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**CONTENTS**

	Page
1. Introduction ... ..	1
2. Location ... ..	1
3. Physiography ... ..	1
4. Geology ... ..	1
5. Objectives ... ..	3
6. Logs, Lithology and Structure ... ..	4
7. Results and Conclusions ... ..	4
D5.1.91 Log ... ..	5
D5.2.91 Log ... ..	6
8. Statement of Costs ... ..	7
9. References ... ..	8
Certificate	

**FIGURES**

Figure 1 ... Site Location ... ..	after page	1
Figure 2 ... Location of Claim Group ... ..		2
Figure 3 ... Don Area and Drill Holes ... ..		4

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

21,737



Province of  
British Columbia

Ministry of  
Energy, Mines and  
Petroleum Resources

ASSESSMENT REPORT  
TITLE PAGE AND SUMMARY

TYPE OF REPORT/SURVEY(S) DRILLING	TOTAL COST \$ 21,806.90
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AUTHOR(S) ... Phil. de Souza, P.Eng. .... SIGNATURE(S) .....

DATE STATEMENT OF EXPLORATION AND DEVELOPMENT FILED July 24, 1991. .... YEAR OF WORK 1991

PROPERTY NAME(S) ELDERBERRY #1A .....

COMMODITIES PRESENT .. Copper .....

B.C. MINERAL INVENTORY NUMBER(S), IF KNOWN .....

MINING DIVISION ... FORT STEELE .....

LATITUDE ... 49. 21. 30. N. .... LONGITUDE ... 115. 11. 30. E. ....

NAMES and NUMBERS of all mineral tenures in good standing (when work was done) that form the property [Examples: TAX 1-4, FIRE 2 (12 units); PHOENIX (Lot 1706); Mineral Lease M 123; Mining or Certified Mining Lease ML 12 (claims involved)]:

..... DOGWOOD. #5, ELDERBERRY. #5, #6, #7. and #8. ....  
..... (all 20 Unit Claims) .....

OWNER(S)

(1) ... R. H. STANFIELD .....

MAILING ADDRESS

#350, 4723 - 1st Street SW

CALGARY; ALBERTA; T2G 4Y8

OPERATOR(S) (that is, Company paying for the work)

(1) ... as above .....

MAILING ADDRESS

SUMMARY GEOLOGY (lithology, age, structure, alteration, mineralization, size, and attitude):

Copper/Silver occurrence in quartz/siderite matrix hosted in near vertical Gateway  
Ampillites on step within the Rocky Mountain Trench

RECEIVED

OCT 17 1991

REFERENCES TO PREVIOUS WORK ... See Report .....

CRANBROOK, B. C.  
GOVERNMENT AGENT

(over)

## **1. Introduction.**

Percussion Drill Hole D5.1.91, was drilled on July 18 and July 19 while Percussion Drill Hole D5.2.91 was drilled on July 19 and 20, 1991 to depths of 61.85 metres from collar location elevations of approximately 1,036 and 1,005 metres respectively above mean sea level on the B.C. Hydro Right of Way crossing the western and south western quadrant of Dogwood #5.

Elderberry Group #1A consists of five contiguous 20 Unit Mineral Claims viz. Dogwood #5 and, Elderberry #5 to #8 inclusive, within the total holdings of the Stanfield Group of Companies.

## **2. Location.**

The Stanfield Group Claims are situated in the Fort Steele Mining Division of southeastern British Columbia ( NTS 82G6 ) astride Highway #3 between Fernie and Cranbrook and encompassing Galloway - see Figure 1 following. The Elderberry 1A Group located within the greater Stanfield Group - see Figure 2 - sits astride a section of the Rocky Mountain Trench eastern margin in the vicinity of Elko and Caithness on the southern Trans Provincial Highway #3 and some 6 kilometers to the southwest of the community of Galloway.

## **3. Physiography.**

The property extends from an elevation of 914 metres (3,000ft) in the Rocky Mountain Trench on the southern boundary of the south eastern quadrant of Dogwood #5 up the southwest facing slopes of the Lizard Front Range (immediately north of the Elk River Valley which separates the Lizard Range from the Border Range) to a height of 2,316 metres (7,600ft) above mean sea level on the south central boundary of Elderberry #7.

Ground water run off from the front range flows southwestward through a myriad streamlets into the southerly flowing Caithness Creek which ultimately joins the Kootenay in Lake Kooconusa just north of Kikomun Creek Provincial Park.

## **4. Geology.**

The complex geology has been well addressed by G.B.Leech who separately and with others has mapped the area in 1956, 1957 and 1959. Previous mapping was conducted by Rice in 1935.

Fig. 1



LOCATION

Map 11-1960 entitled Geology, Fernie (west half) by the Geological Survey of Canada details the result of the Leech mapping.

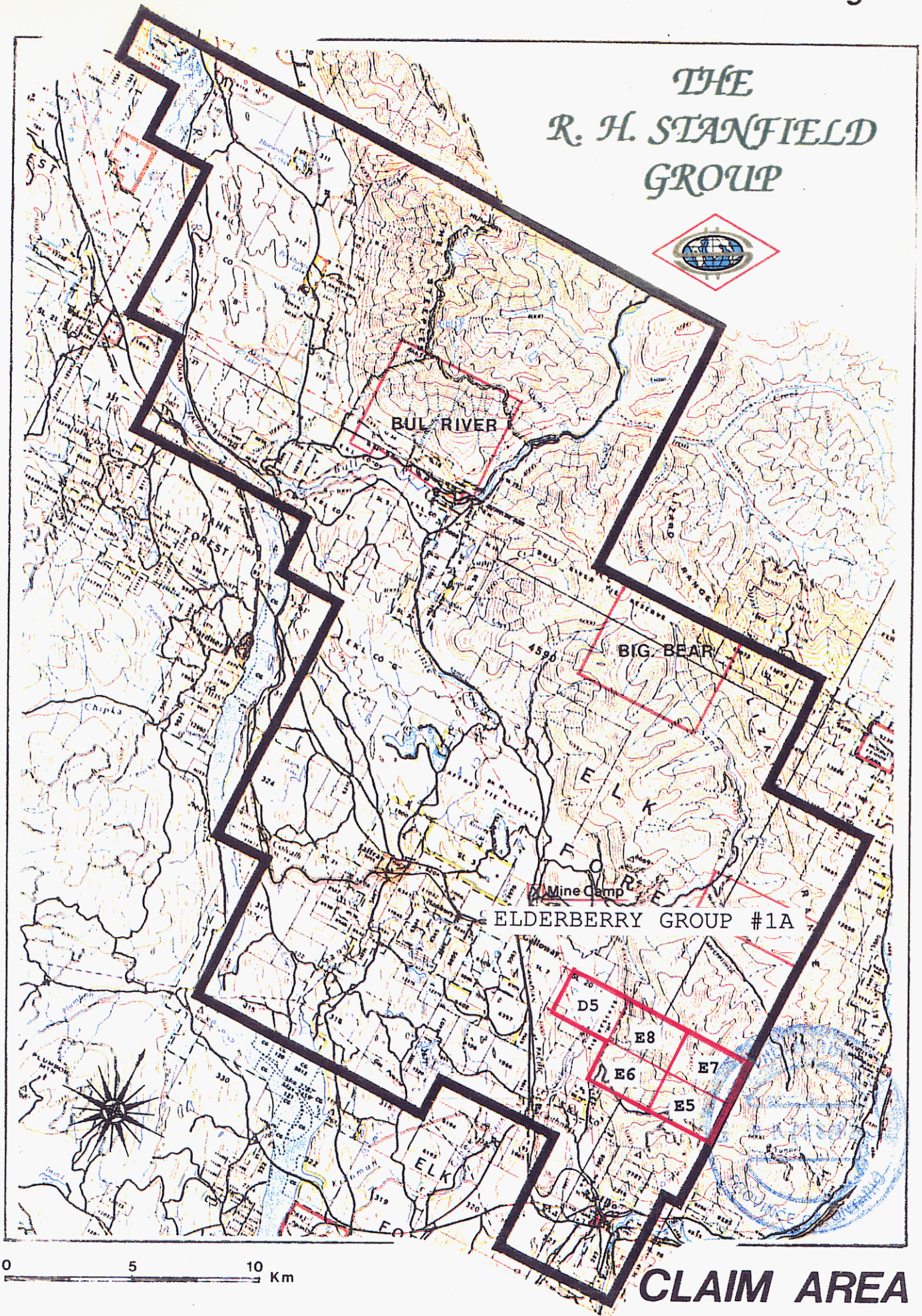
Basically, Dogwood #5 lies on the bench or listric faulted east side of what is known as the Rocky Mountain Trench. In this area, several outcrops of Gateway (Precambrian) argillites, siltstones and quartzites are found within Cenozoic tills, gravels, sands and alluviums. The Stanfield Group consider that the Cenozoic material masks/covers a series of parallel faults forming steps along the side of the "Trench" with the Gateway argillites marking a single (or a few) step/s. It should be noted that the Gateway Outcrops are confined to a relatively narrow band paralleling the southwest face of the front range and are limited to the area south of the major Sand Creek Fault which is postulated to extend into the Trench or crossing the Trench as the eastern Dibble which may become the western Moyie.

The "Trench" exhibits similar features to those currently being found in the Great Rift Valley of east Africa and offshore east Africa where, rather than a single drop for many miles along both east and west flanks, the Trench appears to be the result of a downward stepped hinging more severe towards one flank at one side (north) of a fulcrum point than on the other side (south) of the fulcrum point where step faulting (hinging) results in a greater severity to the opposite flank. The Fulcrum point in this area is postulated to be the Pickering Hills immediately south of the confluence of the Bull and Kootenay Rivers where a very different strike of the "Trench" feature is to be noted.

Compounding the step/listric boundary faulting of the Trench, the older generally NE-SW striking faults such as the Sand Creek, Sand Mountain, Dibble and Bull Canyon had previously disturbed the continuity of bedding so that the later crossing Trench Systems variously affected at any given horizon Aldridge, Creston, Kitchener, Gateway etcetera. On the Stanfield Holdings - Gallowai - in the vicinity of Dogwood #5, we are seeing the northern end of a Gateway Block on the flank step/listric system prior to the southern limit of the Aldridge on the same post NE-SW fault horizon. The "pre-Trench" thrust faults such as the Moyie which thrust the overlying younger rocks westwards under the precambrian sequence have, in this region of the claims been eroded away i.e. the front range between Elko and the Sand Creek Valley consists of younger rocks in their bedded attitude which were below (just - as evidenced by the synclinal attitude of the beds to the east and the apparent pinching of the same beds immediately to the east in the front range) the Thrust Fault. Elderberry Claims #5, #6, #7 and #8 therefore show stratigraphically correct (although sometimes unconformable due to movement on the weaker bedding planes) strata of Roosville, Burton, Jubilee and Elko, Fairholm, Exshaw and Rundle argillites, shales, siltstones, quartzites, dolomites and limestones.

Dogwood #5 hosts the Don Zone, a copper/silver occurrence containing trace gold, lead and significant iron in a matrix of quartz and siderite, is hosted in an outcrop of near vertical Gateway argillite seen on the central western area of Dogwood #5. Previous mapping and studies by earlier Stanfield Group Consultants has mapped the Don as a north east striking structure dipping

Fig. 2



near vertically or towards the northwest. The present consultants consider that bedding planes, shears and fracture planes have been misinterpreted and that the mineralized zone actually strikes northwest-southeast and dips vertically to southwesterly. With such an attitude, the Don may therefore be a mineralized segment of a listric/bench fault associated with the eastern "Trench" boundary, and may therefore be very extensive both to depth and in lateral extent. The two drill holes were sited to test this model. The fact that the Gateway is "near vertical" means that the bedding of the "Trench" precambrians is likely not overturned in this area. It may however be expected to turn under itself at depth due which folding may have allowed the formation of the Thrust Faulting and subsequent movement along the thrust faults. Aldridge, the known host for major mineralization should therefore be found at depth south and west of the Don showing and probably not on the Dogwood #5, #3 or #6 claims. The fact that the Don exhibits mineralization in Gateway leads to the belief that the mineralization is later than the more usual Aldridge hosted deposits and may in fact be the result of a remobilization of earlier emplacements. In such a case, the Don Zone would be expected to terminate on the underlying thrust plane, or possibly, the thrust plane itself may be mineralized in this area. Either possibility is supported by the geologic model postulated above.

## 5. Objectives.

As described above, the Percussion Holes D5.1.91 and D5.2.91 were sited on the postulated hanging wall side of the Don Zone along strike projected to the northwest. D5.2.91 was collared 6.5 metres on a bearing N107E from a caved inclined(?) shaft situated 32 metres northwest of a stope or winze access to a stope which itself lies 4.5 metres northeast of an Inclined Shaft (dipping at 60° in a direction south 50° west). This shaft would appear to be unconnected to the stope as the levels of water in the two excavations do not match. 6 metres south east of the shaft, another excavation, probably a pit, is apparent - see Figure 3 following. The first excavation (inclined shaft?) was sunk on a series of quartz stringers striking generally northeast/southwest. A previous hole, D5.1.87 drilled conforming to the previous geologic interpretation on July 4 and 5 of 1987 and reported in an Assessment Report by Allen in September 1988, yielded no mineralization. D5.1.87 was drilled too far to the north and would have been in the footwall side of the structure according to the new model as described under Section 4 above.

The intention was to define the location and extent of the largely subcropping structure using the new model as a basis which would result in the Stanfield Group being better able to accurately define a shallow diamond drill programme for the Don Zone. In 1956, Canadian Western Collieries drilled a diamond drill hole on this zone which reportedly intersected some 10 metres of copper/silver mineralization. The Author has been unable to track down the Company or therefore details of this hole.

## **6. Logs, Lithology and Structure.**

The following two pages show the Logs of the Chippings from D1.5.91 and D2.5.91 now stored at the Stanfield Camp. Chippings were collected in each instance at 5ft (1.52 metre) intervals through a cyclone connected to the drill string. Dust losses are therefore minimised. The holes were logged by changes in penetration rate, colour change and moisture while drilling. Later logging, as reported following, logged the chippings by 5ft (1.524 metre) cut intervals as bagged on site.

## **7. Results and Conclusions.**

Both holes were successful in that they intersected a zone (or zones) of quartz/siderite veining with varying amounts of sulphides of copper, iron and zinc - see previous two pages detailing targets.

The results confirm that the present geologic model has credence. Further, findings conform to Stanfield Group mapping and interpretation of the Rex and Dean Zones which are to be found some 4kms to the northwest and which are considered also to be associated with bench/listric faulting of the Trench east flank.

The model allows for the consideration that all the Trench flank mineral occurrences may be associated through depth plumbing - mineralogical similarities are evident. Unfortunately, the Stanfield Group has determined that geophysics as an exploratory tool is limited to the Trench areas where overburden depths are shallow than +/- 100 to 200 metres as, the iron content of the cenozoics tends to mask subcropping features. Very significant percussion and diamond drilling must be expected on an ongoing basis all along the Trench Flanks to determine a continuity or otherwise of these Flank Associated Occurrences.



CLAIM MAP

SCALE  
1 : 12,500

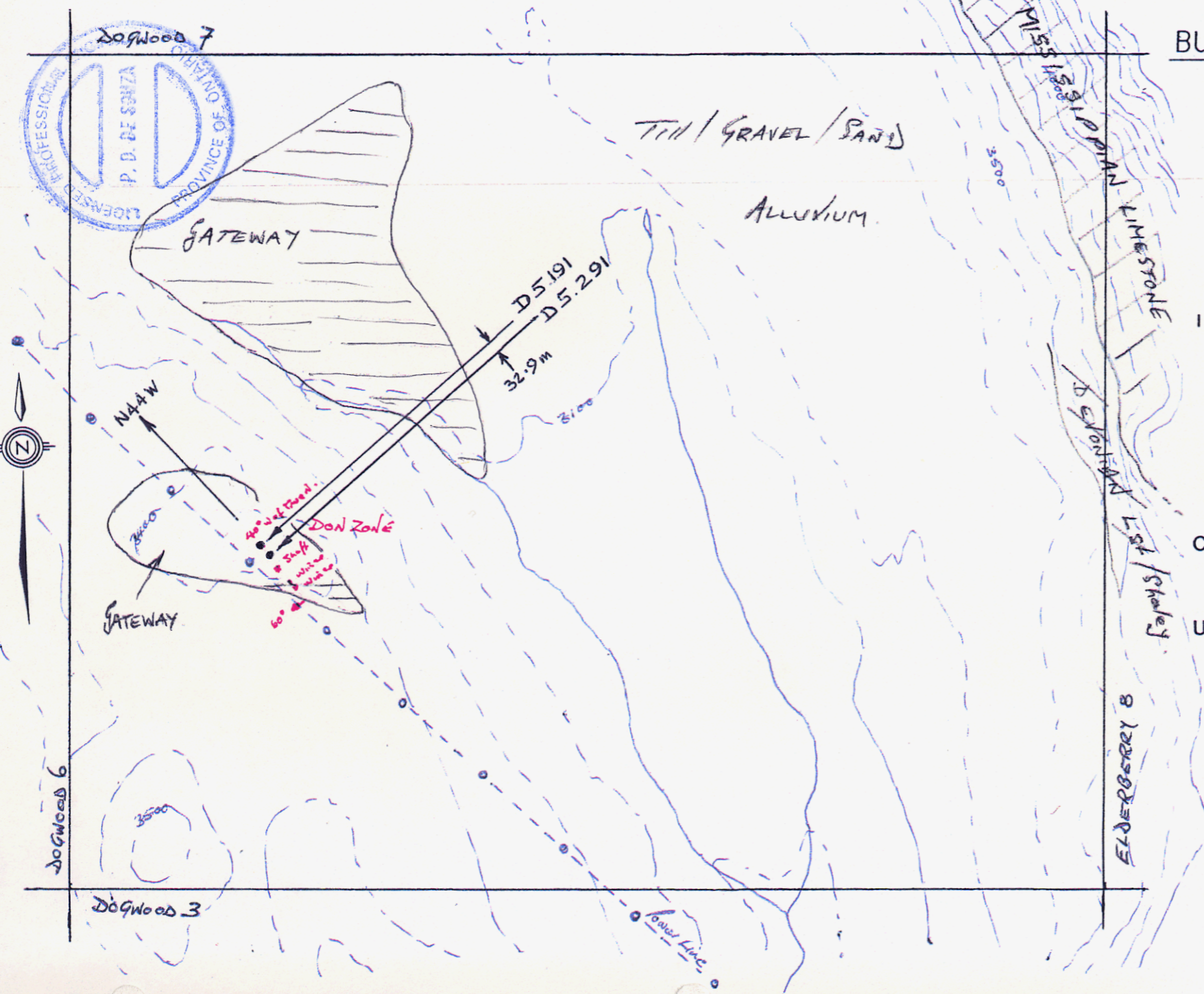


CLAIM SET

Dogwood 5

UPDATE (M:Y)


*Don Zone*





D5.2.91                      Drilled: 19/20 July 1991                      Collar Elevn.    1005m amsl  
 Location                      Dogwood #5 - Stanfield Holdings

DEPTH	DESCRIPTION	COMMENTS
0 - 1.5	Detritals	
- 3.05	::                      , Gravels, Boulders	
- 4.57	Iron stained (limonite) grey argillite and siltite	
- 9.14	Silicious argillite, quartz/siderite veins with specularite	Target Zone
- 13.72	plus pyrite, minor chalcopyrite from 7.6 to 9.1m	::    ::
- 18.29	Silicious argillite	
- 27.43	::                      ::                      and quartzites	
- 30.48	Predominantly grey argillite, some siltite	
- 32.01	Argillite and quartz veins	Target Zone
- 33.53	::                      ::                      ::                      with limonite	::    ::
- 35.05	Qtz/siderite vein, with pyrite, chalcopyrite and pyrrhotite	::    ::
- 38.10	As above plus bornite	::    ::
- 39.62	As above but less strongly mineralized	::    ::
- 44.20	quartz/siderite veining - no apparent sulphides	::    ::
- 53.34	interbedded argillites, quartzites and siltites	
- 54.86	Quartz/siderite veining in argillaceous quartzite	Target Zone
- 57.91	::                      ::                      ::                      with limonite stains, pyrite, pyrrhotite and minor chalcopyrite	::    :: ::    ::
- 60.96	Quartz/siderite veins - no apparent sulphides	::    ::
- 61.87	Predominantly grey argillite	
	end of Hole <u>61.87 metres</u>	

**8. Statement of Costs.****Claim Group:** Elderberry 1A**Claims:** Dogwood #5,  
Elderberry #5, #6, #7 and #8 (all @ 20 units per)**Drilling Date:** July 18 to July 20, 1991 (inclusive)**Drill Crew:** Driller Mr. Don Murray, Strathmore, Alberta.  
Drill 2nd. Mr. Dean Cockx, Strathmore, Alberta.**Site Crew:** Manager Mr. R. Stanfield Jr., Box 24, Gallowai, B.C.**Equipment:** 1 Ingersol Rand TH-90 Rotary/Percussion Truck Mounted (CCC) Drill.  
1 Kenworth Water and Pipe Truck  
Pipe Trailer  
Two Ford F250 4x4 Trucks with Bush Boxes.

<b>Costs:</b>	Percussion D5.1.91	61.85m x 147\$/m	\$ 9,091.95
	Percussion D5.2.91	61.85m x 147\$/m	\$ 9,091.95
	Site Manager (40hrs x \$15/hr)		\$ 600.00
	Mobilisation and Demobilisation		\$ 1,000.00
	Site Preparation and Clean-up		\$ 438.00
	F250's - 2 of @ \$50.00 /day x 3		\$ 300.00
	Supply and Accom @ 3 days x \$65.00 /day /man		\$ <u>585.00</u>
	Consulting and Report - Hole Locations, Chip Logging examination and preparations.		\$ <u>700.00</u>
	<b>ASSESSED TOTAL</b>		<b>\$ <u>21,806.90</u></b>

## 9. References:

- ALLEN, Alfred R. Geology and Ore Potential on the Holdings of R.H. Stanfield. *Aug 1976*
- ALLEN, Alfred R. Altemont Exploration Co. Report *1967*
- ALLEN, Alfred R. Various Assessment Reports *1987, 1988 and 1989*
- BATEMAN Economic Mineral Deposits *1950*
- CLAGUE, John T. The St. Eugene Formation and the development of the Southern Rocky Mountain Trench. *Can. Jour. Earth Science. 1974*
- Dighem. #1097-A Dighem IV Survey for Bul River Mineral Corporation Ltd. Steeples and Aspen Claim Blocks, Fort Steele, British Columbia. *February 25, 1991*
- FREEZE, A.C. On the Origin of the Sullivan Orebody, Kimberley, British Columbia. *Canadian Institute of Mining and Metallurgy, Special Volume 8. 1966*
- HOY,T; HEYDEN,P.van der. Geochemistry, Geochronology, and Tectonic implications of the two Quartz Monzonite Intrusions, Purcell Mountains. *Can. Jour.Earth. Sciences. 1988*
- LEECH, G.B. G.S.C. Fernie Area Map 11 - 1960 *1960*
- LEECH, G.B. Structure of the Bull River Valley near Lat 49 35. *A.S.P.G. 1962*
- Master Mineral Resource Services Ltd., Compilation and Review of the Geology and Geologic Modelling of Gallowai Bul River Mine, Fort Steele Mining Division, British Columbia, Canada. *April 10, 1991.*
- McMECHAN, M.E. The Middle Proterozoic Purcell Supergroup in the southwestern Rocky and southeastern Purcell Mountains. *Bulletin Can. Pet. Geology. Dec 1981*
- McMECHAN, M.E; PRICE, R.A. Transverse Folding and Superimposed deformation, Mount Fisher area, southern Canadian Rocky Mountain thrust and Fold Belt. *National Res. Council of Canada. 1982*
- PRICE, R.A. The Cordilleran Foreland Thrust and Fold Belt in the Southern Canadian Rocky Mountains. *Geol. Soc. of London. 1981*
- THOMPSON, Thomas L. Origin of the Rocky Mountain Trench in southeastern British Columbia by Cenozoic Block Faulting. *A.S.P.G. 1962*
- University of Munich. Preliminary Geology Maps of the southern Steeples and northern Lizard (Front Range) *1989*

**CERTIFICATE:**

October 15, 1991.

I, Phil D. de Souza, certify that:

I am a graduate of the **Camborne School of Mines**, Camborne, Cornwall, England, and that I hold the degree of **A.C.S.M. 1st Class** in Mining Engineering therefrom.

I am a member of the **Canadian Institute of Mining and Metallurgy** and a member of the **American Institute of Mining, Metallurgical and Processing Engineers**.

I am a **Registered Professional Engineer** of the Province of Ontario.

I have practised my profession for the past twenty five years.

I hold no interest in the Properties or Securities of the Stanfield Group, or its affiliates, nor do I expect to receive any directly or indirectly.

This Assessment Report is based on my direct Project Involvement and Consulting on behalf of the Stanfield Group since 1987, on Site selection and examination and from my personal logs of the chippings from the Percussion Programme.

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Phil D. de Souza, A.C.S.M., P.Eng.(Ont.),  
Mining Engineer.