



- EXPLANATION**
- ar Argillite, limy argillite, and slate
  - ls Limestone, argillaceous limestone, and quartzite
  - hn Diopside hornfels
  - db Diabase dike
  - gr Granitic dike
- 
- Ore zone
  - su— Sulfide-bearing zone
  - 45— Contact, showing dip
  - 54— Fault, showing dip—Dashed where inferred
  - U— Fault zone—U, upthrown side, D, downthrown side
  - 50— Shear zone, showing dip
  - 46— Strike and dip of bedding
  - Adit
  - Raise
  - Winze
  - Ore chute
  - Inlined workings
  - Slope
  - Buildings
  - R-43 Sample locality

(All samples chip except No. 1, grab; No. R-19, random chip; Tr, trace; N, not detected; leaders (—), not analyzed)

| No.                        | Length (meters) | Description                 | Sample | Gold Silver Copper Lead Zinc |           |           |           |           |
|----------------------------|-----------------|-----------------------------|--------|------------------------------|-----------|-----------|-----------|-----------|
|                            |                 |                             |        | (g/t)                        | (Percent) | (Percent) | (Percent) | (Percent) |
| <b>SURFACE SAMPLES</b>     |                 |                             |        |                              |           |           |           |           |
| 1                          | —               | Sulfide-bearing material    | N      | 38                           | 0.32      | 0.40      | 0.21      |           |
| 2                          | 0.9             | Across ore zone             | N      | Tr                           | .16       | .28       | .15       |           |
| 3                          | .9              | Across sulfide-bearing zone | N      | 7                            | .55       | 1.20      | .64       |           |
| 4                          | .9              | —                           | N      | 31                           | 2.02      | 3.45      | 3.21      |           |
| 5                          | 2.4             | —                           | N      | 17                           | .27       | 3.87      | 2.66      |           |
| 6                          | 1.2             | Across ore zone             | N      | 17                           | .27       | 1.83      | 1.10      |           |
| 7                          | .9              | —                           | N      | 291                          | —         | 4.31      | 2.81      |           |
| 8                          | .9              | —                           | N      | 373                          | —         | 4.06      | 4.89      |           |
| 9                          | .9              | —                           | N      | 562                          | —         | 3.23      | 5.47      |           |
| 10                         | .2              | Across shear zone           | Tr     | 27                           | —         | —         | —         |           |
| 11                         | 1.4             | Across sulfide-bearing zone | N      | 509                          | —         | 4.05      | 4.49      |           |
| 12                         | 2.5             | —                           | N      | 230                          | —         | 2.65      | 3.55      |           |
| 13                         | 2.4             | Across rhyolite dike        | N      | 7                            | —         | —         | —         |           |
| 14                         | —               | Across sulfide-bearing zone | Tr     | 151                          | —         | 2.46      | 1.68      |           |
| 15                         | .5              | —                           | N      | 202                          | —         | 3.50      | 2.81      |           |
| 16                         | 1.2             | Across ore zone             | Tr     | 638                          | —         | 7.70      | 6.35      |           |
| 17                         | 1.7             | Across sulfide-bearing zone | Tr     | 75                           | —         | .71       | 3.26      |           |
| 18                         | 2.4             | —                           | J      | 45                           | —         | .49       | 2.23      |           |
| 19                         | 1.8             | Across ore zone             | N      | 38                           | —         | .55       | .82       |           |
| 20                         | 1.2             | —                           | Tr     | 278                          | .27       | 1.64      | 2.79      |           |
| <b>UNDERGROUND SAMPLES</b> |                 |                             |        |                              |           |           |           |           |
| <b>Upper Levels</b>        |                 |                             |        |                              |           |           |           |           |
| R-90                       | 0.9             | Across ore zone             | N      | 7                            | —         | 2.72      | 1.87      |           |
| R-91                       | 1.1             | —                           | N      | 14                           | —         | 5.88      | 4.68      |           |
| R-92                       | .5              | —                           | N      | 10                           | —         | 2.91      | 1.93      |           |
| R-93                       | 1.2             | —                           | N      | 7                            | —         | 4.67      | 3.10      |           |
| R-351                      | .9              | —                           | N      | 8                            | .008      | .010      | .004      |           |
| R-346                      | .9              | —                           | N      | 19                           | 2.45      | 3.28      | —         |           |
| R-89                       | .9              | —                           | N      | 7                            | .11       | 5.49      | 4.17      |           |
| R-352                      | .9              | —                           | N      | 3                            | .24       | 3.41      | 2.46      |           |
| R-89                       | 1.5             | —                           | N      | 3                            | —         | 4.39      | 2.67      |           |
| R-354                      | 1.1             | —                           | N      | Tr                           | .033      | 3.85      | 2.46      |           |
| R-101                      | 1.1             | —                           | Tr     | 14                           | .13       | 6.07      | 3.78      |           |
| R-104                      | 1.2             | —                           | N      | 10                           | —         | 5.00      | 4.39      |           |
| R-100                      | .9              | —                           | N      | 31                           | .011      | 5.56      | 4.49      |           |
| R-101                      | 1.2             | —                           | N      | 7                            | .030      | 5.56      | 3.77      |           |
| R-105                      | 1.2             | —                           | N      | 3                            | .14       | 4.80      | 3.90      |           |
| R-355                      | .5              | —                           | N      | 24                           | .034      | 4.8       | 3.30      |           |
| R-106                      | .5              | —                           | N      | 17                           | .17       | 4.14      | 3.15      |           |
| R-95                       | 1.2             | —                           | N      | 10                           | .05       | 6.48      | 4.90      |           |
| R-96                       | 1.2             | —                           | N      | 62                           | .57       | 6.44      | 6.11      |           |
| R-97                       | 1.2             | —                           | N      | 51                           | .32       | 6.62      | 5.41      |           |
| R-98                       | .9              | —                           | Tr     | 75                           | .013      | 3.43      | 2.84      |           |
| R-99                       | .8              | —                           | J      | 346                          | .005      | 5.56      | 5.66      |           |
| R-356                      | 1.1             | —                           | N      | 189                          | .007      | 5.1       | 4.49      |           |
| R-75                       | 1.2             | —                           | N      | 284                          | —         | 2.92      | 2.81      |           |
| R-76                       | .5              | —                           | N      | 295                          | .009      | 2.92      | 3.39      |           |
| R-74                       | 1.2             | —                           | N      | 154                          | —         | 1.82      | 2.07      |           |
| R-73                       | 1.8             | —                           | N      | 418                          | .021      | 4.31      | 3.26      |           |
| R-70                       | 1.2             | —                           | N      | 147                          | .02       | 2.05      | 3.72      |           |
| R-72                       | .8              | —                           | J      | 75                           | —         | .80       | 2.12      |           |
| R-71                       | 1.2             | —                           | Tr     | 24                           | —         | .23       | .73       |           |
| R-77                       | .8              | —                           | N      | 10                           | —         | .22       | .48       |           |
| R-78                       | .9              | —                           | N      | 21                           | —         | .28       | .75       |           |
| R-79                       | 1.2             | —                           | N      | 456                          | .01       | 3.91      | 3.98      |           |
| R-80                       | .8              | —                           | N      | 141                          | —         | 1.07      | 1.37      |           |
| R-81                       | .9              | —                           | N      | 175                          | —         | 1.59      | 3.50      |           |
| R-80                       | .8              | —                           | N      | 196                          | —         | 2.92      | 4.70      |           |
| R-359                      | .8              | —                           | N      | 250                          | .011      | 2.40      | 2.71      |           |
| R-81                       | .9              | —                           | Tr     | 309                          | —         | 2.54      | 3.26      |           |
| R-343                      | .5              | —                           | N      | 89                           | .014      | .96       | 3.61      |           |
| R-344                      | .5              | —                           | N      | 131                          | .017      | 1.25      | 2.23      |           |
| R-85                       | .9              | —                           | Tr     | 336                          | .11       | 3.01      | 5.42      |           |
| R-357                      | 1.1             | —                           | N      | 175                          | .012      | 1.9       | 2.8       |           |
| R-358                      | .4              | —                           | N      | 133                          | .022      | 1.21      | 1.96      |           |
| R-83                       | .9              | —                           | J      | 3                            | —         | 2.06      | 3.97      |           |
| R-82                       | .4              | —                           | N      | 223                          | .016      | 2.09      | 3.56      |           |
| T-141                      | 1.1             | —                           | Tr     | 322                          | —         | 2.85      | 7.15      |           |
| T-142                      | 1.1             | —                           | Tr     | 278                          | —         | 2.65      | 4.64      |           |
| <b>Main level</b>          |                 |                             |        |                              |           |           |           |           |
| R-107                      | 1.1             | Across ore zone             | N      | 134                          | 0.004     | 1.35      | 1.48      |           |
| R-108                      | 1.1             | —                           | N      | 281                          | —         | 4.14      | 3.20      |           |
| R-109                      | 1.1             | —                           | N      | 110                          | —         | 4.49      | 3.11      |           |
| R-110                      | 1.1             | —                           | N      | 3                            | .016      | 4.95      | 3.13      |           |
| R-111                      | 1.1             | —                           | Tr     | 10                           | —         | 5.20      | 3.89      |           |
| R-115                      | 1.1             | —                           | Tr     | 14                           | —         | 3.08      | 3.39      |           |
| R-116                      | 1.1             | —                           | J      | 21                           | .025      | 5.91      | 4.03      |           |
| R-102                      | .9              | —                           | N      | 10                           | .008      | 5.20      | 3.49      |           |
| R-103                      | .9              | —                           | N      | 8                            | .029      | 3.43      | 2.70      |           |
| R-117                      | 1.1             | —                           | Tr     | 10                           | —         | 4.49      | 3.07      |           |
| R-118                      | 1.1             | —                           | N      | 10                           | —         | 6.50      | 4.62      |           |
| R-119                      | 1.1             | —                           | N      | 3                            | .015      | 4.03      | 2.46      |           |
| R-120                      | 1.1             | —                           | J      | 10                           | —         | 3.79      | 3.01      |           |
| R-121                      | 1.1             | —                           | J      | 3                            | —         | 7.64      | 5.30      |           |
| R-112                      | 1.2             | —                           | Tr     | 7                            | —         | 3.08      | 2.39      |           |
| R-113                      | .9              | —                           | Tr     | 14                           | .038      | 6.98      | 4.60      |           |
| R-114                      | 1.2             | —                           | Tr     | 14                           | —         | 5.91      | 5.37      |           |
| R-124                      | .8              | Across sulfide-bearing zone | N      | 27                           | —         | 2.76      | 3.59      |           |
| R-125                      | .8              | —                           | N      | 144                          | —         | 3.20      | 3.39      |           |
| R-122                      | .9              | Across ore zone             | N      | 10                           | .008      | 5.47      | 3.65      |           |
| R-123                      | 1.2             | Across sulfide-bearing zone | N      | 34                           | —         | 2.83      | 1.01      |           |
| R-136                      | 4.3             | Across diabase dike         | N      | 62                           | .013      | 1.62      | 1.21      |           |
| R-126                      | .9              | Across ore zone             | N      | 75                           | .012      | 4.39      | 3.35      |           |
| R-127                      | .9              | —                           | N      | 38                           | —         | 4.57      | 3.42      |           |
| R-129                      | 1.1             | —                           | N      | 45                           | —         | 4.96      | 3.54      |           |
| R-128                      | 1.1             | —                           | N      | 189                          | —         | 5.69      | 4.68      |           |
| R-130                      | .9              | —                           | N      | 291                          | —         | 7.00      | .73       |           |
| R-131                      | .8              | —                           | N      | 58                           | .056      | 1.18      | .73       |           |
| R-132                      | 1.6             | —                           | N      | 69                           | .004      | 1.42      | 1.03      |           |
| R-133                      | 1.5             | —                           | N      | 123                          | .005      | 2.54      | 2.18      |           |
| R-134                      | 1.0             | —                           | N      | 65                           | .011      | 1.61      | 1.33      |           |
| R-135                      | 1.4             | —                           | N      | 127                          | .027      | 1.21      | .79       |           |
| R-363                      | .9              | —                           | N      | 10                           | —         | .49       | 2.60      |           |
| R-137                      | 1.5             | Across sulfide-bearing zone | N      | 24                           | —         | .23       | .15       |           |
| R-138                      | 1.3             | —                           | Tr     | 10                           | —         | <.010     | .012      |           |
| R-139                      | 1.0             | —                           | Tr     | 34                           | .009      | .26       | 1.99      |           |
| R-140                      | .5              | Across ore zone             | Tr     | 27                           | —         | .26       | .26       |           |
| R-141                      | 1.2             | Across sulfide-bearing zone | N      | 69                           | —         | .54       | .57       |           |
| R-141                      | .5              | Across ore zone             | Tr     | 14                           | —         | .11       | 3.39      |           |
| R-142                      | .9              | —                           | Tr     | 17                           | .036      | .15       | 6.85      |           |
| R-143                      | 1.2             | —                           | Tr     | 17                           | —         | .17       | 2.08      |           |
| R-144                      | .9              | —                           | Tr     | 3                            | —         | .057      | 3.37      |           |
| R-145                      | .4              | —                           | Tr     | 34                           | .014      | .25       | 3.63      |           |
| R-146                      | .9              | —                           | Tr     | 55                           | —         | .54       | 3.66      |           |
| R-365                      | .4              | —                           | Tr     | 3                            | —         | .062      | .73       |           |
| R-147                      | .9              | —                           | Tr     | 7                            | —         | .055      | 3.41      |           |
| R-148                      | .8              | —                           | Tr     | 3                            | —         | .012      | 2.68      |           |
| R-149                      | .9              | —                           | Tr     | 3                            | .057      | .044      | 5.15      |           |
| R-150                      | .8              | Across sulfide-bearing zone | Tr     | 579                          | —         | 4.23      | 2.18      |           |
| R-151                      | .4              | —                           | N      | 89                           | —         | .82       | —         |           |
| R-152                      | .8              | —                           | Tr     | 819                          | .29       | 6.43      | 10.3      |           |
| R-153                      | .5              | —                           | N      | 31                           | —         | .58       | .89       |           |
| R-154                      | 1.5             | —                           | N      | 147                          | .004      | 1.40      | 2.13      |           |
| R-155                      | 1.8             | —                           | N      | 17                           | —         | .70       | .39       |           |
| R-156                      | 1.2             | —                           | Tr     | 10                           | —         | .10       | —         |           |
| R-157                      | 2.4             | —                           | J      | 79                           | —         | 1.44      | 1.12      |           |
| R-158                      | 1.1             | —                           | Tr     | 7                            | —         | —         | —         |           |
| R-159                      | .5              | —                           | Tr     | 69                           | —         | .45       | .63       |           |
| R-160                      | 1.1             | —                           | N      | 209                          | —         | 3.07      | —         |           |
| R-162                      | .8              | Across shear zone           | N      | 3                            | —         | —         | —         |           |
| R-163                      | .6              | Across fault zone           | N      | N                            | —         | —         | —         |           |
| <b>Copper adit</b>         |                 |                             |        |                              |           |           |           |           |
| T-143                      | 0.9             | Across sulfide-bearing zone | Tr     | 17                           | —         | 0.12      | 3.84      |           |
| T-145                      | 2.0             | —                           | N      | 65                           | 0.13      | .79       | 3.02      |           |
| T-146                      | 2.9             | —                           | Tr     | 240                          | .32       | 4.05      | 4.78      |           |
| T-147                      | 2.9             | —                           | Tr     | 123                          | .029      | 1.58      | 4.31      |           |
| T-147                      | 1.3             | Across tactite              | Tr     | 14                           | —         | .18       | .21       |           |
| R-17                       | 2.9             | Across sulfide-bearing zone | Tr     | 48                           | .07       | .58       | 1.35      |           |
| R-18                       | 2.4             | —                           | N      | 17                           | .41       | .12       | 8.86      |           |
| R-19                       | —               | —                           | Tr     | 339                          | .15       | 3.75      | 1.00      |           |

MAP SHOWING SURFACE AND UNDERGROUND OF PHI KAPPA MINE, BOULDER-PIONEER STUDY AREA, BLAINE AND CUSTER COUNTIES, IDAHO