



**PHASE II ENVIRONMENTAL SITE ASSESSMENT
Atlantic Superstore
Elmsdale, NS
(PIDs 45336690 and 45003050)**

March 9, 2016



Taking Charge™



March 9, 2016

Mr. Luc Lirette
Choice Properties Limited Partnership
165 Main Street
Moncton, NB E1C 1B3

Dear Mr. Lirette,

Re: Phase II Environmental Site Assessment
Atlantic Superstore, Elmsdale, NS (PIDs 45336690 and 45003050)


Attached is the Phase II Environmental Site Assessment prepared for Atlantic Superstore, Elmsdale, NS (PIDs 45336690 and 45003050).

This report documents our observations, findings, and recommendations.

We trust this report to be satisfactory at this time. Once you have had an opportunity to review this correspondence, please contact us to address any questions you may have.

Thank you,


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EXECUTIVE SUMMARY

Strum Consulting was commissioned by Choice Properties Limited Partnership to complete a Phase II Environmental Site Assessment (ESA) for a commercial site located in Elmsdale, Nova Scotia. The Phase II ESA was completed to screen for potential environmental contamination in soil, in conjunction with a geotechnical program being completed at the site. It is understood that the Phase II ESA is being completed for due diligence purposes in relation to future property development.

The site is located on the east side of Highway 214 in a mixed commercial and residential area of Elmsdale, NS. The investigation area consists of the eastern and northern portions of the developed Atlantic Superstore property at 295 Highway 214. The eastern and northern portions of the property, where the investigation was completed, are currently cleared and landscaped with grass.

The geotechnical investigation included the completion of 15 boreholes across the site; however, the results of the geotechnical investigation are provided under separate cover. As part of the Phase II ESA, select soil samples collected from the boreholes were submitted to an independent laboratory for analysis of available metals and polycyclic aromatic hydrocarbons (PAHs).

In addition to the 15 boreholes completed for geotechnical purposes, three boreholes with monitoring wells installed were completed in the vicinity of the Petro-Canada gas station located west (up-gradient) of the site to assess soil and groundwater for potential petroleum hydrocarbon [benzene, toluene, ethylbenzene, and xylenes (BTEX) and Modified Total Petroleum Hydrocarbons (TPH)] contamination.

Main Findings & Recommendation

Based on the results of the Phase II ESA, the following conclusions are presented:

- No free-phase petroleum hydrocarbon product or other visual/olfactory evidence of contamination was noted in site soils or groundwater during the Phase II ESA.
- Four soil samples collected from the boreholes reported non-detectable hydrocarbon concentrations that comply with applicable NS Environment (NSE) Tier I EQS criteria.
- Three groundwater samples collected from the monitoring wells installed down-gradient of the Petro-Canada gas station southwest of the site reported non-detectable hydrocarbon concentrations that comply with applicable NSE Tier I EQS criteria.

- All hydrocarbon concentrations reported in soil and groundwater complied with the Atlantic RBCA Ecological Screening Levels.
- Seven soil samples analyzed to screen for PAHs reported concentrations that comply with applicable NSE Tier I EQS criteria.
- Elevated iron concentrations exceeding applicable NSE Tier I EQS criteria were identified in all seven soil samples submitted for analysis. However, the reported iron concentrations at those locations can be attributed to natural background occurrences. No other elevated metals concentrations were reported.

Although it is expected that the elevated iron concentrations identified in soil can be attributed to natural background occurrences, the concentrations still represent a potential human health risk via dermal contact with or ingestion of exposed soils. It is expected that soils will be exposed and disturbed during future site development activities; as such, the following management protocols should be considered during site development work to mitigate human health risks:

- Workers should wear appropriate personal protective equipment (PPE) (long pants and shirts, gloves) to prevent exposure to impacted soils.
- Erosion and sediment controls and dust control measures should be employed to prevent sedimentation and to minimize generation of excessive dust.
- Monitoring the movement of the soil on the site should be completed. Further, soil testing should be completed to determine handling and disposal requirements in advance of removing soils from the site.
- Following site development work, exposed soils should be covered with a suitable cap (i.e. asphalt, landscaping, gravel, etc.) to prevent exposure for future site users. Capping/cover materials would need to remain in place indefinitely.

This Executive Summary provides a brief overview of the main findings and recommendations of the environmental site investigations. Complete details are provided in the report and the attached Appendices. The statements made in this Executive Summary are subject to the same limitations as described in Section 8.0.

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1.0 INTRODUCTION

Strum Consulting was retained by the Choice Properties Limited Partnership to conduct a Phase II Environmental Site Assessment (ESA) of a commercial property located at 295 Highway 214 in Elmsdale, NS. The property is currently developed and operated by the Atlantic Superstore, however; the investigation area located on the eastern and northern portions of the property is undeveloped and currently cleared and landscaped with grass.

The purpose of the Phase II ESA was to screen for potential environmental contamination in soil (and groundwater in the vicinity of the Petro-Canada gas station), in conjunction with a geotechnical program being completed at the site.

This report documents the Phase II intrusive investigation work completed by Strum in January and February 2016 and the associated analytical soil results.

2.0 BACKGROUND

2.1 Site Description

The subject site is located on the east side of Highway 214 in a mixed commercial and residential area of Elmsdale, NS. According to the Service Nova Scotia and Municipal Relations database, the site covers a total area of 31.2 acres (126,181 m²) and is made up of two separate lots designated by the PIDs 45336690 and 45003050. PID 45336690 is located on the eastern portion of the site, and makes up the bulk of the land area (28.9 acres), whereas PID 45003050 is located on the northern side of the site and consists of 2.3 acres. Land use at the site is designated as commercial and resource.

The Atlantic Superstore is located on the western portion of the property and includes a 4,645 m² commercial grocery store, a 975 m² liquor store, and associated parking lot. The property is surrounded by developed commercial and residential properties and/or roadways. The Nine Mile River is located on the northern property boundary of the site, followed by agricultural lands. It should be noted that a Petro-Canada gas station is located adjacent to the west side of the site. The eastern and northern portions of the site, where the investigation was completed, is currently cleared and landscaped with grass. It is understood that it is planned for multiple commercial buildings to be constructed on the eastern and northern portions of the site.

A Site Plan (Drawing 1) is provided in Appendix A.

Utilities

Power is provided to the Atlantic Superstore building via an underground power line located on the west side of the building extending from Highway 214. Municipal water and sanitary sewer services are provided to the Atlantic Superstore and Nova Scotia Liquor Commission (NSLC) building from a connection along Highway 214 to the southwest. The Atlantic Superstore parking lot includes a stormwater management system and also underground

power lines for light standards located in the parking lot. A Bell Aliant Fibre-Op communications line located on the east side of the parking lot extends to the Atlantic Superstore building. There is also Bell Aliant “pull-pit” located at the southeast corner of the parking lot to access underground communications lines.

Utilities on the undeveloped portions of the site include an underground stormwater pipe that extends from the parking lot stormwater management system to a stormwater pond on the east side of the site, an underground power supply that extends from the northeast side of the Atlantic Superstore building to the sign located on the eastern side of the site, and the Trans-Atlantic Bell Aliant Fibre-Op line located in the ditch parallel to Highway 102.

Municipal water and sanitary sewer services are provided to the Petro-Canada building from a connection along Highway 214 to the south. It should be noted that a fire hydrant located east of the Petro-Canada gas station is reportedly connected with plastic water lines, as such the location of the plastic water lines could not be located.

Power and communications as well as municipal water and sanitary sewer services are provided to the surrounding properties from utility pole connections along Highway 214 and Country Lane.

It is expected that future site buildings will be connected to the municipal sewer/water lines and power/communications connections.

Adjoining Property Land Use

Land use on the surrounding properties is designated as a mix of commercial, resource, and residential. Details on the adjoining property land use are provided in Table A, below.

Table A: Summary of Adjoining Property Land Use

Boundary Side of Site	Site Use
North, Cross-gradient	Resource – Nine Mile River followed by agricultural lands.
East, Down-gradient	Commercial – Highway 102 followed by commercial businesses. Resource – Highway 102 followed by an agricultural property.
South, Cross-gradient	Commercial – Highway 102.
West, Up-gradient	Commercial – Credit Union (bank) and an optometry and eyewear centre; Petro-Canada Gas Station; 214 followed by a used car sales business. Residential – Single family residential dwellings as well as Highway 214 followed by additional single family residential dwellings.

2.2 Previous Assessments

A Phase I ESA was completed in August 2010 for a portion of the property (PID 45336690) located on the eastern side of the site. The portion of the property that was assessed is located northeast of the Atlantic Superstore parking lot.

The Phase I ESA did not reveal any evidence of actual and potential contamination in connection with the property. There were no recommendations made for further assessment.

No other assessments were completed for the site by Strum.

2.3 Contaminants of Concern

The screening for petroleum hydrocarbons, metals, and polycyclic aromatic hydrocarbons (PAHs) in soil was completed as part of the Phase II ESA.

2.4 Conceptual Site Model & Referenced Standards

In order to select appropriate site criteria, a Conceptual Site Model (CSM) approach was used that addresses both human and ecological health along with assessing potential contaminant exposure pathways.

As noted previously, according to Service Nova Scotia and Municipal Relations Property Online database, the site has commercial and resource land usage. It is expected that the eastern and northern portions of the site will be developed with multiple commercial buildings in the future. Commercial criteria, protective of the current and expected future land use, has therefore been selected for evaluation purposes.

Based on field observations, grain-size analysis, and surficial geology in the area, the soil on the site can be classified as fine-grained for evaluation purposes.

There are no potable water wells on the site, and the majority of properties in the local area are supplied with potable water via municipal connections from the adjacent streets. However; based on the Nova Scotia Groundwater Atlas online mapping, the site is located within 150 m of a domestic or non-domestic water supply well. As such, the site is considered to have potable groundwater usage for evaluation purposes.

Based on our understanding of future site development plans, local geology, land use classification, groundwater usage, and contaminants of concern, the potentially-operable human health risk pathways considered at the site include direct contact (soil ingestion and soil dermal contact absorption), and particulate/vapour inhalation (vapour migration from soil and/or groundwater).

Based on our understanding of the ecological setting in the local area, the potentially-operable ecological risk pathways could include direct contact with shallow soil/groundwater on the site (plants/invertebrates), ingestion of soil and/or food (wildlife/livestock), and

groundwater discharging to surface water. A complete Atlantic Risk Based Corrective Action (RBCA) Ecological Screening Assessment has been conducted and is detailed in Section 5.5.

Based on the CSM results, the selected reference standards and criteria used to evaluate the analytical test results are outlined in Table B.

Table B: Summary of Referenced Standards & Guidelines

Contaminant of Concern	Media		Reference Guidelines
	Soil	Water	
Petroleum Hydrocarbons	X	X	<ul style="list-style-type: none"> NSE Tier I Environmental Quality Standards (July 2013) Atlantic RBCA – Ecological Screening Protocol (Version 3.0, July 2012 with January 2015 Update)
Metals	X	-	<ul style="list-style-type: none"> NSE Tier I Environmental Quality Standards (July 2013)
PAHs	X	-	<ul style="list-style-type: none"> NSE Tier I Environmental Quality Standards (July 2013)

Notes:

1. NSE = Nova Scotia Environment
2. RBCA = Risk Based Corrective Action
3. PAHs = Polycyclic Aromatic Hydrocarbons

In order to confirm compliance with Atlantic RBCA Tier I criteria, the Site Assessment Tier I/II Table Checklist was completed and is included as Appendix B. No significant deviations from the minimum Tier I/II requirements were noted during completion of the checklist.

3.0 SCOPE AND OBJECTIVES

The scope of the Phase II ESA included the following:

- Drilling of 15 boreholes at strategic locations across the site for a geotechnical investigation (the results of which are reported under separate cover) and to inspect subsurface conditions and collect representative soil samples for environmental screening purposes.
- Drilling of three boreholes at strategic locations in the vicinity of the existing Petro-Canada gas station located southwest (up-gradient) of the site.

- Following borehole drilling in the vicinity of the gas station, installation of three monitoring wells in the above-noted boreholes to collect groundwater observations and collect representative groundwater samples.
- Submission of select soil and groundwater samples to Maxxam Analytics Inc., in Bedford, NS, for analysis of:
 - Petroleum hydrocarbons [modified Total Petroleum Hydrocarbons (TPH), benzene, toluene, ethylbenzene, and xylenes (BTEX)] in soil and groundwater.
 - Available metals in soil.
 - PAHs in soil.

The objective of the Phase II ESA was to screen soil and groundwater for potential contamination.

4.0 INVESTIGATION ACTIVITIES

Site investigation activities are described in the following sections. Additional details of the field investigation methodologies are provided in Appendix C.

4.1 Borehole Drilling

A total of 18 boreholes were drilled at the site between January 21 and February 3, 2016 using a geotechnical drill rig supplied and operated by Logan Drilling Group of Stewiacke, NS. Fifteen of the boreholes (identified as BH1-BH13, BH17, and BH18) were completed for the purposes of a geotechnical investigation for the site. Three of the boreholes (identified as BH14, BH15, and BH16) were completed in order to evaluate soil and groundwater conditions in the vicinity of the Petro-Canada gas station located southwest of the site.

Groundwater monitoring wells were installed in three boreholes (BH14, BH15, and BH16) completed in the vicinity of the Petro-Canada gas station and were identified as MW14, MW15, and MW16 (the monitoring well IDs correspond with the borehole IDs in which they were installed).

The borehole/monitoring well locations are shown on Drawing 2 (Appendix A). Borehole Logs are provided in Appendix D, and a summary of the borehole details is provided in Table C, below. Site photographs taken during the drilling program are provided in Appendix E. The results of the geotechnical investigation completed for the site are provided under separate cover.

Table C: Borehole/Monitoring Well Investigation Summary

ID	Total Depth ¹ (m)	Depth to Groundwater ² (m)	Evidence of Hydrocarbon Contamination	Notes	No. of Soil Samples Analyzed
BH1	9.7	-	No	No visual or olfactory evidence of contamination.	1
BH2	9.1	-	No	No visual or olfactory evidence of contamination.	-
BH3	6.7	-	No	No visual or olfactory evidence of contamination.	1
BH4	6.0	-	No	No visual or olfactory evidence of contamination.	-
BH5	6.0	-	No	No visual or olfactory evidence of contamination.	-
BH6	6.0	-	No	No visual or olfactory evidence of contamination.	-
BH7	6.0	-	No	No visual or olfactory evidence of contamination.	-
BH8	6.0	-	No	No visual or olfactory evidence of contamination.	-
BH9	6.0	-	No	No visual or olfactory evidence of contamination.	1
BH10	6.7	-	No	No visual or olfactory evidence of contamination.	1
BH11	6.7	-	No	No visual or olfactory evidence of contamination.	1
BH12	6.7	-	No	No visual or olfactory evidence of contamination.	1
BH13	6.7	-	No	No visual or olfactory evidence of contamination.	1
BH14	4.5	2.54	No	No visual or olfactory evidence of contamination. Monitoring well installed.	2
BH15	6.3	0.68	No	No visual or olfactory evidence of contamination. Monitoring well installed.	1
BH16	6.3	3.06	No	No visual or olfactory evidence of contamination. Monitoring well installed.	1
BH17	6.7	-	No	No visual or olfactory evidence of contamination.	-

ID	Total Depth ¹ (m)	Depth to Groundwater ² (m)	Evidence of Hydrocarbon Contamination	Notes	No. of Soil Samples Analyzed
BH18	6.7	-	No	No visual or olfactory evidence of contamination.	-

Notes:

1. Total depth is measured in metres below surface grade.
2. Depth to groundwater shown in metres below grade, measured on February 10, 2016.

4.2 Soil Sample Screening & Testing

All soil samples were screened for the presence of volatile organic compounds (VOCs) by olfactory review and by measuring sample headspace concentrations (see Screening Methodology, Appendix C).

Based on the headspace screening results and visual/olfactory observations, representative samples were selected and submitted to Maxxam Analytics Inc. in Bedford, NS for analysis.

5.0 INVESTIGATION RESULTS

The results of the Strum Phase II ESA are outlined in the following sections. Soil and groundwater analytical results are summarized in Tables 1-4 (Appendix F), and copies of the laboratory analytical reports are included in Appendix G.

5.1 Site Conditions

5.1.1 Site Geology

Site soils encountered in the boreholes were observed to generally consist of a 0.05 m layer of topsoil with grass cover and root matter followed by sandy silty clay with trace to some gravel. Groundwater seepage was encountered in most of the boreholes during drilling at a depth of approximately 1.7 to 2.7 m below surface grade.

Bedrock was not encountered during the investigation. Keppie (2000) has mapped the bedrock in the area of the site as the Early Carboniferous age rocks designated as the Lower and Middle Windsor Groups. These units are comprised of gypsum, anhydrite, salt, minor siltstone, and marine limestone and dolostone.

No free product or visual/olfactory evidence of contamination was observed in soil in any of the boreholes (BH1-BH18) during drilling.

To confirm whether site soils would be classified as coarse-grained or fine-grained for assessment criteria comparison purposes, three soil samples (BH4-S4, BH9-S2, and BH11-S5) were submitted to EnGlobe of Dartmouth, NS for analysis of grain-size. All three samples reported greater than 50% of the soil (by weight) passing the 0.08 mm sieve, indicating that all three samples are classified as fine-grained soil. As the majority of encountered soils on the site are of similar composition, site soils are classified as fine-

grained for environmental assessment purposes. Laboratory reports of the grain-size analysis are included in Appendix G.

Further details on the subsurface conditions observed in the boreholes are provided in the attached Borehole Logs (Appendix D). A Geotechnical Investigation for the site has also been completed, and is reported under separate cover.

5.1.2 Hydrogeology

Static water level measurements were collected from the monitoring wells on February 4 and 10, 2016. No evidence of hydrocarbon contamination in groundwater was observed in the monitoring wells during assessment activities. Refer to Appendix H for water statics measurements.

Based on the February 10, 2016 statics, the depth of water ranged from 0.68 m in MW15 to a maximum depth 3.06 m below grade in MW16. The depth of water in MW15 was measured to be significantly shallower than the depth to water in the other two monitoring wells; therefore, it is assumed that it is not representative of the natural groundwater elevation. As such, contoured groundwater elevations and the hydraulic gradient could not be accurately calculated. Based on site topography, groundwater is inferred to flow to the east-northeast (Drawing 3, Appendix A).

Hydraulic conductivity of the overburden was evaluated in MW14 on February 4, 2016 by completing a drawdown test and evaluating the data using the Hvorslev method. The resultant hydraulic conductivity was calculated to be 5.8×10^{-6} cm/sec.

5.2 Soil Analytical Results

Soil analytical results are detailed in the following sections and are presented in tabular form in Appendix F. Copies of the laboratory reports are attached as Appendix G.

5.2.1 Petroleum Hydrocarbons

Four soil samples collected from the boreholes were submitted for laboratory analysis of hydrocarbons. These samples included BH14-S3, BH14-S4, BH15-S3, and BH16-S3. All results are summarized on Table 1 (Appendix F), and are compared to the NSE Tier I Environmental Quality Standards (EQS) for a commercial site with potable groundwater usage and fine-grained soils.

As shown on Table 1, all borehole soil sample results reported non-detectable (i.e. below laboratory detection limits) petroleum hydrocarbon concentrations that comply with the applicable guideline criteria.

5.2.2 Metals

Seven soil samples collected from the boreholes were submitted for laboratory analysis of available metals. These samples included BH1-S3, BH3-S3, BH9-S4, BH10-S3, BH11-S4,

BH12-S4, and BH13-S4. All results are summarized on Table 2 (Appendix F), and are compared to the NSE Tier I EQS for a commercial site.

As shown on Table 2, elevated iron concentrations were reported in all seven soil samples, with concentrations ranging from 19,000 to 24,000 mg/kg as compared to the applicable guideline criteria limit of 11,000 mg/kg. All other available metals concentrations reported comply with the applicable guideline criteria.

Further discussion of the reported metals concentrations and exceedences is provided in Section 6.0

5.2.3 Polycyclic Aromatic Hydrocarbons (PAHs)

A total of seven soil samples collected from the boreholes were submitted for laboratory analysis of PAHs. These samples included BH1-S3, BH3-S3, BH9-S4, BH10-S3, BH11-S4, BH12-S4, and BH13-S4. All results are summarized on Table 3 (Appendix F), and are compared to the NSE Tier I EQS for a commercial site.

As shown on Table 3, all seven samples reported non-detectable to detectable PAH concentrations that comply with the applicable guideline criteria.

5.3 Groundwater Analytical Results

Groundwater analytical results are detailed in the following sections and are presented in tabular form in Appendix F. Copies of the laboratory reports for the recent test results are attached as Appendix G.

5.3.1 Petroleum Hydrocarbons

Groundwater samples were collected from all three monitoring wells on February 10, 2016, along with a field duplicate sample (FD1) from MW16, for analysis of petroleum hydrocarbons. All results are presented on Table 4 (Appendix F) and are compared with NSE Tier I EQS criteria for a commercial potable site with fine grained soils.

As shown on Table 4, all groundwater samples reported non-detectable to detectable petroleum hydrocarbon concentrations that comply with the applicable guideline criteria.

5.4 Quality Assurance/Quality Control (QA/QC)

Several laboratory duplicate analyses were completed by Maxxam on soil and groundwater samples being analyzed for petroleum hydrocarbons and PAHs. As shown in Tables 3 and 4 (Appendix F), all laboratory duplicate results were reported to be generally consistent with the results of the original samples.

Additionally, Strum submitted one field duplicate groundwater sample (FD1) to Maxxam for analysis of hydrocarbons. FD1 was a field duplicate of groundwater sample MW16. As shown on Table 4, the results of the field duplicate sample were consistent with those of the original sample.

5.5 Ecological Receptor Screening

In accordance with Atlantic RBCA requirements, the site has been evaluated to determine if petroleum hydrocarbon concentrations at the site present a potential concern to ecological receptors, and if potentially sensitive ecological habitat and/or receptors exist on or within 200 m of the site. The results of the ecological receptor screening are discussed below and presented in the summary table in Appendix I.

The screening protocol includes comparing hydrocarbon data for shallow soil samples (i.e. < 1.5 m depth) and groundwater data to screening criteria limits applicable to the site land-use and soil type, as well as identifying potential ecological receptors and if any potential contaminant pathways to ecological receptors are present.

All hydrocarbon data reported in soil (Table 1, Appendix F) were compared to the Ecological Screening Levels protective of plants and soil invertebrates in direct contact with shallow soil on a commercial site (Atlantic RBCA Version 3, Appendix 2 – Table 1a), and protective of wildlife and livestock via soil and food ingestion (Atlantic RBCA Version 3, Appendix 2 – Table 1b). All groundwater hydrocarbon data (Table 4, Appendix F) were compared to the Ecological Screening Levels protective of plants and soil invertebrates in direct contact with shallow groundwater on a commercial site (Atlantic RBCA Version 3, Appendix 2 – Table 2), and protective of freshwater and marine aquatic life via groundwater discharge to surface water (Atlantic RBCA Version 3, Appendix 2 – Table 3a).

All hydrocarbon data reported in soil and groundwater as part of the Phase II ESA complied with the above-noted Ecological Screening Levels. As such, the reported hydrocarbon concentrations in shallow soil and groundwater are not expected to represent an ecological concern, and further identification of nearby ecological receptors and potential exposure pathways is not required for the purposes of the Phase II ESA.

6.0 DISCUSSION

6.1 Summary of Investigation Results

In summary, the Phase II ESA investigation results did not identify the presence of petroleum hydrocarbon or PAH contamination in site soils. However, elevated metals concentrations were identified in site soils.

6.2 Elevated Metals in Soils

Analytical soil results have identified elevated iron concentrations in site soils. However, no evidence of significant debris in site soils or an on-site point source was identified. As such, it is expected that the elevated iron concentrations can be attributed to natural background occurrences and as a result the site would not be classified as a “contaminated site”. Therefore, it is not expected that further delineation of metals is warranted.

It should be noted that although the elevated iron concentrations can be attributed to natural background occurrences, the fact that the concentrations exceed applicable NSE Tier I EQS

criteria still indicates that site soils could pose potential health risks to commercial human receptors on the subject site including direct dermal contact and ingestion/dust inhalation when soils are exposed (i.e. during site development/construction work). It is recommended that appropriate management protocols be put in place and followed during site development work to ensure soil exposures are minimized.

7.0 CONCLUSIONS & RECOMMENDATIONS

A Phase II ESA was completed at the Atlantic Superstore property located in Elmsdale, NS to screen for potential environmental contamination in soil and groundwater, in conjunction with a geotechnical program being completed at the site. The geotechnical investigation included the completion of 15 boreholes across the site; however, the results of the geotechnical investigation are provided under separate cover. Select soil samples collected from the boreholes were submitted to an independent laboratory for analysis of metals and PAHs.

In addition to the 15 boreholes completed for geotechnical purposes, three boreholes with monitoring wells installed were completed in the vicinity of the Petro-Canada gas station located west (up-gradient) of the site to assess soil and groundwater for potential petroleum hydrocarbon contamination.

Based on the results of the Phase II ESA, the following conclusions are presented:

- No free-phase petroleum hydrocarbon product or other visual/olfactory evidence of contamination was noted in site soils or groundwater during the Phase II ESA.
- Four soil samples collected from the boreholes reported non-detectable hydrocarbon concentrations that comply with applicable NSE Tier I EQS criteria.
- Three groundwater samples collected from the monitoring wells installed down-gradient of the Petro-Canada gas station southwest of the site reported non-detectable hydrocarbon concentrations that comply with applicable NSE Tier I EQS criteria.
- All hydrocarbon concentrations reported in soil and groundwater complied with the Atlantic RBCA Ecological Screening Levels.
- Seven soil samples analyzed to screen for PAHs reported concentrations that comply with applicable NSE Tier I EQS criteria.
- Elevated iron concentrations exceeding applicable NSE Tier I EQS criteria were identified in all seven soil samples submitted for analysis. However, the reported iron concentrations at those locations can be attributed to natural background occurrences. No other elevated metals concentrations were reported.

Although it is expected that the elevated iron concentrations identified in soil can be attributed to natural background occurrences, the concentrations still represent a potential human health risk via dermal contact with or ingestion of exposed soils. It is expected that soils will be exposed and disturbed during future site development activities; as such, the

following management protocols should be considered during site development work to mitigate human health risks:

- Workers should wear appropriate PPE (long pants and shirts, gloves) to prevent exposure to impacted soils.
- Erosion and sediment controls and dust control measures should be employed to prevent sedimentation and to minimize generation of excessive dust.
- Monitoring the movement of the soil on the site should be completed. Further, soil testing should be completed to determine handling and disposal requirements in advance of removing soils from the site.
- Following site development work, exposed soils should be covered with a suitable cap (i.e. asphalt, landscaping, gravel, etc.) to prevent exposure for future site users. Capping/cover materials would need to remain in place indefinitely.

8.0 STATEMENT OF QUALIFICATIONS AND LIMITATIONS

This Report (the “Report”) has been prepared by Strum Consulting (“Consultant”) for the benefit of Choice Properties Limited Partnership (“Client”) in accordance with the agreement between Consultant and Client, including the scope of work detailed therein (the “Agreement”).

The information, data, recommendations, and conclusions contained in the Report (collectively, the “Information”):

- is subject to the scope, schedule, and other constraints and limitations in the Agreement and the qualifications contained in the Report (the “Limitations”)
- represents Consultant’s professional judgement in light of the Limitations and industry standards for the preparation of similar reports
- may be based on information provided to Consultant which has not been independently verified
- has not been updated since the date of issuance of the Report and its accuracy is limited to the time period and circumstances in which it was collected, processed, made or issued
- must be read as a whole and sections thereof should not be read out of such context
- was prepared for the specific purposes described in the Report and the Agreement
- in the case of subsurface, environmental, or geotechnical conditions, may be based on limited testing and on the assumption that such conditions are uniform and not variable either geographically or over time

Consultant shall be entitled to rely upon the accuracy and completeness of information that was provided and has no obligation to update such information. Consultant accepts no responsibility for any events or circumstances that may have occurred since the date on which the Report was prepared and, in the case of subsurface, environmental, or geotechnical conditions, is not responsible for any variability in such conditions, geographically or over time.

Consultant agrees that the Report represents its professional judgement as described above and that the Information has been prepared for the specific purpose and use described in the Report and the Agreement, but Consultant makes no other representations, or any guarantees or warranties whatsoever, whether express or implied, with respect to the Report, the Information or any part thereof.

The Report is to be treated as confidential and may not be used or relied upon by third parties, except:

- as agreed in writing by Consultant and Client
- as required by law

- for use by governmental reviewing agencies

Consultant accepts no responsibility, and denies any liability whatsoever, to parties other than Client who may obtain access to the Report or the Information for any injury, loss, or damage suffered by such parties arising from their use of, reliance upon, or decisions or actions based on the Report or any of the Information ("improper use of the Report"), except to the extent those parties have obtained the prior written consent of Consultant to use and rely upon the Report and the Information. Any damages arising from improper use of the Report or parts thereof shall be borne by the party making such use.

This Statement of Qualifications and Limitations forms part of the Report and any use of the Report is subject to the terms hereof.

Should additional information become available, Strum requests that this information be brought to our attention immediately so that we can re-assess the conclusions presented in this report. This report was prepared by James Foley, MIT, Environmental Coordinator, and was reviewed by Lee Hynes, P.Eng., Environmental Engineer.

9.0 REFERENCES

Atlantic Risk Based Corrective Action (RBCA), 2012. User Guidance – Version 3.0. Updated August 2012.

Canadian Standards Association (CSA) Standard Z769-00 for conducting Phase II Environmental Site Assessments. July 2002 (reaffirmed 2013).

Keppie, J.D. 2000. DP ME 43, Version 2, 2006, Digital Version of Nova Scotia Department of Natural Resources Map ME 2000-1, Geological Map of the Province of Nova Scotia, scale 1:500,000. Digital product compiled by B.E. Fisher. (Formerly DP ME D00-01).

Nova Scotia Environment, July 6, 2013. Contaminated Sites Regulations & Protocols.

Phase I Environmental Site Assessment, Portion of PID 45336690, Elmsdale, NS. Strum Environmental. August 2010.

Phase I Environmental Site Assessment – Addendum, Portion of PID 45336690, Elmsdale, NS. Strum Environmental. September 2010.

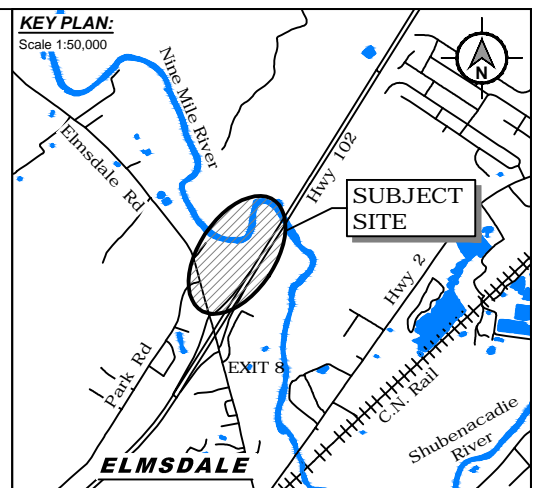
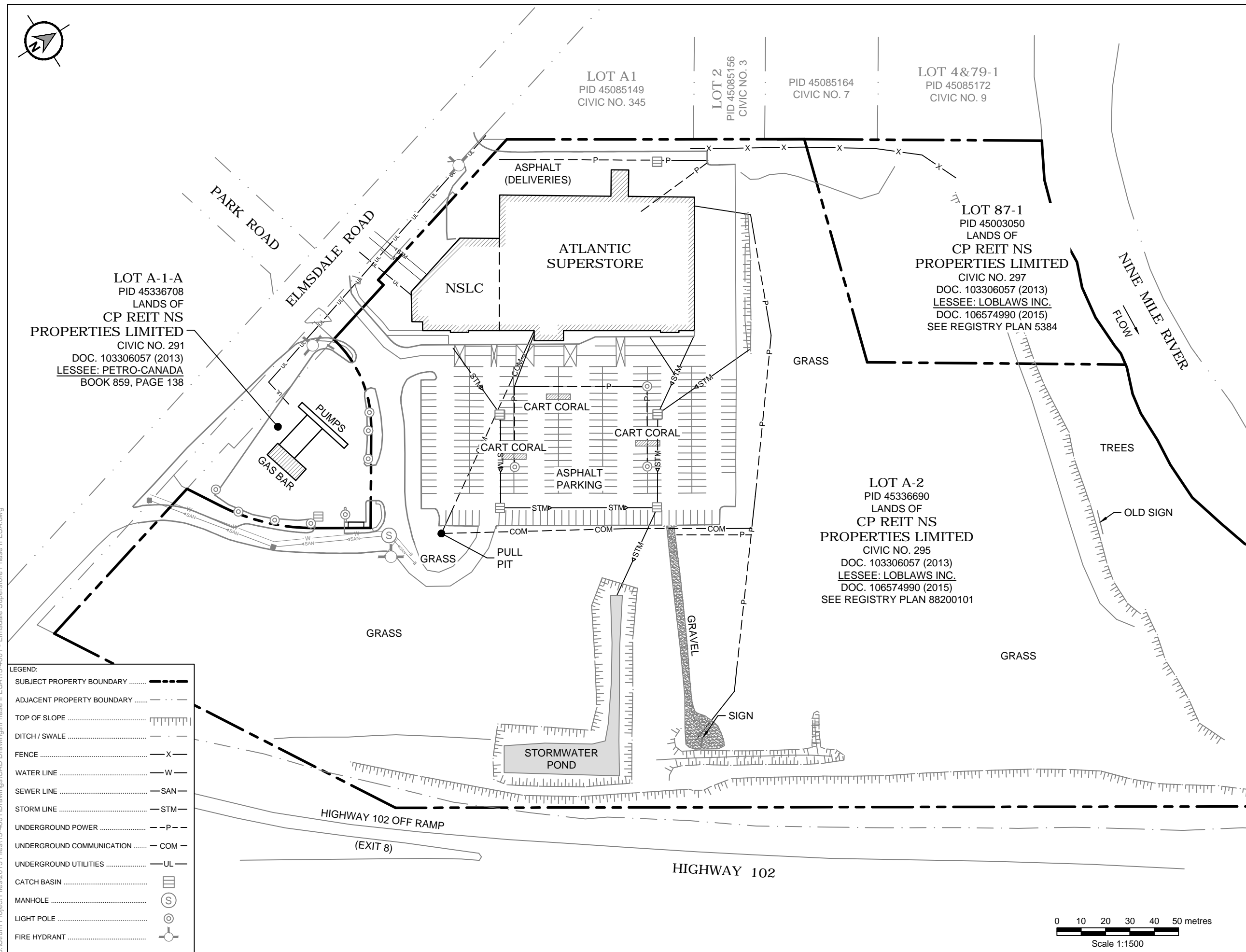
Website References

Nova Scotia Groundwater Atlas
<https://fletcher.novascotia.ca/DNRViewer/?viewer=Groundwater>

Service Nova Scotia and Municipal Relations Property Online Database
www.novascotia.ca/sns/access/land/property-online.asp

APPENDIX A

SITE DIAGRAMS



GENERAL NOTES:

1. THIS DRAWING IS BASED ON FIELD SURVEYS CARRIED OUT BY STRUM CONSULTING IN JAN. 2016.
2. PROJECTION: ATS77, NS MTM ZONE 5.
3. SITE FEATURES AND UTILITIES ARE APPROXIMATE.

CLIENT:

CHOICE PROPERTIES
LIMITED PARTNERSHIP

PROJECT:

PHASE II ENVIRONMENTAL
SITE ASSESSMENT

LOCATION:

ATLANTIC SUPRERSTORE
295 HIGHWAY 214
ELMSDALE, NOVA SCOTIA

TITLE:

SITE PLAN

CONSULTANT:

The logo for Strum Consulting features the word "Strum" in a large, green, stylized font with a red outline. Above the "u" is a small red and white striped flag. To the right of "Strum" is a large red circle containing the number "20" in green, with "YEARS" in red below it. Below the circle is the phrase "Talking Change" in red. Underneath "Strum" is the word "CONSULTING" in a small, green, sans-serif font.

Engineering * Surveying * Environmental
Bedford * Antigonish * Moncton * Deer Lake

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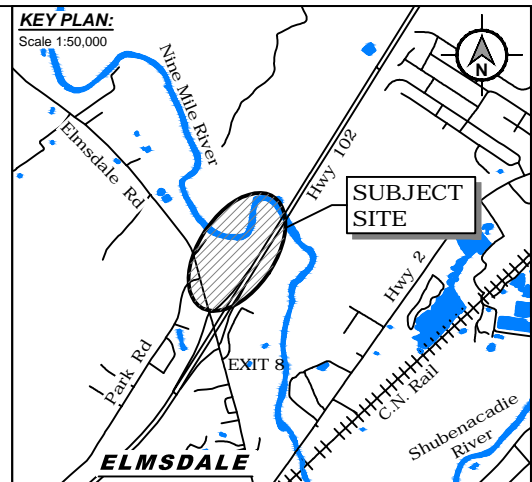
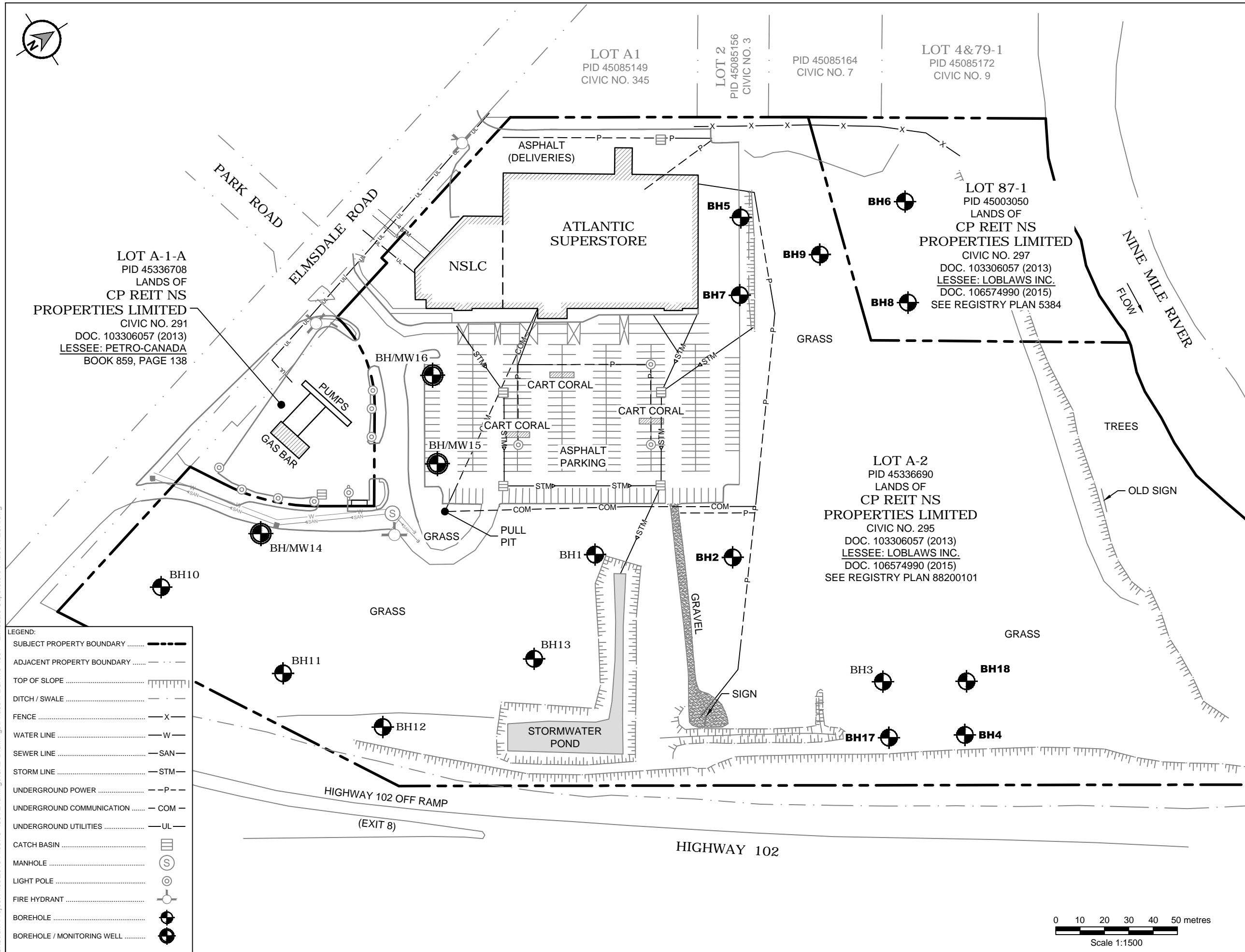
DATE: FEBRUARY 2016	DRAWN: H. SERHAN
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DESIGNED:	CHECKED: C. STRONG	APPR'D: J. FOLEY
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PROJECT No.:	13-4801
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DRAWING No.: **1**

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- GENERAL NOTES:
1. THIS DRAWING IS BASED ON FIELD SURVEYS CARRIED OUT BY STRUM CONSULTING IN JAN. 2016.
 2. PROJECTION: ATS77, NS MTM ZONE 5.
 3. SITE FEATURES AND UTILITIES ARE APPROXIMATE.

CLIENT:

CHOICE PROPERTIES LIMITED PARTNERSHIP

PROJECT:

PHASE II ENVIRONMENTAL SITE ASSESSMENT

LOCATION:

ATLANTIC SUPRERSTORE
295 HIGHWAY 214
ELMSDALE, NOVA SCOTIA

TITLE:

INVESTIGATION LOCATIONS

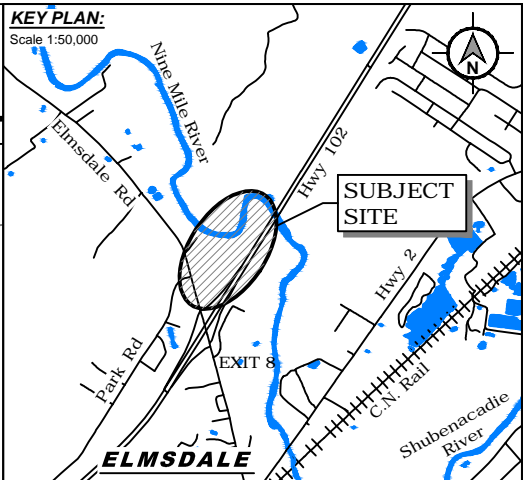
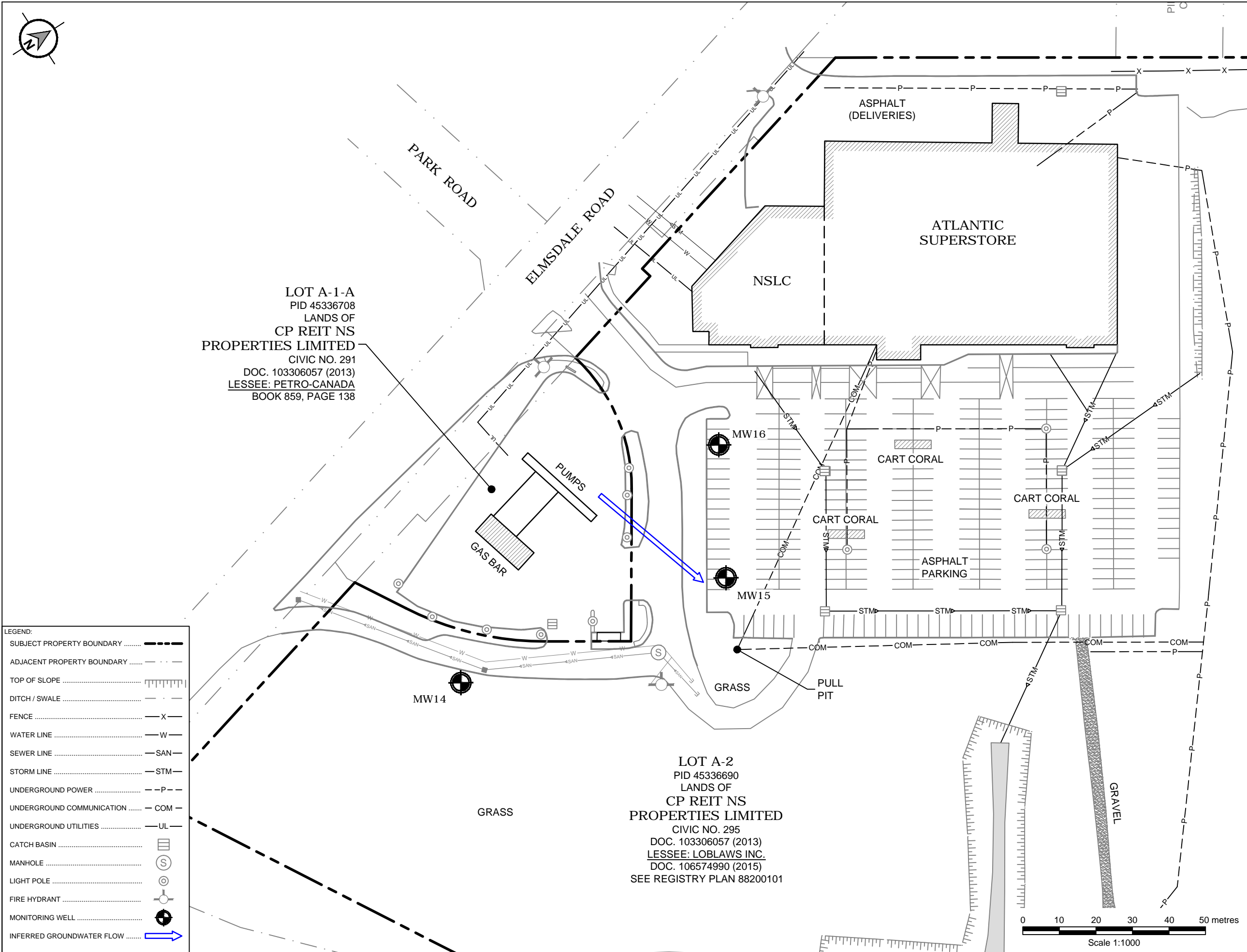
CONSULTANT:

Strum CONSULTING



SCALE:		V:	
H: 1:1500			
DATE:	FEBRUARY 2016		DRAWN: H. SERHAN
DESIGNED:	CHECKED: C. STRONG	APPR'D: J. FOLEY	
PROJECT No.:		13-4801	
DRAWING No.:		2	

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- GENERAL NOTES:**
1. THIS DRAWING IS BASED ON FIELD SURVEYS CARRIED OUT BY STRUM CONSULTING IN JAN. 2016.
 2. PROJECTION: ATS77, NS MTM ZONE 5.
 3. SITE FEATURES AND UTILITIES ARE APPROXIMATE.
 4. GROUNDWATER FLOW IS APPROXIMATE AND BASED ON SURFACE SURVEY DATA AND FIELD OBSERVATIONS.

CLIENT:
CHOICE PROPERTIES LIMITED PARTNERSHIP

PROJECT:
LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT

LOCATION:
**ATLANTIC SUPRERSTORE
295 HIGHWAY 214
ELMSDALE, NOVA SCOTIA**

TITLE:
GROUNDWATER FLOW DIRECTION

CONSULTANT:

Engineering * Surveying * Environmental
Bedford * Antigonish * Moncton * Deer Lake

SCALE: H: 1:1000		V:
DATE: FEBRUARY 2016	DRAWN: H. SERHAN	
DESIGNED:	CHECKED: C. STRONG	APPR'D: J. FOLEY
PROJECT No.: 13-4801		
DRAWING No.: 3		

APPENDIX B
SITE ASSESSMENT & TIER I/II TABLE CHECKLIST

SITE ASSESSMENT & TIER I/II TABLE CHECKLIST

		Method Used	
Site Location:	Elmsdale, NS (PIDs 45336690 & 45003050)	Tier I RBSL	<input checked="" type="checkbox"/>
Site Professional:	Lee Hynes	Tier II PSSL	<input type="checkbox"/>
Date:	February 2016	Tier II SSTL	<input type="checkbox"/>
Minimum Site Assessment Requirements		Other	<input type="checkbox"/>
Issue		Yes or No*	Comment
PID, owner, location identified		Yes	
Current and anticipated future land use identified		Yes	
Review of underground services as conduits		Yes	
Historical review completed		Yes	
Local groundwater use identified		Yes	
Adjacent land uses and receptors identified		Yes	
Ecological screening completed		Yes	
Soil and groundwater samples from all source areas obtained		Yes	
Soil and groundwater impacts delineated to Tier I RBSLs for potential receptor (adjacent property receptor may be lower Tier I RBSLs)		Yes	No soil impacts identified
Groundwater flow direction and gradient established		Yes	
Combination of surface and sub-surface soil samples analysed		Yes	
Free product observations made in soil and groundwater		No	No FP observed
Low lab detection level for benzene in soil if potable water area		Yes	
Grain size and organic carbon analysis completed on soil		No	Tier II SSTL not calculated
TPH fractionation done on soil and water if calculating Tier II SSTL		No	Tier II SSTL not calculated
Scaled site plan showing all relevant site features		Yes	
Receptor building characteristics obtained (storeys, floor condition, ceiling height, etc)		Yes	
Mandatory Conditions			
Issue		Yes or No*	Comment
Non-aqueous phase liquids not present in groundwater		Yes	None observed
Potable water free of objectionable taste and odour		Yes	Municipal water
Soils do not contain liquid and/or free petroleum product		Yes	None observed
Residual hydrocarbons do not create objectionable odours or explosive conditions in indoor or outdoor air		Yes	
Surface soils are not stained		Yes	
No dirt basement floors, sumps with dirt bottoms, etc.		Yes	
Confirmed that correct TPH type selected in RBSL or PSSL Table		Yes	
Confirmed that correct soil type selected in RBSL or PSSL Table		Yes	
Default Site Characteristics and Exposure Scenarios			
Issue		Yes or No*	Comment
Depth to groundwater approximately 3.0 metres		Yes	
Impacted soil thickness is less than 3.0 metres		Yes	No impacts identified
Default foundation crack fraction is appropriate		Yes	
Default foundation thickness is appropriate		Yes	
Two floors exist if using a residential scenario		No	Not residential
Hydrocarbon impacts above RBSL or PSSL Table soil values are not within 0.3 m of foundation walls or floor slab		Yes	No impacts identified
Confirmed that RBSL or PSSL Table values is correct for adjacent property receptors (i.e. use residential at property line if adjacent property is residential)		Yes	
Where exposure pathways have been eliminated at Tier II, detailed explanation provided in report explain why pathways are not relevant		Yes	No pathways eliminated
Where PSSLs tables are used based on elimination or control of a pathway that could be reopened by changes in site use, this condition is specified as a limitation in the report		No	PSSLs not used
Where Tier II SSTLs have been calculated by changing default values, the report includes the parameter changed, the default value, the site-specific value used, and the rationale and/or detailed written justification		No	Tier II SSTLs not used

* If No, indicate in comment section if and where in report the issue is addressed.
Consult the Best Management Practices (Appendix 2) for additional details.

APPENDIX C

FIELD INVESTIGATION METHODOLOGY

C-1 Utility Clearance

Prior to conducting the Phase II Environmental Site Assessment (ESA) field investigation at the site, subsurface, and overhead utilities were reviewed in accordance with Strum's occupational health and safety program, and to determine if preferential pathways are present on the site.

The on-site utilities were located by Cornell Video Inspection and Pipe Lining Services of Middle Sackville, NS. A review was conducted in consultation with Nova Scotia Power, Bell Aliant, Heritage Gas, and Maritimes and Northeast Pipeline.

C-2 Borehole Drilling

Logan Drilling Group of Stewiacke, NS drilled a total of 18 boreholes (BH1-BH18) on the site between January 21 and February 3, 2016, using truck-mounted and track-mounted geotechnical drill rigs. The boreholes were drilled with solid stem augers. Representative soil samples were collected using split-spoon samplers on a continuous basis (where possible), in accordance with industry-standard protocols.

Subsurface conditions were logged in detail and representative soil samples were collected by a Strum field technician during drilling. Drilling equipment (e.g. split spoons) were decontaminated prior to collection of each sample, and all samples were collected while wearing dedicated nitrile gloves.

Monitoring Well Installation

Upon completion of the drilling, 50 mm diameter Schedule 40 PVC monitoring wells were installed in three boreholes (BH14, BH15, and BH16) and identified as MW14-MW16 (the monitoring well IDs correspond with the borehole IDs in which they were installed). All monitoring wells consisted of a 0.05 m well point installed at the base of the borehole, followed by a 5.7 m section of slotted well screen, followed by a length of solid pipe that extends to or above the surface. The solid pipe was sealed with a fitted plug/cap. A bentonite plug was installed in each monitoring well above the screened interval to prevent surface water from entering each well. A steel flush-mount well cover or an aboveground cover was installed at the surface of the monitoring wells to protect the wellhead.

Monitoring Well Development

Each well was developed by purging a minimum of five casing volumes (or to dryness) using a submersible pump to develop the filter pack around the well screen, and to minimize the amount of sediment in water samples subsequently collected from the wells.

Monitoring Well Decommissioning

Upon completion of the required monitoring and approval from Nova Scotia Environment (NSE), the monitoring wells will be decommissioned. The protective cover and any equipment including tubing and other obstructions will be removed from the well. Each well will be cut to at least 0.3 m below grade prior to grouting. The monitoring well will then be filled entirely with bentonite by slow placement. This process will prevent vertical movement of water throughout the well and will prevent surface run-off from contaminating the aquifer.

Appendix C – Investigation Methodology

The surface at the location of the former monitoring wells will be covered with appropriate topsoil, paving, or gravel, and mounded to eliminate surface water ponding.

C-3 Elevation Survey & Groundwater Level Measurement

Surveying was conducted by Strum Consulting in January 2016 and is geodetically referenced to Nova Scotia Co-ordinate Monument (NSCM) #223656, ATS 77, Zone 5. In addition, ground surface (grade point) elevations and well casing (or “Measured Point”) elevations were measured at each monitoring well location by Strum on February 10, 2016. All elevations were surveyed relative to a temporary bench mark set on the concrete base of the light standard located in the center of the parking lot.

Groundwater levels were measured in the monitoring wells on February 10, 2016 using an electronic interface probe. Any evidence of contamination in groundwater was also noted at that time. Depth to water was measured from the Measured Point Elevation on the top of each well head.

C-4 Sampling

Soil Sample Collection and Screening

All soil samples from the Phase II ESA boreholes (BH1-BH18) were collected while wearing dedicated nitrile gloves and were placed in sealed glass containers provided by the laboratory (one 60 mL and one 250 mL container and two 40 mL vials containing methanol preservative for each sample). Sample headspace in the 250 mL jars was aspirated for Volatile Organic Compounds (VOCs) using an RKL Eagle portable gas monitor. VOC measurements were reported in parts per million (ppm) or percent of lower explosive limit (%LEL).

Based on the VOC screening results and field observations, representative soil samples were submitted to Maxxam Analytics in Bedford, NS for hydrocarbon analysis [benzene, toluene, ethylbenzene, and xylenes (BTEX) and modified total petroleum hydrocarbons (TPH)]. Maxxam Analytics is accredited to ISO 17025 by the Standards Council of Canada (SCC).

Groundwater Sampling

Groundwater samples were collected using dedicated bailers for each well. Prior to collection of the samples, each well was purged of at least three well volumes (or to dryness) to remove any standing water from the well, and to ensure that the samples were representative of the surrounding groundwater.

All groundwater samples were collected and placed in laboratory prepared glass containers in cool storage prior to submission to Maxxam Analytics Inc. for analysis.

C-4 Quality Assurance & Quality Control (QA/QC)

All soil samples were placed in sealed laboratory-supplied containers and kept in cool storage pending submission to Maxxam Analytics for analysis.

Appendix C – Investigation Methodology

One field duplicate groundwater sample (FD1) was collected from monitoring well MW16 and submitted for analysis of petroleum hydrocarbons to confirm quality control with Strum sampling protocol. Additionally, the laboratory completed laboratory duplicates of soil and groundwater samples to assess laboratory QA/QC. The results are discussed in Section 6.0 of the report.

APPENDIX D

BOREHOLE LOGS

PROJECT: Atlantic Superstore, Elmsdale, NS (PIDs 45336690 & 45003050)

DRILLING DATE: February 2, 2016

DRILLER: Logan Drilling Group

DRILL TYPE: CME 45

ELEVATION DATUM: Geodetic

DRILLING METHOD: Auger

WATER LEVEL DATE: -

WATER LEVEL (m): -

DEPTH (m)	SOIL DESCRIPTION	STRATA	SAMPLES					WELL INFO			
Elevation (m)			NUMBER	TYPE	RECOVERY (mm)	N-VALUE/RQD(%)	VOC (ppm)	ANALYSIS	WATER LEVEL	WELL CONSTRUCTION	WELL MATERIALS

-1													-1
0	24.57	TOPSOIL and ROOTMAT.		S1	SS	380	2	-	-				0
1		Sandy silty CLAY with trace to some gravel. - Encountered water at approximately 2.4 m.		S2	SS	270	9	-	-				1
2				S3	SS	430	14	5	Metals and PAHs				2
3				S4	SS	220	18	0	PAH				3
4				S5	SS	490	20	-	-				4
5				S6	SS	420	26	-	-				5
6				S7	SS	320	23	-	-				6
7				S8	SS	460	25	-	-				7
8				S9	SS	600	18	-	-				8
9	14.87												9
10		End of borehole at approximately 9.7 m.											10

LOGGED BY: Corey Strong

PROJECT NUMBER: 13-4801

PROJECT: Atlantic Superstore, Elmsdale, NS (PIDs 45336690 & 45003050)

DRILLING DATE: February 2, 2016

DRILLER: Logan Drilling Group

DRILL TYPE: CME 45

ELEVATION DATUM: Geodetic

DRILLING METHOD: Auger

WATER LEVEL DATE: -

WATER LEVEL (m): -

DEPTH (m)	Elevation (m)	SOIL DESCRIPTION	STRATA	SAMPLES						WELL INFO		
				NUMBER	TYPE	RECOVERY (mm)	N-VALUE	VOC (ppm)	ANALYSIS	WATER LEVEL	WELL CONSTRUCTION	WELL MATERIALS

-1	25.05	TOPSOIL and ROOTMAT.										
0		Sandy silty CLAY with trace to some gravel. - Encountered water at approximately 2.4 m. - Noted increase in gravel content at 2.8 m.		S1	SS	250	6	-	-			
1				S2	SS	330	12	-	-			
2				S3	SS	420	13	-	-			
3				S4	SS	440	26	-	-			
4				S5	SS	510	26	-	-			
5				S6	SS	530	37	-	-			
6				S7	SS	500	24	-	-			
7				S8	SS	380	33	-	-			
8				S9	SS	520	23	-	-			
9				S10	SS	610	28	-	-			
10				S11	SS	610	25	-	-			
				S12	SS	590	28	-	-			
	15.95	End of borehole at approximately 9.1 m.		S13	SS	400	42	-	-			

LOGGED BY: Corey Strong

PROJECT NUMBER: 13-4801

PROJECT: Atlantic Superstore, Elmsdale, NS (PIDs 45336690 & 45003050)

DRILLING DATE: February 3, 2016

DRILLER: Logan Drilling Group

DRILL TYPE: CME 45

ELEVATION DATUM: Geodetic

DRILLING METHOD: Auger

WATER LEVEL DATE: -

WATER LEVEL (m): -

DEPTH (m)	Elevation (m)	SOIL DESCRIPTION	STRATA	SAMPLES					WELL INFO		
				NUMBER	TYPE	RECOVERY (mm)	N-VALUE	VOC (ppm)	ANALYSIS	WATER LEVEL	WELL CONSTRUCTION

-1	25.06	TOPSOIL and ROOTMAT.										
0		Sandy silty CLAY with trace to some gravel. - Encountered water at approximately 1.9 m.		S1	SS	270	12	-	-			
1				S2	SS	410	11	-	-			
2				S3	SS	470	20	0	Metals and PAHs			
3				S4	SS	390	14	-	-			
4				S5	SS	460	14	-	-			
5				S6	SS	440	21	-	-			
6				S7	SS	600	23	-	-			
7	18.36	End of borehole at approximately 6.7 m.										
8												
9												
10												

LOGGED BY: Corey Strong

PROJECT NUMBER: 13-4801

PROJECT: Atlantic Superstore, Elmsdale, NS (PIDs 45336690 & 45003050)

DRILLING DATE: February 1, 2016

DRILLER: Logan Drilling Group

DRILL TYPE: CME 45

ELEVATION DATUM: Geodetic

DRILLING METHOD: Auger

WATER LEVEL DATE: -

WATER LEVEL (m): -

DEPTH (m)	Elevation (m)	SOIL DESCRIPTION	STRATA	SAMPLES					WELL INFO			
				NUMBER	TYPE	RECOVERY (mm)	N-VALUE	VOC (ppm)	ANALYSIS	WATER LEVEL	WELL CONSTRUCTION	WELL MATERIALS

-1	25.08											
0		TOPSOIL and ROOTMAT.		S1	SS	100	2	-	-			
1		Sandy silty CLAY with trace to some gravel. - Noted moisture at approximately 1.7 m. - Encountered water at approximately 2.1 m.		S2	SS	310	7	-	-			
2				S3	SS	200	10	-	-			
3				S4	SS	380	25	-	Grain Size Analysis			
4				S5	SS	420	16	-	-			
5				S6	SS	0	26	-	-			
6	19.08			S7	SS	80	40	-	-			
7				S8	SS	330	18	-	-			
8				S9	SS	320	18	-	-			
9				S10	SS	290	22	-	-			
10		End of borehole at approximately 6.0 m.										

LOGGED BY: Corey Strong

PROJECT NUMBER: 13-4801

PROJECT: Atlantic Superstore, Elmsdale, NS (PIDs 45336690 & 45003050)

DRILLING DATE: January 21, 2016

DRILLER: Logan Drilling Group

DRILL TYPE: CME 75

ELEVATION DATUM: Geodetic

DRILLING METHOD: Auger

WATER LEVEL DATE: -

WATER LEVEL (m): -

DEPTH (m)	Elevation (m)	SOIL DESCRIPTION	STRATA	SAMPLES					WELL INFO		
				NUMBER	TYPE	RECOVERY (mm)	N-VALUE	VOC (ppm)	ANALYSIS	WATER LEVEL	WELL CONSTRUCTION

-1												
0	24.88	TOPSOIL and ROOTMAT.		S1	SS	280	18	5	-			
1		Sandy silty CLAY with trace to some gravel. - Encountered water at approximately 3.25 m.		S2	SS	410	20	5	-			
2				S3	SS	470	26	10	-			
3				S4	SS	520	34	5	-			
4				S5	SS	360	33	5	-			
5				S6	SS	590	34	5	-			
6	18.88	End of borehole at approximately 6.0 m.		S7	SS	610	49	5	-			
7				S8	SS	370	44	5	-			
8				S9	SS	580	23	5	-			
9				S10	SS	490	37	5	-			
10												

LOGGED BY: Corey Strong

PROJECT NUMBER: 13-4801

PROJECT: Atlantic Superstore, Elmsdale, NS (PIDs 45336690 & 45003050)

DRILLING DATE: February 1, 2016

DRILLER: Logan Drilling Group

DRILL TYPE: CME 45

ELEVATION DATUM: Geodetic

DRILLING METHOD: Auger

WATER LEVEL DATE: -

WATER LEVEL (m): -

DEPTH (m)	Elevation (m)	SOIL DESCRIPTION	STRATA	SAMPLES					WELL INFO		
				NUMBER	TYPE	RECOVERY (mm)	N-VALUE	VOC (ppm)	ANALYSIS	WATER LEVEL	WELL CONSTRUCTION

-1	25.12											
0		TOPSOIL and ROOTMAT.		S1	SS	300	11	-	-			
1		Sandy silty CLAY with trace to some gravel. - Noted moisture from 1.2 m - 1.8 m. - Encountered water at approximately 1.8 m.		S2	SS	490	21	-	-			
2				S3	SS	380	23	-	-			
3				S4	SS	310	33	-	-			
4				S5	SS	230	23	-	-			
5				S6	SS	380	42	-	-			
6	19.12			S7	SS	330	28	-	-			
7				S8	SS	510	33	-	-			
8				S9	SS	260	16	-	-			
9				S10	SS	600	25	-	-			
10		End of borehole at approximately 6.0 m.										

LOGGED BY: Corey Strong

PROJECT NUMBER: 13-4801

PROJECT: Atlantic Superstore, Elmsdale, NS (PIDs 45336690 & 45003050)

DRILLING DATE: January 21, 2016

DRILLER: Logan Drilling Group

DRILL TYPE: CME 75

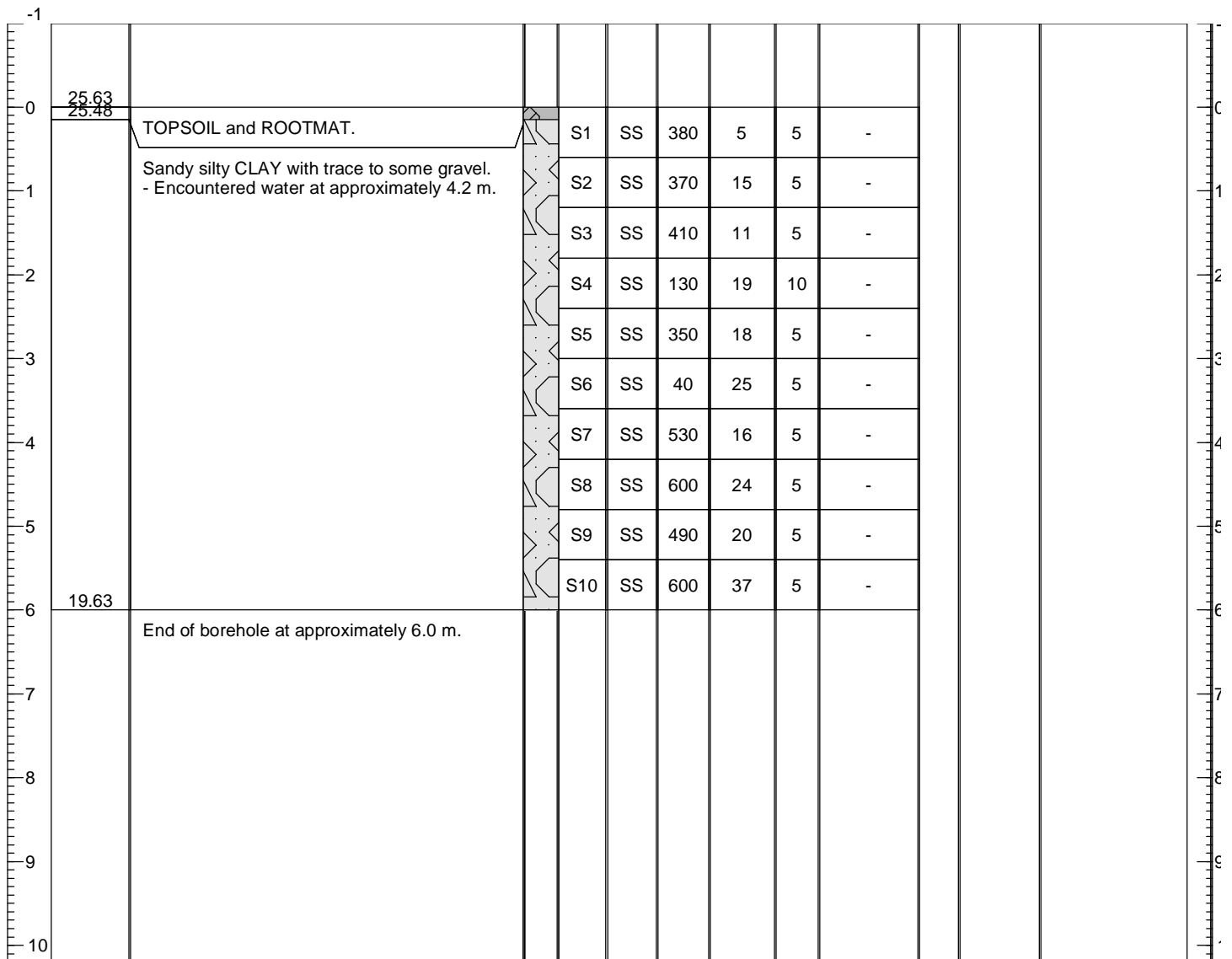
ELEVATION DATUM: Geodetic

DRILLING METHOD: Auger

WATER LEVEL DATE: -

WATER LEVEL (m): -

DEPTH (m)	Elevation (m)	SOIL DESCRIPTION	STRATA	SAMPLES						WELL INFO		
				NUMBER	TYPE	RECOVERY (mm)	N-VALUE	VOC (ppm)	ANALYSIS	WATER LEVEL	WELL CONSTRUCTION	WELL MATERIALS



LOGGED BY: Corey Strong

PROJECT NUMBER: 13-4801

PROJECT: Atlantic Superstore, Elmsdale, NS (PIDs 45336690 & 45003050)

DRILLING DATE: February 1, 2016

DRILLER: Logan Drilling Group

DRILL TYPE: CME 45

ELEVATION DATUM: Geodetic

DRILLING METHOD: Auger

WATER LEVEL DATE: -

WATER LEVEL (m): -

DEPTH (m)	Elevation (m)	SOIL DESCRIPTION	STRATA	SAMPLES					WELL INFO			
				NUMBER	TYPE	RECOVERY (mm)	N-VALUE	VOC (ppm)	ANALYSIS	WATER LEVEL	WELL CONSTRUCTION	WELL MATERIALS

-1	25.72											
0		TOPSOIL and ROOTMAT.		S1	SS	350	12	-	-			
1		Sandy silty CLAY with trace to some gravel. - Encountered water at approximately 1.8 m.		S2	SS	390	28	-	-			
2				S3	SS	300	23	-	-			
3				S4	SS	440	30	-	-			
4				S5	SS	410	24	-	-			
5				S6	SS	590	34	-	-			
6	19.72			S7	SS	320	53	-	-			
7				S8	SS	510	24	-	-			
8				S9	SS	340	20	-	-			
9				S10	SS	590	38	-	-			
10		End of borehole at approximately 6.0 m.										

LOGGED BY: Corey Strong

PROJECT NUMBER: 13-4801

BH9

PROJECT: Atlantic Superstore, Elmsdale, NS (PIDs 45336690 & 45003050)

DRILLING DATE: February 3, 2016

DRILLER: Logan Drilling Group

DRILL TYPE: CME 45

ELEVATION DATUM: Geodetic

DRILLING METHOD: Auger

WATER LEVEL DATE: -

WATER LEVEL (m): -

DEPTH (m)	Elevation (m)	SOIL DESCRIPTION	STRATA	SAMPLES					WELL INFO		
				NUMBER	TYPE	RECOVERY (mm)	N-VALUE	VOC (ppm)	ANALYSIS	WATER LEVEL	WELL CONSTRUCTION

-1	25.25	TOPSOIL and ROOTMAT.										
0		Sandy silty CLAY with trace to some gravel. - Encountered water at approximately 1.9 m.		S1	SS	320	5	-	-			
1				S2	SS	355	6	-	-			
2				S3	SS	455	12	0	Metals and PAHs			
3				S4	SS	240	8	-	-			
4				S5	SS	600	10	-	-			
5				S6	SS	350	21	-	-			
6				S7	SS	580	20	-	-			
7	18.55	End of borehole at approximately 6.7 m.										
8												
9												
10												

LOGGED BY: Corey Strong

PROJECT NUMBER: 13-4801

PROJECT: Atlantic Superstore, Elmsdale, NS (PIDs 45336690 & 45003050)

DRILLING DATE: February 3, 2016

DRILLER: Logan Drilling Group

DRILL TYPE: CME 45

ELEVATION DATUM: Geodetic

DRILLING METHOD: Auger

WATER LEVEL DATE: -

WATER LEVEL (m): -

DEPTH (m)	Elevation (m)	SOIL DESCRIPTION	STRATA	SAMPLES					WELL INFO			
				NUMBER	TYPE	RECOVERY (mm)	N-VALUE	VOC (ppm)	ANALYSIS	WATER LEVEL	WELL CONSTRUCTION	WELL MATERIALS

-1	25.21	TOPSOIL and ROOTMAT.										
0		Sandy silty CLAY with trace to some gravel. - Encountered water at approximately 2.7 m.		S1	SS	330	4	-	-			
1				S2	SS	295	11	-	-			
2				S3	SS	345	13	-	-			
3				S4	SS	360	10	0	Metals and PAHs			
4				S5	SS	415	7	-	Grain Size Analysis			
5				S6	SS	220	12	-	-			
6												
7	18.51	End of borehole at approximately 6.7 m.		S7	SS	580	24	-	-			
8												
9												
10												

LOGGED BY: Corey Strong

PROJECT NUMBER: 13-4801

PROJECT: Atlantic Superstore, Elmsdale, NS (PIDs 45336690 & 45003050)

DRILLING DATE: February 3, 2016

DRILLER: Logan Drilling Group

DRILL TYPE: CME 45

ELEVATION DATUM: Geodetic

DRILLING METHOD: Auger

WATER LEVEL DATE: -

WATER LEVEL (m): -

DEPTH (m)	Elevation (m)	SOIL DESCRIPTION	STRATA	SAMPLES					WELL INFO		
				NUMBER	TYPE	RECOVERY (mm)	N-VALUE	VOC (ppm)	ANALYSIS	WATER LEVEL	WELL CONSTRUCTION

-1	22.14	TOPSOIL and ROOTMAT.										
0		Sandy silty CLAY with trace to some gravel. - Encountered water at approximately 2.4 m.		S1	SS	370	8	-	-			
1				S2	SS	300	8	-	-			
2				S3	SS	485	10	-	-			
3				S4	SS	440	11	5	Metals and PAHs			
4				S5	SS	305	19	-	-			
5				S6	SS	520	22	-	-			
6				S7	SS	480	30	-	-			
7	15.44	End of borehole at approximately 6.7 m.										
8												
9												
10												

LOGGED BY: Corey Strong

PROJECT NUMBER: 13-4801

PROJECT: Atlantic Superstore, Elmsdale, NS (PIDs 45336690 & 45003050)

DRILLING DATE: February 3, 2016

DRILLER: Logan Drilling Group

DRILL TYPE: CME 45

ELEVATION DATUM: Geodetic

DRILLING METHOD: Auger

WATER LEVEL DATE: -

WATER LEVEL (m): -

DEPTH (m)	Elevation (m)	SOIL DESCRIPTION	STRATA	SAMPLES					WELL INFO		
				NUMBER	TYPE	RECOVERY (mm)	N-VALUE	VOC (ppm)	ANALYSIS	WATER LEVEL	WELL CONSTRUCTION

-1	23.90	TOPSOIL and ROOTMAT.										
0		Sandy silty CLAY with trace to some gravel. - Encountered water at approximately 2.4 m.		S1	SS	270	3	-	-			
1				S2	SS	170	13	-	-			
2				S3	SS	395	11	-	-			
3				S4	SS	340	11	0	Metals and PAHs			
4				S5	SS	510	20	-	-			
5				S6	SS	430	53	-	-			
6				S7	SS	435	37	-	-			
7	17.21	End of borehole at approximately 6.7 m.										
8												
9												
10												

LOGGED BY: Corey Strong

PROJECT NUMBER: 13-4801

PROJECT: Atlantic Superstore, Elmsdale, NS (PIDs 45336690 & 45003050)

DRILLING DATE: February 3, 2016

DRILLER: Logan Drilling Group

DRILL TYPE: CME 75

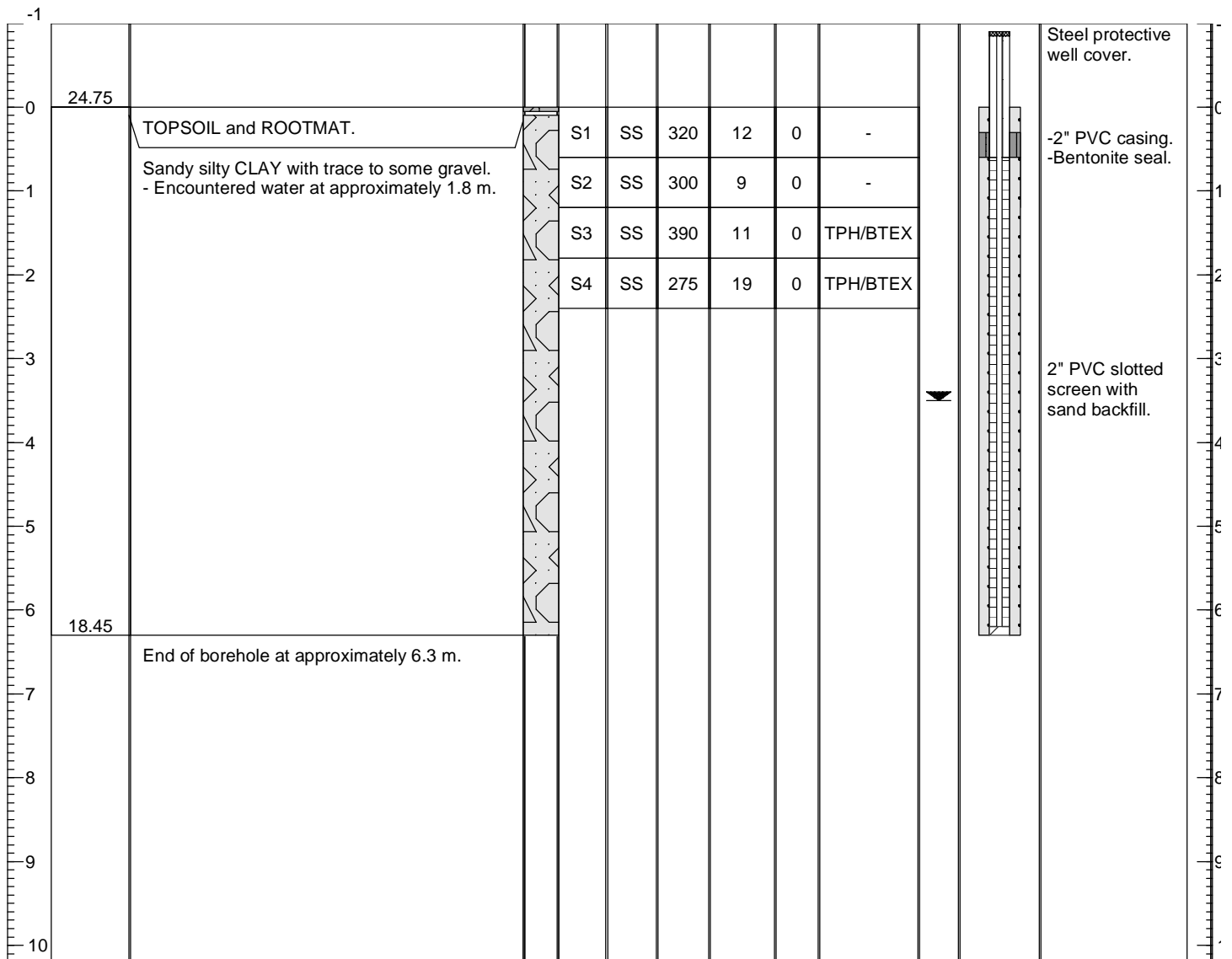
ELEVATION DATUM: Assumed

DRILLING METHOD: Auger

WATER LEVEL DATE: February 10, 2016

WATER LEVEL (m): 3.523

DEPTH (m)	Elevation (m)	SOIL DESCRIPTION	STRATA	SAMPLES				WELL INFO		
				NUMBER	TYPE	RECOVERY (mm)	N-VALUE	VOC (ppm)	ANALYSIS	WATER LEVEL
25.65										



LOGGED BY: Corey Strong

PROJECT NUMBER: 13-4801

PROJECT: Atlantic Superstore, Elmsdale, NS (PIDs 45336690 & 45003050)

DRILLING DATE: January 22, 2016

DRILLER: Logan Drilling Group

DRILL TYPE: CME 75

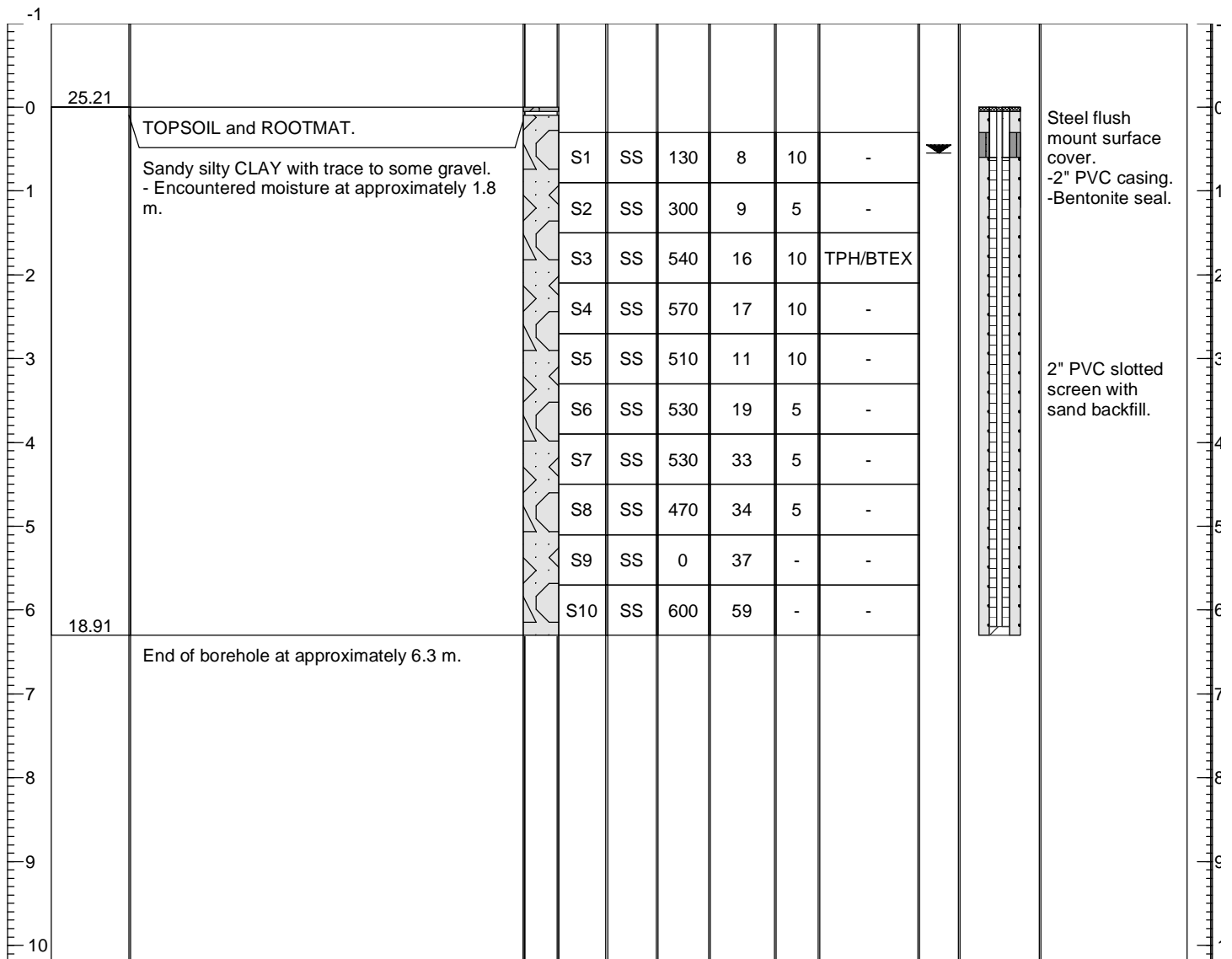
ELEVATION DATUM: Assumed

DRILLING METHOD: Auger

WATER LEVEL DATE: February 10, 2016

WATER LEVEL (m): 0.555

DEPTH (m)	Elevation (m)	SOIL DESCRIPTION	STRATA	SAMPLES				WELL INFO		
				NUMBER	TYPE	RECOVERY (mm)	N-VALUE	VOC (ppm)	ANALYSIS	WATER LEVEL
										WELL CONSTRUCTION
										WELL MATERIALS



LOGGED BY: Corey Strong

PROJECT NUMBER: 13-4801

PROJECT: Atlantic Superstore, Elmsdale, NS (PIDs 45336690 & 45003050)

DRILLING DATE: January 21, 2016

DRILLER: Logan Drilling Group

DRILL TYPE: CME 75

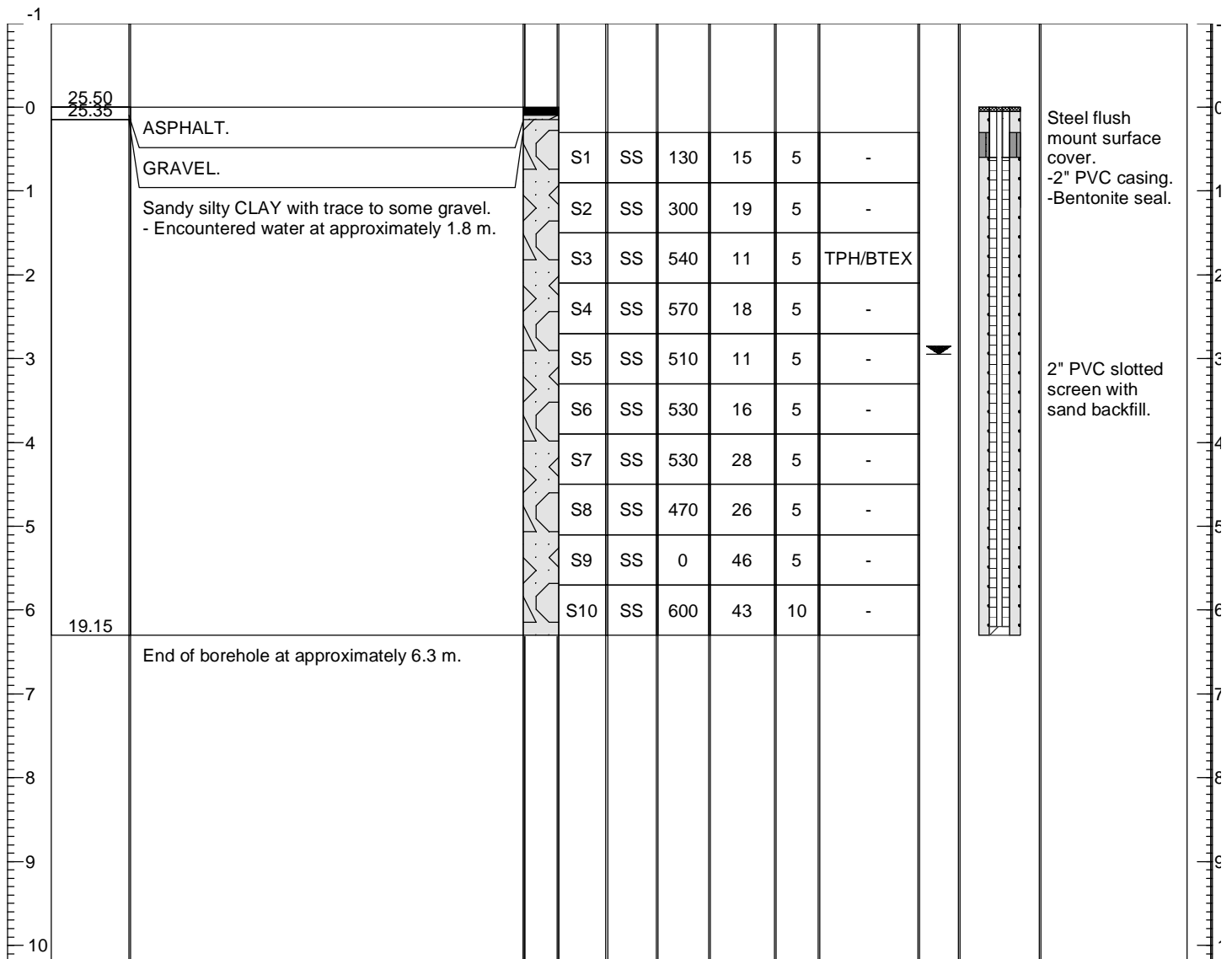
ELEVATION DATUM: Assumed

DRILLING METHOD: Auger

WATER LEVEL DATE: February 10, 2016

WATER LEVEL (m): 2.952

DEPTH (m)	Elevation (m)	SOIL DESCRIPTION	STRATA	SAMPLES				ANALYSIS	WATER LEVEL	WELL CONSTRUCTION	WELL MATERIALS
				NUMBER	TYPE	RECOVERY (mm)	N-VALUE	VOC (ppm)			



LOGGED BY: Corey Strong

PROJECT NUMBER: 13-4801

PROJECT: Atlantic Superstore, Elmsdale, NS (PIDs 45336690 & 45003050)

DRILLING DATE: February 2, 2016

DRILLER: Logan Drilling Group

DRILL TYPE: CME 45

ELEVATION DATUM: Geodetic

DRILLING METHOD: Auger

WATER LEVEL DATE: -

WATER LEVEL (m): -

DEPTH (m)	Elevation (m)	SOIL DESCRIPTION	STRATA	SAMPLES						WELL INFO		
				NUMBER	TYPE	RECOVERY (mm)	N-VALUE	VOC (ppm)	ANALYSIS	WATER LEVEL	WELL CONSTRUCTION	WELL MATERIALS

-1	24.75	TOPSOIL and ROOTMAT.										
0		Sandy silty CLAY with trace to some gravel. - Encountered water at approximately 2.4 m.		S1	SS	280	11	-	-			
1				S2	SS	370	23	-	-			
2				S3	SS	420	17	-	-			
3				S4	SS	600	19	-	-			
4				S5	SS	300	18	-	-			
5				S6	SS	420	20	-	-			
6				S7	SS	550	22	-	-			
7	18.05	End of borehole at approximately 6.7 m.										
8												
9												
10												

LOGGED BY: Corey Strong

PROJECT NUMBER: 13-4801

PROJECT: Atlantic Superstore, Elmsdale, NS (PIDs 45336690 & 45003050)

DRILLING DATE: February 2, 2016

DRILLER: Logan Drilling Group

DRILL TYPE: CME 45

ELEVATION DATUM: Geodetic

DRILLING METHOD: Auger

WATER LEVEL DATE: -

WATER LEVEL (m): -

DEPTH (m)	Elevation (m)	SOIL DESCRIPTION	STRATA	SAMPLES						WELL INFO		
				NUMBER	TYPE	RECOVERY (mm)	N-VALUE	VOC (ppm)	ANALYSIS	WATER LEVEL	WELL CONSTRUCTION	WELL MATERIALS

-1	25.79	TOPSOIL and ROOTMAT.										
0		Sandy silty CLAY with trace to some gravel. - Encountered water at approximately 2.4 m.		S1	SS	485	6	-	-			
1				S2	SS	200	15	-	-			
2				S3	SS	600	21	-	-			
3				S4	SS	50	33	-	-			
4				S5	SS	180	23	-	-			
5				S6	SS	520	23	-	-			
6				S7	SS	560	24	-	-			
7	19.09	End of borehole at approximately 6.7 m.										
8												
9												
10												

LOGGED BY: Corey Strong

PROJECT NUMBER: 13-4801

APPENDIX E
SITE PHOTOS



Photo 1: View of drill rig, looking southeast towards Highway 102.



Photo 2: View of drill rig, looking north.



Photo 3: View of drill rig, looking southwest towards the Petro Canada gas station.



Photo 4: View of drill rig on northeast side of Superstore, looking northwest.

APPENDIX F

ANALYTICAL RESULTS

TABLE 1: Soil Analytical Results - Petroleum Hydrocarbons - Atlantic Superstore, Elmsdale, NS (PIDs 45336690 & 45003050)

Project # 13-4801

Sample ID	Date	Depth	VOC	Benzene	Toluene	Ethyl Benzene	Xylenes	Hydrocarbon Ranges				Modified TPH	Type	Comments
								C ₆ -C ₁₀	C ₁₀ -C ₁₆	C ₁₆ -C ₂₁	C ₂₁ -C ₃₂			
	(yy/mm/dd)	(m)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)		
Borehole Samples														
BH14-S3	16/02/03	1.2 - 1.8	0	nd	nd	nd	nd	nd	nd	nd	nd	nd	-	
BH14-S4	16/02/03	1.8 - 2.4	0	nd	nd	nd	nd	nd	nd	nd	nd	nd	-	
BH15-S3	16/01/22	1.5 - 2.1	10	nd	nd	nd	nd	nd	nd	nd	nd	nd	-	
BH16-S3	16/01/22	1.5 - 2.1	5	nd	nd	nd	nd	nd	nd	nd	nd	nd	-	
Laboratory Detection Limit				0.005	0.025	0.01	0.05	2.5	15	15	15	15	-	
Tier I EQS - Commercial*				0.094	0.74	0.13	22	-	-	-	-	1900 4700	G F	

Notes: * - Nova Scotia Environment Tier I Environmental Quality Standards (EQS), July 2013 - Commercial / Potable / Fine-grained

shading indicates exceedence

VOC = Volatile Organic Compounds in sample headspace	m = metres below grade	nd = not detected
TPH = Total Petroleum Hydrocarbons	ppm = parts per million	nd() = elevated detection limits
Lab analysis by Maxxam Analytics Inc., Bedford, NS.	mg/kg = milligrams per kilogram	" - " indicates no established value
Type = hydrocarbon resemblance based on lab comments and/or distribution of hydrocarbon ranges. G = gasoline; F = fuel oil/diesel; L = lube oil		

TABLE 2: Soil Analytical Results - Available Metals - Atlantic Superstore, Elmsdale, NS (PIDs 45336690 & 45003050)

Project #13-4801

Parameter	Units	Sample ID*							Guideline Criteria NSE Tier I EQS Commercial	RDL
		BH1-S3	BH3-S3	BH9-S4	BH10-S3	BH11-S4	BH12-S4	BH13-S4		
		1.2 - 1.8	1.6 - 2.1	1.8 - 2.4	1.6 - 2.1	2.3 - 2.9	2.3 - 2.9	2.3 - 2.9		
		BUL853 16/02/02	BUL854 16/02/02	BUL852 16/02/01	BUL855 16/02/03	BUL856 16/02/03	BUL857 16/02/03	BUL858 16/02/03		
Aluminum	mg/kg	11000	9000	9600	12000	11000	11000	12000	15400	10
Antimony	mg/kg	nd	nd	nd	nd	nd	nd	nd	63	2
Arsenic	mg/kg	6	4.8	5.3	5.9	5.2	5.8	6.9	31	2
Barium	mg/kg	100	78	100	110	100	120	120	15000	5
Beryllium	mg/kg	nd	nd	nd	nd	nd	nd	nd	320	2
Bismuth	mg/kg	nd	nd	nd	nd	nd	nd	nd	-	
Boron (total)	mg/kg	nd	nd	nd	nd	nd	nd	nd	24000	5
Boron (hws)	mg/kg	-	-	-	-	-	-	-	-	
Cadmium	mg/kg	nd	nd	nd	nd	nd	nd	nd	49	0.3
Chromium (total)	mg/kg	18	16	17	20	18	23	21	630	2
Chromium (VI)	mg/kg	9.4	8.8	9.2	11	10	9.8	11	1300	-
Cobalt	mg/kg	-	-	-	-	-	-	-	250	1
Copper	mg/kg	21	16	15	17	17	16	22	4000	2
Cyanide	mg/kg	-	-	-	-	-	-	-	110	
Iron	mg/kg	22000	19000	21000	23000	23000	23000	24000	11000	50
Lead	mg/kg	10	10	9.3	12	12	12	57	260	0.5
Lithium	mg/kg	20	20	20	23	21	22	24	-	
Manganese	mg/kg	580	420	520	580	630	640	660	-	2
Mercury (total)	mg/kg	nd	nd	nd	nd	nd	nd	nd	24	0.01
Methylmercury	mg/kg	-	-	-	-	-	-	-	1.6	
Molybdenum	mg/kg	nd	nd	nd	nd	nd	nd	nd	1200	2
Nickel	mg/kg	21	18	21	22	22	22	22	2200	2
Rubidium	mg/kg	11	9.4	10	13	11	12	14	-	
Selenium	mg/kg	nd	nd	nd	nd	nd	nd	nd	125	2
Silver	mg/kg	nd	nd	nd	nd	nd	nd	nd	490	0.5
Strontium	mg/kg	12	18	24	16	11	17	20	9400	5
Thallium	mg/kg	nd	nd	nd	nd	nd	0.11	0.14	1	0.1
Tin	mg/kg	nd	nd	nd	nd	nd	nd	nd	9400	2
Uranium	mg/kg	0.63	0.59	0.67	0.63	0.56	0.63	0.62	33	0.1
Vanadium	mg/kg	21	19	20	22	23	22	25	160	2
Zinc	mg/kg	37	42	38	44	48	45	58	47000	5

Notes:

Shading indicates exceedence of 2013 NSE Tier I Environmental Quality Standards (July 2013) - Commercial

RDL = Reportable Detection Limit; nd = non-detect; " - " indicates no established value. Analysis by Maxxam Analytics, Bedford, NS

NSE = Nova Scotia Environment

Sample ID* - is followed by depth of sample (metres below grade), Laboratory ID (e.g., J54189) and sample collection date (year/month/day)

TABLE 3: Soil/Sediment Analytical Results - Polycyclic Aromatic Hydrocarbons (PAHs), Atlantic Superstore, Elmsdale, NS (PIDs 45336690 & 45003050)

Project # 13-4801

Paramater	PEF	Sample ID												Guideline 1	Laboratory				
		BH1-S3		BH3-S3		BH9-S4		BH9-S4 Lab-Dup		BH10-S3		BH11-S4		BH12-S4		BH13-S4		NSE Tier 1 EQS	Maxxam Analytics
		1.2-1.8		1.8-2.4		1.8-2.4		1.8-2.4		1.8-2.4		1.2-1.8		2.3-2.9		1.6-2.1		Soil (Fine)	
		BUL854		BUL855		BUL852		BUL853		BUL856		BUL857		BUL858		BUL859		Commercial	
		16/02/02		16/02/03		16/02/02		16/02/03		16/02/03		16/02/03		16/02/03		16/02/03		Potable	
		mg/kg	B[a]P TPE	mg/kg	B[a]P TPE	mg/kg	B[a]P TPE	mg/kg	B[a]P TPE	mg/kg	B[a]P TPE	mg/kg	B[a]P TPE	mg/kg	B[a]P TPE	mg/kg	B[a]P TPE	mg/kg	Detection Limits
1-Methylnaphthalene	-	nd	-	nd	-	nd	-	nd	-	nd	-	nd	-	nd	-	42	-	0.01	
2-Methylnaphthalene	-	nd	-	nd	-	nd	-	nd	-	nd	-	nd	-	nd	-	42	-	0.01	
Acenaphthene	-	nd	-	nd	-	nd	-	nd	-	nd	-	nd	-	nd	-	8000	-	0.01	
Acenaphthylene	-	nd	-	nd	-	nd	-	nd	-	nd	-	nd	-	nd	-	32	-	0.01	
Anthracene	-	nd	-	nd	-	nd	-	nd	-	nd	-	nd	-	nd	-	37000	-	0.01	
Benzo[a]anthracene	0.10	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-	-	0.01	
Benzo[a]pyrene	1.00	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-	-	0.01	
Benzo[b]fluoranthene	-	nd	-	nd	-	nd	-	nd	-	nd	-	nd	-	nd	-	-	-	0.01	
Benzo[b+j]fluoranthene	0.10	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-	-	-	
Benzo[g,h,i]perylene	0.01	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-	-	0.01	
Benzo[k]fluoranthene	0.10	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-	-	0.01	
Chrysene	0.01	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-	-	0.01	
Dibenz[a,h]anthracene	1.00	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-	-	0.01	
Fluoranthene	-	nd	-	nd	-	nd	-	nd	-	nd	-	nd	-	nd	-	5300	-	0.01	
Fluorene	-	nd	-	nd	-	nd	-	nd	-	nd	-	nd	-	nd	-	4100	-	0.01	
Indeno[1,2,3-cd]pyrene	0.10	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-	-	0.01	
Naphthalene	-	nd	-	nd	-	nd	-	nd	-	nd	-	nd	-	nd	-	28	-	0.01	
Perylene	-	nd	-	nd	-	nd	-	nd	-	nd	-	nd	-	nd	-	-	-	0.01	
Phenanthrene	-	nd	-	0.01	-	0.015	-	0.12	-	nd	-	nd	-	nd	-	24	-	0.01	
Pyrene	-	nd	-	nd	-	nd	-	nd	-	nd	-	nd	-	nd	-	3200	-	0.01	
TOTAL PAHs (mg/kg)		0	-	0.01	-	0.015	-	0.12	-	0	-	0	-	0	-	-	-		
TOTAL B[a]P TPE		-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	5.3		

Notes:

Shading indicates exceedence of Nova Scotia Tier I Environmental Quality Standards (July 2013)

RDL = Reportable Detection Limit; nd = non-detect; nd () = non-detect (elevated detection limit); " - " indicates no established value.

Laboratory analysis completed by Maxxam Analytics, Bedford, NS

CCME = Canadian Council of Ministers of the Environment

B[a]P TPE = Benzo[a]pyrene Total Potency Equivalents = [mg/kg] x PEF

PEF = B[a]P Potency Equivalency Factors (relevant for carcinogenic compounds only)

TABLE 4: Monitor Well Water Analytical Results - Petroleum Hydrocarbons - Atlantic Superstore, Elmsdale, NS (PIDs 45336690 & 45003050)

Project # 13-4801

Sample ID	Date	Sample Type	Benzene	Toluene	Ethyl Benzene	Xylenes	Hydrocarbon Ranges				Modified TPH	Type	Comments
							C ₆ -C ₁₀	C ₁₀ -C ₁₆	C ₁₆ -C ₂₁	C ₂₁ -C ₃₂			
	(yy/mm/dd)	(GW / SW / DW)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)		
MW14	16/02/10	GW	nd	0.0049	0.0019	0.012	0.016	nd	nd	nd	nd	-	
MW14 Lab-Dup	16/02/10	GW	-	-	-	-	-	nd	nd	nd	-	-	Lab duplicate for MW14.
MW15	16/02/10	GW	nd	nd	nd	nd	nd	nd	nd	nd	nd	-	
MW16	16/02/10	GW	nd	nd	nd	nd	nd	0.056	nd	nd	nd	-	
FD1	16/02/10	GW	nd	nd	nd	nd	nd	0.074	nd	nd	nd	-	Field duplicate for MW16.
Laboratory Detection Limit			0.001	0.001	0.001	0.002	0.01	0.05	0.05	0.1	0.1	-	
Tier I EQS -Commercial / Industrial*			0.005	0.024	0.0024	0.3	-	-	-	-	4.4	G	
											3.2	F	
											7.8	L	

Notes: * - Nova Scotia Environment Tier I Environmental Quality Standards (EQS), July 2013 - Commercial & Industrial / Potable / Fine-grained

shading indicates exceedence

VOC = Volatile Organic Compounds in sample headspace

m = metres below grade

nd = not detected

TPH = Total Petroleum Hydrocarbons

ppm = parts per million

nd() = elevated detection limits

Lab analysis by Maxxam Analytics Inc., Bedford, NS.

mg/L = milligrams per litre

" - " indicates no established value

Type = hydrocarbon resemblance based on lab comments and/or distribution of hydrocarbon ranges. G = gasoline; F = fuel oil/diesel; L = lube oil

APPENDIX G

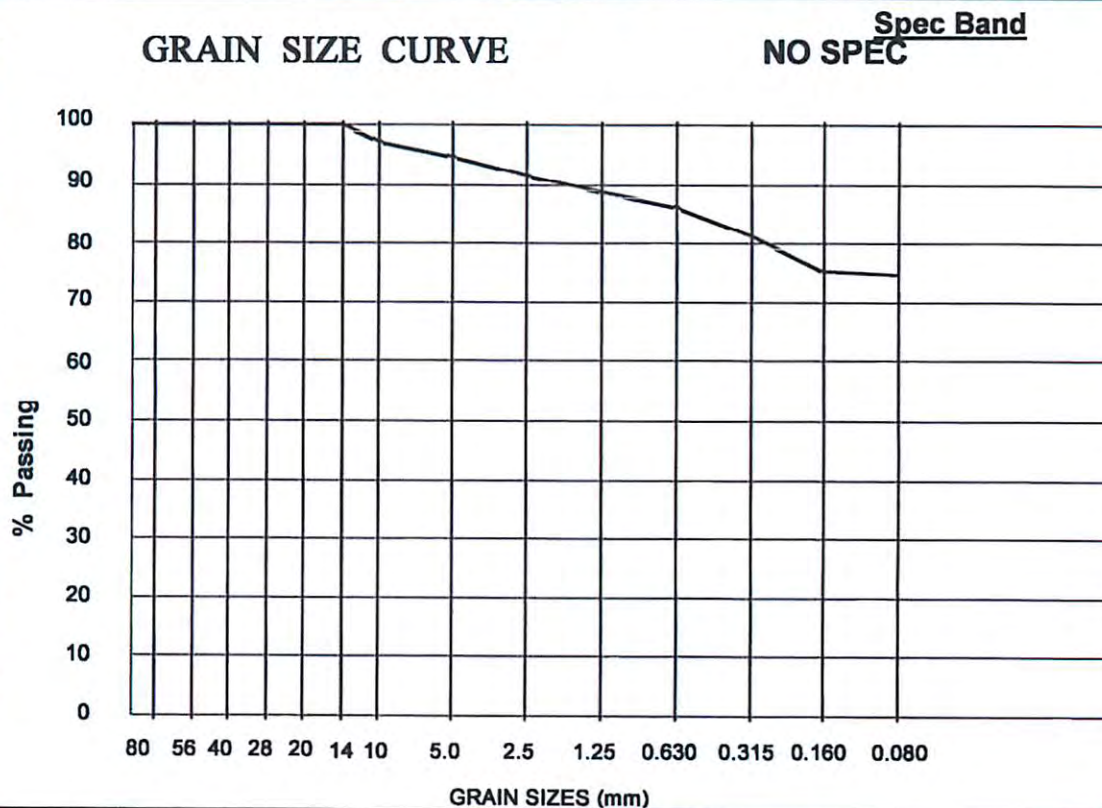
LABORATORY REPORTS

97 TROOP AVE., DARTMOUTH, N.S. B3B 2A7 - TEL (902) 468-6486 FAX 468-4919

Client: Strum Consulting Raiside, 1355 Bedford Highway Bedford, Nova Scotia B4A 1C5 Attn: Corey Strong PHONE (902) 835-5560	Our Project No: 21294 Client Contract No.: 15-5343 Client PO.: CC:
Project: General Lab Testing Source: BH #4 Sample No: S4 Location:	Date Sampled: Sampled by: Client Date Received: 05-Feb-16 Date Tested: 11-Feb-16

PHYSICAL PROPERTY TESTS					
Soil Type		Liquid Limit	24.9	Flat and Elongated Particles, %	
Gravel, %	5	Plastic Limit	15	Coarse Spec. Gravity	
Sand, %	20	Plasticity Index	9.6	Fractured Faces, %	
Silt and Clay, %	75	Coarse Absorption, %		Petrographic No.	
Moisture Cont., %	13.1	Fine Absorption, %		Max. Dry Density, (kg/m3)	
Abrasion Loss, %		Micro Deval Loss, %		Optimum Moisture, %	

Sieve Size (mm)	Percent Passing	Spec. Band
112		
80		
56		
40		
28		
20		
14	100	
10	97	
5.0	95	
2.5	91	
1.25	89	
0.630	86	
0.315	81	
0.160	75	
0.080	74.8	



Comments:

Record No: 9838

Englobe Tech: JA

PER



CERTIFIED LABORATORY
FOR TESTING CONCRETE

Reporting of these test results constitutes a testing service only. Engineering interpretation or evaluation of test results is provided only on request.

project manager Richard Henry

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Client:

Strum Consulting
Railside, 1355 Bedford Highway
Bedford, Nova Scotia
B4A 1C5

Our Project No: 21294

Client Contract No.: 15-5343

Client PO.:

CC:

Attn: Corey Strong

PHONE (902) 835-5560

FAX:

Project: General Lab Testing

Source: BH #9

Sample No: S2

Location:

Date Sampled:

Sampled by: Client

Date Received: 05-Feb-16

Date Tested: 11-Feb-16

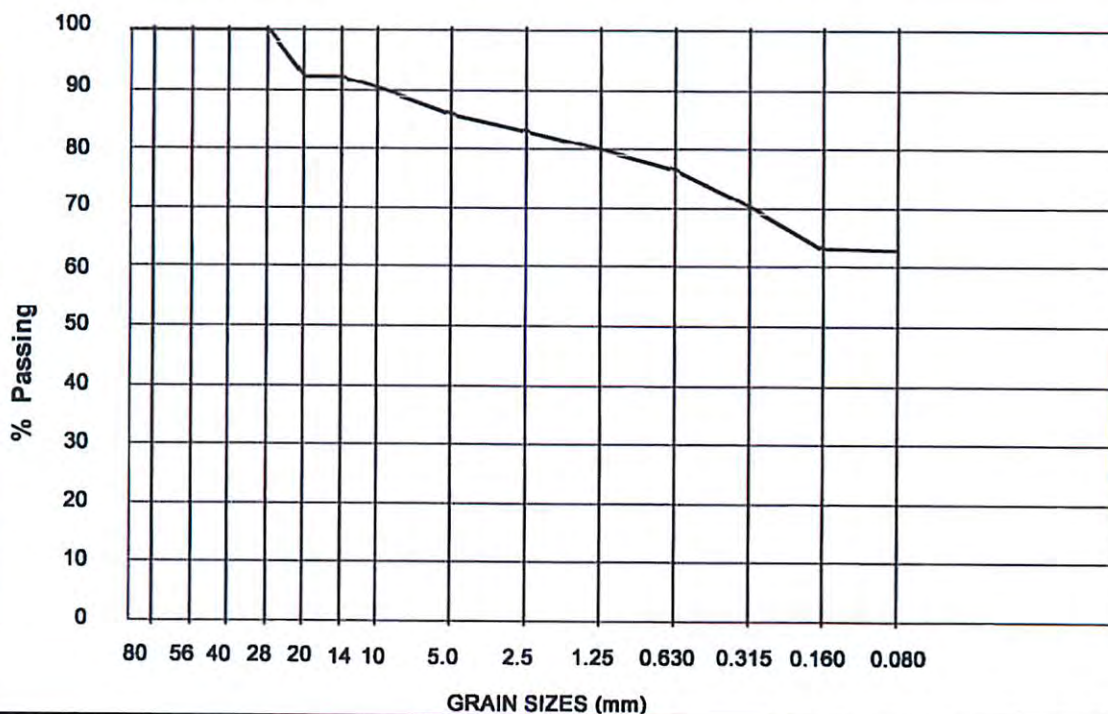
PHYSICAL PROPERTY TESTS

Soil Type		Liquid Limit	22.4	Flat and Elongated Particles, %	
Gravel, %	14	Plastic Limit	13.5	Coarse Spec. Gravity	
Sand, %	23	Plasticity Index	8.9	Fractured Faces, %	
Silt and Clay, %	63	Coarse Absorption, %		Petrographic No.	
Moisture Cont., %	10	Fine Absorption, %		Max. Dry Density, (kg/m3)	
Abrasion Loss, %		Micro Deval Loss, %		Optimum Moisture, %	

Sieve Size (mm)	Percent Passing	Spec. Band
112		
80		
56		
40		
28	100	
20	92	
14	92	
10	90	
5.0	86	
2.5	83	
1.25	80	
0.630	77	
0.315	71	
0.160	63	
0.080	63.0	

GRAIN SIZE CURVE

Spec Band
NO SPEC



Comments:

Record No: 9839

Englobe Tech: JA

PER



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Our Project No: 21294

Client Contract No.: 15-5343

Client PO.:

CC:

Attn: Corey Strong

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FAX:

Project: General Lab Testing

Source: BH 11

Sample No: S5

Location:

Date Sampled:

Sampled by: Client

Date Received: 05-Feb-16

Date Tested: 11-Feb-16

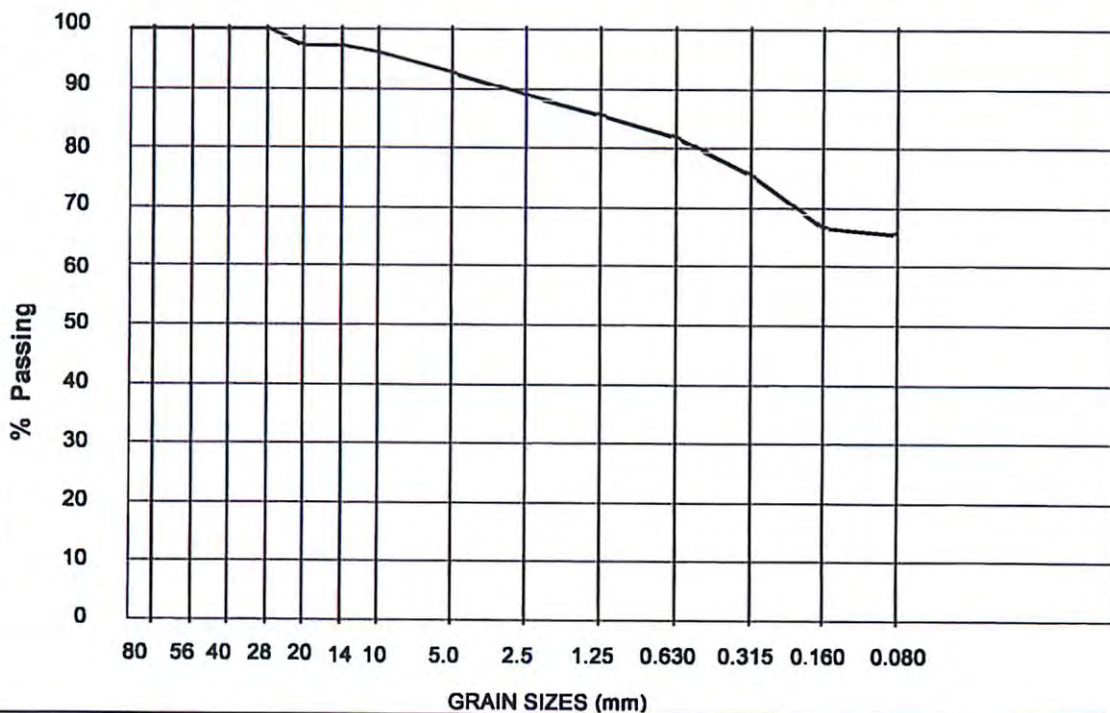
PHYSICAL PROPERTY TESTS

Soil Type		Liquid Limit		Flat and Elongated Particles, %	
Gravel, %	7	Plastic Limit		Coarse Spec. Gravity	
Sand, %	27	Plasticity Index		Fractured Faces, %	
Silt and Clay, %	66	Coarse Absorption, %		Petrographic No.	
Moisture Cont., %	12.5	Fine Absorption, %		Max. Dry Density, (kg/m3)	
Abrasion Loss, %		Micro Deval Loss, %		Optimum Moisture, %	

Sieve Size (mm)	Percent Passing	Spec. Band
112		
80		
56		
40		
28	100	
20	97	
14	97	
10	96	
5.0	93	
2.5	89	
1.25	86	
0.630	82	
0.315	76	
0.160	67	
0.080	65.7	

GRAIN SIZE CURVE

Spec Band
NO SPEC



Comments:

Record No: 9837

Englobe Tech: JA

PER



CERTIFIED LABORATORY
FOR TESTING CONCRETE

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project manager Richard Henry

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		BUL829	BUL830		
Sampling Date		2016/02/03	2016/02/03		
COC Number		N/A	N/A		
	UNITS	BH14-S3	BH14-S4	RDL	QC Batch
Petroleum Hydrocarbons					
Benzene	mg/kg	ND	ND	0.0050	4376798
Toluene	mg/kg	ND	ND	0.025	4376798
Ethylbenzene	mg/kg	ND	ND	0.010	4376798
Total Xylenes	mg/kg	ND	ND	0.050	4376798
C6 - C10 (less BTEX)	mg/kg	ND	ND	2.5	4376798
>C10-C16 Hydrocarbons	mg/kg	ND	ND	10	4376405
>C16-C21 Hydrocarbons	mg/kg	ND	ND	10	4376405
>C21-<C32 Hydrocarbons	mg/kg	ND	ND	15	4376405
Modified TPH (Tier1)	mg/kg	ND	ND	15	4371362
Reached Baseline at C32	mg/kg	NA	NA	N/A	4376405
Hydrocarbon Resemblance	mg/kg	NA	NA	N/A	4376405
Surrogate Recovery (%)					
Isobutylbenzene - Extractable	%	90	85		4376405
n-Dotriacontane - Extractable	%	88	97		4376405
Isobutylbenzene - Volatile	%	85	86		4376798
RDL = Reportable Detection Limit QC Batch = Quality Control Batch ND = Not detected N/A = Not Applicable					

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		BSL759	BSL760		
Sampling Date		2016/01/22	2016/01/21		
COC Number		N/A	N/A		
	UNITS	BH15-S3	BH16-S3	RDL	QC Batch
Petroleum Hydrocarbons					
Benzene	mg/kg	ND	ND	0.0050	4365597
Toluene	mg/kg	ND	ND	0.025	4365597
Ethylbenzene	mg/kg	ND	ND	0.010	4365597
Total Xylenes	mg/kg	ND	ND	0.050	4365597
C6 - C10 (less BTEX)	mg/kg	ND	ND	2.5	4365597
>C10-C16 Hydrocarbons	mg/kg	ND	ND	10	4363060
>C16-C21 Hydrocarbons	mg/kg	ND	ND	10	4363060
>C21-<C32 Hydrocarbons	mg/kg	ND	ND	15	4363060
Modified TPH (Tier1)	mg/kg	ND	ND	15	4359584
Reached Baseline at C32	mg/kg	NA	NA	N/A	4363060
Hydrocarbon Resemblance	mg/kg	NA	NA	N/A	4363060
Surrogate Recovery (%)					
Isobutylbenzene - Extractable	%	90	92		4363060
n-Dotriacontane - Extractable	%	102	100		4363060
Isobutylbenzene - Volatile	%	103	107 (1)		4365597
RDL = Reportable Detection Limit QC Batch = Quality Control Batch ND = Not detected N/A = Not Applicable (1) VPH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.					

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		BUL852	BUL853	BUL854	BUL855	BUL856	BUL857		
Sampling Date		2016/02/01	2016/02/02	2016/02/02	2016/02/03	2016/02/03	2016/02/03		
COC Number		N/A	N/A	N/A	N/A	N/A	N/A		
	UNITS	BH9-S4	BH1-S3	BH3-S3	BH10-S3	BH11-S4	BH12-S4	RDL	QC Batch

Metals									
Acid Extractable Aluminum (Al)	mg/kg	9600	11000	9000	12000	11000	11000	10	4376579
Acid Extractable Antimony (Sb)	mg/kg	ND	ND	ND	ND	ND	ND	2.0	4376579
Acid Extractable Arsenic (As)	mg/kg	5.3	6.0	4.8	5.9	5.2	5.8	2.0	4376579
Acid Extractable Barium (Ba)	mg/kg	100	100	78	110	100	120	5.0	4376579
Acid Extractable Beryllium (Be)	mg/kg	ND	ND	ND	ND	ND	ND	2.0	4376579
Acid Extractable Bismuth (Bi)	mg/kg	ND	ND	ND	ND	ND	ND	2.0	4376579
Acid Extractable Boron (B)	mg/kg	ND	ND	ND	ND	ND	ND	50	4376579
Acid Extractable Cadmium (Cd)	mg/kg	ND	ND	ND	ND	ND	ND	0.30	4376579
Acid Extractable Chromium (Cr)	mg/kg	17	18	16	20	18	23	2.0	4376579
Acid Extractable Cobalt (Co)	mg/kg	9.2	9.4	8.8	11	10	9.8	1.0	4376579
Acid Extractable Copper (Cu)	mg/kg	15	21	16	17	17	16	2.0	4376579
Acid Extractable Iron (Fe)	mg/kg	21000	22000	19000	23000	23000	23000	50	4376579
Acid Extractable Lead (Pb)	mg/kg	9.3	10	10	12	12	12	0.50	4376579
Acid Extractable Lithium (Li)	mg/kg	20	20	20	23	21	22	2.0	4376579
Acid Extractable Manganese (Mn)	mg/kg	520	580	420	580	630	640	2.0	4376579
Acid Extractable Mercury (Hg)	mg/kg	ND	ND	ND	ND	ND	ND	0.10	4376579
Acid Extractable Molybdenum (Mo)	mg/kg	ND	ND	ND	ND	ND	ND	2.0	4376579
Acid Extractable Nickel (Ni)	mg/kg	21	21	18	22	22	22	2.0	4376579
Acid Extractable Rubidium (Rb)	mg/kg	10	11	9.4	13	11	12	2.0	4376579
Acid Extractable Selenium (Se)	mg/kg	ND	ND	ND	ND	ND	ND	1.0	4376579
Acid Extractable Silver (Ag)	mg/kg	ND	ND	ND	ND	ND	ND	0.50	4376579
Acid Extractable Strontium (Sr)	mg/kg	24	12	18	16	11	17	5.0	4376579
Acid Extractable Thallium (Tl)	mg/kg	ND	ND	ND	ND	ND	0.11	0.10	4376579
Acid Extractable Tin (Sn)	mg/kg	ND	ND	ND	ND	ND	ND	2.0	4376579
Acid Extractable Uranium (U)	mg/kg	0.67	0.63	0.59	0.63	0.56	0.63	0.10	4376579
Acid Extractable Vanadium (V)	mg/kg	20	21	19	22	23	22	2.0	4376579
Acid Extractable Zinc (Zn)	mg/kg	38	37	42	44	48	45	5.0	4376579

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

ND = Not detected

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		BUL858		
Sampling Date		2016/02/03		
COC Number		N/A		
	UNITS	BH13-S4	RDL	QC Batch
Metals				
Acid Extractable Aluminum (Al)	mg/kg	12000	10	4376579
Acid Extractable Antimony (Sb)	mg/kg	ND	2.0	4376579
Acid Extractable Arsenic (As)	mg/kg	6.9	2.0	4376579
Acid Extractable Barium (Ba)	mg/kg	120	5.0	4376579
Acid Extractable Beryllium (Be)	mg/kg	ND	2.0	4376579
Acid Extractable Bismuth (Bi)	mg/kg	ND	2.0	4376579
Acid Extractable Boron (B)	mg/kg	ND	50	4376579
Acid Extractable Cadmium (Cd)	mg/kg	ND	0.30	4376579
Acid Extractable Chromium (Cr)	mg/kg	21	2.0	4376579
Acid Extractable Cobalt (Co)	mg/kg	11	1.0	4376579
Acid Extractable Copper (Cu)	mg/kg	22	2.0	4376579
Acid Extractable Iron (Fe)	mg/kg	24000	50	4376579
Acid Extractable Lead (Pb)	mg/kg	57	0.50	4376579
Acid Extractable Lithium (Li)	mg/kg	24	2.0	4376579
Acid Extractable Manganese (Mn)	mg/kg	660	2.0	4376579
Acid Extractable Mercury (Hg)	mg/kg	ND	0.10	4376579
Acid Extractable Molybdenum (Mo)	mg/kg	ND	2.0	4376579
Acid Extractable Nickel (Ni)	mg/kg	22	2.0	4376579
Acid Extractable Rubidium (Rb)	mg/kg	14	2.0	4376579
Acid Extractable Selenium (Se)	mg/kg	ND	1.0	4376579
Acid Extractable Silver (Ag)	mg/kg	ND	0.50	4376579
Acid Extractable Strontium (Sr)	mg/kg	20	5.0	4376579
Acid Extractable Thallium (Tl)	mg/kg	0.14	0.10	4376579
Acid Extractable Tin (Sn)	mg/kg	ND	2.0	4376579
Acid Extractable Uranium (U)	mg/kg	0.62	0.10	4376579
Acid Extractable Vanadium (V)	mg/kg	25	2.0	4376579
Acid Extractable Zinc (Zn)	mg/kg	58	5.0	4376579
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				
ND = Not detected				

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		BUL852	BUL852	BUL853	BUL854	BUL855	BUL856	BUL857		
Sampling Date		2016/02/01	2016/02/01	2016/02/02	2016/02/02	2016/02/03	2016/02/03	2016/02/03		
COC Number		N/A	N/A	N/A	N/A	N/A	N/A	N/A		
	UNITS	BH9-S4	BH9-S4 Lab-Dup	BH1-S3	BH3-S3	BH10-S3	BH11-S4	BH12-S4	RDL	QC Batch

Polyaromatic Hydrocarbons

1-Methylnaphthalene	mg/kg	ND	ND	ND	ND	ND	ND	ND	0.010	4376461
2-Methylnaphthalene	mg/kg	ND	ND	ND	ND	ND	ND	ND	0.010	4376461
Acenaphthene	mg/kg	ND	ND	ND	ND	ND	ND	ND	0.010	4376461
Acenaphthylene	mg/kg	ND	ND	ND	ND	ND	ND	ND	0.010	4376461
Anthracene	mg/kg	ND	ND	ND	ND	ND	ND	ND	0.010	4376461
Benzo(a)anthracene	mg/kg	ND	ND	ND	ND	ND	ND	ND	0.010	4376461
Benzo(a)pyrene	mg/kg	ND	ND	ND	ND	ND	ND	ND	0.010	4376461
Benzo(b)fluoranthene	mg/kg	ND	ND	ND	ND	ND	ND	ND	0.010	4376461
Benzo(g,h,i)perylene	mg/kg	ND	ND	ND	ND	ND	ND	ND	0.010	4376461
Benzo(j)fluoranthene	mg/kg	ND	ND	ND	ND	ND	ND	ND	0.010	4376461
Benzo(k)fluoranthene	mg/kg	ND	ND	ND	ND	ND	ND	ND	0.010	4376461
Chrysene	mg/kg	ND	ND	ND	ND	ND	ND	ND	0.010	4376461
Dibenz(a,h)anthracene	mg/kg	ND	ND	ND	ND	ND	ND	ND	0.010	4376461
Fluoranthene	mg/kg	ND	ND	ND	ND	ND	ND	ND	0.010	4376461
Fluorene	mg/kg	ND	ND	ND	ND	ND	ND	ND	0.010	4376461
Indeno(1,2,3-cd)pyrene	mg/kg	ND	ND	ND	ND	ND	ND	ND	0.010	4376461
Naphthalene	mg/kg	ND	ND	ND	ND	ND	ND	ND	0.010	4376461
Perylene	mg/kg	ND	ND	ND	ND	ND	ND	ND	0.010	4376461
Phenanthrene	mg/kg	0.015	0.012	ND	0.010	ND	ND	ND	0.010	4376461
Pyrene	mg/kg	ND	ND	ND	ND	ND	ND	ND	0.010	4376461

Surrogate Recovery (%)

D10-Anthracene	%	109	106	108	109	104	108	106		4376461
D14-Terphenyl (FS)	%	113	111	115	114	108	113	111		4376461
D8-Acenaphthylene	%	108	104	107	105	101	106	105		4376461

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

ND = Not detected

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		BUL858		
Sampling Date		2016/02/03		
COC Number		N/A		
	UNITS	BH13-S4	RDL	QC Batch
Polyaromatic Hydrocarbons				
1-Methylnaphthalene	mg/kg	ND	0.010	4376461
2-Methylnaphthalene	mg/kg	ND	0.010	4376461
Acenaphthene	mg/kg	ND	0.010	4376461
Acenaphthylene	mg/kg	ND	0.010	4376461
Anthracene	mg/kg	ND	0.010	4376461
Benzo(a)anthracene	mg/kg	ND	0.010	4376461
Benzo(a)pyrene	mg/kg	ND	0.010	4376461
Benzo(b)fluoranthene	mg/kg	ND	0.010	4376461
Benzo(g,h,i)perylene	mg/kg	ND	0.010	4376461
Benzo(j)fluoranthene	mg/kg	ND	0.010	4376461
Benzo(k)fluoranthene	mg/kg	ND	0.010	4376461
Chrysene	mg/kg	ND	0.010	4376461
Dibenz(a,h)anthracene	mg/kg	ND	0.010	4376461
Fluoranthene	mg/kg	ND	0.010	4376461
Fluorene	mg/kg	ND	0.010	4376461
Indeno(1,2,3-cd)pyrene	mg/kg	ND	0.010	4376461
Naphthalene	mg/kg	ND	0.010	4376461
Perylene	mg/kg	ND	0.010	4376461
Phenanthrene	mg/kg	ND	0.010	4376461
Pyrene	mg/kg	ND	0.010	4376461
Surrogate Recovery (%)				
D10-Anthracene	%	113		4376461
D14-Terphenyl (FS)	%	120		4376461
D8-Acenaphthylene	%	113		4376461
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				
ND = Not detected				

ATLANTIC RBCA HYDROCARBONS (WATER)

Maxxam ID		BVM657	BVM657	BVM658	BVM659	BVM660		
Sampling Date		2016/02/10	2016/02/10	2016/02/10	2016/02/10	2016/02/10		
COC Number		N/A	N/A	N/A	N/A	N/A		
	UNITS	MW14	MW14 Lab-Dup	MW15	MW16	FD1	RDL	QC Batch
Petroleum Hydrocarbons								
Benzene	mg/L	ND		ND	ND	ND	0.0010	4378127
Toluene	mg/L	0.0049		ND	ND	ND	0.0010	4378127
Ethylbenzene	mg/L	0.0019		ND	ND	ND	0.0010	4378127
Total Xylenes	mg/L	0.012		ND	ND	ND	0.0020	4378127
C6 - C10 (less BTEX)	mg/L	0.016		ND	ND	ND	0.010	4378127
>C10-C16 Hydrocarbons	mg/L	ND	ND	ND	0.056	0.074	0.050	4379770
>C16-C21 Hydrocarbons	mg/L	ND	ND	ND	ND	ND	0.050	4379770
>C21-<C32 Hydrocarbons	mg/L	ND	ND	ND	ND	ND	0.10	4379770
Modified TPH (Tier1)	mg/L	ND		ND	ND	ND	0.10	4378290
Reached Baseline at C32	mg/L	NA		NA	Yes	Yes	N/A	4379770
Hydrocarbon Resemblance	mg/L	NA		NA	NA	NA	N/A	4379770
Surrogate Recovery (%)								
Isobutylbenzene - Extractable	%	95	81	88	87	77		4379770
n-Dotriacontane - Extractable	%	91	79	82	73	76		4379770
Isobutylbenzene - Volatile	%	99		99	99	100		4378127
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate ND = Not detected N/A = Not Applicable								

APPENDIX H

STATIC MEASUREMENTS

Well Number	Grade Point Elevation (metres)	Measured Point Elevation (metres)	Depth to Water 16/02/04 (metres)	Static Elevation 16/02/04 (metres)	Depth to Water 16/02/10 (metres)	Static Elevation 16/02/10 (metres)
MW14	24.75	25.73	3.191	22.539	3.523	22.207
MW15	25.21	25.09	0.849	24.241	0.555	24.535
MW16	25.50	25.39	0.700	24.690	2.952	22.438

Measured on indicated dates using electronic interface probe

Depth to water measured from Measured Point Elevation on well head

All elevations referenced from Nova Scotia Co-ordinate Monument (NSCM) #223656

APPENDIX I

LABORATORY REPORTS

SUMMARY TABLE - RESULTS OF ECOLOGICAL SCREENING PROTOCOL FOR PETROLEUM IMPACTED SITES

Instructions to Practitioners: This table is intended to summarize the results of the Ecological Screening Protocol and must be completed in consultation with guidance provided in the protocol. Users should include this completed table in their Environmental Assessment or Closure Report. Details and explanations are to be provided in the body of the Report.

Ecological Screening Component	Yes or No	Report name and location of details and explanations
Part I - Identification of petroleum hydrocarbons in media		
1. Do site characterization data indicate the presence of PHC in site <u>surface soil</u> (depth < 1.5 m) above the appropriate screening levels in Tables 1a and 1b?	No	Phase II ESA, Section 5.2
2. Do site characterization data indicate the presence of PHC in <u>shallow site groundwater</u> (depth < 3.0 m) above appropriate ecological screening levels that were derived for the protection of terrestrial plants and soil invertebrates in contact with site groundwater in Table 2?	No	Phase II ESA, Section 5.2
3. Do existing site characterization data indicate the presence of PHC in site <u>groundwater</u> above appropriate ecological screening levels derived for the protection of aquatic receptors in Table 3a/3b?	No	Phase II ESA, Section 5.2
4. Do site characterization data indicate the presence of PHC in site <u>surface water</u> above the appropriate screening levels in Table 3?	No	Surface water not assessed
5. Does site characterization indicate the presence of PHC in on-site or adjacent <u>sediments</u> above the appropriate screening levels in Table 4?	No	Sediments not assessed
IF ALL ANSWERS IN PART I ARE "NO" THEN NO FURTHER ACTION IS REQUIRED		
Part II - Identification of habitat and ecological receptors		
1. Are the following habitat types or conditions present on the site or proximate to site within a minimum of 200 metres? <ul style="list-style-type: none"> • wetland habitats • aquatic habitats • forested habitats • grassland habitats • provincial/national parks or ecological reserves • known rare, threatened or endangered species • other known critical or sensitive habitat • other local or regional receptor or habitat concerns 		
2a. Are there visible indications of stressed vegetation on the site?		

Ecological Screening Component	Yes or No	Report name and location of details and explanations
2b. Is there evidence that the site vegetation community differs from what would be expected?		
2c. Are there indications that the site soil cannot support a soil invertebrate community?		
3. Is there evidence that terrestrial plants in the habitats above are likely to be in root contact with site groundwater above screening levels?		
4. Would wildlife receptors be expected to forage on or near the contaminated areas of the site?		
Part III - Identification of exposure pathways for ecological receptors		
1a. Is it reasonable to conclude that site hydrocarbons in surface soil with concentrations exceeding applicable screening levels, will come into contact with terrestrial plants and invertebrates in a suitable habitat?		
1b. Is it reasonable to conclude that site hydrocarbons in surface soil with concentrations exceeding applicable screening levels, will come into contact with mammalian, avian or herptile terrestrial receptors within an agricultural land use in a suitable habitat?		
2. Is it reasonable to conclude that dissolved hydrocarbons in site groundwater with concentrations exceeding applicable screening levels will come into contact with plants or soil invertebrates in a suitable habitat?		
3. Is it reasonable to conclude that dissolved hydrocarbons in site groundwater with concentrations exceeding applicable screening levels will come into contact with aquatic receptors or aquatic receptor habitat?		
4. Is it reasonable to conclude that site petroleum hydrocarbon contamination could impact aquatic receptors or aquatic habitat in surface water bodies via the following: a. surface runoff (e.g. erosion, windblown contaminants) b. groundwater flow c. preferential overland flow pathways (e.g. drainage ditch, slope, swale) d. preferential subsurface flow pathways (e.g. culvert, trench, sewer line, pipelines, swales) such that aqueous media concentrations would potentially exceed surface water and/or sediment quality screening levels?		
Are there site specific conditions present, which were not considered in any section above that should require further ecological assessment?		
IF ALL ANSWERS IN PART III ARE "NO" THEN NO FURTHER ACTION IS REQUIRED		