

## DAILY REPORT #63 – DORIS NORTH INFRASTRUCTURE/ NORTH DAM

|   |   |   |  |
|---|---|---|--|
| Prepared by:  | John Kurylo<br>Lawrence Borowski  | Date:   | 2012.03.08   |
| Reviewed by:  |   | Project #:  | 1CH008.058.0320  |
| Role  | Company   | Personnel – Position  | On Site  |
| Client  | Hope Bay Mining Limited (HBML)  | Angela Holzapfel – ESR Compliance Manager<br>David Vokey – ESR Coordinator<br>Don Ethelston – HSLP Advisor<br>Dean Wold - Safety<br>Jill Turk – ESR Coordinator<br>Katsky Venter – ESR Manger<br>Michelle Tanquay – ESR Site Manager<br>Stirling Kelly – HSLP Advisor   | No<br>Yes<br>No<br>Yes<br>No<br>Out<br>In<br>In  |
|   | JDS   | Lloyd Jackson – Mechanical Superintendent<br>Doug Fielding – Construction Manager<br>Ishan Fechter – Construction Coordinator<br>Jerry Graham – Construction Manager<br>Kevin Whieldon – Project Coordinator<br>Mark Valeriote – Construction Manager   | Out<br>No<br>In<br>Yes<br>Out<br>Yes   |
| Engineering Design Consultants  | SRK Consulting (Canada) Inc.  | John Kurylo – Site Engineer<br>Megan Miller – Site Engineer<br>Lawrence Borowski – Site Engineer<br>Murray McGregor – Site Engineer<br>Iozsef Miskolczi – Site Engineer<br>Lowell Wade – Senior Engineer  | Yes<br>No<br>Yes<br>No<br>No<br>No   |
|   | EBA Engineering Consultants Ltd.  | Jeff Orr – Project Manager<br>Jennifer Stirling – Geologist<br>Thomas Bradshaw – Junior Engineer<br>Ernest Palczewski – Geologist   | Yes<br>Yes<br>No<br>No   |
| Earthworks Contractor   | Nuna Logistics  | Bradford Watkin – QC Manager<br>Doug Haverland – Area Superintendent<br>Gary Sodhi – Field Engineer<br>Georges Cornelissen – Survey Manager<br>Jeff Roberts - Surveyor<br>Jim Cardinal – Foreman<br>Jordan Gunter – Foreman<br>Kevin Oakes – Project Engineer<br>Kevin Kozdrowski – Foreman (Night shift)<br>Kyle Kuntz – Project Engineer<br>Margaret Caley – Surveyor<br>Matt McKay – Civil Supervisor<br>Mike MacMaster – Surveyor<br>Mike Price – Field Engineer<br>Nick Stoneberger – Superintendent<br>Rick Peter – Foreman (Day shift)<br>Ron MacMaster – Surveyor<br>Simon Chipper – Civil Supervisor | No<br>In<br>Yes<br>No<br>Yes<br>In<br>No<br>No<br>Yes<br>No<br>No<br>Out<br>Out<br>No<br>Out<br>Yes<br>Yes<br>No |
| External Distribution List:   | SRK: Maritz Rykaart, Lowell Wade, Seema Kang, Silkie Wong<br>EBA: Robert Zschuppe<br>Nuna: Chris Petrovic<br>JDS: Bob Prince-Wright, Calvin Goldschmidt<br>HBML: Dave Power, Gerry Benson |   |  |
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**WEATHER (ROBERTS BAY)**

<http://www.wunderground.com/weatherstation/WXDailyHistory.asp?ID=INUNAVUT3>

|                             |  |               |   |                  |
|-----------------------------|--|---------------|---|------------------|
| Temperature/Wind Chill (°C) | 6AM: -28/-42   | 12PM: -30/-47 | 6 PM: -27/-37                                     | 12 AM : 30C/-40C |
| Precipitation (mm)          | <b>Rain:</b> None  |               | <b>Snow:</b> None                                 |                  |
| Conditions                  | <b>Day Shift:</b> Clear, windy, wind chill at -50C by 10:00 am |               | <b>Night Shift:</b> Clear, cold mod to light wind |                  |
| Daily norms (°C)            | 24 hour high: -25  |               | 24 hour low: -30                                  |                  |

**HEALTH, SAFETY AND ENVIRONMENT**

- John Kurylo and Jennifer Stirling attended the nightly Nuna toolbox meeting.

**COMMENTS, CORRESPONDENCE AND ACTIVITIES****DAILY MEETING WITH NUNA AND HBML TEAM:**

- The daily meeting was attended by HBML [Katsky Venter], Newmont [Dean Wold], JDS [Gerry Graham, Kevin Whieldon, Mark Valeriot]; Nuna [Nick Stoneberger] and SRK [Lawrence Borowski, Jeff Orr, John Kurylo].

| Topic                             | Status   |
|-----------------------------------|--|
| Health and Safety and Environment | <ul style="list-style-type: none"> <li>• Safety: No issues</li> <li>• ESR: No issues</li> </ul>  |
| North Dam                         | <ul style="list-style-type: none"> <li>• Freeze back achieved in all areas at the dam. Required drilled cores were completed on yesterday's nightshift.</li> <li>• ROQ hauled and placed at the dam yesterday.</li> <li>• SRK noted that ROQ slopes are not being compacted with the 10 ton roller.</li> <li>• Placing at the dam today. Multibead cables are to go in at Sta 1+40 and 0 +60. Surveys will need to be there to set grades at those stations.</li> <li>• SRK highlighted that work in the SE area is required to start being addressed / fixed up within the next two lift. The placement in this area can then be done at the same time as the other sections. If this is not started soon additional days / lifts to fix up the SE side will be required</li> </ul> |
| Water Management Structures       | <ul style="list-style-type: none"> <li>• Lids for sumps are being manufactured. A short discussion was had on the potential of revising the opening / access in the lid design. This would be done to reduce the weight of the access lid.</li> <li>• Snow clearing continued yesterday.</li> <li>• HDPE liner was cut by a previous operator. Liner will need to be inspected and repaired by Layfield.</li> <li>• Layfield here today.</li> <li>• Overburden material for the sumps is being stored in the Batch Plant.</li> </ul>   |
| General                           | <ul style="list-style-type: none"> <li>• Drilling at quarry 2 to continue</li> </ul>   |

**SURVEY:**

|                      |  |
|----------------------|--|
| <b>Required</b>      | <ul style="list-style-type: none"> <li>QC Cross sections of work in progress (after current lift across the dam is completed)</li> </ul>   |
| <b>Data Received</b> | <ul style="list-style-type: none"> <li>FCM and Transition material placed on March 8<sup>th</sup>.</li> <li>Frozen Core Volumes (for up to and including March 8<sup>th</sup>).</li> </ul> |
| <b>Outstanding</b>   | <ul style="list-style-type: none"> <li></li> </ul>   |
| <b>Upcoming</b>      | <ul style="list-style-type: none"> <li>Survey of FCM after placement (ongoing).</li> <li>Survey of Doris North Diversion berm (ongoing).</li> </ul>  |

**NORTH DAM/FROZEN CORE PLANT PAD:****Multi-Bead Thermistors**

- The following multi-bead strings were read:
  - ND-VTS-060-DS, ND-HTS-060-31.0, ND-HTS-060-28.8, ND-VTS-060-KT
  - ND-VTS-085-DS, ND-HTS-085-29.4, ND-HTS-085-25.3, ND-VTS-085-KT
    - The plastic around pins at the end of cable ND-HTS-085-25.3 is cracked
  - ND-VTS-130-DS, ND-HTS-130-28.8, ND-HTS-130-31.0, ND-VTS-030-KT
  - ND-HTS-175-32.5, ND-HTS-175-31.0, ND-VTS-175-KT

**Frozen Core Plant***Dayshift*

- Frozen core plant started at 2:20 this afternoon.
- The last load left at 5:00 pm
- Due to cold and wind temperature was set at +41C.

*Nightshift*

- Plant was started up around 20:30.
  - Initially the water dial was set to 56.1 (the same as what dayshift ended with)
  - Initial temperatures were around +33C but quickly increased to +36C
- At 22:00 the temperature and moisture were increased as the side slopes were freezing before they could be worked on / shaped.
  - The water dial was increased to 56.6. Also it was noted when visiting the plant that the material belt had also very slightly increased in speed.
  - Temperate of the FCM rose to +39C.
- At 23:15 the plant ran out of water and had to be temporarily shut down as they waited for the water truck. The plant restarted within 30 minute. Temperature of the FCM was +39C.
- Around 01:00 the plant broke down, due to issues with the feeder motor. The plant was unable to be restarted on nightshift.
- Maintenance and clean-up was performed at the plant. A new feeder motor was installed / swapped in however, the Nuna dayshift electricians were required to finish the final installation. This electrical work will be completed at the start of dayshift tomorrow.

**Dam Shell***Dayshift*

- No activity

*Nightshift*

- Transition material was placed from ~ 1+95 to 1+00 on the upstream of the FCM placed today. Additional compaction is still required on this area before the next lift of Transition is placed.

### **Key Trench/ Central Core**

#### *Dayshift*

- Freezeback occurred at 5:00 am last night.
- Nuna started cleaning the entire length at the start of the shift.
- With a crew change today, the first load didn't leave the plant until 2:20 pm
- As an operator for the excavator was not available, the foreman operated the excavator for part of the afternoon.
- Tli Cho was retained to clean at the inflection point at the south east corner. Following cleaning with an air compressor, holes in the GCL were patched with bentonite and GCL.
- Frost fighters still remain at about Sta 0+70. These were maintained all day.
- FCM was placed between Sta 1+45 and the end of the dam. The section from Sta 1+74 north is now at final grade.
- Grade stakes were set for the multi bead thermistor string at Sta 1+30.
- Plant settings were set at the settings of the last cold windy day and temperature raised to +41C. Test results all met specifications with few modifications to the mix.

#### *Nightshift*

- Snow and ice continued to be cleaned from the SW upstream slope area from ~ 0+70 to 0+30. Hand shovelling and an air compressor was used.
- Hording and heating with frost fighters continued over the GCL around station 0+40 to 0+70 areas. No notable work was done beyond the heating
- FCM was placed from ~1+45 to 1+00.
  - Material looked of good quality for compaction and saturation.
  - Approximately 11 loads were placed on nightshift
  - Some pooling was noted to be forming on the surface of the FCM after vibrator compaction. After a couple hours the large majority of the pooling water was noted to have gone. Some bubbles are noted during placement as air space gets replaced by water in the soil. Soil characteristics that appeared somewhat similar to traits of quickly dissipating capillary forces in sand were temporary observed in select area before pooling was noted.
  - A sheen of water was observed on the surface of the entire area where placement observed.
- The core elevation at 1+30 was graded to the elevation 33.5m or the elevation of the final multibead thermistor at this location. The elevations of the dam core at the four remaining multibead locations are outlined below

| Station | Current Top Elevation (m) | Install Elevation (m) | Comment  |
|---------|---------------------------|-----------------------|--|
| 1+30    | 33.50                     | 33.50                 | Graded to multibead elevation. Thermistor string to be installed when next lift placed over this area. |
| 0+85    | 32.95                     | 33.50                 | No change in elevation today   |
| 0+60    | 33.20                     | 33.50                 | No change in elevation today   |
| 0+40    | 33.50                     | 33.50                 | No change in elevation today   |

- Additional crush was placed around the multi bead thermistor cable groups at station 1+75 and 1+30 before Transition material placement.

### **Field Geotechnical Testing, Laboratory and Sampling**

#### **SINGLE BEAD THERMISTOR STATUS**

| Installed Today |         |              | Active |         |              | Destroyed / Abandoned |         |              |
|-----------------|---------|--------------|--------|---------|--------------|-----------------------|---------|--------------|
| ID              | Station | US/DS/Center | ID     | Station | US/DS/Center | ID                    | Station | US/DS/Center |
| SB1             | 1+50    | CL           | SB17   | 0+70    | CL           | SB10                  | 1+40    | U/S          |
| SB13            | CL1+10  | CL           |        |         |              |                       |         |              |

- A summary of today's material testing progress is presented in the tables below.

**PARTICLE SIZE DISTRIBUTION SUMMARY**

| Collected | Testing In Progress | Completed                     |
|-----------|---------------------|-------------------------------|
|           |                     | HB12-FCP-TRANS-PSD66-20120307 |

**MOISTURE CONTENT SUMMARY**

| Collected                       | Testing In Progress | Completed                       |
|---------------------------------|---------------------|---------------------------------|
| HB12-FCP-CORE-MC283-QA-20120308 |                     | HB12-FCP-CORE-MC283-QA-20120308 |
| HB12-ND-CORE-MC284-QA-20120308  |                     | HB12-ND-CORE-MC284-QA-20120308  |
| HB12-ND-CORE-MC285-QA-20120308  |                     | HB12-ND-CORE-MC285-QA-20120308  |
| HB12-FCP-CORE-MC286-QA-20120308 |                     | HB12-FCP-CORE-MC286-QA-20120308 |
| HB12-FCP-CORE-MC287-QA-20120308 |                     | HB12-FCP-CORE-MC287-QA-20120308 |
| HB12-ND-CORE-MC288-QA-20120308  |                     | HB12-ND-CORE-MC288-QA-20120308  |
| HB12-FCP-CORE-MC289-QA-20120308 |                     | HB12-FCP-CORE-MC289-QA-20120308 |
| HB12-ND-CORE-MC290-QA-20120308  |                     | HB12-ND-CORE-MC290-QA-20120308  |
| HB12-ND-CORE-MC291-QA-20120308  |                     | HB12-ND-CORE-MC291-QA-20120308  |
| HB12-FCP-CORE-MC292-QA-20120308 |                     | HB12-FCP-CORE-MC292-QA-20120308 |
| HB12-ND-CORE-MC293-QA-20120308  |                     | HB12-ND-CORE-MC293-QA-20120308  |

**DRILLED CORE**

| Collected | Testing In Progress | Completed  |
|-----------|---------------------|--|
|           |                     | HB12-ND-CORE-DC68-20120307<br>HB12-ND-CORE-DC69-20120307 |

**DORIS NORTH DIVERSION BERM:**

- Layfield arrived at site but were not at the berm today.
- A section of the key trench ~50 meters was cleared of snow and ready for the final bentonite layer yesterday. Snow blew in overnight and the key trench needs to be cleaned again.
- Excavator did some snow clearing in the afternoon.
- Foreman advises that they will no longer work long stretches. He plans to work in 10-20 meter stretches and finish before moving on, as too much time is being spent cleaning snow,

**DORIS SUMPS:**

- Fabrication of the first lid complete. Still needs to be insulated.
- Discussed the proposed change to the lid with SRK. Change would reduce the size of opening to set the sump pumps.

**QUARRY 2:**

- Two drills working.
- Loaded frozen core material all day. Truck fleet reduced at 2:00 pm when the FC plant started up.

**GENERAL:**

- Nuna shift change today.
- Little progress until afternoon

PHOTOS:



Photo 1: Progress photo from photo point 3, facing NNE



Photo 2: Placing core material at extreme north end of the key trench. This section is now at final grade.



Photo 3: Surveyor taking as built measurements at the end of the shift





Photo 4: Fabricated sump lid



Photo 5: Section cut out to install sumps



Photo 6: Cleaned inflection line



Photo 7: Patches to GCL



Photo 8: Frost fighters heating and hording around the fillet expansion around 0+70.



Photo 9: Excavator cleaning snow in berm key trench





**Photo 10:** Slight cracking on top of dayshift placement near tie in. This area is planned to be revisited after freezeback.



**Photo 11:** ~NW view at station 1+30. Note station at next multibead elevation, elev 33.5m.



**Photo 12:** ~N view of construction crew working on sloping upstream of dam.



**Photo 13:** ~WSW view down core towards night construction activities.



**Photo 14:** ~NE view of nightshift FCM placement at the North Dam.





**Photo 14:** ~NNE stitched panoramic view of upstream dam slope. Taken from around 1+20 Note the ice on the slope around station 1+15 is expected to be scraped back when the next lift is placed in this area. Ice from water discharge down slope, due to water draining to a low graded point in the placement.



**Photo 14:** ~WNW view of the upstream dam slope. Taken from around station 0+75. Note the hording and heating being completed around 0+70 .



**Photo 14:** ~ESE view of north end of the Dam construction. Note that the area in the right of this photo is very close to design grade / lines.



**Photo 14:** ~330 Excavator placing Transition material along downstream edge of FCM placed today.



FIGURES:

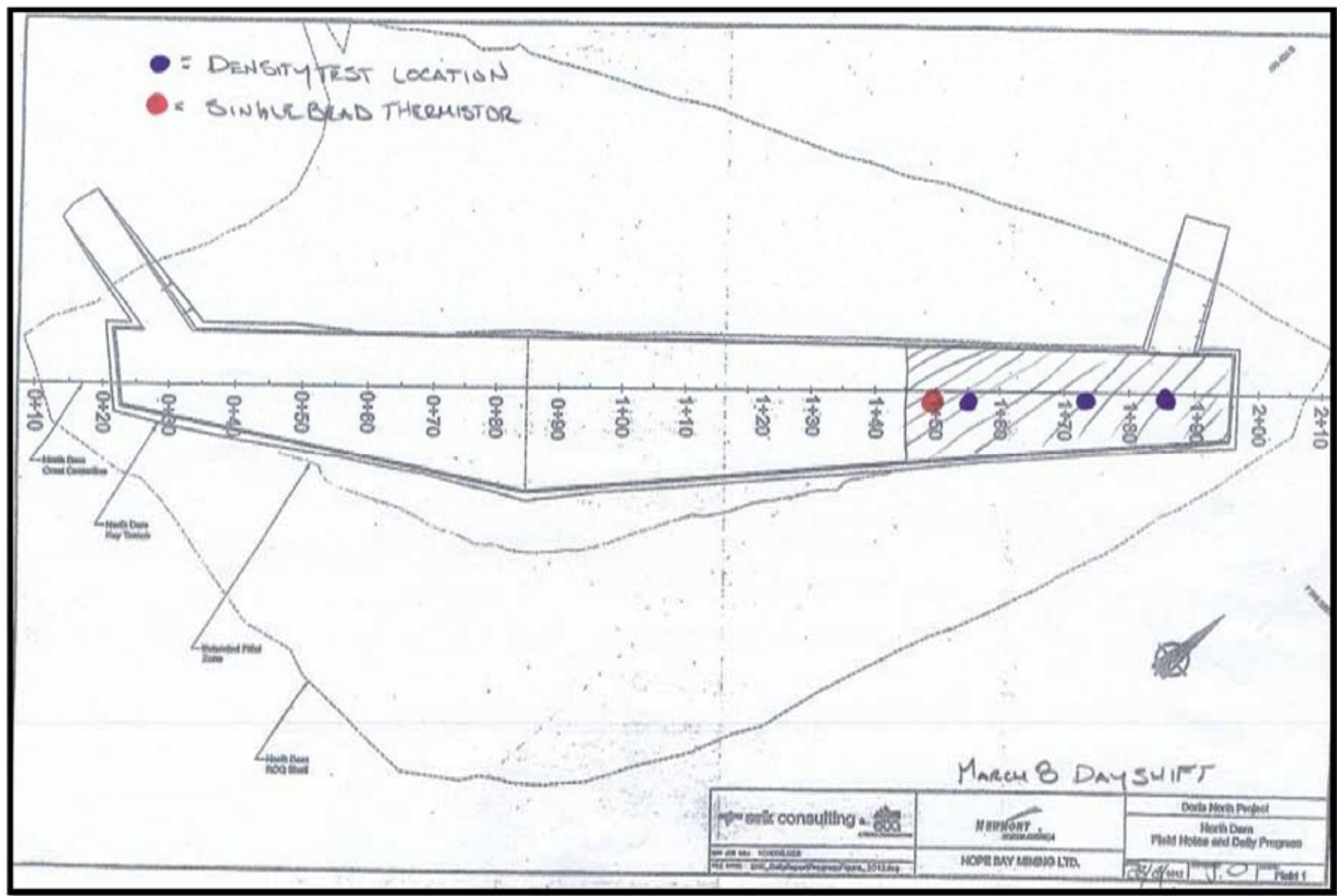


Figure 1 – North Dam Progress – Dayshift

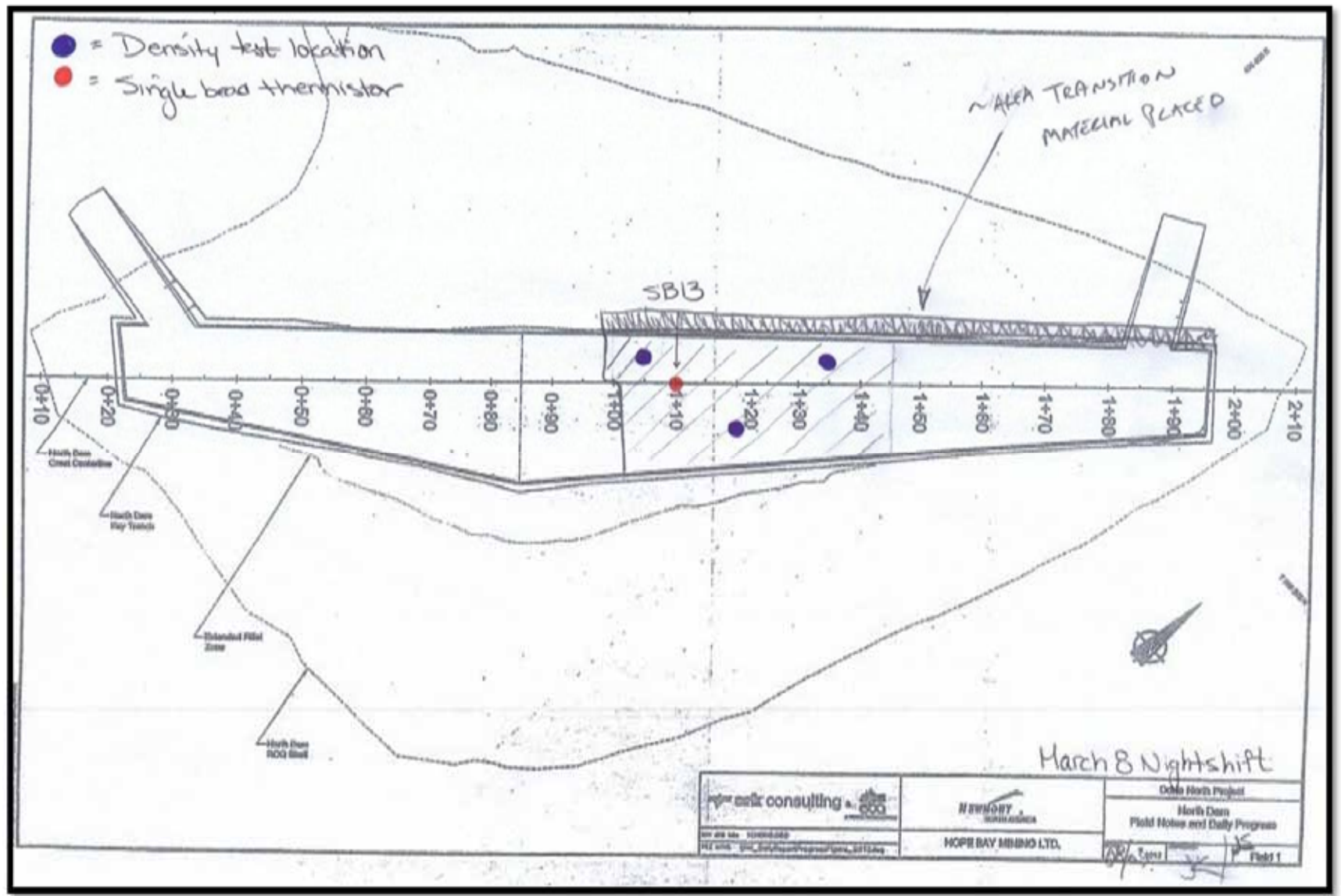


Figure 2 – North Dam Progress – Nightshift