

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 INCLUDED 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	2400 – 2440 Dundas St West, Toronto, Ontario	Sec 1. Pg 2	
Postal Code	M6P 1W9	Pg 1	
Property Owner (on request for comments memo)	Fora Developments	Sec 1. Pg 2	
Proposed description of the project (if applicable) (point towers, number of podiums)	2 buildings with a total of three towers (25, 37, and 42 storeys)	Sec 2. Pg 3	
Land Use (ex. commercial, residential, mixed, institutional, industrial)	The Site is currently zoned as employment residential and mixed residential and commercial	Sec 1. Pg 2	
Number of below-grade levels for the proposed structure	One (1) level of underground	Sec 2. Pg 3	

August 2018

HYDROLOGICAL REVIEW INFORMATION			
Date Hydrological Review was prepared:	June 7, 2024	Pg 1	
Who Performed the Hydrological Review (Consulting Firm)	GEMS	Pg 1	
Name of Author of Hydrological Review	Kimberly Tran/Dan Menard	Sec 9 Pg 23	

HYDROLOGICAL REVIEW SUMMARY

SITE INFORMATION		Page # & Section # of Review	Review Includes this Information City Staff (Check)
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? PEO: Professional Engineers of Ontario APGO: Association of Professional Geoscientists of Ontario		N/A	

August 2018

Has the Hydrological Review been prepared in accordance with all the following:	Yes		
<ul style="list-style-type: none"> Ontario Water Resources Act Ontario Regulation 387/04 Toronto Municipal Code Chapter 681-Sewers 			
		Page # & Section # of every occurrence in the Review	Review Includes this Information City Staff (Check)

HYDROLOGICAL REVIEW SUMMARY

SITE INFORMATION		Page # & Section # of Review	Review Includes this Information City Staff (Check)
Total Volume (L/day) Short Term Discharge of groundwater (construction dewatering) with safety factor included	597,730 L/day What safety factor was used? 1.5	Section 5.4 Pg 18	

August 2018

Total Volume (L/day) Short Term Discharge of groundwater (construction dewatering) without safety factor included	289,687 L/day	Section 5.4 Pg 18	
Total Volume (L/day) Long Term drainage of groundwater (from foundation drainage, weeping tiles, sub slab drainage) with safety factor included If the development is part of a multiple tower complex, include total volume for each separate tower	6,868 L/day What safety factor was used? 1.3	Section 5.5 Pg 19	
List the nearest surface water (river, creek, lake)	Grenadier Pond (1.9km) Lake Ontario (2.4km)	Section 4.2 Pg 7	

HYDROLOGICAL REVIEW SUMMARY

SITE INFORMATION		Page # & Section # of Review	Review Includes this Information City Staff (Check)
Lowest basement elevation	109.0 m asl	Section 5.1 Page 14	

August 2018

Foundation elevation	109.0 m asl	Section 5.1 Page 14	
Ground elevation	114.0 m asl	Section 5.1 Page 14	
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.	(X) Yes	Figure 1 Pg. 26	N/A
Study area map(s) been prepared according to the Hydrological Review Terms of Reference.	(X) Yes	Figure 1 Pg. 26	N/A
WATER LEVEL AND WELLS		Page # & Section # of every occurrence	Review Includes this Information (City Staff Initial)

HYDROLOGICAL REVIEW SUMMARY

August 2018

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	Section 4.3 Page 7	
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.	15 Monitoring wells Water levels taken 7 times in each well from September to November 2022 and once in May 2024	Section 4.3 Page 7	
All water levels in the wells have been measured with respect to masl.	Yes	Section 4.3 Page 7	
A table of geology/soil stratigraphy for the property has been included.	Yes	Table 4.1 Page 6	
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 Analysis of subsurface materials based on the logs from 15 boreholes	Section 4.2 Page 6	

August 2018

Key aquifers and the site's proximity to nearby surface water has been identified.	(X) Yes	Section 4.2 Page 7	N/A
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August 2018

HYDROLOGICAL REVIEW SUMMARY

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.	A pumping test was not completed for this site – Please see next section	Sec 4.4 Pg 11 Appendix D	
The pump test been carried out for at least 24 hours if possible. If not, has a slug test been conducted?	A pumping test was not conducted – Rising head tests were completed in 3 monitoring wells	Sec 4.4 Pg 11 Appendix D	
Have the monitoring well(s) have been monitored using digital devices? If yes how frequently?	Yes – Three wells, 6 tests, 15 second intervals	Sec 4.4 Pg 11 Appendix D	
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)?	(X) Yes Recovery was measured following the removal of a slug in three monitoring wells using digital device in 15 second intervals.	Sec 4.4 Pg 11 Appendix D	N/A
The above noted slug or pump tests have been included in the report.	(X) Yes	Sec 4.4 Pg 11 Appendix D	

August 2018

WATER QUALITY		Page # & Section # of every occurrence in the Review	Review Includes this Information City Staff (Check)
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HYDROLOGICAL REVIEW SUMMARY

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.	Baseline water quality data provided in Tables provided by Toronto Water	Section 4.5 Page 12	
The water quality data templates in Appendix A have been completed for each sample taken for both sanitary/combined and storm sewer limits.	<p>For sanitary discharge- See the sanitary/combined sewer parameter limit template</p> <p>For storm discharge- See the storm sewer parameter limit template</p>		

August 2018

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.	Exceedances listed in report	Section 4.5 Page 12	
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.	Exceedances listed in report	Section 4.5 Page 12	
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.	(X) Yes	Appendix E	N/A

HYDROLOGICAL REVIEW SUMMARY

SITE INFORMATION		Page # & Section # of Review	Review Includes this Information City Staff (Check)
List of Canadian accredited laboratories: Standards Council of Canada			
A chain of custody record for the samples is included with the report.	Yes	Appendix E	

August 2018

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 filtered samples		
List any of the sample parameters that exceed the Bylaw limits with the reporting detection limit (RDL) included.	Total Suspended Solids (TSS) - RDL 10 Total Manganese (Mn) - RDL 2.0	Appendix E	
A true copy of the Certificate of Analysis report, is included with the report.	Yes	Appendix E	
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)? Does the associated Geotechnical report recommend a back-up system or relief safety valve(s)?	<input type="radio"/> Yes <input checked="" type="radio"/> No <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		N/A

HYDROLOGICAL REVIEW SUMMARY

August 2018

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.	The hydrogeology report has provided information on the anticipated quantities and quality of groundwater. Short term dewatering of groundwater for excavation is anticipated.		
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?	<p><input type="radio"/> Yes</p> <p>If yes, identify impact:</p> <p><input checked="" type="radio"/> No</p>		N/A

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

August 2018

HYDROLOGICAL REVIEW SUMMARY

Appendix A:

SANITARY/COMBINED

Sample Location:

Inorganics		Sample Result	Sample Result with upper RDL included	
<u>Parameter</u>	<u>mg/L</u>	<u>mg/L</u>	<u>mg/L</u>	<u>ug/L</u>
BOD	300	ND	2	300,000
Fluoride	10	0.12	0.10	10,000
TKN	100	0.20	0.10	100,000
pH	6.0 - 11.5	7.67		6.0 - 11.5
Phenolics 4AAP	1	0.0012	0.0010	1,000
TSS	350	41	10	350,000
Total Cyanide	2	ND	0.0050	2,000
Metals		ug/L	ug/L	
Chromium Hexavalent	2	0.76	0.50	2,000
Mercury	0.01	ND	0.00010	10
Total Aluminum	50	460	4.9	50,000
Total Antimony	5	ND	0.50	5,000
Total Arsenic	1	1.3	1.0	1,000
Total Cadmium	0.7	ND	0.090	700
Total Chromium	4	ND	5.0	4,000
Total Cobalt	5	ND	0.50	5,000
Total Copper	2	1.8	0.90	2,000
Total Lead	1	0.62	0.50	1,000
Total Manganese	5	170	2.0	5,000
Total Molybdenum	5	1.9	0.50	5,000

August 2018

Total Nickel	2	3.4	1.0	2,000
Total Phosphorus	10	ND	100	10,000
Total Selenium	1	ND	2.0	1,000
Total Silver	5	ND	0.090	5,000
Total Tin	5	2.2	1.0	5,000
Total Titanium	5	15	5.0	5,000
Total Zinc	2	21	5.0	2,000
Petroleum Hydrocarbons				
Animal/Vegetable Oil & Grease	150	ND	0.50	150,000
Mineral/Synthetic Oil & Grease	15	ND	0.50	15,000

HYDROLOGICAL REVIEW SUMMARY

Volatile Organics		Sample Result	Sample Result with upper RDL included	
Parameter	mg/L	ug/L	ug/L	ug/L
Benzene	0.01	ND	0.40	10
Chloroform	0.04	ND	0.40	40
1,2-Dichlorobenzene	0.05	ND	0.80	50
1,4-Dichlorobenzene	0.08	ND	0.80	80
Cis-1,2-Dichloroethylene	4	ND	1.0	4,000
Trans-1,3-Dichloropropylene	0.14	ND	0.80	140
Ethyl Benzene	0.16	ND	0.40	160
Methylene Chloride	2	ND	4.0	2,000
1,1,2,2-Tetrachloroethane	1.4	ND	0.80	1,400
Tetrachloroethylene	1	ND	0.40	1,000
Toluene	0.016	ND	0.40	16
Trichloroethylene	0.4	ND	0.40	400
Total Xylenes	1.4	ND	0.40	1,400
Semi-Volatile Organics		ug/L	ug/L	

August 2018

Di-n-butyl Phthalate	0.08	ND	2	80
Bis (2-ethylhexyl) Phthalate	0.012	3	2	12
3,3'-Dichlorobenzidine	0.002	ND	0.8	2
Pentachlorophenol	0.005	ND	1	5
Total PAHs	0.005	ND	1	5
Misc Parameters		mg/L	mg/L	
Nonylphenols	0.02	ND	0.005	20
Nonylphenol Ethoxylates	0.2	ND	0.001	200

Sample Collected:

Temperature:

HYDROLOGICAL REVIEW SUMMARY

STORM

Sample Location:

Inorganics		Sample Result	Sample Result with upper RDL included	
<u>Parameter</u>	mg/L			ug/L
pH	6.0 - 9.5	7.67		
BOD	15	ND	2	15,000
Phenolics 4AAP	0.008	0.0012	0.0010	8
TSS	15	41	10	15,000
Total Cyanide	0.02	ND	0.0050	20
Metals		ug/L	ug/L	
Total Arsenic	0.02	1.3	1.0	20
Total Cadmium	0.008	ND	0.090	8
Total Chromium	0.08	ND	5.0	80
Chromium Hexavalent	0.04	ND	0.50	40
Total Copper	0.04	1.8	0.90	40
Total Lead	0.12	0.62	0.50	120
Total Manganese	0.05	170	2.0	50
Total Mercury	0.0004	ND	0.10	0.4
Total Nickel	0.08	3.4	1.0	80
Total Phosphorus	0.4	ND	100	400

August 2018

Total Selenium	0.02	ND	2.0	20
Total Silver	0.12	ND	0.090	120
Total Zinc	0.04	21	5.0	40
Microbiology		CFU/100mL	CFU/100mL	
E.coli	200	<10	10	200,000
Volatile Organics		ug/L	ug/L	
<u>Parameter</u>	<u>mg/L</u>	<u>ug/L</u>	<u>ug/L</u>	<u>ug/L</u>
Benzene	0.002	ND	0.40	2
Chloroform	0.002	ND	0.40	2
1,2-Dichlorobenzene	0.0056	ND	0.80	6
1,4-Dichlorobenzene	0.0068	ND	0.80	7
Cis-1,2-Dichloroethylene	0.0056	ND	1.0	6
Trans-1,3-Dichloropropylene	0.0056	ND	0.80	6
Ethyl Benzene	0.002	ND	0.40	2
Methylene Chloride	0.0052	ND	4.0	5
1,1,2,2-Tetrachloroethane	0.017	ND	0.80	17
Tetrachloroethylene	0.0044	ND	0.40	4
Toluene	0.002	ND	0.40	2
Trichloroethylene	0.0076	ND	0.40	8
Total Xylenes	0.0044	ND	0.40	4

HYDROLOGICAL REVIEW SUMMARY

Semi-Volatile Organics		Sample Result	Sample Result with upper RDL included	
Di-n-butyl Phthalate	0.015	ND	2	5
Bis (2-ethylhexyl) Phthalate	0.0088	3	2	8.8
3,3'-Dichlorobenzidine	0.0008	ND	0.8	0.8
Pentachlorophenol	0.002	ND	1	2
Total PAHs	0.002	ND	1	2
PCBs	0.0004	ND	0.05	0.4

August 2018

Misc Parameters		mg/L	mg/L	
Nonylphenols	0.001	ND	0.005	1
Nonylphenol Ethoxylates	0.01	ND	0.001	10

Sample Collected: 2022/09/02

Temperature: 11.3°C

Groundwater Environmental Management Services

Consulting Firm that prepared Hydrological Report: _____

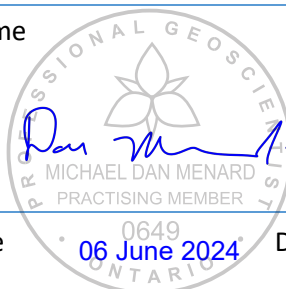
Dan Menard

Qualified Professional who completed the report summary: _____

Print Name

Qualified Professional who completed the report summary: _____

Signature



Date & Stamp