

Log No. 49393  
Permit No. \_\_\_\_\_  
Basin. 028

PRINT OR TYPE ONLY  
DO NOT WRITE ON BACK

WELL DRILLER'S REPORT

Please complete this form in its entirety in accordance with NRS 534.170 and NAC 534.340

NOTICE OF INTENT NOT REQUIRED

1. OWNER HECLA MINING COMPANY ADDRESS AT WELL LOCATION Rosebud Mine  
MAILING ADDRESS P.O. Box 1861 7000 Pitt Rd  
Lovelock, NV 89419 Lovelock, NV 89417  
2. LOCATION 1/4 - 1/4 Sec 24 T. 34 N/S R. 29 E Pershing County  
PERMIT NO. MO-843 Lot 3 Subdivision Name

3. WORK PERFORMED  
 New Well  Replace  Recondition  
 Deepen  Abandon  Other \_\_\_\_\_  
4. PROPOSED USE  
 Domestic  Irrigation  Test  
 Municipal/Industrial  Monitor  Stock  
5. WELL TYPE  
 Cable  Rotary  RVC  
 Air  Other HSA

6. LITHOLOGIC LOG

| Material                       | Water Strata | From | To | Thick-ness |
|--------------------------------|--------------|------|----|------------|
| See Attached Log               |              |      |    |            |
| GT-94-03                       |              |      |    |            |
| 95 MAY 15 P 2:18               |              |      |    |            |
| RECEIVED STATE ENGINEERS OF NV |              |      |    |            |

8. WELL CONSTRUCTION 24.5  
Depth Drilled 25.0 Feet Depth Cased 13.0 Feet  
HOLE DIAMETER (BIT SIZE)  
From To  
8.0 Inches 25.0 Feet 0 Feet  
Inches Feet Feet  
Inches Feet Feet

CASING SCHEDULE

| Size O.D. (Inches) | Weight/Ft. (Pounds) | Wall Thickness (Inches) | From (Feet) | To (Feet) |
|--------------------|---------------------|-------------------------|-------------|-----------|
| <u>2.0</u>         | <u>0.70</u>         | <u>Schedule 40 PVC</u>  | <u>14.5</u> | <u>0</u>  |

Perforations:  
Type perforation Machine Slot  
Size perforation 0.020  
From 24.5 feet to 14.5 feet  
From \_\_\_\_\_ feet to \_\_\_\_\_ feet  
From \_\_\_\_\_ feet to \_\_\_\_\_ feet  
From \_\_\_\_\_ feet to \_\_\_\_\_ feet

Surface Seal:  Yes  No Seal Type:  
Depth of Seal \_\_\_\_\_  Neat Cement  
Placement Method:  Pumped  Cement Grout  
 Poured  Concrete Grout  
Gravel Packed:  Yes  No  
From 25.1 feet to 13.0 feet

9. WATER LEVEL  
Static water level Not Encountered feet below land surface  
Artesian flow N/A G.P.M. N/A P.S.I.  
Water temperature N/A °F Quality N/A

Date started 15 September 1994  
Date completed 15 September 1994

7. WELL TEST DATA

| TEST METHOD: | <input type="checkbox"/> Bailer | <input type="checkbox"/> Pump | <input type="checkbox"/> Air Lift |
|--------------|---------------------------------|-------------------------------|-----------------------------------|
| G.P.M.       | Draw Down (Feet Below Static)   | Time (Hours)                  |                                   |
| <u>N/A</u>   |                                 |                               |                                   |

10. DRILLER'S CERTIFICATION  
This well was drilled under my supervision and the report is true to the best of my knowledge.  
Name Brian Nance / Haz-Tech Drilling, Inc Contractor  
Address 3131 Lanark, Suite B Contractor  
Meridian, I.D. 83642  
Nevada contractor's license number issued by the State Contractor's Board 0023-111  
Nevada driller's license number issued by the Division of Water Resources, the on-site driller N/A  
Signed \_\_\_\_\_  
By driller performing actual drilling on site or contractor  
Date 5-11-94

LOG 49313

# GT-94-03

BOREHOLE NUMBER:

SHEET 1 OF 2

BORING LOCATION: **N 2203173.514/ E 478772.453** Mill Facility: Southeast corner

SURFACE ELEVATION: **6015.8**

DRILLING CO.: **HAZ-TECH Drilling Inc.**

DRILLER: **B. Nance**

DATE/TIME STARTED: **15 SEP 94 @ 14:00**

EQUIPMENT: **GME - 75 Super**

DATE/TIME FINISHED: **15 SEP 94 @ 17:00**

WATER DEPTH: **N/A**

DATE/TIME OF DEPTH: **N/A**

LOGGED BY: **M. Fairhurst**

| ELEV.<br>DEPTH | SOIL PROFILE<br>SOIL DESCRIPTION  | SAMPLES    |     |      |               | DEPTH<br>(UNITS) | STANDARD PENETRATION TEST<br>▲ 'N' BLOWS PER FOOT |    |    |    | WELL CONSTRUCTION |
|----------------|---|------------|-----|------|---------------|------------------|---|----|----|----|-------------------|
|                |   | USCS CLASS | NO. | TYPE | BLOW COUNT/6" |                  | 20  | 40 | 60 | 80 |                   |
| Feet           |   |            |     |      |               |                  |   |    |    |    |                   |
| 5015.8<br>0.1  | <i>Very stiff, grayish red (10R 4/2), blocky, CLAY, trace sub-angular fine Gravel, trace Silt, trace c-m Sand, trace Organics, calcareous (WR), damp (COLLUVIUM?) (BADGER FORMATION?)<br/>Cuttings are a variety of rock types (i.e. chert, granite, claystone)</i>               |            |     |      | 8<br>10<br>11 |                  |   |    |    |    |                   |
|                |   | CL         | 1   | SPT  |               |                  |   |    |    |    |                   |
|                |   |            |     |      |               |                  |   |    |    |    |                   |
| 5005.3<br>10.5 | <i>Stiff, light greenish gray (5GY 8/1), fractured, SILTY CLAY, (shearing planes seen in fabric under microscope), approximately 5% of sample consists of biotite and pyrite crystals, damp (FAULT ZONE?) (BUD TUFF)<br/>Driller notes: Drilling changed to very hard (rock?)</i> | CL         | 2   | SPT  | 6<br>7<br>7   |                  |   |    |    |    |                   |
|                |   |            |     |      |               |                  |   |    |    |    |                   |
|                |   |            |     |      |               |                  |   |    |    |    |                   |
| 5002.8<br>13.1 | <i>Hard, grayish red (10YR 4/2), non-stratified, slightly mottled, SILTY CLAY, little fine sub-angular Gravel, damp (COLLUVIUM?) (CHOCOLATE FORMATION?)</i>   | CL         | 3   | SPT  | 50/1"         |                  |   |    |    |    |                   |
|                |   |            |     |      |               |                  |   |    |    |    |                   |
|                |   |            |     |      |               |                  |   |    |    |    |                   |
|                | Continued Next Page   |            |     |      |               | 20.0             |   |    |    |    |                   |

### WELL CONSTRUCTION DETAILS

**CASED INTERVAL:** 14.5'- 0  
**CASING MATERIAL:** Schedule 40 PVC  
**CASING DIAMETER:** 2.0"  
**FILTER INTERVAL/TYPE:** 25.1-13'/8-20 Sand

**BENTONITE INTERVAL:** 13.0'- 5.0'  
**GROUT INTERVAL/TYPE:** 5.0'-0/Cement-bentonite  
**SCREENED INTERVAL:** 24.5' - 14.5'  
**SURFACE CASING WITH LOCK:** YES  NO

**DISCLAIMER:** This log is not to be used separately from the engineering report.

**NOTE 1:** See Cover Page For Legend And Soil Description Methodology **NOTE 2:** N/A

|                            |                                   |                                  |
|----------------------------|-----------------------------------|----------------------------------|
| Project No.:<br><b>884</b> | Design By:<br><b>M. Fairhurst</b> | Scale:<br><b>44:1</b>            |
| File:<br><b>RSBUD</b>      | Drawn By:<br><b>M. Fairhurst</b>  | Date:<br><b>6 February, 1995</b> |

*Rosebud Project*

**TerraMatrix**  
 Engineering & Environmental Services  
 1475 Pine Grove Road, P.O. Box 774018  
 Steamboat Springs, Colorado 80477

**Figure 3**

**HECLA MINING COMPANY**

ACZE 12 APR 95

# GT-94-03

|   |  |                                |  |   |  |
|---|--|--------------------------------|--|---|--|
| BOREHOLE NUMBER:  |  | <b>GT-94-03</b>                |  | SHEET 2 OF 2                              |  |
| BORING LOCATION: <b>N 2203173.514/ E 478772.453</b> MH Facility: Southeast corner |  |                                | SURFACE ELEVATION: <b>5015.8</b>           |   |  |
| DRILLING CO.: <b>HAZ-TECH Drilling Inc.</b>                                       |  | DRILLER: <b>B. Nance</b>       |  | DATE/TIME STARTED: <b>15 SEP 94@14:00</b> |  |
| EQUIPMENT: <b>CME - 75 Super</b>  |  |                                | DATE/TIME FINISHED: <b>15 SEP 94@17:00</b> |   |  |
| WATER DEPTH: <b>N/A</b>   |  | DATE/TIME OF DEPTH: <b>N/A</b> |  | LOGGED BY: <b>M. Fairhurst</b>            |  |

| ELEV. DEPTH    | SOIL PROFILE<br>SOIL DESCRIPTION | SAMPLES    |     |      |               | DEPTH (UNITS) | STANDARD PENETRATION TEST<br>▲ 'N' BLOWS PER FOOT |    |    |    | WELL CONSTRUCTION |
|----------------|----------------------------------|------------|-----|------|---------------|---------------|---|----|----|----|-------------------|
|                |                                  | USCS CLASS | NO. | TYPE | BLOW COUNT/6" |               | 20  | 40 | 60 | 80 |                   |
| Feet           | <i>(Continued)</i>               |            |     |      |               | Feet          |   |    |    |    |                   |
|                |                                  | CL         | 4   | SPT  | 50/5"         |               |   |    |    |    | ▲                 |
| 4990.7<br>25.1 | <i>Bottom of Hole at 25.1'</i>   | N/A        | 5   | SPT  | 50/2"         | 25.0          |   |    |    |    | ▲                 |

### WELL CONSTRUCTION DETAILS

|   |  |
|---|--|
| <b>CASED INTERVAL:</b> 14.5'- 0                 | <b>BENTONITE INTERVAL:</b> 13.0'- 5.0'   |
| <b>CASING MATERIAL:</b> Schedule 40 PVC         | <b>GROUT INTERVAL/TYPE:</b> 5.0'-0/Cement-bentonite  |
| <b>CASING DIAMETER:</b> 2.0"                    | <b>SCREENED INTERVAL:</b> 24.5' - 14.5'  |
| <b>FILTER INTERVAL/TYPE:</b> 25.1-13'/8-20 Sand | <b>SURFACE CASING WITH LOCK:</b> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |

**DISCLAIMER:** This log is not to be used separately from the engineering report.

**NOTE 1:** See Cover Page For Legend And Soil Description Methodology

|                     |                            |                           |
|---------------------|----------------------------|---------------------------|
| Project No.:<br>884 | Design By:<br>M. Fairhurst | Scale:<br>44:1            |
| File:<br>RSBUD      | Drawn By:<br>M. Fairhurst  | Date:<br>6 February, 1995 |

*Rosebud Project*

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**Figure 3**

**HECLA MINING COMPANY**