Klohn Crippen Berger

Teck Coal Limited - Elkview Operations

West Fork Tailings Facility and

Lagoons A, B, C, and D

2021 Annual Facility Performance Report

M09963A25.730

March 2022

March 29, 2022

Teck Coal Limited - Elkview Operations
R.R. #1, Highway #3
Sparwood, British Columbia
V0B 2G1

Mr. Patrick Green, P.Eng.,
Tailings Engineer

Dear Mr. Green:

West Fork Tailings Facility and Lagoons A, B, C, and D
2021 Annual Facility Performance Report

We are pleased to submit the 2021 Annual Facility Performance Report for the Teck Elkview Operations West Fork Tailings Facility, and Lagoons A, B, C, and D.

Please contact us if you have any questions regarding this report.

Yours truly,

KLOHN CRIPPEN BERGER LTD.

Christine Peters, P.Eng., M.Eng.
Senior Project Manager

DHG/AS/MT:jc

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Teck Coal Limited - Elkview Operations

West Fork Tailings Facility and

Lagoons A, B, C, and D

2021 Annual Facility Performance Report

EXECUTIVE SUMMARY

This report presents the 2021 Annual Facility Performance Report (AFPR) for the Teck Elkview Operations (EVO) West Fork Tailings Facility (WFTF) and the Lagoon Tailings Area, comprising Lagoons A, B, C, and D, between November 2020 to October 2021, herein referred to as the reporting period.

The 2021 AFPR site visit of the WFTF and Lagoons A, B, C, and D, was completed on September 15 and 16 of 2021, by Mr. Andy Small, P.Eng., Mr. Dan Hughes-Games, P.Eng., and Mr. Michael Tin, E.I.T. of Klohn Crippen Berger (KCB). The Tailings Storage Facility (TSF) Qualified Person (defined as the Responsible Tailings Facility Engineer (RTFE) by the Global Industry Standard on Tailings Management (GISTM)) at the time of the AFPR was Mr. Patrick Green, P.Eng., who was also on site during the AFPR site visit. The Engineer of Record (EoR) for the tailings facilities is Mr. Andy Small, P. Eng., of KCB, who was part of the AFPR site visit team and was involved in the preparation of this report.

The WFTF, and Lagoons A, B, C, and D, appeared to be in good physical condition with no signs of structural distress based on observations during the 2021 AFPR. The only exception to this was the excavated/removed embankment at the north perimeter of Lagoon B; however, this is not an immediate safety concern for the facility as the exposed tailings slope appeared to be stable during the site visit, and the exposed condition may have existed since 2020. Further, Lagoon B would not cause any life safety concerns if an event occurred. Tailings deposition was to the Lagoon D cells during the site visit, and deposition was being operated in accordance with the procedures in the Operations, Maintenance, and Surveillance Manual.

Summary Description of Facilities

WFTF is the primary active tailings storage facility at EVO and consists of a downstream-raised rockfill shell with upstream filter overlying an existing waste dump. The embankment is approximately 16 m high at its highest point, and the TSF contains an estimated 10.6 Mm^3 of fine tailings.

Lagoons A, B, C, and D were constructed as ring dyke embankments. Lagoons A, B, and C are inactive and contain an estimated 0.19 Mm^3, 0.30 Mm^3, and 4.7 Mm^3 of tailings, respectively. Lagoon D still receives a small portion of fine tailings and contains an estimated 23 Mm^3 of tailings. Lagoons A and B were constructed without raising. Lagoon C was constructed using a combination of downstream and upstream raising methods and Lagoon D was constructed by upstream raising only, both using a combination of Coarse Coal Rejects (CCR) or sand and gravel fill.

Summary of Key Hazards

The key external hazards for the WFTF and Lagoon Tailings Area are seismic and meteorological hazards, which are address through the selection of Inflow Design Flood (IDF) and Earthquake Design Ground Motion (EDGM).

Summary of Significant Changes in 2021

No significant changes to the WFTF, Lagoons A, B, C, and D were observed that would affect embankment stability. No signs of cracking, wet spots, or deformations were observed during the 2021 AFPR.

Summary of WFTF Construction in 2021

The Adit Filter Berm, at the WFTF, has been raised approximately 3 m to El. 1677.5 m at the time of the AFPR. A campaign to raise the WFTF South Embankment to El. 1684 m commenced on October 13, 2021. Construction halted due to unfavourable winter weather on December 9, 2021, with the embankment raised to a minimum of El. 1683.2 m. The capacity as constructed is sufficient to store the projected tailings production to beyond the end of 2022.

Summary of Recommendations

There is one new Priority[1] 2 and two new Priority 3 recommendations arising from the 2021 AFPR. The Priority 2 recommendation is shown in Table E.1. There are no other outstanding Priority 1 or 2 recommendations. These recommendations are also described in Section 9.

Table E.1 Summary of Priority 1 and 2 Recommendations

Action ID	Structure	Deficiency or Non-Conformance	Applicable Regulation or OMS Manual Reference	Recommended Action	Priority	Status / Recommended Deadline
2021 Recommendations						
2021-01	Lagoon C	Actual Deficiency. The Lagoon C crest has a low spot at the trestle at approximately El. 1126.6 m.	N/A	The low spot should be filled to at least El. 1128.5 m to accommodate the IDF plus freeboard requirements.	2	To be completed in 2022

Notes: Recommendation priority guidelines specified in the HSRC Guidance Document (BCMEM, 2016) and assigned by KCB. Refer Table 9.1 for description of priorities.

[1] Recommendation priority guidelines specified in the HSRC Guidance Document (BCMEM, 2016).

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CLARIFICATIONS REGARDING THIS REPORT

This report is an instrument of service of Klohn Crippen Berger (KCB). The report has been prepared for the exclusive use of Teck Coal Limited (Client) and the British Columbia Ministry of Energy, Mines and Low Carbon Innovation for the specific application to the West Fork Tailings Facility, and Lagoons A, B, C, and D AFPR, and it may not be relied upon by any other party without KCB's written consent.

KCB has prepared this report in a manner consistent with the level of care, skill and diligence ordinarily provided by members of the same profession for projects of a similar nature at the time and place the services were rendered. KCB makes no warranty, express or implied.

Use of or reliance upon this instrument of service by the Client is subject to the following conditions:

1. The report is to be read in full, with sections or parts of the report relied upon in the context of the whole report.

2. The Executive Summary is a selection of key elements of the report. It does not include details needed for the proper application of the findings and recommendations in the report.

3. The observations, findings and conclusions in this report are based on observed factual data and conditions that existed at the time of the work and should not be relied upon to precisely represent conditions at any other time.

4. The report is based on information provided to KCB by the Client or by other parties on behalf of the client (Client-supplied information). KCB has not verified the correctness or accuracy of such information and makes no representations regarding its correctness or accuracy. KCB shall not be responsible to the Client for the consequences of any error or omission contained in Client-supplied information.

5. KCB should be consulted regarding the interpretation or application of the findings and recommendations in the report.

1 INTRODUCTION

1.1 General

Klohn Crippen Berger Ltd. (KCB) was engaged by Teck Coal Limited to complete the 2021 Annual Facility Performance Report (AFPR) for the West Fork Tailings Facility (WFTF) and the Lagoon Tailings Area (Lagoons A, B, C, and D) at the Elkview Operations (EVO) site. This report presents the results of the 2021 AFPR, including a review of available monitoring data from November 2020 to the end of October 2021, herein referred to as the reporting period. The Health, Safety and Reclamation Code (HSRC) for Mines in British Columbia, by the British Columbia Ministry of Energy, Mines and Low Carbon Innovation (EMLI 2021) was consulted for the AFPR.

The site visit for the WFTF and Lagoons A, B, C, and D was conducted from September 15 to 16, 2021, by Mr. Andy Small, P.Eng., Mr. Dan Hughes-Games, P.Eng., and Mr. Michael Tin, E.I.T. of KCB. The previous site visit for these structures was conducted from September 21 to 22, 2020, by Mr. Andy Small, P.Eng., and Mr. Michael Tin, E.I.T. of KCB.

This report is organized as follows:

- Section 2: overview of the project background and facility description as it relates to the AFPR;
- Section 3: summary of activities since the last AFPR;
- Section 4: review of 2021 AFPR observations;
- Section 5: review of monitoring records;
- Section 6: summary of 2021 climate aspects;
- Section 7: summary of water management aspects;
- Section 8: review of documentation and relevant failure modes to support the facility safety assessment; and
- Section 9: recommendations for ongoing operations, maintenance, and surveillance of the facilities.

1.2 Engineer of Record and Tailings Storage Facility Qualified Person

Mr. Andy Small, P.Eng., as a representative of KCB, is the Engineer of Record (EoR) for the EVO tailing storage facilities (TSF), including the WFTF, and Lagoons A, B, C, and D. He has filled the role since 2014 while working with Wood PLC (previously Amec Foster Wheeler). Mr. Small joined KCB in August 2018 and has continued to provide support as the EoR for the EVO TSFs. He visited the site once in 2021 for the AFPR site visit and was involved in the preparation of this report.

Mr. Patrick Green, P.Eng., of EVO, was the TSF Qualified Person at the site (beginning in June 2021), as defined by the HSRC. Teck refers to the role as the Responsible Tailings Facility Engineer (RTFE), terminology consistent with the GISTM.

1.3 Consequence of Failure Framework

Teck has advised that they are aligned with the most conservative interpretation of the GISTM which, in turn, is consistent with their safety culture. Commensurately, Teck has advised that consequence classification is not a part of their tailings management governance going forward and has asked that it not be reported in this AFPR. Instead, they intend to adopt the extreme consequence case design loading for any facility with a credible flow failure mode. For facilities without a credible failure mode in terms of a life safety issue, Teck indicates they will reduce credible risks to As Low As Reasonably Practicable (ALARP). This consequence case applies for both earthquake and flood scenarios for all tailings facilities, consistent with the GISTM.

2 BACKGROUND

2.1 General

The EVO coal mine site is approximately 3 km east of the town of Sparwood, in southeastern British Columbia. Underground coal mining at the site began in the late 1890's, with open pit mining operated since 1969. The site comprises the following key tailings management and processing facilities:

- West Fork Tailings Facility (WFTF);
- Lagoon Tailings Area (Lagoons A, B, C, and D);
- Coarse Coal Refuse (CCR) Dump; and
- Wash Plant.

The focus of this report is on the fine tailings facilities: WFTF and Lagoons A, B, C, and D. An overview of these facilities is presented in the following section.

2.2 Description of Facilities

2.2.1 West Fork Tailings Facility

The WFTF is an active TSF and was commissioned in 2006 with the purpose of serving as the primary fine tailings storage facility on site. The facility is located on the eastern perimeter of the site, approximately 1 km from the Adit Pit and is confined by the Adit Waste Dump, West Fork/Cowboy Dump, Adit Ridge and Cowboy Ridge. The TSF embankment overlies the West Fork/Cowboy Dump. Limited information is available on the surficial soils within the vicinity of the WFTF, however previous studies suggest that the natural stratigraphy in the area comprised bare rock surfaces, colluvial fans and mass-wasting debris (SRK 2019).

The Adit Filter Berm separates the tailings surface from the Adit Waste Dump. It is also progressively raised ahead of tailings deposition to reduce the potential for infiltration of tailings fines into the dump.

Fine refuse material is deposited into the WFTF via a single discharge point which is periodically moved along the embankment. The tailings deposition plan is designed to keep ponded water at the northern extent of the WFTF, away from the embankment. The tailings surface elevation within the WFTF typically rises at an approximate rate of 2 m to 4 m per year, depending on the production rate of fine tailings from the Wash Plant and on deposition locations.

The WFTF embankment will require progressive raises as the tailings level increases. The WFTF South Embankment crest was raised to a minimum of El. 1683.2 m during the 2021 construction campaign from October 13 to December 9, 2021.

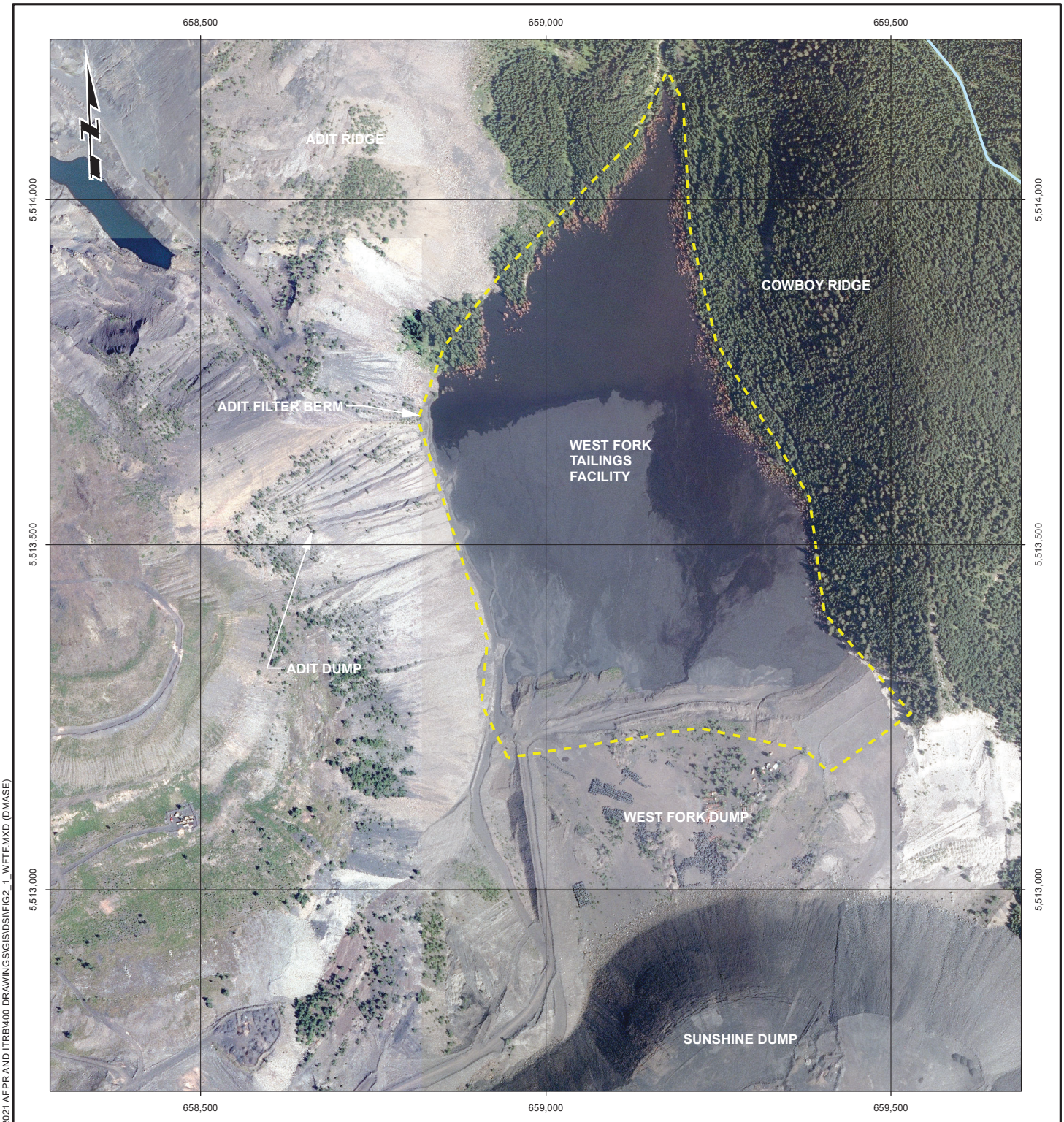
The general information and the current configuration for the WFTF is presented in Table 2.1 and plan layout of the WFTF is presented in Figure 2.1

Table 2.1 WFTF General Information and Configuration

Key Parameters	WFTF
Raise Method	Downstream
Minimum Crest Elevation[1]	1,683.2 m
Maximum Embankment Height	16.0 m
Maximum Impoundment Depth [2]	83.7 m
Approximate Footprint	28.5 ha
Crest Length	609 m
Crest Width	40 m
Overall Downstream Slope	2.5H:1V
Overall Upstream Slope	2.5H:1V
Estimated Impounded Tailings Volume	10,578,000 m^3
Estimated Impounded Water Volume	300,000 m^3
Normal Operational Tailings Deposition Rate	6,500 m^3/day
Maximum Emergency Tailings Deposition Rate	13,100 m^3/day
Tailings Deposition in 2021 [3]	1,058,300 m^3
Inflow Design Flood (IDF)	1/3 between 1,000 AEP and PMF
Earthquake Design Ground Motion (EDGM)	1/10,000 AEP
Adit Filter Berm	
Elevation	1,677.5 m
Side Slope	1.3H:1V
Typical Width	8 m

Source: Elkview Operations – 2018 TSF Dam Safety Review (SRK 2019) and 2021 data (EVO 2021)

Note:
1. Minimum crest elevation achieved during the 2021 WFTF South Embankment raise construction campaign.
2. Maximum impoundment depth estimated from WFTF crest elevation to lowest elevation of tailings placement.
3. Tailings deposition quantity is approximate only. Based on values reported by EVO, and an assumed density of 0.95 t/m^3.
4. AEP is Annual Exceedance Probability. PMF is Probable Maximum Flood.



LEGEND

- CREEK
- TAILINGS FACILITY
- TAILINGS DEPOSITION LINE

NOTES

1. DATUM, PROJECTION: NAD83, UTM ZONE 11 (WKID 26911)
2. IMAGERY FROM TECK ELKVIEW OPERATIONS (COLLECTED IN 2019).

NOT FOR CONSTRUCTION

SCALE 0 150 m

CLIENT: Teck

Klohn Crippen Berger

PROJECT: TECK ELKVIEW OPERATIONS
2021 ANNUAL FACILITY PERFORMANCE REPORT

TITLE: WEST FORK TAILINGS FACILITY
PLAN LAYOUT

SCALE	PROJECT No.	FIG. No.
1:8,000	M09963A25	2.1

ANSI A

SAVE DATE: 2022-01-19(13:10 PM)
FILE PATH: \\INT.KLOHN.COM\PROJDATA\MV\CRM\09963A25-TCL-EVO 2021 AFPR AND ITRB\400 DRAWINGS\GIS\DS\FIG2_1_WFTF.MXD (DMASE)

2.2.2 Lagoon Tailings Area

The Lagoon Tailings Area, comprising Lagoons A, B, C, and D is located on the western perimeter of the site, immediately west of the Wash Plant. The arrangement of the lagoon facilities is presented in Figure 2.2. Lagoons A, B, and C do not receive new tailings. Lagoon D is occasionally used for tailings storage when needed (e.g., when the pump and tailings line to WFTF are down for maintenance). The general information and the current configuration for these facilities is presented in Table 2.2, with additional details provided in the following sections. The design criteria for each facility are summarized in their respective Operations, Maintenance, and Surveillance (OMS) Manuals.

Lagoons A, B, C, and D have been constructed on the floodplains of the Elk River. A review of the Elk Valley late Quaternary geology and geomorphology indicated this area was previously covered by a glacial lake that deposited glaciolacustrine silts and clays along with areas of alluvial sediments (SRK 2019).

Table 2.2 Lagoon Tailings Area General Information and Configuration

Key Parameters	Lagoon A	Lagoon B	Lagoon C	Lagoon D
Tailings Deposition in 2021 (m^3) (1)	None	None	None	14,000
Impounded Tailings Volume (m^3)	185,000	295,000	4,658,600	22,774,000
Maximum Operating Pond Volume (m^3)	550	0	18,000	288,000
Approximate Footprint (ha)	5.8	4.5	32.6	61
Crest Length (m)	1,100	800	2,000	2,226
Crest Width (m)	6	6	6	6 to 10
Minimum Crest Elevation (m)	1119.0	1118.2	1129.3	1167.85 (West) (3) 1172 (East)
Maximum Embankment Height (m)	4	4	19.5	59
Raise Method	No raises.	No raises.	Upstream for East embankment Downstream for all other embankments	Upstream
Overall Downstream Slope	1.8H:1V	1.75H:1V	1.75H:1V	2.7H:1V to 3.4H:1V
Inter-berm Side Slope	N/A	N/A	N/A	2H:1V (typical)
Spillway Elevation (El. m)	1118.3	N/A	N/A	N/A
Spillway Width (m)	5	N/A	N/A	N/A
Inflow Design Flood (IDF)	1/200 AEP	1/100 AEP	1/3 between 1,000 AEP and PMF	PMF
Earthquake Design Ground Motion (EDGM)	1/2,475	1/2,475	1/2,475	1/5,000

Source: Elkview Operations – 2018 TSF Dam Safety Review (SRK 2019) and 2021 data (EVO, 2021)

Notes:
1. Tailings deposition quantity is approximate only.
2. Tailings volume deposited is approximate. Based on 13,000 t as reported by EVO and an assumed density of 0.95 t/m^3
3. Lagoon D nominal crest elevation is 1168 m, with a minimum crest elevation of 1167.85 m measured at a low spot.

LEGEND

- CREEK
- LAGOON BOUNDARY

NOTES

1. DATUM, PROJECTION: NAD83, UTM ZONE 11 (WKID 26911)
2. IMAGERY FROM TECK ELKVIEW OPERATIONS (COLLECTED IN 2019).

NOT FOR CONSTRUCTION

SCALE 0 250 m

CLIENT: Teck

Klohn Crippen Berger

PROJECT: TECK ELKVIEW OPERATIONS
2021 ANNUAL FACILITY PERFORMANCE REVIEW

TITLE: LAGOON TAILINGS AREA
PLAN LAYOUT

SCALE	PROJECT No.	FIG. No.
1:12,000	M09963A25	2.2

ANSI A

SAVE DATE: 2022-01-19(14:05 PM)
FILE PATH: \\INT.KLOHN.COM\PROJDATA\MV\CRM\09963A25-TCL-EVO 2021 AFPR AND ITRB\400 DRAWINGS\GIS\DS\FIG2_2_LAGOONS.MXD (DMASE)

Lagoon A

Lagoon A is an inactive TSF used during the mine start-up period in the 1960's. Lagoon A is in the "active care" phase of closure.

The facility is impounded by embankments approximately 4 m in height at the north and west perimeter, by natural ground on the eastern perimeter, and by the north side of Lagoon D the south perimeter. Construction records for Lagoon A are not available; however, site investigations indicate the starter embankment was primarily constructed using silty sand or sand and gravel (glacial till) materials.

The foundations comprise coarse-grained gravelly sand (glacial till) overlain by glaciofluvial sands and sandy silts. Glaciolacustrine clay was identified in the western portion of the foundation of Lagoon A.

Water from Cossarini Creek flows directly through Lagoon A and discharges out of the spillway at the western perimeter of the facility into a series of check dam ponds (Otto Ponds).

Lagoon B

Lagoon B is an active TSF and was used for initial tailings storage at the commencement of mining and processing in the 1960's. Lagoon B is considered an active facility because it receives emergency overflow process water from the Wash Plant when required. EVO have limited the quantity of plant water discharge to Lagoon B and direct that water to a series of sumps excavated within the tailings, i.e., a general pond does not form. Water within these sumps infiltrates through the tailings into the foundation soils.

Similar to Lagoon A, the tailings are impounded by 4 m high embankments to the west and south, coal stockpiles to the north, and natural ground to the east. Construction records are not available for Lagoon B; however, site investigations indicate the starter embankment was primarily constructed using silty sand or sand and gravel (glacial till) materials. The foundations comprise coarse-grained gravelly sand glacial till, underlain by glaciofluvial sands, sandy silts, and interbedded glaciolacustrine clays.

Lagoon C

Lagoon C is an inactive TSF and was operated from 1970 to 1996, with tailings deposition ceasing in 1987. From 1987 to 1996, Lagoon C was used to temporarily retain excess decant water from Lagoon D. It is currently used to store sediments excavated as part of routine maintenance from several sedimentation ponds and sumps.

The starter embankment was constructed in 1970 using sand and gravel fill, with two subsequent raises completed in 1985 and 1986 using CCR. The upstream raise method was utilised on the eastern embankment due to site infrastructure constraints and the north, south and west embankments were raised using the downstream method. The foundation comprises coarse-grained, gravelly sand (glacial till) underlain by interbedded glaciofluvial silty sands, and glaciolacustrine clays and silts.

Additional infrastructure at Lagoon C includes:

- an out-of-service tailings pipeline used to decant water from Lagoon D to Lagoon C;
- wind fencing historically used to manage dust;
- power line infrastructure along the western embankment crest, and
- a natural gas pipeline buried adjacent to the toe of the embankment at the western perimeter.

Lagoon D

Lagoon D is an active ring-dyke TSF with tailings deposition commencing in the early 1970's. Since the commissioning of the WFTF in 2006, Lagoon D has become the secondary tailings storage location, with approximately 2% of fine tailings in 2021 being deposited in Lagoon D.

Since 2005, tailings have been deposited into shallow cells on the northeastern and southeastern perimeter of the ring-dyke. The cells vary in length and width, however typical cell dimensions are 60 m long x 15 m wide, with cell depths ranging from 1.8 m to 4.1 m. This tailings management system enables faster consolidation of the tailings in individual cells while allowing bleed water to drain towards the centre of Lagoon D via solid pipes. Tailings from the cells are then excavated and placed on the Reclamation Area at the western portion of the facility.

The ring-dyke starter embankment was constructed in 1972 using locally borrowed sand and gravel. The north, south, and west perimeter of the facility was then raised using CCR by the upstream method. The eastern perimeter is confined by the natural hillside. Lagoon D is underlain by sand and gravel alluvial deposits overlying glaciolacustrine clays and silts.

In 2018, the crest elevation of the active deposition area of Lagoon D was raised to El. 1,168 m to provide additional storage for water during flood events. Along the north and south sides of Lagoon D, the embankment raise varied in height from 0 m to 2 m. The Inner Ring Road was raised 2 m.

Lagoon D has sufficient capacity to effectively manage the pond and contain the 72-hour IDF without a spillway. Water from the pond can also be pumped to and from the Wash Plant.

3 FACILITY ACTIVITIES IN 2021

The following operational and construction activities for the TSFs were undertaken between November 2020 and October 2021. A common activity for all TSFs was the completion of a site-wide LiDAR survey by EVO in October 2021.

3.1 WFTF

- The tailings elevation adjacent to the embankment increased approximately 3 m on the western and central portion of the storage, and the beach elevation ranges from El. 1,675.3 m at the central portion of the beach to El. 1,672.5 m at the eastern portion of the beach. The rate of rise across the tailings beach is typical for the WFTF. The tailings elevation is surveyed at approximately three-month intervals.
- The Adit Filter Berm was raised 3.5 m ahead of tailings deposition from an approximate elevation of El. 1,674 m to EL. 1,677.5 m.
- The WFTF South Embankment raise to El. 1684 m commenced on October 13, 2021. The general fill embankment zone was raised to a minimum crest elevation of 1683.2 m and the upstream filter zone was constructed to a minimum elevation of 1682.7 m, when the construction campaign was ceased on December 9, 2021 due to unfavourable winter weather conditions. The constructed storage capacity was assessed by EVO as being sufficient for projected deposition beyond the end of 2022.

3.2 Lagoon A

- No activities for Lagoon A took place in 2021.

3.3 Lagoon B

- Routine discharge of Wash Plant washdown water to excavated cells in the tailings the southeast corner of Lagoon B continued through the reporting period under written approval from both the EVO Geotechnical and Tailings Department and the Environment Department per the OMS Manual procedures. There were 11 discharges into Lagoon B during the reporting period:
  - November 18, 2020
  - December 3, 2020
  - January 12, 2021
  - February 17, 2021
  - March 17, 2021
  - April 20, 2021
  - May 26, 2021
  - June 16, 2021
  - August 10, 2021
  - September 15, 2021
  - October 13, 2021

3.4 Lagoon C

- Sediment excavated from several sumps and ponds at the EVO site were dumped and spread in Lagoon C and tracked-packed with a dozer. This is expected to continue as a routine operation to effectively maintain ponds and sumps. Approximately 800 bank cubic meters of material was placed on Lagoon C at the southwest corner during the reporting period.

3.5 Lagoon D

- Intermittent deposition totalling approximately 13,200 t of tailings occurred at the Lagoon D cells throughout the reporting period.
- Approximately half of the tailings cells on the north side of Lagoon D were backfilled with fine tailings and the surface seeded.

4 SITE OBSERVATIONS / RESULTS OF SITE VISIT

The site visit conducted by Mr. Small, Mr. Hughes-Games, and Mr. Tin included observing the condition of the facilities to identify deficiencies and other potential concerns regarding the geotechnical stability of the landforms. There were no concerns related to water management. No signs of structural distress were observed for the crest, upstream beach, downstream slope, abutments, and toe area during the site visit.

Site visit checklist forms and selected photographs of the facilities are presented in Appendix I and II, and a summary of notable observations are included in Table 4.1. Only observations that are of specific interest are included, and includes notes, on whether the observations are new, and if there is an associated recommendation that should be addressed. Comments and recommendations arising from the observations are in Section 9.

Table 4.1 Summary of Notable Observations

No.	Notable Observations	Change from 2020 AFPR?	Recommendation provided?	Photo Reference
WFTF				
WFTF-1	There were no observations of surface fine tailings migration into the abutments of the WFTF embankment. Subsidence of the tailings beach was observed around the 2013 raise area and along a portion of the Adit filter area but it is unclear whether this is due to fine tailings migration or due to other processes such as entrapment of snow and ice in the winter.	No	No	IW-3, IW-4, IW-10
WFTF-2	The differential height elevation between Adit Filter Berm crest level and the surface of the tailings was within the allowable design limit of 6 m.	Yes	No	IW-10
Lagoon A				
N/A	No notable observations for the 2021 period.	N/A	N/A	N/A
Lagoon B				
LB-1	A portion of the crest was observed to be narrow and may possibly be a low spot.	No	No	IB-3
LB-2	A minor erosion gully was observed at the southwest downstream slope of Lagoon B. The surface erosion is minor and does not appear to be eroding further.	No	No	N/A
LB-3	A portion of the embankment on the northwest side of the facility was excavated by EVO personnel to make a turnaround area for the Goddard Pond hydrovac trucks. The edge of the excavation created an unsupported cut slope in exposed, unsaturated tailings, approximately 4 m high. The tailings slope did not appear to have deformed.	Yes (feature may have existed in 2020 as well)	Yes	IB-7, IB-8
Lagoon C				
LC-1	A local low spot on the crest near the trestle was observed, and survey confirms the low spot elevation is 1126.6 m.	No	Yes	IC-7

No.	Notable Observations	Change from 2020 AFPR?	Recommendation provided?	Photo Reference
LC-2	Erosion on the upstream side of the crest was observed at the north section of the Lagoon near the pumphouse. It is not expected that this erosion could propagate though the crest of the embankment and is therefore not an embankment safety concern.	No	No	IC-10
Lagoon D				
LD-1	Minor erosion of the downstream slope was observed at several locations around Lagoon D.	No	No	ID-10
LD-2	Minor subsidence was observed at the surface of the backfilled northern tailings cells.	Yes	No	ID-13

5 MONITORING AND INSTRUMENTATION REVIEW

The monitoring instrumentation at site comprises a network of VWPs, standpipe piezometers, survey monuments and inclinometers. Measurements are collected by the EVO Tailings Team, with the data evaluated against the Quantifiable Performance Objectives (QPOs) for the WFTF and Lagoon Tailings Area. The data review is escalated to the EoR where there is an exceedance of a trigger level for any of the monitoring instruments.

The current monitoring program is sufficient to assess the performance of the facilities against QPOs. During 2021 EVO documented the standards to be used for all tailings VWP calculations and corrections. The EVO Tailings team also conducted a review and reconciliation of the instrumentation for the site. A review of the monitoring and instrumentation data and procedures at site is presented below, with the location of each monitoring instrument and data shown in Appendix IV.

5.1.1 WFTF

The WFTF was constructed using rock fill overlying a foundation consisting of an existing waste dump which in turn overlies natural ground understood to be mainly bedrock. Past instrumentation monitoring has demonstrated piezometric levels in the foundation are very low, well below the base of the TSF embankment and hence it was originally judged that no instrumentation is required at the WFTF. Installation of instrumentation to monitor pore pressures and deformations was planned as part of the designed WFTF South Embankment raise to El. 1710 m as part of due diligence (KCB, 2021a).

5.1.2 Lagoon A and B

- The two VWPs installed in Lagoon A indicate the phreatic surface elevation is at approximately El. 1114.4 m and El. 1115.1 m at the eastern and western extent of Lagoon A, respectively. The phreatic surface elevation is approximately 1 m above the base of the tailings, equivalent to 3.3 m below the embankment crest. The most recent measurement for these VWPs was taken in January 2022.
- The pore pressures at Lagoon B embankments are likely lower than Lagoon A since there is limited ponding in Lagoon B. Due to the low consequence of failure, it is judged that no monitoring instrumentation is necessary for Lagoon B.

5.1.3 Lagoon C

The following instruments are used to interpret pore water pressure conditions of the Lagoon C embankments:

- 15 VWPs
- 6 standpipe piezometers

Appendix IV presents the piezometer data for the reporting period and indicates that the porewater pressures within the Lagoon C embankments generally remain constant over the reporting period. These measurements are also consistent with previous trends. The piezometric surface level ranges

from El. 1113 m to El. 1115 m, and is generally near the base of the tailings, or at the original ground surface level. The standpipes showed a peak water level around May which likely correlates with an elevated Elk River water level during freshet.

There were some standpipe piezometers that were not read during the reporting period, either because they were scheduled to be decommissioned or because they are designated backup instruments (only to be read when there is an alert level exceedance on another instrument). Additionally, there were some VWPs that were not included in the instrumentation record because the data was determined to be erroneous and corrections to the data logging system and/or calibration of the instruments have not yet been completed (refer to Appendix IV).

5.1.4 Lagoon D

The following instruments are used to interpret pore water pressure conditions in the Lagoon D embankments:

- 30 VWPs (19 of which are read regularly)
- 46 standpipe piezometers

Appendix IV presents the piezometer data for the reporting period which indicates that the porewater pressures within the Lagoon D embankments generally remain constant over the reporting period. These measurements are also consistent with previous trends. The phreatic surface level is generally measured between El. 1110 m to El. 1116 m, which is between approximately 3 m below the original ground surface level to up to 3m above the base of the tailings. The piezometers generally indicate a downward gradient, suggesting drainage occurs through the gravel foundations below the Lagoon D embankment. This downward gradient has been observed since 2012.

EVO's reconciliation of operating instruments included an audit of several VWPs. Errors were found in the application of calibration constants for some instruments, and as a result, the measurements for some of these instruments appear to show an increase in the pore water pressures to previous reporting periods; however the measurements are consistent with the historic data when that data is also corrected (refer to Appendix IV). There were some additional standpipe piezometers and VWPs that were not reported during the reporting period, because the data was determined to be erroneous and corrections to the data logging system and/or calibration of the instruments have not yet been completed.

5.2 Deformations

No significant movements or displacements were measured for Lagoons C and D during the reporting period, and there are no safety concerns for the facilities. A summary for each facility is presented below and instrumentation plots are provided in Appendix IV.

5.2.1 Lagoon A and B

There are no settlement or lateral movement monitoring instruments installed in Lagoons A or B. Routine inspections are adequate to monitor these facilities. No significant deformations have been observed during routine inspections.

5.2.2 Lagoon C

Eight survey monuments exist in four pairs at the embankment crest and toe along sections A-A, B-B, C-C and D-D. Due to previous erroneous measurements and issues with survey accuracy, EVO discontinued reading the survey monuments and no measurements were taken during the reporting period.

5.2.3 Lagoon D

Four inclinometers are installed in Lagoon D (North “LD_N”, South “LD_S”, BH-D-19-03 and BH-D-19-06). LD_N and LD_S have been monitored periodically since the first quarter of 2013 and were transitioned to an automated Shape Accelerometer Array system in June of 2019 which records weekly measurements. Inclinometers BH-D-19-02, BH-D-19-03 and BH-D-19-06 have been monitored since the second quarter of 2020. The inclinometers were most recently measured in June and July of 2021, except for LD_N which was last measured in September 2020.

All displacements for Lagoon D inclinometers were consistent with previous trends and no significant discrete displacements or localized shear planes were recorded during the reporting period. Some inclinometer plots indicate local movement at the top of casing, which is common for slope inclinometer casings and represents disturbance due to frost action or other forces and is not a concern. The observed deformation trends are consistent with the Lagoon D tailings consolidating in three-dimensions under self-weight, with tailings at the top of casing settling towards the upstream direction.

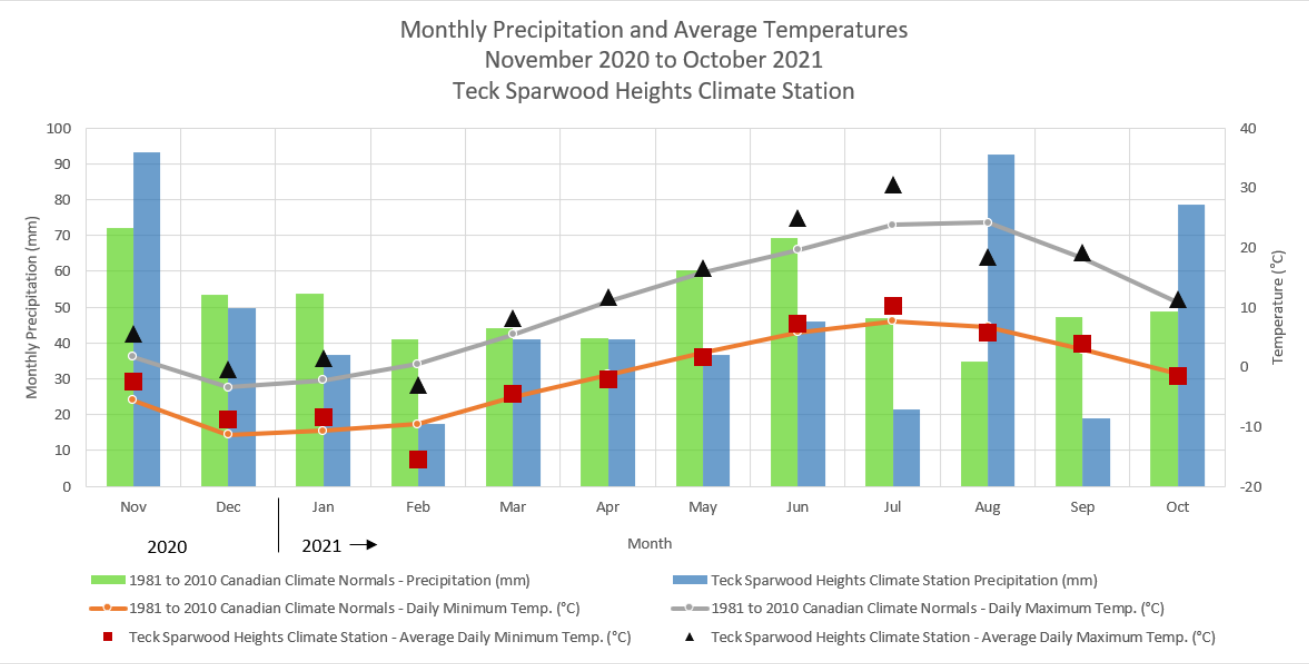
Eight sets of survey monuments are installed along each section of Lagoon D for a total of 29 survey monuments (as shown in Appendix IV). But, due to previous erroneous measurements and issues with survey accuracy, EVO discontinued reading the survey monuments and no measurements were taken during the reporting period.

6 CLIMATE

Figure 6.1 presents the climate averages for Sparwood based on the Teck Sparwood Heights climate station. The Teck Sparwood Heights climate station data was used for this reporting period. The total recorded precipitation from the November 2020 to end of October 2021 period was approximately 574 mm, compared to the average at Sparwood of 614 mm (based on Environment Canada Sparwood climate normal from 1981 to 2010).

Precipitation during November 2020, and August and October of 2021 was higher than the 1981-2010 Canadian climate normal for Sparwood. The precipitation for the 2020 to 2021 period has generally been lower in comparison the 1981-2010 Canadian climate normal for Sparwood. KCB is not aware of any instances of decreased facility performance during the high precipitation months.

Figure 6.1 Climate Averages for Sparwood



Note: 1. Source: Environment Canada Sparwood Climate Normals (1981 to 2010) (Climate ID 1157630; El. 1138 m), and EVO Sparwood Heights Climate Station (El. 1138 m).

7 WATER MANAGEMENT

The EVO Mine Water Management Plan was updated in July 2021 (EVO 2021). A GoldSim water balance model review and update were completed by KCB for the 2021 hydrological year (KCB 2021b). The following sections provide a summary of the water management strategies used at each facility.

7.1 WFTF

Tailings discharge into the facility is located along the WFTF embankment. The decant pond is subsequently formed at the northern portion of the impoundment, confined by the Adit Ridge and the Cowboy Ridge. The decant pond in the WFTF is not reclaimed, and seeps into the tailings and adjacent waste rock dumps. The WFTF has sufficient freeboard to accommodate the 72-hour, 1/3 between the 1/1,000 AEP and PMF events (approximately equivalent to the 1/10,000 AEP event).

7.2 Lagoon A

Lagoon A does not receive any pumped tailings or water discharge from the Wash Plant, and rainfall typically infiltrates the tailings into the sand and gravel foundations, or ponds on the surface of the lagoon along with Cossarini Creek inflows and discharges through an open channel, riprap lined spillway. The spillway was designed to accommodate the 1/200 AEP event. The water management at Lagoon A is managed passively by the spillway.

7.3 Lagoon B

EVO pumps sediment-laden water to excavated cells within Lagoon B on occasion. All water in Lagoon B infiltrates through the tailings and into the natural ground surface. EVO is able to utilize the impoundment capacity of Lagoon B to receive overflow process water in emergency situations, and this occurred 11 times during the reporting period (refer to Section 3.3).

7.4 Lagoon C

Lagoon C was designed to accommodate the 72-hour, 1/3 between the 1 in 1,000-yr and PMF event while maintaining freeboard for wave runup. Lagoon C is currently utilized as a sediment disposal location for sediment excavated from various sumps and ponds.

Lagoon C has sufficient capacity to store the 24-hr IDF, however due to the low spot in the crest at the trestle, it has less than the recommended freeboard during this event (KCB 2021c). Lagoon C would overtop at the low spot near the trestle during the 72-hour IDF. Ponded water infiltrates through the tailings to the natural ground.

7.5 Lagoon D

Tailings deposition to Lagoon D is managed using shallow cells to enable faster consolidation of tailings, with bleed water draining towards the center of the structure via temporary solid pipes

though the cell walls. Lagoon D does not have an emergency spillway. The central decant pond is managed to maintain a 1.25 m minimum freeboard and 60 m wide beach relative to the ring-dyke embankments. The freeboard is measured with a staff gauge on the north side of the Inner Ring Road. The decant pond can accommodate the 72-hour PMP event and also the 30-day PMP event. Water from the decant pond can be transferred to the plant site by pumping.

7.6 Discharge Quantities and Quality

EVO reports water quality data directly to the BC Ministry of Environment and Climate Change Strategy (ECCS) under separate cover.

Seepage from the WFTF is expected to perch on shallow bedrock below the embankment and underlying waste dump, before travelling south through various waste dumps along the pre-mine Erickson Valley. Typically, the infiltration of rainfall or ponded water through the tailings occurs slowly, with no observed areas of seepage downstream of the WFTF embankment. During the reporting period, there were no water quality exceedances measured.

Rainfall infiltrating through the surface of the Lagoons typically drains to the ground surface level where it infiltrates into the underlying permeable foundation soils. The original ground comprises layers of sand and gravel, glaciolacustrine clay, and till. Infiltration into groundwater is not measured and water quality for the Lagoon TSFs are not tested by EVO.

8 FACILITY SAFETY ASSESSMENT

The WFTF, and Lagoons A, B, C, and D, appeared to be in good physical condition with no signs of structural distress based on observations during the 2021 AFPR. The only exception to this was the excavated/removed embankment at the north perimeter of Lagoon B; however, this is not a safety concern for the facility as the exposed tailings slope appeared to be stable during the site visit, the exposed condition may have existed since 2020, and the tailings within the facility are drained. Further, Lagoon B would not cause any life safety concerns if an event occurred. Tailings deposition was to the Lagoon D cells during the site visit, and deposition was being operated in accordance with the procedures in the OMS Manual.

The following sections provide additional detail on specific facility safety categories and detail deficiencies where applicable.

8.1 Failure Modes Review

The most recent risk assessment for the WFTF and Lagoons A, and B were completed in 2020, and risk assessments for Lagoons C and D were completed in March 2021. The risk assessments were updated during a working session with EVO and KCB and a discussion of key failure modes are provided in the following sub-sections.

8.1.1 Definition of failure modes

A failure mode commences with an initiating event (trigger) that is the loading or physical condition that starts the failure process. This is followed by the failure progression, which is the mechanism that can lead to an impact to the facility (such as overtopping, instability, or internal erosion), but it is important to note that not all failure mechanisms will result in a breach of the embankment (a failure of the “embankment system”). The failure mechanism may become arrested or there may be interventions that prevent the failure mechanism from progressing to a breach.

8.1.2 Overtopping

WFTF

The WFTF available freeboard during the 2021 AFPR site visit was approximately 5.6 m from the top of the tailings beach elevation to the crest level (El. 1679.5 m), with an available impoundment capacity of approximately 3.5 Mm^3, exceeding the 72-hr PMF volume of approximately 1.1 Mm^3.Therefore, the failure mode via overtopping is effectively managed with the available impoundment capacity. The impoundment capacity was further increased by raising the WFTF South Embankment crest to a minimum of El. 1683.2 m.

Lagoons A, B, C, and D

The passive water management strategy for Lagoons A, B, and C is to allow ponded water to infiltrate through the tailings and dissipate into the foundations. Lagoon D currently maintains an operational pond and is designed with adequate freeboard to meet the design criteria. The potential for overtopping for Lagoons A, B, C, and D is managed through appropriately designed impoundment

capacity and minimum freeboards. The freeboard and flood routing analyses completed for Lagoon B determined that has sufficient capacity to store the 24-hour PMF derived IDF (Wood 2019).

A low spot in the Lagoon C crest was observed near the trestle which has reduced the impoundment capacity volume to 79,000 m^3 (without freeboard). This low spot should be filled to El. 1128.5 m to accommodate the IDF and restore the recommended freeboard. EVO is in the process of addressing this recommendation.

8.1.3 Internal Erosion and Piping

WFTF

During the 2019 AFPR, tailings was observed to be migrating into the WFTF abutment where the 2013 embankment raise material may be too coarse. This was not observed during the 2020 or 2021 AFPR site visits. The WFTF South Embankment raise was constructed to El. 1683.2 m by December 2021 and includes a 5 m wide filter zone on the upstream side of the embankment to reduce the potential for tailings migration through the embankment. Tailings migration, even if it were to occur through the embankment or abutments, does not pose a risk to facility safety for the WFTF.

Lagoons A, B, C, and D

Lagoons A, B, and C do not maintain ponds and have low piezometric pressures within the tailings and embankments. The conditions of the Lagoons remain relatively consistent, based on daily inspections by the EVO Road Crew team and monthly inspections by the EVO Tailings Team. Given these observations and a lack of past issues, potential for failure due to internal erosion and piping is considered unlikely and is managed by the current surveillance program.

Lagoon D maintains an operational pond, however, monitoring instruments typically indicate a downward flow to the foundations. No piping of embankment or tailings material was observed during the 2021 AFPR site visit or routine inspections by EVO personnel. Piping erosion is not expected based on the groundwater flow pattern and filter compatibility between the tailings and the surrounding embankment fill materials.

Monitoring the embankment slopes and toes for seepage and erosion is part of the scheduled surveillance during routine inspections. The failure mode via piping and erosion is adequately managed by the current controls.

8.1.4 Slope Instability

No signs of slope instability were observed for the WFTF and Lagoons A, B, C, and D, during the 2021 AFPR site visit. Excavation of the Lagoon B north embankment occurred during the reporting period resulting in exposure of the contained tailings, as described in Table 4.1. A remedial action has been recommended (refer to Section 9).

Based on previous geotechnical investigations, potential glaciolacustrine silty clay foundation units underlie portions of Lagoons A, B, C, and D. Stability analyses for these structures indicate that the structures meet the minimum target FoS for relevant loading conditions.

Therefore, the failure mode via slope instability is considered effectively managed with current design controls.

8.1.5 Surface Erosion

EVO personnel conduct routine inspections of the tailings facilities and monitor the downstream and upstream slopes for surface erosion caused by snow melt or rainfall runoff. Surface erosion was observed on the surface of Lagoon C at a point near the pumphouse, which is not a facility safety concern but should be repaired as part of closure works. Minor surface erosion was also observed on Lagoon D at several downstream slope locations. The downstream minor erosion should be monitored, tracked, and repaired as needed. Minor erosion gullies were observed on the downstream slope of Lagoon B, and no surface erosion was observed on Lagoon A.

The magnitude of surface erosion for the WFTF and Lagoons A, B, C, and D, is not a concern to the safety of the embankments. EVO has been utilizing hydroseeding with a tackifier to effectively control most of the erosion on the downstream face of the structures. Therefore, the failure mode via surface erosion is considered to be effectively managed with the current controls.

8.1.6 Earthquake

The WFTF is not vulnerable to instability by seismic ground motions because the embankment was constructed using compacted, free-draining rockfill overlying bedrock foundations, and the seismic demand in the region is relatively low. The WFTF South Embankment was designed to accommodate a 1/10,000 AEP seismic event (KCB, 2021).

Lagoons A and B are not vulnerable to seismic ground motions because of the low design seismicity and the relatively small height of the facilities. EVO has adopted a 1/2,475 AEP seismic event for these structures.

Lagoons C and D have been designed to 1/2,475 AEP and 1/5,000 AEP seismic events, respectively and the perimeter embankments have been assessed as being capable to withstand these seismic events.

Therefore, the failure mode via an earthquake is considered effectively managed by the configuration of the embankments.

8.2 OMS Manual and ERP

EVO has three separate OMS Manuals, encompassing inactive Lagoons A, B and C, Lagoon D and the WFTF. All three OMS Manuals for were updated in January 2021.

An ERP was prepared for Lagoon D in October 2014 which is a combined emergency preparedness plan and emergency response plan. It was subjected to a tabletop test in 2018. Revision of the ERP document is in progress. The ERP document for Lagoons A, B, and C is up to date for 2021, with no revisions required.

An ERP was prepared for the WFTF in 2020 and is an adequate action plan in the event of an emergency at the WFTF and is considered to be up to date for 2021.

8.3 Dam Safety Reviews

The last DSR completed for the EVO site was in 2018, which covered Lagoons A, B, C, and D and the WFTF. DSRs are conducted at 5-year intervals and accordingly the next DSR would be needed in 2023.

9 SUMMARY OF RECOMMENDATIONS

A summary of previous recommendations and 2021 AFPR recommendations are provided in the following sub-sections. Recommendations are prioritized based on the framework recommended in MEM (2016), as shown in Table 9.1.

Each recommendation is assigned a number with the prefix based on the year that item was recommended. Recommendations noted as completed or closed in this report are presented in gray and will be removed from the register in subsequent reports.

The action items in Table 9.2 are classified using the following terms, adapted from the BC Dam Safety Regulation Technical Resources (Gov. BC 2015) and the CDA Technical Bulletin: Dam Safety Reviews (CDA 2016):

- Non-Conformance: Defined as a deviation from established policies, procedures, operating instructions, maintenance requirements, or surveillance plans. A non-conformance is not an indication of unacceptable facility performance.
- Potential Deficiency[2]: A facility performance condition that requires further evaluation to determine if the condition is a deficiency.
- Actual Deficiency: An unacceptable facility performance condition based on analysis results and/or site observations/instrumentation data with respect to criteria outlined in the HSRC (EMLI 2021), best practices, and/or applicable regulatory requirements.

Table 9.1 Prioritization of Action Items

Priority	Description
1	A high probability or actual dam safety issues considered dangerous to life, health or the environment, or a significant risk of regulatory enforcement.
2	If not corrected, could likely result in dam safety issues leading to injury, environmental impact or significant regulatory enforcement; or, a repetitive deficiency that demonstrates a systematic breakdown of procedures.
3	Single occurrences of deficiencies or non-conformances that alone would not be expected to result in dam safety issues.
4	Best Management Practice – further improvements are necessary to meet best practices or reduce potential risks.

[2] Deficiency is defined as an inadequacy, or uncertainty in the adequacy, of the dam system to meet its performance goals in accordance with good dam safety practices (CDA 2016).

9.1 Summary of Previous and 2021 Recommendations

Outstanding recommendations related to previous AFPRs and new recommendations arising from the 2021 AFPR for the EVO TSFs are presented in Table 9.2. The table also indicates if each recommendation is still appropriate and what actions have been taken. Recommendations from previous reviews that have been addressed have not been included.

Table 9.2 Summary of Previous Recommendations

Action ID	Facility	Deficiency or Non-Conformance	Applicable Regulation or OMS Manual Reference	Recommended Action	Priority	Status / Recommended Deadline
Previous Recommendations						
2019-01	Lagoon B	Potential Deficiency. Lagoon B does not meet regulatory compliance volume for flood storage.	HSRC 2021	Lagoon B can contain a 24 hour 200-year flood event. The HSRC indicates that it should meet a 72-hour event that is 1/3 between the 1,000 year event and the probable maximum precipitation. The discrepancy should be addressed with a determination of whether Lagoon B should follow the HSRC requirements	3	December 2022
2021 Recommendations						
2021-01	Lagoon C	Actual Deficiency. The Lagoon C crest has a low spot at the trestle at approximately El. 1126.6 m.	N/A	The low spot should be filled to at least El. 1128.5 m to accommodate the IDF plus freeboard requirements.	2	To be completed in 2022
2021-02	Lagoon B	Potential Deficiency. The northern Lagoon B embankment was excavated by EVO personnel, exposing tailings.	N/A	The exposed tailings surface should be evaluated to determine whether remedial action is required.	3	To be completed in 2022
2021-03	Lagoon C and D	Non-Conformance. survey pins were not monitored during the 2020 to 2021 reporting period.	OMS Manual Section 6.4.4	Monitor the survey pins in accordance with the frequency specified in the OMS Manual.	3	To be completed in Q2 2022

Notes: Recommendation priority guidelines specified in the HSRC Guidance Document (BCMEM, 2016) and assigned by KCB. Refer Table 9.1 for description of priorities.

10 CLOSING

Based on the site visit observations and data reviewed, the WFTF and Lagoons A, B, C, and D, are in an adequate condition and they performed satisfactorily over the reporting period.

If you have any questions, please contact the undersigned.

KLOHN CRIPPEN BERGER LTD.
B.C. Permit to Practice No. 1000171

Andy Small, P.Eng.
Senior Geotechnical Engineer

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APPENDIX I

Site Visit Photographs

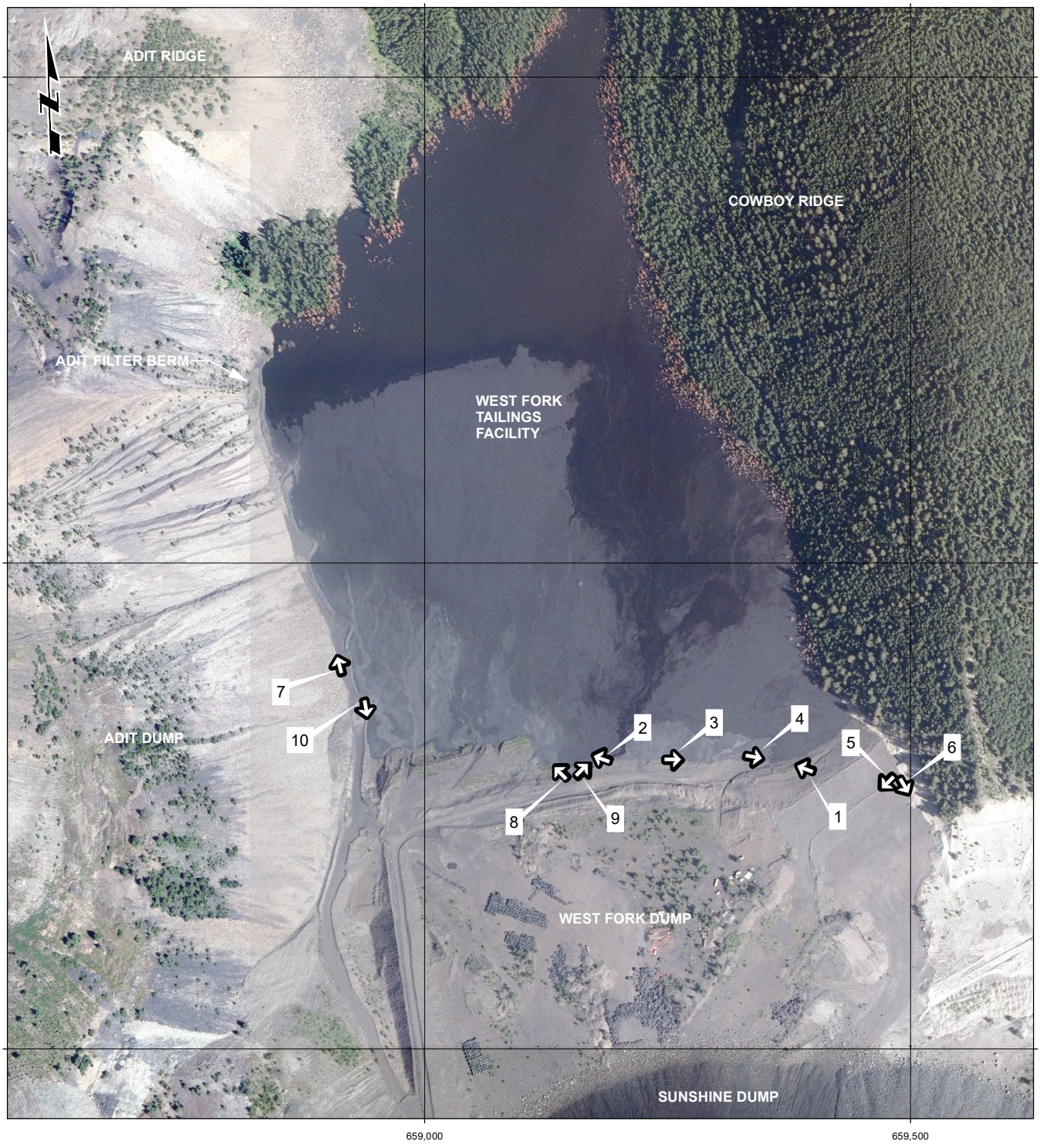
WFTF
Lagoon A
Lagoon B
Lagoon C
Lagoon D

Appendix I
Site Visit Photographs
(Taken on September 15 and 16, 2021 during annual site visit)

I-1.1 West Fork Tailings Facility (WFTF)

The WFTF photograph locations plan layout is presented on Figure I-1. The following general notes are applicable to the site visit photographs:

1. This appendix contains selected photos taken during the site visit, it does not include all of the photos that were taken.
2. The photo locations and direction taken are approximate only.



LEGEND

ELKVIEW PHOTO LOCATION

NOTES

1. DATUM, PROJECTION: NAD83, UTM ZONE 11 (WKID 26911)
2. IMAGERY FROM EVO (COLLECTED IN 2019).

NOT FOR CONSTRUCTION

SCALE 0 125 m

CLIENT: Teck

Klohn Crippen Berger

PROJECT: TECK ELKVIEW OPERATIONS
2021 ANNUAL FACILITY PERFORMANCE REPORT

TITLE: WEST FORK TAILINGS FACILITY
PHOTOGRAPH LOCATIONS
PLAN LAYOUT

SCALE	PROJECT No.	FIG. No.
1:6,000	M09963A25	I-1

ANSI A

SAVE DATE: 2022-02-03(13:06 PM)
FILE PATH: \\INT.KLOHN.COM\PROJDATA\MV\CRM\09963A25-TCL-EVO 2021 AFPR AND ITRB\400 DRAWINGS\GIS\DSI\FIGI-1_DSI_WFTF.MXD (TSCHOENHALS)

Photo IW-1 WFTF tailings beach overview. (Looking NW – Taken 15 September 2021)

Photo IW-2 WFTF tailings beach. (Looking West – Taken 15 September 2021)

Photo IW-3 WFTF embankment. (Looking East – Taken 15 September 2021)

Photo IW-4 WFTF Tailings contact at the east abutment. (Looking East – Taken 15 September 2021)

Photo IW-5 WFTF typical crest conditions and downstream slope at the east abutment. (Looking West – Taken 15 September 2021)

Photo IW-6 WFTF downstream of embankment. (Looking South – Taken 15 September 2021)

Photo IW-7 WFTF Adit Filter Berm construction in progress - typical conditions. (Looking North – Taken 15 September 2021)

Photo IW-8 WFTF Adit Dump erosion above Adit Filter Berm. (looking west – Taken 15 September 2021)

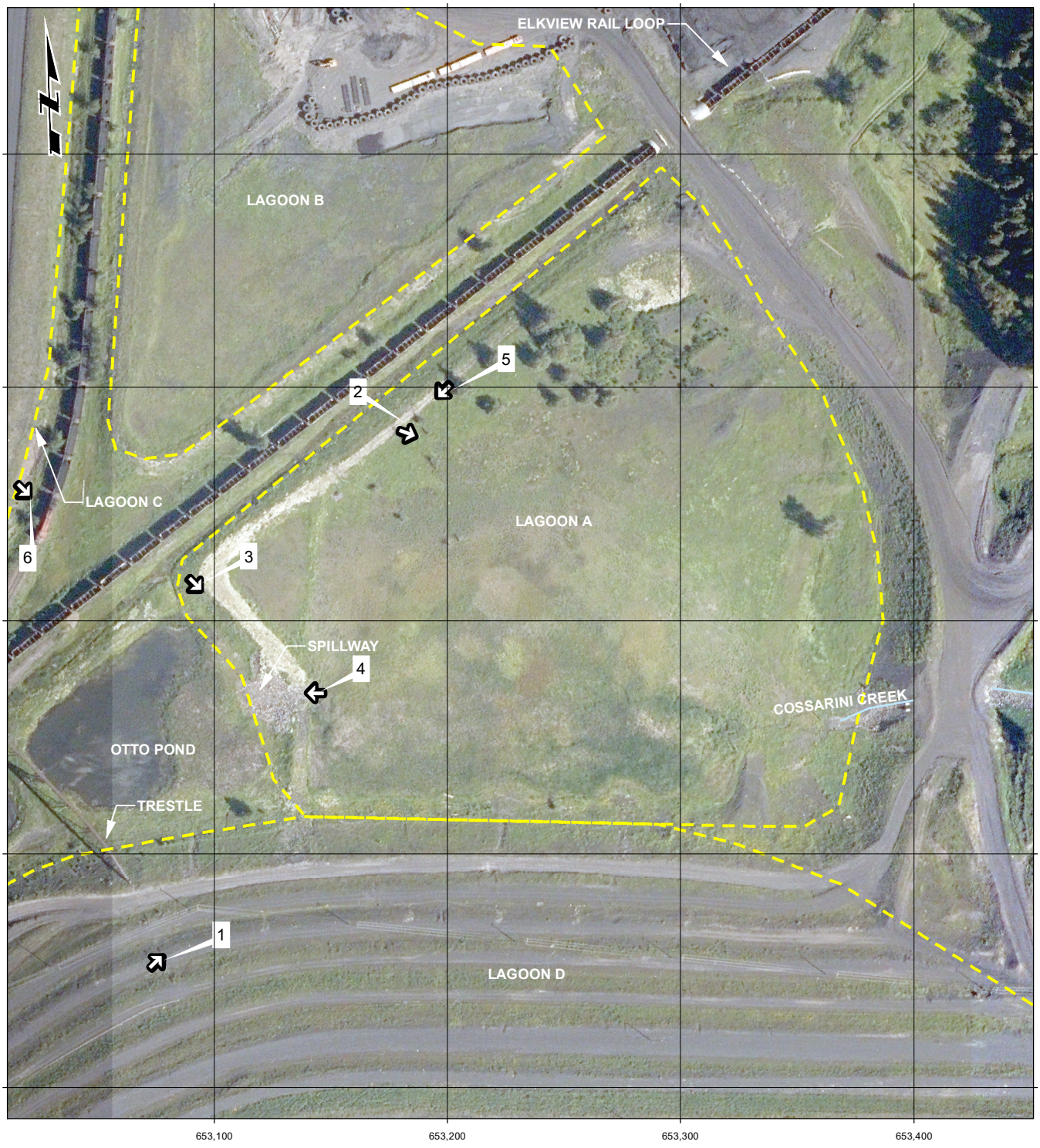
Photo IW-9 WFTF tailings beach and spigot. (Looking NE – Taken 15 September 2021)

Photo IW-10 WFTF embankment at west abutment. (Looking South – Taken 15 September 2021)

I-1.2 Lagoon A

The Lagoon A photograph locations plan layout is presented on Figure I-2. The following general notes are applicable to the site visit photographs:

1. This appendix contains selected photos taken during the site visit, it does not include all of the photos that were taken.
2. The photo locations and direction taken are approximate only.



LEGEND

ELKVIEW PHOTO LOCATION

LAGOON BOUNDARY

CREEK

NOTES

1. DATUM, PROJECTION: NAD83, UTM ZONE 11 (WKID 26911)
2. IMAGERY FROM EVO (COLLECTED IN 2019).

NOT FOR CONSTRUCTION

SCALE 0 50 m

CLIENT: Teck

Klohn Crippen Berger

PROJECT: TECK ELKVIEW OPERATIONS
2021 ANNUAL FACILITY PERFORMANCE REPORT

TITLE: LAGOON A PHOTOGRAPH LOCATIONS PLAN LAYOUT

SCALE	PROJECT No.	FIG. No.
1:2,500	M09963A25	I-2

ANSI A

SAVE DATE: 2022-02-03(13:09 PM)
FILE PATH: \\INT.KLOHN.COM\PROJDATA\MV\CRM\09963A25-TCL-EVO 2021 AFPR AND ITRB\400 DRAWINGS\GIS\DSI\FIGI-2_DSI_LAGOONA.MXD (TSCHOENHALS)

Photo IA-1 Lagoon A general conditions and overview. (from Lagoon D looking northeast – Taken 16 September 2021)

Photo IA-3 Lagoon A crest and spillway riprap. (Looking SE – Taken 15 September 2021)

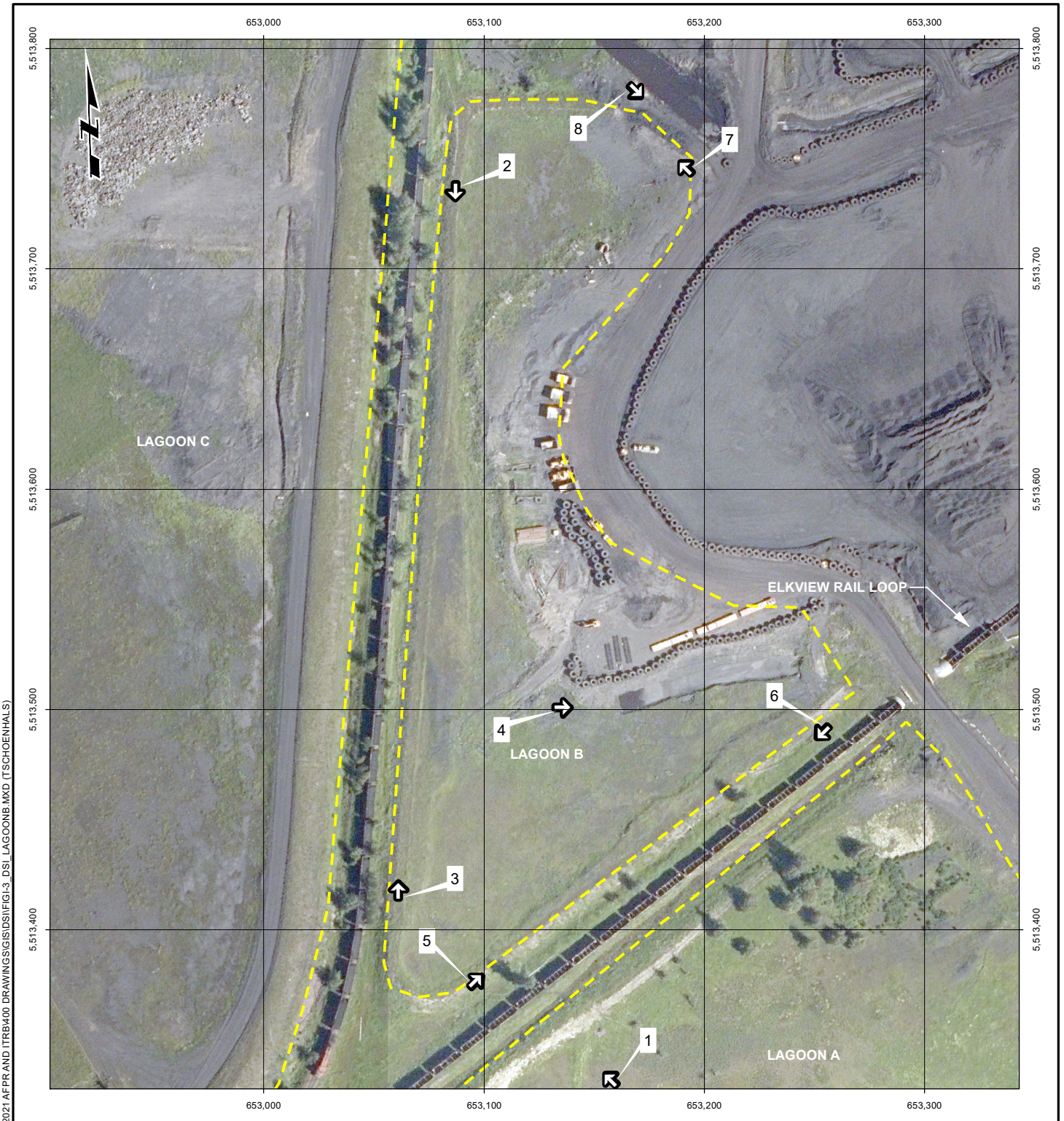
Photo IA-5 Lagoon A crest typical conditions. (Looking West – Taken 15 September 2021)

Photo IA-6 Lagoon A typical conditions. (Looking East from Lagoon C crest – Taken 15 September 2021)

I-1.3 Lagoon B

The Lagoon B photograph locations plan layout is presented on Figure I-3. The following general notes are applicable to the site visit photographs:

1. This appendix contains selected photos taken during the site visit, it does not include all of the photos that were taken.
2. The photo locations and direction taken are approximate only.



LEGEND

- ELKVIEW PHOTO LOCATION
- LAGOON BOUNDARY

NOTES

1. DATUM, PROJECTION: NAD83, UTM ZONE 11 (WKID 26911)
2. IMAGERY FROM EVO (COLLECTED IN 2019).
3. PHOTO 1 TAKEN FROM LAGOON D CREST.

NOT FOR CONSTRUCTION

SCALE 0 50 m

CLIENT: Teck

Klohn Crippen Berger

PROJECT: TECK ELKVIEW OPERATIONS
2021 ANNUAL FACILITY PERFORMANCE REPORT

TITLE: LAGOON B PHOTOGRAPH LOCATIONS PLAN LAYOUT

SCALE	PROJECT No.	FIG. No.
1:2,500	M09963A25	I-3

ANSI A

SAVE DATE: 2022-02-03(13:11 PM)
FILE PATH: \\INT.KLOHN.COM\PROJDATA\MV\CRM\09963A25-TCL-EVO 2021 AFPR AND ITRB\400 DRAWINGS\GIS\DSI\FIGI-3_DSI_LAGOONB.MXD (TSCHOENHALS)

Photo IB-1 Lagoon B overview. (Looking North from Lagoon D crest – Taken 16 September 2021)

Photo IB-3 Lagoon B crest typical condition. (Looking North – Taken 15 September 2021)

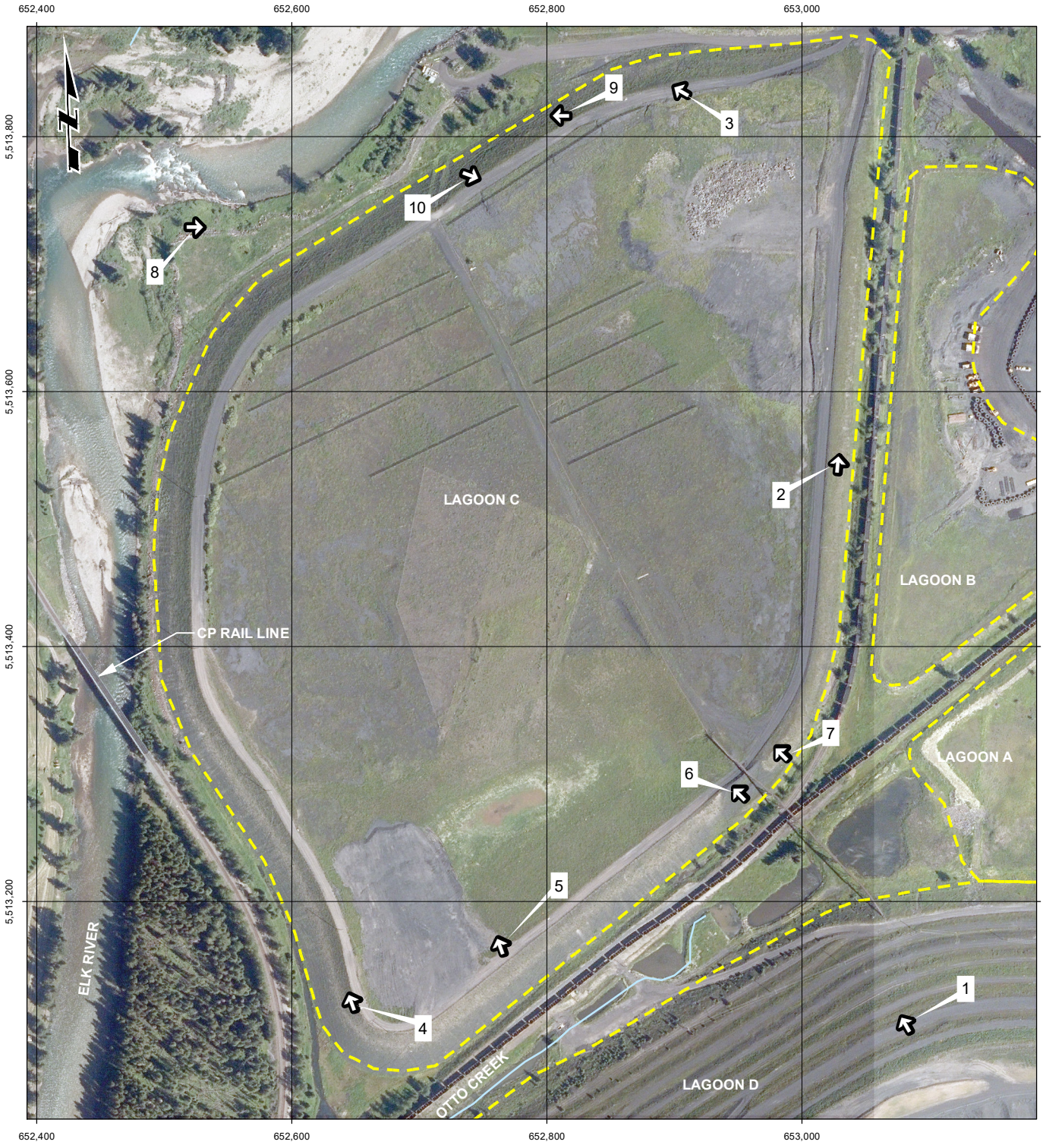
Photo IB-5 Lagoon B crest typical condition. (Looking NE – Taken 15 September 2021)

Photo IB-7 Lagoon B embankment excavation. (Looking West – Taken 15 September 2021)

I-1.4 Lagoon C

The Lagoon C photograph locations plan layout is presented on Figure I-4. The following general notes are applicable to the site visit photographs:

1. This appendix contains selected photos taken during the site visit, it does not include all of the photos that were taken.
2. The photo locations and direction taken are approximate only.



LEGEND

- ELKVIEW PHOTO LOCATION
- LAGOON BOUNDARY
- CREEK

NOTES

1. DATUM, PROJECTION: NAD83, UTM ZONE 11 (WKID 26911)
2. IMAGERY FROM EVO (COLLECTED IN 2019).

NOT FOR CONSTRUCTION

SCALE 0 100 m

CLIENT: Teck

Klohn Crippen Berger

PROJECT: TECK ELKVIEW OPERATIONS
2021 ANNUAL FACILITY PERFORMANCE REPORT

TITLE: LAGOON C PHOTOGRAPH LOCATIONS PLAN LAYOUT

SCALE	PROJECT No.	FIG. No.
1:4,500	M09963A25	I-4

ANSI A

SAVE DATE: 2022-02-03(13:13 PM)
FILE PATH: \\INT.KLOHN.COM\PROJDATA\MVCRM\09963A25-TCL-EVO 2021 AFPR AND ITRB\400 DRAWINGS\GIS\DSI\FIGI-4_DSI_LAGOONC.MXD (TSCHOENHALS)

Photo IC-1 Lagoon C overview. (Looking NE from Lagoon D crest – Taken 16 September 2021)

Photo IC-2 Lagoon C crest typical condition. (Looking North – Taken 15 September 2021)

Photo IC-3 Lagoon C typical crest typical condition with piezometer OW-C-88-1. (Looking SW – Taken 15 September 2021)

Photo IC-4 Lagoon C crest and downstream slope typical conditions. (Looking NW – Taken 15 September 2021)

Photo IC-5 Lagoon C sediment placement. (Looking North – Taken 15 September 2021)

Photo IC-6 Lagoon C crest and downstream slope. (Looking SW – Taken 15 September 2021)

Photo IC-7 Lagoon C crest low spot and trestle structure. (Looking SW – Taken 15 September 2021)

Photo IC-8 Lagoon C toe riprap. (Looking NE – Taken 15 September 2021)

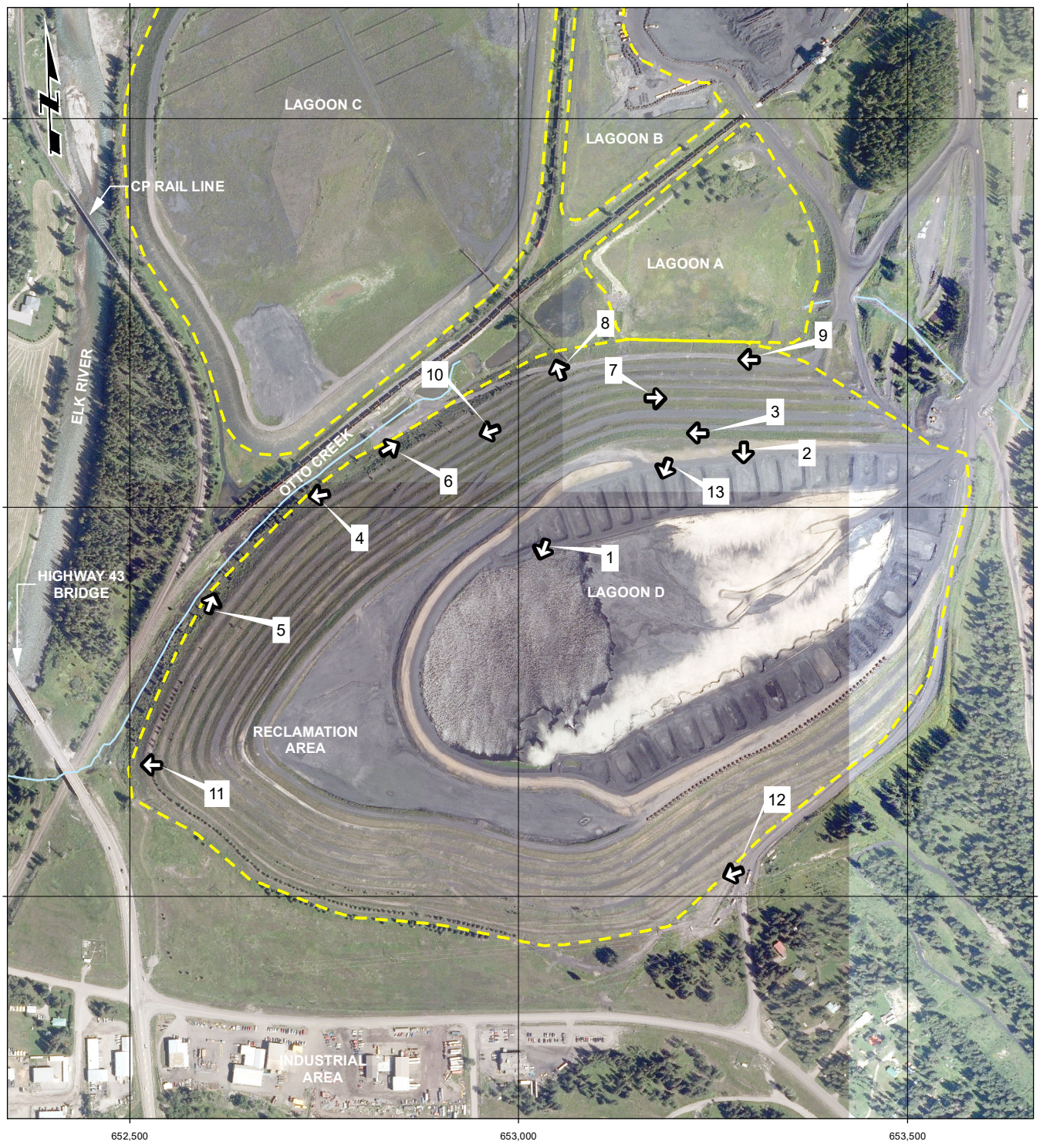
Photo IC-9 Lagoon C downstream slope and toe riprap. (Looking West – Taken 15 September 2021)

Photo IC-10 Lagoon C upstream slope erosion. (Looking South – Taken 15 September 2021)

I-1.5 Lagoon D

The Lagoon D photograph locations plan layout is presented on Figure I-5. The following general notes are applicable to the site visit photographs:

1. This appendix contains selected photos taken during the site visit, it does not include all of the photos that were taken.
2. The photo locations and direction taken are approximate only.



LEGEND

- ELKVIEW PHOTO LOCATION
- LAGOON BOUNDARY
- CREEK

NOTES

1. DATUM, PROJECTION: NAD83, UTM ZONE 11 (WKID 26911)
2. IMAGERY FROM EVO (COLLECTED IN 2019).

NOT FOR CONSTRUCTION

SCALE 0 150 m

CLIENT: Teck

Klohn Crippen Berger

PROJECT: TECK ELKVIEW OPERATIONS
2021 ANNUAL FACILITY PERFORMANCE REPORT

TITLE: LAGOON D PHOTOGRAPH LOCATIONS PLAN LAYOUT

SCALE	PROJECT No.	FIG. No.
1:7,500	M09963A25	I-5

ANSI A

SAVE DATE: 2022-02-03(13:14 PM)
FILE PATH: \\INT.KLOHN.COM\PROJDATA\MV\CRM\09963A25-TCL-EVO 2021 AFPR AND ITRB\400 DRAWINGS\GIS\DSI\FIGI-5_DSI_LAGOOND.MXD (TSCHOENHALS)

Photo ID-1 Lagoon D tailings beach. (Looking South – Taken 16 September 2021)

Photo ID-2 Lagoon D north tailings cells. (Looking South – Taken 16 September 2021)

Photo ID-3 Lagoon D crest typical condition. (Looking West – Taken 16 September 2021)

Photo ID-4 Lagoon D ponding at the toe (Otto Ponds) adjacent to the rail line. (Looking West – Taken 16 September 2021)

Photo ID-5 Lagoon D Toe and adjacent rail track. (Looking NE – Taken 16 September 2021)

Photo ID-6 Lagoon D bench typical conditions. (Looking NE – Taken 16 September 2021)

Photo ID-7 Lagoon D bench typical conditions. (Looking East – Taken 16 September 2021)

Photo ID-8 Lagoon D decant pond transfer pipeline and trestle. (Looking NW – Taken 16 September 2021)

Photo ID-9 Lagoon D bench typical conditions. (Looking West – Taken 16 September 2021)

Photo ID-10 Lagoon D bench minor erosion. (Looking West – Taken 16 September 2021)

Photo ID-11 Lagoon D toe and pumphouse. (Looking West – Taken 16 September 2021)

Photo ID-12 Lagoon D embankment. (Looking NW – Taken 16 September 2021)

Photo ID-13 Lagoon D minor subsidence of backfilled north tailings cell. (Looking SW – Taken 16 September 2021)

APPENDIX II

Site Visit Checklists

WFTF
Lagoon A
Lagoon B
Lagoon C
Lagoon D

Annual Facility Performance Report Site Visit Checklist

Klohn Crippen Berger

Site	Teck Elkview Operations		
Structure	West Fork Tailings Facility		
Reviewed by	Andy Small P.Eng., / Dan Hughes-Games P.Eng	Crest El.	1,679.5 m
Accompanied by	Trevor Munn P.Geo / Patrick Green P.Eng	Spillway Invert El.	None.
Date of Observations	September 15, 2021	Reservoir Level El.	1,673.9 m
Walk Over Review	Crest/slopes/Toe/Surface	Available Freeboard	5.6 m
Weather Conditions	Sunny / Mostly Clear		

Notes: Reservoir Level is the average tailings beach level at the south end of the facility.

ID	Observed Features	Yes	No	N/A	Comments
1.0	***Upstream Embankment Slope***				
1.1	Concern with Current or Previous Water Level		X		
1.2	Evidence of Wave or Other Erosion/Gullying		X		
1.3	Evidence of Sloughing/Sliding		X		
1.4	Evidence of Cracking		X		
1.5	Evidence of Movement		X		
1.6	Other Deformation/Settlement/Sinkholes		X		
1.7	Other Unusual Conditions		X		
1.8	Repairs Required		X		
2.0	***Embankment Crest***				
2.1	Evidence of Shoulder/Erosion		X		
2.2	Evidence of Cracking		X		
2.3	Evidence of Movement		X		
2.4	Other Deformation/Settlement/Sinkholes		X		
2.5	Concerns with Low Areas on the Crest		X		
2.6	Concerns with crest width		X		
2.7	Other Unusual Conditions		X		
2.8	Repairs Required		X		
3.0	***Downstream Embankment Slope***				
3.1	Evidence of Erosion		X		
3.2	Evidence of Sloughing/Sliding		X		
3.3	Evidence of Cracking		X		
3.4	Evidence of Movement		X		
3.5	Any Other Deformation		X		
3.6	Signs of Phreatic Surface/Seepage		X		
3.7	Seepages Observed		X		
3.8	Is Seepage (if any) Turbid		X		
3.9	Other Unsual Conditions		X		
3.10	Repairs Required		X		
4.0	***Embankment Abutments***				
4.1	Seepages Observed		X		
4.2	Is Seepage (if any) Turbid		X		
4.3	Evidence of Erosion		X		No tailings migration was observed.
4.4	Evidence of Cracking		X		
4.5	Evidence of Movement		X		
4.6	Other Deformation/Settlement/Sinkholes		X		
4.7	Other Unusual Conditions		X		
4.8	Repairs Required		X		

Annual Facility Performance Report Site Visit Checklist

Klohn Crippen Berger

Site	Teck Elkview Operations		
Structure	West Fork Tailings Facility		
Reviewed by	Andy Small P.Eng., / Dan Hughes-Game	Crest El.	1,679.5 m
Accompanied by	Trevor Munn P.Geo / Patrick Green P.E	Spillway Invert El.	None.
Date of Observations	September 15, 2021	Reservoir Level El.	1,673.9 m
Walk Over Review	Crest/slopes/Toe/Surface	Available Freeboard	5.6 m
Weather Conditions	Sunny / Mostly Clear		

Notes: Reservoir Level is the average tailings beach level at the south end of the facility.

ID	Observed Features	Yes	No	N/A	Comments
5.0	***Downstream Toe***				
5.1	Seepages Observed		X		
5.2	Is Seepage (if any) Turbid		X		
5.3	Evidence of Soft Toe Condition		X		
5.4	Evidence of Sloughing/Sliding		X		
5.5	Evidence of Boils		X		
5.6	Evidence of Contamination/Vegetation Kills		X		
5.7	Excessive Vegetation		X		
5.8	Other Unusual Conditions		X		
5.9	Repairs Required		X		
6.0	***Spillway***				
6.1	Obstruction by debris or vegetation			X	
6.2	Lack of Erosion Protection			X	
6.3	Slope Deterioration (Sloughing, Erosion etc...)			X	
6.4	Other Unusual Conditions			X	
6.5	Repairs Required			X	
7.0	***Other***				
7.1	Other Unusual Conditions		X		
7.2	Sketch (if required):				

Adit Filter Berm was constructed to an average elevation of El. 1,677 m at the time of AFPR.
The WFTF South Embankment crest elevation was 1,679.5 m at the time of AFPR, but was raised to El.1683.2m by 9 December 2021.

Annual Facility Performance Report Site Visit Checklist

Klohn Crippen Berger

Site	Teck Elkview Operations		
Structure	Lagoon A		
Reviewed by	Dan Hughes-Games P.Eng / Michael Tin E.I.T	Crest El.	1,119.0 m
Accompanied by	Trevor Munn P.Geo	Spillway Invert El.	1,118.3 m
Date of Observations	September 15, 2021	Reservoir Level El.	No pond observed
Walk Over Review	Crest/Slopes/Toe	Available Freeboard	None - surface flows to spillway
Weather Conditions	Mostly Sunny		

ID	Observed Features	Yes	No	N/A	Comments
1.0	***Upstream Embankment Slope and Tailings Surface***				
1.1	Concern with Current or Previous Water Level		X		
1.2	Evidence of Wave or Other Erosion/Gullying		X		
1.3	Evidence of Sloughing/Sliding		X		
1.4	Evidence of Cracking		X		
1.5	Evidence of Movement		X		
1.6	Other Deformation/Settlement/Sinkholes		X		
1.7	Other Unusual Conditions		X		
2.0	***Embankment Crest***				
2.1	Evidence of Shoulder/Erosion		X		
2.2	Evidence of Cracking		X		
2.3	Evidence of Movement		X		
2.4	Other Deformation/Settlement/Sinkholes		X		
2.5	Concerns with Low Areas on the Crest		X		
2.6	Concerns with crest width		X		
2.7	Other Unusual Conditions		X		
2.8	Repairs Required		X		
3.0	***Downstream Embankment Slope***				
3.1	Evidence of Erosion		X		
3.2	Evidence of Sloughing/Sliding		X		
3.3	Evidence of Cracking		X		
3.4	Evidence of Movement		X		
3.5	Any Other Deformation		X		
3.6	Signs of Phreatic Surface/Seepage		X		
3.7	Seepages Observed		X		
3.8	Is Seepage (if any) Turbid		X		
3.9	Other Unsual Conditions		X		
3.10	Repairs Required		X		
4.0	***Embankment Abutments***				
4.1	Seepages Observed			X	
4.2	Is Seepage (if any) Turbid			X	
4.3	Evidence of Erosion			X	
4.4	Evidence of Cracking			X	
4.5	Evidence of Movement			X	
4.6	Other Deformation/Settlement/Sinkholes			X	
4.7	Other Unusual Conditions			X	
4.8	Repairs Required			X	

Annual Facility Performance Report Site Visit Checklist

Klohn Crippen Berger

Site	Teck Elkview Operations		
Structure	Lagoon A		
Reviewed by	Dan Hughes-Games P.Eng / Michael Tin E.I.T	Crest El.	1,119.0 m
Accompanied by	Trevor Munn P.Geo	Spillway Invert El.	1,118.3 m
Date of Observations	September 15, 2021	Reservoir Level El.	No pond observed
Walk Over Review	Crest/Slopes/Toe	Available Freeboard	None - surface flows to spillway
Weather Conditions	Mostly Sunny		

ID	Observed Features	Yes	No	N/A	Comments
5.0	***Downstream Toe***				
5.1	Seepages Observed		X		
5.2	Is Seepage (if any) Turbid		X		
5.3	Evidence of Soft Toe Condition		X		
5.4	Evidence of Sloughing/Sliding		X		
5.5	Evidence of Boils		X		
5.6	Evidence of Contamination/Vegetation Kills		X		
5.7	Excessive Vegetation		X		
5.8	Other Unusual Conditions		X		
5.9	Repairs Required		X		
6.0	***Spillway***				
6.1	Obstruction by debris or vegetation		X		
6.2	Lack of Erosion Protection		X		
6.3	Slope Deterioration (Sloughing, Erosion etc...)		X		
6.4	Other Unusual Conditions		X		
6.5	Repairs Required		X		
7.0	***Other***				
7.1	Other Unusual Conditions		X		
7.2	Sketch (if required):				

Cossarini Creek culverts, located upstream of Lagoon A, were flowing at the time of site visit.

Annual Facility Performance Report Site Visit Checklist

Klohn Crippen Berger

Site	Teck Elkview Operations		
Structure	Lagoon B		
Reviewed by	Andy Small P.Eng., / Dan Hughes-Games P.Eng	Crest El.	1,118.5 m
Accompanied by	Trevor Munn P.Geo / Patrick Green P.Eng	Spillway Invert El.	None. (1,118.2 m low spot)
Date of Observations	September 15, 2021	Reservoir Level El.	No pond observed
Walk Over Review	Crest/Slopes/Toe	Available Freeboard	0.33 m (tailings surface to low spot)
Weather Conditions	Cloudy / Overcast		

ID	Observed Features	Yes	No	N/A	Comments
1.0	***Upstream Embankment Slope and Tailings Surface***				
1.1	Concern with Current or Previous Water Level		X		
1.2	Evidence of Wave or Other Erosion/Gullying		X		
1.3	Evidence of Sloughing/Sliding		X		
1.4	Evidence of Cracking		X		
1.5	Evidence of Movement		X		
1.6	Other Deformation/Settlement/Sinkholes		X		
1.7	Other Unusual Conditions		X		
1.8	Repairs Required		X		
2.0	***Embankment Crest***				
2.1	Evidence of Shoulder/Erosion		X		
2.2	Evidence of Cracking		X		
2.3	Evidence of Movement		X		
2.4	Other Deformation/Settlement/Sinkholes		X		
2.5	Concerns with Low Areas on the Crest		X		
2.6	Concerns with crest width		X		
2.7	Other Unusual Conditions	X			Northern embankment was excavated/removed.
2.8	Repairs Required	X			Northern embankment was excavated/removed.
3.0	***Downstream Embankment Slope***				
3.1	Evidence of Erosion		X		
3.2	Evidence of Sloughing/Sliding		X		
3.3	Evidence of Cracking		X		
3.4	Evidence of Movement		X		
3.5	Any Other Deformation		X		
3.6	Signs of Phreatic Surface/Seepage		X		
3.7	Seepages Observed		X		
3.8	Is Seepage (if any) Turbid		X		
3.9	Other Unsual Conditions	X			Northern embankment was excavated/removed.
3.10	Repairs Required	X			Northern embankment was excavated/removed.
4.0	***Embankment Abutments***				
4.1	Seepages Observed			X	
4.2	Is Seepage (if any) Turbid			X	
4.3	Evidence of Erosion			X	
4.4	Evidence of Cracking			X	
4.5	Evidence of Movement			X	
4.6	Other Deformation/Settlement/Sinkholes			X	
4.7	Other Unusual Conditions			X	
4.8	Repairs Required			X	

Annual Facility Performance Report Site Visit Checklist

Klohn Crippen Berger

Site	Teck Elkview Operations		
Structure	Lagoon B		
Reviewed by	Andy Small P.Eng., / Dan Hughes-Game	Crest El.	1,118.5 m
Accompanied by	Trevor Munn P.Geo / Patrick Green P.E	Spillway Invert El.	None. (1,118.2 m low spot)
Date of Observations	September 15, 2021	Reservoir Level El.	No pond observed
Walk Over Review	Crest/Slopes/Toe	Available Freeboard	0.33 m (tailings surface to low spot)
Weather Conditions	Cloudy / Overcast		

ID	Observed Features	Yes	No	N/A	Comments
5.0	***Downstream Toe***				
5.1	Seepages Observed		X		
5.2	Is Seepage (if any) Turbid		X		
5.3	Evidence of Soft Toe Condition		X		
5.4	Evidence of Sloughing/Sliding		X		
5.5	Evidence of Boils		X		
5.6	Evidence of Contamination/Vegetation Kills		X		
5.7	Excessive Vegetation		X		
5.8	Other Unusual Conditions		X		
5.9	Repairs Required		X		
6.0	***Spillway***				
6.1	Obstruction by debris or vegetation			X	No Spillway
6.2	Lack of Erosion Protection			X	
6.3	Slope Deterioration (Sloughing, Erosion etc...)			X	
6.4	Other Unusual Conditions			X	
6.5	Repairs Required			X	
7.0	***Other***				
7.1	Other Unusual Conditions		X		
7.2	Sketch (if required):				

Annual Facility Performance Report Site Visit Checklist

Klohn Crippen Berger

Site	Teck Elkview Operations		
Structure	Lagoon C		
Reviewed by	Dan Hughes-Games P.Eng / Michael Tin E.I.T	Crest El.	1,129.3 m
Accompanied by	Trevor Munn P.Geo / Patrick Green P.Eng	Spillway Invert El.	None. (1,126.6 m low spot at trestle)
Date of Observations	September 15, 2021	Reservoir Level El.	No pond observed
Walk Over Review	Crest/Slopes/Toe/Crest Surface	Available Freeboard	Varies
Weather Conditions	Sunny / Mostly Clear		

ID	Observed Features	Yes	No	N/A	Comments
1.0	***Upstream Embankment Slope and Tailings Surface***				
1.1	Concern with Current or Previous Water Level		X		
1.2	Evidence of Wave or Other Erosion/Gullying	X			Upstream erosion at a point near the pumphouse (same condition as 2019 and 2020 inspection and not worsening). To be monitored.
1.3	Evidence of Sloughing/Sliding		X		
1.4	Evidence of Cracking		X		
1.5	Evidence of Movement		X		
1.6	Other Deformation/Settlement/Sinkholes		X		
1.7	Other Unusual Conditions		X		
1.8	Repairs Required		X		
2.0	***Embankment Crest***				
2.1	Evidence of Shoulder/Erosion		X		
2.2	Evidence of Cracking		X		
2.3	Evidence of Movement		X		
2.4	Other Deformation/Settlement/Sinkholes		X		
2.5	Concerns with Low Areas on the Crest	X			Minor localised low area at the trestle
2.6	Concerns with crest width		X		
2.7	Other Unusual Conditions		X		
2.8	Repairs Required		X		
3.0	***Downstream Embankment Slope***				
3.1	Evidence of Erosion		X		
3.2	Evidence of Sloughing/Sliding		X		
3.3	Evidence of Cracking		X		
3.4	Evidence of Movement		X		
3.5	Any Other Deformation		X		
3.6	Signs of Phreatic Surface/Seepage		X		
3.7	Seepages Observed	X			Change in vegetation indicating occasional wet spots
3.8	Is Seepage (if any) Turbid		X		
3.9	Other Unusual Conditions		X		
3.10	Repairs Required		X		
4.0	***Embankment Abutments***				
4.1	Seepages Observed			X	
4.2	Is Seepage (if any) Turbid			X	
4.3	Evidence of Erosion			X	
4.4	Evidence of Cracking			X	
4.5	Evidence of Movement			X	
4.6	Other Deformation/Settlement/Sinkholes			X	
4.7	Other Unusual Conditions			X	
4.8	Repairs Required			X	

Annual Facility Performance Report Site Visit Checklist

Klohn Crippen Berger

Site	Teck Elkview Operations		
Structure	Lagoon C		
Reviewed by	Dan Hughes-Games P.Eng / Michael Tin E.I.T	Crest El.	1,129.3 m
Accompanied by	Trevor Munn P.Geo / Patrick Green P.Eng	Spillway Invert El.	None. (1,126.6 m low spot at trestle)
Date of Observations	September 15, 2021	Reservoir Level El.	No pond observed
Walk Over Review	Crest/Slopes/Toe/Crest Surface	Available Freeboard	Varies
Weather Conditions	Sunny / Mostly Clear		

ID	Observed Features	Yes	No	N/A	Comments
5.0	***Downstream Toe***				
5.1	Seepages Observed		X		
5.2	Is Seepage (if any) Turbid		X		
5.3	Evidence of Soft Toe Condition		X		
5.4	Evidence of Sloughing/Sliding		X		
5.5	Evidence of Boils		X		
5.6	Evidence of Contamination/Vegetation Kills		X		
5.7	Excessive Vegetation		X		
5.8	Other Unusual Conditions		X		
5.9	Repairs Required		X		
6.0	***Spillway***				
6.1	Obstruction by debris or vegetation			X	
6.2	Lack of Erosion Protection			X	
6.3	Slope Deterioration (Sloughing, Erosion etc...)			X	
6.4	Other Unusual Conditions			X	
6.5	Repairs Required			X	
7.0	***Other***				
7.1	Other Unusual Conditions			X	
7.2	Sketch (if required):				

Annual Facility Performance Report Site Visit Checklist

Klohn Crippen Berger

Site	Teck Elkview Operations		
Structure	Lagoon D		
Reviewed by	Andy Small P.Eng., / Dan Hughes-Games P.Eng	Crest El.	1,168.0 m
Accompanied by	Trevor Munn P.Geo / Patrick Green P.Eng	Spillway Invert El.	None.
Date of Observations	September 16, 2021	Reservoir Level El.	1,165.0 m
Walk Over Review	Crest/Slopes/Toe/Crest Surface	Available Freeboard	3.0 m
Weather Conditions	Sunny / Mostly Clear		

ID	Observed Features	Yes	No	N/A	Comments
1.0	***Upstream Embankment Slope and Tailings Surface***				
1.1	Concern with Current or Previous Water Level		X		
1.2	Evidence of Wave or Other Erosion/Gullying		X		
1.3	Evidence of Sloughing/Sliding		X		
1.4	Evidence of Cracking		X		
1.5	Evidence of Movement		X		
1.6	Other Deformation/Settlement/Sinkholes	X			Minor subsidence at backfilled north tailings cells.
1.7	Other Unusual Conditions		X		
1.8	Repairs Required		X		
2.0	***Embankment Crest***				
2.1	Evidence of Shoulder/Erosion		X		
2.2	Evidence of Cracking		X		
2.3	Evidence of Movement		X		
2.4	Other Deformation/Settlement/Sinkholes		X		
2.5	Concerns with Low Areas on the Crest		X		
2.6	Concerns with crest width		X		
2.7	Other Unusual Conditions	X			Minor animal burrows in benches.
2.8	Repairs Required		X		
3.0	***Downstream Embankment Slope***				
3.1	Evidence of Erosion	X			Minor erosion on slope at several locations
3.2	Evidence of Sloughing/Sliding		X		
3.3	Evidence of Cracking		X		
3.4	Evidence of Movement		X		
3.5	Any Other Deformation		X		
3.6	Signs of Phreatic Surface/Seepage		X		
3.7	Seepages Observed		X		
3.8	Is Seepage (if any) Turbid		X		
3.9	Other Unsual Conditions		X		
3.10	Repairs Required		X		
4.0	***Embankment Abutments***				
4.1	Seepages Observed		X		
4.2	Is Seepage (if any) Turbid		X		
4.3	Evidence of Erosion		X		
4.4	Evidence of Cracking		X		
4.5	Evidence of Movement		X		
4.6	Other Deformation/Settlement/Sinkholes		X		
4.7	Other Unusual Conditions		X		
4.8	Repairs Required		X		

Annual Facility Performance Report Site Visit Checklist

Klohn Crippen Berger

Site	Teck Elkview Operations		
Structure	Lagoon D		
Reviewed by	Andy Small P.Eng., / Dan Hughes-Games P.Eng	Crest El.	1,168.0 m
Accompanied by	Trevor Munn P.Geo / Patrick Green P.Eng	Spillway Invert El.	None.
Date of Observations	September 16, 2021	Reservoir Level El.	1,165.0 m
Walk Over Review	Crest/Slopes/Toe/Crest Surface	Available Freeboard	3.0 m
Weather Conditions	Sunny / Mostly Clear		

ID	Observed Features	Yes	No	N/A	Comments
5.0	***Downstream Toe***				
5.1	Seepages Observed		X		
5.2	Is Seepage (if any) Turbid		X		
5.3	Evidence of Soft Toe Condition		X		
5.4	Evidence of Sloughing/Sliding		X		
5.5	Evidence of Boils		X		
5.6	Evidence of Contamination/Vegetation Kills		X		
5.7	Excessive Vegetation		X		
5.8	Other Unusual Conditions		X		
5.9	Repairs Required		X		
6.0	***Spillway***				
6.1	Obstruction by debris or vegetation			X	
6.2	Lack of Erosion Protection			X	
6.3	Slope Deterioration (Sloughing, Erosion etc...)			X	
6.4	Other Unusual Conditions			X	
6.5	Repairs Required			X	
7.0	***Other***				
7.1	Other Unusual Conditions		X		
7.2	Sketch (if required):				

APPENDIX III

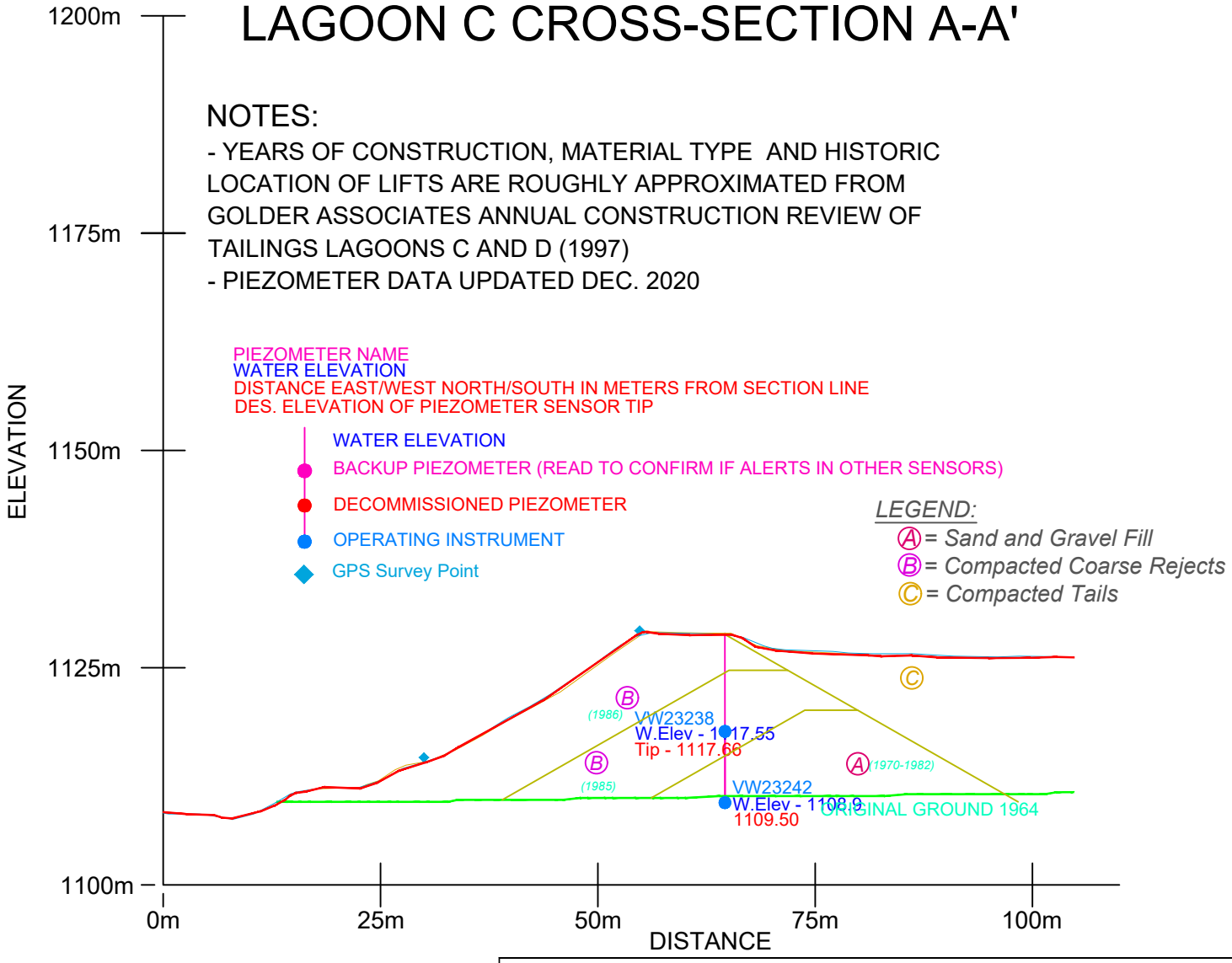
Lagoon C and Lagoon D Cross Sections (provided by EVO)

Lagoon C
Lagoon D

CROSS-SECTION
ORIGIN COORD: 14538.12E, 52909.99N
AZIMUTH: 144°50'19"

LAGOON C CROSS-SECTION A-A'

NOTES:
- YEARS OF CONSTRUCTION, MATERIAL TYPE AND HISTORIC LOCATION OF LIFTS ARE ROUGHLY APPROXIMATED FROM GOLDER ASSOCIATES ANNUAL CONSTRUCTION REVIEW OF TAILINGS LAGOONS C AND D (1997)
- PIEZOMETER DATA UPDATED DEC. 2020



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LAGOON C CROSS-SECTION A-A'
2020

DATE: Dec. 2020	SCALE:	DWG. NO. :
DWN BY: A. Yeomans	REV BY: M. Barton	

CROSS-SECTION
ORIGIN COORD: 14267.12E, 52774.79N
AZIMUTH: 115°6'0"

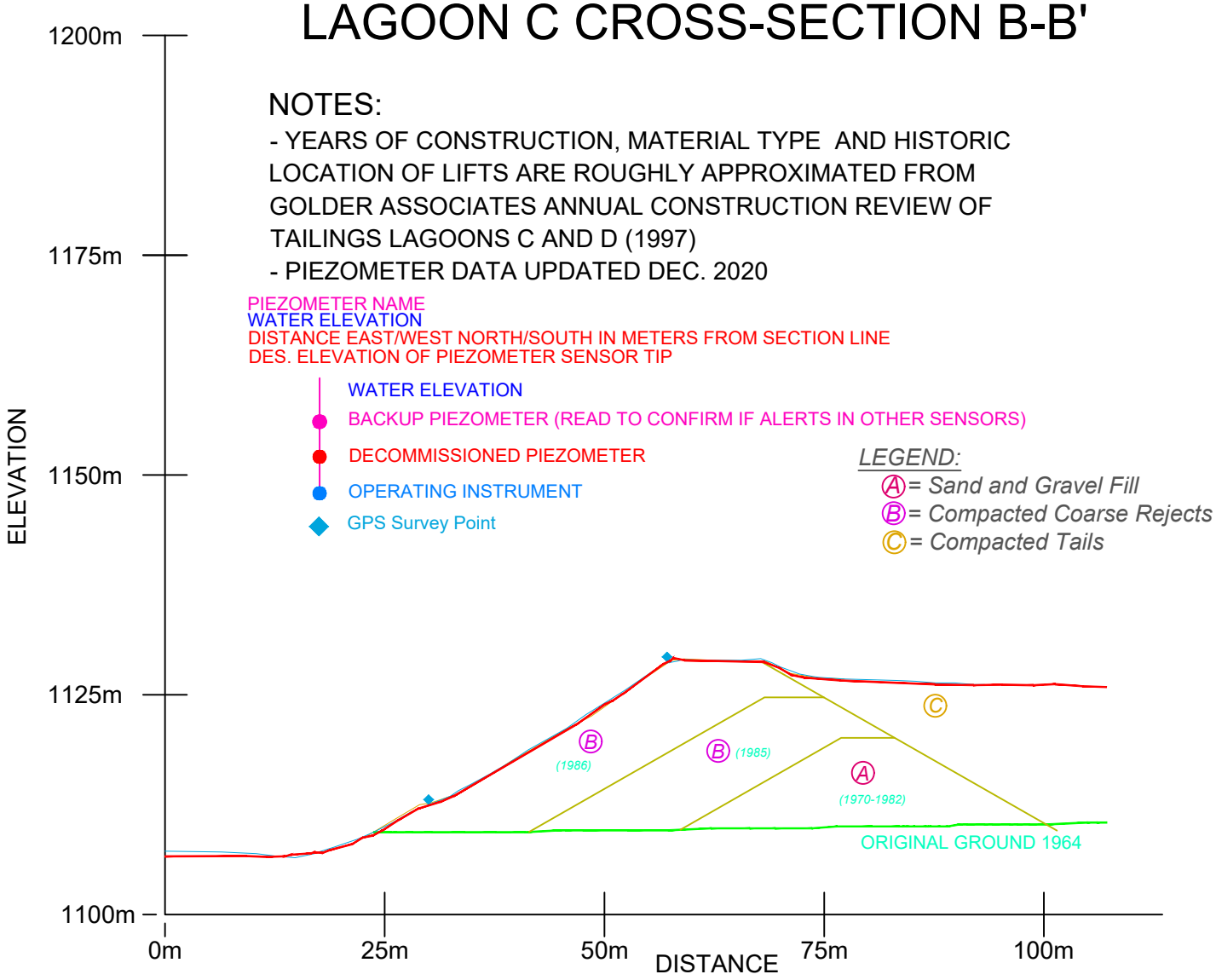
LAGOON C CROSS-SECTION B-B'

NOTES:
- YEARS OF CONSTRUCTION, MATERIAL TYPE AND HISTORIC LOCATION OF LIFTS ARE ROUGHLY APPROXIMATED FROM GOLDER ASSOCIATES ANNUAL CONSTRUCTION REVIEW OF TAILINGS LAGOONS C AND D (1997)
- PIEZOMETER DATA UPDATED DEC. 2020

PIEZOMETER NAME
WATER ELEVATION
DISTANCE EAST/WEST NORTH/SOUTH IN METERS FROM SECTION LINE
DES. ELEVATION OF PIEZOMETER SENSOR TIP

WATER ELEVATION
BACKUP PIEZOMETER (READ TO CONFIRM IF ALERTS IN OTHER SENSORS)
DECOMMISSIONED PIEZOMETER
OPERATING INSTRUMENT
GPS Survey Point

LEGEND:
Ⓐ = Sand and Gravel Fill
Ⓑ = Compacted Coarse Rejects
Ⓒ = Compacted Tails



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LAGOON C CROSS-SECTION B-B'
2020

DATE: Dec. 2020	SCALE:	DWG. NO. :
DWN BY: A. Yeomans	REV BY: M. Barton	

CROSS-SECTION
ORIGIN COORD: 14253.35E, 52508.06N
AZIMUTH: 82°8'31"

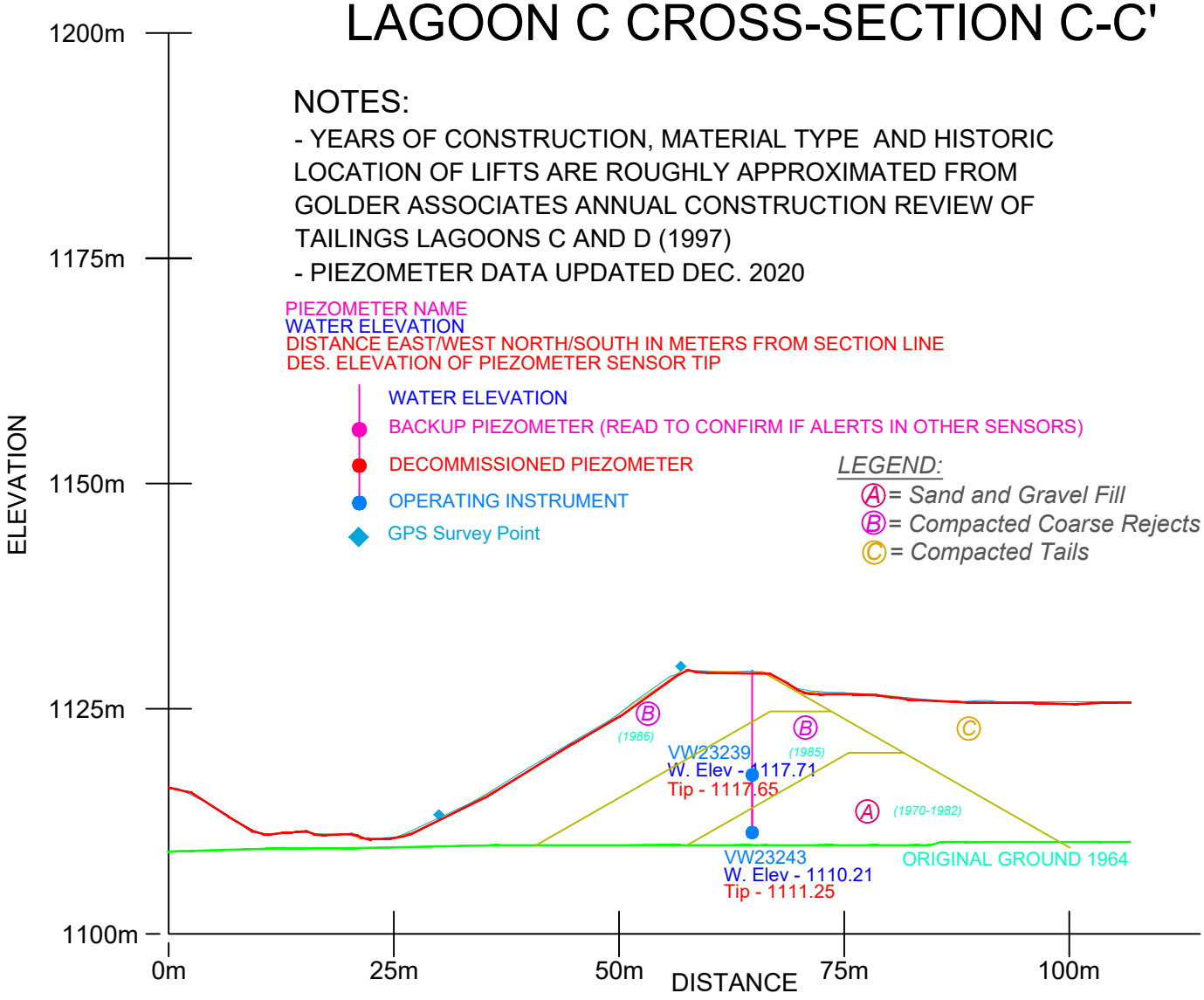
LAGOON C CROSS-SECTION C-C'

NOTES:
- YEARS OF CONSTRUCTION, MATERIAL TYPE AND HISTORIC LOCATION OF LIFTS ARE ROUGHLY APPROXIMATED FROM GOLDER ASSOCIATES ANNUAL CONSTRUCTION REVIEW OF TAILINGS LAGOONS C AND D (1997)
- PIEZOMETER DATA UPDATED DEC. 2020

PIEZOMETER NAME
WATER ELEVATION
DISTANCE EAST/WEST NORTH/SOUTH IN METERS FROM SECTION LINE
DES. ELEVATION OF PIEZOMETER SENSOR TIP

WATER ELEVATION
BACKUP PIEZOMETER (READ TO CONFIRM IF ALERTS IN OTHER SENSORS)
DECOMMISSIONED PIEZOMETER
OPERATING INSTRUMENT
GPS Survey Point

LEGEND:
Ⓐ = Sand and Gravel Fill
Ⓑ = Compacted Coarse Rejects
Ⓒ = Compacted Tails



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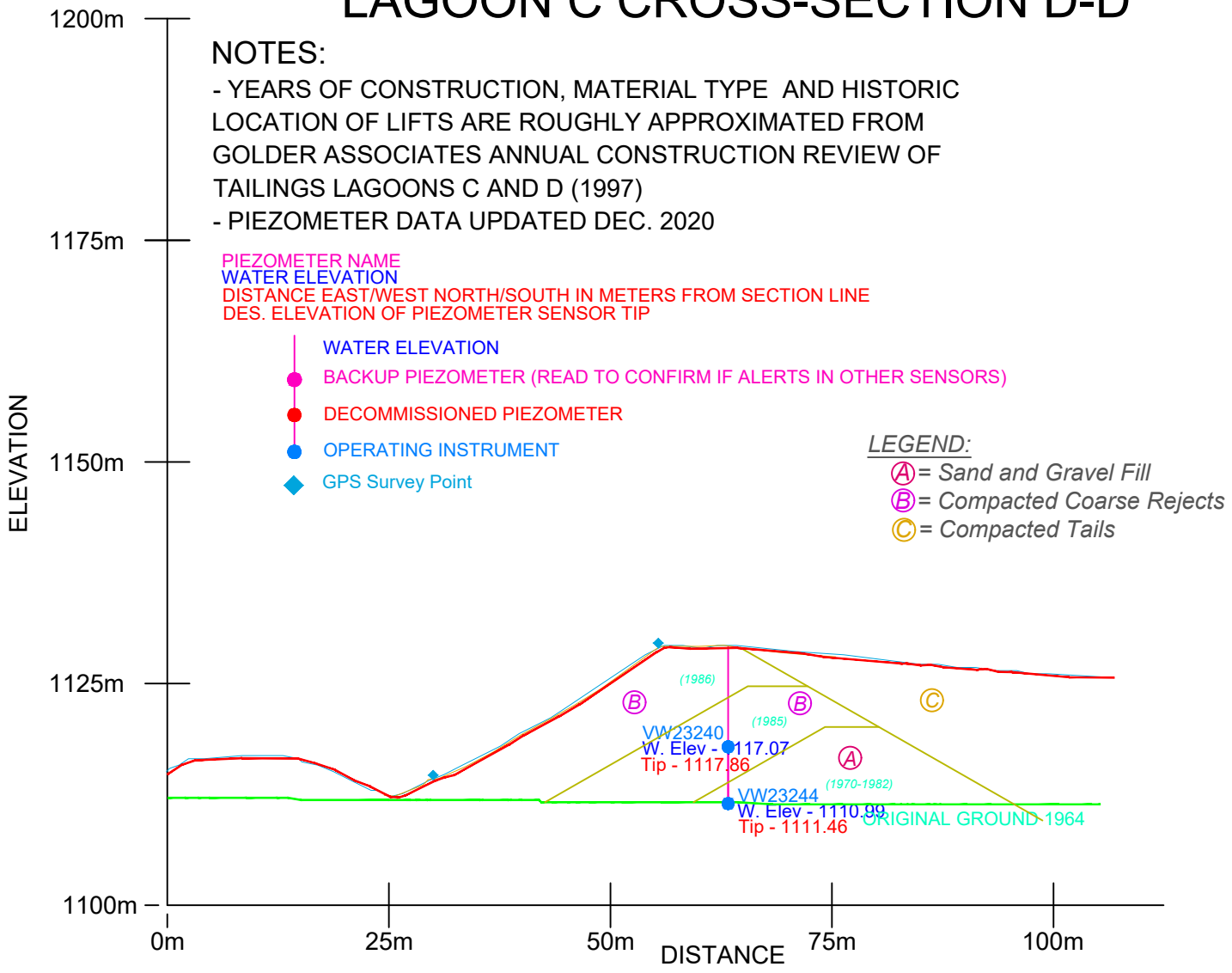
LAGOON C CROSS-SECTION C-C'
2020

DATE: Dec. 2020	SCALE:	DWG. NO. :
DWN BY: A. Yeomans	REV BY: M. Barton	

CROSS-SECTION
ORIGIN COORD: 14489.78E, 52319.17N
AZIMUTH: 345°37'1"

LAGOON C CROSS-SECTION D-D'

NOTES:
- YEARS OF CONSTRUCTION, MATERIAL TYPE AND HISTORIC LOCATION OF LIFTS ARE ROUGHLY APPROXIMATED FROM GOLDER ASSOCIATES ANNUAL CONSTRUCTION REVIEW OF TAILINGS LAGOONS C AND D (1997)
- PIEZOMETER DATA UPDATED DEC. 2020



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LAGOON C CROSS-SECTION D-D'
2020

DATE: Dec. 2020	SCALE:	DWG. NO. :
DWN BY: A. Yeomans	REV BY: M. Barton	

CROSS-SECTION
ORIGIN COORD: 14278.06E, 52280.63N
AZIMUTH: 324°12'9"

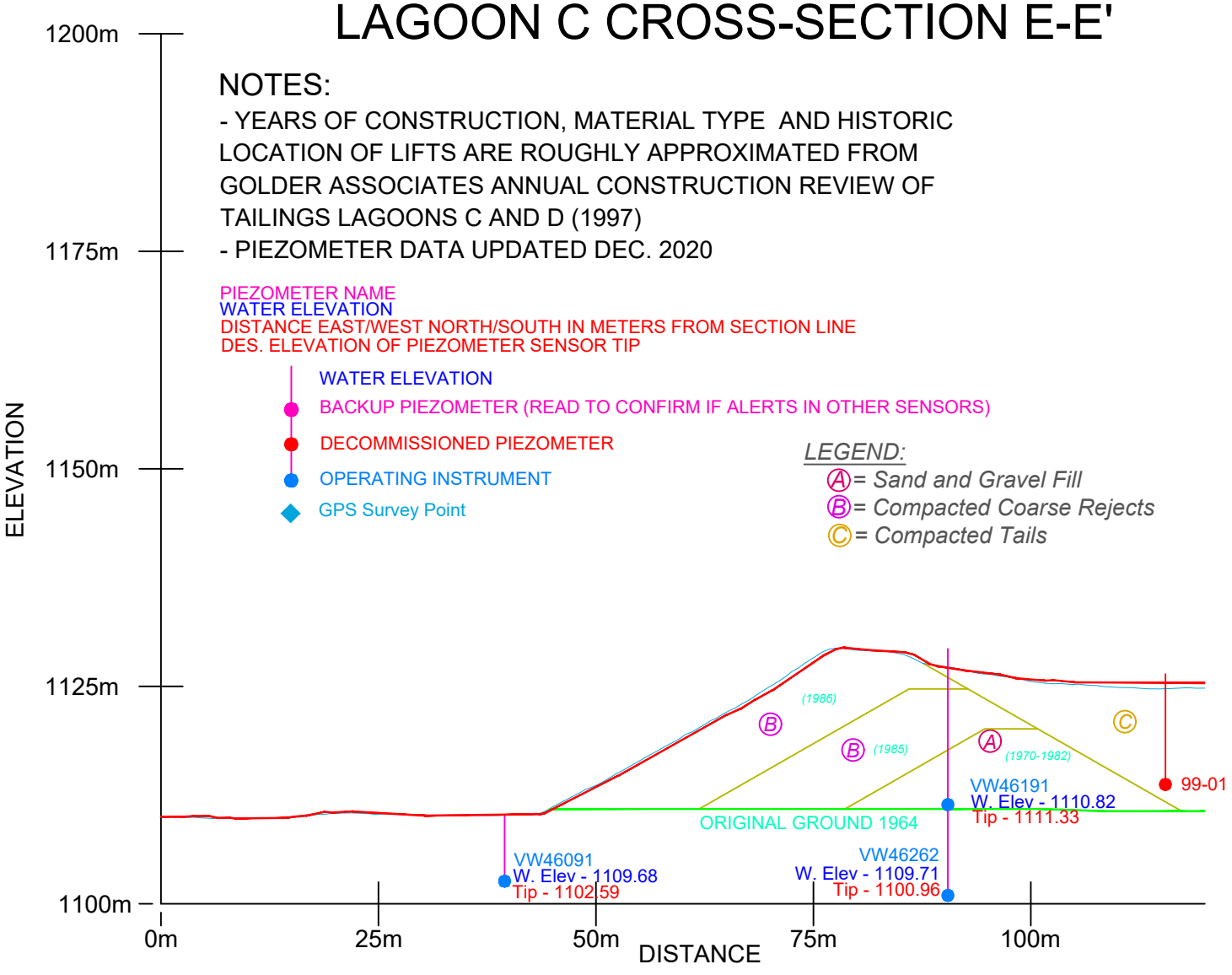
LAGOON C CROSS-SECTION E-E'

NOTES:
- YEARS OF CONSTRUCTION, MATERIAL TYPE AND HISTORIC LOCATION OF LIFTS ARE ROUGHLY APPROXIMATED FROM GOLDER ASSOCIATES ANNUAL CONSTRUCTION REVIEW OF TAILINGS LAGOONS C AND D (1997)
- PIEZOMETER DATA UPDATED DEC. 2020

PIEZOMETER NAME
WATER ELEVATION
DISTANCE EAST/WEST NORTH/SOUTH IN METERS FROM SECTION LINE
DES. ELEVATION OF PIEZOMETER SENSOR TIP

WATER ELEVATION
BACKUP PIEZOMETER (READ TO CONFIRM IF ALERTS IN OTHER SENSORS)
DECOMMISSIONED PIEZOMETER
OPERATING INSTRUMENT
GPS Survey Point

LEGEND:
Ⓐ = Sand and Gravel Fill
Ⓑ = Compacted Coarse Rejects
Ⓒ = Compacted Tails



Teck Elkview Operations

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LAGOON C CROSS-SECTION E-E'
2020

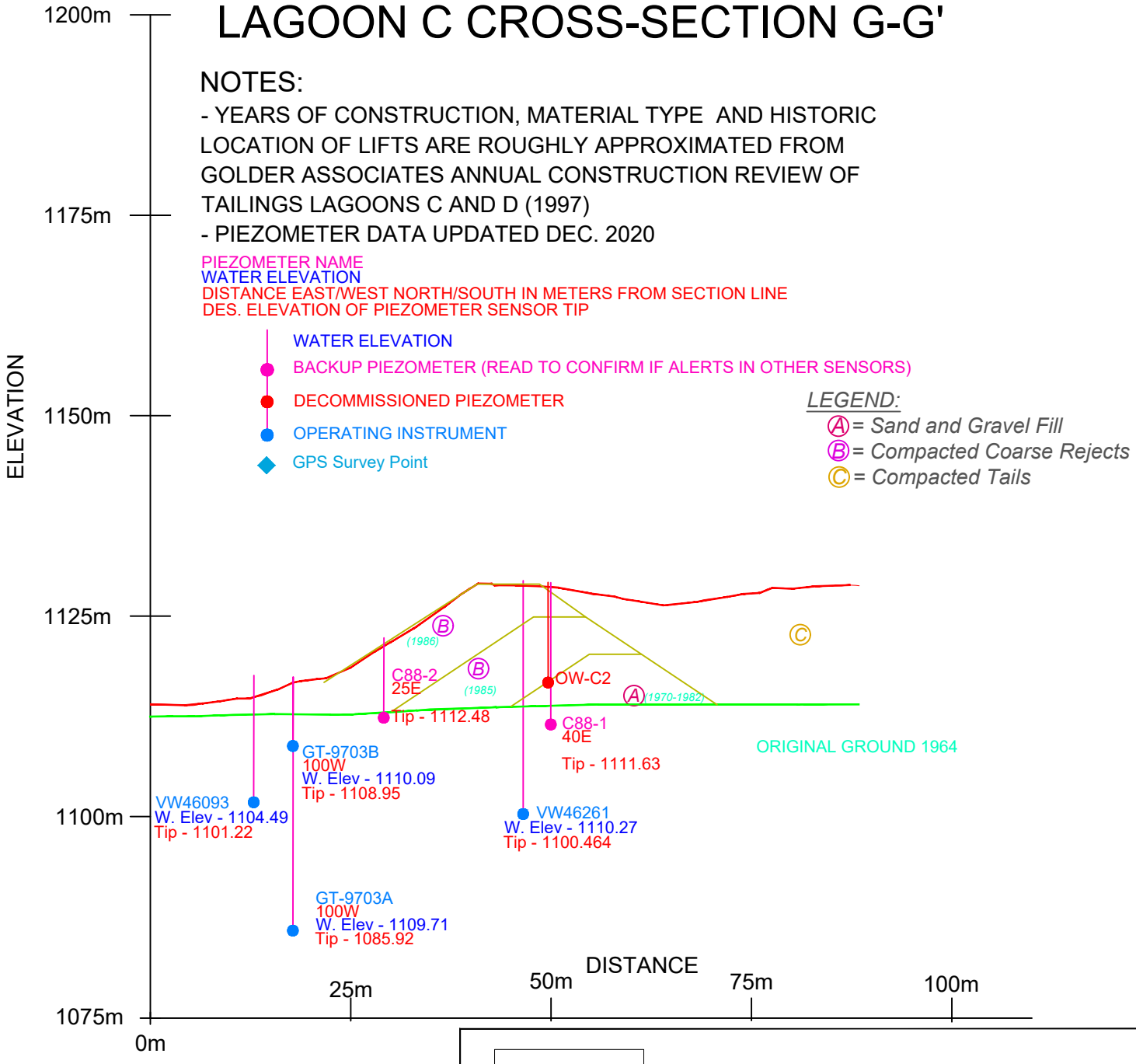
DATE: Dec. 2020	SCALE:	DWG. NO. :
DWN BY: A. Yeomans	REV BY: M. Barton	

CROSS-SECTION
ORIGIN COORD: 14538.12E, 52909.99N
AZIMUTH: 144°50'19"

LAGOON C CROSS-SECTION G-G'

NOTES:
- YEARS OF CONSTRUCTION, MATERIAL TYPE AND HISTORIC LOCATION OF LIFTS ARE ROUGHLY APPROXIMATED FROM GOLDER ASSOCIATES ANNUAL CONSTRUCTION REVIEW OF TAILINGS LAGOONS C AND D (1997)
- PIEZOMETER DATA UPDATED DEC. 2020

PIEZOMETER NAME
WATER ELEVATION
DISTANCE EAST/WEST NORTH/SOUTH IN METERS FROM SECTION LINE
DES. ELEVATION OF PIEZOMETER SENSOR TIP



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LAGOON C CROSS-SECTION G-G'
2020

DATE: Dec. 2020	SCALE:	DWG. NO. :
DWN BY: A. Yeomans	REV BY: M. Barton	

CROSS-SECTION
ORIGIN COORD: 14960.53E, 52265.72N
AZIMUTH: 202°53'07"

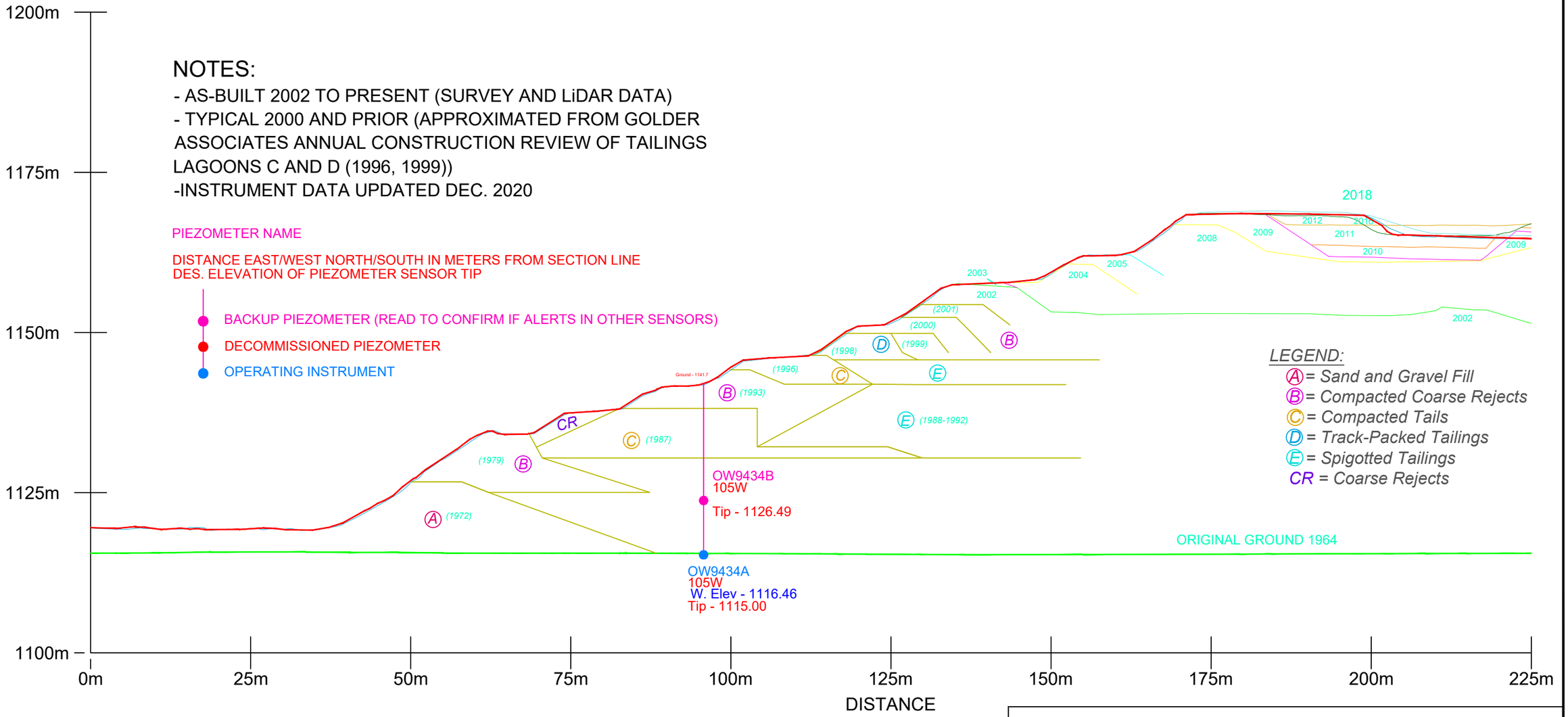
LAGOON D CROSS-SECTION A-A'

NOTES:
- AS-BUILT 2002 TO PRESENT (SURVEY AND LiDAR DATA)
- TYPICAL 2000 AND PRIOR (APPROXIMATED FROM GOLDER ASSOCIATES ANNUAL CONSTRUCTION REVIEW OF TAILINGS LAGOONS C AND D (1996, 1999))
-INSTRUMENT DATA UPDATED DEC. 2020

PIEZOMETER NAME

DISTANCE EAST/WEST NORTH/SOUTH IN METERS FROM SECTION LINE
DES. ELEVATION OF PIEZOMETER SENSOR TIP

- BACKUP PIEZOMETER (READ TO CONFIRM IF ALERTS IN OTHER SENSORS)
- DECOMMISSIONED PIEZOMETER
- OPERATING INSTRUMENT



LEGEND:
- *A = Sand and Gravel Fill*
- *B = Compacted Coarse Rejects*
- *C = Compacted Tails*
- *D = Track-Packed Tailings*
- *E = Spigotted Tailings*
- *CR = Coarse Rejects*

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LAGOON D CROSS-SECTION A-A'
2020

DATE: Dec. 2020	SCALE:	DWG. NO. :
DWN BY: A. YEOMANS	REV BY: M. Barton	

CROSS-SECTION
ORIGIN COORD: 14726.30E, 52346.74N
AZIMUTH: 182°47'27"

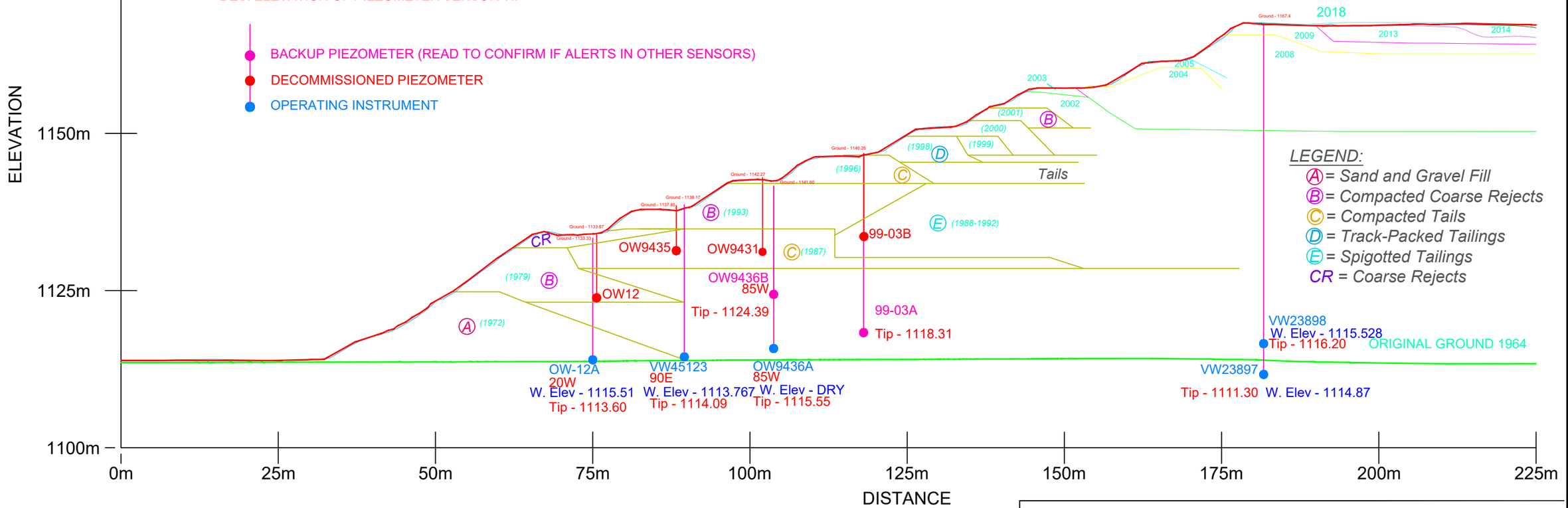
LAGOON D CROSS-SECTION B-B'

NOTES:
- AS-BUILT 2002 TO PRESENT (SURVEY AND LiDAR DATA)
- 2001 AND PRIOR ARE ROUGHLY APPROXIMATED FROM GOLDER ASSOCIATES ANNUAL CONSTRUCTION REVIEW OF TAILINGS LAGOONS C AND D (1996, 1999)
-INSTRUMENT DATA UPDATED DEC. 2020

PIEZOMETER NAME

DISTANCE EAST/WEST NORTH/SOUTH IN METERS FROM SECTION LINE
DES. ELEVATION OF PIEZOMETER SENSOR TIP

BACKUP PIEZOMETER (READ TO CONFIRM IF ALERTS IN OTHER SENSORS)
DECOMMISSIONED PIEZOMETER
OPERATING INSTRUMENT



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LAGOON D CROSS-SECTION B-B'
2020

DATE: Dec. 2020	SCALE:	DWG. NO. :
DWN BY: A. YEOMANS	REV BY: M. Barton	

CROSS-SECTION
ORIGIN COORD: 14491.89E, 52303.38N
AZIMUTH: 168°11'50"

LAGOON D CROSS-SECTION C-C'

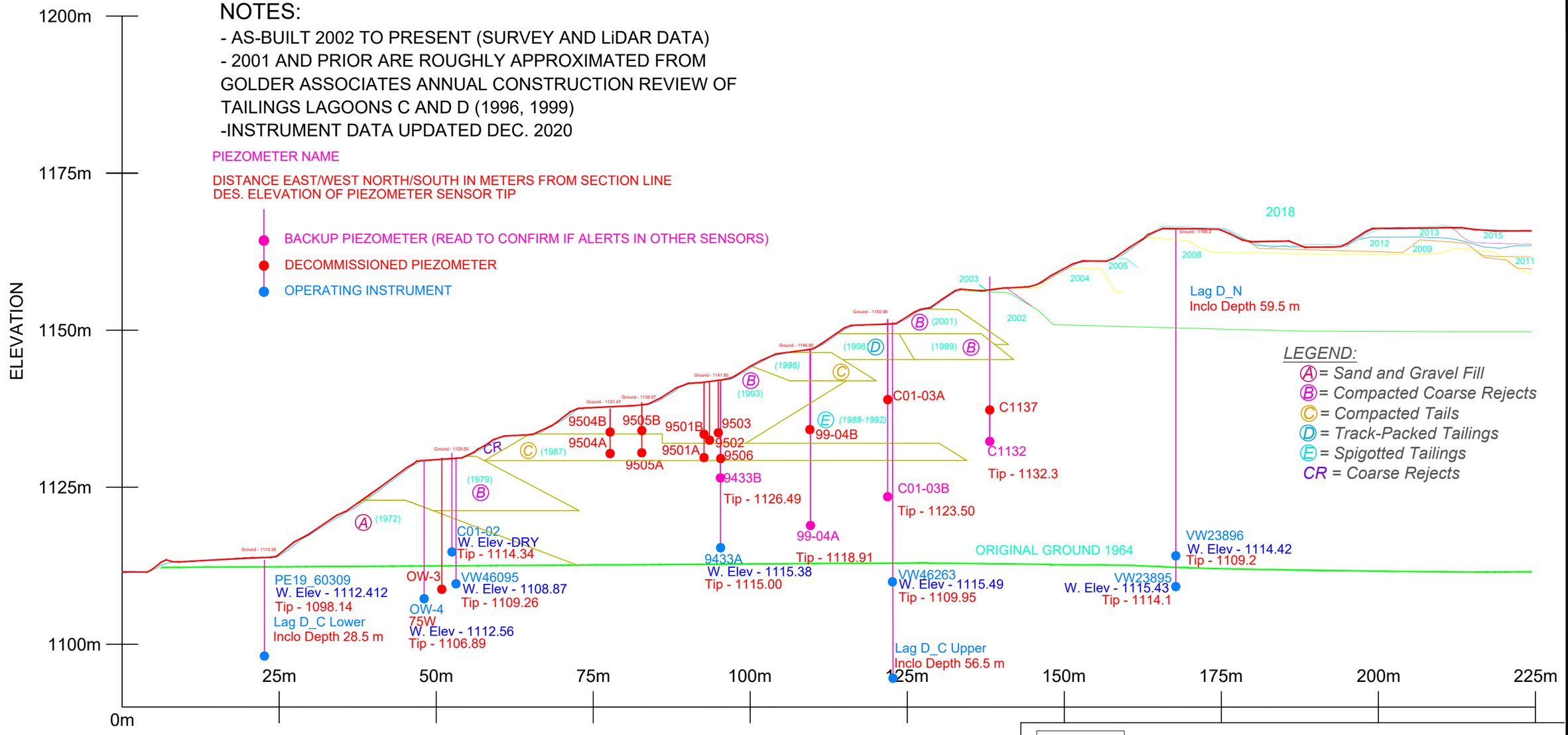
NOTES:

- AS-BUILT 2002 TO PRESENT (SURVEY AND LiDAR DATA)
- 2001 AND PRIOR ARE ROUGHLY APPROXIMATED FROM GOLDER ASSOCIATES ANNUAL CONSTRUCTION REVIEW OF TAILINGS LAGOONS C AND D (1996, 1999)
-INSTRUMENT DATA UPDATED DEC. 2020

PIEZOMETER NAME

DISTANCE EAST/WEST NORTH/SOUTH IN METERS FROM SECTION LINE
DES. ELEVATION OF PIEZOMETER SENSOR TIP

- BACKUP PIEZOMETER (READ TO CONFIRM IF ALERTS IN OTHER SENSORS)
- DECOMMISSIONED PIEZOMETER
- OPERATING INSTRUMENT



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LAGOON D CROSS-SECTION C-C'
2020

DATE: Dec. 2020	SCALE:	DWG. NO. :
DWN BY: A. YEOMANS	REV BY: M. Barton	

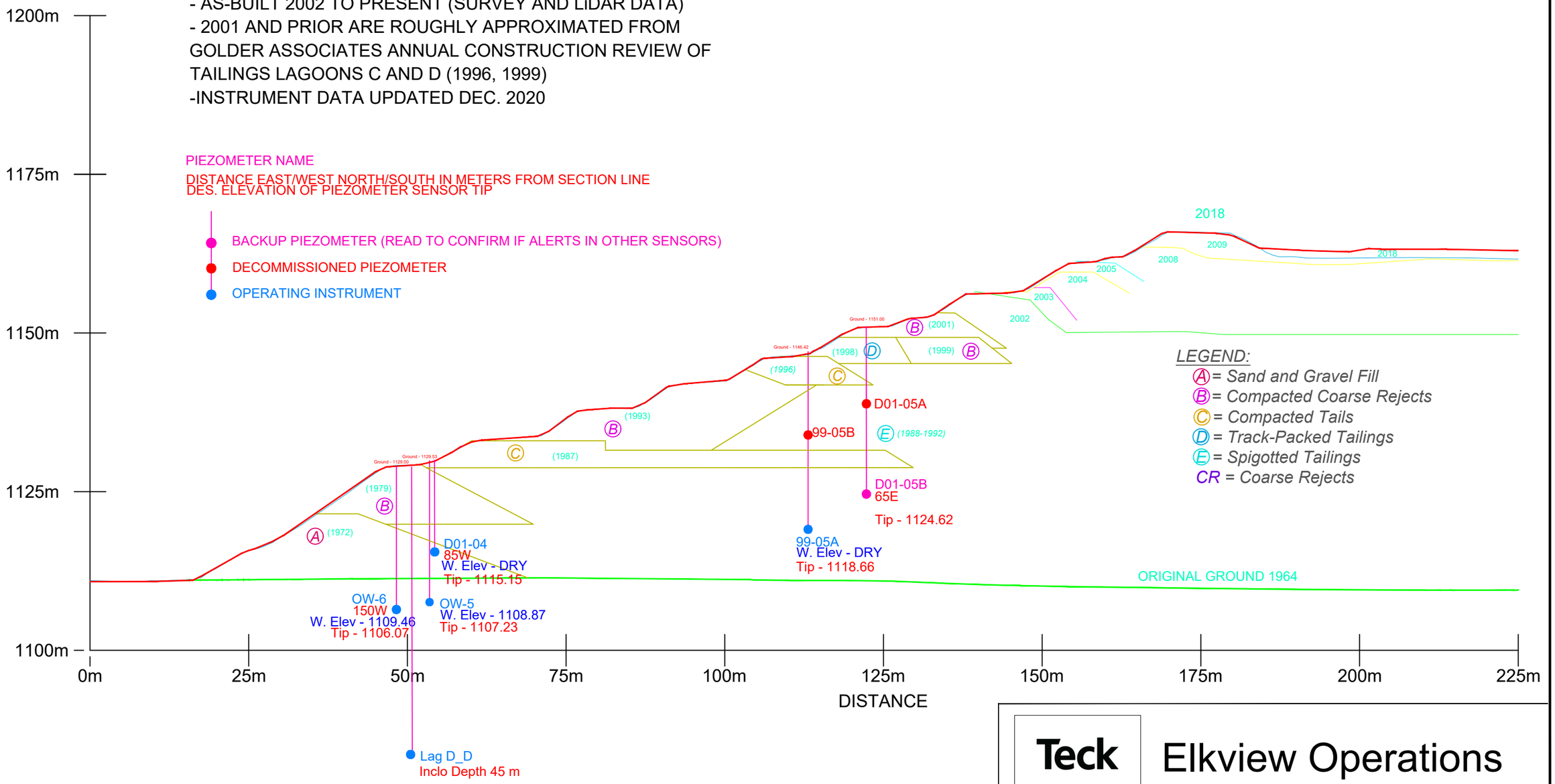
CROSS-SECTION
ORIGIN COORD: 14249.70E, 52237.31N
AZIMUTH: 155°43'21"

LAGOON D CROSS-SECTION D-D'

NOTES:
- AS-BUILT 2002 TO PRESENT (SURVEY AND LiDAR DATA)
- 2001 AND PRIOR ARE ROUGHLY APPROXIMATED FROM GOLDER ASSOCIATES ANNUAL CONSTRUCTION REVIEW OF TAILINGS LAGOONS C AND D (1996, 1999)
-INSTRUMENT DATA UPDATED DEC. 2020

PIEZOMETER NAME
DISTANCE EAST/WEST NORTH/SOUTH IN METERS FROM SECTION LINE
DES. ELEVATION OF PIEZOMETER SENSOR TIP

BACKUP PIEZOMETER (READ TO CONFIRM IF ALERTS IN OTHER SENSORS)
DECOMMISSIONED PIEZOMETER
OPERATING INSTRUMENT



LEGEND:
- *A = Sand and Gravel Fill*
- *B = Compacted Coarse Rejects*
- *C = Compacted Tails*
- *D = Track-Packed Tailings*
- *E = Spigotted Tailings*
- *CR = Coarse Rejects*

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LAGOON D CROSS-SECTION D-D'
2020

DATE: Dec. 2020	SCALE:	DWG. NO. :
DWN BY: A. YEOMANS	REV BY: M. Barton	

CROSS-SECTION
ORIGIN COORD: 13974.88E, 51969.26N
AZIMUTH: 90°31'40"

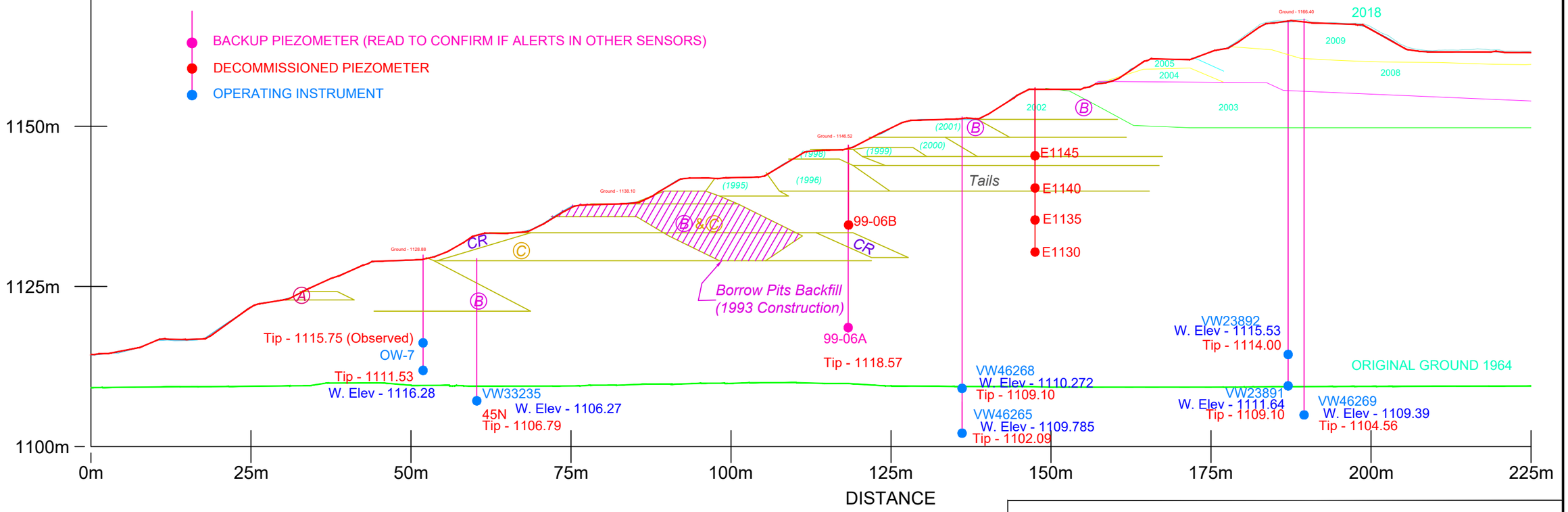
LAGOON D CROSS-SECTION E-E'

NOTES:
- AS-BUILT 2002 TO PRESENT (SURVEY AND LiDAR DATA)
- 2001 AND PRIOR ARE ROUGHLY APPROXIMATED FROM GOLDER ASSOCIATES ANNUAL CONSTRUCTION REVIEW OF TAILINGS LAGOONS C AND D (1996, 1999)
-INSTRUMENT DATA UPDATED DEC. 2020

LEGEND:
- Ⓐ = Sand and Gravel Fill
- Ⓑ = Compacted Coarse Rejects
- Ⓒ = Compacted Tails
- Ⓓ = Track-Packed Tailings
- Ⓔ = Spigotted Tailings
- CR = Coarse Rejects

PIEZOMETER NAME
DISTANCE EAST/WEST NORTH/SOUTH IN METERS FROM SECTION LINE
DES. ELEVATION OF PIEZOMETER SENSOR TIP

- BACKUP PIEZOMETER (READ TO CONFIRM IF ALERTS IN OTHER SENSORS)
- DECOMMISSIONED PIEZOMETER
- OPERATING INSTRUMENT



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LAGOON D CROSS-SECTION E-E'
2020

DATE: Dec. 2020	SCALE:	DWG. NO. :
DWN BY: A. YEOMANS	REV BY: M. Barton	

CROSS-SECTION
ORIGIN COORD: 14225.89E, 51679.04N
AZIMUTH: 24°05'20"

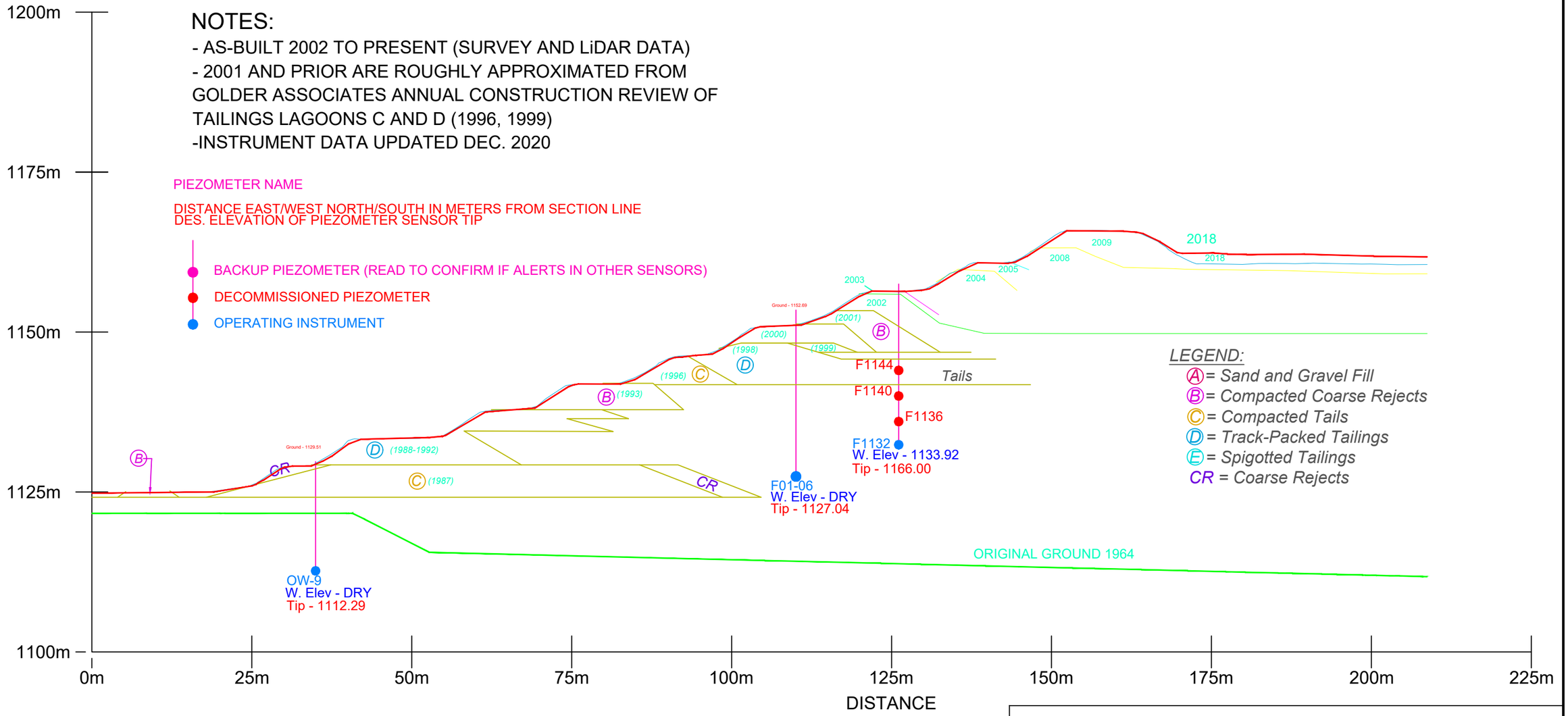
LAGOON D CROSS-SECTION F-F'

NOTES:
- AS-BUILT 2002 TO PRESENT (SURVEY AND LiDAR DATA)
- 2001 AND PRIOR ARE ROUGHLY APPROXIMATED FROM GOLDER ASSOCIATES ANNUAL CONSTRUCTION REVIEW OF TAILINGS LAGOONS C AND D (1996, 1999)
-INSTRUMENT DATA UPDATED DEC. 2020

PIEZOMETER NAME

DISTANCE EAST/WEST NORTH/SOUTH IN METERS FROM SECTION LINE
DES. ELEVATION OF PIEZOMETER SENSOR TIP

BACKUP PIEZOMETER (READ TO CONFIRM IF ALERTS IN OTHER SENSORS)
DECOMMISSIONED PIEZOMETER
OPERATING INSTRUMENT



Teck Elkview Operations

Geotechnical Engineering

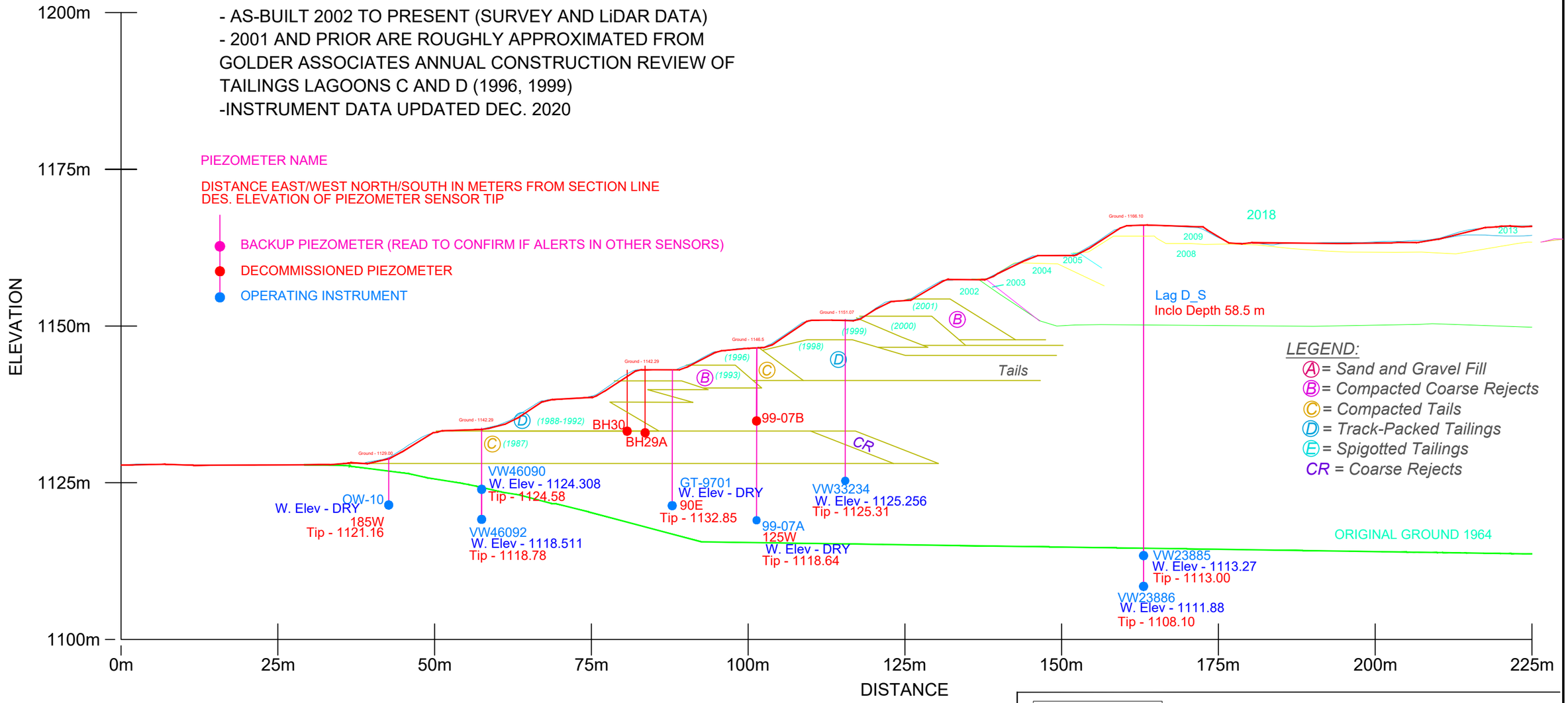
LAGOON D CROSS-SECTION F-F'
2020

DATE: Dec. 2020	SCALE:	DWG. NO. :
DWN BY: A. YEOMANS	REV BY: M. Barton	

CROSS-SECTION
ORIGIN COORD: 14583.76E, 51528.38N
AZIMUTH: 350°18'50"

LAGOON D CROSS-SECTION G-G'

NOTES:
- AS-BUILT 2002 TO PRESENT (SURVEY AND LiDAR DATA)
- 2001 AND PRIOR ARE ROUGHLY APPROXIMATED FROM GOLDER ASSOCIATES ANNUAL CONSTRUCTION REVIEW OF TAILINGS LAGOONS C AND D (1996, 1999)
-INSTRUMENT DATA UPDATED DEC. 2020



Teck

Elkview Operations

Geotechnical Engineering

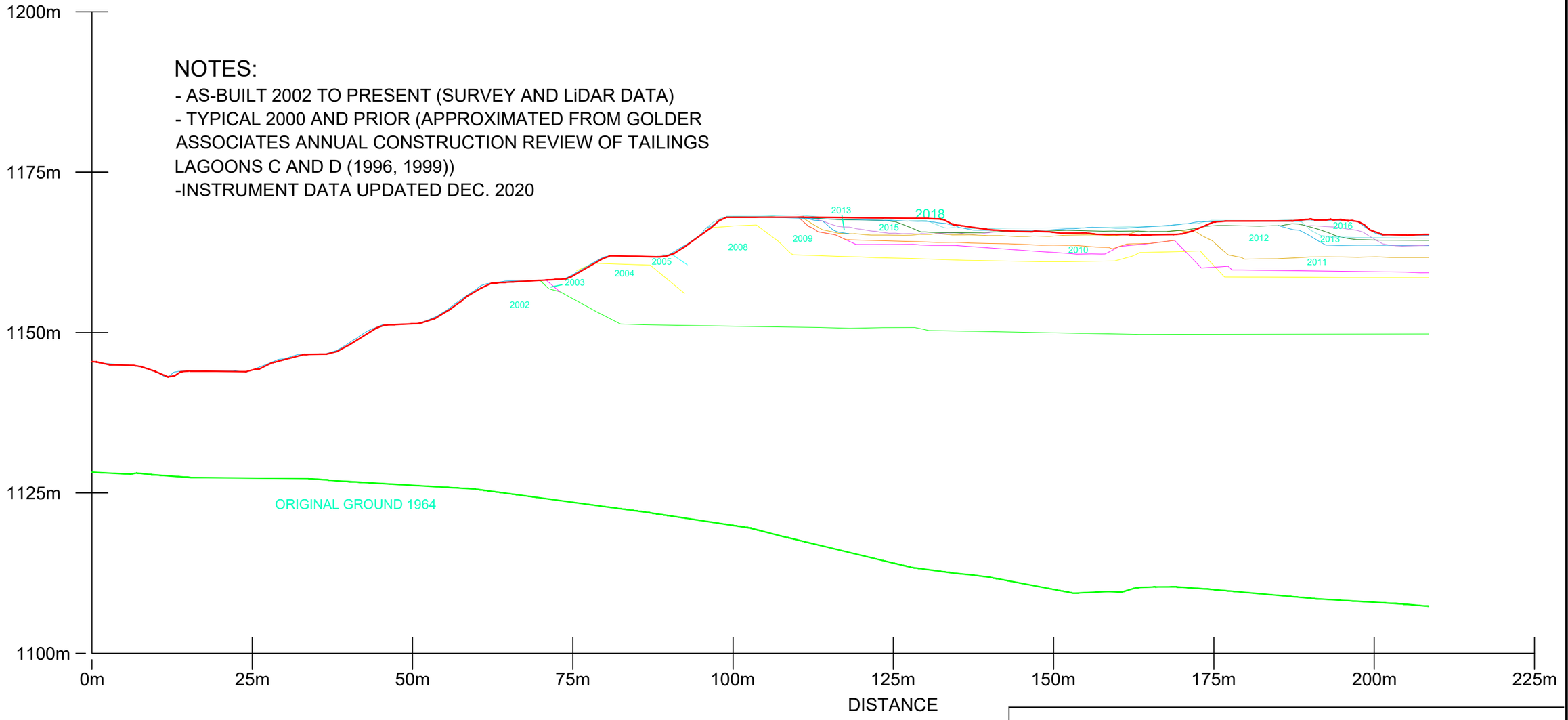
LAGOON D CROSS-SECTION G-G'
2020

DATE: Dec. 2020	SCALE:	DWG. NO. :
DWN BY: A. YEOMANS	REV BY: M. Barton	

CROSS-SECTION
ORIGIN COORD: 14865.68E, 51638.80N
AZIMUTH: 350°43'36"

LAGOON D CROSS-SECTION H-H'

NOTES:
- AS-BUILT 2002 TO PRESENT (SURVEY AND LiDAR DATA)
- TYPICAL 2000 AND PRIOR (APPROXIMATED FROM GOLDER ASSOCIATES ANNUAL CONSTRUCTION REVIEW OF TAILINGS LAGOONS C AND D (1996, 1999))
-INSTRUMENT DATA UPDATED DEC. 2020



Teck Elkview Operations

Geotechnical Engineering

LAGOON D CROSS-SECTION H-H'
2020

DATE: Dec. 2020	SCALE:	DWG. NO. :
DWN BY: A. YEOMANS	REV BY: M. Barton	

APPENDIX IV

Monitoring Instrument Data and Plots (provided by EVO)

WFTF
Lagoon A
Lagoon C
Lagoon D

Appendix IV
2021 Piezometric Level Observations

Table IV-1.0 2021 Piezometric Level Observation

Structure	Piezometer ID	Stability Section	VWP Tip Elevation or Standpipe Screen Elevation (m)	Max Measured Water Table Elevation[1] (m)	2021 Observations
WFTF	VWP VW38582	N/A	1657.93	1658.00	Increase since 2020 "dry" measurement from dry to 0.07 m above VWP tip.
WFTF	VWP VW38583	N/A	1658.87	N/A (below tip)	Steady trend.
WFTF	VWP VW38584	N/A	1657.48	1657.51	Steady trend. Increase since 2020 "dry" measurement from dry to 0.03 m above VWP tip.
WFTF	VWP VW38585	N/A	1657.08	N/A (below tip)	Steady trend. Last read on December 2020.
WFTF	VWP VW38586	N/A	1661.31	1661.41	Increase since 2020 "dry" measurement from dry to 0.1 m above VWP tip.
WFTF	VWP VW27171	N/A	1657.08	1659.10	Increase of 2.02 m compared to 2020 measurements due to instrument calibration. However, the trend remains consistent when historical data is adjusted.
WFTF	VWP VW27172	N/A	1658.06	N/A (below tip)	Steady trend.
WFTF	VWP VW29155	N/A	1657.87	N/A (below tip)	Steady trend.
WFTF	VWP VW29158	N/A	1657.31	N/A (below tip)	Steady trend.
WFTF	VWP VW29159	N/A	1656.62	1661.3	Increase of 3.77 m since 2020 measurement compared to 2020 measurements due to instrument calibration. However, the trend remains consistent when historical data is adjusted.
WFTF	Standpipe WF-2 SOUTH (VWP 67219)	N/A	1536.38	1557.99	Previously not reported in 2020.
WFTF	Standpipe WF-3 NORTH (VWP 67218)	N/A	1547.58	1559.67	Previously not reported in 2020.
Lagoon A	VWP PE19_60307	A-A	1113.59	1114.93	Steady trend. 0.29 m increase from 2020 measurements.
Lagoon A	VWP PE19_60301	A-A	1112.69	1114.42	Steady trend. 0.38 m decrease from 2020 measurements.
Lagoon C	VWP VW23238	A-A	1117.66	N/A (below tip)	Steady trend.
Lagoon C	VWP VW23242	A-A	1109.50	N/A (below tip)	Steady trend.
Lagoon C	VWP VW23239	C-C	1117.65	1117.81	Steady trend. 0.77 m decrease from 2020 measurements.

Structure	Piezometer ID	Stability Section	VWP Tip Elevation or Standpipe Screen Elevation (m)	Max Measured Water Table Elevation[1] (m)	2021 Observations
Lagoon C	VWP VW23243	C-C	1111.25	N/A (below tip)	Steady trend.
Lagoon C	Standpipe 99-01	D-D	1113.72	N/A	This is a backup instrument (not read in 2021)
Lagoon C	VWP VW46191	D-D	1111.33	1112.16	Increase of 0.83 m since 2020 measurement.
Lagoon C	VWP VW46262	D-D	1100.96	1109.86	Steady trend. 0.08 m increase from 2020 measurement.
Lagoon C	VWP VW46091	D-D	1102.59	1109.77	No measurements taken in 2020 or 2021. No datalogger present. 2019 water table elevation shown.
Lagoon C	VWP VW23240	D-D	1117.86	N/A (below tip)	Steady trend.
Lagoon C	VWP VW23244	D-D	1111.46	N/A (below tip)	Steady trend.
Lagoon C	VWP VW23241	N/A	1118.60	1120.0	Increased by 1.4 m compared to 2020 measurements.
Lagoon C	VWP VW23245	N/A	1111.03	1111.91	Steady trend. 0.94 m decrease from 2020 annual inspection.
Lagoon C	VWP VW46261	G-G	1100.46	Not Reported	Potential instrument malfunction or requires calibration and therefore not reported.
Lagoon C	VWP VW46093	G-G	1101.22	1110.04	Increase of 5.34 m compared to 2020 measurements due to instrument calibration. However, the trend remains consistent when historical data is adjusted.
Lagoon C	Standpipe OW-C-88-1	G-G	1111.63	N/A	This is a backup instrument (not read in 2021)
Lagoon C	Standpipe OW-C-88-2	G-G	1112.48	N/A (below tip)	No data collected in 2021, however historical trends show Dry readings at 1111.63 since about 2009.
Lagoon C	Standpipe OW-C2	G-G	1116.87	N/A	Scheduled to be decommissioned (not read).
Lagoon C	Standpipe GT-9703 A (VWP 67169)	G-G	1085.92	1110.19	Steady trend.
Lagoon C	Standpipe GT-9703 B	G-G	1108.50	1110.51	Not read in 2021, however GT-9703 A trend is consistent.(2019 value shown)
Lagoon C	VWP VW_ PE19_60310	East Emb	1106.69	1113.39	Steady trend. 0.09 m increase from 2019 measurements (measurements from 2020 were erroneous).
Lagoon C	VWP VW_ PE19_60311	East Emb	1106.64	1112.14	Steady trend. 0.11 m decrease from 2019 measurements (measurements from 2020 were erroneous).
Lagoon D	VWP VW23897	B-B	1111.30	1115.65	Steady trend. 0.48 m increase from 2019 measurement (not read in 2020).

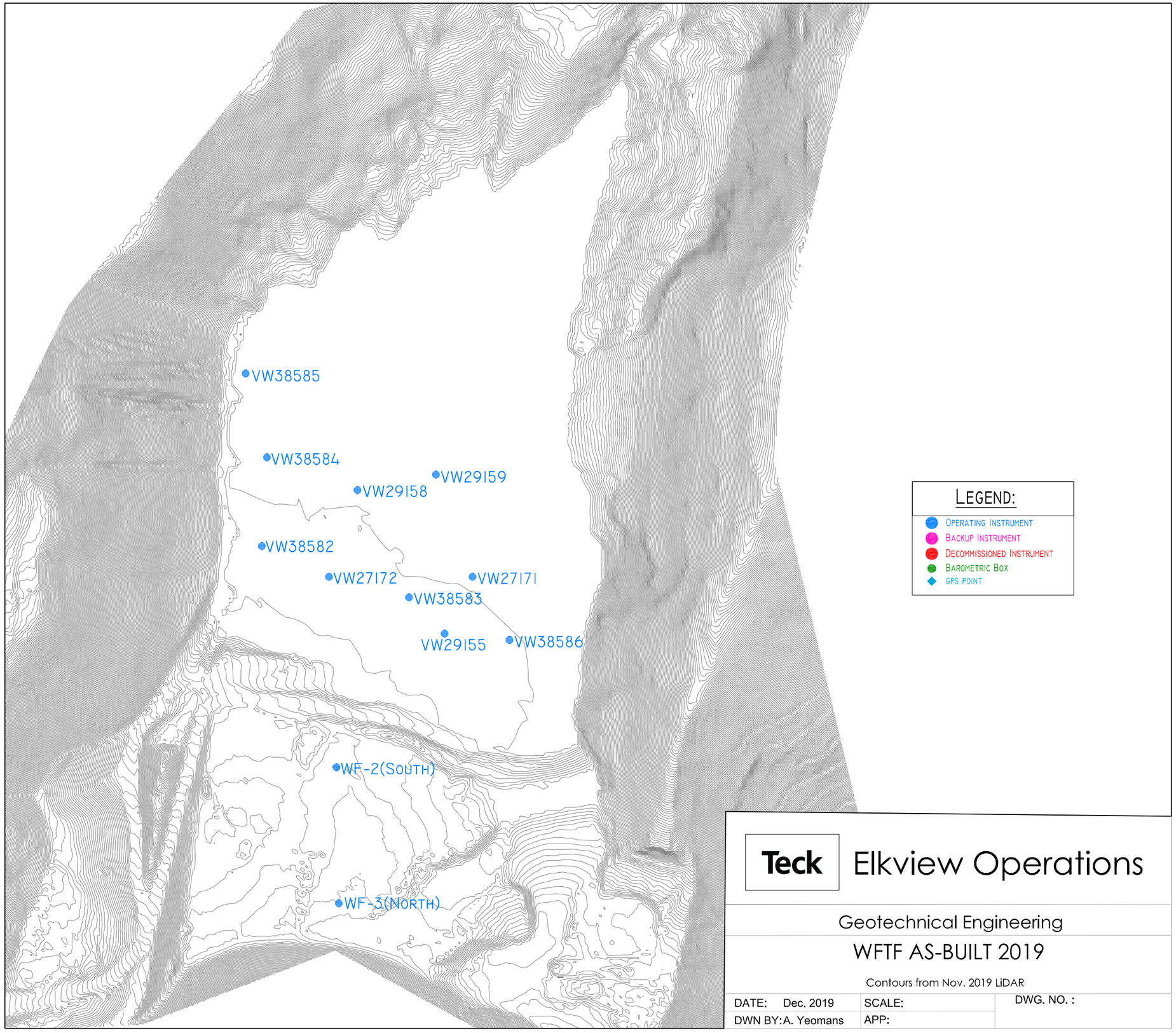
Structure	Piezometer ID	Stability Section	VWP Tip Elevation or Standpipe Screen Elevation (m)	Max Measured Water Table Elevation[1] (m)	2021 Observations
Lagoon D	VWP VW23898	B-B	1116.20	N/A (below tip)	Steady trend. Dry.
Lagoon D	Standpipe 99-03A	B-B	1118.31	N/A	This is a backup instrument (not read in 2021)
Lagoon D	Standpipe 99-03B	B-B	1133.21	N/A	Scheduled to be decommissioned (not read).
Lagoon D	Standpipe OW-12	B-B	1123.50	N/A	Scheduled to be decommissioned (not read).
Lagoon D	Standpipe OW-12A (VWP 67201)	B-B	1113.60	1116.23	Steady trend. 0.27 m decrease from 2020 annual inspection.
Lagoon D	Standpipe OW-9431	B-B	1130.79	N/A	Scheduled to be decommissioned (not read).
Lagoon D	Standpipe OW-9435	B-B	1130.97	N/A	Scheduled to be decommissioned (not read).
Lagoon D	VWP VW23895	C-C	1114.10	Not Reported	Note from EVO that datalogger is saturated and requires replacement (No readings for 2021)
Lagoon D	VWP VW23896	C-C	1109.20	Not Reported	Note from EVO that datalogger is saturated and requires replacement (No readings for 2021)
Lagoon D	VWP VW65023 (C1137)	C-C	1137.05	N/A	Scheduled to be decommissioned (not read)
Lagoon D	VWP VW65026 (C1132)	C-C	1132.16	N/A	This is a backup instrument (not read)
Lagoon D	VWP VW46263	C-C	1109.95	1115.65	Steady trend. 0.33 m increase from 2020 measurement.
Lagoon D	Standpipe C01-03A	C-C	1138.95	N/A	Scheduled to be decommissioned (not read).
Lagoon D	Standpipe C01-03B	C-C	1123.50	N/A	This is a backup instrument (not read in 2021)
Lagoon D	Standpipe OW-9505A	C-C	1130.11	N/A	Scheduled to be decommissioned (not read).
Lagoon D	Standpipe OW-9505B	C-C	1133.65	N/A	Scheduled to be decommissioned (not read).
Lagoon D	Standpipe OW-9503	C-C	1133.33	N/A	Scheduled to be decommissioned (not read).
Lagoon D	Standpipe OW-9506	C-C	1129.26	N/A	Scheduled to be decommissioned (not read).
Lagoon D	Standpipe OW-9433A (VWP 67167)	C-C	1115.00	Not Reported	Potential instrument malfunction or additional calibration required, and therefore not reported.
Lagoon D	Standpipe OW-9433B	C-C	1126.49	N/A	Scheduled to be decommissioned (not read).

Structure	Piezometer ID	Stability Section	VWP Tip Elevation or Standpipe Screen Elevation (m)	Max Measured Water Table Elevation[1] (m)	2021 Observations
Lagoon D	Standpipe 99-04A	C-C	1118.91	N/A	Scheduled to be decommissioned (not read).
Lagoon D	Standpipe 99-04B	C-C	1133.81	N/A	Scheduled to be decommissioned (not read).
Lagoon D	VWP VW46095	C-C	1109.26	Not Reported	Potential instrument malfunction and therefore not reported.
Lagoon D	Standpipe C01-02 (VW 67197)	C-C	1114.34	1114.50	Steady trend. 0.16 m increase.
Lagoon D	VWP VW_ PE19_60309	C-C	1098.14	Not Reported	Potential instrument malfunction and therefore not reported.
Lagoon D	Standpipe D01-05A	CC-DD	1138.55	N/A	Scheduled to be decommissioned (not read).
Lagoon D	Standpipe D01-05B	CC-DD	1124.62	N/A	This is a backup instrument (not read in 2021)
Lagoon D	Standpipe OW-5 (VW 67204)	D-D	1107.23	1111.09	Generally trending steady. 0.73 m intermittent increase from 2020 annual inspection.
Lagoon D	Standpipe 99-05A (VW 67208)	D-D	1118.66	1118.76	Steady trend. 0.10 m increase from 2020 measurements.
Lagoon D	Standpipe 99-05B	D-D	1133.54	N/A	Scheduled to be decommissioned (not read).
Lagoon D	Standpipe D01-04 (VW 67198)	DD-EE	1115.15	1115.46	Steady trend. 0.31 m increase from 2020 measurements.
Lagoon D	VWP VW23891	E-E	1109.10	1111.75	Note from EVO that datalogger requires replacement (No readings for 2021). Previous 2020 measurement shown.
Lagoon D	VWP VW23892	E-E	1114.00	1115.65	Note from EVO that datalogger requires replacement (No readings for 2021). Previous 2020 measurement shown.
Lagoon D	VWP VW46269	E-E	1104.56	1109.86	Steady trend. 0.49 m increase from 2019 annual inspection.
Lagoon D	VWP VW46265	E-E	1102.09	1110.58	Note from EVO that there are no readings for 2021. Previous 2020 measurement shown.
Lagoon D	VWP VW46268	E-E	1109.10	1110.83	Note from EVO that there are no readings for 2021. Previous 2020 measurement shown.
Lagoon D	Standpipe 99-06A	E-E	1118.57	N/A	This is a backup instrument (not read in 2021)
Lagoon D	Standpipe 99-06B	E-E	1134.22	N/A	Scheduled to be decommissioned (not read).
Lagoon D	Standpipe OW-7 (VWP 67162)	E-E	1111.53	Not Reported	Potential instrument malfunction and therefore not reported.

Structure	Piezometer ID	Stability Section	VWP Tip Elevation or Standpipe Screen Elevation (m)	Max Measured Water Table Elevation[1] (m)	2021 Observations
Lagoon D	VWP VW33235	E-E	1106.79	1109.27	Increase of 2.48 m compared to 2020 measurements due to instrument calibration. However, the trend remains consistent when historical data is adjusted.
Lagoon D	VWP VW 62745 (F1144)	F-F	1144.00	N/A	Scheduled to be decommissioned (not read).
Lagoon D	VWP VW 65027 (F1140)	F-F	1140.00	N/A	Scheduled to be decommissioned (not read).
Lagoon D	VWP VW 12394-134 (F1136)	F-F	1136.00	N/A	Scheduled to be decommissioned (not read).
Lagoon D	VWP VW 66325 (F1132)	F-F	1132.00	N/A	Scheduled to be decommissioned (not read).
Lagoon D	Standpipe F01-06	F-F	1127.04	N/A (below tip)	Not read in 2021. 2020 value shown
Lagoon D	Standpipe OW-9	F-F	1112.29	N/A (below tip)	Not read in 2021. 2020 value shown
Lagoon D	Standpipe GT-9701	FF-GG	1120.97	N/A (below tip)	Not read in 2021. 2020 value shown
Lagoon D	VWP VW23885	G-G	1113.00	1114.80	1 m increase from 2020 readings however this is expected. This instrument fluctuates with the Elk River elevation.
Lagoon D	VWP VW23886	G-G	1108.10	1112.10	0.08 m increase from 2020 readings and trending steady.
Lagoon D	VWP VW33234	G-G	1125.31	N/A (below tip)	Steady trend. 0.06 m decrease from 2020 measurements.
Lagoon D	VWP VW46090	G-G	1124.58	Not Reported	Potential instrument malfunction or additional calibration required, and therefore not reported.
Lagoon D	VWP VW46092	G-G	1118.78	N/A (below tip)	Not read in 2021. 2020 value shown
Lagoon D	BH 30	G-G	1132.85	N/A	Scheduled to be decommissioned (not read).
Lagoon D	VWP VW45123	AA-BB	1114.09	1116.20	Increase of 2.11 m compared to 2020 measurements due to instrument calibration. However, the trend remains consistent when historical data is adjusted.
Lagoon D	Standpipe OW-9434A (VW 67168)	AA-BB	1115.00	Not Reported	Potential instrument malfunction or additional calibration required, and therefore not reported.
Lagoon D	Standpipe OW-9434B	AA-BB	1123.77	N/A	This is a backup instrument (not read in 2021)
Lagoon D	Standpipe OW-9436A (VW 67166)	BB-CC	1115.55	1121.52	Increase of 6 m compared to 2020 measurements due to instrument calibration. However, the trend

Structure	Piezometer ID	Stability Section	VWP Tip Elevation or Standpipe Screen Elevation (m)	Max Measured Water Table Elevation[1] (m)	2021 Observations
					remains consistent when historical data is adjusted.
Lagoon D	Standpipe OW-9436B	BB-CC	1124.39	N/A	This is a backup instrument (not read in 2021)
Lagoon D	Standpipe OW-9504A	BB-CC	1130.00	N/A	Scheduled to be decommissioned (not read).
Lagoon D	Standpipe OW-9504B	BB-CC	1133.42	N/A	Scheduled to be decommissioned (not read).
Lagoon D	Standpipe OW-9502	BB-CC	1132.14	N/A	Scheduled to be decommissioned (not read).
Lagoon D	Standpipe OW-9501A	BB-CC	1129.37	N/A	Scheduled to be decommissioned (not read).
Lagoon D	Standpipe OW-9501B	BB-CC	1133.09	N/A	Scheduled to be decommissioned (not read).
Lagoon D	Standpipe OW-3	BB-CC	1108.48	N/A	Scheduled to be decommissioned (not read).
Lagoon D	Standpipe OW-4 (VW 67205)	CC-DD	1106.89	1112.74	Steady trend. 0.18 m increase from 2020 annual inspection.
Lagoon D	Standpipe OW-6 (VW 67206)	DD-EE	1106.07	1110.08	Steady trend. 0.51 m increase from 2020 annual inspection.
Lagoon D	VWP VW 12394-136 (E1140)	DD-EE	1142.49	N/A	Scheduled to be decommissioned (not read).
Lagoon D	VWP VW 12394-135 (E1145)	DD-EE	1144.61	N/A	Scheduled to be decommissioned (not read).
Lagoon D	VWP VW 65025 (E1135)	DD-EE	1135.00	N/A	Scheduled to be decommissioned (not read).
Lagoon D	VWP VW 65024 (E1130)	DD-EE	1130.00	N/A	Scheduled to be decommissioned (not read).
Lagoon D	Standpipe OW-10 (VWP 67195)	FF-GG	1121.16	N/A (below tip)	Not read in 2021. 2020 value shown
Lagoon D	Standpipe 99-07A	FF-GG	1118.64	N/A (below tip)	Not read in 2021. 2020 value shown
Lagoon D	Standpipe 99-07B	FF-GG	1134.48	N/A	Scheduled to be decommissioned (not read).
Lagoon D	Standpipe BH 29A	GG-HH	1132.59	N/A	Scheduled to be decommissioned (not read).

Note: 1. Max measured water table elevation refers to the maximum recorded level for the 2020/2021 period since the previous annual facility performance reporting period (up to October 2020). This level may vary from the drawing cross-sections which shows the last recorded measurement for each instrument.



LEGEND:

- Operating Instrument
- Backup Instrument
- Decommissioned Instrument
- Barometric Box
- GPS Point

Teck Elkview Operations

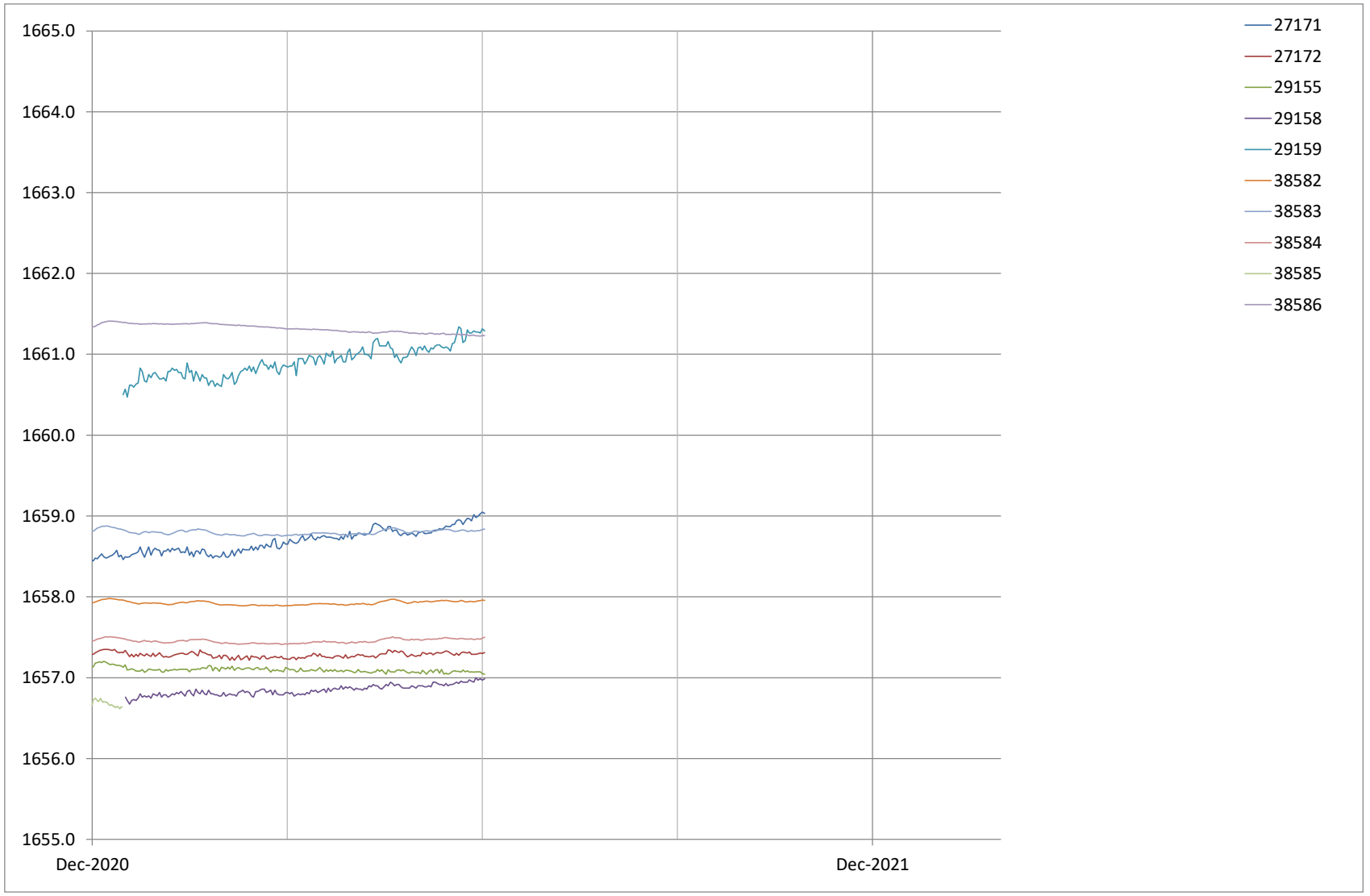
Geotechnical Engineering

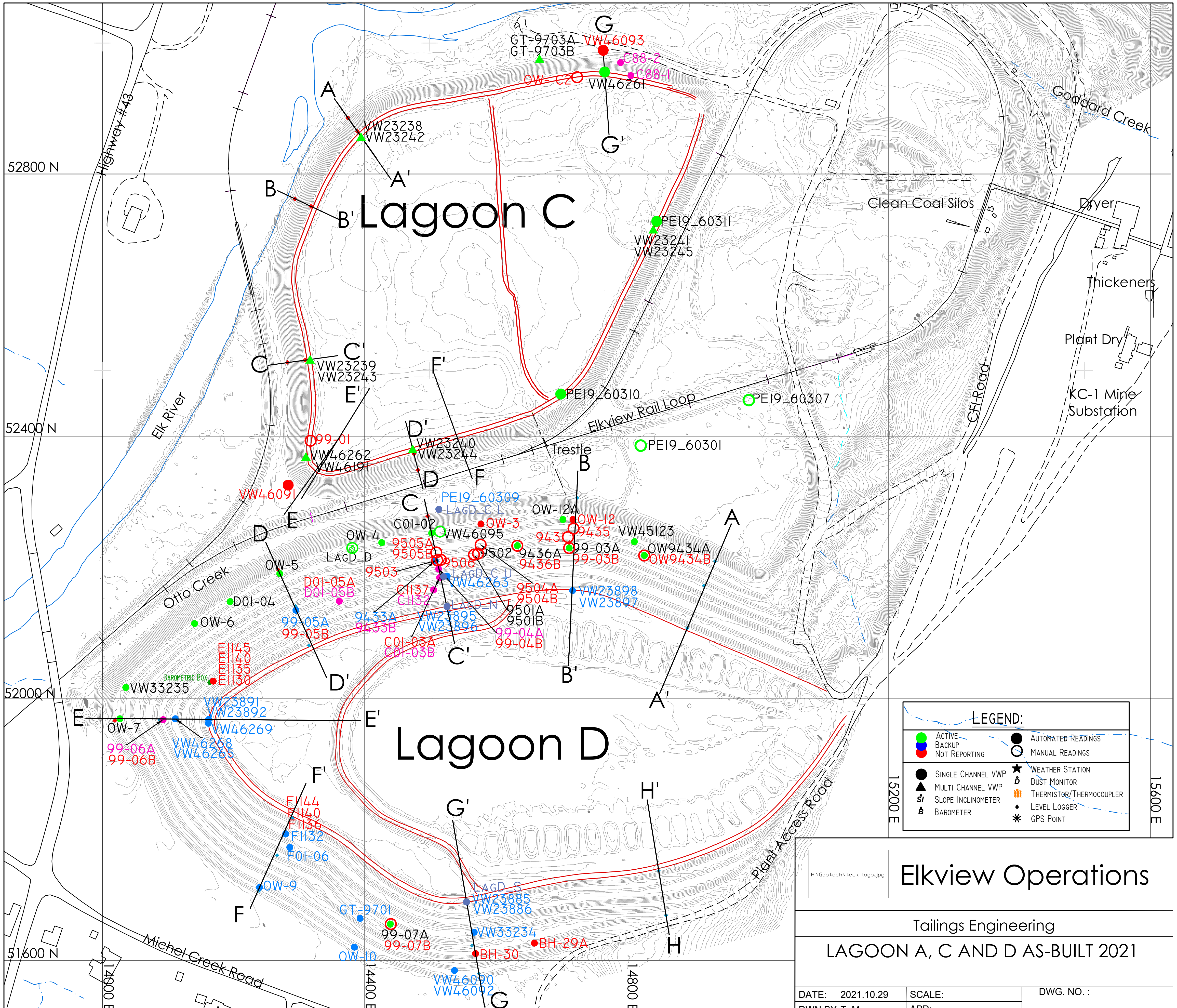
WFTF AS-BUILT 2019

Contours from Nov. 2019 LiDAR

DATE: Dec. 2019	SCALE:	DWG. NO. :
DWN BY:A. Yeomans	APP:	

PROJECT: TECK (EVO)	WFTF Piezometers	COMMENTS:
LOCATION: West Fork Tailings Facility		





Lagoon C
Lagoon D
LEGEND:
Active
Backup
Not Reporting
Automated Readings
Manual Readings
Single Channel VWP
Multi Channel VWP
Slope Inclinometer
Barometer
Weather Station
Dust Monitor
Thermistor/Thermocoupler
Level Logger
GPS Point
52800 N
52400 N
52000 N
51600 N
14000 E
14400 E
14800 E
15200 E
15600 E
Highway #43
Elk River
Otto Creek
Goddard Creek
Clean Coal Silos
Dryer
Thickeners
Plant Dry
KC-1 Mine Substation
CFI Road
Elkview Rail Loop
Trestle
Plant Access Road
Michel Creek Road
GT-9703A
GT-9703B
VW46093
C88-2
C88-1
OW-C2
VW46261
VW23238
VW23242
PE19_60311
VW23241
VW23245
VW23239
VW23243
PE19_60310
PE19_60307
PE19_60301
99-01
VW46262
VW46191
VW23240
VW23244
VW46091
PE19_60309
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OW-12
C01-02
OW-3
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9435
VW45123
OW-4
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9505B
9502
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9436B
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99-03B
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OW9434B
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9503
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D01-05B
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C1132
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VW23897
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9433B
VW23895
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99-04B
C01-03A
C01-03B
E1145
E1140
E1135
E1130
Barometric Box
VW33235
VW23891
VW23892
VW46269
OW-7
99-06A
99-06B
VW46268
VW46265
F1144
F1140
F1136
F1132
F01-06
OW-9
GT-9701
99-07A
99-07B
LAGD_S
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VW23886
VW33234
BH-29A
BH-30
OW-10
VW46090
VW46092
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A'
B
B'
C
C'
D
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E'
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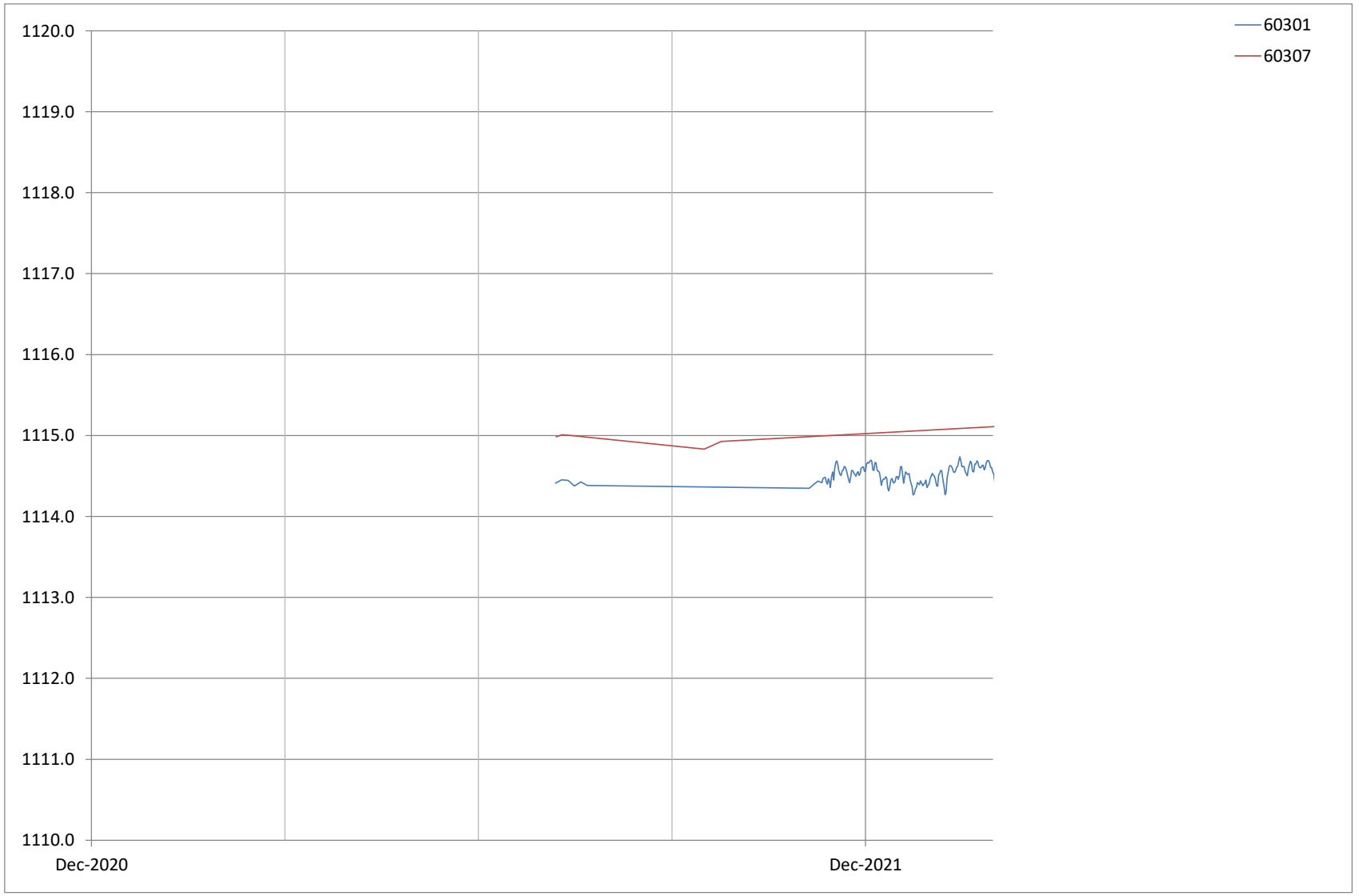
Elkview Operations

Tailings Engineering

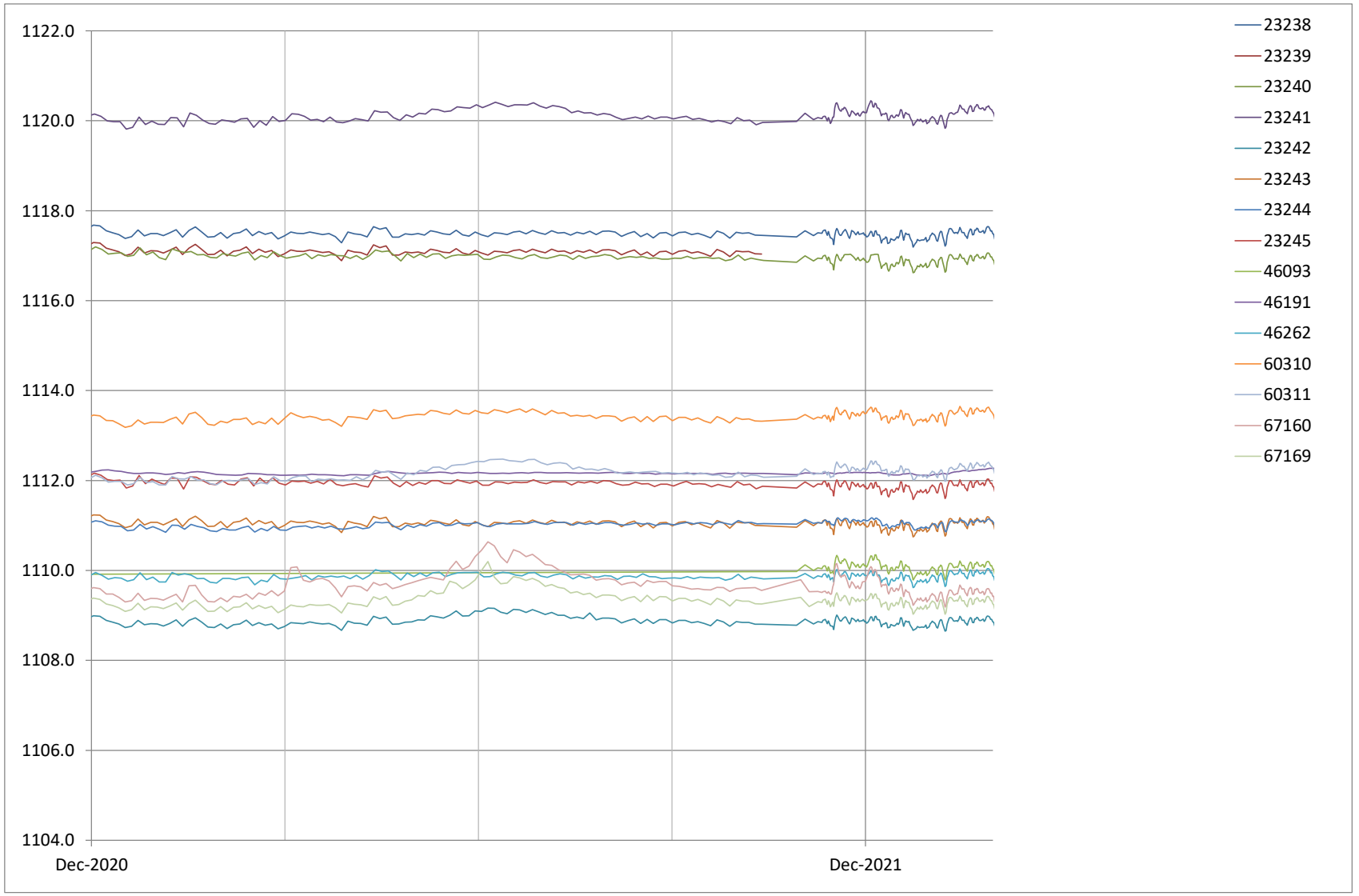
LAGOON A, C AND D AS-BUILT 2021

DATE: 2021.10.29	SCALE:	DWG. NO. :
DWN BY: T. Munn	APP:	

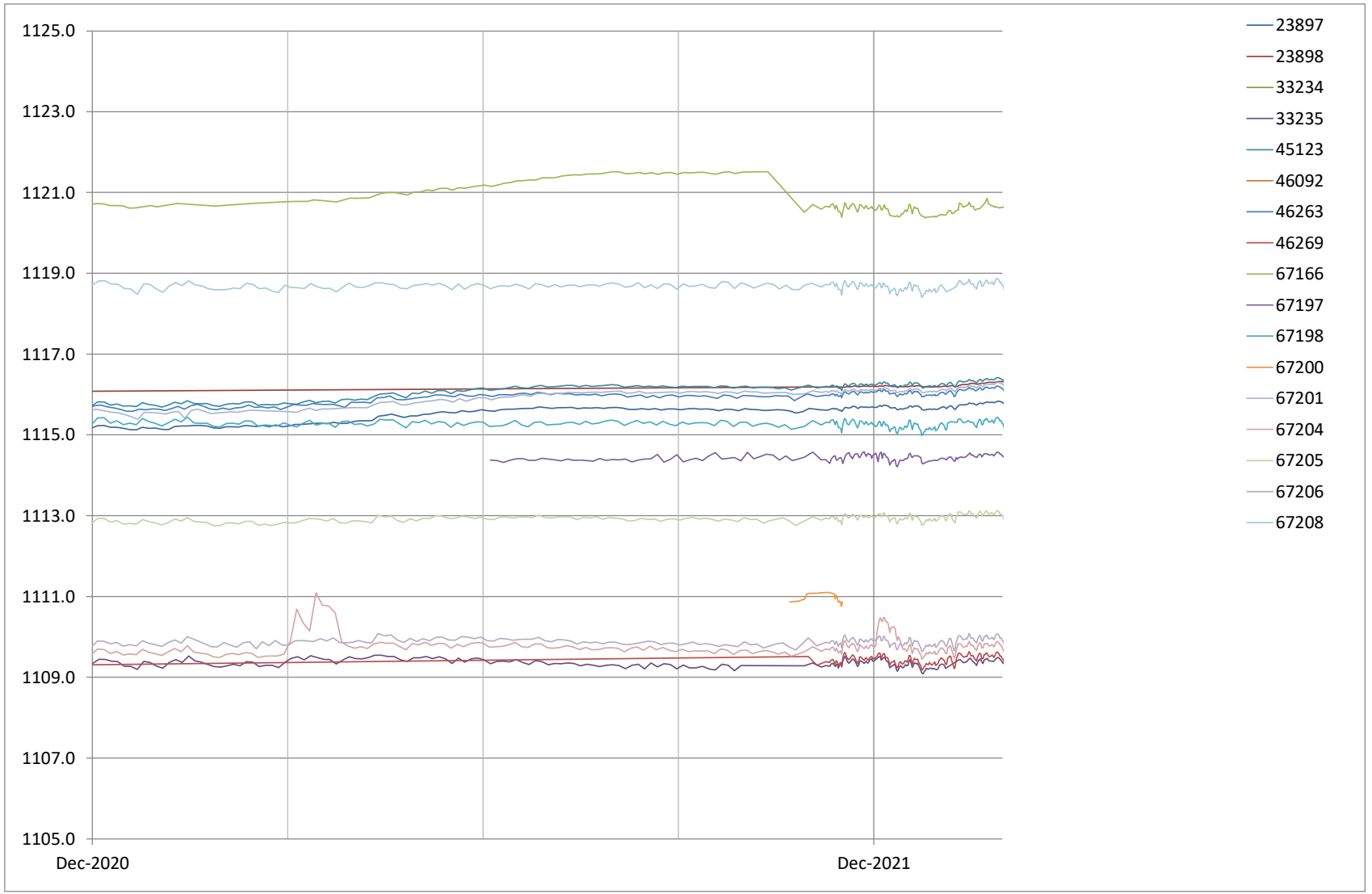
PROJECT: TECK (EVO)	**Lagoon A Piezometers**	COMMENTS:
LOCATION: Lagoon A		

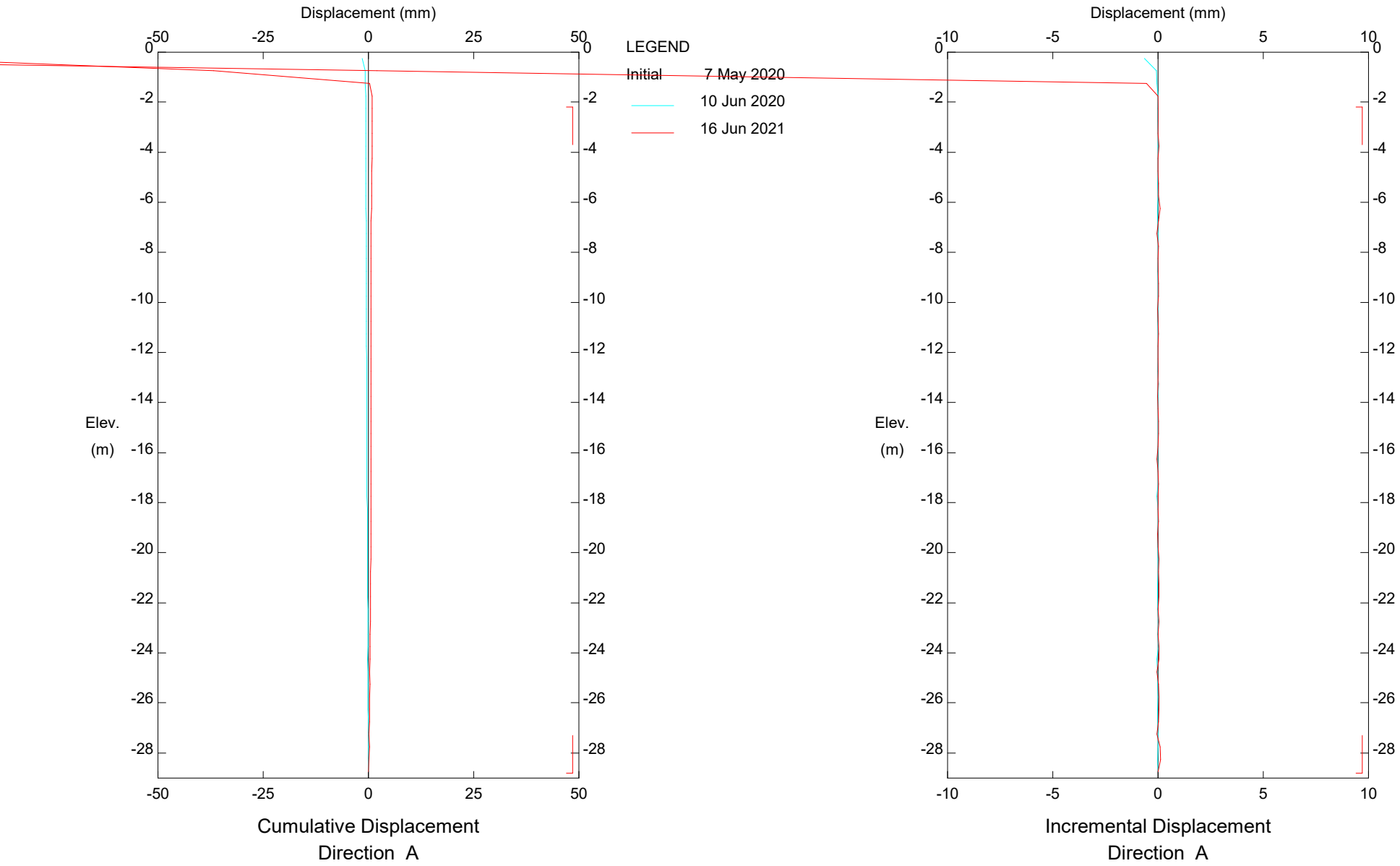


PROJECT: TECK (EVO)	**Lagoon C Piezometer Plots**	COMMENTS:
LOCATION: Lagoon C		



PROJECT: TECK (EVO)	**Lagoon D Piezometer Plots**	COMMENTS:
LOCATION: Lagoon D		





LagoonD, Inclinometer BH_D_19_02

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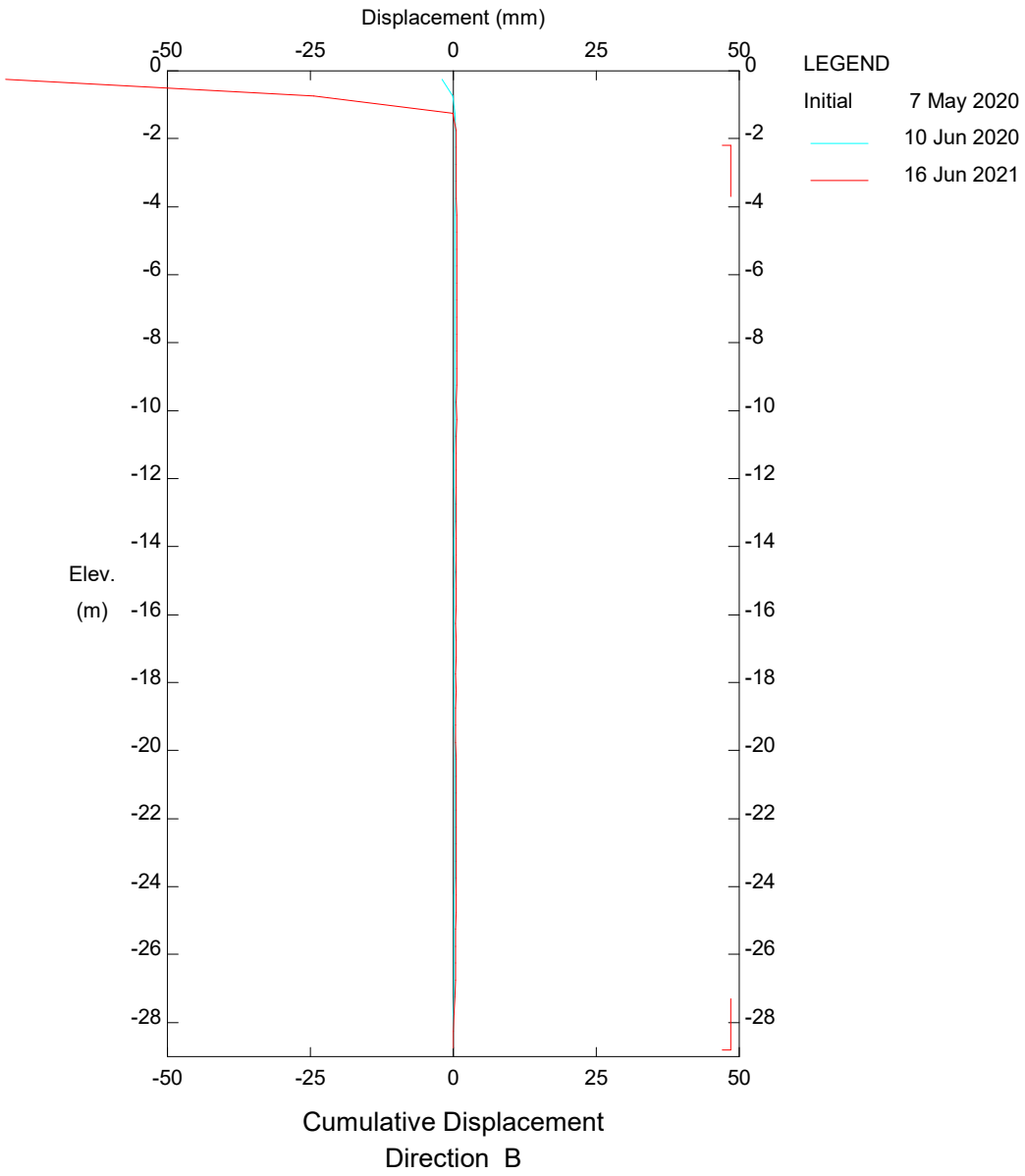
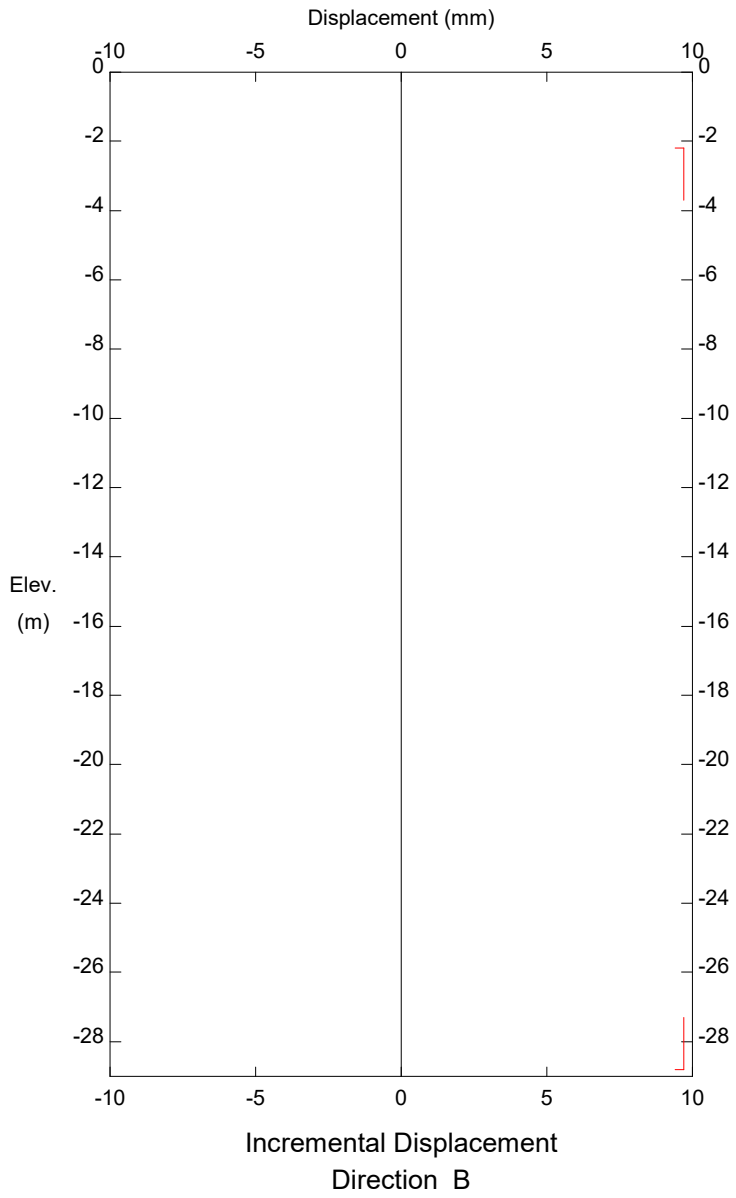


Cumulative Displacement
Direction B



Incremental Displacement
Direction B

LagoonD, Inclinometer BH_D_19_02

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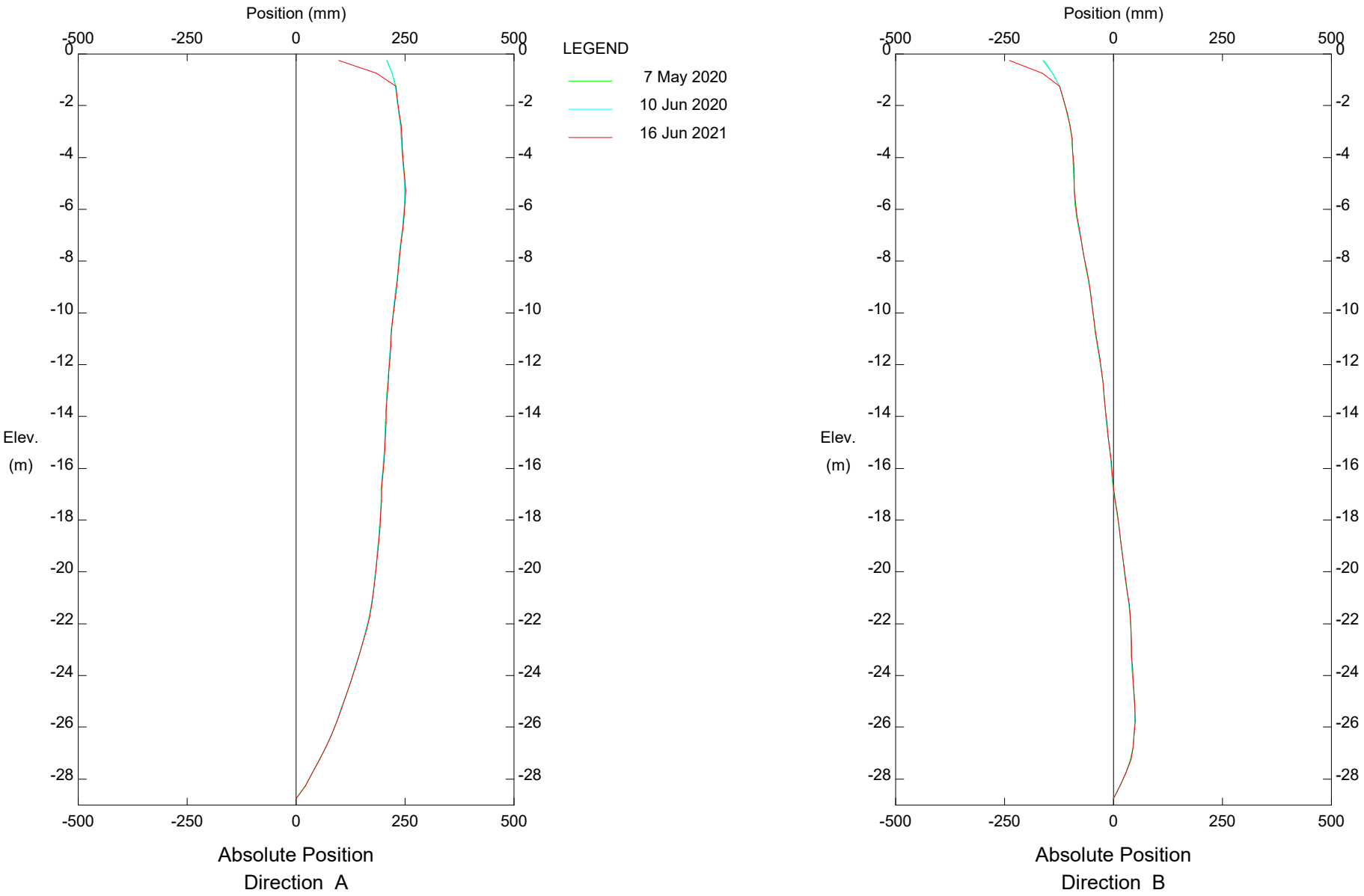

LagoonD, Inclinometer BH_D_19_02

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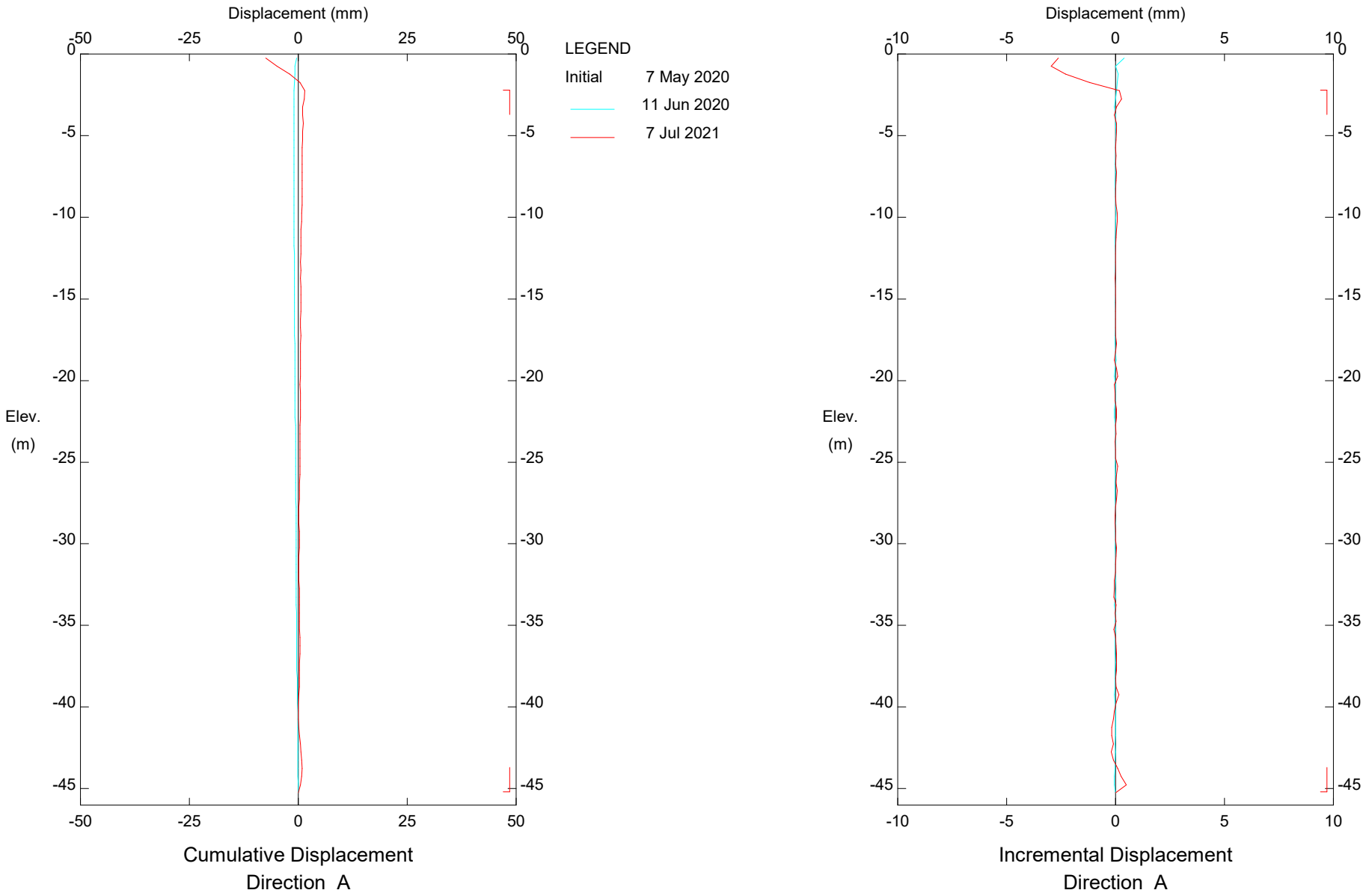

LagoonD, Inclinometer BH_D_19_03

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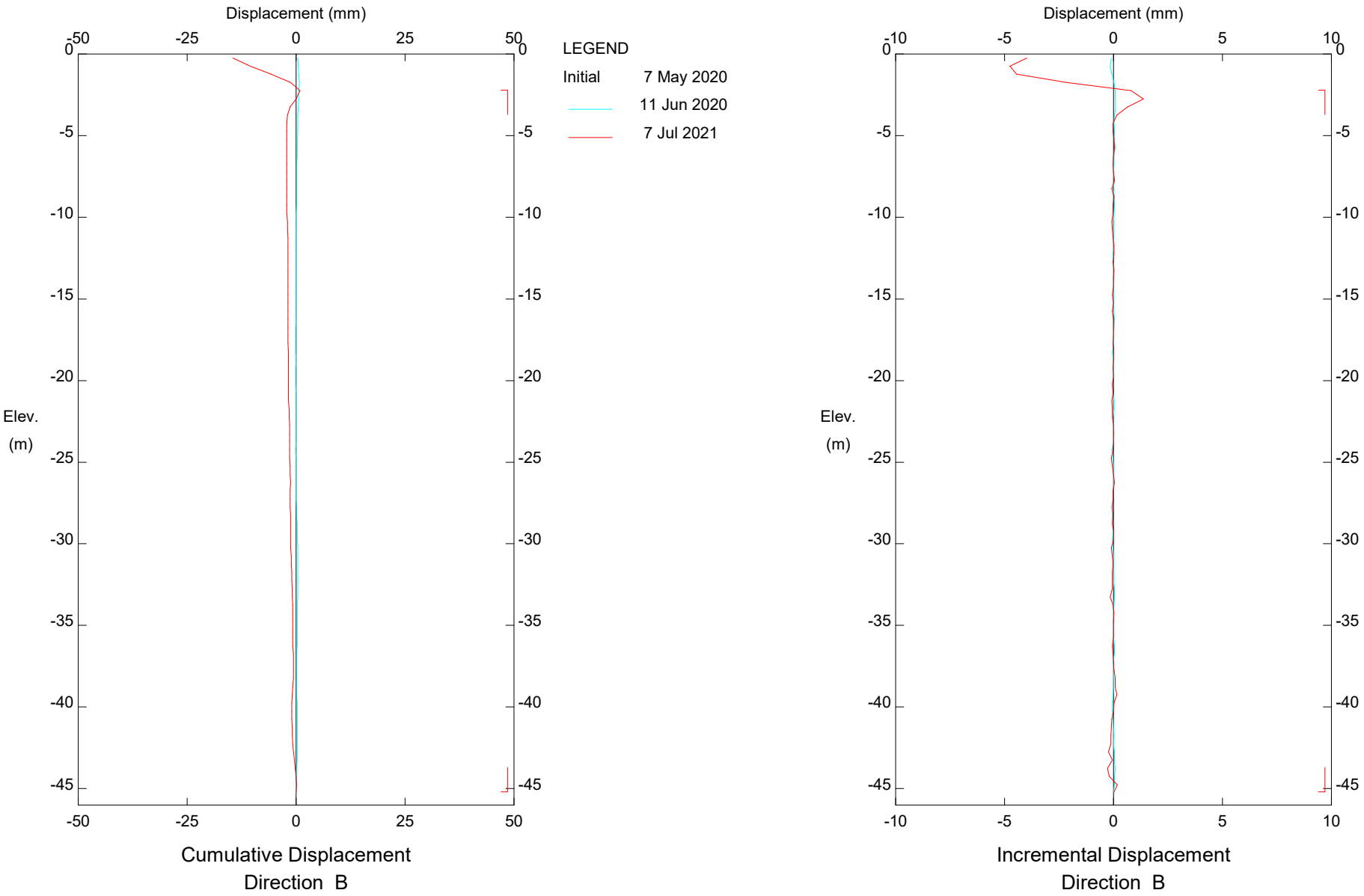

LagoonD, Inclinometer BH_D_19_03

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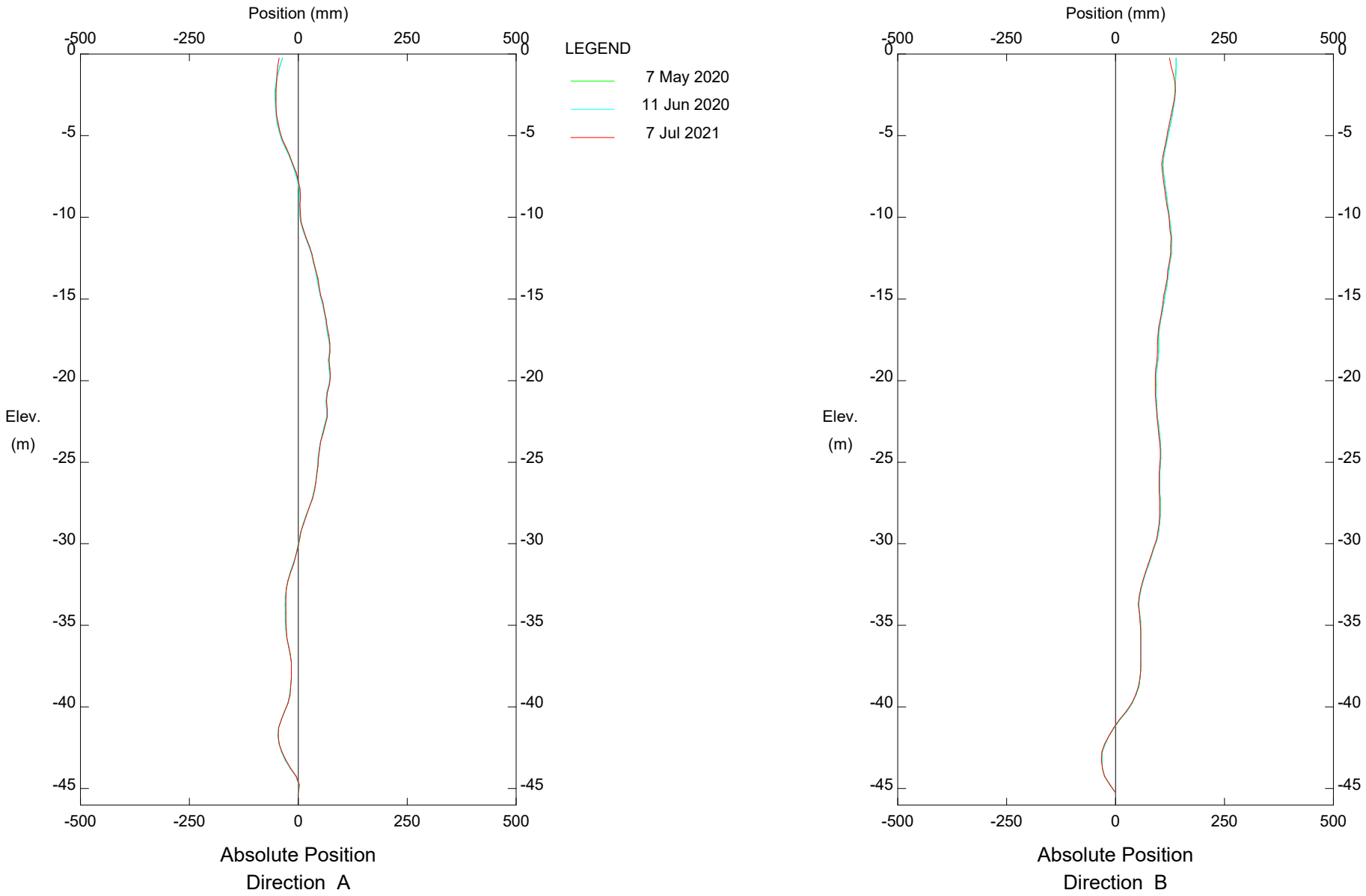

LagoonD, Inclinometer BH_D_19_03

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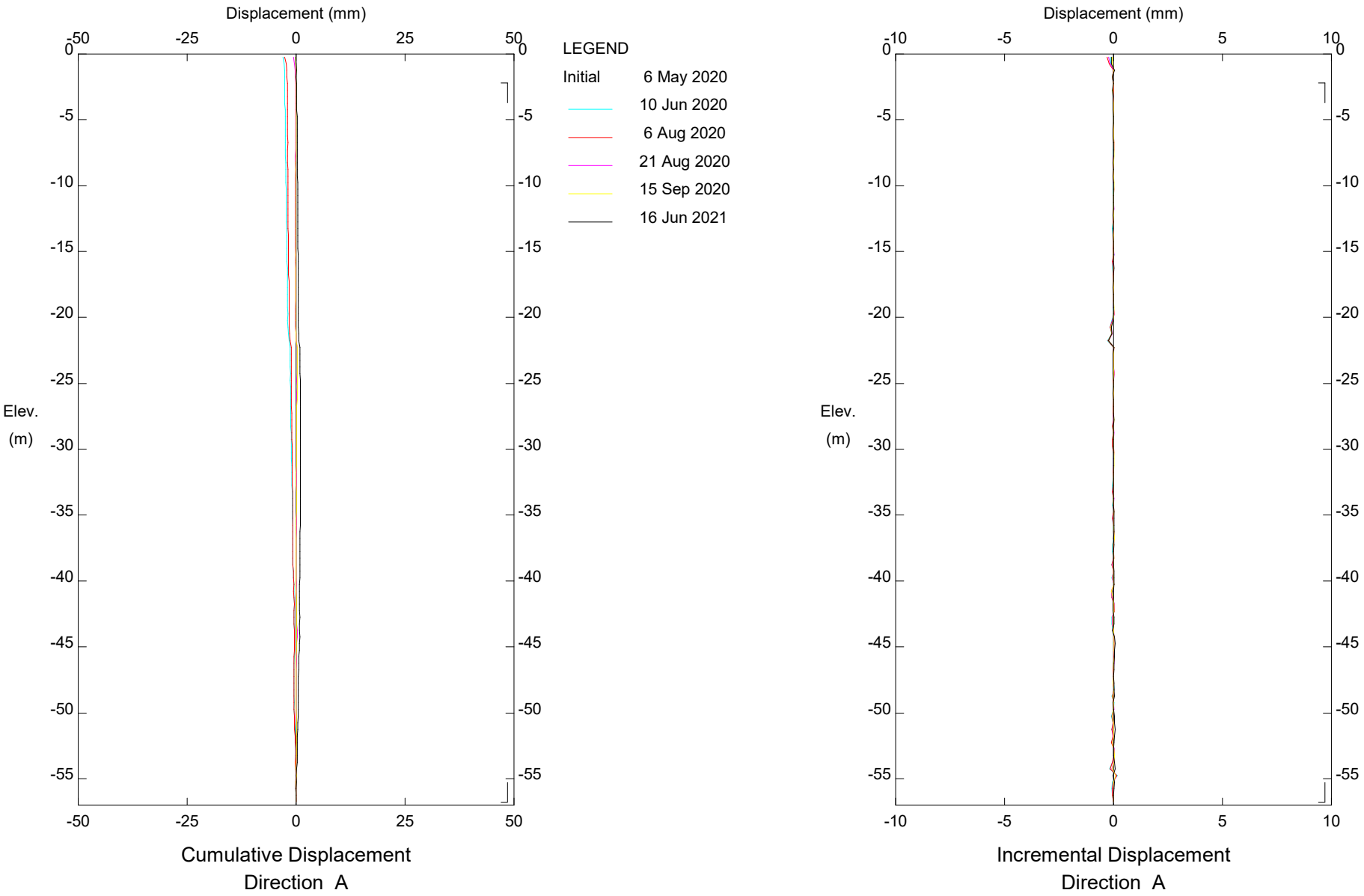

LagoonD, Inclinometer BH_D_19_06

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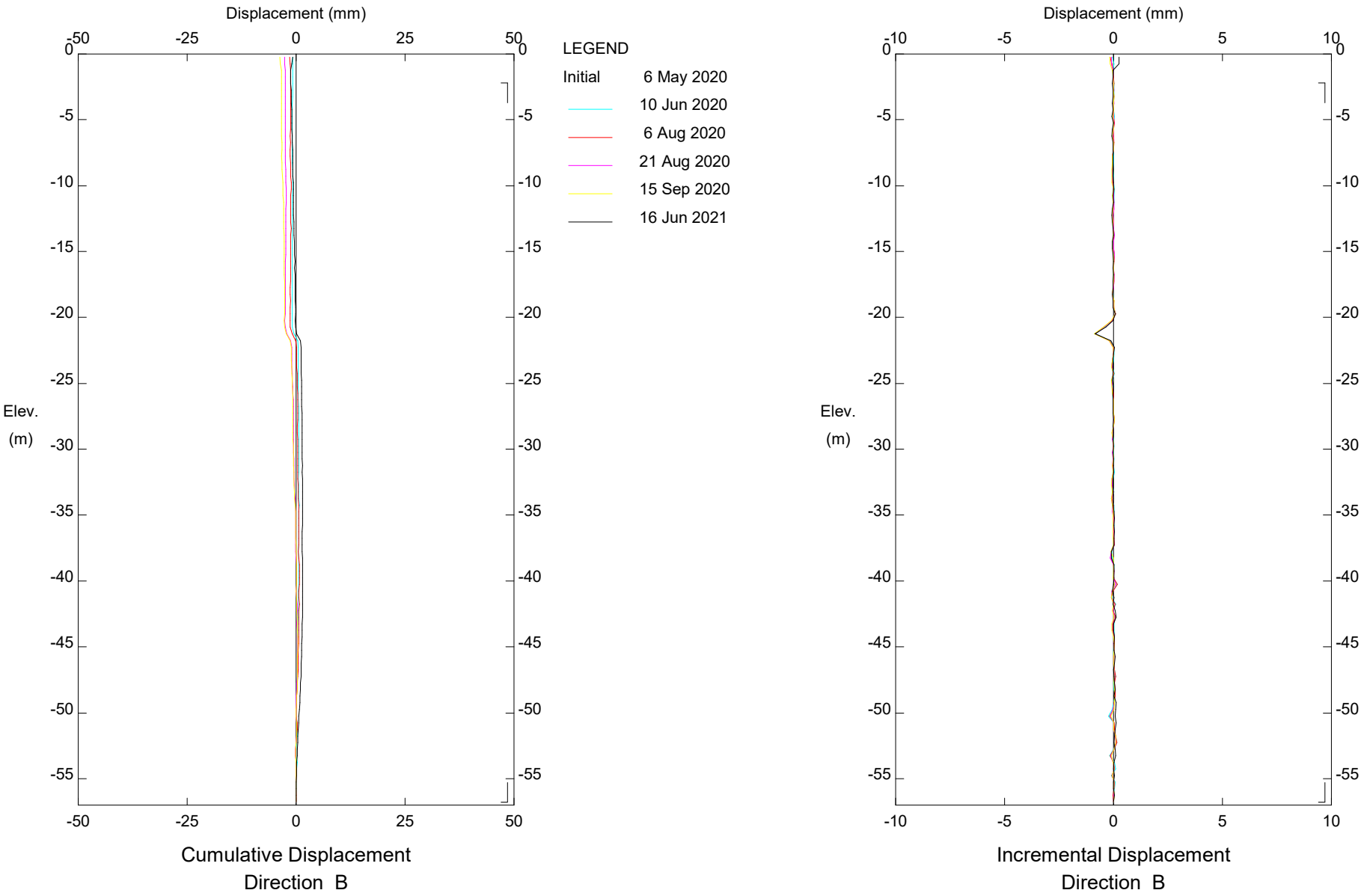

LagoonD, Inclinometer BH_D_19_06

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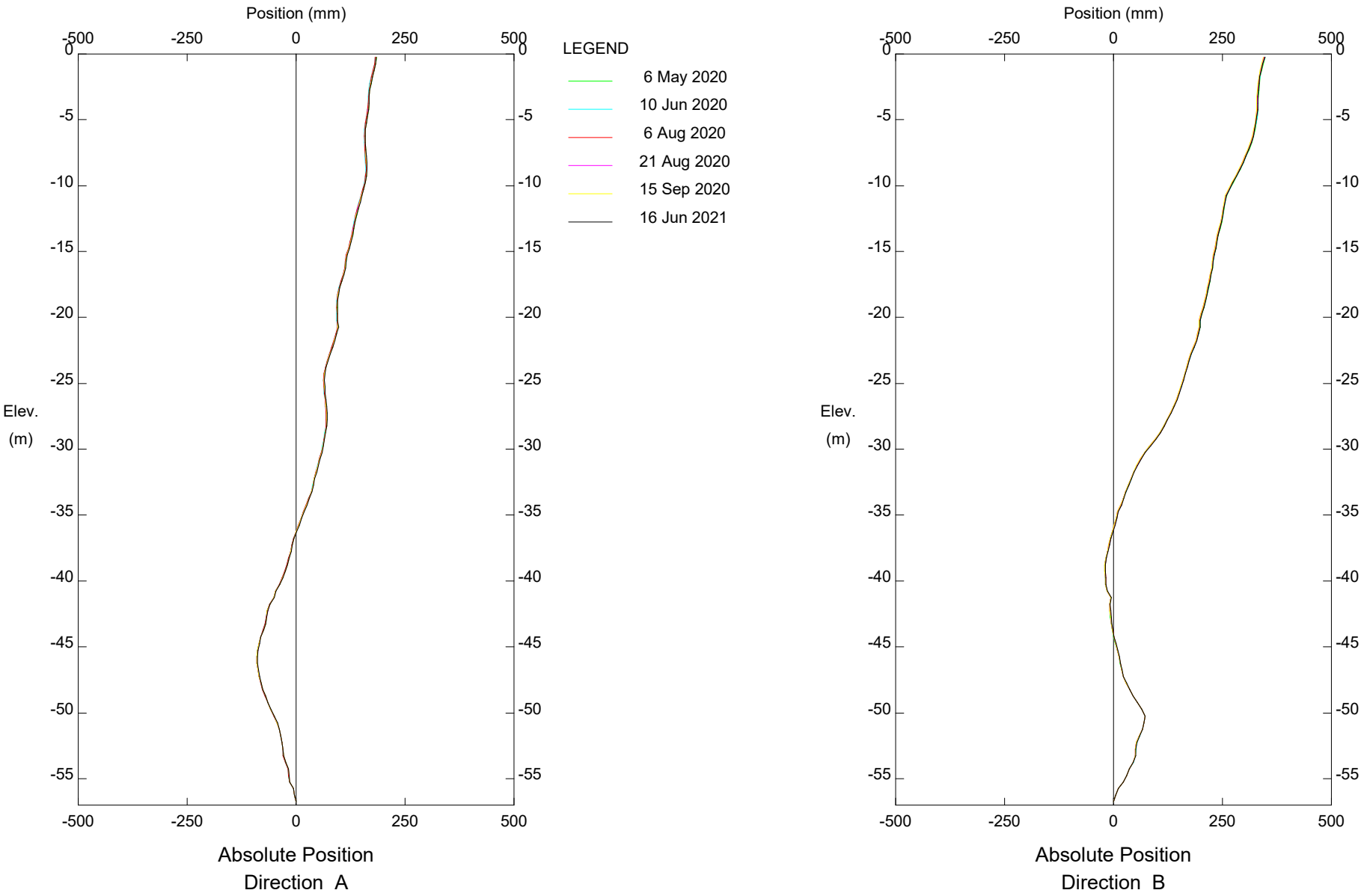

LagoonD, Inclinometer BH_D_19_06

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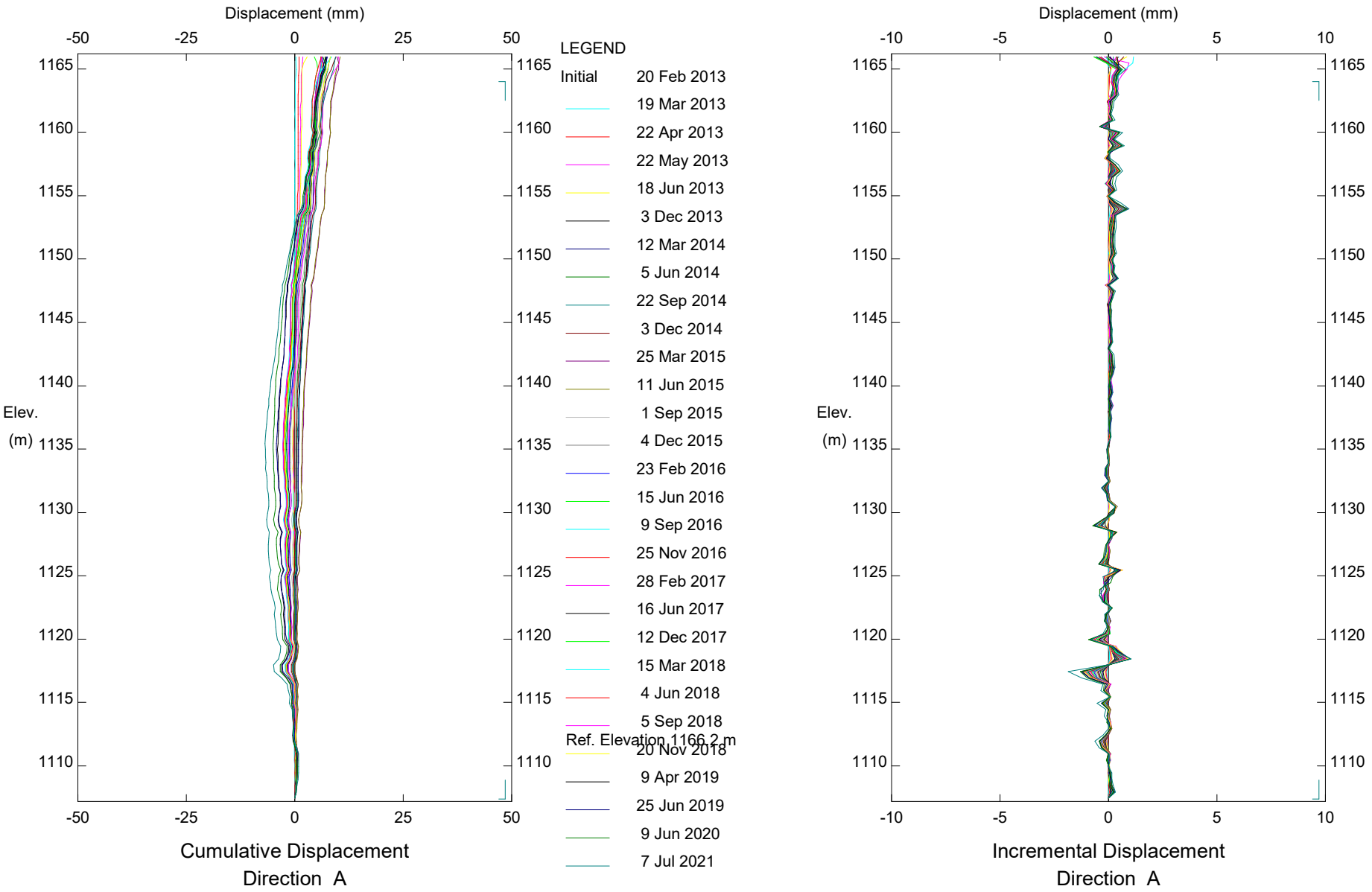

LagoonD, Inclinometer LD__S

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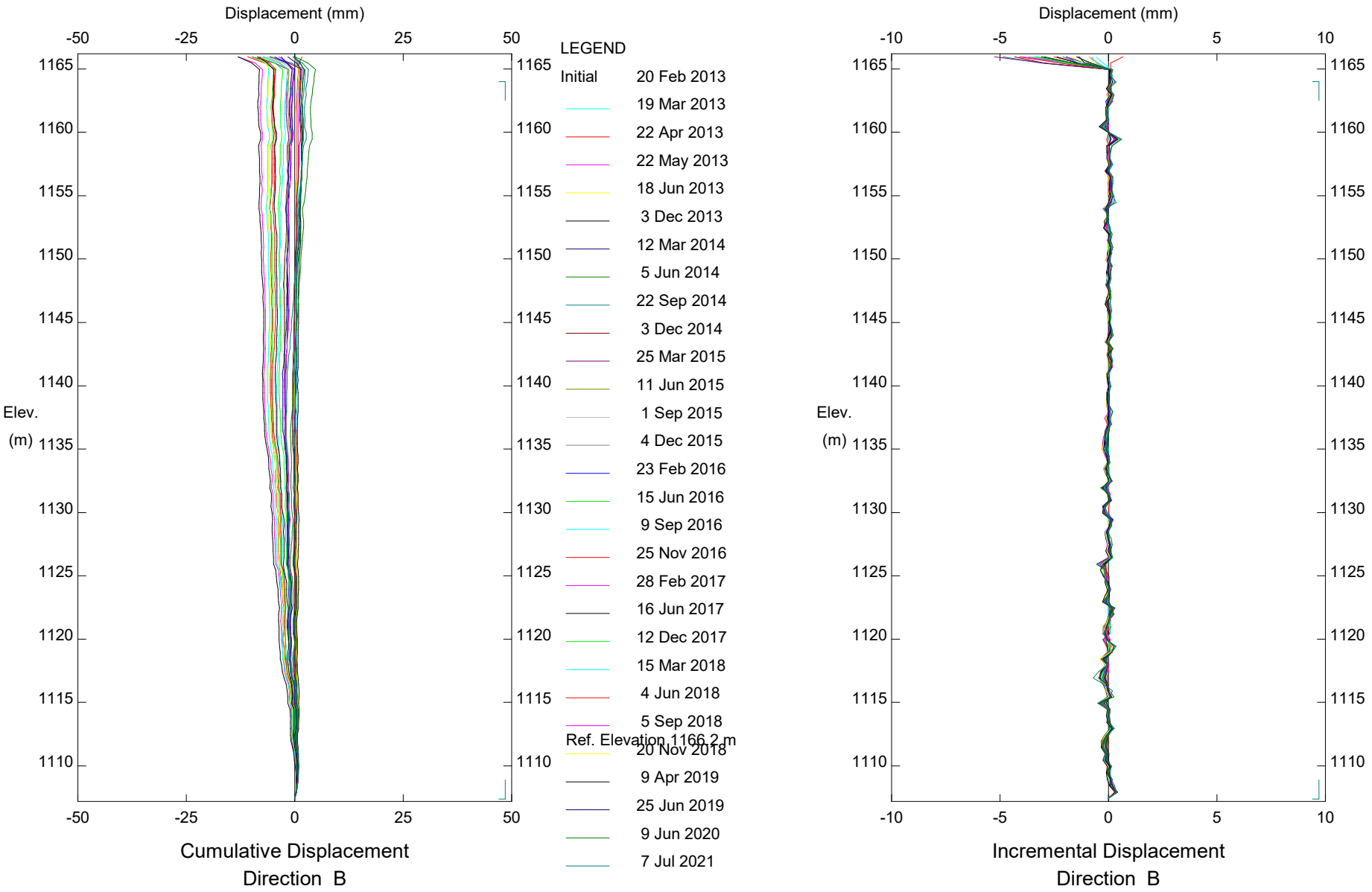

LagoonD, Inclinometer LD__S

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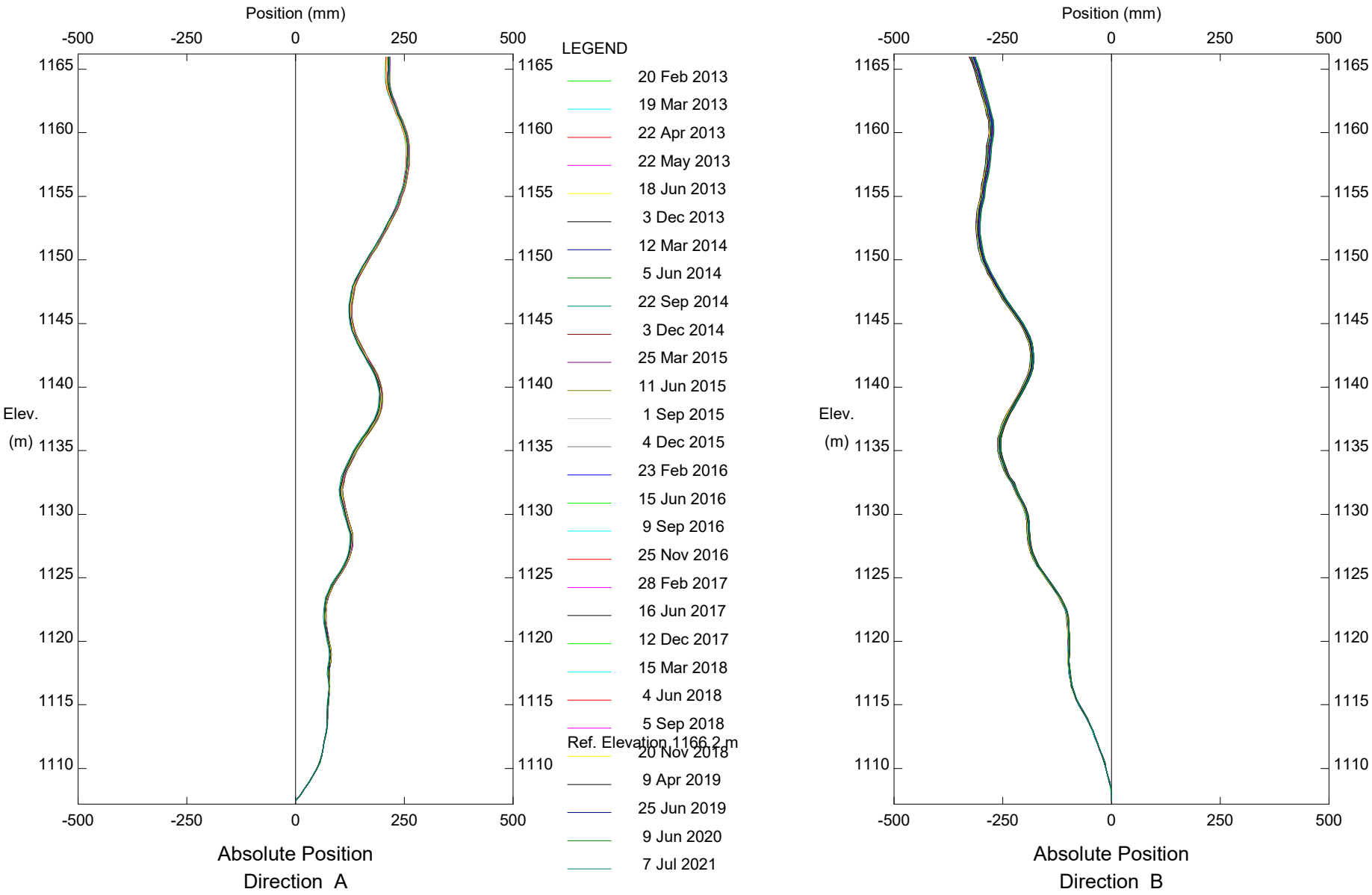

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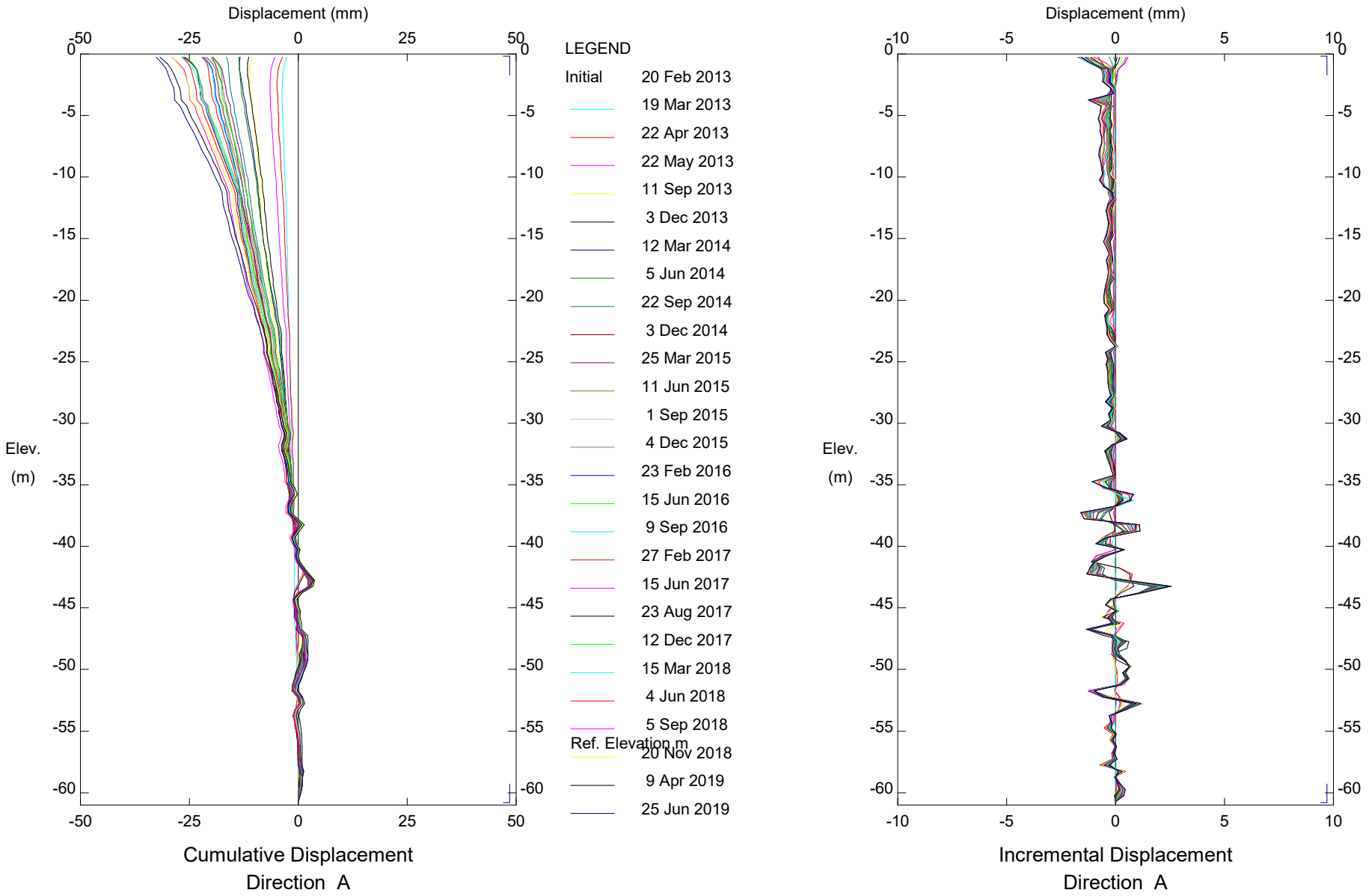

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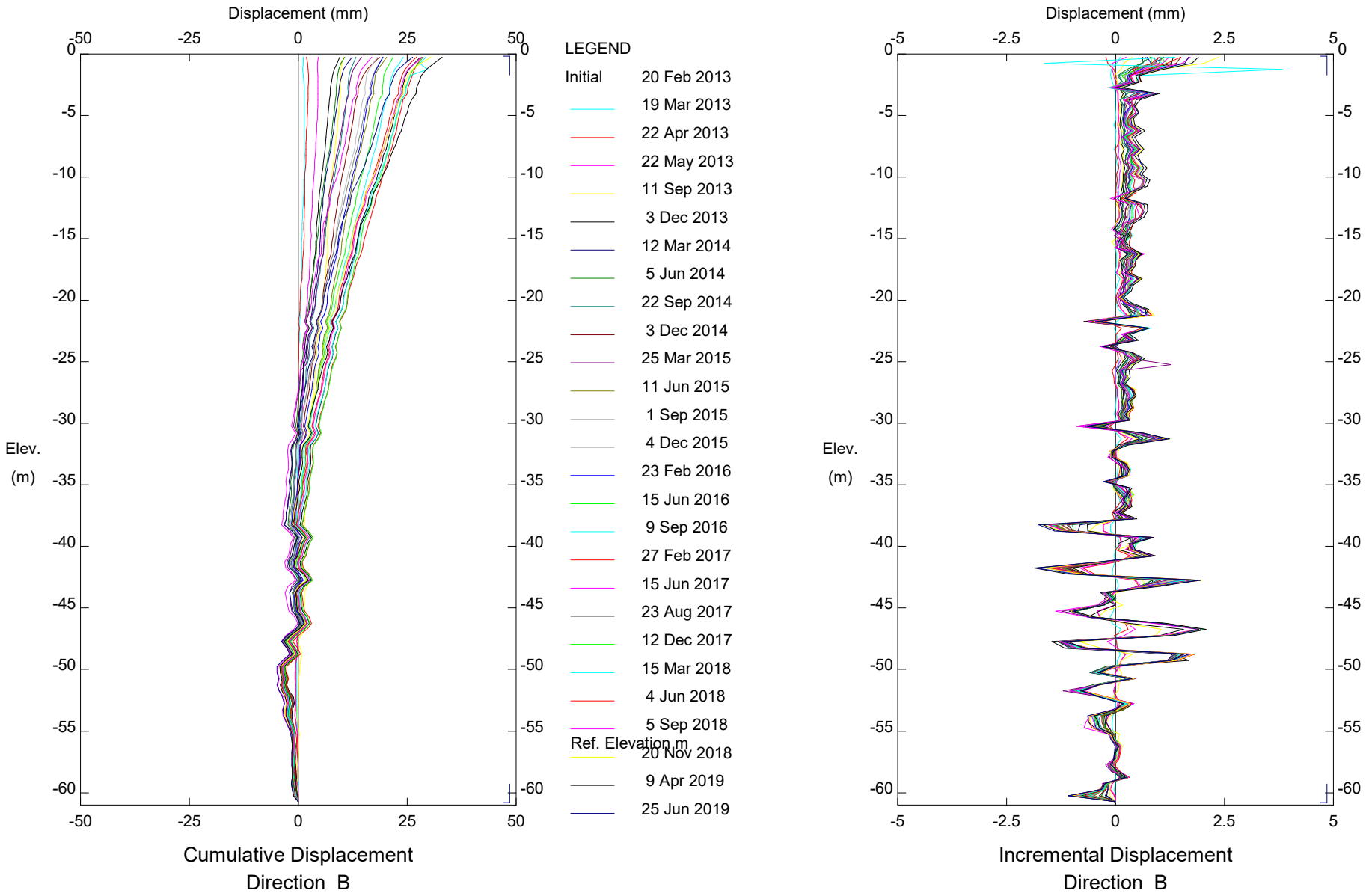

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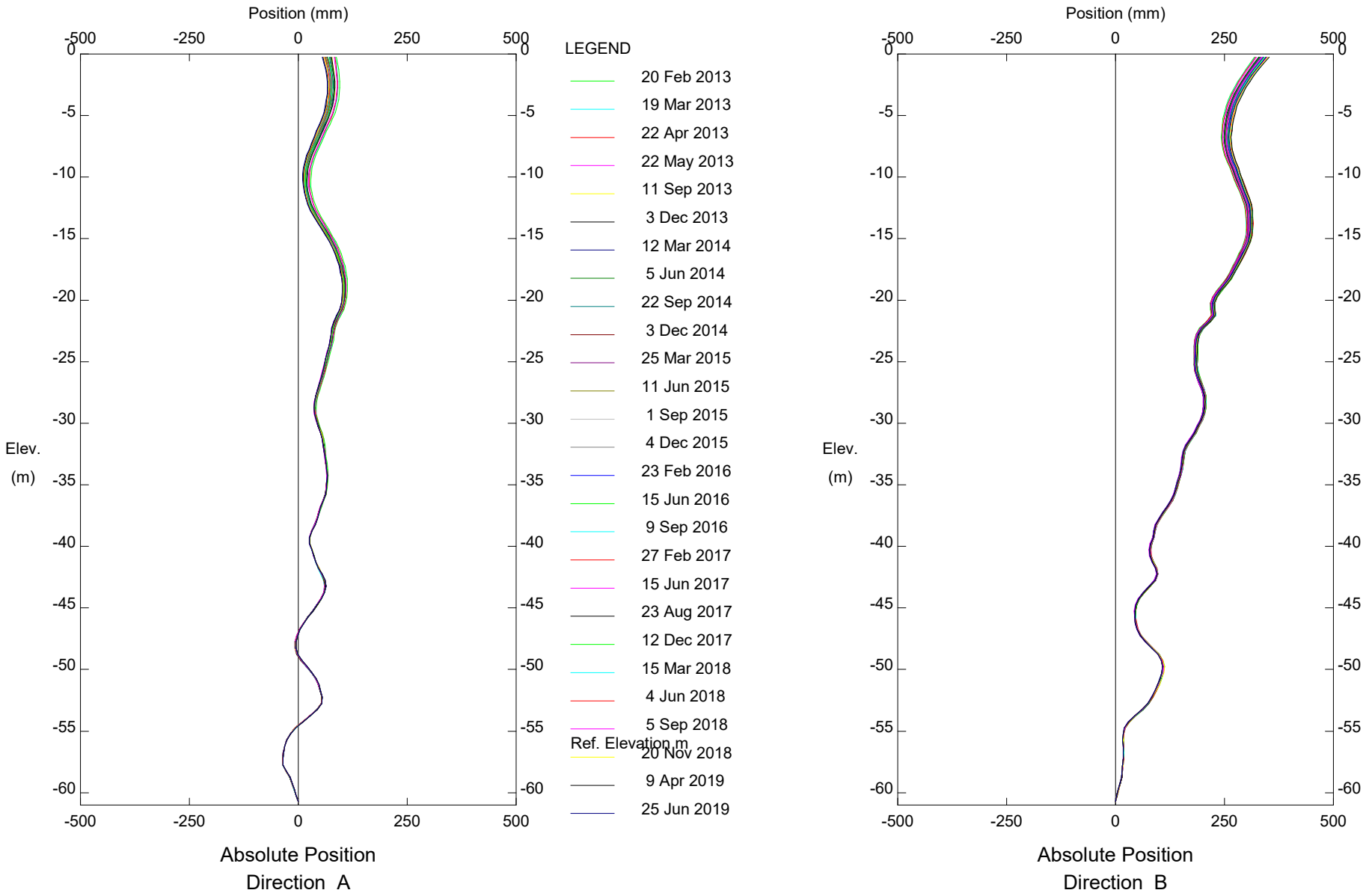

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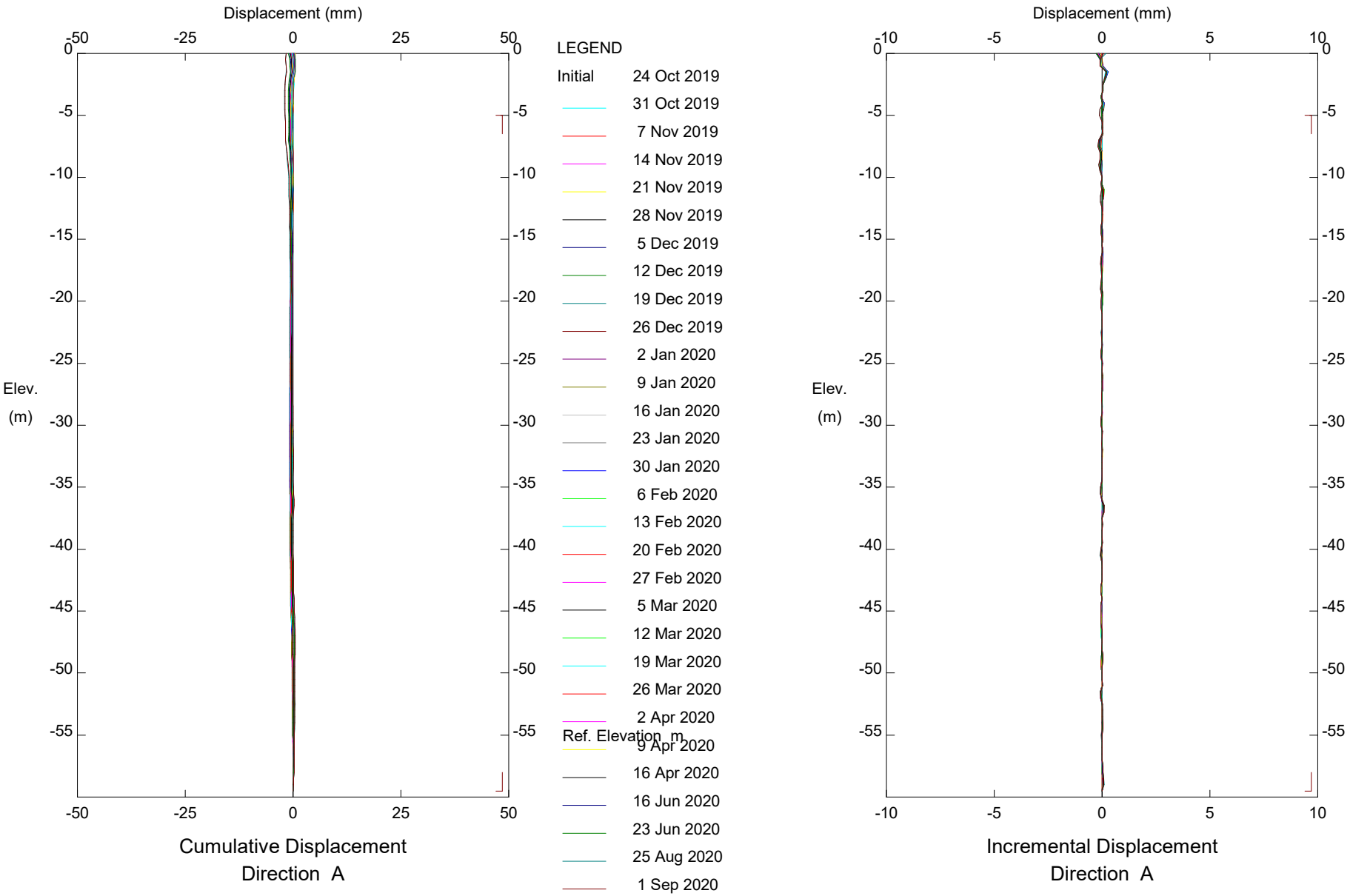

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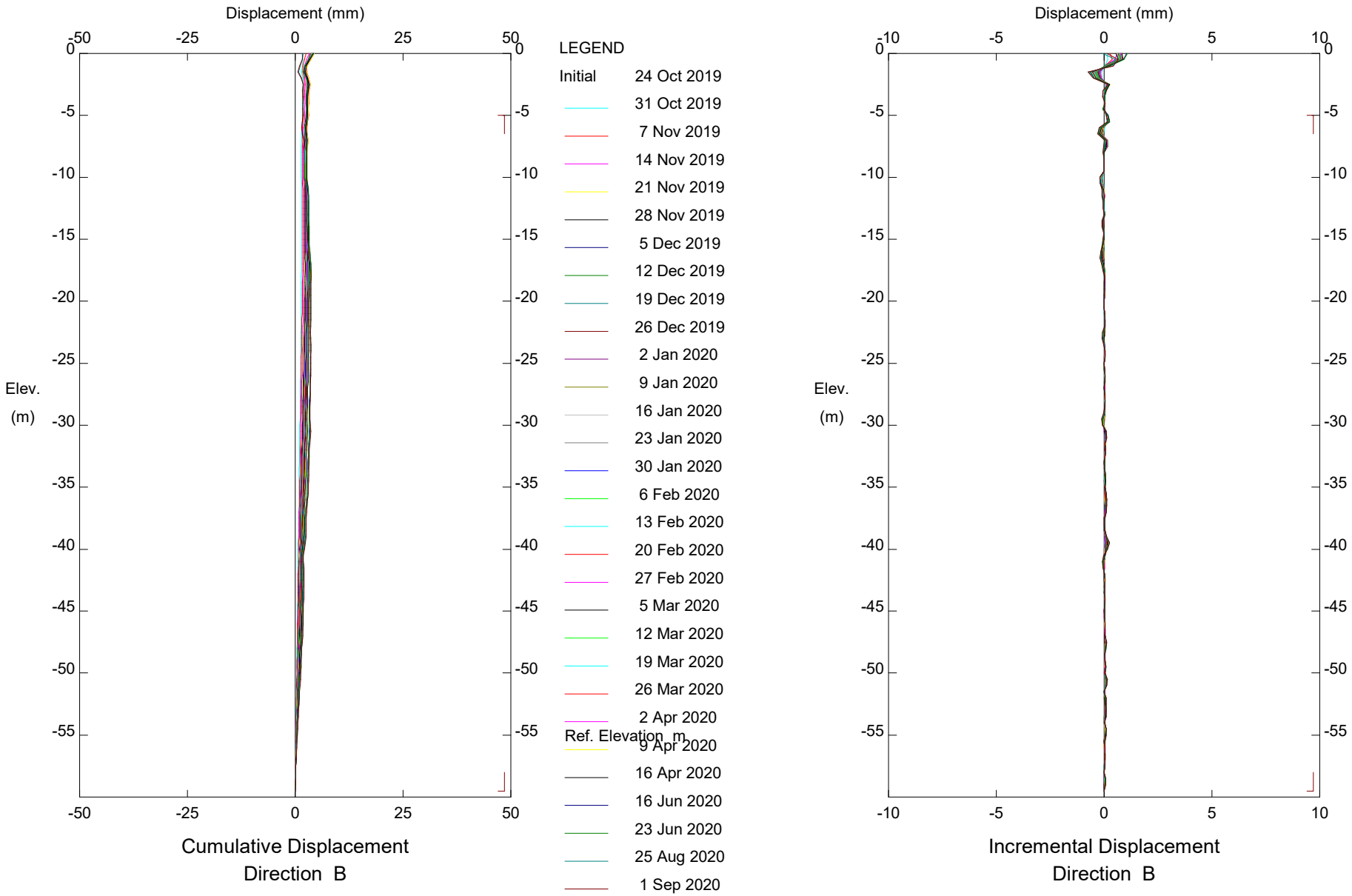

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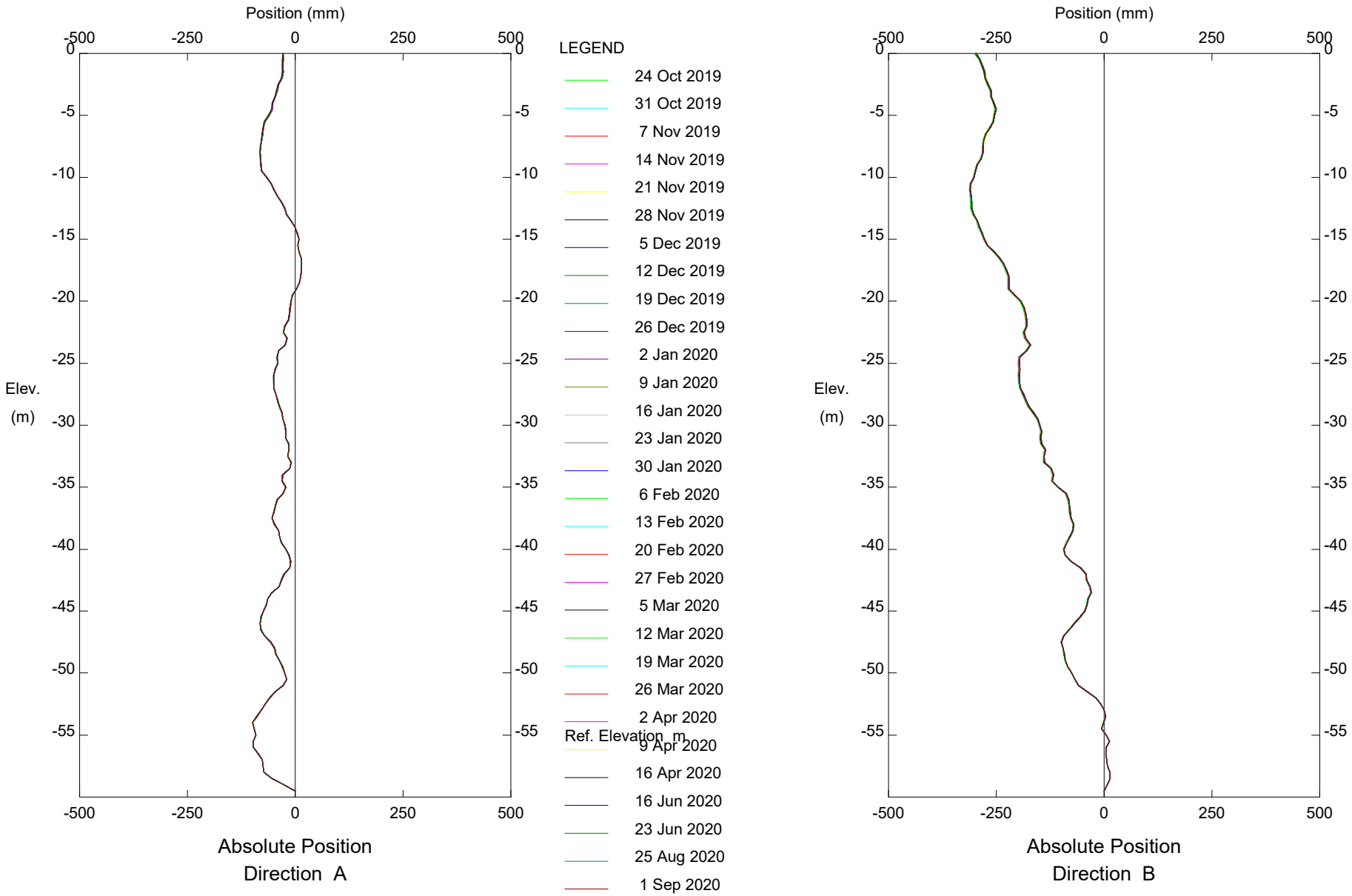

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