

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019**
AGNICO EAGLE
 MEADOWBANK

Date: 27/01/2020

Time: 7h30

Presents:

AEM: PEM, MH, YS

KCG: JT, AP

QA: SV

QC: ✓

Health & Safety & Environment:

No event.

Daily Advance:

KCG:	1 hole (P488.5) injected.	Casing drilled	/ 192
	Interruptions before of pig launching safety radius in AM and PM.	Injection	/ 192
	Maintenance on equipments because injection was impossible.	Water cons.	2100 liters
	Drilling S554.5, S542.5, S530.5, S518.5, S506.5	Cement	600 Kg

QA/QC: Compare elevations of areas where loss of return water happened.
 Mix C used, no need for mix D so far in this section.

General Planning/Comments:

KCG: No drilling (too advanced)
 2P before 450 : inject P then do plugs
 P 476, 464, 452 to inject
 S446, T471.5 to plug
 Then come back and inject.

QA/QC: Follow works.

Report By:

MH

DAILY CONSTRUCTION MEETING

WHALE TAIL DIKE 2019



AGNICO EAGLE
MEADOWBANK

Date: 28/01/2020

Time: 7h30

Presents:

AEM: PEM, MH, YS

KCG: AP, JT

QA: SV

QC: —

Health & Safety & Environment:

No event. High winds: low visibility and frostbite risk.

Daily Advance:

KCG:	Packer sticking into holes: procedure set up to improve packer placement and avoid an issue. Control where problematic areas are.	Casing drilled	/ 192
		Injection	/ 192
	Inj.: P476.5, P464.5, P452.5, S590.5, S578.5	Water cons.	2792 liters
	Plug: T461.5, S446.5 (all low take)	Cement	1560 Kg
	Drilled: S494.5		

QA/QC: Plugs: did not pre-fill with grout. This will be done from now on.
After each hole, try to measure grout depth: difficult while the grout is not yet set.
→ uncertainty possible with water mixing, especially after packer is passed through.

General Planning/Comments:

KCG: If weather allows, continue injecting S holes.
Drilling: S → 446, then T (593)

QA/QC: Follow works.

AEM: How to optimize operations at the end of the shift? Sometimes workers prefer not to start on next hole because they will not have time to finish it by 18:00. Expected low-take holes could be done at that time (faster to do).

Report By: MH

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019****AGNICO EAGLE**
MEADOWBANK

Date: 29/01/2020

Time: 7h30

Presents:

AEM: PETI, MH, YS

KCG: JT, AP

QA: SV

QC: —

Health & Safety & Environment:

Blizzard conditions yesterday: works had to be interrupted for 6h.

Excessive speed on the dike: no unrequired traffic on the dike, respect speed limits and stops.

Daily Advance:

KCG:	Works stopped due to blizzard: no works in the morning. Water flushed.	Casing drilled	/ 192
	No water truck afterwards: no injection.	Injection	/ 192
	Drilling: 3 holes.	Water cons.	2900 liters
		Cement	— Kg

QA/QC: Weekly report issued. Received expected seepage zones from AETI.

General Planning/Comments:

KCG: Injection (586→)
Drilling: 2 holes. Afterwards, need to wait for injection to catch up.

QA/QC: Follow-up.

AETI: possibility to finish the section at 430 instead of 450. Probably easier to grant holes to the instrumentation shack (440).

Daily optimization of the number of injected holes was discussed with the team on the field.

Report By: MH

DAILY CONSTRUCTION MEETING
WHALE TAIL DIKE 2019



AGNICO EAGLE
MEADOWBANK

Date: 30/01/2020

Time: 7h30

Presents:

AEM: PER, MH, YS

KCG: JT, AP, SB

QA: SV

QC: ✓

Health & Safety & Environment:

No event yesterday. Placed a pickup near the working areas on the dike to protect workers. Reminder will be done for all employees that no one with no business on the dike should enter.

Windy conditions.

Daily Advance:

KCG:	Options found to refill water if water truck is broken.	Casing drilled	/ 192
	inj. S 56.5, S 554.5, S 542.5, S 530.5.	Injection	/ 192
	backfill P 524 with packer inside: re-inject above packer, grout lost.	Water cons.	4224 liters
	→ possible that the packer was blocking a fractured bedrock area. Regrout.	Cement	3720 Kg
	Drill: S 446.5, T 533.5.		

QA/QC: P 524 was problematic. Restart grouting process, because of that V_{max} exceeded. Still work to do.
Verify casing depth before packer to ensure correct placement.

General Planning/Comments:

KCG: Regrout P 524, then S holes skipping the closest one. Alternative: back with packer.
Drill: T 587 → 539 (9 holes) ↳ if they communicate.

QA/QC: Agreement on sequence for close holes if they don't communicate to optimize time today in case of lost time because of blizzard. Not applied to the rest of the dike, only local adjustment.

Report By:

MH

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019****AGNICO EAGLE**
MEADOWBANK

Date: 31/01/2020

Time: 7h30

Presents:

AEM: MH, YS

KCG: AP, JT

QA: SV

QC: ✓

Health & Safety & Environment:

White-out conditions yesterday.
People still traffic through the dike at an excessive speed.

Daily Advance:

KCG:	Water tank flushed for activity shut down.	Casing drilled	/ 192
		Injection	/ 192
		Water cons.	liters
		Cement	✓ Kg

QA/QC: ✓

General Planning/Comments:

KCG: Waiting for the water truck to start.
Regrout P 524.5 with Celbex.
Grout S → S446.5 (before shack).

QA/QC: Follow works.
Discussion about the sequence Mix C-D-C+.
Prefill for plugs: 15 L.

Report By: MH

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019****AGNICO EAGLE**
MEADOWBANK

Date: 02/01/2020

e: 7h30

Presents:

AEM: PEM, YS

KCG: SL, NT, AP, PG

QA: SV QC: Ø

Health & Safety & Environment:

- Dike is closed for tourists. Several pick up seen @ high speed, not a good mix with pedestrians

Daily Advance:**KCG:**

Water truck only came @ 8h, truck had a flat tire → working at 11h
 Grout started only at PM
 524.5 → Celbex open throat, refusal by pressure
 ↳ packer was stuck in that hole

Casing drilled / 192

Injection 1803 m³

Water cons. 2640 liters

Cement 2040 Kg

- Ken Lachance arrival.

QA/QC:

Injection follow up.
 1.3% Celbex

General Planning/Comments:**KCG:**

- measure 524.5 → backfill or segment depending of values
- Inject 7 consecutive from 524.5 down.
- Drilling Testicularies w/ Tamrock.

QA/QC:

- weekly report.

Report By:

DAILY CONSTRUCTION MEETING

WHALE TAIL DIKE 2019



AGNICO EAGLE
MEADOWBANK

Date: 02/02/2020

Time: 7h30

Presents:

AEM: PEM, YS

KCG: PG, EG, KL, AP.

QA: SV.

QC:

Health & Safety & Environment:

Dike closed.

Daily Advance:

KCG:

Secondary S18.5 - 446.5 → 7 holes grouted
Tertiary drilling 587.5 - 533.5
2 plugs - 0+434 & 0+425.

Casing drilled	192	392
Injection	192	392
Water cons.	3380	liters
Cement	1920	Kg

QA/QC:

KL proposal: if low take on "S", could we drill "T" within 12m inside 24hr.
(SV to validate) + set time is 10 hours. Would be more effective for operations

- Drilling washout for hole to last 5min
- Plugs will stop at Vmax, no plug segment is required

General Planning/Comments:

KCG:

Plugs on next section, ~ 20 holes planned → more effective operation wire
from drilling Tertiary. from 0+425 down

QA/QC:

Field follow up.

Report By:

DAILY CONSTRUCTION MEETING

WHALE TAIL DIKE 2019



AGNICO EAGLE
MEADOWBANK

Date: 02/03/2020

Time: 7h30

Presents:

AEM:

YS, PEM

KCG:

AP, KL, EG

QA:

SV

QC:

Ø

Health & Safety & Environment:

Nose partbite for 1 worker
Very cold with wind chill.

Daily Advance:

KCG:

0+422.5 0+392.5 → Plugs
Drilling T-527.5 to T-443.5

Casing drilled — / 192

Injection — / 192

Water cons. 3780 liters

Cement 720 Kg

QC:

Plug follow up.

Ø Tertiary to be drilled within 12m radius

General Planning/Comments:

KCG:

Plugs to 0+371 to be finished
Tertiary injection

Longitudinal section to work on, include more data.

QA/QC:

Injection follow up.

Report By:

DAILY CONSTRUCTION MEETING

WHALE TAIL DIKE 2019



AGNICO EAGLE
MEADOWBANK

Date: 2/4/2020

Time: 7h30

Presents:

AEM: PEM, YS

KCG: KL, AP, EG

QA: SV

QC: —

Health & Safety & Environment:

Nothing to report.

Daily Advance:

KCG:

Plugs 389.5 to 371.5
Tertiary 605.5 to 581.5 → low takes.
Drilling: P-428.5 P-416.5 P-404.5

Casing drilled / 192

Injection / 192

Water cons. 4020 liters

Cement 1800 Kg

KL: Review of grant committee email.

QA/QC:

Nothing to report.

General Planning/Comments:

KCG:

Tertiary injection.

Drilling = 2 primaries to be done.

QA/QC:

Follow up of injection works.

Report By:

DAILY CONSTRUCTION MEETING

WHALE TAIL DIKE 2019



AGNICO EAGLE
MEADOWBANK

Date: Feb 5, 2020

Time: 7h30

Presents:

AEM: FLB, YS

KCG: AP, E

QA: SV

QC:

Health & Safety & Environment:

Nothing report

Daily Advance:

KCG: Ing: Totaio 575.5 - 551.5 (S)

4 low take

(1) → 1600 L

Mix D, + CRheomac)

Casing drilled / 192

Injection ~ 95 / 100

Drilling (2) remains 342.5, 380.5

Water cons. 3920 liters

3920 L eau, 3000 kg cement

Cement 3000 Kg

QA/QC:

General Planning/Comments:

KCG: continue grouting
Ph?

QA/QC:

Report By: Frederick L. Bolduc

DAILY CONSTRUCTION MEETING

WTD Grouting
South Whale Tail Channel



AGNICO EAGLE
MEADOWBANK

Date: Feb 6, 2020

Time: 7h30

Presents:

AEM: FLB, JFB

KCG: AP, E

QA: SV

QC:

Health & Safety & Environment:

- Expts camp entrance slippery

Daily Advance:

KCG: inj 3 test 545.5, 539.5, 533.5
533.5 → 1,300 L (high table)
no drilling

consumption
3420 L water
1680 kg cement

QA/QC: —

General Planning/Comments:

KCG: • strategy change primary 428 → 380

QA/QC:

Report By: Frédéric L. Bolduc

DAILY CONSTRUCTION MEETING

WHALE TAIL DIKE 2019



AGNICO EAGLE
MEADOWBANK

Date: 2020-02-07

Time: 7h00

Presents:

AEM: JPB

KCG: AP WL EG

QA: SV

QC:

Health & Safety & Environment:

- Nothing to Report
- Presentation "MANIPULATION BIG HOLE PROCEDURE"

Daily Advance:

KCG:

5 PRIMARY

428.5 to 380.5

1 PLUG

368.5 DEEPER CASING

NO DRILLING

Casing drilled / 192

Injection / 192

Water cons. 4100 liters

Cement 2040 Kg

QA/QC:

Nothing to Add

General Planning/Comments:

KCG:

CROSS-SHIFT TECHNICIEN NO INJECTION

MAY BE DRILLING

QA/QC:

CROSS-SHIFT

Report By:

JF BELAND

DAILY CONSTRUCTION MEETING

WHALE TAIL DIKE 2019



AGNICO EAGLE
MEADOWBANK

Date: Feb 8, 2020

Time: 7:00

Presents:

AEM: FLB, JFB

KCG: WL, Ekene,

QA: Salkern

QC:

Health & Safety & Environment:

- —
- Injection today AEM: JFB & L
- Changing conditions, new personnel in injection unit

Daily Advance:

KCG: • cleaning, cross-shift (crew change)

Casing drilled — / 192

Injection — / 192

Water cons. — liters

Cement — Kg

QA/QC: —

General Planning/Comments:

- KCG: • restarting plug (final sequence)
- reception of as-built info

QA/QC:

Report By: Frederick L. Bolduc

DAILY CONSTRUCTION MEETING

WHALE TAIL DIKE 2019



AGNICO EAGLE
MEADOWBANK

Date: Feb 9, 2020

Time: 7h30

Presents:

AEM: FLB, JFB

KCG: WL, E. time

QA: MS

QC:

Health & Safety & Environment:

- safety tour yesterday → no issue raised
- report whip check on line
- co-activity
- slippery condition

Daily Advance:

KCG: • 10 plug T 365.5 - P 332.5

Casing drilled / 192

Injection / 192

Water cons. 2400 liters

Cement 840 Kg

- Few more required due to instrumentation check

QA/QC: —

General Planning/Comments:

- KCG:
- More plug
 - drilling 5-8 hole, rock drilling + plug

QA/QC:

Report By: Frédéric L. Bolduc

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019****AGNICO EAGLE**
MEADOWBANK

Date: Feb 10, 2020

Time: 7h00

Presents:

AEM: FLB, JFB

KCG: WL, G. Lema

QA: SM

QC:

Health & Safety & Environment:

- Permeation inspection procedure
- icy surface

Daily Advance:

- KCG: • 14 plug OT 329.5 to 5290.5
• drill 3 hole S434, S422, S410, no ice / water encountered

plug	148 / 188
Casing drilled	/ 192
Injection	105 / 192
Water cons.	4800 liters
Cement	1200 Kg

QA/QC: 2 hole reach vol refusal

General Planning/Comments:

- KCG: • Plug (2-3 day remaining)
• drilling (2 sec hole remaining)

QA/QC: • Request more consistency for hole depth measurement

Report By: Frederick L. Bolduc

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019****AGNICO EAGLE**
MEADOWBANK

Date: 11/02/2020

Time: 7h30

Presents:

AEM: NH, JFB

KCG: JD, E

QA: NS

QC: /

Health & Safety & Environment:

Nothing to report for the injection on the dike. Cold weather: operations on hold.
Near miss: fuel truck nearly collided with a haul truck on Road 7 (stop sign).
Procedure written for the permadome door incident.

Daily Advance:

KCG:	Casing drilled	/ 192
	Injection	/ 192
	Water cons.	3800 liters
	Cement	1080 Kg

QA/QC: 13 plugs, mostly pressure refusal
drilling 2S and 2P (5 m). No water loss.
Gelbex added when re-grouting.

General Planning/Comments:

KCG: If weather improves, move grout shack and continue plugs then grouting.

QA/QC: Grouting T holes after plugs are done.

Report By: NH

DAILY CONSTRUCTION MEETING

WHALE TAIL DIKE 2019



AGNICO EAGLE
MEADOWBANK

Date: 12/02/2020

Time: 7h30

Presents:

AEM: PG, FH, JFB

KCG: JD, KL, WL, E

QA: MS

QC: /

Health & Safety & Environment:

Frestrip (worker did not know he would be outside for long), worker hit his foot on plywood.

Daily Advance:

KCG:	grout 5T	527.5 → 503.5	Casing drilled	/ 192
	drill 3P	344.5 → 320.5 (stable holes)	Injection	/ 192
			Water cons.	3752 liters
			Cement	800 Kg

QA/QC: large fluctuations in Marsh values between batches. Temperature will be double-checked.
Issues with big bags of cement.

General Planning/Comments:

KCG: grout T holes
drill P holes

QA/QC: Checking issues, follow works.

AET: do we need to do all the T plugs? QA says yes.

Report By:

FH

DAILY CONSTRUCTION MEETING

WHALE TAIL DIKE 2019



AGNICO EAGLE
MEADOWBANK

Date: 13/02/2020

Time: 7h30

Presents:

AEM: PG, PH, JFB

KCG: KL, WL, JD, E

QA: MS

QC: /

Health & Safety & Environment:

Potential near-miss during the night (channel).

Daily Advance:

KCG:	grout T : 497.5 → 479.5 (low take except 479.5)	Casing drilled	/ 192
	drill last P holes plug : → P360.5	Injection	/ 192
	Suggestion: use Flix B (thinner) to start on T holes.	Water cons.	5275 liters
	SNC agrees to try.	Cement	4200 Kg

QA/QC: Skipping T holes : maybe not ideal because there are unexpected high take T holes like T479.5.

General Planning/Comments:

KCG: grout T holes , S holes on next section.
no drilling

⑦ about when casing can be installed on US. AEM to check.

QA/QC: Removing water from holes (recommendation from grouting committee) : not feasible as water keeps flowing in at a high rate. Only a first flush of the hole.
Prefill with grout before inflating the packer.

Report By:

PH

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019**
AGNICO EAGLE
 MEADOWBANK

Date: 14/02/2020

Time: 7h30

Presents:

AEM: PG, FH, JFB

KCG: WL, DP

QA: MS

QC: ✓

Health & Safety & Environment:

Speed on the dike: 20 km/h max. Remind the workers.

Daily Advance:

KCG:	grout T holes 443 → 473 (only 1 remaining in the section) ↳ actually done	Casing drilled	/ 192
		Injection	/ 192
	genset broke down during the night.	Water cons.	3600 liters
		Cement	2470 Kg

QA/QC: Mix B in the afternoon: 3 holes closed with Mix B, 1 with mix C.
 Decision made to grout all the T holes on the DS blanket.

General Planning/Comments:

KCG: grout S holes after 434.
 genset down, works to resume after it is fixed.
 as-built to be sent
 (?) of colour coding of high/low take sections based on SNC's demand, to confirm by AET with the grout committee.

QA/QC: follow-up on works, weekly report

Report By:

FH

DAILY CONSTRUCTION MEETING

WHALE TAIL DIKE 2019



AGNICO EAGLE
MEADOWBANK

Date: 15/02/2020

Time: 7h30

Presents:

AEM: PH, JFB

KCG: DP, FC, JT, JD, WL

QA: MS

QC: /

Health & Safety & Environment:

Spill 30L (reported). Cold weather conditions.

Daily Advance:

KCG: Genset down all day,

Casing drilled / 192

Injection / 192

Water cons. / liters

Cement / Kg

QA/QC: /

General Planning/Comments:

KCG: Restart in the PT7 when the genset is fixed,
Will not drill before the S holes are injected (next 2 days).

QA/QC: Changes to the as-built: AET1 will ask the grouting committee before implementing.

Report By: PH

DAILY CONSTRUCTION MEETING

WHALE TAIL DIKE 2019



AGNICO EAGLE
MEADOWBANK

Date: 16/02/2020

Time: 7h30

Presents:

AEM: PG, PH, JFB

KCG: JT, WL, KL, JD

QA: MS

QC: —

Health & Safety & Environment:

Nothing to report.

Daily Advance:

KCG: New genset (new piece from Tbk). No production during the shift.

Casing drilled / 192

Injection / 192

Water cons. liters

Cement Kg

QA/QC: Weekly report and data compilation.

NCR file: QA says it must be done by KCG. To discuss.

AET: deviation measurements: how important is it for the injection? Precision of the instrument is already close to the allowable %. SNC to provide feedback: discuss in next meeting.

General Planning/Comments:

KCG: Injection today: 5 holes

QA/QC: follow-up on works.

AET: install remaining casings when possible. Will send the coordinates to KCG for staking.

Report By: PH

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019****AGNICO EAGLE**
MEADOWBANK

Date: 17/02/2020

Time: 7h30

Presents:

AEM: PG, PH, JFB

KCG: WL, KL, DP, JT, JD

QA: MS

QC: —

Health & Safety & Environment:

No event. Still very cold weather.

Daily Advance:

KCG:	grout 8 holes	SS	434.5 → 386.5	} no high takes	Casing drilled	/ 192
		3P	368.5 → 344.5		Injection	/ 192
					Water cons.	3276 liters
					Cement	2520 Kg

QA/QC: Only issue: excessive water temperature. Was resolved.

General Planning/Comments:

KCG: grout P holes (7 remaining)
finish remaining plugs (probably tomorrow)
drilling T holes around the S grouted yesterday (10 T holes)
if additional time, continue S holes

QA/QC: Grout committee responses discussed.

Report By:

PH

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019**
AGNICO EAGLE
 MEADOWBANK

Date: 18/02/2020

Time: 7h30

Presents:

AEM: PG, PH, JFB

KCG: JT, WL, KL

QA: RS

QC: /

Health & Safety & Environment:

Nothing to report.

Daily Advance:

KCG:	grout P holes	332 → 272.5	(6 holes) → low takes	Casing drilled	/ 192
	drilling T holes	437 → 383.5		Injection	/ 192
	S holes	374 → 350		Water cons.	3850 liters
				Cement	1440 Kg

QA/QC: Try mix B for areas with low take P.
 Grout temperature is still too high. Water heater will be turned off.
 Grout depth measurement too soon after pressure refusal impractical: wait longer before measuring.
 Grout must be flushed after 2h in the tank (spec). Workers do it every 90 min, when required, but it happened only once when all holes were low take. Recommended to do half tanks.

General Planning/Comments:

KCG: grout 1P then remaining plugs
 drilling S holes around P injected yesterday (6 holes planned)
 test genset.

QA/QC: follow grouting.

Report By: PH

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019****AGNICO EAGLE**
MEADOWBANK

Date: 19/02/2020

Time: 7h30

Presents:

AEM: PETI, TH, JFB

KCG: JT, WL, RL, JD

QA: NS

QC: ✓

Health & Safety & Environment:

Nothing to report. Windy conditions yesterday.
New searans in the SANA parking: blind spots.

Daily Advance:

KCG: grout 7 holes (6 plugs + 1 P260.5)
 plugs 248.5 → 233.5
 drilling 338.5 → 278.5

Casing drilled / 192

Injection / 192

Water cons. 3850 liters

Cement 1280 Kg

QA/QC: Switched from mix C to mix B.
Install casings where they have not yet been (near instrument shacks).
Grout temperature is now OK.

General Planning/Comments:

KCG: plugs remaining (10-15 remaining) → should all be done tomorrow morning.
expected completion of DS blanket: March 10.
need the casing locations for the US blanket → AETI to check.

QA/QC: Wash holes before installing the packer → KCG is concerned that the water will freeze within the casing.
Presence of mud in the holes (same as East abutment).

Report By: TH

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019**
AGNICO EAGLE
 MEADOWBANK
Date: 20/02/2020Time: 7h30**Presents:**AEM: PET, MHKCG: AP, KL, JD, WL, JTQA: FSQC: ✓**Health & Safety & Environment:**

SANA parking: searcons will be moved today.
 Right of way to the emulsion truck. Loader down the dike backed up close to a pickup.
 New truck driver on the dikes and channel. Reminder of using the right radio channel.

Daily Advance:

KCG:	grouted plugs 230.5 → 194.5, skipped 197.5 (mud in casing) → the skipped one will be plugged when drilled. some ice is forming in the last hole of the section.	Casing drilled	/ 192
		Injection	/ 192
		Water cons.	2771 liters
		Cement	1200 Kg

QA/QC: Skipped plug: use packer half and half for injection.

AET: injection coming close to the frozen abutment. Do not inject where the bedrock is frozen. We will see ice coming from the drilling.

General Planning/Comments:

KCG: 6 plugs remaining
 Crew change tomorrow → move the grouting unit to next location, clean-up.
 if time remaining, inject a few holes before.
 (?) of deepening holes in bedrock on the US side (maybe 10 m?) → to discuss

QA/QC: meeting with SNC at 12:30
 (?) of the casings installation to start on US side.

Report By: MH

DAILY CONSTRUCTION MEETING

WHALE TAIL DIKE 2019



AGNICO EAGLE
MEADOWBANK

Date: 21/02/2020

Time: 7h30

Presents:

AEM: PET, PH

KCG: JT, JD, AP

QA: MS

QC: ✓

Health & Safety & Environment:

Blizzard in the PM and night.

Daily Advance:

KCG:	no drilling	Casing drilled	/ 192
	6 plugs 191.5 → 176.5 (no ice in the holes)	Injection	/ 192
	started moving the injection unit before blizzard.	Water cons.	2060 liters
		Cement	480 Kg

QA/QC: no issue yesterday

Weekly SNC meeting:

- US quarternary holes on hold (will be done as needed)
- US super primary holes (10 m in bedrock): done at close spacing (e.g. every 2 P) to assess the need for complete 10 m deep sections → will start in area 750 → 650 (high take DS)
- Q holes on DS where high take was observed. Drilling sequence to adjust for efficiency.

General Planning/Comments:

KCG: AEM to send coordinates of US holes to KCG
moving the injection unit
crew change

QA/QC: QA missed his flight → until Monday, SNC will provide remote support but no presence on site.

Report By:

PH

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019****AGNICO EAGLE**
MEADOWBANK

Date: 22/02/2020

Time: 7h30

Presents:

AEM: PETT, PH, VS

KCG: JD, JT, AP, DP, SB, FC

QA: /

QC: /

Health & Safety & Environment:

Monthly permadome inspection.

Daily Advance:

KCG:	no injection	Casing drilled	/ 192
	BR drilling S 266.5, 7P 248.5 → 176.5 (last hole on dike)	Injection	/ 192
	injection unit moved and ready.	Water cons.	4000 liters
	spare piece for genset received.	Cement	/ Kg
	② duration of water washing of holes (spec: 6 min). AETI to check if it can be reduced based on the observation of water return.		

QA/QC:

No QA on site

General Planning/Comments:

KCG: Casing drilling: drill is ready, begin on NS.
Injection T holes. Begin near 440 shack.
No BR drilling.

QA/QC:

Report By: PH

DAILY CONSTRUCTION MEETING

WHALE TAIL DIKE 2019/2020



AGNICO EAGLE
MEADOWBANK

Date: 23/02/2020

Time: 7h30

Presents:

AEM: PET, PH, YS

KCG: JD, AP, JT, FC

QA:

QC:

Health & Safety & Environment:

Nothing to declare on works.

Daily Advance:

KCG: grout 6T 437.5 → 407.5 (Mix B, low takes)
casing drilling US T 748.5

Casing drilled / 192

Injection / 192

Water cons. 2400 liters

Cement 960 Kg

QA/QC: Next day QC arriving tomorrow

General Planning/Comments:

KCG: grout remaining T holes, then S
casing drilling US
BR drilling to resume

QA/QC:

AEM: will send remaining JS T holes coordinates (all 4 will be grouted).

Report By: PH

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019/2020****AGNICO EAGLE**
MEADOWBANK

Date: 24/02/2020

Time: 7h30

Presents:

AEM: PET, MH, YS

KCG: JT, SF, AP

QA: /

QC: /

Health & Safety & Environment:

Nothing to declare.

Daily Advance:

KCG:	grout 6 T: T 401.5 → T 383.5	401.5 was high take	Casing drilled	/ 192
	2 S: S 374.5 → S 362.5	(closed with Mix C)	Injection	/ 192
	no BR drilling		Water cons.	3972 liters
			Cement	1701 Kg

QA/QC: /

General Planning/Comments:

KCG: BR drilling (3 holes)
grout S holes
~ 11 shifts remaining for the DS blanket. US casing installation is not progressing fast enough to switch to US grouting then. Waiting for a replacement part for the drill, not before Wednesday.

QA/QC: /

Report By: MH

DAILY CONSTRUCTION MEETING

WHALE TAIL DIKE 2019/2020



AGNICO EAGLE
MEADOWBANK

Date: 2/25/2020

Time: 7h30

Presents:

AEM: YS, PEM

KCG: JT, SF, SB, AP, E

QA: Sebastien QC:

Health & Safety & Environment:

main Genset up → no more cable layed on the ground from Temporary genset.

Daily Advance:

KCG:

S-350.5 → S-290.5 6 holes injected.
all low takes with mix B, max 100 L.
Ø drilling, waiting for parts.

Casing drilled / 192

Injection / 192

Water cons. 3950 liters

Cement 960 Kg

QA/QC:

Arrival. Get back in the flow.
Ø more grout measure when holes < 100 L.

General Planning/Comments:

KCG:

Injection: finish secondaries & then jump to primaries
Bt drilling on Tertiary

AEM: send 4 exclusion holes coming location

QA/QC:

Follow up injection

Report By:

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019/2020****AGNICO EAGLE**
MEADOWBANK

Date: 2/26/2020

e: 7h30

Presents:

AEM: YS, PEM

KCG: SF, AP, EG, JT

QA: SV QC: —

Health & Safety & Environment:

Nothing to report.

Daily Advance:

KCG: 2 casing drilling S-745, Q-739.

Casing drilled / 192

2 secondaries S 278.5 - S 266.5

Injection / 192

Primaries P-248.5 - P-200.5

Water cons. 5888 liters

B drilling BR. T-377.5 to - T 293.5

Cement 720 Kg

On the U/S, problems for moving injection, humpers & dike not flat → possibility to use grader

QA/QC:

Good Pmax taken for 2 secondaries. mix B head loss was taken by mix C was the correct one. → too late when realized. For now mix C pressure is used (conservative), if mix B is systematically used on U/S, pressure loss tests can be done on mix B.

AEM: Quaternaries & 3 excl. holes was forwarded to KCG. → strategy: drill all "Q" & excl. → drill all "P" on 0750 - 0+550

General Planning/Comments:**KCG:**

Shut down & maintenance Injection unit
2 primaries
Injection unit maintenance (4-6 hours forecasted).
BR drilling: Tertiary & secondaries from Yesterday's grouted primary.

QA/QC:

Field follow up.

Report By:

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019/2020**
AGNICO EAGLE
 MEADOWBANK
Date: 2/27/2020e: 7h30**Presents:**AEM: PEM, YSKCG: JT, AD, SF, BV.QA: SVQC: —**Health & Safety & Environment:**

Nothing to report.

Daily Advance:

KCG:

Casing drilled / 192

Injection / 192

Water cons. 4240 liters

Cement 1200 Kg

P 188.5 P-176.5:

Drilling Bedrock T-292.5 to 269.5

" S-254.5 to 206.5

Casing drilling Q 736 - 733 - 697 - 694. • Ø drilling on NS, compressor down.

QA/QC:

Western limit took 400-600L, it was last campaign's western limit, is possible.
Injection follow.**General Planning/Comments:**

KCG:

Drill 2 secondaries

Inject secondaries → Tertiaries from 0+254

Drill (casing quaternaries) if compressor is up.

QA/QC:

Injection follow up.

Report By: John C. [Signature]

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019/2020**
AGNICO EAGLE
 MEADOWBANK

Date: 2/28/2020

e: 7h30

Presents:

AEM: YS, PEM

KCG: AP, SF, DB, SL

QA: SV QC: —

Health & Safety & Environment:

Nothing to report.

Daily Advance:

KCG:	Casing drilled	/ 192
2 injected holes S-254.5 S-242.5	Injection	/ 192
BR drilling S-194.5 & S-182.5	Water cons.	4480 liters
Casing drill Q-694 & Q-691 DS	Cement	1440 Kg
Q-688 & Q-685 & Q-682		

New profile curve of injection available. → wk ratio to add.

QA/QC:

Casing drilling are drilled up to bedrock, regardless of adjacent bottom of recent piles.

- hole @ S-242.5 measured after 15 min → grout over casing shoe.

General Planning/Comments:

KCG:

 Finish Secondaries
 Begin Tertiary.
 BR drilling to begin tomorrow.
 Continue casing drillers.

QA/QC:

Continue injection follow up

Report By: 

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019/2020**
AGNICO EAGLE
 MEADOWBANK
Date: 2/29/2020Time: 7h30**Presents:**

AEM:

PEM, VS

KCG:

SF, AP, EG

QA:

SV

QC:

—

Health & Safety & Environment:

Nothing to report.

Daily Advance:

KCG:

Casing drilled / 192

4 holes S-230.5 S-218.5 S-206.5 S-194.5

Injection / 192

(Casing drilling "Q": 618 667 664 628 1800L (curtain edge)

Water cons. 4260 liters

609.1 & US T-742 P-739 - T736

Cement 2760 Kg

↳ Upstream done for logistic reasons

Ø BR drilling

QA/QC:

 S-194.5 almost reached Vmax, closed w/ Rheumac (mix D) double dose.
 ↳ grout over casing shoe.
General Planning/Comments:

KCG:

- Tertiary injection after last secondary.
- BR drilling from 0+263 down on Tertiary.
- Continue casing on upstream, come back w/ DIS grout when water on when enough advance is gained.

QA/QC:

 Field follow up.
 Send Weekly report.

Report By:

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019/2020****AGNICO EAGLE**
MEADOWBANK

Date: 3/01/2020

Time: 7h30

Presents:

AEM: PEM, YS

KCG: SF, AP

QA: SV, QC: —

Health & Safety & Environment:

Weather not looking good.

When code 1 on radio → radio silence to let dispatcher speak.
 Pipe wrench kicked back towards worker, he stopped it w/ hands (minor injury).
 (involving drill).

Daily Advance:

KCG:

Casing drilled / 192

Last recordance S-182.5

Injection / 192

T 377.5 up to T 347.5. only 377.5 drank 700L.

Water cons. 3897 liters

Casing drilling DS 5 holes S-533, T-730, P-727, T-724
 NS 4 holes T-718 @ S-709, S-721 on US.

Cement 2160 Kg

BR drilling T-263.5 → drill down, 11 holes available ahead of us.

QA/QC:

1 instance where cement was more "chunky"
 Injection follow up

AEM: Need to follow up casing installation on QA side.

General Planning/Comments:

KCG:

Continue injection, may be paused temporarily because of down drill.

Continue casing drilling

QA/QC:

weekly report report.

Continue follow up on the field.

Grant committee next Friday → will provide info to KCG for KCG casing fabrication

Report By:

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019/2020**
AGNICO EAGLE
 MEADOWBANK

Date: 3/02/2020

Time: 7h30

Presents:

AEM: PEM, YS

KCG: AP, SF

QA: SV QC: -

Health & Safety & Environment:

Nothing to report.

Daily Advance:

KCG:	Casing drilled	/ 192
7 holes T-341 to T-299.5	Injection	/ 192
DR drilling 6 T-257.5 to T-227.5	Water cons.	5100 liters
Casing Drilling { DS U/S T-706, P-703, T-700.	Cement	960 Kg
{ NS U/S T-694. 5697		

Test done for injection shack around green shack: Casings inside 6 ft from green shack will be re-drillable.

QA/QC:

Field follow up.

2 times casing drilling communication. Happens when drilling in FF.

L 703 - 700 - 697 U/S. "same" zone as drilling communication on Quaternary

often when drilling rock for casing, they see chips of gravel from nearby

General Planning/Comments:

KCG:

DR drilling to finish today

Continue injection 3-4 days foreseen

ACR sent grouting impact on instruments yesterday.

QA/QC:

Follow up.

Report By:

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019/2020**
AGNICO EAGLE
 MEADOWBANK

Date: 3/03/2020

Time: 7h30

Presents:

AEM: PET, TH, YS

KCG: SB, AP, EG, NT

QA: SV

QC: /

Health & Safety & Environment:

Nothing to declare. HSSE visit planned today.

Drilling outside: issue of masks with goggles. New models are being shipped on site.

Daily Advance:

KCG:	grout T293.5 → 275.5: (4 holes)	Casing drilled	/ 192
	T293.5 high take, the others low take	Injection	/ 192
	BR drilling 8 holes: T221.5 → T179.5 (last T of DS)	Water cons.	5050 liters
US	Casing drilling: DS P691 → T676 (6 holes)	Cement	2520 Kg
	↳ to complete		
	NS T676 → S673		
QA/QC:	then put first bit of casing on T664 → S649 because skytrack was down.		
	Measured T293.5 after 4h: grout in the casing, hole backfilled.		

General Planning/Comments:

KCG: grout T holes. Skytrack should be up by noon, to bring cement.
 BR drilling on hold.

QA/QC: follow works.

Report By:

TH

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019/2020**
AGNICO EAGLE
 MEADOWBANK

Date: 4/03/2020

Time: 7h30

Presents:

AEM: MH, YS

KCG: EG, AP, SB

QA: SV

QC: /

Health & Safety & Environment:

Visit of Yves Levesque and Jacques Proulx: comments and changes to follow. HSSE of KCG will do the update. Procedures for fuelling equipments to be checked.

Daily Advance:

KCG:	grout T 269.5 → T 239.5 (6 holes)	Casing drilled	/ 192
	casing drilling DS T664, S661, T658, P655	Injection	/ 192
	NS T652, S649, T646	Water cons.	4250 liters
		Cement	720 Kg

QA/QC: cement was too cold in the morning. Fixed. Reminded to rotate cement.
 "cement chips" observed by NS QC: to verify, since cement would be crushed to powder, not chips. NS QC must verify.

General Planning/Comments:

KCG: grout next holes, 1 not plugged (packer method). T holes should be finished tomorrow.
 casing drilling US. DS @ holes will be drilled when we move.

QA/QC: @ holes might be added on the DS near the west abutment.

Report By:

MH

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019/2020**
AGNICO EAGLE
 MEADOWBANK

Date: 5/03/2020

Time: 7h30

Presents:

AEM: MH, JFB

KCG: AP, SB

QA: SV

QC: /

Health & Safety & Environment:

Changes done after inspections from 3/03. Environment complained that dust from drilling activities is contaminating the water sampling station.

Daily Advance:

KCG:	grout T233.5 (700L), T227.5 (low take 65L), T221.5 (1600L),	Casing drilled	/ 192
	T215.5 (305L)	Injection	/ 192
	casing: DS 5 holes P643 → P631	Water cons.	5200 liters
	NS 1 hole T628 (compressor issue)	Cement	2760 Kg

QA/QC: T221.5 backfilled at the end of the day after grout depth measurement.
 Grout mix recipes not respected: less calcium for B/C, too much Rheomac for B.
 In review, will be corrected.
 Water at 9° during the day, corrected.

General Planning/Comments:

KCG: grout until middle M, then cleanup for crew change.
 casing drilling.

QA/QC: follow up works.

Report By:

DAILY CONSTRUCTION MEETING

WHALE TAIL DIKE 2019/2020



AGNICO EAGLE
MEADOWBANK

Date: 6/03/2020

Time: 7h30

Presents:

AEM: PH, JFB

KCG: EG, AP, WL

QA: SV

QC: ✓

Health & Safety & Environment:

HSE visit results received. AEM + KCG will respond with corrective measures taken.

Daily Advance:

KCG:	grout T209.5, T203.5, T197.5	Casing drilled	/ 192
	↳ 2 graphs: plug not done, packer method with other stage for the plug.	Injection	/ 192
		Water cons.	3400 liters
		Cement	2520 Kg

T197.5: high take

casing: DS 1 hole S625

(mechanical breaks)

NS 3 holes T622, P619, T616

QA/QC: Mix recipe fixed. Results for injection are similar → previous mixes were off but no impact on operations.

2 stages for T197.5 to ensure all pits are grouted. Watched for casing coming up, but all went well. Not yet backfilled.

General Planning/Comments:

KCG: Crew change on the grouting unit.
Casing drilling.

For grouting meetings: hard to estimate nb of casings due to nb of holes not yet determined.

QA/QC: Check grout level in T197.5 before backfilling.
Verify batching methods.

Report By:

PH

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019/2020****AGNICO EAGLE**
MEADOWBANK

Date: 7/03/2020

Time: 7h30

Presents:

AEM: TH, JFB

KCG: EG, SB, KL, WL

QA: TS

QC: /

Health & Safety & Environment:

Reminder to use correct posture while handling heavy loads. Blizzard conditions.

Daily Advance:

KCG:	casing drilling 6 holes S613 → T598 + one in progress	Casing drilled	/ 192
	crew change on grouting	Injection	/ 192
		Water cons.	/ liters
		Cement	/ Kg

QA/QC: QA crew change.

General Planning/Comments:

KCG: grout remaining T holes
move back unit to the beginning of the dikes to grout Q holes, if weather allows.
no casing drilling due to weather

QA/QC: follow-up on works
monitor mix recipes

Report By:

TH

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019/2020**
AGNICO EAGLE
 MEADOWBANK

Date: 8/03/2020

Time: 7h30

Presents:

AEM: TH, JFB

KCG: EG, KL, WL

QA: PS

QC: /

Health & Safety & Environment:

Follow-up visit from HSSE to the batch plant.

Daily Advance:

KCG:	casing drilling: PS95 → T586 (4 casings), then blizzard conditions grouting 3 remaining T: T191.5, T185.5, T179.5 (low take) moved the grouting unit to the E abutment	Casing drilled	/ 192
		Injection	/ 192
		Water cons.	2658 liters
		Cement	720 Kg

QA/QC: T191.5 started with mix C by mistake, changed to B.
 @ holes: casing plugs → mix C, bedrock grouting → mix B

General Planning/Comments:

KCG: casing plugs for @ holes (13 planned)
 US casing drilling
 First 3 casings are full of ice → verify today if they should be grouted or not.

QA/QC: If @ hole does not take, we may use mix A. KCG concerned that Super P is not available in quantities.
 Drilling logs: should have more info on cuttings.

Report By:

TH

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019/2020**
AGNICO EAGLE
 MEADOWBANK

Date: 9/03/2020

e: 7h30

Presents:

AEM: TH, JFB

KCG: KL, WL

QA: RS

QC: /

Health & Safety & Environment:

Permadomes inspections done, eyewash stations replaced.

Daily Advance:

KCG:	10 plugs on Q 739 → Q 782 (DS)	Casing drilled	/ 192
	4 casings PS83 → 574 (welding issues) (US)	Injection	/ 192
		Water cons.	2600 liters
		Cement	600 Kg

QA/QC: plugs are low-take
 lots of unexplained variations in Flash values. Temperature rose rapidly after mixing.
 Cement looks different than the previous batch (maybe older / newer cement).

General Planning/Comments:

KCG: grouting plugs (3 remaining + 1 in exclusion hole)
 move to US for plugs. Start where the BR drill is not in the way.
 BR drilling of Q holes DS (alternate for setting time, grout 1 of 2 then come back to avoid communication).

QA/QC: Check holes
 Sent injection results to SNC for next Q holes to add.

Report By:

TH

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019/2020**
AGNICO EAGLE
 MEADOWBANK

Date: 10/03/2020

Time: 7h30

Presents:

AEM: MH, JFB

KCG: KL, WL

QA: MS

QC: ✓

Health & Safety & Environment:

Nothing to report on the injection. Electric shock in the SANIA shop.

Daily Advance:

KCG:	plugs (4 DS + 4 US): DS Q667, Q664, Q628, P609.1	Casing drilled	/ 192
	US S661, T652, P643, P640.	Injection	/ 192
	casing drilling: P471 → T450 (8 casings in total).	Water cons.	4100 liters
	BR drilling: 6 @ holes, alternate holes to avoid communication	Cement	840 Kg
	→ based on results, we expect high takes. Lots of casing. Poor rock condition.		

QA/QC: Still not sure what causes variability in the grout. But the grout when in the hole is OK. Problem is only in the mixer.

General Planning/Comments:

KCG: grout @ holes. Probably slow because expected high takes.
 Possibility of using open-throat pump.
 casing drilling: 1 US then 4 remaining @ on DS.
 (?) about doing P-S-T before @ on DS to limit moves.
 (US)

QA/QC: Start with mix B, if high take thicken the mix.
 New @ holes: should be communicated shortly by SUR.

Report By:

MH

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019/2020**
AGNICO EAGLE
 MEADOWBANK

Date: 11/03/2020

Time: 7h30

Presents:

AEM: PG, FH

KCG: WL, KL

QA: PS

QC: ✓

Health & Safety & Environment:

Nothing to report.

Daily Advance:

KCG:	cavings: 4Q (Q481, Q478, Q523, Q526)	DS	Casing drilled	/ 192
	PS47 → SS29 (11 cavings)	US	Injection	/ 192
	grouting: Q739, 733, 718, 697, 691, 685	→ all low take, but	Water cons.	4100 liters
	(mix B + C for 2 holes)	still high for a Q hole.	Cement	2400 Kg
	moved US, plugs: T 747			

QA/QC: still issues with Marsh values → adjusted water/cement ratio
 3 frozen holes near the E abutment: only frozen in surface, below is water.

General Planning/Comments:

KCG: casing drilling US
 grouting plugs US from E abutment

QA/QC: follow up on works
 weekly injection meeting.
 grout committee's comments received.

Report By:

FH

DAILY CONSTRUCTION MEETING

WHALE TAIL DIKE 2019/2020



AGNICO EAGLE
MEADOWBANK

Date: 12/03/2020

Time: 7h30

Presents:

AEM: PG, PH, JFB

KCG: WL, KL

QA: TIS

QC: —

Health & Safety & Environment:

Nothing to report. Env. inspection.

Daily Advance:

KCG:	grout plugs US: 739 → 700 (14), skipped a few because frozen ↳ will be redrilled.	Casing drilled	/ 192
		Injection	/ 192
	casing: S529, T526, P523 → 487 (only P and S) 8 holes.	Water cons.	2625 liters
		Cement	1680 Kg

QA/QC: high temperature in water and cement
water may be high in calcium?
received the remaining 7 @ holes coordinates

General Planning/Comments:

KCG: grouting plugs
BR drilling for remaining @ holes, to be grouted tomorrow.
casing drilling: remaining @ holes on W side. Drill will be given back
to the pit afterwards.

QA/QC: follow up works
weekly report.

Report By:

PH

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019/2020**
AGNICO EAGLE
 MEADOWBANK

Date: 13/03/2020

Time: 7h30

Presents:

AEM: PG, PH, JFB

KCG: JD, KL, WL

QA: NS

QC: ✓

Health & Safety & Environment:

Nothing to report.

Daily Advance:

KCG:	casing: P 487 (US), JS Q all done.	Casing drilled	/ 192
	BR drilling: Q736, Q694, Q688, Q682, Q667	Injection	/ 192
	grout plugs: S697 → S673	Water cons.	4350 liters
	T634 → S625 (13 plugs in total)	Cement	2800 Kg

QA/QC: better control on the grout.
 some ice encountered but not an issue

General Planning/Comments:

KCG: deepen 1 casing
 grout plugs → end of US, then move grouting unit to JS Q. Objective is to finish the plugs and then start injection.
 a few BR drilling / cleaning of blocked holes (ice).

QA/QC: follow up on works, advance weekly report.

Report By: PH

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019/2020****AGNICO EAGLE**
MEADOWBANK

Date: 14/03/2020

Time: 7h30

Presents:

AEM: PG, MH, JFB

KCG: JT, JD, KL, WL

QA: NS

QC: ✓

Health & Safety & Environment:

Nothing to report.

Daily Advance:KCG: US: 6 plugs T622 → P695 (issues with water pump / truck)
flushed the tank

Casing drilled / 192

Injection / 192

Water cons. 5000 liters

Cement 728 Kg

QA/QC: weekly report

General Planning/Comments:KCG: US plugs grouting (3 days expected)
BR drilling DS @ holes.
Still 18 remaining to grout.

QA/QC: follow up on works.

Report By: MH

DAILY CONSTRUCTION MEETING

WHALE TAIL DIKE 2019/2020



AGNICO EAGLE
MEADOWBANK

Date: 15/03/2020

Time: 7h30

Presents:

AEM: PH, JFB

KCG: JD, KL, WL

QA: MS

QC: ✓

Health & Safety & Environment:

SANA is out of hand sanitizer.

Daily Advance:

KCG:	<u>drilled Q628, P609.1</u>	Casing drilled	/ 192
	<u>plugs T592 → T580 (5 holes)</u>	Injection	/ 192
	<u>stopped at end of A7 because of loader until P7</u>	Water cons.	<u>3200</u> liters
		Cement	<u>720</u> Kg

QA/QC: waiting for the seepage report from Agnico

General Planning/Comments:

KCG: plugs
maintenance on the drill, then BR drilling on Q holes.

QA/QC: follow up on works.

Report By: PH gh

DAILY CONSTRUCTION MEETING

WHALE TAIL DIKE 2019/2020



AGNICO EAGLE
MEADOWBANK

Date: 16/03/2020

Time: 7h30

Presents:

AEM: PG, FH, JFB

KCG: JD, KL, WL

QA: TS

QC: /

Health & Safety & Environment:

Blizzard condition. New questionnaire to fill in when leaving site and before coming on site.

Daily Advance:

KCG: 13 plugs S577 → S541
maintenance on the drill

Casing drilled / 192

Injection / 192

Water cons. 2600 liters

Cement 1200 Kg

QA/QC: water temperature too high, to verify before mixing. Issue was front loader being placed too close.

General Planning/Comments:

KCG: US casing plugs complete, then move to DS @ plugs, time allowing.
Testing on drill and redrill through ice.

QA/QC: follow up on works
weekly report

Report By:

FH

DAILY CONSTRUCTION MEETING
WHALE TAIL DIKE 2019/2020



AGNICO EAGLE
MEADOWBANK

Date: 17/03/2020

Time: 7h30

Presents:

AEM: PG, FH, JFB

KCG: JD, KL, WL

QA: PS QC: /

Health & Safety & Environment:

Nothing to report. SANA did a reminder of driving safety rules on site.

Daily Advance:

KCG:	10 plugs (8 US TS38 → TS05, 2 DS Q523, Q526) cleaned holes	Casing drilled	/ 192
		Injection	/ 192
		Water cons.	3100 liters
		Cement	720 Kg

QA/QC: all good yesterday.
2 holes in exclusion zones do not have casings → to be installed when possible, when we have a drill.

General Planning/Comments:

KCG: plugs: finish US then move DS to plug Q holes.

QA/QC: follow up on works
new QA on Thursday to replace Sebastian.

Report By: FH

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019/2020****AGNICO EAGLE**
MEADOWBANK

Date: 18/03/2020

Time: 7h30

Presents:

AEM: MH, JFB, YS (phone)

KCG: JT, JD, KL, WL

QA: MS

QC: ✓

Health & Safety & Environment:

Nothing to report. Cold weather.

Daily Advance:

KCG: remaining plugs US (3), 9 DS

Casing drilled / 192

Injection / 192

Water cons. 2850 liters

Cement 1200 Kg

QA/QC: still issue with cement temperature. Maybe batch from yesterday that stayed in the grout shack. 0-15° when it leaves the batch plant.

General Planning/Comments:KCG: grout holes that were cleaned 2 days ago (plugs).
casing plugs (Q)
No BR grouting too much in advance in case we need redrilling.

QA/QC: follow up on works.

Report By:

MH

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019/2020****AGNICO EAGLE**
MEADOWBANK

Date: 19/03/2020

Time: 9h30

Presents:

AEM: RH, LC, YS (phone)

KCG: JT, JD, KL, WL

QA: RS

QC: ✓

Health & Safety & Environment:

Nothing to report.

Concerned workers: adjust tasks.

Daily Advance:

KCG: plugs (7) TS98 → S649 (only those that were cleaned)

Casing drilled / 192

Injection / 192

Water cons. 2600 liters

Cement 960 Kg

QA/QC: loss of time because of loader broken.

General Planning/Comments:

KCG: due to stressful context, SANA will do an internal meeting and adjust works to maintenance and less hazardous tasks → no grouting.

QA/QC: file updates and weekly meeting
grout committee + SNC meeting.

Report By: RH [signature]

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019/2020****AGNICO EAGLE**
MEADOWBANK

Date: 2020-03-21

Time: 7h00

Presents:

AEM: LC YS

KCG: JT AP

QA: SM

QC:

Health & Safety & Environment:

Nothing to report

Daily Advance:

KCG :	Crew change	Casing drilled	0/ 192
		Injection	0/ 192
		Water cons.	0 liters
		Cement	0 Kg

QA/QC : weekly report

General Planning/Comments:

KCG :	Finish the upstream plugs, 4 left and cleaning 2 holes
	Start grouting the downstream quaternaries, 6 done – 18 left
	Bed rock drilling

QA/QC :	Follow up on daily activities
	keep an eye on cement temperature to avoid any concerns.

Report By: Y.Simard

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019/2020****AGNICO EAGLE**
MEADOWBANK

Date: 2020-03-22

Time: 7h00

Presents:

AEM: LC YS LC JC

KCG: JT AP

QA: SM

QC:

Health & Safety & Environment:

Nothing to report

3 Outstanding items were closed, 1 is still ongoing.

Daily Advance:

KCG :	Grouting 4 plugs upstream	Casing drilled	0/ 192
	Grouting sec 745- Ter 742 – 664 – 668	Injection	0/ 192
	Bedrock drilling on Quart 526 – 481	Water cons.	4120 liters
		Cement	1200 Kg

QA/QC :	Grout tests	
	Managing cement for temperature control	

General Planning/Comments:

KCG :	Continue grouting quaternaries
	Start drilling primaries on upstream, target 5 holes

QA/QC :	Follow up on daily activities
	Manage solutions for cement temperature's problematic.

Report By: Y.Simard

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019/2020****AGNICO EAGLE**
MEADOWBANK

Date: 2020-03-23

Time: 7h00

Presents:

AEM: LC YS JC

KCG: AP

QA: PY

QC:

Health & Safety & Environment:

Small incident, pick up truck backed up in a seacan, report ongoing

Daily Advance:

KCG :	Grouting Quart 682 (500 L)	Casing drilled	0/ 192
	Grouting Quart 667 & 628 (low take)	Injection	0/ 192
	* Work stopped due to pig shooting from 10 am to 2 pm, work started at 2:30 Pm	Water cons.	3270 liters
		Cement	1200 Kg

QA/QC :	Grout tests	
	Cement had good temperature	
	Tests on grout mix	

General Planning/Comments:

KCG :	Grout down stream on prim 609.1
	Grout down stream on Quater 526 and 581
	Drilling on down stream Quater 664
	Drilling on up stream prim 679

QA/QC :	Follow up on daily activities
	monitoring and tests

Report By: Y.Simard

WHALE TAIL DIKE 2019/2020

AGNICO EAGLE
MEADOWBANK

Date: 2020-03-24

Time: 7h00

Presents:

AEM:LC YS

KCG: AP EG

QA: PY

QC:

Health & Safety & Environment:

Nothing to report

Daily Advance:

KCG : Grouting extrusion zone on primary hole 609.1 (low take)

Grouting quaternaires 526 and 541

Drilling upstream primary hole 679

Water cons.

2400 liters

Couldn't do the 664 as the drill was too close from grout shack

Cement

1680 Kg

QA/QC :

Grout tests

Water was a bit too high, follow up for adjustment

Follow up and reports

General Planning/Comments:

KCG : Grouting primary 715, this one has caved so it will be done in 2 steps,

First on today, mix B & C to consolidate and second tomorrow to grout up to Vmax

Drilling of last quaternaries on downstream, 3 holes up to 478

will move upstream after

QA/QC :

Follow up on daily activities

Monitoring and tests

Water temperature follow up

Report By: Y.Simard

WHALE TAIL DIKE 2019/2020

AGNICO EAGLE
MEADOWBANK

Date: 2020-03-25

Time: 7h00

Presents:

AEM:LC YS JC

KCG: AP

QA: PY

QC:

Health & Safety & Environment:

Nothing to report

Daily Advance:

KCG : Grouting primaries from 722 to 691 (hole 703 wa high take)

First part of 715 was done, wait until tomorrow for 2nd phase. (600L intake for 1st part)

Drilling downstream quaternaries 625 – 523 – 478.

Water cons.

3250 liters

Cement

2520 Kg

QA/QC :

Grout tests

Follow up for water, good temperature

Follow up and reports

General Planning/Comments:

KCG : Grout primary 679 upstream.

Grout quaternaries downstream 664- 523-478

Drilling secondary on upstream might start today if it goes well.

QA/QC :

Follow up on daily activities

Monitoring and tests

Report By: Y.Simard

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019/2020****AGNICO EAGLE**
MEADOWBANK

Date: 2020-03-26

Time: 7h00

Presents:

AEM: PEM YS JC VD

KCG: AP DP

QA: PY

QC:

Health & Safety & Environment:

Nothing to report

Daily Advance:**KCG :** Grouting last primaty at up stream 679

Grouting quaternaries at downstream 664 and 523

Back filled as requested hole 478 with no pressure

Water cons.

1550 liters

Cement

960 Kg

QA/QC :

Grout tests

Follow up and reports

General Planning/Comments:**KCG :** Last operation to winterize the grout shack

Closing the facilities

Report and updates regarding the project closure

QA/QC : Report and follow up with SNC regarding the project closure

Report By: Y.Simard

DAILY CONSTRUCTION MEETING**WHALE TAIL DIKE 2019/2020****AGNICO EAGLE**
MEADOWBANK

Date: 2020-03-27

Time: 7h00

Presents:

AEM: PEM YS JC VD

KCG: AP EG

QA: PY

QC:

Health & Safety & Environment:

Nothing to report

Daily Advance:

KCG : Starting demob

Blizzard conditions in PM

Water cons. liters

Cement Kg

QA/QC :

General Planning/Comments:

KCG : Last operation to winterize the grout shack

Get all facilities out of the dike.

Main crew has left yesterday, 4 people remaining until monday

Paper and office work this week end and last crew leaving Monday.

QA/QC :

Report By: Y.Simard

Appendix G

Seepage Reports (AEM Reports)

WTD Remedial Drilling and Grouting As-Built Report		Original -V.00
2020/08/10	669034-0000-4GER-0001	Technical Report

G-1Weekly Water Testing Data

Sample Date	Sample Name	Parameter	Conductivity, field measured	pH, field measured	Total Suspended Solids	Total Suspended Solids, field measured	Turbidity, field measured
		Unit	uS/cm	pH units	mg/L	mg/L	NTU
2019-11-11	ST-WT-17		86.9	7.54	2	-	4.69
2019-11-18	ST-WT-17		121.8	8.68	3	1	2.91
2019-11-25	ST-WT-17		128.7	8.67	3	5	2.95
2019-12-02	ST-WT-17		144.4	9.01	2	0.5	3.21
2019-12-03	ST-WT-17		158.1	9.18	-	-	2.27
2019-12-04	ST-WT-17		151.3	9.1	-	-	1.95
2019-12-05	ST-WT-17		161.1	9.2	-	-	2.85
2019-12-06	ST-WT-17		158.1	9.15	-	-	1.69
2019-12-07	ST-WT-17		157.8	9.09	-	-	2.25
2019-12-08	ST-WT-17		159.7	8.79	-	-	2.36
2019-12-08	ST-WT-17		128.1	6.93	-	13	42.21
2019-12-16	ST-WT-17		175.1	9.56	4	4	3.45
2019-12-16	ST-WT-17		172.1	9.49	-	-	2.51
2019-12-17	ST-WT-17		166.2 220.9	9.91 10.09	-	-	1.56 1.55
2019-12-18	ST-WT-17		153.9	9.67	-	-	1.11
2019-12-18	ST-WT-17		-	9.57	-	-	5.22
2019-12-19	ST-WT-17		158.6	9.68	-	-	1.71
2019-12-19	ST-WT-17		-	9.6	-	-	2.3
2019-12-21	ST-WT-17		157.3	9.4	-	-	1.6
2019-12-21	ST-WT-17		-	9.54	-	-	2.14
2019-12-22	ST-WT-17		152	9.57	-	-	1.86
2019-12-22	ST-WT-17		-	9.89	-	-	1.61
2019-12-23	ST-WT-17		156.4	9.53	1	-	2.28
2019-12-23	ST-WT-17		-	9.64	-	-	2.24
2019-12-24	ST-WT-17		153.7	9.39	-	-	2.45
2019-12-24	ST-WT-17		-	9.46	-	-	3.26
2019-12-25	ST-WT-17		150.1	9.37	-	-	1.81
2019-12-25	ST-WT-17		-	9.58	-	-	2.91
2019-12-26	ST-WT-17		154.6	9.47	-	-	3.38
2019-12-26	ST-WT-17		-	9.45	-	-	4.57
2019-12-27	ST-WT-17		153.5	9.44	-	-	2.04
2019-12-27	ST-WT-17		-	9.49	-	-	2.66
2019-12-28	ST-WT-17		150.9	9.35	-	-	1.6
2019-12-28	ST-WT-17		-	9.34	-	-	2.33
2019-12-29	ST-WT-17		151.8	9.3	-	-	3.38
2019-12-29	ST-WT-17		-	9.25	-	-	4.43
2019-12-30	ST-WT-17		153.9	9.27	-	-	2.11
2019-12-30	ST-WT-17		-	9.38	-	-	2.29
2019-12-31			-	-	3	-	-
2019-12-31	ST-WT-17		146.8 146.8	9.44 9.44	-	-	1.74 1.74
2020-01-01	ST-WT-17		150	9.28	-	-	1.82
2020-01-01	ST-WT-17		-	9.22	-	-	1.84
2020-01-02	ST-WT-17		1479.7	9.41	-	-	1.9
2020-01-02	ST-WT-17		-	9.36	-	-	2.22
2020-01-03	ST-WT-17		151.8	9.13	-	-	4.31
2020-01-03	ST-WT-17		-	9.1	-	-	2.99
2020-01-04	ST-WT-17		152.5	9.06	-	-	2.43
2020-01-04	ST-WT-17		-	9.05	-	-	2.27
2020-01-05	ST-WT-17		98.1	9.21	-	4	2.14
2020-01-05	ST-WT-17		152.8	8.99	4 140	-	2.12
2020-01-06	ST-WT-17		154.1	9.05	-	-	1.39
2020-01-06	ST-WT-17		-	9.12	-	-	3.42
2020-01-07	ST-WT-17		156.8	8.94	-	-	2.02
2020-01-07	ST-WT-17		-	8.91	-	-	3.34
2020-01-08	ST-WT-17		150.9 150.9 154.7	8.78 8.78 9.22	-	-	1.96 1.96 6.38
2020-01-08	ST-WT-17		-	9.11 9.03 9.11	-	-	2.34 7.05 2.34
2020-01-09	ST-WT-17		150.4	8.87	-	-	3.17
2020-01-09	ST-WT-17		-	9.38	-	-	7.33
2020-01-11	ST-WT-17		153.8	8.97	-	-	8.75
2020-01-11	ST-WT-17		-	9.26	-	-	15
2020-01-12	ST-WT-17		152.2	9.26	-	-	9.06
2020-01-12	ST-WT-17		-	9.41	-	-	7.89
2020-01-13	ST-WT-17		157.9	9.31	8 90	10.5	7.4
2020-01-13	ST-WT-17		-	9.66	-	-	7.7
2020-01-14	ST-WT-17		131.1	9.54	-	-	4.38
2020-01-14	ST-WT-17		-	10.08	-	-	4.57
2020-01-15	ST-WT-17		166.7	9.96	-	-	5.77
2020-01-15	ST-WT-17		170.2	9.68	-	-	15.8
2020-01-16	ST-WT-17		162.2	9.6	-	-	6.2
2020-01-16	ST-WT-17		-	9.63	-	-	5.14
2020-01-17	ST-WT-17		169.1	9.47	-	-	6.64
2020-01-17	ST-WT-17		170	9.55	-	-	8.91

2020-01-18	ST-WT-17	163.2	9.61	-	-	4.87
2020-01-19	ST-WT-17	159.6	9.66	-	-	3.51
2020-01-20	ST-WT-17	148.5	9.37	11 112	9.5	6.37
2020-01-20	ST-WT-17	-	9.63	-	-	6.65
2020-01-21	ST-WT-17	160	9.31	-	-	18.9
2020-01-21	ST-WT-17	-	9.78	-	-	7.38
2020-01-22	ST-WT-17	163.9	9.52	-	-	6.64
2020-01-22	ST-WT-17	-	9.74	-	-	7.66
2020-01-23	ST-WT-17	156.3	9.73	-	-	7.32
2020-01-23	ST-WT-17	-	9.83	-	-	7.2
2020-01-24	ST-WT-17	159.2	9.71	-	-	2.77
2020-01-24	ST-WT-17	-	9.67	-	-	2.78
2020-01-25	ST-WT-17	158.4	9.54	-	-	7.93
2020-01-25	ST-WT-17	-	9.77	-	-	2.58
2020-01-26	ST-WT-17	156	9.6	-	-	2.18
2020-01-27	ST-WT-17	161.7	9.51	3 104	5	1.38
2020-01-27	ST-WT-17	-	9.6	-	-	1.09
2020-01-28	ST-WT-17	159.3	9.45	-	-	1.9
2020-01-29	ST-WT-17	161.9	9.6	-	-	3.02
2020-01-29	ST-WT-17	-	9.55	-	-	4.7
2020-01-30	ST-WT-17	171.9	9.67	-	-	2.21
2020-01-31	ST-WT-17	1655	9.54	-	-	3.96
2020-01-31	ST-WT-17	-	9.7	-	-	4.91
2020-02-01	ST-WT-17	162.9	9.4	-	-	5.03
2020-02-01	ST-WT-17	-	9.64	-	-	6.63
2020-02-02	ST-WT-17	164.7	9.58	-	-	3.8
2020-02-02	ST-WT-17	161.6	9.92	-	-	5.07
2020-02-03	ST-WT-17	162.5	9.34	2 148	5	3.67
2020-02-03	ST-WT-17	-	9.62	-	-	6.36
2020-02-04	ST-WT-17	166.1	9.54	-	-	5.78
2020-02-04	ST-WT-17	-	9.71	-	-	3.22
2020-02-05	ST-WT-17	169.2	9.45	-	-	4.21
2020-02-06	ST-WT-17	159.3	9.86	-	-	3.99
2020-02-06	ST-WT-17	-	9.58	-	-	4.36
2020-02-07	ST-WT-17	158	9.37	-	-	12.3
2020-02-07	ST-WT-17	-	9.56	-	-	12.8
2020-02-08	ST-WT-17	158.7	9.53	-	-	3.07
2020-02-08	ST-WT-17	-	9.62	-	-	5.35
2020-02-09	ST-WT-17	158.5	9.43	-	-	8.08
2020-02-10	ST-WT-17	-	-	7	-	-
2020-02-10	ST-WT-17	156.1	9.42	-	7.5	6
2020-02-10	ST-WT-17	-	9.56	-	-	8.33
2020-02-11	ST-WT-17	157.3	9.5	-	-	7.09
2020-02-12	ST-WT-17	159.7	9.52	-	-	4.97
2020-02-12	ST-WT-17	-	9.56	-	-	6.36
2020-02-13	ST-WT-17	165.2	9.6	-	-	4.11
2020-02-14	ST-WT-17	164.2	9.45	-	-	4.8
2020-02-14	ST-WT-17	-	9.51	-	-	4.6
2020-02-15	ST-WT-17	165.7	9.45	-	-	3.15
2020-02-16	ST-WT-17	167.7	9.53	-	-	3.99
2020-02-17	ST-WT-17	118.1	9.48	3	3	2.47
2020-02-17	ST-WT-17	174.3	9.41	-	-	5.57
2020-02-18	ST-WT-17	177	9.36	-	-	4.84
2020-02-19	ST-WT-17	184.6	8.95	-	-	2.47
2020-02-19	ST-WT-17	188.4	9.13	-	-	3.8
2020-02-20	ST-WT-17	181	9.42	-	-	3.18
2020-02-21	ST-WT-17	171.6	9.34	-	-	5.69
2020-02-21	ST-WT-17	-	9.38	-	-	5.66
2020-02-22	ST-WT-17	172.6	9.4	-	-	3.52
2020-02-22	ST-WT-17	-	9.43	-	-	3.81
2020-02-23	ST-WT-17	184.2	9.25	-	-	13.7
2020-02-24	ST-WT-17	180.8	9.31	2	9	2.05
2020-02-25	ST-WT-17	185.8	9.27	-	-	4.4
2020-02-25	ST-WT-17	184.2	9.3	-	-	4.41
2020-02-26	ST-WT-17	184	9.28	-	-	4.68
2020-02-26	ST-WT-17	191	9.3	-	-	7.51
2020-02-27	ST-WT-17	188.2	9.31	-	-	3.66
2020-02-27	ST-WT-17	189.1	9.25	-	-	4.01
2020-02-28	ST-WT-17	191.9	9.28	-	-	5.51
2020-02-28	ST-WT-17	194.2	9.69	-	-	6.91
2020-02-29	ST-WT-17	191.4	9.32	-	-	6.47
2020-02-29	ST-WT-17	191.8	9.48	-	-	45.7
2020-03-01	ST-WT-17	197.7	9.26	-	15.5	42.7
2020-03-01	ST-WT-17	195.8	9.31	-	-	11.6
2020-03-02	ST-WT-17	189.1	9.38	-	-	7.17
2020-03-02	ST-WT-17	-	9.29	-	-	19.7
2020-03-03	ST-WT-17	183.2	9.31	-	-	19.2

2020-03-03 ST-WT-17
2020-03-04 ST-WT-17
2020-03-04 ST-WT-17
2020-03-05 ST-WT-17
2020-03-05 ST-WT-17
2020-03-06 ST-WT-17
2020-03-06 ST-WT-17
2020-03-08 ST-WT-17
2020-03-08 ST-WT-17
2020-03-09 ST-WT-17
2020-03-09 ST-WT-17
2020-03-10 ST-WT-17
2020-03-11 ST-WT-17
2020-03-11 ST-WT-17
2020-03-12 ST-WT-17
2020-03-13 ST-WT-17
2020-03-14 ST-WT-17

-	9.64	-	-	5.26
165.4	9.16	-	-	3.81
-	9.37	-	-	3.76
164.2	9.32	-	-	1.32
159.2	9.43	-	-	4
162.8	9.25	-	-	3.68
164.1	9.21	-	-	3.66
160.5	9.28	-	4.5	2.59
162.7	9.55	-	-	4.02
166.6	9.55	-	-	4.71
-	9.49	-	-	9.85
175.2	9.63	-	-	3.96
169.7	9.56	-	-	2.12
-	9.68	-	-	2.56
-	9.97	-	-	3.07
171.5	9.82	-	-	2.14
173.9	9.82	-	-	1.45

ST-DD-7: Dewatering of WTN
ST-RAW-WTN: WTN Raw Water
ST-WT-17: WT Dike Seepage
ST-WT-17E: WT Dike E Seepage
ST-WT-4: Pit Sump
ST-WT-Quarry 1: Whale Tail Quarry 1

G-2 V-Notch Monitoring 2019

WTD V-Notch Monitoring

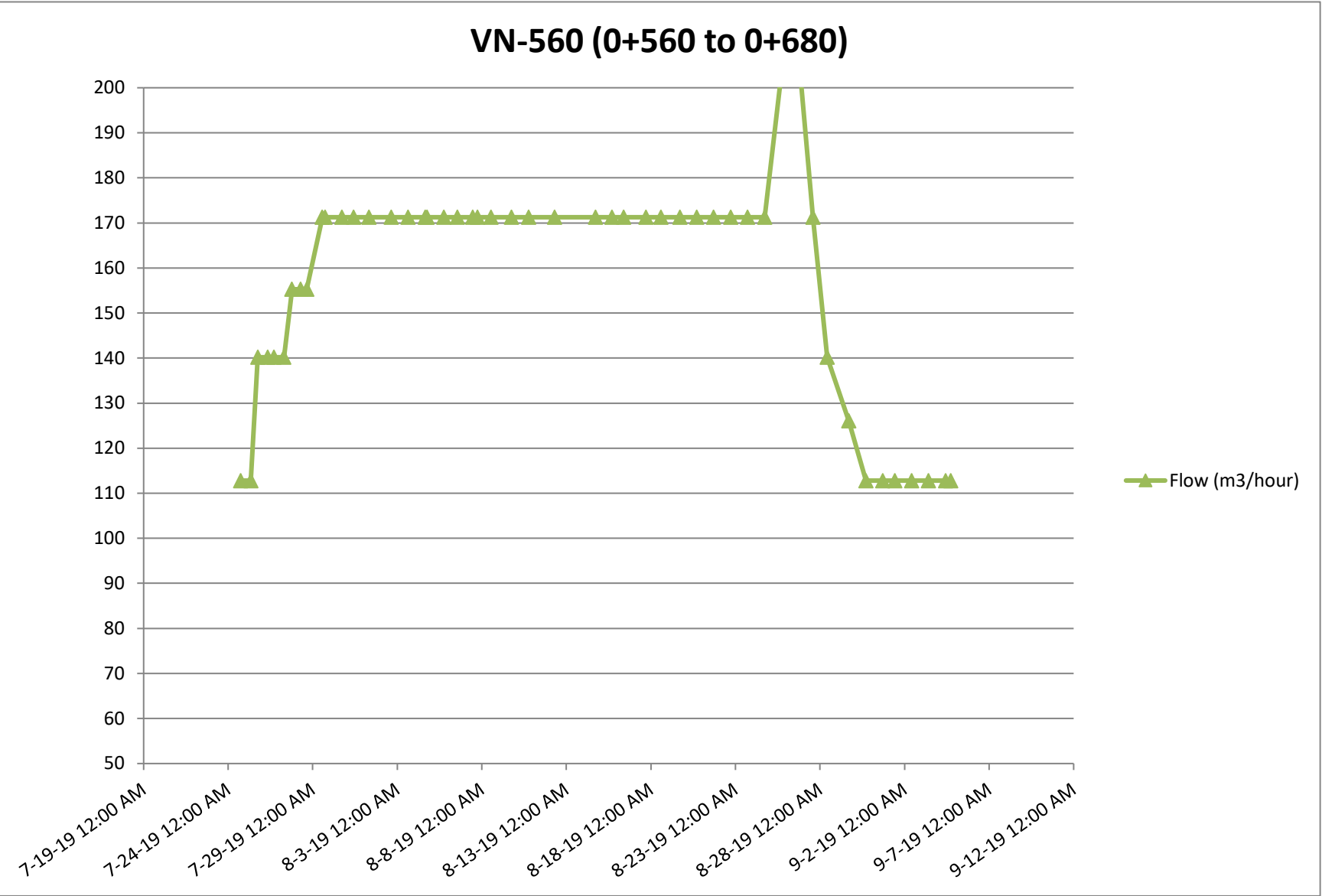
V-Notch : 0+560

0+560 to 0+680

Northing 607507.170

Easting 7254816.916

Elevation

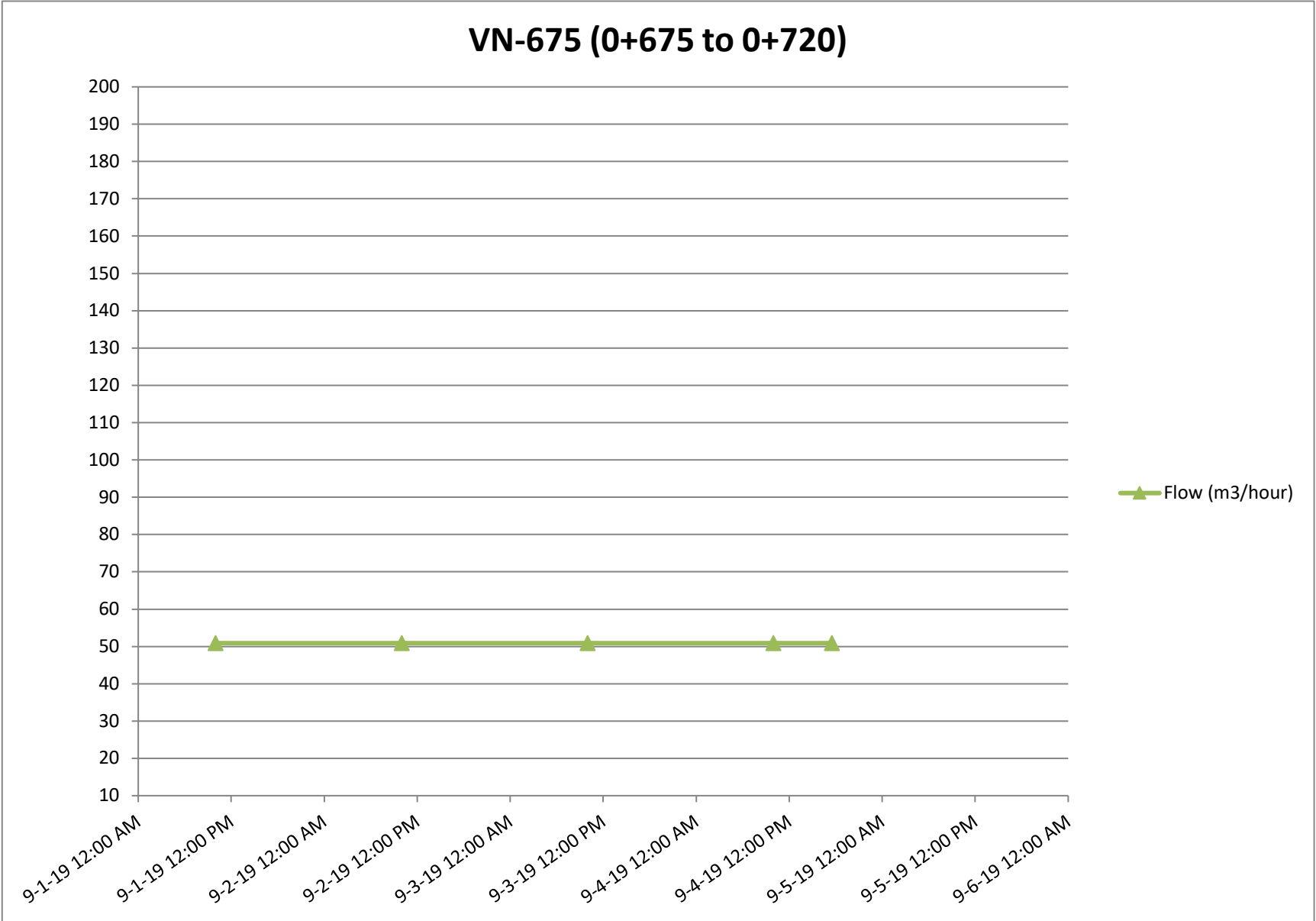
[illegible]

WTD V-Notch Monitoring

V-Notch : 0+675	0+720 to 0+675
------------------------	----------------

[illegible]

Northing	607591.038	607588.957
Easting	7254867.952	7254866.587
Elevation	152.274	152.304

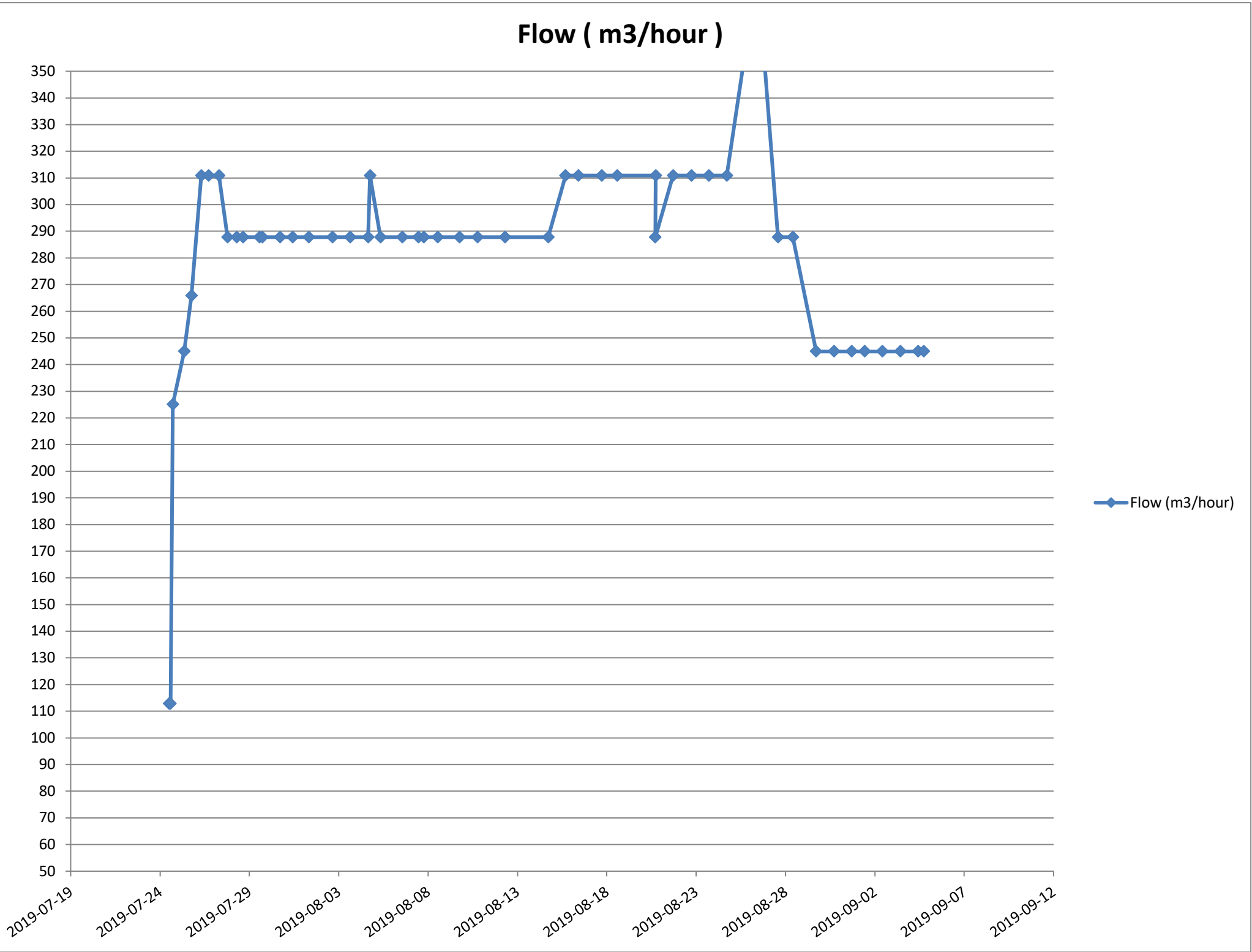


WTD V-Notch Monitoring

V-Notch : 0+430 **TOTAL : 0+430 to 0+680**

[illegible]

Northing	607379.425
Easting	7254799.446
Elevation	150.300



WTD V-Notch Monitoring

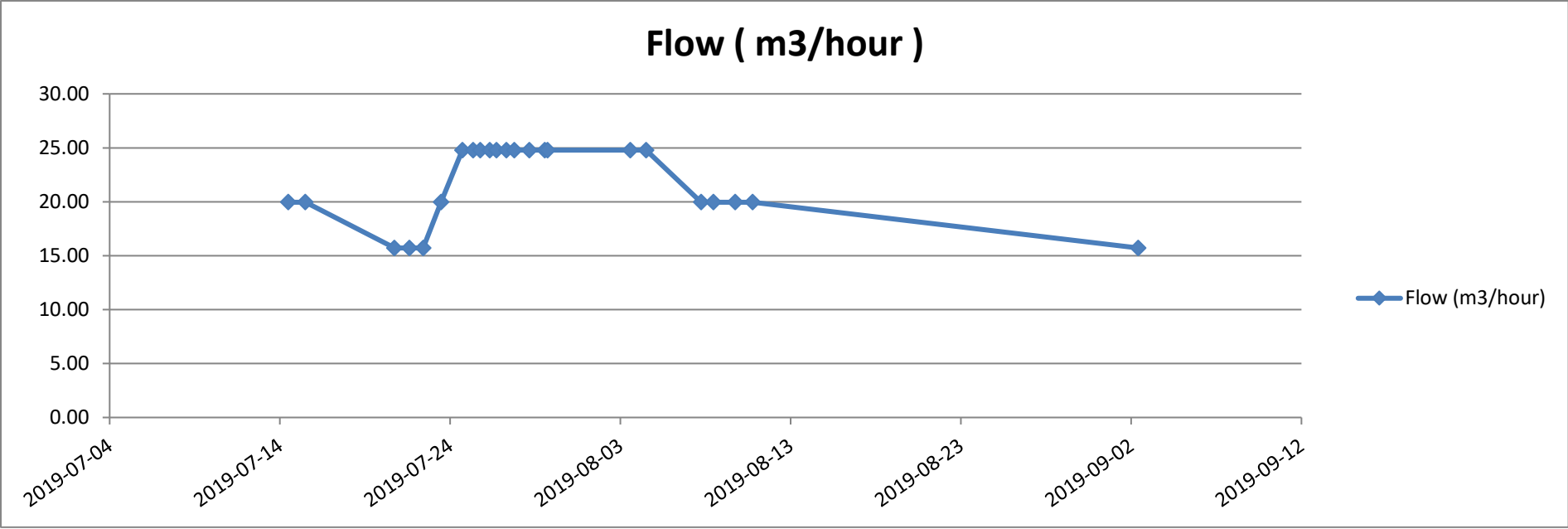
V-Notch : S-25 (0+465)

Northing607413.383

Easting7254796.021

Elevation150.900

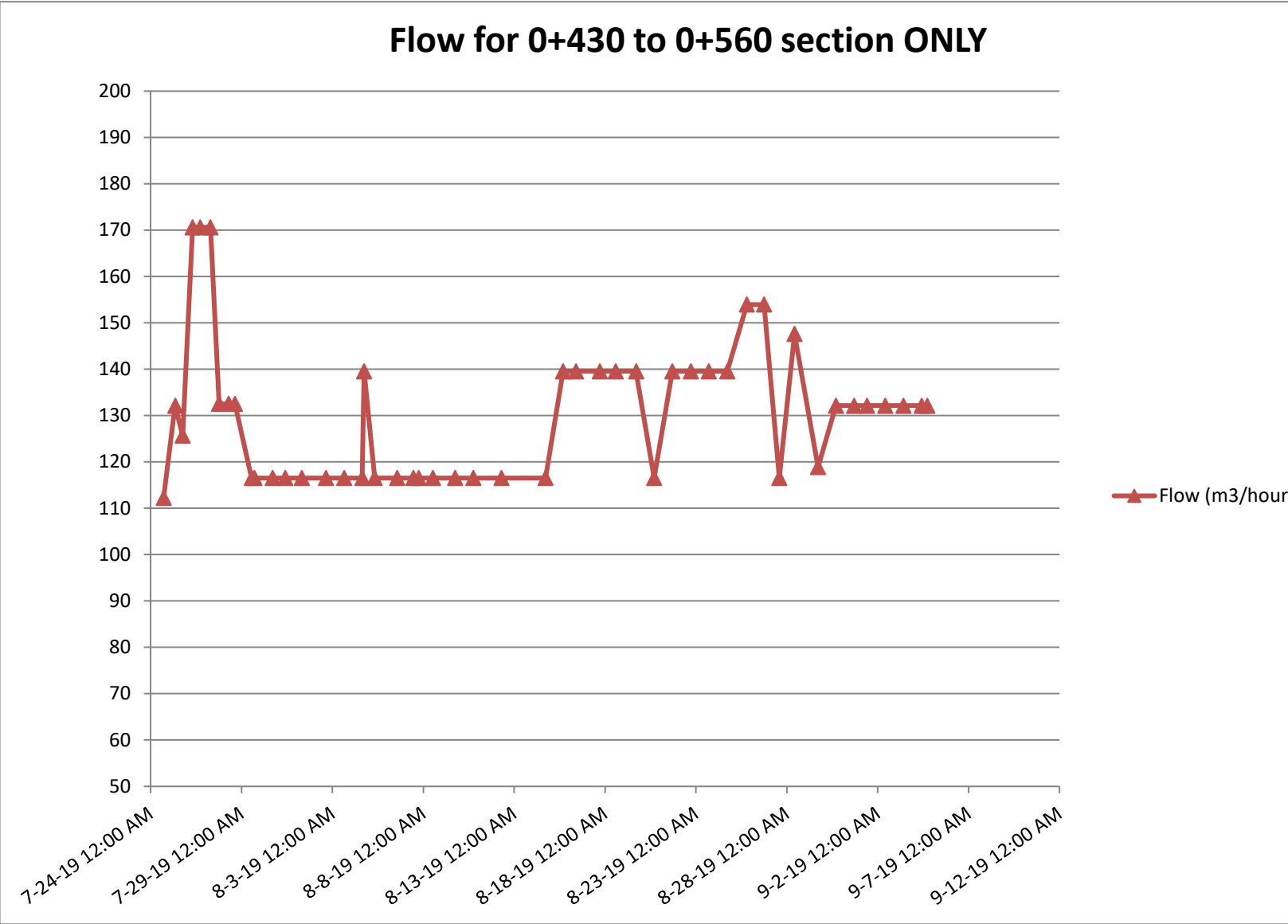
Date & Time	Reading (cm)	Flow reading (sec) ¹	Flow (l/s)	Flow (m ³ /hour)	Seepage temperature (°C)	Comment
7-14-19 12:00 PM	11.00		5.54	19.94		
7-15-19 12:00 PM	11.00		5.54	19.94		
7-20-19 5:30 PM	10.00		4.36	15.71		
7-21-19 2:15 PM	10.00		4.36	15.71		
7-22-19 9:45 AM	10.00		4.36	15.71		
7-23-19 11:10 AM	11.00		5.54	19.94		
7-24-19 5:15 PM	12.00		6.88	24.79		
7-25-19 8:35 AM	12.00		6.88	24.79		
7-25-19 6:15 PM	12.00		6.88	24.79		
7-26-19 7:40 AM	12.00		6.88	24.79		
7-26-19 5:15 PM	12.00		6.88	24.79		
7-27-19 7:10 AM	12.00		6.88	24.79		Rain today.
7-27-19 6:10 PM	12.00		6.88	24.79		
7-28-19 3:30 PM	12.00		6.88	24.79		
7-29-19 1:30 PM	12.00		6.88	24.79		
7-29-19 5:15 PM	12.00		6.88	24.79		
8-3-19 2:00 PM	12.00		6.88	24.79		Rain all night
8-4-19 12:00 PM	12.00		6.88	24.79		Light rain
8-7-19 6:00 PM	11.00		5.54	19.94		
8-8-19 11:00 AM	11.00		5.54	19.94		
8-9-19 6:00 PM	11.00		5.54	19.94		
8-10-19 6:15 PM	11.00		5.54	19.94		
9-2-19 10:00 AM	10.00		4.36	15.71		
			#N/A	#N/A		
			#N/A	#N/A		
			#N/A	#N/A		
			#N/A	#N/A		
			#N/A	#N/A		
			#N/A	#N/A		



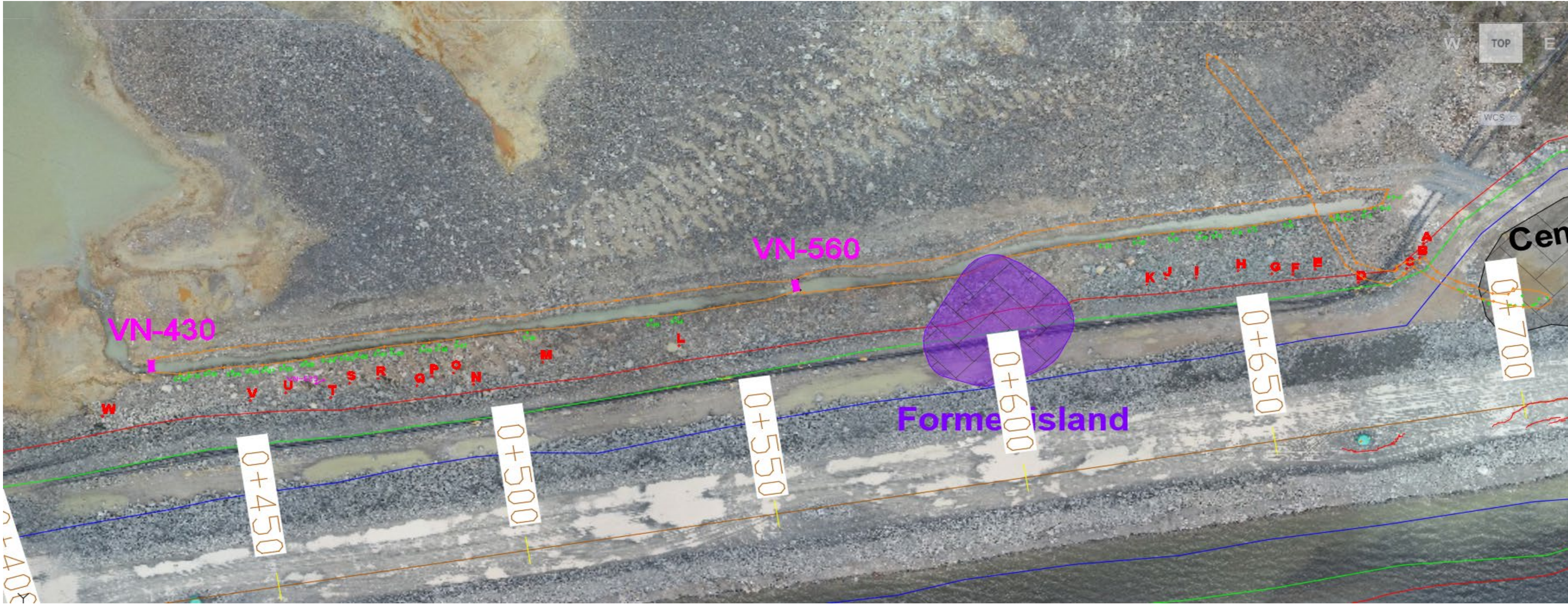
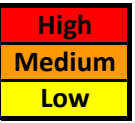
WTD V-Notch Monitoring

V-Notch : Flow from 0+430 to 0+560

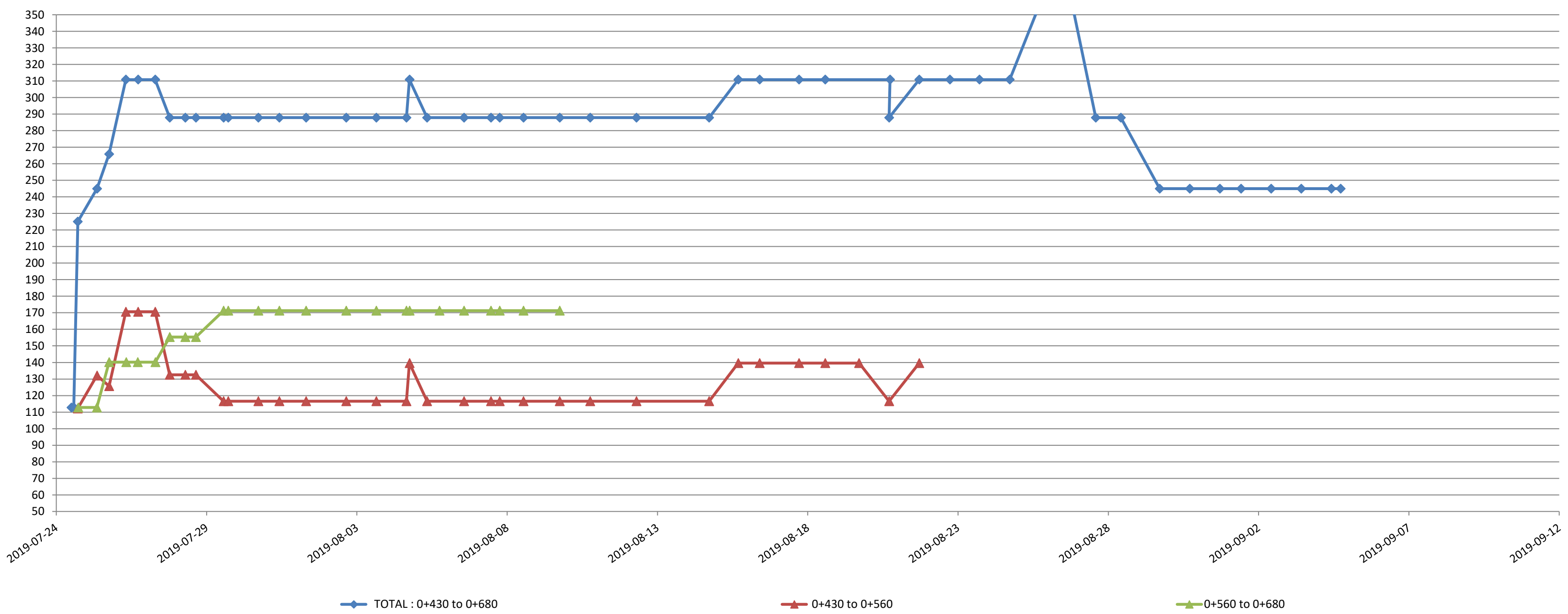
DATE	TOTAL FLOW m ³ /day (VN340 - VN-560)
7-24-19 5:10 PM	112
7-25-19 8:30 AM	132
7-25-19 6:10 PM	126
7-26-19 7:30 AM	171
7-26-19 5:20 PM	171
7-27-19 7:00 AM	171
7-27-19 6:30 PM	133
7-28-19 7:00 AM	133
7-28-19 3:30 PM	133
7-29-19 1:30 PM	117
7-29-19 5:15 PM	117
7-30-19 5:15 PM	117
7-31-19 10:00 AM	117
8-1-19 7:30 AM	117
8-2-19 3:30 PM	117
8-3-19 3:30 PM	117
8-4-19 3:30 PM	117
8-4-19 6:00 PM	140
8-5-19 8:00 AM	117
8-6-19 1:30 PM	117
8-7-19 11:00 AM	117
8-7-19 6:00 PM	117
8-8-19 1:00 PM	117
8-9-19 6:00 PM	117
8-10-19 6:15 PM	117
8-12-19 7:15 AM	117
8-14-19 5:15 PM	117
8-15-19 4:30 PM	140
8-16-19 9:30 AM	140
8-17-19 5:00 PM	140
8-18-19 2:00 PM	140
8-19-19 5:00 PM	140
8-20-19 5:00 PM	117
8-21-19 5:00 PM	140
8-22-19 5:30 PM	140
8-23-19 5:00 PM	140
8-24-19 5:15 PM	140
8-25-19 7:15 PM	154
8-26-19 6:00 PM	154
8-27-19 2:00 PM	117
8-28-19 10:00 AM	148
8-29-19 5:00 PM	119
8-30-19 5:00 PM	132
8-31-19 5:00 PM	132
9-1-19 10:00 AM	132
9-2-19 10:00 AM	132
9-3-19 10:00 AM	132
9-4-19 10:00 AM	132
9-4-19 5:30 PM	132
9-5-19 10:00 AM	



Stream #.	X	Y	Z	STA	Turbidity	Comments
S-1	607625.2	7254836.4	152.8	0+681	High	Redirected to cement diversion channel
S-2	607622.4	7254834.0	152.9	0+678	High	Redirected to cement diversion channel
S-3	607620.5	7254833.3	152.9	0+676	High	Redirected to cement diversion channel
S-4	607617.2	7254832.8	152.8	0+673	Medium	Redirected to cement diversion channel
S-5	607615.1	7254832.5	152.7	0+670	Medium	Redirected to cement diversion channel
S-6	607605.6	7254831.1	152.5	0+661	Low	
S-7	607598.4	7254829.9	152.4	0+653	Low	
S-8	607595.1	7254829.6	152.4	0+650	Low	
S-9	607591.0	7254828.8	152.4	0+646	Low	
S-10	607587.9	7254828.6	152.2	0+643	Low	
S-11	607582.5	7254828.4	152.4	0+637	Low	
S-12	607575.6	7254827.5	152.3	0+630	Low	
S-13	607568.7	7254827.1	152.4	0+623	Low	
S-14	607483.8	7254810.1	151.6	0+537	Low	Very Turbid water coming out from Aug 15th, clear from 31st
S-15	607479.0	7254809.5	151.5	0+532	Low	
S-16	607454.5	7254806.8	151.4	0+507	Low	
S-17	607440.6	7254804.8	151.2	0+494	Low	
S-18	607437.0	7254804.0	151.3	0+490	Low	
S-19	607433.9	7254803.8	151.1	0+487	Low	
S-20	607427.6	7254803.1	151.0	0+480	Low	
S-21	607425.0	7254802.9	151.2	0+478	Low	
S-22	607420.7	7254802.3	151.2	0+473	Low	
S-23	607418.4	7254801.8	150.9	0+471	Low	
S-24	607416.5	7254801.2	150.8	0+469	Low	
S-25	607410.6	7254800.4	150.8	0+463	Low	
S-26	607406.3	7254799.6	150.8	0+459	Low	
S-27	607402.6	7254799.1	150.9	0+455	Low	
S-28	607399.5	7254798.8	150.9	0+452	Low	
S-29	607396.0	7254798.3	150.7	0+448	Low	
S-30	607391.4	7254798.4	150.4	0+444	Low	
S-31	607387.5	7254798.0	150.5	0+440	Low	
S-32	607385.8	7254797.4	150.5	0+438	Low	
S-33				0+420	Low	Estimated flow at 25m3/h, start back on August 8th
S-34						
S-35				0+365	Low	Estimated flow at 10m3/h, start on August 9th. 2 significant sandboils



WTD V-Notch Monitoring



G-3 Thermistor Data Review

Technical Communication

Whale Tail Dike – Amaruq Mine Site

Thermistor data interpretation – V1 DRAFT

October 2019

Thomas Lépine, P. Eng. (NWT/Nunavut), Technical Specialist, Environmental Management & Engineer of Record AEM Nunavut Operations

The following has been prepared in order to assist the understanding of the potential seepage areas in the bedrock foundation of the Whale Tail Dike. This instrumentation data interpretation does not intent to provide the absolute truth but, however, to provide assistance in the development of mitigation strategies to reduce seepage flow including the current proposed grouting activities. The rational goes as follows:

- Closer a thermistor is to a main flow path, faster the instrument will react to the upstream lake temperature fluctuation. If the temperature of a bead change simultaneously has the temperature in the upstream basin, the hypothesis is that the bead is located at an emplacement of direct flow. In other words, this instrument is at the emplacement of a main source of seepage in the bedrock underneath the dike;
- The longer it takes for a thermistor bead to react to the upstream lake temperature fluctuation, the further the bead (and the instrument) is to a main flow source;
- If they are no correlation in between the thermistors temperature fluctuation and the upstream lake temperature fluctuation, the hypothesis is that the area is not located at an emplacement of a main flow path.

To visually help the understanding, I have prepared a longitudinal cross section that passes at the emplacement of the thermistor in the downstream fine filter next to the cut-off wall. Every small rectangle of the cross section represents 0,5 meters vertically and 25 meters horizontally. Where there is a direct response to the temperature fluctuation of a bead in comparison to the upstream lake temperature fluctuation, the rectangle appears in shaded white/red. Other colours of the cross section are explained with the legend just below.

Legend	
	Direct response of area to lake temperature fluctuation
	Area reach warmest U/S lake temperature (~12 deg c)
	Area within 1 deg of warmest U/S lake temperature
	Area within 2-3 deg from warmest U/S lake temperature with delays from U/S lake temperature fluctuation
	Temperature of the area does not have similarity with U/S lake temperature fluctuations.
	Transition zone to permafrost
	Permafrost
	Approx bedrock elevation
	Grout curtain already in place
	Potential seep area from thermistor monitoring
	Potential no flow or less flow area from thermistor monitoring
	Willowstick results
	Last TH bead

Correlation with Willowstick geophysical survey is also studied in this technical communication. It is noted that outside the main flow path BB' (station 0+498 to 0+580), there is no direct correlation in between the thermistors reading and the results from the survey. Some theories are proposed to integrate the geophysical survey results and the thermal behaviour of the bedrock foundation. These theories are actually being my own interpretation and do not contain all the answers. I encourage you to interrogate the data and add to the current theories if you wish.

Regards,

Thomas

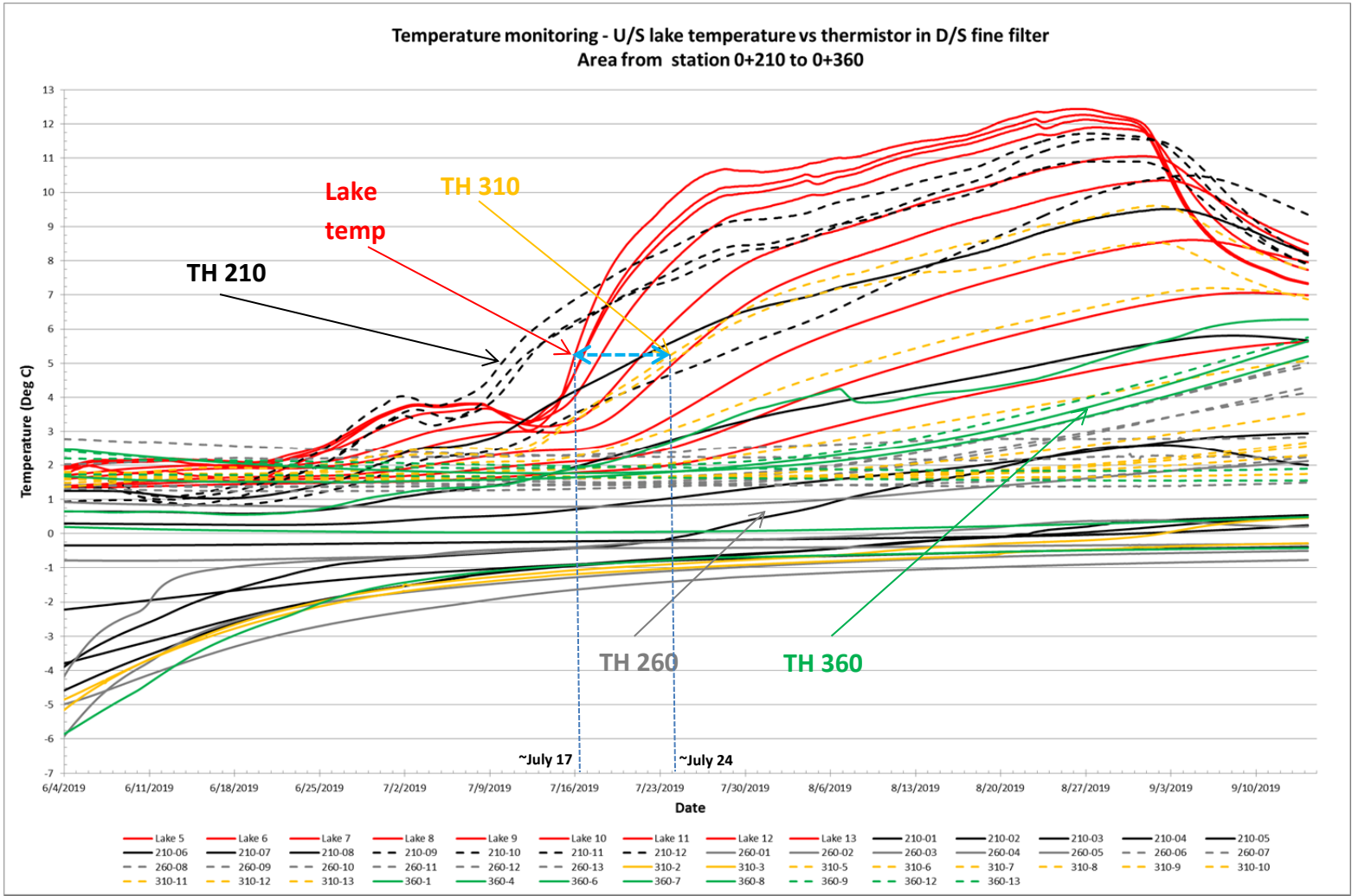
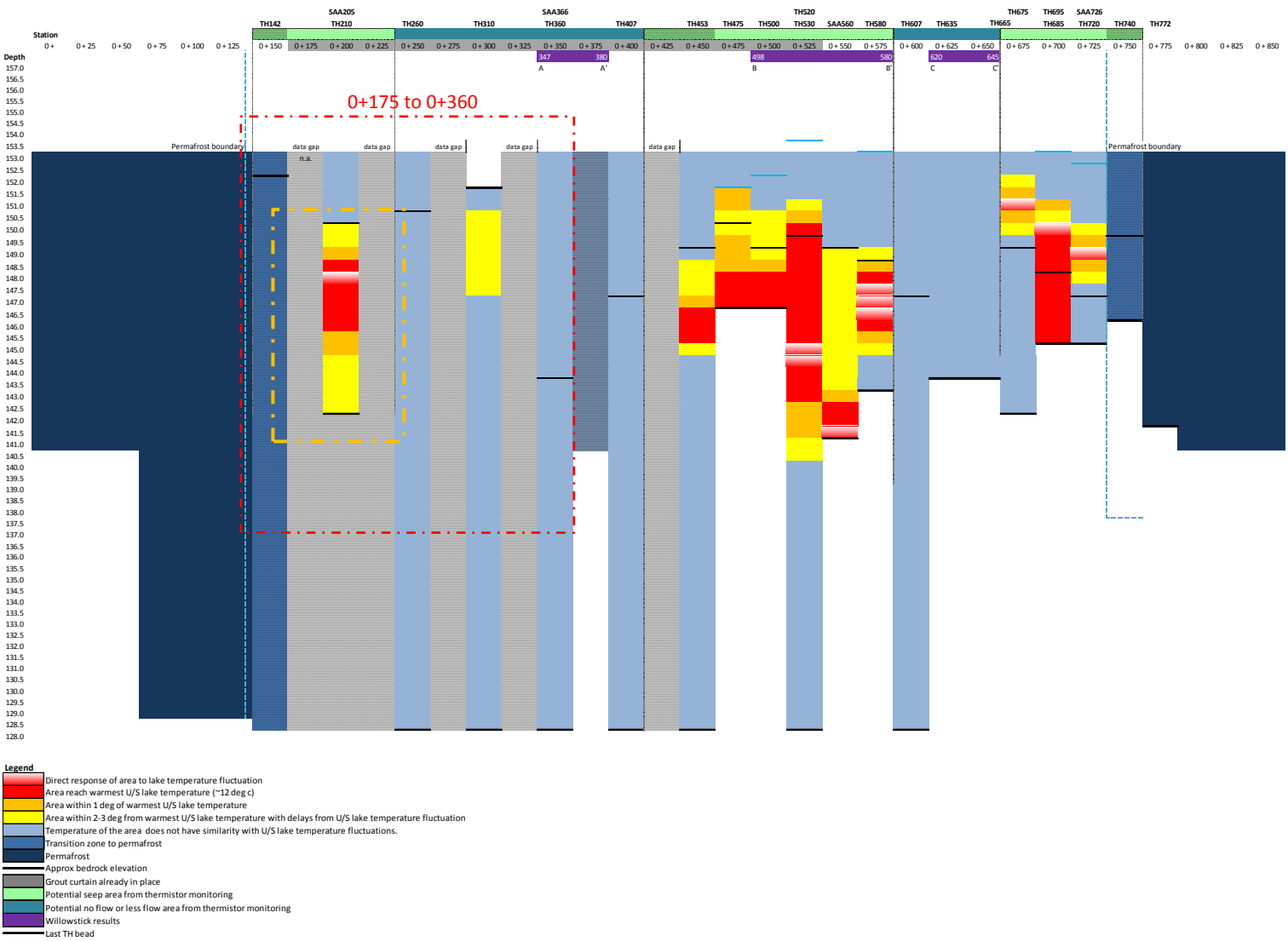
Potential seep area from thermistors data – Area from station 0+ 150 to 0+380

Observations:

- Permafrost Western boundary of the Whale Tail Dike is currently somewhere between station 0+150 and 0+175;
- Thermistor TH 210 shows a direct response to the upstream lake temperature fluctuations at elevation 148. This thermistor also suggests that the main window for the water course into the bedrock in this area is in between elevations 145 to 149;
- Area 250 does not show temperature correlation with the upstream lake temperature. From the reading of the TH 260, we can observe that the area isn't frozen but have temperature relatively low ~ 6 deg C°. This suggests that this area is not a main flow path area;
- Thermistor TH 310 shows some correlation with the temperature fluctuation of the upstream lake temperature from elevations 147 to 151 but there is a delay period of around 7 days. It never completely reaches the maximal lake temperature elevation in comparison to the TH 210 at elevation 148. It suggests that the area is in proximity from a main flow path but not directly into it. Note that there is no thermal information available directly east and west to the thermistor TH 310;
- TH 360 and TH SAA366 results don't correlate with the main flow path AA' (station 0+347 to 0+380) found in the geophysical survey.

Area of interest:

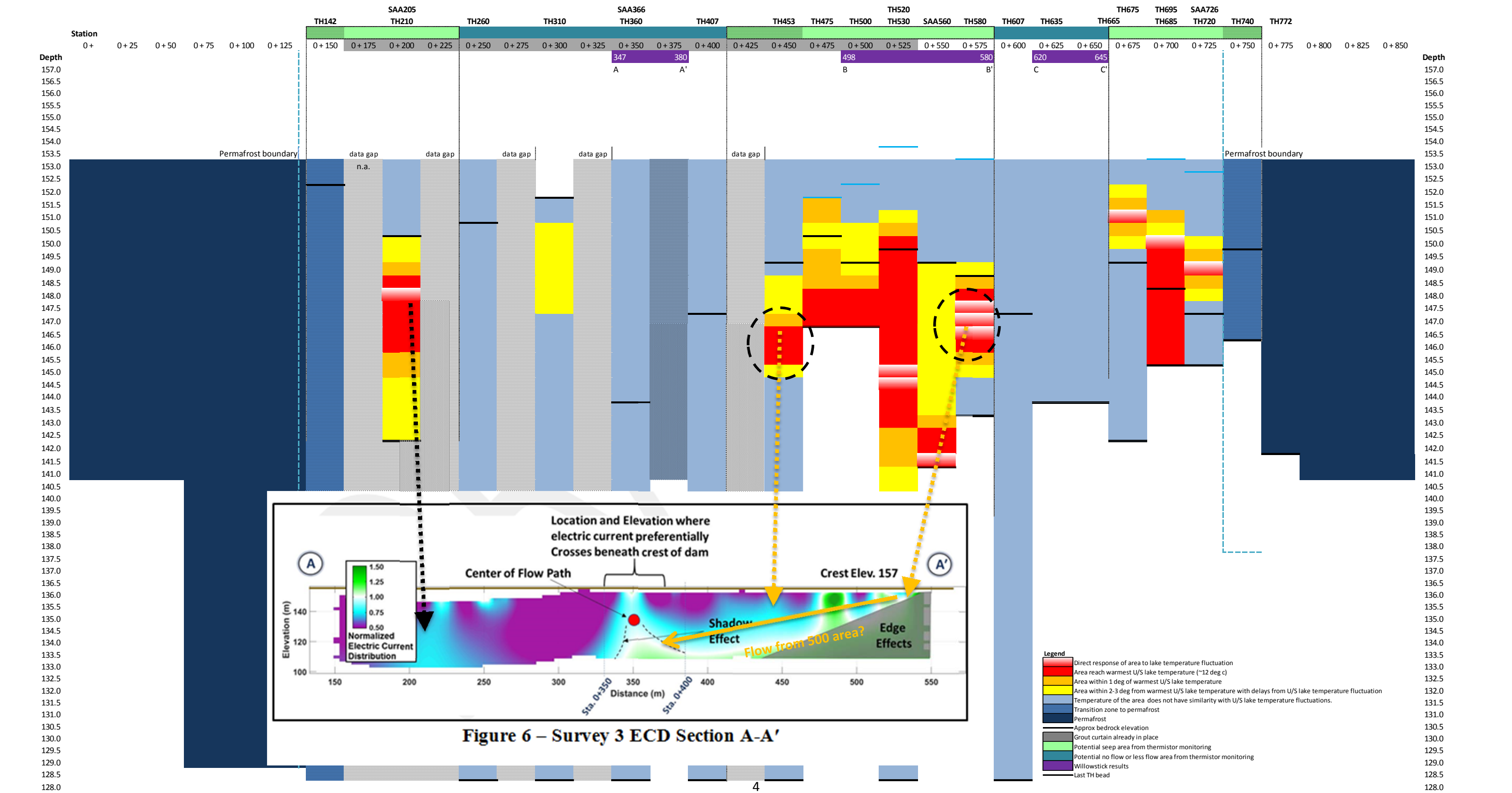
- **Area 200:** There is certainly an area of interest around station 200. While it hasn't been captured strongly with the geophysics (see next page), the thermistor TH 210 support the rational that there is a flow path in the area. Adding additional thermistors at station 0+175, 0+230 and 0+285 would help to refine the thermal signature of this area;
- **Area 300:** The area around 300 is maybe in the vicinity of a main flow pat. There is, however, a delay in the temperature fluctuation of the area compares to the lake temperature. The addition of a deep thermistor at station 0+335 would help to refine the understanding;
- **Area 350 to 380:** Area of interest from the geophysical survey result (section AA') is not captured by the thermistors TH 360 and TH SAA366. There's, however, no thermal monitoring in from 0+366 and 0+407. The addition of thermistors at station 0+385 is recommended.



Potential seep area thermistors data vs anomaly AA' from Willowstick survey

2 proposed theories for the flow path areas in between stations 150 to 360:

- 1. There is 2 distinct main flow path: one around station 0+ 200 that is slightly captured with the geophysics (show by the black arrow below) and one around station 0+350 and not perceived currently by the thermal monitoring (the flow path is deeper than the current thermal monitoring coverage – the geophysics results seems, however, to suggest elevations that are within the current area covered by thermal monitoring);
- 2. There is only one main flow path in the area 0+200 and its reporting to the East when it reaches the D/S area (moving from 200 to 300/350) just by gravity since it's a low spot area for the bedrock – the main flowpath BB' (the one at 500) could also feed the area at 350 like suggested in the Willowstick results (orange arrow below).



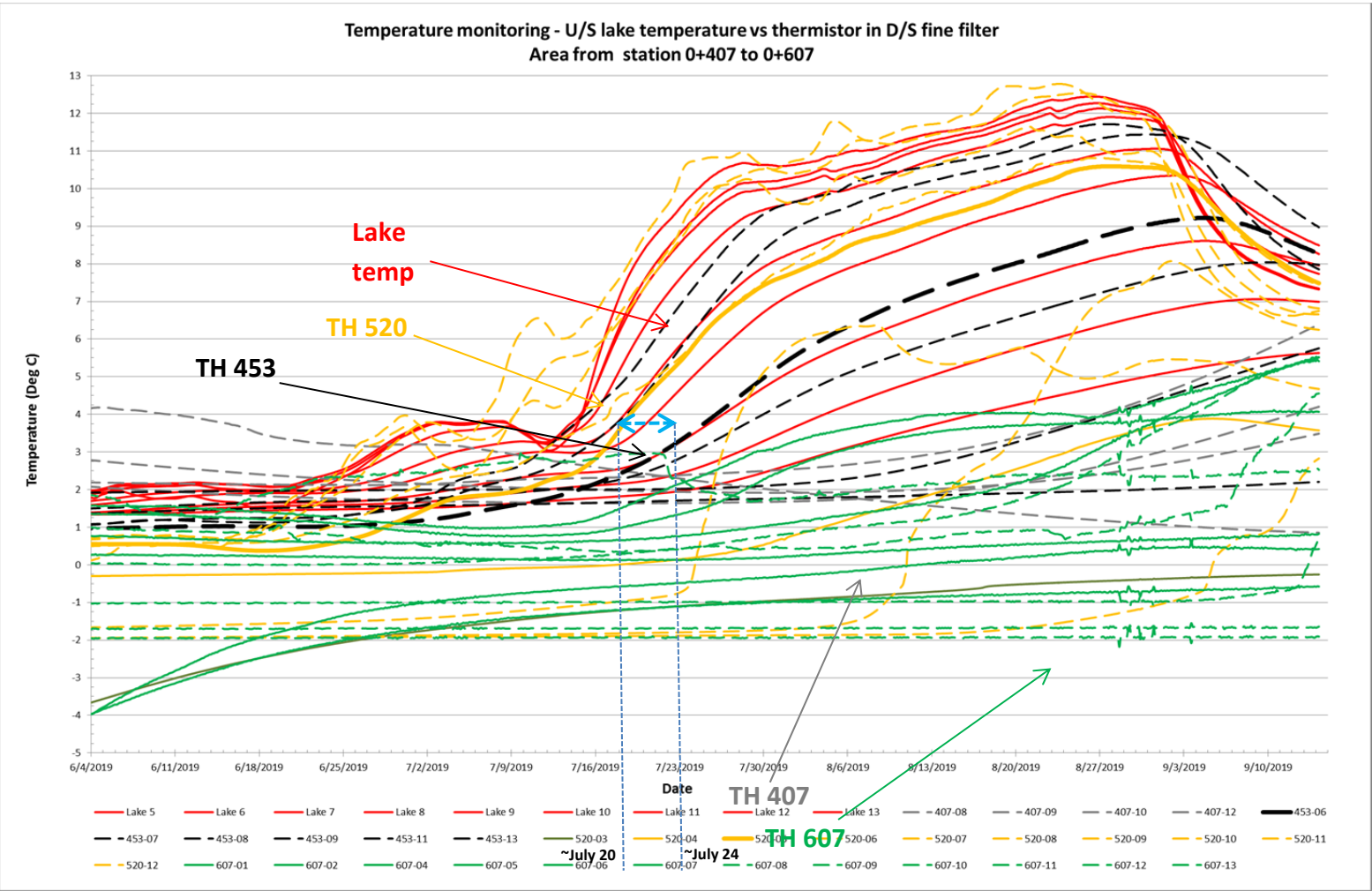
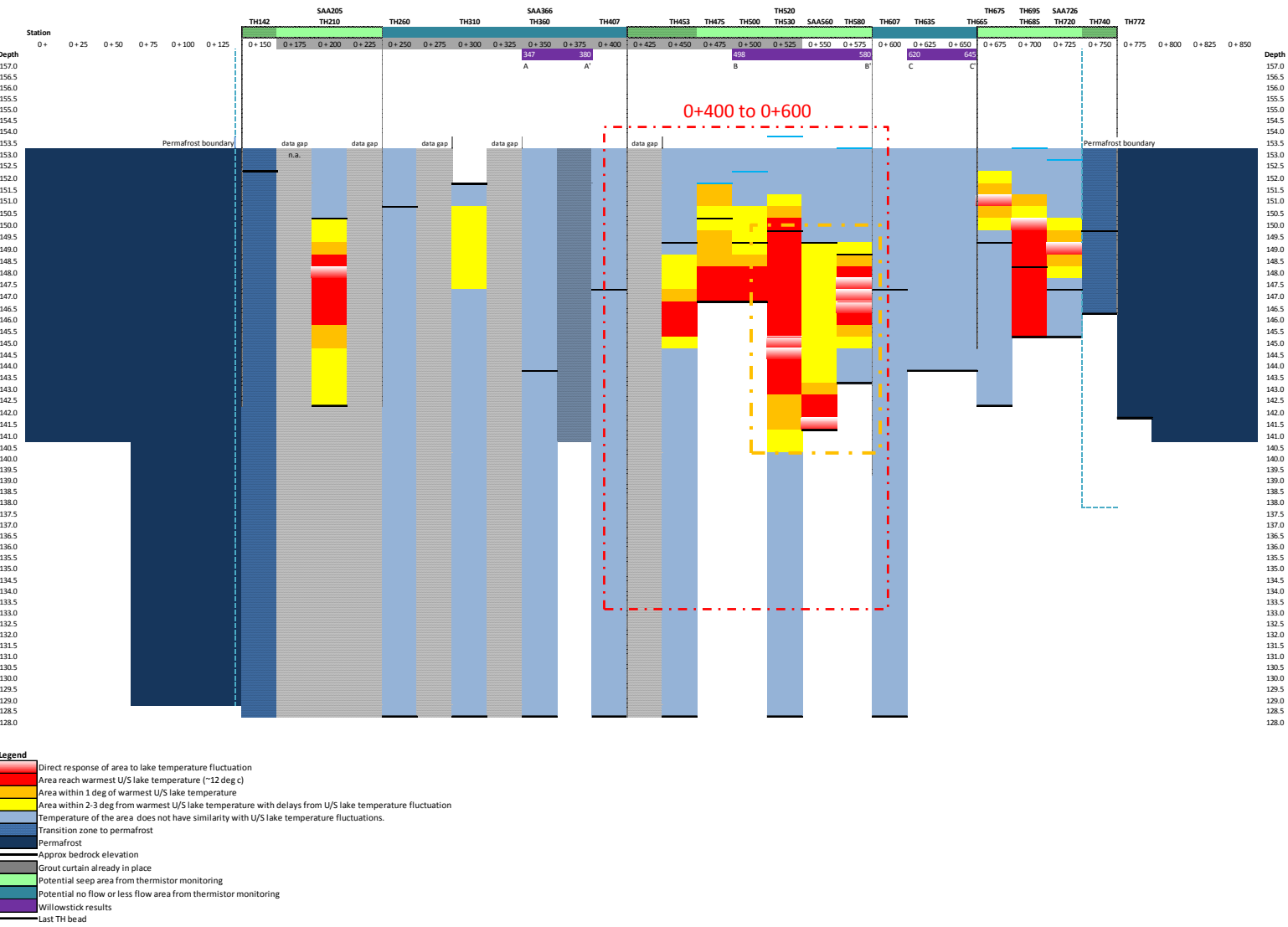
Potential seep area from thermistors data – Area from station 0+ 400 to 0+600

Observations:

- This main flowpath area is well captured by the thermal monitoring and correlate quite well with the willowstick anomaly BB’ (498 to 580);
- The large limit of the impacted area extends from 0+425 to 0+580 – the most active thermal monitoring area is 0+525 to 0+580 (we don’t see the activity at depth in between 500 and 525 since the thermistor TH 500 ends at 147 elev);
- Active area from 0+525 to 0+580 is in bedrock from elevations 142 to 147 meaning around 8 meters below bedrock elevation - it is probably also active in depth but we don’t have the coverage with thermal monitoring;
- Most reactive thermistor is the TH 520 who shows instantaneous response to lake temperature fluctuations at elevation 145 – TH SAA560 and TH 580 also indicate strong connection to lake temperature respectively at elevations 141 and 147;
- Thermistor TH 453 shows some connection with the fluctuation of the lake temperature from elevations 146 to 147 but there is a delay period of around 96 hours. It suggests that the area is influenced by the flow path at station ~520 and most probably flowing from east to west.

Area of interest:

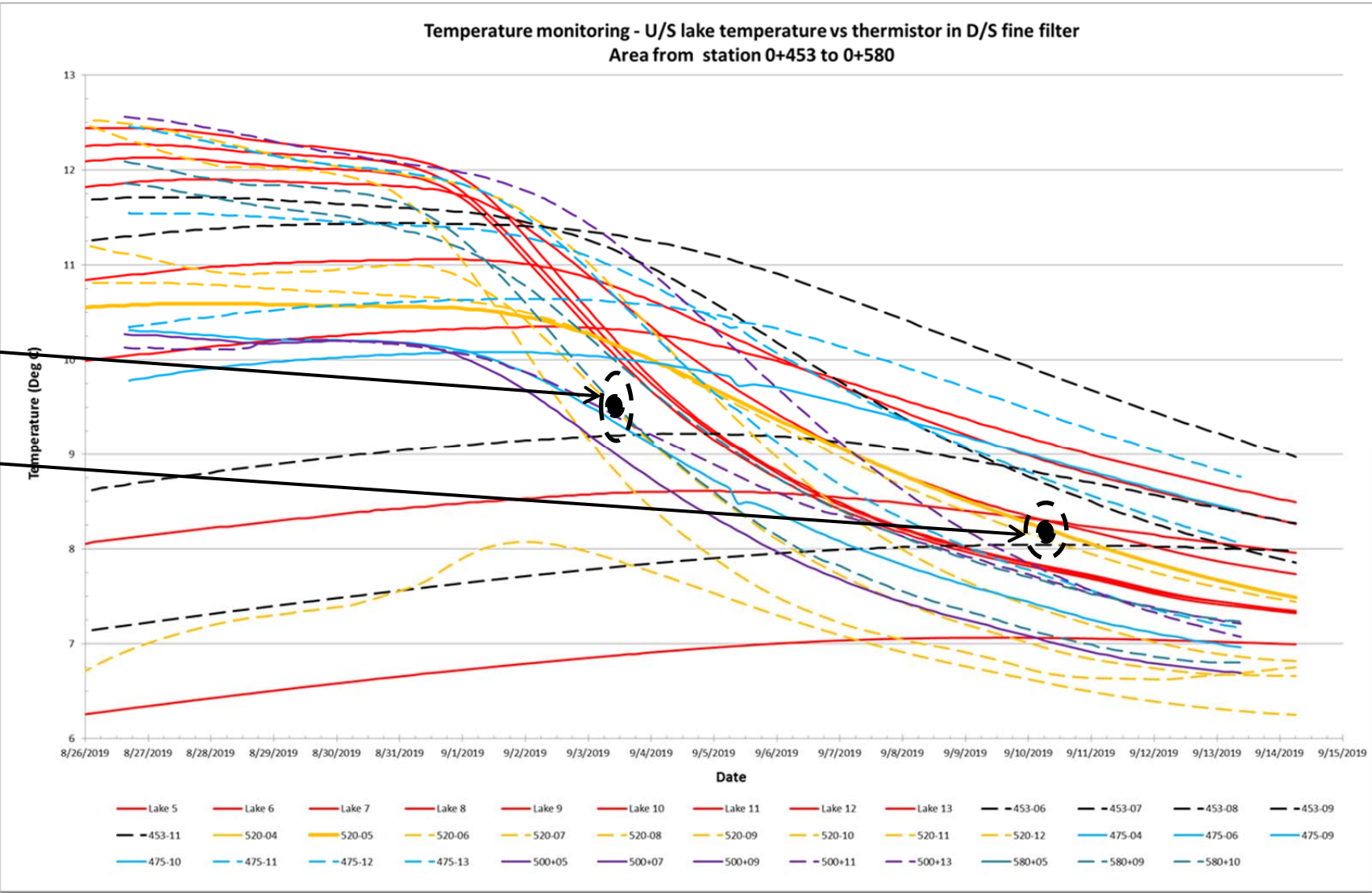
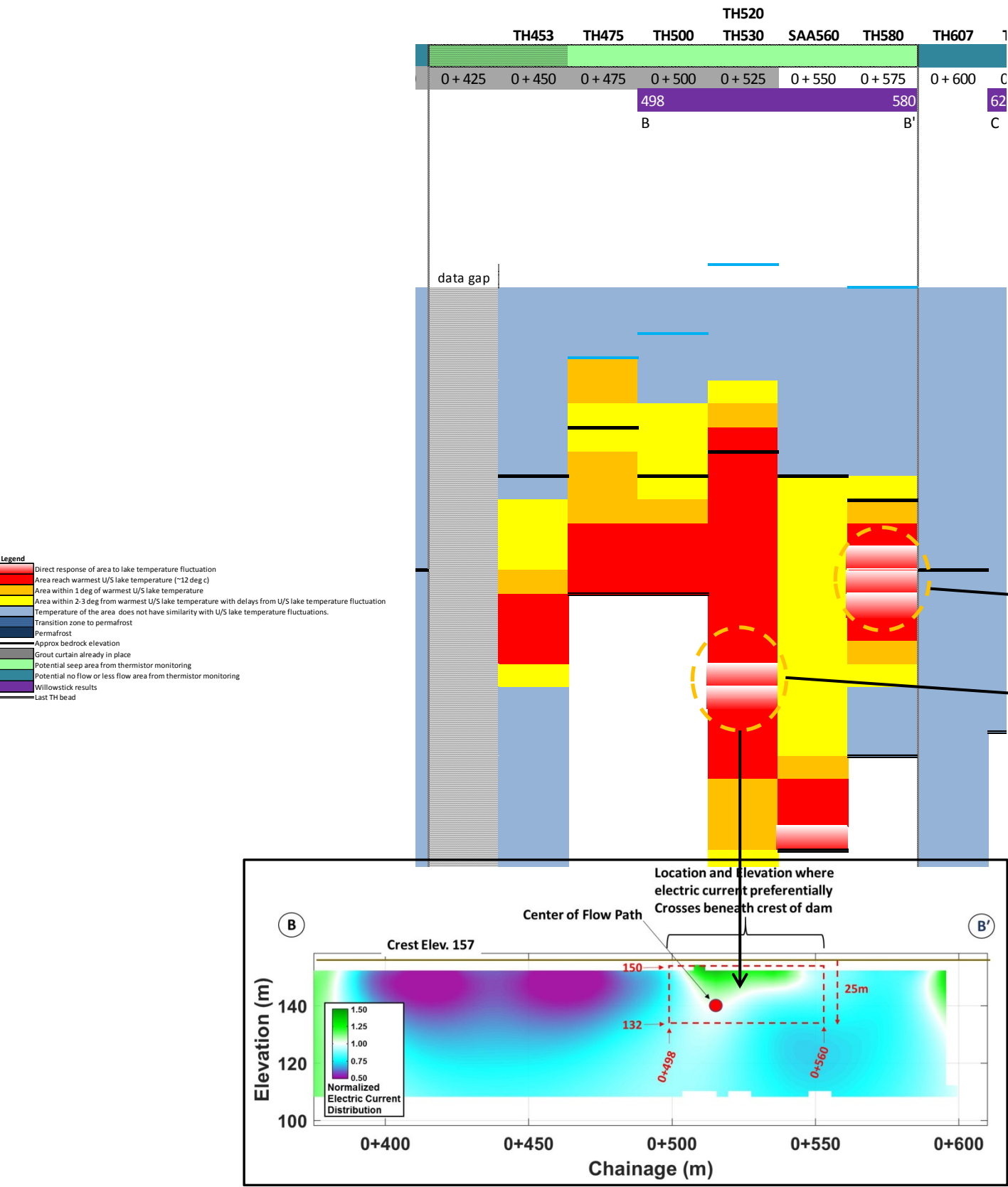
- **Area 525 to 580:** is the main area of interest in the area – maybe associated with a special feature or simply related to the eastern limit of the current grout curtain and permafrost degradation.



Potential seep area from thermistors data – Area from station 0+ 450 to 580 vs anomaly BB’ from Willowstick survey

Observations:

- Zooming in the main active area from 500 to 580 and coupling the recently installed temporary thermistors to the lake temperature;
- Thermal monitoring results with the temporary thermistors support the geophysics and permanent thermistors results with a strong active area with TH 530, TH SAA 560 and TH 580;
- There is a data gap at 425 – it is recommended to install a thermistor at ~ 0+425 to establish with more precision the western boundary of this area.



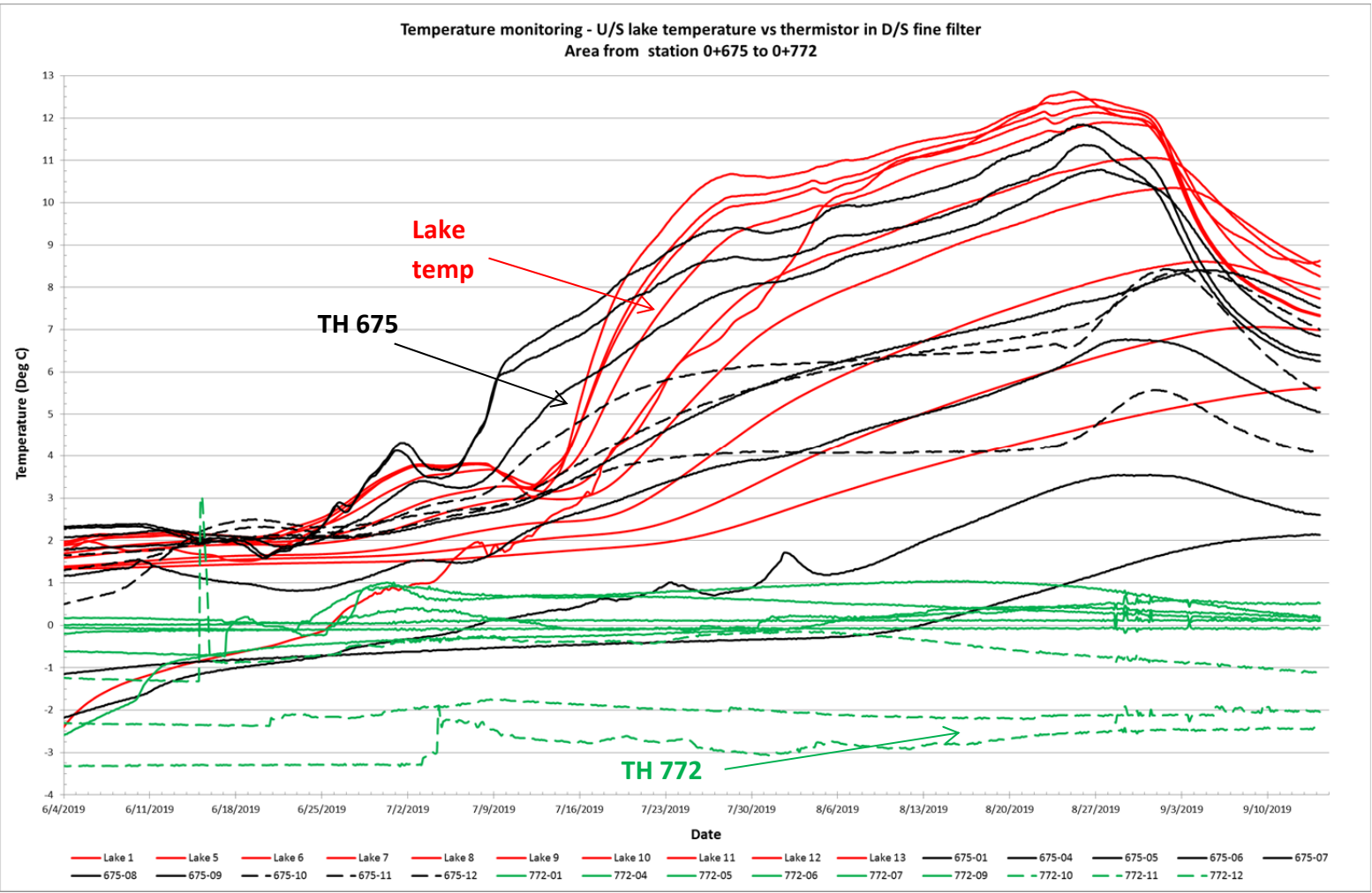
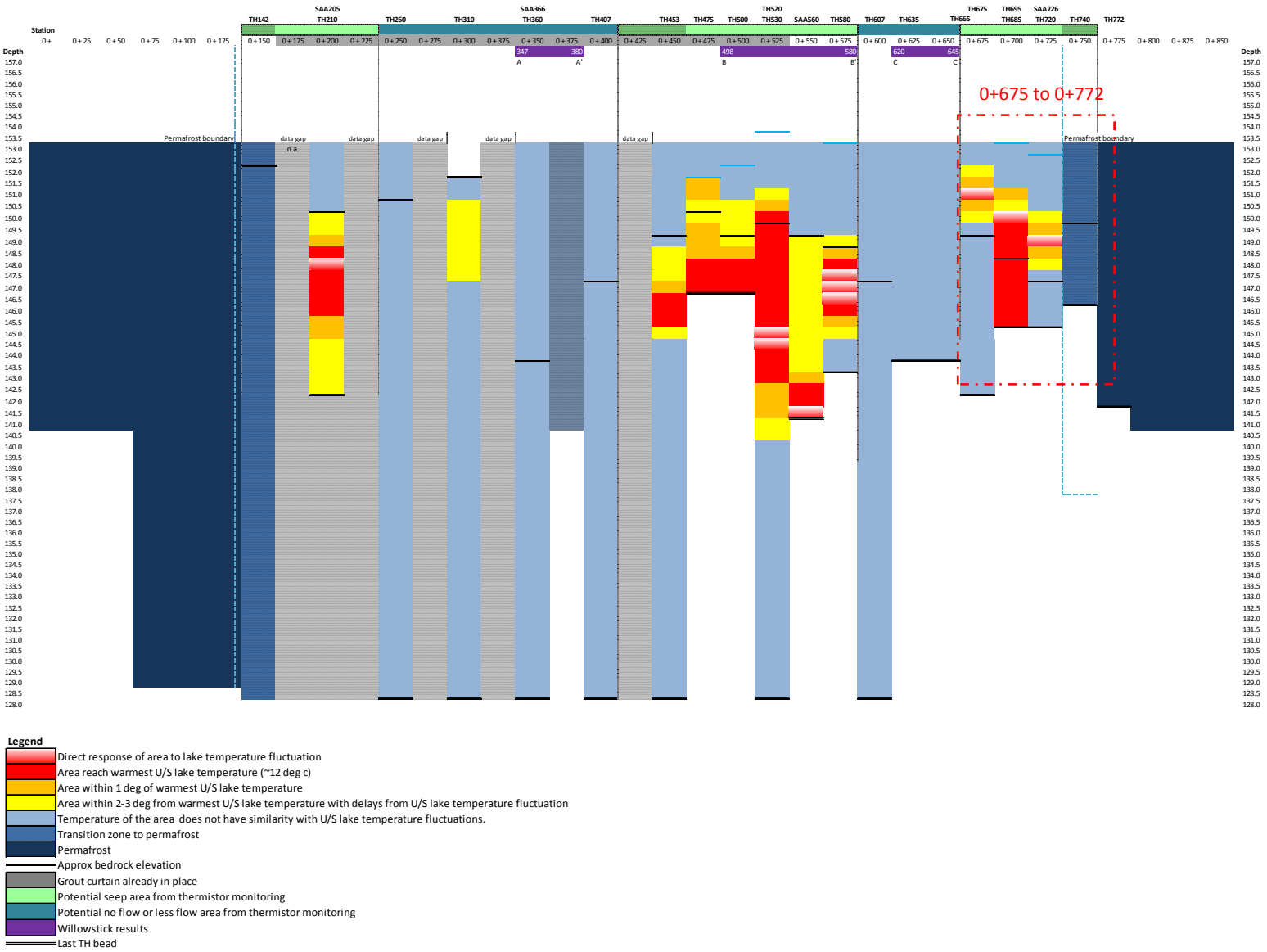
Potential seep area from thermistors data – Area from station 0+675 to 0+772

Observations:

- Eastern permafrost boundaries of the dike foundation is currently in between ~ station 0+750 to 0+775;
- The flow path area, suggested by the thermistors results from 675 to 725, does not correlate quite well with the Willowstick anomaly CC’ (620 to 645);
- Permanent thermistor TH 675 show strong correlation with the upstream lake bed temperature fluctuation at elevation 151.5
- TH 685 and TH 695 show strong correlation with the upstream lake bed temperature fluctuation at elevation ~150;
- TH 720 also shows correlation with the upstream lake bed temperature fluctuation at elevation ~149;
- The western limit of the flow path based on the thermal monitoring is around 665 (on the graph on next page);
- The area is well covered in terms of thermal monitoring (at least in the relatively shallow depth).

Area of interest:

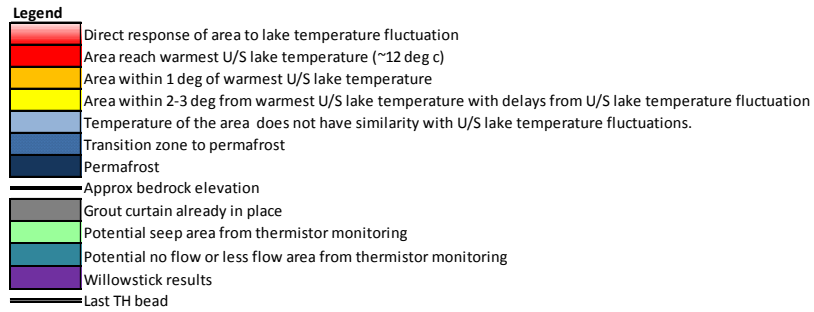
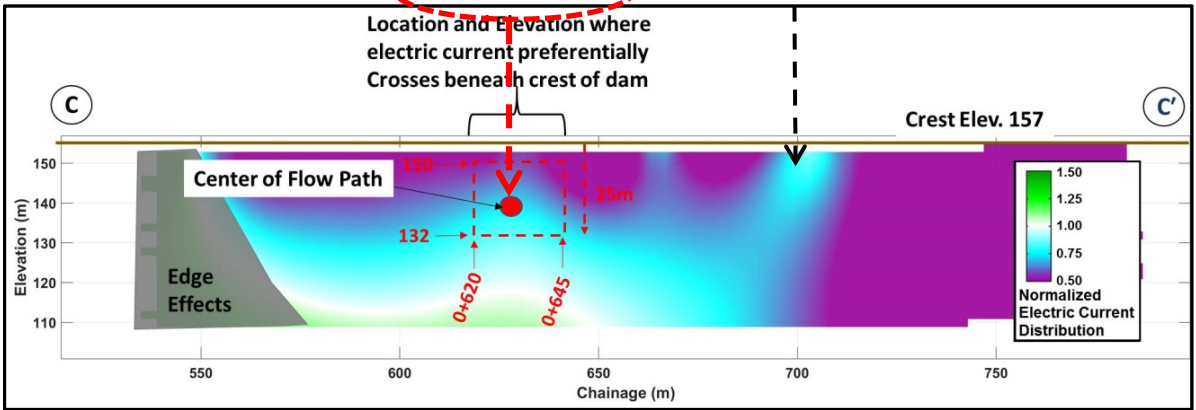
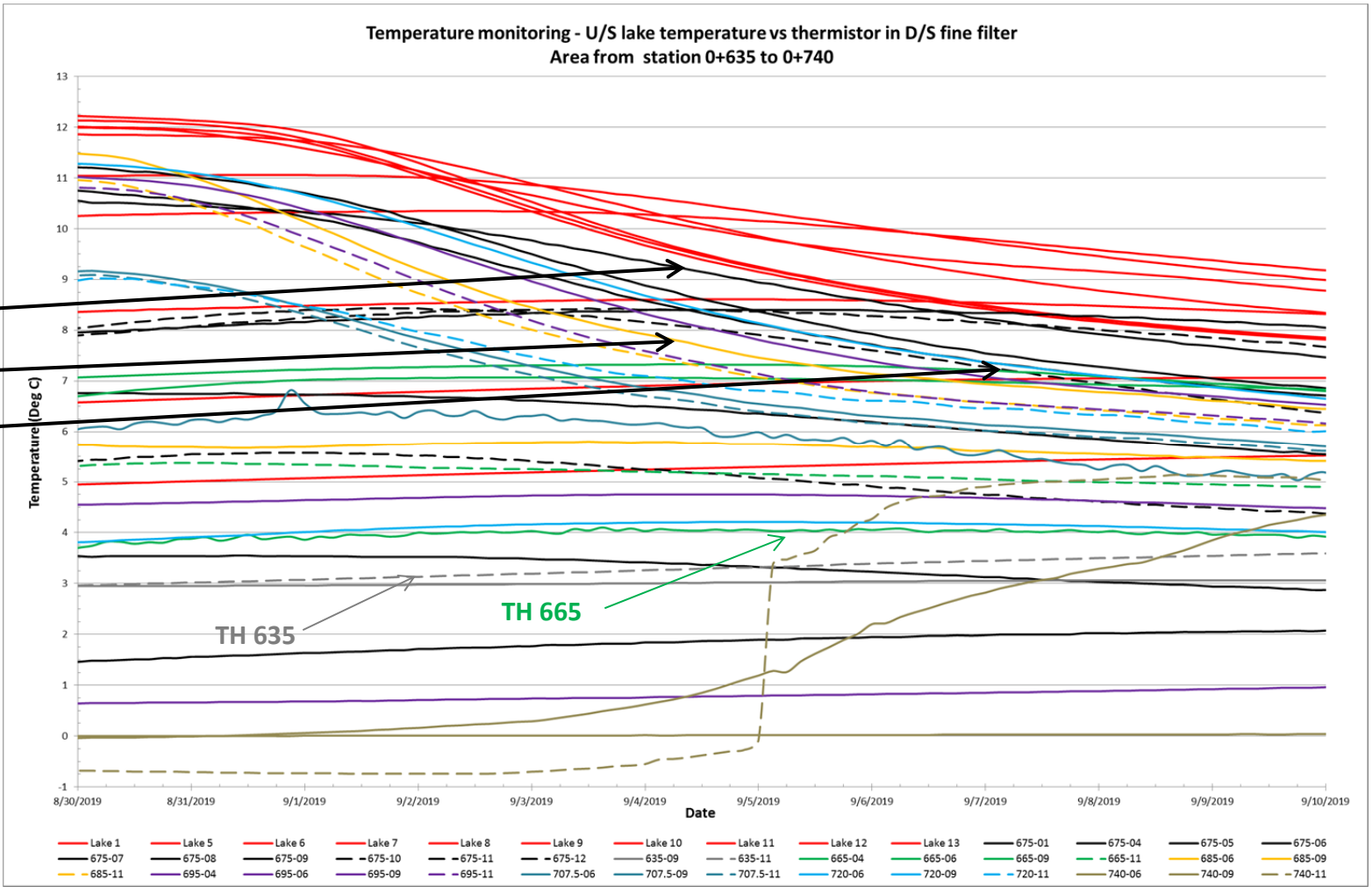
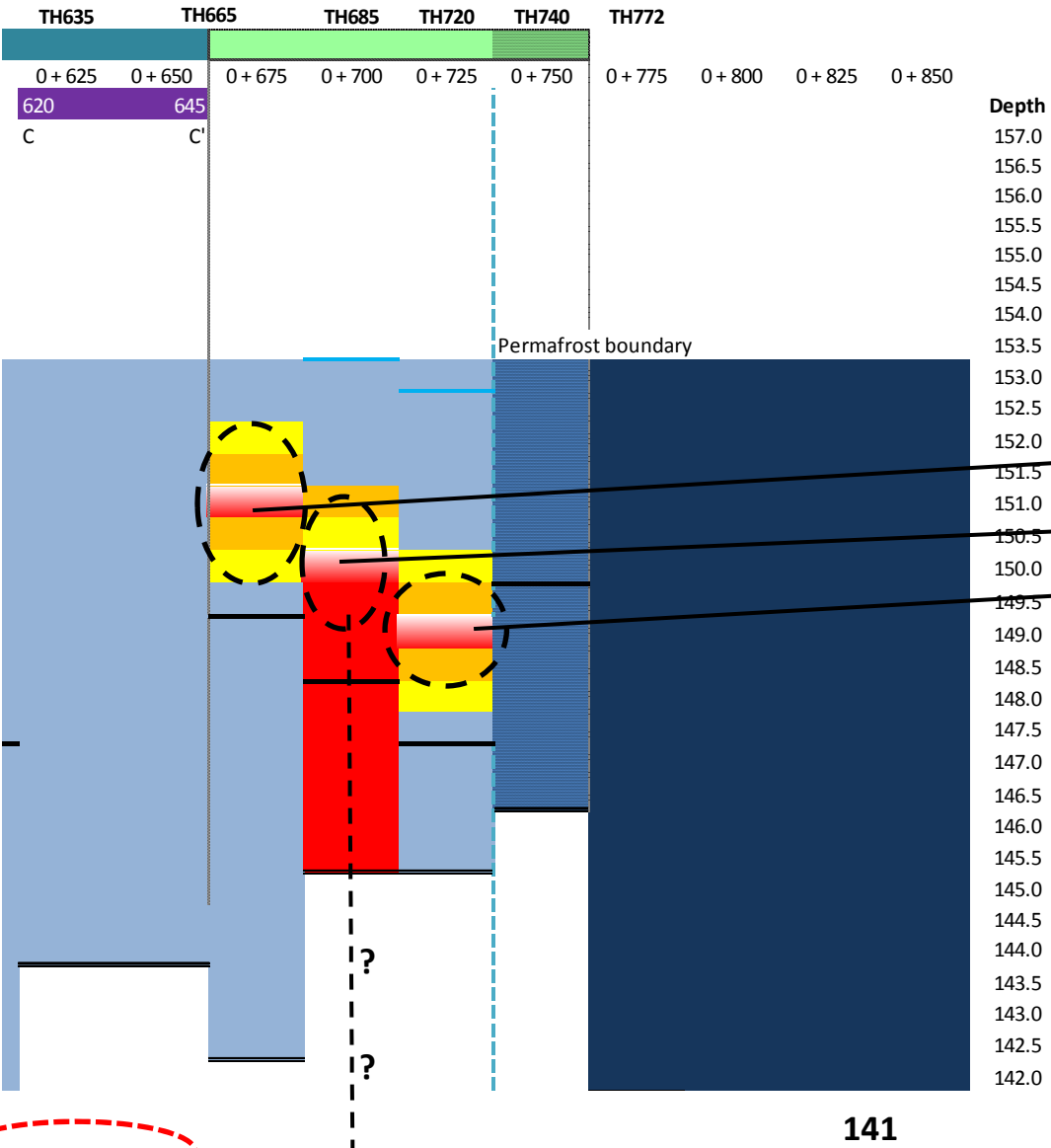
- Base on thermistors results, the main area of interest is from station 0+675 to 0+725.



Potential seep area from thermistors data – Area from station 0+ 635 to 0+740

Observations:

- Zooming in the area from 635 to 740 and coupling the recently installed temporary thermistors to the lake temperature;
- Thermal monitoring results with the temporary thermistors does not correlate with geophysics results for flow path CC' (620 to 645). However, the center of the geophysical anomaly is suggested at 141 elevation which is lower than the TH 635 and 665;
- Strong connection between lake temperature and TH 675, TH 685, TH 695 and TH 720;
- There is a sharp difference from TH data 675 and 665 suggesting maybe a feature at 675 that is not present at 665.



Quan, Nina

From: Alexandre Lavallee <alexandre.lavallee@agnicoeagle.com>
Sent: February 17, 2020 7:31 AM
To: Quan, Nina; Patrice Gagnon
Cc: Frederick Bolduc; Jesse Clark; Pier-Eric McDonald; El Bensi, Abdellah; Xue, Tom; Thomas Lepine
Subject: RE: [EXTERNAL] RE: Casing drilling U/S
Attachments: Longitudinal Analysis Feb 2.pdf

Hi Nina,

See attached and below interpretation from Pier-Eric.

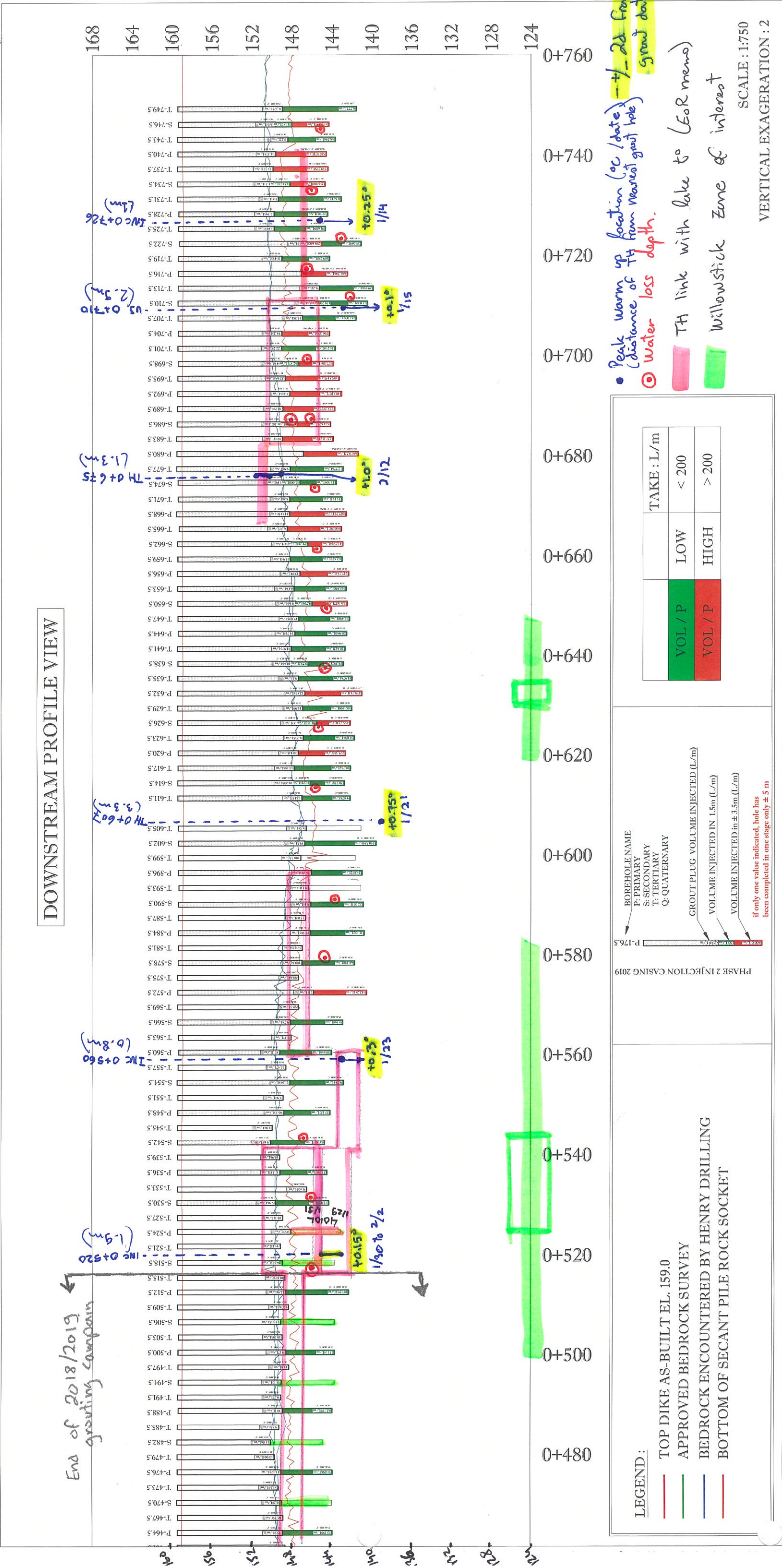
- **Location of water return loss:** Loss of water return seems to be below the 2nd half of a 5m stage in general, rather than the upper portion which was expected to be more weathered and fractured. This concurs with driller's verbal input, which explain why very little downstage at 1.5/3.5m was done yet.
- **Grout travel & instrument influence:** On all of the 6 instruments, they all exhibit a warm up within 2 days of the closest grouting hole. Although no instrument are directly against a high take hole, very low grout takes are enough to warm up nearby beads in the range of 0.1-1.0 degC even when the closest bead is 3.3m away from the grouted hole, for TH-607. Also, even though the beads are spaced 4m on the TH and 0.5m on the INC, all peak temperature warmth – other than TH 675 above BR– is observed at the bottom of the stage and even 1m below the stage on 2 out 6 occurrences. This observation is even more true for the 2nd section from 0+600 to 0+450 where all 3 instruments show warmest beads at or below bottom of stage.
- **Impact of 2018/2019 curtain from 0+180 to 0+516:** ALL holes (P-S) done within that zone from 0+450 to 0+518 show low grout takes and refusal by pressure, hence potentially proving the effectiveness of the previous curtain.
- **Compliance to Willowstick:** It seems like the zone that was expected to be the most problematic in terms of both TH and Geophysics from 0+600 to 0+500 is the one that surprisingly showed the less grouting takes on only 2/8 primaries >200L/m as opposed for 9/11 primaries for the previous section. This being said, in both Willowstick target windows at 0+525-0+542 & 0+630 there was 1 hole that showed high grout takes, particularly for P 524.5 where 4000L with Celbex was required. This may suggest more localized features than zone 0+600 to 0+750, however, investigation hole AMQ17 -1212 located at 0+516 didn't show any special features.
- **Compliance to TH hot spots (EoR memo):** At the East abutment section 0+600 to 0+750 the high take zones are widespread within zones identified by Thermistors VS section 2 at 0+600 to 0+450 where hot TH zones are linked to single hole that showed high take. This may be attributable to the fact that inflows in chainage < 0+600 may be attributable to localized features while inflows in chainage > 0+600 may be more attributable to permafrost degradation as seen on INC 0+726 bottom mid-august where a warm up was seen 1-2 weeks after at the base of TH 740.

Thanks,

Alexandre Lavallee
T: 819-860-0804

From: Quan, Nina [mailto:Nina.Quan@snclavalin.com]
Sent: February 16, 2020 3:14 PM

INJECTION DOWNSTREAM PHASE 2 2019 - AS-BUILT
WHALE TAIL DIKE CONSTRUCTION
CONTRACT # 11-811

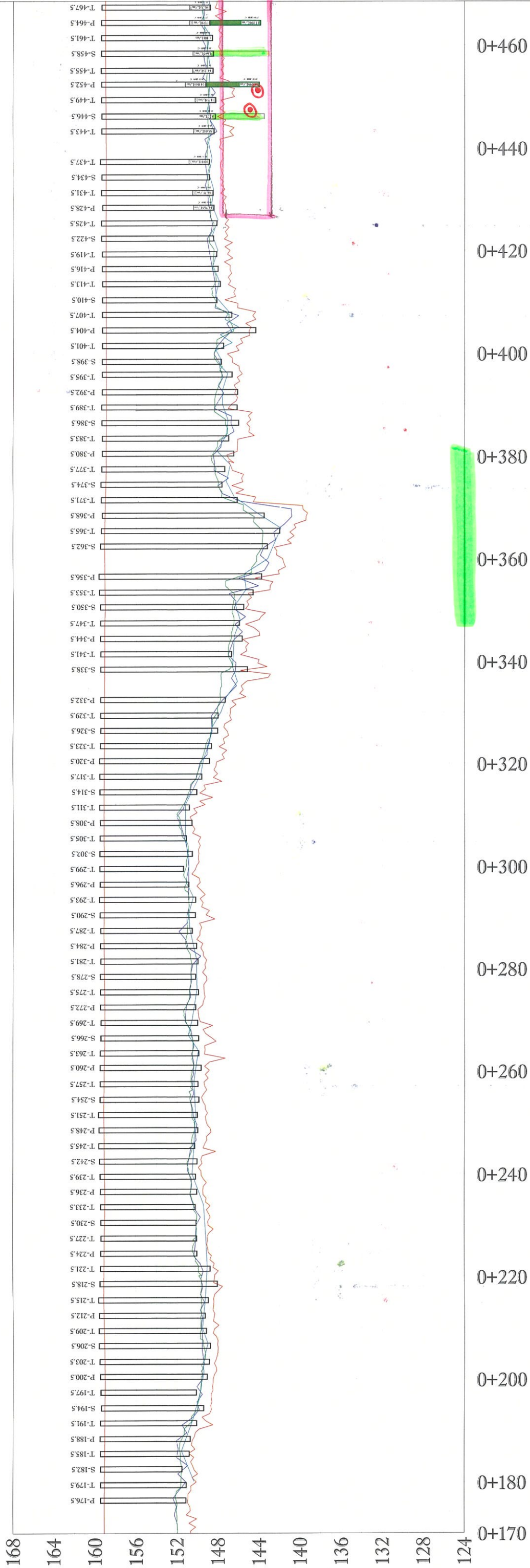


KIVALLIQ CONTRACTORS
GROUP LTD

PREPARED BY : MARC-ANDRÉ BLACKBURN
DATE : 31-01-2020
CON-FD-230

INJECTION DOWNSTREAM PHASE 2 2019 - AS-BUILT
WHALE TAIL DIKE CONSTRUCTION
CONTRACT # 11-811

DOWNSTREAM PROFILE VIEW



LEGEND:

- TOP DIKE AS-BUILT EL. 159.0
- APPROVED BEDROCK SURVEY
- BEDROCK ENCOUNTERED BY HENRY DRILLING
- BOTTOM OF SECANT PILE ROCK SOCKET

PHASE 2 INJECTION CASING 2019

BOREHOLE NAME
P: PRIMARY
S: SECONDARY
T: TERTIARY
Q: QUATERNARY

GROUT PLUG VOLUME INJECTED (L/m)
VOLUME INJECTED IN 1.5m (L/m)
VOLUME INJECTED in ± 3.5m (L/m)

if only one value indicated, hole has been completed in one stage only ± 5 m

TAKE : L/m		
	LOW	HIGH
VOL / P	< 200	> 200
VOL / P	< 200	> 200

SCALE : 1:750
VERTICAL EXAGERATION : 2

Saleem, Muhammad

From: Pier-Eric McDonald <pier-eric.mcdonald@agnicoeagle.com>
Sent: March 1, 2020 6:12 PM
To: Viau, Sebastien; Quan, Nina; Saleem, Muhammad; Xue, Tom; El Bensi, Abdellah; Thomas Lepine; Alexandre Lavallee; Jesse Clark; Frederick Bolduc; Marion Habersetzer; Patrice Gagnon; Alexandre Lavallee
Cc: Alex Penney; William Lavoie; Ken Lachance
Subject: RE: [EXTERNAL] Weekly Report - 2020-02-21 to 2020-02-27
Attachments: 0+260.jpg; 0+310.jpg; 0+407.jpg; 0+520.jpg; 0+560.jpg; WTD Grouting - Analysis 0+700 to 0+450

Thank you Sebastien,

On Feb 2nd I provided an analysis (attached email) that links the grouting date and elevation to an instrument bead that reacted to grouting from 0+750 to 0+520. I redid the analysis for 0+560 to 0+142 now that we grouted a good amount of holes in that zone. Note that the most conductive zone for the 2nd half of the dike is at 0+205-210 but both instruments are down, however only a very local high take of 1800L was observed at 0+194.5, others are all <100L, although tertiaries haven't been grouted in this zone.

This may be something you want to include in a revised version of the weekly, or at the very least presented at the upcoming grout committee.

- **TH-260:** One of the lowest reaction zone along with 0+407 and 0+360 as per TH analysis to lake temperature. 0.1C reaction with grouting pf P-260.5 at that same date, located direct AT and slightly above bedrock interface for P-260.5. The surrounding tertiaries are not grouted yet.
- **TH-310:** identified as a low thermally conductive zone but not as low as 260, 360 or 407. Warmed up 0.05C reaction linked with grouting of P-308.5 in roughly the middle of the stage. The surrounding tertiaries are not grouted yet.
- **TH-360:** One of the lowest reaction zone along with 0+260 and 0+407 as per TH analysis of lake temperature. No reaction with nearby grout hole.
- **TH-407:** One of the lowest reaction zone along with 0+260 and 0+360 as per TH analysis of lake temperature. Warm up of 0.6C in the bottom half of the stage induced by T-407.5.
- **TH-453:** No reaction at all to grouting, contradicting the fact it was strongly related to lake temperature variations. No reaction with nearby grout hole.
- **TH-520:** Surprisingly, only a bead warm up of 0.15C all along 150 to 143. From all instruments, this was the most conductive beads to lake temperature variation from bedrock @ 149.5 to last bead @ 127 and subject to a Willowstick anomaly.
- **TH-560:** Is the one that reacted the most out of all thermistors across the dike to grouting (also one of the most linked to lake). 0.25C reaction for P-560.5 and 1.5C for T-563.5. This warm up is located BELOW the blanket depth, again suggesting that deeper holes around 0+560 are relevant. See figure below.

For the instrument that react thermally, it is often linked to 1 hole only (the closest) and since holes are spaced at 3m, it seems like features are very localized.
See attached instruments for further visuals.

Thanks,



Pier-Eric McDonald | Geotechnical Engineer

pier-eric.mcdonald@agnicoeagle.com | Direct 819.759.3555 x4606726 |

Agnico Eagle Mines Limited - Meadowbank Division, Suite 540 - Baker Lake, Nunavut, Canada X0C 0A0

agnicoeagle.com



Sent from Amaruq

From: Viau, Sebastien [mailto:Sebastien.Viau@snclavalin.com]

Sent: March 1, 2020 11:40 AM

To: Quan, Nina <nina.quan@snclavalin.com>; Saleem, Muhammad <Muhammad.Saleem@snclavalin.com>; Xue, Tom <Tom.Xue@snclavalin.com>; El Bensi, Abdellah <Abdellah.ElBensi@snclavalin.com>; Thomas Lepine <thomas.lepine@agnicoeagle.com>; Alexandre Lavallee <alexandre.lavallee@agnicoeagle.com>; Jesse Clark <jesse.clark@agnicoeagle.com>; Frederick Bolduc <frederick.bolduc@agnicoeagle.com>; Marion Habersetzer <marion.habersetzer@agnicoeagle.com>; Patrice Gagnon <patrice.gagnon@agnicoeagle.com>; Pier-Eric McDonald <pier-eric.mcdonald@agnicoeagle.com>; Alexandre Lavallee <alexandre.lavallee@agnicoeagle.com>; Alain Parent <alain.parent@agnicoeagle.com>

Cc: Alex Penney <Alex.Penney@groupegilbert.com>; William Lavoie <William.Lavoie@groupegilbert.com>

Subject: [EXTERNAL] Weekly Report - 2020-02-21 to 2020-02-27

CAUTION : EXTERNAL

Hi All,

Please find attached the weekly report for February 21st to February 27th, 2020.

Regards

Sébastien Viau, ing., P.Eng.

Ingénieur en géologie / Geology Engineer

Tél. : 514-393-8000 x 58348

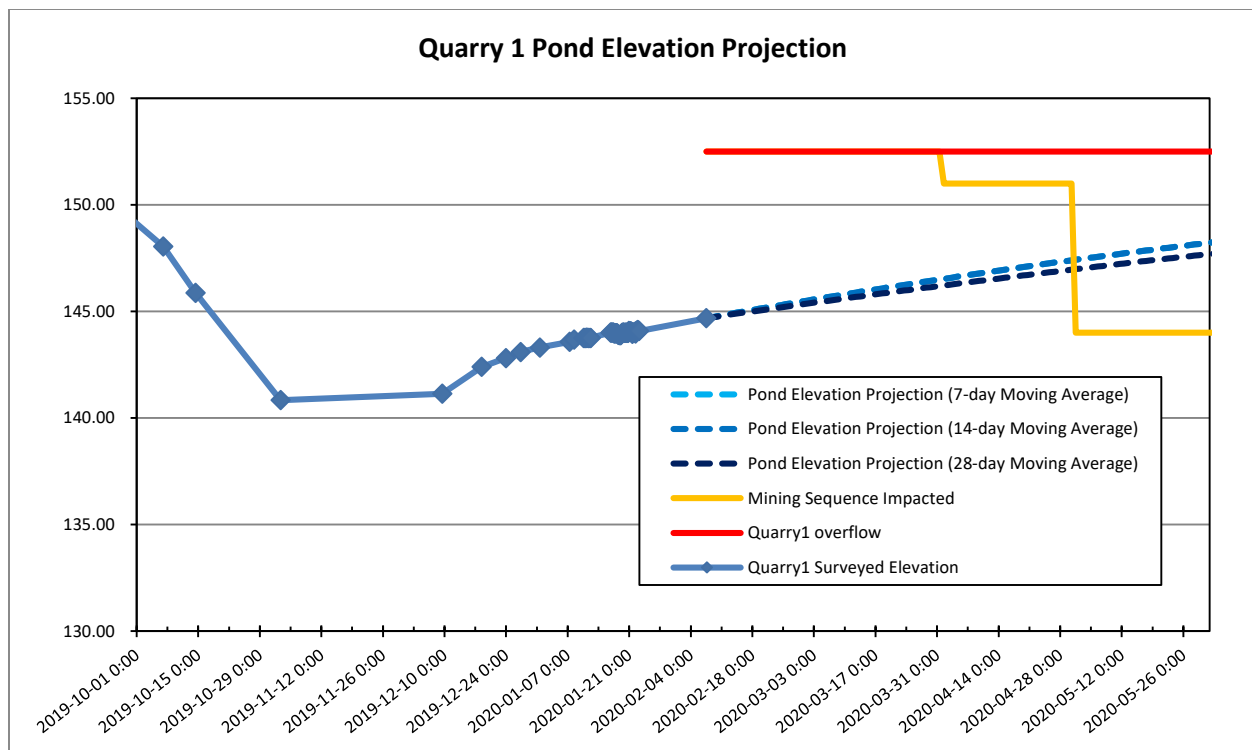
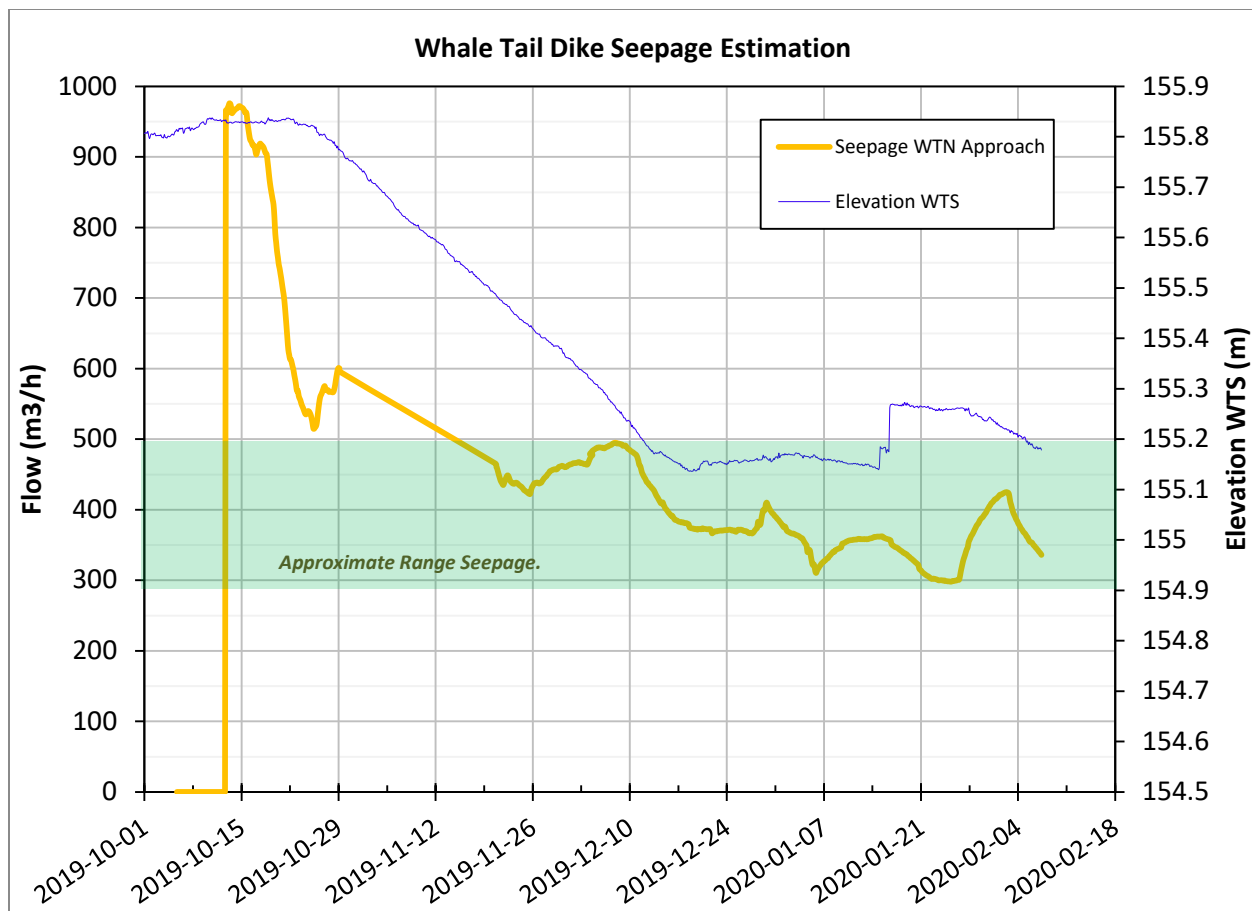
Télec. : 514-876-9273

SNC-Lavalin inc. - Division Hydro Est

1801, avenue McGill College, 12^e étage

Montréal | Québec | Canada | H3A 2N4

G-4 Weekly Seepage Reports

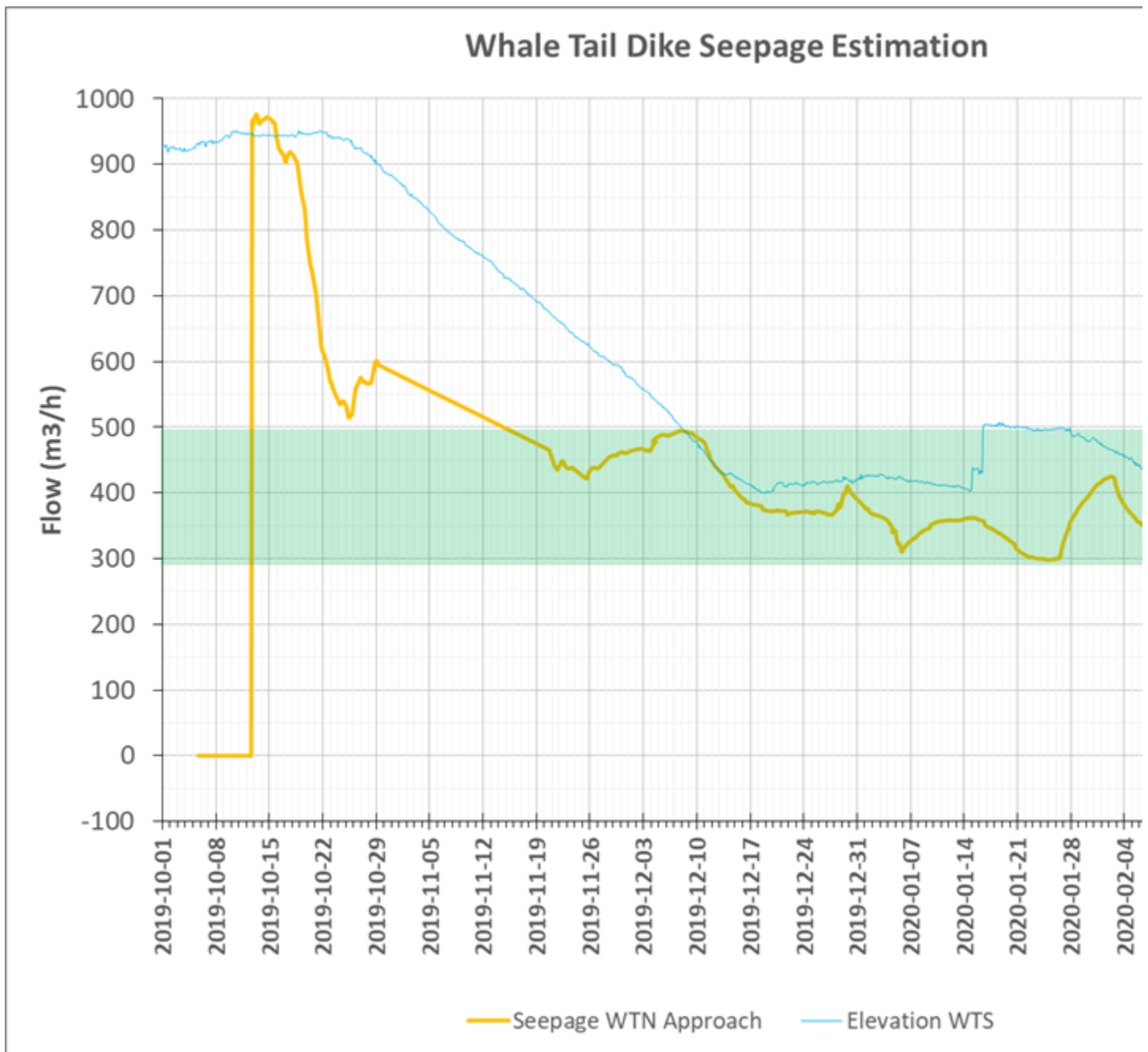


Saleem, Muhammad

From: Patrice Gagnon <patrice.gagnon@agnicoeagle.com>
Sent: February 15, 2020 6:03 PM
To: Quan, Nina; Alexandre Lavallee
Cc: Frederick Bolduc; Jesse Clark; Pier-Eric McDonald; El Bensi, Abdellah; Xue, Tom; Thomas Lepine
Subject: RE: [EXTERNAL] RE: Casing drilling U/S
Attachments: TH data for SNC #3.xlsx

Hi Nina,

Please find attached the latest data of all thermistors as well as the values of temperature for the inclinometers installed on WTD. Also, find below the seepage estimation updated as of today.



Best Regards,



Patrice Gagnon | Geotechnical Specialist

patrice.gagnon@agnicoeagle.com | Direct 819.759.3555 x4606726 |

Agnico Eagle Mines Limited - Meadowbank Division, Suite 540 - Baker Lake, Nunavut, Canada X0C 0A0

agnicoeagle.com    

Sent from Amaruq

From: Quan, Nina [mailto:Nina.Quan@snclavalin.com]

Sent: February 14, 2020 10:02 PM

To: Patrice Gagnon <patrice.gagnon@agnicoeagle.com>; Alexandre Lavallee <alexandre.lavallee@agnicoeagle.com>

Cc: Frederick Bolduc <frederick.bolduc@agnicoeagle.com>; Jesse Clark <jesse.clark@agnicoeagle.com>; Pier-Eric

McDonald <pier-eric.mcdonald@agnicoeagle.com>; Christopher Gilbert <christopher.gilbert@groupegilbert.com>; Audrey Bilodeau Groupe Gilbert <audrey.bilodeau@groupegilbert.com>; Nicolas Tremblay <nicolas.tremblay@groupegilbert.com>; El Bensi, Abdellah <Abdellah.ElBensi@snclavalin.com>; Xue, Tom <Tom.Xue@snclavalin.com>; Thomas Lepine <thomas.lepine@agnicoeagle.com>
Subject: RE: [EXTERNAL] RE: Casing drilling U/S

Hi Patrice

We are looking for the processed data that show the temperature anomalies – something similar to what AEM sent us last time (see the attached file).

Thanks in advance.

Best Regards

Nina Quan, *P. Eng.*

Ingénieur en Géotechnique/Geotechnical Engineer
Capital de maintien/Sustainable Capital Toronto Office
Mines et métallurgie/Mining & Metallurgy

Tel.: (416) 252-5315 x 54162

Cell.: (416) 434-1851

Fax: (416) 231-5336

SNC-Lavalin

195 The West Mall

Toronto | Ontario | Canada | M9C 5K1

From: Patrice Gagnon <patrice.gagnon@agnicoeagle.com>

Sent: February 14, 2020 5:34 PM

To: Quan, Nina <Nina.Quan@snclavalin.com>; Alexandre Lavallee <alexandre.lavallee@agnicoeagle.com>

Cc: Frederick Bolduc <frederick.bolduc@agnicoeagle.com>; Jesse Clark <jesse.clark@agnicoeagle.com>; Pier-Eric McDonald <pier-eric.mcdonald@agnicoeagle.com>; Christopher Gilbert <christopher.gilbert@groupegilbert.com>; Audrey Bilodeau Groupe Gilbert <audrey.bilodeau@groupegilbert.com>; Nicolas Tremblay <nicolas.tremblay@groupegilbert.com>; El Bensi, Abdellah <Abdellah.ElBensi@snclavalin.com>; Xue, Tom <Tom.Xue@snclavalin.com>; Thomas Lepine <thomas.lepine@agnicoeagle.com>

Subject: RE: [EXTERNAL] RE: Casing drilling U/S

Hi Nina,

What do you expect as data for thermistors, raw excel files, graphs ? Over what period of time ?

Thanks,



Patrice Gagnon | Geotechnical Specialist

patrice.gagnon@agnicoeagle.com | Direct 819.759.3555 x4606726 |

Agnico Eagle Mines Limited - Meadowbank Division, Suite 540 - Baker Lake, Nunavut, Canada X0C 0A0

agnicoeagle.com



Sent from Amaruq

From: Quan, Nina [<mailto:Nina.Quan@snclavalin.com>]

Sent: February 14, 2020 2:02 PM

To: Alexandre Lavallee <alexandre.lavallee@agnicoeagle.com>

Cc: Frederick Bolduc <frederick.bolduc@agnicoeagle.com>; Jesse Clark <jesse.clark@agnicoeagle.com>; Patrice Gagnon <patrice.gagnon@agnicoeagle.com>; Pier-Eric McDonald <pier-eric.mcdonald@agnicoeagle.com>; Christopher Gilbert <christopher.gilbert@groupegilbert.com>; Audrey Bilodeau Groupe Gilbert <audrey.bilodeau@groupegilbert.com>; Nicolas Tremblay <nicolas.tremblay@groupegilbert.com>; El Bensi, Abdellah <Abdellah.ElBensi@snclavalin.com>; Xue, Tom <Tom.Xue@snclavalin.com>; Thomas Lepine <thomas.lepine@agnicoeagle.com>

Subject: [EXTERNAL] RE: Casing drilling U/S

CAUTION : EXTERNAL

Hi Alex

Please see the response in green below.

For a complete assessment, we need to have thermistor data as well as the seepage estimation to correlate with grouting data to provide AEM grouting strategy for Upstream. We are waiting for AEM's thermistor data and assessment.

Best Regards

Nina Quan, *P. Eng.*

Ingénieur en Géotechnique/Geotechnical Engineer
Capital de maintien/Sustainable Capital Toronto Office
Mines et métallurgie/Mining & Metallurgy

Tel.: (416) 252-5315 x 54162

Cell.: (416) 434-1851

Fax: (416) 231-5336

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195 The West Mall

Toronto | Ontario | Canada | M9C 5K1

From: Alexandre Lavallee <alexandre.lavallee@agnicoeagle.com>

Sent: February 14, 2020 11:44 AM

To: Quan, Nina <Nina.Quan@snclavalin.com>

Cc: Frederick Bolduc <frederick.bolduc@agnicoeagle.com>; Jesse Clark <jesse.clark@agnicoeagle.com>; Patrice Gagnon <patrice.gagnon@agnicoeagle.com>; Pier-Eric McDonald <pier-eric.mcdonald@agnicoeagle.com>; Christopher Gilbert <christopher.gilbert@groupegilbert.com>; Audrey Bilodeau Groupe Gilbert <audrey.bilodeau@groupegilbert.com>; Nicolas Tremblay <nicolas.tremblay@groupegilbert.com>

Subject: Casing drilling U/S

Hi Nina,

KCG will need to jump on casing drilling of the upstream on Feb 21. Can you confirm that location of collar/depth will be available. The whole US strategy doesn't have to be ready at that time but at least to know where to put the first few casings. **This information was provided at the beginning of the grouting program (see the attachment).**

Also, to help you in your planning of the upstream strategy, we've evaluated that we would have time to do about 150 to 200 stages in the upstream before freshet (March 18 to June 1). How to be the most efficient with those 150-200

stages is the question we would like SNC to answer and the committee to review. Could you please confirm the following?

- Freshet will begin on June 1?
- March 18 - June 1 is the estimated time for grouting of 150-200 holes based on one stage per hole?

Thanks,



Alexandre Lavallee, P. Eng. | Project Lead – Water Management Infrastructures – Construction Group
alexandre.lavallee@agnicoeagle.com | Mobile 819.860.0804
Agnico Eagle Mines Limited - Meadowbank Division, Suite 540 - Baker Lake, Nunavut, Canada X0C 0A0
agnicoeagle.com    

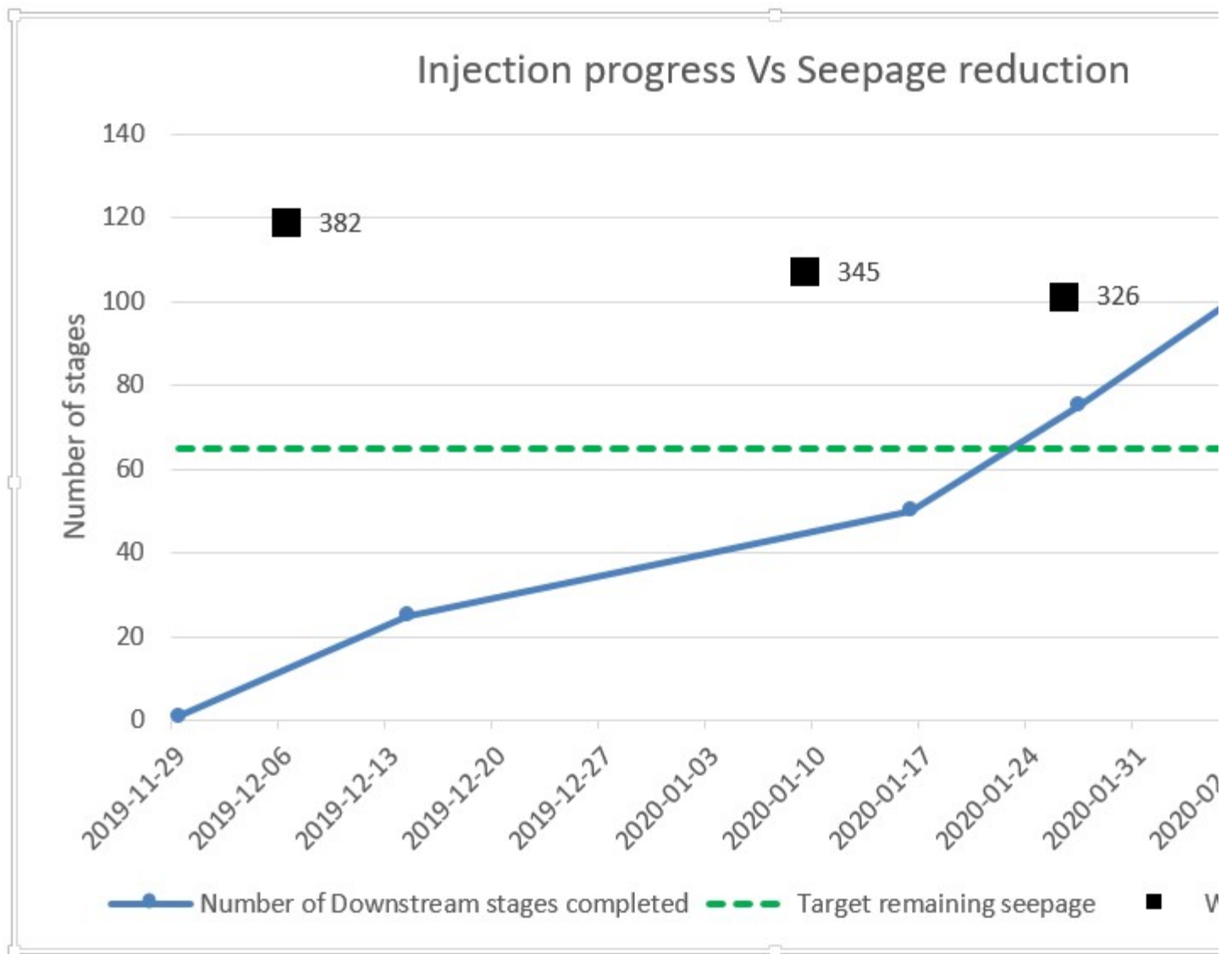
Saleem, Muhammad

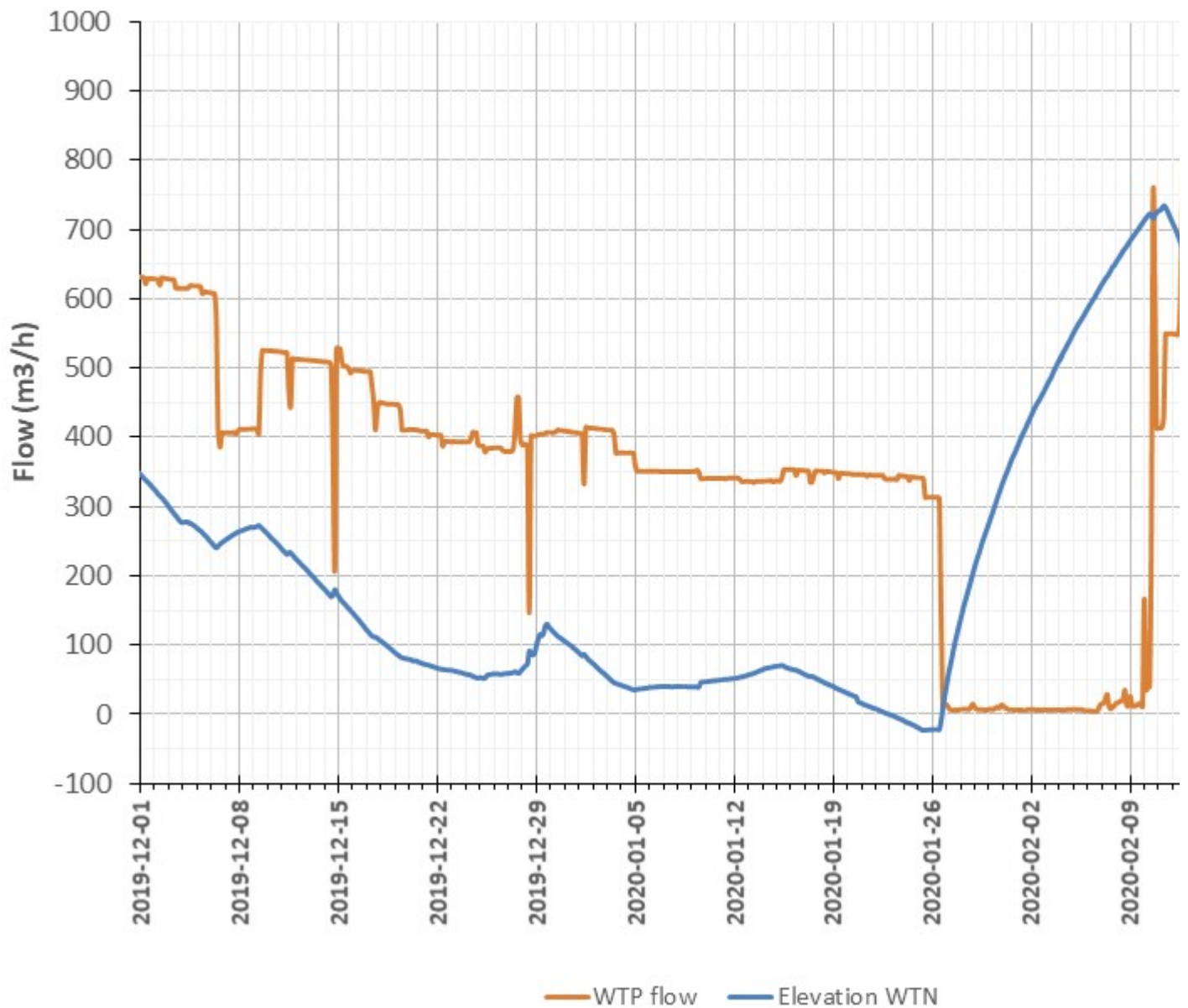
From: Alexandre Lavallee <alexandre.lavallee@agnicoeagle.com>
Sent: February 27, 2020 1:59 PM
To: Quan, Nina
Subject: WTD seepage rate

Hi Nina,

As discussed, see below.

Thanks,





Alexandre Lavallee, P. Eng. | Project Lead – Water Management Infrastructures – Construction Group
alexandre.lavallee@agnicoeagle.com | Mobile 819.860.0804
 Agnico Eagle Mines Limited - Meadowbank Division, Suite 540 - Baker Lake, Nunavut, Canada X0C 0A0
agnicoeagle.com    

Appendix H

Work Suspension Notification

WTD Remedial Drilling and Grouting As-Built Report		Original -V.00
2020/08/10	669034-0000-4GER-0001	Technical Report

From: Alexandre Lavallee <alexandre.lavallee@agnicoeagle.com>

Sent: March 25, 2020 9:46 AM

To: Quan, Nina <Nina.Quan@snclavalin.com>

Cc: Xue, Tom <Tom.Xue@snclavalin.com>; El Bensi, Abdellah <Abdellah.ElBensi@snclavalin.com>; Thomas Lepine <thomas.lepine@agnicoeagle.com>; Frederick Bolduc <frederick.bolduc@agnicoeagle.com>; Jesse Clark <jesse.clark@agnicoeagle.com>; Patrice Gagnon <patrice.gagnon@agnicoeagle.com>; Pier-Eric McDonald <pier-eric.mcdonald@agnicoeagle.com>; Alain Parent <alain.parent@agnicoeagle.com>; Nguyen, Anh-Long <Anh-Long.Nguyen@snclavalin.com>

Subject: Update - Injection

Hi Nina,

As discussed over the phone, understanding that the main goal of the whale tail dike injection was to reduce the risk of overwhelming the WTP at freshet 2020, we can now say, based on 1) current estimate of lower inferred seepage rate (+/-230 m3/h), 2) progress of piping installation and 3) contingency plans developed, that this risk has been reduced to an acceptable level for AEM. The possibility of continuing the injection work later in 2020 or 2021 will be evaluated as part of a broader tradeoff study later this summer.

The above arguments are sufficient, without even adding the COVID-19 situation, to recommended suspension of the injection work as of today.

Big thanks to all SNC team for their professionalism and cooperation throughout the project.

I will contact you shortly by email to see the plan for Paul and the as-built report strategy.

Thank you,

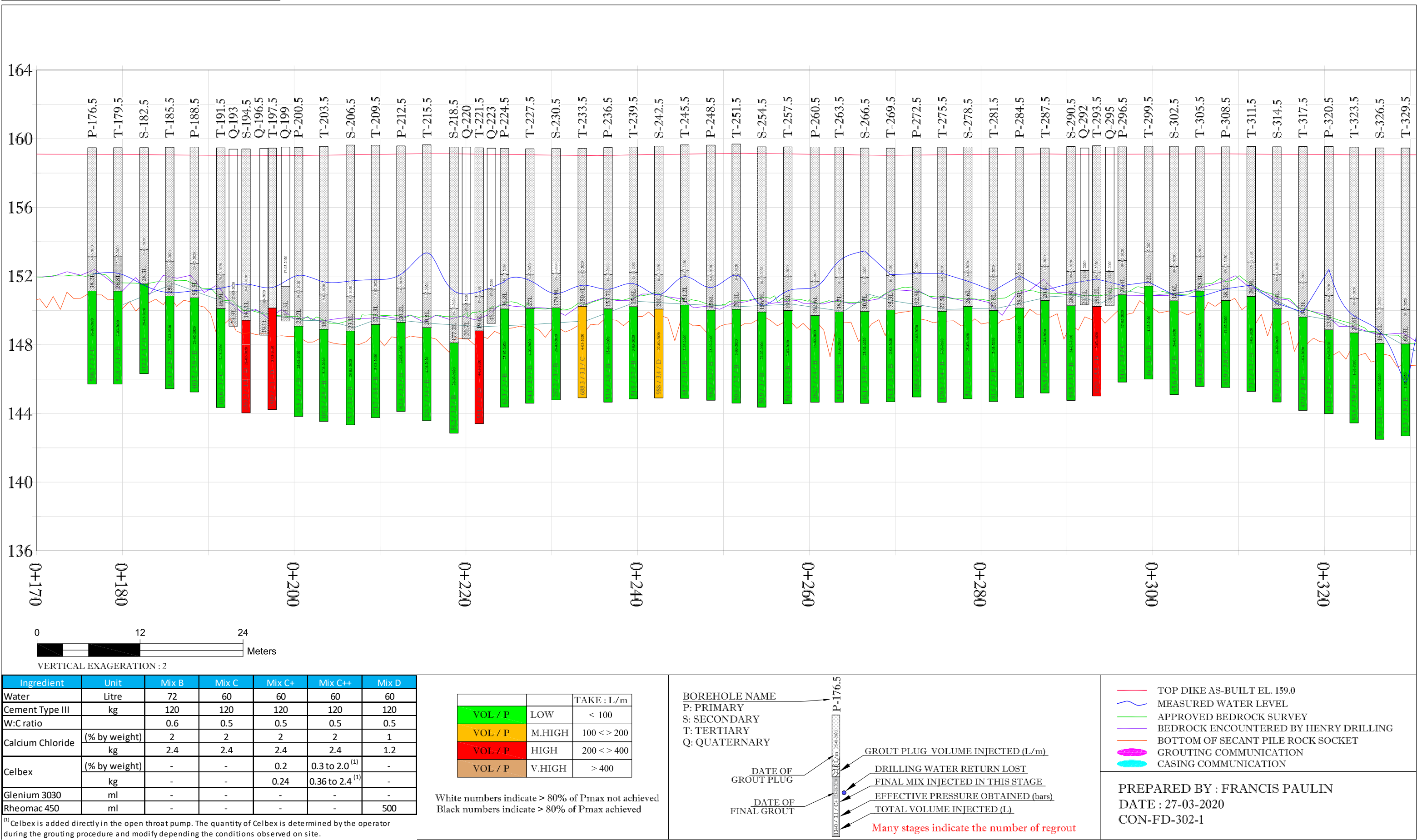


Alexandre Lavallee, P. Eng. | Project Lead – Water Management Infrastructures – Construction Group
alexandre.lavallee@agnicoeagle.com | Mobile 819.860.0804
Agnico Eagle Mines Limited - Meadowbank Division, Suite 540 - Baker Lake, Nunavut, Canada X0C 0A0
agnicoeagle.com    

Appendix I

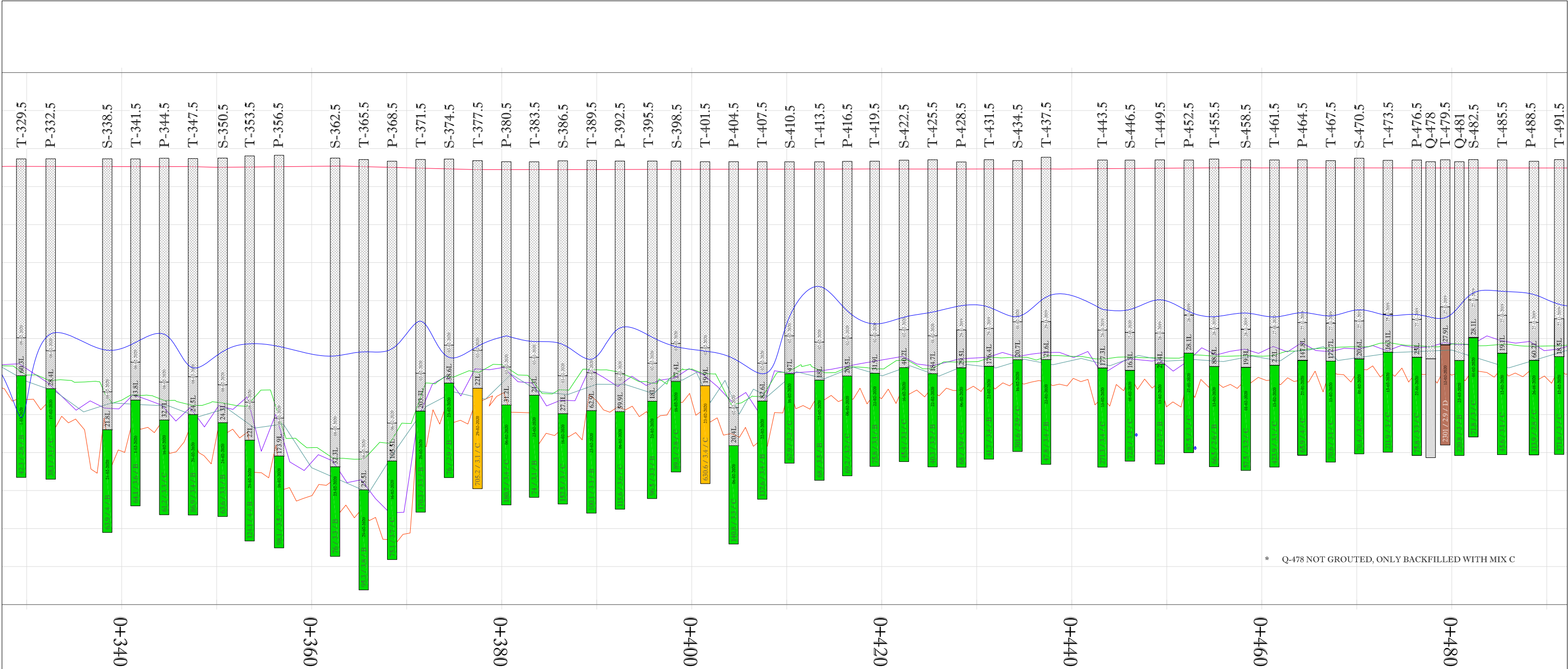
As-Built Drilling and Grouting Profile Drawings

WTD Remedial Drilling and Grouting As-Built Report		Original -V.00
2020/08/10	669034-0000-4GER-0001	Technical Report



INJECTION DOWNSTREAM PHASE 2 - AS-BUILT

WHALE TAIL DIKE CONSTRUCTION - CONTRACT # 11-811



Ingredient	Unit	Mix B	Mix C	Mix C+	Mix C++	Mix D
Water	Litre	72	60	60	60	60
Cement Type III	kg	120	120	120	120	120
W:C ratio		0.6	0.5	0.5	0.5	0.5
Calcium Chloride	(% by weight)	2	2	2	2	1
	kg	2.4	2.4	2.4	2.4	1.2
Celbex	(% by weight)	-	-	0.2	0.3 to 2.0 ⁽¹⁾	-
	kg	-	-	0.24	0.36 to 2.4 ⁽¹⁾	-
Glenium 3030	ml	-	-	-	-	-
Rheomac 450	ml	-	-	-	-	500

⁽¹⁾ Celbex is added directly in the open throat pump. The quantity of Celbex is determined by the operator during the grouting procedure and modify depending the conditions observed on site.

		TAKE : L/m
VOL / P	LOW	< 100
VOL / P	M.HIGH	100 <> 200
VOL / P	HIGH	200 <> 400
VOL / P	V.HIGH	> 400

White numbers indicate > 80% of Pmax not achieved
Black numbers indicate > 80% of Pmax achieved

BOREHOLE NAME
P: PRIMARY
S: SECONDARY
T: TERTIARY
Q: QUATERNARY

DATE OF GROUT PLUG

DATE OF FINAL GROUT

P-176.5

GROUT PLUG VOLUME INJECTED (L/m)

DRILLING WATER RETURN LOST

FINAL MIX INJECTED IN THIS STAGE

EFFECTIVE PRESSURE OBTAINED (bars)

TOTAL VOLUME INJECTED (L)

Many stages indicate the number of regROUT

TOP DIKE AS-BUILT EL. 159.0

MEASURED WATER LEVEL

APPROVED BEDROCK SURVEY

BEDROCK ENCOUNTERED BY HENRY DRILLING

BOTTOM OF SECANT PILE ROCK SOCKET

GROUTING COMMUNICATION

CASING COMMUNICATION

PREPARED BY : FRANCIS PAULIN

DATE : 27-03-2020

CON-FD-302-2



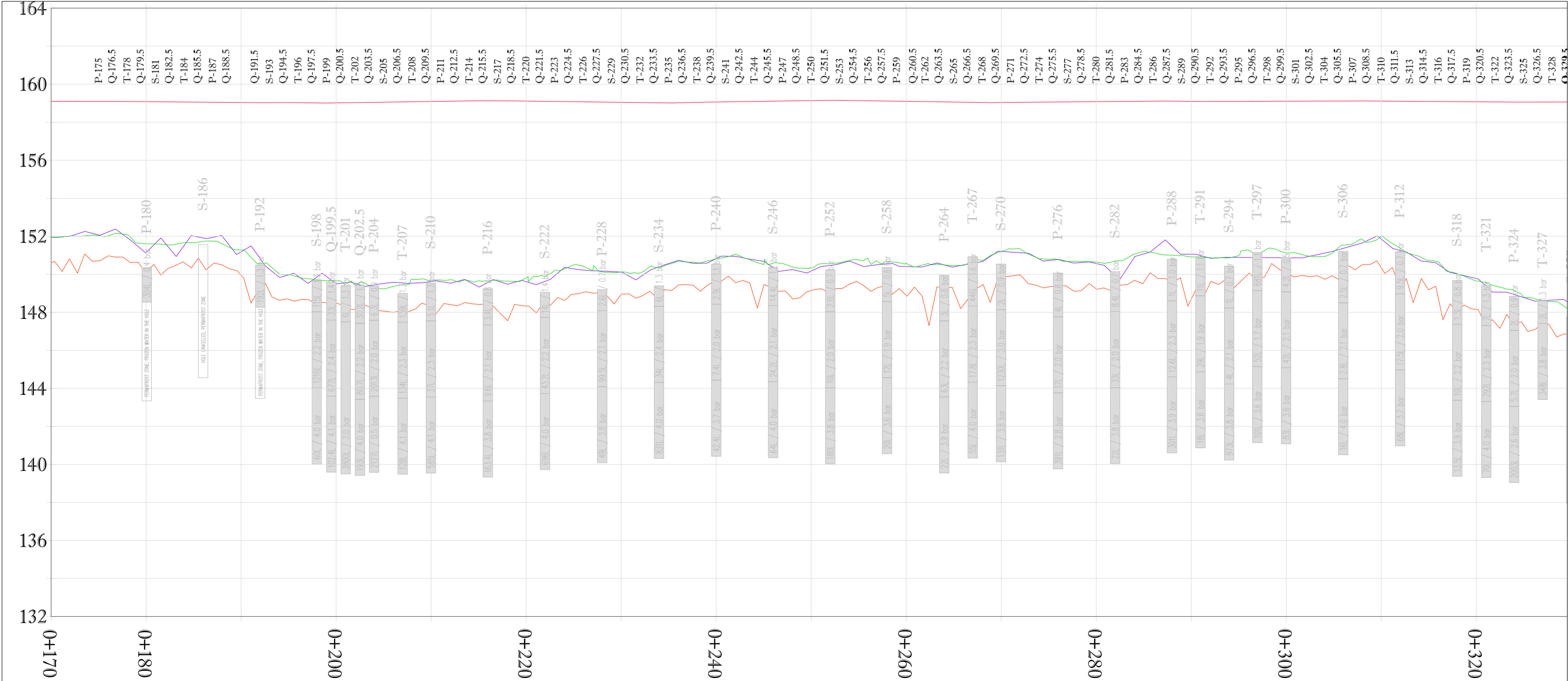
White numbers indicate > 80% of Pmax not achieved
Black numbers indicate > 80% of Pmax achieved

 TOP DIKE AS-BUILT EL. 159.0
 MEASURED WATER LEVEL
 APPROVED BEDROCK SURVEY
 BEDROCK ENCOUNTERED BY HENRY DRILLING
 BOTTOM OF SECANT PILE ROCK SOCKET
 GROUTING COMMUNICATION
 CASING COMMUNICATION

PREPARED BY : FRANCIS PAULIN
DATE : 27-03-2020
CON-FD-302-3

INJECTION UPSTREAM PHASE 2 - AS-BUILT

WHALE TAIL DIKE CONSTRUCTION - CONTRACT # 11-811

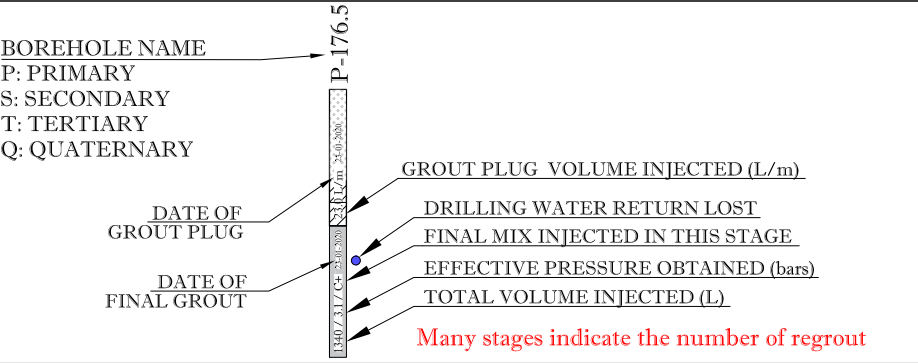


Ingredient	Unit	Mix B	Mix C	Mix C+	Mix C++	Mix D
Water	Litre	72	60	60	60	60
Cement Type III	kg	120	120	120	120	120
W:C ratio		0.6	0.5	0.5	0.5	0.5
Calcium Chloride	(% by weight)	2	2	2	2	1
	kg	2.4	2.4	2.4	2.4	1.2
Celbex	(% by weight)	-	-	0.2	0.3 to 2.0 ⁽¹⁾	-
	kg	-	-	0.24	0.36 to 2.4 ⁽¹⁾	-
Glenium 3030	ml	-	-	-	-	-
Rheomac 450	ml	-	-	-	-	500

⁽¹⁾ Celbex is added directly in the open throat pump. The quantity of Celbex is determined by the operator during the grouting procedure and modify depending the conditions observed on site.

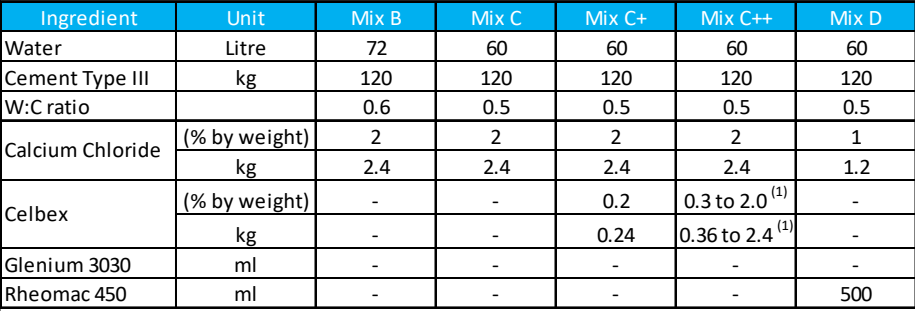
		TAKE : L/m
VOL / P	LOW	< 100
VOL / P	M.HIGH	100 >> 200
VOL / P	HIGH	200 >> 400
VOL / P	V.HIGH	> 400

White numbers indicate > 80% of Pmax not achieved
Black numbers indicate > 80% of Pmax achieved



- TOP DIKE AS-BUILT EL. 159.0
- MEASURED WATER LEVEL
- APPROVED BEDROCK SURVEY
- BEDROCK ENCOUNTERED BY HENRY DRILLING
- BOTTOM OF SECANT PILE ROCK SOCKET
- GRROUTING COMMUNICATION
- CASING COMMUNICATION

PREPARED BY : FRANCIS PAULIN
DATE : 26-03-2020
CON-FD-303-1



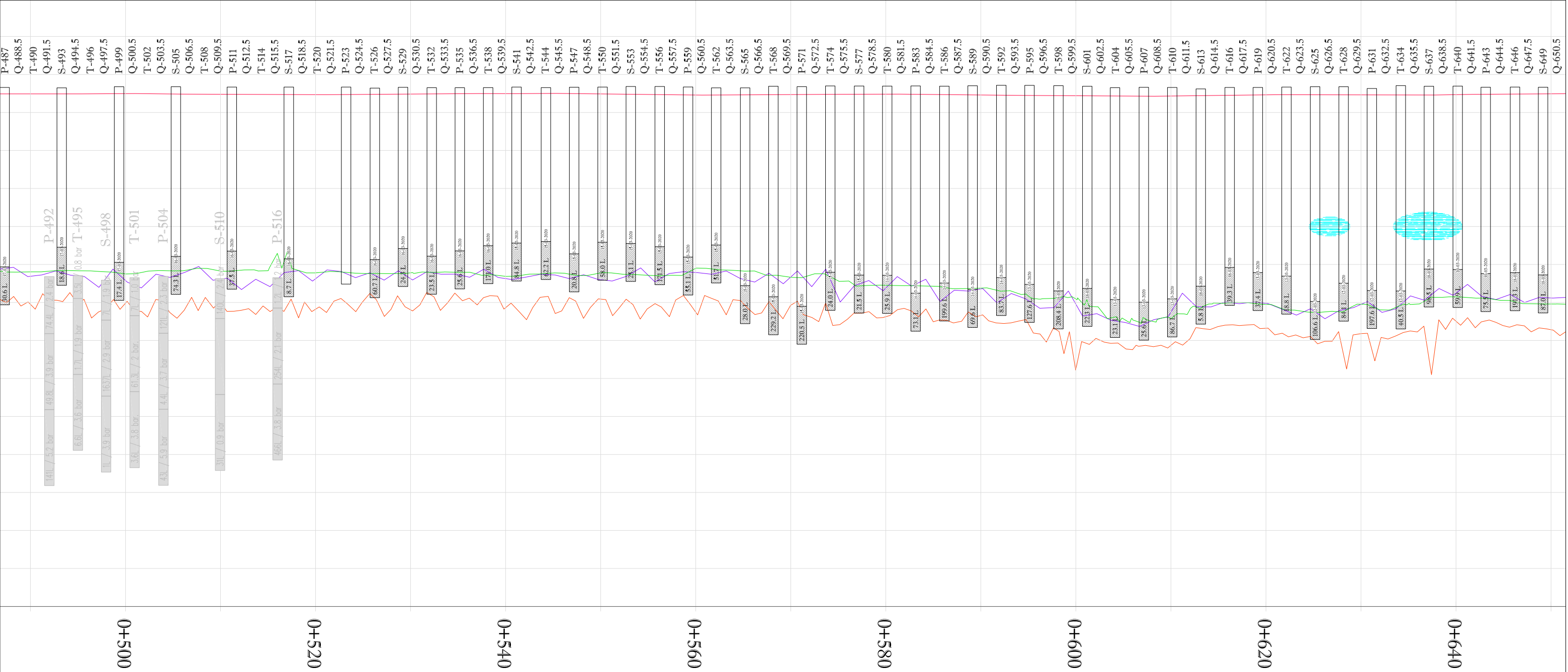
White numbers indicate > 80% of Pmax not achieved
Black numbers indicate > 80% of Pmax achieved

[illegible]

- PREPARED BY : FRANCIS PAULIN
DATE : 26-03-2020
CON-FD-303-2



INJECTION UPSTREAM PHASE 2 - AS-BUILT
WHALE TAIL DIKE CONSTRUCTION - CONTRACT # 11-811

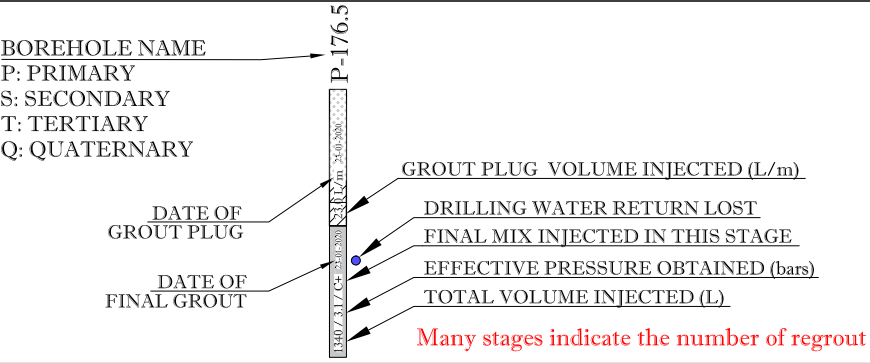


Ingredient	Unit	Mix B	Mix C	Mix C+	Mix C++	Mix D
Water	Litre	72	60	60	60	60
Cement Type III	kg	120	120	120	120	120
W:C ratio		0.6	0.5	0.5	0.5	0.5
Calcium Chloride	(% by weight)	2	2	2	2	1
	kg	2.4	2.4	2.4	2.4	1.2
Celbex	(% by weight)	-	-	0.2	0.3 to 2.0 ⁽¹⁾	-
	kg	-	-	0.24	0.36 to 2.4 ⁽¹⁾	-
Glenium 3030	ml	-	-	-	-	-
Rheomac 450	ml	-	-	-	-	500

⁽¹⁾ Celbex is added directly in the open throat pump. The quantity of Celbex is determined by the operator during the grouting procedure and modify depending the conditions observed on site.

		TAKE : L/m
VOL / P	LOW	< 100
VOL / P	M.HIGH	100 >> 200
VOL / P	HIGH	200 >> 400
VOL / P	V.HIGH	> 400

White numbers indicate > 80% of Pmax not achieved
Black numbers indicate > 80% of Pmax achieved



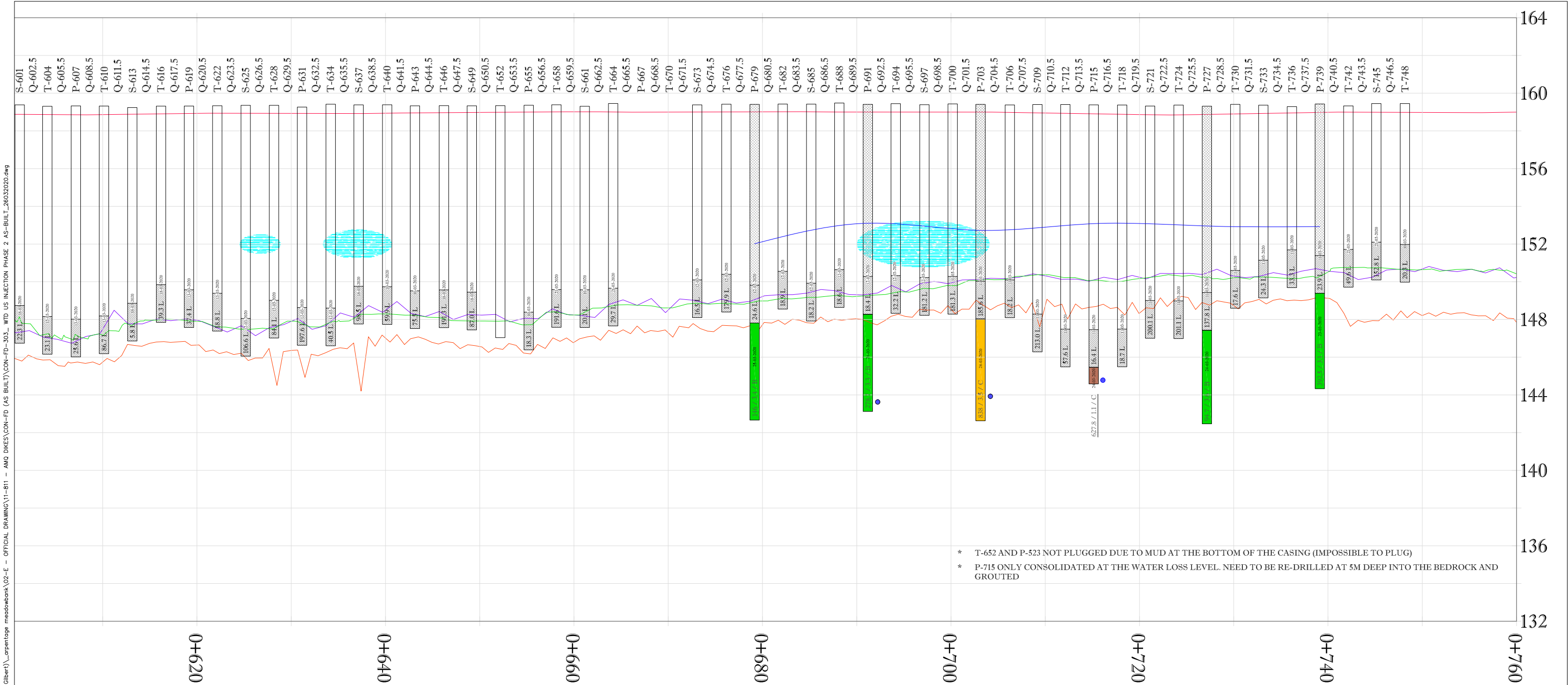
- TOP DIKE AS-BUILT EL. 159.0
- MEASURED WATER LEVEL
- APPROVED BEDROCK SURVEY
- BEDROCK ENCOUNTERED BY HENRY DRILLING
- BOTTOM OF SECANT PILE ROCK SOCKET
- GROUTING COMMUNICATION
- CASING COMMUNICATION

PREPARED BY : FRANCIS PAULIN
DATE : 26-03-2020
CON-FD-303-3

INJECTION UPSTREAM PHASE 2 - AS-BUILT

WHALE TAIL DIKE CONSTRUCTION - CONTRACT # 11-811

C:\Users\arpenteur\Dropbox (Groupe Gilbert)_arpentage meadowbank 02-E - OFFICIAL DRAWING\11-811 - AMO DIKES\CON-FD (AS BUILT)\CON-FD-303_ WTD US INJECTION PHASE 2 AS-BUILT_26032020.dwg

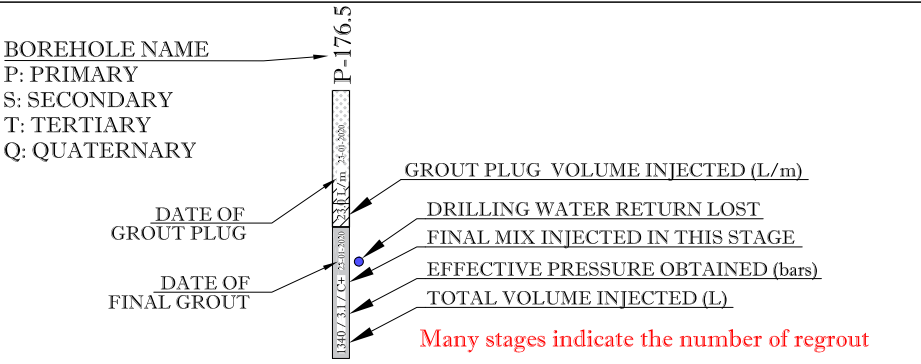


Ingredient		Unit	Mix B	Mix C	Mix C+	Mix C++	Mix D
Water		Litre	72	60	60	60	60
Cement Type III		kg	120	120	120	120	120
W:C ratio			0.6	0.5	0.5	0.5	0.5
Calcium Chloride	(% by weight)		2	2	2	2	1
	kg		2.4	2.4	2.4	2.4	1.2
Celbex	(% by weight)		-	-	0.2	0.3 to 2.0 ⁽¹⁾	-
	kg		-	-	0.24	0.36 to 2.4 ⁽¹⁾	-
Glenium 3030		ml	-	-	-	-	-
Rheomac 450		ml	-	-	-	-	500

⁽¹⁾ Celbex is added directly in the open throat pump. The quantity of Celbex is determined by the operator during the grouting procedure and modify depending the conditions observed on site.

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VOL / P	LOW	< 100
VOL / P	M.HIGH	100 < > 200
VOL / P	HIGH	200 < > 400
VOL / P	V.HIGH	> 400

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Black numbers indicate > 80% of Pmax achieved



- TOP DIKE AS-BUILT EL. 159.0
- MEASURED WATER LEVEL
- APPROVED BEDROCK SURVEY
- BEDROCK ENCOUNTERED BY HENRY DRILLING
- BOTTOM OF SECANT PILE ROCK SOCKET
- GROUTING COMMUNICATION
- CASING COMMUNICATION

PREPARED BY : FRANCIS PAULIN
DATE : 26-03-2020
CON-FD-303-4