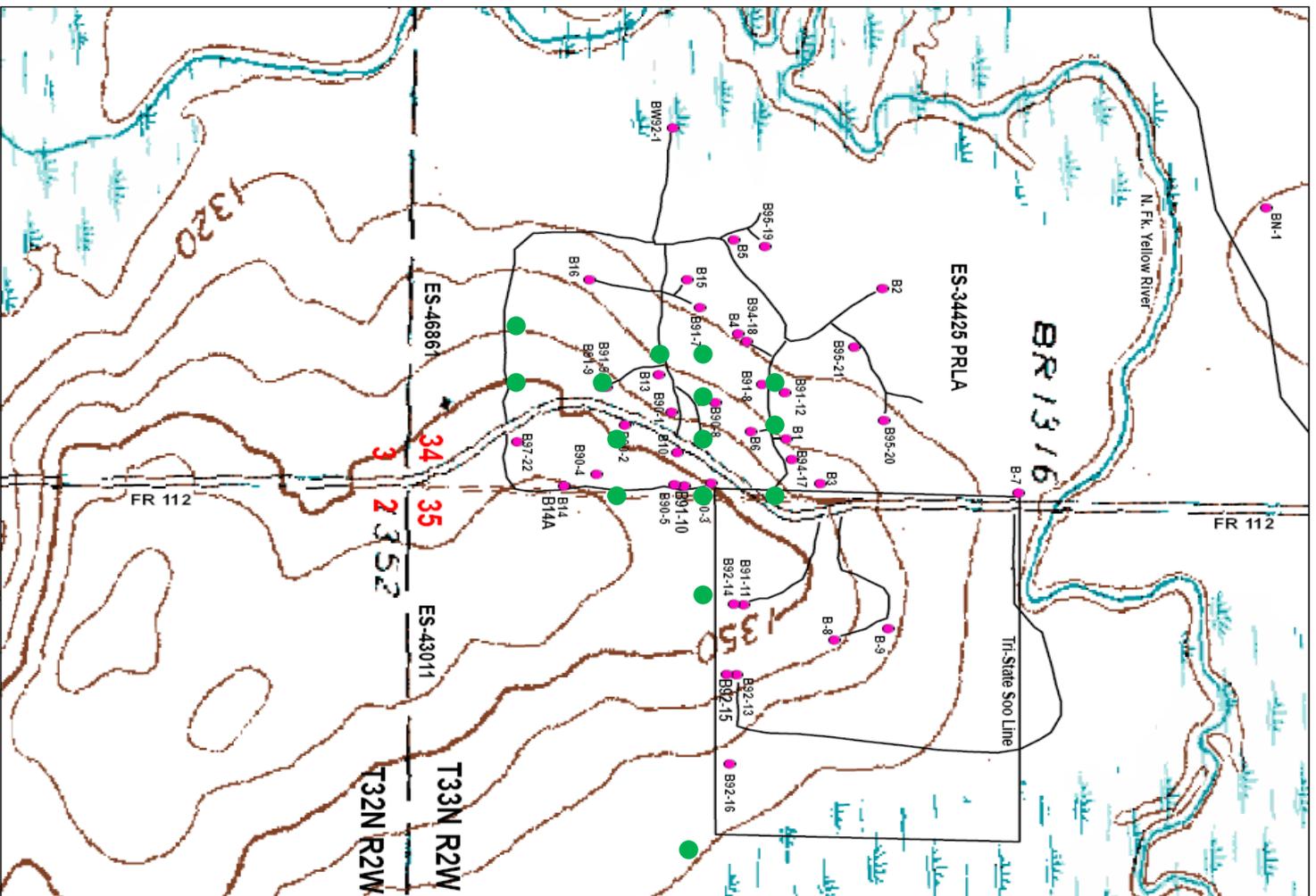


Longitudinal projection of ore polygons for the gold zones

Figure 14



Bend drillhole location map #1 (large scale)
 Medford RD, Taylor County, WI



● Proposed drillhole site location

Legend

- Drillcollar_locations_28Jan2005
- Drillcollar_Access_28Jan2005

0 187.5375 750 1,125 1,500
 Feet

1:5,062 Contour Interval = 10 feet

Source –
 U.S.F.S map

Jump River Fire Tower, 15' Quadrangle

Figure 16

