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To:	Amy Driessen Alberta Transportation	From:	Leslie Cho and Xiteng Liu Stantec Consulting Ltd.
File:	123315222	Date:	June 2, 2022

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**Reference: North Central Region, Stony Plain, Site NC086 - Highway 39:06 Poplar Creek Slide, Spring 2022 Instrumentation Monitoring Report**

## 1.0 OBSERVATIONS

### 1.1 FIELD PROGRAM AND INSTRUMENTATION STATUS

One slope inclinometer (SI18-01) was read during the Spring 2022 reading cycle. **Figure-1** attached provides a site plan of NC86. The instrument was read by Mahendran Senthoooran, M.Eng., EIT and Akintola Fakinlede, M.Sc., Engineering Technologist on May 6, 2022.

The SI was measured using an RST MEMS digital inclinometer probe with 0.5 m increments and handheld PC. Readings were taken based on cable markings in relation to the top of SI casing.

GPS coordinates of all instruments were obtained using a Garmin eTrex 10 handheld GPS unit.

## 2.0 INSTRUMENTATION READINGS

### 2.1 GENERAL

The SI plots are provided in the attachments and summarized in the following sections. Displacement-time plots along with movement rates, total cumulative movement, maximum movement rates, and incremental movements since initializing the SI are provided in **Table NC086-1** and the attachments.

### 2.2 ZONES OF MOVEMENT

A potential zone of movement from 11.2 m to 15.2 m below ground level was observed in **SI18-01** near the sandy clay and clay shale interface. Given the relatively small amount of cumulative movement (less than 1 mm), additional readings will be required to confirm movement.

### 2.3 MONITORING RESULTS

#### 2.3.2 Slope Inclinometer

**SI18-01** has recorded less than 1 mm of cumulative movement since initialization in 2018.

## 3.0 RECOMMENDATIONS AND REPAIRS

It is recommended that the SI be read in the Spring 2023 reading cycle.

No repairs are required at this site.

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**Table NC086-1: Spring 2022 Slope Inclinometer Reading Summary**

Instrument Name	Date Initialized	Coordinates <sup>(1)</sup> (UTM 12N, NAD1983) (m)		Total Cumulative Resultant Movement and Depth of Movement to Date (mm)	Maximum Rate of Movement (mm/yr)	Current Status	Date of Previous Reading	Incremental Movement Since Previous Reading (mm)	Rate of Movement (mm/yr)	Change in Rate of Movement Since Previous Reading (mm/yr)
		Northing	Easting							
SI18-01	Sep. 11, 2018	5897673	648164	Less than 1 mm from 13.2 m to 15.2 m.	< 1.0	Operational	July 6, 2021	<1	<1	<1
SI18-02	Feb. 16, 2017	-	-	Inoperable in Spring 2019						
Note: (1) Updated May 6, 2022, with approximate accuracy of ± 3 m.										

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## 4.0 CLOSING

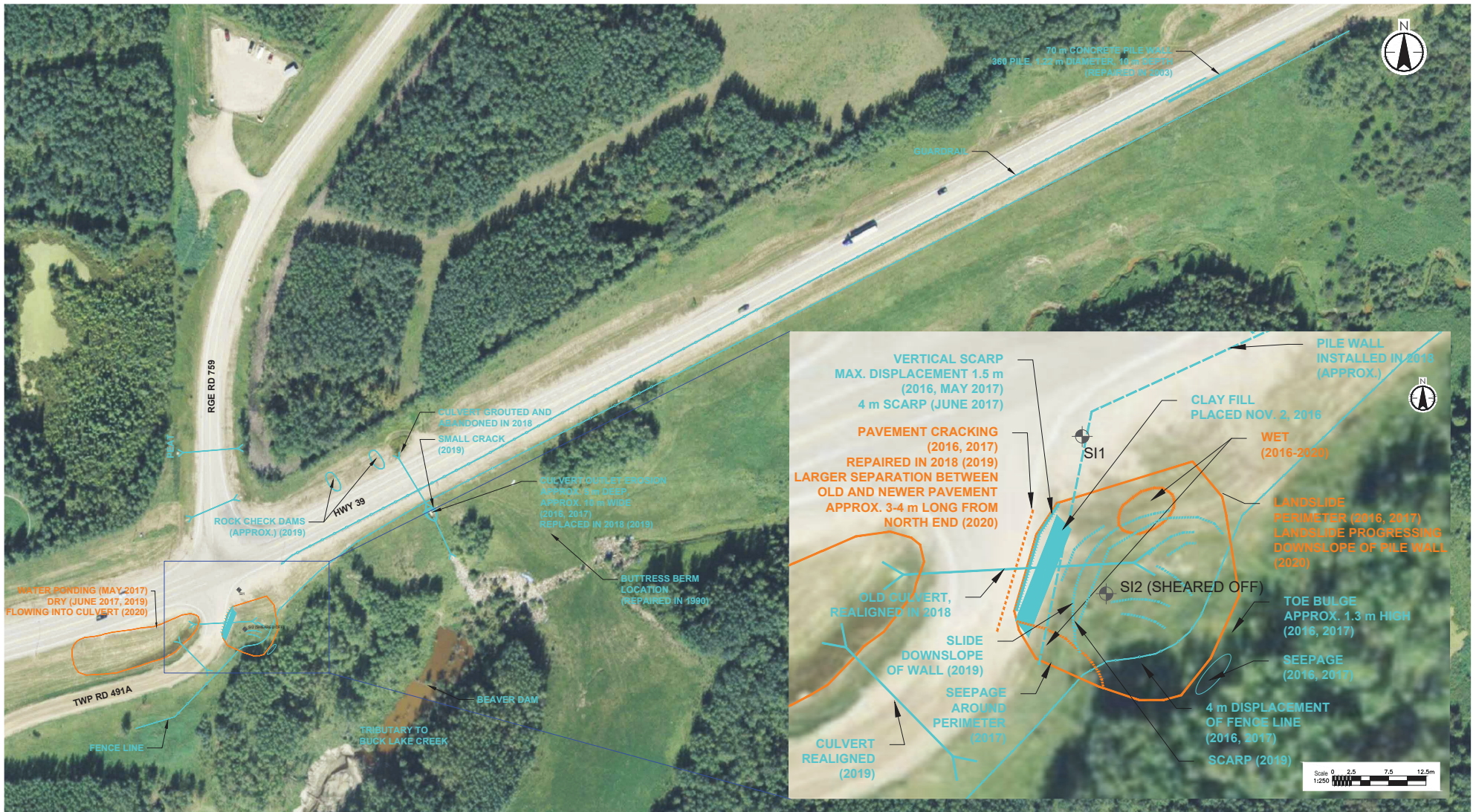
We trust this instrumentation report meets your requirements. If you have any questions, please do not hesitate to contact the undersigned.

**Stantec Consulting Ltd.**

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Attachment: Figure 1 – Site Plan  
S118-01 Slope Inclinator Plots



**NOTE**  
FEATURE LOCATIONS ARE APPROXIMATE

**REFERENCE**  
2012 IMAGERY © 2016 VALTUS IMAGERY SERVICES

- LEGEND**
- CULVERT
  - PREVIOUS OBSERVATION
  - 2020 OBSERVATION
  - INSTRUMENT LOCATION



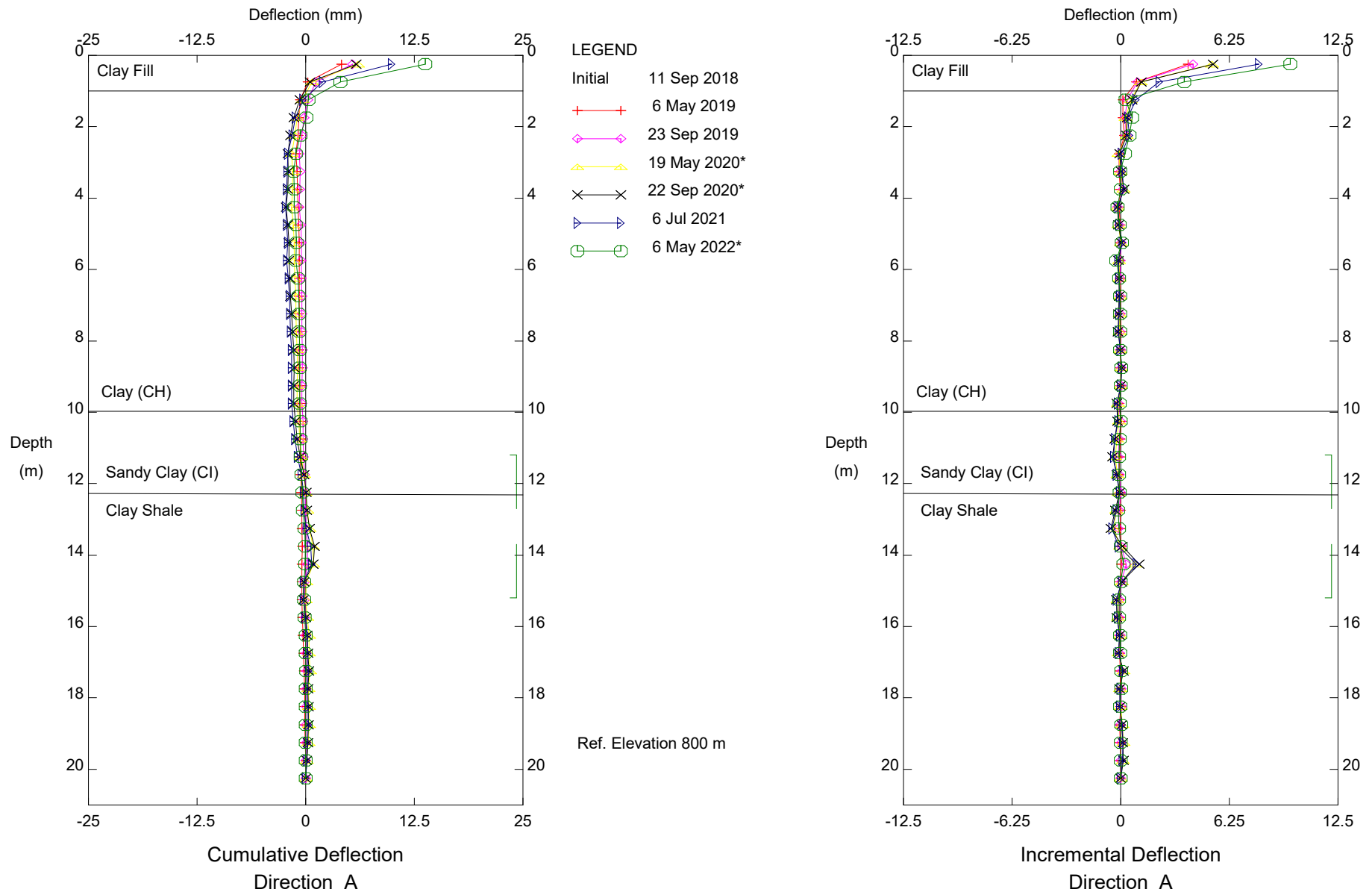
STANTEC CONSULTING  
400-10220 103 AVENUE NW  
EDMONTON, ALBERTA, CANADA  
TSJ 05A

ALBERTA TRANSPORTATION  
GEOHAZARD MONITORING PROGRAM  
NC086 HWY 39 AND TWP RD 491A - NEAR DRAYTON  
VALLEY SITE PLAN

DRAWN: MK	CHECK: XL	APPROVE: LC
DATE: 13 JUN. 2020	SCALE: AS SHOWN	PROJECT #: 123315222

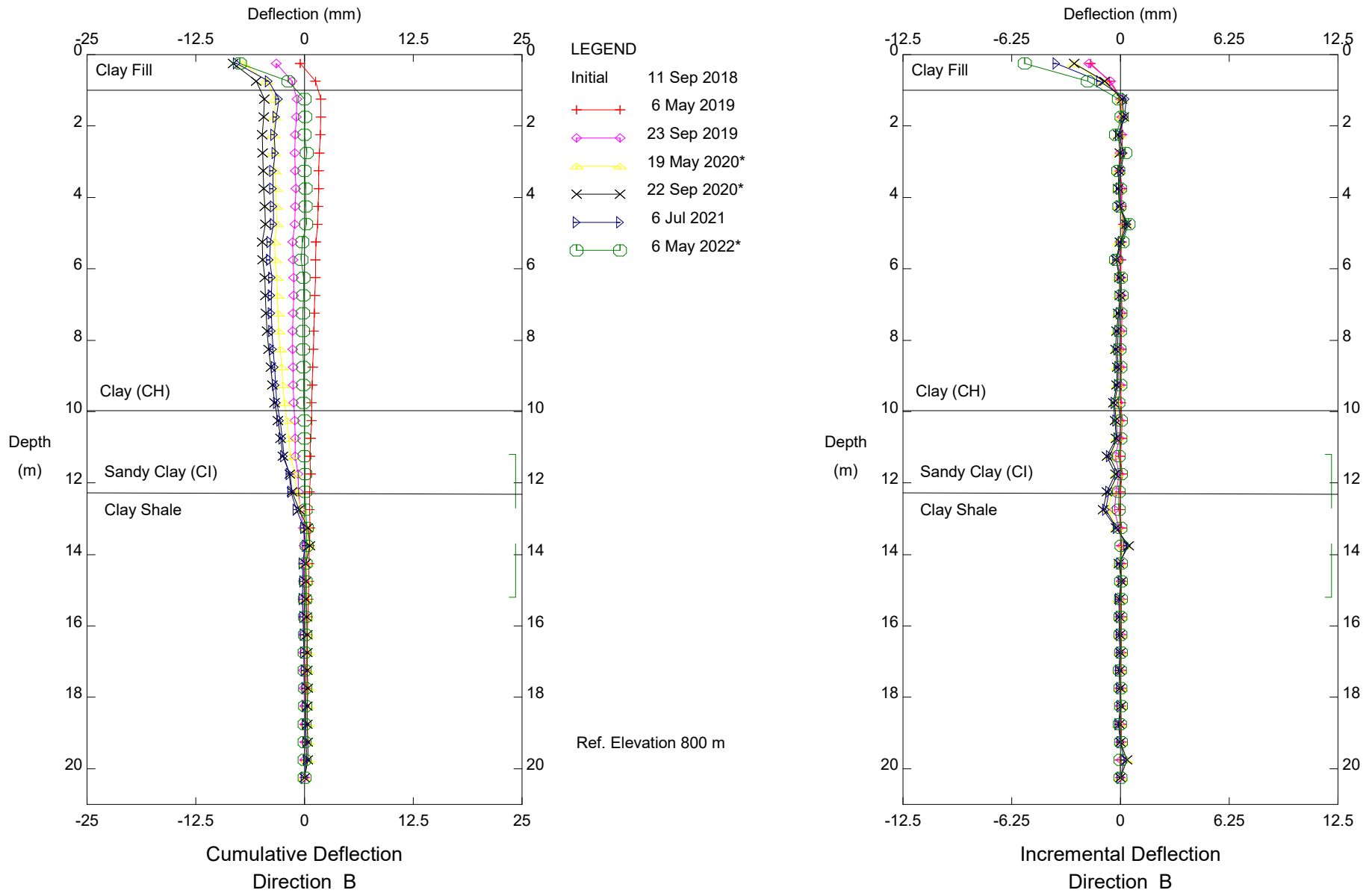
FIGURE -1





NC086, Inclinometer SI18-01

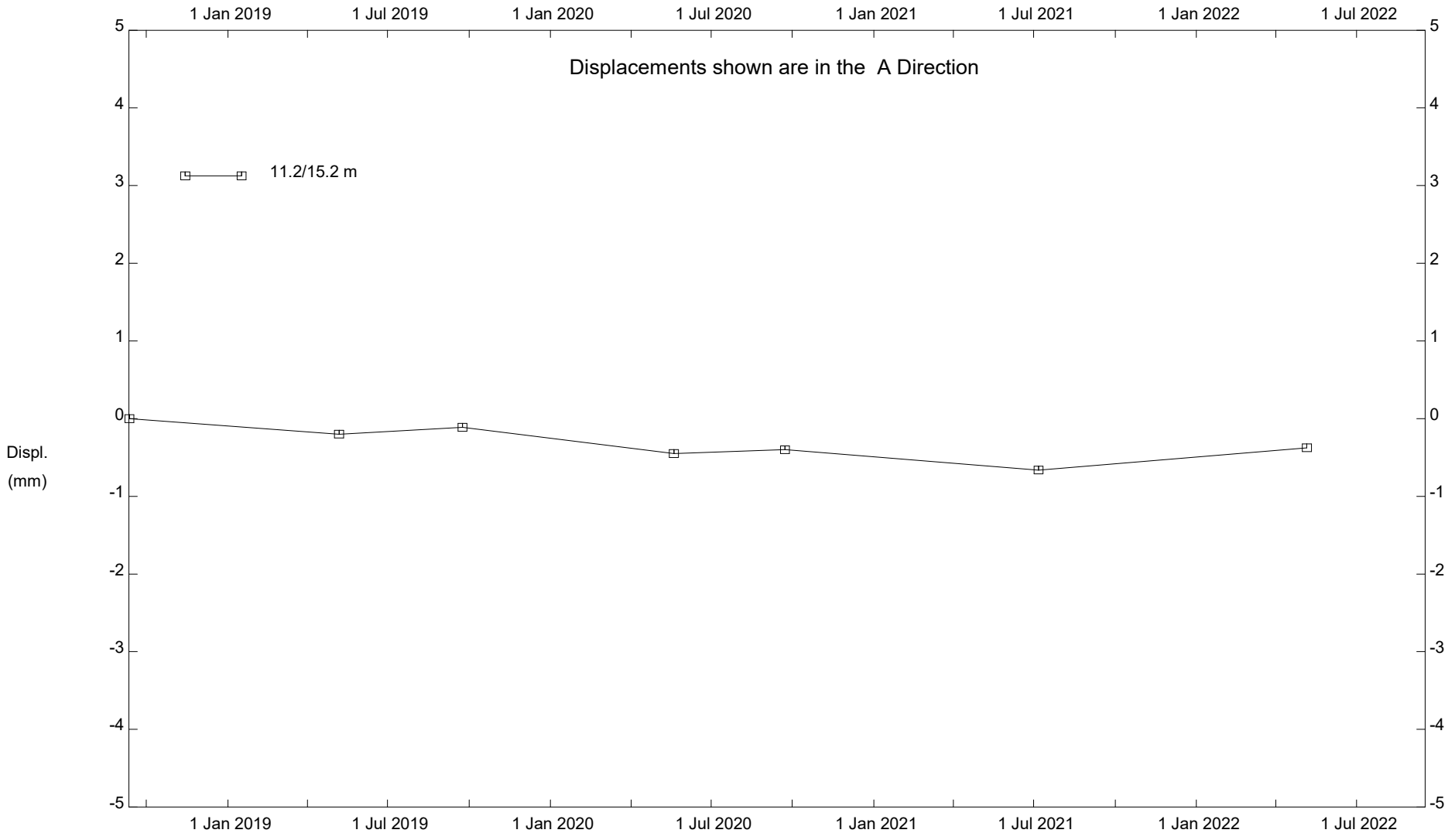
Sets marked \* include zero shift and/or rotation corrections.



NC086, Inclinometer SI18-01

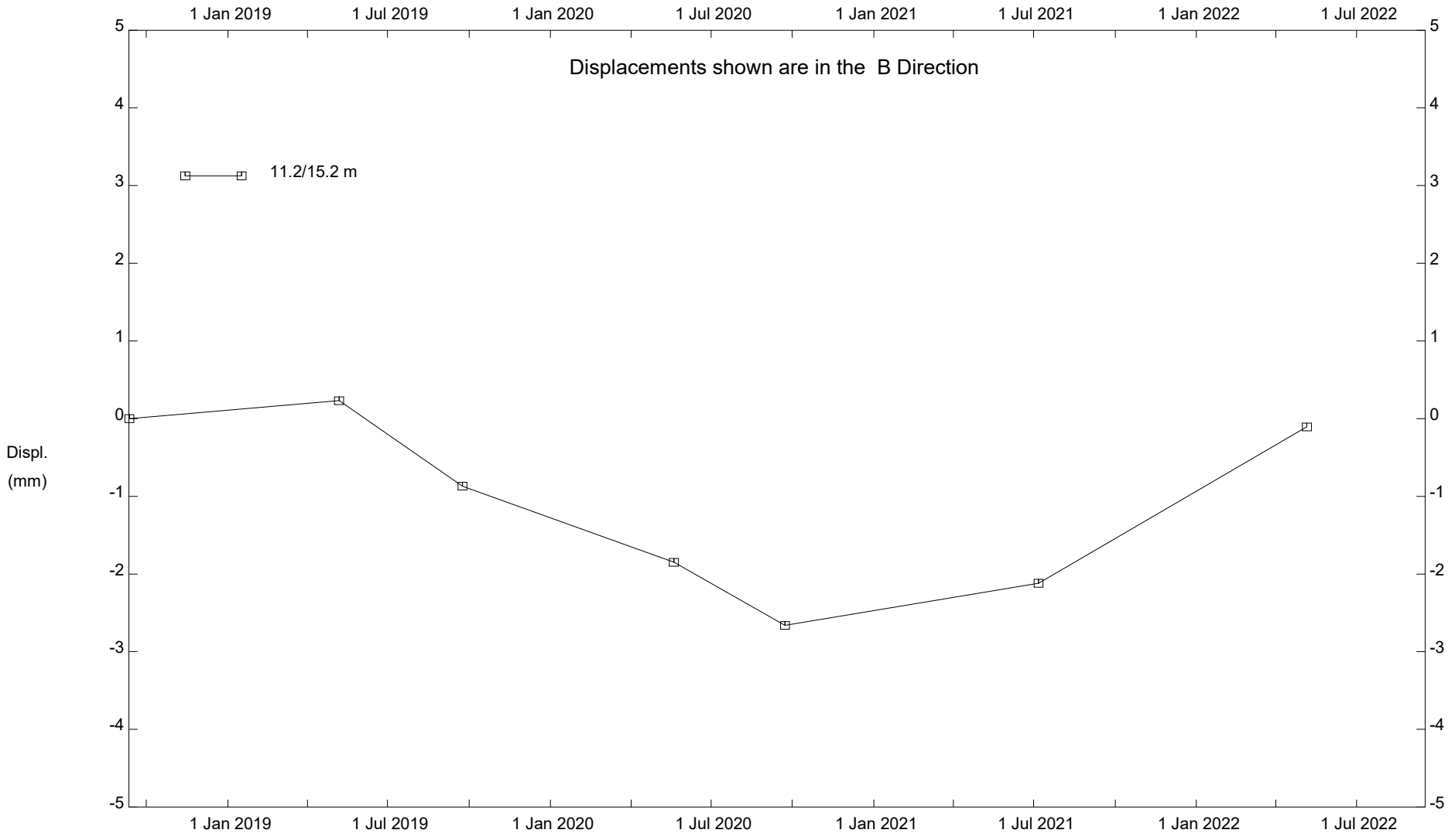
Sets marked \* include zero shift and/or rotation corrections.

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NC086, Inclinator SI18-01

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