

REPORT

on the

SULLIVAN TWO/DODGE PROPERTY

Creston Area, B.C.
Nelson Mining Division
NTS 82F/2E
49<sup>0</sup>03'N Lat., 116<sup>0</sup>37'W Long.

for

WHITE KNIGHT RESOURCES LTD.

August 8, 1992

G.P. Leask
GEOLOGICAL BRANCH
ASSESSMENT REPORT

22,523

# TABLE OF CONTENTS

| 1.0  | INTRODUCTION 1                                  |
|------|---|
| 2.0  | LOCATION AND ACCESS 2                           |
| 3.0  | CLAIMS 4  |
| 4.0  | REGIONAL GEOLOGY 6                              |
| 5.0  | HISTORY AND WORK PROGRAM 8                      |
| 6.0  | PROPERTY GEOLOGY                                |
| 6.1  | Stratigraphy10                                  |
| 6.2  | Mineralization10                                |
| 7.0  | CONCLUSIONS 11                                  |
| ε.ο  | COST SUMMARY 12                                 |
| 9.0  | REFERENCES                                      |
| 10.0 | STATEMENT OF QUALIFICATIONS 14                  |
|      | LIST OF FIGURES                                 |
| 1    | LOCATION MAP 3                                  |
| 2    | CLAIM MAP 5                                     |
| 3    | REGIONAL GEOLOGY 7                              |
| 4    | PROPERTY GEOLOGY/DRILL HOLE LOCATION MAP pocket |
|      | T TOWN OR WINDING                               |
|      | LIST OF TABLES                                  |
| 1    | CLAIM DATA 4                                    |

# LIST OF APPENDICES

DRILLHOLE LOGS DRILL SECTIONS

#### 1.0 INTRODUCTION

The Sullivan Two/Dodge property at Creston, B.C. hosts stratabound lead-zinc-silver mineralization in Middle Aldridge sediments. Geological mapping, soil geochemistry, trenching and drilling have traced the mineralized horizon for about 2000 metres.

Structurally the Sullivan Two/Dodge is similar to the Sullivan Mine at Kimberley, B.C. Distinctive geological elements associated with the Sullivan Mine and found at the Sullivan Two/Dodge are albite and tourmaline alteration, growth fault pattern, fragmentals and a peripheral lead, zinc and silver apron.

Mineralization on the Sullivan Two/Dodge closely follows the mountain slope and probably forms a sheet at shallow depths beneath the surface. Lead, zinc and silver mineralization has been found at several points along the trend of the horizon. Visible mineralization consists of galena and sphalerite grading to 4.99% lead, to 1.46 zinc and to 130 gram/tonne silver. Surface exposures of the mineralized horizon in trenches are highly oxidized and leached, obtaining a true thickness of 6 metres. Fragmentals, tourmaline and albite alteration are concentrated around growth faults along the south and centre of the property. Exploration in 1991 consisted of geologic mapping and hand and machine trenching across the mineralized horizon.

A diamond drill program totalling 590 metres consisting of two holes was undertaken between June 28th and July 12th, 1992. Diamond drill holes SD92-1 and SD92-2 were both drilled in close proximity to the east-west trending tourmalinized breccia zone.

# 2.0 LOCATION AND ACCESS

The Sullivan Two/Dodge property is situated ten kilometres southwest of Creston, B.C. in the Nelson Mining Division. The claims are reached via the Dodge Creek Forest Service Road onto the upper slopes of Mt. Rykert. Logging and exploration roads access the property. The claim group covers most of the valley of Urmston Creek which drains east from Mt. Rykert to the Kootenay River. Elevations on the property range from 730m in the lower valley of Urmston Creek to 1646 m on Mt. Rykert.

The westernmost portion of the property has been logged, leaving only small remnants of the original forest cover of larch and spruce. The central and lower parts are covered by second growth of the same varieties, with alders, as the valley of Urmston Creek was burned in 1928. Water is available from Dodge Creek on the southwest side of the property and from the lower part of Urmston Creek.

The percentage of outcrop is variable; large outcrop areas along the ridge crests of Mt. Rykert are formed by the resistant Moyie sills. Many rock exposures are found along the logging roads and along White Knight's access roads. Natural outcrops occur from place to place. Elsewhere there is a fairly continuous cover of overburden, generally only one to two metres thick, but reaching thicknesses of over five metres in the upper northern part of the Urmston Creek basin.

Figure 1 is the Location Map. Figure 2 is the Claim Map.



WHITE KNIGHT RESOURCES LTD.

LOCATION MAP

SULLIVAN TWO PROPERTY

DATE: FEB, 1992 SCALE

NTS: 82F/2W FIGURE: 1

## 3.0 CLAIMS

The Sullivan Two/Dodge property consists of the following claims in the Nelson Mining Division:

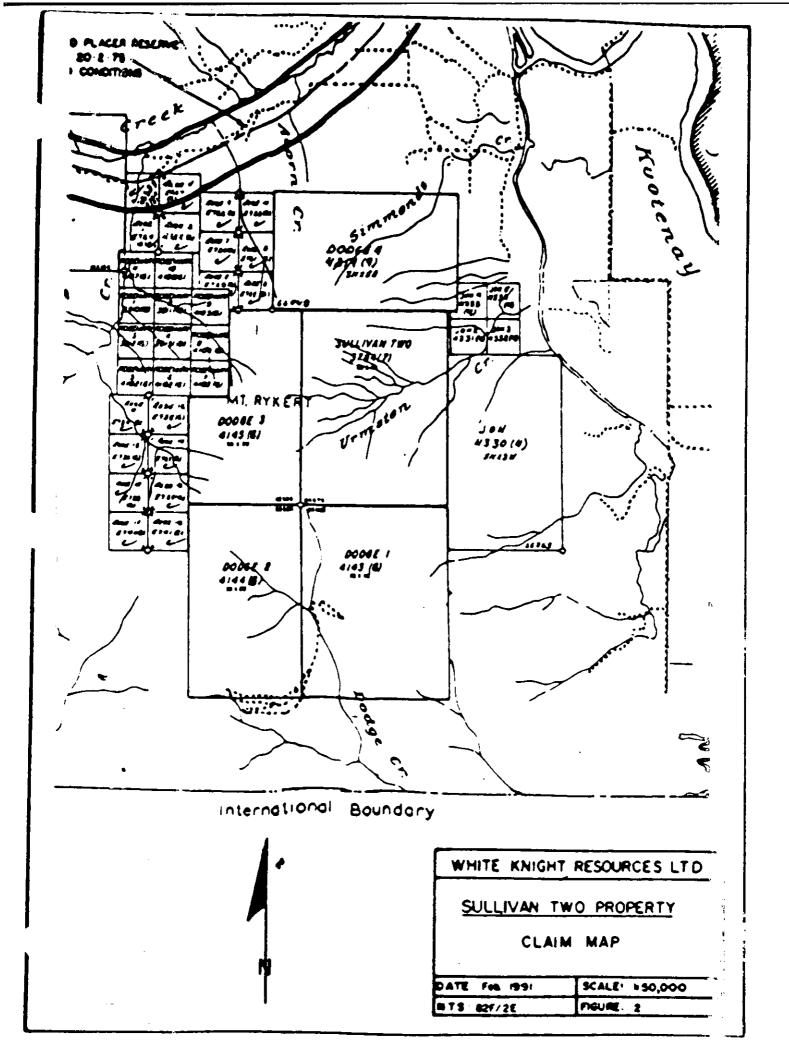
Table 1 - Claim Data

| Name         | Record No. | Units | Expiry Date    |
|--------------|------------|-------|----------------|
| Sullivan Two | 3784       | 20    | July 11, 1994  |
| Jon          | 4330       | 15    | April 02, 1996 |
| Jon 2        | 4331       | 1     | April 17, 1996 |
| Jon 3        | 4332       | 1     | April 17, 1996 |
| Jon 4        | 4333       | 1     | April 17, 1996 |
| Jon 5        | 4334       | 1     | April 17, 1996 |
| Dodge 1      | 4143       | 20    | June 20, 1994  |
| Dodge 2      | 4144       | 15    | June 20, 1994  |
| Dodge 3      | 4145       | 15    | June 20, 1994  |
| Dodge 4      | 4219       | 15    | Sept 12, 1993  |

White Knight Resources Ltd. owns an 100% interest in the Sullivan Two claim subject to a 15% NPI royalty held by Muirfield Investments Ltd.

White Knight has the right to earn a 100% interest in the Jon claims from F. O'Grady.

White Knight has the right to earn a 100% interest in the Dodge claims from Cominco. Cominco retains the right to earn back a 51% interest in the Dodge claims for a period of 10 years.

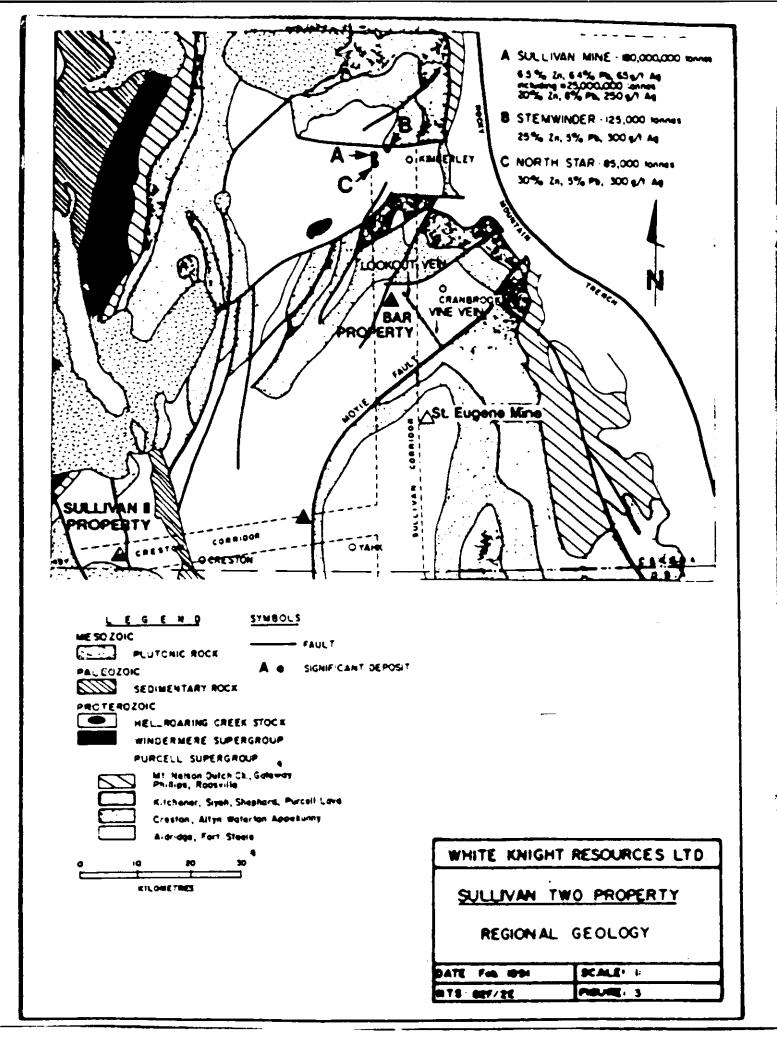


#### 4.0 REGIONAL GEOLOGY

The property is situated in the Nelson Range of the Selkirk Mountains on the west flank of the Purcell Anticlinorium. Regional geology is shown on Figure 3. East-west trending faults and zones of tourmaline alteration appear to delineate an east-west trending sub-basin in the Creston Area within an extensive clastic basin which extends southward from Canal Flats, British Columbia into Idaho and Montana in which the Belt Purcell Supergroup was deposited. Reactivated (growth) faults may have had an influence on deposition of stratiform massive sulphide deposits, such as the Sullivan, North Star, Stemwinder and Kootenay-King deposits in the Cranbrook-Fort Steele area. In the main basin northeast trending faults, such as the Cranbrook and Kimberley faults may have been transform faults which offset crustal spreading centres forming the locus of major sedimentary exhalative lead, zinc and silver deposits accompanied by tourmaline and albite alteration.

Rocks in the area belong to the Purcell Supergroup of Upper Proterozoic age, overlain by Paleozoic Cambrian to Middle Devonian sedimentary rocks.

Several large sills and rare dykes of Purcell age are present in the region. These are most common in the Aldridge and Fort Steele Formations, but may also be present in younger Proterozoic strata. The "Moyie Sills", predominantly gabbro in composition, have ages identical to the enclosing Aldridge strata (1433 Ma). Hoy (1983) suggests they were emplaced into uncompacted water-saturated sediments. Sulphide accumulations and veins are common adjacent to sill or dyke margins, and the Moyie intrusions are suggested to be part of a thermal-hydrothermal and mineralizing event accompanying graben development in a rifting controlled deep clastic basin.



#### 5.0 HISTORY AND WORK PROGRAM

The first known reference to metallic mineralization in the vicinity of the property is the mention in the B.C.M.M. Annual Report for 1929, page C 360, which reported: "...prospecting by Angus Currie and associates, who staked four claims at the head of Long Creek (Long Creek was later re-named Urmston Creek) following the discovery of a large quantity of float after a forest fire which burned over this area last fall. These claims are about 2 miles west of the Kootenay flats, Long Creek being a small stream between Corn and Boundary Creeks. The float is a milling ore consisting of galena in a quartz gangue and the formation is probably Aldridge. A large granitic dyke is said to cross the ground from north to south."

F.B. Whiting staked the 20 unit Sullivan Two claim in 1984. Cominco subsequently staked the adjoining Dodge 1 to 4 claims and carried out programs of geologic mapping, soil sampling and, reportedly, a geophysical survey. Cominco filed an assessment report, #14,951, for soil geochemistry work done in July and August, 1985. gives contoured maps for lead and zinc which show a continuous anomaly for each of the metals extending from an outcrop 650 metres southwest of the LCP of the Sullivan Two, that carries traces of sphalerite, right up to the western boundary of the Sullivan Two. No natural outcrops exist along that 1200m line anomaly, but float of talc-rock and of carbonate were found at four places, and one area of loose galena-bearing carbonate material was located. Widening of a logging road at a point on this coincident anomaly 150m west of the west boundary of the Sullivan Two disclosed the presence of a highlyoxidized manganiferous gossan containing secondary lead minerals in a zone of quartzites, carbonate and massive talc beds totalling over 5m in stratigraphic thickness. Weak fine-grained galena was seen in silty quartzite beds just below the lowermost gossan layer.

A mapping and prospecting program was carried out in 1985 by F.B. Whiting and Orion Resources Ltd. (now Muirfield Investments Ltd.) which had by them purchased a 50% interest in the Sullivan Two.

The Jon and Jon 2 to 5 were staked in 1986 by F.P. O'Grady. Those claims were optioned by White Knight Resources Ltd. in 1987. White Knight Resources Ltd. also acquired options on the two 50% interests in the Sullivan Two from F.B. Whiting and Orion Resources Ltd.

In 1987 work done by White Knight Resources Ltd. consisted of gridding, geological mapping, prospecting, soil sampling, rock sampling, bulldozer trenching and the construction of some four kilometres of access roads. To the end of 1987 White Knight had spent \$101,700 on the property.

In 1989 Cominco carried out a UTEM geophysical survey on the Dodge 1 and 2 claims. A crossover type conductor was detected on one loop on the Dodge 1 claims about 1000 metres south of the Sullivan Two claim.

In 1990, Kali Ventures Corp acquired an option to earn a 50% interest in White Knight's interest in the property and carried out a 909 metre BQ diamond drilling program.

In November, 1990 White Knight acquired the right to earn a 100% interest in the Dodge claims from Cominco subject to Cominco retaining the right to back in for a 51% interest in the Dodge claims.

White Knight carried out mapping, hand and machine trenching along the mineralized horizon on the Dodge 1, 2 and 3 claims in June and July, 1991. The outcrop identified by Cominco in 1989 as containing 1.5% Ph/Zn was located and exposed using hand tools. A track mounted excavator was then used to excavate one 30 metre long trench across the outcrop and 10 small test pits uphill to the horizon identified by the Cominco soil geochemistry. A total of 60 metres of machine trenching was carried out. Overburden was typically less than 1.2 metres. All trenches were backfilled upon completion.

White Knight undertook a 590 metre diamond drill program between June 28th and July 12th, 1992. Two holes were drilled straddling a zone of lead-zinc enriched tourmalinized breccia. The holes were targeted to intersect a 2 kilometre long, stratiform lead-zinc soil geochemical anomaly, situated in the structural footwall and stratigraphic hanging wall of the tourmalinized breccia.

#### 6.0 PROPERTY GEOLOGY AND MINERALIZATION

## 6.1 Stratigraphy

The Sullivan Two/Dodge claim group is underlain by quartzites and siltstones of the Middle Aldridge Formation. The sequence includes two Moyie gabbro sills. In general the beds strike roughly north and dip east at angles ranging from  $-20^{\circ}$  at the west boundary of the property to  $-85^{\circ}$  in the far northeast corner of the block. Local flattenings and steepenings result in small folds in the bedding.

Correlations of markers show that the Middle Aldridge stratigraphy is overturned on the property. A major fold with an axis trending north and plunging gently north is visible on the east face of the mountain between Corn Creek and Summit Creek resulting in beds close to the Kootenay River flats dipping shallowly east while the beds farther up the mountain dip at moderate angles to the west. At some point due west of the Sullivan Two/Dodge property, the general westward dip must prevail as that area holds the western limb of the Purcell Anticlinorium.

To the south of the claim block, a markedly porphyritic granitic rock occurs which has been called the Mt. Rykert granite. By the evidence of definite sedimentary layering preserved in the outer parts of this body, it must be a anatectite-type granitic mass rather than a magmatic intrusion. Its age is Late Cretaceous to early Tertiary.

#### 6.2 Mineralization

A large area of brecciated and tourmalinized sediment occurs in place on the Dodge 2 claim. Breccia fragments are subangular ranging in size from fine gravel to cobble size. Alteration of the fragments varies from weak to moderate tourmalinization. The matrix is silicified throughout. Sugary quartz stringers occur within the breccia. Pyrite with rare sphalerite and galena occur within the quartz stringers.

The mineralized outcrop was weathered to a pale tan talcose material with remnant biotite visible. No sulphides were visible. Weathering extended approximately 0.3 to 0.5 metres into the outcrop. The fresh rock was a grey quartz-feldspar-biotite-garnet schist (meta-sediment) with disseminated galena and sphalerite concordant to foliation. Near massive galena occurs sporadically throughout with lens to 1.0 centimetre thick. Two representative samples from the trench returned 1.17% Pb, 1.13% Zn and 0.44 oz/ton Ag and 1.87% Pb, 1.46% Zn and 0.71 oz/ton Ag. Figure 5 is the trench map.

No mineralized interval was encountered in either DDH SD92-1 or SD92-2. A very narrow zone of weakly tourmalinized sediment was intersected in diamond drill hole SD92-1.

# 7.0 CONCLUSIONS

The 1992 drill program failed to intersect a zone of base metal sulphides. It is the writer's opinion that a Sullivan type system was present at the Sullivan Two/Dodge property area although it would appear that only a very weakly mineralized remnant remains.

# 8.0 COST SUMMARY

Expenditures

Diamond Drilling: Britton Eros. Diamond Drilling

\$ 32,400.00

TOTAL

\$32,400.00

### 9.0 REFERENCES

B.C.M.M.: Annual Report for 1929 (pp C 360).

Botel, W.G.: (1988) Report on the Sullivan Two Property for White Knight Resources Ltd.

Hoy, T.: (1984) Structural Setting, Mineral Deposits, and Associated Alteration and Magmatism Sullivan Camp, Southeastern British Columbia.

Hoy, et al.: (1985) Field Guides to Geology and Mineral Deposits in the Southern Canadian Cordillera. GAC Cordilleran Section Meeting Vancouver B.C., May 1985.

Parkinson, J.G.: (1989) Geophysical Report on a UTEM Survey on the Dodge Property, Nelson M.D.. B.C.

Pighin, D.L.: (1985) Report on Soil Grid Geochemistry, Dodge Property, Dodge 1 to 3, Nelson Mining Division, Creston Area for Cominco Ltd. Assessment Report 14,951.

Price, B.J.: (1989) Geological Report, Lookout Property, Cranbrook Area, B.C. Internal Report for White Knight Resources Ltd.

Tipper, et al: Tectonic Assemblage Map of the Canadian Cordillera (1981), Geologic Survey of Canada Map 1505A.

Visser, S.J.: (1986) Geophysical Report on the Horizontal Loop EM Magnetic Surveys Dodge 1 to 4 Claims, Nelson Mining Division, B.C.

## 10.0 STATEMENT OF QUALIFICATIONS

- I, Gordon P. Leask, do hereby certify that:
- 1. I am a geologist with resident at 1940 Chestrfield Avenue, North Vancouver, B.C., V7M 2P5.
- 2. I am a graduate of the University of British Columbia with a Bachelor of Applied Science degree in Geological Engineering (1985).
- 3. I have been involved in mining exploration since 1979.

Gordon P. Leask

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