



December 19th, 2018

Richard Dwyer
Manager of Licensing
Nunavut Water Board
P.O Box 119
Gjoa Haven, NU X0B 1J0

Re: Agnico Eagle Mines – Meadowbank Division Responses to Whale Tail WRSF, NPAG and Overburden Stockpile Design Report Comments

Dear Mr. Dwyer,

As requested, the following responses are intended to address the comments made in the below letter:

- CIRNAC – December 7, 2018, Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) comments on Agnico Eagle Mines Limited's (AEM's) Waste Rock Storage Facility (WRSF), Non-Potentially Acid Generating (NPAG) Stockpile and Overburden Stockpile Design Report and Drawings – Whale Tail Pit Project under AEM's Type "A" Water Licence No. 2AM-WTP1826.

Should you have any questions or require further information, please do not hesitate to contact me.

Best regards,

Marie-Pier Marcil
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819-759-3555 x5836
Senior Compliance Technician



1 Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC)

1.1 Drawing: Whale Tail WRSF Layout

Reference: Appendix A: Project Site Layout

Comment 1: On the provided site layout, we noted the legend for a temporary road. AEM is to clarify the purpose of this road. We assume it will be built and used to facilitate the construction of the WRSF. We do not see any construction narratives describing how the indicated road will be put in place.

AEM is to provide adequate construction drawings for the installation of the temporary road in the design report if required.

Agnico Eagle's Response:

The surrounding road around the WRSF will actually be a permanent construction to ease visual inspection of the WRSF toe and construct the WRSF saddle dam (if required). The road towards the Communication tower will also be permanent. The legend of the layout should not have mentioned "temporary". As per Water License 2AM-WTP1826 Part D Item 1, Agnico does not plan to produce or submit a construction drawing for these roads as they are not and will not contain water management infrastructure.

1.2 Permafrost

Reference: Section 2.6

Comment 2: AEM's design report states "the typical depth of the active layer is 2 m in this region of Canada. The typical permafrost ground temperatures at the depths of zero annual amplitude (typically at the depth of below 15 m) is approximately -8.0 °C in areas away from lakes and streams." CIRNAC requests the thermistor details and temperature profile be provided for the aforementioned measurements at the Whale Tail Pit site.

Agnico Eagle's Response:

A memo summarizing the thermal monitoring program at Whale Tail Pit Project from the period of 2015 to 2018 is presented in Appendix 1. Find below selected thermal profiles from this memo that specifically provide answers related to the zero annual amplitude and the permafrost temperature (-8 °C). As for the active layer depth, this will vary depending on the material. The 2 meters mentioned refers to natural overburden. The FEIS documents mention that: "the depth of the active layer ranges from about 1.3 m in areas with shallow overburden, up to about 4 m adjacent to lakes". (FEIS Appendix 5 –A: Terrain, Permafrost, and Soils Baseline Report) Coarser rockfill material (WRSF) will have a deeper active layer due to additional warm convective airflow during summer.

AMQ15-324: This 300 meters depth thermistor, installed west of the lake, provides a good example of a thermal profile away from lakes and streams. As shown in the profile, temperatures reach approximately -8.0 °C at elevation 10 150 (150 m.a.s.l.).

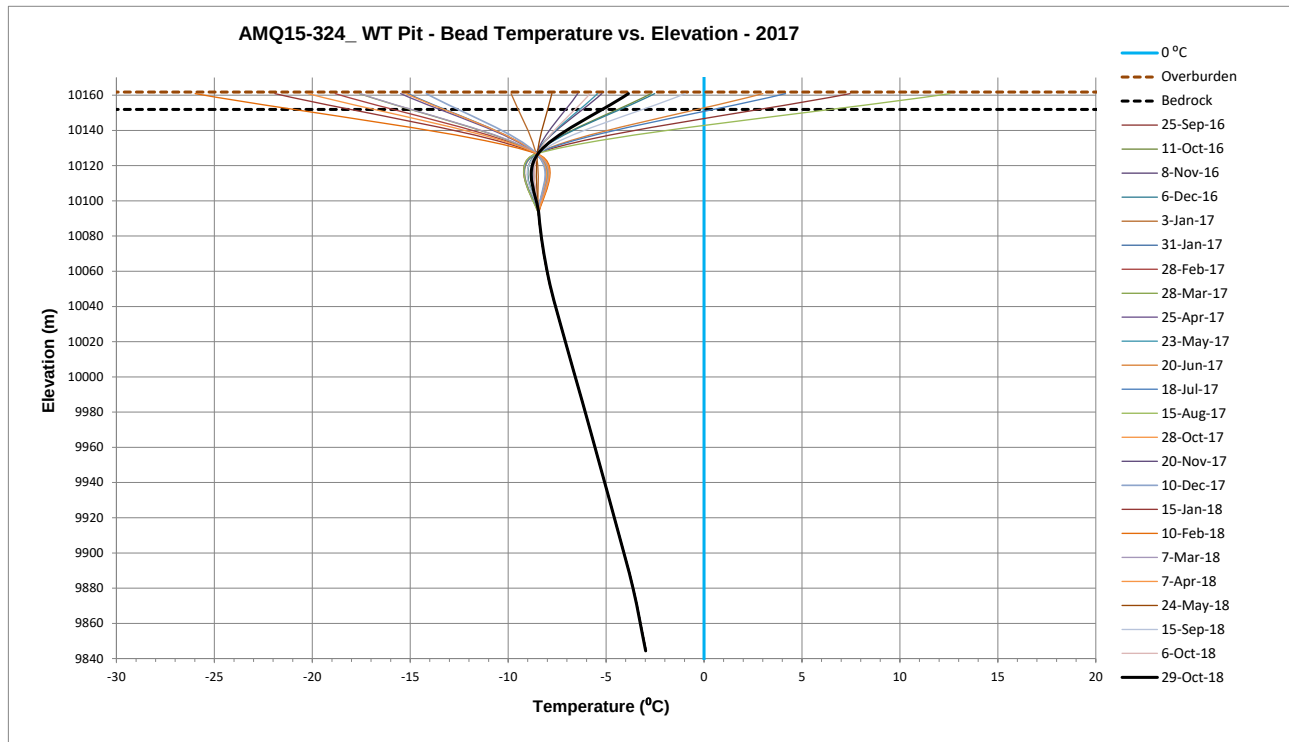


Figure 1: AMQ15-324 thermal profile

AMQ15-294: This thermistor shows the zero annual amplitude of approximately 19m (from 10 155 to 10 136).

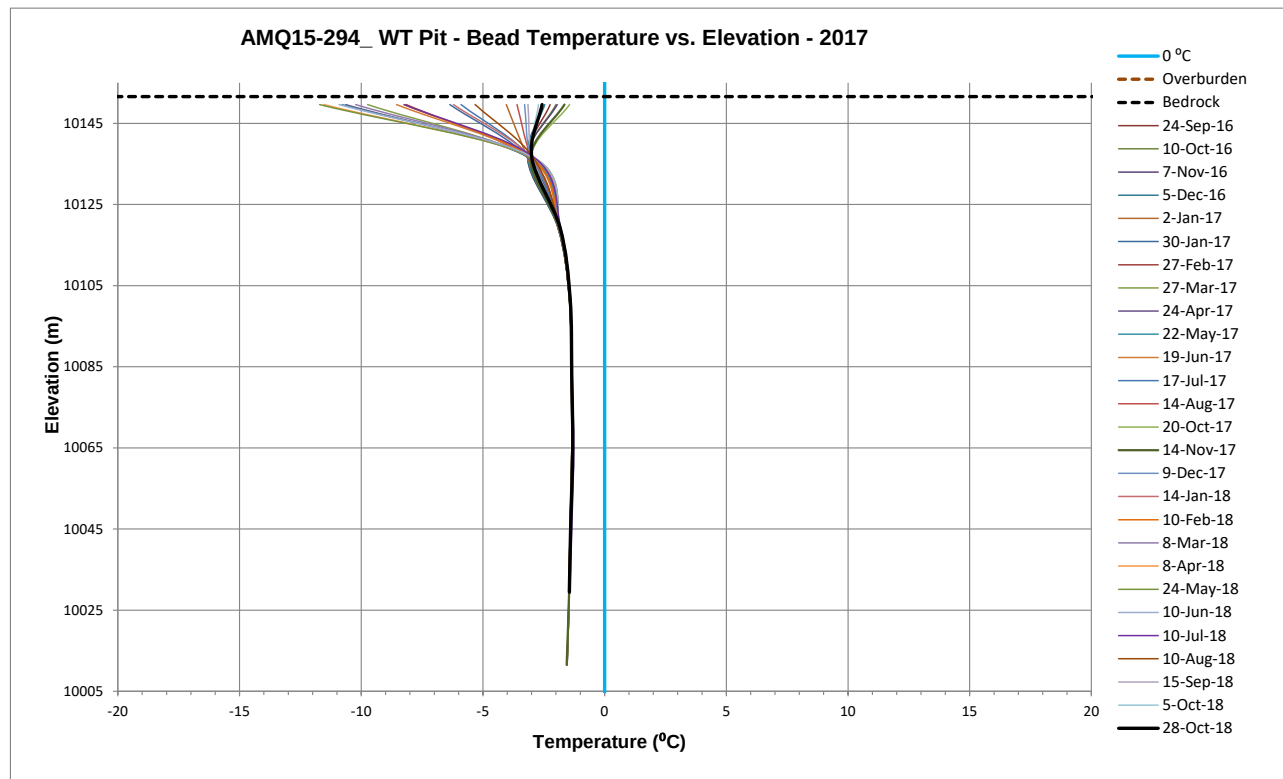


Figure 2: AMQ15-294 thermal profile

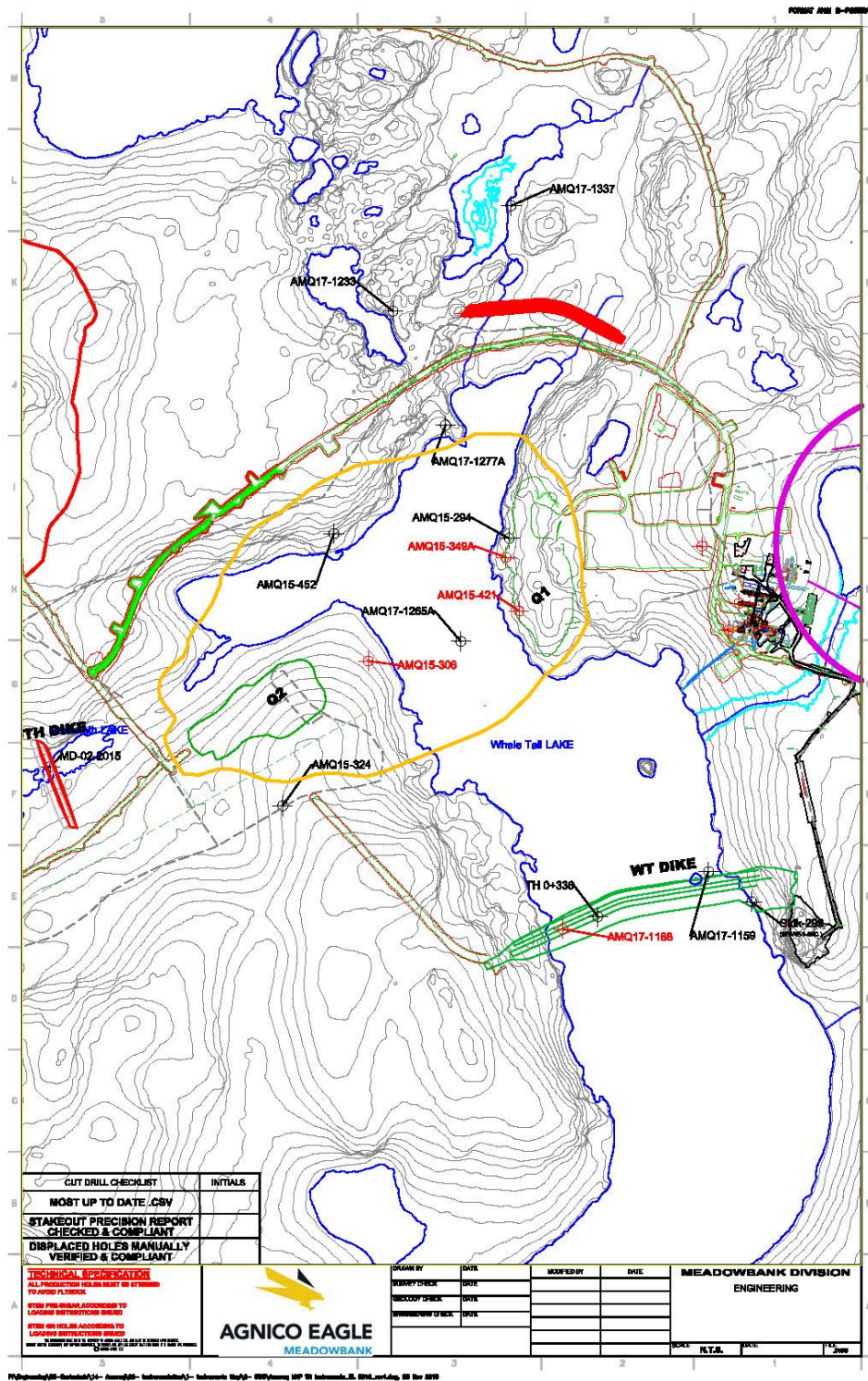


Figure 3: Site layout showing all thermistor around Whale tail pit site



1.3 Access Roads Instrumentation during construction & closure/postclosure

Reference: Section 4.6.1 & 4.6.2

Comment 3: AEM's design report states "an adaptive monitoring strategy will be implemented in which the decision to install additional thermistor in operation will be based on the analysis of the results of the thermal monitoring program." CIRNAC requests further details on what temperature, depths and timing would trigger the decision to install additional thermistors and/or signal the WRSF design is not performing as intended.

Agnico Eagle's Response:

Agnico intends to evaluate WRSF freeze-back performance by monitoring thermistor strings, and collecting water quality data which will be compared against sensitivity and 'base case' freeze-back modelling, and site-wide load balance modelling. The results of the performance and monitoring will be presented within the Annual Report.

It is expected that a range of freeze-back performance will occur due to inherent variability in construction technique, physical material properties and chemical material properties. Significant divergence of in situ measurements outside of the range of expected and acceptable variability from the numerical model will be evaluated to determine potential impact on closure and additional monitoring and/or mitigations required.

Specifically, should daily temperature readings of thermistors located at the interface of the waste rock and thermal cover system indicate that the waste rock is not frozen, resulting in water quality exceedances beyond permitted values in the WRSF collection ponds or groundwater monitoring prior to post-closure, these will trigger the installation of additional monitoring and/or mitigation to reduce uncertainty in variability and reducing the overall risk to water quality. This overall performance will be based on the integration of the various monitoring data used as model inputs.



APPENDIX 1

Memo - Summary of Thermal monitoring at Amaruq Site from 2015-2018



AGNICO EAGLE Memo

From: Bruno Lessard

CC: Frederick Bolduc and Alexandre Lavallee

Date: November 28th 2018

Subject: Summary of Thermal monitoring at Amaruq Site from 2015-2018

This document present a summary of the thermal monitoring at the Amaruq project from 2015 to 2018. During that period, thermistor strings were installed around the Amaruq site to support various studies for the construction of the different infrastructures of the project.

A total of 15 boreholes for thermistors were installed between May 2015 and November 2018. 11 of the installation are still functional and continue to be monitored on a bi-weekly basis, either manually or with Dataloggers.

Figure 1 show a plan view of the location of the thermistors installed between May 2015 and November 2018.

Table 1 present the thermistors installation, their coordinate and their status.

Figure 2 to 16 present the thermistors data, either active or not. For clarity purpose, a representative numbers of readings (approximatively once per month) for the reference period are presented.

Table 1: Permanent and temporary thermistors installation coordinates and status

<i>Name</i>	<i>Area</i>	<i>Easting (X)</i>	<i>Northing (Y)</i>	<i>Elevation (Z)</i>	<i>Azimuth</i>	<i>Dip</i>	<i>Installed</i>	<i>Active (Y) or (N)</i>
AMQ17-1159	WTD	607580.20	7254827.60	152.56	--	-90	2017	Y
AMQ17-1188	WTD	607209.90	7254681.30	151.76	--	-90	2017	N
WTD_TH-0+336	WTD	607298.44	7254713.44	157.00	--	-90	2018	Y
Stkd299	WTD	607689.94	7254751.01	153.74	--	-90	2017	Y
MD-02-2015	MD	605906.10	7255094.50	152.27	--	-90	2015	Y
AMQ15-294	WTP	607073.20	7255676.10	155.93	322.67	-45.18	2015	Y
AMQ15-349 A	WTP	607064.90	7255627.50	155.30	204.41	-45.32	2015	N
AMQ15-421	WTP	607098.30	7255490.80	155.09	273.93	-51.31	2015	N
AMQ15-306	WTP	606714.80	7255363.80	154.92	96.30	-45.41	2015	N
AMQ15-324	WTP	606496.80	7254995.20	161.79	323.41	-55.46	2015	Y
AMQ15-452	WTP	606627.20	7255687.90	156.16	159.5	-49.98	2015	Y
AMQ17-1265 A (2)	WTP	606950.00	7255414.00	140.00	196.03	-79.99	2017	Y
AMQ17-1277 A	WTP	606911.00	7255964.00	153.00	193.06	-60.17	2017	Y
AMQ17-1337	IVR	607078.00	7256522.00	155.00	260.37	-59.62	2017	Y
AMQ17-1233	IVR	606778.00	7256254.00	162.00	252.71	-59.06	2017	Y



AGNICO EAGLE

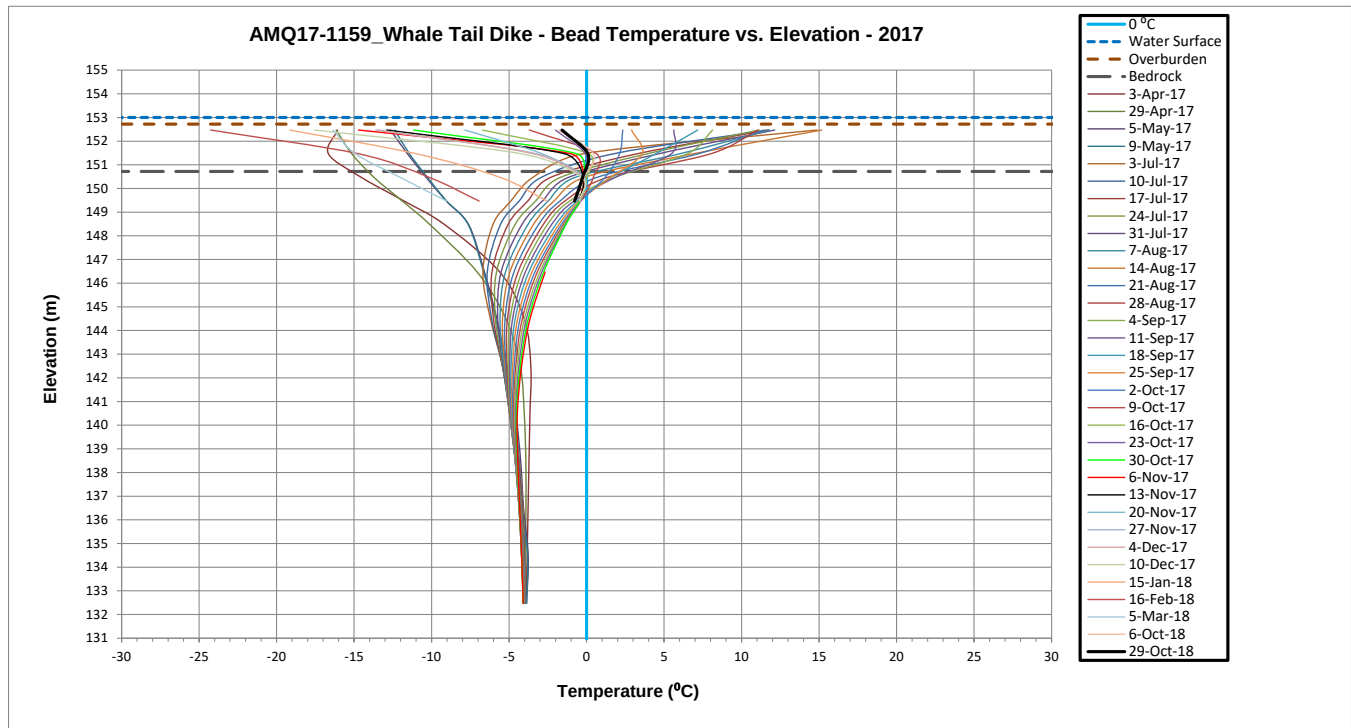


Figure 2: Temperature profile (Celsius) as a function of elevation (masl) from installation to October 2018 for thermistor AMQ17-1159

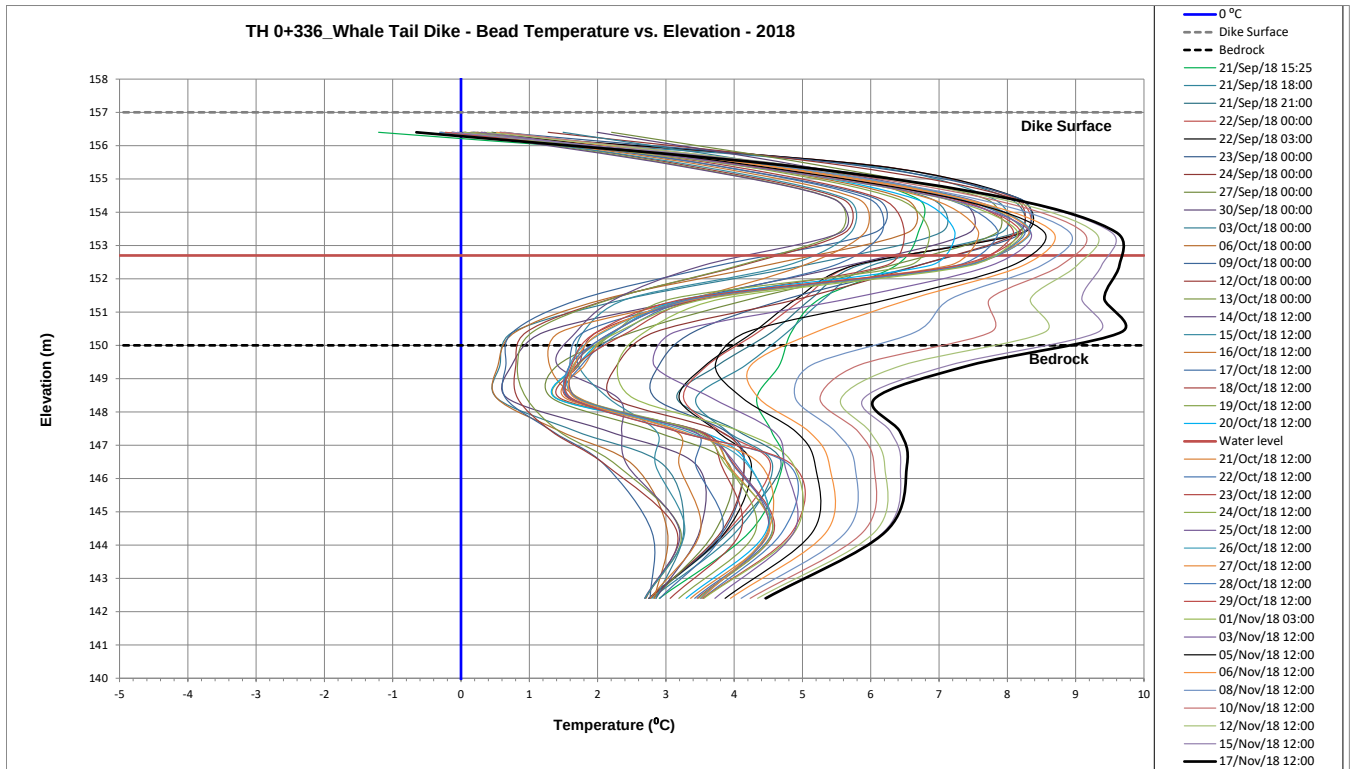


Figure 3: Temperature profile (Celsius) as a function of elevation (masl) from installation to November 2018 for thermistor TH 0+336

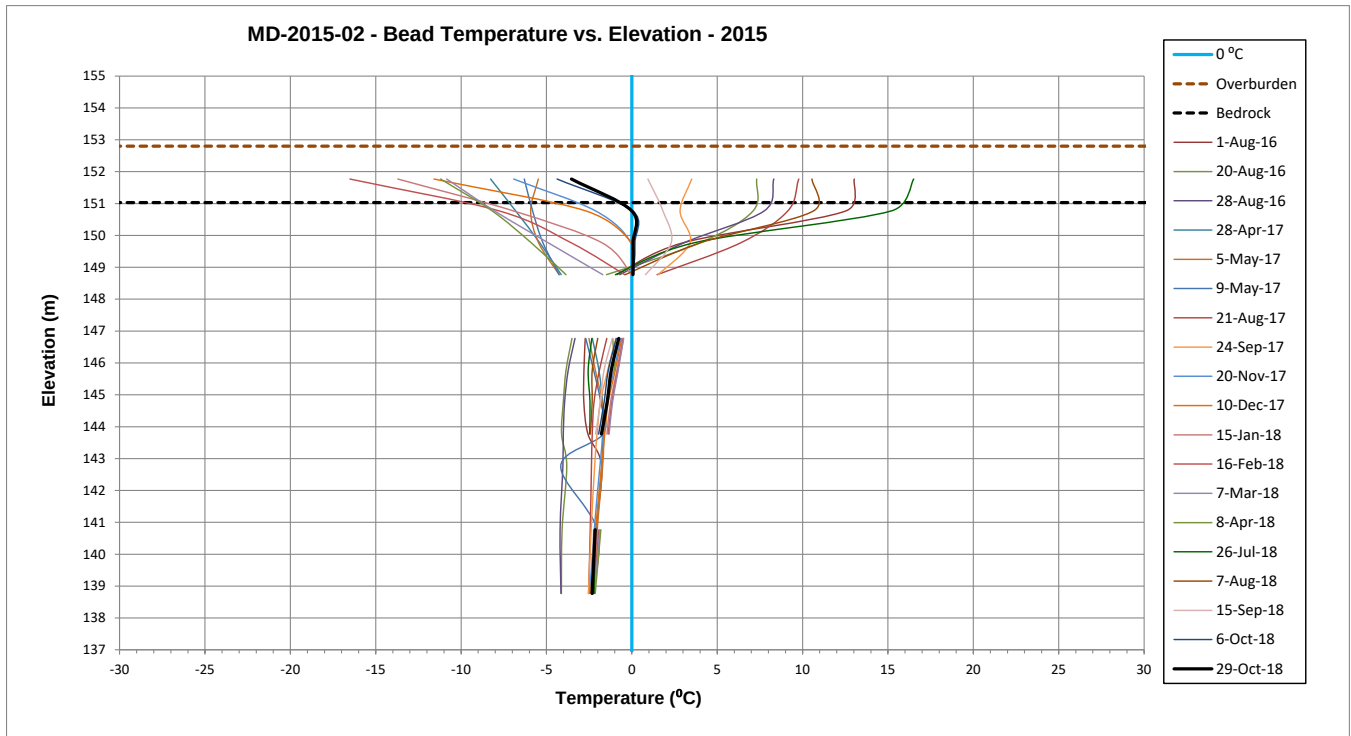


Figure 4: Temperature profile (Celsius) as a function of elevation (masl) from installation to October 2018 for thermistor MD-2015-02

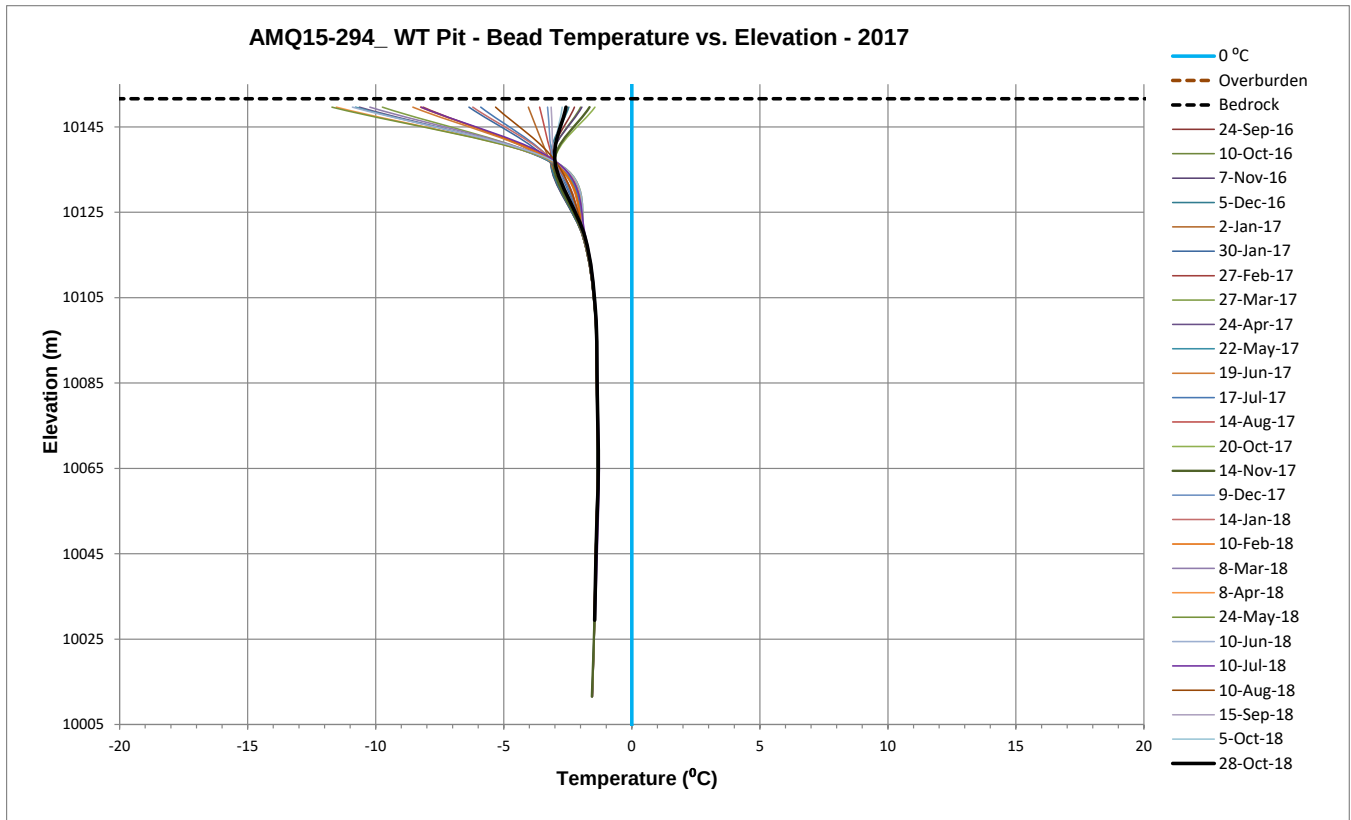


Figure 5: Temperature profile (Celsius) as a function of elevation (masl) from installation to October 2018 for thermistor AMQ15-294

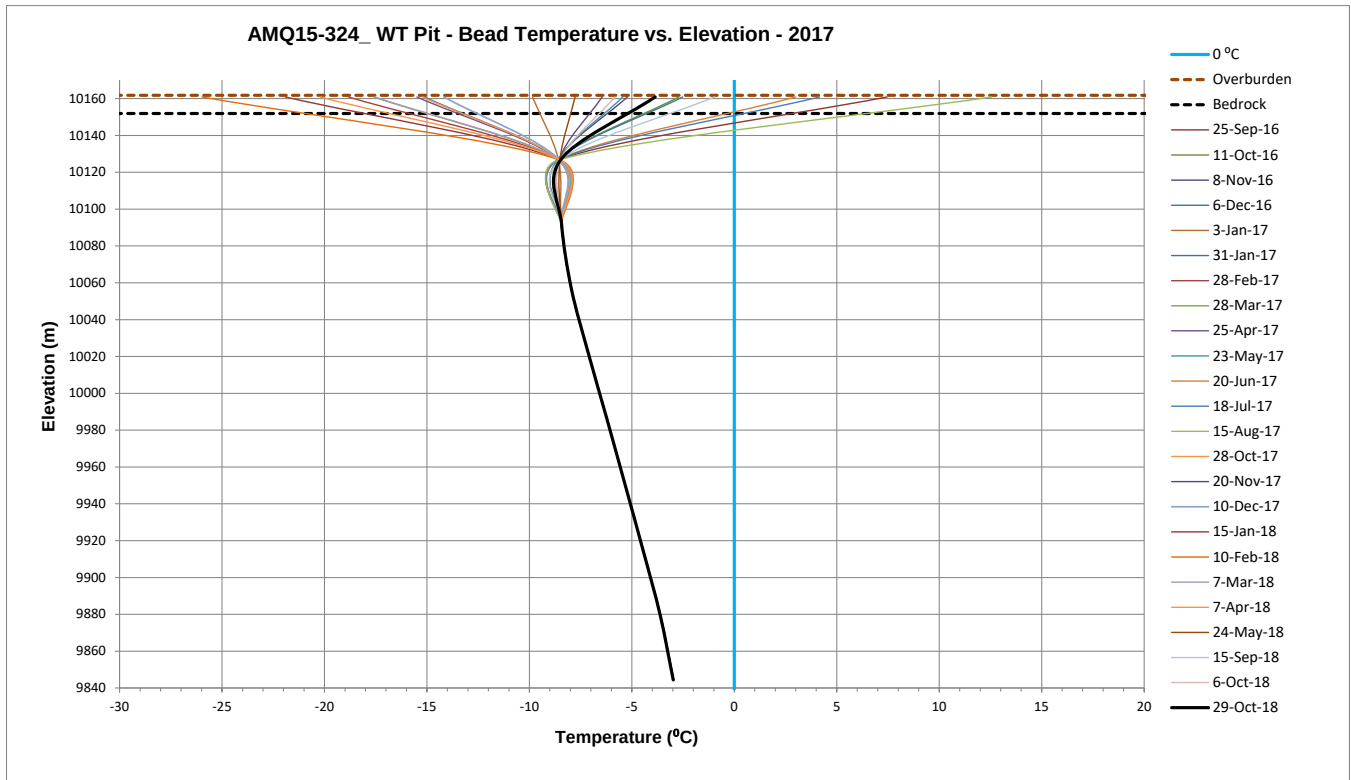


Figure 6: Temperature profile (Celsius) as a function of elevation (masl) from installation to October 2018 for thermistor AMQ15-324

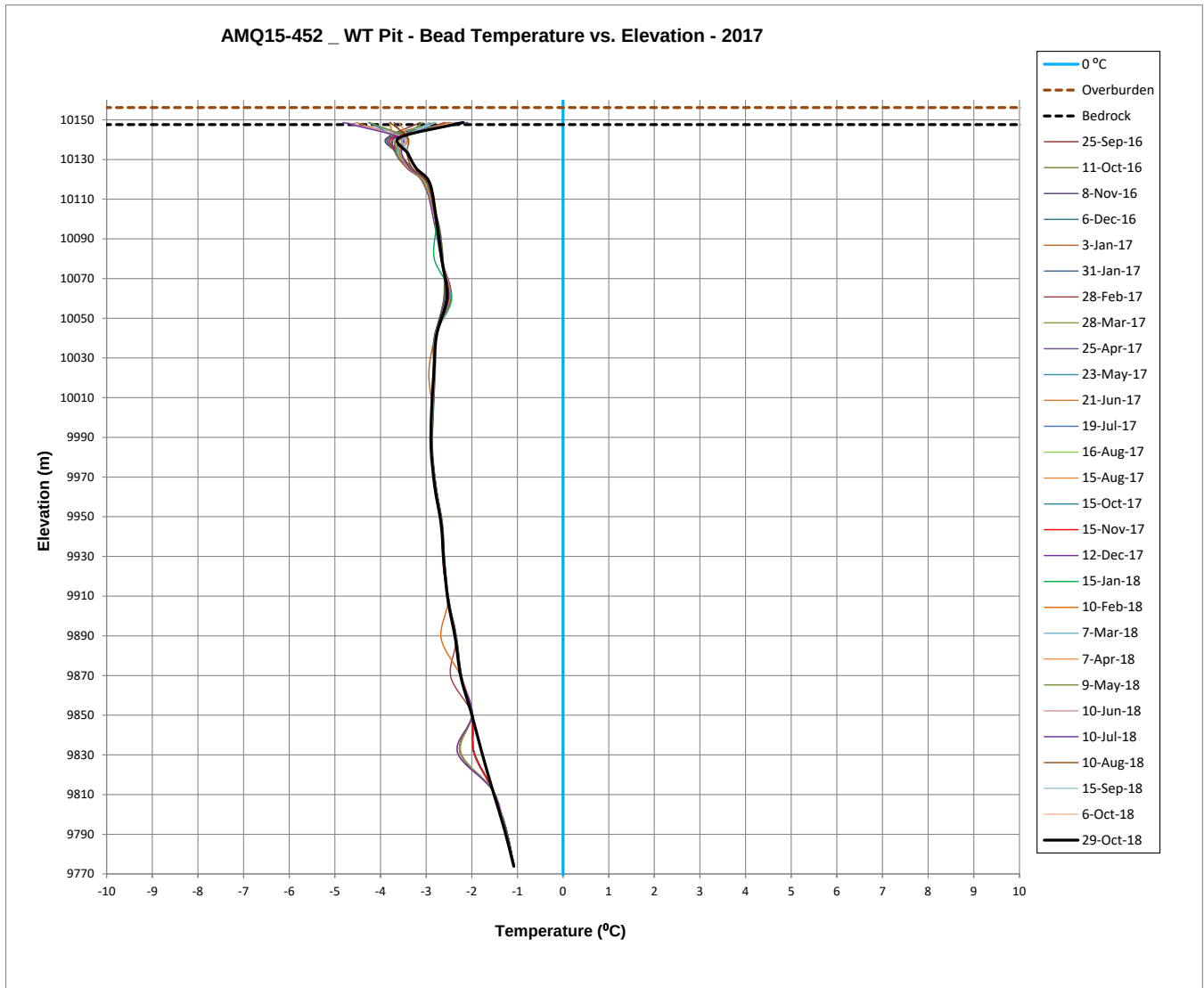


Figure 7: Temperature profile (Celsius) as a function of elevation (masl) from installation to October 2018 for thermistor AMQ15-452

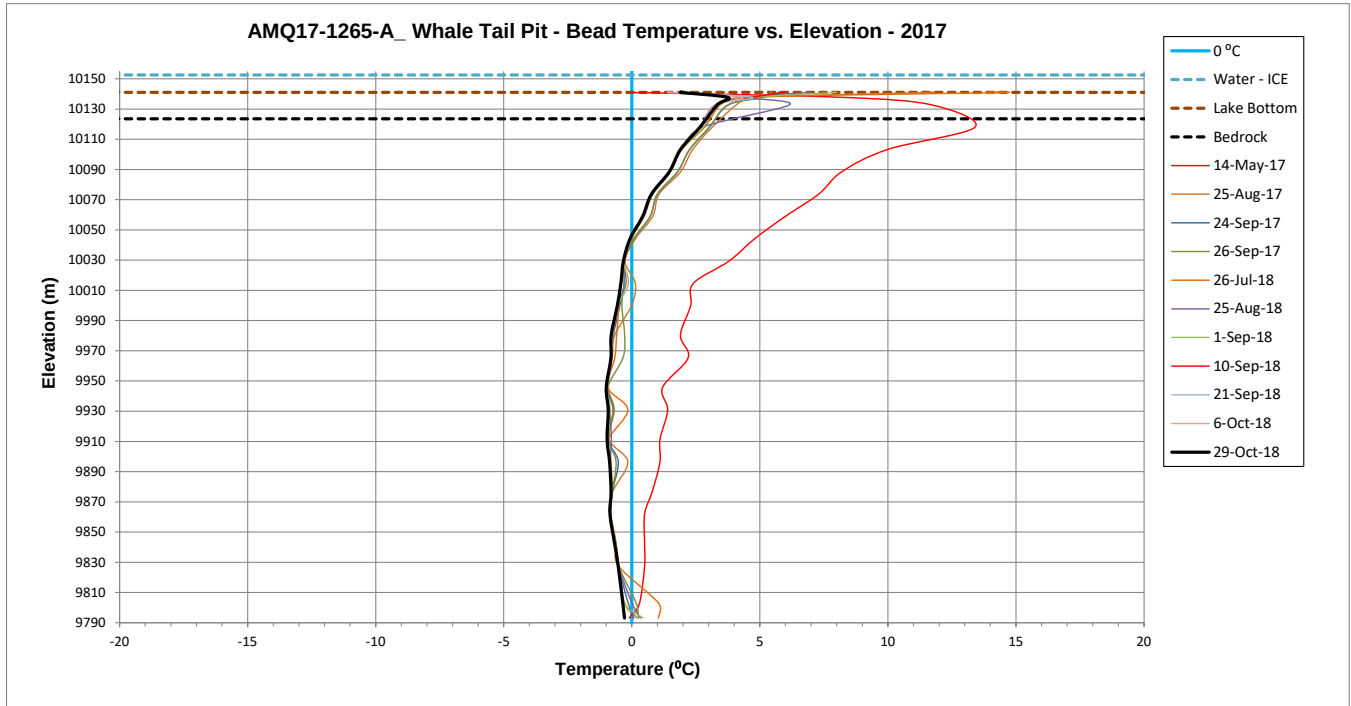


Figure 8: Temperature profile (Celsius) as a function of elevation (masl) from installation to October 2018 for thermistor AMQ17-1265A

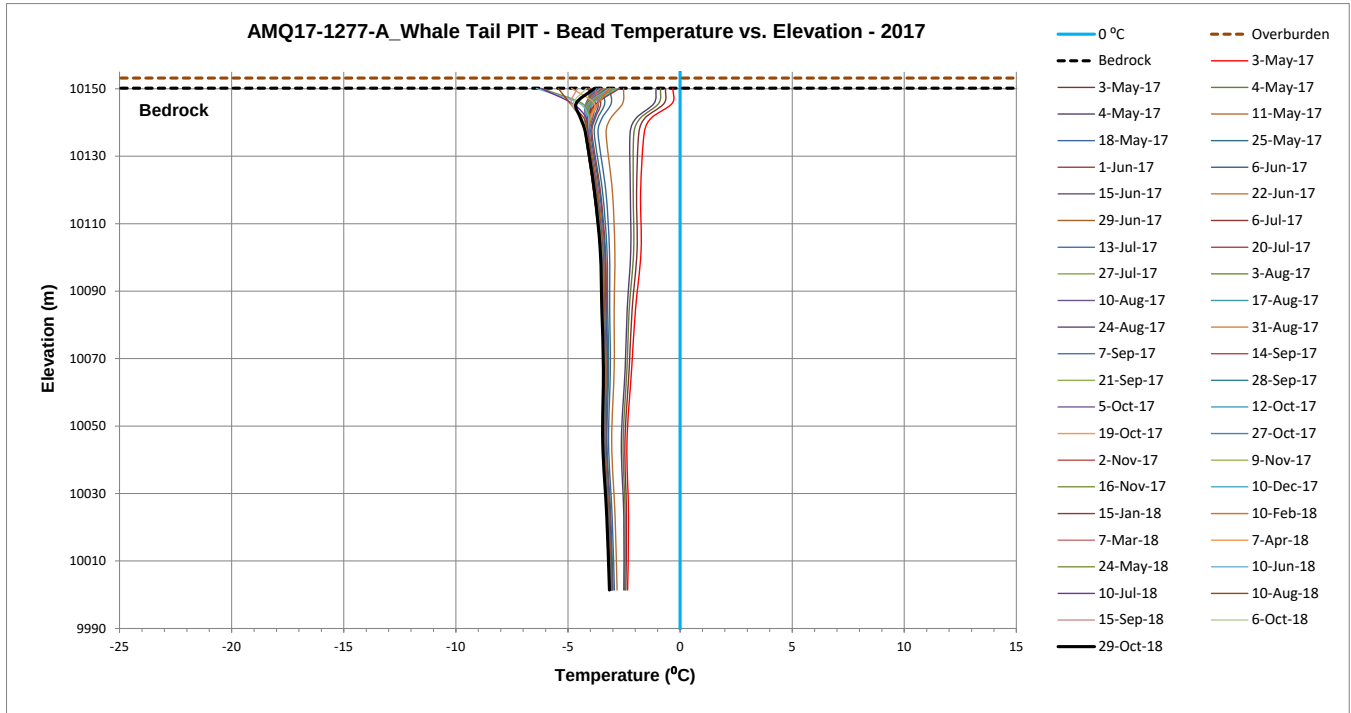


Figure 9: Temperature profile (Celsius) as a function of elevation (masl) from installation to October 2018 for thermistor AMQ17-1277A

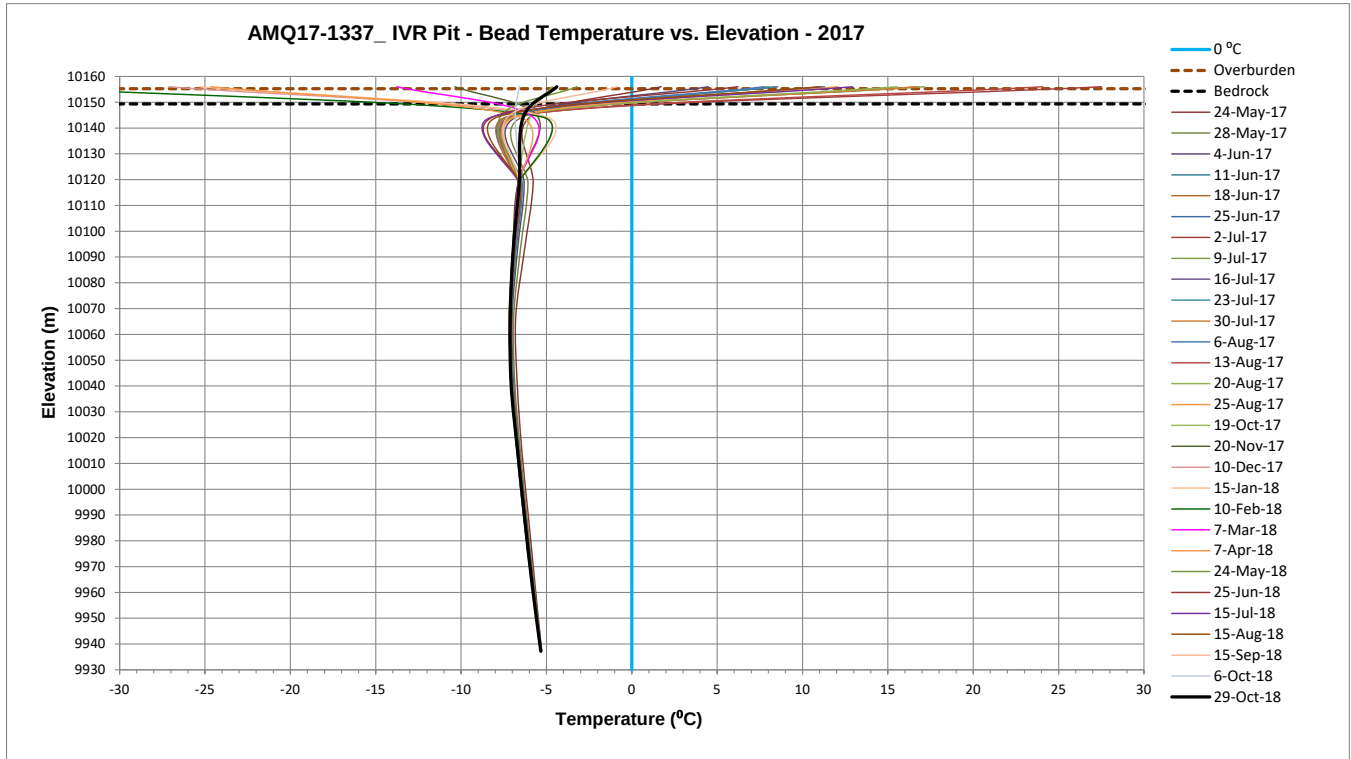


Figure 10: Temperature profile (Celsius) as a function of elevation (masl) from installation to October 2018 for thermistor AMQ17-1337

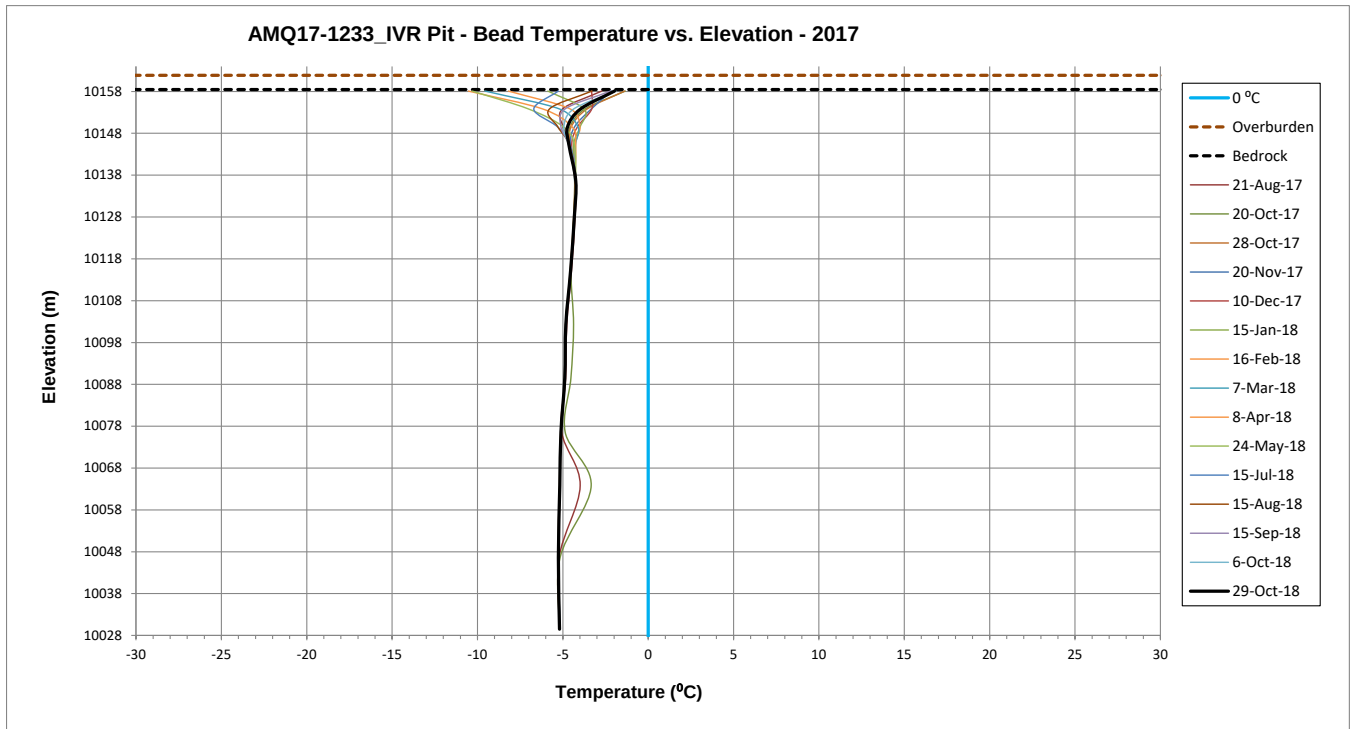


Figure 11: Temperature profile (Celsius) as a function of elevation (masl) from installation to October 2018 for thermistor AMQ17-1233

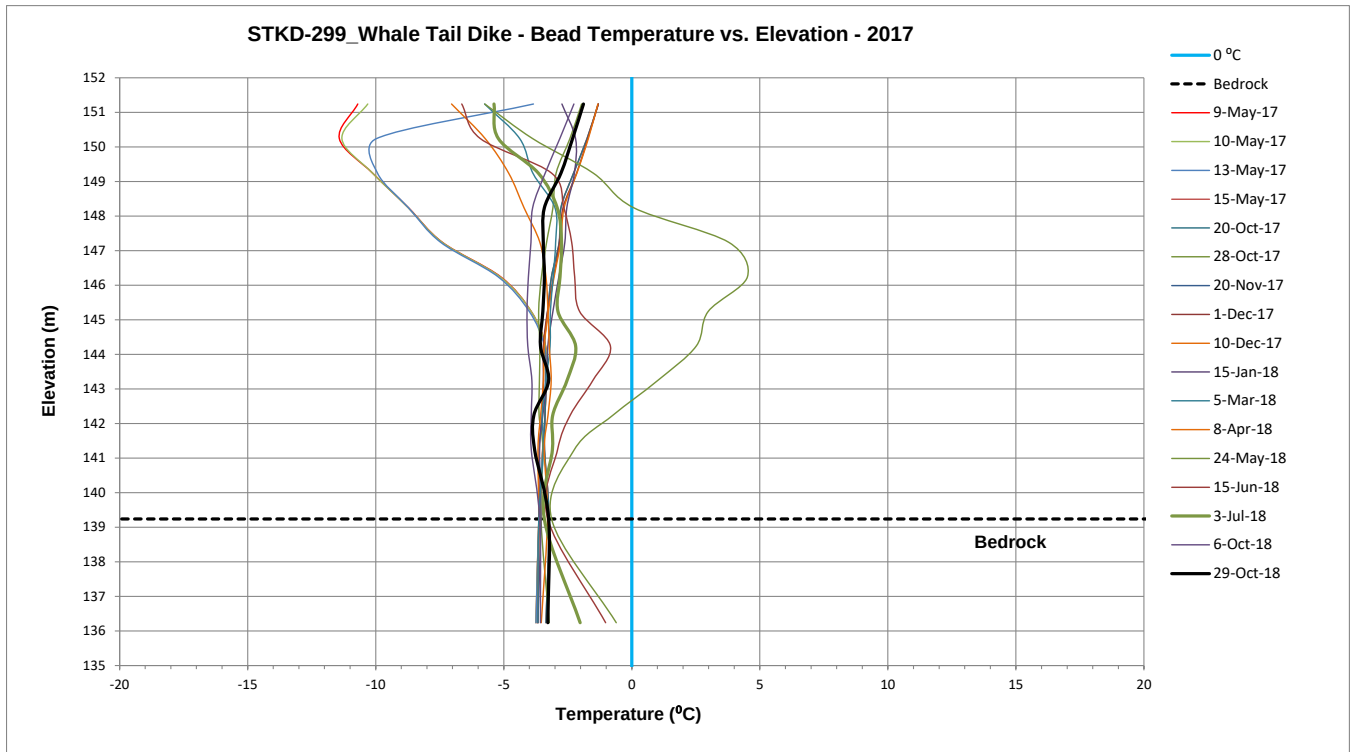


Figure 12: Temperature profile (Celsius) as a function of elevation (masl) from installation to October 2018 for thermistor STKD-299

Non Active thermistors:

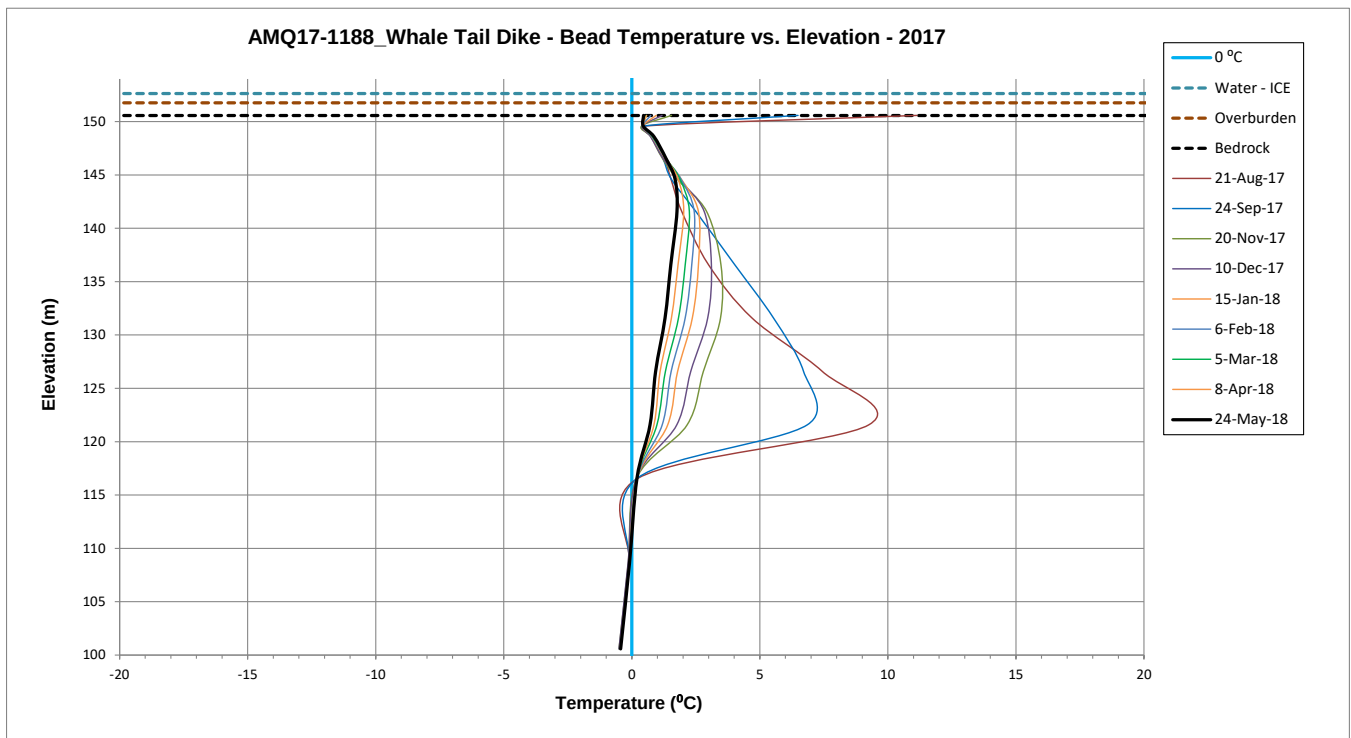


Figure 13: Temperature profile (Celsius) as a function of elevation (masl) from installation to May 2018 for thermistor AMQ17-1188

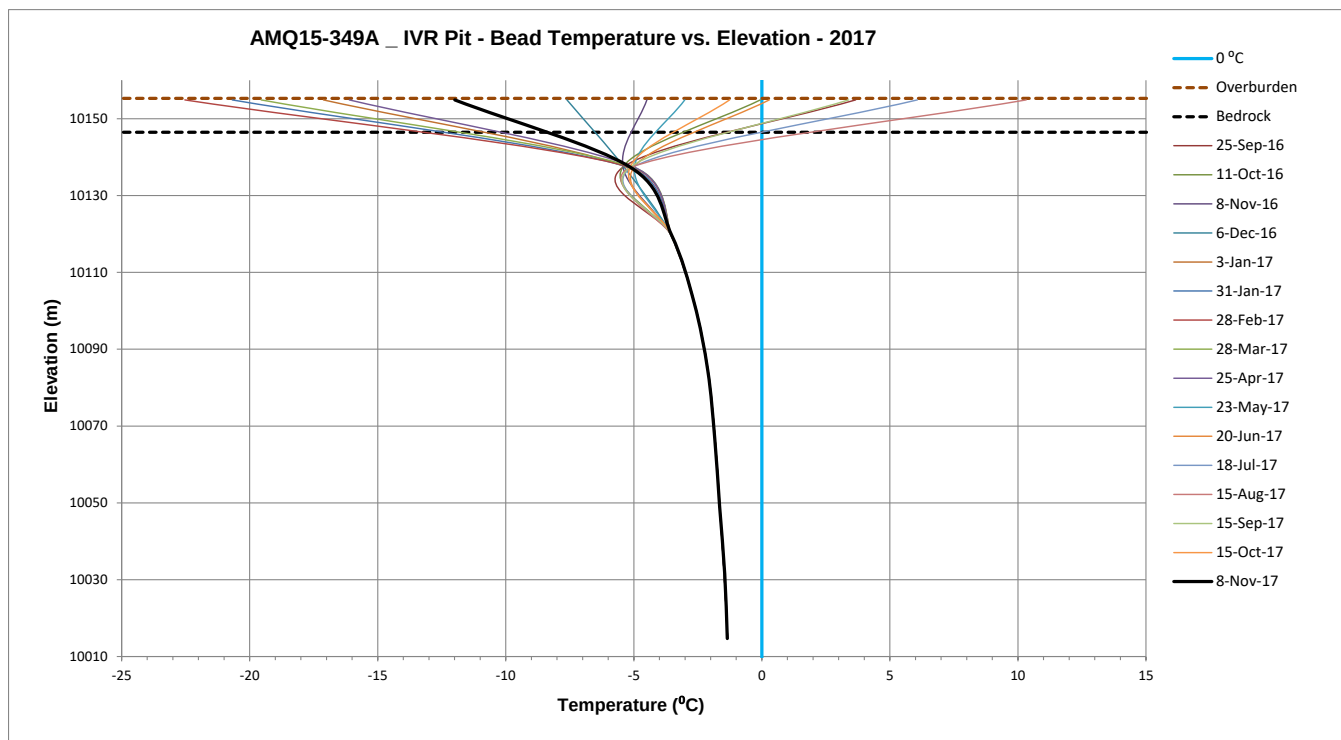


Figure 14: Temperature profile (Celsius) as a function of elevation (masl) from installation to November 2017 for thermistor AMQ15-349A

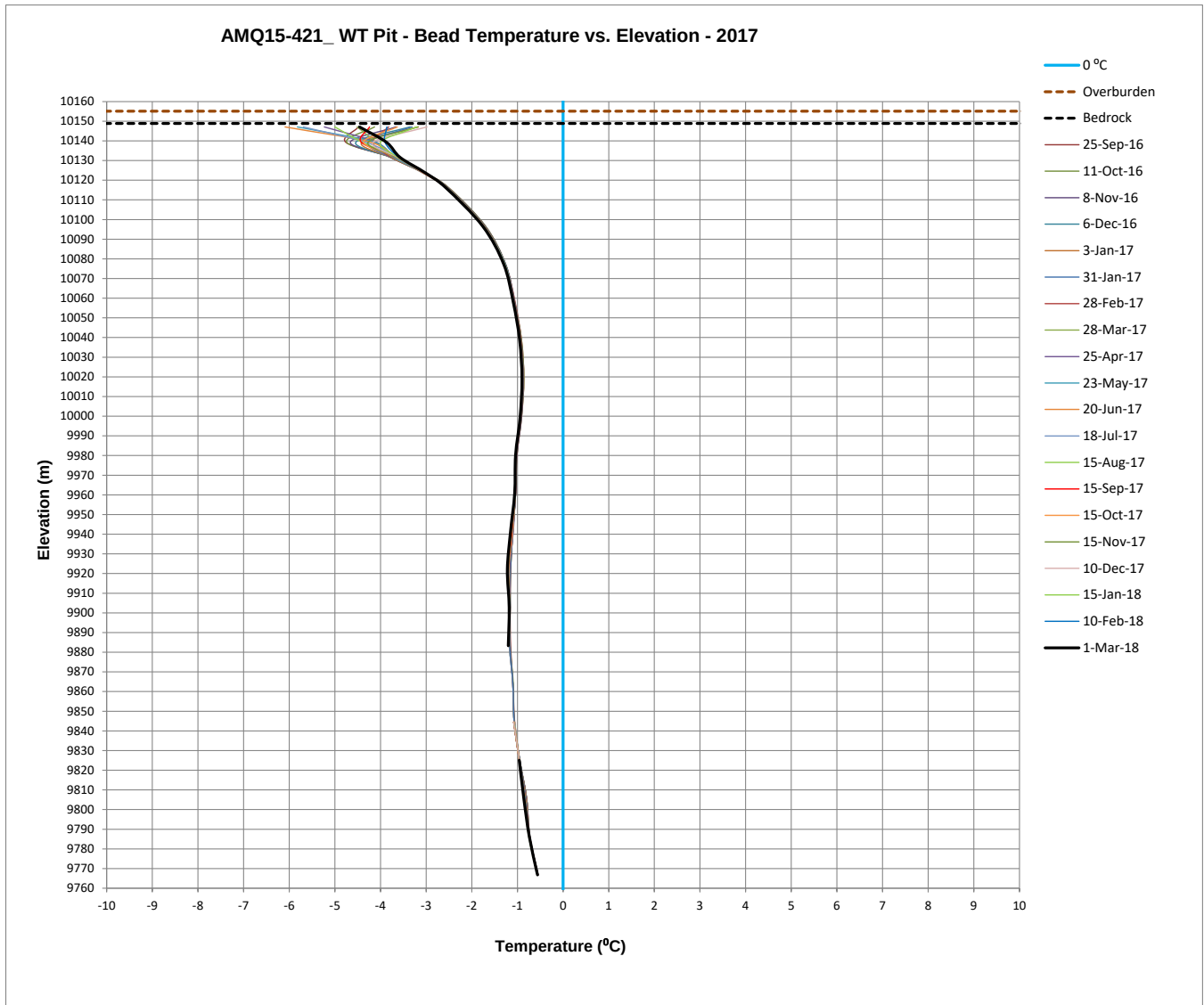


Figure 15: Temperature profile (Celsius) as a function of elevation (masl) from installation to Mars 2018 for thermistor AMQ15-421

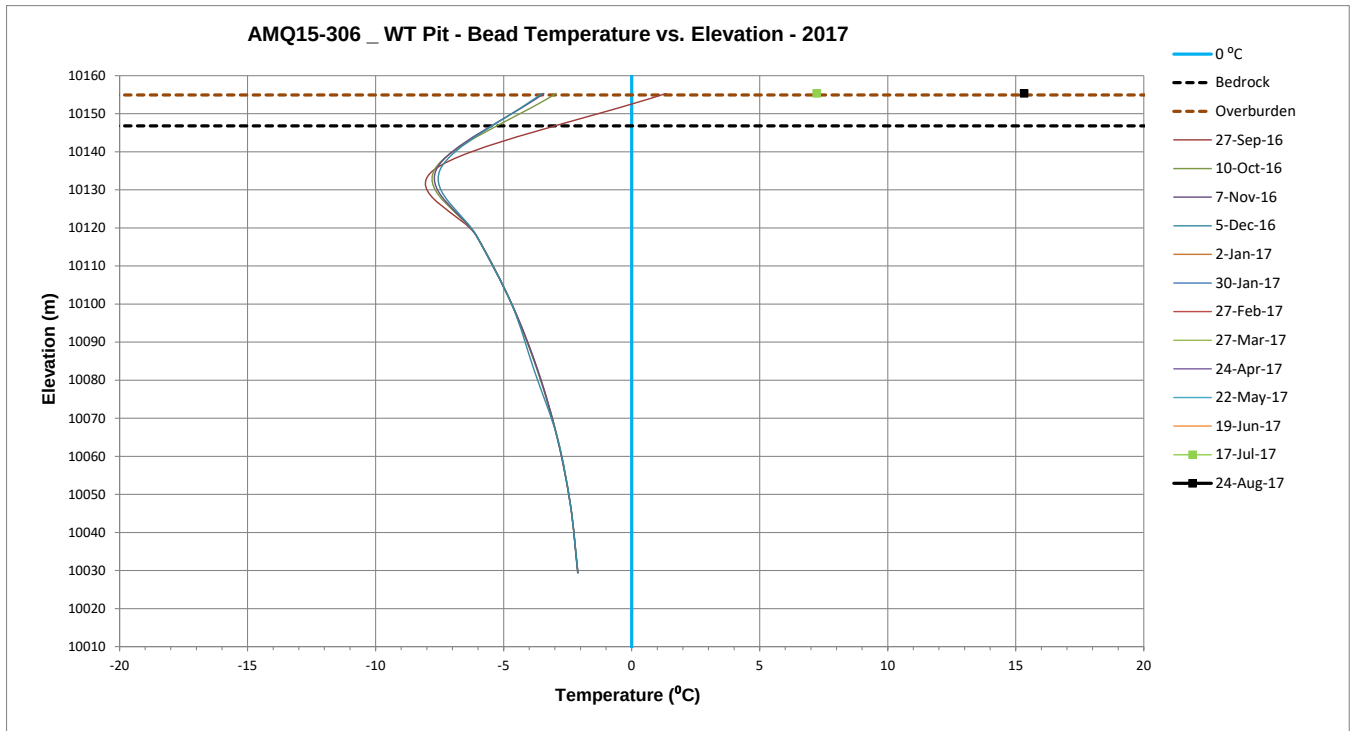


Figure 16: Temperature profile (Celsius) as a function of elevation (masl) from installation to August 2017 for thermistor AMQ15-306