

August 2018

HYDROLOGICAL REVIEW SUMMARY

The form is to be completed by the Professional that prepared the Hydrological Review.
 Use of the form by the City of Toronto is not to be construed as verification of engineering/hydrological content.

Refer to the Terms of Reference, Hydrological Review:

[Link to Terms of Reference Hydrological Review](#)

For City Staff Use Only:	
Name of ECS Case Manager (Please print)	
Date Review Summary provided to to TW, EM&P	

**IF ANY OF THE REQUIREMENTS LISTED BELOW HAVE NOT BEEN INLCUDED IN THE HYDROLOGICAL REVIEW, THE REVIEW WILL BE CONSIDERED INCOMPLETE.
 THE GREY SHADED BOXES WILL REQUIRE A CONSISTANCY CHECK BY THE ECS CASE MANAGER.**

Summary of Key Information:

SITE INFORMATION		Page # & Section # of Review	Review Includes this Information City Staff (Check)
Site Address	27 Grosvenor Street and 26 Grenville Street, Toronto, Ontario	Page 1, Section 1.1	
Postal Code	M7A 2G6 and M7A 2G9	Page 1, Section 1.1	
Property Owner (on request for comments memo)	Greenwin Holdings Inc. & Choice Properties REIT	Page 1, Section 1.1	
Proposed description of the project (if applicable) (point towers, number of podiums)	Rental housing mixed use buildings	Page 1, Section 1.1	
Land Use (ex. commercial, residential, mixed, institutional, industrial)	Mixed use	Page 1, Section 1.1	
Number of below grade levels for the proposed structure	Three (3) levels of underground parking	Page 1, Section 1.1	
HYDROLOGICAL REVIEW INFORMATION			
Date Hydrological Review was prepared:	February 5, 2021		
Who Performed the Hydrological Review (Consulting Firm)	B.I.G. Consulting Inc.	Page 1, Section 1.1	
Name of Author of Hydrological Review	Prem Manicks, P.Geo	Page 18, section 10	

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<p>Check the directories on the website for Professional Geoscientists and/or Professional Engineers of Ontario been checked to ensure that the Hydrological Report has been prepared by a qualified person who is a licensed Professional Geoscientist as set out in the Professional Geoscientist Act of Ontario or a Professional Engineer?</p> <p>PEO: Professional Engineers of Ontario APGO: Association of Professional Geoscientists of Ontario</p>	<p>Prem Manicks is a practicing member in the Association of Professional Geoscientist of Ontario, the membership number is 0842.</p>	<p>N/A</p>	
<p>Has the Hydrological Review been prepared in accordance with all the following:</p> <ul style="list-style-type: none"> • Ontario Water Resources Act • Ontario Regulation 387/04 • Toronto Municipal Code Chapter 681-Sewers 	<p>Yes</p>	<p>Page 8, Section 4.5; Page 16, Section 8.1, 8.2</p>	
		<p>Page # & Section # of every occurrence in the Review</p>	<p>Review Includes this Information City Staff (Check)</p>

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SITE INFORMATION		Page # & Section # of Review	Review Includes this Information City Staff (Check)
<p>Total Volume (L/day) Short Term Discharge of groundwater (construction dewatering) with safety factor included</p>	<p>150,000 L/day</p> <p>What safety factor was used?</p> <p style="text-align: center;"><u>3</u></p>	<p>Page 11, section 5.5</p>	
<p>Total Volume (L/day) Short Term Discharge of groundwater (construction dewatering) without safety factor included</p>	<p>50,000 L/day</p>	<p>Page 11 section 5.5</p>	
<p>Total Volume (L/day) Long Term drainage of groundwater (from foundation drainage, weeping tiles, sub slab drainage) with safety factor included</p> <p>If the development is part of a multiple tower complex, include total volume for each separate tower</p>	<p>19,000 L/day</p> <p>What safety factor was used?</p> <p style="text-align: center;"><u>3</u></p>	<p>Page 14, section 6.3</p>	
<p>List the nearest surface water (river, creek, lake)</p>	<p>The closest surface water body to the Site is the Don River is situated approximately 2.3 km east of the Site and Lake Ontario is situated approximately 2.4 km south of the Site.</p>	<p>Page 4, section 3.2</p>	

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SITE INFORMATION		Page # & Section # of Review	Review Includes this Information City Staff (Check)
Lowest basement elevation	93.71 m asl	Page 10, section 5.2; Page 13, section 6.1	
Foundation elevation	91.11 m asl	Page 13, section 6.1	
Ground elevation	106.0 m asl	Page 10, section 5.2; Page 13, section 6.1	
STUDY AREA MAP		Page # & Section # of every occurrence in the Review	Review Includes this Information City Staff (Check)
Study area map(s) have been included in the report.	⊗ Yes	Page 1, section 1.1; page 3, sections 2.1 and 2.2; Page 4, sections 3.3 and 3.4; page 5, sections 4.1 and 4.2; page 6, section 4.3 and attached in Figures	N/A
Study area map(s) been prepared according to the Hydrological Review Terms of Reference.	⊗ Yes	Page 1, section 1.1; page 3, sections 2.1 and 2.2; Page 4, sections 3.2 and 3.4; page 5, sections 4.1 and 4.2; page 6, section 4.3 and attached in Figures	N/A
WATER LEVEL AND WELLS		Page # & Section # of every occurrence	Review Includes this Information (City Staff Initial)

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SITE INFORMATION		Page # & Section # of Review	Review Includes this Information City Staff (Check)
		in the Review	
The groundwater level has been monitored using all wells located on site (within property boundary).	Yes	Page 7, section 4.3	
The static water level measurements have been monitored at all monitoring wells for a minimum of 3 months with samples taken every 2 weeks for a minimum of 6 samples. The intent is for the qualified professional to use professional judgement to estimate the seasonally high groundwater level.	Yes	Page 7, section 4.3	
All water levels in the wells have been measured with respect to masl.	Yes	Page 7, section 4.3	
A table of geology/soil stratigraphy for the property has been included.	Yes	Page 5, section 4.2	
GEOLOGY AND PHYSICAL HYDROLOGY		Page # & Section # of every occurrence in the Review	Review Includes this Information (City Staff Initial)
The review has made reference to the soil materials including thickness, composition and texture, and bedrock environments.	Yes	Page 5, section 4.2	
Key aquifers and the site's proximity to nearby surface water has been identified.	<input checked="" type="checkbox"/> Yes No local aquifers that were identified could negatively impact the subject site.	Page 3, section 2.3	N/A

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SITE INFORMATION		Page # & Section # of Review	Review Includes this Information City Staff (Check)
PUMP TEST/SLUG TEST/DRAWDOWN ANALYSIS		Page # & Section # of every occurrence in the Review	Review Includes this Information City Staff (Check)
A summary of the pumping test data and analysis is included in the review.	Not applicable. Given the low recovery rate of the native soil, a pump test is not applicable for the Site.	Page 8, section 4.4	
The pump test been carried out for at least 24 hours if possible. If not, has a slug test been conducted?	Not applicable. Slug test has been conducted.	Page 8, section 4.4 and Appendix C	
Have the monitoring well(s) have been monitored using digital devices? If yes how frequently?	No, water levels have been taken manually as per the August 2018 City of Toronto Geotechnical/Hydrogeological Terms of Reference.		
If a slug or pump test has been conducted has the static groundwater level been monitored at all monitoring well(s) multiple times to measure recovery? -prior to the slug or pumping test(s)? -post slug or pumping test(s)?	⊗ Yes	Page 8, section 4.4 and Appendix C	N/A
The above noted slug or pump tests have been included in the report.	⊗ Yes	Page 8, section 4.4 and Appendix C	
WATER QUALITY		Page # & Section # of every occurrence in the Review	Review Includes this Information City Staff (Check)

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SITE INFORMATION		Page # & Section # of Review	Review Includes this Information City Staff (Check)
The report includes baseline water quality samples from a laboratory. The water quality must be analyzed for all parameters listed in Tables 1 and 2 of Chapter 681 Sewers of the Toronto Municipal Code (found in Appendix A) and the samples must have to be taken unfiltered within 9 months of the date of submission.	Yes.	Page 8 and 9, section 4.5 and Appendix D	
The water quality data templates in Appendix A have been completed for each sample taken for both sanitary/combined and storm sewer limits.	For sanitary discharge- See the sanitary/combined sewer parameter limit template For storm discharge- See the storm sewer parameter limit template	Tables below	
Qualified professional to list all sample parameters that have violated the Bylaw limits for each sample taken for the sanitary/combined Bylaw limits If there are any sample parameter Exceedances the groundwater can't be discharged as is.	No exceedances.	Page 9, section 4.5 and Appendix D	
Qualified professional to list all sample parameters that have violated the Bylaw limits for each sample taken for the storm Bylaw limits. If there are any sample parameter exceedances the groundwater can't be discharged as is.	Storm: Total suspended solids (limit 15 mg/L, result 160 mg/L) Total manganese (Limited 0.05 mg/L, result 0.34 mg/L) Total phosphorus (limit 0.4 mg/L, result 1.1 mg/L)	Page 9, section 4.5 and Appendix D	
The water quality samples have been analyzed by a Canadian laboratory accredited and licensed by Standards Council of Canada and/or Canadian Association for Laboratory Accreditation.	⊗ Yes	Page 10, section 4.5 and Appendix D	N/A

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SITE INFORMATION		Page # & Section # of Review	Review Includes this Information City Staff (Check)
List of Canadian accredited laboratories: Standards Council of Canada	Bureau Veritas Laboratories	Page 8, section 4.5 and Appendix D	
A chain of custody record for the samples is included with the report.	Yes	Appendix D	
Has the chain of custody reference any filtered sample? If yes, the report has to be amended and re-submitted to include only non-filtered samples.	No	Appendix D	
List any of the sample parameters that exceed the Bylaw limits with the reporting detection limit (RDL) included.	Storm: Total suspended solids (limit 15 mg/L, result 160 mg/L) Total manganese (Limited 0.05 mg/L, result 0.34 mg/L) Total phosphorus (limit 0.4 mg/L, result 1.1 mg/L)	Appendix D	
A true copy of the Certificate of Analysis report, is included with the report.	Yes	Appendix D	
EVALUATION OF IMPACT		Page # & Section # of every occurrence in the Review	Review Includes this Information City Staff (Check)
Does the report recommend a back-up system or relief safety valve(s)?	<input type="radio"/> Yes <input checked="" type="radio"/> No		
Does the associated Geotechnical report recommend a back-up system or relief safety valve(s)?	<input type="radio"/> Yes <input checked="" type="radio"/> No		
The taking and discharging of groundwater on site has been analyzed to ensure that no negative	<input checked="" type="radio"/> Yes	Page 15, section 7	N/A

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SITE INFORMATION	Page # & Section # of Review	Review Includes this Information City Staff (Check)
impacts will occur to: the City sewage works in terms of quality and quantity (including existing infrastructure), the natural environment, and settlement issues.		
Has it been determined that there will be a negative impact to the natural environment, City sewage works, or surrounding properties has the study identified the following: the extent of the negative impact, the detail of the precondition state of all the infrastructure, City sewage works, and natural environment within the effected zone and the proposed remediation and monitoring plan?	<input type="radio"/> Yes If yes, identify impact: <input checked="" type="radio"/> No	Page 15, section 7 N/A

Summary of Additional Information and Key Items (if applicable):

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Appendix A:

SANITARY/COMBINED

Sample Location: BH/MW1

Inorganics		Sample Result	Sample Result with upper RDL included	
Parameter	mg/L	mg/L	mg/L	ug/L
BOD	300	12	2	300,000
Fluoride	10	<0.10	0.10	10,000
TKN	100	2.7	0.10	100,000
pH	6.0 - 11.5	7.46		6.0 - 11.5
Phenolics 4AAP	1	<0.0010	0.0010	1,000
TSS	350	160	10	350,000
Total Cyanide	2	<0.0050	0.005	2,000
Metals				
Chromium Hexavalent	2	<0.0005	0.0005	2,000
Mercury	0.01	<0.00010	0.00010	10
Total Aluminum	50	0.64	0.0049	50,000
Total Antimony	5	<0.0005	0.0005	5,000
Total Arsenic	1	0.0027	0.0010	1,000
Total Cadmium	0.7	<0.000090	0.000090	700
Total Chromium	4	<0.005	0.005	4,000
Total Cobalt	5	0.00052	0.0005	5,000
Total Copper	2	0.0019	0.0009	2,000
Total Lead	1	0.006	0.0005	1,000
Total Manganese	5	0.340	0.002	5,000
Total Molybdenum	5	<0.0005	0.0005	5,000
Total Nickel	2	0.0017	0.001	2,000
Total Phosphorus	10	1.1	0.1	10,000
Total Selenium	1	<0.002	0.002	1,000
Total Silver	5	<0.00009	0.00009	5,000
Total Tin	5	0.003	0.001	5,000
Total Titanium	5	0.026	0.005	5,000
Total Zinc	2	0.02	0.005	2,000
Petroleum Hydrocarbons				
Animal/Vegetable Oil & Grease	150	1.7	0.50	150,000
Mineral/Synthetic Oil & Grease	15	0.70	0.50	15,000

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Volatile Organics		Sample Result	Sample Result with upper RDL included	
Parameter	mg/L	mg/L	mg/L	ug/L
Benzene	0.01	<0.0004	0.0004	10
Chloroform	0.04	<0.0004	0.0004	40
1,2-Dichlorobenzene	0.05	<0.0008	0.0008	50
1,4-Dichlorobenzene	0.08	<0.0008	0.0008	80
Cis-1,2-Dichloroethylene	4	<0.001	0.001	4,000
Trans-1,3-Dichloropropylene	0.14	<0.0008	0.0008	140
Ethyl Benzene	0.16	<0.0004	0.0004	160
Methylene Chloride	2	<0.004	0.004	2,000
1,1,2,2-Tetrachloroethane	1.4	<0.0008	0.0008	1,400
Tetrachloroethylene	1	<0.0004	0.0004	1,000
Toluene	0.016	<0.0004	0.0004	16
Trichloroethylene	0.4	<0.0004	0.0004	400
Total Xylenes	1.4	<0.0004	0.0004	1,400
Semi-Volatile Organics				
Di-n-butyl Phthalate	0.08	<0.008	0.008	80
Bis (2-ethylhexyl) Phthalate	0.012	<0.008	0.008	12
3,3'-Dichlorobenzidine	0.002	<0.0008	0.0008	2
Pentachlorophenol	0.005	<0.002	0.002	5
Total PAHs	0.005			5
Misc Parameters				
Nonylphenols	0.02	<0.001	0.001	20
Nonylphenol Ethoxylates	0.2	<0.005	0.005	200

Sample Collected: November 2, 2020

Temperature: 13.7 °C

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STORM

Sample Location: BH/MW1

Inorganics		Sample Result	Sample Result with upper RDL included	
Parameter	mg/L	mg/L	mg/L	ug/L
pH	6.0 - 9.5	7.46		6.0 - 9.5
BOD	15	12	2	15,000
Phenolics 4AAP	0.008	<0.0010	0.0010	8
TSS	15	160	10	15,000
Total Cyanide	0.02	<0.0050	0.005	20
Metals				
Total Arsenic	0.02	0.0027	0.0010	20
Total Cadmium	0.008	<0.000090	0.000090	8
Total Chromium	0.08	<0.005	0.005	80
Chromium Hexavalent	0.04	<0.0005	0.0005	40
Total Copper	0.04	0.0019	0.0009	40
Total Lead	0.12	0.006	0.0005	120
Total Manganese	0.05	0.340	0.002	50
Total Mercury	0.0004	<0.00010	0.00010	0.4
Total Nickel	0.08	0.0017	0.001	80
Total Phosphorus	0.4	1.1	0.1	400
Total Selenium	0.02	<0.002	0.002	20
Total Silver	0.12	<0.00009	0.00009	120
Total Zinc	0.04	0.02	0.005	40
Microbiology				
E.coli	200	<10	10	200,000
Volatile Organics				
Parameter	mg/L	mg/L	mg/L	ug/L
Benzene	0.002	<0.0004	0.0004	2
Chloroform	0.002	<0.0004	0.0004	2
1,2-Dichlorobenzene	0.0056	<0.0008	0.0008	6
1,4-Dichlorobenzene	0.0068	<0.0008	0.0008	7
Cis-1,2-Dichloroethylene	0.0056	<0.001	0.001	6
Trans-1,3-Dichloropropylene	0.0056	<0.0008	0.0008	6
Ethyl Benzene	0.002	<0.0004	0.0004	2
Methylene Chloride	0.0052	<0.004	0.004	5
1,1,2,2-Tetrachloroethane	0.017	<0.0008	0.0008	17
Tetrachloroethylene	0.0044	<0.0004	0.0004	4
Toluene	0.002	<0.0004	0.0004	2
Trichloroethylene	0.0076	<0.0004	0.0004	8
Total Xylenes	0.0044	<0.0004	0.0004	4

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Semi-Volatile Organics		Sample Result	Sample Result with upper RDL included	
Di-n-butyl Phthalate	0.015	<0.008	0.008	15
Bis (2-ethylhexyl) Phthalate	0.0088	<0.008	0.008	8.8
3,3'-Dichlorobenzidine	0.0008	<0.0008	0.0008	0.8
Pentachlorophenol	0.002	<0.002	0.002	2
Total PAHs	0.002			2
PCBs	0.0004	<0.00005	0.00005	0.4
Misc Parameters				
Nonylphenols	0.001	<0.001	0.001	1
Nonylphenol Ethoxylates	0.01	<0.005	0.005	10

Sample Collected: November 2, 2020

Temperature: 13.7 °C

Consulting Firm that prepared Hydrological Report: B.I.G. Consulting Inc.

Qualified Professional who completed the report summary: Prem Manicks, P.Geo
Print Name

Qualified Professional who completed the report summary: 
Signature

