

DAILY REPORT #78 – DORIS NORTH INFRASTRUCTURE/ NORTH DAM

Prepared by:	John Kurylo Megan Miller	Date:	2012.03.23
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 No Yes No Yes Yes No No
	JDS	Lloyd Jackson – Mechanical Superintendent Doug Fielding – Construction Manager Ishan Fechter – Construction Coordinator Jerry Graham – Construction Manager Kevin Whieldon – Project Coordinator Mark Valeriot – Construction Manager Calvin Goldschmidt – Construction Coordinator	No Yes No No No Yes Yes
Engineering Design Consultants	SRK Consulting (Canada) Inc.	John Kurylo – Site Engineer Megan Miller – Site Engineer Lawrence Borowski – Site Engineer Murray McGregor – Site Engineer Iozsef Miskolczi – Site Engineer Lowell Wade – Senior Engineer	Yes Yes No No No No
	EBA Engineering Consultants Ltd.	Jeff Orr – Project Manager Jennifer Stirling – Geologist Thomas Bradshaw – Junior Engineer Ernest Palczewski – Geologist	No No Yes Yes
Earthworks Contractor	Nuna Logistics	Doug Haverland – Area Superintendent Gary Sodhi – Field Engineer Georges Cornelissen – Survey Manager Jeff Roberts - Surveyor Jim Cardinal – Foreman Jordan Gunter – Foreman (Dayshift) Kevin Oakes – Project Engineer Kevin Kozdrowski – Foreman (Night shift) Kyle Kuntz – Project Engineer Margaret Caley – Surveyor Matt McKay – Civil Supervisor Mike MacMaster – Surveyor Mike Price – Field Engineer Nick Stoneberger – Superintendent Rick Peter – Foreman Ron MacMaster – Surveyor Simon Chipper – Civil Supervisor	No No Yes No Yes Yes Yes No No Yes No Yes Yes Yes No No Yes
External Distribution List:	SRK: Maritz Rykaart, Lowell Wade, Seema Kang, Silkie Wong EBA: Robert Zschuppe Nuna: Chris Petrovic JDS: Bob Prince-Wright, Calvin Goldschmidt 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: -28.7/-32	12PM: -21.8/-26	6 PM: -17.2/-24	12 AM: -27.6/-31
Precipitation (mm)	Rain: None		Snow: None	
Conditions	Day Shift: Sunny, calm, bright		Night Shift: Light to moderate wind, cool, clear.	
Daily norms (°C)	24 hour high: -16.1		24 hour low: -29.1	

HEALTH, SAFETY AND ENVIRONMENT

- Megan Miller and Ernest Palczewski attended the dayshift Nuna toolbox meeting.
- John Kurylo and Thomas Bradshaw attended the nightly toolbox meeting.

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

- The daily meeting was attended by Nuna [Nick Stoneberger], Newmont Safety [Don Ethelston], ESR [Katsky Venter], JDS [Mark Valeriote, Doug Fielding], SRK [John Kurylo, Megan Miller]

Topic	Status
Health and Safety and Environment	<ul style="list-style-type: none"> • No safety issues reported. • ESR said that the burn pan has been closed down following the INAC inspection.
North Dam	<ul style="list-style-type: none"> • GCL panels were placed on dayshift. • Nuna plans on placing additional GCL on dayshift. • 22 loads of overliner material were placed on nightshift
Water Management Structures	<ul style="list-style-type: none"> • Things at the berm are going well. They are almost at the power cable crossing. • Realigning the culvert from the diversion berm was discussed as it appears as though the culvert as-designed would end in the middle of the access road to the overburden dump. Nuna suggested that the culvert alignment follow the alignment of the existing culvert for the previous berm.
General	<ul style="list-style-type: none"> • Nothing additional.

SURVEY:

Required	<ul style="list-style-type: none"> • FCM placed March 21, 2012 • GCL placed March 22, 2012 • To date as-builts of Doris Diversion Berm (ROQ, underliner crush, liner, overliner crush) • Recent multi-bead cable string pickups and crush cover over cables.
Data Received	<ul style="list-style-type: none"> • None
Outstanding	<ul style="list-style-type: none"> • None
Upcoming	<ul style="list-style-type: none"> • Diversion Berm material as placed • Dam material (ongoing)

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

- Readings were taken of all multi-bead thermistors.
 - Thermistor String ND-HTS-085-33.5 remains non-functional.

Frozen Core Plant*Dayshift*

- No activity.
- No operator available.
- Overliner material was hauled from Quarry 2 to the frozen core plant pad stockpile.

Nightshift

- The FCP was started around 21:00 and produced FCM until ~22:15.
 - As the first truck load was being placed near the GCL on the top crest of the dam in a small lift the moisture content was started around 55.6 on the water pump dial to control bleed water.
 - At 21:30 the water was bumped up to 56.5 on the water dial for placement in the underbuilt SSE corner area.
 - The temperature of the FCM today was ~ +29 to +30C.
 - At 21:45 the water was slightly increased at the plant to 57.4 on the water dial.
 - At 22:15 the FCM production was stopped to allow for the excavator and packer to place and pack the material in the underbuilt SSE corner before switching over to the Overliner material production.
- Overliner material production was started at the plant around 00:45 and ran until ~5:15.
 - The water pump dial setting was started around 41.9 and the temperature was around +26C.
 - Around 1:10 the water was lowered to 40.9. Temperatures remained around +27 to +26C.
- The variability with the FCP burner has been addressed and full control of the burner was experienced on tonight's shift.
- In total 23 loads were hauled from the plant to the dam (114 loader buckets). 4 loads of FCM were produced and 19 loads of overliner material were produced.

Dam Shell*Dayshift*

- Transition material was placed over the GCL overliner material along the crest, slope and toe 1+95 to 1+80 and along the crest 1+80 to 1+40. This material was packed with the 10T vibratory packer.
 - The CAT 330 excavator was used to place this material along the slope and the CAT D8 dozer placed the material along the crest.
 - 1-2 truck drivers and one piece of placing equipment work steadily on this for most of the shift.

Nightshift

- Minor compaction of some of the recently placed Transition material was completed around 1+40 to 1+80 over the main core area.

Key Trench/ Central Core*Dayshift*

- Discussions were had with Nuna foreman, superintendent and engineer regarding the underbuilt crest slope at station 1+15 and 1+10. As can be seen in Figure 3. Nuna plans on building up these areas when they place FCM on nightshift.
- The cracked area at the crest of the core near station 1+05 shown in photos 6 and 7 of daily report 77 was scraped with the excavator; however additional scraping is needed to remove all of the cracked crust of core material.
- Two panels of GCL material were placed, approximately station 1+30 to 1+20.
 - The first panel placed was joined on the slope as there was insufficient material on the roll to cover the entire slope. The portion of liner on the upper portion of this slope was patched 4 times as the GCL was punctured.
 - The top portion of the further south GCL was flipped back to allow for FCM placement at the crest.
- Labourers used the air compressor to clean the low area in the SSE corner of the dam in anticipation of FCM placement on nightshift.

Nightshift

- At the start of the shift the side slopes around 0+40 to 0+70 and the graded / indented area (around 0+60) were scraped with an excavator and cleaned with the skidsteer. Some looser material was removed from the side slopes and a few cracked pieces of frozen core were scraped up / removed.
- The crack noted around station 1+05 (see Daily Report #77) was scraped down with the excavator. The hard to get portions of this area were removed with a sledgehammer and shovelling before FCM placement.
- 3 loads of FCM were placed between 0+40 and 0+70, in the underbuilt SSE corner.
 - This small triangular sliver was overbuilt and packed with the 10 ton vibrator compactor then cut back with the excavator. The side slopes were then smoothed by the labour team with shovels and rakes. See Photo 10 and 11.
 - The last three exposed beads from thermistor string ND-HTS-060-33.5 were installed / covered. All thermistor strings have now been installed in the main dam core. See Photo 9.
- 1 load of FCM was placed on the slightly underbuilt top crest of the dam (see Figure 3), around 1+05 to 1+20.
 - See Photo 8
- Around station 1+40 to 1+30 the hording and heating over the liner where ice from bleed water had built up was removed. Some of the water / slush was scraped to the side with flat shovels. A few pieces of reject GCL (typically cut off from the end of rolls) was placed around this area near the toe / base of the upstream slope (slightly N of the edge of the min 1m GCL liner overlap).
- 19 loads of GCL cover material (Overliner material) were placed between 1+45 and 1+20.
 - See Photo 12 to 17.
 - At the start of placement a couple excavator buckets of Overliner material were placed at the end of the planned placement area. This was done to act as a berm for any bleed water. Unlike March 22nd (see Daily #77) at the end of shift no bleed water out of the upstream toe fill was noted. Water contents were more in control due to better consistency with feed and burner controls at the plant.
- FCM and Overliner material was placed with the CAT 330 excavator with cleanup bucket.
- Installed single beads were monitored throughout the shift. At the end of nightshift SB 7 (placed on the top crest area around station 1+10) was noted to be at +0C.

Field Geotechnical Testing, Laboratory and Sampling

- The power in the geotechnical laboratory was not working for most of dayshift due to a problem with the generator. The power was restored at 3 pm, the water in the barrels was just starting to freeze by the time the power was restored.
- A short drilled core sample was collected from the FCM placed March 21, nightshift at station 0+55 center.

SINGLE BEAD THERMISTOR STATUS

Installed Today			Active			Destroyed / Abandoned		
ID	Station	US/DS/Center	ID	Station	US/DS/Center	ID	Station	US/DS/Center
SB7	1+10	D/S				SB23	0+65	CL
SB11	0+54	CL				SB26	1+20	U/S

- 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-CORE-PSD76-QA-20120322

MOISTURE CONTENT SUMMARY

Collected	Testing In Progress	Completed
HB12-FCP-CORE-MC384-20120323	HB12-FCP-CORE-MC384-20120323	
HB12-ND-CORE-MC385-20120323	HB12-ND-CORE-MC385-20120323	
HB12-FCP-COVER-MC386-20120323	HB12-FCP-COVER-MC386-20120323	
HB12-FCP-COVER-MC387-20120323	HB12-FCP-COVER-MC387-20120323	
HB12-ND-COVER-MC388-20120323	HB12-ND-COVER-MC388-20120323	
HB12-FCP-COVER-MC389-20120323	HB12-FCP-COVER-MC389-20120323	
HB12-ND-COVER-MC390-20120323	HB12-ND-COVER-MC390-20120323	

DRILLED CORE

Collected	Testing In Progress	Completed
HB12-ND-CORE-DC87-20120323		HB12-ND-CORE-DC87-20120323

COMPACTION TESTING SUMMARY

Number of Tests	Material	Tested By	Shift	Notes
0	N/A	EP	Day	No FCM Placed
3	FCM and GCL Cover	TB	Night	Tests Acceptable

- Compaction values over 90% were achieved.

DORIS NORTH DIVERSION BERM:

- The base of the key trench was inspected from 1+60 (power cable location) to 1+00. The bottom layer of crush material to bring the floor up to grade was placed in this area.
- Underliner crush placed on dayshift March 22, 2012 was tidied then the geotextile and liner layers were placed from 1+95 to 1+60 (power cable).
- The bentonite 'plug' was placed all the way to 1+60.
- Placement of overliner crush over this area was started before the end of shift.
- Discussions were had in the field with the Diversion Berm Foreman and the Nuna field engineer regarding the culverts crossing the primary road. Nuna has only ordered the quantity of pipe shown on the design drawings; therefore there is insufficient pipe to diagonally cross the Primary Road coming out on the downstream side of the overburden dump access road. Therefore having the culverts cross the primary road above the access road to the overburden dump (this is the existing culvert alignment) was discussed. Culverts already exist under the overburden dump access road.
 - See Figure 4 for additional notes / details.

QUARRY #2:

- One drill continues to drill on both day and nightshift.

GENERAL:

- SRK went to Roberts Bay to collect the portable welder to use as a power source of the coring rig. However the welder was not in Roberts Bay. The small red generator was used as a power source, hence the small core length.
- Additional "Final" material testing results were obtained. The test results, as described in the email, include:
 - Compaction and Saturation Testing Summary up to March 17.
 - Core Ice Saturation Summary up to March 19. Explanation was added for the results that were removed and core 22 was returned to the summary.
 - Bulk Density Summary up to March 23.
 - Moisture Content Summary up to March 20.
 - Moisture-density Relationship (Proctor) tests used in calculations up to March 17 (SP1 through SP3, SP5 and SP6). Results for Proctor SP4 were not reasonable and are not reported. Proctor SP4 was not used.
 - EBA Daily Testing Summary.

PHOTOS:



Photo 1: Progress photo of North Dam from photo point 3. Looking north east along the dam.



Photo 2: looking south west along the dam stranding on the placed transition material.



Photo 3: Collecting a drilled core sample. Coring! Coring!



Photo 4: Underliner crush material placed in Diversion Berm. Photo looking west, mega bag is ~1+60



Photo 5: Diversion Berm trench floor and ROQ slope, between 1+60 and 1+00.

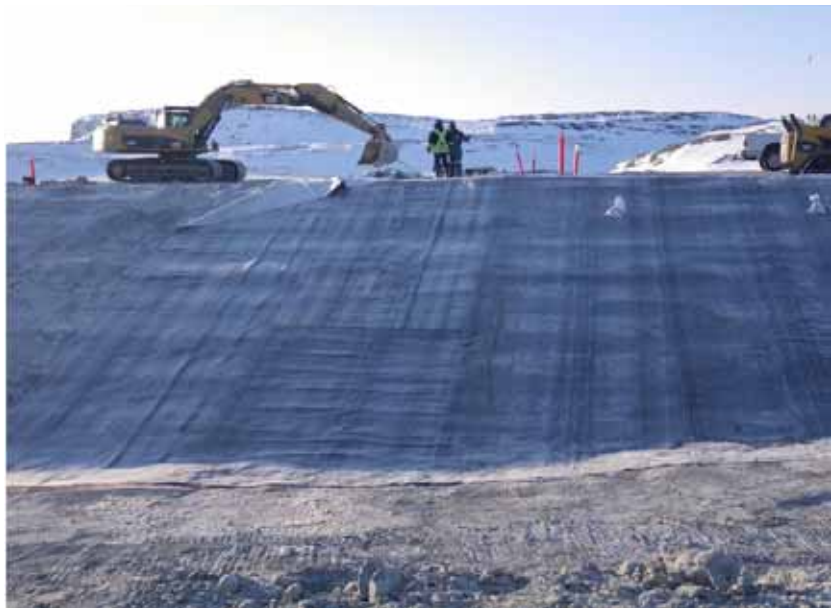


Photo 6: GCL placed on North Dam.



Photo 7: plate tamping the crush on the floor of the Diversion Berm, just west of 1+60. Photo looking west.



Photo 8: Area on the top crest of the dam, around 1+05 to 1+20, that was built up on the downstream and upstream crest with a small lift of material (~0.1 to 0.15m left).



Photo 9: The final three exposed beads on thermistor cables ND-HTS-060-33.5 being installed in FCM.



Photo 10: View of lift of FCM placed in underbuilt SSE corner of the core. Note the paint marks outlining the crest that this lift was required to be cut back to after being overbuilt and packed.



Photo 11: ~NE view of SSE underbuilt corner of the core. Photo taken after final sloping completed. Note that on the order of 3 lifts remain to be placed in this underbuilt sliver.



Photo 12: ~ NNE stitched panoramic view of 330 excavator placing and 730 truck dumping Overliner material around 1+30.



Photo 13: ~NNW stitched panoramic view of excavator spreading Overliner material. As noted by dayshift one panel row of GCL had a seam that was overlapped on the upstream slope. These GCL panels can be observed in the left of this picture.



Photo 14:~ NE view from 1+40 of Transition material placed on dayshift. Note that the majority of the placed transition material was placed first on the crest of the dam. Additional material required on the upstream dam slope from ~ 1+95 to 1+60.

Photo 15: ~NE view down over inflection point of the dam towards the Overliner placement at the N The area show in this picture was cleaned of snow and large debris. The area south of (or behind) this picture still requires notable snow clearing.



Photo 16: Packer starting to compacted the side slopes around 1+30 to 1+20 (stitched panoramic



Photo 17: 10 ton vibrator packer vibratory rolling the upstream slope.

FIGURES:

Figure 1: Dayshift North Dam Progress Figure

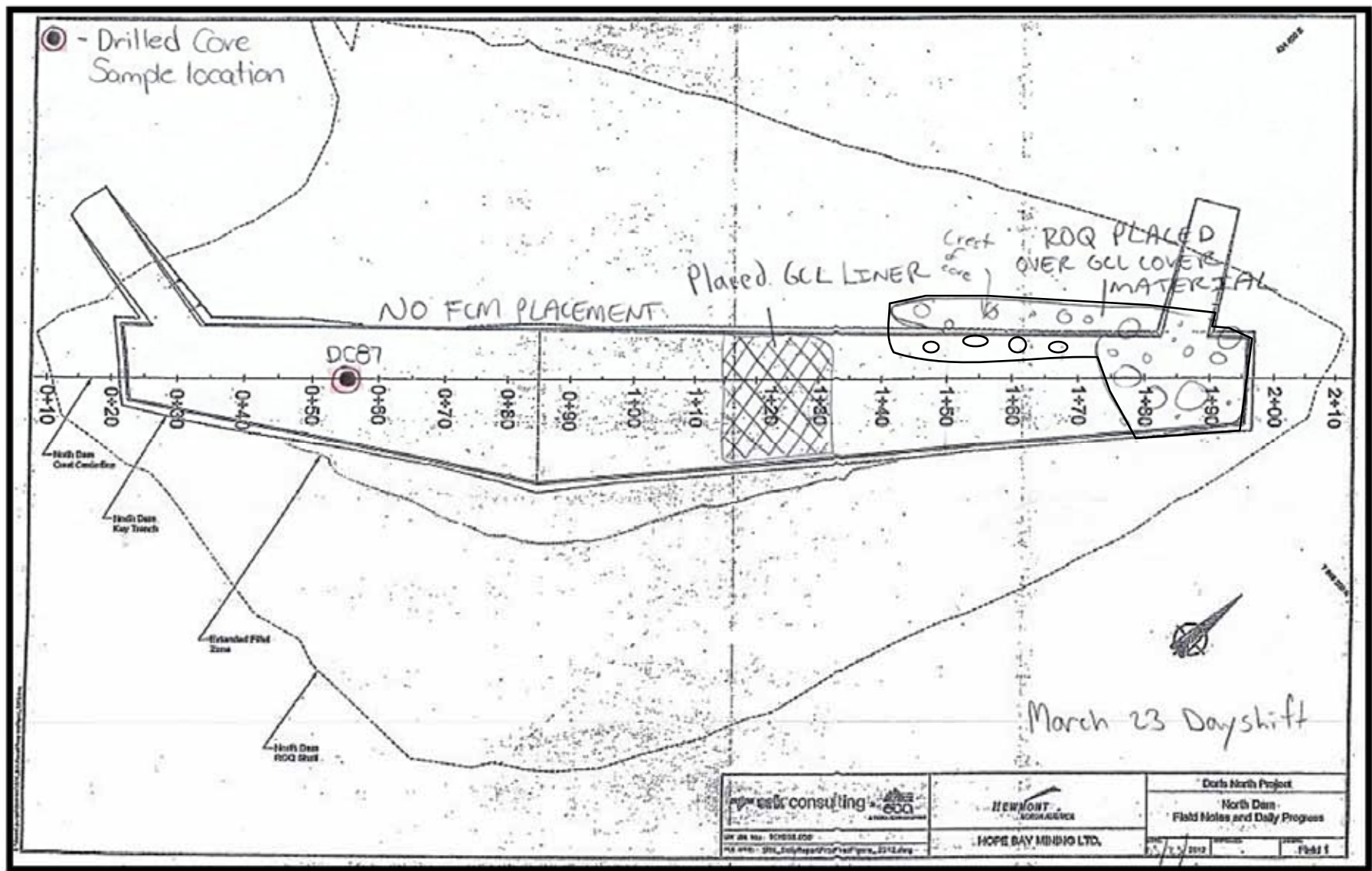


Figure 2: Nightshift North Dam Progress Figure

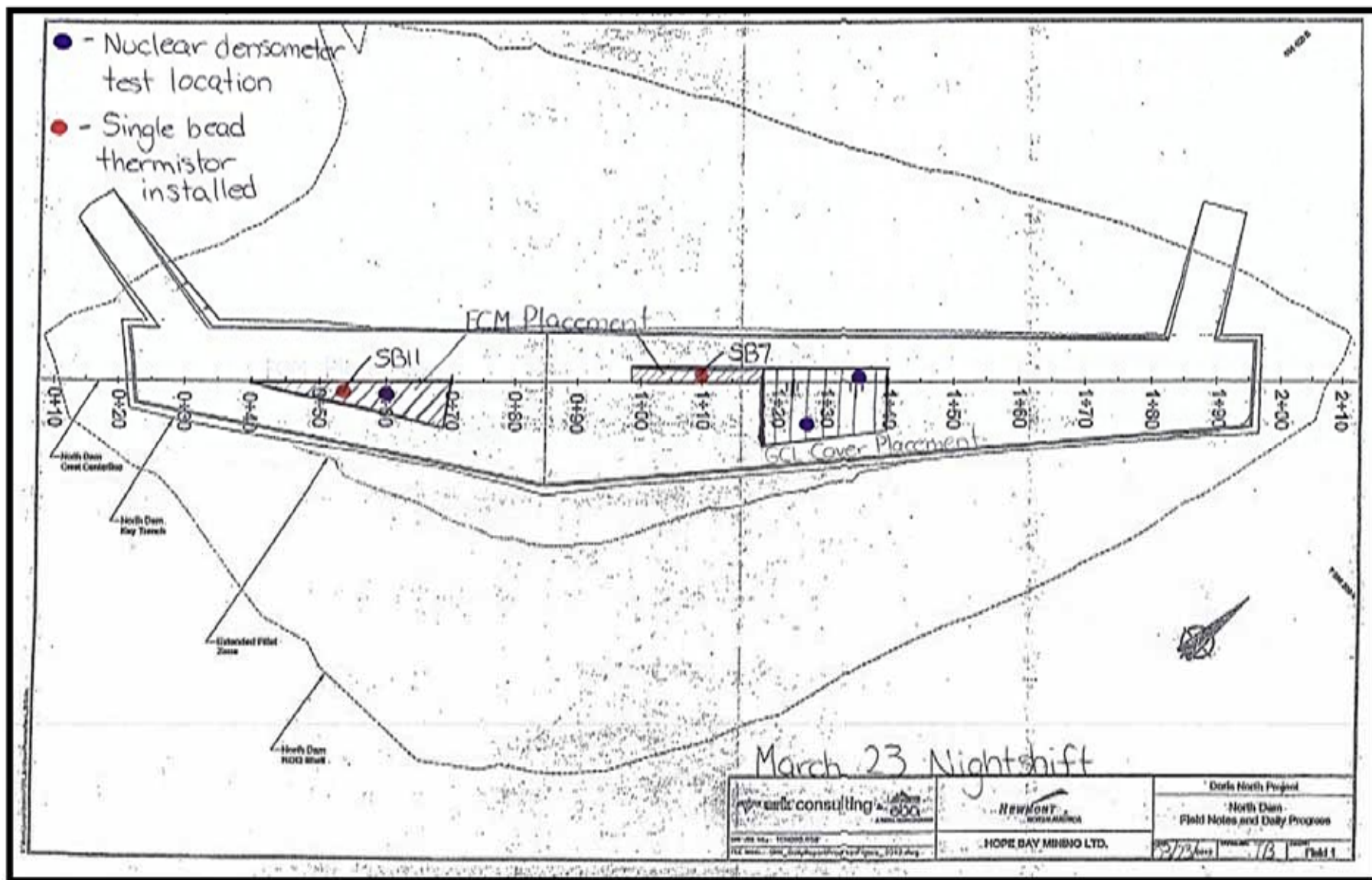


Figure 3: Cross sections of underbuilt crest area at station 1+15 and 1+10 (design lines are in white on the screen shots). Note that material was placed over these areas on nightshift.

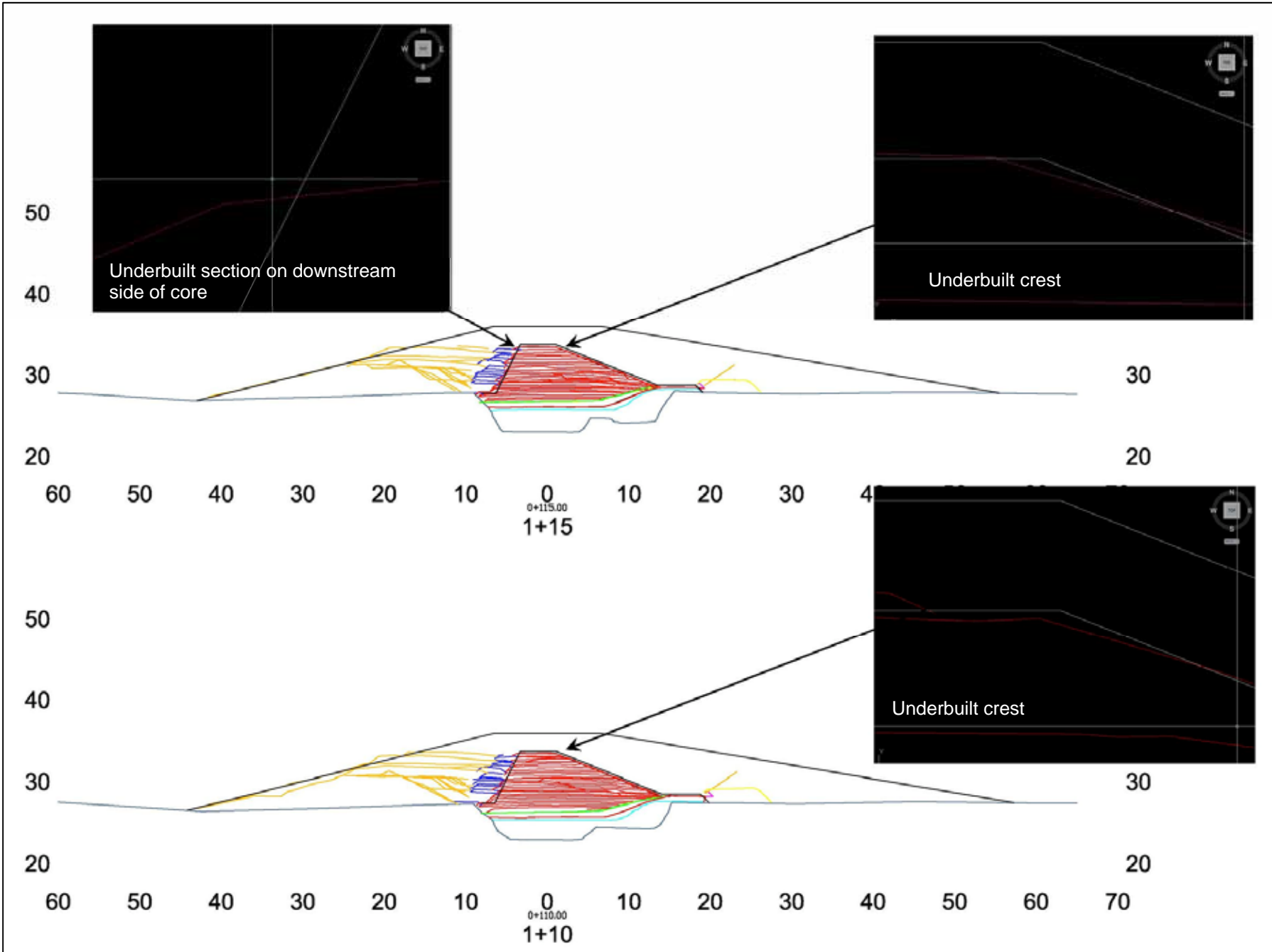


Figure 4: Location of IFC culvert alignment in relation to the Overburden dump access roads (light green lines).

