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Quintette

~~June 1997~~ Monthly Report
for the
Northeast-Central Region
by
Bob Lane, Regional Geologist, Prince George

HIGHLIGHTS

Kemess. A road block was constructed on the ORAR by the Tsay Keh Dene band at Black Pine. Royal Oak is attempting to have the blockade removed by court injunction (Note: the blockade was removed voluntarily by the Tsay Keh Dene on July 4 and discussions between representatives from Royal Oak, First Nations and the provincial government will hopefully resolve the outstanding issues).

Presented Exploration Overview talk in Tumbler Ridge, on June 4, as part of the informal Coal Symposium, organized each year by Barry Ryan (GSB-Victoria). Approximately 30 locals took in the talks which focused on coal fluidity (Ryan), Jade (Lefebure), Arctic coal (Rick Richardson), and updates of Quintette (Helene Lukey) and Bullmoose (Dan McNeil) operations.

MINES and MINE DEVELOPMENTS

QR. The Main pit has been shut down temporarily while engineering studies are completed on an area of possible failure in the ramp area. In-pit reserves contain an estimated 6,000 to 8,000 ounces of gold. Stockpiles contain approximately 2 months of millfeed. Underground development on the Midwest zone will enable mining to proceed, from the 985 level, within weeks. Development of the Southlobe pit (West zone) has not yet begun. Exploration and underground development is ongoing (see below).

Quintette. Toured the Shikano pit and Babcock (Little Windy-phase 1) developments with Ryan and Lefebure on June 5. La Prairie Contracting (Tumbler Ridge) will mine and stockpile approximately 500,000 tonnes of met. coal while they are constructing about half of the 9.5 km mine access road to the Babcock site. At the time of our visit about 150,000 tonnes of coal had already been stockpiled. The project is scheduled to be in full operation by 1998 with projected annual production of 2 million tonnes. Reserves will be mined out by 2003. Quintette's total planned clean coal production for 1997 is 4.4 million tonnes.

Bullmoose. An exploration/geotech drilling program, consisting of 50-60 rotary holes each averaging approximately 80 metres in length, is planned to get underway in September on the West Fork deposit.

Hannandor. The Hannandor place gold property, owned by Gallery Resources, is located 22 km east of Quesnel and consists of 12 placer leases that cover a portion of Lightning Creek, as well as benches north and south of the current channel. Project consultant Terry Garrow provided a tour of operations on June 19. Production in 1997 began on May 10. Pay gravels are trucked from the North Moustique pit several kilometres to the plant site in the old Hannandor pit. The 150

MINES and MINE DEVELOPMENTS

- 1) **Babcock (Quintette).** The Babcock development, managed by Quintette Operating Corporation, is immediately S-SE of the Shikano Pit. Phase 1 of the project includes development and mining of the Little Windy Starter Pit, which will be completed by September or October, 1997 (480,000 - 500,000 tonnes total will be mined from the starter pit). By March 31, 1998 - Shikano, Wolverine and Deputy pits will be closed (reserves exhausted). The current schedule of mining runs to 2003.
- 2) **Kemess South.** Over 400 workers are currently onsite. Construction is more than 50% complete. Top soil is being stripped from the pit area; the roof is on the mill and service complexes; tailings dam construction is steadily progressing, and; mining equipment is arriving daily, including seven 260 tonne Euclid diesel-electric haul trucks that are on their way from the factory in Guelph, Ontario. Logging of the powerline will resume following the approval of amendments to the logging plans and the issuance of the Licence to Cut for the centre section of the 384 km right-of-way. An injunction by First Nations has been sought to prevent any further work on the powerline access corridor. The application will be heard in court on June 16-17th.
- 3) **Mount Polley.** The mine is in the final preparations prior to start-up and should be fully operational by the end of June. The crusher has been processing waste which is being used to upgrade mine roads; staff are now housed in the combined concentrator/office complex; drilling of the starter pit has resumed, and; exploration/definition drilling is underway on the southeast margin of the existing pit design. The tentative date for official startup is August 22.
- 4) **QR.** Operating at approximately 1400 tpd! Development of the Midwest underground zone is progressing very well, but mining of the zone has not yet begun. Once underground mining commences higher grade ore from the development will be blended with lower grade Main zone ore. Mining is continuing at the Main Zone open pit with gold grades in the 3-4 g/t range.
- 5) **Willow Creek.** The Willow Creek Coal property consists of 33 coal licenses in Willow Creek area. It is being explored by Pine Valley Coal Ltd. To date 523 exploration drill holes, totaling 34,500 metres, have been completed in Willow Creek coal block. In addition, 50 percussion holes have been drilled on claims to the SE in the Pine Pass area. The mineable reserve now stands at 15 million tonnes of low grade ('semi-soft') metallurgical coal and thermal coal. An Environmental Impact Assessment and Mine Permit application are expected by June or July, 1997. If the project receives the necessary permits, construction will commence in May of 1998 with startup scheduled for October-November, 1998. The planned 600,000 tonne per year operation has an estimated minimum mine life of 20 years.

The deposit occurs on the north side of Willow Creek and the coal measures are hosted by the Gething Formation within the east limb of the Pine River anticline. The coal occurs in 8 major seams (estimated combined thickness is about 21 metres) which are gently dipping and are affected by minor block faulting. The coal will be mined from three pits: North, North-Central and South-Central blocks. The mine will employ approximately 85 to 100 workers.

Winter drilling was completed by the first week of April. A 2-tonne bulk sample, is planned for July, using large diameter drilling. Geotech drilling will also take place this summer.

BL MR - May '97

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MEMORANDUM

**June 1998 Monthly Report
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MINES AND MINE DEVELOPMENTS

Kemess. Toured site June 16th with Ken MacDonald and Kemess Mines Inc. chief geologist Mike Hibbits. The mill was processing from 20,000 to 24,000 tons per day through one mill circuit and the second circuit was beginning to coming on stream. The mine should reach full production in six to eight weeks. Metal recoveries are typically about 70% for both copper and gold. A 42 cubic yard P&H shovel and two 260 tonne haul trucks are mining ore. Waste from the pit is being removed by an L1400 loader and hauled to the tailings via four 260 tonne trucks. A 3-metre lift is being added to the dam. An estimated 6 - 7 million tonnes of ore will be mined in 1998. Concentrate is being produced, but none has left the mine site yet (stored in conc bags in the mill). Details of the concentrate haulage route are still being worked out.

Bullmoose. Visited June 11th with Tom Schroeter and Barry Ryan. Dan McNeil, Mine Geologist provided a tour of the site. Estimated production for 1998 = 2 million tonnes. Bullmoose will get a premium for any coal stockpiled at the Ridley terminal by March 31/99; however the mines stockpile area at the port is full of coal (est 400,000 tonnes) and it is waiting for boats to deliver it to Japan. In 1999 when the supply contract goes to 1.6 million tonnes from 2 million tonnes there will be significant layoffs; the mine is also reaching a point where the strip ratio has been significantly reduced and will require a smaller workforce. Current employment is about 360; an additional 12-15 are employed by Arrow Trucking. Last winters exploration program on West Fork totaled approx. 2000 metres in 54 perc. holes and cost approximately \$98,000. The future of the mine is the West Fork deposit, but it may not be economically feasible. A tentative plan would be to mine at a rate of 1.5 million tonnes for 5 years at an average strip ratio of 10:1 current mining is from several locations toward the south end of the South Fork pit where the strata (including coal seams) steepens to a maximum of 65 degrees; 6 seams are mined: A1, A2, B, C, D and E. The mine uses four 2100 P&H shovels and 14 CAT haul trucks, 11 of which are 789B model and have a capacity of 172 tonnes. Very successful reclamation--several prominent dumps have been recontoured, layered with mud (top soil) and seeded.

Quintette. Visited on June 10 with Tom Schroeter and Barry Ryan; Kevin Sharman, Mine Geologist, provided a tour of the site. Estimated production for 1998 = 3 million tonnes. Masa pit was mined out about 6 weeks ago. Shikano pit has about 6-8 weeks worth of reserves before it is completely mined out. Production from Babcock will replace production from Shikano...in time; mining is currently well behind schedule at Babcock. Prefeasibility on Window pit (zone): will be examined (hopefully) this year by way of a 25-hole percussion and large diameter coring program and bulk sampling (\$500,000 program if approved). Window contains a resource of approx. 10 million tonnes and would require prestripping. U/G potential of Babcock will likely be closely reviewed; there are an estimated 50 million product tonnes in Babcock U/G. Babcock consists of 5 main seams that are flatter than elsewhere on the property. Herman Mountain also has some potential for future production: 8 million tonnes at a strip ratio of 8.5:1.

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Coal from Quintette that was delivered to the Rupert port on or before March 31 received a price of \$20 over world price—Quintette received the premium for approx. 700,000 tonnes. Road to Big Windy should be completed by mid July; the area has to have 50 ft of overburden and waste rock removed to get at the top coal seam.

Talisman drilled 2 deep wells near Windy area: both were successful gas holes penetrating the Triassic.

Mount Polley. Imperial Metals continues to seek concessions from all stakeholders in order to improve the economic viability of it's two operating mines in central B.C.

EXPLORATION MONITORING

JD (Creek zone). Visited on June 17th with Ken MacDonald. Antares consultants Paul Hawkins and John Pukas were on site. A seven-hole drill program had recently been completed on the Creek zone totaling 3,404 ft (CZ98-09 to CZ98-15). Six holes are on the same section; the other was drilled "down dip" and perpendicular to the apparent strike of the zone (which is about 170°). The drilling has generated very little new information about the zone, however there were some encouraging assay results, including a 3.0 metre intersection in ddh CZ98-12 that averaged 18.7 g/t Au (in this interval a narrow, mineralized sulphide-carbonate vein is parallel to the core axis). Mineralization occurs primarily in narrow veins and stringers. The mineral assemblage is sphalerite-galena-chalcopyrite-pyrite in a gangue consisting of calcite-epidote-chlorite+/-quartz. Sphalerite-rich intervals are associated with the highest gold grades.

Wall rock is plag. phyric andesite flows and lesser lapilli tuffs that display pervasive epidote and/or hematite in both the groundmass and plag phenocrysts.

Antares has suspended exploration drilling until at least August 1. During July they will further compile all data from the Creek zone, before selecting their next drill targets. The company is very concerned about the future of the Cheni mine road and if the road is decommissioned and/or deactivated they will likely cease their activity in the Toodoggone. Antares is in support of a road users committee.

Firesteel. Partners Don Bragg and Dave Javorsky have located some interesting base metal mineralization west of the Firesteel River. Numerous trenches uncover mineralized breccia that turned out to be calcrete or till cemented by calcium carbonate; however several trenches uncovered the source of the mineralized boulders—encouraging stockworks of tetrahedrite-galena-sphalerite with pyrite in dolomitized and locally silicic limestone. Manganese and iron oxides locally form thick rims on altered and mineralized bedrock and/or float. Old timbered shafts, that date back to work done by Cominco(?) in the 1950s(?), were also located.

Thor-Marmot. San Telmo Resources were moving into the property to begin drilling this volcanic redbed copper prospect on June 18th; staging from the north end of the Moose Valley air strip; camped at Johanson Lake.

Wishaw Lake. Ava Resources (Larry Ellis): access to the Wishaw Lake quarry is being upgraded, including new bridge over Bastille Creek and improvement of several soft sections of the road. Arrangements have been made between Ava and several stone processing outfits (including the "Italians") for preliminary testing of the quartzite. Mr. Ellis provided a copy of a recent technical report which summarizes the sound structural integrity of the quartzite.

Fort. On June 26th Tom Schroeter and I met with Ken Carter (Ascot Resources), and consultants Giles Peatfield and Chris Stargaard, and project and field staff Jay Page and Scott Trigaskas, to examine the Fort copper-molybdenum property west of Ft. St. James. The main Specularite Lake