**McCLELLAND LABORATORIES, INC.**

1016 Greg Street, Sparks, Nevada 89431 (775) 356-1300
FAX (775) 356-8917
E-MAIL mli@mettest.com

January 14, 2011

Mr. Scott Jolcover
**Comstock Mining, Inc.**
PO Box 1118
Virginia City, NV 89440

Dear Scott:

Enclosed is our report concerning metallurgical results obtained from bottle roll tests conducted on all drill cuttings, bulk ore, heap residue and drill core samples/composites from the Lucerne Project. This report is for metallurgical results for MLI Job No. 3273 and MLI Job No. 3439. Column leach test results will be discussed in a separate report, for both MLI Job numbers, after final results from the 20 column leach tests (in progress) conducted on bulk ore samples (and 1 - core composite) are completed and when final data are obtained.

Enclosed also is our invoice (MLI Job Nos. 3273 and 3439 / 8266) for this bottle roll test report.

It has been a pleasure serving Comstock Mining on this project, and wish you the best in bringing it to commercial production.

Sincerely,

Gene E. McClelland
Metallurgist/President

GEM:cd
Enclosures

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# Report
# on
# Preliminary Phase Metallurgical Evaluation -
# ~ 100 Samples from the Comstock Mining Lucerne Project
# MLI Job Nos. 3273 and 3439
# January 14, 2011

**for**

**Mr. Scott Jolcover**
**Comstock Mining, Inc.**
**PO Box 1118**
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**Report**
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**~ 100 Samples from the Comstock Mining Lucerne Project**
**MLI Job Nos. 3273 and 3439**
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## EXECUTIVE SUMMARY

### Sample/Composite Receipt Sequence Summary

Various drill cuttings, heap residue, bulk ore and drill core samples/composites were received from April, 2008 through November, 2010 for metallurgical evaluation.

First sets (3 shipments) of samples/composites were received April to March, 2008 and included 16 drill cuttings composites (drill holes L07-01, 02, 03 and L08-01, 02, 03) prepared by McClelland Laboratories, Inc. (MLI), 16 drill cuttings composites (drill holes L08-03c, 10, 12, 13, 14 and 14A) prepared by Comstock Mining personnel, and two heap residue samples (Cell #3-450' and Cell #3-520'). The first 16 cuttings composites (L07 & L08) were not identified by rock type or ore grade. The other 16 cuttings composites (prepared by Comstock) had some rock type description (11 of the 16 rock types - Pit backfill, Tuff Mix-Met, Deep Qtz Vein, Tuff - no rock type information was provided for the other 5 comps).

In August, 2008 an additional 39 drill cuttings intervals (5 to 20' intercepts) were received, representing high grade (HG), medium grade (MG) and low grade (LG) from three general rock types; Alta Andesite (AA), Rhyolite (RHY) and metavolcanics (MV). Seven HG, 6 MG and 26 LG intercepts were composited for bottle roll tests (39) at the as received feed size ($P_{95}$1/2"). HG and MG composites for each rock type were prepared from those 39 intercepts for grind vs. recovery cyanidation tests. In early November, 2008 an additional HG composite (all rock types) and a LG composite (all rock types) were prepared from those 39 cuttings intercepts for gravity/tail cyanidation test series and for the column leach test portion of the metallurgical testing program. The scope of work for these two composites is summarized below.

HG Comp
- Gravity conc./gravity tail cyanidation ($P_{80}$100M)
- Agglomerate strength and stability tests (HG, $P_{80}$100M, LG, ~ 1/2")
- Bond work index and crusher sizing tests
- Head screen analysis
- HG column test (CT)
- Pulp agglom. CT (20% HG, 80% LG)
- Grind thickener sizing test series

LG Comp
- Gravity conc./gravity tail cyanidation ($P_{80}$100M)
- Agglom. S&S tests (~ 1/2" feed)
- Head screen (~ 1/2" feed)
- LG CT (~ 1/2" feed)
- Pulp agglom. CT (20% HG @ $P_{80}$100M, 80% LG @ ~ 1/2")

The main objective for the above scope of work was to obtain design information for a head end gravity, partial gravity tail cyanidation (HG) and pulp agglomeration - heap leach (20% gravity/tail CN residue, 80% LG ore @ ~ 1/2") process circuit for the project. This proposed process circuit (pulp agglom) was later determined not feasible, because load/permeability testing on the pulp agglomerated leached residue determined that permeability was unacceptable after the first 21 foot heap lift, and because the HG ore heap leached well (93.8% Au recovery) at a $P_{95}$1/2" crush size.

The following sample/composites were evaluated under MLI Job No. 3439.

Drill core intervals from drill holes PC10-04, 05, 06, 08 were received in June, 2010 and were from North and South Zones of the deposit. A total of 14 composites were prepared from those drill holes (9 from North Zone, and 5 from South Zone). Bottle roll tests were conducted on each composite at $P_{80}$2" and $P_{80}$1/2" crush sizes. MV, RHY and AA rock types were represented with the 14 core composites.

On September 9, 2010, 11 bulk mined ore samples and one core composite (drill holes PC10-07 & 08) were received for bottle roll tests at $P_{80}$2" and $P_{80}$1/2" crush sizes. The 11 bulk ore samples were obtained from Dayton, Hartford and Lucerne mining areas and were identified by rock type (generally; AA, MV, QP - quartz porphyry). Those bulk ore samples (9 of 11) and the core composite were also used for CT's (20) at $P_{80}$1" and $P_{80}$1/2" crush sizes. Those 20 CT's are in progress.

**Summary Metallurgical Results - Presented in Order of Date Received**

Bottle roll tests were conducted on the first 32 cuttings composites received at the as received feed size (~ $P_{95}$1/2") to determine precious metal recovery, recovery rate and reagent requirements. These composites were not identified with rock type and grade designations. Perhaps Comstock Mining personnel can review drill data to later assign rock type designations so a complete recovery vs. rock type relationship can be obtained.

Summary results for those 32 bottle roll tests (BT's) are provided in Table 1.

**Table 1. - Summary Metallurgical Results, Bottle Roll Tests, Comstock Drill Cuttings Composites Not Identified by Rock Type (Nominal 1/2" Feeds)**

| Drill Hole | Composite Intercept, Feet | Extracted, oz/ton ore | | Tail Assay, oz/ton | | Calc'd. Head, oz/ton ore | | Recovery, percent | | Reagent Consumption, lb/ton ore | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Au | Ag | Au | Ag | Au | Ag | Au | Ag | NaCN | Lime (added) |
| L07-01 | 70-105 | 0.0460 | 0.626 | 0.0107 | 0.330 | 0.0567 | 0.956 | 81.1 | 65.5 | 0.14 | 2.1 |
| L07-01 | 105-130 | 0.0365 | 0.196 | 0.0122 | 0.211 | 0.0487 | 0.407 | 74.9 | 48.2 | 0.30 | 2.6 |
| L07-01 | 145-175 | 0.0040 | 0.200 | 0.0017 | 0.232 | 0.0057 | 0.432 | 70.2 | 46.3 | 0.63 | 3.5 |
| L07-02 | 160-200 | 0.0261 | 0.258 | 0.0610 | 0.425 | 0.0871 | 0.683 | 30.0 | 37.8 | 0.31 | 2.9 |
| L07-02 | 250-290 | 0.0127 | 0.175 | 0.0112 | 0.438 | 0.0239 | 0.613 | 53.1 | 28.5 | 0.30 | 2.7 |
| L07-03 | 40-80 | 0.0246 | 0.486 | 0.0116 | 0.534 | 0.0362 | 1.020 | 68.0 | 47.6 | 0.29 | 3.9 |
| L08-01 | 165-195 | 0.0206 | 0.531 | 0.0144 | 0.793 | 0.0350 | 1.306 | 58.9 | 39.3 | 0.35 | 5.6 |
| L08-01 | 195-215 | 0.0245 | 0.534 | 0.0088 | 1.555 | 0.0333 | 2.089 | 73.6 | 25.6 | 0.15 | 3.2 |
| L08-01 | 215-245 | 0.0791 | 1.248 | 0.0122 | 1.658 | 0.0913 | 2.906 | 86.6 | 42.9 | 0.30 | 3.1 |
| L08-02 | 90-130 | 0.0610 | 0.211 | 0.0070 | 0.155 | 0.0680 | 0.366 | 89.7 | 57.6 | 0.16 | 7.7 |
| L08-02 | 155-200 | 0.0231 | 0.131 | 0.0175 | 0.109 | 0.0406 | 0.240 | 56.9 | 54.6 | 0.14 | 4.5 |
| L08-02 | 200-225 | 0.0083 | 0.045 | 0.0093 | 0.043 | 0.0176 | 0.088 | 47.2 | 51.1 | 0.38 | 5.1 |
| L08-02 | 265-295 | 0.0066 | 0.660 | 0.0039 | 0.975 | 0.0105 | 1.635 | 62.9 | 40.4 | 0.29 | 4.4 |
| L08-03 | 70-100 | 0.0415 | 0.375 | 0.0216 | 0.449 | 0.0631 | 0.824 | 65.8 | 45.5 | 0.16 | 5.8 |
| L08-03 | 100-125 | 0.0960 | 1.943 | 0.0165 | 1.312 | 0.1125 | 3.255 | 85.3 | 59.7 | 0.60 | 4.6 |
| L08-03 | 125-140 | 0.0345 | 0.731 | 0.0184 | 0.798 | 0.0529 | 1.529 | 65.2 | 47.8 | 0.31 | 3.0 |
| L08-03c | 8-20 | 0.0173 | 0.230 | 0.0038 | 0.136 | 0.0211 | 0.366 | 82.0 | 62.8 | 0.38 | 7.6 |
| L08-03c | 20-30 | 0.0149 | 0.191 | 0.0040 | 0.106 | 0.0189 | 0.297 | 78.8 | 64.3 | 0.15 | 8.6 |
| L08-03c | 30-40 | 0.0102 | 0.133 | 0.0017 | 0.075 | 0.0119 | 0.208 | 85.7 | 63.9 | 0.15 | 10.0 |
| L08-03c | 40-50 | 0.0169 | 0.185 | 0.0042 | 0.148 | 0.0211 | 0.333 | 80.1 | 55.6 | 0.31 | 9.0 |
| L08-10 | All (?) | 0.0744 | 0.850 | 0.0222 | 1.248 | 0.0966 | 2.098 | 77.0 | 40.5 | 0.31 | 2.5 |
| L08-12 | 720-740 | 0.0102 | 0.205 | 0.0096 | 0.774 | 0.0198 | 0.979 | 51.5 | 20.9 | 0.30 | 2.1 |
| L08-13 | 5-25 | 0.0065 | 0.085 | 0.0023 | 0.081 | 0.0088 | 0.166 | 73.9 | 51.2 | 0.38 | 6.5 |
| L08-14 | 30-35 | 0.0231 | 0.531 | 0.0075 | 0.784 | 0.0306 | 1.315 | 75.5 | 40.4 | 0.45 | 2.1 |
| L08-14 | 125-130 | 0.0217 | 0.526 | 0.0100 | 1.024 | 0.0317 | 1.550 | 68.4 | 33.9 | 0.29 | 2.3 |
| L08-14 | 135-140 | 0.0140 | 0.319 | 0.0095 | 0.679 | 0.0235 | 0.998 | 59.6 | 32.0 | 0.45 | 2.1 |
| L08-14 | 140-145 | 0.0237 | 0.594 | 0.0217 | 1.839 | 0.0454 | 2.443 | 52.2 | 24.4 | 0.43 | 2.2 |
| L08-14 | 145-150 | 0.0458 | 0.723 | 0.0132 | 1.424 | 0.0590 | 2.147 | 77.6 | 33.7 | 0.31 | 3.0 |
| L08-14A | 0-70 | 0.0117 | 0.224 | 0.0020 | 0.194 | 0.0137 | 0.418 | 85.4 | 53.6 | 0.16 | 6.7 |
| L08-14A | 70-95 | 0.0291 | 0.510 | 0.0095 | 0.559 | 0.0386 | 1.069 | 75.4 | 47.7 | 0.29 | 2.7 |
| L08-14A | 95-115 | 0.0724 | 0.650 | 0.0307 | 0.703 | 0.1031 | 1.353 | 70.2 | 48.0 | 0.16 | 2.8 |
| L08-14A | 115-150 | 0.0713 | 0.747 | 0.0216 | 1.109 | 0.0929 | 1.856 | 76.7 | 40.2 | 0.31 | 3.6 |

Summary results show, generally, that the 32 cuttings composites were amenable to cyanidation treatment at the minus 1/2" crush size.

- Au grades ranged from 0.0057 to 0.1125 oz/ton ore, and Au recoveries ranged from 30.0 to 89.7 percent.
- Ag grades ranged from 0.088 to 3.255 oz/ton ore, and Ag recoveries ranged from 20.9 to 65.5 percent.
- Recovery rate data (provided later) show that Au and Ag values were being extracted at a reasonable rate when leaching was terminated at 96 hours.
- NaCN consumptions were generally low and ranged from 0.14 to 0.63 lb/ton of ore.
- Lime requirement (lime added) varied considerably from 2.1 to 10.0 lb/ton of ore.
- A trend for grade vs. recovery was not established.
- Rock type vs. recovery relationship could not be established because rock type was not identified. A rock type vs. recovery relationship for other samples/composites is provided later.

Results for water leach/cyanidation tests conducted on heap residue bulk samples (Cell #3- 450' and 520') are summarized as follows:

- Au extracted values ranged from 0.0010 to 0.0015 oz/ton, and most of the Au was extracted during the 24 hour water leach cycle indicating a recovery of dissolved values remaining in the heap.
- Ag extracted values ranged from 0.022 to 0.030 oz/ton, and nearly all Ag extraction occurred during the cyanidation portion of the leach cycle.
- Precious metal recovery increased with decreasing crush size ($P_{80}$2", 1", 1/2").
- NaCN consumptions were low at about 0.3 lb/ton.
- Lime requirement was moderate at about 3 to 4 lb/ton.
- Precious metal extraction was essentially complete at the end of the 96 hour leach cycle.

A total of 39 cuttings composites, identified by grade (HG, MG, LG) and rock type (AA, RHY, MV), were prepared in August, 2008 at the as received cuttings feed size ($P_{95}$1/2") for bottle roll tests on each.

Summary results for those 39 BT's ($P_{95}$1/2") are provided in Table 2.

**Table 2. - Summary Metallurgical Results, Bottle Roll Tests, Comstock Grade and Rock Type Cuttings Composites, As Received ($P_{95}$1/2") Feed Size**

| Drill Hole | Composite Intercept, Feet | Grade Designation | Rock Type | Extracted, oz/ton ore | | Tail Assay, oz/ton | | Calc'd. Head, oz/ton ore | | Recovery, percent | | Reagent Consumption, lb/ton ore | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Au | Ag | Au | Ag | Au | Ag | Au | Ag | NaCN | Lime (added) |
| L08-33 | 425-435 | HG | AA | 0.1308 | 1.628 | 0.0181 | 0.477 | 0.1489 | 2.105 | 87.8 | 77.3 | 0.43 | 2.9 |
| L08-33 | 415-425 | HG | AA | 0.6355 | 21.095 | 0.1980 | 11.618 | 0.8335 | 32.713 | 76.2 | 64.5 | 2.52 | 2.3 |
| L08-26 | 440-455 | HG | RHY/AA | 0.1952 | 1.206 | 0.1059 | 2.333 | 0.3011 | 3.539 | 64.8 | 34.1 | 0.62 | 2.8 |
| L08-26 | 455-465 | HG | RHY | 0.0951 | 1.797 | 0.0288 | 3.053 | 0.1239 | 4.850 | 76.8 | 37.0 | 0.44 | 3.0 |
| L08-22 | 350-360 | HG | MV | 0.1138 | 1.948 | 0.0745 | 3.393 | 0.1883 | 5.341 | 60.4 | 36.5 | 0.31 | 2.7 |
| L08-33 | 435-440 | MG | AA | 0.0484 | 0.521 | 0.0042 | 0.117 | 0.0526 | 0.638 | 92.0 | 81.7 | 0.45 | 3.4 |
| L08-33 | 210-225 | MG | AA | 0.0322 | 0.264 | 0.0170 | 0.389 | 0.0492 | 0.653 | 65.4 | 40.4 | 0.29 | 4.6 |
| L08-25 | 265-270 | MG | AA | 0.0486 | 0.303 | 0.0061 | 0.554 | 0.0547 | 0.857 | 88.8 | 35.4 | 0.29 | 5.8 |
| L08-26 | 615-625 | MG | RHY | 0.0681 | 0.230 | 0.0094 | 0.272 | 0.0775 | 0.502 | 87.9 | 45.8 | 0.44 | 4.0 |
| L08-33 | 485-495 | MG | RHY | 0.0507 | 0.941 | 0.0071 | 0.642 | 0.0578 | 1.583 | 87.7 | 59.4 | 0.46 | 2.3 |
| L08-22 | 340-350 | MG | RHY | 0.0372 | 0.360 | 0.0396 | 1.437 | 0.0768 | 1.797 | 48.4 | 20.0 | 0.31 | 2.5 |
| L08-20 | 170-185 | MG | RHY | 0.0136 | 0.127 | 0.0613 | 0.642 | 0.0749 | 0.769 | 18.2 | 16.5 | 0.31 | 2.2 |
| L08-22 | ? - 395 | MG | MV | 0.0307 | 0.480 | 0.0315 | 1.176 | 0.0622 | 1.656 | 49.4 | 29.0 | 0.34 | 3.7 |
| L08-22 | 160 - ? | LG | AA | 0.0393 | 0.174 | 0.0046 | 0.136 | 0.0439 | 0.310 | 89.5 | 56.1 | 0.50 | 8.5 |
| L08-23 | 415-425 | LG | AA | 0.0207 | 0.292 | 0.0088 | 0.525 | 0.0295 | 0.817 | 70.2 | 35.7 | 0.29 | 4.1 |
| L08-23 | 370-385 | LG | AA | 0.0090 | 0.070 | 0.0028 | 0.068 | 0.0118 | 0.138 | 76.3 | 50.7 | 0.26 | 7.3 |
| L08-27 | 450-465 | LG | AA | 0.0063 | 0.023 | 0.0031 | 0.029 | 0.0094 | 0.052 | 67.0 | 44.2 | 0.59 | 3.8 |
| L08-34 | 180-185 | LG | AA | 0.0044 | 0.108 | 0.0017 | 0.252 | 0.0061 | 0.360 | 72.1 | 30.0 | 0.30 | 4.5 |
| L08-34 | 15-20 | LG | AA | 0.0024 | 0.071 | 0.0016 | 0.146 | 0.0040 | 0.217 | 60.0 | 32.7 | 0.30 | 5.3 |
| L08-34 | 140-145 | LG | AA | 0.0180 | 0.237 | 0.0046 | 0.826 | 0.0226 | 1.063 | 79.6 | 22.3 | 0.14 | 3.6 |
| L08-35 | 420-435 | LG | AA | 0.0025 | 0.013 | 0.0006 | 0.029 | 0.0031 | 0.042 | 80.6 | 31.0 | 0.45 | 3.4 |
| L08-26 | 595-615 | LG | AA | 0.0269 | 0.129 | 0.0032 | 0.068 | 0.0301 | 0.197 | 89.4 | 65.5 | 0.43 | 2.5 |
| L08-35 | 150-155 | LG | AA | 0.0111 | 0.258 | 0.0060 | 0.302 | 0.0171 | 0.560 | 64.9 | 46.1 | 0.19 | 4.2 |
| L08-35 | 260-265 | LG | AA | 0.0348 | 0.283 | 0.0034 | 0.223 | 0.0382 | 0.506 | 91.1 | 55.9 | 0.10 | 6.2 |
| L08-25 | 355-360 | LG | AA | 0.0177 | 0.391 | 0.0045 | 0.602 | 0.0222 | 0.993 | 79.7 | 39.4 | 0.20 | 4.7 |
| L08-35 | 250-255 | LG | AA | 0.0124 | 0.317 | 0.0041 | 0.272 | 0.0165 | 0.589 | 75.2 | 53.8 | 0.31 | 5.8 |
| L08-35 | 280-285 | LG | AA | 0.0005 | 0.008 | 0.0006 | <0.029 | 0.0011 | <0.037 | 45.4 | >21.6 | 0.47 | 2.9 |
| L08-32 | 475-485 | LG | AA | 0.0095 | 0.445 | 0.0047 | 0.622 | 0.0142 | 1.067 | 66.9 | 41.7 | 0.30 | 5.7 |
| L08-33 | 225-235 | LG | AA | 0.0182 | 0.063 | 0.0148 | 0.049 | 0.0330 | 0.112 | 55.2 | 56.2 | 0.47 | 4.0 |
| L08-35 | 210-215 | LG | AA | 0.0179 | 0.214 | 0.0117 | 0.243 | 0.0296 | 0.457 | 60.5 | 46.8 | 0.46 | 4.3 |
| L08-35 | 200-205 | LG | AA | 0.0226 | 0.459 | 0.0076 | 0.982 | 0.0302 | 1.441 | 74.8 | 31.8 | 0.31 | 5.1 |
| L08-26 | 535-555 | LG | RHY | 0.0107 | 0.099 | 0.0040 | 0.156 | 0.0147 | 0.255 | 72.8 | 38.8 | 0.11 | 2.8 |
| L08-27 | 590-635 | LG | RHY/MV | 0.0093 | 0.175 | 0.0044 | 0.574 | 0.0137 | 0.749 | 67.9 | 23.4 | 0.30 | 3.3 |
| L08-27 | 570-585 | LG | RHY | 0.0083 | 0.136 | 0.0044 | 1.186 | 0.0127 | 1.322 | 65.4 | 10.3 | 0.30 | 2.4 |
| L08-31 | 480-485 | LG | RHY | 0.0148 | 0.240 | 0.0106 | 0.379 | 0.0254 | 0.619 | 58.3 | 38.8 | 0.44 | 3.8 |
| L08-26 | 475-495 | LG | RHY | 0.0228 | 0.406 | 0.0046 | 0.253 | 0.0274 | 0.659 | 83.2 | 61.6 | 0.40 | 3.2 |
| L08-32 | 545-555 | LG | RHY | 0.0107 | 0.099 | 0.0046 | 0.156 | 0.0147 | 0.255 | 72.8 | 38.8 | 0.11 | 2.8 |
| L08-31 | 535-545 | LG | MV/RHY | 0.0117 | 0.081 | 0.0085 | 0.107 | 0.0202 | 0.188 | 57.9 | 43.1 | 0.42 | 3.2 |
| L08-20 | 315 - ? | LG | MV | 0.0081 | 0.180 | 0.0123 | 0.992 | 0.0204 | 1.172 | 39.7 | 15.4 | 0.25 | 3.1 |

Summary results show that, in general, the grade and rock type composites were amenable to cyanidation at the cuttings feed size. There was no definite trend established for grade vs. recovery, but a trend for rock type vs. recovery was indicated. These trends are discussed later in this Executive Summary. General results are summarized below.

- Au grades ranged from 0.0011 to 0.8335 oz/ton of ore. Au recoveries ranged from 18.2 to 92.0 percent.
- Ag grades ranged from <0.037 to 32.713 oz/ton of ore and Ag recoveries ranged from 10.3 to 81.7 percent.
- Recovery rate data show that precious metal values were being extracted at a reasonable rate when leaching was terminated at 96 hours.
- NaCN consumptions varied considerably, but were generally low. NaCN consumptions ranged from 0.10 to 2.52 (L08-33, 415-425' - HG, AA) lbs/ton of ore.
- Lime requirements (lime added) also varied, and ranged from 2.2 to 8.5 lbs/ton of ore.

In September to October, 2008 HG and MG cuttings composites were prepared from some of the 39 cuttings composites prepared in August, 2008. The HG and MG cuttings composites represented the three rock types (AA, RHY, MV). These composites were prepared for grind vs. recovery cyanidation tests to optimize grind size for a commercial grind circuit for a milling or pulp agglomeration-heap leach process scenario. Grind sizes of $P_{80}$100 mesh and $P_{80}$200 mesh were evaluated.

Summary results for grind vs. recovery cyanidation tests for the HG (3) and MG (2) rock type composites are provided in Table 3.

**Table 3. - Summary Metallurgical Results, Grind vs. Recovery Cyanidation Tests, Comstock HG & MG/Rock Type Composites**

| Grade | Rock | 80% Passing | Extracted, oz/ton ore | | Tail Assay, oz/ton | | Calc'd. Head, oz/ton ore | | Recovery, percent | | Reagent Consumption, lb/ton ore | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Designation | Type | Size, mesh | Au | Ag | Au | Ag | Au | Ag | Au | Ag | NaCN | Lime (added) |
| HG | AA | 100 | 0.4984 | 8.316 | 0.0115 | 3.500 | 0.5099 | 11.816 | 97.7 | 70.4 | 0.91 | 5.2 |
| HG | AA | 200 | 0.3427 | 8.333 | 0.0061 | 3.005 | 0.3488 | 11.338 | 98.2 | 73.5 | 1.20 | 5.5 |
| HG | RHY | 100 | 0.1264 | 2.356 | 0.0052 | 1.283 | 0.1316 | 3.639 | 96.0 | 64.7 | 0.43 | 2.4 |
| HG | RHY | 200 | 0.1215 | 2.568 | 0.0030 | 0.865 | 0.1245 | 3.433 | 97.6 | 74.8 | 0.61 | 2.7 |
| HG | MV | 100 | 0.1647 | 3.024 | 0.0053 | 3.053 | 0.1700 | 6.077 | 96.9 | 49.8 | 0.30 | 2.9 |
| HG | MV | 200 | 0.1545 | 3.333 | 0.0046 | 2.732 | 0.1591 | 6.065 | 97.1 | 55.0 | 0.74 | 3.1 |
| MG | AA | 100 | 0.0457 | 0.564 | 0.0013 | 0.058 | 0.0470 | 0.622 | 97.2 | 90.7 | 0.54 | 5.7 |
| MG | AA | 200 | 0.0488 | 0.629 | 0.0009 | 0.029 | 0.0497 | 0.658 | 98.2 | 95.6 | 1.08 | 5.7 |
| MG | RHY | 100 | 0.0422 | 0.190 | 0.0015 | 0.088 | 0.0437 | 0.278 | 96.6 | 68.3 | 0.28 | 2.6 |
| MG | RHY | 200 | 0.0379 | 0.195 | 0.0008 | 0.039 | 0.0387 | 0.234 | 97.9 | 83.3 | 0.45 | 2.8 |

AA = Alta Andesite
RHY = Rhyolite SCT
MV = Metavolcanics

Summary results show that HG and MG rock type composites are readily amenable to milling/cyanidation processing at both grind sizes ($P_{80}$100 and 200M). Results are summarized as follows:

- Au grades ranged from 0.0387 to 0.5099 oz/ton of ore and Au recoveries ranged from 96.0 to 98.2 percent. Au recovery from $P_{80}$200M feeds was only slightly higher than for the $P_{80}$100M feeds (0.2 to 1.6 percent higher), and the optimum grind size was determined to be $P_{80}$100M (or perhaps coarser).
- Recovery rate data, for most composites, show that Au extraction was essentially complete in 72 hours. A 72 hour leach cycle for ground feeds, however, is considered a long retention time.
- Ag grades ranged from 0.234 to 11.816 oz/ton of ore, and Ag recoveries ranged from 49.8 to 95.6 percent. Ag recoveries increased (3.1 to 20%) with decreasing grind size, but the difference in Ag and Au value would likely not make grinding finer than $P_{80}$100M economical. The HG and MG RHY composites were most sensitive to grind size with respect to Ag recovery.
- Recovery rate data show that Ag was being extracted at a reasonable rate when leaching was terminated at 96 hours. However, extending the 72 hour retention time for Au recovery to 96 hours or longer for Ag recovery would likely not be economical.
- NaCN consumptions were generally moderate to high and ranged from 0.28 to 1.20 lbs/ton of ore.
- Lime requirements were generally moderate and ranged from 2.4 to 5.7 lbs/ton of ore.

Overall HG and LG cuttings composites were prepared, from the original 39 cuttings composites, in November, 2008 for use in gravity/cyanidation tests, the column leach test phase, and for comminution and grind thickener sizing tests. Again, this phase of testing was part of the initially planned pulp agglomeration-heap leach processing sequence for mineable ores at the project. This processing sequence was deemed impractical because pulp agglomerated (20% $P_{80}$100M HG, 80%-1/2" LG) materials could not be stacked and leached in heaps over 20 feet high, and because column leach test results for the HG composite (w/o pulp agglomeration) was readily amenable to heap leach treatment at the minus 1/2" crush size. After Comstock's review of data from this phase of the testing program, it was suggested that HG ore be selectively mined, crushed and heap leached on a segregated pad area, and proceed with heap leaching plans for MG and LG ores. A full milling/cyanidation processing sequence for HG ores may be feasible at some time during commercial heap leach production if sufficient selectively mineable HG tonnage is developed. MG and LG ores would still be processed by heap leach cyanidation for economic recovery of Au and Ag values.

Gravity concentration test results and subsequent gravity Ro. Tail cyanidation test results are summarized below ($P_{80}$100M HG and LG composite feeds).

- About 30 percent of the contained Au reported to the gravity cleaner concentrate (Cl. Conc.). About 6 percent of contained Ag reported to the Cl. Conc.
- Weight concentration ratios were acceptable at ~ 200:1 (Cl. Conc.:Feed). Au and Ag concentration ratios were about 60:1 and 12:1, respectively.
- Cl. Conc. grades were too low for direct smelting, so concentrates would have to be cyanided to recover precious metal values.
- Combined gravity/Ro. Tail cyanidation recoveries were ~ 97 and 74 percent Au and Ag, respectively.

Based on these results, and because milling/cyanidation of whole ore (HG and MG) was efficient, it was determined that adding a "head end" gravity circuit to the milling/cyanidation circuit would provide no economic benefit.

Column leach test data for HG and LG cuttings composites and the HG/LG pulp agglomeration test are summarized in Table 4.

**Table 4. - Column Leach Test Summary Results,**
**HG and LG Cuttings Composites**

| Composite | Feed | Days | Extracted, oz/ton ore | | Tail Screen, oz/ton | | Calc'd. Head, oz/ton ore | | Recovery, percent | | Reagent Consumption, lb/ton ore | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I.D. | Size | Leached | Au | Ag | Au | Ag | Au | Ag | Au | Ag | NaCN | Cement (added) |
| LG | $P_{98}$1/2" | 184 | 0.0183 | 0.338 | 0.0057 | 0.330 | 0.0240 | 0.668 | 76.3 | 50.6 | 0.87 | 8.0 |
| HG | $P_{98}$1/2" | 323 | 0.2241 | 4.997 | 0.0147 | 0.969 | 0.2388 | 5.966 | 93.8 | 83.8 | 4.73 | 6.0 |
| HG/LG | 100M HG/1/2" LG[1)] | 148 | 0.0167 | 0.547 | 0.0025 | 0.332 | 0.0222 | 0.879 | 87.0 | 62.2 | 0.74 | 10.0 |

1) HG ore ($P_{80}$100M) was subjected to gravity concentration and 24 hour Ro. Tail cyanidation before being agglomerated with the LG ore.

Summary results show that heap leach processing of HG and LG ores (AA, RHY, MV rock types included) is efficient for recovery of precious metal values from the minus 1/2" cuttings composites. Heap leaching is the recommended processing method for the project at least during the first portion (2 years) of the commercial operation.

Following summary results are for core composites and bulk mined ore samples received in 2010 and metallurgical testwork was conducted under MLI Job No. 3439.

In June, 2010, nine core composites from the North Ore Zone (PC10-04, 05, 08) and five core composites from the South Ore Zone (PC10-06) were prepared for BT's at $P_{80}$2" and $P_{80}$1/2" crush sizes.

Summary results for those 28 BT's are provided in Table 5.

**Table 5. - Summary Metallurgical Results, Bottle Roll Tests, Comstock Drill Core Composites (North & South Zones), $P_{80}$2" and $P_{80}$1/2" Feeds**

| Drill Hole | Interval, Feet | Feed Size, Inch | Rock Type | Extracted, oz/ton ore | | Tail Assay, oz/ton | | Calc'd. Head, oz/ton ore | | Recovery, percent | | Reagent Consumption, lb/ton ore | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Au | Ag | Au | Ag | Au | Ag | Au | Ag | NaCN | Lime (added) |
| **North Zone Core Composites** | | | | | | | | | | | | | |
| PC10-08 | 76-84 | 2 | MV | 0.0014 | 0.080 | 0.0113 | 0.275 | 0.0127 | 0.355 | 11.0 | 22.5 | 0.30 | 1.9 |
| PC10-08 | 76-84 | 1/2 | MV | 0.0096 | 0.130 | 0.0270 | 0.501 | 0.0366 | 0.631 | 26.2 | 20.6 | 0.29 | 2.2 |
| PC10-08 | 68-76 | 2 | RHY | 0.2247 | 4.94 | 0.2550 | 9.50 | 0.4797 | 14.44 | 46.8 | 34.2 | 0.45 | 1.0 |
| PC10-08 | 68-76 | 1/2 | RHY | 0.1777 | 3.56 | 0.1457 | 4.73 | 0.3234 | 8.29 | 54.9 | 42.9 | 0.58 | 1.1 |
| PC10-04 | 152.5-163 | 2 | AA | 0.0208 | 0.138 | 0.0120 | 0.217 | 0.0328 | 0.355 | 63.4 | 38.9 | 0.15 | 2.6 |
| PC10-04 | 152.5-163 | 1/2 | AA | 0.0292 | 0.168 | 0.0197 | 0.163 | 0.0489 | 0.331 | 59.7 | 50.8 | 0.48 | 3.0 |
| PC10-05 | 214-223 | 2 | MV | 0.0014 | 0.050 | 0.0030 | 0.366 | 0.0044 | 0.416 | 31.8 | 12.0 | 0.39 | 3.4 |
| PC10-05 | 214-223 | 1/2 | MV | 0.0011 | 0.048 | 0.0030 | 0.150 | 0.0041 | 0.198 | 26.8 | 24.2 | 0.31 | 3.7 |
| PC10-08 | 59.5-68 | 2 | RHY | 0.0051 | 0.130 | 0.0217 | 0.642 | 0.0268 | 0.772 | 19.0 | 16.8 | <0.05 | 1.3 |
| PC10-08 | 59.5-68 | 1/2 | RHY | 0.0085 | 0.202 | 0.0150 | 0.845 | 0.0235 | 1.047 | 36.2 | 19.3 | 0.14 | 1.0 |
| PC10-04 | 30.5-43 | 2 | AA | 0.0317 | 0.154 | 0.0343 | 0.553 | 0.0660 | 0.707 | 48.0 | 21.8 | 0.47 | 8.1 |
| PC10-04 | 30.5-43 | 1/2 | AA | 0.0242 | 0.182 | 0.0333 | 0.414 | 0.0575 | 0.596 | 42.1 | 30.5 | 0.67 | 10.5 |
| PC10-05 | 223-231 | 2 | MV | 0.0005 | 0.021 | 0.0020 | 0.144 | 0.0025 | 0.165 | 20.0 | 12.7 | <0.05 | 2.2 |
| PC10-05 | 223-231 | 1/2 | MV | 0.0006 | 0.031 | 0.0010 | 0.142 | 0.0016 | 0.173 | 37.5 | 17.9 | 0.31 | 2.4 |
| PC10-04 | 356-365 | 2 | RHY | 0.0009 | 0.011 | 0.0020 | 0.048 | 0.0029 | 0.059 | 31.0 | 18.6 | <0.05 | 2.1 |
| PC10-04 | 356-365 | 1/2 | RHY | 0.0006 | 0.009 | 0.0013 | 0.030 | 0.0019 | 0.039 | 31.6 | 23.1 | 0.19 | 2.0 |
| PC10-04 | 99.5-108 | 2 | AA | 0.0005 | 0.010 | 0.0037 | 0.030 | 0.0042 | 0.040 | 11.9 | 25.0 | 0.23 | 3.6 |
| PC10-04 | 99.5-108 | 1/2 | AA | 0.0006 | 0.016 | 0.0007 | 0.036 | 0.0013 | 0.052 | 46.2 | 30.8 | 0.30 | 2.7 |
| **South Zone Core Composites** | | | | | | | | | | | | | |
| PC10-06 | 113-120 | 2 | MV | 0.0047 | 0.208 | 0.0033 | 0.277 | 0.0080 | 0.485 | 58.8 | 42.9 | 0.16 | 3.1 |
| PC10-06 | 113-120 | 1/2 | MV | 0.0079 | 0.303 | 0.0260 | 0.477 | 0.0339 | 0.780 | 23.3 | 38.8 | 0.48 | 3.0 |
| PC10-06 | 52-62 | 2 | AA | 0.0062 | 0.177 | 0.0040 | 0.188 | 0.0102 | 0.365 | 60.8 | 48.4 | 0.32 | 6.1 |
| PC10-06 | 52-62 | 1/2 | AA | 0.0055 | 0.153 | 0.0027 | 0.234 | 0.0082 | 0.387 | 67.1 | 39.5 | 0.27 | 4.8 |
| PC10-06 | 78-91 | 2 | AA | 0.0099 | 0.589 | 0.0013 | 0.771 | 0.0112 | 1.360 | 88.4 | 43.3 | 0.29 | 6.1 |
| PC10-06 | 78-91 | 1/2 | AA | 0.0096 | 0.600 | 0.0030 | 0.717 | 0.0126 | 1.317 | 76.2 | 45.6 | 0.28 | 5.1 |
| PC10-06 | 123.5-130 | 2 | MV | 0.0000 | 0.021 | 0.0000 | 0.070 | 0.0000 | 0.091 | 0.0 | 23.1 | 0.09 | 3.5 |
| PC10-06 | 123.5-130 | 1/2 | MV | 0.0006 | 0.034 | <0.0010 | 0.119 | <0.0016 | 0.153 | >37.5 | 22.2 | 0.28 | 2.6 |
| PC10-06 | 91-113 | 2 | AA | 0.0113 | 0.586 | 0.0043 | 0.666 | 0.0156 | 1.252 | 72.4 | 46.8 | 0.15 | 4.8 |
| PC10-06 | 91-113 | 1/2 | AA | 0.0145 | 0.747 | 0.0060 | 0.942 | 0.0205 | 1.698 | 70.7 | 44.2 | 0.30 | 3.4 |

Precious metal recoveries from these core composites were generally much lower than those achieved from previously summarized cuttings composites ($P_{95}$1/2" feeds). Results from these core composites are considered suspect for the following reasons.

- Calculated head grades for 2" and 1/2" crush sizes did not agree well.
- Many of the core composites contained <0.01 ozAu/ton.
- Drill hole locations were not provided to MLI, but should be compared to drill locations of RC drill holes and mining areas where the bulk ore samples were mined.

The concern here is that these drill holes do not necessarily represent mineable ore, and recovery from $P_{80}$1/2" feeds are lower than recoveries obtained from cuttings composites at a similar feed size (~ $P_{95}$1/2") for the various rock types (AA, RHY, MV). If these core composites (drill holes) were drilled near RC holes and/or bulk ore mined areas, and do indeed represent mineable ore at depth, a larger concern is raised. That concern is that if recoveries for these core composites are characteristic of ore mined at depth, the economics of the project are not as acceptable.

It was recommended that new core holes be drilled in the bulk sample mined area and to "twin" previous RC drill holes to allay or confirm the concerns. Those core holes are being drilled, or will be drilled early in 2011. That said, it is suspected that core composites summarized in Table 5 are anomalous and not representative of most mineable ore tonnage.

Results for the core composites are summarized below.

- Au grades ranged from 0 to 0.4797 oz/ton of ore, and recoveries ranged from 0 to 88.4 percent. However, most gold recoveries were <60 percent.
- Ag grades ranged from 0.039 to 14.44 oz/ton of ore and recoveries ranged from 12.0 to 50.8 percent.
- $P_{80}$2" and $P_{80}$1/2" calculated head grades did not agree well for respective composites which renders recovery percentages vs. crush size suspect or at least difficult to evaluate accurately.
- Recovery rate data show that precious metals were still being extracted when leaching was terminated at 96 hours, for most of the core composites.
- Visual head grade predictions by Comstock personnel generally did not match calculated head grades from the 2" and 1/2" feed BT's.
- Au and Ag recoveries were generally higher for South Zone composites than for North Zone composites.
- NaCN consumptions were low, and lime requirements varied from low (<2 lbs/ton) to high (>8 lbs/ton).

Eleven bulk ore samples from three mining areas (Dayton, Hartford, Lucerne) of varied grade (HG, MG, LG) and rock type (AA, MV, QP) as well as one core composite drilled near Lucerne (PC10-07, 08) were received September 9, 2010 for BT's at $P_{80}$2" and $P_{80}$1/2" crush sizes. It was planned to later obtain 4 ton bulk ore samples from the same respective bulk ore mined areas for use in the CT phase of the metallurgical testing program. It was later determined, based on indicated optimum heap leach crush size, that there was a sufficient quantity of each bulk ore samples to conduct CT's on $P_{80}$1" and $P_{80}$1/2" crush sizes. A total of 20 CT's are in progress on the bulk ore samples and the core composite. Bulk ore samples HM-009 and HM-013 were combined to produce an HM-MG composite for CT's. Bulk ore samples LM-019, 020, 021 and LM-026, 027 were combined to produce an LM-LG composite for CT's at the two crush sizes. As a result of the compositing, only 9 bulk ore samples/composites are being used for CT's at the two crush sizes (18 CT's). The core composite at the two crush sizes (2 CT's) is also being used for CT's, for a total of 20 tests.

Poor recoveries (BT's and interim CT's) from the core composite (P10-07, 08) raised questions about the representative nature of the core composite. Comstock geologists later described the P10-07, 08 core composite as highly siliceous and determined the composite as representing only a small percentage of mineable ore. Consequently, results (BT and CT) are considered non-representative, but does demonstrate that siliceous ores (QP) are less amenable to heap leach cyanidation because values are not liberated by crushing.

Summary metallurgical results for BT's conducted on bulk ore samples (11) and the core composite are provided in Table 6.

**Table 6. - Summary Metallurgical Results, Bottle Roll Tests, Comstock Bulk Ore Samples (1 Core Comp), Varied Crush Sizes**

| Bulk Ore I.D. | Crush Size, 80% Passing | Rock Type | Extracted, oz/ton ore | | Tail Assay, oz/ton | | Calc'd. Head, oz/ton ore | | Recovery, percent | | Reagent Consumption, lb/ton ore | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Au | Ag | Au | Ag | Au | Ag | Au | Ag | NaCN | Lime (added) |
| DA-001 LG | 2" | Mix[1)] | 0.0143 | 0.07 | 0.0148 | 0.17 | 0.0291 | 0.24 | 49.1 | 29.2 | <0.05 | 2.0 |
| DA-001 LG | 1/2" | Mix[1)] | 0.0159 | 0.08 | 0.0137 | 0.13 | 0.0296 | 0.21 | 53.7 | 38.1 | 0.16 | 4.2 |
| DP-004 MG | 2" | AA | 0.0494 | 0.21 | 0.0170 | 0.61 | 0.0664 | 0.82 | 74.4 | 25.6 | 0.24 | 10.5 |
| DP-004 MG | 1/2" | AA | 0.0469 | 0.27 | 0.0080 | 0.51 | 0.0549 | 0.82 | 85.4 | 34.6 | 0.19 | 10.5 |
| DP-005 MG/HG | 2" | AA | 0.0801 | 0.18 | 0.0433 | 0.60 | 0.1234 | 0.78 | 64.9 | 23.1 | <0.05 | 5.2 |
| DP-005 MG/HG | 1/2" | AA | 0.0990 | 0.26 | 0.0332 | 0.46 | 0.1322 | 0.72 | 74.9 | 36.1 | 0.21 | 5.5 |
| HM-011 LG | 2" | QP | 0.0090 | 0.34 | 0.0067 | 0.33 | 0.0157 | 0.67 | 57.3 | 50.7 | <0.05 | 2.9 |
| HM-011 LG | 1/2" | QP | 0.0139 | 0.46 | 0.0053 | 0.23 | 0.0192 | 0.69 | 72.4 | 66.7 | 0.31 | 5.3 |
| HM-009 LG/MG | 2" | QP | 0.0076 | 0.03 | 0.0190 | 0.22 | 0.0266 | 0.25 | 28.6 | 12.0 | 0.15 | 5.4 |
| HM-009 LG/MG | 1/2" | QP | 0.0088 | 0.06 | 0.0123 | 0.15 | 0.0211 | 0.21 | 41.7 | 28.6 | 0.19 | 6.7 |
| HM-013 MG | 2" | MV | 0.0157 | 0.12 | 0.0280 | 0.50 | 0.0437 | 0.62 | 35.9 | 19.4 | <0.05 | 5.7 |
| HM-013 MG | 1/2" | MV | 0.0228 | 0.20 | 0.0200 | 0.54 | 0.0428 | 0.74 | 53.3 | 27.0 | 0.15 | 8.4 |
| HM-010 HG | 2" | AA/QP[2)] | 0.0375 | 0.40 | 0.1183 | 0.83 | 0.1558 | 1.23 | 24.1 | 32.5 | <0.05 | 4.6 |
| HM-010 HG | 1/2" | AA/QP[2)] | 0.0472 | 0.48 | 0.0787 | 0.55 | 0.1259 | 1.03 | 37.5 | 46.6 | 0.15 | 5.2 |
| LM-006, 007 LG | 2" | AA[3)] | 0.0107 | 0.10 | 0.0060 | 0.21 | 0.0167 | 0.31 | 64.1 | 32.3 | <0.05 | 3.8 |
| LM-006, 007 LG | 1/2" | AA[3)] | 0.0124 | 0.16 | 0.0037 | 0.13 | 0.0161 | 0.29 | 79.5 | 55.2 | 0.19 | 7.7 |
| LM-019, 020, 021 LG | 2" | AA/QP[2)] | 0.0094 | 0.08 | 0.0263 | 0.20 | 0.0357 | 0.28 | 26.3 | 28.6 | 0.09 | 5.3 |
| LM-019, 020, 021 LG | 1/2" | AA/QP[2)] | 0.0133 | 0.13 | 0.0140 | 0.11 | 0.0273 | 0.24 | 48.7 | 54.2 | 0.14 | 14.5 |
| LM-026, 027 LG | 2" | AA/MN[4)] | 0.0072 | 0.24 | 0.0093 | 1.32 | 0.0165 | 1.56 | 43.6 | 15.4 | <0.05 | 2.2 |
| LM-026, 027 LG | 1/2" | AA/MN[4)] | 0.0102 | 0.41 | 0.0090 | 1.35 | 0.0192 | 1.76 | 53.1 | 23.3 | 0.15 | 3.1 |
| LM-010,011 HG | 2" | QP[5)] | 0.0936 | 0.54 | 0.1640 | 1.38 | 0.2576 | 1.92 | 36.3 | 28.1 | <0.05 | 2.5 |
| LM-010,011 HG | 1/2" | QP[5)] | 0.1385 | 0.72 | 0.0605 | 1.04 | 0.1990 | 1.76 | 69.6 | 40.9 | 0.20 | 3.1 |
| PC10, 07, 08 MG | 2" | N/A[6)] | 0.0147 | 0.29 | 0.1120 | 1.50 | 0.1267 | 1.79 | 11.6 | 16.2 | <0.05 | 1.0 |
| PC10, 07, 08 MG | 1/2" | N/A[6)] | 0.0241 | 0.51 | 0.0257 | 0.70 | 0.0498 | 1.21 | 48.4 | 42.1 | 0.16 | 2.0 |

1) Breccia including AA, QP, RHY, Limonite and Mn.
2) Contact of AA & QP - HM-010 fault zone on contact with AA & QP.
3) Hanging wall (AA)
4) AA in fault zone with Mn
5) Silver City fault on contact with mostly QP
6) Core composite described as high silicification.

Many of the bulk ore samples were amenable to heap leach cyanidation at both crush sizes evaluated ($P_{80}$2" and $P_{80}$1/2"), but recoveries from 1/2" feeds were higher for all 11 bulk ore samples and the core composite. Summary results below are for 1/2" feeds only (core comp data not included).

- Au grades (1/2" feeds) ranged from 0.0161 to 0.1990 oz/ton of ore and recoveries from 37.5 to 85.4 percent. Au values were being extracted from most samples when leaching was terminated at 96 hours.
- Ag grades ranged from 0.21 to 1.76 oz/ton of ore, and recoveries ranged from 23.3 to 66.7 percent. For most samples, Ag was being extracted when leaching was terminated at 96 hours.
- NaCN consumptions were low and ranged from 0.14 to 0.31 lbs/ton of ore. Consumption was lower for 2" feeds.
- Lime requirements (lime added) were generally moderate and ranged from 3.1 to 14.5 lbs/ton of ore. The 14.5 lbs lime/ton requirement will be lower, because an excess of lime was inadvertently added during the BT. Lime requirements were generally lower for 2" feeds.
- AA rock type recoveries were higher than for MV rock types. Recoveries were lower for all bulk ore samples with QP in the rock type designation.

- The core composite (PC10-07, 08) was described as highly siliceous, is a very small percentage of mineable ore, and was not representative. Consequently, results from the core composite should not be included in the project data base for ores mined for commercial heap leach production.

All BT data for nominal 1/2" feeds was reviewed specifically to establish relationships (trends) with respect to grade vs. recovery and rock type vs. recovery. Core composite data was not included in the relationships because core composites BT results are considered, presently, as anomalous.

There was no real trend established for a grade vs. recovery relationship as summarized in Table 7.

**Table 7. - Gold Grade vs. Au Recovery Relationship (Regardless of Rock Type), Bottle Roll Tests, Comstock Samples/Composites, Nominal 1/2" Feeds (Core Comps not Included)**

| Grade Designation | Average Au Grade, oz/ton ore | Average Au Recovery, % | Number of Tests | Au Grade Range, oz/ton ore |
|---|---|---|---|---|
| LG | 0.0206 | 67.5 | 48 | 0.001-0.04 |
| MG | 0.0584 | 68.0 | 20 | 0.04-0.09 |
| HG | 0.1961 | 72.6 | 13 | >0.09 |

Summary data show that average recoveries from LG and MG were the same (68%). Recoveries (avg.) from HG samples/composites were somewhat higher (~ 73%), but a grade vs. recovery trend was not definitely established.

A rock type vs. Au recovery trend was established as seen in Table 8.

**Table 8. - Rock Type vs. Au Recovery Relationship (Regardless of Grade), Bottle Roll Tests, Comstock Samples/Composites, Nominal 1/2" Feeds (Core Comps not Included)**

| Rock Type | Average Au Grade, oz/ton ore | Average Au Recovery, % | Number of Tests |
|---|---|---|---|
| AA | 0.0656 | 74.9 | 26 |
| RHY | 0.0792 | 66.4 | 10 |
| MV | 0.0579 | 54.8 | 6 |
| QP | 0.0660 | 52.8 | 7 |

Summary data show that recoveries from the AA rock type was about 10% higher than the RHY rock type and recoveries from the RHY rock type were about 10% higher than MV and QP rock types. Average Au recoveries were essentially the same (~ 53 - 55%) for the MV and QP rock types.

There were a sufficient number of tests to attempt a grade vs. Au recovery relationship for the AA rock type, but the indicated trend may not be statistically accurate because of the low number of tests conducted on each of the four grade ranges selected. Gold recoveries were relatively high for all grade ranges. This general trend is shown in Table 9.

**Table 9. - Gold Grade vs. Au Recovery Relationship, AA Rock Type, Bottle Roll Tests, Comstock Samples/Composites, Nominal 1/2" Feeds (Core Comps not Included)**

| Grade Designation | Rock Type | Average Au Grade, oz/ton ore | Average Au Recovery, % | Number of Tests | Au Grade Range, oz/ton ore |
|---|---|---|---|---|---|
| Very LG | AA | 0.0047 | 65.1 | 5 | 0.0011-0.0094 |
| LG | AA | 0.0262 | 74.1 | 13 | 0.01-0.04 |
| MG | AA | 0.0511 | 84.2 | 5 | 0.04-0.08 |
| HG | AA | 0.3715 | 79.6 | 3 | >0.08 |

Column leach tests are in progress on 9 bulk ore samples at $P_{80}$1" and $P_{80}$1/2" crush sizes. To date extracted Au values are very encouraging and extracted values are nearly the same for both crush sizes. Precious metal recoveries are not projected because calculated heads from the respective column leach tests cannot be obtained until the CT's are completed and tail screen analysis data is received and calculated.

**General Comments and Recommendations**

- BT and CT data to date indicate that ores represented by these samples/composites are amenable to heap leach cyanidation treatment at a $P_{80}$1/2" or coarser ($P_{80}$1") crush size, especially for AA and RHY rock types.
- Milling/cyanidation test results show that all rock types (AA, RHY, MV) are readily amenable to cyanidation at a $P_{80}$100 mesh grind size. Head end gravity concentration is not necessary for a milling/cyanidation process sequence.
- If heap leaching, with cement agglomeration, is selected for all ore grades early on in commercial production, HG ores should be leached on a pad separate from lower grade ores to segregate preg solutions for Zn ppt'n and for easy access in case heap leaching is not as efficient for HG as currently anticipated. Segregation of HG will allow milling/cyanidation of partially leached HG heap material if a mill is ultimately constructed and heap recoveries are less than desired.
- A milling/cyanidation circuit may be selected for HG ore later in project development/ commercial production if sufficient HG tonnage is identified which can be selectively mined. A heap leach operation would still be necessary for lower grade ores.
- It is strongly recommended that core holes be drilled near previous RC holes and areas of bulk ore sample acquisition to confirm that bulk ore samples currently being evaluated do represent ore at depth and to have core available for at least BT's to compare data from RC holes ($P_{95}$1/2" feeds). Also, new core must be obtained to confirm that core composites evaluated in this metallurgical test program are indeed anomalous.
- Mineable tonnages by rock type should be calculated so the impact on economics of MV and QP rock types mined and processed can be ascertained.

- Because of “head assay scatter” (nugget effect), grade control during commercial operation will be an issue.
- As project development continues additional metallurgical testing phases may be required to determine heap leach amenability of ores mined early in commercial production (years 1 & 2?) and to determine if a milling/cyanidation plant is more efficient economically for HG ores later in the project life. Appropriate drill core should be obtained for additional testing phases.