EXPLORATION AND MINING IN KOOTENAY-BOUNDARY REGION, BRITISH COLUMBIA

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SUMMARY AND TRENDS

Activity and output levels for exploration and mining in the Kootenay-Boundary Region of British Columbia began to rebound in late 2009 from the global economic recession. This general positive trend continued through 2010, although raising funds for exploration continued to be a challenge.

Significant industry events in 2010 included:

- approval of the expansion at the MAX molybdenum mine (Roca Mines Inc) to a production rate of 1000 tonnes per day (Phase 2 Expansion);
- strong gold drill intersections on properties near Nelson, including the Kena (Sultan Minerals Inc), Star (Valterra Resource Corporation) and Kenville (Anglo Swiss Resources Inc);
- underground exploration drilling programs at the Silvana mine (Slocan Silver project, Klondike Silver Corp), the J&L (Merit Mining Corp) and the MAX mine (Roca Mines Inc);
- drilling for Sullivan-style lead-zinc mineralization in the East Kootenays at the Iron Range property (Eagle Plains Resources Ltd and Providence Capital Corp) and at Hawkins Creek (Klondike Gold Corp);
- new discoveries of mineralized showings on the Silver Fox property (Kootenay Gold Inc) that have affinities to known economic copper-silver mineralization in Proterozoic rocks in western Montana;
- improved prices for metallurgical coal;
- increased production at four of the five metallurgical coal mines in the Elk Valley (Teck Coal Limited);
- a large advanced exploration drilling program at the Bingay Creek coal property, representing the largest Chinese investment to date in a southeast British Columbia coal exploration project (Centremount Coal Ltd);
- the largest ever exploration rotary drilling program at Fording River Operations (Teck Coal Limited);
- a large rotary drill program on the Burnt Ridge North coal property in the Elk valley (Line Creek Phase 2 Expansion Project, Teck Coal Limited); and,
- increased production at the Elkhorn gypsum mine (CertainTeed Gypsum Canada) and the Mount Brussilof magnesite mine (Baymag Inc).

As in previous years, past producing, historic metal mines and camps were the sites of significant exploration programs, spurred mainly by high gold and silver prices. These included projects in the Slocan, Greenwood, Nelson, Salmo and Rossland areas. The Nelson area in particular witnessed resurgence in exploration activity in 2010.

Exploration expenditures in 2010 are projected to total about $28.0 million, nearly double the 2009 level (Figure 1). This total was divided between metals (about 52%) and coal (about 48%). This increase was in part due to the expansion of the region's area, through the addition of the Revelstoke district (west half of the former Columbia Forest District), in 2010.

Exploration expenditures in 2010 can be broken down into stages as shown in Figure 2. The commodities with the highest exploration expenditures were coal and gold.

An estimated 114 000 m of exploration drilling was carried out in the Kootenay-Boundary Region in 2010 (Figure 3). Of this total, approximately 35% represented drilling for metals, compared with about 65% for coal (not including drilling in active pits).

In addition to the exploration expenditures,

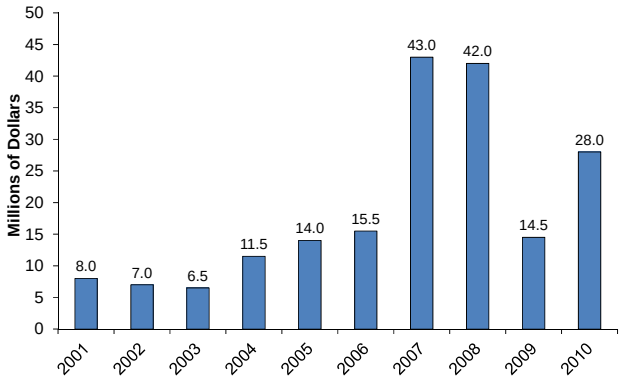

Figure 1. Annual exploration spending in millions of dollars, 2001 to 2010, Kootenay-Boundary Region. The Revelstoke area was added to the region in 2010, which accounts for part of the increase in 2010 over the previous year.

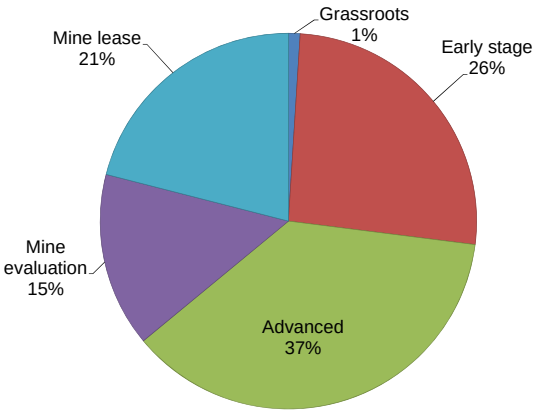

Figure 2. 2010 expenditures by exploration category, Kootenay-Boundary Region.

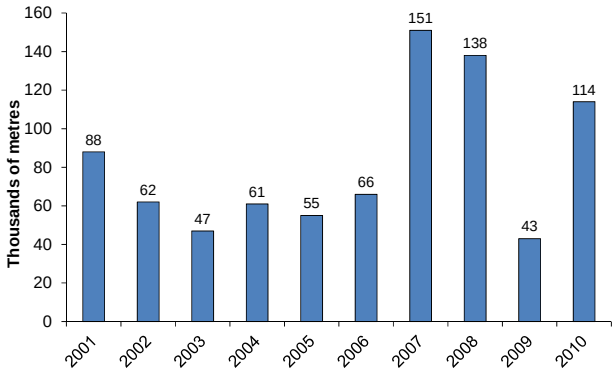

Figure 3. Annual exploration drilling in thousands of metres, 2001 to 2010, Kootenay-Boundary Region. Note that prior to 2004 production (in-pit) drilling at operating coal mines was included in the total.

approximately $6 million was spent on mine development in the Kootenay-Boundary Region in 2010. All of this was at Roca Mines Inc's MAX underground molybdenum mine.

MINES

The Kootenay-Boundary Region hosts five large coal mines, and smaller operations for molybdenum and various industrial minerals including gypsum, magnesite, silica and dolomite. Selected current producing mine locations in the Kootenay-Boundary Region are shown on Figure 4 and basic information concerning these operations is listed in Table 1 and outlined below.

METALS

Roca Mines Inc's **MAX** underground molybdenum mine at Trout Lake is the only metal mine in the region. The MAX mine (Figure 5) began shipping concentrate in November 2007 and achieved full commercial production in April 2008 at a rate of 72 000 tonnes per year. In April 2010, Roca received approval to expand its production rate to 1000 tonnes per day (Phase 2 Expansion). At the time of writing, the MAX operation was temporarily shut down due to underground sill pillar stability problems.

The MAX deposit (MINFILE 082KNW087) contains measured plus indicated resources of 42.9 Mt grading 0.20% MoS_2 using a 0.10% MoS_2 cut-off. The Phase 1 mine has been producing from the HG zone, with an initial resource of 280 000 tonnes (measured and indicated) grading 1.95% MoS_2 at a 1.00% cut-off. The Phase 2 expansion is based on a measured plus indicated resource of 1.7 Mt at 0.73% Mo.

Metasediments of the Paleozoic Lardeau Group at the MAX property are intruded by the Cretaceous Trout Lake stock. The deposit is a pipe-like quartz vein stockwork that extends from surface to a depth of at least 1000 m, in which molybdenite occurs mainly along margins of veins. The vein stockwork is best developed in close proximity to the margins of the intrusive body and its associated offshoots.

Potential exists for additional high-grade zones, as well as a deeper large porphyry system. Underground exploration drilling was carried out in 2010 to evaluate the Ethyl and East zones, to the southwest and northeast of the existing workings, respectively (Figure 6). Both are potentially high-grade zones in close proximity to the active mining area.

Roca also carried out underground development at the MAX mine in support of its approved Phase 2 expansion.

COAL

Teck Coal Limited, the world's second-largest supplier of seaborne metallurgical coal, operates five large open-pit coal mines in the Elk Valley area. Projected combined total 2010 coal production at the company's **Coal Mountain**, **Elkview**, **Line Creek** (Figure 7), **Greenhills** and **Fording River** operations is approximately 22.4 Mt of clean coal (predominantly metallurgical). This compares with an actual production total of 18.0 Mt in 2009. The mines directly employ 3160 people and make a major contribution to the East Kootenay and provincial economies.

Proven and probable raw coal reserves at the five mines are listed in Table 1; in addition there is a very large resource base in the southeast British Columbia coalfields. With the exception of Coal Mountain Operations, all of the mines produce from multiple seams. Currently productive coal seams are typically medium-volatile bituminous in rank, and are low in sulphur. Clean metallurgical product coal ash contents are typically in the 8.6 to 9.5% range. Other attractive quality parameters include favourable ash chemistry, which contributes to a high Coke Strength after Reaction (CSR).

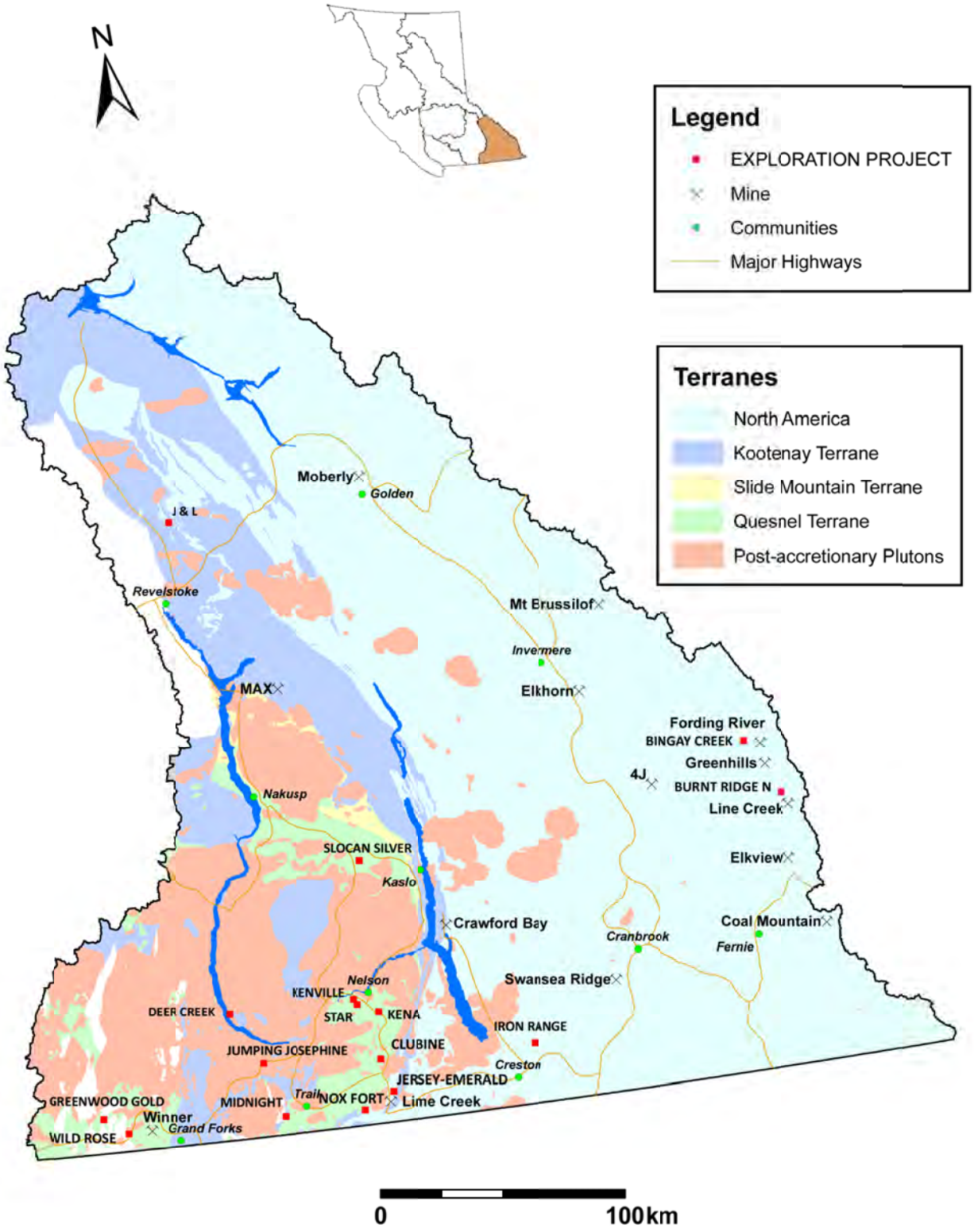

Figure 4. Locations of selected operating mines and exploration projects, Kootenay-Boundary Region, 2010. On-lease exploration drilling programs at three operating mines (MAX, Elkview and Fording River) are not indicated separately.

TABLE 1. SELECTED PRODUCING MINES, KOOTENAY-BOUNDARY REGION, 2010

Mine	Operator	Commodity	Employment	Actual 2009 Production	Projected 2010 Production	Proven and Probable Reserves as of December 31, 2009 or as indicated	Reference for Reserves
Coal							
Coal Mountain	Teck Coal Limited	Metallurgical coal	242	2.36 Mt clean coal	2.21 Mt clean coal	22.0 Mt	Annual Information Form
Elkview	Teck Coal Limited	Metallurgical coal	877	4.18 Mt	5.42 Mt	231.7 Mt	Annual Information Form
Fording River	Teck Coal Limited	Metallurgical coal	1050	6.04 Mt	8.0 Mt	249.9 Mt	Annual Information Form
Greenhills	Teck Coal Limited	Metallurgical coal	564	3.4 Mt	4.2 Mt	84.9 Mt	Annual Information Form
Line Creek	Teck Coal Limited	Metallurgical and thermal coal	431	2.02 Mt	2.6 Mt	20.2 Mt	Annual Information Form
Metals							
MAX	Roca Mines Inc	Mo	80		456 t Mo	Measured and indicated resource of 1.7 Mt at 0.73% Mo (December 2009)	Application to amend permit (Phase 2 Expansion)
Industrial Minerals (selected)							
4J	Georgia-Pacific Canada Inc	Gypsum					
Crawford Bay	Imasco Minerals Inc	Dolomite					
Elkhorn	CertainTeed Gypsum Canada	Gypsum	17	389 000 t	450 000 t		
Lime Creek	Imasco Minerals Inc	Limestone					
Moberly	HCA Mountain Minerals (Moberly) Ltd	Silica sand					
Mount Brussilof	Baymag Inc	Magnesite	32	135 000 t	155 000 t		
Winner	Roxul (West) Inc	Gabbro (mineral wool)	3		80 000 t		

Figure 5. Adit #2 at Roca Mines Inc's MAX molybdenum mine near Trout Lake.

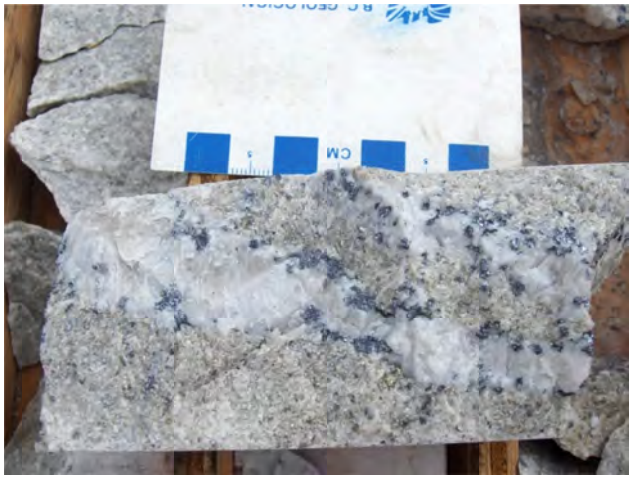

Figure 6. Molybdenite-bearing quartz veining from the Ethyl zone at the MAX molybdenum mine.

Figure 7. Burnt Ridge South pit at Teck Coal Limited's Line Creek mine.

Commercially mineable coals in southeast British Columbia belong to the Jurassic-Cretaceous Mist Mountain Formation (Kootenay Group), and are contained in three structurally distinct coalfields, known collectively as the East Kootenay coalfields, in the Front Ranges of the Rocky Mountains. The more northerly Fording River, Greenhills and Line Creek operations are in the Elk Valley coalfield, which is formed by the Alexander Creek and Greenhills synclines. The Elkview and Coal Mountain operations are in the Crowsnest coalfield, which occupies the Fernie Basin, a broad synclinorium that has hosted coal mining since before the turn of the twentieth century. The third coalfield, known as the Flathead coalfield, consists of four relatively small, structurally isolated erosional remnants of Kootenay Group exposures. A portion of the Crowsnest coalfield and the entire Flathead coalfield are now off limits to development based on a 2010 government decision to prohibit mining and oil and gas-related activities in the

Flathead River drainage.

INDUSTRIAL MINERALS

The Kootenay-Boundary Region continues to be an important source of industrial minerals and related products, including gypsum, magnesite, silica sand, mineral wool, dolomite, limestone, tufa, flagstone, rip rap, aggregate and smelter slag. Selected larger operations are described below, listed in Table 1 and shown on Figure 4.

Baymag Inc produces high-quality magnesite from its open-pit mine near **Mount Brussilof** (MINFILE 082JNW001), in the Rocky Mountains northeast of Radium (Figure 8). The operation has been in production since 1982. The deposit represents a large magnesium alteration zone in Cambrian carbonates. Ore is transported by truck to the company's processing facilities in Exshaw, Alberta for production of magnesium oxide (magnesia or MgO) and magnesium hydroxide (MgOH). Production in 2010 is projected to be approximately 155 000 tonnes, an increase over 2009. Magnesite has a variety of environmental, industrial and agricultural uses. A recent and growing market for a water treatment (environmental) application has been the Alberta oil sands mining operations, where magnesia in suspension is used to promote precipitation of silica from waste waters.

There are two gypsum mines in the Kootenay-Boundary region, both producing from a Devonian evaporate unit in the Rocky Mountains. CertainTeed

Figure 8. The Mount Brussilof magnesite mine, Baymag Inc.

Gypsum Canada operates the **Elkhorn** mine (MINFILE 082JSW021) east of Windermere, where production is mainly from the Elkhorn West Extension pit. Production is projected to be approximately 450 000 tonnes in 2010, a 15% increase over 2009. Georgia-Pacific Canada Inc operates the **4J** gypsum mine (MINFILE 082JSW009) southeast of Canal Flats.

Silica sand is produced from a friable Ordovician quartzite in the Rocky Mountains by HCA Mountain Minerals (Moberly) Ltd at the **Moberly** mine (MINFILE 082N 001) and plant, north of Golden. Stockpiled material was shipped to several markets in 2010.

Imasco Minerals Inc produces a variety of crushed and ground rock products at its Creston Operations Plant at **Sirdar** from limestone, dolomite, granite and quartzite rock types. Raw sources for these products include an underground dolomite mine at **Crawford Bay** (MINFILE 082FNE113), a limestone quarry at **Lime Creek** (MINFILE 082FSW307) southeast of Salmo, and a granite quarry at **Sirdar** (MINFILE 082FSE072).

The **Winner** gabbro quarry (MINFILE 082ESE265) west of Grand Forks supplies feed for the Roxul (West) Inc mineral wool insulation manufacturing plant in Grand Forks. Production at the Winner quarry in 2010 totalled 80 000 tonnes.

MINE EVALUATION PROJECTS

Teck Coal Limited continued baseline environmental and other studies at **Line Creek Operations' Phase 2 Expansion Project**. The expansion, which encompasses Mount Michael (MINFILE 082GNE022) and Burnt Ridge North (MINFILE 082JSE001), will extend Line Creek's production activities to the north of currently active pits. The project is in the pre-application stage of the Environmental Assessment Process, and an application is anticipated in 2011. Burnt Ridge North was the site of a large fill-in rotary exploration drilling program in 2010 (see below).

Teck Coal Limited also continued studies at Elkview Operations' proposed **Baldy Ridge** development (MINFILE 082GNE016). The Baldy Ridge proposal, which is below the threshold for the Environmental Assessment Process, has been scaled back for the time being to a single proposed pit known as the BR2. An application for the BR2 pit is anticipated in 2011.

EXPLORATION HIGHLIGHTS

Selected 2010 mineral and coal exploration projects in the Kootenay-Boundary Region are listed in Table 2, and their locations are shown on Figure 4. Generally the selected exploration programs involved expenditures in excess of $250,000 in 2010 on work that included mechanized ground disturbance. The information in this section was derived mainly from discussions with

TABLE 2. SELECTED EXPLORATION PROJECTS, KOOTENAY-BOUNDARY REGION, 2010

Property	Operator	MINFILE	NTS	Commodities	Target Type	Work program	Metres of drilling (approximate in some cases)
Bingay Creek	Centremount Coal Ltd	082JSE011	82J/2W	coal	sedimentary	G, RC, DD, TR	18809
Burnt Ridge North	Teck Coal Limited (Line Creek Operations)	082JSE001	82G/15W, 82J/2W	coal	sedimentary	A, G, RC, EN	8148
Clubine	Klondike Gold Corp	082FSW200	82F/3W	Au, Ag, Cu	vein	DD	600
Deer Creek	Kootenay Gold Inc and Northern Vertex Capital Inc		82E/8E	Au	vein	DD	500
Elkview	Teck Coal Limited	082GNE017	82G/15W	coal	sedimentary	RC, EN	10793
Fording River	Teck Coal Limited	082JSE010	82J/2W	coal	sedimentary	RC, RC-BU	36000
Greenwood Gold	Grizzly Discoveries Inc	082ESE/034, 147, 174, 082ESW231	82E/2E, 2W, 3E	Au, Ag, Cu, Mo, Zn, Pt	vein, skarn, intrusion-related	P, G, GC, MG, EM, AB-EM	4000
Iron Range	Eagle Plains Resources Ltd and Providence Capital Corp	082FSE014 to 028	82F/1W	Au, Zn, Pb, Fe, Cu	IOCG, SEDEX	DD	3337
J & L	Merit Mining Corp	082M 003	82M/8E	Au, Ag, Pb, Zn	sedimentary replacement	UG-DD	3500
Jersey-Emerald	Sultan Minerals Inc	082FSW009, 010, 011, 059, 218	82F/3E	W, Zn, Pb, Mo, Au	skarn (W, Au), sedimentary replacement (Pb, Zn), porphyry (Mo)	GC, TR, DD	555
Jumping Josephine (JJ)	Astral Mining Corp and Kootenay Gold Inc	082ESE275	82E/8E, 82F/5W	Au	vein	DD, TR	5500
Kena	Sultan Minerals Inc	082FSW237, 332, 379	82F/6W	Au, Cu	porphyry	IP, DD	1400
Kenville Gold Mine (Nelson Mining Camp project)	Anglo Swiss Resources Inc	082FSW086	82F/6W	Au, Cu	vein, porphyry	AB-EM, DD, UG-DD	5850
MAX	Roca Mines Inc	082KNW087	82K/12E	Mo	porphyry	UG-DD	1500
Midnight (Rossland project)	West High Yield (W.H.Y.) Resources Ltd	082FSW119, 116, 117	82F/4W	Au, Mg, Ni	vein, ultramafic	DD	1698
Nox Fort	Jaxon Minerals Inc	082FSW002	82F/3W	Au, Bi, Te, Pb, Zn, W, Mo	intrusion-related	DD	1581
Slocan Silver	Klondike Silver Corp	082FNW013, 043, 050	82F/14W	Ag, Pb, Zn	vein	G, P, GC, TR, DD, UG (100m)	1750
Star	Valterra Resource Corporation	082FSW083, 084, 294	82F/6W	Au, Ag, Cu	vein, porphyry	P, DD	3000
Wild Rose	Golden Dawn Minerals Inc	082ESE116	82E2E	Au, Cu, Ag	vein, porphyry	DD	2000

Work Program Abbreviations:

A = access (trail, road construction on claims); AB-EM = airborne electromagnetics; AB-MG = airborne magnetics; AB-RD = airborne radiometrics; BU (X tonnes) = bulk sample (weight in tonnes if known); CD = condemnation drilling; CQ = coal quality testing; CT = carbonization test (coal); DD (Xm)= diamond drilling totalling X metres; EN = environmental baseline studies/monitoring, remediation work; FS = feasibility studies; G = geology, mapping etc.; GC = geochemical sampling (rock, soil, silt etc.); GD = geotech drilling; GP = geophysics (general); IP = Induced Polarization; 3D-IP; MG = magnetics; MK = marketing (primarily for industrial mineral products); MS = metallurgical studies; OB = overburden drilling; OP-BU = open-pit bulk sample; P = prospecting; PD = percussion drilling; PF = pre-feasibility studies; R = reclamation; RC = reverse circulation drilling; TR = trenching; UG (Xm) = X metres of underground development; UG-BU= underground bulk sample; UT = UTEM; VLF; WT = washability test (coal)

exploration project staff during site visits, as well as company reports, presentations, press releases and websites.

Gold Projects

BOUNDARY DISTRICT

Grizzly Discoveries Ltd's extensive **Greenwood Gold** Project was active for the third consecutive year. Grizzly Discoveries has assembled what it claims is the largest ever land position in the Boundary District. The company's holdings extend from east of Greenwood to west of Anarchist Summit, and cover an area roughly 70 km by 25 to 30 km.

The project area is underlain by a range of rock units, including the Paleozoic Knob Hill and Anarchist groups, Triassic Brooklyn Formation, and Eocene Penticton Group. Intrusions of Jurassic, Cretaceous and Eocene rocks are widespread.

There are many known mineral occurrences encompassing varying types of mineralization within the overall project area, including gold-quartz veins, polymetallic veins, skarns and intrusion-related precious metals. The common themes for Grizzly Discoveries' targets are the proximity of intrusive rocks, notably Eocene syenites, and the presence of gold. High gold prices and the proximity to Kinross' Buckhorn mine and concentrator in northern Washington are stimulating exploration interest north of the border.

Activities in 2010 included diamond drilling, prospecting, sampling, mapping and ground geophysics at various locations throughout the project area. The properties and areas drilled in 2010 included: the Copper Mountain area, including the Prince of Wales showing; the Motherlode past producer (Figure 9); the Sappho past producer; the Ket 28 prospect; and, the Dayton past producer.

Figure 9. The Motherlode open-pit mine (past producer) near Greenwood, part of Grizzly Dsicoveries Ltd's Greenwood Gold Project holdings.

The Copper Mountain area is 13 km west of Greenwood. It is a gold-silver vein-related target (with or without copper and zinc) in hornfelsed rocks in proximity to intrusive contacts. A strong gold intersection at the Prince of Wales target (MINFILE 082ESE255) was reported as a new discovery. The Motherlode (MINFILE 082ESE034) is a copper-gold skarn past producer 3 km west of Greenwood. Production occurred at various time intervals up until 1962. Mineralization at the Sappho (MINFILE 082ESE147), 10 km south of Greenwood, includes copper, silver, platinum and gold in massive to semimassive sulphide veins, and is related to alkalic and ultramafic intrusions. Ket 28 (MINFILE 082ESW210) is a gold prospect 8 km west of Rock Creek. Mineralization is associated with quartz veins and pyrite-bearing silicified breccia zones adjacent to a southeast-northwest trending shear zone. Drilling at the Dayton (MINFILE 082ESW022), 6 km north of Bridesville, was designed to follow up a significant gold soil-geochemical anomaly. Gold mineralization at the Dayton occurs in quartz veins, and is also associated with copper-gold skarns; all mineralization is spatially related to alkalic intrusions.

Golden Dawn Minerals Inc undertook a late season diamond drilling program on the **Wild Rose** property, 3.5 km south of Greenwood. Gold-silver-copper mineralization is hosted by the Wild Rose (quartz) vein (MINFILE 082ESE116), which has been explored through underground workings and previous drilling campaigns. A main focus of the 2010 drilling program was a system of lower grade, bulk tonnage gold-copper targets and potential in zones to the east and west of the old workings. The Deadwood gold zone, an example of one of these zones, trends northwest-southeast and coincides with a magnetic anomaly. Previous drilling defined an extent of up to 2000 m.

Activities at the large **Jumping Josephine** or **JJ** property (Figures 10 and 11), undertaken by joint-venture partners Astral Mining Corporation and Kootenay Gold Inc, have been centred on a 2003 discovery of high grade gold mineralization known as the JJ Main zone. The JJ Main zone (MINFILE 082ESE275) is 22 km west of Castlegar and just north of Highway 3. Mineralization in this zone is hosted by monzonitic rocks of the Jurassic Nelson plutonic suite, and may be related to a later phase Jurassic intrusion that does not reach surface. Occurrences of Eocene Coryell syenite are also widespread. Mineralization (chiefly pyrite and arsenopyrite) occurs with quartz in stockworks, vein breccias, ladder veins and sheeted veins, and is associated with a prominent northeast trending shear zone.

Figure 10. Diamond drilling on Astral Mining Corporation and Kootenay Gold Inc's Jumping Josephine property.

Figure 11. Pyrite, arsenopyrite and gold (inside red circles) in quartz vein material, Jumping Josephine property drill core.

The mineralized structure in the vicinity of the JJ Main zone has been intersected in trenching and drilling over a strike length of greater than 900 m and at up to 240 m vertical depth in drillholes. There is a 300 m long core zone of higher grade material. Geology, geophysics and geochemistry had previously suggested that the host structure may extend for up to 2.5 km, and drilling in 2010, including work at the Highway zone, confirmed that the structure is continuous over a strike length of greater than 2 km.

Drilling in 2010 also targeted suspected parallel zones to the JJ Main, based on aeromagnetic and soil geochemical anomalies. Drilling of the Cedar zone, to the northwest, confirmed the presence of quartz stockwork and vein breccias with pyrite and arsenopyrite. Similarly, drilling has provided further evidence for a parallel zone to the southeast of the JJ Main (Ford zone).

The potential for deep seated, lower grade mineralization is also being considered.

West High Yield (W.H.Y.) Resources Ltd carried out diamond drilling on the **Midnight** property, part of its Rossland project on the western outskirts of the town of Rossland. Past gold producers on the company's property include the Midnight, OK and IXL (MINFILE 082FSW119, 116 and 117). Gold mineralization is associated with ultramafic contacts and a regional tectonic boundary, and consists of gold-bearing quartz-carbonate veins, in contrast to the more typical Rossland-style sulphide-rich veins.

The major effort in 2010 was focused on the Midnight Crown-granted mineral claim. Work on the Midnight property consisted of in-fill drilling, with the objective of generating a gold resource estimate.

The property is also being evaluated for its potential for magnesium and nickel associated with ultramafic rocks. Further work on the magnesium potential of Record Ridge, for which a resource calculation and metallurgical studies were recently completed, is being planned for 2011.

WEST KOOTENAYS

Sultan Minerals Inc's **Kena** property (Figures 12 and 13) is 8 km south of Nelson and includes the Gold Mountain, Kena Gold, Copper King and South Gold zones. Porphyry-style gold and gold-copper mineralization is associated with both the Jurassic Elise Formation volcanic rocks (Rossland Group) and the comagmatic Jurassic Silver King porphyry intrusions. The belt comprising these zones trends northwest-southeast and is subparallel to and east of the Silver King shear zone.

Gold-copper mineralization in the belt referred to above occurs in bulk tonnage (low grade) settings, particularly in the Copper King zone, while gold mineralization occurs in both bulk tonnage and bonanza

Figure 12. Diamond drilling on Sultan Minerals Inc's Kena property near Nelson. Consulting geologist Linda Dandy is in the foreground.

Figure 13. The Copper King zone at Sultan Minerals Inc's Kena property.

(high grade) settings. All these styles of mineralization have been a target of recent exploration efforts.

Gold mineralization tends to occur in four settings: a high-grade corridor, associated with volcanics and intrusives; volcanic-intrusive contact areas; bonanza shoots; and, bulk tonnage haloes around shoots.

The main objective of the 2010 drilling program was to demonstrate the continuity of the high grade gold corridor. The corridor is believed to be associated with a

deep seated shear structure to the west of the Gold Mountain (MINFILE 082FSW379) and Kena Gold (MINFILE 082FSW237) zones. The structure is characterized by silicification and sericite alteration, as well as mafic dikes, and has been traced with a magnetometer survey over a 7 km strike length. Mineralization has now been intersected in twelve core holes and one trench over a strike length of 5.65 km. The average grade of these intersections is 15.65 g/t Au over a minimum 2.0 m width. High grade gold veins are often surrounded by an envelope of lower grade mineralization.

Drilling in 2010 also targeted copper-gold mineralization in the Copper King zone (MINFILE 082FSW332). Resampling and analysis of historic drill core from this zone was also carried out.

Valterra Resource Corporation's gold-silver-copper **Star** project is 7 km southwest of Nelson, and includes both the Star and the Toughnut properties. The project area contains five known gold zones in proximity to the prospective Silver King shear zone, including the Star and Eureka past producers, the Alma N zone (immediately to the south of the Star), the Toughnut occurrence and the Gold Eagle zone further to the southeast.

Production from the Eureka mine (MINFILE 082FSW084) between 1905 and 1954 totalled about 9000 tonnes of ore averaging over 2 g/t Au, 125 g/t Ag and 1.77% Cu. Gold-silver-copper mineralization at the Star project is hosted by both the Jurassic Elise Formation volcanic rocks (Rossland Group) and Jurassic Eagle Creek pluton, and has both alkali porphyry (disseminated) and shear-hosted (higher grade) affinities. Mineralization consists mainly of pyrite, with or without chalcopyrite, within sericite and K-feldspar alteration zones.

Work in 2010 began with an airborne EM-MAG survey, followed by initial drilling on the Toughnut (MINFILE 082FSW294), Eureka and Star (MINFILE 082FSW083) zones. A zone anomalous in gold has now been outlined through drilling over a potential strike length of greater than 3.5 km. A second-phase drilling program started late in the year, with a focus on the Gold Eagle and Alma N zones. Drilling at the latter zone in 2009 demonstrated approximately 250 m of mineralized strike length to a maximum depth of 135 m.

New geological and geophysical compilations have also identified a number of potential target areas, some of which are apparently related to intersections of north-south and east-west structures. These target areas will be evaluated through drilling.

Anglo Swiss Resources Inc was active again on its **Kenville Gold Mine** property, roughly 6 km west of Nelson. The past producing Kenville mine, also known as the Granite-Poorman, operated intermittently between 1890 and 1954, with the bulk of production prior to 1912. More than 180 000 tonnes of ore was mined, yielding over 2 tonnes Au and 861 kg Ag, along with significant amounts of copper, lead and zinc. Production averaged more than 17 g/t Au, from a series of northeast dipping quartz veins.

Hostrocks at the Kenville (MINFILE 082FSW086) are within the Jurassic Eagle Creek plutonic complex which is intruded into, and may be the intrusive equivalent of, basalts of the Jurassic Elise Formation of the Rossland Group. Jurassic (Nelson suite) and Tertiary intrusive rocks are also common in the immediate area. The property lies on the Silver King shear zone.

Exploration at the Kenville in 2010 included surface and underground diamond drilling. The company's objectives have been to explore for extensions of known ore-grade material and new mineralization, focusing on the sulphide-bearing, mesothermal quartz veins. The current focus is to follow up on recent drilling, which has yielded vein intersections at depth and to the south and southwest of the underground workings. Some of the known veins have been extended over 200 m to the south. New mineralized veins have also been intersected.

The Kenville Gold mine property is part of a larger Anglo Swiss claim area, referred to as the Nelson Mining Camp. This area contains numerous examples of gold, silver and base metal mineralization, including other past producers. One of the objectives of the overall Nelson Mining Camp program has been to identify potential deep source areas for known vein-style mineralization, as well as to assess potential for deep, disseminated mineralization. Work in 2010 on the larger claim area included an airborne EM-MAG survey, intended in part to assist in identifying targets of potential deeper mineralization.

Recent acquisitions contiguous with the Kenville Gold Mine property itself include the Silver Lynx zinc-lead-copper-silver property (MINFILE 082FSW378) and the Gold Hill silver-gold-copper property (082FSW092). Diamond drilling programs were carried out on both properties in 2010.

Jaxon Minerals Inc's **Nox Fort** property is an intrusion-related gold prospect with bismuth and tellurium located about 15 km southwest of Salmo. Known mineralization on the property includes the Bunker Hill mine (MINFILE 082FSW002), a minor past producer prior to 1942 of gold with tungsten, silver, molybdenum and zinc.

Mineralization on the Nox Fort property is hosted by quartz veins and skarn-altered rocks and is closely associated with the Bunker Hill intrusion, a possible sill related to the Cretaceous Wallack Creek stock. Pyrrhotite is the most common sulphide mineral, with lesser pyrite, galena and chalcopyrite. A significant portion of the known mineralization is associated with the north trending western contact of the Bunker Hill intrusion, which intrudes metasedimentary rocks of the Cambrian Laib Formation at the south end of the Kootenay Arc. Jurassic Rossland Group volcanic and sedimentary rocks on the hangingwall of the Waneta thrust fault occupy the northwest portion of the property. Two bodies of

ultramafic rock of unknown affinity also occur on the property.

The company believes that mineralization on the property, particularly in the vicinity of the Bunker Hill mine, represents a reduced, intrusion-related gold (RIRGD) system, perhaps analogous to deposits in the Tintina gold belt including the Fort Knox mine in Alaska. Thin, low-sulphide veins with a gold-bismuth-tellurium geochemical signature are characteristic of this type of system.

Drilling in 2010 was focused on the western contact of the Bunker Hill intrusive, an area with anomalous gold, bismuth and tellurium concentrations in soils. The target zone was the third level of the Bunker Hill mine, a lower elevation target than previously intersected.

Klondike Gold Corp followed up a successful 2009 drilling program on the past producing **Clubine** gold-silver-copper property near Salmo with another round of diamond drilling in 2010. Mineralization at the Clubine (MINFILE 082FSW200) is associated with a shear zone containing lenses of quartz and quartz-carbonate, as well as distinct veins. Hostrocks are part of the Jurassic Rossland Group. Drilling was intended to test along strike and downdip continuity of the shear zone and veins, including high-grade material, intersected the previous year.

At the **Deer Creek** property, 30 km northwest of Castlegar, Kootenay Gold Inc and Northern Vertex Capital Inc carried out a diamond drilling program to test gold-bearing zones discovered through airborne geophysics and trenching in 2009. Gold, along with minor copper, occurs in quartz veins, veinlets and fractures within north trending shear zones. Hostrocks are clastic and carbonate sedimentary rocks of the Paleozoic Mount Roberts Formation, which are intruded by Jurassic granitic rocks and Eocene syenites.

Base Metals Projects

WEST KOOTENAYS

Klondike Silver Corp's **Slocan Silver** project, east of New Denver, is in a rich historic silver-lead-zinc mining area. Klondike's holdings are divided into six areas or "camps", each of which encompasses past producers of vein-style mineralization. These include Sandon, Hewitt, Silverton Creek, Cody Creek, Payne and Jackson Basin. The company's Silvana mill at Sandon, a 100 tonnes per day concentrator, is operational and the company has an arrangement for a smelter to accept concentrates from the mill.

Mineral occurrences in the Slocan are hosted by sheared and brecciated argillite and slate of the Triassic Slocan Group, which are intruded by granodiorite and quartz monzonite dikes.

Exploration activities on the Slocan Silver project in 2010 were carried out both underground and on the surface.

Underground exploration was focused on the past producing Silvana mine (MINFILE 082FNW050), where drift development and diamond drilling were carried out. The 4625-level of the Silvana mine was extended to the west, in order to test the potential extension of the Silvana main lode structure, a major source of ore in the Slocan. The projected extension of the main lode into a gap of approximately 1.5 km between the Silvana mine and Silverton has not been tested up until now, but is presumed to have significant potential for mineralization. Drilling from a recently established underground drill station intersected a structure assumed to be the main lode in four holes. Quartz-carbonate veining is prevalent, with minor galena and sphalerite. Locating more strongly mineralized shoots is a high priority as the project moves forward.

Another ongoing objective of the underground program is to outline and recover ore-grade material in the range of thousands to tens of thousands of tonnes, and process it in the Silvana mill.

Surface work in 2010 included ground-based geophysics, soil geochemistry, trenching and drilling. The company's overall objective is to discover new lodes or extensions of known occurrences at various locations. IP geophysical surveys are proving to be very effective in seeing through unconsolidated cover. Diamond drilling to test two IP anomalies in the western part of the Hewitt camp was carried out late in the year. The objective was to see if these anomalies represented western extensions of the past producing Hewitt mine (MINFILE 082FNW065) lode structure. Another focus was the rich McLanders vein at the past producing Wonderful mine in the Sandon camp (MINFILE 082FNW043).

The **Jersey-Emerald** property, 10 km south of Salmo, was the site of significant work by Sultan Minerals Inc again in 2010. The property, which is situated near the south end of the Kootenay Arc, is host to a variety of different types and styles of mineralization. Replacement-style, stratabound lead-zinc mineralization is associated with Paleozoic carbonates. Tungsten is associated with the contact between Paleozoic sedimentary rocks and Cretaceous intrusions. It is hosted by both skarn and massive pyrrhotite bodies. Gold is also associated with skarn. Molybdenum-bearing, granitic intrusion-hosted quartz stockworks lie beneath some of the old tungsten mine workings and in some cases molybdenum is also associated with tungsten.

The underground Jersey lead-zinc and Emerald tungsten mines (MINFILE 082FSW009, 010, 011 and 218) closed in 1973. The Jersey mine was historically British Columbia's second largest lead-zinc producer, and the Emerald was Canada's second largest tungsten producer (Figure 14).

Figure 14. The Emerald open-pit mine (tungsten past producer) near Salmo on Sultan Minerals Inc's Jersey-Emerald property.

In 2009 Sultan Minerals acquired the rights to the past producing HB underground and Garnet open pit lead-zinc mines. The HB and Garnet adjoin the Jersey-Emerald property on the north side of Sheep Creek. The HB-Garnet mine (MINFILE 082FSW004 and 082FSW249), which closed in 1978, was the province's third largest lead-zinc producer.

Sultan produced a NI 43-101 lead-zinc resource estimate for the Jersey-Emerald in 2010. It includes an indicated resource of 1.9 Mt averaging 1.96% Pb and 4.10% Zn, using a cut-off grade of 3.5% combined Pb-Zn. This resource is located solely in the area of the old Jersey mine workings.

Exploration work in 2010 involved diamond drilling and trenching to test magnetic geophysical anomalies in the vicinity of the Garnet mine. Exploration was successful in extending mineralization, consisting of pyrrhotite associated with sphalerite, to the north of the Garnet open pit.

EAST KOOTENAYS

Eagle Plains Resources Ltd and Providence Capital Corp carried out a diamond drilling program on the **Iron Range** property, roughly 15 km northeast of Creston (Figures 15 and 16). Providence Capital holds the option to earn a 60% interest in the property. There are two settings for mineralization at the Iron Range. One is gold

Figure 15. Diamond drilling on the Iron Range property (Eagle Plains Resources Ltd and Providence Capital Corp).

Figure 16. View to the southwest from the Iron Range property. The Creston valley is in the far distance.

mineralization associated with iron oxide and copper along the Iron Mountain structure (also known as the Iron Range fault). These known occurrences (MINFILE 082FSE014 to 028) have possible affinities with iron oxide-copper-gold (IOCG) mineralization. The second style is sedimentary exhalative (SEDEX) mineralization associated with the contact between the lower and middle members of the Aldridge Formation (so-called Sullivan horizon) in the Proterozoic Purcell Supergroup. This latter style is analogous to the Sullivan mine orebody.

Diamond drilling in 2010 was generally focused on the potential SEDEX target near the south end of the Iron Range in an area of pervasive albite alteration. Encouraging results were obtained in terms of sulphide mineralogy, alteration, lithologies and textures that suggest proximity to a possible hydrothermal vent system at Sullivan time. The presence of gold and silver associated with sulphide mineralization has also been demonstrated in two drillholes, based on early analytical results.

Polymetallic Projects

WEST KOOTENAYS

Merit Mining Corp carried out underground drilling at the **J&L** gold-silver-zinc-lead property, 35 km north of Revelstoke. The polymetallic mineral zones at the J&L (MINFILE 082M 003) are stratabound, massive sulphide-bearing units. There is uncertainty as to the origins of the J&L, but mineralization has been compared to structurally controlled, carbonate replacement-type deposits.

The property lies near the north end of the Kootenay Arc. Mineralization is hosted by the late Proterozoic to early Cambrian Hamill Group metasedimentary rocks. Mineralization occurs in two significant zones, one of which, the Main zone, is described as a stratiform, structurally controlled precious metal and polymetallic-base metal massive sulphide deposit. The Main zone has been exposed over 850 m in underground drifting. Previous underground drilling has defined the zone over a 1.4 km strike length, while on suface it has been traced for a total of 1.6 km. It averages 2.5 m in thickness. The subparallel Yellowjacket zone is a siliceous zinc-lead-silver stratabound zone in the immediate hangingwall of the Main zone.

Drilling in 2010 focused on the Main zone, which has a historic (pre-NI 43-101) resource. Drilling is intended to allow a compliant resource estimate, as well as to potentially increase the known extent of the zone. Further underground drifting and cross-cut extensions are planned in future, prior to further drilling.

East Kootenay Coalfields Projects

Centremount Coal Ltd carried out a large diamond and rotary drilling program on the **Bingay Creek** property, 20 km north of Elkford on the floor of the Elk Valley, and within the Elk Valley coalfield (Figures 17 and 18). This program was the largest exploration project in the region in 2010, and also represents the largest investment of Chinese capital in a southeastern British Columbia coal exploration play to date. At Bingay Creek (MINFILE 082JSE011) the coal-bearing Mist Mountain Formation of the Jurassic-Cretaceous Kootenay Group is preserved in a tight, asymmetric syncline in the immediate footwall of the west dipping Bourgeau thrust fault. The west limb of the Bingay Creek syncline is steeply east-dipping to overturned. Strata at Bingay Creek are contiguous with those on the west side of the Greenhills Range, and are separated from the Greenhills syncline by the Fording Mountain anticline.

Bingay Creek is currently being evaluated as a potential underground and/or open pit metallurgical coal mine. Drilling in 2010 was intended to define the extent of the known coal occurrences, delineate mineable reserves, and to provide samples for exhaustive coal quality testing.

Figure 17. Rotary drilling at the side of the Elk Valley Forest Service Road north of Elkford on Centremount Coal Ltd's Bingay Creek coal property.

Figure 18. Diamond drilling on the Bingay Creek coal property

In comparison to coal-bearing sections in other parts of the Elk Valley coalfield, the section at Bingay Creek appears to be relatively rich in coal, both in terms of number of potentially mineable seams and average seam thickness. For example, there are four seams consistently greater than 15 m in thickness. Coals at Bingay Creek are known to be medium-volatile and high volatile-A bituminous in rank, based on previous exploration results.