# Bronco **(Ag, Cu, Pb, Zn, Fe)**

**Summary**
Beginning in 2005, Eagle Plains Resources Ltd. has carried out regional exploration for Zn-Pb deposits throughout the northern Mackenzie Mountains. During the 2005 to 2007 period a large amount of geological and geochemical data was acquired, compiled and interpreted.

**Prospecting Permits**
Eagle Plains Resources holds a significant ground position in the northern Mackenzie Mountains consisting of 32 prospecting permits and 7 claim groups. The Bronco Prospecting Permit 7030 was obtained in 2006 and following the discovery of several significant showings during fieldwork that year, Prospecting Permits 7317, 7318, 7319, 7320 were acquired. These permits are located on NTS map sheets 105O15 and 105O16, approximately 230 km southwest of Norman Wells, NWT

Drilling at the Bronco Project 2007

**2007 Field Work**
The latest phase of the work on these permits was carried out in 2007 and is the subject of this technical report. 2007 field activities began mid-June and concluded at the end of August. A base camp in the central area of the region was established at Willow Handle Lake, which was supplied by fixed wing aircraft out of Norman Wells.

The diamond drill equipment was flown into the project area by helicopter from the Canol Road, 70 km to the south. Field crews stationed at the Willow Handle Lake camp were flown to the project area by helicopter. Up to 30 field personnel were active on the project, with most of them employed by Bootleg Exploration Inc, a wholly owned subsidiary of Eagle Plains Resources Ltd. Contractors were hired for specialized geology and management functions as well as geophysicists, environmental workers, diamond drillers, and personnel involved in aviation, pad building, environmental and wildlife monitoring, staking and line-cutting. Academic geologists from the University of Alberta,

Laurentian University and UBC were also involved in the program working on projects with students or as consultants to Eagle Plains.

The 2007 exploration program consisted of diamond drilling, geological, geochemical and geophysical work on the five Prospecting Permits comprising the Bronco Project.

**Geology**

The project area is underlain by Proterozoic to Mesozoic rocks which correlate with similar strata hosting significant mineral deposits in the region. Proterozoic rocks belonging to the Mackenzie Mountain Supergroup and the Windermere Supergroup underlie the exploration area and are well exposed in the eastern part of the northern Mackenzie Mountains. Black shales abound in a large extension of the Selwyn Basin, called the Misty Creek Embayment, forming a major feature within the project area.

The Misty Creek Embayment is flanked by Proterozoic to Paleozoic carbonate rocks which are extensively exposed in the Bronco prospecting permits. A suite of large Northwest trending granitic plutons lie to the Southwest of the exploration area. A number of significant to world class mineral deposits are found in the district around the Bronco showings.

**Other Deposits**

Important sediment-hosted exhalative (SEDEX) Zn-Pb deposits occur within the Selwyn Basin lying to the south of the project area. The most noteworthy is the world class Howard's Pass Deposit (2007 Ore Reserves listed as 86.6 Million Tonnes Indicated grading 4.93% Zn, 1.73% Pb and 215.4 Million Tonnes Inferred grading 4.71% Zn and 1.48% Pb) several smaller but still significant deposits are found at MacMillan Pass, 80 km south of the Bronco area. These are the Tom deposit (15.7 million tonnes Inferred grading 7.0% Zn, 4.6% Pb, and 49.1 g/tonne Ag) and the Jason deposit(10.1 million Tonnes Inferred grading 7.4% Zn, 6.5% Pb and 79.9 g/tonne Ag). Significant carbonate hosted Zn-Pb deposits such as Gayna River and Goz Creek (no current 43-101 reserves listed) are hosted in platformal to transitional carbonate rocks that underlie a broad arc through the central part of the northern Mackenzie Mountains. Red bed copper deposits such as the Redstone Copper Deposit at Coates Lake (33.6 Million Tonnes Inferred grading 3.92% Cu and 9 g/tonne Ag) occur in Proterozoic rocks to the Southeast of the Bronco project area. Finally, the world class Mactung tungsten deposit (6.1 Million Tonnes Indicated Ore Reserves grading 1.2%WO3), is associated with Cretaceous intrusive rocks which lie near MacMillan Pass.

**Bronco, Mustang and Golf Ball Exploration**

The 2007 Bronco exploration program focused on the 7030 Permit, the site of a mineralized corridor containing a number of new Zn-Pb-Ag showings including the Bronco, Mustang, and Golf Ball. These showings belong to a narrow zone, approximately 7 km in length, containing numerous mineral occurrences that were deposited during a large-scale fluid event plumbed by regional structures and hosted by limestone of the Sekwi Formation.

Exploration focused on Prospecting Permit 7030 began in early June with a geological crew mapping stratigraphy and prospecting along the mineralized trend between Bronco and Golf Ball Showings. A 1:10,000 scale mapping program concentrated on the main trend of Zn-Pb-Ag mineralization. This elongate trend of multiple showings is the product of a widespread fluid event that produced sphalerite, galena, and tetrahedrite mineralization. The mineralizing fluids exploited the highly folded and faulted limestone of the Sekwi Formation and were trapped by local impermeable units and reducing zones within the Sekwi Formation as well as by the regional aquitard created by the overlying Hess River shales.

At the start of the program a grid was surveyed and picketed over the Bronco showing area, by Ridge Resources, a contractor based in Smithers, BC. The baseline of this grid was later extended to the Golf Ball area and picked by Bootleg Exploration Inc. personnel. Line spacing over the Bronco and Mustang showings were 50 m and away from the showing area spacing was 100 m between cross lines extend perpendicular to the baseline. Cross lines were picketed every 25 m using wooden laths and grid coordinates were marked with aluminum tags affixed to the pickets. The lines. An extensive soil sampling program was carried out over the grid area following the picketed lines. Soil samples were collected every 25 m along the lines and positions at the start and end points of the line were recorded from hand held GPS readings which were also taken at sample points approximately every 250 m along the line. Soil sample data was entered into a hand held Palm Pilot and downloaded into the main database in camp. Soil samples were dried and shipped to the lab in sealed sacks. Initial soil samples were sent to Accura Assay Laboratories in Yellowknife but later all samples were sent to Global Discovery Labs in Vancouver.

Anomalous Zn values occur in numerous locations near the Bronco and Golf Ball showings. These anomalies correlate with outcrop and float occurrences of sphalerite and galena showings within the Sekwi Formation limestone in most instances. Reconnaissance geochemical sampling for silt and contour soils covered selected areas on Permit numbers 7317, 7318, 7319 7320 and the Yukon Claims .

Most of this work was to follow-up areas of stream sediment anomalies or areas of favorable geology.

Exploration targets were carbonate hosted and SEDEX style deposits in all of these areas.

A geophysical survey program, contracted to Aurora Geosciences Ltd., was carried out over the Bronco and Mustang mineralized areas and along the mineralized trend down the valley as well as over the Golf Ball showing area. Gravity, magnetic and horizontal loop electromagnetic surveys were performed over the grid area. Gravity, HLEM and magnetometer measurements were taken along the base and cross lines every 25 m.
HLEM readings were taken using a 100 m coil separation. Results of the three different survey methods were inconclusive and do not appear to correlate with mineralization.

**Diamond Drilling**

Wooden platforms for drill pads and helicopter pads were built on the Bronco and Mustang showings by MinConsult contractors. A two week diamond drilling program was carried out on the Bronco Permit (7030) and 888 m of NQ drill core were drilled in three drill holes at the Bronco showing and two drill holes on the nearby Mustang showings.

Geochemical analyses of 499 split core samples were completed by Eco Tech Laboratories of Kamloops, British Columbia while all other geochemical analyses were completed by Global Discovery Labs of Vancouver, British Colombia.

Zn-Pb-Ag-Cu mineralization in drill core is patchy and weak but is irregularly scattered throughout a large interval following a major structure upward and transverse along a folded and faulted region. The best base metal drill intersections are at the Bronco showing where drill hole BR07001 contains a 6.6 m interval grading to 2.7 % Zn in one intersection while farther down the hole there is a interval grading 2.1% Pb over 3.0 m. These intersections correlate with the surface mineralization exposed in the Bronco showing. Elevated silver values were encountered at the Mustang showing, where diamond drill intersections grading 1.0 m of 124 g/t Ag and 4.0 m grading 42.4 g/t Ag in DDH BRO7004 as well as 9.0 m of 13.3 g/t Ag in drill hole BR07005.

Although the drilling did not encounter ore grades, it does show that: sulphide bearing fluids were reactive with the limestone host rocks of the Sekwi Formation; dolomitization and limited silicification accompanied mineralization; pyrobitumen, a hydrocarbon residue marking a paleo-reducing environment, flooded the altered and fractured rocks; sulfide mineralization strongly correlates with the pyrobitumen-rich areas.

**Conclusions**

The 2007 exploration season for the Bronco Permit Group had the dual purpose of investigating showings discovered in the 2006 season and reconnaissance work to look for new showings. The corridor of mineral occurrences in the Bronco Permit 7030 was covered by an extensive mapping, soil, and silt sampling program while the Bronco and Mustang showings were drill tested.

The soil and silt sampling has proven to be a useful tool for focusing prospecting efforts. All of the known showings on the Bronco and adjacent permits have distinct soil and silt anomalies. There are a number of cases where currently unexplained prominent soil or silt anomalies occur.

In the Bronco and Mustang showings there is a correlation between mineralization and folding caused by west verging thrust faulting. Observations from mapping and drill core show that the influx of fluids has caused a large amount of dissolution and precipitation of mineralization. The abundance of mineralized occurrences in the Bronco corridor and the close association of structure and dissolution textures suggest a substantial fluid event concentrated by structures. These deep rooted structures provided a conduit for fluids to migrate into the deformed and reactive limestones of the Sekwi Formation. Less

permeable shales of the Hess Formation overlie the Sekwi Formation and create a barrier for mineralizing fluids.

**Recommendations**

Additional mapping and prospecting is required in a number of locations around the Bronco Permit to delineate the extent of known showings as well as developing newly discovered showings. The surrounding permits require more reconnaissance work in areas with prospective horizons and geochemical anomalies. The SEDEX potential of the basinal rocks underlying the area needs to be explored in 2008 using regional silt samples and heavy mineral sampling to delineate anomalous areas for detailed geological and geochemical follow-up.

Total expenditures for the 2007 exploration program covering prospecting permits 7030, 7317-7320, and the Yukon Claims were $1,452,204.22. These expenditures are in excess of those required to hold the permits for their three year term and all the excess expenditures can be credited toward assessment expenditures required on any claims staked within or adjacent to their boundaries before the permits lapse.

This property is available for option and represents a project of merit.

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