

**Technical Report of the Aurora Uranium Project  
Malheur County, Oregon**

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- A. Claim names, County Instrument, and BLM serial number.
- B. Representative Cross-Sections from Resource Model

### Item 3: Summary

The Aurora Property is located in Southern Oregon 3 miles from the Nevada border about 10 miles west of the small border town of McDermitt, Nevada. Quincy Energy Corp (Quincy) has entered into a Joint Venture agreement with Energy Metals Corp. (EMC), the property owner, to purchase up to a 75% interest in the property.

Placer Amex conducted an extensive exploration and evaluation program on the property from 1977 through 1980, investigating the uranium mineralization with the goal of putting the project into production. Placer and the previous owner, Locke Jacobs, completed at least 562 rotary and diamond core drillholes and 530 are included in the resource calculation. Placer completed a pre-feasibility study defining a resource of 16.8 million tons with an average grade of 0.048% equivalent  $U_3O_8$  ( $eU_3O_8$ ), but due to falling uranium prices, dropped interest in the project. The  $eU_3O_8$  value is based on the conversion of the radiometric gamma log determination of radioactive mineral to a calculated uranium content. True  $U_3O_8$  values ( $U_3O_8$ ) are obtained from direct chemical assay results.

Uranium mineralization at Aurora is hosted in clay altered volcanic flows and tuffs within the McDermitt Caldera complex. The mineralization represents both primary and secondarily enriched uranium bodies which are controlled by porous and permeable stratigraphic units and structural zones. The indicated resource calculated in this study is 17.69 million tons at an average grade of 0.0518%  $eU_3O_8$  or 18.3 million pounds of uranium (Table 3-1), using a 0.03%  $eU_3O_8$  cutoff, in an area approximately 5000 feet long by 1000 feet wide. The mineralization averages approximately 20 feet thick in multiple, nearly horizontal horizons ranging from 5 to over 100 feet true thickness. Studies completed by Placer in 1979 indicate recoveries of at least 85% are possible.

Generative work programs have not been conducted on the property since 1980. Quincy has not completed any work on the project beyond the review of the Placer data for this study and bases this resource estimation on that database. The author considers the database to be reliable and finds the project to be of high merit. Further exploration and evaluation programs are recommended.

**Table 3-1.**  
**2005 Indicated Resource and Historic Drilling Data Support.**

Million Tons	Grade % $eU_3O_8$	# of Rotary Drillholes	# of Core Drillholes	Drill Fence Spacing	Drillhole Spacing along Fence
17.69	0.0518	505	25	200 Feet	100 Feet

### Item 4: Introduction and Terms of

The term of reference for this report is to determine if the subject uranium property, for which Quincy Energy Corp ("Quincy") has entered into a Joint Venture Agreement with the owner Energy Metals Corp ("EMC") is of sufficient merit to warrant further exploration activities and advanced engineering studies.

*Statement of the person for whom the report was prepared:*

"The subject report was commissioned by Quincy Energy Corp. for the dual purpose of a) a property qualifying report for the listing of Quincy Energy on the Toronto Stock Exchange and b) to confirm a historic uranium resource and bring this resource up to modern industry standards. As a significant body of exploration data previously existed for the deposit, and an historical pre-Feasibility study was completed by Placer Development Ltd., work performed for the subject report was limited to: a) compilation of all available data, b) a site visit to confirm historic drill hole locations and infrastructure, and c) an independent recalculation of mineral resources to confirm previous estimates by Placer Development."

Work that remains to be done in the context of industry standards for development of mineral resources includes: infill drilling and drilling for geotechnical and metallurgical samples, metallurgical testing, site selection for mine infrastructure, calculation of mineral reserves, and permitting. This work was beyond the scope of the commissioned report"

-Art Ettlinger

This report is based on the extensive database generated by Placer during its exploration program in 1978-1980 and information available from Locke Jacobs, the original property owner. The database includes gamma downhole geophysical logs for more than 562 holes with some confirmation assays and initial resource modeling by Placer.

The author visited the property on June 22, 2005. During the visit the presence of the old drill pads and related drill cuttings were confirmed to exist as represented on the existing Placer drillhole location maps. A handheld scintillometer was used to confirm the presence of radioactive material at mineralized outcrops and in the drill cuttings found on drill pads. Limited grab samples from old drill cuttings and outcrops were collected to confirm the presence of uranium mineralization.

#### **Item 5: Disclaimer**

The data used to prepare this report was collected by previous property owners, Locke Jacobs, a private land owner and prospector, and Placer Mining Company, a major exploration and mining company with several mining operations. These exploration and evaluation activities took place from 1977 through 1980. The procedures implemented by these operators are well documented and follow industry standard procedures and best practices. No drillcore or rotary drilling chip samples exist today. An extensive database of drillhole gamma logs, and supporting reports were critically reviewed. The author believes the data and subsequent evaluations to be reliable.

The author prepared this technical report with the assistance of Dr. Douglas Underhill, an experienced geologist in uranium exploration, evaluation, and production. Dr Underhill sorted through the volumes of historic data and assisted with the review of the data generated by Placer, evaluating data collection procedures, data evaluation, and the conclusions of Placer. Dr. Underhill confirmed the procedures implemented by Placer followed uranium industry standards. All work completed by Dr. Underhill was critically reviewed and confirmed by the author.

## **Item 6: Property Description and Location**

The Aurora Property covers an area of 450 acres, approximately 182.1 hectares comprised of 18 unpatented lode claims designated the New U Claims 11-28 (appendix A). The company has recently filed an additional 34 lode claims surrounding the project area to insure total coverage of the resource, close any gaps with neighboring land owners, and secure areas critical to future exploration and development activities. The existing and newly acquired claim block consists of 52 lode claims covering 1300 acres, approximately 526 hectares.

The Property is located in Southeast Oregon in the Quinn River Valley, Malheur County (Fig. 6-1) on the USGS Bretz Mine 7.5 Minute Quadrangle topographic map. The claims are located in Sections 3, 4, 5, 8, 9, 10, 15, and 16 of Township 41 South, Range 41 East, Willamette Base Meridian (Fig. 6-2). The approximate center of the property is identified by the UTM Coordinates 425,136 east and 4,653,987 north in UTM Zone 11 on the NAD 27 Clark 66 map base. A local mine grid was established by Placer in 1977 and used for all exploration activities using Imperial Units. The local grid point 8000 east and 5000 north corresponds to UTM coordinate 424556.8 east and 4653816.6 north. All drillhole collars and drill sections are in Imperial Units on the local coordinates grid. All cross-sections use the same scale vertical and horizontal so there is no distortion or exaggeration. The bench level designations (5100, 5200, etc.) are elevations in feet above mean sea level.

The unpatented, contiguous claim block includes 18 lode claims designated New U 11 through 28. Twenty two additional claims have recently been filed and form a contiguous claim block surrounding the original claims on the west, east, and south. The expanded claim block abuts the Bretz claims on the north and provides sufficient area around the resource for exploration and development. The claims are on land administered by the U.S Bureau of Land Management (BLM) and fall under the jurisdiction of the BLM office in Vale, Oregon.

Quincy has executed a Joint Venture agreement with the property owner, EMC to acquire a 51% Interest in the Aurora Property. Quincy was required to pay the sum of \$25,000 to execute the Option Grant and issue 1,000,000 unencumbered shares to EMC. The agreement requires Quincy to incur a total of \$2,000,000 in exploration expenditures on the Property over a four year period and the issuance of 1,000,000 fully paid shares to EMC. The staged work requirements are \$200,000 in year one, \$400,000 in year two, \$600,000 in year three, and \$800,000 in year four. Quincy has the ability to acquire an additional 24% interest bringing their share to 75% with the 100% funding of a Feasibility Study.

Annual payments of \$125 per claim are required by BLM in order to maintain the claims in good status. No other encumbrances are known to exist by the author. The claims are located on public lands administered by the U.S. Bureau of Land Management office in Vale, Oregon. No land alienation for parks or special management zones exist. There is at least one aboriginal group living at the Fort McDermitt Reservation near McDermitt, Nevada but no rights conveyed or implied, exist in or near the property area.

The claim block has been legally filed and accepted by the BLM based on a GPS survey of the Location Monuments and description of the claim boundaries. An extensive survey of claim corners and monuments has not been completed.

The Aurora mineral resource falls within the claims boundaries (Fig. 6-3). The mineralized body is known to extend at depth to the north onto the adjoining Bretz Claims. Currently the Bretz extension is not considered to be of high interest due to the depth of the mineralized body. Other prospective exploration areas for shallow mineralization are included in the claim block as are areas appropriate for the location of processing facilities, tailings, and dumps. An intermittent creek and small tributaries transect the mineral zone.

The Quincy agreement is subject to a 1.5% Net Smelter Return in favor of Mr. Kevin S. Linville. No other encumbrances are known to the author.

The Aurora property is relatively undisturbed. Previous drilling generally did not require the construction of drillpads or drill roads on the gently undulating topography. Any pads which required work were reclaimed. The immediate property area does not currently have any disturbance except for access roads. The Bretz Mercury Mine lies to the north of the Aurora property and is held by a separate private party. The Bretz Mine contains an old mill, mercury roasters and condensers, and tailing piles and waste dumps, none of which appear to be reclaimed. The environmental liabilities of the Bretz Mine are unknown and are beyond the scope of this report.

Permits for the next stage of exploration activities are not in place. Permitting is through the BLM office in Vale, Oregon. Restrictions or delays are not expected in the exploration permitting process. A dialog has begun with Oregon Department of Geology and Mineral Industries (DOGAMI) personnel and Quincy management regarding the future exploitation of the mineral resource and initial discussions have been favorably received.

#### **Item 7: Accessibility, Climate, Local Resources, Infrastructure and Physiography**

The Aurora property occurs on the alluvial fan and gently rolling hills on the southern flank of the Trout Creek Mountains and just south of Flattop Mountain. Elevations range from 5200 to 5400 feet above mean sea level in the project area (Fig. 7-1). Vegetation consists of low desert sage and thin grasses in an arid, high desert climate (Plate 7-1). The property area is cut by tributaries of Cottonwood and McDermitt Creeks. A network of dirt roads provide access to much of the property.

The property is accessed from Highway 95 at McDermitt, Nevada. A paved road (Plate 7-2) goes west from the town of McDermitt and continues west becoming an improved dirt road (Plate 7-3) approximately 4.3 miles from the Highway 95 turnoff (Fig 7-2). A dirt road turns off to the northwest and is marked as access to the Bretz Mine. The improved dirt road continues approximately 7 miles to the Aurora project area. Dirt roads provide good access to the project area (Plate 7-4).

McDermitt is located on US Highway 95 which provides access to Reno, Nevada to the south and Boise, Idaho to the north, which are the closest major transportation and support hubs, approximately 240 and 180 miles from the project area, respectively. The closest population center is Winnemucca, NV, a town of slightly over 10,000 permanent residents, 73 miles to the south at the junction of Interstate 95 with Interstate 80.



The climate of the property area is typical of the high Nevada desert with summer temperatures commonly in the high 90's° F. Winter temperatures can reach below zero. Rain and snow are minimal, averaging less than 8 inches per year. The operating season is rarely affected by weather conditions at the numerous operating Nevada mines in the equivalent climatic zone.

The surface rights of the property area are controlled by the U.S. Bureau of Land Management (BLM) and has not been removed from development or under other restrictions. The property is situated 6 miles west of the 24,000 KVA Harney Electric Cooperative Substation that serviced the McDermitt mercury mine. A low tension power line crosses the southern edge of the property and groundwater is abundant. Surface water is absent except during extended periods of rain. The terrain is relatively flat with a dry creekbed cutting the mineral zone. Excellent areas exist for potential mine facilities, mineral processing areas, and waste dumps. A skilled workforce exists within a 200 mile radius in Nevada and Oregon

#### **Item 8: History**

Locke Jacobs staked the original Aurora claim block in 1977. Placer entered into a joint venture with Jacobs and maintained the claims in good standing until 1990, at which time they were allowed to lapse. Bill Sherriff restaked the New U claims in 1997 and has maintained the claims in good standing. Energy Metals Corp. entered into an agreement to purchase the property and completed an initial 43-101 report in 2004. EMC acquired a 100% interest in the Property from the owner, William Sheriff on July 19, 2004. Quincy entered into a joint venture with EMC in June of 2005. Quincy has not completed any work beyond this data review and evaluation and the preparation of a new mineral resource model presented in this report.

Uranium exploration in the Project area began as an offshoot of mercury and gold exploration efforts around the Bretz Mine. Placer had a limited reconnaissance program during 1974 and 1975. The program did not look promising and interest quickly ended.

Locke Jacobs completed an airborne geophysical survey over the area in 1977. Ground follow-up of a radiometric anomaly identified uranium mineralized outcrops. Jacobs staked claims on what became the Aurora prospect. Jacobs completed at least 90 drillholes in 1977 and 1978 totaling about 32,630 feet. The initial drilling program intersected a flat-lying mineralized zone, which in places was over 100 feet thick and assay averages were approximately 0.05%  $eU_3O_8$  (Roper, 1979).

Placer entered into a joint venture agreement with Jacobs in 1978 and continued uranium exploration on the claim block. Placer completed approximately 447 rotary drill holes totaling about 151,590 feet, as well as 25 diamond drill holes totaling about 6,650 feet (Table 8-1). The 562 drillholes completed by Jacobs and Placer were radiometrically logged by Century Geophysical Corp and make up the basis for this resource calculation and technical review.

Table 8-1.  
Source, Footage, and Type of Drilling in Resource Database

Company	Feet of Drilling
Locke Jacobs	32,630
Placer Rotary	151,590
Placer Core	6,650
Total	190,870

Placer completed a pre-Feasibility study for the Aurora Project in 1980 and stated a mineral "reserve" of 16.8 million tons grading 0.048 %  $eU_3O_8$ , using a cutoff grade of 0.03%  $eU_3O_8$  and a total of 22 million tons grading 0.043%  $eU_3O_8$ , using a cutoff of 0.025%  $eU_3O_8$  (Table 8-2). **The stated "reserve" by Placer does not meet the Proven or Probable Reserve definition stated in NI 43-101.** The "reserve" was estimated with a simple polygon calculation method summing the five foot mineralized composites above the stated cutoff grade. The average grade was calculated for the drillhole and applied to the polygon volume. The number of calculated pounds of  $U_3O_8$  and polygon tons were summed from each polygon to calculate an average grade. No polygon maps or mineralization sections exist in the data base today and detailed documentation of the Placer "reserve" is not contained in the database files.

Table 8-2.  
1980 "Mineral Reserve" of the Aurora Uranium Project\*

	Tons	Grade $eU_3O_8$ %	Contained $eU_3O_8$ Pounds
0.025% $eU_3O_8$ cutoff	22 million	0.043	18.9 million
0.03% $eU_3O_8$ cutoff	16.8 million	0.048	16.1 million

\*Placer Amex pre-Feasibility report, 1980 **The term mineral reserve was used by Placer and does not meet the definition of Mineral Reserve, Proven, Probable, or Possible as required by NI 43-101.**

The Aurora property has not had any production.

## Item 9: Geological Setting

### Regional Geologic Setting

The Aurora uranium property is within the Miocene McDermitt caldera system straddling the Oregon-Nevada border. The McDermitt caldera is approximately 30 miles long north to south and 20 miles wide east to west, and consists of at least five nested ring fracture systems (Fig. 9-1). The oldest rocks in the region of the caldera are intrusive rocks of Cretaceous age. A granodiorite pluton outcrops along the western

margin of the caldera. Early Miocene age basalt, andesite, and dacite flows erupted 18 to 24 million years before present (m.y.b.p.) and lie unconformably upon the eroded granodiorite pluton, and appear to be the earliest volcanic rocks related to the caldera complex. Collapse of the caldera occurred about 16 m.y.b.p. as the result of explosive eruptions of peralkaline ash flow tuff which began about 18 m.y.b.p. (Walker and Repenning, 1966). Voluminous rhyolitic to peralkaline ash flow tuffs (Table 9-1) were erupted from 15.8 to 17.9 m.y.b.p. (Rytuba and Glanzman, 1978).

The volcanic rocks are dominated by ash flow sheets and with lesser volumes of andesitic to dacitic lava flows. The ash flow sheets are generally densely welded and are often difficult to distinguish from the dacitic flows (Roper, 1979). Rhyolitic ring domes and resurgent domes are associated with each of the nested caldera systems and often display banded or porphyritic textures (Rytuba and Glanzman, 1978).

Table 9-1.  
Concentration of Major Elements and selected trace elements in some of the volcanic rock units in the McDermitt Caldera (Rytuba and Glanzman, 1978)

	Basal Vitrophyre of ash flow 1	Basal Vitrophyre of ash flow 2	Basal Vitrophyre of ash flow 3	Intrusive Dome Vitrophyre	Vitric Tuffaceous Sandstone
SiO <sub>2</sub>	74.8	74.7	67.9	68.9	74.8
Al <sub>2</sub> O <sub>3</sub>	11.0	11.0	12.7	11.9	12.6
Fe <sub>2</sub> O <sub>3</sub>	2.0	1.1	1.7	3.6	2.7
FeO	0.72	1.7	2.4	1.1	-
MgO	0.06	0.01	0.16	0.2	0.4
CaO	0.17	0.23	1.1	0.4	0.8
Na <sub>2</sub> O	4.3	4.3	3.5	3.6	2.8
K <sub>2</sub> O	4.7	4.7	5.5	5.2	5.4
H <sub>2</sub> O+	0.4	0.38	2.3	3.9	-
H <sub>2</sub> O-	0.2	0.07	0.56	0.1	-
TiO <sub>2</sub>	0.11	0.23	0.41	0.37	0.3
P <sub>2</sub> O <sub>5</sub>	0.05	0.05	0.12	0.02	0.04
MnO	0.03	0.05	0.09	0.07	0.08
CO <sub>2</sub>	0.06	0.04	0.06	0.04	-
Ba	70	30	1000	300	700
Li	300	300	-	30	320
Mo	5	7	5	10	-
Sr	15	3	70	20	-
U	3	20	-	20	20
V	-	-	7	-	-

Lacustrine sedimentary rocks consisting of tuffaceous sandstone, siltstone, shale, and claystone, with local chalcedony beds occur in restricted basins within the calderas. Lakebeds directly overlie dacitic lavas as well as rhyolite welded tuff and occupy about 20 percent of the interior of the caldera. Lake sediments generally fill moat-portions of the calderas and tend to be thickest near the ring fracture zones (Roper, 1979).

Several mineralized systems occur within the caldera systems and include mercury, uranium, and lithium occurrences. The mineralized systems are related to the well developed hydrothermal activity associated with the volcanic complex, and formed in shallow hot spring systems (Rytuba and Glanzman, 1978). Mercury production occurred at several deposits including the McDermitt Mercury Mine, Bretz Mine, Cordero Mine, Ruja Mine, and the Opalite Mine. These mercury systems contain anomalous gold and silver but exploration efforts have failed to identify economic deposits of precious metals. Low values of uranium also occur in the mercury systems. Lithium deposits occur within tuffaceous sedimentary rocks found in the restricted lake sediments within the caldera (Glanzman, Rytuba, and McCarthy, 1978). Limited exploration programs have evaluated the lithium occurrences, but have not identified economically interesting bodies. Several uranium occurrences are found within the caldera and are most commonly associated with rhyolitic ring domes emplaced along the western margin of the caldera ring fractures (Rytuba and Glanzman, 1978). The Moonlight Mine on the southwestern margin of the caldera system had minor production in the 1970's from low grade veins within a brecciated zone along the contact of the granodiorite and andesite (Rytuba and Glanzman, 1978). Uranium concentrations in unaltered rhyolitic rocks are slightly anomalous and the occurrence of the uranium anomalies spatially with the ring domes suggest a genetic relationship to the intrusive and extrusive rhyolitic rocks of the Miocene volcanic system. The latest stages of volcanic activity generated rhyolite enriched in uranium and the related hydrothermal cells, which developed in these later stages, served to mobilize and concentrate uranium into the more permeable rocks (Rytuba and Glanzman, 1978).

## **Local Geology**

The Aurora project area is covered with a thin veneer of alluvium overlying lake bed sediments. The lake sediments are generally tuffaceous but in places are complexly interbedded with the Aurora dacitic flows. The Lake Sediments overlie the Aurora flows with a contact that is abrupt in some areas, with thick flows marking the bottom of the sediments or by gradually increasing volumes and thicknesses of the dacitic flows and tuffs. The flows generally become more massive or compact near the contact with the underlying rhyolitic welded tuffs and flow domes (Fig. 9-2). Cross sections in the Aurora area (Fig. 9-3) illustrate the generalized geologic relationships between the different units and the variability in thickness of the units (Figs. 9-4, 9-5, and 9-6). The Aurora lavas were deposited upon an irregular surface of rhyolitic rocks, which appear in part to be intrusive based on porphyritic textures, and may represent local volcanic domes (Roper, 1979).

The Quaternary alluvium is composed of a variety of alluvial, colluvial and in-situ debris consisting of volcanic boulders, cobbles and gravel derived from adjacent highlands and finer material derived from the lake sediments. The thickness of the gravels varies from 0 to more than 50 feet and averages about 20 feet.

The Lake Sediments are Miocene in age and are composed of poorly consolidated, subaerial tuffaceous material interstratified with fine grained non-descript bedded layers and discontinuous lenses and nodules of chalcedony. Tuffaceous material

within the lakebeds includes devitrified glass fragments and fine to coarse grained crystal and lithic fragments. Lake sediments vary from finely laminated clay-shales, siltstones and tuffaceous sandstones, to more massively bedded rhyolitic air-fall ash tuffs (Roper, 1979). The lake sediments are up to 600 feet thick in the drillholes, being thickest on the north edge of the mineralized zone in a graben like growth basin. The sediments probably originated from local volcanic vents and were deposited in moat-like basins within the caldera margins.

The Aurora lava flows and tuffaceous units consist of a complex interbedded sequence of dark colored dacitic flows with vesicular to scoriaceous flow tops with some interbeds of ash. The cores of the flows are dense and black with rare plagioclase phenocrysts. The dacitic lavas contain high total iron, high Ca, Na, and K and 60-62% silica (Roper, 1979). Individual flows range in thickness from 5 to 50 feet. The lava sequence contains a variety of breccia layers, which include flow breccia, laharic (mudflow) breccia, pyroclastic breccia and local fault breccia (Roper, 1979). Cumulative thickness of the Aurora lava sequence is variable, but generally is 100 to 300 feet.

Rhyolitic rocks are at least in part intrusive and may represent several generations of extrusive and intrusive flow dome and vent breccia events. Whole-rock chemical analyses are very similar to the dacitic rocks of the Aurora lava flows (Roper, 1979). The flow banded rhyolite may be a portion of a flow dome complex in the area. Extrusive rhyolitic welded tuffs are exposed on the margin of the project area north and east of the Bretz pits along the mountain front marking the caldera rim. These rocks were deposited as thick ash flow layers erupted during successive collapse periods as part of the evolution of the caldera complex (Roper, 1979).

## Structure

The principle structures in the Aurora area are related to caldera formation, subsidence, and resurgence. The structural features are sub-parallel to the northwest-southeast striking caldera rim (Fig. 9-7). The outer rim fault is a steeply dipping normal fault system that strikes northwest-southeast and passes through the Bretz Mine pits. This structure is readily apparent from air photos because it generally marks the contact between lake sediments and caldera rim volcanics. The rim fault does appear to have acted as an ore control for the Opalite-type mercury mineralization mined from Bretz (Roper 1979). The inner rim structure is identified from drilling on the Bretz property and marks the northern limit of uranium mineralization (Roper, 1979). The structure has not been identified on the surface. The boundary fault system is interpreted as a normal fault zone on the northern edge of the Aurora mineralized zone (Roper, 1979). Figures 11-1, 11-2, and 11-3 show the rhyolitic rocks dip rapidly to the north and the Lake Sediments or the Aurora volcanics thicken rapidly. This feature is interpreted as the bounding fault of a small graben like basin on the edge of the rhyolitic dome.

## **Alteration**

Alteration in the Aurora area is described in core logs as clay dominant with reference to the presence of opaline or chalcedonic silica, chlorite, gypsum, fluorite, and zeolites. Opal is common in the uppermost altered horizons. Feldspar and altered magnetite/ilmenite are also present and probably are relicts of the original volcanic material. However a portion of the feldspar is hydrothermal or authigenic as it occurs lining cavities. The magnetite/ilmenite is often altered at mineral grain rims and associated with pyrite. Alteration is strongest in the tuffaceous fine-grained rocks and the more permeable and porous layers within the Aurora lava sequence commonly destroying the rock texture making identification of the original protolith very difficult (Roper and Wallace, 1981). The distribution of alteration assemblages has not been mapped or interpreted on section in detail from drillhole information.

## **Item 10: Deposit Type**

Volcanic type uranium deposits are defined as mineralized systems associated with volcanic rocks in a caldera setting. The mineralization is associated with mafic to felsic volcanic rocks and is often intercalated with clastic sediments. Mineralization is largely controlled by structures, occurs at several stratigraphic levels of the volcanic and sedimentary units, and extends into the basement where it is found in fractured granite and in metamorphic rocks. There is generally a strong hydrothermal control to the transportation of uranium and the mineralization occurs as both primary and remobilized uranium in an oxidizing-reducing setting. Uranium mineralization is commonly associated with molybdenum, vanadium, lithium, other sulphides, violet fluorite and quartz to colloidal silica or opal. Examples of volcanic hosted uranium deposits include the Dornot deposit in Mongolia, the Michelin deposit in Canada, the Nopal deposit in Mexico, and the Strelsovsk Caldera in the Russian Federation hosts several commercial deposits.

## **Item 11: Mineralization**

The Aurora uranium mineralization forms stratabound and cross-cutting bodies in the Lake Sediments and dacitic flow units forming an irregular mineralized zone approximately 5000 feet long by 1000 feet wide. The mineralized horizons range from a true thickness of a few feet to more than 100 feet thick. The mineralized beds range from nearly horizontal to moderately dipping (up to 40°). The beds are spatially related to and partially controlled by possible growth faults or graben bounding structures, primarily on the northeast margin of the mineralization. Review of the diamond drillcore logs indicate the uranium mineralization contained minor primary deposition related to volcanic and hydrothermal activity. The spatial distribution of uranium with sediments and broken, permeable zones of volcanic rocks (refer to Fig. 9-2) suggests mechanically and chemically transported zones of mineralization are common. Several of the secondary or tertiary basins, within the Lake Sediments and graben block, show thin repeating beds of mineralization (Figs. 11-1, 11-2, and 11-3), within zones of the more permeable rocks, which are isolated by clay rich zones. Higher grade and thicker zones

of mineralization could represent high angle structures which acted as hydrothermal feeders or enrichment zones. Drillhole DDH-495 is the only angle core hole and confirms the approximately horizontal nature of the mineralization on Figure 11-3.

The geologic interpretation completed for this report indicate lateral continuity of moderate and low grade mineralization ( $<0.05\% \text{ eU}_3\text{O}_8$ ), whereas the continuity of high grade mineralization ( $>0.08\% \text{ eU}_3\text{O}_8$ ) is poor. The presence of the local feeder zones or chemically enriched mineral zones could account for the irregular distribution of high grade mineralization. The presence of higher grade mineralization in these enriched zones has not been tested with angled drill holes. Exploration around the possible higher-grade feeder structures could increase the overall average grade of mineralization.

The long axis of mineralization trends northwest and roughly coincides with a dome like feature consisting of rhyolitic tuff and rhyolite porphyry. Drill logs poorly describe the volcanic rocks and alteration assemblages.

Mineralization is associated with the porous and permeable volcanic rocks (Plate 11-1) and includes pyrite bearing clays with uranium minerals, leucoxene, marcasite, and arsenopyrite. Uranium minerals which have been identified in various studies include uraninite (uranium oxide), coffinite (hydrous uranium silicate), phosphranylite (hydrous calcium uranium phosphate), umohoite (hydrous molybdenum uranium oxide) and autenite (hydrous calcium uranium phosphate) (Dudas, 1979a, b and Roper and Wallace, 1981). Pyrite is abundant and occurs in two forms. A coarser, crystalline variety is disseminated throughout the Bretz area and appears to be the earliest formed. Euhedral marcasite and arsenopyrite are also associated with the coarser pyrite. Fine grained, framboidal pyrite occurs in the Aurora area and is associated with uranium mineralization (Dudas, 1979a, b). Framboidal pyrite is formed in areas rich in bacteria and organic material, these reducing conditions are favorable for the precipitation of uranium from oxidized solution. A possible mineralizing source rock cannot be clearly defined. The distribution of uranium in the more porous units suggests remobilization of primary mineralization by oxidizing fluids and lateral transport and re-deposition in the flow and tuff units under more reducing conditions. The observed uranium and alteration mineral assemblage, as well as textural evidence, suggest the possibility of colloidal mineral deposition by a relatively cool water mechanism (Dudas, 1979a, b).

Composited ore samples were collected from the diamond core drillholes and were analyzed by Hazen for uranium and a multi-element suite (Table 11-1). The composites were part of the metallurgical study completed by Hazen that analyzed representative ore types. The results indicate somewhat elevated values of molybdenum and arsenic, and vanadium values are low for all ore types.

**Table 11-1**  
**Multi-element Analytical Results for Selected Composite Ore Samples.**

Sample	1	2	3	4	5	6	7	8
Description			Shallow	Deep	High Grade	Altered	Low Grade	
Chemical Analysis (%)								
U <sub>3</sub> O <sub>8</sub>	0.157	0.087	0.044	0.053	0.101	0.041	0.028	0.052
Mo	0.011	0.013	0.005	0.011	0.012	0.007	0.007	0.012
As	0.141	0.124	0.136	0.119	0.114	0.101	0.125	0.108
Fe	6.2	5.1	5.04	4.93	4.28	4.26	4.51	5.08
S	5	4.1	3.99	4.14	3.75	3.45	3.97	3.7
CO <sub>2</sub>	0.18	-	0.69	0.27	0.19	0.69	0.69	-
Se	-	-	0.0016	0.0009	0.001	0.001	0.0011	-
V <sub>2</sub> O <sub>5</sub>	0.007	-	<0.01	<0.01	<0.01	<0.01	<0.01	-
XRF Analysis (%)								
Cu	0.003	0.013	0.006	0.003	0.008	0.007	0.008	0.01
Zn	0.009	0.023	0.014	0.009	0.014	0.01	0.01	0.015
Pb	0.009	0.012		0.003	0.006	0.003		0.008
As	-	0.088	0.092	0.13	0.084	0.063	0.083	0.079
Se	-	-	-	0.009	-	-	-	-
Fe	2.4	2.1	1.8	1.8	1.4	1.5	1.8	2.9
Ni	-	0.002	-	0.004	-	0.004	-	-
Rb	0.01	0.011	0.013	0.011	0.013	0.009	0.007	0.01
Ba	0.12	0.24	0.39	0.33	0.28	0.51	0.41	0.37
Sr	0.053	0.006	0.008	0.003	0.003	0.006	0.008	0.008
Ti	0.18	0.18	0.049	0.066	-	0.082	0.099	0.21
Zr	0.04	0.028	0.041	0.036	0.035	0.041	0.038	0.036
Mo	-	0.017	0.006	0.013	0.018	0.008	0.008	0.013
U	-	0.071	0.034	0.033	0.072	0.032	0.019	0.035
Mn	0.066	0.044	0.018	0.02	0.013	0.037	0.023	0.077
Yt	0.006	0.009	0.005	0.008	0.006	0.009	0.005	0.006
V	0.03							
Nb	0.007							

## Item 12: Exploration

Quincy Energy has not conducted any physical work on the Aurora property beyond a complete data package review and critical evaluation.

The author collected GPS UTM coordinate information during the field visit sufficient to confirm the location of the Placer local mine grid, drillhole locations, and claim monuments (Plate 12-1 and 12-2).



### Item 13: Drilling

This report is based on equivalent uranium grade determinations from downhole gamma logs of 505 rotary drill holes totaling 184,220 feet and 25 core holes totaling about 6,650 feet. Drilling was initiated by Locke Jacobs in May of 1978 and completed by Placer in late 1979. Quincy has not completed any drilling.

The drill holes have an average total depth of 350 feet with the deepest hole being 750 feet. All drillholes were vertical except for one core hole. The drill holes are spaced 100 feet apart on lines oriented N42°E. Parallel lines of drillholes are spaced 200 feet apart. Drillhole collar locations are not written on the individual gamma logs and in some cases multiple logs exist for the same drillhole with different total depths marked on the logs. These drillholes with multiple logs usually have a suffix such as 1-W on the drillhole name. The Placer tabulation of drillhole coordinates is assumed to correspond to the gamma log drillhole number. The total depth of the drillhole was checked between the collar location table and the individual drillhole gamma logs to confirm the drillhole name and location. Gamma logs and drillholes which could not be clearly correlated were eliminated from the resource calculation and modeling.

Rotary drillholes are the most common type of drilling completed on the project. It is not clear if chip samples were recovered from the drillholes as no descriptions or logs exist in the database. The diameter of the rotary holes is a minimum of 5.1 inches and in some cases the holes were reamed to a larger diameter for re-entry and re-logging. Core holes are distributed over the ore body and include HQ (2.5 inch diameter core) and six inch diameter metallurgical drillholes. The core holes had excellent recovery averaging over 93%. The alluvium and lake sediments were usually drilled with rotary and the mineralized horizon was completed with core.

Downhole gamma probe surveys of the drillholes collected readings every 0.1 foot and composites were calculated on 2, 5, 10, 15, and 20 foot intervals. The current database contains the original gamma logs with the 0.1 foot data and the compilation of 5 foot composites. Mineralization ranges from a few feet thick to over 100 feet thick true thickness in nearly horizontal stratabound layers. The gamma probe sampling interval was sufficient to define the mineralized horizons in detail. Mineralization is approximately horizontal and essentially all of the drilling was vertical. The mineralized intercepts are approximately the true thickness of the mineralization. Additional angle holes are necessary to confirm the horizontal nature of the ore body and to test possible high angle feeder zones.

All drilling included in this examination was completed during the exploration efforts of Locke Jacobs, the original property owner and Placer during the 1970's. Quincy Energy Corp has not conducted any drilling on the property. The historic drilling database contains information from 562 of which 530 drillholes were included in the resource model (Fig 13-1). Twenty five of the drillholes were diamond core and the remaining 505 were rotary drillholes. Multiple gamma logs were completed in several of the holes to confirm mineralized intervals and to determine drill pipe and other factors used to determine the uranium content of the rocks.

#### **Item 14: Sampling Method and Approach**

Measurement of the uranium concentration in drillholes was made with radiometric logging of most drill holes throughout the entire resource area. Confirmation analyses included direct chemical assays and closed can radiometric assays for selected core holes. Radiometric logging of the drill holes was completed by Century Geophysical using the Compu-Log system. This system is comprised of radiometric logging equipment based on a truck-mounted digital computer. The natural gamma (counts/second, or cps), self potential (millivolts), and resistance (ohms) were recorded at 1/10th foot increments on magnetic tape and then processed by computer to graphically reproducible form. Neutron-neutron logging was also used to collect rock characteristics for dry drill holes and SP and resistance logs were completed for drillholes with water. The neutron-neutron and SP data have not been tabulated or evaluated. The  $eU_3O_8$  % conversions from the gamma log data were calculated and printed with the original, unprocessed gamma logs.

Downhole geophysical survey results are affected by several factors. The survey tool is either lowered down on open hole or is lowered inside the drillpipe. The radiation counts are most representative in a dry open hole. The presence of water in the hole or a survey through the drillpipe returns gamma count values which are lower than those collected in an open hole or a dry hole and return equivalent uranium values that are lower than the actual concentration. The use of the pipe correction in an open hole or the use of a water factor in a dry hole would result in calculated uranium values that are higher than actual values. It is not known if the correction factors were used in the calculated uranium values in the Placer database, but information gained from internal Placer memos suggest correction factors were under evaluation and were not applied to the original gamma readings. The probable lack of correction factors further supports the conclusion that in most cases the uranium content would have been underestimated, therefore uranium concentrations are considered to be minimum values and do not overestimate grades. The sample quality is considered to be acceptable and representative of uranium values within the range of acceptable analytical error.

Downhole geophysical surveys collected data on 0.1 foot intervals regardless of rocktype or alteration, eliminating any sampling bias. High grade intervals exist and have a fairly limited vertical and lateral extent. These zones have been confirmed with duplicate gamma probe surveys and check assays. These high grade pods are interpreted to be hydrothermal feeder zones or locally enriched areas due to remobilization and redeposition. The high grade intervals have not been averaged beyond the immediate drillhole area of influence. The values are believed to be accurate and have not been cut for modeling purposes.

The database consists of more than 2 million 0.1 foot original gamma probe readings and these were composited to 35,179 five foot values, which were used in the resource model.

## Item 15: Sample Preparation, Analyses and Security

The original geophysical data acquisition was completed by Century Geophysical under contract to Placer. Check assays from diamond core drillholes were collected by Placer geologists and submitted to several commercial laboratories for analysis. Quincy has not conducted any sampling or geophysical analyses of mineralization used in this evaluation.

This resource calculation is based on the  $eU_3O_8\%$  gamma log conversion values to identify the ore zone and calculate an average grade for the model discussed. The procedures implemented for the radiometric downhole surveys are discussed in Item 14 and Item 16. Confirmation check assays for  $U_3O_8\%$  were completed on some drill core samples for comparison with the  $eU_3O_8\%$  values.

Placer contracted Hazen Research Inc., of Golden, Colorado in 1978, for metallurgical and analytical testing of samples from the Aurora deposit. The samples were prepared (Fig. 15-1) and subjected to a series of analytical techniques including chemical and radiometric analysis for uranium, as well as chemical and X-ray fluorescence analysis for other constituents of the ore. Uranium analytical procedures included chemical fluorimetric assay, closed can techniques including radiometric beta-gamma, radiometric sealed-can gamma, % radon loss, and %beta and gamma readings.

A description of Hazen's methodology (1978a) of radiometric analysis follows:

The %  $U_3O_8$  (Beta-gamma) result is reported as the true uranium content of the ore (Hazen, 1978a). This value is independent of the state of normal radioactive equilibrium of the ore. The beta activity measured arises predominantly from  $^{234}Pa$ , which, because of its short half life, is in equilibrium with  $^{238}U$ , and from daughter elements of  $^{226}Ra$ . A measure of the beta activity of  $^{234}Pa$  alone is a direct measure of the  $^{238}U$  content. The total beta activity is corrected to represent that of  $^{234}Pa$  alone by measuring the gamma activity of the  $^{226}Ra$  group (98 % of the gamma activity arises from this group) and subtracting a factor based on this activity from the total beta activity. Hence, the beta – gamma results represent the true  $U_3O_8$  content of the ore (Fig. 15-2).

The beta-equivalent (%  $U_3O_8$ ) and the gamma- equivalent (% $U_3O_8$ ) results are based on comparison of the sample with an ore which is known to be in radioactive equilibrium, and are a measure of radium (and daughters) enrichment or depletion. The primary usefulness of this information lies in correcting on-site gamma probe or survey measurements to provide a true measure of  $U_3O_8$  content, and to determine the extent of natural leaching or of uranium values in deposition zones. The determination of  $eU_3O_8$  for the down hole surveys completed by Placer used the gamma  $eU_3O_8$  values, which are the lowest estimation of  $eU_3O_8$ . Therefore the values used for the definition of the mineralized zone and the determination of the grade of the mineralization is considered to be a minimum, conservative value of  $eU_3O_8$ .

The sealed can %  $eU_3O_8$  value represents the amount of uranium which would need to be present to support, under equilibrium conditions, the observed amount of  $Ra^{226}$  in the sample. The value is determined by making the gamma activity measurements in the sample before and after sealing in an airtight container for sufficient time to allow the short-lived daughters of  $^{226}Ra$  to approach equilibrium. Loss of radon can occur during

sampling, transporting, or preparing of samples for analysis. The value for % Radon Loss is included in the report to indicate the magnitude of disequilibrium arising from this possibility (Figure 15-3). The results are inconclusive and further work is required to fully understand disequilibrium conditions.

Confirmation analyses of  $eU_3O_8$  values were completed at Hazen by comparison of the beta-gamma  $eU_3O_8$  versus the fluorimetric chemical analysis of  $U_3O_8$  (Figure 15-4). The results indicate that the beta-gamma  $eU_3O_8$  consistently overestimated the chemical determination of  $U_3O_8$ .

Check assays and duplicate samples of drill core were submitted to Skyline Labs, Geoco Division of EDA Instruments Inc. (Geoco), Wheatridge, Colorado, and Bondar-Clegg Inc., Denver, Colorado for the purpose of verifying Hazen's analytical results. Geoco analyzed duplicate samples using fluorimetric and radiometric techniques (Roberts, 1980a). Bondar-Clegg (1980) determined the uranium content using neutron activation analysis. Comparison of the Beta-gamma  $eU_3O_8\%$  values from Geoco and Hazen show reasonable agreement in values (Fig. 15-5). The analytical laboratories used in 1978-1980 check assay and confirmation assay programs were well established and accepted geochemical and radiometric analytical facilities. The analyses were completed prior to the designation of ISO certification for analytical labs. Hazen's Analytical Services are now certified by the State of Colorado to analyze drinking water for metals and anions, and by the U.S. Environmental Protection Agency (EPA) for radiochemistry. Skyline Bondar Clegg did receive certification when ISO standards were implemented.

The author believes the original gamma log data and subsequent conversion to  $eU_3O_8\%$  values to be a reliable, but conservative estimates of the  $U_3O_8$  grade. Procedures followed by Placer and Century Geophysical were well documented, contained several checks on the confirmation of grade, and followed best practices standards of companies participating in uranium exploration and development. Onsite collection of the downhole gamma data and onsite data conversion limits the possibility of sample contamination or tampering.

#### **Item 16: Data Verification**

Placer conducted studies to confirm the  $eU_3O_8\%$  values calculated from the gamma logs, in addition to the evaluation of the radiometric analyses discussed in Item 15, by completing assays of selected samples from the diamond core holes (Fig. 16-1). The graph shows the comparison analyses do not replicate gamma  $eU_3O_8\%$  uranium values. Uranium values to the left of the diagonal line are overestimated by the gamma logs to the perceived true uranium values, while values to the right of the diagonal line are underestimated by the gamma log relative to the true value. Generally the gamma calculated  $eU_3O_8\%$  values are underestimated at grades of  $U_3O_8 > 0.1\%$ . Values of  $U_3O_8 < 0.1\%$  are underestimated and overestimated about equally, but the gamma conversions tend to underestimate the true  $U_3O_8\%$  values more than the assayed values. Overall the values of  $eU_3O_8\%$  are probably representative of the overall population of samples but individual samples may show significant variations. The overall evaluation of the actual content of uranium based on the different radiometric analyses and chemical assay results does not clearly identify any correction factors or best analytical technique. Assay estimation of uranium content is probably more reliable than the calculated equivalent

uranium content obtained from the gamma logs. Future drilling programs and grade confirmation studies should utilize uranium assays rather than equivalent uranium values calculated from radiometric surveys. The indicated resource grade is based on the equivalent uranium values, from the gamma conversions, and is probably a conservative grade estimate.

The percentage of  $eU_3O_8$  contained in drillholes was calculated from the downhole gamma logs by Century Geophysical at the time of the drilling and surveys. Original data was collected on 0.1 foot intervals and converted to  $eU_3O_8\%$ . The converted values were then compiled on 2, 5, 10, 15, and 20 foot intervals. The data available for this analysis were the original gamma logs and the 5 foot  $U_3O_8\%$  composites. The original logs and 5 foot composites were compared to verify the values and there is a reasonable correlation in values. The 5 foot composites were double entered into an ACCESS database along with collar location data. The double entry data had less than 1% entry error and the current database is estimated to be error free. Further verification and correction of the data was completed during sectional interpretations. Several original gamma logs were re-run at the time of drilling as checks and the results were very similar to the original logs. Core and chip samples from the original drilling are not available for check assays.

The original downhole gamma logs have been reviewed in detail. Rotary chip samples apparently were not collected, or were discarded, and the diamond core samples were not preserved after Placer terminated the project and therefore it has not been possible to confirm assay values in comparison to gamma log estimations. Drillholes from the 1977-1979 program were not cased or capped and it is not possible to re-enter any drillholes in order to re-survey drillholes.

The position of the mineralized horizons was checked on the original logs to confirm the agreement of the original Century Geophysical logs and the 5 foot composite database generated by Placer. Data which did not agree between the 2 data sets were corrected where possible or were omitted from the resource evaluation when the data could not be confirmed.

The only alternative to definitively verify gamma log values or  $U_3O_8$  assays is to drill twin holes in selected areas. Confirmation drilling is beyond the scope of this stage of project evaluation and will be recommended in the next stage of work.

#### **Item 17: Adjacent Properties**

The adjoining Bretz property on the northern side of the Aurora project hosts the downdip, northern extension of the Aurora mineralized body. Mineralization is deeper than 400 feet and Placer did not consider the body to be economically feasible and only limited drilling explored the zone. **Placer stated that the uranium mineralization may exceed 5 million pounds of  $U_3O_8$  on the Bretz Claims, but no data was found in the Placer data package and the Author is unable to verify the quantity of mineralization or mineral grades.**

#### **Item 18: Mineral Processing and Metallurgical Testing**

Placer completed a metallurgical evaluation of the Aurora mineralization in 1980. Hazen Research Inc. was contracted to study the ore material and found the uranium was amenable to leaching technologies. The 25 year old metallurgical studies completed by Placer and Hazen concluded  $U_3O_8$  recoveries range from a low of 55% to a high of 85% (Table 18-1) (Hazen Research, Inc., 1979a, b). Additional studies are needed to define metallurgical properties of the mineralization in light of advances in leach technology. The studies are recommended in the future work programs.

Table 18-1.  
**Results of 1979 Metallurgical Testing**

Strong Acid Leach	55%
Acid Leach at 80°C no oxidant	60%
Acid Leach at 80°C and 20% Sodium Chlorate	70%
Acid Pressure Leach	85%

#### **Item 19: Mineral Resource and Mineral Reserve Estimates**

The currently defined mineral resource is stated as an Indicated Resource under the definition described under NI 43-101. The density of drilling information is sufficient to interpret the mineralized horizons with a high level of confidence. The calculation of an indicated resource rather than a measured resource is due to the lack of physical samples of drill core or chips which can be re-assayed, and the inability to re-enter old drillholes to confirm gamma logs of the mineralized zones. Confirmation drillholes will be required to elevate the status of the indicated resource to measured. Additional confirmation drilling and a detailed 5 by 5 by 5 foot block model generated from the cross section and bench interpretations, and evaluated with a modern mine planning software package, is necessary to provide the basis for a proven and probable mineral reserve along with detailed economic and engineering studies.

The author prepared the estimation of mineral resources. Dr Myers has prepared reserve and resource estimations and feasibility reports for a variety of advanced exploration projects and operating mines, over the past 16 years, which have passed technical reviews, internal, and external audits, meeting reporting requirements of the SEC and JORC codes. The author is independent of Quincy Energy Corp as defined by NI 43-101.

The grade of the mineralized zone was calculated as an average, section by section, and did not utilize any weighting factors in the calculations. The pounds of  $eU_3O_8$  for each section were tabulated along with the area and calculated volume for each section. The total number of tons contained in the mineralized zones and the total number of pounds of  $eU_3O_8$  were summed and the average grade of the entire mineralized zone was calculated from these results (Table 19-1). The calculated grade of 0.0518%  $eU_3O_8$  agrees well with the statistical average of the sample population above the 0.03% cutoff, which is 0.0528%  $eU_3O_8$ .

**Table 19-1.**

### 2005 Aurora Resource Statement using 0.03% U<sub>3</sub>O<sub>8</sub> Cutoff

	Million Tons	Grade eU <sub>3</sub> O <sub>8</sub> %	Contained eU <sub>3</sub> O <sub>8</sub> (Million Pounds)
<b>Indicated Resource</b>	<b>17.69</b>	<b>0.0518</b>	<b>18.3</b>

Definition of the mineralized zone assumed the reliability of the gamma log readings and the conversion to eU<sub>3</sub>O<sub>8</sub> values. Every effort was made to confirm the location of the mineralized zone in each drillhole and the conversion to U<sub>3</sub>O<sub>8</sub> was also confirmed. The primary deposition and subsequent chemical and mechanical remobilization of uranium in the volcanic hosted Aurora uranium system is interpreted to form horizontal, bedding controlled units in the volcanic rocks and locally in lake sediments. Excellent continuity exists along horizontal layers between drillholes over hundreds to thousands of feet. Previous drilling did not test any potential feeder structures or zones with angled drillholes. The one angled core hole did confirm the horizontal orientation of the mineralization (refer to Fig. 11-3).

#### Cutoff Grades

The mineralized zone was defined as mineralization above the selected cutoff grade of 0.03% eU<sub>3</sub>O<sub>8</sub>. The selection of a 0.03% eU<sub>3</sub>O<sub>8</sub> cutoff was made by Dr. Underhill based on the Placer data evaluations. Preliminary estimates for mining and processing costs are about \$20/ton. Mining costs of \$2-4 per ton are typical of the smaller open pit mines in Nevada. The lake sediments, which overlie the mineralized horizon, are poorly consolidated and stripping costs are estimated to be low. The mineralized horizon is highly fractured and mining costs are estimated to be low in this unit as well. The 0.03% cutoff maximizes the tonnage of mineralization while maintaining strong positive value at today's uranium price (Table 19-2). A more extensive evaluation of the cutoff grade will be completed in the pre-feasibility study.

**Table 19-2.**  
**Relationship of Cutoff Grade to Average Grade and Mineral Value**  
**at Various Uranium Prices.**

Cutoff Grade % eU <sub>3</sub> O <sub>8</sub>	Average Grade % eU <sub>3</sub> O <sub>8</sub> > cutoff	Value/ton at 85% recovery and \$30 U <sub>3</sub> O <sub>8</sub>	Value/ton at 85% recovery and \$35 U <sub>3</sub> O <sub>8</sub>	Value/ton at 85% recovery and \$40 U <sub>3</sub> O <sub>8</sub>
0.025%	0.047%	23.77	27.73	31.69
0.03%	0.053%	26.91	31.39	35.88
0.04%	0.063%	32.33	37.72	43.11
0.05%	0.075%	38.18	44.55	50.91

The sample population of eU<sub>3</sub>O<sub>8</sub> values forms a log normal distribution with a range from 0% to a high of 0.7294% (Table 19-3). The mean of the population is 0.0126% and the standard deviation is 0.0184%. The cutoff used of 0.03% is the mean plus one standard deviation (Fig. 19-1). The sample population above the cutoff grade shows a mean of 0.0528% and a standard deviation of 0.0293%. The calculated average

grade of the indicated resource agrees well with the statistical average of the sample population above the 0.03% cutoff.

**Table 19-3.**  
**Population Statistics of  $eU_3O_8$  Values at Various Cutoff Grades**

Sample Population	Minimum Value	Maximum Value	Population Range	Mean	Standard Deviation
34584	0	0.7294	0.7294	0.0126	0.0184
5075	0.025	0.7294	0.7044	0.0466	0.0274
4026	0.03	0.7294	0.6994	0.0528	0.0293
2428	0.04	0.7294	0.6894	0.0634	0.0319
1515	0.05	0.7294	0.6794	0.0749	0.0357

### **Volume Determination of Mineralized Zone**

Orthogonal cross sections were completed in the mineralized zone utilizing known features of the geologic controls on mineralization (representative examples in Append. B.). The sections were created on a northwest and northeast orientation corresponding to the lines of drillholes. The cross sections with drillhole  $eU_3O_8\%$  values and limited geologic information were generated in the Rockworks 2004 software program from the ACCESS database. The cross sections were then interpreted by hand on a section by section basis and digitized in order to accurately measure the area of the mineralized body outline. Northwest trending sections were completed on 100 foot centers and northeast trending sections were completed on 200 foot centers corresponding to the 100 by 200 foot spacing of drillholes (Fig. 19-2). Benches were completed on 40 foot spacings through the main portion of the mineralized body to rectify and confirm the cross section interpretations. The measured area and volumes calculated from each set of sections were compared for confirmation of the models reliability (Tables 19-4 and 19-5). The northeast trending sections have the tightest drillhole control and are considered to be the best estimate of mineralization volume. Volume variations between the sets of sections are minimal and provide increased confidence in the interpretation of the mineralized zones. The stated indicated resource calculated the average of the tons and grade from the northwest and northeast sets of sections.



**Table19-4.**  
**2005 Mineral Resource Calculations for Northeast Trending Sections**  
**Looking Northwest using 0.03% eU<sub>3</sub>O<sub>8</sub> Cutoff.**

Section	Area ft2	thickness	volume ft3	short tons	grade	# eU3O8
A	6541	200	1,308,200	70,333	0.044%	61,753
B	27156	200	5,431,200	292,000	0.049%	284,992
C	55435	200	11,087,000	596,075	0.052%	613,958
D	93129	200	18,625,800	1,001,387	0.064%	1,273,764
E	83166	200	16,633,200	894,258	0.055%	974,741
F	73634	200	14,726,800	791,763	0.048%	764,843
G	99619	200	19,923,800	1,071,172	0.049%	1,045,464
H	79713	200	15,942,600	857,129	0.043%	728,560
I	113373	200	22,674,600	1,219,065	0.055%	1,328,780
J	103607	200	20,721,400	1,114,054	0.063%	1,394,795
K	86282	200	17,256,400	927,763	0.050%	935,186
L	69164	200	13,832,800	743,699	0.055%	815,094
M	95624	200	19,124,800	1,028,215	0.054%	1,102,247
N	70005	200	14,001,000	752,742	0.064%	962,004
O	93176	200	18,635,200	1,001,892	0.050%	1,009,908
P	78826	200	15,765,200	847,591	0.049%	835,725
Q	20999	200	4,199,800	225,796	0.053%	238,440
R	7563	200	1,512,600	81,323	0.046%	74,654
S	41298	200	8,259,600	444,065	0.045%	402,322
T	50252	200	10,050,400	540,344	0.046%	492,794
U	62227	200	12,445,400	669,108	0.046%	614,241
V	53229	200	10,645,800	572,355	0.052%	596,394
W	46417	200	9,283,400	499,108	0.042%	423,243
X	34189	200	6,837,800	367,624	0.043%	319,097
Y	60780	200	12,156,000	653,548	0.049%	637,863
Z	34412	200	6,882,400	370,022	0.041%	300,457
AA	17135	200	3,427,000	184,247	0.039%	144,818
AB	3738	200	747,600	40,194	0.034%	27,332
<b>Total</b>				<b>17,856,871</b>	<b>0.0515%</b>	<b>18,403,470</b>

Table 19-5.  
**2005 Mineral Resource Calculations for Northwest Trending Sections**  
**Looking Northeast using 0.03% eU<sub>3</sub>O<sub>8</sub> Cutoff.**

Section	Area ft2	thickness	volume ft3	short tons	grade	# eU3O8
2	18758	100	1,875,800	100,849	0.034%	68,678
3	29958	100	2,995,800	161,065	0.037%	118,125
4	38089	100	3,808,900	204,780	0.035%	144,492
5	75,936	100	7,593,600	408,258	0.038%	313,216
6	77792	100	7,779,200	418,237	0.038%	316,438
7	149789	100	14,978,900	805,317	0.044%	706,263
8	167729	100	16,772,900	901,769	0.062%	1,123,243
9	226609	100	22,660,900	1,218,328	0.057%	1,388,650
10	191982	100	19,198,200	1,032,161	0.054%	1,122,579
11	227011	100	22,701,100	1,220,489	0.054%	1,306,656
12	280677	100	28,067,700	1,509,016	0.056%	1,675,008
13	400676	100	40,067,600	2,154,172	0.057%	2,467,389
14	348009	100	34,800,900	1,871,016	0.052%	1,935,005
15	306907	100	30,690,700	1,650,038	0.052%	1,726,269
16	251116	100	25,111,600	1,350,086	0.050%	1,360,347
17	293798	100	29,379,800	1,579,559	0.053%	1,677,176
18	98327	100	9,832,700	528,640	0.043%	451,776
19	43642	100	4,364,200	234,634	0.043%	200,190
20	33959	100	3,395,900	182,575	0.044%	161,031
<b>Total</b>				<b>17,530,989</b>	<b>0.0520%</b>	<b>18,262,530</b>

A grade times thickness (gxt) map (Fig. 19-3) was generated to evaluate the shape of the mineralized body, possible feeder zones, structural controls, and for comparison with bench plans of the mineralized body interpreted from cross-sections. The plan projects all mineralization to the surface and includes all assay values. The plan agrees well with the general shape and the location of the mineralized body on the 5100 Bench plan (Fig. 19-4). Several possible feeder zones are present, identified by the highest values of gxt. The mineralization contours show offsets and linear controls which may represent fault zones (Fig. 19-5).

#### **Density Determinations**

Placer and Hazen Labs completed specific gravity determinations for several hundred samples from the Aurora project and from the nearby McDermitt mercury mine,

which occurs in equivalent lithologic units. The detailed data does not exist in the database obtained by Quincy but the results were summarized in the 1980 Placer Pre-Feasibility report (Table 19-6). Results for the unmineralized volcanic rocks within the Aurora deposit indicate the density values are somewhat low compared to volcanic rocks of similar composition in general. The low density is attributed to the strong clay and opalite alteration and high porosity and open space nature of the brecciated volcanic rocks.

**Table 19-6.**  
**Dry Density Values for Various Rocktypes\***

Gravels	16.1 Feet <sup>3</sup> /Ton
Lake Sediments	18.9 Feet <sup>3</sup> /Ton
Mineralized Volcanic Rocks	18.6 Feet <sup>3</sup> /Ton
Unmineralized Volcanic Rock	18.6 Feet <sup>3</sup> /Ton

\*Placer Pre-Feasibility Report 1980

### Grade Continuity

Co-variograms were calculated for the 5100 level and the 5140 level using 120 and 98 data points respectively (Fig. 19-6). The continuity of grade between drillholes is good at values of  $eU_3O_8$  below about 0.07%. Bench 5100 has a sill limit of about 0.1% and bench 5140 has a sill limit at about 0.0485%. The linear correlation of grade is limited to about 150 feet for both benches, indicating that generating a krigged average of grades above about 0.07% beyond 150 feet would bias the calculated average. The use of an inverse distance squared average will also have limitations when averaging groups of adjoining drillholes. Resource modeling for this report calculated a simple average grade for each section, equally weighting each drillhole to limit biasing.

No limitations or other negative impacts due to environmental permitting or other political issues, which will have an affect on the mineral resource, are known to exist. A full evaluation of these factors is beyond the scope of this stage of the study.

The resource model created in this study made every attempt to exclude internal waste by identifying and delineating low grade bodies within the mineral zone. During mining these thin bodies may not be separable from the ore and would cause an internal dilution of grade while producing an increase in mined tons above the modeled tons. The overall effect would generally be a small decrease in produced pounds of uranium and a decrease in head grades shipped to the mill. Contact dilution may create a similar grade dilution and a small decrease in pounds of uranium produced. Stringent ore control and mined to model rectification will limit these dilution effects. Several of the ore horizons are only five feet thick using a five foot composite and 0.03%  $eU_3O_8$  cutoff. If mining occurs on 10 foot benches, maximum ore control may require half benching in some areas to limit dilution of the mineral while maximizing tons. Ore control during mining activities should be maintained with a handheld scintillometer or similar technology, easily identifying ore zones on each bench and blast pattern.

The high clay content of the ore zones will affect leaching qualities and grinding factors of the ore, requiring specialized leaching and grinding facilities able to deal with

the abundant, heavy clay. Vat leaching works well for this type of material in several copper oxide plants and similar technologies may apply well to the Aurora mineral. The distribution and percentage of clay in the ore zone may be an important factor in modeling a mineable reserve and could reduce the mineable tons due to processing limitations. Clay content is not quantified in previous drilling and data does not exist to model the clay zones. Further alteration and metallurgical studies are needed to address this factor and are recommended for future work programs.

#### **Item 21: Interpretation and Conclusions**

The study completed for Quincy on the Aurora Property found the project to be a property of merit and further work is recommended. Critical evaluation of the historic database generated by Locke Jacobs and Placer proved sufficient to allow the calculation of a new indicated resource of 17.69 million tons grading 0.0518%  $eU_3O_8$ , containing 18.3 million pounds of  $eU_3O_8$ . This estimate agrees well with the 1980 resource of 16.8 million tons at a grade of 0.048%  $eU_3O_8$  calculated by Placer. The detailed orthogonal cross section model created for this study identified internal waste bodies, which could be segregated during mining from the mineralized bodies, and accounts for the increase in the average grade from the Placer's simple polygonal calculation.

The exploration program executed by Placer from 1977 through 1980 followed best practices and provided checks throughout the program to confirm the reliability of the data and conclusions. Drilling density and the acquisition of radiometric downhole surveys provide the density of information sufficient to generate a detailed volumetric model of the mineralized body and calculate an average uranium grade for the resource. Some questions exist in the detailed correlation of the equivalent uranium grades calculated from the gamma survey values and the check assay values. The estimated uranium grades are considered to be conservative estimations of the true grade. The calculated average grade of the indicated resource is considered to be a representative yet conservative estimation of the overall mineral body.

The objective of this report was to confirm the previous resource statement of Placer and bring the resource to modern standards. The three dimensional model generated by the author with orthogonal cross sections and the rectification of the sections to bench plan provides a high level of confidence for the calculated volume of the ore body. The author believes that the database generated by Placer is a truthful representation of the data and provides a database sufficient to calculate an indicated resource which meets the standards of NI 43-101.

#### **Item 22: Recommendations**

The Aurora Project is considered, by the author, to be a significant uranium resource and further work is warranted. Current projections of uranium demand for energy production and related unit price projections are considered to be very positive and indicate a strong value to the property moving forward.

Future work programs are recommended as follows:

## Stage 1

**Table 22-1.**  
**Pre-Feasibility Confirmation and Exploration Program.**

Twin and infill drilling and assays for grade confirmation Vertical and angle holes recommended Approximately 50 drillholes 20,000 feet of a combination of reverse circulation and diamond core, utilizing chemical or neutron activation assay techniques in favor of a calculated estimate from gamma probe surveys	\$400,000
Step-out drilling to test expansion of mineralized zone Approximately 10 drillholes 5,000 feet	\$100,000
Metallurgical Evaluation Program completing a large diameter (PQ) drillhole program 8 holes 3000 feet and leaching tests on the core	\$250,000
Baseline environmental study to identify the geochemical haloes related to radioactive material and mercury contamination. The relationship of the contamination haloes related to the Aurora property and the adjacent Bretz Mercury property.	\$65,000
Completion of geologic and alteration model with 10 foot spaced bench plans through the mineralized zone based from the 100 by 200 foot spaced cross-sections created for this interpretation.	\$35,000
Completion of Reserve/Resource Block Model using 5' by 5' by 5' blocks, compositing to 10 foot benches.	\$50,000
<b>Total</b>	<b>\$900,000</b>

## Stage 2

**Table 22-2**  
**Feasibility Study**

Follow-up drilling approximately 25 holes 15,000 feet	\$300,000
Updated Block Model	\$50,000
Economic Evaluation	\$50,000
Engineering Evaluation and Preliminary Plant Design and Mine Plan	\$600,000
<b>Totals</b>	<b>\$1,100,000</b>

This proposed work program completes \$2 million earn-in requirements of Quincy-EMC agreement over the four year period.

### **Item 23: References**

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- Walker, G.W. and C.A. Repenning, 1966, "Reconnaissance geologic map of the west half of the Jordan Valley Quadrangle, Malheur County, Oregon", Misc. Geol. Investigation, USGS, Map I-457.

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CERTIFICATE of AUTHOR

I, Gregory Myers do hereby certify that:

1. I am Chief Geologist and President of:

Dorado Minerals

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(425) 788-7144

2. I graduated with a Doctor of Philosophy degree in Economic Geology from Washington State University in 1993 In addition, I have obtained a Master of Science degree in Economic Geology from the University of Alaska in 1985 and a Bachelor of Science degree in Geology from the University of Alaska in 1981

3. I am a Member and Chartered Professional Geologist of the Australian Institute of Mining and Metallurgy.

4. I have worked as a geologist for a total of 20 years since my graduation from university.

5. I have read the definition of “qualified person” set out in National Instrument 43-101 (“NI 43-101”) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a “qualified person” for the purposes of NI 43-101.

6. I am responsible for the preparation of the technical report titled Technical Report of the Aurora Uranium Project Malheur County, Oregon and dated September 1, 2005. I visited the Aurora property on June 22, 2005.

7. I have not had prior involvement with the property that is the subject of the Technical Report.

8. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.



9. I am independent of the issuer applying all of the tests in section 1.5 of National Instrument 43-101

10. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

11. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated this 1st Day of September, 2005.



Gregory L. Myers  
Geology

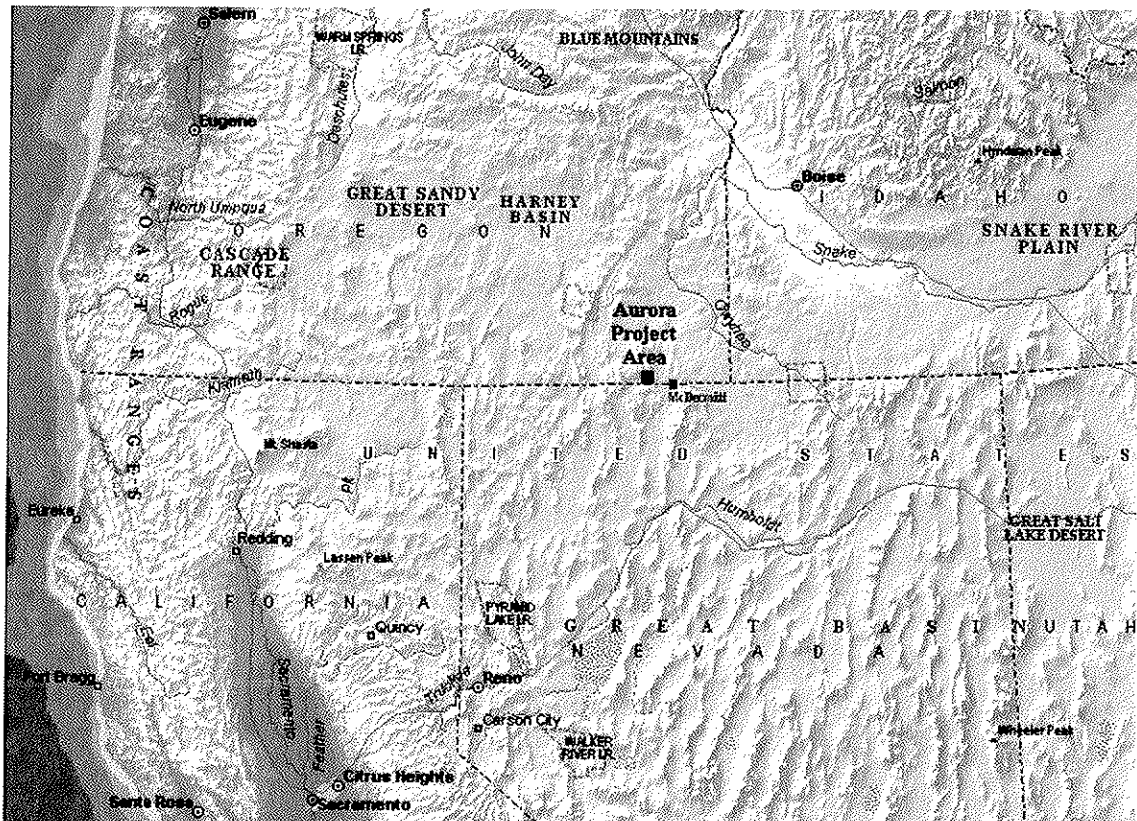
A handwritten signature in black ink, appearing to read "Gregory Myers", with a long, sweeping horizontal stroke extending to the right.

Gregory Myers

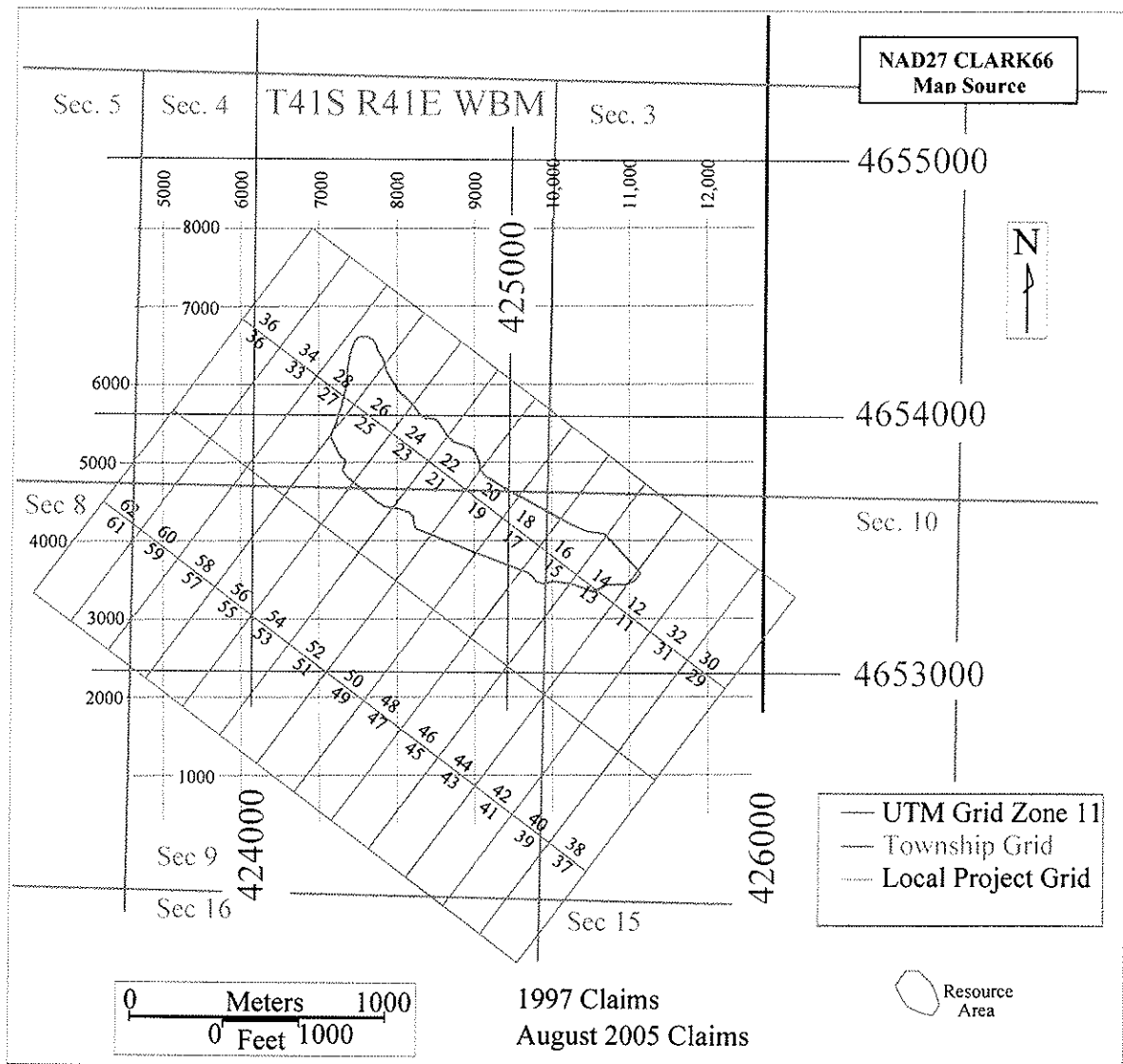
**Item 26: Illustrations**

The following figures accompany the report and are designated by the Item to which they refer and the figure number in that Item.

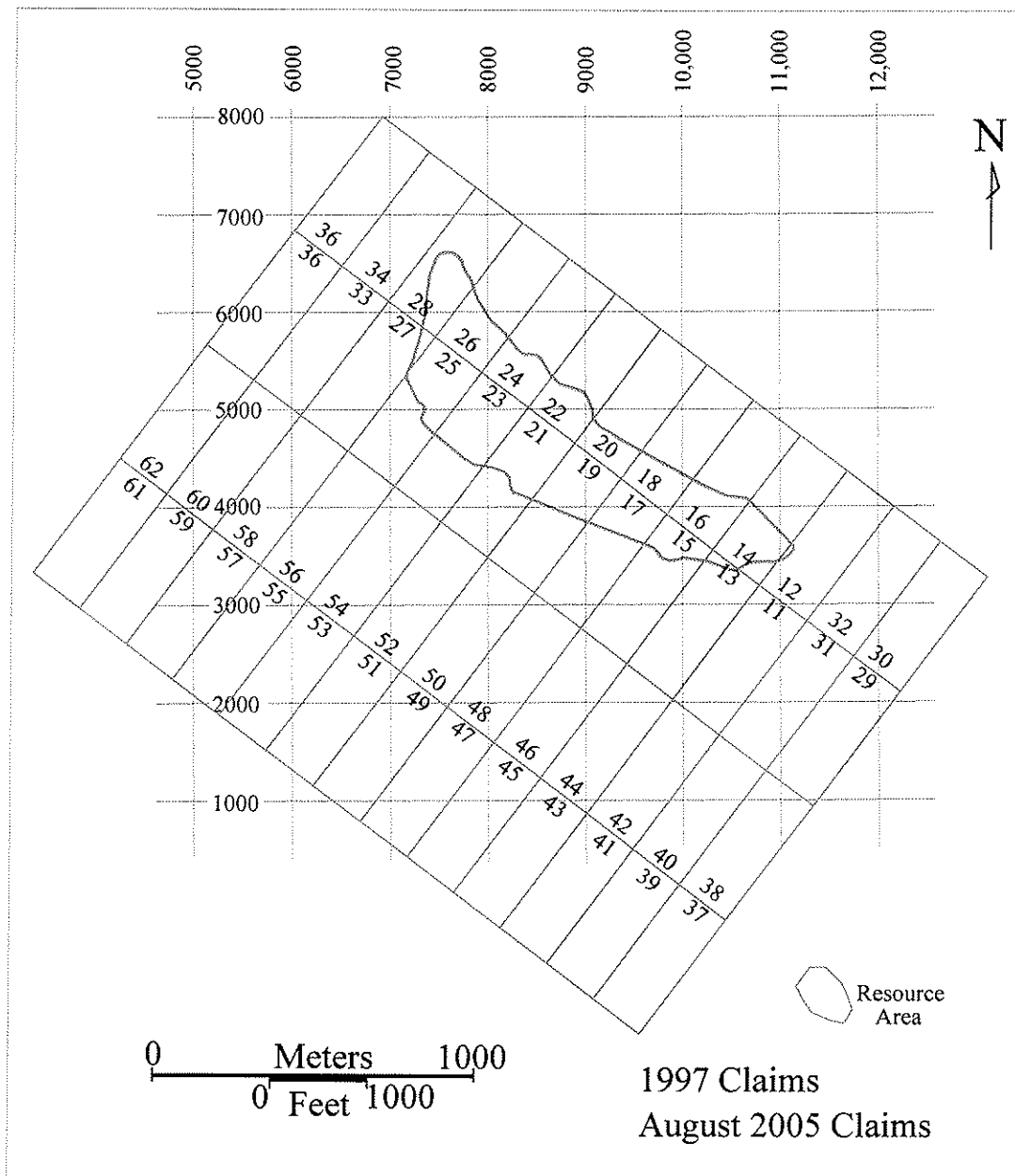
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**Figure 6-1.**  
Location of the Aurora Project Area in Southeastern Oregon.

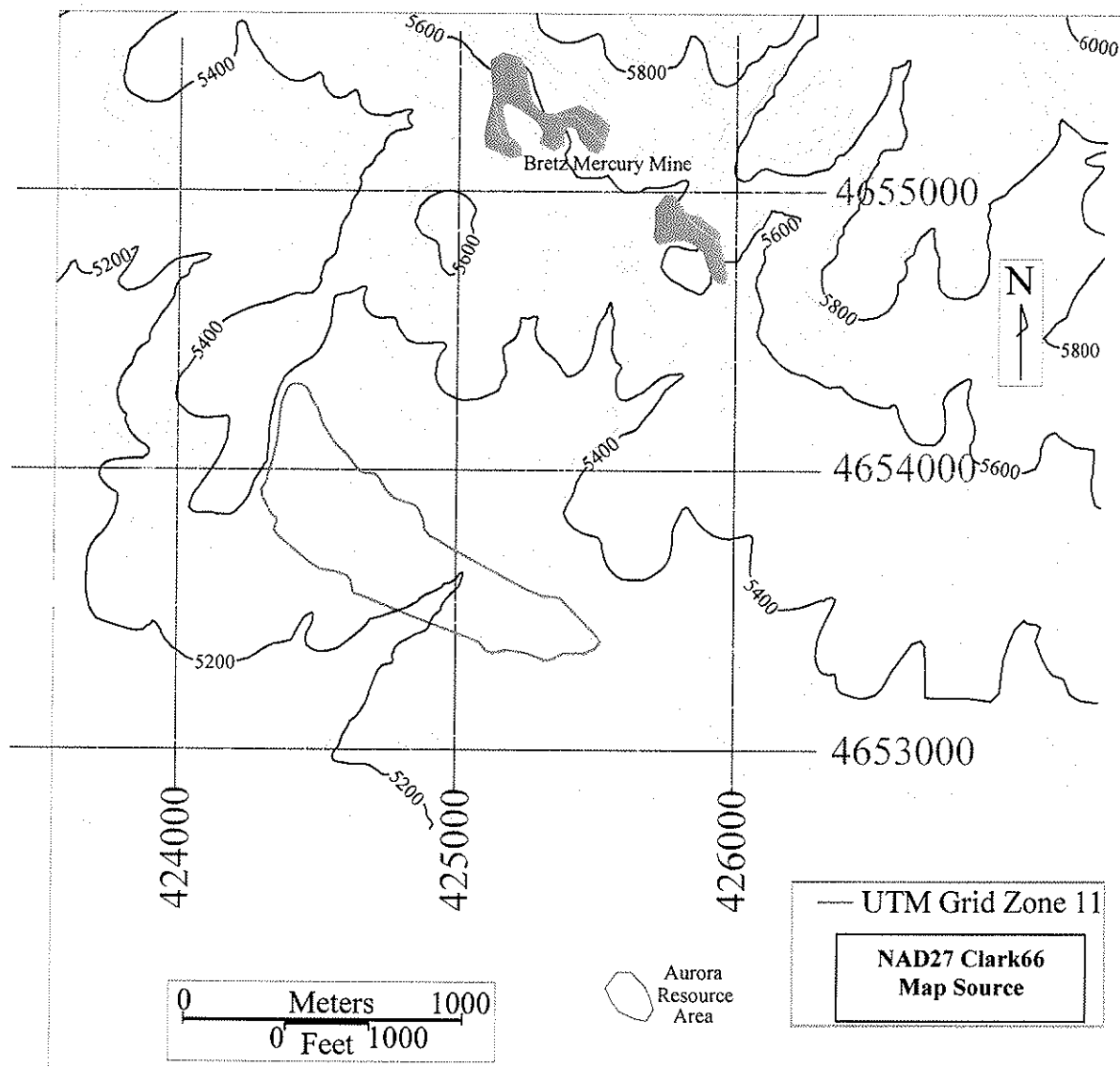


**Figure 6-2.**  
Location of the Aurora 1997 New U claim block and the relationship of the UTM grid and the local project grid. The Township, Range, and Sections are shown in relation to claim block.

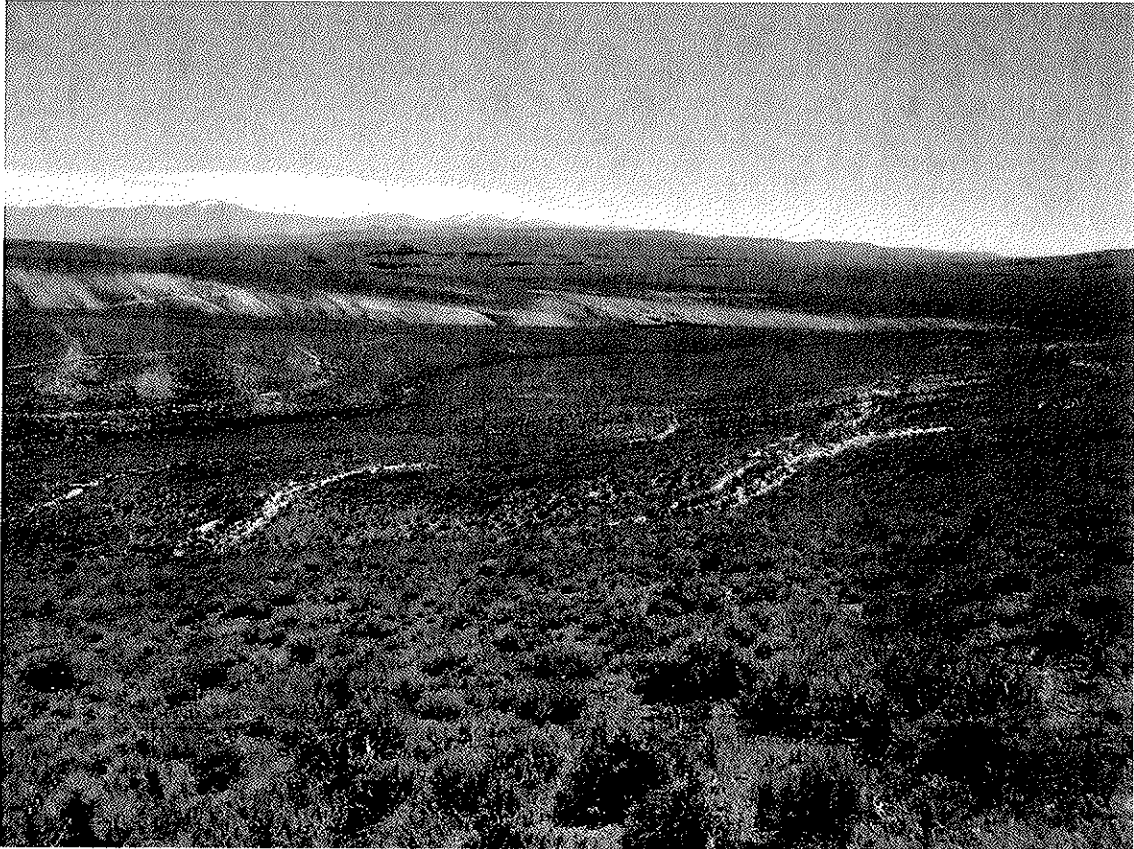


**Figure 6-3.**  
Location of the surface projection of the Mineral Resource

in relation to the expanded claim block and drillholes. The 1997 New U Claims are marked in green and newly staked claims are marked in red expanding the claim block to fully cover all prospective ground.

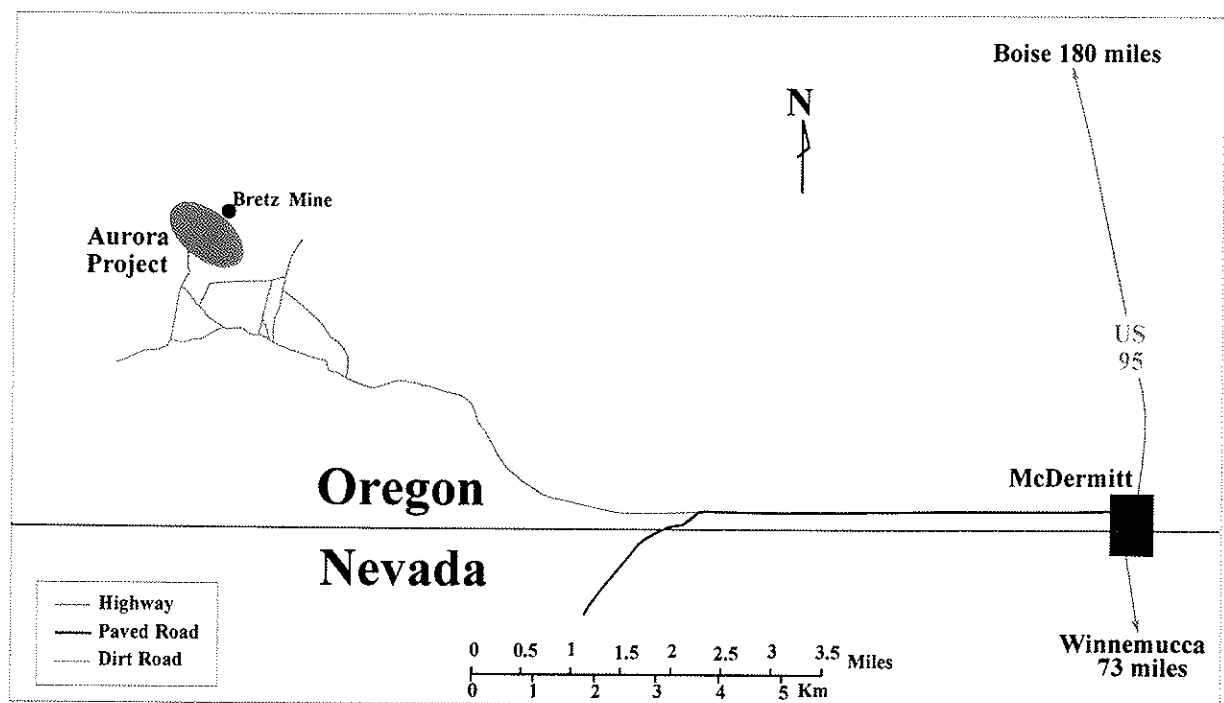


**Figure 7-1.**  
Topographic map of the Aurora Project area. Contour intervals are 40 feet.



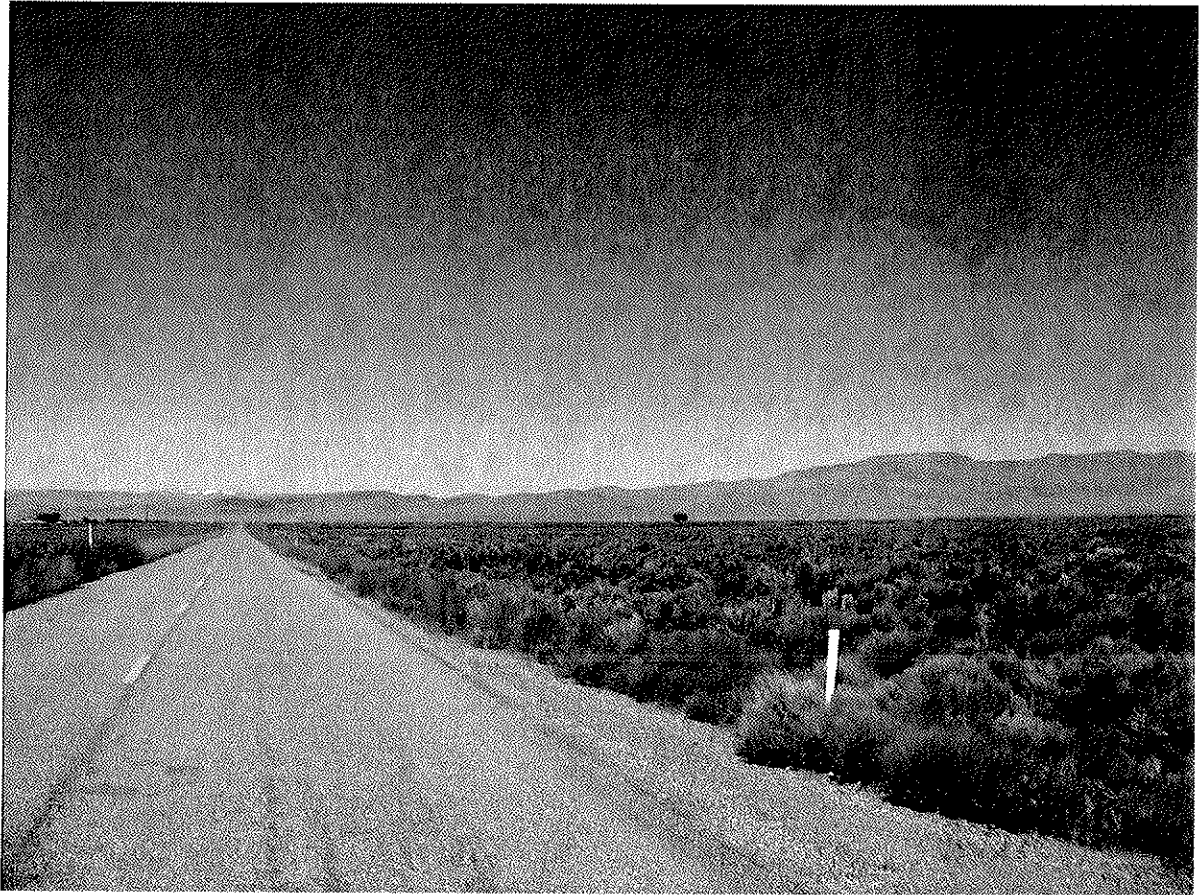
**Plate 7-1.**

View of the resource area from the western limit looking to the east southeast. The resource extends from the immediate foreground to beyond the white ridge exposed in the Cottonwood Creek drywash. Old drillroads can be seen as white streaks in the middle of the picture.



**Figure 7-2.**  
Highway 95 and access roads to the Aurora Project





**Plate 7-2.**

View of the access road near McDermitt, Nevada looking west toward the Aurora Project area. The property lies over the low hills just to the right of the road about 10 miles from this location.



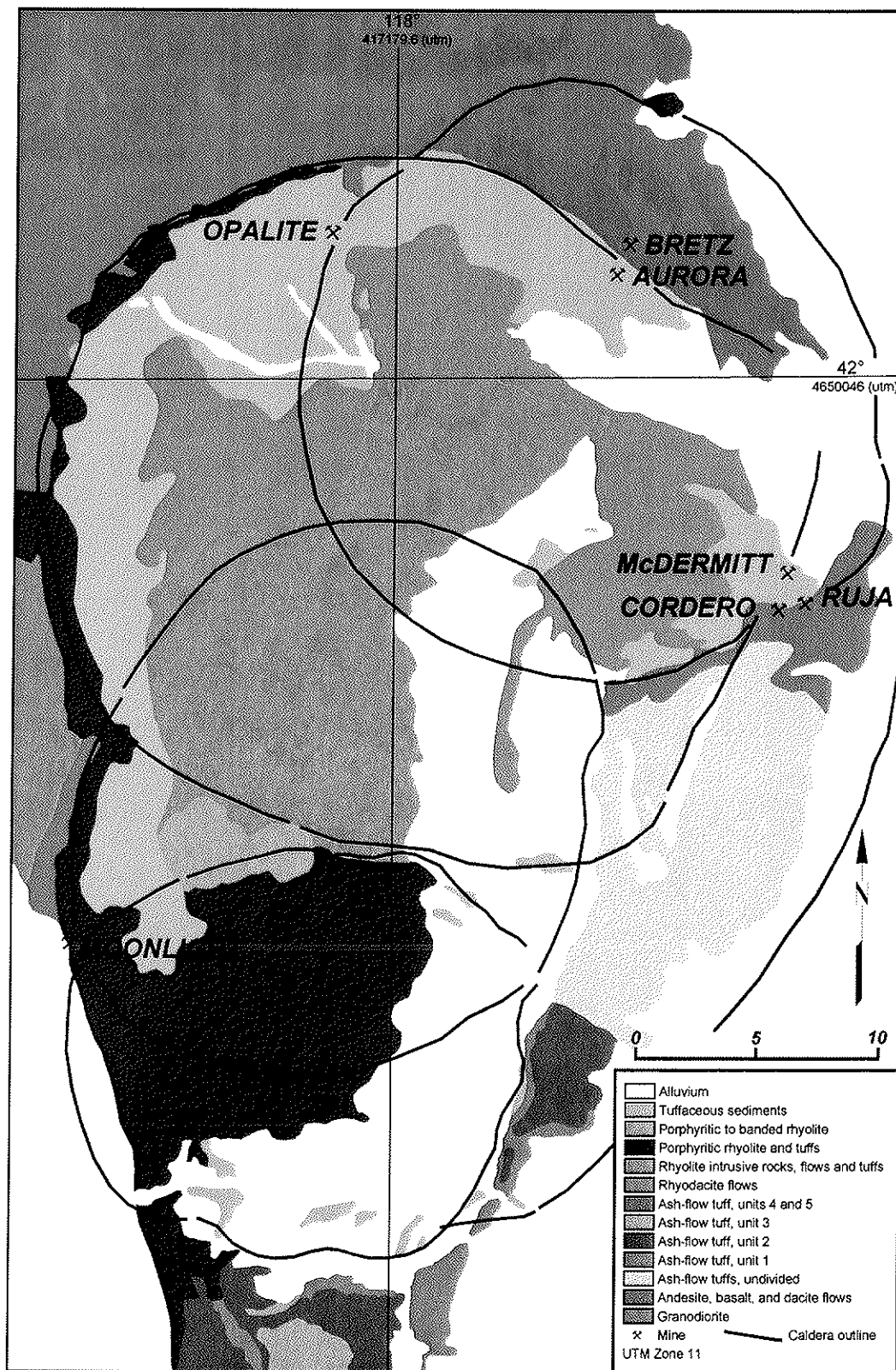
**Plate 7-3.**

View of the improved dirt road just past the turnoff to the McDermitt Mercury Mine and the paved road. The Aurora Property is about 3 miles from this point near the hills to the right of the road.



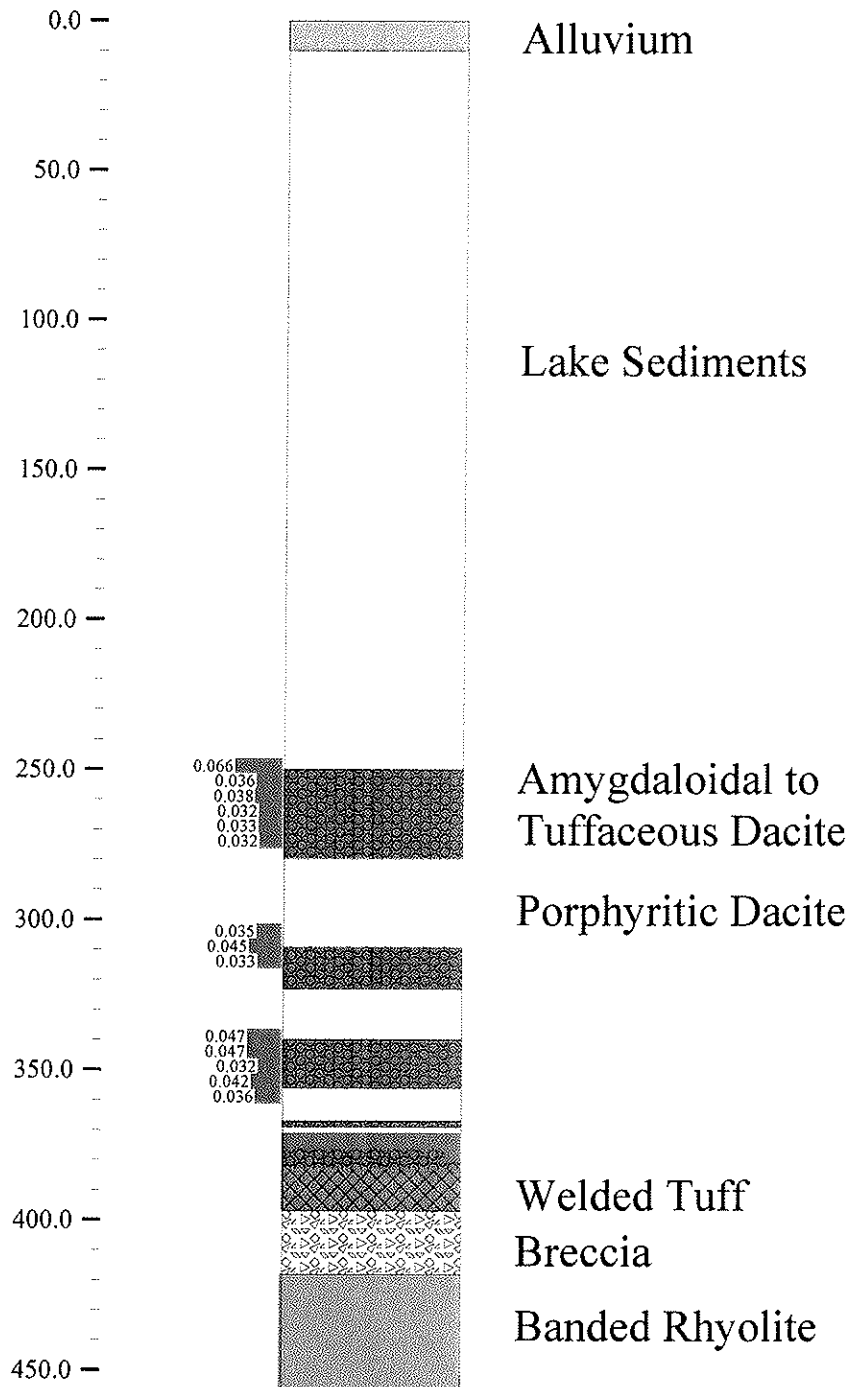
**Plate 7- 4.**

View of the Aurora Property looking north from the access road. The lower yellow hills are just behind the resource area in the area of the Bretz Mine. The area in the picture foreground is a possible plant site on the relatively level alluvium.



**Figure 9-1.**  
Generalized geologic map of the McDermitt Caldera Complex, southern Oregon and northern Nevada (modified after Rytuba and Glanzman, 1978)

# DDH-409



**Figure 9-2**

Detailed lithologic log of diamond drillhole 409 with eU<sub>3</sub>O<sub>8</sub>% values, from the gamma log conversions, above the 0.03% cutoff. Uranium mineralization is closely associated with the more porous dacitic flows. Depth below the surface in feet is annotated along the left edge of the figure.



Figure 9-3.  
Location of Diamond Core Drillhole Sections.  
Figure plotted on the local mine grid in feet.

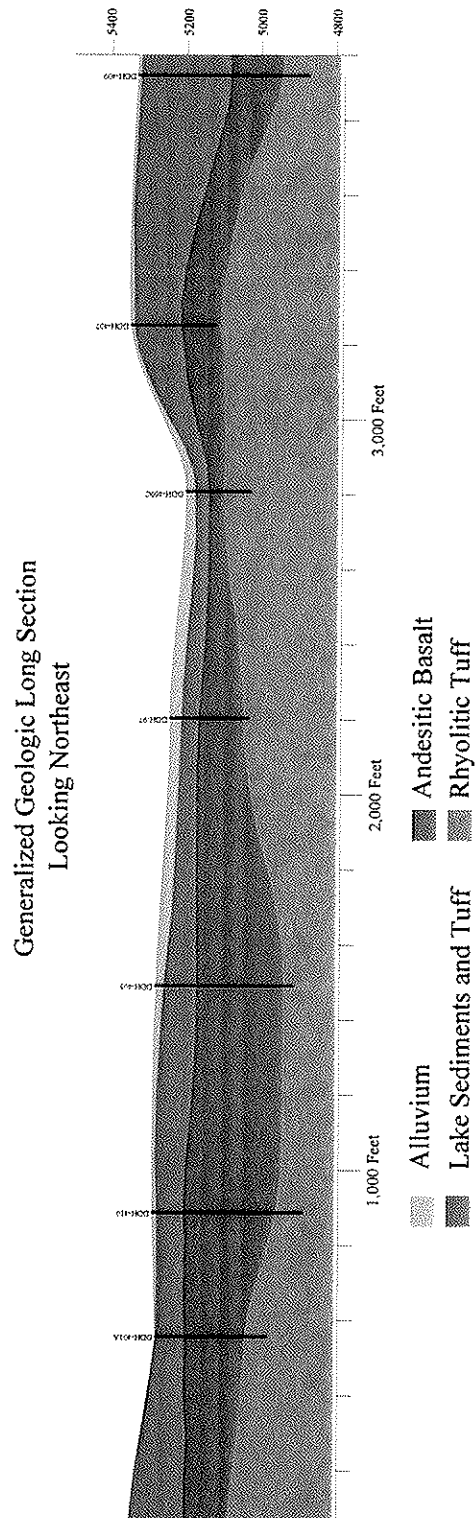


Figure 9-4.  
Generalized Geologic Long-Section based on diamond core drillhole logs. Section is oriented southeast-northwest looking northeast. All units are in feet.



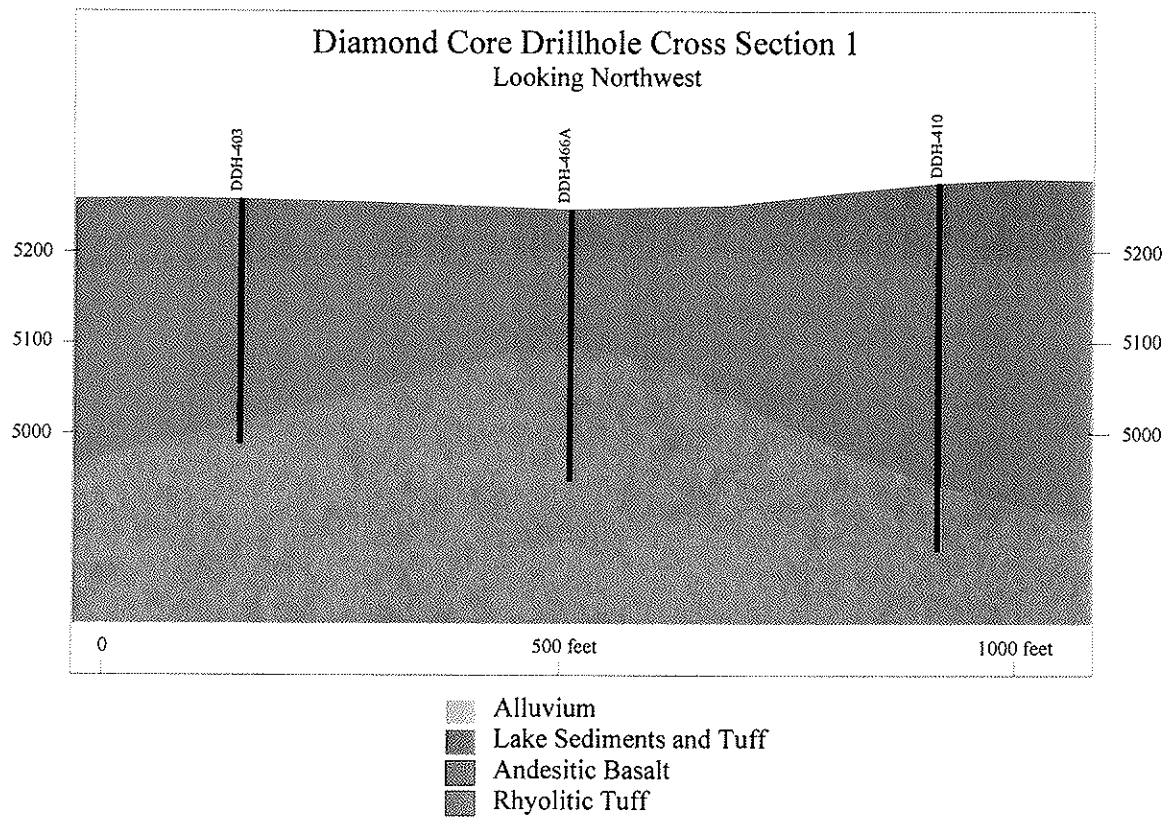


Figure 9-5.  
Generalized Geologic Cross-Section based on diamond core drillhole logs. Section is oriented southwest-northeast looking northwest. All units are in feet.



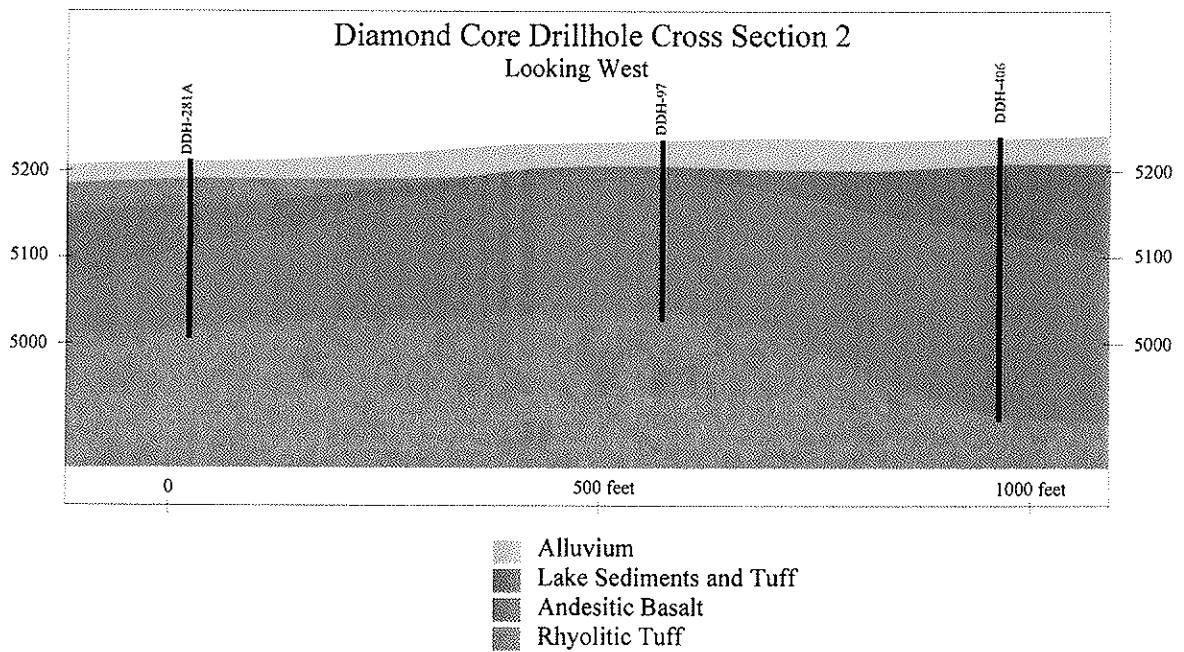


Figure 9-6.  
Generalized Geologic Cross-Section based on diamond core drillhole logs. Section is oriented southwest-northeast looking northwest. All units are in feet.

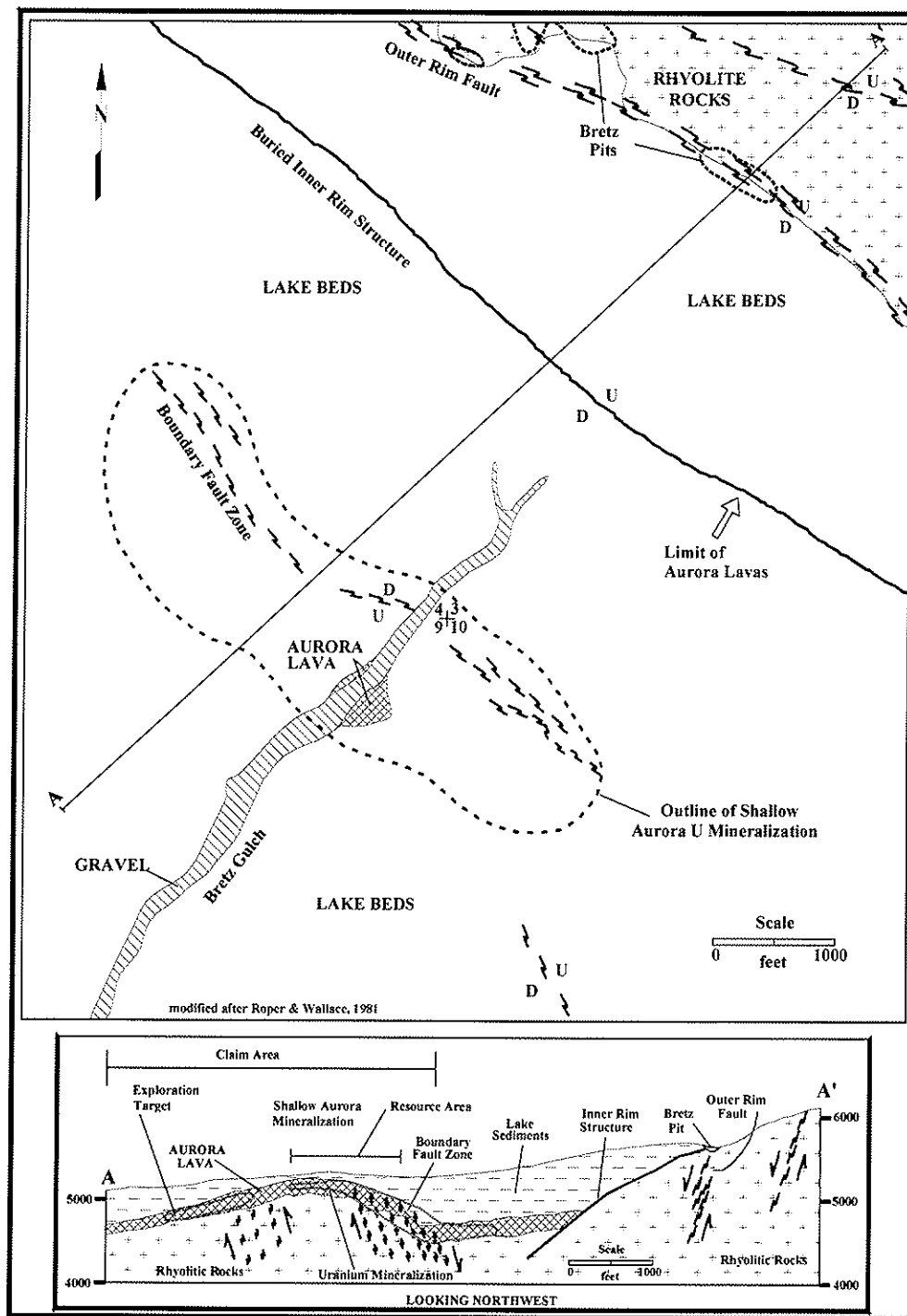


Figure 9-7.  
Generalized map of geology and structures at the Aurora Project and surrounding area.

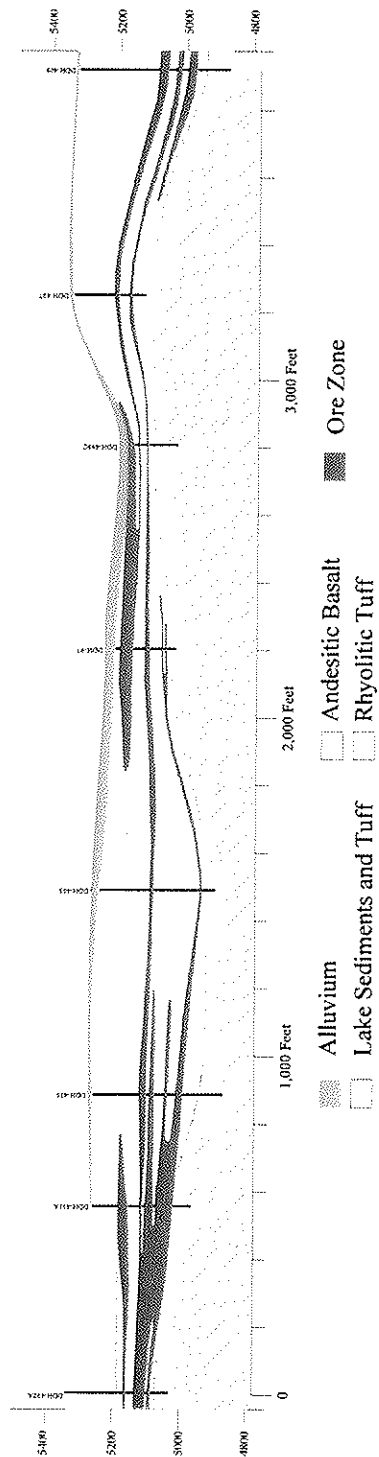


Figure 11-1  
Generalized Geologic Cross-Section based on diamond core drillholes with the ore zone.  
Mineralization is strongly controlled by stratigraphy. Section is east-west looking north.  
All units are in feet.

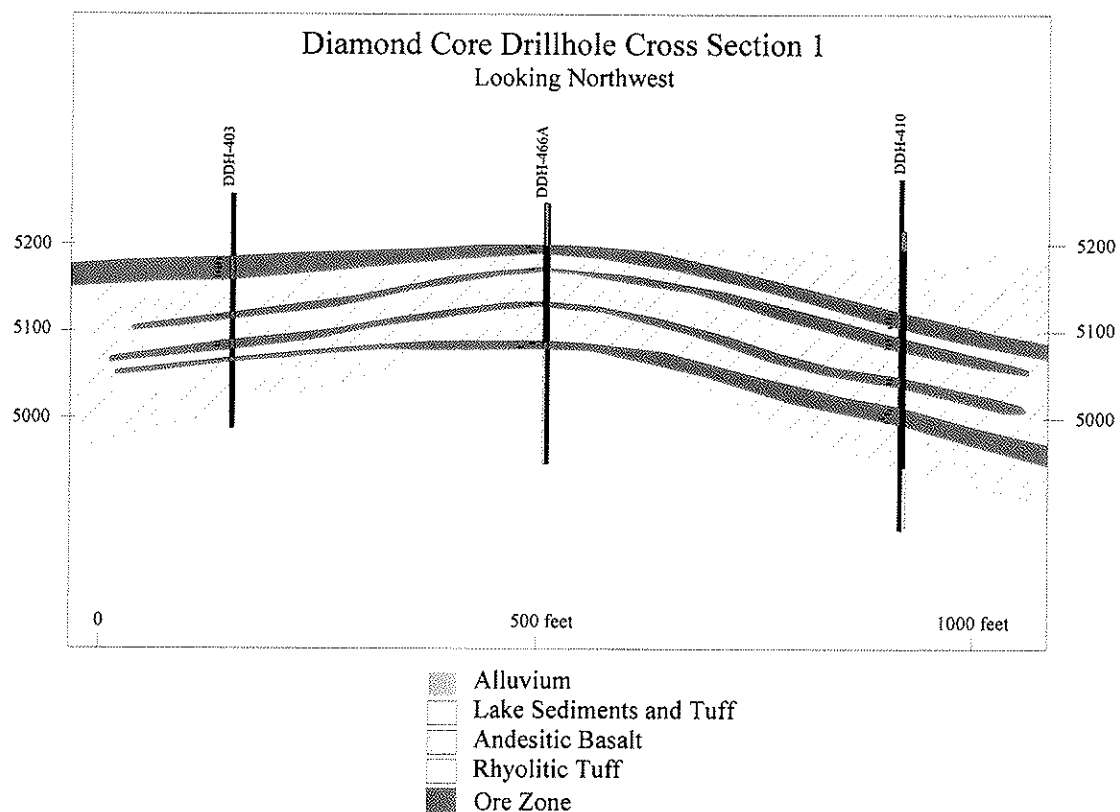


Figure 11-2.  
Generalized Geologic Cross-Section based on diamond core drillholes with the ore zone.  
Mineralization is strongly controlled by stratigraphy. Section is oriented southwest-  
northeast looking northwest. All units are in feet.

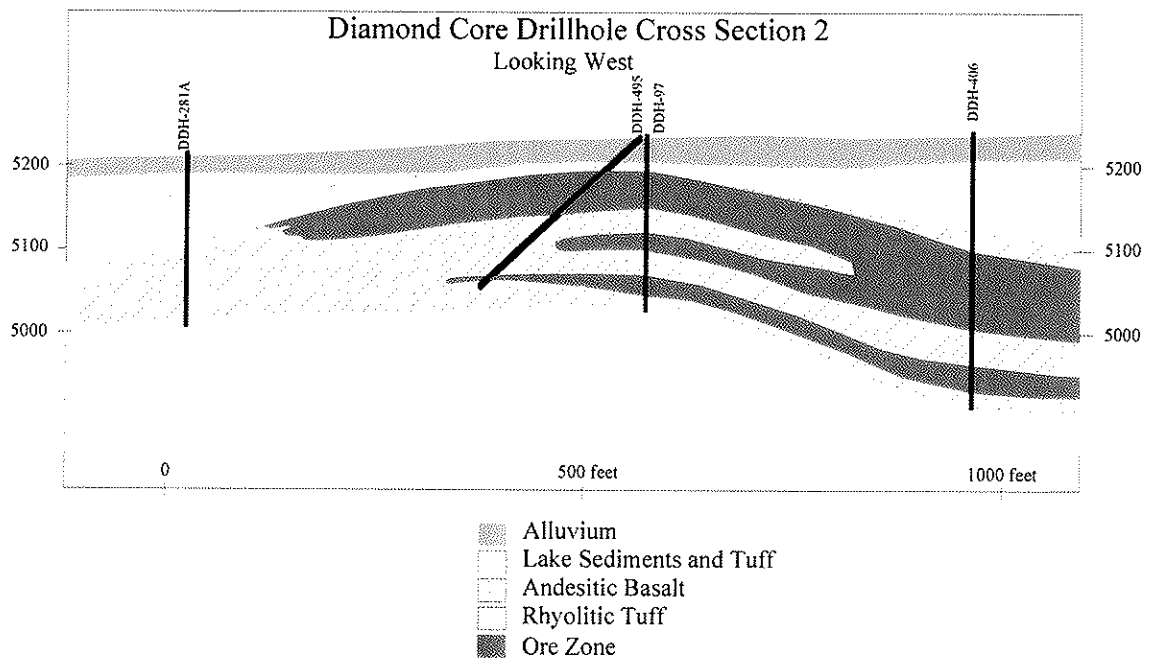
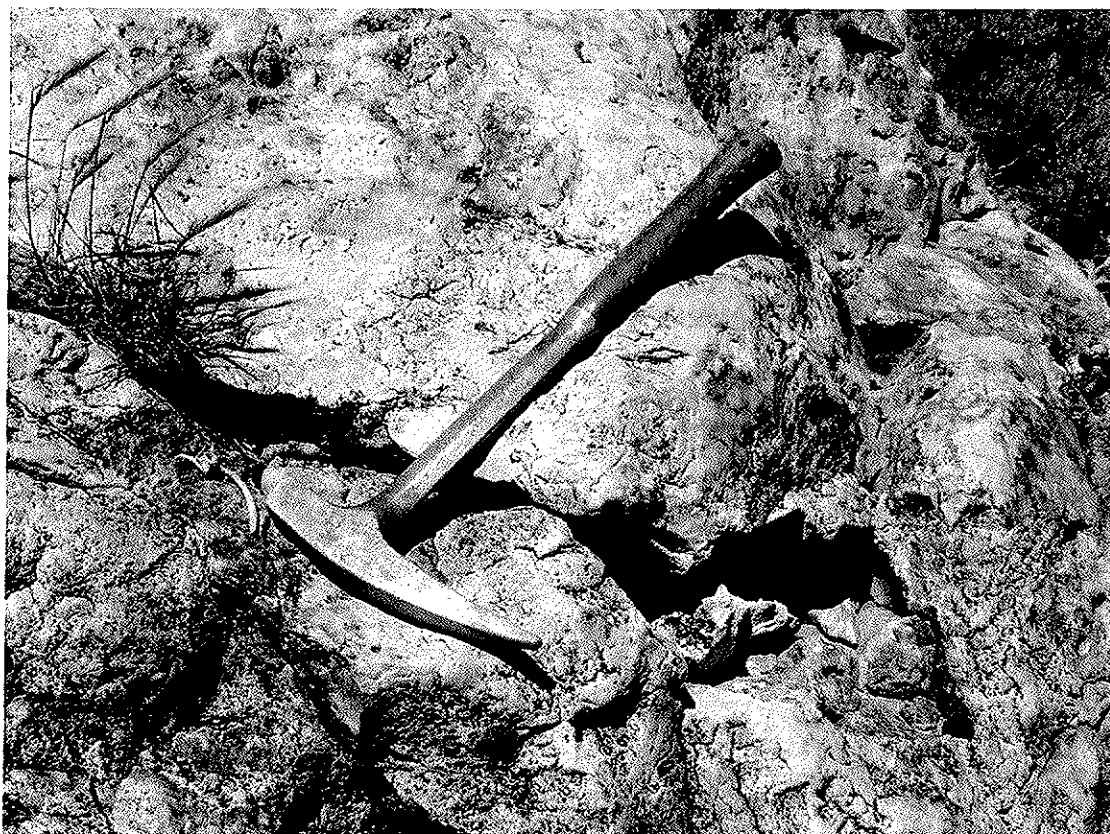


Figure 11-3.  
Generalized Geologic Cross-Section based on diamond core drillholes with the ore zone.  
Mineralization is strongly controlled by stratigraphy. Section is oriented southwest-  
northeast looking northwest. All units are in feet.



**Plate 11-1.**  
**Boulder outcrop of opal altered volcanic rock with highly anomalous uranium.**

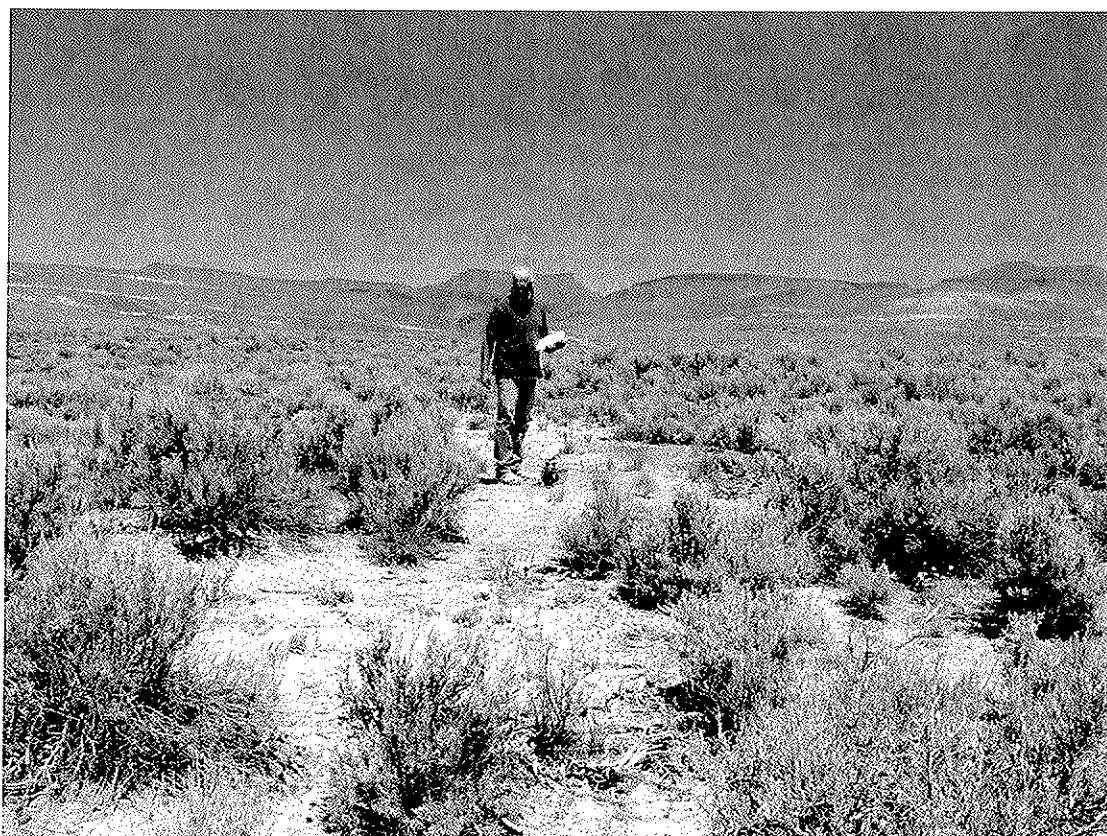


Plate 12-1.  
The author field checking reclaimed drillsites and drill cuttings  
which contain anomalous uranium values.

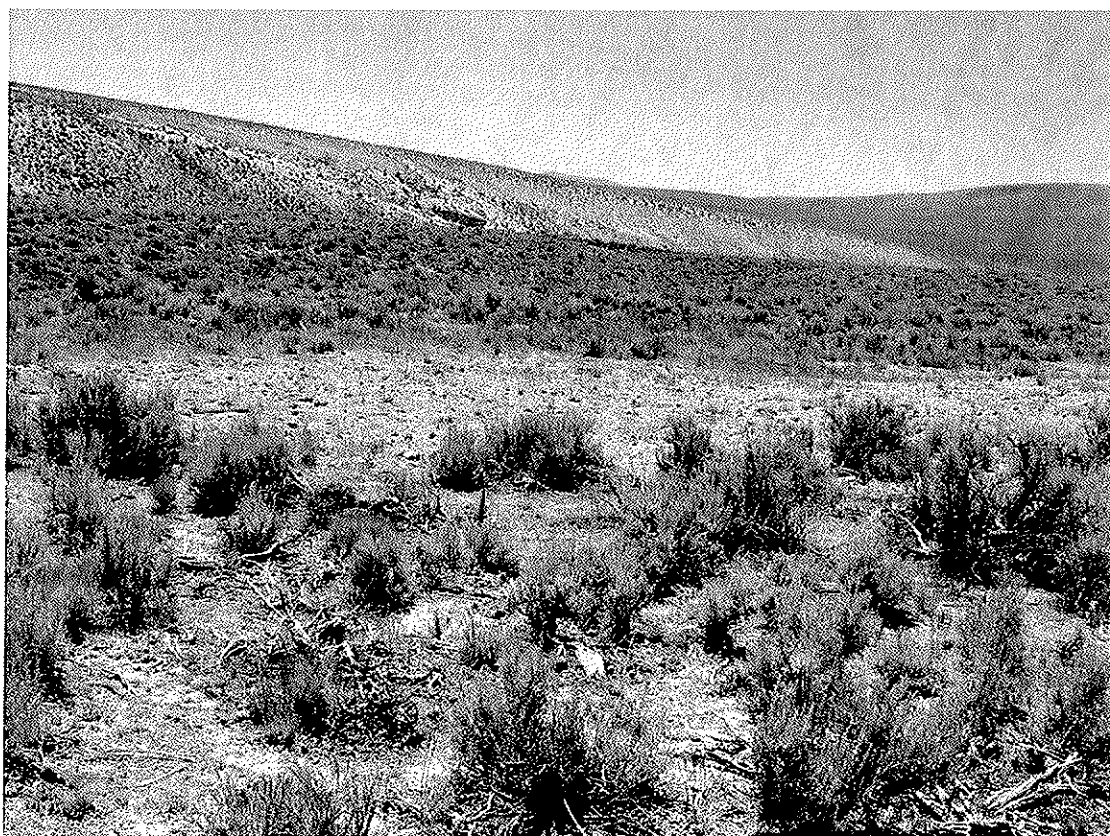
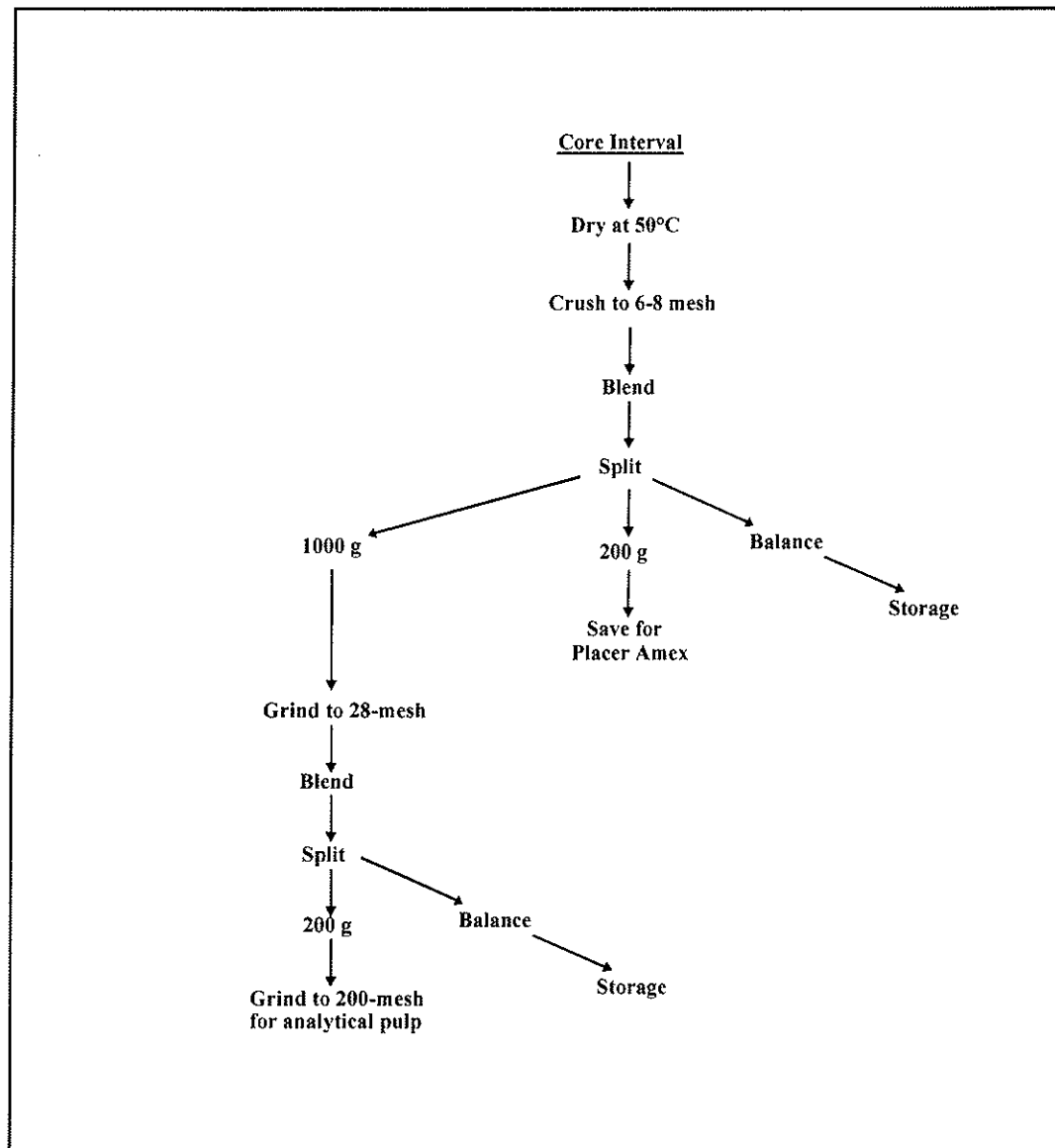


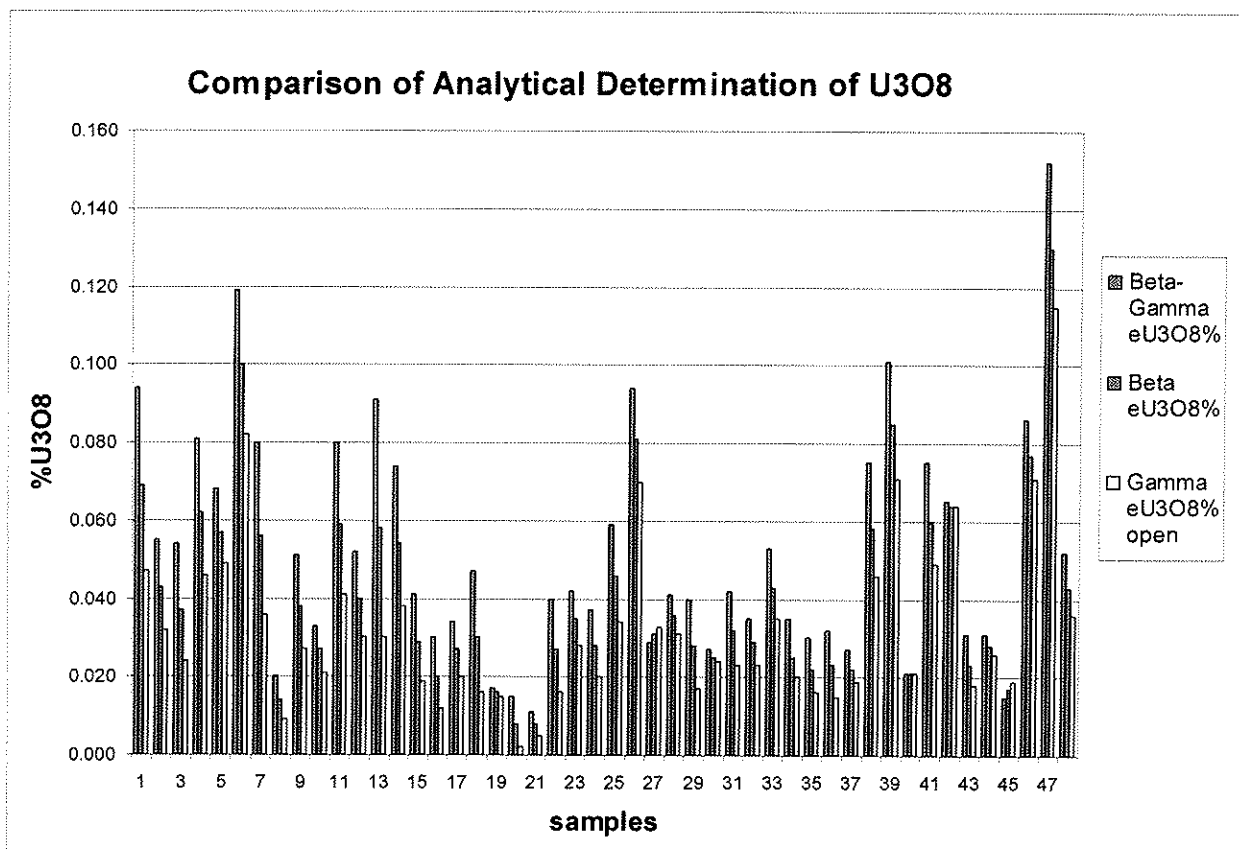
Plate 12-2.  
Reclaimed drill pad directly above mineralized zone.







**Figure 15-1.**  
**Hazen Flow Sheet for Sample Preparation (Hazen Research, 1979).**



**Figure 15-2.**

Comparison of Beta-Gamma, Beta, and Gamma determinations of  $eU_3O_8$ . The Beta-Gamma value is always the highest value and is considered to be closest to the true concentration of  $U_3O_8$ . The downhole logging used to determine the  $eU_3O_8$  on the Aurora project was a Gamma log, which returns the lowest estimation of  $eU_3O_8$ .

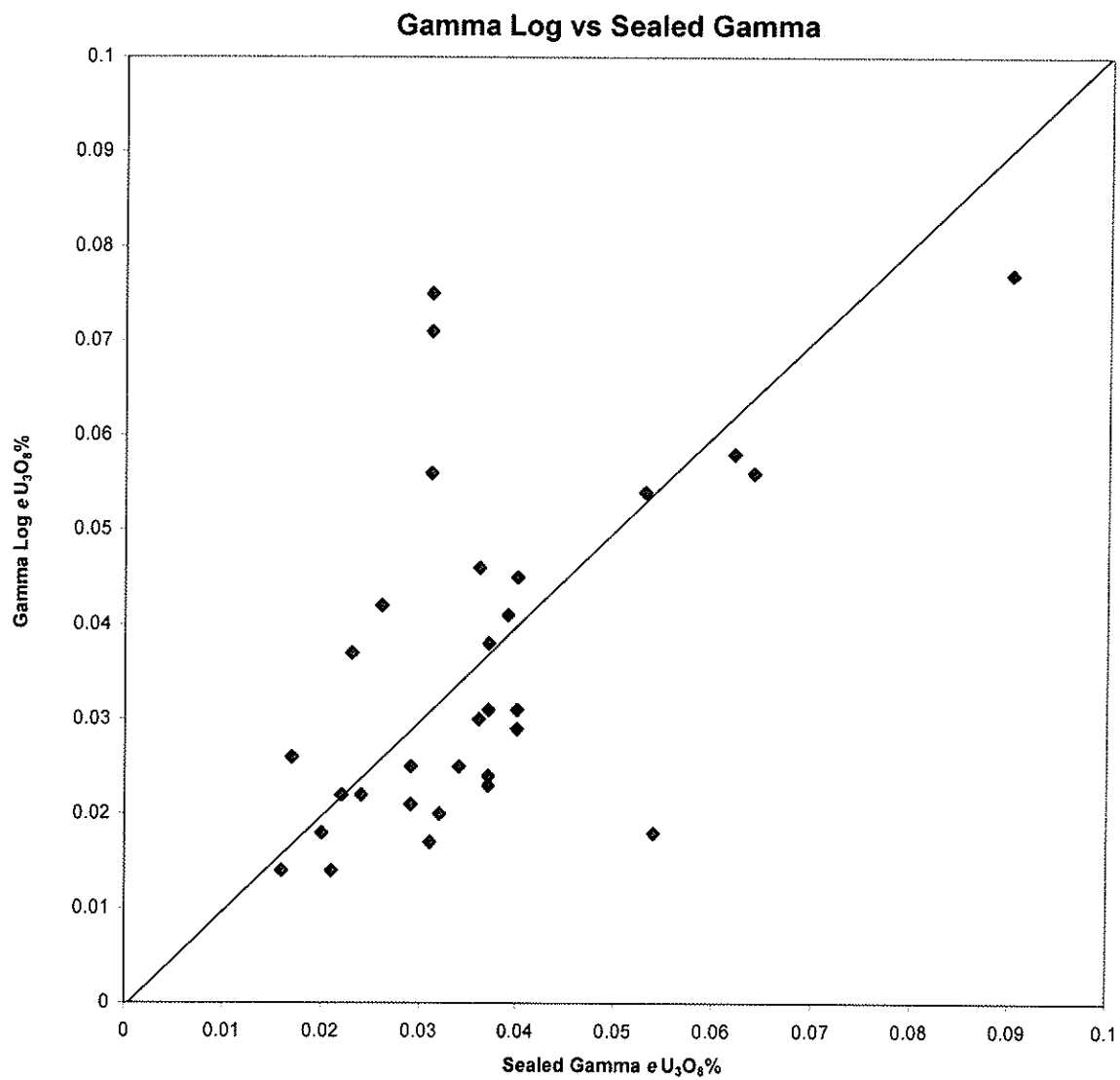


Figure 15-3.  
The Gamma versus sealed can Gamma show considerable scatter in the results. The data does not indicate that the sealed can Gamma analytical technique always returns the highest value for  $eU_3O_8$ .

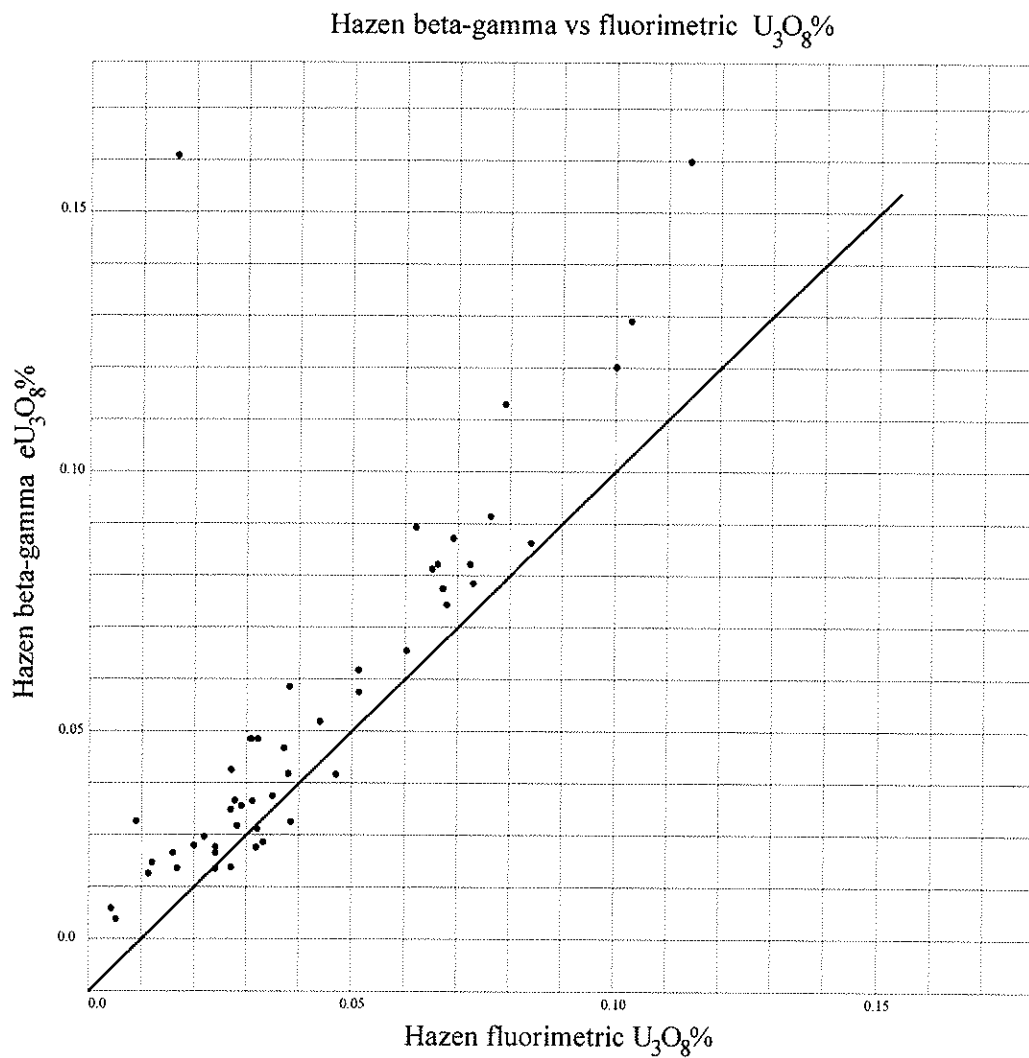


Figure 15-4  
Comparison of Beta-Gamma  $e\text{U}_3\text{O}_8$  determination versus chemical fluorimetric  $\text{U}_3\text{O}_8$  analyses. The Beta Gamma  $e\text{U}_3\text{O}_8$  determination consistently overestimates the  $\text{U}_3\text{O}_8$  concentration of the sample.

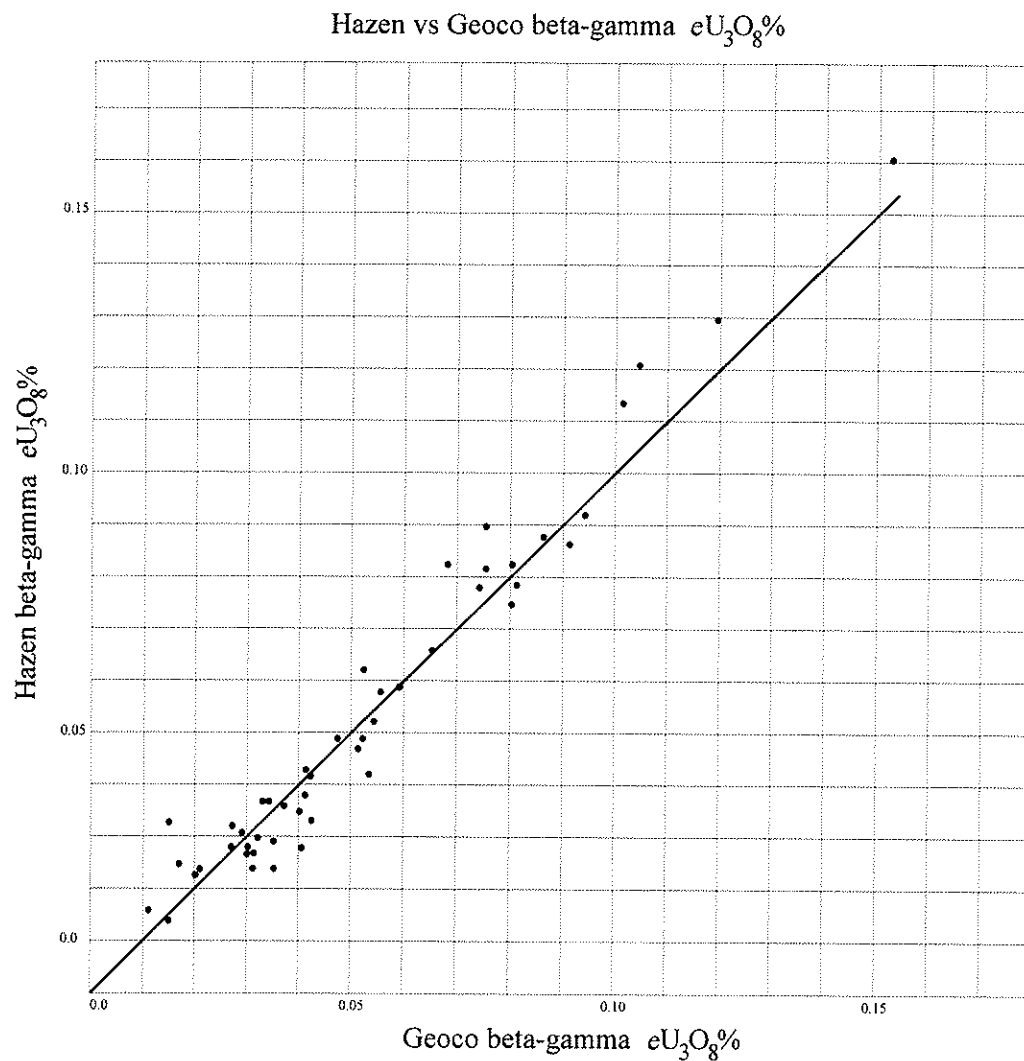


Figure 15-5  
Comparison of analytical results from duplicate splits analysed by Hazen and Geoco Laboratories. The results show fairly good agreement between the analyses.

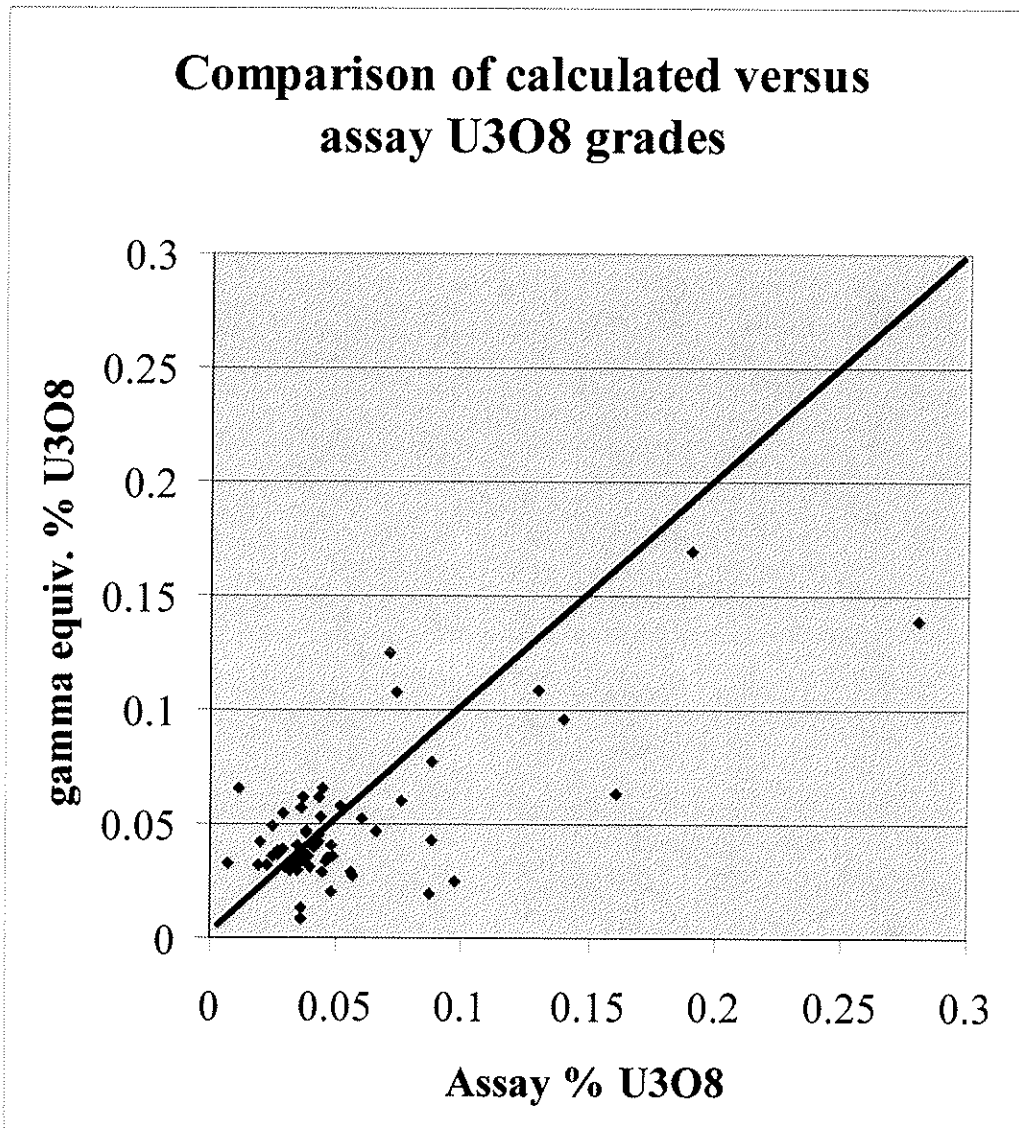


Figure 16-1.  
Comparison of equivalent %  $eU_3O_8$  values calculated from the gamma logs versus the  $U_3O_8$ % fluorimetric assay values. The diagonal line represents equal values for each estimation of actual  $U_3O_8$  grade.

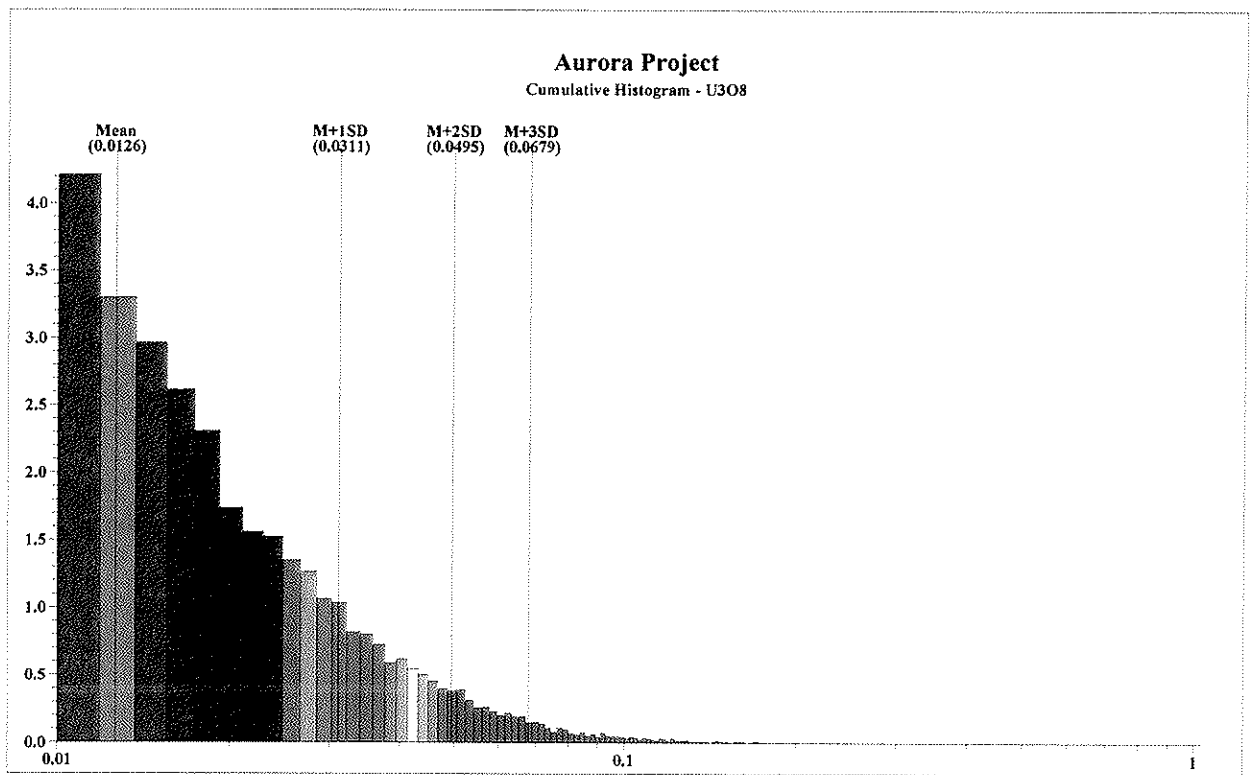


Figure 19-1.  
Cumulative Histogram of the Aurora  $eU_3O_8\%$ .



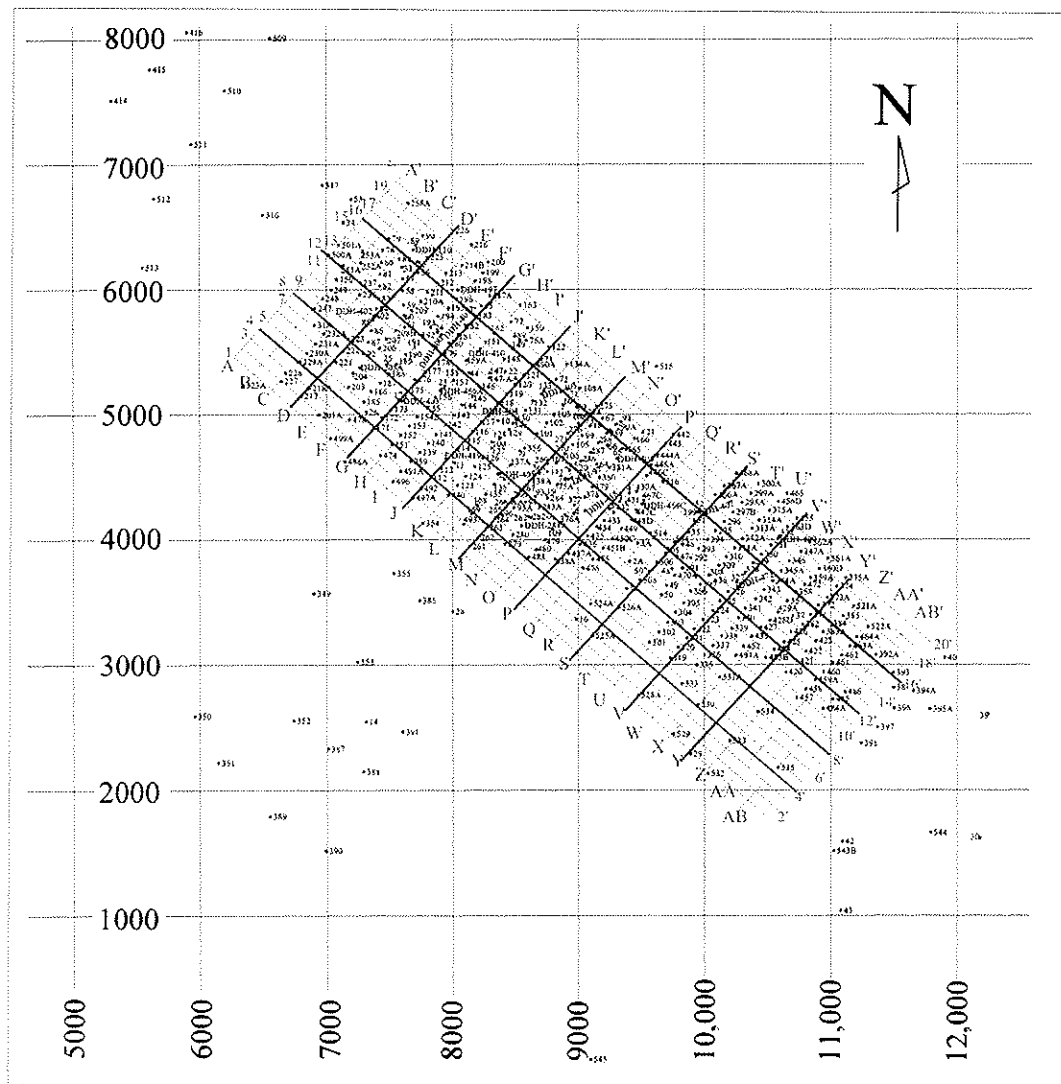


Figure 19-2.  
Location of section lines used in the interpretation of the mineralized bodies.

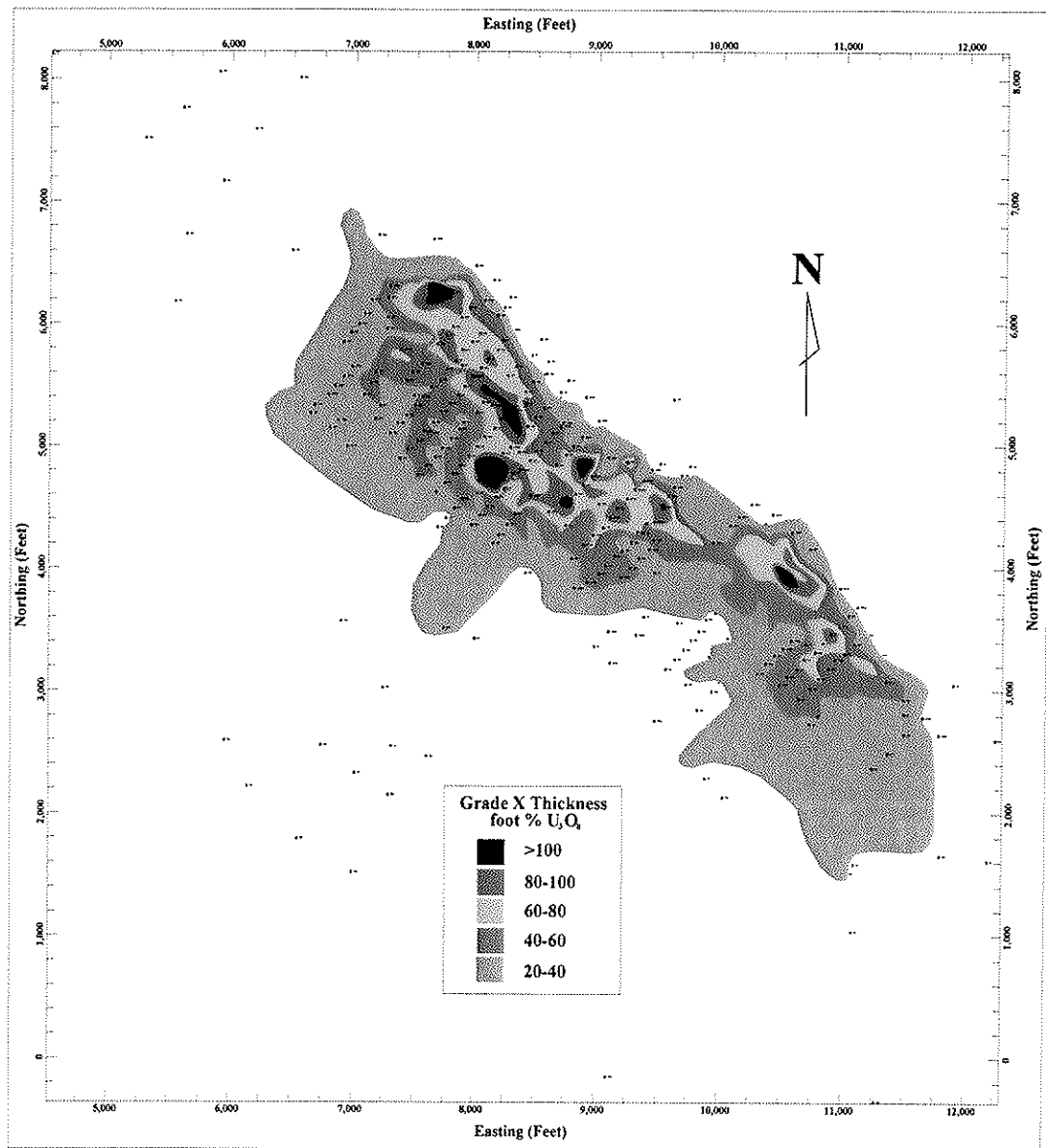


Figure 19-3.  
Grade times thickness map of the Aurora Property.

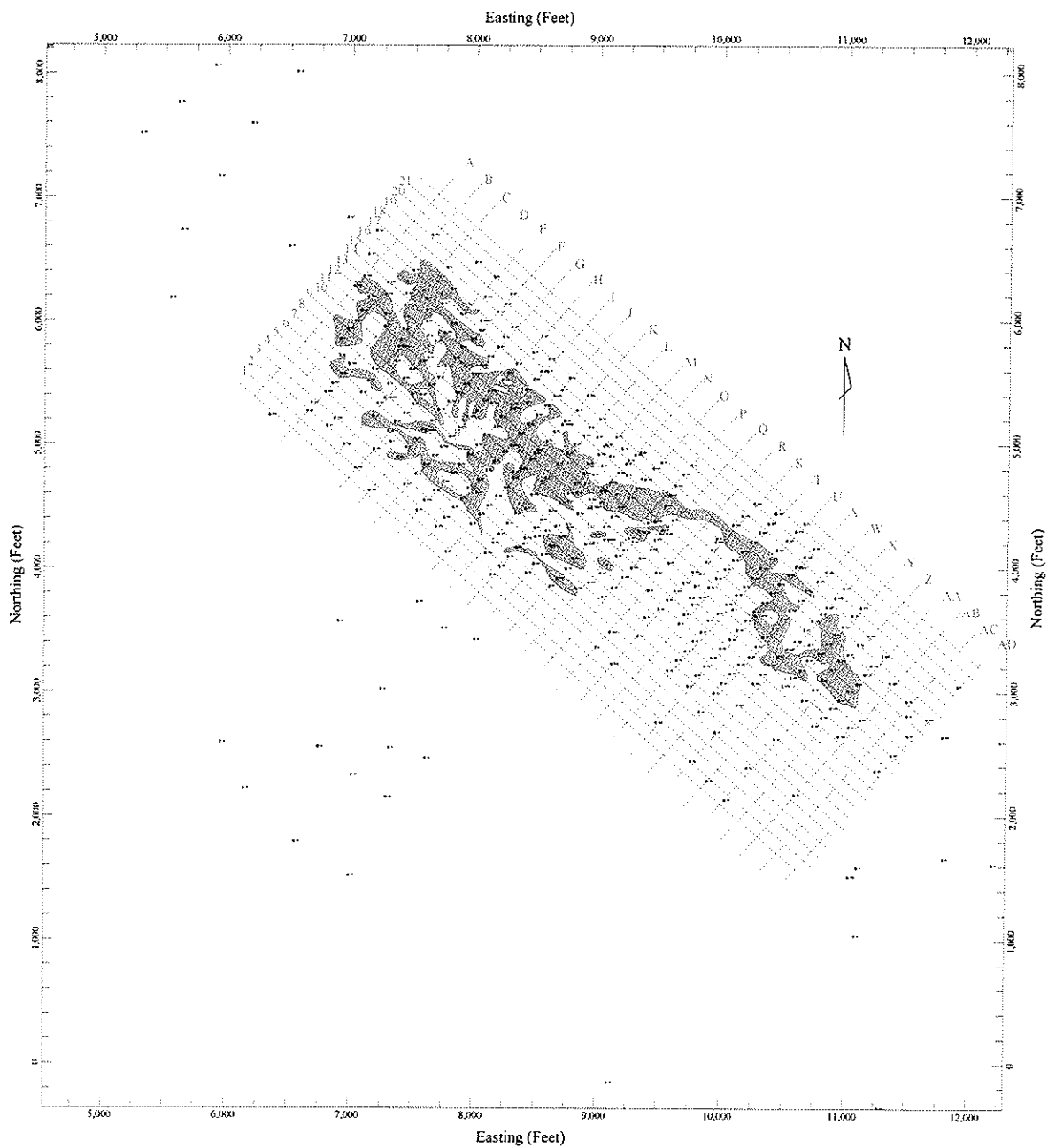


Figure 19-4.  
5100 Bench plan of mineralized zone interpreted from the orthogonal sections through the main portion of the ore body. The mineralized shape agrees well with the GxT plan shown in Figure 19-3.

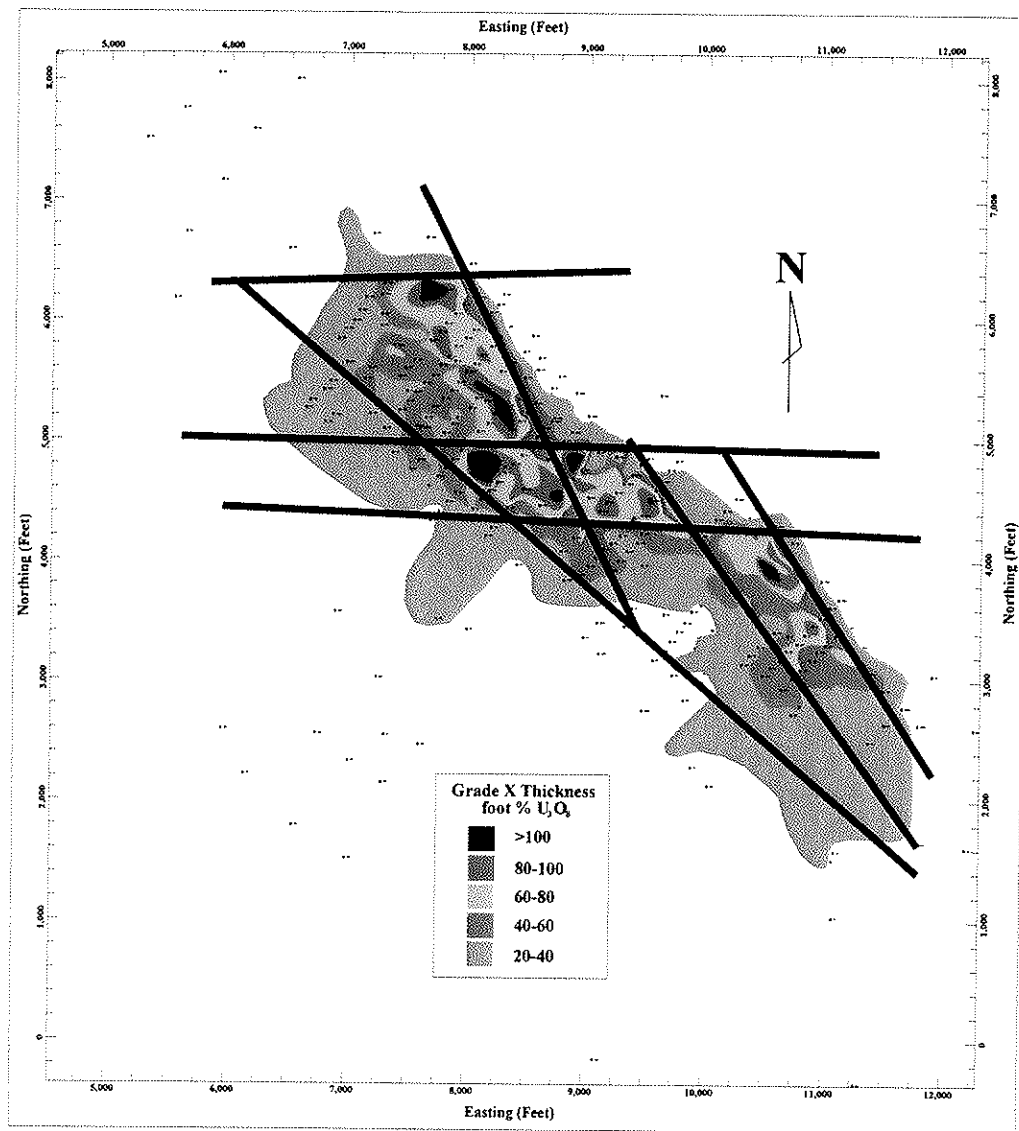


Figure 19-5.  
Interpreteted fault zones offsetting and controlling areas of mineralization.

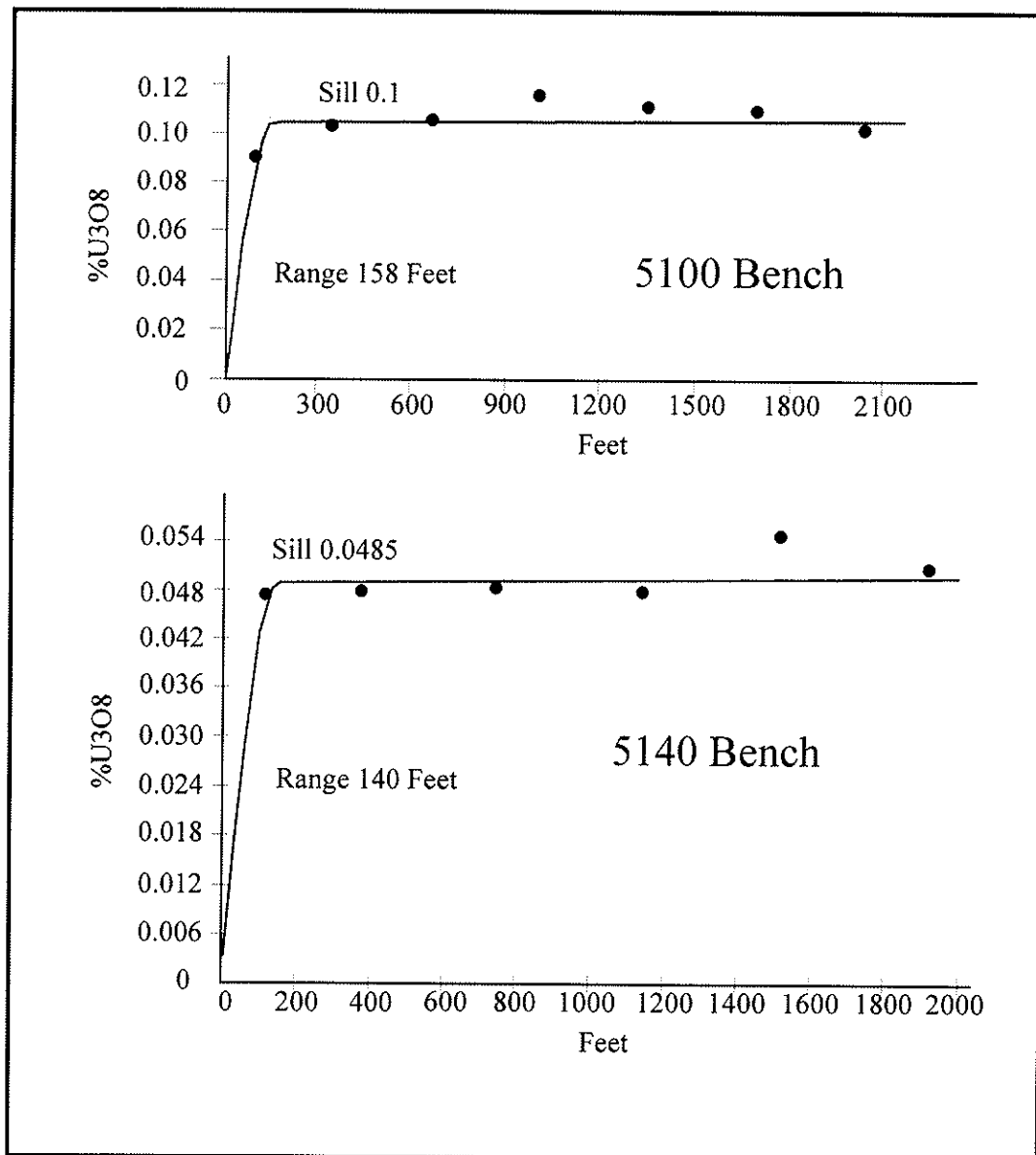


Figure 19-6.  
Co-variograms for the 5100 bench and the 5140 bench based on  $eU_3O_8$  values.

## Appendix A

List of Claims for the Aurora Property, Malheur County, Oregon.

Claim Name	County Instrument	BLM Serial #
New U #11	97-8460	153217
New U #12	97-8461	153218
New U #13	97-8462	153219
New U #14	97-8463	153220
New U #15	97-8464	153221
New U #16	97-8465	153222
New U #17	97-8466	153223
New U #18	97-8467	153224
New U #19	97-8468	153225
New U #20	97-8469	153226
New U #21	97-8470	153227
New U #22	97-8471	153228
New U #23	97-8472	153229
New U #24	97-8473	153230
New U #25	97-8474	153231
New U #26	97-8475	153232
New U #27	97-8476	153233
New U #28	97-8477	153234

## Appendix B.

Representative cross sections showing mineralized bodies above cutoff value of 0.03% U<sub>3</sub>O<sub>8</sub>. Cross sections D, G, J, M, P, S, V, and Y are looking northwest. Cross sections 4, 8, 12, and 16 are looking northeast. Local mine grid coordinates are listed across the bottom of each section. Elevations in feet are along the sections edges. Lake Sediments are shown in green as a marker horizon and the mineralized zone is in red.

# Cross-Section D Looking Northwest

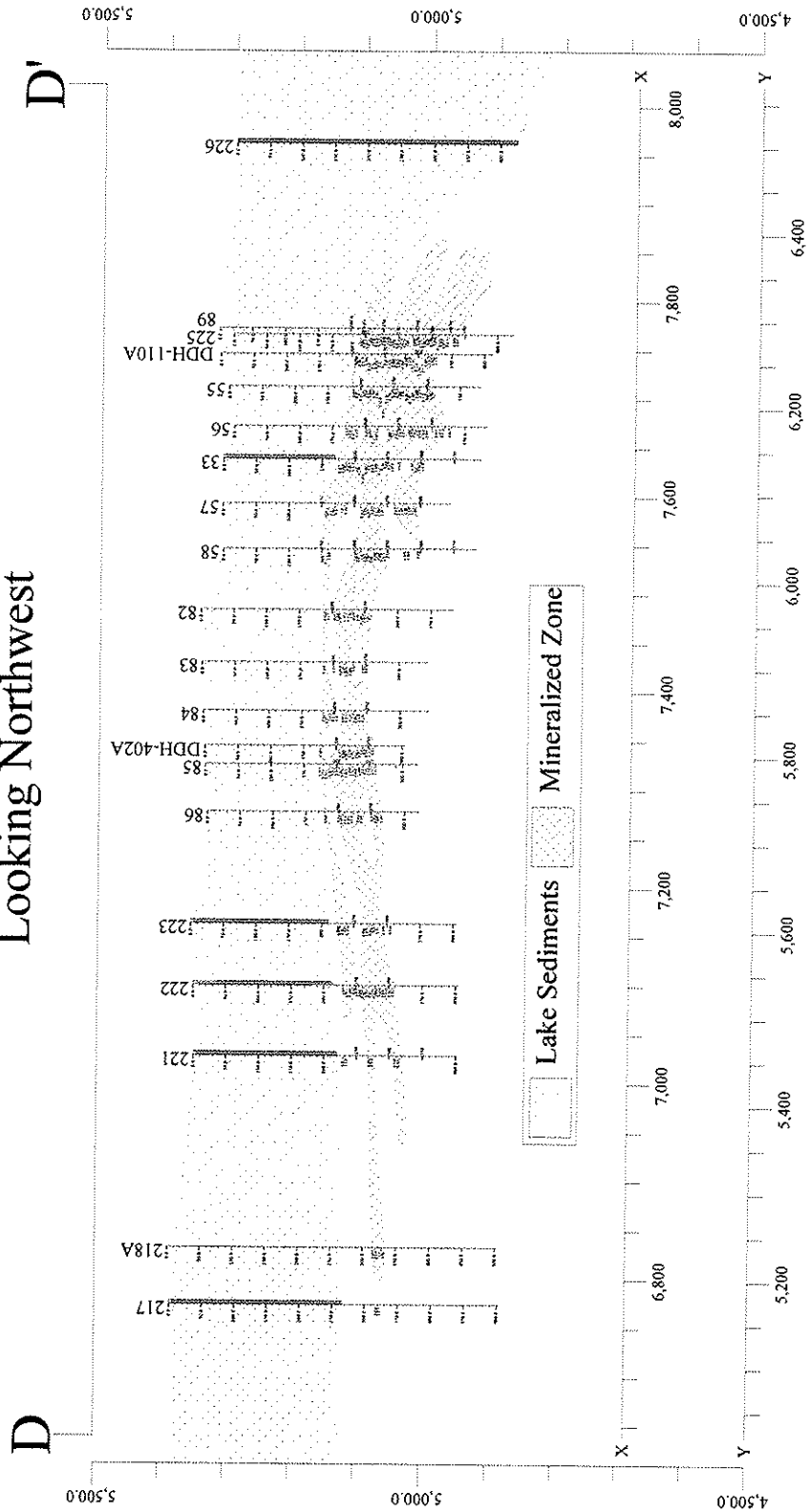


Figure B-1.

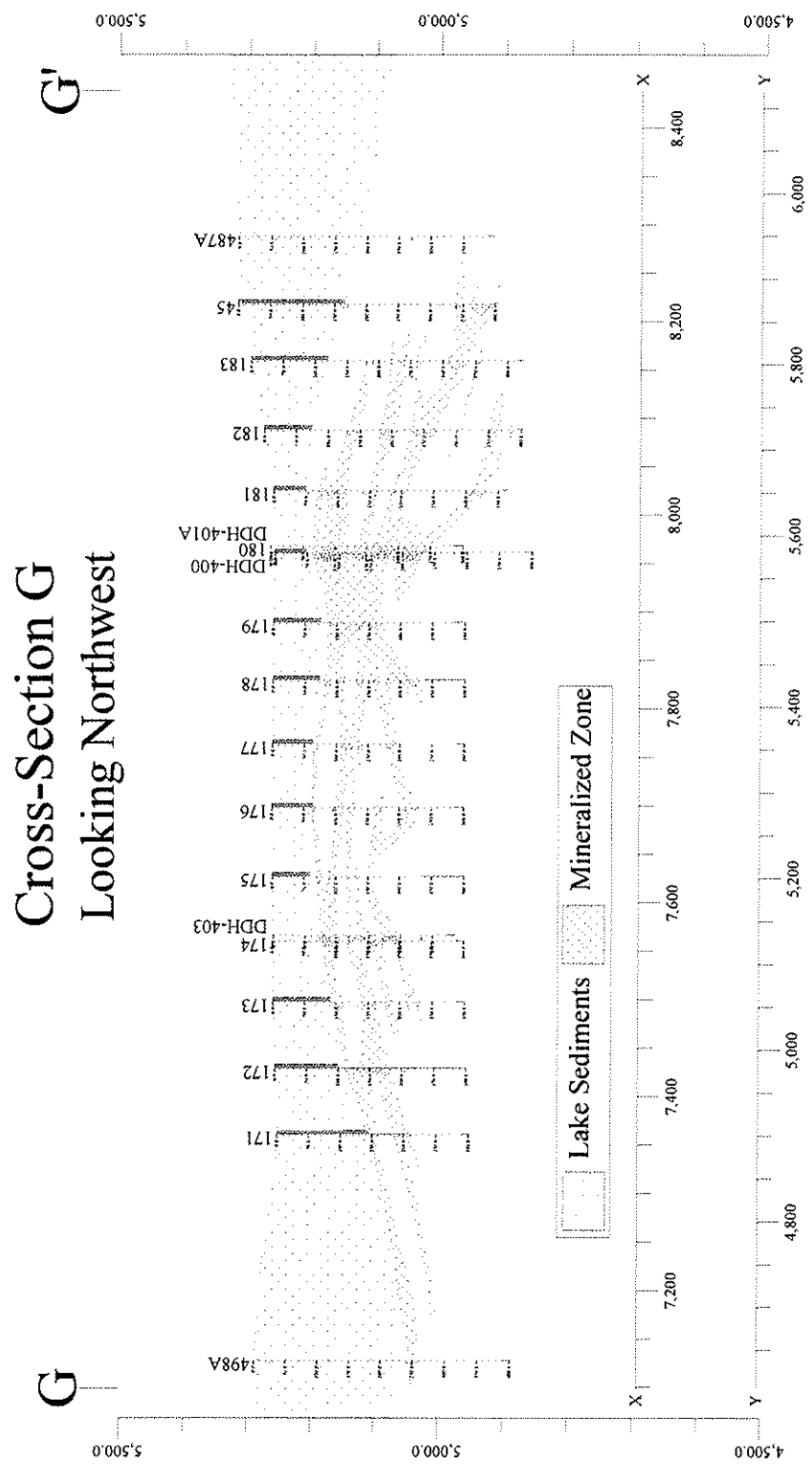


Figure B-2



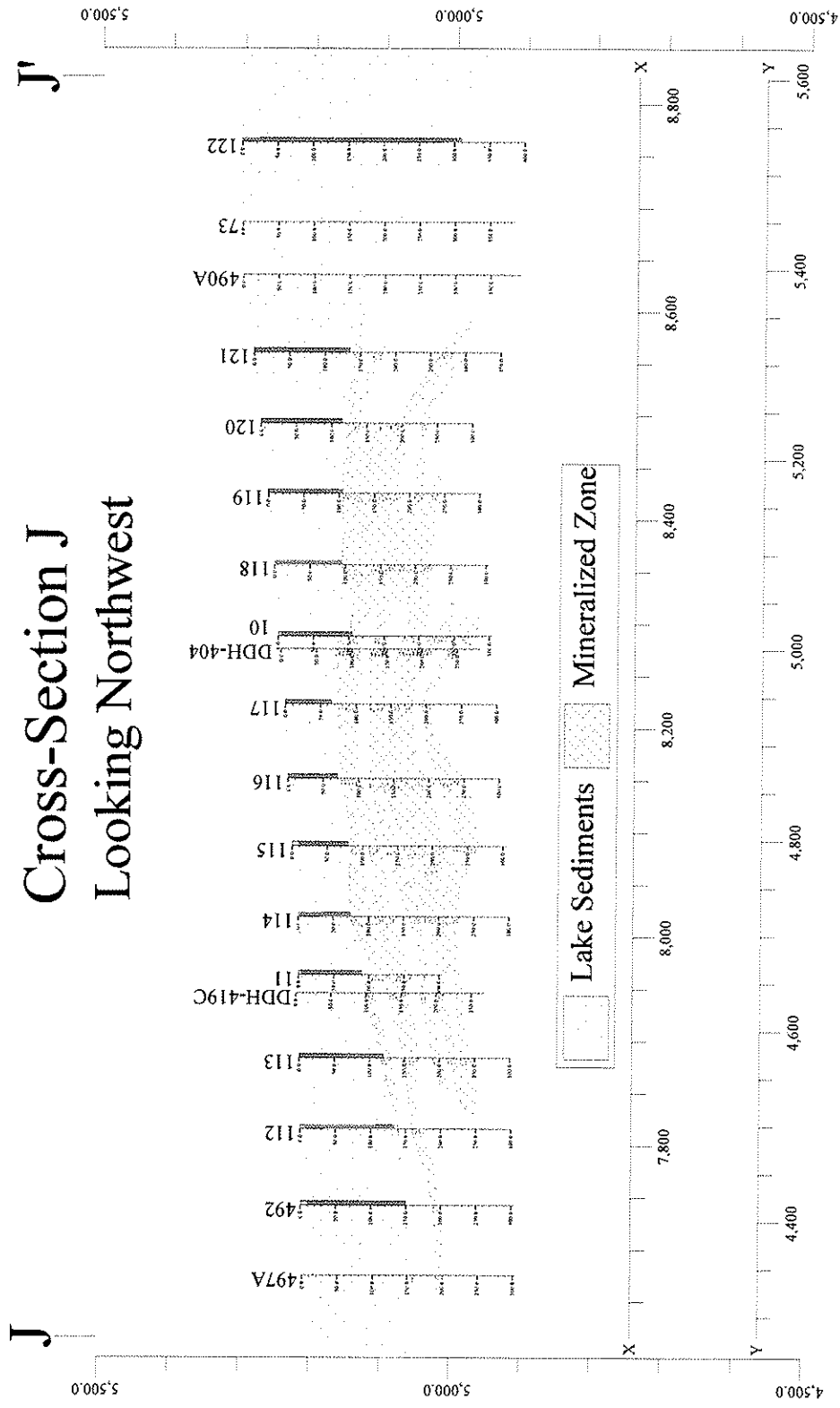


Figure B-3.

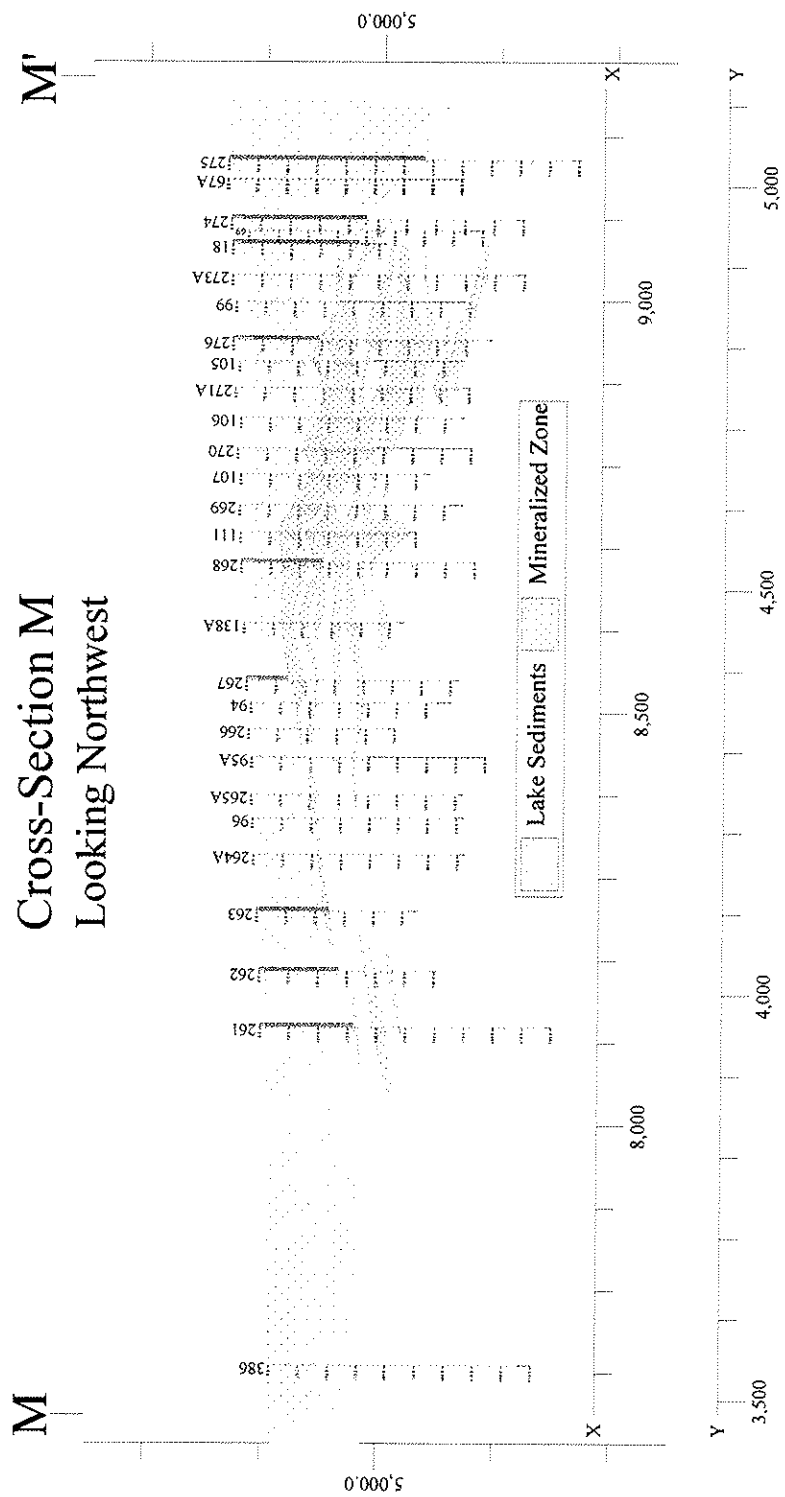


Figure B-4.

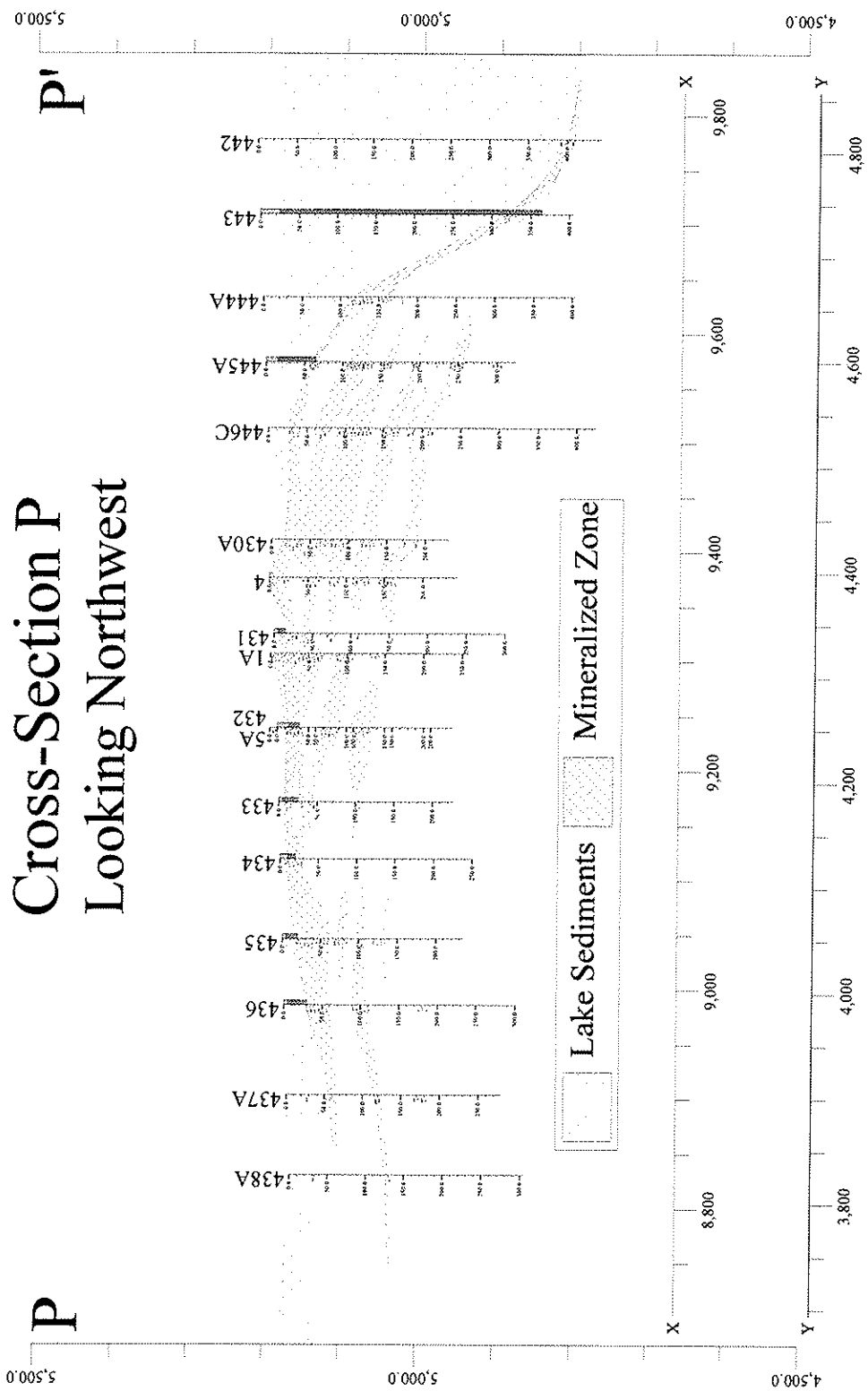


Figure B-5

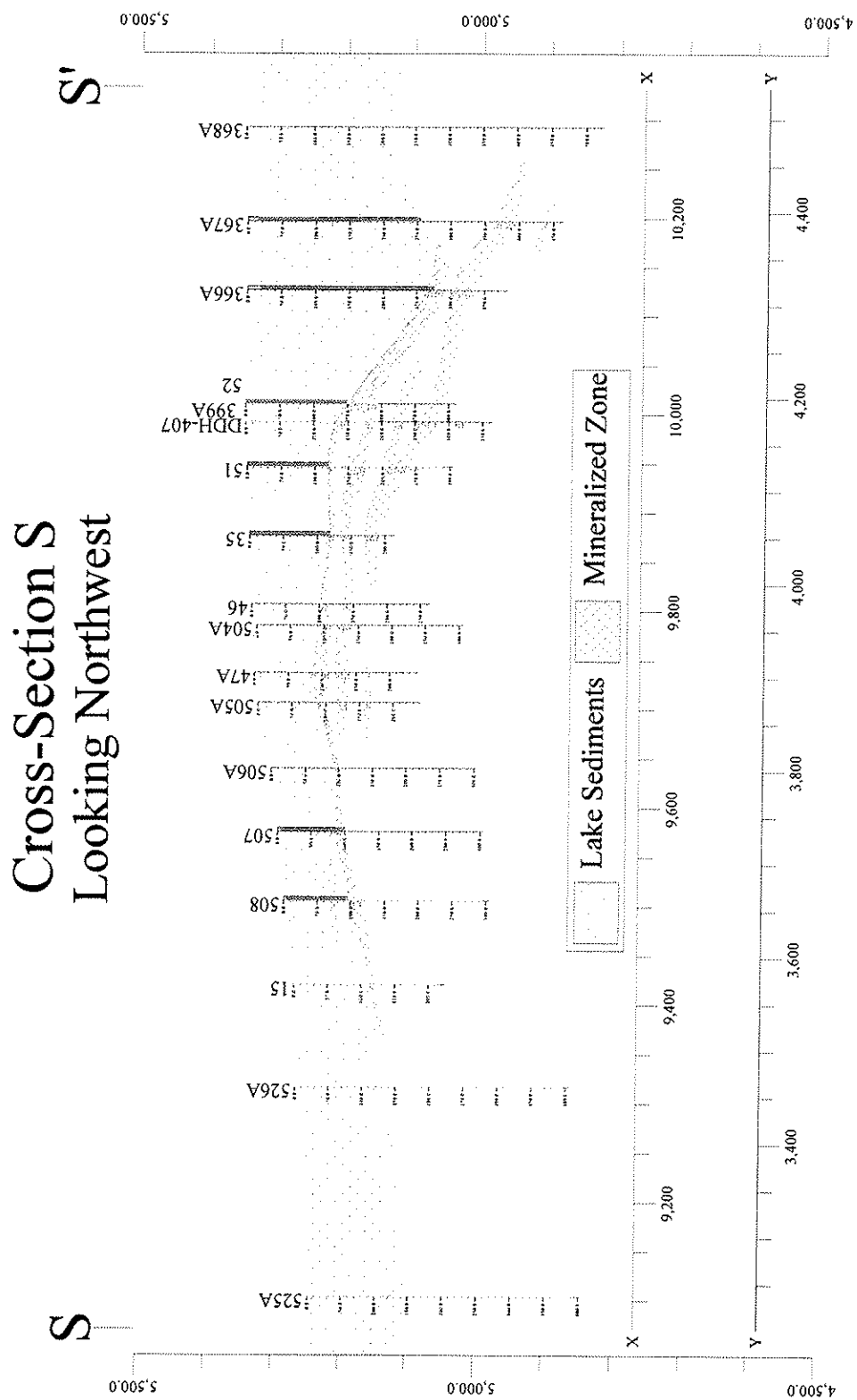


Figure B-6

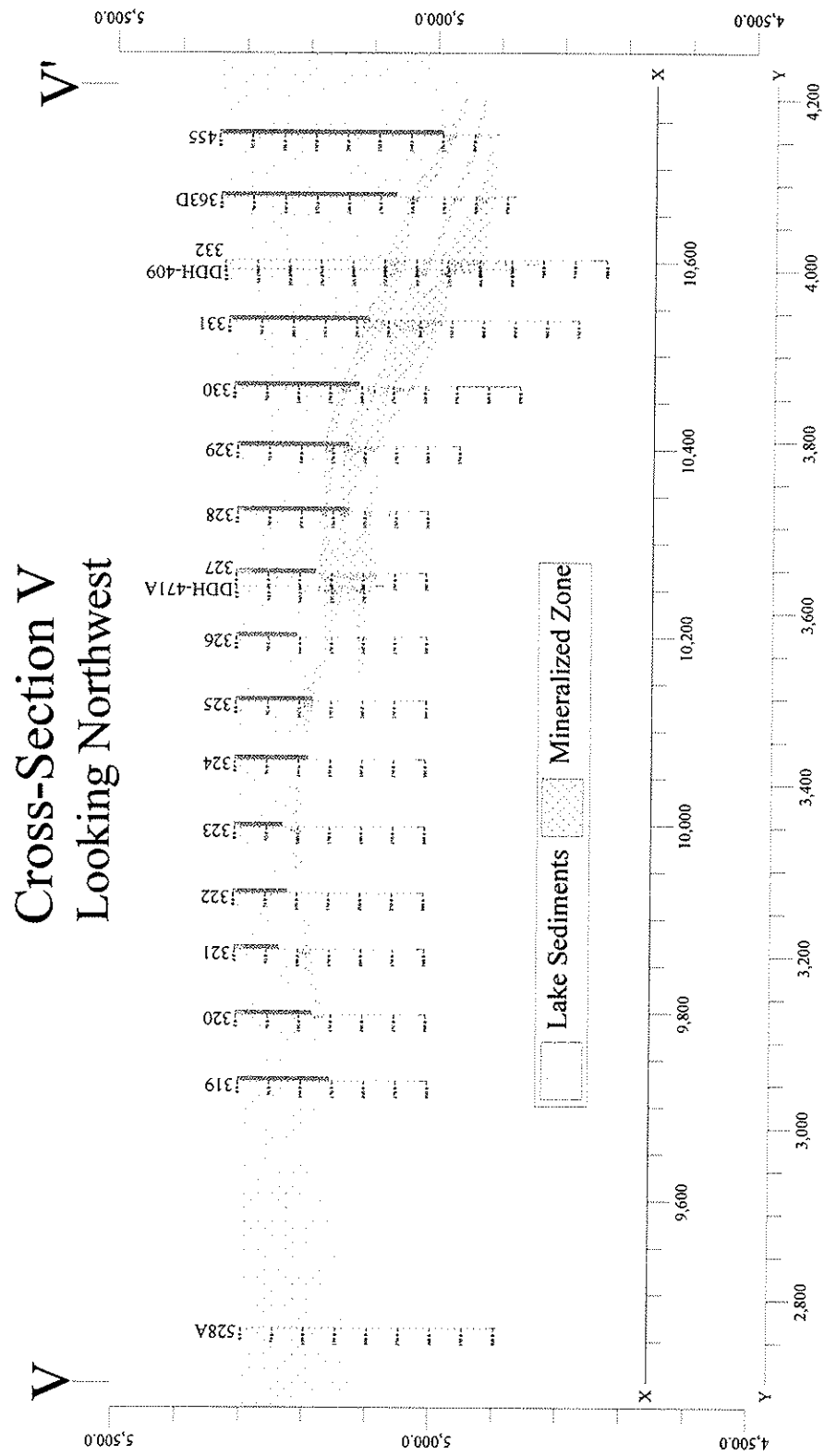


Figure B-7.

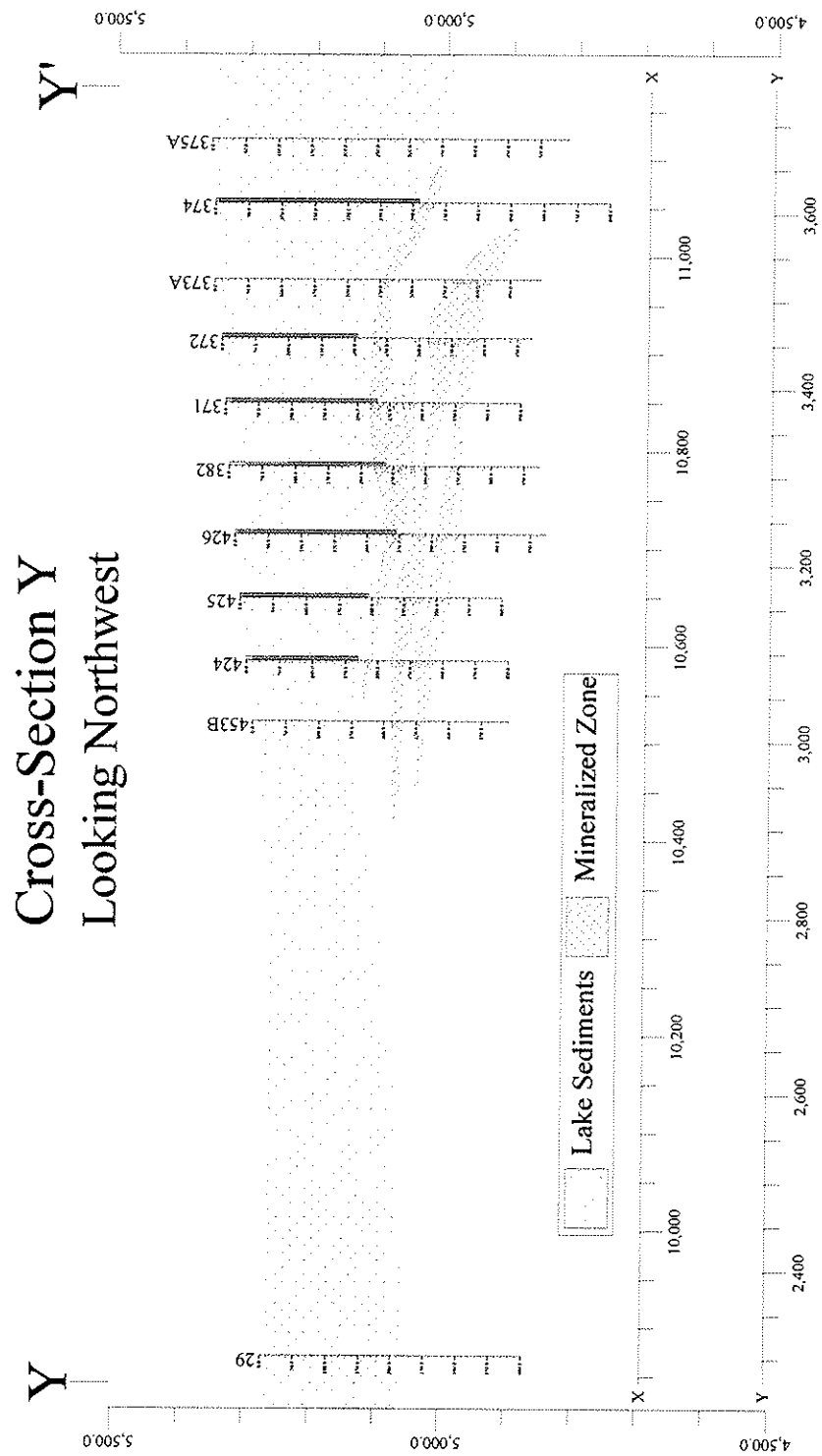


Figure B-8.

# **Cross-Section 4** Looking Northeast

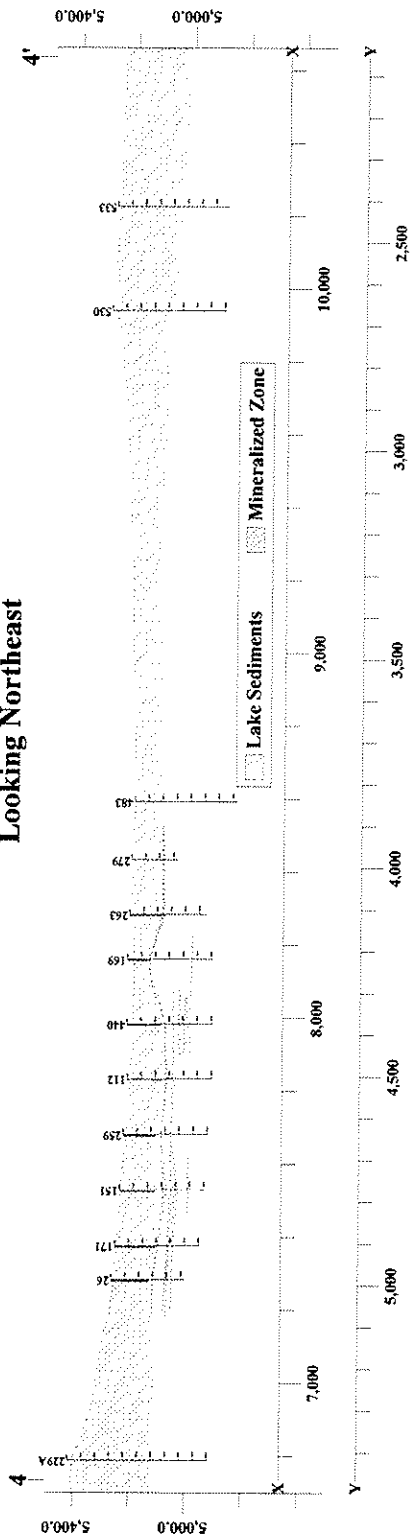


Figure B-9.

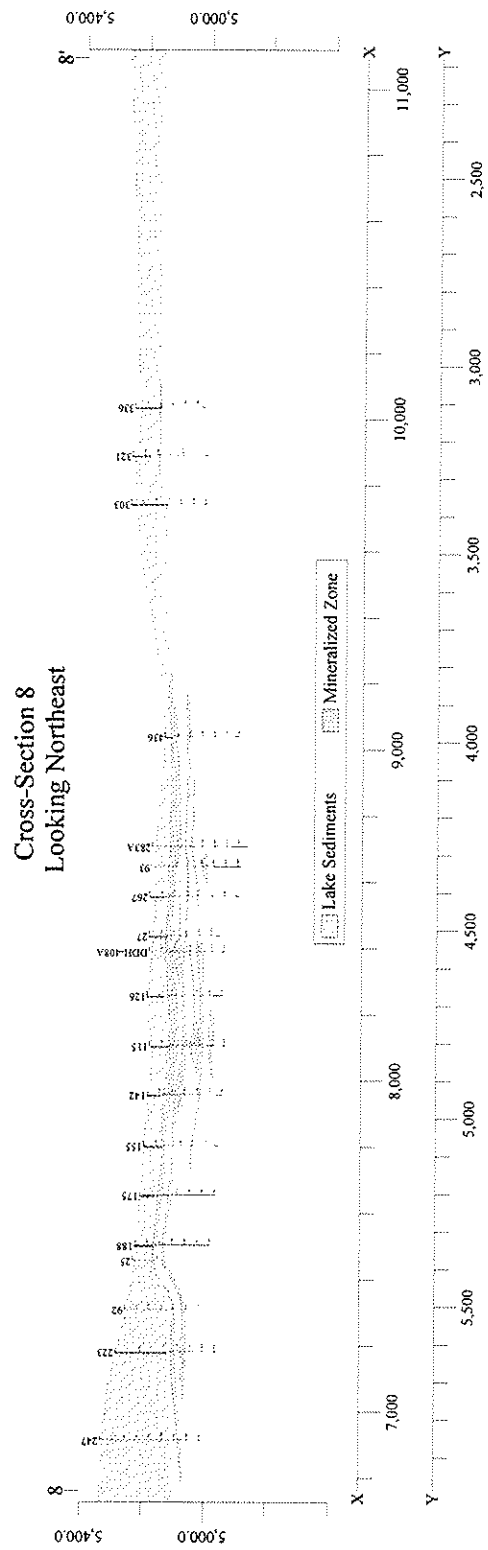


Figure B-10.





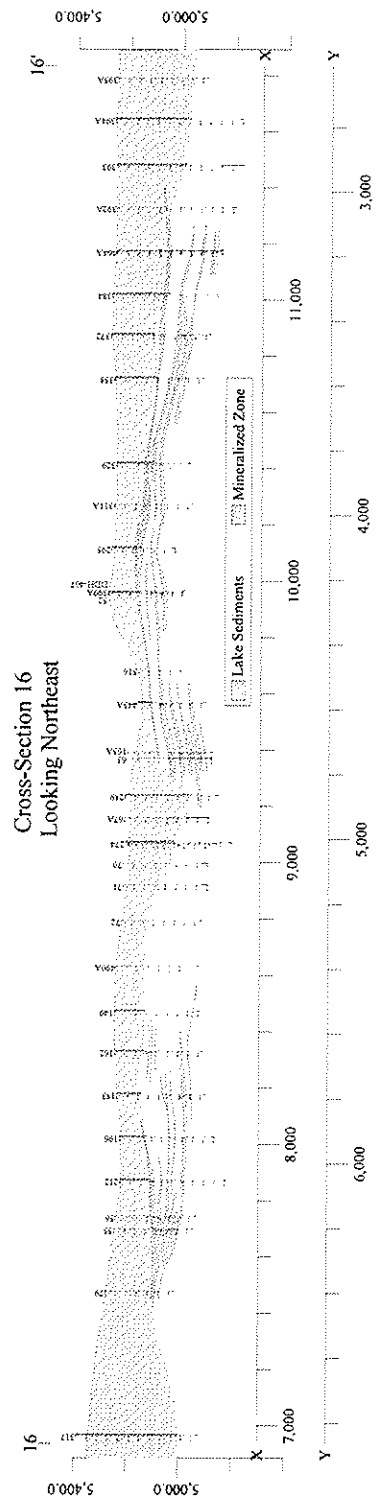


Figure B-12.