PHASE TWO CONCEPTUAL SITE MODEL

4078 VICTORIA AVENUE, NIAGARA FALLS, ON

Project Location:
4078 Victoria Avenue
Niagara Falls, ON

Prepared For:
Build Up Victoria Inc.

NIAGARA SOILS SOLUTIONS LTD.

Prepared By:
Niagara Soils Solutions Ltd.
3300 Merrittville Highway, Unit 5
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L2V 4Y6

Date: October 6, 2022

NSSL File No.: NS2241-04

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1.0 INTRODUCTION

1.1 Site Description

The Phase One and Two ESA and Record of Site Condition property is located at 4078 Victoria Avenue, in the City of Niagara Falls, Ontario. The property is currently a vacant undeveloped lot with no buildings or structures, measuring approximately 0.12 hectares in size and situated on the east side of Victoria Avenue and the south side of Leader Lane [see Figure 1]. The legal description of the property is LT 16 PL 997 TOWN OF NIAGARA FALLS; PT LT 15 PL 997 TOWN OF NIAGARA FALLS PT 1-3, 59R1702; NIAGARA FALLS. Historic site use has included agricultural or other land use until the early 1930's when the site was developed for residential purposes. The property remained residential until the mid 1980's when the buildings were demolished, and the lot sat unused until current day. The RSC filing was requested as a condition for site re-development.

1.2 Current and Future Use of the Site

The Phase Two Property remains vacant. It is Niagara Soils Solutions Ltd.'s [NSSL] understanding that the future use of the Phase Two Property will continue to be residential with new construction of fifteen [15] residential units.

1.3 Applicable Site Condition Standards

The Ministry of the Environment, Conservation and Parks [MECP] April 15, 2011 "Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act" was utilized to assess the soil across the site. Specifically, soil samples were compared to the Ontario Ministry of the Environment, Conservation and Parks Table 2 Generic Site Condition Standards in a Potable Groundwater Condition for residential/parkland/institutional use, fine grained soils based upon the following considerations:

- The site is currently residential land use and will remain residential land use.
- The site does not include all or part of a water body, it is not adjacent to a water body, and it does not include land within 30 m of a water body. As such, Site Condition Standards for use within 30 m of a water body were not applied.
- The site is not considered to be a shallow soil property. Bedrock was not identified within 2.0 m of the ground surface over more than one-third of the property.

- Soil grain size analyzes indicated more than 50 percent by mass of particles [<75 µm or larger in diameter] for all tested samples. Therefore, the site condition standards for fine texture soils were used in the assessment.

- The site is not considered to be classified as environmentally sensitive:
    - the site is not located within an area of natural significance or a provincially significant wetland,
    - the site does not have a pH value for surface soil less than 5 or greater than 9 or for subsurface soil less than 5 or greater than 11.

2.0 DESCRIPTION AND ASSESSMENT

2.1 Potentially Contaminating Activities

The Phase One ESA identified a total of eight [8] Potentially Contaminating Activities within the Phase One Study Area [see Figure 2A], as according to Ontario Regulation 153/04 [as amended] PCA list including:

- 30. Importation of Fill Material of Unknown Quality
- 34. Metal Fabrication
- 10. Commercial Autobody Shops
- 46. Rail Yards, Tracks and Spurs
- 32. Iron and Steel Manufacturing and Processing [2 sites]
- 28. Gasoline and Associated Products Storage in Fixed Tanks [2 sites]

The distances between the off-site PCAs to the Phase Two ESA study site, along with consideration for downgradient or cross [trans] gradient locations relative to the inferred groundwater flow direction resulted in one [1] on-site Area of Potential Environmental Concern to the study site's soil as described further below [see Figure 2B].

2.2 Areas of Potential Environmental Concern

Area of potential environmental concern[1]	Location of area of potential environmental concern on phase one property	Potentially contaminating activity[2]	Location of PCA (on-site or off-site)	Contaminants of potential concern[3]	Media potentially Impacted (Groundwater, soil and/or sediment)
APEC -1	Former building footprint [central area of study site]	30. Importation of Fill Material of Unknown Quality	On-site	PHCs, BTEX, PAHs, Metals, pH/SAR/EC	Soil

A review of historical information, including previous environmental investigations completed in 2021 by Hallex Environmental Ltd. and an updated Phase One ESA completed in 2022 by NSSL identified the following on-site Area of Potential Environmental Concern.

APEC-1 [PCA #30 Importation of Fill Material of Unknown Quality]: The study site was historically utilized for residential purposes. An aerial photograph dated 1971 continues to depict a residential structure on-site. Aerial images from 1989-2018 show the land as vacant with no on-site structures. It is possible that following demolition of the original onsite structures fill material of unknown origin and composition may

have been placed on-site within the location of the former dwelling. Target contaminants of concern to the soil medium include Petroleum Hydrocarbons [PHCs] F1-F4/Benzene, Toluene, Ethylbenzene and Xylene [BTEX], Polycyclic Aromatic Hydrocarbons [PAHs], Metals by ICP and pH/Sodium Adsorption Rate [SAR]/Electrical Conductivity [EC].

3.0 PHYSICAL SETTING

3.1 Regional Geology & Hydrogeology

A review of the Ministry of Northern Development Mines "Quaternary Geology of Southern Ontario – Niagara-Welland", Geological Series, Map 2496, "Ontario Paleozoic Geological Survey, Map 2344" indicates that the subject site is in an area of Glaciolacustrine nearshore silt and clay. The study Site physiography consists of clay plains as noted in Chapman and Putnam's "Physiography of the South-Central Portion of Southern Ontario Map 2226". A review of the "Bedrock Topography Niagara and Niagara-On-The-Lake, Map P. 2400" shows that the Site is nearby a contour indicting Elevation 525 feet [about 55 feet below grade]. From experience and published information, the bedrock in the Niagara Falls area is Dolostone of the Lockport Formation, Goat Island Member. Approximate depth to bedrock, as documented from surrounding well records, is at 18.3 m bgs [metres below ground surface] and consists of Niagara Shale [Bedrock Geology of Ontario, Southern Ontario Geological Survey Map 2544]. A review of a nearby Water Well [ID 6604904] located within the northern area of the study area completed in 2005 reports sand and gravel over the top of red brown Silty Clay at 10.5 m bgs. The sharp angular turn of the Niagara River carved deep in the bedrock of the Niagara Gorge is located approximately 500 m east of the Site.

3.2 Site Geology and Hydrogeology

About 0 to 250 mm of topsoil was encountered in test pits TP1 to TP11. Fill material encountered at the study site consisted of silt, sand and gravel with some miscellaneous debris to a maximum depth of approximately 1.50 m bgs. The deepest area of fill material was found to be within the footprint of the former residential structure. A native layer of clayey silt was found beneath the surficial fill material. The clayey silt was noted to be hard and 'moist' across all test pits to a maximum depth of 1.8 m bgs. Bedrock was not encountered in any of the excavated areas. The test pit locations are depicted on Figure 3 with Cross-Sections summarizing the subsurface soil conditions on Figures 5a to 5h.

3.3 Groundwater

Elevation

No groundwater or perched water was encountered throughout excavation activities at the Phase Two Property. Based on NSSL's review of surrounding well records and knowledge of the area, the expected depth to the unconfined aquifer at the Phase Two Property is inferred to be greater than 10.0 m bgs.

Flow Direction

The groundwater flow direction in the unconfined aquifer at the Phase Two Property is inferred to be northeast, based on the surrounding water well records, depth to bedrock, surrounding topography, and the presence of the Niagara Gorge/Niagara River to the northeast.

Hydraulic Conductivity and Hydraulic Gradient

Groundwater was not assessed as part of this Phase Two ESA, and, as such, no information regarding the hydraulic conductivity, groundwater flow velocity or horizontal and vertical gradients is available.

3.4 Imported Soils

No excess soil was placed at the Phase Two ESA Property during or after site investigative works. The excavation has remained open throughout remediation with the remediated area enclosed with metal construction fencing for precautionary reasons.

4.0 SOIL CONTAMINANTS

4.1 Soil Results

A Phase Two ESA was completed by Hallex Environmental Ltd. in December 2021. Five test-pits TP1-TP5 were initially excavated within the APEC area identified above in section 2.0 to address potential on-site contamination within the soil medium. Sample results revealed exceedances to PHCs, Metals and PAHs in TP3 and TP4 within the location of the former residential structure as compared to Table 2 residential site condition standards. An additional six test pits TP6-TP11 were advanced for delineation purposes with test results confirming further impacted fill material in all additional test pits extending outwards from the original building footprint towards the eastern property boundary. Figures 4 and 4a to 4c depict the test results. The lateral and vertical distribution of contaminant concentrations in the soil at the Phase Two Property are shown on Figures 5a to 5h.

pH/SAR/EC

All samples analysed for Sodium Adsorption Ratio [SAR] and Electrical Conductivity [EC] met Table 2 residential criteria. The pH levels across the site were noted as above 5 and below 9, ranging from 7.42 to 7.61 for surficial samples and 7.70 to 7.84 for sub-surface samples.

Metals

The Metals exceedances were identified at test pit locations TP-3 and TP-4, and TP-6 to TP-11 at depths ranging between 0 to 1.52 metres below ground surface [m bgs]. These impacts were attributed to poor quality fill material that was likely deposited on-site post building demolition and distributed across the property during site re-grading.

Polycyclic Aromatic Hydrocarbons & Petroleum Hydrocarbons

Test pits TP-3, TP-4 and TP-6 exhibited elevated results for PAHs from 0 to 1.52 m bgs. TP-3 and TP-4 were located within the former residential building footprint, and TP-6 was located north of the building along the northern property boundary.

One soil test result exceeded applicable Table 2 criteria for PHCs [F3] at sample location TP-4 with 1360 ug/g vs 1300 ug/g. The PHC-impacted soil was identified between 0.1 to 1.52 m bgs, located within the footprint of the historic residential dwelling.

As with the Metals exceedances described above, the PAH and PHC impacts were attributed to poor quality fill material placed on-site following removal of the original residential dwelling. No other potential off-site or on-site likely sources were identified during the Phase Two ESA and remedial investigations.

Volatile Organic Compounds, Benzene, Toluene, Ethylbenzene & Xylene

The two test-pits located west of the original dwelling footprint met applicable Table 2 criteria for VOCs. No olfactory evidence, staining or other physical attributes were observed in TP-1 or TP-2 during the site investigation. Additionally, all field samples from these two test pits recorded 0 parts per million [ppm] when evaluated for combustibility soil vapour concentrations.

The three [3] test pits TP-3, TP-4 and TP-5 met applicable Table 2 criteria for BTEX analysis. A slight odour was noted in test-pits TP-3 [SA-1] and TP-4 [SA-1]. Both of those samples registered a value of 70 ppm and 30 ppm when evaluated for combustibility soil vapour concentrations.

4.2 Soil Remediation

NSSL was engaged to complete the remediation and verification work across the site and prepare the RSC package for submission to the Ministry. The impacted fill material across the property was identified within two distinct areas as identified within Hallex Environmental Ltd.'s Phase Two ESA report and NSSL's site reconnaissance. Area 1 was impacted with Metals [Lead and Zinc] and Area 2 was impacted with Metals [Lead and Zinc], PAHs, and PHCs [F3]. The impacted soil material was excavated by Cotton Inc. from the study site and disposed of at Walker's landfill. See Figure 6 for the excavation areas and verification sampling locations. As the excavation proceeded across the property miscellaneous debris such as bricks and asphaltic concrete rubble were also encountered within the soil medium. This material was also removed from site and disposed of at Walker's. The final excavation depths for the two areas were measured between about 0.25 and 1.1 m bgs for Area 1 and about 0.25 and 1.8 m bgs within Area 2, see Figure 7 for topographic contours across the site. Approximately 600 m^3 was excavated from Area 1 and 95 m^3 for Area 2 for a total of 1,114 metric tonnes removed from the study site [as indicated on the weigh tickets].

Following completion of the excavation of the impacted material and based on the size of the excavated areas, floor and wall verification samples were taken and submitted to Paracel Laboratories Ltd. for analysis of target contaminants Metals, PAHs and PHCs.

The test sample results were compared against Table 2 Residential criteria, fine soil texture. All test results met the applicable criteria except for sample W-3, located at the eastern limits of the Phase Two ESA property boundary. Although W-3 did not meet Table 2 Standards, contaminated soil was removed to the maximum extent on-site across the eastern property boundary [to the eastern property line]. See Figures 8 and 8a to 8c for Verification Results. Cross-sectional figures depicting the extent of the excavation and soil sample locations at the Phase Two Property following remediation are provided on Figures 9a to 9h.

4.3 Groundwater

Target contaminants of concern were not identified for the groundwater medium and therefore groundwater was not investigated as part of the Phase Two ESA site works.

4.4 Sediment

No water bodies were identified on Site, and therefore, sediment sampling was not required as part of the Phase Two ESA investigation.

4.5 Climatic or Meteorological conditions Affecting Contaminant Flow

Due to the impacted soil of the site not exceeding 1.52 m bgs and the expected groundwater level to be greater than 10 m bgs, seasonal variations including fluctuating groundwater levels were not anticipated to affect the migration and/or distribution of the identified contaminants at the Phase Two ESA Property.

4.6 Soil Vapour Intrusions into Buildings

As VOCs were not identified within the soil medium across the study site and there are currently no buildings erected onsite, the potential for vapour intrusion is considered not applicable.

4.7 Subsurface Utilities and Pathways

Underground utilities which are known or inferred to be present at the Phase Two Property include one [1] natural gas line, one [1] overhead electric line, and one [1] overhead Cogeco line. The approximate locations of the underground utilities were noted on Frontier Utility Locating Services Inc.'s documents utilized to support the remediation works. The depth of the one [1] subsurface gas line is expected to be approximately 1.5 m bgs. As inferred groundwater levels are expected to be deeper than 10 m bgs, no interaction with utilities is anticipated for this study site. NSSL notes that utility trenches can act as a pathway for contaminant migration, however evidence of this was not encountered during the Phase Two ESA or remediation work completed at the study site.

5.0 HUMAN HEALTH & ECOLOGICAL EXPOSURES

The 2011 MECP document "Rationale for the Development of Soil and Groundwater Standards for Use at Contaminated Sites in Ontario" outlines the general exposure pathways and receptors criteria to be considered for properties undergoing a Record of Site Condition Filing. The Exposure Assessment specifications have been given due consideration for the Study Site at 4078 Victoria Avenue, Niagara Falls. A Conceptual Site Model [CSM] diagram has been prepared to illustrate the potential exposure pathways for both Human and Ecological Receptors [see following page] with narrative below.

Pre-Remediation

Migration of contaminants at the site would have followed deposition of the unknown fill material commencing at the time of demolition/backfilling of the historical residential dwelling. Disturbances to the soil through subsequent site grading or utility decommissioning may have contributed to vertical migration and lateral spreading or subsequent migration to a receptor. Once leached or volatized into the subsurface from the known release point and origin, subsequent trans gradient movement could continue to occur for the contaminants of concern into the surrounding disturbed soils present on the Site over the passage of time.

The resulting exposure pathways to humans would include dermal uptake through handling of impacted soils on and under the Site and inhalation of vapours when on Site. Inhalation of volatilized contaminants encompasses long term residents who were routinely exposed to soils on the Site and / or visitors to the Site, such as short-term property visitors, including contractors who may also be engaged in further disturbance of contaminated media on/in/under the Site for utility work. Human receptors may additionally include ingestion through the uptake of contaminants in the soil material by way of vegetation grown on Site that may be included in a meal, such as vegetables from gardening. Ecological receptors include direct contact exposure points on and in the Site [terrestrial vegetation], under the Site [soil invertebrates] and mammals and birds through indirect contact of physical exposure and trophic cascade [ingestion and uptake of impacted vegetation and invertebrate material].

Post-Remediation

The fill material was excavated and removed from the Phase One Site, directly impacting the origin of preferential pathways for migration routes of exposure for both human and ecological receptors. With discontinuous migration exposure pathways, for the identified contaminants of concern, they are no longer viable and in turn, no longer a hazard to the presence of human and ecological receptors. Additionally, there aren't any potable sources of water on the Site and therefore no pathways for dermal contact.

HUMAN Receptors and Exposure Pathways

Release Mechanism	Media [Soil / Groundwater]	Exposure Pathways	Receptor
Pre-Remediation			
Impacted Soil	Metals, PHCs, PAHs	Dermal Inhalation Ingestion	Resident Property Visitor Construction Worker
Post-Remediation			
Impacted Soil	Metals, PHCs, PAHs	Contaminated Soil REMOVED ~~Dermal~~ ~~Inhalation~~ ~~Ingestion~~	Resident Property Visitor Construction Worker

ECOLOGICAL Receptors and Exposure Pathways

Release Mechanism	Media [Soil / Groundwater]	Exposure Pathways	Receptor
Pre-Remediation			
Impacted Soil	Metals, PHCs, PAHs	Direct Contact Indirect Contact	Terrestrial Vegetation Soil Invertebrates Mammals & Birds
Post-Remediation			
Impacted Soil	Metals, PHCs, PAHs	Contaminated Soil REMOVED ~~Direct Contact~~ ~~Indirect Contact~~	Terrestrial Vegetation Soil Invertebrates Mammals & Birds

6.0 CONCLUSIONS

The Phase Two Conceptual Site Model was prepared in accordance with Ontario Regulation 153/04 as amended. The Metals, Polycyclic Aromatic Hydrocarbon and Petroleum Hydrocarbon impacted fill material identified during the Phase Two ESA was excavated and disposed of at a Ministry of the Environment, Conservation and Parks approved landfill [Walkers]. Verification soil samples collected from the base and sidewalls of the excavation confirmed concentrations below Table 2 Residential Site Condition Standards, fine texture criteria except for W-3, found at the eastern property boundary.

LEGEND

- Phase One and Two ESA and RSC Property Boundary
- Study Area

CLIENT: **Build Up Victoria Inc.**

PROJECT:

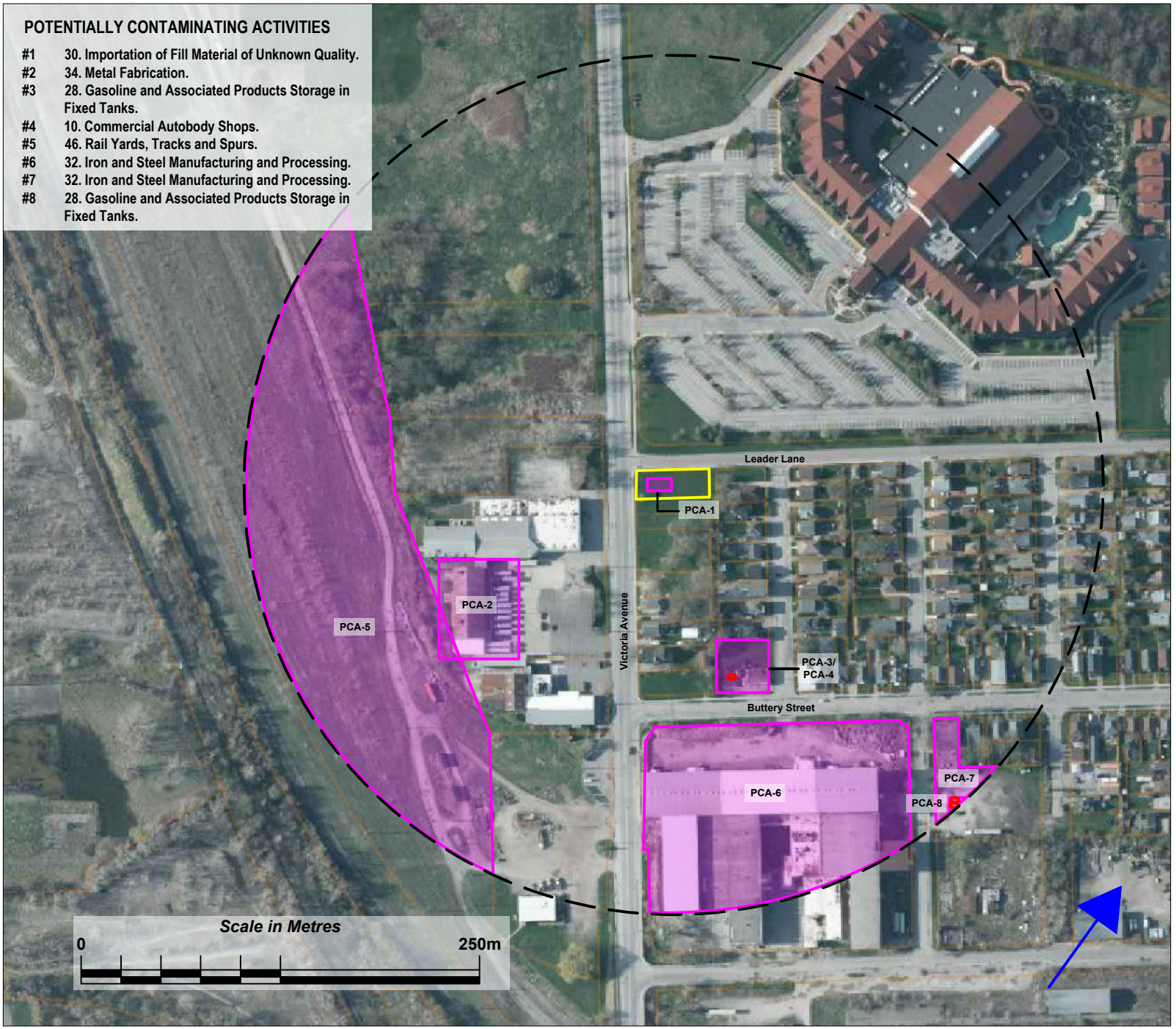
PHASE TWO CSM
4078 VICTORIA AVENUE,
NIAGARA FALLS, ONTARIO

TITLE:

Study Site Location

DRAWN BY:	DN
CHECKED BY:	JM
DATE:	October 2022
PROJECT NO:	NS2241-03
SCALE:	AS SHOWN
NO:	Figure 1

REFERENCE: BASE MAP PROVIDED BY NIAGARA NAVIGATOR, https://maps-beta.niagararegion.ca/Navigator/
NOTE: FOR ILLUSTRATION PURPOSES ONLY, ALL LOCATIONS APPROXIMATE.



LEGEND

- Phase One and Two ESA and RSC Property Boundary
- APEC Areas
- AST / UST
- Inferred Groundwater Direction

CLIENT: Build Up Victoria Inc.

PROJECT:

PHASE TWO CSM
4078 VICTORIA AVENUE,
NIAGARA FALLS, ONTARIO

TITLE: Potentially Contaminating Activities

DRAWN BY: DN

CHECKED BY: JM

DATE: October 2022

PROJECT NO: NS2241-03

SCALE: AS SHOWN

NO: Figure 2A

REFERENCE: BASE MAP PROVIDED BY NIAGARA NAVIGATOR, https://maps-beta.niagararegion.ca/Navigator/
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LEGEND

- Phase One and Two ESA and RSC Property Boundary
- APEC Areas
- Approximate Footprint of Former Building

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CLIENT:
Build Up Victoria Inc.

PROJECT:
PHASE TWO CSM
4078 VICTORIA AVENUE,
NIAGARA FALLS, ONTARIO

TITLE:
AREAS OF POTENTIAL ENVIRONMENTAL CONCERN

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CHECKED BY: JM

DATE: October 2022

PROJECT NO: NS2241-03

SCALE: AS SHOWN

NO:

Figure 2B

REFERENCE: BASE MAP PROVIDED BY NIAGARA NAVIGATOR, https://maps-beta.niagararegion.ca/Navigator/
NOTE: FOR ILLUSTRATION PURPOSES ONLY, ALL LOCATIONS APPROXIMATE.
TEST PIT EXCAVATION CARRIED OUT BY HALLEX ENVIRONMENTAL LTD. [2021]

LEGEND

- Phase One and Two ESA and RSC Property Boundary
- Approximate Building Footprint
- TP-1 Phase Two ESA Test Pit Locations

CLIENT: **Build Up Victoria Inc.**

PROJECT:

PHASE TWO CSM
4078 VICTORIA AVENUE,
NIAGARA FALLS, ONTARIO

TITLE:

TEST PIT LOCATIONS

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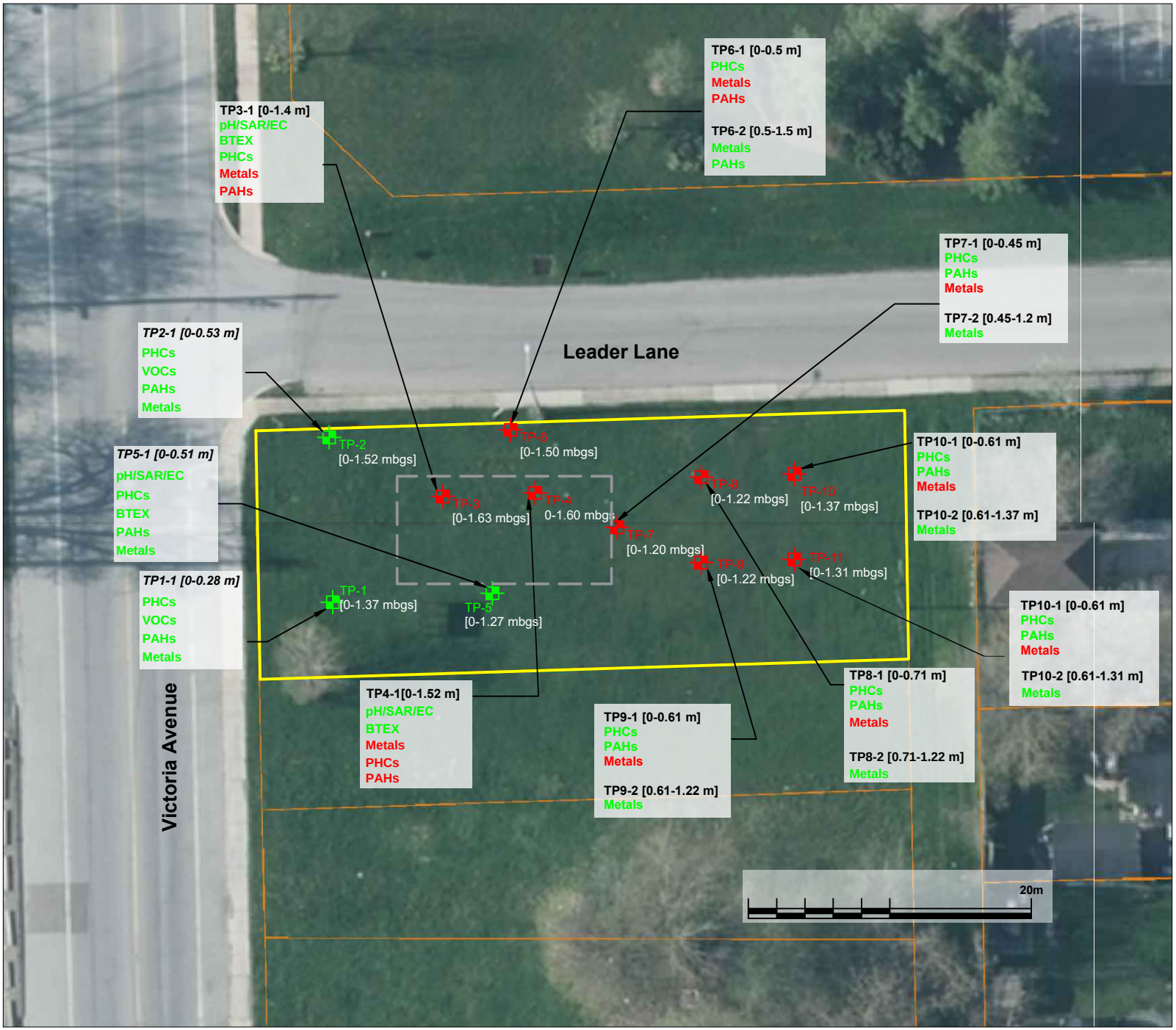
PROJECT NO:	NS2241-03
SCALE:	AS SHOWN
NO:	Figure 3



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LEGEND

- Phase One and Two ESA and RSC Property Boundary
- Approximate Footprint of Former Building
- TP-1 Test Pit Location
- TP-1 Meets Standards
- TP-1 Exceeds Standards

Results Compared to O.Reg. 153/04 , Table 2: Residential, Fine Criteria

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PROJECT:

PHASE TWO CSM
4078 VICTORIA AVENUE,
NIAGARA FALLS, ONTARIO

TITLE: **Soil Sampling Results**

DRAWN BY: DN

CHECKED BY: JM

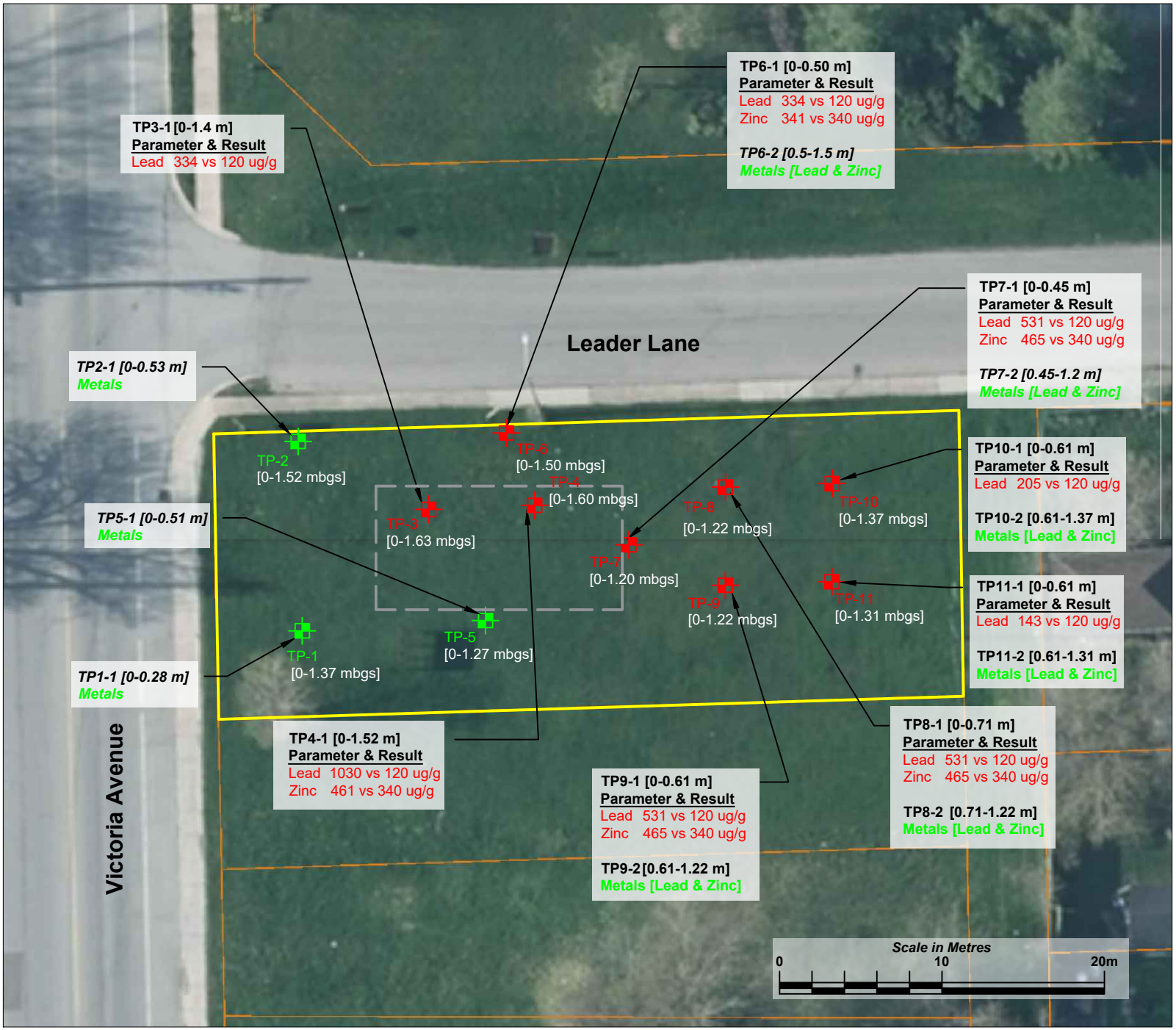
DATE: JULY 2022

PROJECT NO: NS2241-03

SCALE: AS SHOWN

NO:

Figure 4



LEGEND

- Phase One and Two ESA and RSC Property Boundary
- Approximate Footprint of Former Building
- TP-1 Meets Standards
- TP-1 Exceeds Standards
- TP-1 Not Analyzed

Results Compared to O.Reg. 153/04 , Table 2: Residential, Fine Criteria

CLIENT: Build Up Victoria Inc.

PROJECT:
PHASE TWO CSM
4078 VICTORIA AVENUE,
NIAGARA FALLS, ONTARIO

TITLE: Soil Sampling Results Metals

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CHECKED BY: JM

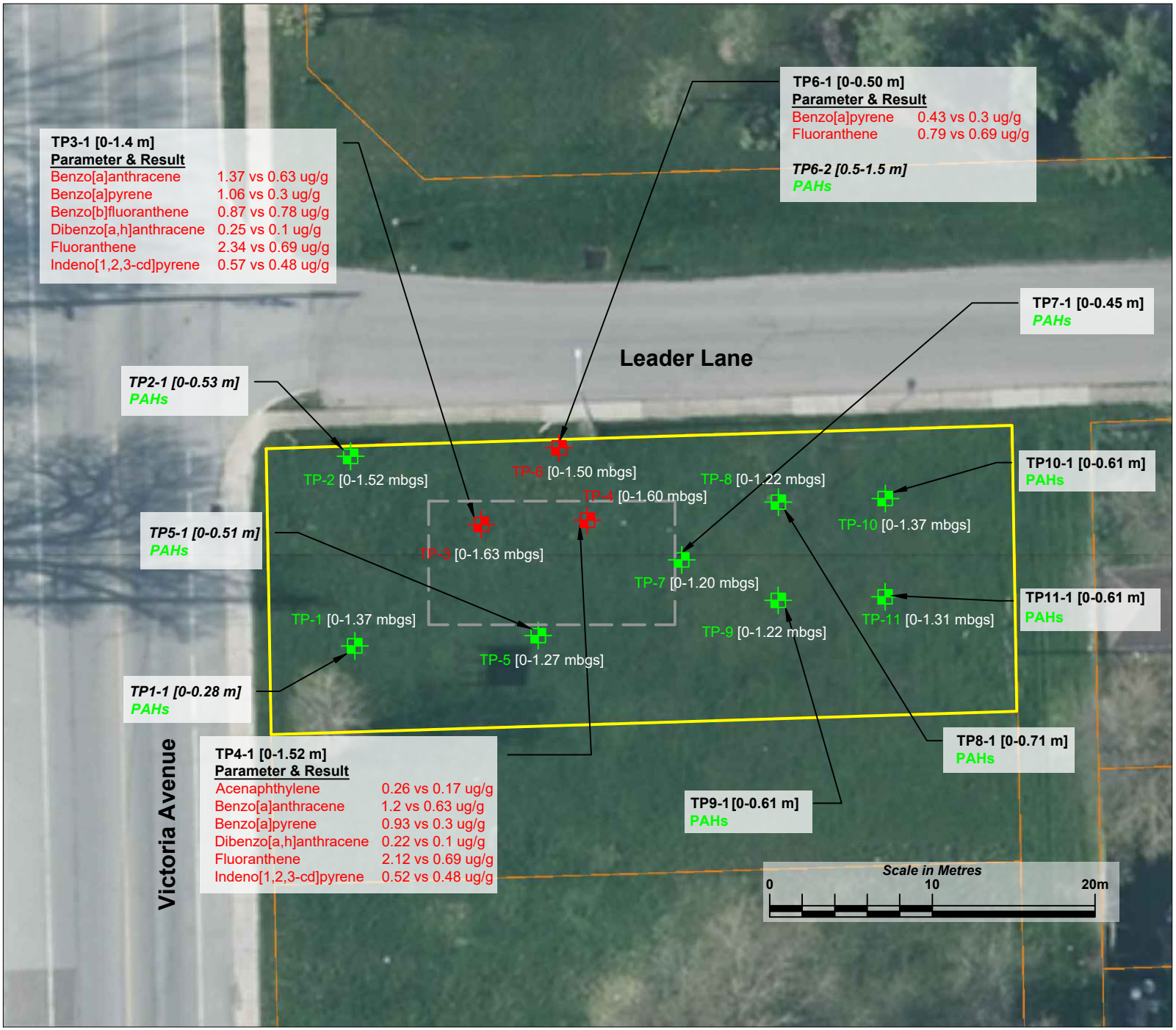
DATE: October 2022

PROJECT NO: NS2241-03

SCALE: AS SHOWN

NO: Figure 4A

REFERENCE: BASE MAP PROVIDED BY NIAGARA NAVIGATOR, https://maps-beta.niagararegion.ca/Navigator/
NOTE: FOR ILLUSTRATION PURPOSES ONLY, ALL LOCATIONS APPROXIMATE.



REFERENCE: BASE MAP PROVIDED BY NIAGARA NAVIGATOR, https://maps-beta.niagararegion.ca/Navigator/
NOTE: FOR ILLUSTRATION PURPOSES ONLY, ALL LOCATIONS APPROXIMATE.

LEGEND

- Phase One and Two ESA and RSC Property Boundary
- Approximate Footprint of Former Building
- TP-1 Meets Standards
- TP-1 Exceeds Standards
- TP-1 Not Analyzed

Results Compared to O.Reg. 153/04 , Table 2: Residential, Fine Criteria

CLIENT: Build Up Victoria Inc.

PROJECT:
PHASE TWO CSM
4078 VICTORIA AVENUE,
NIAGARA FALLS, ONTARIO

TITLE:
Soil Sampling Results
PAHs

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CHECKED BY: JM

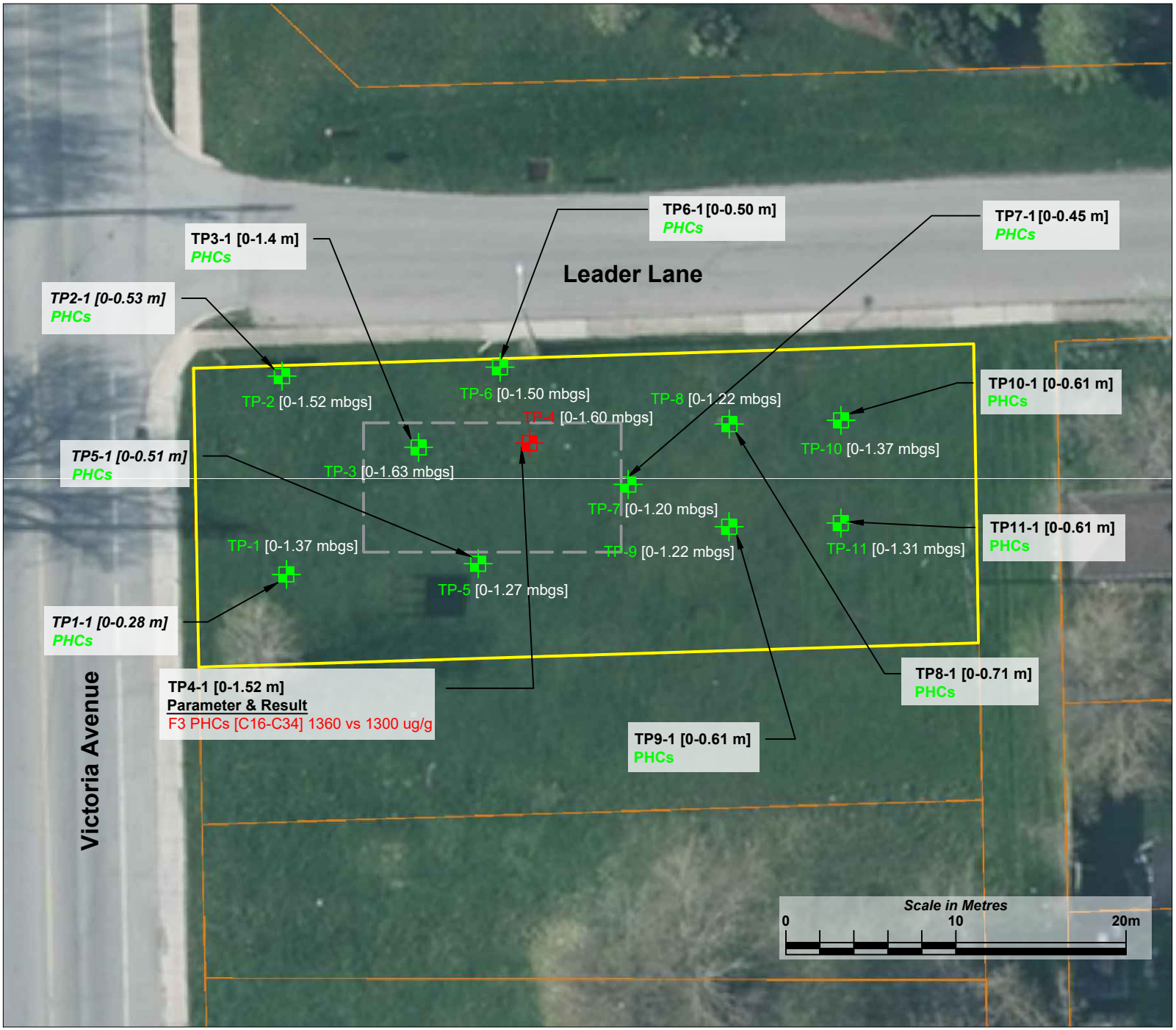
DATE: October 2022

PROJECT NO: NS2241-03

SCALE: AS SHOWN

NO:

Figure 4B



LEGEND

- Phase One and Two ESA and RSC Property Boundary
- Approximate Footprint of Former Building
- TP-1 Meets Standards
- TP-1 Exceeds Standards
- TP-1 Not Analyzed

Results Compared to O.Reg. 153/04 , Table 2: Residential, Fine Criteria

CLIENT: Build Up Victoria Inc.

PROJECT:

PHASE TWO CSM
4078 VICTORIA AVENUE,
NIAGARA FALLS, ONTARIO

TITLE: Soil Sampling Results PHCs

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DATE: October 2022

PROJECT NO: NS2241-03

SCALE: AS SHOWN

NO: Figure 4C

REFERENCE: BASE MAP PROVIDED BY NIAGARA NAVIGATOR, https://maps-beta.niagararegion.ca/Navigator/
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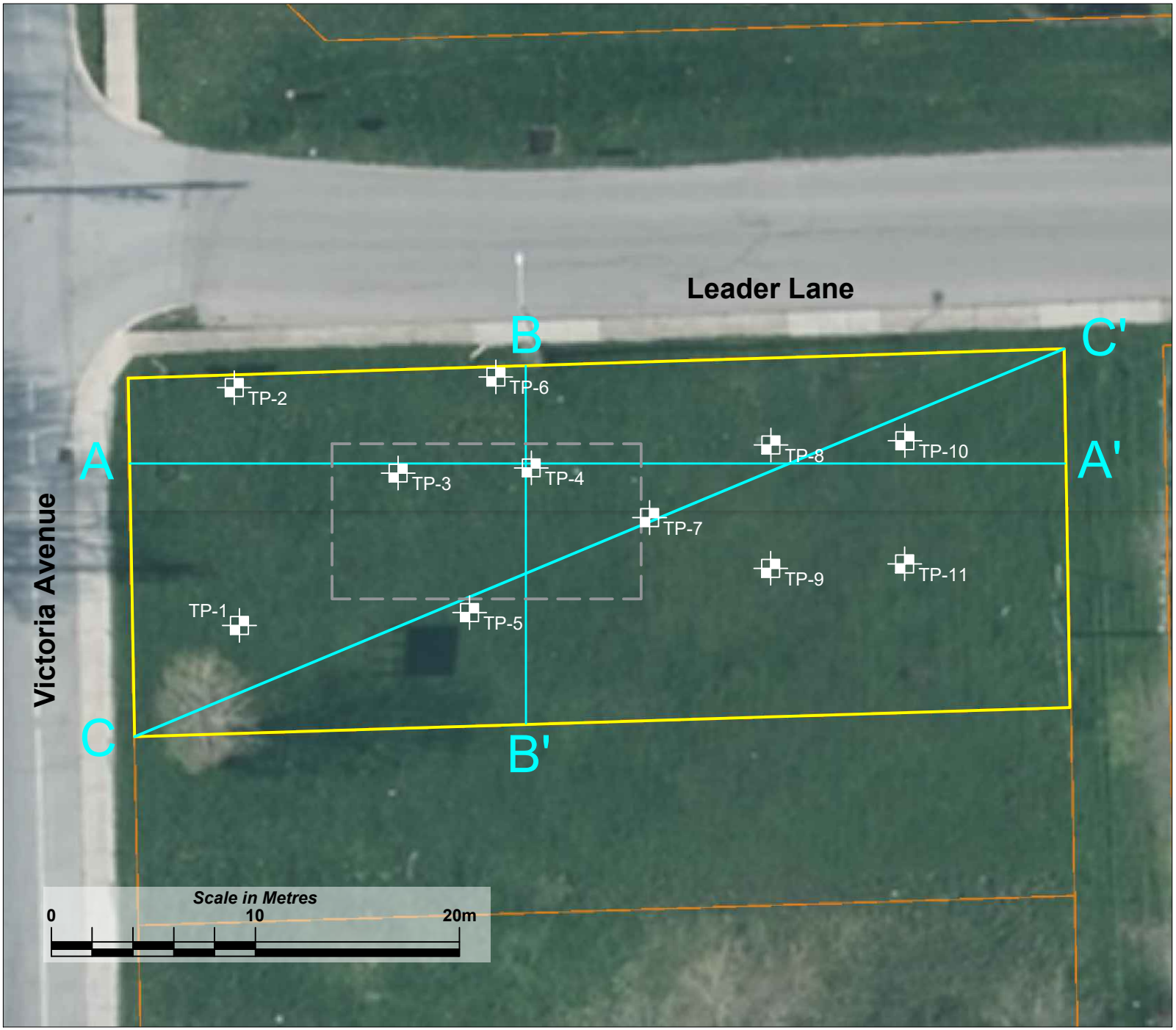

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NOTE: FOR ILLUSTRATION PURPOSES ONLY, ALL LOCATIONS APPROXIMATE.

LEGEND

- Phase One and Two ESA and RSC Property Boundary
- Approximate Footprint of Former Building
- TP-1 Test Pit Location
- X — X' Cross Section

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CLIENT:
Build Up Victoria Inc.

PROJECT:
PHASE TWO CSM
4078 VICTORIA AVENUE,
NIAGARA FALLS, ONTARIO

TITLE:
CROSS SECTIONS
A-A', B-B', C-C'

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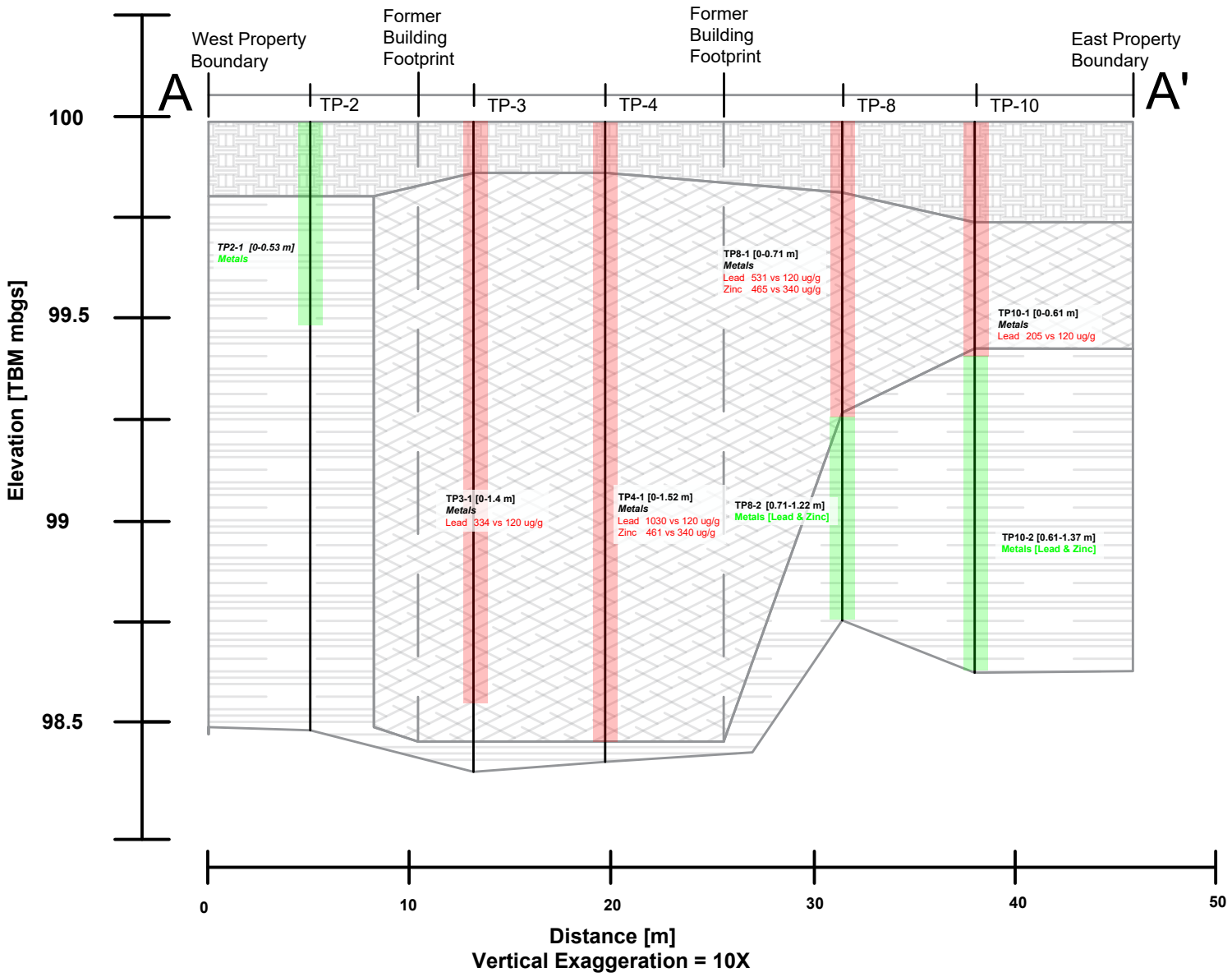
DATE: October 2022

PROJECT NO: NS2241-03

SCALE: AS SHOWN

NO:

Figure 5



LEGEND

- Topsoil
- Fill Material
- Clayey Silt / Silty Clay
- Exceeds Table 2 Standards
- Meets Table 2 Standards

CLIENT:
Build Up Victoria Inc.

PROJECT:
PHASE TWO CSM
4078 VICTORIA AVENUE,
NIAGARA FALLS, ONTARIO

TITLE:
CROSS SECTION A-A' : METALS

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DATE: October 2022

PROJECT NO: NS2241-03

SCALE: AS SHOWN

NO:

Figure 5A

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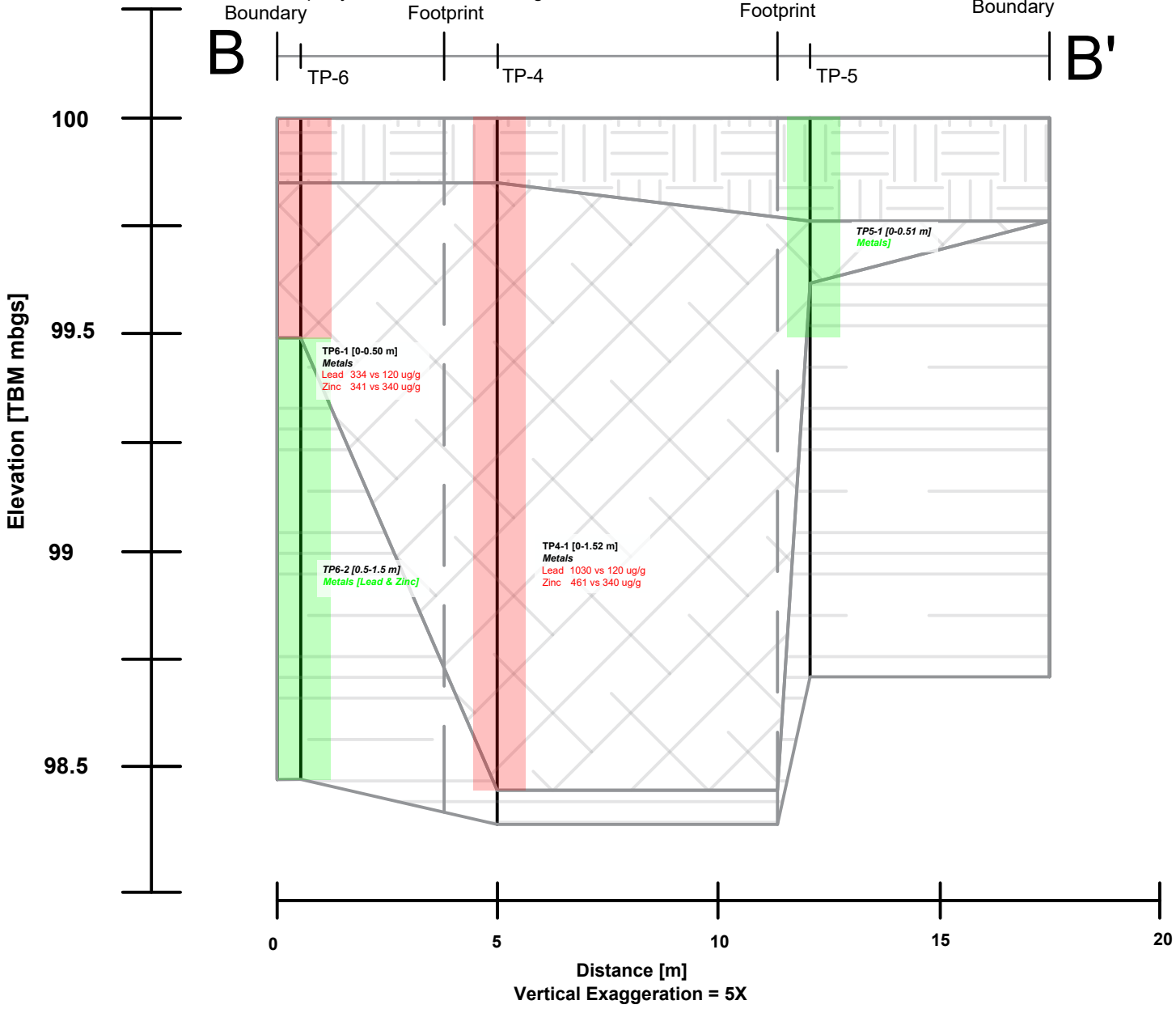

LEGEND

- Topsoil
- Fill Material
- Clayey Silt / Silty Clay
- Exceeds Table 2 Standards
- Meets Table 2 Standards

CLIENT: **Build Up Victoria Inc.**

PROJECT:

PHASE TWO CSM
4078 VICTORIA AVENUE,
NIAGARA FALLS, ONTARIO

TITLE:

CROSS SECTION B-B': METALS

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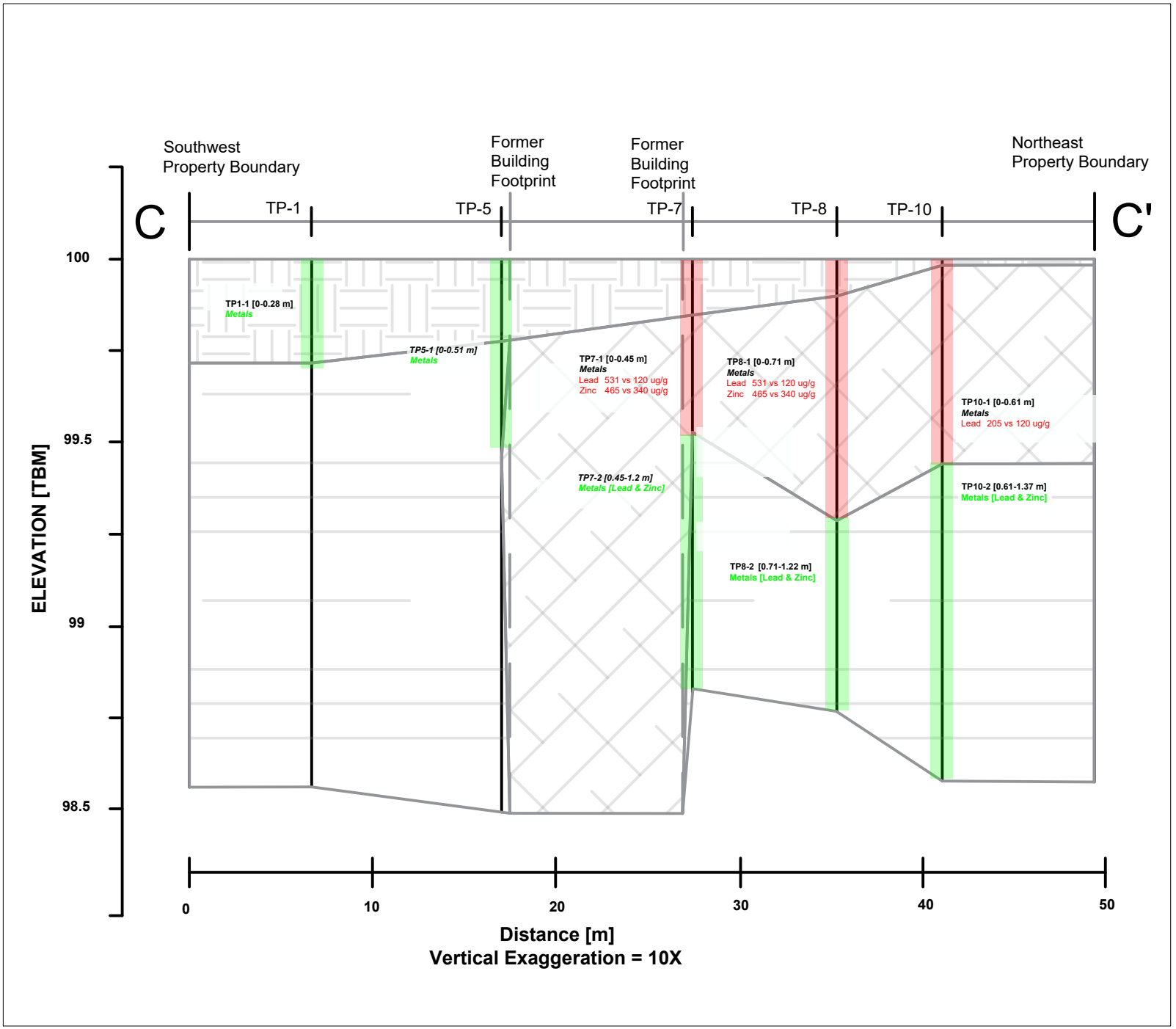
DATE:	October 2022
PROJECT NO:	NS2241-03
SCALE:	AS SHOWN
NO:	Figure 5B

NOTE: FOR ILLUSTRATION PURPOSES ONLY, ALL LOCATIONS APPROXIMATE.



LEGEND

- Topsoil
- Fill Material
- Clayey Silt / Silty Clay
- Exceeds Table 2 Standards
- Meets Table 2 Standards

CLIENT: **Build Up Victoria Inc.**

PROJECT:

PHASE TWO CSM
4078 VICTORIA AVENUE,
NIAGARA FALLS, ONTARIO

TITLE:

CROSS SECTION C-C': METALS

DRAWN BY: DN

CHECKED BY: JM

DATE: October 2022

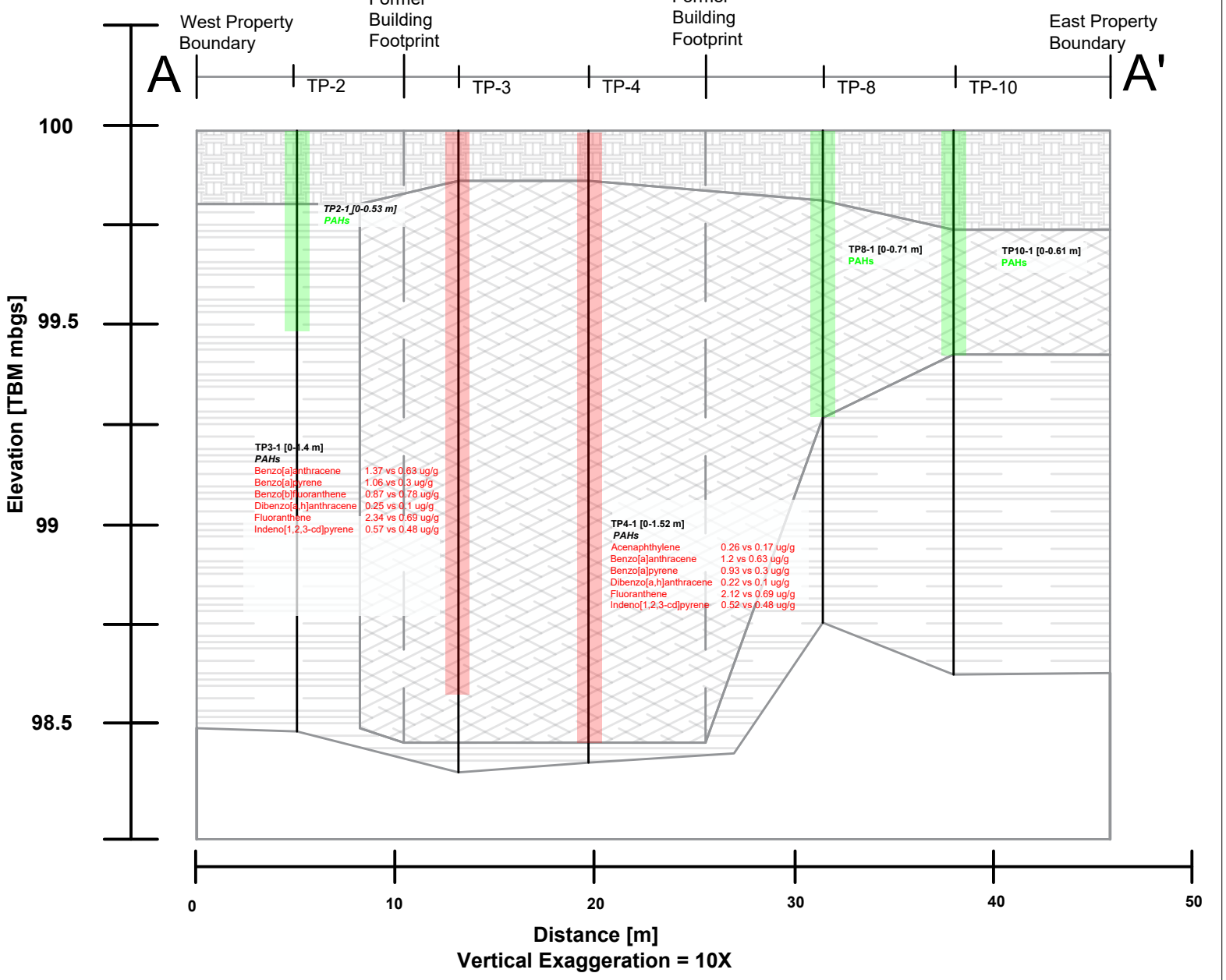
PROJECT NO: NS2241-03

SCALE: AS SHOWN

NO:

Figure 5C

NOTE: FOR ILLUSTRATION PURPOSES ONLY, ALL LOCATIONS APPROXIMATE.



LEGEND

- Topsoil
- Fill Material
- Clayey Silt / Silty Clay
- Exceeds Table 2 Standards
- Meets Table 2 Standards

CLIENT: **Build Up Victoria Inc.**

PROJECT:

PHASE TWO CSM
4078 VICTORIA AVENUE,
NIAGARA FALLS, ONTARIO

TITLE:

CROSS SECTION A-A': PAHs

DRAWN BY: DN

CHECKED BY: JM

DATE: October 2022

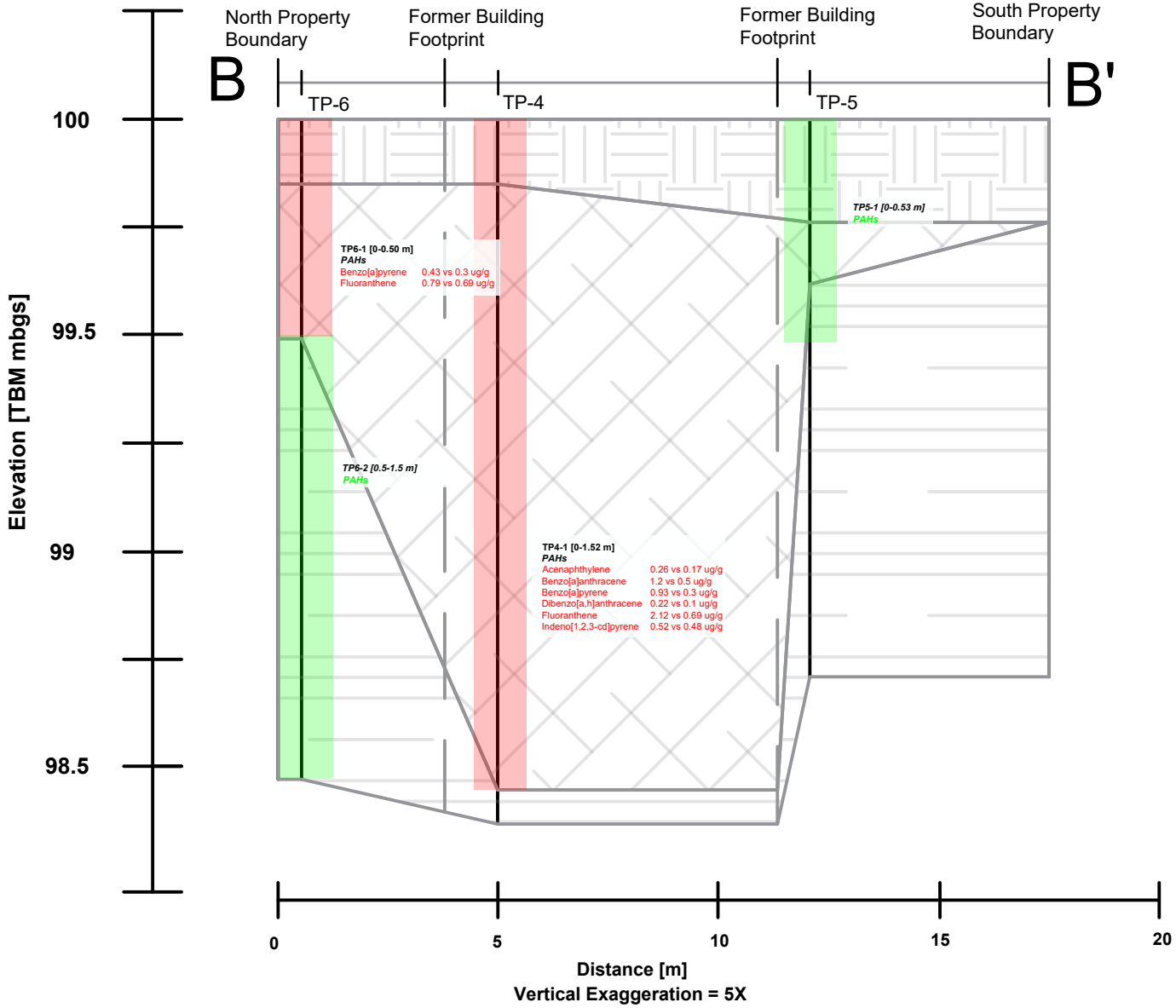
PROJECT NO: NS2241-03

SCALE: AS SHOWN

NO:

Figure 5D

NOTE: FOR ILLUSTRATION PURPOSES ONLY, ALL LOCATIONS APPROXIMATE.



LEGEND

- Topsoil
- Fill Material
- Clayey Silt / Silty Clay
- Exceeds Table 2 Standards
- Meets Table 2 Standards

CLIENT: **Build Up Victoria Inc.**

PROJECT: **PHASE TWO CSM**
4078 VICTORIA AVENUE,
NIAGARA FALLS, ONTARIO

TITLE: **CROSS SECTION B-B': PAHs**

DRAWN BY: DN

CHECKED BY: JM

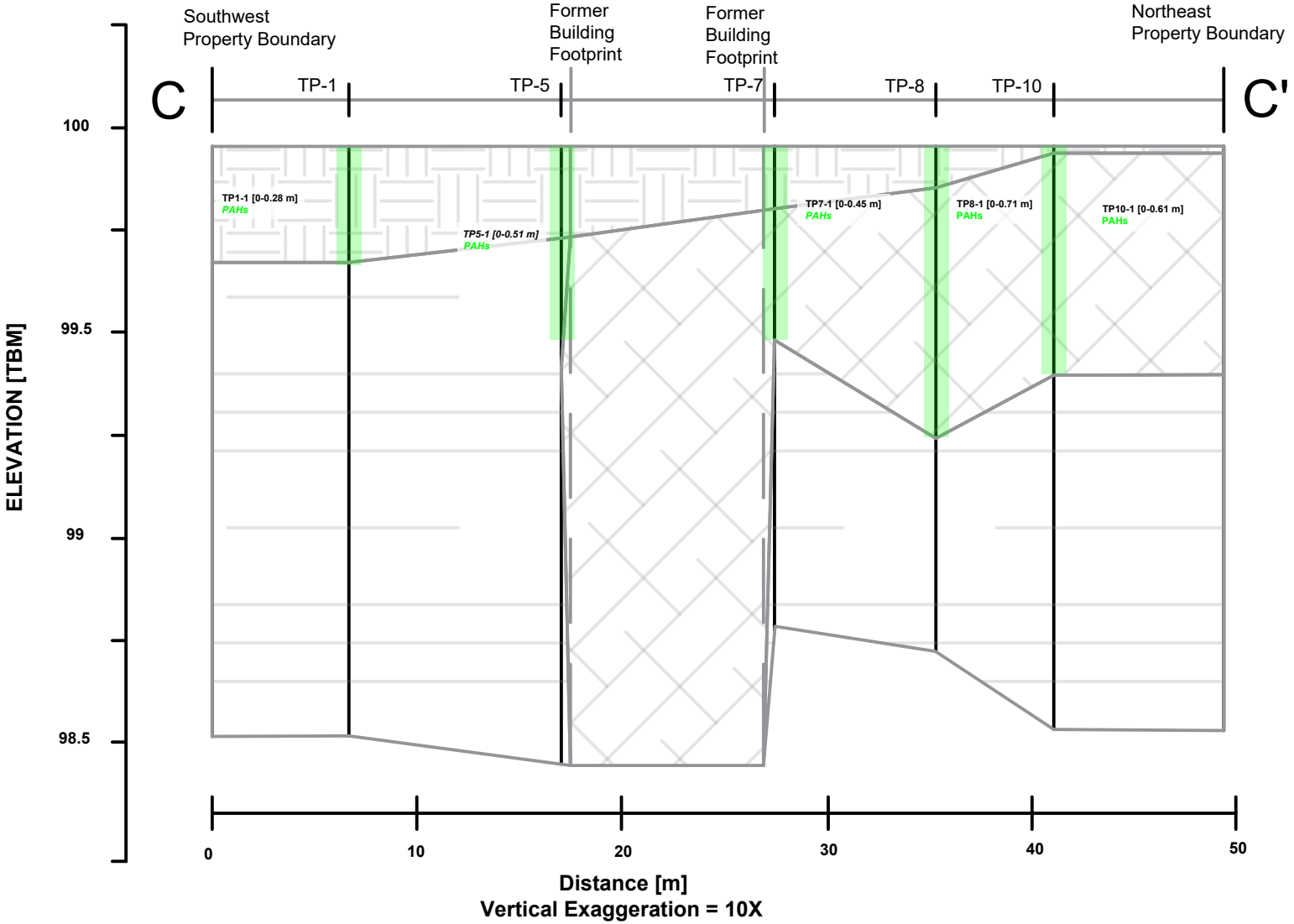
DATE: October 2022

PROJECT NO: NS2241-03

SCALE: AS SHOWN

NO: Figure 5E

NOTE: FOR ILLUSTRATION PURPOSES ONLY, ALL LOCATIONS APPROXIMATE.



LEGEND

- Topsoil
- Fill Material
- Clayey Silt / Silty Clay
- Exceeds Table 2 Standards
- Meets Table 2 Standards

CLIENT:
Build Up Victoria Inc.

PROJECT:
PHASE TWO CSM
4078 VICTORIA AVENUE,
NIAGARA FALLS, ONTARIO

TITLE:
CROSS SECTION C-C': PAHs

DRAWN BY: DN

CHECKED BY: JM

DATE: October 2022

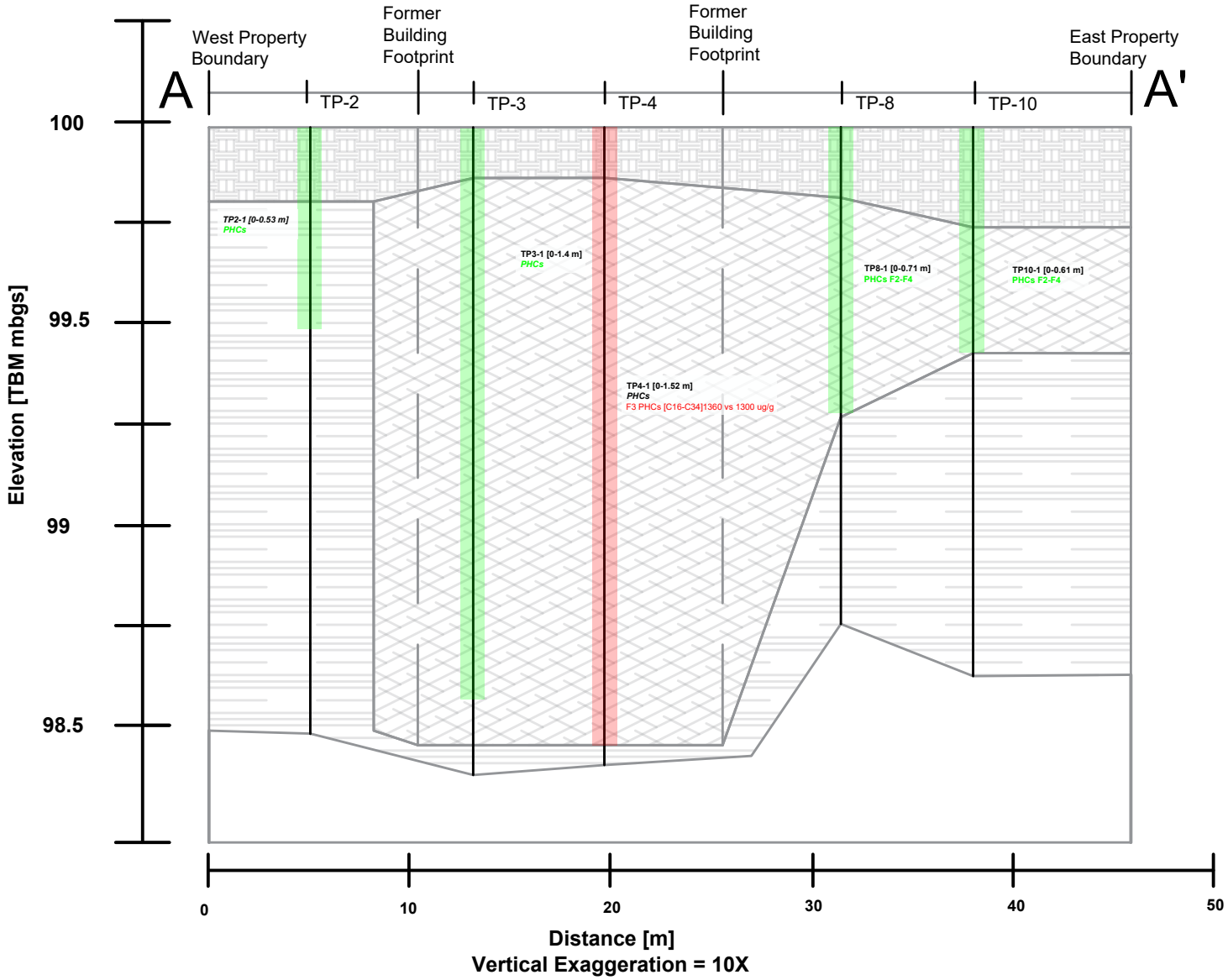
PROJECT NO: NS2241-03

SCALE: AS SHOWN

NO:

Figure 5F

NOTE: FOR ILLUSTRATION PURPOSES ONLY, ALL LOCATIONS APPROXIMATE.



LEGEND

- Topsoil
- Fill Material
- Clayey Silt / Silty Clay
- Exceeds Table 2 Standard
- Meets Table 2 Standard

CLIENT: **Build Up Victoria Inc.**

PROJECT: **PHASE TWO CSM**
4078 VICTORIA AVENUE,
NIAGARA FALLS, ONTARIO

TITLE: **CROSS SECTION A-A': PHCs**

DRAWN BY: DN

CHECKED BY: JM

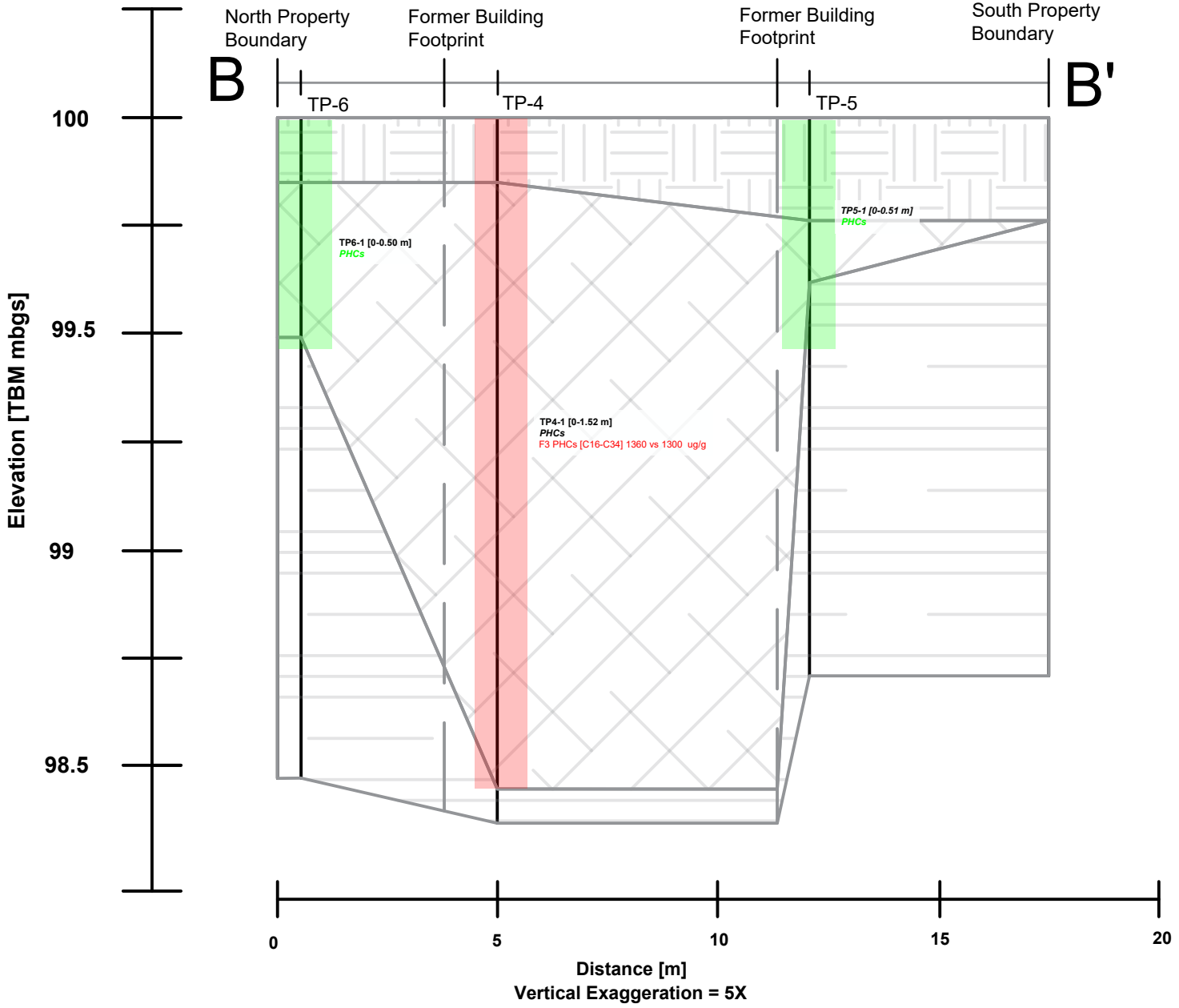
DATE: October 2022

PROJECT NO: NS2241-03

SCALE: AS SHOWN

NO: Figure 5G

NOTE: FOR ILLUSTRATION PURPOSES ONLY, ALL LOCATIONS APPROXIMATE.



LEGEND

- Topsoil
- Fill Material
- Clayey Silt / Silty Clay
- Exceeds Table 2 Standards
- Meets Table 2 Standards

CLIENT:
Build Up Victoria Inc.

PROJECT:
PHASE TWO CSM
4078 VICTORIA AVENUE,
NIAGARA FALLS, ONTARIO

TITLE:
CROSS SECTION B-B'; PHCs

DRAWN BY: DN

CHECKED BY: JM

DATE: October 2022

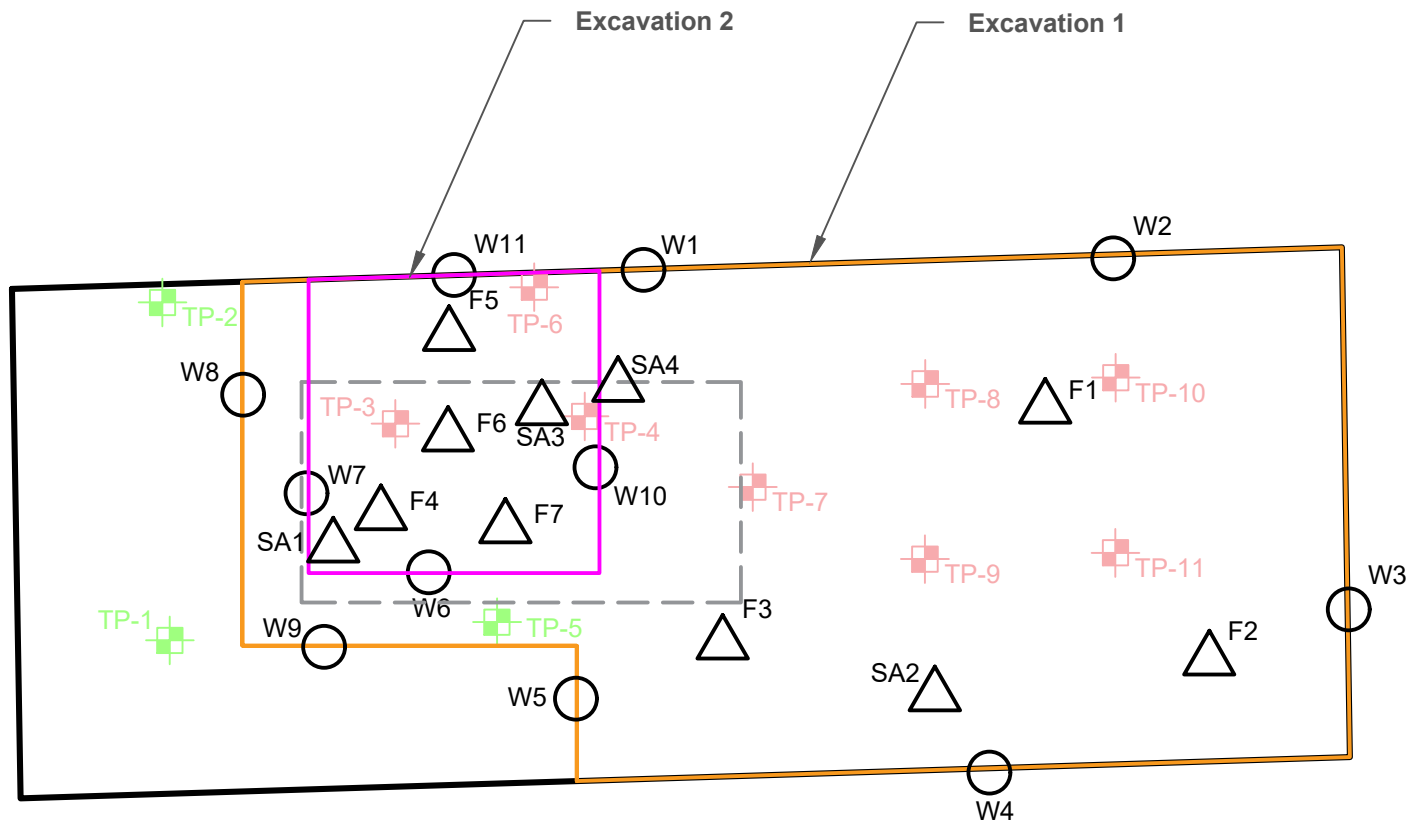
PROJECT NO: NS2241-03

SCALE: AS SHOWN

NO:

Figure 5H

NOTE: FOR ILLUSTRATION PURPOSES ONLY, ALL LOCATIONS APPROXIMATE.



Scale in Metres

0 10 20m

Note: SA1, SA2, SA3 & SA4 sampling locations were for additional pH analysis in surface & subsurface soil

NOTE: FOR ILLUSTRATION PURPOSES ONLY, ALL LOCATIONS APPROXIMATE.

LEGEND

- Phase One and Two ESA and RSC Property Boundary
- TP-1 Test Pit Locations
- W1 / F1 Verification Wall / Floor Samples
- Excavation 1: Metals
- Excavation 2: Metals, PAHs, PHCs

CLIENT: **Build Up Victoria Inc.**

PROJECT: **PHASE TWO CSM**
4078 VICTORIA AVENUE,
NIAGARA FALLS, ONTARIO

TITLE: **EXCAVATION AREAS & VERIFICATION SAMPLING LOCATIONS**

DRAWN BY: DN

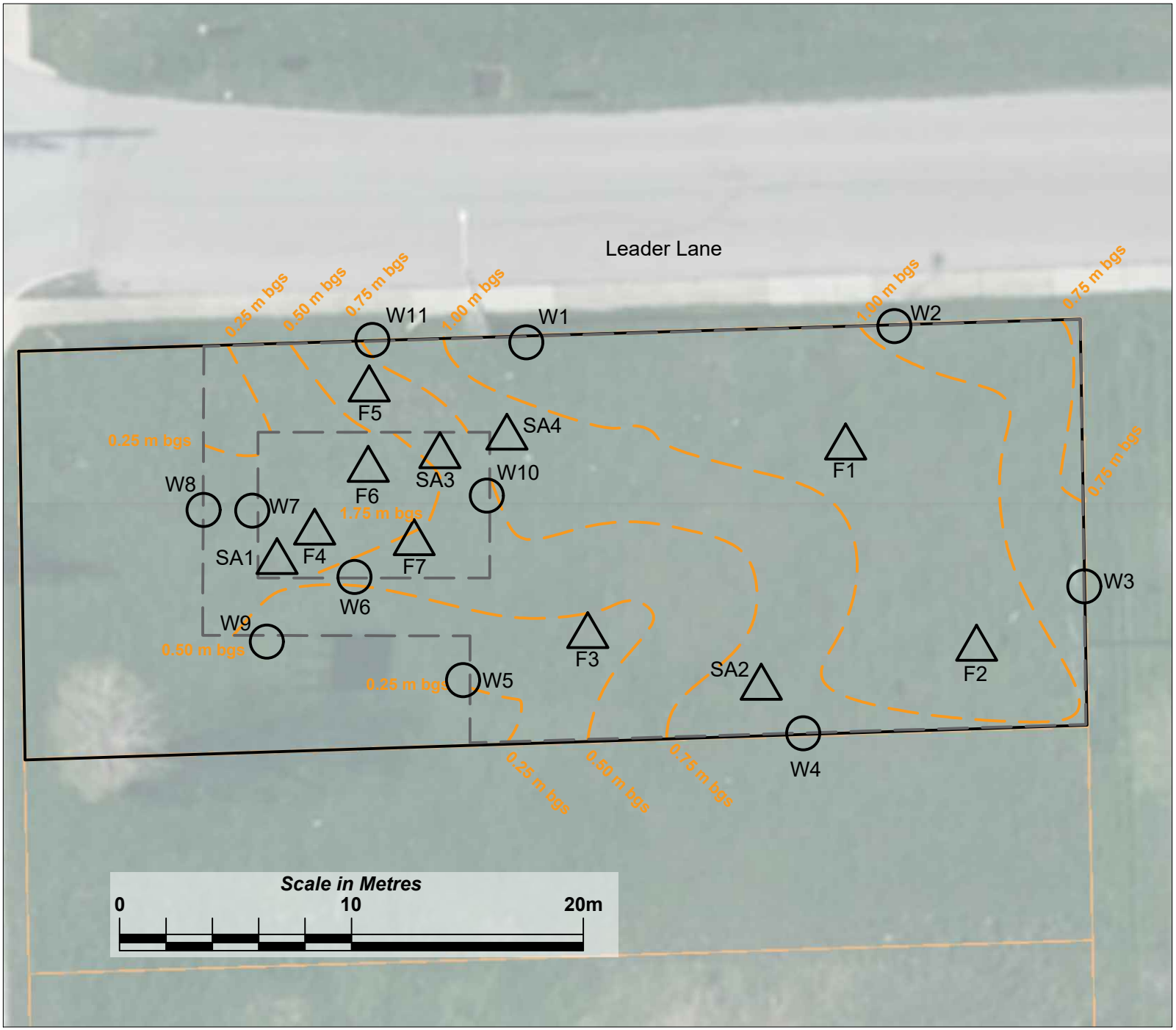
CHECKED BY: JM

DATE: October 2022

PROJECT NO: NS2241-03

SCALE: AS SHOWN

NO: Figure 6



LEGEND

- Phase One and Two ESA and RSC Property Boundary
- Excavated Area
- W1 / F1 — Verification Wall / Floor Samples
- Topographic Contours; mbgs [Meters Below Ground Surface]

CLIENT: **Build Up Victoria Inc.**

PROJECT: **PHASE TWO CSM**
4078 VICTORIA AVENUE,
NIAGARA FALLS, ONTARIO

TITLE: **TOPOGRAPHIC CONTOUR**

DRAWN BY: DN

CHECKED BY: JM

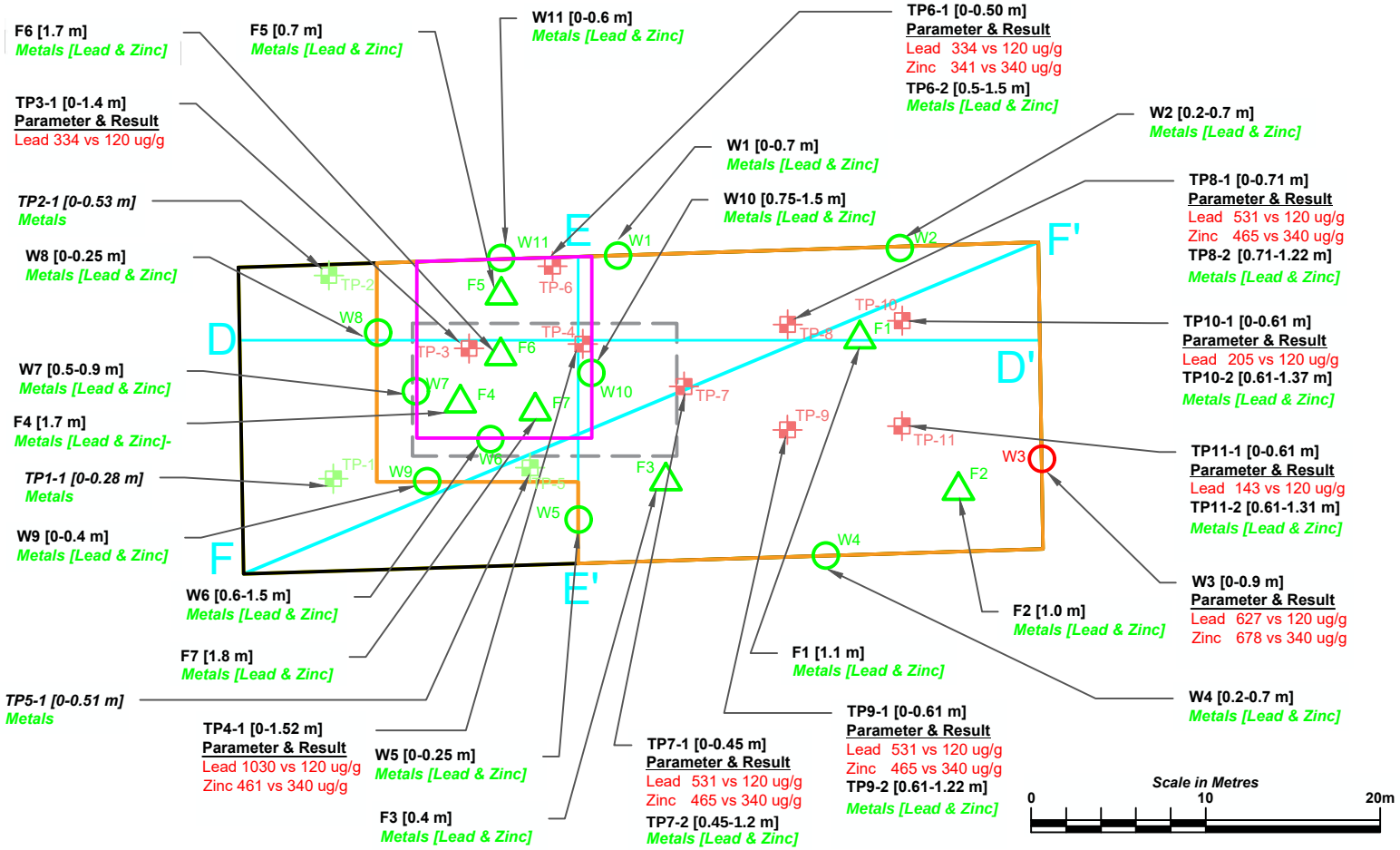
DATE: October 2022

PROJECT NO: NS2241-03

SCALE: AS SHOWN

NO: Figure 7

REFERENCE: BASE MAP PROVIDED BY NIAGARA NAVIGATOR, https://maps-beta.niagararegion.ca/Navigator/
NOTE: FOR ILLUSTRATION PURPOSES ONLY, ALL LOCATIONS APPROXIMATE.



NOTE: FOR ILLUSTRATION PURPOSES ONLY, ALL LOCATIONS APPROXIMATE.

LEGEND

- Phase One and Two ESA and RSC Property Boundary
- TP-1 — Test Pit Locations
- W1 / F1 — Verification Wall / Floor Samples
- Excavation 1
- Excavation 2
- Meets Standards
- Exceeds Standards

Results Compared to O.Reg. 153/04 , Table 2: Residential, Fine Criteria

CLIENT:
Build Up Victoria Inc.

PROJECT:
PHASE TWO CSM
4078 VICTORIA AVENUE,
NIAGARA FALLS, ONTARIO

TITLE:
VERIFICATION SAMPLING RESULTS: METALS

DRAWN BY: DN

CHECKED BY: JM

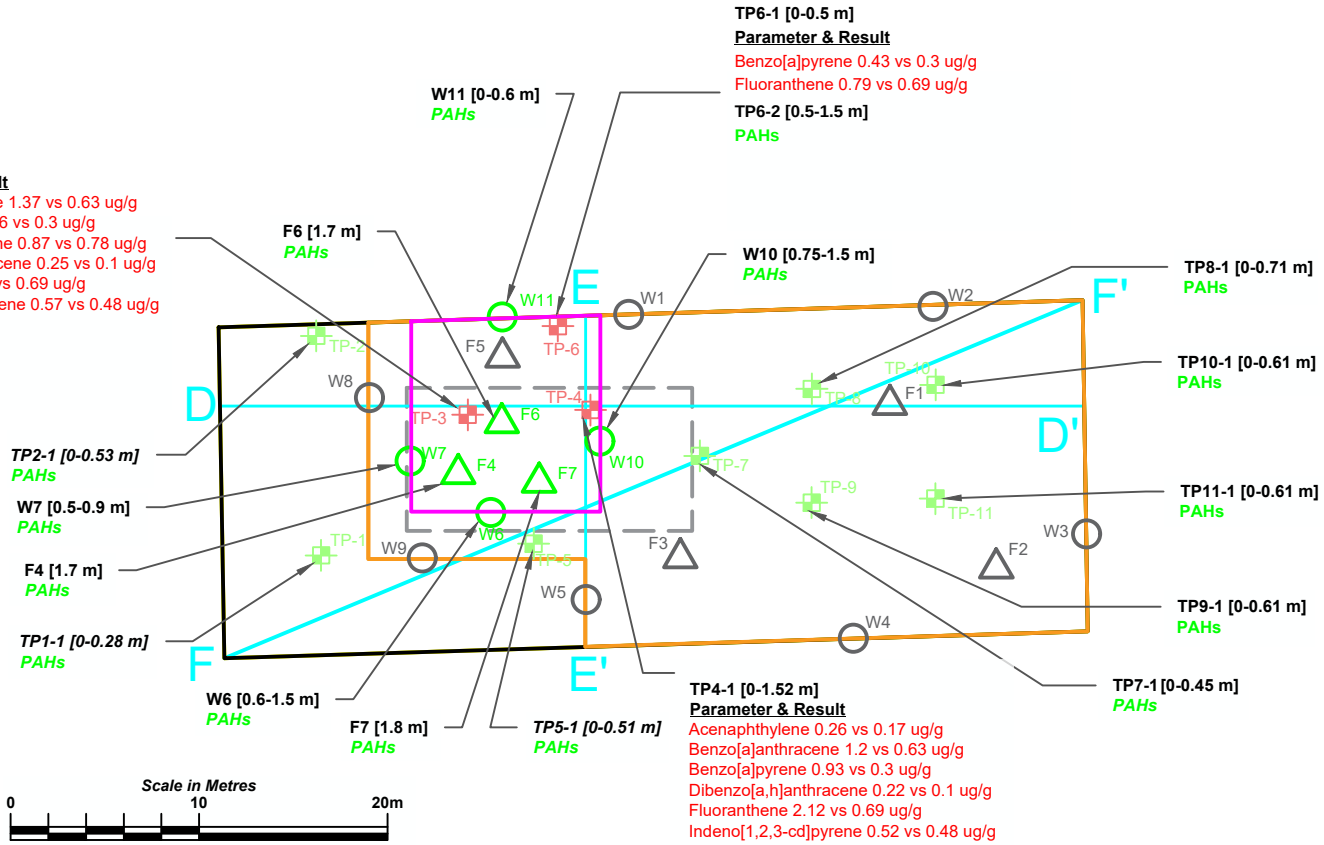
DATE: JULY 2022

PROJECT NO: NS2241-03

SCALE: AS SHOWN

NO:

Figure 8A



NOTE: FOR ILLUSTRATION PURPOSES ONLY, ALL LOCATIONS APPROXIMATE.

LEGEND

- Phase One and Two ESA and RSC Property Boundary
- TP-1 Test Pit Locations
- W1 / F1 Verification Wall / Floor Samples
- Excavation 1
- Excavation 2
- Meets Standards
- Exceeds Standards
- Not Analyzed

Results Compared to O.Reg. 153/04 , Table 2: Residential, Fine Criteria

NIAGARA SOILS SOLUTIONS LTD.

CLIENT:
Build Up Victoria Inc.

PROJECT:
PHASE TWO CSM
4078 VICTORIA AVENUE,
NIAGARA FALLS, ONTARIO

TITLE:
VERIFICATION SAMPLING RESULTS: PAHs

DRAWN BY: DN

CHECKED BY: JM

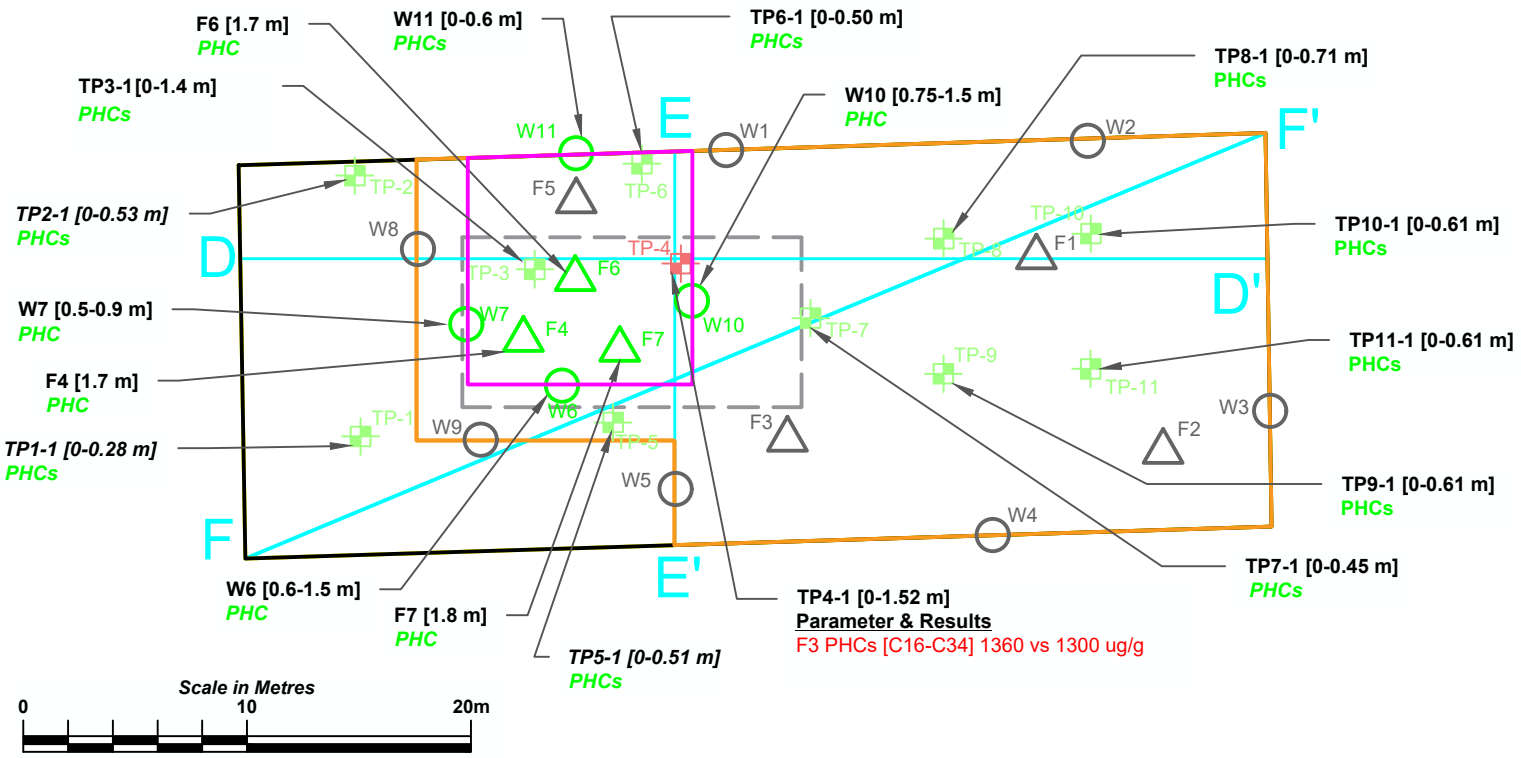
DATE: October 2022

PROJECT NO: NS2241-03

SCALE: AS SHOWN

NO:

Figure 8B



NOTE: FOR ILLUSTRATION PURPOSES ONLY, ALL LOCATIONS APPROXIMATE.

LEGEND

- Phase One and Two ESA and RSC Property Boundary
- TP-1 Test Pit Locations
- W1 / F1 Verification Wall / Floor Samples
- Excavation 1
- Excavation 2
- Meets Standards
- Exceeds Standards
- Not Analyzed

Results Compared to O.Reg. 153/04 , Table 2: Residential, Fine Criteria

NIAGARA SOILS SOLUTIONS LTD.

CLIENT:
Build Up Victoria Inc.

PROJECT:
PHASE TWO CSM
4078 VICTORIA AVENUE,
NIAGARA FALLS, ONTARIO

TITLE:
VERIFICATION SAMPLING RESULTS: PHCs

DRAWN BY: DN

CHECKED BY: JM

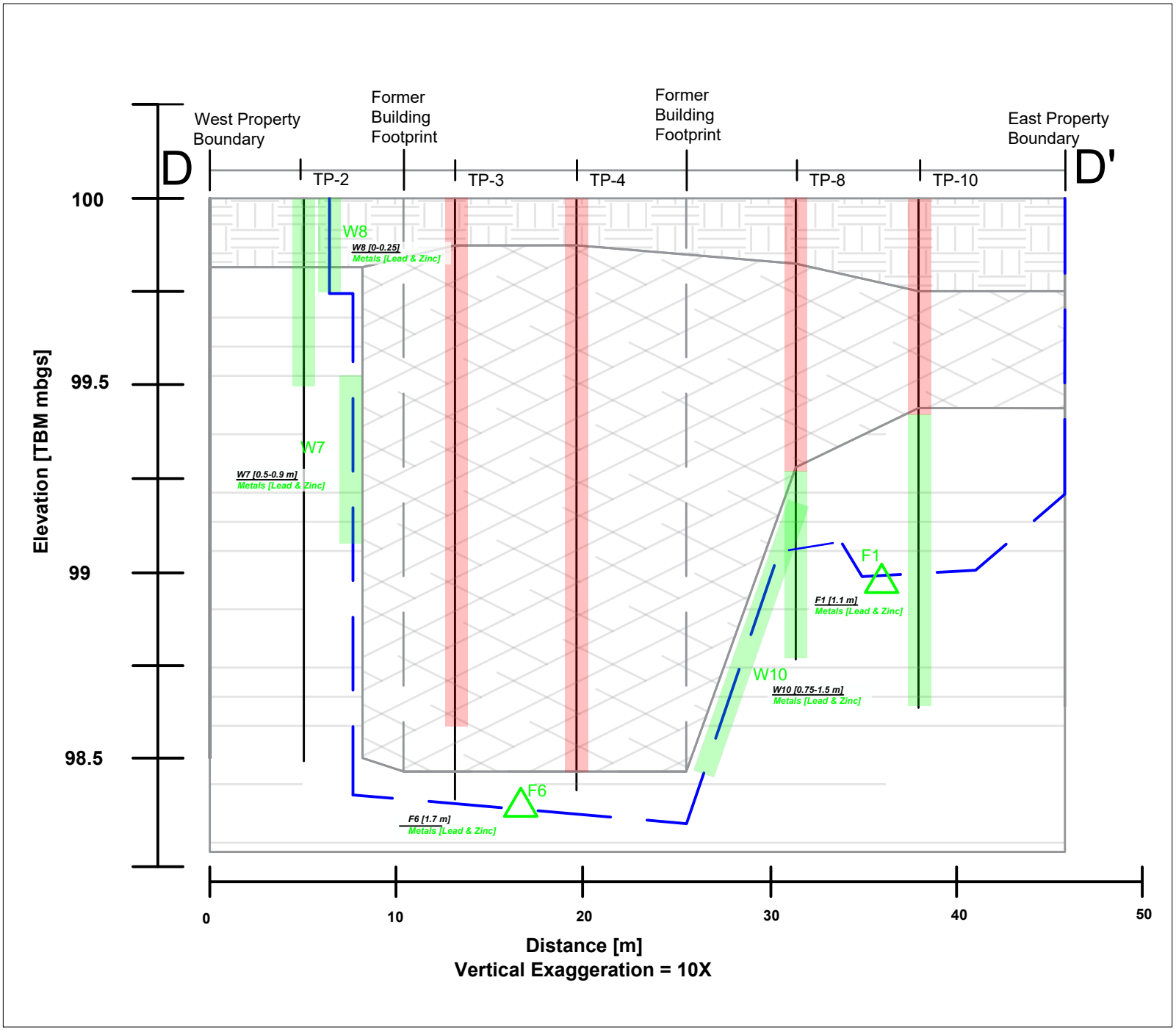
DATE: October 2022

PROJECT NO: NS2241-03

SCALE: AS SHOWN

NO:

Figure 8C



LEGEND

- W1 / F1 — Verification Wall / Floor Samples
- Topsoil
- Fill Material
- Clayey Silt / Silty Clay
- Excavation
- Exceeds Table 2 Standard
- Meets Table 2 Standard

CLIENT: Build Up Victoria Inc.

PROJECT: PHASE TWO CSM
4078 VICTORIA AVENUE,
NIAGARA FALLS, ONTARIO

TITLE: CROSS SECTION D-D': METALS

DRAWN BY: DN

CHECKED BY: JM

DATE: October 2022

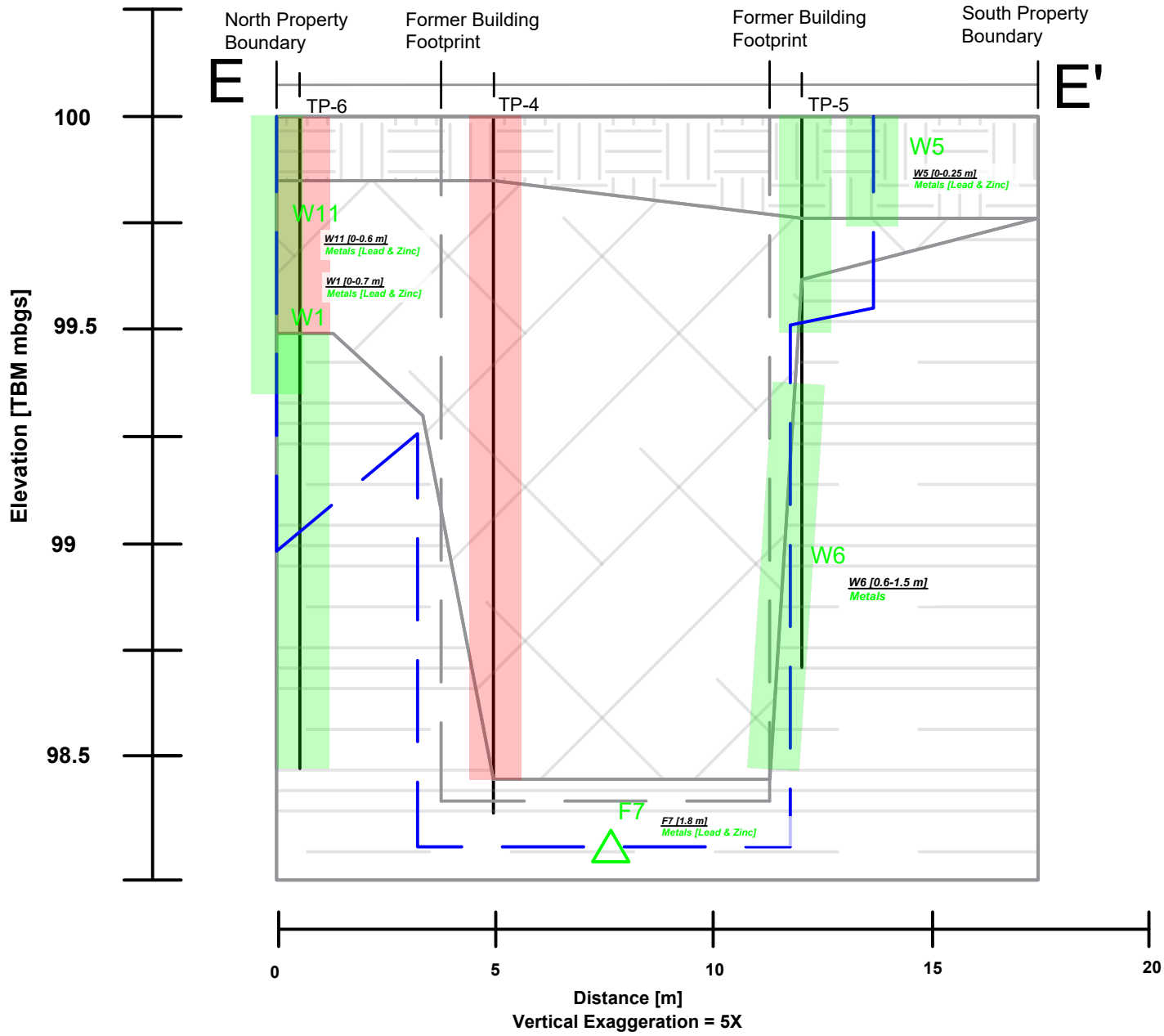
PROJECT NO: NS2241-03

SCALE: AS SHOWN

NO:

Figure 9A

NOTE: FOR ILLUSTRATION PURPOSES ONLY, ALL LOCATIONS APPROXIMATE.



LEGEND

W1 / F1 — Verification Wall / Floor Samples

Topsoil

Fill Material

Clayey Silt / Silty Clay

Excavation

Exceeds Table 2 Standard

Meets Table 2 Standard

CLIENT:
Build Up Victoria Inc.

PROJECT:
PHASE TWO CSM
4078 VICTORIA AVENUE,
NIAGARA FALLS, ONTARIO

TITLE:
CROSS SECTION E-E': METALS

DRAWN BY: DN

CHECKED BY: JM

DATE: October 2022

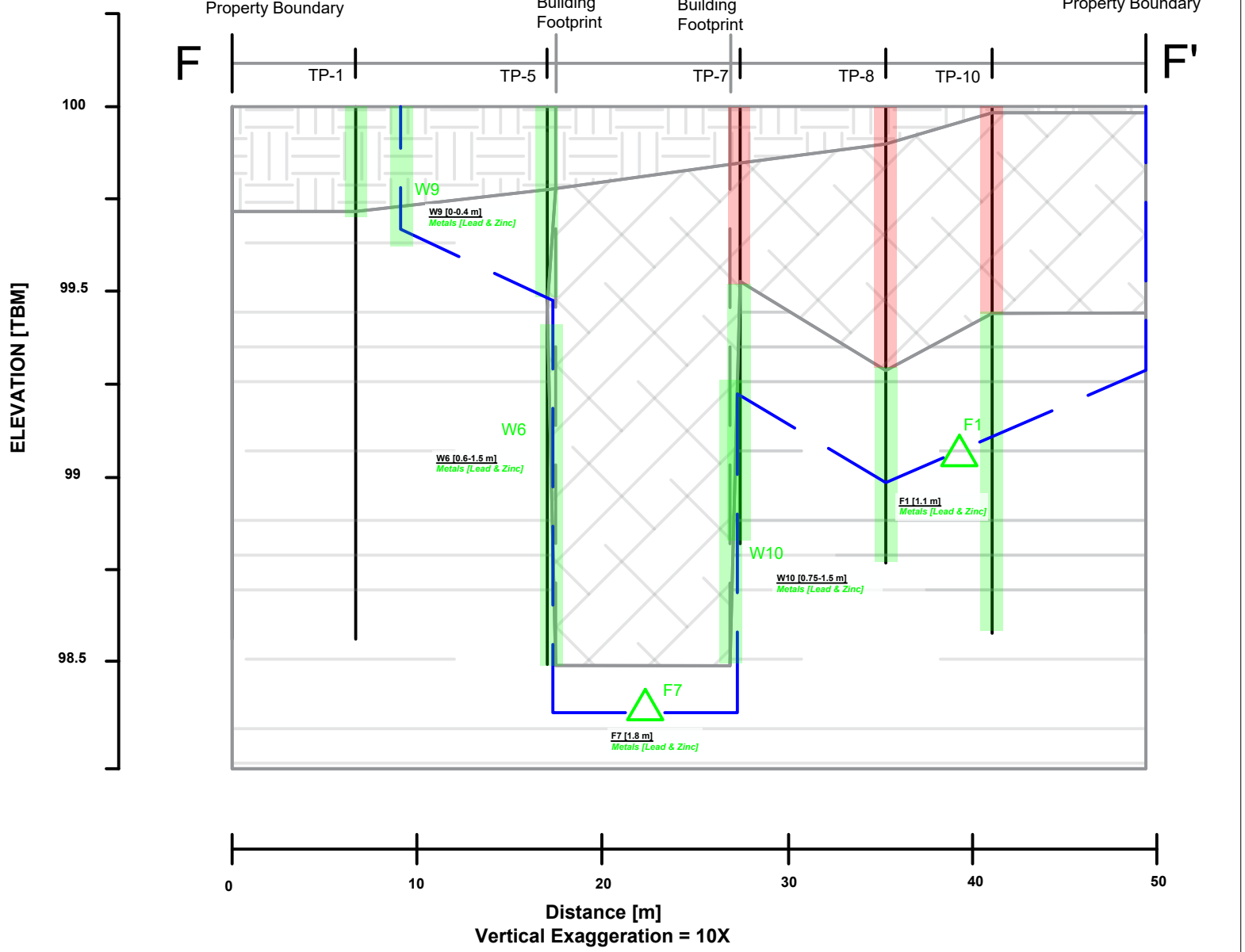
PROJECT NO: NS2241-03

SCALE: AS SHOWN

NO:

Figure 9B

NOTE: FOR ILLUSTRATION PURPOSES ONLY, ALL LOCATIONS APPROXIMATE.



LEGEND

- W1 / F1 — Verification Wall / Floor Samples
- Topsoil
- Fill Material
- Clayey Silt / Silty Clay
- Excavation
- Exceeds Table 2 Standard
- Meets Table 2 Standard

CLIENT: **Build Up Victoria Inc.**

PROJECT: **PHASE TWO CSM**
4078 VICTORIA AVENUE,
NIAGARA FALLS, ONTARIO

TITLE: **CROSS SECTION F-F': METALS**

DRAWN BY: DN

CHECKED BY: JM

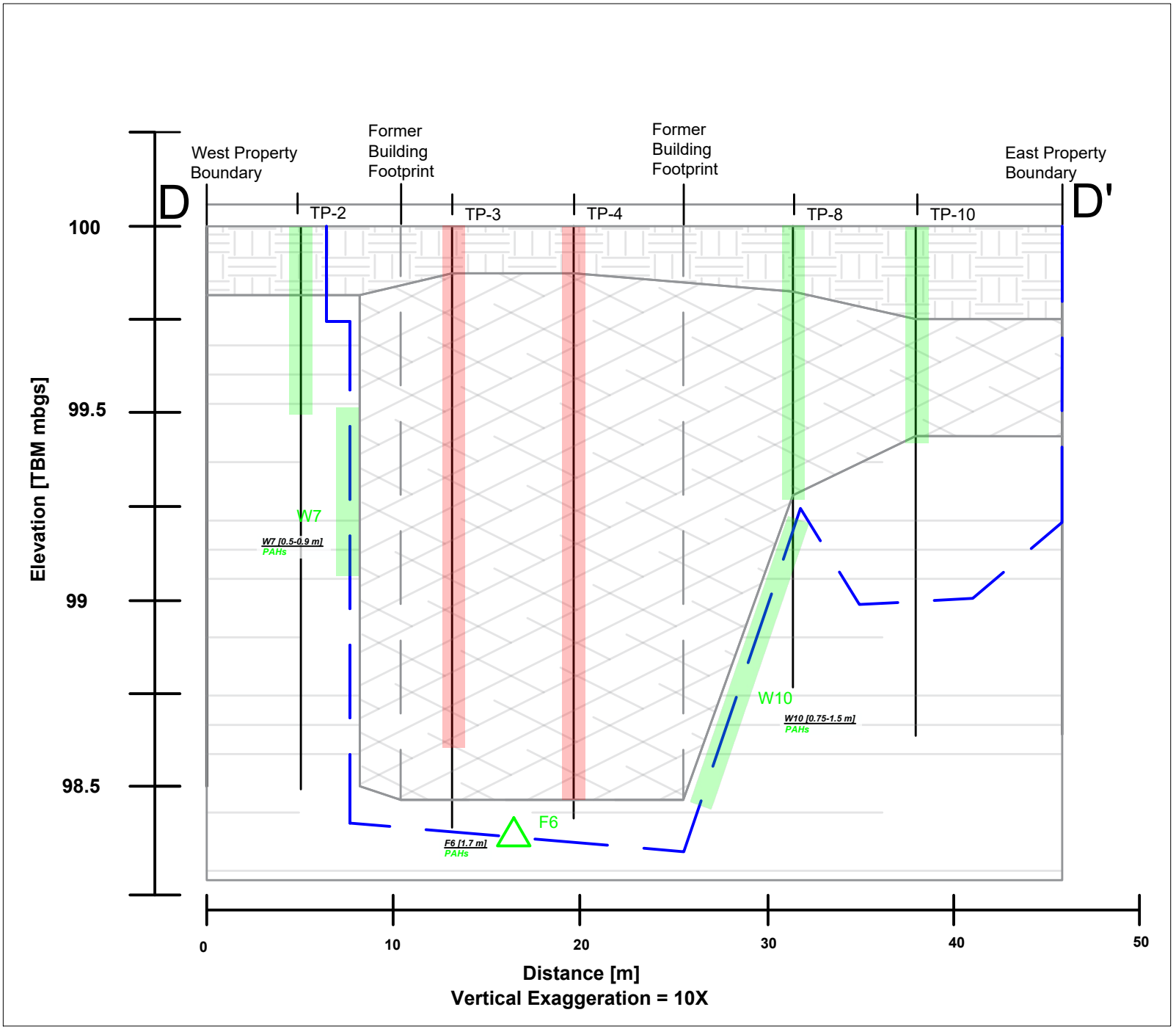
DATE: October 2022

PROJECT NO: NS2241-03

SCALE: AS SHOWN

NO: Figure 9C

NOTE: FOR ILLUSTRATION PURPOSES ONLY, ALL LOCATIONS APPROXIMATE.



LEGEND

W1 / F1 Verification Wall / Floor Samples

Topsoil

Fill Material

Clayey Silt / Silty Clay

Excavation

Exceeds Table 2 Standard

Meets Table 2 Standard

CLIENT: Build Up Victoria Inc.

PROJECT:

PHASE TWO CSM
4078 VICTORIA AVENUE,
NIAGARA FALLS, ONTARIO

TITLE:

CROSS SECTION D-D': PAHs

DRAWN BY: DN

CHECKED BY: JM

DATE: October 2022

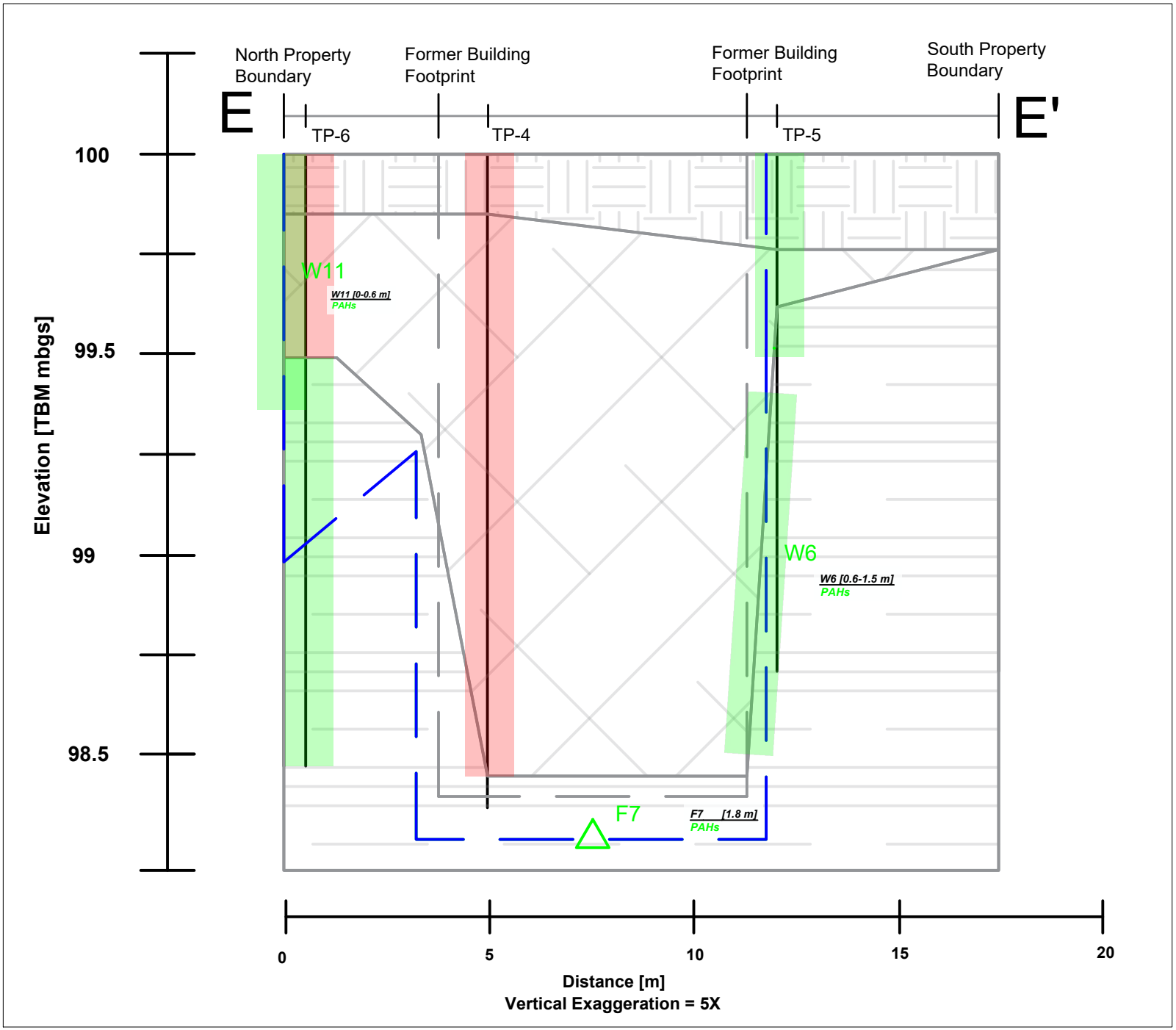
PROJECT NO: NS2241-03

SCALE: AS SHOWN

NO:

Figure 9D

NOTE: FOR ILLUSTRATION PURPOSES ONLY, ALL LOCATIONS APPROXIMATE.



LEGEND

- W1 / F1 — Verification Wall / Floor Samples
- Topsoil
- Fill Material
- Clayey Silt / Silty Clay
- Excavation
- Exceeds Table 2 Standard
- Meets Table 2 Standard

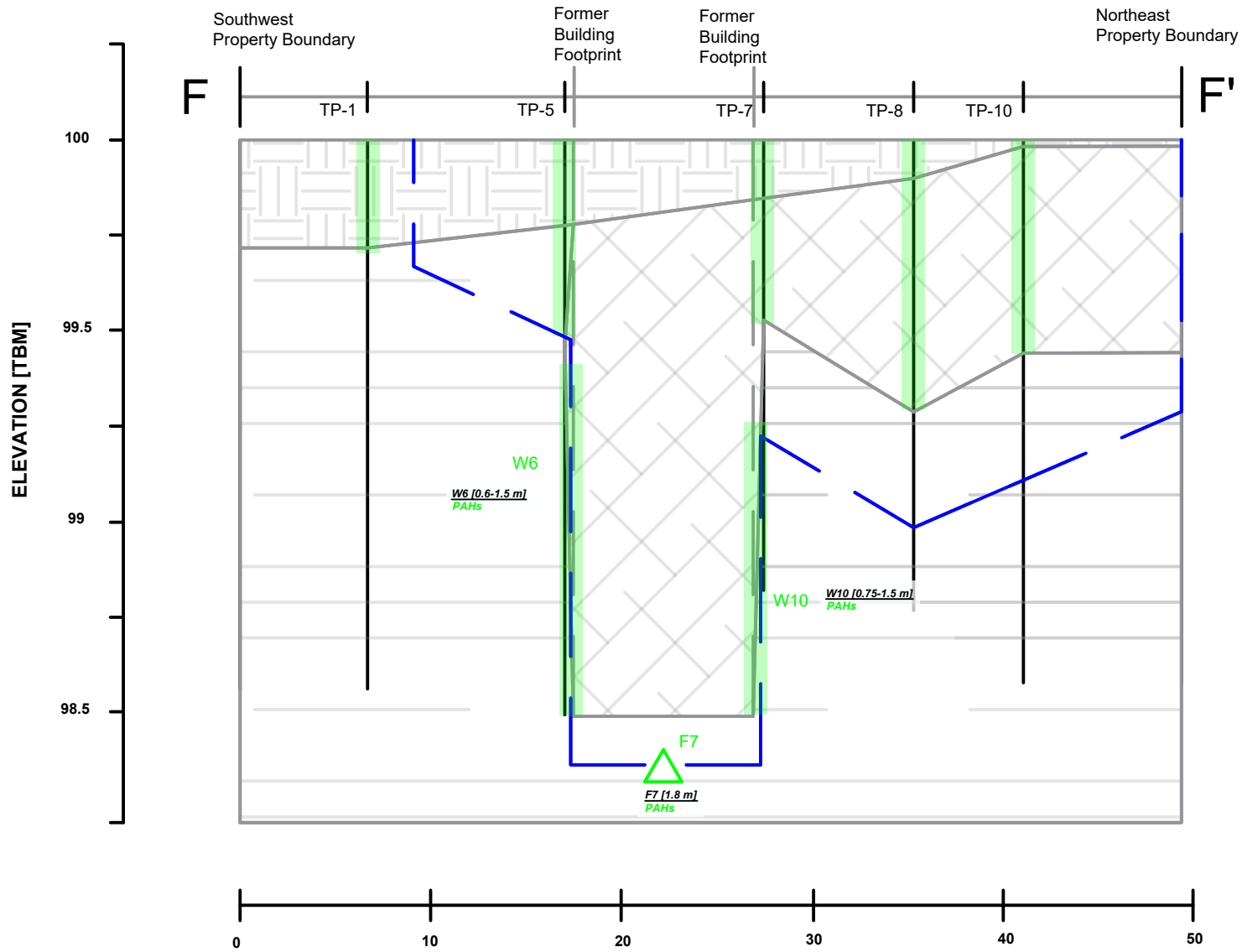
CLIENT: **Build Up Victoria Inc.**

PROJECT: **PHASE TWO CSM**
4078 VICTORIA AVENUE,
NIAGARA FALLS, ONTARIO

TITLE: **CROSS SECTION E-E': PAHs**

DRAWN BY:	DN
CHECKED BY:	JM
DATE:	October 2022
PROJECT NO:	NS2241-03
SCALE:	AS SHOWN
NO:	Figure 9E

NOTE: FOR ILLUSTRATION PURPOSES ONLY, ALL LOCATIONS APPROXIMATE.



LEGEND

- W1 / F1 — Verification Wall / Floor Samples
- Topsoil
- Fill Material
- Clayey Silt / Silty Clay
- Excavation
- Exceeds Table 2 Standard
- Meets Table 2 Standard

CLIENT: **Build Up Victoria Inc.**

PROJECT: **PHASE TWO CSM**
4078 VICTORIA AVENUE,
NIAGARA FALLS, ONTARIO

TITLE: **CROSS SECTION F-F': PAHs**

DRAWN BY: DN

CHECKED BY: JM

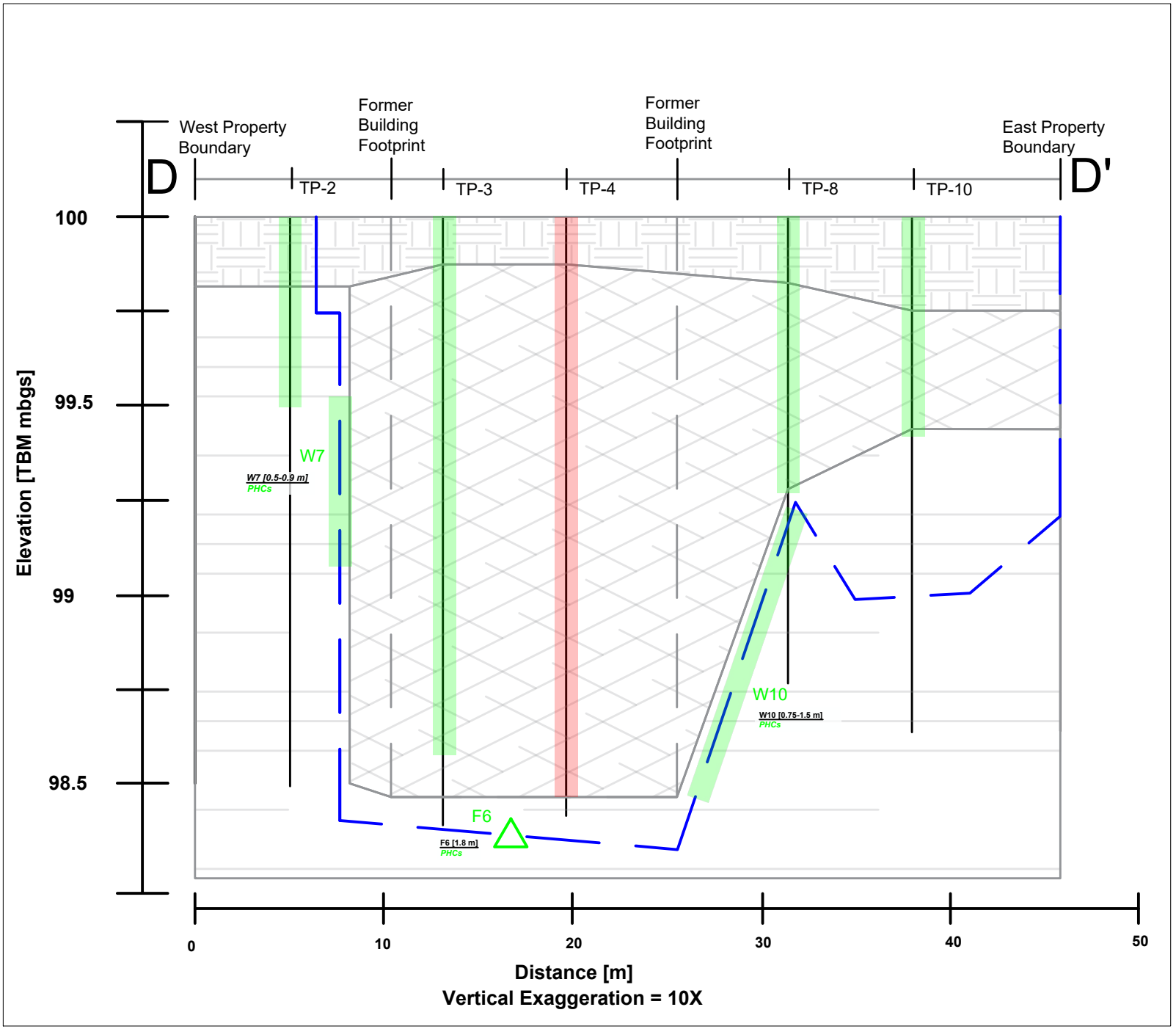
DATE: October 2022

PROJECT NO: NS2241-03

SCALE: AS SHOWN

NO: Figure 9F

NOTE: FOR ILLUSTRATION PURPOSES ONLY, ALL LOCATIONS APPROXIMATE.



LEGEND

- W1 / F1 — Verification Wall / Floor Samples
- Topsoil
- Fill Material
- Clayey Silt / Silty Clay
- Excavation
- Exceeds Table 2 Standard
- Meets Table 2 Standard

CLIENT: **Build Up Victoria Inc.**

PROJECT:

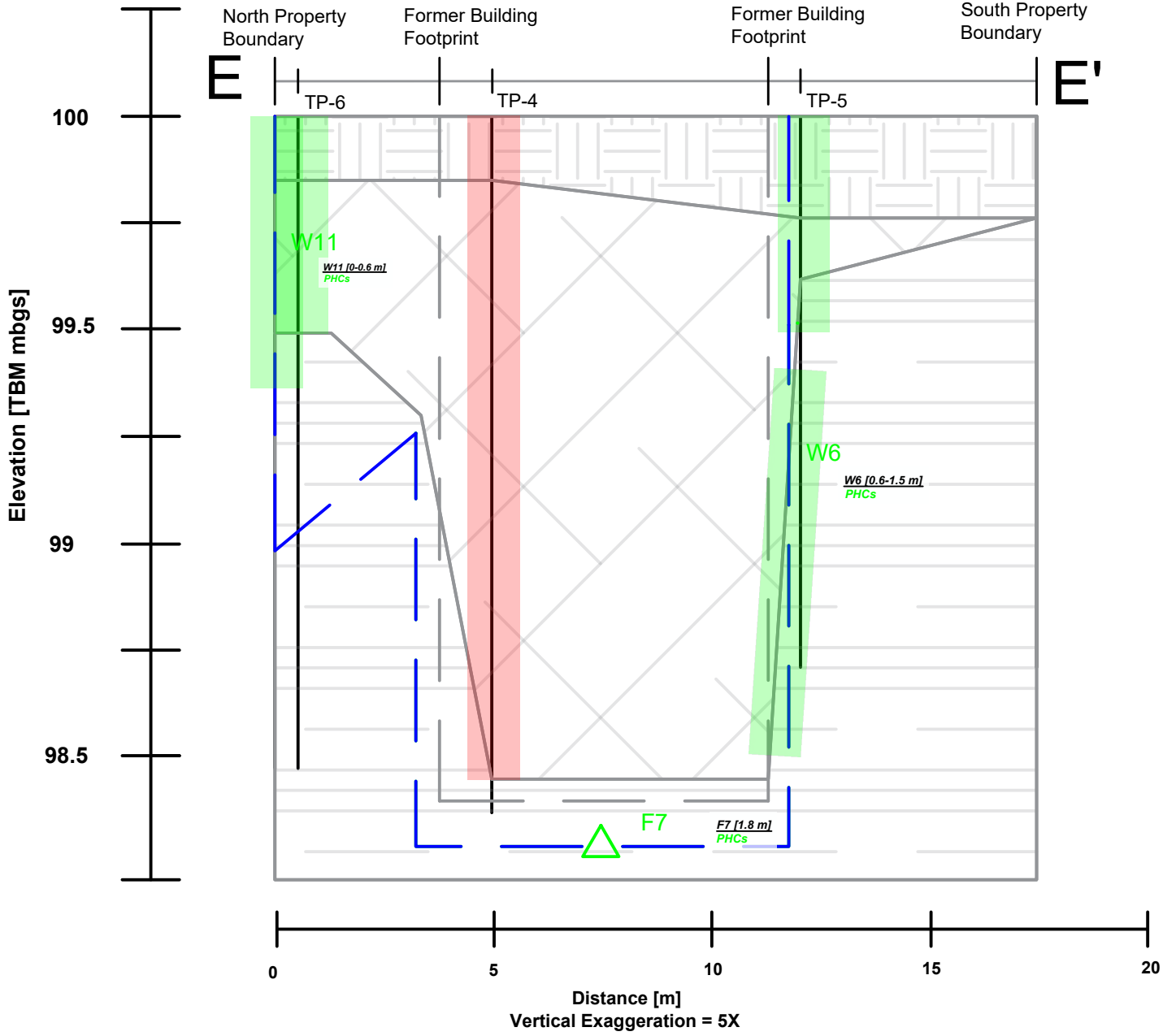
PHASE TWO CSM
4078 VICTORIA AVENUE,
NIAGARA FALLS, ONTARIO

TITLE:

CROSS SECTION D-D': PHCs

DRAWN BY:	DN
CHECKED BY:	JM
DATE:	October 2022
PROJECT NO:	NS2241-03
SCALE:	AS SHOWN
NO:	Figure 9G

NOTE: FOR ILLUSTRATION PURPOSES ONLY, ALL LOCATIONS APPROXIMATE.



LEGEND

- W1 / F1 — Verification Wall / Floor Samples
- Topsoil
- Fill Material
- Clayey Silt / Silty Clay
- Excavation
- Exceeds Table 2 Standard
- Meets Table 2 Standard

CLIENT: **Build Up Victoria Inc.**

PROJECT: **PHASE TWO CSM**
4078 VICTORIA AVENUE,
NIAGARA FALLS, ONTARIO

TITLE: **CROSS SECTION E-E': PHCs**

DRAWN BY: DN

CHECKED BY: JM

DATE: October 2022

PROJECT NO: NS2241-03

SCALE: AS SHOWN

NO: Figure 9H

NOTE: FOR ILLUSTRATION PURPOSES ONLY, ALL LOCATIONS APPROXIMATE.