

ALBERTA TRANSPORTATION AND
ECONOMIC CORRIDORS GRMP
NORTH CENTRAL (ATHABASCA AND FORT
McMURRAY DISTRICTS)
INSTRUMENTATION MONITORING - SPRING 2025



Site Number	Location	Name	Hwy	km
NC110	HWY 754:06 C1 32.94	Wabasca Lake Slip 'n Slide	754:06	km 32.94
Legal Description: NW-27-80-25 W4		UTM Co-ordinates		
		12U E 321468	N	6207205

Current Monitoring:	30-May-2025	Previous Monitoring	17-Sep-2024
Instruments Read By:	Mr. Niraj Regmi, G.I.T and Mr. Godfred Etiendem, of Thurber		

Instruments Read During This Site Visit			
Slope Inclinomometers (SIs): SI24-3	Pneumatic Piezometers (PN): N/A	Vibration Wire Piezometers (VW): VW24-2B, VW24-3A and VW24-3B	Standpipe Piezometers (SP): SP24-1 and SP24-4
Load Cell (LC): N/A	Strain Gauges: N/A	SAA's: N/A	Others:

Readout Equipment Used			
Slope Inclinomometers: RST Digital Inclinator probe with a 2 ft. wheelbase and a RST Pocket PC readout.	Pneumatic Piezometers:	Vibration Wire Piezometers: Geokon GK404 digital readout	Standpipe Piezometers: DGS1 dipmeter
Load Cell:	Strain Gauges:	SAA's:	Others:
Notes:			

Discussion	
Zones of New Movement:	None
Interpretation of Monitoring Results:	SI24-3 showed a rate of movement of 22.4 mm/yr over 0.6 m to 3.7 m depth since the fall 2024 readings. This corresponds to a decrease in the rate of movement by 194.1 mm/yr. Standpipe piezometer SP24-1 showed a decrease in groundwater level of 0.08 m since the fall of 2024 readings. SP24-4 showed an increase in groundwater level of 1.19 m since the fall of 2024 readings. Vibrating wire piezometers VW24-2B, VW24-3A and VW24-3B showed decreases in groundwater level of 0.52 m, 0.29 m and 0.29 m, respectively, since the fall of 2024 readings.
Future Work:	The instruments should be read again in the fall of 2025.
Instrumentation Repairs:	
Additional Comments:	

Attachments:	• Table NC110-1 Spring 2025 – HWY 754:06 Wabasca Lake Slip 'n Slide, Slope Inclinator Instrumentation Reading Summary • Table NC110-2 Spring 2025 – HWY 754:06 Wabasca Lake Slip 'n Slide, Standpipe Piezometer Instrumentation Reading Summary • Table NC110-3 Spring 2025 – HWY 754:06 Wabasca Lake Slip 'n Slide, Vibrating Wire Piezometer Instrumentation Reading Summary • Statement of Limitations and Conditions • APPENDIX A – NC110-1 SPRING 2025 - o Field Inspector's report - o Site Plan Showing Approximate Instrument Locations (Drawing No. 32122-NC110) - o SI Reading Plots - o Figure NC110-1 (Piezometric Depths) - o Figure NC110-2 (Piezometric Elevations)
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We trust this report meets your requirements at present. If you have any questions, please contact the undersigned at your convenience.

Yours very truly,
Thurber Engineering Ltd.
Tarek Abdelaziz, Ph.D., P. Eng.
Partner | Senior Geotechnical Engineer

Lucas Green, P.Eng.
Geotechnical Engineer

Table NC110-1: Spring 2025 – Hwy 754:06 Wabasca Lake Slip n' Slide Inclinometer Instrumentation Reading Summary

Date Monitored: May 30, 2025

INSTRUMENT #	DATE INITIALIZED	TOTAL CUMULATIVE RESULTANT MOVEMENT AND DEPTH OF MOVEMENT TO DATE (mm)	MAXIMUM RATE OF MOVEMENT (mm/yr)	CURRENT STATUS OF SI	DATE OF PREVIOUS READING	INCREMENTAL MOVEMENT SINCE PREVIOUS READING (mm)	CURRENT RATE OF MOVEMENT (mm/yr)	CHANGE IN RATE OF MOVEMENT SINCE PREVIOUS READING (mm/yr)
SI24-2	February 1, 2024	8.6 over 1.8 m to 3.6 m depth in 236° direction	56.6 in June 2024	Sheared off at 2.0 m	June 13, 2024	N/A	N/A	N/A
SI24-3	February 1, 2024	77.8 over 0.6 m to 3.7 m depth in 240° direction	216.5 in September 2024	Operational	September 17, 2024	15.7	22.4	-194.1

Drawing 32122-NC110 in Appendix A provides a sketch of the approximate location of the monitoring instrumentation for this site.

Table NC110-2: Spring 2025 – Hwy 754:06 Wabasca Lake Slip n' Slide Standpipe Piezometer Instrumentation Reading Summary

Date Monitored: May 30, 2025

INSTRUMENT #	DATE INITIALIZED	TIP DEPTH (m)	GROUND ELEV. (m)	CURRENT STATUS	HIGHEST MEASURED GROUNDWATER LEVEL BGS (m)	CURRENT GROUNDWATER DEPTH BGS (m)	PREVIOUS GROUNDWATER DEPTH BGS (m)	CHANGE IN WATER LEVEL SINCE PREVIOUS READING (m)
SP24-1	Jan. 29, 2024	19.40	-	Operational	1.67 on September 17, 2024	1.75	1.67	-0.08
SP24-4	Feb. 1, 2024	17.34	-	Operational	3.61 on June 13, 2024	4.03	5.22	1.19

Drawing 32122-NC110 in Appendix A provides a sketch of the approximate location of the monitoring instrumentation for this site.

Table NC110-3: Spring 2025 – Hwy 754:06 Wabasca Lake Slip n' Slide Vibrating Wire Piezometer Instrumentation Reading Summary

Date Monitored: May 30, 2025

INSTRUMENT #	DATE INITIALIZED	TIP DEPTH (m)	GROUND ELEV. (m)	CURRENT STATUS	HIGHEST MEASURED GROUNDWATER LEVEL BGS (m)	CURRENT GROUNDWATER DEPTH BGS (m)	PREVIOUS GROUNDWATER DEPTH BGS (September 17, 2024) (m)	CHANGE IN WATER LEVEL SINCE PREVIOUS READING (m)
VW24-2A (171163)	February 2, 2024	3.6	-	Not Functioning	2.64 on May 1, 2024	N/A	2.64	-
VW24-2B (163823)	February 2, 2024	15.0	-	Operational	8.96 on June 13, 2024	9.51	8.99	-0.52
VW24-3A (171177)	February 2, 2024	3.7	-	Operational	1.58 on June 13, 2024	2.00	1.71	-0.29
VW24-3B (163840)	February 2, 2024	12.1	-	Operational	2.97 on September 17, 2024	3.26	2.97	-0.29

Drawing 32122-NC110 in Appendix A provides a sketch of the approximate location of the monitoring instrumentation for this site.

STATEMENT OF LIMITATIONS AND CONDITIONS

1. STANDARD OF CARE

This Report has been prepared in accordance with generally accepted engineering or environmental consulting practices in the applicable jurisdiction. No other warranty, expressed or implied, is intended or made.

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All documents, records, data and files, whether electronic or otherwise, generated as part of this assignment are a part of the Report, which is of a summary nature and is not intended to stand alone without reference to the instructions given to Thurber by the Client, communications between Thurber and the Client, and any other reports, proposals or documents prepared by Thurber for the Client relative to the specific site described herein, all of which together constitute the Report.

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The Report has been prepared for the specific site, development, design objectives and purposes that were described to Thurber by the Client. The applicability and reliability of any of the findings, recommendations, suggestions, or opinions expressed in the Report, subject to the limitations provided herein, are only valid to the extent that the Report expressly addresses proposed development, design objectives and purposes, and then only to the extent that there has been no material alteration to or variation from any of the said descriptions provided to Thurber, unless Thurber is specifically requested by the Client to review and revise the Report in light of such alteration or variation.

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- a) Nature and Exactness of Soil and Contaminant Description: Classification and identification of soils, rocks, geological units, contaminant materials and quantities have been based on investigations performed in accordance with the standards set out in Paragraph 1. Classification and identification of these factors are judgmental in nature. Comprehensive sampling and testing programs implemented with the appropriate equipment by experienced personnel may fail to locate some conditions. All investigations utilizing the standards of Paragraph 1 will involve an inherent risk that some conditions will not be detected and all documents or records summarizing such investigations will be based on assumptions of what exists between the actual points sampled. Actual conditions may vary significantly between the points investigated and the Client and all other persons making use of such documents or records with our express written consent should be aware of this risk and the Report is delivered subject to the express condition that such risk is accepted by the Client and such other persons. Some conditions are subject to change over time and those making use of the Report should be aware of this possibility and understand that the Report only presents the conditions at the sampled points at the time of sampling. If special concerns exist, or the Client has special considerations or requirements, the Client should disclose them so that additional or special investigations may be undertaken which would not otherwise be within the scope of investigations made for the purposes of the Report.
- b) Reliance on Provided Information: The evaluation and conclusions contained in the Report have been prepared on the basis of conditions in evidence at the time of site inspections and on the basis of information provided to Thurber. Thurber has relied in good faith upon representations, information and instructions provided by the Client and others concerning the site. Accordingly, Thurber does not accept responsibility for any deficiency, misstatement or inaccuracy contained in the Report as a result of misstatements, omissions, misrepresentations, or fraudulent acts of the Client or other persons providing information relied on by Thurber. Thurber is entitled to rely on such representations, information and instructions and is not required to carry out investigations to determine the truth or accuracy of such representations, information and instructions.
- c) Design Services: The Report may form part of design and construction documents for information purposes even though it may have been issued prior to final design being completed. Thurber should be retained to review final design, project plans and related documents prior to construction to confirm that they are consistent with the intent of the Report. Any differences that may exist between the Report's recommendations and the final design detailed in the contract documents should be reported to Thurber immediately so that Thurber can address potential conflicts.
- d) Construction Services: During construction Thurber should be retained to provide field reviews. Field reviews consist of performing sufficient and timely observations of encountered conditions in order to confirm and document that the site conditions do not materially differ from those interpreted conditions considered in the preparation of the report. Adequate field reviews are necessary for Thurber to provide letters of assurance, in accordance with the requirements of many regulatory authorities.

6. RELEASE OF POLLUTANTS OR HAZARDOUS SUBSTANCES

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**ALBERTA TRANSPORTATION AND ECONOMIC CORRIDORS GRMP (CON0022163)
NORTH CENTRAL (ATHABASCA AND FORT McMURRAY DISTRICTS)
INSTRUMENTATION MONITORING RESULTS**

SPRING 2025

**APPENDIX A
DATA PRESENTATION**

SITE NC110: HWY 754:06 WABASCA LAKE SLIP N' SLIDE

**ALBERTA TRANSPORTATION AND ECONOMIC CORRIDORS
NORTH CENTRAL REGION - ATHABASCA AND FORT McMURRAY DISTRICTS
INSTRUMENTATION MONITORING FIELD SUMMARY (NC110)
SPRING 2025**

Location: Hwy 754:06 WABASCA LAKE	Readout: DGSi Dipmeter/ GK404/SN364
File Number: 45363	Casing Diameter: 2.75"
Probe: RST SET 8R	Temp: 25
Cable: RST SET 8R	Read by: NKR/GE

SLOPE INCLINOMETER (SI) READINGS

SI#	GPS Location (UTM 12)		Date	Stickup (m)	Readings Depth from top of casing (ft)	Azimuth of A+ Groove degree	Current Bottom Depth Readings				Size (")	Remarks
	Northing	Easting					A+	A-	B+	B-		
SI24-3	6206017	323092	30-May-25	-0.23	-58 to -2	225	706	-698	211	-203	2.75	8 mm Allen Key Needed

VIBRATING WIRE PIEZOMETER (VW) READINGS

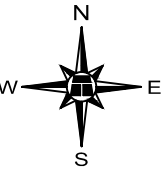
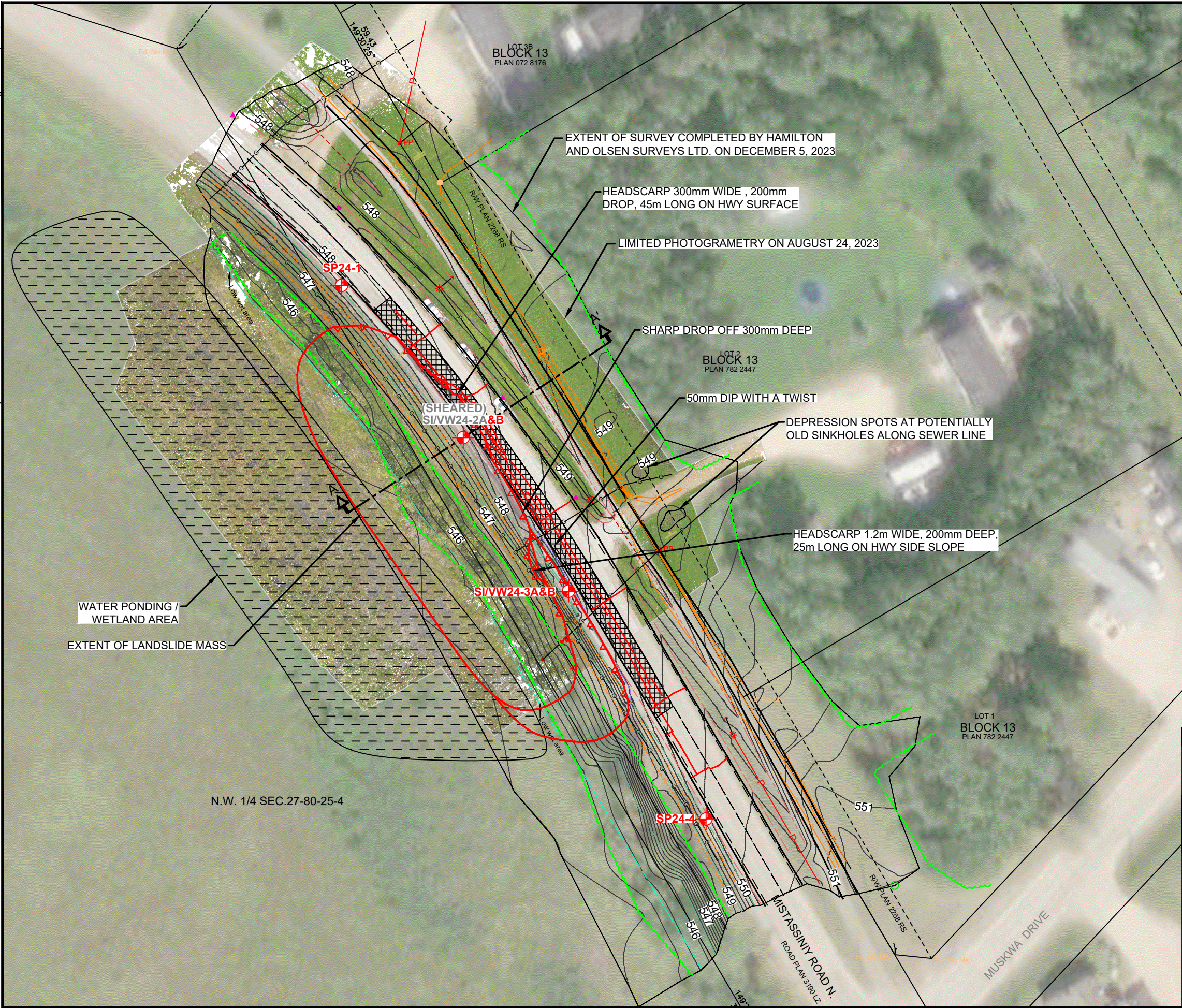
PN #	Serial	GPS Location (UTM 12)		Location	Date	Reading		Comments
		Northing	Easting			B Unit	°C	
VW24-2B	163823	6206046	323071	Attached to TH24-2		8657.2	3.9	8 mm Allen Key Needed
VW24-3A	171177	6206017	323092	Attached to TH24-3		8828.4	3.6	8 mm Allen Key Needed
VW24-3B	163840	6206017	323092	Attached to TH24-3		8597.3	4.6	8 mm Allen Key Needed

SP#	GPS Location (UTM 12)		Date	Stick-up (m)	Water level below top of pipe (m)	Comments
	Northing	Easting				
SP24-1	6206076	323048	30-May-25	-0.13	1.62	1/2" Socket Needed to Open
SP24-4	6205973	323118	30-May-25	-0.13	3.9	Allen key

INSPECTOR REPORT

8 mm Allen Key and 1/2" Socket needed to open flushmounts

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LEGEND

- APPROXIMATE TEST HOLE LOCATION
- CRACK
- ACTIVE HEADSCARP
- TREE LINE
- POWER LINE
- GAS LINE
- FIBRE CABLE
- TELEPHONE LINE
- ASPHALT PATCH
- SLOPE INCLINOMETER
- STANDPIPE PIEZOMETER
- VIBRATING WIRE PIEZOMETER



AIR PHOTO FROM ESRI WORLD IMAGERY EXPORTED ON FEBRUARY 21, 2024



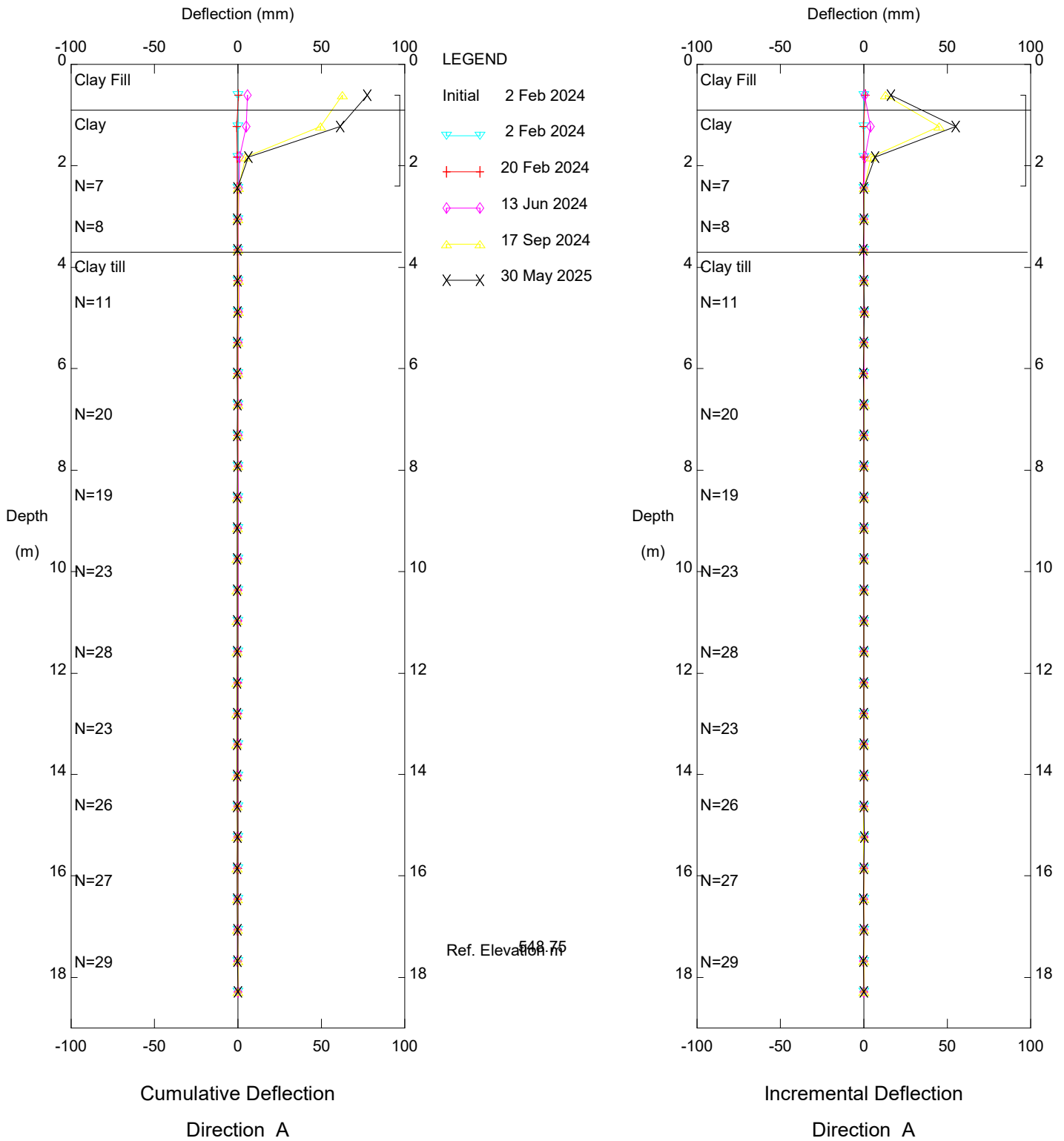
**NORTH CENTRAL
(ATHABASCA AND FORT MCMURRAY DISTRICTS)**
**NC110 - WABASCA LAKE SLIP 'N' SLIDE
HWY 754:06 WABASCA, ALBERTA
SITE PLAN**

DWG No. 32122-NC110

DRAWN BY	ML
DESIGNED BY	JGP
APPROVED BY	TSA
SCALE	1:750
DATE	SEPTEMBER 2024
FILE No.	32122

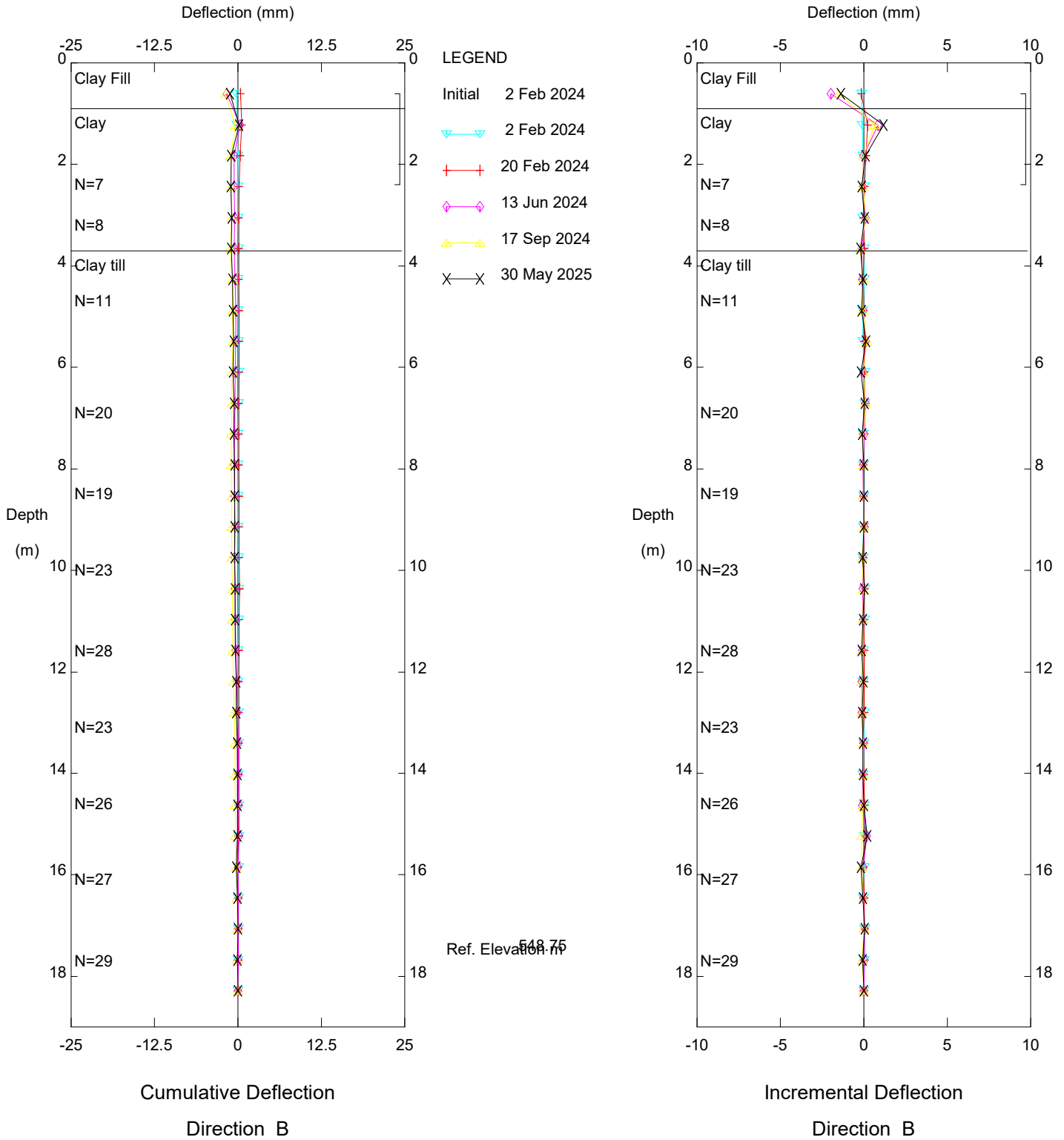


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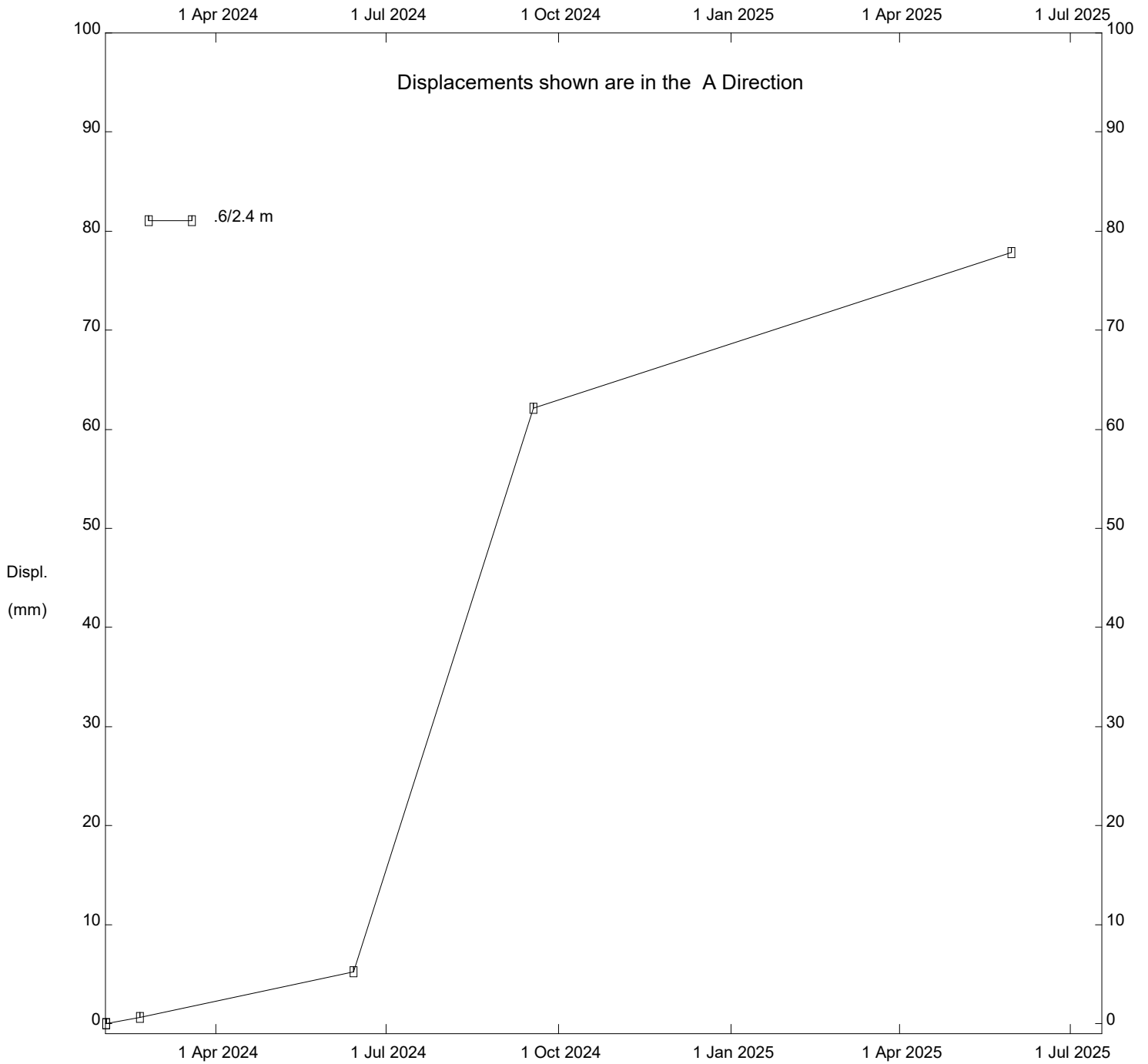
SI24-3, NC110 Wabasca Lake, Inclinator 24-3

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SI24-3, NC110 Wabasca Lake, Inclinator 24-3

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SI24-3, NC110 Wabasca Lake, Inclinator 24-3

FIGURE NC110 -1
HWY 754:06 (NC110) - WABASCA LAKE PIEZOMETER DEPTHS

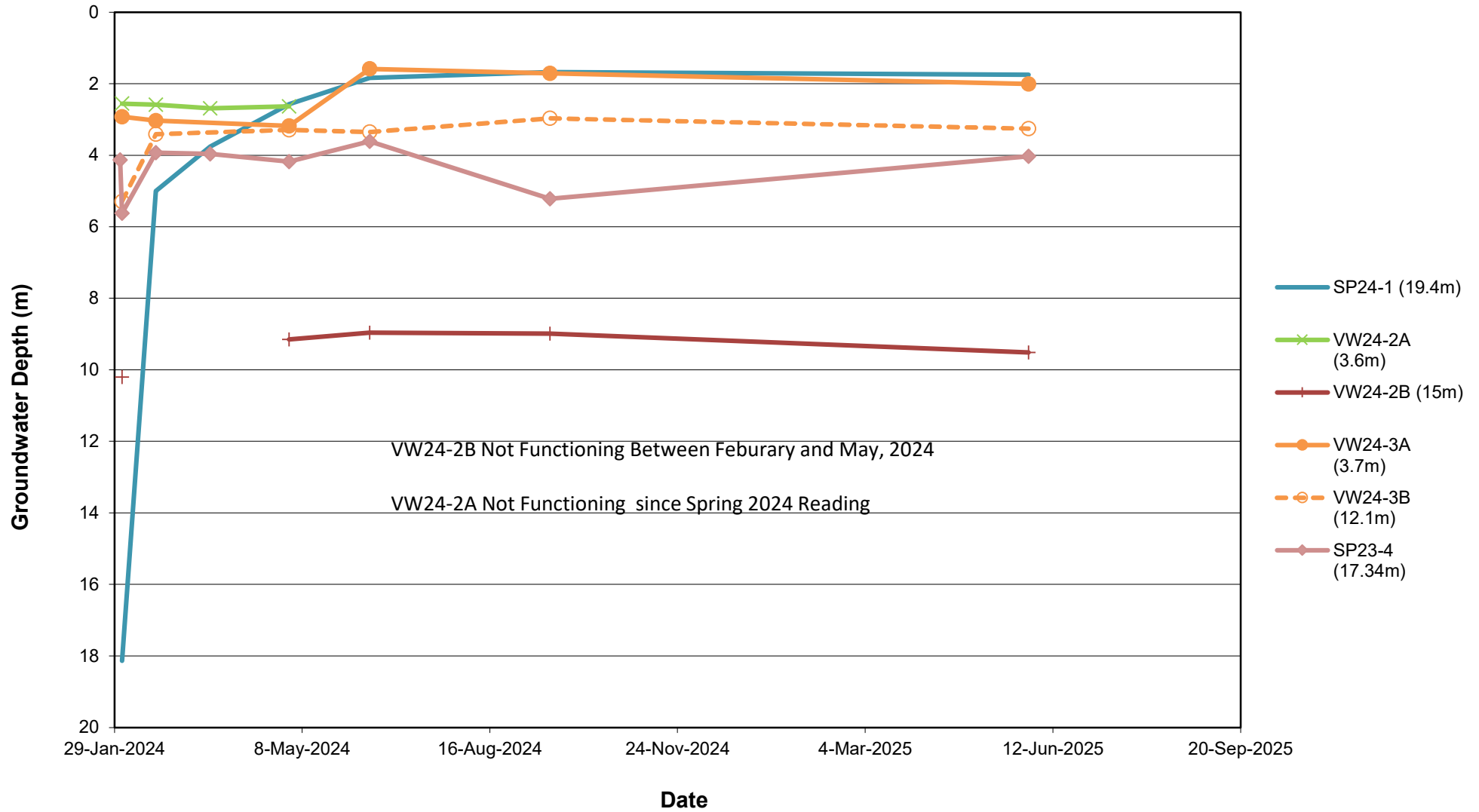


FIGURE NC110-2
HWY 754:06 (NC110) - WABASCA LAKE PIEZOMETER ELEVATIONS

