

March 17, 2021

TRIBAL PARTNERS CANADA INC.

FUNCTIONAL SERVICING REPORT 12035 DIXIE ROAD

MARCH 11, 2021







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TRIBAL PARTNERS CANADA INC.

PROJECT NO.: 20M-01429 DATE: MARCH 2021

WSP UNIT 500 119 SPADINA AVENUE TORONTO, ON, CANADA M5V 2L1

T: +1 416 260-0387 F: +1 416 260-3028 WSP.COM

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Date	March 11, 2021			
Prepared by	Dabi Abikoye			
Signature				
Checked by	Justin Gleben			
Signature				
Authorised by	Alex Williams			
Signature				
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SIGNATURES

PREPARED BY

Justin Gleben, M.Eng., P.Eng. Project Engineer

REVIEWED BY

Alex Williams, P.Eng. Project Manager

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APPENDICES

APPENDIX A	FUS Fire Flow Calculations
APPENDIX B	Sanitary Flow Calculations

1 INTRODUCTION

1.1 SCOPE

WSP Canada Incorporated (WSP) has been retained by Tribal Partners Canada Inc. to prepare a Functional Servicing Report (FSR) to support a zoning by-law amendment and site plan approval application for the proposed development of 12035 Dixie Road in Caledon, Ontario. The purpose of this report is to provide a conceptual framework for servicing the proposed development with respect to water supply, sanitary sewage and storm drainage. A Stormwater Management (SWM) Report outlining the proposed quality and quantity controls for stormwater on this site has been prepared under separate cover, also by WSP.

In preparing this report, WSP staff secured and analyzed available Region of Peel Record Drawings, architectural drawings prepared by Baldassarra Architects, as well as a topographic survey prepared by R. Avis Surveying Inc.

1.2 SITE DESCRIPTION

The site is a 56.1 ha parcel of land bounded by Mayfield Road to the east, Dixie Road to the south, agricultural lands to the north, and existing industrial warehousing lands to the west. The site is currently used for agricultural purposes, and is primarily vacant with the exception of some structures associated with the current agricultural usage. Tributary 2 of the West Humber River flows through the site, conveying flow from the west to east, which will be re-aligned as part of the development. A woodlot which includes a wetland forms a portion of the site along the northwest boundary.

The proposed development will consist of four (4) industrial warehouse shell buildings with loading dock areas and associated trailer and car parking spaces. All site drainage is conveyed to a stormwater management pond to control storm runoff from the site to meet quantity and quality control targets. The total Gross Floor Area (GFA) of each of Buildings A, B, C, D respectively area: 123,456 m²; 37,691 m²; 17,635 m²; 21,509 m².

All buildings will be serviced by existing watermains and sanitary sewer in the adjacent rights-of-way along Dixie Road and Mayfield Road. Refer to Figure 1 for the Location Map, Figure 2 for the Predevelopment Plan, and Figure 3 for an illustration of the Proposed Development Plan.



C:\Users\gleben\\BIM 360\WSP Canada projects (AMER)\Land Development Ontario\Project Files\20M-01429 - 12035 Dixie Road\MUN\FSR\20M-01429_Fig_1.dwg Mar 12, 2021 - 12:32am, GlebenJ FILENAME: PLOTDATE:





DTDATE: Mar 11, 2021 - 9:37pm, GlebenJ

2 WATER SUPPLY

2.1 EXISTING CONDITIONS

WSP has obtained sewer record drawings from the Region of Peel for the area surrounding the site. Existing watermains in the vicinity of the site include a 300mm diameter Zone 6 watermain and a 400mm diameter Zone 7 watermain on Dixie Road as well as a 750mm dia. CPP transmission watermain on Mayfield Road.

2.2 DOMESTIC WATER DEMANDS

The peak domestic water demand for the development was calculated using the Region of Peel's design criteria for industrial development. A population density of 70 persons per hectare, average consumption of 300L/employee/day, a maximum day factor of 1.4 and peak hour factor of 3.0 were used to estimate the demands from each building. The estimated fire flows have been calculated using the recommendations of the 1999 Fire Underwriter's Survey. The table below lists the domestic and fire demands for buildings 1, 2, 3 and 4. For detailed calculations, see Appendix A.

		Dom	estic Demand	s (L/s)	Fire Flow (FUS)			
Building	Gross Floor Area (m2)	<u>Avg. Day</u>	Max. Day Peak Hour		USGPM	L/min	L/s	
А	123,456	3.0	4.2	9.0	11,346	43,000	717	
В	37,691	0.9	1.3	2.8	6332	24,000	400	
С	17,635	0.4	0.6	1.3	4222	16,000	267	
D	21,509	0.5	0.7	1.6	4749	18,000	300	

Table 1: Domestic Water Demand and Fire Flow Requirements

2.3 FIRE SUPPLY

WSP completed a hydrant flow test on hydrants connected to the existing 400mm diameter watermain along Dixie Road on February 23, 2021 to determine the available water supply for fire protection. The results of the test indicate that at 20 psi, a fire flow of 3900 GPM (246 L/s) is available from the hydrant nearest to the proposed water connection to Dixie Road. Therefore, the existing water supply is insufficient to provide the required fire protection outlined in Table 1.

To increase the available fire supply to the site, a looped connection is proposed to the existing 300mm diameter watermain along Russel Creek Drive. An additional hydrant flow test will be conducted to confirm the available fire supply at the hydrant along Russel Creek Drive, south of the Mayfield Road intersection. It is our understanding that the Region of Peel will use the multi-use demand table appended to this report to confirm using their water model that supply is available to meet the estimated demand of the proposed development.



2.4 PROPOSED SERVICING

To provide fire protection for the site, a 300mm diameter watermain loop is proposed within the site's internal drive aisles which will have two connection points to the municipal water network: a connection to the existing 400mm diameter watermain along Dixie Road, and a connection to the existing 300mm watermain on Russel Creek Drive, immediately south of its interconnection to the existing 750mm diameter watermain along Mayfield Road. Each of the 4 proposed buildings will have a separate 300mm diameter fire connection made to the proposed 300mm watermain loop.

Each building shall have a separate 150mm domestic connection to the Regional water network, separately metered and fitted with a backflow preventer. Buildings C and D shall connect to the existing 400mm diameter watermain along Dixie Road, north of Merchant Road, while Buildings A and B shall connect to the existing 300mm diameter watermain along Dixie Road, south of Merchant Road.

Hydrants shall be provided in front of each proposed building. All service connections are proposed to include valve and boxes at the property line. The on-site watermains within the proposed building will be designed by the site mechanical consultant. Refer to Figure 4 for proposed water servicing layout.

2.5 REGIONAL WATER IMPROVEMENTS

Ultimately the existing 400mm diameter watermain along Dixie Road will be interconnected with watermains on Mayfield Road and Heart Lake Road and transferred to Zone 7, providing additional pressure to the site.

3 SANITARY SEWERS

3.1 EXISTING SEWER SYSTEM

There is an existing concrete pressure pipe sanitary sewer along the west side of the Dixie Road right-of-way, varying in size between 525mm and 600mm diameter. A 75mm diameter leachate line is also present within the Dixie Road right-of-way. The existing sanitary sewer is quite deep, constructed at a cover depth of approximately 11m along the site frontage of Dixie Road.

3.2 PROPOSED DEVELOPMENT

To calculate the theoretical peak sanitary flows, the following design criteria have been utilized:

- ► 70 persons/ha for industrial land use
- ▶ 302.8 L/cap/day average flow generation rate
- Harmon Peaking Factor
- ► Infiltration = 0.26 L/s/ha

The demand and peaking factors are based on Region of Peel Sanitary Sewer Design Criteria, March 2017.

3.3 PROPOSED SEWAGE FLOWS

The proposed buildings are industrial warehouses. The sanitary flow for this type of warehouse development are based on Region of Peel standards of 70 people/ha and result in an estimated total population of 1402 persons. According to Region of Peel standard drawing 2-9-2, the estimated sanitary generation for the proposed development is approximately 0.0193 m³/s. See Appendix B for the sanitary design sheet.

Sanitary sewage from the four proposed buildings will be directed to two sanitary sewers, each connecting to the existing 600mm diameter sanitary sewer along Dixie Road. Buildings A and B will share an internal 200mm sanitary sewer connecting to an existing manhole along Dixie Road. Buildings C and D will direct sanitary drainage to another 200mm diameter sanitary sewer connecting to Dixie Road. This connection will include a new maintenance hole and drop structure connecting to the existing 600mm diameter sanitary sewer.

The proposed on-site sanitary sewers will each include a control manhole located at the property line. The proposed sanitary servicing configuration is shown in Figure 5.



4 STORM DRAINAGE

A Stormwater Management Report for this development has been prepared under a separate cover by WSP Canada Inc. which details the stormwater quantity and quality controls provided to meet the requirements of the TRCA and Town of Caledon. A Channel Realignment Report has also been prepared under a separate cover by WSP Canada Inc. to detail the channel design considerations.

4.1 EXISTING STORM SEWERS

There are currently no existing storm sewers in the vicinity of the site. The existing site drainage primarily drains overland towards Tributary 2 of the West Humber River, which cuts through the middle of the site (to be realigned as part of the proposed development) and discharges to an existing culvert at the southeast corner of the site, crossing underneath Mayfield Road.

4.2 MINOR STORM DRAINAGE SYSTEM

For minor storm events, all storm drainage on-site will be captured via catchbasins, and conveyed through an onsite storm sewer system sized for the 5 year storm event. The drainage from the entire site is conveyed to a stormwater management pond which provides quantity and quality control for the site drainage.

A portion of the rooftop drainage from Building A is directed to a flow spreader adjacent to Kilamanagh Creek, a tributary of the West Humber River, to maintain surface recharge of this feature.

Refer to Figure 6 for an illustration of the proposed storm servicing. For further details regarding the stormwater management, refer to WSP's SWM Report.

4.3 MAJOR STORM DRAINAGE SYSTEM

The major storm system is a conveyance system for flows in excess of the minor system flows. For the development of the site, the grading design is such that the surface (i.e. parking lots, drive aisles, walkways and landscaped areas) grades will direct surface drainage away from the building to the stormwater management pond through overland flow routes. The proposed grading of the subject site will ensure that existing grade elevations will be met along the property limits.





5 UTILITIES

5.1 EXISTING CONDITIONS

The servicing utilities companies in the geographical area including: Bell, Rogers, Hydro One, and Enbridge Gas have been contacted to determine the location of existing facilities at or near the site. The location of all utilities must be confirmed in the field prior to construction.

5.2 RELOCATION OF EXISTING UTILITIES AND PROVISION FOR NEW SERVICES

New building construction and any roadworks will require field locates by each utility company and relocation as needed. As the current site is undeveloped and used primarily for agricultural uses, no on-site utility relocations are anticipated.

Each utility provider must confirm the capacity of their existing infrastructure to support the demands of the proposed development and upgrade infrastructure as necessary.

6 CONCLUSIONS

6.1 WATER SERVICING

A new internal 300mm diameter watermain is proposed, with connection points to both the existing 300mm diameter watermains along Dixie Road and Russel Creek Drive (at the Mayfield Road intersection). Domestic and fire service connections for Buildings A and B are proposed to connect to the internal 300mm diameter watermain.

To service Buildings C and D, separate domestic water connections and a shared fire connection will be made to the existing 400mm diameter watermain along Dixie Road.

6.2 SANITARY SERVICING

Sanitary sewage from this development will be conveyed to the existing 600mm diameter sanitary sewer along Dixie Road. Two connections will be made to the existing Regional sewer: Buildings A and B will connect to an existing manhole, while Buildings C and D will share a connection to a new manhole installed on the existing 600mm sanitary sewer.

Based on the Region of Peel sanitary sewer design criteria, the internal sanitary sewers have sufficient capacity to convey sewage to Dixie Road.

6.3 STORM SERVICING

Minor and major storm drainage for the proposed development will be collected by the internal site drainage system and directed to a stormwater management pond to provide quantity and quality control of site runoff.

For details concerning stormwater management, refer to the Stormwater Management Report under a separate cover.

FIRE FLOW CALCULATIONS - BUILDING A

Project:	12035 Dixie Road
Job No.:	20M-01429

Fire Flow Calculation Procedure per Water Supply for Public Fire Protection, 1999 by Fire Underwriter Survey, p 20.



FIRE FLOW CALCULATIONS - BUILDING B

Project:	12035 Dixie Road
Job No.:	20M-01429

Fire Flow Calculation Procedure per Water Supply for Public Fire Protection, 1999 by Fire Underwriter Survey, p 20.

		aa	\sim
P'	=	220	$C \checkmark A$

	-	·	-	• -	-			
where								
	F = Fire flow in Litres pe	r minute (Lp	om)					
	C = coefficient related to	the type of	constructi	on				
	A = total floor area in squ	uare metres						
Α.	Determine Type of C	onstruction	Ì					
	=> Non-combustible C	onstruction						
	Therefore $C = 0.8$							
В.	Determine Ground Fl	loor Area						
	=> Fire-resistive buildi	ng with verti	ical openii	ngs and	dexterior	verti	cal communications prope	rly protecte
	Therefore A = Total C	FA of Large	est Floor -	one flo	oor only			
	A = 37,691	m2						
C.	Determined the Fire	Flow						
	F = 220 x 0).8 x √37691	1					
	F = 34,169) Lpm						
D.	Determine Increase of	or Decrease	for Occu	upancy	,			
	=> No Reduction for C	ombustible	Occupano	cies				
	Therefore 0% reductio	'n						
	0% reduction of 341	69 Lpm =	-	Lpm				
	34169	- 0 =	34,169	Lpm				
Е.	Determine Decrease	for Automa	tic Sprin	kler Pr	otection			
	=> Has Automatic Sprinkler Protection (Per NFPA 13 Standards)							
	Therefore 30% reducti	on						
	30% reduction of 341	69 Lpm =	10,251	Lpm				
	34169	- 10251 =	23,918	Lpm				
F.	Determine the Total I	ncrease Fo	r Exposu	ires				
	West Side	>45	0%					
	East Side	>45	0%					
	North Side	>45	0%					
	South Side	>45 Total	0% 0%	of	34,169	=	0 Lpm	
G	Reald Fire Flow = C .	E+E						
0.	F = -220	18 l nm						
	F = 23,9 F = 24.0	00 Lpm (2	2.000 Lpm	ι < F <	45.000 Lr	om: (OK)	
	F = 6.332	US GPM	_,_ pn		, 	, .	,	
	F = 6,332	US GPM						

FIRE FLOW CALCULATIONS - BUILDING C

Project:	12035 Dixie Road
Job No.:	20M-01429

Fire Flow Calculation Procedure per Water Supply for Public Fire Protection, 1999 by Fire Underwriter Survey, p 20.



where	
	F = Fire flow in Litres per minute (Lpm)
	C = coefficient related to the type of construction
	A = total floor area in square metres
А.	Determine Type of Construction
	=> Non-combustible Construction
	Therefore C = 0.8
В.	Determine Ground Floor Area
	=> Fire-resistive building with vertical openings and exterior vertical communications properly protected
	Therefore A = Total GFA of Largest Floor - one floor only
	A = 17,635 m2
C.	Determined the Fire Flow
	F = 220 x 0.8 x √17635
	F = 23,372 Lpm
D.	Determine Increase or Decrease for Occupancy
	=> No Reduction for Combustible Occupancies
	Therefore 0% reduction
	0% reduction of 23372 Lpm = - Lpm
	23372 - 0 = 23,372 Lpm
E.	Determine Decrease for Automatic Sprinkler Protection
	=> Has Automatic Sprinkler Protection (Per NFPA 13 Standards)
	Therefore 30% reduction
	30% reduction of 23372 Lpm = 7,012 Lpm
	23372 - 7012 = 16,360 Lpm
F.	Determine the Total Increase For Exposures
	West Side >45 0%
	East Side >45 0%
	North Side >45 0%
	South Side >45 0% Total 0% of 23,372 = 0 Lpm
6	
G.	$\mathbf{R} = \mathbf{R} \mathbf{R} \mathbf{R} \mathbf{R} \mathbf{R} \mathbf{R} \mathbf{R} \mathbf{R}$
	F = 16,000 Lpm (2,000 Lpm < F < 45,000 Lpm ⁻ OK)
	F = 4.222 LIS GPM
	F = 4,222 US GPM

FIRE FLOW CALCULATIONS - Building D

Project:	12035 Dixie Road
Job No.:	20M-01429

Fire Flow Calculation Procedure per Water Supply for Public Fire Protection, 1999 by Fire Underwriter Survey, p 20.



where	
	F = Fire flow in Litres per minute (Lpm)
	C = coefficient related to the type of construction
	A = total floor area in square metres
Α.	Determine Type of Construction
	=> Non-combustible Construction
	Therefore C = 0.8
В.	Determine Ground Floor Area
	=> Fire-resistive building with vertical openings and exterior vertical communications properly protected
	Therefore A = Total GFA of Largest Floor - one floor only
	A = 21,509 m2
C.	Determined the Fire Flow
	$F = 220 \times 0.8 \times \sqrt{21509}$
	F = 25,812 Lpm
D.	Determine Increase or Decrease for Occupancy
	=> No Reduction for Combustible Occupancies
	Therefore 0% reduction
	0% reduction of 25812 Lpm = - Lpm
	25812 - 0 = 25,812 Lpm
E.	Determine Decrease for Automatic Sprinkler Protection
	=> Has Automatic Sprinkler Protection (Per NFPA 13 Standards)
	Therefore 30% reduction
	30% reduction of 25812 Lpm = 7,744 Lpm
	25812 - 7744 = 18,068 Lpm
F.	Determine the Total Increase For Exposures
	West Side >45 0%
	East Side >45 0%
	North Side >45 0%
	South Side >45 0%
	Total 0% of 25,812 = 0 Lpm
G.	Req'd Fire Flow = C - E + F
	F = 18,068 Lpm
	F = 18,000 Lpm (2,000 Lpm < F < 45,000 Lpm; OK)
	F = 4,749 US GPM





Diameter: 400 mm Area:

0.126 m2

Residual Hydrant: Flow Hydrant:

TABLE A: TESTED PRESSURES AND FLOWS

	Time		Residual			Flow Hy	/drant ()	Total Flow		Volocity		
Point	1 11 1	e	on Resid	ual Hydra	Port 1 (S1)		Port 2 (S2)				Velocity	
	Start	Finish	(kPa)	(psi)	(L/s)	(GPM)	(L/s)	(GPM)	(L/s)	(GPM)	(m/s)	
Static	460	522	356	51.6	0.0	0	0.0	0	0.0	0	0.0	
2"	595	638	351	50.9	38.0	602	0.0	0	38.0	602	0.3	
2"			0	0.0	0.0	0	0.0	0	0.0	0	0.0	
1" + 2"			0	0.0	0.0	0	0.0	0	0.0	0	0.0	
2" + 2"	699	729	335	48.6	35.7	566	33.9	537	69.6	1103	0.6	

vsp

12035 Dixie Road HYDRANT FLOW TEST RESULTS

	Date	: 23-F	eb-21	Time:	8:52		Municipality	Town of C	aledon	
_					(hh/mm)		Operator:	C	_	
le	sted By		Sen				Test No:	1		
										-
								enditione hefe		
Ņ							Res	idual Hydrant:	<u>51.6 psi</u>	356 kPa
				Re	esidual		Hydrant	that will Flow:	51.6 psi	356 kPa
	V	Ditie	Ra 🖌			X		Δ pressure:	0.0 psi	0 kPa
Flov	V			ofenne ss.		R	Elevation [Difference:	0.0 ft	0.0 m
12035 Dixie Rd,						(Flow El R	lesidual El.)			
			Meda		Caledon, ON L7	C 2M4	Test Notes:			
						S S				
		Ackla	ands Grainger	9		Heverhill				
_			Alleron	MA	AYFIELD					
	TES	т	TEST	FLOW	RESIDUAL P	RESSURE (psi)		Fire Flow at	Fire Flow at	
Por	t Size	Nozzle	(1000)	4.4.	Monitoring	Flow Hydrant	Minimum Residual P. (psi)	Minimum Residual O	Minimum Residual O	5% Pressure Drop
((in)	Pressure (psi)	(USGPM)	(L/s)	Hydrant	(Corrected) *	Residual F _r (psi)	(USGPM)	(L/s)	Achieved?
ST	ATIC	n/a	0	0	51.6	51.6				
	Single Po	rt Tests								
	2	14.9	602.0	38.0	50.9	50.9	20	4596	290	NO
	2						20			
	Two Por	t Test								
	1				-		20			
	2 Two Bor	t Toot								
			527 0	22.0						
	2	13.2	566.0	35.7	48.6	48.6	20	3912	247	YES
* Pres	sure co	rrection is ed	qual to the el	evation diffe	rence. Colum	n 2 (and Table	A) show the no	zzle pressure v	vhile flowing.	
		Residual	Pressure vs	. Hydrant I	Flow					
	60							Res	sults	
	50	•					Static P	ressure	Flow at 20	psi (140kPa)*
_		•					(psi)	(kPa)	(gpm)	(L/s)
(PSI	· 40						51.6 * Results carried to n	356	3900	246
URE								ourou oo gpin or ro	gpinn ovor roco	99111
ESS	30 -						Hydra	Int Classificat	ion as per NF	FPA 291
Å							Class	AA	Color	BLUE
	20				•					
	10						Water D	ischarged Durii	ng Test:	13200 L
							Rounded up to close	st 100L		
	0									
	0	1000	2000	3000	4000	5000				
			FLOV	V (GPM)						
DISCLA While W	DISCLAIMER FOR FIRE FLOW TESTS While WSP makes every effort to ensure that the information contained herein is accurate and up to date. WSP is not responsible for unintended or incorrect use of the data									
and info	ormation d	escribed and/or	contained here	in. The user mu	ust make his/her o	own determination	as to its accuracy a	nd suitability. The i	nformation is rep	resentative for a
©WSP	Canada I	nc. 2014.	shange over time							
This info	ormation s	heet can be re	produced by the	client for interr	nal use but not rec	distributed to third p	parties without the w	vritten authorization	n of WSP.	

WSP Canada Inc.



B SANITARY FLOW CALCULATIONS

THE REGIONAL MUNICIPALITY OF PEEL SANITARY DESIGN CHART 12035 DIXIE ROAD

* DESIGN FLOWS AS PER REGION OF PEEL SANITARY SEWER DESIGN FLOW CHART STD. DWG. 2 - 5 - 2

Manning's n=

									SEWAGE	INFILTRATION	TOTAL		
LOCATION	FROM	то	AREA	AREA	UNITS	POP.	CUM.	CUM.	FLOW *	FLOW *	FLOW	FALL	LENGTH
	мн	мн		DENSITY			AREA	POP.		0.00020			
			(ha)	(ppha)			(ha)		(m³/sec)	(m³/sec/ha)	(m³/sec)	(m)	(m)
													
Proposed Building D	PLUG	MH1A	2.15	70		151	2.15	151	0.0130	0.0004	0.0134		10.0
	MH1A	MH2A				0	2.15	151	0.0130	0.0004	0.0134		107.5
			4 = 0			400							
Proposed Building C	PLUG	MH2A	1.76	70		123	1.76	123	0.0130	0.0004	0.0134		10.0
	MH2A	МНЗА				0	3.91	274	0.0130	0.0008	0.0138		107.5
Proposed Building A	PLUG	МН9А	12.35	70		865	12.35	865	0.0130	0.0025	0.0155		20.0
	MH9A	MH3A				0	12.35	865	0.0130	0.0025	0.0155		58.5
	МНЗА	МН4Д				0	16 26	1138	0 0151	0 0033	0 0184		94.0
	MH4A	MH5A				0	16.26	1138	0.0151	0.0033	0.0184		59.7
	MH5A	MH6A				0	16.26	1138	0.0151	0.0033	0.0184		57.4
Proposed Building B	PLUG	MH8A	3.77	70		264	3.77	264	0.0130	0.0008	0.0138		30.0
	MH8A	MH6A				0	3.77	264	0.0130	0.0008	0.0138		20.0
												<u> </u>	
	MH6A	MH7A				0	20.03	1402	0.0181	0.0040	0.0221		31.0
	MH7A	EX MH				0	20.03	1402	0.0181	0.0040	0.0221		36.0

CONSULTANT:

WSP Canada Inc

				11_Mar_21
			BV	
_	0 013	CHECKED	BY.	Δ.W
	0.010	ONLONED		A. .
	GRADIENT	PIPE SIZE	CAPACITY	VELOCITY
	(%)	(mm)	(m³/sec)	(m/sec)
)	1.00	200	0,033	1.04
	1.00	200	0.033	1.04
			0.000	
)	1.00	200	0.033	1.04
;	1.00	200	0.033	1.04
)	1.00	200	0.033	1.04
;	1.00	200	0.033	1.04
)	1.00	200	0.033	1.04
	1.00	200	0.033	1.04
•	1.00	200	0.033	1.04
_	1 00	200	0 033	1.04
)	1.00	200	0.033	1.04
	1.00	200	0.000	1.04
)	1.00	200	0.033	1.04
)	1.00	200	0.033	1.04

REGION OF PEEL MULTI-USE DEMAND TABLE WATER CONNECTION

CONNECTION POINT				
1. Fire - Existing 300mm Watermain on Russel Creek Drive				
2. Fire - Existing 400mm Watermain on Dixie Road at Merchar	nt Road			
3. Dom Existing 300mm Watermain on Dixie Road south of Merchant Road				
4. Dom Existing 300mm Watermain on Dixie Road at Merchant Road				
5. Dom Existing 400mm Watermain on Dixie Road north of Merchant Road				
6. Dom Existing 400mm Watermain on Dixie Road north of Merchant Road				
Pressure zone of connection point				
Pressure Zone 7				
Fotal equivalent population to be serviced 140				
Total lands to be serviced(ha)	20.			

Hydrant Flow Test		
East side of Dixie Road, north of Merchant Road		
Pressure (psi)		Flow (GPM)
	51.6	STATIC
	50.9	4596
	48.6	3912.0

	Water demand									
No.	Demand type	Building A	Building B	Building C	Building D	Total				
1	Average day flow (L/s)	3.0	0.9	0.4	0.5	4.9				
2	Maximum day flow (L/s)	4.2	1.3	0.6	0.7	6.8				
3	Peak hour flow (L/s)	9.0	2.8	1.3	1.6	14.6				
4	Fire flow (L/s)	716.7	400.0	266.7	300.0	716.7				
Analysis										
5	Maximum day plue fire flow (L/s)	720.9	401.3	267.3	300.7	723.5				
6	Peak hour flow (L/s)	9.0	2.8	1.3	1.6	14.6				
7	Maximum demand flow (L/s)	720.9	401.3	267.3	300.7	723.5				

WASTEWATER CONNECTION

Connection Point:	Ex MH, intersection of Dixie Road ar	nd Merchant Road
Total Lands to be service	ced (ha):	20
Total equivalent popula	1404	
Wastewater Sewer Efflu	uent (m3/s):	0.0221