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Arch-Nova Design Inc.
45 Banner Road
Nepean, Ontario
K2H 8X5

May 20, 2014
Project: 13-079

Attention: Mr. Zoran Mrdja, P.Eng.

**Re: Private Well Sampling Summary
Proposed Commercial Development
2403 Huntley Road
Ottawa, Ontario**

Water samples were collected from untreated water taps at the locations of a private residence on Kimini Drive and an adjacent property on Fallowfield Road on April 30, 2014. The addresses of the properties from which the water samples were collected are not included in this report to protect the privacy of participants; however, the names and addresses of the property owners are kept on file at Houle Chevrier Engineering Ltd. The private wells which were sampled are located within 250 metres of the subject site property lines.

The water samples were collected in laboratory supplied bottles, preserved in the field and submitted to an accredited laboratory for analysis of a range of chemical, physical and bacteriological parameters (subdivision package). A copy of the laboratory Certificate of Analysis of the results is provided in Attachment A following the text of this letter.

The results of the laboratory analysis were compared with the Maximum Acceptable Concentration (MAC), Aesthetic Objectives (AO) and Operational Guidelines (OG) provided in the Ontario Drinking Water Standards as well as the maximum treatable limits as given by the Ontario Ministry of Environment (MOE) Procedure D-5-5: Technical Guideline for Private Wells: Water Supply Assessment. The parameters exceeding the ODWS and maximum treatable limits are summarized in the following table:

Parameter	ODWS Limit	Maximum Treatable Limit (Procedure D-5-5)	PW1	PW2
Hardness (mg/L as CaCO ₃)	100 ¹	n/a	700	550
Total Dissolved Solids (mg/L)	500	n/a	1,700	1,010
Chloride (mg/L)	250	250	635	322
Turbidity (NTU)	1.0 / 5.0 ²	n/a	0.9	3.1
Sodium (mg/L)	200	200	214	99

Notes: 1. The ODWS states that hardness levels above 300 mg/L as CaCO₃ is considered very hard and hardness level over 500 mg/L as CaCO₃ is considered unacceptable for domestic use.
2. The maximum acceptable concentration for turbidity is set at 1.0 NTU for water requiring disinfection and the aesthetic objective for turbidity is 5.0 NTU.

The concentrations of chloride in samples PW1 and PW2 and the concentration of sodium in PW1 exceed the maximum treatable limits as specified in MOE Procedure D-5-5. It is possible, however, that the groundwater in an on-site test well may differ from nearby wells.



James McEwen, B.Sc., B.Eng.
Senior Environmental Scientist



Andrew Chevrier, M.Eng., P.Eng.
Principal



ATTACHMENTS A

Laboratory Certificates of Analysis
Samples PW1 and PW2

Client: Houle Chevrier Engineering
180 Wescar Lane, R.R. #2
Carp, ON
K0A 1L0
Attention: Mr. James McEwen
PO#:
Invoice to: Houle Chevrier Engineering

Report Number: 1407544
Date Submitted: 2014-04-30
Date Reported: 2014-05-02
Project: 13-079
COC #: 169722

Page 1 of 2

Dear James McEwen:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

APPROVAL: _____

Krista Quantrill
Laboratory Supervisor, Microbiology

Exova (Ottawa) is certified and accredited for specific parameters by:

CALA, Canadian Association for Laboratory Accreditation (to ISO 17025), OMAFRA, Ontario Ministry of Agriculture, Food and Rural Affairs (for farm soils), Licensed by Ontario MOE for specific tests in drinking water.

Exova (Mississauga) is accredited for specific parameters by:

SCC, Standards Council of Canada (to ISO 17025)

Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only.

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 Date Submitted: 2014-04-30
 Date Reported: 2014-05-02
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Group	Analyte	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sampling Date	Sample I.D.
					1100308	Water		2014-04-30	
Microbiology	Escherichia Coli	0	ct/100mL	MAC-0	1100309	Water		2014-04-30	
	Faecal Coliforms	0	ct/100mL					PW1	PW2
	Faecal Streptococcus	0	ct/100mL						
	Heterotrophic Plate Count	0	ct/1mL						
	Total Coliforms	0	ct/100mL	MAC-0					

Guideline = ODWSOG

*** = Guideline Exceedence**

** = Analysis completed at Mississauga, Ontario.

Results relate only to the parameters tested on the samples submitted.

Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

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180 Wescar Lane, R.R. #2
Carp, ON
K0A 1L0
Attention: Mr. James McEwen
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Report Number: 1407575
Date Submitted: 2014-04-30
Date Reported: 2014-05-05
Project: 13-079
COC #: 169722

Dear James McEwen:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

APPROVAL: _____

Lorna Wilson
Laboratory Supervisor, Inorganics

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Report Number: 1407575
 Date Submitted: 2014-04-30
 Date Reported: 2014-05-05
 Project: 13-079
 COC #: 169722

Group	Analyte	MRL	Units	Guideline	Lab I.D.	
					Sample Matrix	Sample Type
				Sample Date	1100425	1100426
				Sample I.D.	Water	Water
					2014-04-30	2014-04-30
					PW 1	PW 2
Calculations	Hardness as CaCO3	1	mg/L	OG-100	700*	550*
	Ion Balance	0.01			0.94	1.03
	TDS (COND - CALC)	1	mg/L	AO-500	1700*	1010*
General Chemistry	Alkalinity as CaCO3	5	mg/L	OG-500	287	248
	Cl	1	mg/L	AO-250	635*	322*
	Colour	2	TCU	AO-5	<2	<2
	Conductivity	5	uS/cm		2620	1560
	DOC	0.5	mg/L	AO-5	1.8	4.3
	F	0.10	mg/L	MAC-1.5	0.10	0.13
	N-NO2	0.10	mg/L	MAC-1.0	<0.10	<0.10
	N-NO3	0.10	mg/L	MAC-10.0	1.71	1.67
	pH	1.00		6.5-8.5	7.86	7.95
	S2-	0.01	mg/L	AO-0.05	<0.01	<0.01
	SO4	1	mg/L	AO-500	57	39
	Turbidity	0.1	NTU	MAC-1.0	0.9	3.1*
Metals	Ca	1	mg/L		198	141
	Fe	0.03	mg/L	AO-0.3	<0.03	0.07
	K	1	mg/L		6	5
	Mg	1	mg/L		50	48
	Mn	0.01	mg/L	AO-0.05	<0.01	<0.01
	Na	2	mg/L	AO-200	214*	99
Nutrients	N-NH3	0.02	mg/L		0.07	0.14
	Phenols	0.001	mg/L		<0.001	0.001
	Tannin & Lignin	0.1	mg/L		<0.1	<0.1
	Total Kjeldahl Nitrogen	0.10	mg/L		<0.10	0.12

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 = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

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QC Summary

Analyte	Blank	QC % Rec	QC Limits
Run No 0 Analysis Date 2014-05-02 Method C SM2340B			
Hardness as CaCO3			
Ion Balance			
TDS (COND - CALC)			
Run No 268258 Analysis Date 2014-04-30 Method C SM2130B			
Turbidity	<0.1 NTU	99	73-127
Run No 268284 Analysis Date 2014-05-01 Method C SM5530D			
Phenols	<0.001 mg/L	94	73-127
Run No 268285 Analysis Date 2014-05-01 Method C SM2120C			
Colour	<2 TCU	100	80-120
Run No 268287 Analysis Date 2014-05-02 Method SM 4110C			
Cl	<1 mg/L	100	90-112
SO4	<1 mg/L	105	90-110
Run No 268319 Analysis Date 2014-05-01 Method EPA 200.8			
Fe	<0.03 mg/L	99	90-110

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QC Summary

Analyte	Blank	QC % Rec	QC Limits
Mn	<0.01 mg/L	102	90-110
Run No 268340 Analysis Date 2014-05-01 Method C SM4500-S2-D			
S2-	<0.01 mg/L	95	
Run No 268343 Analysis Date 2014-05-01 Method C SM4500-NO3-F			
N-NO2	<0.10 mg/L	103	80-120
N-NO3	<0.10 mg/L	95	80-120
Run No 268362 Analysis Date 2014-05-01 Method M SM3120B-3500C			
Ca	<1 mg/L	101	80-120
K	<1 mg/L	100	80-120
Mg	<1 mg/L	99	80-120
Na	<2 mg/L	96	80-120
Run No 268368 Analysis Date 2014-05-02 Method C SM5550B			
Tannin & Lignin	<0.1 mg/L	94	80-120
Run No 268372 Analysis Date 2014-05-01 Method SM 2320B			
Alkalinity as CaCO3	<5 mg/L	99	95-105
Conductivity	<5 uS/cm	101	95-105
F	<0.10 mg/L	101	90-110

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QC Summary

Analyte	Blank	QC % Rec	QC Limits
pH	5.53	100	90-110
Run No 268380 Analysis Date 2014-05-02 Method C SM4500-Norg-C			
Total Kjeldahl Nitrogen	<0.10 mg/L	94	77-123
Run No 268381 Analysis Date 2014-05-02 Method C SM4500-NH3D			
N-NH3	<0.02 mg/L	101	85-115
Run No 268382 Analysis Date 2014-05-01 Method C SM5310C			
DOC	<0.5 mg/L	101	84-116

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