

## DAILY REPORT #19 – DORIS NORTH INFRASTRUCTURE/ NORTH DAM

Prepared by:	John Kurylo/ Jeff Orr / Megan Miller	Date:	2012.01.24
Reviewed by:		Project #:	1CH008.058.0320
Role	Company	Personnel – Position	On Site
Client	Hope Bay Mining Limited (HBML)	Angela Holzapfel – ESR Compliance Manager David Vokey – ESR Coordinator Don Ethelston – HSLP Advisor Dean Wold - Safety Jill Turk – ESR Coordinator Katsky Venter – ESR Manger Michelle Tanquay – ESR Site Manager Stirling Kelly – HSLP Advisor	No Yes Yes No No No Yes No
	JDS	Lloyd Jackson – Mechanical Superintendent Sven Archimowtiz – Electrical Superintendent Doug Fielding – Construction Manager Ishan Fechter – Construction Coordinator Jerry Graham – Construction Manager Kevin Whieldon – Project Coordinator Mark Valeriote – Construction Manager	No Yes Yes Yes No No Out
Engineering Design Consultants	SRK Consulting (Canada) Inc.	John Kurylo – Site Engineer Megan Miller – Site Engineer Lawrence Borowski – Site Engineer Murry McGregor – Site Engineer Iozsef Miskolczi – Site Engineer	Yes Yes No No No
	EBA Engineering Consultants Ltd.	Jeff Orr – Project Manager Jennifer Stirling – Geologist Thomas Bradshaw – Junior Engineer Ernest Palczewki – Geologist	Yes Yes No No
Earthworks Contractor	Nuna Logistics	Bradford Watkin – QC Manager Dale Craig – Safety Don Webber – Foreman Doug Haverland – Area Superintendent Gary Sodhi – Field Engineer Georges Cornelissen – Survey Manager Jeff Roberts - Surveyor Jim Cardinal – Foreman Kevin Oakes – Project Engineer Kevin Kozdrowski – Foreman Margret Caley – Surveyor Matt McKay – Civil Supervisor Mike MacMaster – Surveyor Mike Price – Field Engineer Nick Stoneberger – Superintendent Rick Peters – Foreman Ron MacMaster – Surveyor Simon Chipper – Civil Supervisor	No No No Yes No Yes Yes Yes No No Yes Yes Yes Yes No No Yes No
External Distribution List:	SRK: Maritz Rykaart, Lowell Wade, Seema Kang, Silkie Wong EBA: Robert Zschuppe Nuna: Chris Petrovic JDS: Bob Prince-Wright 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:-33.8/-37	12 PM:-33.3/-42	6 PM: -31.8/-51	12 AM: -27.7/-50
Precipitation (mm)	<b>Rain:</b> None		<b>Snow:</b> 20-30	
Conditions	<b>Day Shift:</b> Light to moderate wind.		<b>Night Shift:</b> Wind and snow starting at ~1 am.	
Daily norms (°C)	24 hour high: -27.7		24 hour low: -35.1	

**HEALTH, SAFETY AND ENVIRONMENT**

- Jeff Orr attended daily Nuna construction meeting.
- Megan Miller and Jennifer Stirling attended the nightly Nuna construction meeting.

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

- The daily meeting was attended by ADCO, Williams Wireless, ACI, Nuna [Doug Haverland], ESR [Michelle Tanquay], Newmont Safety [Don Ethelston], JDS [Doug Fielding, Ishan Fechter], SRK [John Kurylo]

Topic	Status
Health and Safety and Environment	<ul style="list-style-type: none"> <li>• One incident was reported. An ADCO personnel slipped and had a minor incident with a flat head screw in a sea can. The worker was back at work the same day.</li> <li>•</li> </ul>
North Dam	<ul style="list-style-type: none"> <li>• Issues with the FCP seem to be fixed for the time being. Most of the issues with the belt overloading have been attributed to the frozen lumps (which have been being broken down and sorted) and the way the loader was loading material into the hopper and the way the hopper was loading the belts.</li> <li>• Cleaning and placement at the N Dam was planned for today.</li> <li>• SRK provided a summary/ overview of the construction activities that resulted at the N Dam on Jan 23<sup>rd</sup> (see daily report #18 for details).</li> <li>• SRK noted that no freezback had been achieved on the material placed on Jan 23<sup>rd</sup>, at the time of the meeting.</li> </ul>
Water Management Structures	<ul style="list-style-type: none"> <li>• ESR recently inspected the snow road by the DN Diversion berm. Snow road construction completed looks good.</li> <li>• A test strip was completed at the DN Diversion berm alignment yesterday. Frozen permafrost soil was encountered during the test strip (complete along the most western end of the key trench alignment).</li> <li>• ESR recently inspected the snow road by the DN Diversion berm. Snow road construction, completed thus far, looks good.</li> <li>• Approximately 180 holes are estimates to be required to drill Sump 2 location.</li> <li>• Survey will continually lay out the DN Diversion Berm footprint during ripping to ensure that ripping progresses within the limits of the IFC key trench lines.</li> </ul>

General	<ul style="list-style-type: none"> <li>• Snow was hauled from various locations on site yesterday.</li> <li>• The crane that was planned to assist ACI with lifts at the Vent Raise is in the show. This crane is expected to be available later in the day.</li> <li>• ADCO's skid steer is back up and running.</li> <li>• Willing Wireless will be working on the cable pull to the Power House.</li> <li>• The water for Doris Camp is planned to be down shortly today around 1pm while some servicing (changing breakers) is completed.</li> </ul>
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**SURVEY:**

Required	<ul style="list-style-type: none"> <li>• As-built survey of FCM placed on 2012/01/21</li> </ul>
Data Received	<ul style="list-style-type: none"> <li>• Survey Data of Placed Frozen Core: <ul style="list-style-type: none"> <li>○ AB 120123 ND FC – Standard.zip</li> <li>○ AB 120123 ND FC SURV2-Standard.zip</li> <li>○ AB 120123 ND sURV2.csv</li> <li>○ AB 120123 ND FC.csv</li> </ul> </li> </ul>
Outstanding	<ul style="list-style-type: none"> <li>•</li> </ul>
Upcoming	<ul style="list-style-type: none"> <li>• Survey of frozen core surface after cleaning/ scraping activities at N. Dam (on going).</li> <li>• Survey of FCM after placement (on going).</li> </ul>

**NORTH DAM/FROZEN CORE PLANT PAD:****Frozen Core Plant***Dayshift*

- The FCP started FCM production around 15:30 pm today.
  - The temperature of the FCM was exiting the plat chute around 33°C at the start of shift and then cooled down to ~ 28-29°C as production progressed.
  - A dozer continues to be used at the FCM stockpile to sort and break down unsaturated frozen lumps of FCM. Some larger clumps of the FCM have started to be backhauled to the crusher.

*Nightshift*

- The loader used to feed the frozen core plant and the available replacement loaders were having mechanical issues at the start of shift.
- SRK discussed increasing the heat of the material leaving the plant to achieve a better bond between lifts of material with the nightshift foreman and frozen core plant operator.

**Dam Shell**

- No significant activity.

**Key Trench***Dayshift*

- The 345 excavators (equipped with toothed bucket) was used during dayshift to assist with removal of additional frozen 5/8" clear material from ~ 1+40 to 1+85.
  - The bottom (flat) area cleaning from ~ 1+40 to 1+85 was approved for placement. The upstream fillet slope still requires additional cleaning before final approval.
  - The 325 excavator, equipped with finishing bucket has now been repaired and was mobilized the North Dam area to assist with future cleaning and placement activities.
- Core material placement was started at around 15:45 and ran to the end of dayshift.
- FCM was placed from ~ 1+40 to 1+85 on dayshift.
  - FCM temperatures at the dam/ at placement were closer to 25° C.

- A progress figure showing the approximate extent of today's placement is provided as Figure 1.

#### *Nightshift*

- Multi-bead thermistor ND-HTS-060-28.8 remains broken/ severed.
- Nightshift could not access the key trench until the lift placed dayshift 2012/01/23 was frozen back. This lift achieved freeze back at ~9 pm.
- Three drilled core samples were collected. One sample was collected from the material placed dayshift 2012/01/23 in the center of the key trench at Sta.0+50. Two cores were collected from the material placed on 2012/01/23 nightshift.
- One of the drilled cores broke in two (spun off) during sampling due poor bonding at the joint between lifts. This is a cause of concern. Higher placement temperatures are expected/ planned to be used in for future lifts to achieve better bonding between lifts. This will be discussed in more detail tomorrow with Nuna and JDS site staff.
  - Based on field observations FCM is expected to be required to be leaving the FCP chute at temperatures in excess of 30°C. This is due to visual observations during coring. The lifts did not appear to be bonded or melted together as well as observed last year. The interface between to separate lifts was separating during coring. This was not a problem last year and is most likely a product of extreme low air temperature while placing.
- The key trench floor was cleaned from 1+40 south west. Cleaning was done with the brush on the bobcat for part of the night then with the air compress when the bobcat broke down.
- 5/8" material was scraped from the upstream slope of the key trench to an elevation ~0.25 m from the floor of the key trench (1 lift thickness) from Sta. 1+40 to ~0+80. Some 5/8" material remained along this area but it was small discontinuous patches. Survey picked up the area which had been scraped to a satisfactory level.
- No material was placed on nightshift. This was in part due to miscommunications regarding placement location. The key trench was sufficiently cleaned to start placing material on the floor of the key trench at ~1 am. The upstream side slope was not approved for placement as additional 5/8" material needed to be removed. It was understood that the foreman wanted to tie material into the upstream slope and therefore additional cleaning on the slope was required, if placement was to proceed up to the upstream edge without an offset. Due to mechanical/ equipment issues and timing placement did not result on nightshift.

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

- Single bead #55 and #56 were read and decommissioned once freeze back had been achieved.
- Single bead #46 was installed in the lift placed on the dayshift. This lift was frozen back by the end of dayshift.

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

Installed Today			Active			Destroyed / Abandoned		
ID	Station	US/DS/Center	ID	Station	US/DS/Center	ID	Station	US/DS/Center
SB46	1+75	Center				SB55	0+50	Center
						SB56	0+90	Center

- A summary of the material testing progress for 2012/01/24 is presented in the tables below.

#### **PARTICLE SIZE DISTRIBUTION SUMMARY**

Collected	Processed	Completed
HB-FCP-CORE-PSD8-QA-20120124		HB-FCP-CORE-PSD7-QA-20120123

**MOISTURE CONTENT SUMMARY**

Collected	Processed	Completed
HB-FCP-CORE-MC17-QA-20120124 HB-FCP-CORE-MC18-QA-20120124		HB-FCP-CORE-MC14-QA-20120123 HB-FCP-CORE-MC15-QA-20120123 HB-FCP-CORE-MC16-QA-20120123

**DRILLED CORE**

Collected	Processed	Completed
HB12-ND-CORE-DC5-QA-20120124 HB12-ND-CORE-DC6-QA-20120124 HB12-ND-CORE-DC7-QA-20120124	HB12-ND-CORE-DC1-QA-20120116 HB12-ND-CORE-DC2-QA-20120119 HB12-ND-CORE-DC3-QA-20120119 HB12-ND-CORE-DC4-QA-20120122	

**COMPACTION TESTING SUMMARY**

Number of Tests	Material	Tested By	Shift	Notes
5	Core	JO	Day	All Passed

- Compaction and saturation results from the nuclear densometer were acceptable.

**DORIS NORTH CAMP:**

- Westarc continues drilling at Sump 2. Drilling at Sump 2 is expected to be completed tomorrow.
- SRK JDS and Nuna held discussions on the updated/ revised Sump 1 location.
  - See daily report #18, figure 4 for additional notes on previous site discussions.
  - The original location of Sump 1 was selected to intercept the surface and subsurface flow of water that has come into contact with mine waste/ waste rock.
  - Drawings for the Doris North Camp sites were issued on Aug 26<sup>th</sup> 2011. In January 2012 the locations were checked in the field and the Sump #1 location was found to be located on the peep bench of the expanded Float Plane Dock Access Road.
  - Observed seeps have previously (in Summer 2011) been observed to exit near the toe of the road. To best capture flows the sump was/ is required to be as close to the road shoulder as possible.
  - In the summer of 2011 SRK (Maritz Rykaart), along with Nuna and JDS site personnel visited/ walked around the expected location of Sump 1 in the field together.
  - Future plans to build up areas surrounding the Pollution Pond area were discussed. The DN Camp sumps would also be planned to be used to help collect seepage from these built up pad areas.
  - SRK briefly touched on geochemistry data from 2011, collected downstream of the Float Plane Dock Access Road.
  - The revised location of Sump 1 is near the toe of the road and does currently intersect two cables that are frozen on the tundra. JDS and Nuna expressed concerns about moving and potentially hitting the frozen and buried (in snow) cables.
    - Options for avoiding the cables were discussed. The option of hand shovelling, heating and exposing the cables was discussed. Further, the option of stringing out an additional power line and then turning off the other cables was discussed.
  - Nuna survey has proposed a new location from the outlined sump that will be ~ 1m from the cable. This move requires the sump to be shifted slightly downstream and outwards on the order of ~1.5 to 1.6m. By moving the sump out ~1.5+m the sump location would be seen as less favourable for seepage collection. SRK and JDS discussed risks and additional uncertainties with further moving the Sump 1 location from the toe.
    - The location of Sump 1 that has been provided and will remain as outlined in JDS-RFI-081.

- Snow road construction around the DN Diversion Berm continues. The Challenger was used to spread snow and the snow access road was watered.
- Nuna Survey staked the DN Diversion Berm key trench.

■  
**GENERAL:**

- The new generator supplied for coring is less powerful than the old generator and the breaker gets tripped if both the vacuum and coring machine are on together. EBA/ SRK to look into making minor modifications to use the full power/ potential of the new generator.
- Nuna Surveyed the ice strip today.



PHOTOS:



**Photo 1:** ~E view of test stripped ripped by D9 at the DN Diversion Berm alignment.



**Photo 2:** ~NNE view up key trench from ~ 0+70,



**Photo 3:** 345 excavator scraping 5/8" material cover from key trench around station 1+85



**Photo 4:** Bobcat with brush and 345 excavator cleaning key trench from ~ 1+40 to 1+85, ~NE view.



**Photo 5:** ~NE view down key trench. Note the whiter, frost covered, area in the center to eastern side of the picture shows the area where material on 2012/01/24 was placed.



**Photo 6:** Close up view of surface around 1+50 where 5/8" removal is nearly complete. Note the faint line showing the approx.. location where overlying lift tapered out.



**Photo 7:** ~ N view towards FCM placement. Placement progressing around station 1+60 in this picture.





**Photo 7:** Coring on night shift!



**Photo 8:** HB12-ND-CORE-DC5-20120123 collected from Sta. 0+50 center of the key trench. This core is typical of what you would expect to find when coring this material.



**Photo 9 and 10:** HB12-ND-CORE-DC6-20120123 collected from Sta. 0+95 center of key trench. Thinning near top of this core is due primarily to drill chatter.



**Photo 10:** A large piece of rock was hit when coring the lift placed 2012/01/22 near station 1+20 downstream side. A second core was taken a few feet from the first, as the first core was stopped short and of very poor quality (due to drilling). Core HB12-ND-CORE-DC7-20120123 was taken immediately adjacent to this location.



**Photo 11** Drilled core HB12-ND-CORE-DC7-20120123 taken at Sta. 1+20 downstream. Note that this core separated (spun off) at the joint between lifts.



**Photo 12** Cleaning of key trench looking SW along trench. Note snow starting to fall on nightshift.





**Photo 13:** Progress photo of North Dam from photo point 1. ~SW view.



**Photo 14:** Progress photo of North Dam from photo point 2. ~WNW view.



FIGURES:  
Figure 1 - FCM Progress/ Placement – Jan 24<sup>th</sup>

