

**J. TUACH GEOLOGICAL CONSULTANTS, INC.  
DIAMOND DRILL CORE LOG**

|                                              |       |       |          |           |                                              |                             |
|----------------------------------------------|-------|-------|----------|-----------|----------------------------------------------|-----------------------------|
| LATITUDE <u>L 146E</u>                       | Tests | Dip   | Magnetic | Corrected | Project No. _____                            | Hole No. <u>BE-96-12</u>    |
| DEPARTURE <u>68 + 19N</u>                    | Depth |       | Bearing  | Bearing   | Property <u>Buchans East</u>                 |                             |
| ELEVATION _____                              | _____ | _____ | _____    | _____     | NTS <u>12A/15</u>                            | Grid Name _____             |
| DIP AT COLLAR <u>-45°</u>                    | _____ | _____ | _____    | _____     | Date started <u>Feb. 12/96</u>               | Completed <u>Feb. 16/96</u> |
| BEARING <u>180°</u>                          | _____ | _____ | _____    | _____     | Contractor <u>IDEAL DRILLING (NFLD.) LTD</u> |                             |
| TOTAL DEPTH <u>169.8</u> CORE SIZE <u>BO</u> | _____ | _____ | _____    | _____     |                                              |                             |
| REMARKS _____                                | _____ | _____ | _____    | _____     | Logged by <u>Phillip Saunders</u>            |                             |

| Depth & Lithology | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Alteration                                                                                                                                                                                                                                                                                                                                                                    | Mineralization                                                   |
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| 0 - 20.2          | OVERBURDEN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                               |                                                                  |
| 20.2 - 50.9       | <p><u>INTERMEDIATE TUFFS AND FLOWS</u></p> <p>20.2-23.5 crystal lithic tuff</p> <ul style="list-style-type: none"> <li>- dark green, medium-coarse grained, chloritic</li> <li>- altered green feldspar crystals (sericite or epidote), occasional small qtz crystals</li> <li>- a few lithic fragments, mainly mafic to intermediate volcanic, locally variolitic</li> </ul> <p>23.5-27.4 - massive flow</p> <ul style="list-style-type: none"> <li>- medium-dark greenish-grey, fine grained, hard</li> <li>- uniform texture, fine grained, probably chilled</li> <li>- probable basalt</li> <li>- occasional calcite-epidote patches (pillow cores?) and chlorite spots</li> </ul> <p>27.4-33.5</p> <ul style="list-style-type: none"> <li>- dark green, medium-coarse grained</li> <li>- similar to 20.2-23.5, but generally larger, more abundant fragments</li> <li>- occasional light grey, qtz-porphyritic rhyolite fragments to 10cm</li> <li>- other fragments mafic to intermediate volcanics, massive &amp; feldspar-porphyritic, subangular to subrounded</li> <li>- chloritic, tuffaceous matrix</li> </ul> <p>33.5-36.2</p> <ul style="list-style-type: none"> <li>- dark greenish-grey, dense, fine grained, massive</li> <li>- feldspar porphyritic in upper 1m</li> <li>- good core recovery. Spaced joints mainly @45° TCA</li> <li>- locally crowded w/ tiny, white feldspar(?) crystals</li> </ul> | <ul style="list-style-type: none"> <li>- altered feldspars (sericite, epidote)</li> <li>- calcite on some fractures</li> <li>- calcite +/- epidote veins &amp; patches</li> <li>- pink carbonate on some fractures - probable calcite</li> <li>- minor calcite veining, epidote patches</li> <li>- occasional qtz-calcite veins, locally w/ bright red (hematite?)</li> </ul> | <p>rare specks of pyrite +/- chalcopyrite</p> <p>rare pyrite</p> |

HOLE NO. BE-96-12

| Depth & Lithology    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Alteration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Mineralization                                                                                                                              |
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| 20.2 - 50.9 (Cont'd) | <p>36.2 - mafic-intermediate tuff</p> <ul style="list-style-type: none"> <li>- upper contact weakly sheared, minor pyrite</li> <li>- greenish-grey, medium grained, crystal-lithic tuff</li> <li>- abundant greenish-white &amp; pinkish, altered feldspar crystals</li> <li>- a few, lapilli-size mafic fragments &amp; rare, qtz-porphyrific rhyolite fragments</li> </ul> <p>36.2-37.2</p> <ul style="list-style-type: none"> <li>- zones of gouge &amp; rubble to 20cm thick</li> </ul> <p>39-43 - intermittent rubbly zones w/ some ground core</p> <p>44.6-45.4</p> <ul style="list-style-type: none"> <li>- interbedded, fine grained tuffs. Local shearing, ground core, minor talc</li> </ul> <p>45.4-47.2</p> <ul style="list-style-type: none"> <li>- pale greenish-grey, bleached, altered mafic(?) volcanic</li> <li>- local calcite veining w/ 1-5% specular hematite ((IP source?))</li> <li>- minor shearing, gouge 70° TCA</li> <li>- narrow zone of pumiceous-looking rock (gas breccia?) @46.9-47, waxy green, chlorite-filled vesicles</li> </ul> <p>47.2-50.2</p> <ul style="list-style-type: none"> <li>- flow breccia or tuff. Basaltic fragments w/ chlorite &amp; calcite-filled amygdules. Blocky white feldspar phenocrysts</li> <li>- veinlet of magnetite(?) @48.2</li> </ul> <p>48.5</p> <ul style="list-style-type: none"> <li>- unit becomes brecciated, or tuffaceous</li> <li>- heavy calcite veining</li> <li>- gouge, faulting at lower contact</li> </ul> | <p>37.3-39</p> <ul style="list-style-type: none"> <li>- heavy carbonate veining, white calcite &amp; abundant, salmon pink mineral</li> <li>- appears to react to HCl - probably calcite but could be barite</li> </ul> <p>- calcite-hematite</p> <ul style="list-style-type: none"> <li>- local pink staining probably due to hematite</li> <li>- locally 1-5% specular hematite in calcite veins</li> </ul> <p>- minor calcite veining w/ reddish-brown hematite(?) persists</p> <ul style="list-style-type: none"> <li>- local rusty-red staining probably due to hematite</li> </ul> | <p>- trace pyrite</p> <p>trace chalcopryite</p>                                                                                             |
| 50.9 - 54.8          | <p><u>FELSIC FLOW</u></p> <ul style="list-style-type: none"> <li>- medium greenish-grey to light tan colour</li> <li>- uniform, fine grained aphyric</li> <li>- appears siliceous but may be altered basalt</li> </ul> <p>53.9-54.8</p> <ul style="list-style-type: none"> <li>- lower contact chloritic fault gouge &amp; breccia w/ fragments of pink feldspar-porphyrific rock</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <ul style="list-style-type: none"> <li>- chlorite-calcite on fractures</li> <li>- a few chlorite specks</li> <li>- tan colour appears to be fracture-controlled alt'n</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                         | <p>51.3 -</p> <ul style="list-style-type: none"> <li>- a few stringers of fine grained pyrite</li> <li>- no significant sulfides</li> </ul> |
| 54.8 - 57.4          | <p><u>MAFIC VOLCANICS</u></p> <p>54.8-55.7 - basalt</p> <ul style="list-style-type: none"> <li>- dark green, fine grained, porphyritic</li> <li>- blocky white feldspar phenocrysts - altered</li> <li>- fine grained groundmass w/ black chlorite specks</li> <li>- local calcite-filled amygdules</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <ul style="list-style-type: none"> <li>- green altered feldspars</li> <li>- calcite veinlets, minor hematite</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                             |

| Depth & Lithology    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Alteration                                                                                | Mineralization                                     |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|----------------------------------------------------|
| 54.8 - 57.4 (Cont'd) | 55.7-57.4<br>- abundant greenish-grey, feldspar-porphyritic lithic fragments<br>- glassy chloritic groundmass<br>- narrow intervals of fine grained tuff & mafic flows toward lower contact (layers? Or fragments).<br>Sharp boundaries                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                           | - trace disseminated pyrite                        |
| 57.4 - 61.5          | <u>FELSIC VOLCANICS</u><br>- medium greenish-grey to tan colour<br>- uniform, fine grained, very similar to 50.9-54.8<br>- small chlorite specks<br>60.1 - brecciated calcite vein<br>60.1-60.5 - brecciated, chloritized<br>60.5-61.5 - intermediate flows & tuff                                                                                                                                                                                                                                                                                                                                                                                      | - chlorite-calcite veinlets<br>- very minor pink, potassic alt'n<br>- chloritic fractures |                                                    |
| 61.5 - 69.0          | <u>LITHIC TUFF</u><br>- medium green, coarse grained, tuffaceous texture<br>- small irregular chloritic lenses & fragments<br>- small rounded quartz grains, siliceous fragments<br>- occasional large fragments (to 5cm), mafic & felsic<br>- overall intermediate to felsic composition<br>- pyritic volcanic clast at 65.2<br>- 30cm porphyritic andesite fragment at 65.5<br>- most flattened fragments about 80° TCA                                                                                                                                                                                                                               | - minor calcite veining, & carbonate in groundmass                                        | - trace pyrite, disseminated & blebs               |
| 69.0 - 84.3          | <u>BASALT</u><br>- dark green to black, uniform, dense, fine grained                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | - narrow calcite-epidote veinlets on fractures, random angles to core                     |                                                    |
| 84.3 - 169.8         | <u>MAFIC FLOWS, TUFFS</u><br>84.3 - 87.3 - agglomerate<br>- densely packed w/ 4-8mm subangular, mainly siliceous fragments in a chloritic matrix<br>- fragments up to 5cm of pale green & grey porphyritic felsic volcanics<br>- occasional grey, rhyolitic fragments w/ fine disseminated pyrite<br>- a few mafic volcanic fragments, mainly toward lower contact<br><br>87.3-88.4<br>- dark green to black, fine grained<br>- sharp, slightly chilled upper contact @80° TCA<br>- calcite filled amygdules, mainly 2-4mm across<br><br>88.4-89.0<br>- lithic tuff as above<br>- upper & lower contacts 70° TCA<br><br>89.0-90.4<br>- basalt, as above | - calcite-epidote stringers                                                               | - trace pyrite, disseminated & in felsic fragments |

| Depth & Lithology     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Alteration                                                                                                                                                                                       | Mineralization                    |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| 84.3 - 169.8 (Cont'd) | <p>90.4-93.3</p> <ul style="list-style-type: none"> <li>- felsic &amp; mafic fragments to 5cm across</li> <li>- light grey porphyritic rhyolite &amp; dark green chloritic fragments</li> <li>- small, rounded qtz eyes</li> <li>- rare felsic fragments rimmed by pyrite</li> </ul> <p>93.3-94.6</p> <ul style="list-style-type: none"> <li>- basalt, as above</li> </ul> <p>94.6-96.7 - coarse agglomerate as above, upper contact 60° TCA<br/>96.7-98.7 - basalt as above, upper contact 65° TCA, lower contact 55° TCA</p> <p>98.7-106.2 - agglomerate as above</p> <ul style="list-style-type: none"> <li>- locally abundant purple-pink calcite veinlets (hematite stain?)</li> <li>- fewer large rhyolitic fragments toward lower part of unit. Mainly lapilli tuff</li> <li>- occasional calcite-epidote patches</li> <li>- lower contact ~55° TCA. Slightly displaced along fault</li> </ul> <p>106.2-106.5</p> <ul style="list-style-type: none"> <li>- basalt</li> </ul> <p>106.5-121.5</p> <ul style="list-style-type: none"> <li>- lapilli tuff as above</li> <li>- mainly small (&lt;1cm) subrounded light green &amp; light grey siliceous fragments</li> <li>- narrow bands of basalt (or diabase?) 108.4-108.8, 112.7-114</li> </ul> <p>121.5 - mafic flows</p> <ul style="list-style-type: none"> <li>- alternating massive &amp; porphyritic basaltic flows, minor pillow lava &amp; pillow breccia</li> </ul> <p>121.5-131.4</p> <ul style="list-style-type: none"> <li>- medium to dark greenish-grey massive flow</li> <li>- uniform, very fine grained, aphyric, dense, hard</li> <li>- variably chloritic, probably mafic to intermediate composition</li> </ul> <p>127.5 - 8cm breccia zone w/ hard, siliceous matrix</p> <p>131.4-134.7 - pillow lava</p> <ul style="list-style-type: none"> <li>- dark green, strongly chloritic</li> <li>- local calcite-filled amygdules</li> <li>- greenish-white, epidotized pillow cores</li> <li>- small (2-4mm) spherical, altered feldspar phenocrysts (amygdules? varioles?) locally coalescing.</li> </ul> <p>Epidote-carbonate alt'n</p> <ul style="list-style-type: none"> <li>- lower part fragmental - pillow breccia</li> </ul> <p>134.7-138.0 - massive flow</p> <ul style="list-style-type: none"> <li>- gradational contacts</li> <li>- small calcite-filled amygdules in places</li> </ul> | <p>- abundant epidote in matrix</p> <p>- pink carbonate veining, locally up to 10% of rock (eg. 101-105m)</p> <p>- local, narrow, wispy sericitic layers</p> <p>- late calcite-epidote veins</p> | <p>- rare disseminated pyrite</p> |

**HOLE NO. BE-96-12**

PROJECT NO. \_\_\_\_\_

PROPERTY Buchans East

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