BOREHOLE LOG	PROJECT:	97-557 TARO	BOREHOLE: 69-III 2 of 2
HYDROGEOLOGICAL INVESTIGATIONS			DATE: 10 December 1997
Stoney Creek, Ontario	GEOLOGIST PW		
FOR: TARO AGGREGATES LTD.			ELEVATION 206.97 m ASL

	上		T			6	AM	DIE				/ III ASL
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL		N VALUE	WATER	REC	RQD	N VALUE	WATER CONTENT (%)
	S	Increasingly shaly below about 14.9 m.		_	A	_		./.	х.	"	15 30 45 60	10 20 30 40
16 -		Thin calcite seams (less than 0.08 m thick) at about 15.8 m, 16.9 m and 17.0 m.								-		
17 -		Fossiliferous layer at about 17.1 m.								-		
18.3		VINEMOUNT SHALE Grey thin bedded, aphanitic shale, occasionally										
19.2 19 -		interbedded with dolostone, occasional fossil-rich layers. Grey dolostone bed from about 19.2 m to 20.0 m.								-		
. 21 -			A							-		
22 -							٠	17				
23 - 23.6										-		
24 - 24.5		GOAT ISLAND DOLOSTONE Grey fine crystalline, thick bedded dolostone, occasional shaley stringers. 0.02 m thick gypsum seam at about 24.1 m.								-		
		Borehole terminated at 24.46 m in dolostone. NOTE: Stratigraphy inferred from adjacent borehole 69-I. Borehole logged to confirm contacts and for monitor placement.										

BOREHOLE LOG	PROJECT:	97-557 TARO	BOREHOLE:	69-IV 1 of 2
HYDROGEOLOGICAL INVESTIGATIONS			DATE: 11 De	ecember 1997
Stoney Creek, Ontario			GEOLOGIST	PW
FOR: TARO AGGREGATES LTD.	CONTROL CONTRO	•	ELEVATION	206.91 m ASL

上		~			SAM	PLE			1	
(m) ELLH STRATIGRAPH	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL	N UALUE	% WATER	% REC	% RQD	N VALUE	WATER CONTENT (%)
PARION MINUS	TOPSOIL			H-	+	-	• •	••	15 30 45 60	10 20 30 40
0.8	Dark brown clayey silt topsoil with gravel and rootlets, very soft, moist.									
' 1	CLAYEY SILT Brown mottled grey clayey silt with trace sand and rare gravel, very soft to soft, DTPL.									
2	Fractured below about 2 m. Occasional limonite (yellow), iron (rust) and manganese (black) staining along fracture surfaces.	4	-							
3 -	Occasional thinly laminated sections below about 3 m.									
4	Becoming dark grey below about 3.9 m. Rare fine gravel, no fractures, WTPL.		-							
5 -	Speckled dark red throughout sample below about 4.5 m.		-					-		
6.2 6	Becoming APL below about 6.1 m. Some medium gravel.		-							
7	ERAMOSA DOLOSTONE Brownish-grey fine crystalline, thin to medium bedded dolostone, slightly weathered to about 12.0		-3							
8	m, occasional shale stringers and vugs, rare fossils.		-				2.0	_		
,	Becoming brownish-grey to grey below about 9 m. Occasional shale interbeds, some vuggy sections with		-							,
10	calcite infilling.		-					_		
11	۱.		-					_		
12			-					_		
13			-							
14	Gypsum seam at 13.4 m.									

BOREHOLE LOG PROJECT: 97-557 TARO BOREHOLE: 69-IV 2 of 2

HYDROGEOLOGICAL INVESTIGATIONS
Stoney Creek, Ontario
FOR: TARO AGGREGATES LTD.

BOREHOLE: 69-IV 2 of 2

DATE: 11 December 1997

GEOLOGIST PW
ELEVATION 206.91 m ASL

	HY		~			S	AM	PLE				
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL	TYPE	UALUE	WATER	REC	RQD	N VALUE	WATER CONTENT (%)
	S	Increasingly shaley below about 14.9 m.		2	П		Z	"	"	%	15 30 45 60	10 20 30 40
16 -		Thin calcite seams (less than 0.08 m thick) at about 15.8 m, 16.9 m and 17.0 m.								Ţ		
17 -		Fossiliferous layer at about 17.1 m.		9								
18.3		VINEMOUNT SHALE								-		
19.2 19		Grey thin bedded, aphanitic shale, occasionally interbedded with dolostone, occasional fossil-rich layers.								-		
20.0 20 -		Grey dolostone bed from about 19.2 m to 20.0 m.	#######################################	-						_		
		Borehole terminated at 20.42 m in shale. NOTE: Stratigraphy inferred from adjacent borehole 69-I. Borehole logged to confirm contacts and for monitor placement.										

BOREHOLE LOG	PROJECT: 97-557 TARO	BOREHOLE: 69-V 1 of 1
HYDROGEOLOGICAL INVESTIGATIONS		DATE: 15 December 1997
Stoney Creek, Ontario		GEOLOGIST PW
FOR: TARO AGGREGATES LTD.		ELEVATION 206.98 m ASL

	누					S	AM	PLE				I
EPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	DETAILS NUMBER	NUMBER	INTERUAL	TYPE	N VALUE	% WATER	% REC	% RQD	N VALUE	WATER CONTENT (%)
0.8		TOPSOIL Dark brown clayey silt topsoil with gravel and rootlets, very soft, moist. CLAYEY SILT Brown mottled grey clayey silt with trace sand and rare gravel, very soft to soft, DTPL. Fractured below about 2 m. Occasional limonite		-							13 30 43 60	10 20 30 40
3		(yellow), iron (rust) and manganese (black) staining along fracture surfaces. Occasional thinly laminated sections below about 3 m.		•								
5 —		Becoming dark grey below about 3.9 m. Rare fine gravel, no fractures, WTPL. Speckled dark red throughout sample below about 4.5 m.		-								
6.2 6		Becoming APL below about 6.1 m. Some medium gravel.										
7		ERAMOSA DOLOSTONE Brownish-grey fine crystalline, thin to medium bedded dolostone, slightly weathered to about 12.0 m, occasional shale stringers and vugs, rare fossils.										
8.4		Borehole terminated at 8.38 m in dolostone. NOTE: Stratigraphy inferred from adjacent borehole 69-I. Borehole logged to confirm contacts and for monitor placement.										
		•										
		1 MAR 98									Outpou I	

BOREHOLE LOG PROJECT: 97-557 TARO BOREHOLE: 69-VI 1 of 1

HYDROGEOLOGICAL INVESTIGATIONS
Stoney Creek, Ontario
FOR: TARO AGGREGATES LTD.

BOREHOLE: 69-VI 1 of 1

DATE: 16 December 1997

GEOLOGIST PW
ELEVATION 206.98 m ASL

										200.	76 III ASL
DEPTH (m)	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL		NALUE	PLE WATER	REC	RQD	N VALUE	WATER CONTENT (%)
		E D 4	N	N	TYPE	z	3	× ×	× ×	15 30 45 60	10 20 30 40
0.8 1 -	TOPSOIL Dark brown clayey silt topsoil with gravel and rootlets, very soft, moist. CLAYEY SILT Brown mottled grey clayey silt with trace sand and rare gravel, very soft to soft, DTPL. Fractured below about 2 m. Occasional limonite (yellow), iron (rust) and manganese (black) staining along fracture surfaces. Occasional thinly laminated sections below about 3 m. Becoming dark grey below about 3.9 m. Rare fine gravel, no fractures, WTPL. Speckled dark red throughout sample below about 4.5 m.								1		
6.0	Borehole terminated at 5.99 m in clayey silt. NOTE: Borehole stratigraphy inferred from adjacent borehole 59-I.										

BOREHOLE LOG

PROJECT:

97-557 TARO

BOREHOLE:

69-VI

1 of 1

HYDROGEOLOGICAL INVESTIGATIONS

Stoney Creek, Ontario

FOR: TARO AGGREGATES LTD.

DATE:

16 December 1997

GEOLOGIST

PW

ELEVATION

206.98 m ASL

	O Addition 25			S	AMI	PLE				
DEPLH DEPLH PH	STRATIGRAPHIC DESCRIPTION		NUMBER	TYPE	VALUE	WATER	REC	RQD	N VALUE	WATER CONTENT (%)
(m) RATE			로	4	z	*	ж	%	15 30 45 60	10 20 30 40
0.8 1	TOPSOIL Dark brown clayey silt topsoil with gravel and rootlets, very soft, moist. CLAYEY SILT Brown mottled grey clayey silt with trace sand and rare gravel, very soft to soft, DTPL. Fractured below about 2 m. Occasional limonite (yellow), iron (rust) and manganese (black) staining along fracture surfaces. Occasional thinly laminated sections below about 3 m. Becoming dark grey below about 3.9 m. Rare fine gravel, no fractures, WTPL. Speckled dark red throughout sample below about 4.5 m.		-							
6.0	Borehole terminated at 5.99 m in clayey silt. NOTE: Borehole stratigraphy inferred from adjacent borehole 69-I.									

BOREHOLE LOG	PROJECT: 99-651.2	BOREHOLE: 70-I 1 of 1
Taro East and West Landfills		DATE: 14 July 1999
Stoney Creek, Ontario		GEOLOGIST LM/TLC
FOR: Philip Services Inc.		ELEVATION 192.7 m ASL

FOR:	Philip Services Inc.					E	LL.	V AL	IUN	172.1	III ASL	
	АН	œ.		S	AM	PLE	E		1 100	* 2		1 de 1
DEPTH (m)	STRATIGRAPHIC DESCRIPTION STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	TYPE	N VALUE	% WATER	% REC	% RQD	(VERY %)	RQI (%) 25 50 75)
0.2	FILL VINEMOUNT SHALE		1	HQ HQ			100 100	66			•	
1	Dark grey, aphenitic to fine crystalline, thin to medium bedded shale. Occasional dolostone beds with bioturbation associated with lower contacts.		-	НQ			100					•
2	Dolostone bed observed from about 0.2 to 1.3 m					22 "		-				
3			4	HQ			100	95	11	1		1
4.4	GOAT ISLAND SHALE		5	HQ		- 1 - 10 - 10	100	100				+
5 -	Medium to dark grey, fine crystalline, medium to thick bedded dolostone, numerous shale stringers and gypsum infilling.			in the later and			8	-				
5.9 6	-Seam and large vug infilled with gypsum, some weathering noted, at 5.5 m. SHALE Dark brownish grey, medium bedded shale, interlaminated		- 6	HQ			100	82				
7	with dolostone and siltstone, bioturbation at upper contact.		7	HQ			100	1.				
8		111111111111111111111111111111111111111										
8.9	Borehole terminated at 8.94 m in dolostone.		N N									
		±1										
					100							
					22			1				
							<u></u>				e Lim	

BOREHOLE LOG	PROJECT: 99-651.2	BOREHOLE: 70-II 1 of 1
Taro East and West Landfills		DATE: 14 July 1999
Stoney Creek, Ontario		GEOLOGIST LM
FOR: Philip Services Inc.	N 4	ELEVATION 192.8 m ASL

	Ы		Γ.	Г			434	י ימ	7		Г						
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERVAL	TYPE	N VALUE W	% WATER	% REC	% RQD		(%)		RQ (% 25 50 7)	
	S	FILL	0.24(1)[5][6]		H								1	100	1	7	
0.2		VINEMOUNT SHALE	40														
		Dark grey, aphenitic to fine crystalline, thin to medium															
1	==	bedded shale. Occasional dolostone beds with bioturbation		- 1	Ш	23				-			1				
		associated with lower contacts.	age fact					- 10					1				
	==					80	12.0	30									
2 -	==	Dolostone bed observed from about 0.2 to 1.3 m			11		÷.,		-	-							
	==	-Interlaminated to interbedded shale and dolostone from			П			1	-								
	==	about 1.4 to 3.0 m.	1000		11	100											
3 -	==		in the said	ŀ						-							
			7			9. 1			-								
				9													
4 -				ŀ						-							
4.4																	
		GOAT ISLAND SHALE	=					9.0									
5 🕳		Medium to dark grey, fine crystalline, medium to thick	-	- 1	П					-							
	2	bedded dolostone, numerous shale stringers and gypsum	=					9									
	2	infilling.	32					8									
5.9		-Seam and large vug infilled with gypsum, some weathering noted, at 5.5 m.			H						H	-	-	+-		-	\vdash
6.0		Borehole terminated at 5.97 m in dolostone.		-		8											
		Bolehole terminated at 3.57 in in dolostone.					9										
		Stratigraphy inferred from adjacent borehole 70-I.			Ш	15			- 1								
				١.								1					
				1	$\ \ $								1.0				
					11												
					11												
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		7 28	1														
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96 Newcombe Road. Dundas ON

Monitor Completion Date: October 10, 2008

Drilling method - Mud Rotary

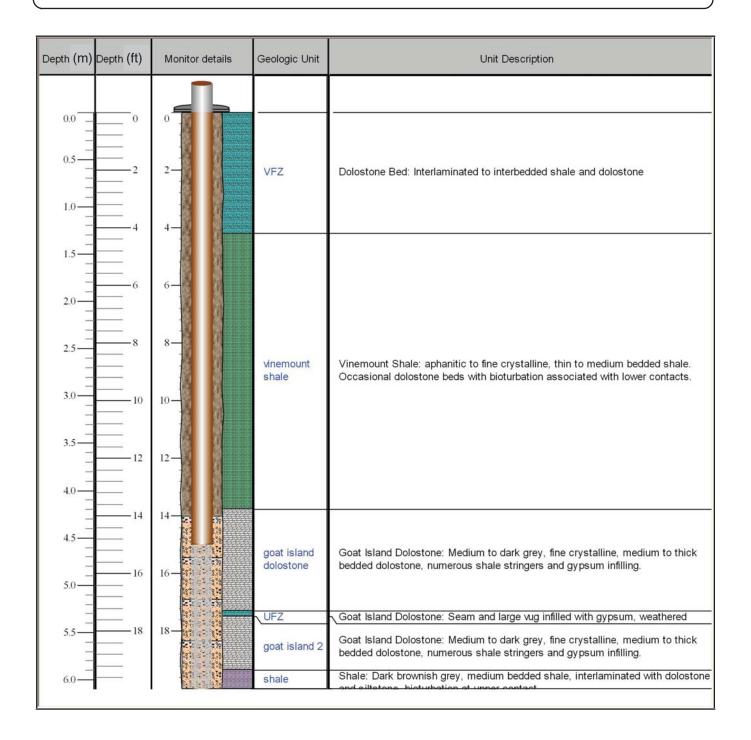
Borehole Log Report

Project: Newalta Corporation

Location: Newalta Hamilton (Stoney Creek) Landfills

Log of Monitor - 70-IIR

Drilling Contractor - Lantech Drilling Services Inc.



Ground Surface Elevation - N/A
Top of Casing/Measuring Point - 193.99
Prepared by W. Jackman, P.Geo.

BOREHOLE LOG	PROJECT: 99-651.2	BOREHOLE: 70-III 1 of 1
Taro East and West Landfills		DATE: 14 July 1999
Stoney Creek, Ontario FOR: Philip Services Inc.		GEOLOGIST LM ELEVATION 192.8 m ASL

STRATIGRAPHIC DESCRIPTION STRATIGRAPHIC DESCRIPTION EILL VINEMOUNT SHALE: Dark grey, aphenitic to fine crystalline, thin to medium bedded shale. Occasional dolostone beds with biocurbation associated with lower contacts. Dolostone bed observed from about 0.2 to 1.3 m -Interlaminated to interbedded shale and dolostone from about 1.4 to 3.0 m. Borehole terminated at 3.84 m in shale. Stratigraphy inferred from adjacent borehole 70-1.		T#T		or.		S	SAM	PLI	£					
O.2 FILL VINEMOUNT SHALE Dark grey, aphenitic to fine crystalline, thin to medium bedded shale. Occasional dolostone beds with bioturbation associated with lower contacts. Dolostone bed observed from about 0.2 to 1.3 m -Interlaminated to interbedded shale and dolostone from about 1.4 to 3.0 m. Borehole terminated at 3.84 m in shale.	DEPTH (m)	TRATIGRAP	STRATIGRAPHIC DESCRIPTION	DETAILS & NUMBER	NUMBER	WAL	VALUE	WATER	REC		(%) .	(%))
Dark grey, aphenitic to fine crystalline, thin to medium bedded shale. Occasional dolostone beds with bioturbation associated with lower contacts. Dolostone bed observed from about 0.2 to 1.3 m -Interlaminated to interbedded shale and dolostone from about 1.4 to 3.0 m. Borehole terminated at 3.84 m in shale.	0.2		FILL											
-Interlaminated to interbedded shale and dolostone from about 1.4 to 3.0 m. 3			Dark grey, aphenitic to fine crystalline, thin to medium bedded shale. Occasional dolostone beds with bioturbation										8	
3.8 Borehole terminated at 3.84 m in shale.			-Interlaminated to interbedded shale and dolostone from											
Borehole terminated at 3.84 m in shale.				92 92 23										
Stratigraphy inferred from adjacent borehole 70-1.	5.0		Borehole terminated at 3.84 m in shale.						-					
			Stratigraphy inferred from adjacent borehole 70-1.			2								33
										a				
								2						
									94 1.1					

BOREHOLE LOGPROJECT:GLL 21-654BOREHOLE:71-I1 of 2Hydrogeological InvestigationsDATE:10 September 2001Stoney Creek, OntarioGEOLOGISTYSFOR:Philip Services Inc.ELEVATION189.1 m ASL

	. 1				~						
2		<u> </u>		11	S	AM	PL	E			
DEPTH (m)	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	RECOVERY (%) 25 50 75100	RQD (%) 25 50 75 100
0.5	TOPSOIL Dark brown silt with some clay and rootlets, trace fine sand, moist									23 30 13 100	23 30 73 100
1 -	CLAYEY SILT Greyish brown clayey silt, trace very fine sand, APL, very stiff		- 1	200.000	SS	21		100	-		
2 -			-						-		
3 -	-Becoming brownish grey below about 3.1 m		2		SS	22		100		†	
5 –	-Becoming WTPL, thin seams of silt/fine sand occur below about 4.5 m.		3 -		SS	23		100	-	•	
6	GOAT ISLAND DOLOSTONE Medium grey, fine crystalline, medium bedded dolostone, some shale stringers, occasional fossils, occasional calcite filled nodules. -Fractured zone between about 5.8 and 6.2 m		-		HQ HQ			90	77 98	•	
7	-Some chert nodules occur below about 7.7 m										
8			6		HQ			100	74	•	
9.4	-Clay infilling found in fracture at about 9.0 m ANCASTER CHERT BEDS Light brownish grey fine crystalline, thick bedded siliceous dolostone, numerous chert nodulesFractured with clay infilling along shale stringers between		7 -		HQ			100	98	•	
11 5	about 9.5 and 9.6 m -Gypsum stringers/nodules encountered below about 10.2 m -Fractured zone between about 11.0 and 12.2 m	15.0 (0.10)	- 8		HQ			100	90	•	
12										artner Le	

BOREHOLE LOGPROJECT: GLL 21-654BOREHOLE: 71-I2 of 2Hydrogeological InvestigationsDATE: 10 September 2001Stoney Creek, OntarioGEOLOGISTYSFOR: Philip Services Inc.ELEVATION189.1 m ASL

DEPTH (m) Let STRATIGRAPHIC DESCRIPTION (%) PROPERTY (%)	FUR:	T III	ip Services inc.							كالبالد	V A	110	14	189.1	111 /	10L	
DEPTH (m) STRATIGRAPHIC DESCRIPTION STRATIGR		HY		~			S	AM	PL	E							
Borehole terminated at 12.60 m in siliceous dolostone.		STRATIGRAP	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERVAL	TYPE						(%)		(%)	
	12.6		Borehole terminated at 12.60 m in siliceous dolostone.														

BOREHOLE LOG	PROJECT: GLL 21-654	BOREHOLE: 71-II 1 of 1
Hydrogeological Investigations		DATE: 11 September 2001
Stoney Creek, Ontario		GEOLOGIST YS
FOR: Philip Services Inc.		ELEVATION 189.1 m ASL

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	PHY	4 2021-1100-2100-0	_ ~	Γ		S	AN	IPL	E					
DEPTH (m)	STRATIGRAP	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS	NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD		COVER (%) 50 75 100		RQD (%) 50 75 100
0.5		TOPSOIL Dark brown silt with some clay and rootlets, trace fine sand, moist CLAYEY SILT Greyish brown clayey silt, trace very fine sand, APL, very stiff		-						0.	2.5	30 73 100	23	30 73 100
3 -		-Becoming brownish grey below about 3.1 m		-						_	-			
5 - 5.5		-Becoming WTPL, thin seams of silt/fine sand occur below about 4.5 m.		-						-				
5.5 6 - 7 -		GOAT ISLAND DOLOSTONE Medium grey, fine crystalline, medium bedded dolostone, some shale stringers, occasional fossils, occasional calcite filled nodules. -Fractured zone between about 5.8 and 6.2 m		-										
8 -		-Some chert nodules occur below about 7.7 m	2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	_										
9.4 9.8		-Clay infilling found in fracture at about 9.0 m ANCASTER CHERT BEDS Light brownish grey fine crystalline, thick bedded siliceous												
		dolostone, numerous chert nodulesFractured with clay infilling along shale stringers between about 9.5 and 9.6 m Borehole terminated at 9.83 m in siliceous dolostone Stratigraphy inferred from adjacent borehole 71-I	and the second s											

BOREHOLE LOG	PROJECT: GLL 21-654	BOREHOLE: 71-III 1 of 1
Hydrogeological Investigations		DATE: 11 September 2001
Stoney Creek, Ontario		GEOLOGIST YS
FOR: Philip Services Inc.		ELEVATION 189.1 m ASL

FOR:	1 111	ilp Services file.			-				فاناه	V A	110	14	189.	ım	ASL
	НУ					S	AM	PL	E						
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERVAL		VALUE	% WATER	% REC	% RQD		(%			RQD (%)
(m) 0.5 1 - 2 - 5.5 6 - 7.0	STRAT	TOPSOIL Dark brown silt with some clay and rootlets, trace fine sand, moist CLAYEY SILT Greyish brown clayey silt, trace very fine sand, APL, very stiff -Becoming brownish grey below about 3.1 m -Becoming WTPL, thin seams of silt/fine sand occur below about 4.5 m. GOAT ISLAND DOLOSTONE Medium grey, fine crystalline, medium bedded dolostone, some shale stringers, occasional fossils, occasional calcite filled nodulesFractured zone between about 5.8 and 6.2 m Borehole terminated at 6.96 m in dolostone. Stratigraphy inferred from adjacent borehole 71-I		NUMBE	EGENT	TYPE	N VAI				25		75100	25	50 75 100
el e		Suangraphy innoviced from adjacent coronice 77 1													

96 Newcombe Road. Dundas ON

Monitor Completion Date: October 10, 2008

Drilling method - Mud Rotary

Borehole Log Report

Project: Newalta Corporation

Location: Newalta Hamilton (Stoney Creek) Landfills

Log of Monitor - 72-I

Drilling Contractor - Lantech Drilling Services Inc.

Depth (m) Depth (ft)	Monitor details	Geologic Unit	Unit Description
0 0	0	clayey silt	Brown clayey silt, trace sand, fractures with oxidation, APL, stiff Brown to grey brown clayey silt, occasional fine gravel, trace fine sand, fractured with orange and black oxidation, APL, very stiff to hard
5———20	20—		
10	30 —	Eramosa Dolostone	Brownish grey, fine crystalline, thin to medium bedded dolostone, occasional shale stringers, locally porous, minor occurrence of small vugs
1550	ราย (1986) เกาะ เกาะ เกาะ เกาะ เกาะ เกาะ เกาะ เกาะ		
20——60	60—	vinemount shale VFZ	Vinemount Shale: Brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale. Dolostone: Dolostone bed with moderate shale content locally.
70	70—	vinemount2	Vinemount Shale continued: Brownish grey, aphanitic to very fine crystalline, thir to medium bedded shale, interlamintated to interbedded with dolostone below about 20.5m. Bioturbation at lower contact.
25———80	80—	UFZ Shale	Goat Island Dolostone - Brownish grey to grey, fine crystalline, thick bedded dolostone. Two fractures at about 24.1m . Both contain weathered gypsum and varied in aperture up to 3.8cm. Dark brownish grey, medium bedded shale, slightly laminated with dolostone,
90	90 —	UMFZ	bioturbation at upper contact. Goat Island Dolostone: Two gypsum filled fractures at about 25.4m. Brownish grey to grey, fine crystalline dolostone.
30—————————————————————————————————————	100	goat island 2	Goat Island Dolostone continued: Brownish grey to grey, fine crystalline, thick bedded dolostone, occasional shale stringers to about 24.5m, trace fossils.
		ancaster chert beds	Ancaster Chert Beds: Brownish grey to light brown, fine to very fine crystalline, medium bedded siliceous dolostone with numerous chert nodules and layers, minor occurrence of sphalerite mineralization usually associated with chert
		\ LFZ	Ancaster Chert Beds: Fractured encountered at about 32.9m

Ground Surface Elevation - 207.90 asl.

Top of Casing/Measuring Point - 208.90 asl.

Prepared by W. Jackman, P.Geo.

96 Newcombe Road. Dundas ON

Monitor Completion Date: October 10, 2008

Drilling method - Mud Rotary

Borehole Log Report

Project: Newalta Corporation

Location: Newalta Hamilton (Stoney Creek) Landfills

Log of Monitor - 72-II

Drilling Contractor - Lantech Drilling Services Inc.

Depth (m) Depth (ft)	Monitor details	Geologic Unit	Unit Description
00		clayey silt	Brown clayey silt, trace sand, fractures with oxidation,APL, stiff
	-	oldy by bilt	Diemir diay by disk, stade daria, madrando misi oxidadion, in E, disi
2	10-	clayey silt till	Brown to grey brown clayey silt, occasional fine gravel, trace fine sand, fractured with orange and black oxidation, APL, very stiff to hard
6	20—		
30	30 —		
12—40	40—	Eramosa Dolostone	Brownish grey, fine crystalline, thin to medium bedded dolostone, occasional shale stringers, locally porous, minor occurrence of small vugs
16—————————————————————————————————————	50—		
18—————————————————————————————————————	60-	vinemount shale	Vinemount Shale: Brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale.
20 —		VFZ	Dolostone: Dolostone bed with moderate shale content locally.
20	70—	vinemount2	Vinemount Shale continued: Brownish grey, aphanitic to very fine crystalline, thir to medium bedded shale, interlamintated to interbedded with dolostone below about 20.5m. Bioturbation at lower contact.
24——80	80	UFZ Shale	Goat Island Dolostone - Brownish grey to grey, fine crystalline, thick bedded dolostone. Two fractures at about 24.1m . Both contain weathered gypsum and varied in aperture up to 3.8cm.
26—=		UMFZ	Dark brownish grey, medium bedded shale, slightly laminated with dolostone, bioturbation at upper contact. Goat Island Dolostone: Two gypsum filled fractures at about 25.4m. Brownish grey to grey, fine crystalline dolostone.

Ground Surface Elevation - 207.72 asl. Top of Casing/Measuring Point - 208.72 Prepared by W. Jackman, P.Geo.

96 Newcombe Road. Dundas ON

Monitor Completion Date: October 10, 2008

Drilling method - Mud Rotary

Borehole Log Report

Project: Newalta Corporation

Location: Newalta Hamilton (Stoney Creek) Landfills

Log of Monitor - 72-III

Drilling Contractor - Lantech Drilling Services Inc.

Depth (ft)	Depth (m)	Monitor details	Geologic Unit	Unit Description
0	0	0 -	clayey silt	Brown clayey silt, trace sand, fractures with oxidation,APL, stiff
10 —	2	2—	clayey silt till	Brown to grey brown clayey silt, occasional fine gravel, trace fine sand, fractured with orange and black oxidation, APL, very stiff to hard
20 —	6	6—		
30 —	10	10—	Eramosa Dolostone	Brownish grey, fine crystalline, thin to medium bedded dolostone, occasional shale stringers, locally porous, minor occurrence of small vugs
40 — — — — — — — 50 —	12	12—		
	16 18	16-		
60 —		10	vinemount √shale	Vinemount Shale: Brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale.
]			VFZ	Dolostone: Dolostone bed with moderate shale content locally.
70 —	20	20—	vinemount2	Vinemount Shale continued: Brownish grey, aphanitic to very fine crystalline, thir to medium bedded shale, interlamintated to interbedded with dolostone below about 20.5m. Bioturbation at lower contact.
	24	24—	UFZ	Goat Island Dolostone - Brownish grey to grey, fine crystalline, thick bedded dolostone. Two fractures at about 24.1m . Both contain weathered gypsum and
'		and a second		

Ground Surface Elevation - 207.74 asl.

Top of Casing/Measuring Point - 208.74

Prepared by W. Jackman, P.Geo.

BOREHOLE LOGPROJECT: GLL 21-654BOREHOLE: 73-I1 of 3Hydrogeological Investigations
Stoney Creek, Ontario
FOR: Philip Services Inc.DATE: 12 September 2001
GEOLOGIST YS
ELEVATION 205.9 m ASL

ZHZ		<u>~</u>			SAN	IPL	E			
(m) HLAAD	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	TVPF	N VALUE	% WATER	% REC	% RQD	RECOVERY (%) 25 50 75100	RQD (%) 25 50 75 100
0.5	TOPSOIL Dark brown silt with some clay and rootlets, trace fine sand, moist									
1 -	CLAYEY SILT Greyish brown clayey silt, trace very fine sand, DTPL, very stiff		1	S	S 29		100		-	
2 -										
3 -	-Becoming silt and clay, brownish grey, APL and stiff below about 3.1 m		2	S	S 13		100		•	
4 -	December all the slave and the slave all the		3	SS	S 9		100			
5 -	-Becoming silty clay, medium grey and WTPL below about 4.5 m		_		5 9		100	-		
6			4	SS	5 13		100			
7.1 7	ERAMOSA DOLOSTONE Brownish grey, fine crystalline, thin to medium bedded		5	Н	Q		100	30	+	•
8 -	dolostone, slightly weathered to 10.9 m with rust staining on fractures, occasional shale stringers, rare fossils. -Numerous small vugs occur locally between about 7.3 and 12.5 m		- 6	Н	ξ		100	71		
9 -	-Calcite infilling in a large vug at about 8.3 m -Fractured zone between about 9.2 and 9.4 m									
10 -			_ 7	Н	Ω		100	58.		
11			8	НС	2		100	95		
12	4. Tup 02								artnor Le	

BOREHOLE LOGPROJECT: GLL 21-654BOREHOLE: 73-I2 of 3Hydrogeological InvestigationsDATE: 12 September 2001Stoney Creek, OntarioGEOLOGISTYSFOR: Philip Services Inc.ELEVATION205.9 m ASL

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DEPTH	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS	9	五 元 六 二		VALUE	WATER		D	RECOVERY	
(m)	STRAT		MOI	UN &	NOMBER	TYPE	N VA.	% WA	% REC	% RQD	(%) 25 50 75 100	(%) 25 50 75 100
13 -	3	DOLOSTONE(Continued)		_	9	HQ			100	76-	23 30 73 100	23 30 73 100
14 -		-A thin shale bed at about 13.4 m										
15 🗕		-Dolostone becomes medium grey in color below about 14.5 m -Gypsum stringers/nodules frequently occur along bedding		ļ	10	HQ			100	91		
16 -		planes below about 15.0 m.		- 1	11	HQ			100	91-	•	A
17 -				-		Action . Property						
18.0 ₁₈ .		VINEMOUNT SHALE			12	HQ			100	93		
19 -		Medium to dark grey aphanitic, thin bedded shale, with occasional dolostone beds and fossiliferous layers. -Medium grey dolostone bed between about 18.9 and 19.6 m -Fractured zone between about 19.3 and 19.6 m along			13	HQ	The state of the s		100	99 ⁻	-	
20		dolostone bed.		-	14	HQ			100	97		
21 -						Y						
22			E660 500	_	15	HQ			100	97		
23.1 23		GOAT ISLAND DOLOSTONE Medium grey, fine crystalline, medium bedded dolostone, some shale stringers.		1	16	НQ			100	100		
24.1 24		-Large vugs infilled with gypsum encountered at about 23.3 and 23.7 m										
24.7	=	Dark grey, aphanitic, thin bedded shale, bioturbation			N.							

BOREHOLE LOGPROJECT: GLL 21-654BOREHOLE: 73-I3 of 3Hydrogeological InvestigationsDATE: 12 September 2001Stoney Creek, OntarioGEOLOGISTYSFOR: Philip Services Inc.ELEVATION205.9 m ASL

TOK.		np services nic.		V						V 1 X	HOI	. 20		III P	
	HΥ					S	AM	PL	E				П		
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERVAL		N VALUE	% WATER	% REC	% RQD		COVE (%)			RQD (%) 0 75 100
25.1		occurs at upper contact. GOAT ISLAND DOLOSTONE Medium grey, fine crystalline, medium bedded dolostone. Borehole terminated at 25.1 m in dolostone.		4								50 7510		25 5	0 75100

BOREHOLE LOG	PROJECT: GLL 21-654	BOREHOLE: 73-II 1 of 2
Hydrogeological Investigations		DATE: 13 September 2001
Stoney Creek, Ontario		GEOLOGIST YS
FOR: Philip Services Inc.		ELEVATION 205.9 m ASL

FOR:	1 1111	p Services Inc.								11011 203.	MASE
	PHY.		Δ.			SAN	IPL:	E	,	1	
DEPTH (m)	STRATIGRAP	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERVAL	N VALUE	% WATER	% REC	% RQD	RECOVER (%) 25 50 75100	Y RQD (%) 25 50 75 100
	S	TOPSOIL				-				25 30 75100	23 30 73 100
0.5		Dark brown silt with some clay and rootlets, trace fine sand, moist CLAYEY SILT Greyish brown clayey silt, trace very fine sand, DTPL, very stiff		-							
3 -		-Becoming silt and clay, brownish grey, APL and stiff below about 3.1 m		-			-				
5 -		-Becoming silty clay, medium grey and WTPL below about 4.5 m		_					_		
7.1 7 - 8 -		ERAMOSA DOLOSTONE Brownish grey, fine crystalline, thin to medium bedded dolostone, slightly weathered to 10.9 m with rust staining on fractures, occasional shale stringers, rare fossils. -Numerous small vugs occur locally between about 7.3 and 12.5 m -Calcite infilling in a large vug at about 8.3 m -Fractured zone between about 9.2 and 9.4 m							_		
10 -		Titolaide Zone detricon addat 7/2 and 7/1 in		_					_		
12 ·	d: 2	4 Jun 02		-					- 0	Sartner L	ee Limited

BOREHOLE LOGPROJECT: GLL 21-654BOREHOLE: 73-II2 of 2Hydrogeological InvestigationsDATE: 13 September 2001Stoney Creek, OntarioGEOLOGISTYSFOR: Philip Services Inc.ELEVATION205.9 m ASL

	\rightarrow		SAMPLE						Т					
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS NIMBER	NUMBER	INTERVAL		VALUE	WATER	REC	RQD	RECOVE (%)	RY	RQI (%)	
(111)	TRE		ΣOų	NUN	LNI	TYPE	N	0/0	o/o △/o	% \\\\	25 50 7510	00	25 50 75	-
13 -	5	DOLOSTONI(Continued)		-						-				
14 -		-A thin shale bed at about 13.4 m												
15 –		-Dolostone becomes medium grey in color below about 14.5 m -Gypsum stringers/nodules frequently occur along bedding planes below about 15.0 m.		-						-				
16 -										82				
17 -														
18.0 18		VINEMOUNT SHALE Medium to dark grey aphanitic, thin bedded shale, with occasional dolostone beds and fossiliferous layers.												
19 -		-Medium grey dolostone bed between about 18.9 and 19.6 m -Fractured zone between about 19.3 and 19.6 m along dolostone bed.	10 10 10 10 10 10 10 10 10 10 10 10 10 1											
20.0 20 -		Borehole terminated at 20.04 m in shale. Stratigraphy inferred from adjacent borehole 73-I.								-				
											artner			

BOREHOLE LOGPROJECT: GLL 21-654BOREHOLE: 74-I1 of 3Hydrogeological InvestigationsDATE: 14 September 2001Stoney Creek, OntarioGEOLOGISTYSFOR: Philip Services Inc.ELEVATION206.3 m ASL

		p services me.			_	0	A 78.7	DI.	D.			
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERVAL		N VALUE	% WATER	% REC	% RQD	RECOVERY (%)	RQD (%) 25 50 75 100
0.5		TOPSOIL Dark brown silt with some clay and rootlets, trace fine sand, moist.										
1 -		CLAYEY SILT Medium brown clayey silt, trace very fine sand, DTPL, hard.		- 1		SS	34		100	-	-	
2 -										_		
3 -		-Becoming silt and clay, brownish grey, APL and very stiff below about 3.1 m. Rust stained vertical fractures extend to about 3.4 m.		2		SS	20		100		•	
4 - 5 -		-Becoming silty clay, medium grey, WTPL and firm to stiff below about 4.6 m.		3		SS	6		100			
6 -		-A fine sand seam at about 6.4 m.		4		SS	17		100	-	-	
7.6 8 -		ERAMOSA DOLOSTONE Brownish grey, fine crystalline, thin to medium bedded dolostone, with occasional shale stringers, rare fossilsFractured zone between about 8.0 and 8.8 m.		5		HQ			90	34	•	A
9 -				-		IIO.			100	66		
10 -		-Numerous small vugs occur between about 10.0 and 10.7 $$ m $$		- °		HQ			100	-		
11 -		-Calcite infilled in two large vugs at about 10.6 mA fractured zone with gypsum infilling between about 10.7 and 10.9 m below the above vuggy zone.		- 7		HQ			100	89	•	
12 -		-Numerous small vugs between about 11.9 and 12.5 m.										e Limited

BOREHOLE LOGPROJECT: GLL 21-654BOREHOLE: 74-I2 of 3Hydrogeological Investigations
Stoney Creek, OntarioDATE: 14 September 2001
GEOLOGIST YSFOR: Philip Services Inc.ELEVATION 206.3 m ASL

FUR:	1 1111	ip Services inc.								V ZX.	HON	200.5	III ASL
	ΣI					S	AM	PL	E				
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	(OVERY %) 75100	RQD (%) 25 50 75 100
13 -		DOLOSTONE Continued) -Dolostone becomes medium grey in color below about 12.5 mCalcite infilled in a large vug at about 13.3 m.		8		HQ			100	87		•	
14 -		-A vuggy zone likely bearing water between about 14.0 and 14.1 mNumerous small vugs between about 14.2 and 14.5 m.		9		НQ			100	91		•	
15 -		-Gypsum stringers / nodules frequently occur below about 15.2 mShale stringers frequently occur below about 15.5 m.		10		НQ			100	93			
17 -		-Large vugs infilled with calcite at about 16.6 m.		11		HQ			100	100		-	
18 - 18.3		VINEMOUNT SHALE		-						. 33			
19 -		Medium to dark grey, aphanitic, thin bedded shale, occasional dolostone beds and fossiliferous layers. -Medium grey dolostone bed between about 18.7 and 19.8 m.		_ 12	2	HQ			100	93_		•	
20 -		-2 cm mudstone bed at 19.7 m.		13	3	HQ			100	100			
21 -		-Fossiliferous layer from 21.7 to 21.8 m.		- 14		НQ			100	100		-	
23.1 23		GOAT ISLAND DOLOSTONE Medium grey, fine crystalline, medium bedded dolostone, some shale stringers.		15		HQ			100	100			
24.1 24 - 24.6		-Large vugs infilled with gypsum occur at 23.3 and 23.7 m. SHALE Dark grey, aphanitic, thin bedded shale, bioturbation occurs at upper contact										•	

BOREHOLE LOGPROJECT: GLL 21-654BOREHOLE: 74-I 3 of 3Hydrogeological InvestigationsDATE: 14 September 2001Stoney Creek, OntarioGEOLOGIST YSFOR: Philip Services Inc.ELEVATION 206.3 m ASL

	HY		~			S	AM	PL	E			
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	RECOVERY (%) 25 50 75100	RQD (%) 25 50 75 100
26 -		GOAT ISLAND DOLOSTONE Medium grey, fine crystalline, medium bedded dolostone, some shale stringers. DOLOSTONE (Continued) -Dolostone becomes siliceous below about 26.0 m.		16 - 17		HQ HQ				100		
27				-								
28 -				18		HQ			100	97		
29.9 30 -		ANCASTER CHERT BEDS		19		HQ			100	91	•	
31.0 31		Brownish light grey fine crystalline, thick bedded siliceous dolostone, numerous large chert nodules.	#								*	
		Borehole terminated at 31.0 m in siliceous dolostone.										

BOREHOLE LOG	PROJECT: GLL 21-654	BOREHOLE: 74-II 1 of 3
Hydrogeological Investigations		DATE: 17 September 2001
Stoney Creek, Ontario		GEOLOGIST YS
FOR: Philip Services Inc.		ELEVATION 206.3 m ASL

	БНТ	~			S	AM	PL	E			
DEPTH (m)	STRATIGRAPHIC DESCRIPTION STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	RECOVERY (%) 25 50 75 100	RQD (%) 25 50 75 100
0.5	TOPSOIL Dark brown silt with some clay and rootlets, trace fine sand, moist.										
1	CLAYEY SILT Medium brown clayey silt, trace very fine sand, DTPL, hard.								8		
2 -			-						-		
3 -	-Becoming silt and clay, brownish grey, APL and very stiff below about 3.1 m. Rust stained vertical fractures extend to about 3.4 m.		=						-		
4 -	-Becoming silty clay, medium grey, WTPL and firm to stiff below about 4.6 m.								-		
5 -	below about 4.6 m.								-		
7	-A fine sand seam at about 6.4 m.		_						10 -		
7.6											
8 -	ERAMOSA DOLOSTONE Brownish grey, fine crystalline, thin to medium bedded dolostone, with occasional shale stringers, rare fossilsFractured zone between about 8.0 and 8.8 m.		-						-		
9 -			-						•		
10 -	-Numerous small vugs occur between about 10.0 and 10.7 m								-		
11 -	-Calcite infilled in two large vugs at about 10.6 mA fractured zone with gypsum infilling between about 10.7 and 10.9 m below the above vuggy zone.		_								
12 -	-Numerous small vugs between about 11.9 and 12.5 m.		-								o Limited

BOREHOLE LOG	PROJECT: GLL 21-654	BOREHOLE: 74-II 2 of 3
Hydrogeological Investigations		DATE: 17 September 2001
Stoney Creek, Ontario		GEOLOGIST YS
FOR: Philip Services Inc.		ELEVATION 206.3 m ASL

	PHY		~		_	S	AM	PL	E			
DEPTH (m)	STRATIGRAPI	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERVAL	E.	VALUE	WATER	REC	RQD	RECOVERY	RQD (%)
()	STR		N U W	NUN	N	TYPE	Z	0/0	0/0 □□	% Tri	25 50 75100	25 50 75 100
13 -		DOLOSTONE (Continued) -Dolostone becomes medium grey in color below about 12.5 mCalcite infilled in a large vug at about 13.3 m.		-						-		
14 -		-A vuggy zone likely bearing water between about 14.0 and 14.1 mNumerous small vugs between about 14.2 and 14.5 m.		_								
15 - 16 -		-Gypsum stringers / nodules frequently occur below about 15.2 mShale stringers frequently occur below about 15.5 m.		_						-		
17 -		-Large vugs infilled with calcite at about 16.6 m.		-								
18.3		VINEMOUNT SHALE		-								
19 -		Medium to dark grey, aphanitic, thin bedded shale, occasional dolostone beds and fossiliferous layers. -Medium grey dolostone bed between about 18.7 and 19.8 m.		_								
20 –		-2 cm mudstone bed at 19.7 m.		-								
21 -		-Fossiliferous layer from 21.7 to 21.8 m.										
22 -		-1 Ossimerous layer from 21.7 to 21.6 m.								1-		
23.1 23		GOAT ISLAND DOLOSTONE Medium grey, fine crystalline, medium bedded dolostone, some shale stringers. -Large vugs infilled with gypsum occur at 23.3 and 23.7 m.										
24.1 24 - 24.6		SHALE Dark grey, aphanitic, thin bedded shale, bioturbation										
		\occurs at upper contact									cetnor Lo	

BOREHOLE LOGPROJECT: GLL 21-654BOREHOLE: 74-II 3 of 3Hydrogeological InvestigationsDATE: 17 September 2001Stoney Creek, OntarioGEOLOGIST YSFOR: Philip Services Inc.ELEVATION 206.3 m ASL

FOR.		ip services inc.									TON			11 7 10	(38)
	HY		~			S	AM	PLI	E						
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD		OVER (%)	1	(0,	QD (6) 75 100
26 -		GOAT ISLAND DOLOSTONE Medium grey, fine crystalline, medium bedded dolostone, some shale stringers. DOLOSTONE(Continued) -Dolostone becomes siliceous below about 26.0 m.	1 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 1 0												
27.3		Borehole terminated at 27.31 m in dolostone. Stratigraphy inferred from adjacent borehole 74-I.													
1															

BOREHOLE LOG	PROJECT: GLL 21-654	BOREHOLE: 74-III 1 of 3
Hydrogeological Investigations		DATE: 18 September 2001
Stoney Creek, Ontario		GEOLOGIST YS
FOR: Philip Services Inc.		ELEVATION 206.2 m ASL

				ui	S	AM	PI.	E			
DEPTH	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	RECOVER' (%) 25 50 75100	RQD (%) 25 50 75 100
0.5	TOPSOIL Dark brown silt with some clay and rootlets, trace fine \sand, moist.									25 30 75100	23 30 73 100
1 -	CLAYEY SILT Medium brown clayey silt, trace very fine sand, DTPL, hard.		-						1*		
2 -									æ		
3 -	-Becoming silt and clay, brownish grey, APL and very stiff below about 3.1 m. Rust stained vertical fractures extend to about 3.4 m.								14		
5 -	-Becoming silty clay, medium grey, WTPL and firm to stiff below about 4.6 m.		- 10						-		
6 -	-A fine sand seam at about 6.4 m.		-								
7.6	ERAMOSA DOLOSTONE Brownish grey, fine crystalline, thin to medium bedded dolostone, with occasional shale stringers, rare fossils. -Fractured zone between about 8.0 and 8.8 m.										
10 -	-Numerous small vugs occur between about 10.0 and 10.7		_						_		
11	-Calcite infilled in two large vugs at about 10.6 mA fractured zone with gypsum infilling between about 10.7 and 10.9 m below the above vuggy zone.		-						8*		
12	-Numerous small vugs between about 11.9 and 12.5 m.		-								e Limited

BOREHOLE LOGPROJECT: GLL 21-654BOREHOLE: 74-III 2 of 3Hydrogeological Investigations
Stoney Creek, OntarioDATE: 18 September 2001
GEOLOGIST YSFOR: Philip Services Inc.ELEVATION 206.2 m ASL

	PHY		~	Π		S	AM	PL	E		***	
DEPTH (m)	STRATIGRAPI	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERVAL	TYPE	VALUE	WATER	REC	RQD	RECOVERY	RQD (%)
	ST			N	FI	H	Z	0/0	0/0	0/0	25 50 75100	25 50 75 100
13		DOLOSTONE (Continued) -Dolostone becomes medium grey in color below about 12.5 m. -Calcite infilled in a large vug at about 13.3 m.								-		
14 -		-A vuggy zone likely bearing water between about 14.0 and 14.1 mNumerous small vugs between about 14.2 and 14.5 m.		_								
15 -		-Gypsum stringers / nodules frequently occur below about 15.2 mShale stringers frequently occur below about 15.5 m.								-		
17		-Large vugs infilled with calcite at about 16.6 m.								<u>.</u>		
18.3		VINEMOUNT SHALE		_						_		
19 -		Medium to dark grey, aphanitic, thin bedded shale, occasional dolostone beds and fossiliferous layers. -Medium grey dolostone bed between about 18.7 and 19.8 m.								_		
20 🗕		-2 cm mudstone bed at 19.7 m.		-						-		
21 -		D. 116		-						82		
22 -		-Fossiliferous layer from 21.7 to 21.8 m.								-		
23.1 23	<u>-</u>	GOAT ISLAND DOLOSTONE Medium grey, fine crystalline, medium bedded dolostone, some shale stringers.								-		
24.1 24 24.6		-Large vugs infilled with gypsum occur at 23.3 and 23.7 m. SHALE Dark grey, aphanitic, thin bedded shale, bioturbation	1	-						-		
24.9		\occurs at upper contact										

BOREHOLE LOGPROJECT: GLL 21-654BOREHOLE: 74-III 3 of 3Hydrogeological InvestigationsDATE: 18 September 2001Stoney Creek, OntarioGEOLOGIST YSFOR: Philip Services Inc.ELEVATION 206.2 m ASL

	ΙΧ			Г		S	AM	PLI	E			
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERVAL		N VALUE	% WATER	% REC	% RQD	RECOVERY (%) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	RQD (%) 25 50 75 100
		Medium grey, fine crystalline, medium bedded dolostone, some shale stringers. Borehole terminated at 24.92 m in dolostone. Stratigraphy inferred from adjacent borehole 74-1.										

BOREHOLE LOGPROJECT: GLL 21-654BOREHOLE: 74-IV 1 of 2Hydrogeological InvestigationsDATE: 19 September 2001Stoney Creek, OntarioGEOLOGIST YSFOR: Philip Services Inc.ELEVATION 206.2 m ASL

	PHY		α.			S	AM	PL	E							
DEPTH (m)	STRATIGRAF	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERVAL	TYPE	VALUE	WATER	REC	RQD		COVE (%)	RY		RQ	- 1
	STF		12	NO	A	TY	Z	0/0	0/0	0/0	25	50 751	00	25	50 7	5 100
0.5		TOPSOIL Dark brown silt with some clay and rootlets, trace fine sand, moist.														
1 -		CLAYEY SILT Medium brown clayey silt, trace very fine sand, DTPL, hard.		-												
2 -				-,												
3 -		-Becoming silt and clay, brownish grey, APL and very stiff below about 3.1 m. Rust stained vertical fractures extend to about 3.4 m.		_						-						
.5 -		-Becoming silty clay, medium grey, WTPL and firm to stiff below about $4.6\ \mathrm{m}.$		-						_						
6 -		-A fine sand seam at about 6.4 m.		-												
7.6		ERAMOSA DOLOSTONE														
8 -		Brownish grey, fine crystalline, thin to medium bedded dolostone, with occasional shale stringers, rare fossils. -Fractured zone between about 8.0 and 8.8 m.														
9 -				-												
10 -		-Numerous small vugs occur between about 10.0 and 10.7 $$ m $$		-						-						
11 ·		-Calcite infilled in two large vugs at about 10.6 mA fractured zone with gypsum infilling between about 10.7 and 10.9 m below the above vuggy zone.		-						-						
12		-Numerous small vugs between about 11.9 and 12.5 m.		-												ited

BOREHOLE LOGPROJECT: GLL 21-654BOREHOLE: 74-IV 2 of 2Hydrogeological InvestigationsDATE: 19 September 2001Stoney Creek, OntarioGEOLOGIST YSFOR: Philip Services Inc.ELEVATION 206.2 m ASL

	Ιλ			Г		S	AM	PL	E				T		
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERVAL		N VALUE	% WATER	% REC	% RQD	(%	VER') 5 100	L	RQ (%	
13 -		DOLOSTONE (Continued) -Dolostone becomes medium grey in color below about 12.5 mCalcite infilled in a large vug at about 13.3 m.		_						-					
14 -		-A vuggy zone likely bearing water between about 14.0 and 14.1 mNumerous small vugs between about 14.2 and 14.5 m.		-											
15 -		-Gypsum stringers / nodules frequently occur below about 15.2 mShale stringers frequently occur below about 15.5 m.		-						-					
16 -		-Large vugs infilled with calcite at about 16.6 m.		-											
18 - 18.3		VINEMOUNT SHALE		_						-					
19 -		Medium to dark grey, aphanitic, thin bedded shale, occasional dolostone beds and fossiliferous layers. -Medium grey dolostone bed between about 18.7 and 19.8 m.		_						-					
20 – 20.4		-2 cm mudstone bed at 19.7 m. Borehole terminated at 20.35 m in shale.		-						-					
		Stratigraphy inferred from adjacent borehole 74-I.													
		4. Tun 02													nited

BOREHOLE LOGPROJECT: GLL 21-654BOREHOLE: 74-V 1 of 1Hydrogeological InvestigationsDATE: 19 September 2001Stoney Creek, OntarioGEOLOGIST YSFOR: Philip Services Inc.ELEVATION 206.2 m ASL

	РН Д				S	AM	PL	E			
DEPTH (m)	STRATIGRAPHIC DESCRIPTION STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	RECOVER' (%) 25 50 75 100	RQD (%) 25 50 75 100
0.5	TOPSOIL Dark brown silt with some clay and rootlets, trace fine sand, moist.										
1 -	CLAYEY SILT Medium brown clayey silt, trace very fine sand, DTPL, hard.								-		
2 -			-								
3 -	-Becoming silt and clay, brownish grey, APL and very stiff below about 3.1 m. Rust stained vertical fractures extend to about 3.4 m.										
5 🗕	-Becoming silty clay, medium grey, WTPL and firm to stiff below about 4.6 m.		_						-		
7 -	-A fine sand seam at about 6.4 m.		_			2			_		
7.6 8 -	ERAMOSA DOLOSTONE Brownish grey, fine crystalline, thin to medium bedded dolostone, with occasional shale stringers, rare fossilsFractured zone between about 8.0 and 8.8 m.		-						24		
9 - 10 -	-Numerous small vugs occur between about 10.0 and 10.7		-						_		
10.3	Borehole terminated at 10.34 m in dolostone. Stratigraphy inferred from adjacent borehole 74-I.										
	• 24 Jun 02									Control	e Limited

BOREHOLE LOGPROJECT:92377BOREHOLE:P1-I1 of 2HYDRAULIC CONTROL INVESTIGATIONDATE:9 April 1992TARO-WEST QUARRYGEOLOGISTPWFOR:TARO AGGREGATES LTD.ELEVATION196.6 m ASL

	<u>}</u>		~			S	AM	PLI	E						
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL	TYPE	N VALUE	% WATER	% REC	% RQD		(%	VERY	RQ (%	1
		FILL Brown silty sand with brick fragments.										Ī			
1 -				1		НQ			93	0					
1.8	₩	EDAMOSA DOLOSTONE		. ,		нQ нQ			100	32-					
2.4		ERAMOSA DOLOSTONE Brownish grey to greyish brown, fine crystalline, thin bedded dolostone, weathered.			M	- 1			100	32					
3.1 3 -		VINEMOUNT SHALE Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale, locally		3		НQ			100	53				•	
4.0		interlaminated to interbedded with dolostone, occasional clay seams, trace fossils. -Very weathered to about 4.6 m.								-					
5 -		-Dolostone bed from about 3.1 to 4.0 m.		- 4		НQ			100	77					
6 -				-											
7 -				- -		НQ			100	88					
7.5		GOAT ISLAND DOLOSTONE Brownish grey to grey, fine crystalline, thin to		- 6		НQ			100	97					4
8.8		medium bedded dolostone, moderate shale content, occasional shale stringers, locally vuggy with some 'vugs infilled with calcite.			A										
9.5		N-Fractures observed between about 7.5 and 7.9 m.	_	7		НQ			100	78					
10 -		Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale interlaminated with dolostone.		-						-					
11				8		НQ			100	88					•
12				-		НQ			03						A
13		-Minor occurrences of chert nodules below about 13.1 m.		9		пQ			93	89					
14		AVIA III.		10		нQ			100	97	-				
													er I d		

Printed: 29 SEP 93

BOREHOLE LOGPROJECT:92377BOREHOLE:P1-I2 of 2HYDRAULIC CONTROL INVESTIGATIONDATE:9 April 1992TARO-WEST QUARRYGEOLOGISTPWFOR:TARO AGGREGATES LTD.ELEVATION196.6 m ASL

										-	1011	170.0	 	
	НΥ		_~			S	AM	PL	E					
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL	TYPE	N VALUE	% WATER	% REC	% RQD	(9	VERY 6) 75 100	 RQ (%	
16 -		-8 cm calcite infilled fracture at about 15.5 m.		11		НQ			100	88				A
16.6		ANCASTER CHERT BED												
17 -		Light brownish grey, very fine crystalline, medium bedded siliceous dolostone with numerous chert nodules and beds, minor occurrences of shale stringers.		12		НQ			100	93				A
19 -		-Large fracture encountered at about 18.6 m.		13		НQ			98	95				4
20 -			##	- 14		НQ			100	94				A
21.3 21 -		GASPORT DOLOSTONE		-										
22 .0 22 -		Medium to dark grey, coarse crystalline, medium to thick bedded dolostone, porous, some fossils. DECEW DOLOSTONE Medium to dark grey, fine crystalline, thin to		15		HQ			100	100				
23 - 23.4		medium bedded dolostone interlaminated to interbedded with shale. ROCHESTER SHALE Medium to dark grey, aphanitic to very fine		16		HQ			100	100				
25.2 25 -		crystalline, thin bedded shaly dolostone.		_17		HQ			100	79_				
		Borehole terminated at 25.18 m in shaly dolostone.												

BOREHOLE LOGPROJECT:92377BOREHOLE:P1-II1 of 2HYDRAULIC CONTROL INVESTIGATIONDATE:13 May 1992GEOLOGISTPWFOR:TARO AGGREGATES LTD.

	}		~			S	AM	PLI	2				-		 -	
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL	TYPE	N VALUE	% WATER	% REC	% RQD		(%	VER 6) 75 100		QD %)	.00
1 -		FILL Brown silty sand with brick fragments.														
1.8		ERAMOSA DOLOSTONE														
3.1 3		Brownish grey to greyish brown, fine crystalline, thin bedded dolostone, weathered. VINEMOUNT SHALE Dark brownish grey, aphanitic to very fine		_		,										
4.0		crystalline, thin to medium bedded shale, locally interlaminated to interbedded with dolostone, occasional clay seams, trace fossils. -Very weathered to about 4.6 m.		-												
5 -		-Dolostone bed from about 3.1 to 4.0 m.	1.0	_						-						
6			***************************************													
7 7.5		GOAT ISLAND DOLOSTONE		-												
8.8		Brownish grey to grey, fine crystalline, thin to medium bedded dolostone, moderate shale content, occasional shale stringers, locally vuggy with some 'vugs infilled with calcite.	-								1					
9.5		SHALE Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale		_												
11		interlaminated with dolostone.														
12																
13		-Minor occurrences of chert nodules below about 13.1 m.		-												
14				-												
			生生						<u>بــــــــــــــــــــــــــــــــــــ</u>	1	ᆣ_	لــــــــــــــــــــــــــــــــــــــ	لىلى	1	 	

BOREHOLE LOGPROJECT:92377BOREHOLE:P1-II2 of 2HYDRAULIC CONTROL INVESTIGATIONDATE:13 May 1992TARO-WEST QUARRYGEOLOGISTPWFOR:TARO AGGREGATES LTD.ELEVATION196.8 m ASL

	٦_		1	T		 				T							一
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS L NUMBER	NUMBER	INTERUAL	N VALUE W	% WATER	% REC	% RQD	_	(%)	ERY		(%	QD %)	
16 -		GOAT ISLAND DOLOSTONE(continued)							-	2	3 3	0 73		2.	5 50	75 10	
		Borehole terminated at 16.50 m in dolostone. NOTE: BOREHOLE DRILLED DIRECTLY BY AIRTRACK, STRATIGRAPHY INFERRED FROM ADJACENT P1-I.															

BOREHOLE LOG	PROJECT: 92377	BOREHOLE: P1-III 1 of 1
HYDRAULIC CONTROL INVEST	IGATION	DATE: 13 May 1992
TARO-WEST QUARRY		GEOLOGIST PW
FOR: TARO AGGREGATES LTI) .	ELEVATION 196.5 m ASL

	È		α			S	AM	PLI	3							
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	(%	VER 6) 75 10			RQ (%	1
1 -	8	FILL Brown silty sand with brick fragments.								-						
1.8		ERAMOSA DOLOSTONE								-						
3.1 3		Brownish grey to greyish brown, fine crystalline, thin bedded dolostone, weathered. VINEMOUNT SHALE		-												
4.0		Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale, locally interlaminated to interbedded with dolostone,														
4		occasional clay seams, trace fossils. -Very weathered to about 4.6 m. -Dolostone bed from about 3.1 to 4.0 m.														
5 -		-polosione ped nom about 0:1 to 110 m								-						
6																
7 .5				-												
8.6		GOAT ISLAND DOLOSTONE Brownish grey to grey, fine crystalline, thin to medium bedded dolostone, moderate shale content,		-												
8.0		occasional shale stringers, locally vuggy with some vugs infilled with calcite. Borehole terminated at 8.59 m in dolostone.														
		NOTE: BOREHOLE DRILLED DIRECTLY BY AIRTRACK, STRATIGRAPHY INFERRED FROM ADJACENT P1-I.														
		ADJAGENT I I .														
L	<u> </u>					ــــــــــــــــــــــــــــــــــــــ			<u>ـــــــــــــــــــــــــــــــــــــ</u>	1	 		<u></u>	بــــــــــــــــــــــــــــــــــــــ		

Printed: 29 SEP 93

BOREHOLE LOGPROJECT:92377BOREHOLE:P2-OW1 1 of 2HYDRAULIC CONTROL INVESTIGATIONDATE:10 April 1992TARO-WEST QUARRYGEOLOGISTPWFOR:TARO AGGREGATES LTD.ELEVATION200.6 m ASL

	IΣT					9	ΔM	PLI	F		ſ				T			一
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL	TYPE	N VALUE	% WATER	% REC	% RQD		(%)	ER'	<u> </u>	(9	QD %) 75 10	00
	₩	INDUSTRIAL FILL	20 13 mg		\dagger								Î	Ť	Ħ			H
1 -		Dark brown to black heterogeneous mix of sand, silt and clay and fine gravel, moist, loose to compact.		-		SS		14.3		_								
2 -				-		33	•	14.3	,	-								
3 -				2		ss	5	19.3										
5				3		ss	8	18.4		1								
6 -				. 4		ss	17	17.5		ı								
7 - 7.5		-Wet below about 6.6 m.				HQ			66	0								
8.2 8 -		VINEMOUNT SHALE Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale, locally interlaminated to interbedded with dolostone, trace			N	HQ			100	-							A	
9 -	Ħ	fossils. -Medium grey heavily fractured dolostone from about 7.5 to 8.2 m.		3		HQ			100	78				-				
10 -				_						1								
11.6	7.3	GOAT ISLAND DOLOSTONE Brownish grow to grow fine constalling thin to		4		HQ			100	100				•				
12.8 13 -		Brownish grey to grey, fine crystalline, thin to medium bedded dolostone, moderate shale content, occasional shale stringers and vugs. -Fracture encountered at about 12.2 m.		5		HQ			100	100				+				
13.4 14 -		SHALE Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale							100									
:	14' A' I	Occasional shale stringers and minor occurrences of calcite nodules below about 13.4 m	+	6		HQ			100	17								

BOREHOLE LOG	PROJECT: 92377	BOREHOLE: P2-OW1 2 of 2
HYDRAULIC CONTROL INVESTIG	GATION	DATE: 10 April 1992
TARO-WEST QUARRY		GEOLOGIST PW
FOR: TARO AGGREGATES LTD.		ELEVATION 200.6 m ASL

	È		α			SA	M	PLE	3							
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	HANDINT	TYPE	N VALUE	% WATER	% REC	% RQD		(%	VERY) 75 100		RQI (%))
		GOAT ISLAND DOLOSTONE(continued)		7	I	IQ			100	95						4
16 -										_						
18				8	I	IQ			100	98						Ī
19.2 19				9	1	HQ.			100	87						•
20 -		ANCASTER CHERT BEDS Light brownish grey, very fine crystalline, medium bedded siliceous dolostone with numerous chert nodules and beds, minor occurrences of shale		- 10		HQ			100	87						•
21		stringersLarge fracture encountered at about 19.5 m.		11												
22				11		HQ			100	100)					
23				12		HQ			100	92						A
24.0 24 25 -		GASPORT DOLOSTONE Grey, coarse crystalline, massive bedded dolostone, porous, minor occurrence of shale stringers.	_	1	M	нQ			95	88						•
^{26.0} 26		DECEW DOLOSTONE Medium to dark grey, fine crystalline, thin to	_	14		нQ			100	10	0					
27		medium bedded dolostone interlaminated to interbedded with shale, occasional shale stringers. -Shale content increasing with depth.	्यातसम्बद्धाः -													
28.1 28		Borehole terminated at 28.09 m in shaly dolostone.		15		НQ			100	D						
Printe	d: 4	ост 93		<u> </u>					[3	Gai	rtn	er L	ee	Lim	nited

BOREHOLE LOGPROJECT:92377BOREHOLE:P2-TW1Al of 1HYDRAULIC CONTROL INVESTIGATIONDATE:19 May 1992TARO-WEST QUARRYGEOLOGISTPWFOR:TARO AGGREGATES LTD.ELEVATION201.1 m ASL

	¥			· ·			S	AM	PLI	E						Π			
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR	DETAILS & NUMBER	NUMBER	INTERUAL	TYPE	N VALUE	% WATER	% REC	% RQD	L	(%)	ERY	_		QD %)	_
	***	INDUSTRIAL FILL		8	-	H						╁		73	100	-	30	737	
1 -		Dark brown to black heterogeneous mix of sand, silt and clay and fine gravel, moist, loose to compact.									-								
2 -											-								
3 -											-								
4 -											-								
5 -											-								
6 -											_								
7 - 7.5		-Wet below about 6.6 m.			-						T								
8.2 8 -		VINEMOUNT SHALE Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale, locally interlaminated to interbedded with dolostone, trace			-						,								
9 -	昌昌	fossilsMedium grey heavily fractured dolostone from about			-														
10 -		7.5 to 8.2 m.			-														
11 - 11.6	昌				-						-								
12 - 12.8		GOAT ISLAND DOLOSTONE Brownish grey to grey, fine crystalline, thin to medium bedded dolostone, moderate shale content, occasional shale stringers and vugs.																	
		Borehole terminated at 12.80 m in dolostone. NOTE: Borehole drilled directly to 12.80 m with a water well rig, stratigraphy inferred from adjacent borehole P2-OW1. Borehole was cased and redrilled to become P2-TW1B.																	

BOREHOLE LOGPROJECT:92377BOREHOLE:P2-TW1B1 of 2HYDRAULIC CONTROL INVESTIGATIONDATE:8 June 1992TARO-WEST QUARRYGEOLOGISTPWFOR:TARO AGGREGATES LTD.ELEVATION201.1 m ASL

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	STRATIGRAPHY	CORP. ANY CRAPHIC DESCRIPTION	TO R	DETAILS & NUMBER		d		Ē	Œ			RE	റവ	/ERY		RQ	D	ĺ
DEPTH	TIG	STRATIGRAPHIC DESCRIPTION	K	ETA	NUMBER	INTERUA	ш	VALUE	WATER	REC	RQD		(%			(%	1	ĺ
(m)	RA		Ē	□ •	Ž	Ħ	TYPE	z	3	2	× ×	75		5 100	25		5 100	l
	ر س	INDUSTRIAL FILL		7		H	•	_	<u> </u>			1	30 .	1100	1	30.		İ
	▓	Dark brown to black heterogeneous mix of sand, silt				$\ $												
	▓	and clay and fine gravel, moist, loose to compact.				П												l
1 -	₩																	ĺ
	₩					$\ $			ļ									
2 -	₩				-													ĺ
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5 -	₩					Ш						1						
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,]						
6	₩																	
		-Wet below about 6.6 m.																
7	₩											1						
7.5	\bowtie																	
		VINEMOUNT SHALE]						l
8.2 8		Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale, locally	Æ															
		interlaminated to interbedded with dolostone, trace							İ									
9		fossils.			-							$\{ \ \ $						l
		-Medium grey heavily fractured dolostone from																
		about 7.5 to 8.2 m.]	-					
10 -	E																	
11	巨											1						
11.6	层																	
11.0	-	GOAT ISLAND DOLOSTONE																1
12	\square	Brownish grey to grey, fine crystalline, thin to										1						
1		medium bedded dolostone, moderate shale content,																
12.8	<u> -</u>	occasional shale stringers and vugs.	- 14	ļ	-							1						
13.4		SHALE Dark brownish grey, aphanitic to very fine	-								1							
		crystalline, thin to medium bedded shale	1															
14		interlaminated with dolostone, trace fossils.	.'		t							1						
					1							\bot						٢
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BOREHOLE LOGPROJECT:92377BOREHOLE:P2-TW1B2 of 2HYDRAULIC CONTROL INVESTIGATIONDATE:8 June 1992TARO-WEST QUARRYGEOLOGIST PWFOR:TARO AGGREGATES LTD.ELEVATION 201.1 m ASL

FOR.		NO AUGREGATES LTD.	·············					1		V 77.	IION	201.1	- 111	7.51	
	¥		n			S	AM	[PL]	E						
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS NUMBER	NUMBER	INTERUAL	TYPE	N VALUE	% WATER	% REC	% RQD	(VERY %) 75 100	· · · · · · · · · · · · · · · · · · ·	RQ:	
	Ë	GOAT ISLAND DOLOSTONE(continued)		┢	\dagger						25 30	73100	25		3 100
16										-					
17				-						-					
18										-					
19.2 19 -		ANCASTER CHERT BEDS Light brownish grey, very fine crystalline, medium bedded siliceous dolostone with numerous chert nodules and beds, minor occurrences of shale		-						-					
21		stringersLarge fracture encountered at about 19.5 m.								•					
22 -															
		Borehole terminated at 23.16 m in siliceous dolostone. NOTE: Borehole P2-TW1B drilled directly from 12.80 to 23.16 m with a water well rig, stratigraphy inferred from adjacent borehole P2-OW1.													

BOREHOLE LOG	PROJECT: 92377	BOREHOLE: P3-I 1 of 2
HYDRAULIC CONTROL INVE	STIGATION	DATE: 20 April 1992
TARO-WEST QUARRY		GEOLOGIST PW
FOR: TARO AGGREGATES I	LTD.	ELEVATION 200.2 m ASL

	ב		~			SAM	PLI	3		-					
	STRATIGRAPHY		MONITOR DETAILS & NUMBER	1	4		~					n	.]	D	O.D.
DEPTH	ğ	STRATIGRAPHIC DESCRIPTION	HE P	NUMBER		VALUE	WATER	ا ن		KŁ		VER	Y		QD
(m)	됩		2 H 3	NUMBER		1 S	3	REC	SQ C		(%				%)
	TR			3	7	- z	×	×	×	2	5 50	75 100	2	5 50	75 100
0.3		FILL													
		Medium to dark brown silty sand with clay and			١.,			91	0						
1 .		gravel, metal fragments, moist.		- 1	Н	الح		91	ŭ.						
' '	\square	ERAMOSA DOLOSTONE Brownish grey to grey, fine crystalline, thin bedded			N										
		dolostone, weathered and very fractured, locally			Н								1		
2 .		vuggy, minor occurrence of clay infilled fractures and		- 2	Ян	Q		100	23_						
		shale stringers.			N										
					N										
3 -					Ä										
				3	И	Q		100	75			11	-		
	H											11			
4	11				N		Ì								
					N								İ		
5 -		-Less fractured below about 4.8 m.		_ 4	Ян	Q		100	32_			T		ГΙ	
1					N		1								
5.8					N										
, 6	扫	VINEMOUNT SHALE		-	Ŋ				•	1		11	١.		
	巨	Dark brownish grey, aphanitic to very fine		- 5	Н	[Q]		100	17				1	1	
6.7		crystalline, thin to medium bedded shale, locally			Ň								1		
7.3 7		interlaminated to interbedded with dolostone, trace fossils, minor occurrence of clay seams.			N				'	1			1		
		-Dolostone bed from about 6.7 to 7.3 m.		_ 6	M										
		-polosione bed from about on to the im-		6	N H	10		100	85.			•			•
8	吕												Ì		
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9	EE			_	M					-					
,]===			۱ .	N.	IQ.		100	78						
l						10		100	"	Ì		11			
10 -	-			-	N				-	┨					
	==				M										
10.9					Ň										
11		GOAT ISLAND DOLOSTONE		- 8	M	IQ		100	95	1					
		Brownish grey to grey, fine crystalline, thin to			M										
12.0		medium bedded dolostone, moderate shale content		664	NA)	1									
12.0 12	巨	locally, occasional shale stringers and calcite nodules, minor ocurrences of sphalerite mineralization.	, i		M										
12.7		t-Fracture encountered at about 11.5 m.		9	N I	QF		100	75	1		T			
13		SHALE	1		M		1			1					
13		Dark brownish grey, aphanitic to very fine			M		1								
		crystalline, thin to medium bedded shale													
14	1	interlaminated with dolostone.		- 10	M I	HQ		100	0 80	H		•	'		
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BOREHOLE LOGPROJECT:92377BOREHOLE:P3-12 of 2HYDRAULIC CONTROL INVESTIGATIONDATE:20 April 1992TARO-WEST QUARRYGEOLOGISTPWFOR:TARO AGGREGATES LTD.ELEVATION200.2 m ASL

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DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL	N VALUE	% WATER	% REC	% RQD	(VERY %)	RQD (%) 25 50 75 100
		GOAT ISLAND DOLOSTONE(continued)			N							
16 -		-Minor occurrence of chert and becoming more siliceous below about 16.1 m.			НQ			98	88			
17 -				12	W.			100	92			A
18.3 18 -		-Fracture encountered at about 18.3 m. ANCASTER CHERT BEDS Light brownish grey, very fine crystalline, medium bedded siliceous dolostone with numerous chert	*********	13	нQ			100	85			
20 –		nodules and beds, occasional calcite nodules, some shale stringers, minor occurrences of sphalerite mineralization usually associated with chert. -Fractures encountered between 18.5 and 19.8 m.		- 14	НQ			100	100		•	
21 -				- 15	НQ			96	96			
22 -				-					-			
24.2 24 -					НQ			100	98			
25 - 25.4		GASPORT DOLOSTONE Grey to bluish grey, coarse crystalline, thick bedded dolostone, porous, fossiliferous.		17	нQ			100	100			
26 -		<u>DECEW DOLOSTONE</u> Brownish grey to grey, fine crystalline, medium bedded dolostone interbedded to interlaminated with shale.		18	НQ			100	100			
27.1 ₂₇ -		ROCHESTER SHALE Dark grey to grey, aphanitic to very fine crystalline, thick bedded shaly dolostone.		19	НQ			100	100			
29.1 29 -		Borehole terminated at 29.14 m in shaly dolostone.		-					-			

BOREHOLE LOG	PROJECT: 92377	BOREHOLE: P3-II 1 of 1
HYDRAULIC CONTROL INV	ESTIGATION	DATE: 13 May 1992
TARO-WEST QUARRY		GEOLOGIST PW
FOR TARO AGGREGATES	LTD.	ELEVATION 200.2 m ASL

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DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERVAL	TYPE	N VALUE	WATER	REC	S C	(0	%)	RY	2	RQ (%)	
0.3 1 - 2 - 3 - 5.8 6 - 6.7 7.3 7 - 10.9 11 - 12.0 12		Medium to dark brown silty sand with clay and gravel, metal fragments, moist. ERAMOSA DOLOSTONE Brownish grey to grey, fine crystalline, thin bedded dolostone, weathered and very fractured, locally vuggy, minor occurrence of clay infilled fractures and shale stringers. VINEMOUNT SHALE Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale, locally interlaminated to interbedded with dolostone, trace fossils, minor occurrence of clay seams. -Dolostone bed from about 6.7 to 7.3 m. GOAT ISLAND DOLOSTONE Brownish grey to grey, fine crystalline, thin to medium bedded dolostone, moderate shale content locally, occasional shale stringers and calcite nodules, minor occurrences of sphalerite mineralization. Borehole terminated at 12.00 m in dolostone. NOTE: BOREHOLE DRILLED DRECTLY BY AIRTRACK, STRATIGRAPHY INFERRED FROM ADJACENT P3-I.		X		É .	Z	×	*	×	5 50	751	ĊOO	25	50	75 10	0
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BOREHOLE LOG PROJECT: 92377

HYDRAULIC CONTROL INVESTIGATION

TARO-WEST QUARRY

FOR: TARO AGGREGATES LTD.

BOREHOLE: P3-III 1 of 2

DATE: 6 November 1992

GEOLOGIST SMA

ELEVATION 200.2 m ASL

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DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL		VALUE	WATER	REC	RQD		OVER		(%	
	ဖြ			Z	И	-	z	*	*	×	25	50 75 100	2	5 50	75 100
0.3	***	FILL Medium to dark brown silty sand with clay and gravel, metal fragments, moist.													
1 -		ERAMOSA DOLOSTONE Brownish grey to grey, fine crystalline, thin bedded								-					
2 -		dolostone, weathered and very fractured, locally vuggy, minor occurrence of clay infilled fractures and shale stringers.		-						-					
3 -										-					
4 -				_						-					
5 - - 5.8		-Less fractured below about 4.8 m.		-						_					
6 -		VINEMOUNT SHALE		-						-					
6.7		Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale, locally				1									
7.3 7		interlaminated to interbedded with dolostone, trace fossils, minor occurrence of clay seams.								_					
		-Dolostone bed from about 6.7 to 7.3 m.													
8 -				•						1					
9										-					
10 -				-						-					
10.9 11	哥	GOAT ISLAND DOLOSTONE													
12.0 12		Brownish grey to grey, fine crystalline, thin to medium bedded dolostone, moderate shale content													
12.7		locally, occasional shale stringers and calcite nodules, minor ocurrences of sphalerite mineralization.													
13		SHALE Dark brownish grey, aphanitic to very fine	Apara Barana							+					
14		crystalline, thin to medium bedded shale interlaminated with dolostone.													

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BOREHOLE LOG	PROJECT: 92377	BOREHOLE: P3-III 2 of 2
HYDRAULIC CONTROL INVES	TIGATION	DATE: 6 November 1992
TARO-WEST QUARRY		GEOLOGIST SMA
FOR: TARO AGGREGATES L	TD.	ELEVATION 200.2 m ASL

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DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERVAL	TYPE	UALUE	WATER	REC	RQD		(VE %)			RQ (%)	
	ST			Ž	F	۲	z	*	*	×	2	5 50	751	00	25	50 7	75 100	4
		Borehole terminated at 14.80 m in dolostone.																
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BOREHOLE LOGPROJECT:92377BOREHOLE:P4-I1 of 2HYDRAULIC CONTROL INVESTIGATIONDATE:16 April 1992TARO-WEST QUARRYGEOLOGISTPWFOR:TARO AGGREGATES LTD.ELEVATION199.6 m ASL

DEPTH (m) STRATIGRAPHIC DESCRIPTION DEPTH (m) ELL Medium to dark brown silty sand with gravel and clay, moist. ERAMGSA DOLOSTONE Brownish grey, sphanitic to very fine organization and properly alline, thin bedded dolostone, bunerous fractures, occasional shale stringers, botally viagey, minor occurrence of calcite nodules. 3 Peconting shaly below about 6.1 m. VINEMOUNT SHALE Dark brownish grey, aphanitic to very fine organization of the shale content, occasional shale stringers and in the shale content, occasional shale stringers and in the shale content, occasional shale stringers and in the shale content, occasional shale stringers and the shale content, occasional shale stringers and the shale content, occasional shale stringers and the shale content, occasional shale stringers and the shale content, occasional shale stringers and the shale content, occasional shale stringers and the shale content, occasional shale stringers and the shale content, occasional shale stringers and the shale content, occasional shale stringers and the shale content, occasional shale stringers and the shale stringers and the shale stringers and the shale stringers and the stringers and the shale stringers and the stringers and	TOK.		RO AGGREGATES LTD.						1 -	LE	V A	ION	199.0	m	10L	
Medium to dark brown silty sand with gravel and clay, moist. ERAMOSA DOLOSTONE Brownish grey to grey, fine crystalline, thin bedded dolostone, numerous fractures, occasional shale stringers, locally vuggy, minor occurrence of calcite nodules. 3 HQ 100 25 stringers, locally vuggy, minor occurrence of calcite nodules. 4 HQ 100 35 -Vertical fracture encountered from about 4.0 to 4.4 m. 5 Becoming shaly below about 6.1 m. VINEMOUNT SHALE Dark brownish grey, aphanitic to very fine crystalline, thin bedded shale, locally interfaminated to interbedded with dolostone, trace fossile. 7.9 Colostone bed from about 7.3 to 7.9 m, moderate shale content locally. 7 HQ 98 85 10 GOAT ISLAND DOLOSTONE Brownish grey to grey, fine crystalline, thin to medium bedded dolostone, moderate shale content, occasional shale stringers and calcite nodules. - Fracture encountered at about 12.5 m. SHALE Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded dolostone, bioturbation at upper contact. - Winner occurrence of shale stringers and calcite nodules. - Winner occurrence of shale stringers and calcite nodules. - Winner occurrence of shale stringers and calcite nodules. - Winner occurrence of shale stringers and calcite nodules. - Winner occurrence of shale stringers and manual programments.		¥					S	AM	PLI	E						
Medium to dark brown silty sand with gravel and clay, moist. ERAMOSA DOLOSTONE Brownish grey to grey, fine crystalline, thin bedded dolostone, numerous fractures, occasional shale stringers, locally vuggy, minor occurrence of calcite nodules. 3 HQ 100 25 stringers, locally vuggy, minor occurrence of calcite nodules. 4 HQ 100 52 -Vertical fracture encountered from about 4.0 to 4.4 m. 5 Becoming shaly below about 6.1 m. YINEMOUNT SHALE Dark brownish grey, aphanitic to very fine crystalline, thin bedded shale, locally interfaminated to interbedded with dolostone, trace fossils. 10 Dolostone bed from about 7.3 to 7.9 m, moderate shale content locally. 7 HQ 98 85 10 GOAT ISLAND DOLOSTONE Brownish grey to grey, fine crystalline, thin to medium bedded dolostone, moderate shale content, occasional shale stringers and calcite nodules. - Fracture encountered at about 12.5 m. SHALE Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded dolostone, bioturbation at upper contact. Minor occurrence of shale stringers and calcite nodules Minor occurrence of shale stringers and calcite nodules Minor occurrence of shale stringers and scalice nodules Minor occurrence of shale stringers		₽ E		足の説		П										
Medium to dark brown silty sand with gravel and clay, moist. ERAMOSA DOLOSTONE Brownish grey to grey, fine crystalline, thin bedded dolostone, numerous fractures, occasional shale stringers, locally vuggy, minor occurrence of calcite nodules. 3 HQ 100 25 stringers, locally vuggy, minor occurrence of calcite nodules. 4 HQ 100 35 -Vertical fracture encountered from about 4.0 to 4.4 m. 5 Becoming shaly below about 6.1 m. VINEMOUNT SHALE Dark brownish grey, aphanitic to very fine crystalline, thin bedded shale, locally interfaminated to interbedded with dolostone, trace fossile. 7.9 Colostone bed from about 7.3 to 7.9 m, moderate shale content locally. 7 HQ 98 85 10 GOAT ISLAND DOLOSTONE Brownish grey to grey, fine crystalline, thin to medium bedded dolostone, moderate shale content, occasional shale stringers and calcite nodules. - Fracture encountered at about 12.5 m. SHALE Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded dolostone, bioturbation at upper contact. - Winner occurrence of shale stringers and calcite nodules. - Winner occurrence of shale stringers and calcite nodules. - Winner occurrence of shale stringers and calcite nodules. - Winner occurrence of shale stringers and calcite nodules. - Winner occurrence of shale stringers and manual programments.	DEPTH	ğ	STRATIGRAPHIC DESCRIPTION	EFF	æ	9	ļ	Щ	D.			REC	OVERY]	ROD	1
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Medium to dark brown silty sand with gravel and clay, moist. 1		ίς		200 1000 10000	z	Ц	۲	Z	<u> </u>	*	<u>×</u>	25 5	0 75 100	25 5	0 75 10	00
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GOAT ISLAND DOLOSTONE Brownish grey to grey, fine crystalline, thin to medium bedded dolostone, moderate shale content, occasional shale stringers and calcite nodules. -Fracture encountered at about 12.5 m. SHALE Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale interlaminated with dolostone, bioturbation at upper contact. -Minor occurrence of shale stringers	11.2 11				- 8	N F	IQ			97	92-		🖣			İ
medium bedded dolostone, moderate shale content, occasional shale stringers and calcite nodules. Fracture encountered at about 12.5 m. SHALE Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale interlaminated with dolostone, bioturbation at upper contact. Minor occurrence of shale stringers		\Box	GOAT ISLAND DOLOSTONE			N			İ		Ì					
occasional shale stringers and calcite nodulesFracture encountered at about 12.5 m. SHALE Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale interlaminated with dolostone, bioturbation at upper contactMinor occurrence of shale stringers		=				N										
12.7 -Fracture encountered at about 12.5 m. SHALE Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale interlaminated with dolostone, bioturbation at upper contact. -Minor occurrence of shale stringers	12	4				N					+					
SHALE Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale interlaminated with dolostone, bioturbation at upper contact. -Minor occurrence of shale stringers	12.7	\exists	£		9	N F	IQ.			100	85					
Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale interlaminated with dolostone, bioturbation at upper contact. -Minor occurrence of shale stringers	l 1	彐	`			Ŋ-	۱,									
crystalline, thin to medium bedded shale interlaminated with dolostone, bioturbation at upper contact. -Minor occurrence of shale stringers	13.3 15	==				Ň					+					
interlaminated with dolostone, bioturbation at upper contact. -Minor occurrence of shale stringers		eq 1				Ü					- 1					
contactMinor occurrence of shale stringers	4,	4				Ñ.,	.									
	14 1	_			10) H	Q			100	70-					
		4	-Minor occurrence of shale stringers		N	Ŋ										
					N	N										

BOREHOLE LOGPROJECT: 92377BOREHOLE: P4-I 2 of 2HYDRAULIC CONTROL INVESTIGATIONDATE: 16 April 1992TARO-WEST QUARRYGEOLOGIST PWFOR: TARO AGGREGATES LTD.ELEVATION 199.6 m ASL

FOR.	<u>}</u>		or .		5	SAM	PLI	E					\neg
DEPTH (m)	SткатівкарнY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	TYPE	N VALUE	% WATER	% REC	% RQD		COVERY (%) 50 75 100	RQD (%) 25 50 75 10	20
16 -		GOAT ISLAND DOLOSTONE(continued) -Chert nodules observed below about 15.7 m.		11	НQ			98	98				
17 -				- 12	но			100	97-			4	
^{18.1} 18 -		ANCASTER CHERT BEDS Light brownish grey to dark grey, very fine crystalline, medium to thick bedded siliceous		13	НQ			88	88				
19 -		dolostone with numerous chert nodules and beds, minor occurrences of shale stringers. -Fracture encountered at about 18.4 m. -Increasing appearance of chert nodules and beds		-14	нс			100	68				
] 21 ·		below about 19.8 m. -Fractured zone encountered between about 20 and 21.3 m.		_									
22				15 -	нс			98	95				
23				- 1	нс	1		100	100	1			
24.2 24		GASPORT DOLOSTONE Bluish grey to dark grey, coarse crystalline, massive	_	- 18	но	5		95	93				L
25 - 25.7 26		bedded dolostone, porous, occasional fossils. DECEW DOLOSTONE						1.00	10				
27.3 27		Brownish grey, fine crystalline, medium to thick bedded dolostone interlaminated to interbedded with shale, occasional shale stringers.		19	HO	3		100	100	1			
28		ROCHESTER SHALE Medium to dark grey, aphanitic to very fine crystalline, thin bedded shaly dolostone.		20	Н	5		98	98				
29.0		Borehole terminated at 28.96 m in shaly dolostone.											
				1						Ш			┸.

BOREHOLE LOGPROJECT:92377BOREHOLE:P4-II1 of 1HYDRAULIC CONTROL INVESTIGATIONDATE:13 May 1992TARO-WEST QUARRYGEOLOGISTPWFOR:TARO AGGREGATES LTD.ELEVATION199.7 m ASL

		n			S	AM	PLI	E							
DEPTH (m)	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL	TYPE	N VALUE	% WATER	% REC	% RQD	(%)	ERY	R((%		-20
0.5	FILL			\parallel	-					3 30	73	100	30	75 10	
	Borehole terminated at 12.90 m in shale. NOTE: BOREHOLE DRILLED DIRECTLY BY AIRTRACK, STRATIGRAPHY INFERRED FROM ADJACENT P4-I.														

BOREHOLE LOG	PROJECT: 92377	BOREHOLE: P4-III 1 of 2
HYDRAULIC CONTROL INVE	STIGATION	DATE: 2 November 1992
TARO-WEST QUARRY		GEOLOGIST SMA
FOR: TARO AGGREGATES I	LTD.	ELEVATION 199.6 m ASL

	}			S	SAM	PLI	Ξ							
DEDTH	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER		1	Ш	α			BEC	OVE	RV		RQ	D
DEPTH (m)	STRATIGNAPHIC DESCRIPTION	NO THE	NUMBER	INTERVE FYPE	VALUE	WATER	REC	Rab	ı	(%)			(%	
	TRE	EOA	Ž	TYPE	Z	3	X	χ.		50 75 1	00	25	50 7	
	FILL								Ť				\top	
0.5	Medium to dark brown silty sand with gravel and clay, moist.		1	НО			59	0			1			
1 -	ERAMOSA DOLOSTONE		}					-						
	Brownish grey to grey, fine crystalline, thin bedded			N										
2 -	dolostone, locally fracture and weathered to about 4.9 m, occasional shale stringers, locally vuggy.		٠,	НQ			95	25						
	4		2	W										
_	4													
3 -	<u> </u>							_						
	/			N .										
4 -			-					-						
	7			N										
5 -			- 3	НQ			99	59			•		A	
l	<u> </u>													
4	4			W										
6.2 6				НQ										
	Dark brownish grey, aphanitic to very fine													
7.3 7 -	crystalline, thin bedded shale, locally interlaminated to interbedded with dolostone, trace fossils.		-						1					
7.9	-Moderate dolostone content from about 6.2 to 7.9													
8 -	m.		- 4	ИQ			99	81	1		•			
9 -	宫 ······		_	W .		}]					
,	뒄			N .										
10 -			_					_	1					
	邑													
11.2 11			- 5	НQ	:		100	76	1		Ī			
	GOAT ISLAND DOLOSTONE Brownish grey to grey, fine crystalline, medium				ļ									
12	bedded dolostone, moderate shale content, occasional		-						4					
12.5	shale stringers and calcite nodules.	r i i												
13.0			L											
13	SHALE													
	Dark brownish grey, medium bedded shale,			N										
14	interlaminated with dolostone, bioturbation at upper icontact.	‡	6	но	2		87	83	1					
1	-Minor occurrence of shale stringers below about 13.3													
	m.	生		7/					Щ	ner	<u> </u>	L,	Ц.	<u>. </u>

BOREHOLE LOGPROJECT:92377BOREHOLE:P4-III2 of 2HYDRAULIC CONTROL INVESTIGATIONDATE:2 November 1992TARO-WEST QUARRYGEOLOGISTSMAFOR:TARO AGGREGATES LTD.ELEVATION199.6 m ASL

																AUL	
	STRATIGRAPHY		~ (C)		77	S	AM	PLI	Ξ								
DEPTH	GRA	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	œ	E		UE	2			RE	CO	VE:	RY		RQ	D
(m)	RAT.		N D S	NUMBER	INTERUA	TYPE	VALUE	WATER	REC	200		(%	ó)			(%)	1
	ST			₹	H	T	z	×	*	×	2	5 50	75 10	00	25	50 7	5 100
		GOAT ISLAND DOLOSTONE(continued) -4 cm cavity with well formed calcite crystals	#														
16 -		observed at about 15.0 m.		L						_							
															l		
17.1 17										_							
		Borehole terminated at 17.12 m in dolostone.															
														j			
														1			
	İ																
					$\ $												
														1			
						•											
	\perp																

BOREHOLE LOGPROJECT:92377BOREHOLE:P4-IV1 of 1HYDRAULIC CONTROL INVESTIGATIONDATE:2 November 1992TARO-WEST QUARRYGEOLOGISTSMAFOR:TARO AGGREGATES LTD.ELEVATION199.7 m ASL

	숲		α			S	AM	PLI	Ξ								
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL	밆	VALUE	WATER	REC	RQD	RE		VE %)	RY		RQ (%	
	STR			N	Ħ	TYPE	z	×	×	×	2	5 50	751	00	25	50 7	5 100
0.5		Medium to dark brown silty sand with gravel and clay, moist.															
1 1	4	ERAMOSA DOLOSTONE		ŀ						-	1						
		Brownish grey to grey, fine crystalline, thin bedded dolostone, locally fracture and weathered to about															
2		4.9 m, occasional shale stringers, locally vuggy.		-						-							
3				-						•							
4			***************************************	ļ													
4.9																	
		Borehole terminated at 4.90 m in dolostone.															
		NOTE: Stratigraphy inferred from adjacent borehole P4-I. Borehole cored directly to 4.90 m, logged to confirm contacts and monitor for				i											
		placement.															
													İ				

BOREHOLE LOGPROJECT:92377BOREHOLE:P5-I2 of 2HYDRAULIC CONTROL INVESTIGATIONDATE:16 September 1992TARO-WEST QUARRYGEOLOGISTPWFOR:TARO AGGREGATES LTD.ELEVATION197.9 m ASL

	≽		1		_		AM	PL	F.		Γ			Ŧ	 	
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL	TYPE	N VALUE	% WATER	% REC	% RQD		(%	VER		 RQ1 (%)	
16 -		GOAT ISLAND DOLOSTONE(continued)			September 1	НQ			100	93						A
17.8		-Becoming siliceous below about 17.6 m.		- 15		НQ			98	70					4	
18 -		ANCASTER CHERT BEDS Light brownish grey, very fine crystalline, thin to thick bedded siliceous dolostone with numerous chert nodules and seams, minor occurrences of sphalerite mineralization usually associated with chert.	#	16		HQ HQ		-	100	60					•	·
20.2 20 -		-Slight fracture zone from about 19.5 to 19.9 m, with a solution fracture at about 19.7 m.		17		HQ			100	93						
		Borehole terminated at 20.20 m in siliceous dolostone with chert.														

BOREHOLE LOGPROJECT:92377BOREHOLE:P5-I1 of 2HYDRAULIC CONTROL INVESTIGATIONDATE:16 September 1992GEOLOGIST PWFOR: TARO AGGREGATES LTD.

	È		~			SAN	1PL	E						
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	TYDE	N UALUE	ł	% REC	% RQD	(VERY %)	25	RQ (%)
	S S	FILL		┝═┼	+	+	+			23 30	73100	1	7 30 .	
1.0									_					
' '		ERAMOSA DOLOSTONE Brownish grey to greyish brown, fine crystalline, thin		1	Н	Q		100	0		[]			
2 -		bedded dolostone, locally weathered and porous. -Broken up from about 1.0 to 1.5 m.		_ 2	Н	Q		100	24.					
3 -		-Increasing shale content below about 2.7 m.		-	Н				-					
3.7		-Transitional below about 3.3 m.		3	Вн	Q		97	34				•	
4.5		VINEMOUNT SHALE Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale, occasional		-					-					
5 -		mud seams, locally interlaminated to interbedded with dolostone, dolostone beds usually associated		_ 4	Н	Q		100	50.				,	
5.7		with bioturbation at lower contact and fossils at upper contact.			, , ,			100	58					
6		-Dark grey, fine to medium dolostone with moderate to high shale content observed between about 4.5 to 5.7 m.			Н			96	45				4	
7		•.•		7	Н	[Q]		100	87					•
8				- 8	H	Q		100	91					•
9.2 9		-Transitional below about 8.9 m. GOAT ISLAND DOLOSTONE		_										
10.2 10 -		Brownish grey to grey, fine crystalline, thin to medium bedded dolostone, moderate shale content locally, minor occurrences of gypsum infilling and	(9 -	H	[Q		100	91					
11.1 11		sphalerite mineralization from about 9.2 to 10.2 m. 1-3 cm open solution fracture at about 9.8 m. 1-3 SHALE	,	10	H	IQ		95	61				•	
12		Dark brownish grey, medium bedded shale, interlaminated with dolostone, bioturbation at upper, contact.		-										
13		-Fractured zone from about 11.1 to 13.0 mOccasional gypsum nodules between about 11.7 and 12.3 m.		11	F	IQ		100	97					
14				12	H	IQ.		92	75					
		-Siliceous patches below about 14.6 m		13	I	IQ.		100	83		•			A
	40							-		` .	- 1 c			• • •

BOREHOLE LOG PROJECT: 92377

BOREHOLE: P5-II 1 of 1

HYDRAULIC CONTROL INVESTIGATION

TARO-WEST QUARRY
FOR: TARO AGGREGATES LTD.

BOREHOLE: P5-II 1 of 1

DATE: 17 September 1992

GEOLOGIST PW

ELEVATION 197.8 m ASL

	¥			Ţ		S	AM	PLI	E					T			
DEPTH	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS		Ē		Ш	œ			DE	ርሶ	VEI			DΛ	n
(m)	ATI	STATISMINE BESCRIPTION	IN STAN	NUMBER	INTERUA	Ę	VALUE	WATER	REC	RQD	R.E.	ر 0		1		RQ (%	
	STR		204	Ş	R	TYPE	z	.x	×	× = = = = = = = = = = = = = = = = = = =	25	-	75 10	00	25	T	5 100
		FILL			\parallel							Ť	T		Ť	T	
1.0																	
		ERAMOSA DOLOSTONE		-	Ш												
		Brownish grey to greyish brown, fine crystalline, thin bedded dolostone, locally weathered and porous.			$\ $												
2 -	7	-Broken up from about 1.0 to 1.5 m.		-			1			-		Ì					
		-Increasing shale content below about 2.7 m.															
3 -	4	-Increasing shale content below about 2.7 m.		}									11				
3.7		-Transitional below about 3.3 m.															
4		VINEMOUNT SHALE		-													
4.5	Ξ	Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale, occasional			$\ $	Ì											
5 -		mud seams, locally interlaminated to interbedded	l i														
5.7		with dolostone, dolostone beds usually associated with bioturbation at lower contact and fossils at					1										
6		upper contact.			$\ $									1			
		-Dark grey, fine to medium dolostone with moderate to high shale content observed between about 4.5 to	- 1.0			1			İ	1							
		5.7 m.	7			1				ı							
7 †										1							
	国				П			i									
8 -				-						-	İ						
F			13											į			
9.2 9		-Transitional below about 8.9 m.	- 17	-				İ						l			
	Z	GOAT ISLAND DOLOSTONE				ļ		1		l							
10.2 10 -	\exists	Brownish grey to grey, fine crystalline, thin to medium bedded dolostone, moderate shale content															
10.1		locally, minor occurrences of gypsum infilling and															
11.1	킄	sphalerite mineralization from about 9.2 to 10.2 m. /-3 cm open solution fracture at about 9.8 m.															
		SHALE	12	•		ı				1							
		Dark brownish grey, medium bedded shale, interlaminated with dolostone, bioturbation at upper															
12		contact.	#							\dashv							11
	4	-Fractured zone from about 11.1 to 13.0 m.	#					Ì									
13.3 13		-Occasional gypsum nodules between about 11.7 and 12.3 m.	**********							4							
F	\exists	Borehole terminated at 13.30 m in dolostone.	34	\dashv	+		\dashv		-+	\dashv	+	+	\vdash	+	+	H	+
İ		NOTE: Stratigraphy inferred from adjacent borehole															
		P5-I. Borehole cored directly to 13.30 m, logged to confirm contacts and monitor for															
		placement.															

BOREHOLE LOGPROJECT:92377BOREHOLE:P5-III1 of 1HYDRAULIC CONTROL INVESTIGATIONDATE:18 September 1992GEOLOGISTPWFOR: TARO AGGREGATES LTD.

	主		_ ~			S	AM	PLI	Ξ								7
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL	TYPE	N VALUE	% WATER	x REC	% RQD		%)	ERY		RQ (%		
	რ ‱	FILL		드	H	•			<u> </u>		 30	7	100	1	30	13 100	\dashv
1.0 1 - 1 2 - 1 3 - 1 3.7 4 - 1 4.5 5 - 1 5.7 6 - 1		ERAMOSA DOLOSTONE Brownish grey to greyish brown, fine crystalline, thin bedded dolostone, locally weathered and porous. Broken up from about 1.0 to 1.5 m. Increasing shale content below about 2.7 m. Transitional below about 3.3 m. VINEMOUNT SHALE Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale, occasional mud seams, locally interlaminated to interbedded with dolostone, dolostone beds usually associated with bioturbation at lower contact and fossils at upper contact. Dark grey, fine to medium dolostone with moderate to high shale content observed between about 4.5 to 5.7 m.								-							
9.2 9 -		-Transitional below about 8.9 m. GOAT ISLAND DOLOSTONE Brownish grey to grey, fine crystalline, thin to medium bedded dolostone, moderate shale content locally, minor occurrences of gypsum infilling and sphalerite mineralization from about 9.2 to 10.2 m. -3 cm open solution fracture at about 9.8 m. Borehole terminated at 10.23 m in dolostone. NOTE: Stratigraphy inferred from adjacent borehole P5-I. Borehole cored directly to 10.23 m, logged to confirm contacts and for monitor placement.								•							

Printed: 4 OCT 93

BOREHOLE LOGPROJECT:92377BOREHOLE:P5-IV1 of 1HYDRAULIC CONTROL INVESTIGATIONDATE:22 September 1992TARO-WEST QUARRYGEOLOGISTPWFOR:TARO AGGREGATES LTD.ELEVATION197.9 m ASL

		NO ACORECATES ETD.				 		==			<u> </u>		<u></u>		73	
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL	N VALUE WY	% WATER	% REC	% RQD		CO (%	b)		25	RQ (%)
1.0 1 - 3 - 3.7 4 - 4.5 5 - 5.7 6.3 6 - 3	STRATI	ERAMOSA DOLOSTONE Brownish grey to greyish brown, fine crystalline, thin bedded dolostone, locally weathered and porous. Broken up from about 1.0 to 1.5 m. -Increasing shale content below about 2.7 m. -Transitional below about 3.3 m. VINEMOUNT SHALE Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale, occasional mud seams, locally interlaminated to interbedded with dolostone, dolostone beds usually associated with bioturbation at lower contact and fossils at upper contact. -Dark grey, fine to medium dolostone with moderate to high shale content observed between about 4.5 to 5.7 m. Borehole terminated at 6.30 m in shale. NOTE: Stratigraphy inferred from adjacent borehole P5-I. Borehole cored directly to 6.30 m, logged to confirm contacts and for monitor placement.		7		Z	*	×	×	1 22	(%)	77510	000		50 7	

Jackman Geoscience Inc.

96 Newcombe Road. Dundas ON

Monitor Completion Date: October 10, 2008

Drilling method - Mud Rotary

Borehole Log Report

Project: Newalta Corporation

Location: Newalta Hamilton (Stoney Creek) Landfills

Log of Monitor - P5-IVR

Drilling Contractor - Lantech Drilling Services Inc.

Depth (ft)	Depth (m)	Monitor details	Geologic Unit	Unit Description
2—	0.0	0.0	clayey silt till	Overburden: clayey silt till
4—————————————————————————————————————	1.01.52.02.53.03.5	2.0— 2.5— 3.0— 3.5—	eramosa dolostone	Brownins grey, fine crystalline, thin bedded dolostone, locally weathered and porous.
14—	4.0	4.0—	vinemount shale	Vinemount Shale: Dark browninsh grey, aphanitic to very fine crystalline, thin to medium bedded shale, occasional mud seam, interlaminations with dolostone.
16—————————————————————————————————————		5.0	VFZ	Vinemount Flow Zone: Dark grey, fine to medium dolostone with moderate to high shale content.

Ground Surface Elevation - 197.59 asl. Top of Casing/Measuring Point - 198.60 asl. Prepared by W. Jackman, P.Geo. Borehole Diameter - 10.16 cm Casing Diameter - 5.08 cm Screen Slot Size - N/A BOREHOLE LOGPROJECT:92377BOREHOLE:P6-I1 of 1HYDRAULIC CONTROL INVESTIGATIONDATE:11 September 1992GEOLOGISTPWFOR: TARO AGGREGATES LTD.

	}	_~		S	AM	PLI	<u> </u>					T			
	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER			ш	O'			DE	C O	vee			OΝ	
DEPTH	STRATIGRAPHIC DESCRIPTION	FEE S	NUMBER		VALUE	WATER	ای	0	KE		VER	Y		RQD	
(m)	TRAT	₩ 03	NUMBER	TYPE	A P	MM	REC	RQD		(%	0)		((%)	
			ž	F	z	*	*	×	25	50	75 10	0	25 5	0 75	100
	FILL .		1	SS	49	16									
0.8	Dark brown sandy gravel, some clay and silt, moist to wet, dense.		688	3							1	1			
1 -	ERAMOSA DOLOSTONE		2	HQ			100	0_			+ I	Τ			
	Brownish grey to greyish brown, fine crystalline, thin		3	HQ			100	0				│	į		
_	bedded dolostone, occasional vertical fractures,			N								.],			
2 -	locally weathered and porous. -Heavily fractured from about 0.8 to 2.3 m.		4	НQ			100	13-							
	-Heavily fractured from about 0.8 to 2.3 in.											- 1			
3 -	4		- 8					-						!	
								• •				1			
			5	HQ			100	24							
4 -	-	1						-							
				8							11	1			
_	4			<u> </u>									_		
5 -			F 6	нQ			100	38		1					
										İ		İ			
6-	//		- 1	8				-				ļ			
			7										•		
			7	HQ			100	33							
7 -	-Becoming thinly interbedded with shale with			8				-	1						
	increasing shale content below about 7.0 m.			\								1			
7.9				HQ HQ								. 1			
8 -	VINEMOUNT SHALE Dark brownish grey, aphanitic to very fine		8	HQ		.	100	51			1 1				
	crystalline, thin to medium bedded shale, locally			N N											
9.0 9 -	interlaminated to interbedded with dolostone,		-						1						
9.5	dolostone beds usually associated with bioturbation			Ň							1	.			
	at lower contact and fossils at upper contact.		9	HQ			100	69]				
10 -				8		1		-	1						
:	and vugs from about 5.0 to 5.0 in.											1			
11 -)					1			.			
ļ ''			10	НQ			100	75							
	吕			8								1			
12 -	덤		 	8	İ				$\mid \cdot \mid$						
				N N								.			•
	-Becoming transitional below about 12.6 m.	I	11	ИQ			97	88]	Ϊ.			_
13.1 13	GOAT ISLAND DOLOSTONE			Ŋ				'	1						
	Medium grey, fine crystalline, thin to medium bedded	II		W .											
l 14.1 _{14 -}	dolostone, slightly weathered gypsum seam			N .											
14	encountered. 5 cm gypsum seam at about 13.7 m,	1												T	
	slightly weathered.														
	Borehole terminated at 14.05 m in dolostone.	<u> </u>	Ш		<u> </u>	<u> </u>			Ļ		er l	1	- -	<u> </u>	

BOREHOLE LOGPROJECT:92377BOREHOLE:P7-I1 of 2HYDRAULIC CONTROL INVESTIGATIONDATE:10 September 1992TARO-WEST QUARRYGEOLOGISTSMAFOR:TARO AGGREGATES LTD.ELEVATION201.6 m ASL

101.		NO MOCKEOMILE DID.	······································									01.0			
	±		_ ~	1	5	SAM	[PL]	E							
	STRATIGRAPHY		MONITOR DETAILS & NUMBER]	T				1					
DEPTH	Ö	STRATIGRAPHIC DESCRIPTION	FAR	α	INIERUA IYPE	VALUE	WATER			REC	COVE	ERY		RQ	D
(m)	15		BLZ	NUMBER	n H	ਰੂ	Ε	REC	Rad		(%)			(%)
()	Ě		EDW	15	TYPE	Į.		l .			· ·		-		· · · · · ·
·	l in		2090330 000300		1 -	z	×	*	×	25	50 75	100	25	50 7	75 100
		FILL		1	SS	10	18	72			1 T				
		Dark yellowish brown clayey silt, some fine sand and			7	İ					1_1			İ	
1 .		fine gravel, DTPL, stiff to hardRootlets and fracturing to about 0.9 m.		2	SS	19	19	61	_		-				
ļ		-Mottled grey and laminated below about 0.8 m.												- 1	
		mountain gray and rammatou boton about the min		3	ss	32	16	78							
2.3 2						1		'	_						
2.3	m	TID AN COCK IN DAY COMPANY		1	НQ	1		100	7			T			
		ERAMOSA DOLOSTONE			N										
3 -		Brownish grey to greyish brown, fine crystalline, thin bedded dolostone, locally weathered and porous to		L 8	N										
_		about 3.2 m, locally minor to moderate shale content			N							11			
		below about 4.9 m.		2	НQ			100	45			Ŧ		4	
4.					Ň				_						}
,					Ň.										
					N										
5 -					N				_						
					N										
					N]	
6 -					N										
					N										
				3	НQ			99	73			•		4	4
7 -					y &			33							
,		-Moderate shale content below about 7.3 m.			Ĭ								Ì		
		-Moderate shale content below about 7.5 m.													
. 8 -					Ĭ										
8.3									-			11			
		VINEMOUNT SHALE		N											
9 -		Dark brownish grey, aphanitic to very fine			Ň										
9.5		crystalline, thin to medium bedded shale, locally			Ň							1 1			
9.8		interlaminated to interbedded with dolostone,		4	HQ			100	43			<u> </u>		A	
10 -		dolostone beds usually associated with bioturbation at lower contact and fossils at upper contact.		4	HQ			100	97			₹			1
10	드러	-Grey dolostone bed from about 9.5 to 9.8 m.													
		City dolossone bed from about 3.5 to 3.6 m.			N .										
11 -					N .										
• • •	ဌ			N	N .				1						
	吕			N	Y										
12 -	드크				¥										
16	듬긝			6	1				1						
	吕				3				ļ						
13 -	ᆵ			6	HQ			100	92			Τl			
13 -					1				1						
13.7					¥ .										
4,		GOAT ISLAND DOLOSTONE			1										
14 -		Brownish grey to grey, fine crystalline, thin to	إنبا					ļ	1						
	4	medium bedded dolostone, locally moderate shale		N	1										
14.8	\exists	.content, minor occurrences of gypsum and shale		N											
					u	<u> </u>									لسلسا

2 of 2 **BOREHOLE**: P7-I **BOREHOLE LOG** PROJECT: 92377 **DATE:** 10 September 1992 HYDRAULIC CONTROL INVESTIGATION

TARO-WEST QUARRY

FOR: TARO AGGREGATES LTD.

GEOLOGIST SMA

ELEVATION 201.6 m ASL

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DEPTH (m)	SтRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERVAL	TYPE	N VALUE	% WATER	% REC	% RQD	_	(°	VEI %) 75 10		RQI (%))
15.5		stringers. -1-Slightly weathered gypsum seam at about 14.3 m.														
16 -		SHALE Dark brownish grey, medium bedded shale, interlaminated with dolostone, bioturbation at upper		7		HQ			100	92						
17 -		GOAT ISLAND DOLOSTONE (continued) -Fractured zone from about 16.0 to 16.2 m with occasional fractures to about 17.0 m.		-						-						
18 -				8		НQ			100	95						4
19 -				_						-						
20 -		- Siliceous patches below about 20.2 m.		_						-						
22 - 22.4		-Becoming siliceous with minor occurrences of chert nodules and sphalerite mineralization.		9		НQ			100	100)		1			
23 -		ANCASTER CHERT BEDS Light brownish grey, very fine crystalline, thin to medium bedded siliceous dolostone with numerous chert nodules and layers, minor occurrences of calcite		-		нQ										
24		infilling, shale stringers and sphalerite mineralization.	 	10		НQ			100	100			1			
25 -			#			j				•						
26.9 27		-Becoming interlaminated with shale and decreasing chert below about 26.3 m. GASPORT DOLOSTONE	_	11 -		HQ			100	100	0					
27.7		Medium to dark grey, coarse crystalline, medium bedded dolostone, slightly porous. Borehole terminated at 27.72 m in dolostone.									-					
											\perp				\bot	ited

Jackman Geoscience Inc.

96 Newcombe Road. Dundas ON

Monitor Completion Date: October 10, 2008

Drilling method - Mud Rotary

Borehole Log Report

Project: Newalta Corporation

Location: Newalta Hamilton (Stoney Creek) Landfills

Log of Monitor - P7-IR

Drilling Contractor - Lantech Drilling Services Inc.

Depth (m) Depth (ft)	Monitor details	Geologic Unit	Unit Description
00	0	top soil	Soil fill - clayey silt till
4	10—		
620	20—	eramosa dolostone	Eramosa Dolostone - Brown to grey, aphanitic to fine crystalline, thin bedded dolostone, weathered and porous to about 3 m, local minor to moderate shale stringers below about 4m.
10 - 30	30-	vinemount shale VFZ	Vinemount Shale: Dark brown to black, aphanitic to crystalline, thin to medium bedded shale, with thin interlaminations of dolostone Vinemount Flow Zone - Grey Dolostone bed
1240	40-	vinemount2	Vinemount Shale: Dark brounw to black, aphanitic to crystalline, thin to medium bedded shale, with thin interlaminations of dolostone
1450	50 —	goat island dolostone	Goat Island Dolostone: Brownish grey to grey, fine crystalline, thin to medium bedded dolostone, some shale stringers, minor gypsum infilling of vugs, Weathered gypsum seam at 15.54m 0.063m wide, not visibly weathered.
		shale	Goat Island Shale: Dark brownish grey, medium bedded shale, interlaminated with dolostone, bioturbation at upper contact.
1860	60—		
20	70—	goat island 2	Goat Island Dolostone continued: Gypsum seam at 17.8 and 20.7. Both appear to be unweathered.
24———80	80 —	ancaster chert beds	Ancaster Chert Beds - Lighe brownish grey, very fine crystalline, thin to medium bedded siliceous dolostone with numerous chert nodules and layers, minor occurences of calcite infilling, shale stringers and sphalarite, mineralization. Shale fracture at 26.
		LFZ	Ancaster Chert Beds: Interlamination with shale beginning at 25.5m

Ground Surface Elevation - 202.71 asl.

Top of Casing/Measuring Point - 203.71 asl.

Prepared by W. Jackman, P.Geo.

Borehole Diameter - 10.16 cm Casing Diameter - 5.08 cm Screen Slot Size - N/A BOREHOLE LOGPROJECT:92377BOREHOLE:P7-II1 of 2HYDRAULIC CONTROL INVESTIGATIONDATE:14 September 1992TARO-WEST QUARRYGEOLOGISTSMAFOR:TARO AGGREGATES LTD.ELEVATION201.7 m ASL

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	ξ		~			S	AM	PLI	3							
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL	TYPE	N VALUE	% WATER	% REC	% RQD		OVEF (%)		(QD %)	
1 - 2.3 2 - 3 - 4 - 5 - 6 - 6 - 6		FILL Dark yellowish brown clayey silt, some fine sand and fine gravel, DTPL, stiff to hard. -Rootlets and fracturing to about 0.9 m. -Mottled grey and laminated below about 0.8 m. ERAMOSA DOLOSTONE Brownish grey to greyish brown, fine crystalline, thin bedded dolostone, locally weathered and porous to about 3.2 m, locally minor to moderate shale content below about 4.9 m.		-						-	25	50 75 10		25 50	7510	
7 -		-Moderate shale content below about 7.3 m.								-						
9.5 9.8 10 –		VINEMOUNT SHALE Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale, locally interlaminated to interbedded with dolostone, dolostone beds usually associated with bioturbation at lower contact and fossils at upper contact. -Grey dolostone bed from about 9.5 to 9.8 m.														
13 13.7 14.8		GOAT ISLAND DOLOSTONE Brownish grey to grey, fine crystalline, thin to medium bedded dolostone, locally moderate shale content, minor occurrences of gypsum and shale														

BOREHOLE LOGPROJECT:92377BOREHOLE:P7-II2 of 2HYDRAULIC CONTROL INVESTIGATIONDATE:14 September 1992TARO-WEST QUARRYGEOLOGISTSMAFOR:TARO AGGREGATES LTD.ELEVATION201.7 m ASL

DEPTH (m) STRATIGRAPHIC DESCRIPTION STRATIGRAPHIC DESCRIPTION STRATIGRAPHIC DESCRIPTION STRATIGRAPHIC DESCRIPTION STRATIGRAPHIC DESCRIPTION STRATIGRAPHIC DESCRIPTION STRATIGRAPHIC DESCRIPTION STRATIGRAPHIC DESCRIPTION (%) (%) (%) (%) (%) (%) (%) (%		¥			I		S	AM	PLI	<u> </u>					T			
15.5 stringers. Sightly weathered gypsum seam at about 14.3 m. SHALE Dark brownish grey, medium bedded shale, interlaminated with dolostone, bioturbation at upper contact. GOAT ISLAND DOLOSTONE (continued) Fractured zone from about 16.0 to 16.2 m with occasional fractures to about 17.0 m. Borehole terminated at 18.67 m in dolostone. NOTE: Stratigraphy inferred from adjacent borehole P7-I. Borehole cored directly to 18.67 m, logged to	1	STRATIGRAPH	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL	TYPE	1			RQD	(%))		(%)	
Borehole terminated at 18.67 m in dolostone. NOTE: Stratigraphy inferred from adjacent borehole P7-I. Borehole cored directly to 18.67 m, logged to	16 - 17 - 18 -		SHALE Dark brownish grey, medium bedded shale, interlaminated with dolostone, bioturbation at upper contact. GOAT ISLAND DOLOSTONE (continued) -Fractured zone from about 16.0 to 16.2 m with	111111111111111111111111111111111111111	-						-							
			NOTE: Stratigraphy inferred from adjacent borehole P7-I. Borehole cored directly to 18.67 m, logged to															

Printed: 4 OCT 93

BOREHOLE LOG	PROJECT: 92377	BOREHOLE: P7-III 1 of 2
HYDRAULIC CONTROL INVESTIG	ATION	DATE: 15 September 1992
TARO-WEST QUARRY		GEOLOGIST SMA
FOR: TARO AGGREGATES LTD.		ELEVATION 201.6 m ASL

) H				S	AM	PLI	E					
DEPTH (m)	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL	TYPE	N VALUE	% WATER	% REC	% RQD	 COV (%)	 	RQ (% 50 7	
1 -	FILL Dark yellowish brown clayey silt, some fine sand and fine gravel, DTPL, stiff to hard. -Rootlets and fracturing to about 0.9 m. -Mottled grey and laminated below about 0.8 m.								_				
2.3 2	ERAMOSA DOLOSTONE Brownish grey to greyish brown, fine crystalline, thin bedded dolostone, locally weathered and porous to about 3.2 m, locally minor to moderate shale content below about 4.9 m.		-						-				
5 -			-										
6			-						•				
7	-Moderate shale content below about 7.3 m.		•						1				
9.5 9.8	VINEMOUNT SHALE Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale, locally interlaminated to interbedded with dolostone,		-						1				
10	dolostone beds usually associated with bioturbation at lower contact and fossils at upper contact. -Grey dolostone bed from about 9.5 to 9.8 m.		-						-				
11									-				
13.7		######################################							-				
14 -	GOAT ISLAND DOLOSTONE Brownish grey to grey, fine crystalline, thin to medium bedded dolostone, locally moderate shale content, minor occurrences of gypsum and shale	######################################							1				

BOREHOLE LOGPROJECT:92377BOREHOLE:P7-III2 of 2HYDRAULIC CONTROL INVESTIGATIONDATE:15 September 1992TARO-WEST QUARRYGEOLOGISTSMAFOR:TARO AGGREGATES LTD.ELEVATION201.6 m ASL

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DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL	N UALUE WA	× WATER	% REC	% RQD	 (%)	ERY	 RQ:)
15.1		SHALE Dark brownish grey, medium bedded shale, interlaminated with dolostone, extensive bioturbation at upper contact. Borehole terminated at 15.13 m in shale. NOTE: Stratigraphy inferred from adjacent borehole P7-I. Borehole cored directly to 15.13 m, logged to confirm contacts and for monitor placement.											

BOREHOLE LOGPROJECT:92377BOREHOLE:P7-IV1 of 1HYDRAULIC CONTROL INVESTIGATIONDATE:15 September 1992TARO-WEST QUARRYGEOLOGISTSMAFOR:TARO AGGREGATES LTD.ELEVATION201.6 m ASL

	≻		T	SAMPLE										 		一
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL		N VALUE	% WATER	% REC	% RQD	<u> </u>	(%	VE) 6) 75 10		RQ (%))
2.3 2 -		FILL Dark yellowish brown clayey silt, some fine sand and fine gravel, DTPL, stiff to hard. -Rootlets and fracturing to about 0.9 m. -Mottled grey and laminated below about 0.8 m.		-						-						
3 -		ERAMOSA DOLOSTONE Brownish grey to greyish brown, fine crystalline, thin bedded dolostone, locally weathered and porous to about 3.2 m, locally minor to moderate shale content below about 4.9 m.								-						
5 -				-						_						
7		-Moderate shale content below about 7.3 m.		-						- -						
8.3		VINEMOUNT SHALE Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale, locally								-						
9.5 9.8 10 –		interlaminated to interbedded with dolostone, dolostone beds usually associated with bioturbation at lower contact and fossils at upper contact. -Grey dolostone bed from about 9.5 to 9.8 m.								_						
		Borehole terminated at 11.01 m in shale. NOTE: Stratigraphy inferred from adjacent borehole P7-I. Borehole cored directly to 11.01 m, logged to confirm contacts and for monitor														

BOREHOLE LOGPROJECT:92377BOREHOLE:P7-OW1 1 of 2HYDRAULIC CONTROL INVESTIGATIONDATE:30 September 1992TARO-WEST QUARRYGEOLOGISTBJFOR:TARO AGGREGATES LTD.ELEVATIONm ASL

		RO AGGREGATES ETD.															_
	ΙÈ				_	S	AM	PLI	3								
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL	TYPE	VALUE	WATER	REC	RQD		(%			R(o)	
	ST			z	Н	-	z	×	×	*	25	50 7	5 100	25	50	75 100	듸
1		FILL Dark yellowish brown clayey silt, some fine sand and fine gravel, DTPL, stiff to hard. -Rootlets and fracturing to about 0.9 m. -Mottled grey and laminated below about 0.8 m.		•						-							
2.3 2		ERAMOSA DOLOSTONE Brownish grey to greyish brown, fine crystalline, thin bedded dolostone, locally weathered and porous to about 3.2 m, locally minor to moderate shale content								-							
4 -		below about 4.9 m.		- -													
6 -				_				:		-		-					
7 -		-Moderate shale content below about 7.3 m.		-						-							
9.5 9.8		VINEMOUNT SHALE Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale, locally interlaminated to interbedded with dolostone,		• •						-							
9.8		dolostone beds usually associated with bioturbation at lower contact and fossils at upper contact. -Grey dolostone bed from about 9.5 to 9.8 m.		-						-							
12				-						-							
13.7		GOAT ISLAND DOLOSTONE								-							
14.5 14.5		Brownish grey to grey, fine crystalline, thin to medium bedded dolostone, locally moderate shale content, minor occurrences of gypsum and shale															

BOREHOLE LOGPROJECT:92377BOREHOLE:P7-OW1 2 of 2HYDRAULIC CONTROL INVESTIGATIONDATE:30 September 1992TARO-WEST QUARRYGEOLOGISTBJFOR:TARO AGGREGATES LTD.ELEVATIONm ASL

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DEPTH CALL	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL	TYPE	N VALUE	% WATER	% REC	% RQD	L	RECOVERY (%) 25 50 75 100			 RQ (%	
15	SHALE Dark brownish grey, medium bedded shale, interlaminated with dolostone, extensive bioturbation at upper contact. Borehole terminated at 15.00 m in shale. NOTE: Borehole drilled using a water well rig, stratigraphy inferred from adjacent borehole P7-I.								-						5 100

BOREHOLE LOGPROJECT: 92377BOREHOLE: P7-V 1 of 2HYDRAULIC CONTROL INVESTIGATIONDATE: 19 January 1993TARO-WEST QUARRYGEOLOGIST SMAFOR: TARO AGGREGATES LTD.ELEVATION 201.4 m ASL

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	È		P			S	AM	PLI	Ξ									
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL	TYPE	UALUE	WATER	REC	RQD		(%)			(9	QD %)	
	E I			ž	Ħ	F	z	×	×	×	2	5 5	0 7	100	2	5 50	75	100
1 -		FILL Dark yellowish brown clayey silt, some fine sand and fine gravel, DTPL, stiff to hard.		_						_								
2.3 2 -		ERAMOSA DOLOSTONE Brownish grey to greyish brown, fine crystalline, thin bedded dolostone, locally weathered and porous, locally minor to moderate shale content.		-						-								
4 5 -		iocally manor to mount of the control of the contro		-						-								
6				_						-								
7				_						-								
8.3 8.6		-Moderate shale content below about 7.6 m.		-														
9 9.5		VINEMOUNT SHALE Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale, locally																
9.8 10 -		interlaminated to interbedded with dolostone, dolostone beds usually associated with bioturbation at lower contact and fossils at upper contact								-								
11																		
12				_														
14.0		CO LE VIL AND DOV OCEONO		_														
		GOAT ISLAND DOLOSTONE Brownish grey to grey, fine crystalline, thin to																
		medium bedded dolostone, locally moderate shale																
								<u> </u>	F		. _	•		r 1 4		1:-	•	

BOREHOLE LOGPROJECT:92377BOREHOLE:P7-V2 of 2HYDRAULIC CONTROL INVESTIGATIONDATE:19 January 1993TARO-WEST QUARRYGEOLOGISTSMAFOR:TARO AGGREGATES LTD.ELEVATION201.4 m ASL

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DEPTH (m) STRATIGRAPHIC DESCRIPTION (m) SAMPLE STRATIGRAPHIC DESCRIPTION (m) STRATIGRAPHIC DESCRIPTION (m) SAMPLE STRATIGRAPHIC STRATIGRAP	RECOVER (%)	(%)
15.1 15.8 16 Dark brownish grey, medium bedded shale, interlaminated with dolostone, bioturbation at upper contact. GOAT ISLAND DOLOSTONE (continued) -Fractured sone from about 16.0 m to 17.5 m. 18.0 18 Borehole terminated at 18.00 m in dolostone NOTE: Stratigraphy inferred from adjacent borehole P7-I. Borehole cored directly to 18.67 m, logged to confirm contacts and for monitor placement.		

BOREHOLE LOG	PROJECT: 92377	BOREHOLE: P7-VI 1 of 2
HYDRAULIC CONTROL INVESTI	GATION	DATE: 20 January 1993
TARO-WEST QUARRY		GEOLOGIST SMA
FOR: TARO AGGREGATES LTD).	ELEVATION 203.6 m ASL

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DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL	ř	VALUE	WATER	REC	RQD	RE	CO (%	VEI	RY		RQI (%)	
()	STR/			Ž	Ħ	TYPE	z	×	*	×	2!	5 50	75 10	00	25	50 7 5	100
1 -		FILL Dark yellowish brown clayey silt, some fine sand and fine gravel, DTPL, stiff to hard.								•							
3.2 3 -				-						-							
4 -		ERAMOSA DOLOSTONE Brownish grey to greyish brown, fine crystalline, thin bedded dolostone, locally weathered and porous.															
6 -				-													
9.6		VINEMOUNT SHALE		-													
10 -		Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale, locally interlaminated to interbedded with dolostone, trace fossils, bioturbation at lower contact and fossils at upper contact.															
12																	
13											1						
14.9															Ц		ted

BOREHOLE LOGPROJECT:92377BOREHOLE:P7-VI2 of 2HYDRAULIC CONTROL INVESTIGATIONDATE:20 January 1993TARO-WEST QUARRYGEOLOGISTSMAFOR:TARO AGGREGATES LTD.ELEVATION203.6 m ASL

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	È		~			S	AM	PLI	<u> </u>						
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL	TYPE	N VALUE	% WATER	% REC	% RQD	(% 5 50	6)		RQ] (%)	- 1
(m) 16.2 16 - 16.4	STRATI	GOAT ISLAND DOLOSTONE Brownish grey to grey, fine crystalline, thin to medium bedded dolostone, moderate shale content, occasional shale stringers, and gypsum nodules. SHALE Dark brownish grey, medium bedded shale, interlaminated with dolostone, bioturbation at upper contact. Borehole terminated at 16.40 m in shale.	MON.	ISBMON .	TANTER	TYPE					(%	6)		(%))

BOREHOLE LOG	PROJECT: 92377	BOREHOLE: P8-I 1 of 2
HYDRAULIC CONTROL INVES	TIGATION	DATE: 16 September 1992
TARO-WEST QUARRY		GEOLOGIST SMA
FOR: TARO AGGREGATES L	TD.	ELEVATION 204.3 m ASL

	놀		D'		S	AM	PLI	C .				Τ		
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	TYPE	VALUE	WATER	REC	RQD		OVER	Y		QD 6)
	STI			Ž	<u> </u>	z	×	*	×	25_5	0 75 100	4	25 50	75 100
0.2		TOPSOIL Grey brown clayey silt, rootlets, DTPL, stiff. FILL		2	SS	11	19	40						
1 - 1.5		Light brown clayey silt, rootlets, trace angular gravel, DTPL, very stiff.		3		15	20	56	4					
2 -	▓	CLAYEY SILT Dark to medium brown, mottled grey, clayey silt, DTPL, very stiff to hard.		4	35 35 37 37 37 37 37 37 37 37 37 37 37 37 37	36		50	-					
3 -				- 5	SS	42	19	61	-					
3.8		ERAMOSA DOLOSTONE		1	НQ			99	38_				•	
5 -		Brownish grey to greyish brown, fine crystalline, thin bedded dolostone, occasional shale stringers, locally weathered and porous to about 7.2 m.		_ 2	НQ			100	54_					.
6 -				3	НQ			100	60					
7 - 8 -		-Increasing shale content below about 8.3 m.		_ 4	НQ			100	76			1		
9				- 5	НQ			100	80			i		
10 -				- 6	но			100	94					
11.6		VINEMOUNT SHALE												
12 12.6		Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale, locally interlaminated to interbedded with dolostone,		7	нс	2		100	94			'		
13.3 13		dolostone beds usually associated with bioturbation at lower contact and fossils at upper contact.												
14		-Grey dolostone from about 12.6 to 13.3 m, moderate shale content.		_ 8	нс	2		100	10	Q				
				4							ner l			

BOREHOLE LOGPROJECT:92377BOREHOLE:P8-I2 of 2HYDRAULIC CONTROL INVESTIGATIONDATE:16 September 1992TARO-WEST QUARRYGEOLOGISTSMAFOR:TARO AGGREGATES LTD.ELEVATION204.3 m ASL

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DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS	NUMBER	INTERUAL	TYPE	N VALUE	% WATER	% REC	% RQD		(%)	ERY	<u> </u>	(%	QD %) 75 100	
16 -		VINEMOUNT SHALE(continued)		1		HQ			100	80							•	
16.6 17 -		GOAT ISLAND DOLOSTONE Brownish grey, fine crystalline, medium bedded dolostone, occasional shale stringers, minor shale content, minor occurrence of sphalerite	****	- 10		НQ			100	91-								
		mineralization and gypsum seams. -Two well formed gypsum seams(-5 cm) at about 17.4 m. Borehole terminated at 17.76 m in dolostone.																
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BOREHOLE LOGPROJECT:92377BOREHOLE:P8-II1 of 1HYDRAULIC CONTROL INVESTIGATIONDATE:17 September 1992TARO-WEST QUARRYGEOLOGISTSDMAFOR:TARO AGGREGATES LTD.ELEVATION204.3 m ASL

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DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL	TYPE	N VALUE	% WATER	% REC	% RQD	(%	ER) 5 100		(QD %)	
0.2 1 - 1.5 2 -		TOPSOIL Grey brown clayey silt, rootlets, DTPL, stiff. FILL Light brown clayey silt, rootlets, trace angular gravel, DTPL, very stiff. CLAYEY SILT Dark to medium brown, mottled grey, clayey silt, DTPL, very stiff to hard.								-						
3.8 4 - 5 -		ERAMOSA DOLOSTONE Brownish grey to greyish brown, fine crystalline, thin bedded dolostone, occasional shale stringers, locally weathered and porous to about 7.2 m.		-						_						
7 - 8 - 9 -		-Increasing shale content below about 8.3 m.								_						
11.0 11		Borehole terminated at 11.01 m in dolostone. NOTE: Stratigraphy inferred from adjacent borehole P8-I. Borehole cored directly to 11.01 m, logged to confirm contacts and for monitor														
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BOREHOLE LOGPROJECT:92377BOREHOLE:P9-I1 of 2HYDRAULIC CONTROL INVESTIGATIONDATE:18 September 1992TARO-WEST QUARRYGEOLOGISTSMAFOR:TARO AGGREGATES LTD.ELEVATION202.6 m ASL

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DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL	N VALUE		% REC	% RQD		COVERY (%) 	R((%	6)
	 	FILL	80ga Arts April 18	1	Ц.		14	40		25	50 75 100	25 50	75 100
1 -		Medium grey brown clayey silt, some grey mottling and rust staining, DTPL, firm.		. 2	SS	2	17	20	-				
2 -	₩			-		1			_				
2.4 3 -	***	ERAMOSA DOLOSTONE Brownish grey to greyish brown, fine crystalline, thin to medium bedded dolostone, locally weathered and porous to about 6.0 m.		4 1 - 2	SS HC	2	14	62 100 100	65 49				
4 -				3	нс			100	40			•	
6				- 4	но			100	55				
7		-Minor shale content and thinly interbedded with shale below about 6.9 m.							-				
8 -		· •		5				100	57				
10.3 10		-Becoming transitional below about 9.8 m.		. 8	НQ			100	90				
11.2 11		VINEMOUNT SHALE Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale interbedded with dolostone, locally interlaminated with dolostone, dolostone beds usually associated with bioturbation		7	НQ			100	95_		•		1
12		at lower contact and fossils at upper contact. -Vertical fractures between about 10.8 and 11.2 m. -Grey dolostone from about 11.2 to 11.8 m, moderate shale content locally.		8	НQ			100	100				
14		-3 cm cavity with well formed calcite crystals at about 11.6 m.		9	нQ			100	89-				
	=1										•		

BOREHOLE LOGPROJECT:92377BOREHOLE:P9-I2 of 2HYDRAULIC CONTROL INVESTIGATIONDATE:18 September 1992TARO-WEST QUARRYGEOLOGISTSMAFOR:TARO AGGREGATES LTD.ELEVATION202.6 m ASL

	¥		α			S	AM	PLI	E								
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL	TYPE	N VALUE	% WATER	% REC	% RQD		(%)	ERY		QD %) 75 1	
15.2 16.3 16 -		GOAT ISLAND DOLOSTONE Medium grey, fine crystalline, medium bedded dolostone, minor shale content locally, gypsum seam at about 16.1 m with a weathered gypsum seam at		•	2.3	HQ HQ			100 96								
		about 16.2 m. Borehole terminated at 16.30 m in dolostone.															
		-															
1																	
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BOREHOLE LOGPROJECT:92377BOREHOLE:P9-II1 of 1HYDRAULIC CONTROL INVESTIGATIONDATE:22 September 1992TARO-WEST QUARRYGEOLOGISTSMAFOR:TARO AGGREGATES LTD.ELEVATION202.9 m ASL

	¥					S	AM	PLI	3						Г			$\overline{\ }$
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL	TYPE	UALUE	WATER	REC	RQD		(9	%)	ERY		R(QD 6)	
	ST			ž	Ħ	F	z	*	×	×	2	5 50	75	100	2	5 50	75 10	0
1 -		FILL Medium grey brown clayey silt, some grey mottling and rust staining, DTPL, firm.								-								
2.4		ERAMOSA DOLOSTONE								-								
3 -		Brownish grey to greyish brown, fine crystalline, thin to medium bedded dolostone, locally weathered and porous to about 6.0 m.								-								
5			HHH	_						-								
6 -			HHHHHH	_						-								
7 -		-Minor shale content and thinly interbedded with shale below about 6.9 m.	***************************************	_														
8 -			********	-						-								
9.2 9		Borehole terminated at 9.22 m in dolostone.	3	-	$\!$		_			-	\square	\dashv	-	1		\perp	1	\dashv
		NOTE: Stratigraphy inferred from adjacent borehole P9-I. Borehole cored directly to 9.22 m, logged to confirm contacts and for monitor placement.																
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BOREHOLE LOGPROJECT:92377BOREHOLE:P10-I1 of 2HYDRAULIC CONTROL INVESTIGATIONDATE:29 September 1992TARO-WEST QUARRYGEOLOGISTPWFOR:TARO AGGREGATES LTD.ELEVATION199.4 m ASL

	ΣĪ				S	AM	PLI	₹			-					\neg
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	TYPE	VALUE	WATER	REC	RQD		COVI (%)			RQ (%	-	
	STR			Z F	F	z	×	×	×	25	50_75	100	25	5 50 7	75 10	0
0.5 0.8		TOPSOIL Dark brown, mottled light brown, clayey silt, rootlets, DTPL, firm.		1	SS	7	18	60					•			
1 -		CLAYEY SILT Brown, mottled grey and rust brown, clayey silt,		1	SS HQ		18	100 100	15_							
2 -		ERAMOSA DOLOSTONE Greyish brown to brownish grey, fine crystalline, thin		2	НQ			100	14				•			
3 -		bedded dolostone, locally weathered and porous to about 3.4 m. -Locally interlaminated to thinly interbedded with		3					-							
4 -		shale below about 3.4 m.						100	28							
5 -				- 4	нQ			100	- 59					•		
6.6									•							
7 -		VINEMOUNT SHALE Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale, locally		5	НО			100	58							
7.8 8.2 8		interlaminated to interbedded with dolostone, dolostone beds usually associated with bioturbation at lower contact and fossils at upper contact.		6	нс			100	72			+			4	
9 -		-Grey dolostone from about 7.8 to 8.2 m, moderate shale content locally.		- 8	N											
10 -				- ⁷	нс	2		99	89						•	
11					Ň											
11.9		-Transitional below about 11.2 m.		- 8	НС	2		99	96							
13.0		GOAT ISLAND DOLOSTONE Brownish grey to grey, fine crystalline, thin to thick bedded dolostone, minor shale content locally,		٥	нс			100	10			+				
13.6		occasional shale stringers. Large gypsum nodule and gypsum seams between about 12.5 to 12.6 m.		-						1						
14		SHALE Dark brownish grey, medium bedded shale, interlaminated with dolostone, bioturbation at upper		10	н	5		99	63			-		,	A	
		contact.			74					للل	tnei		<u></u>		-:•	

BOREHOLE LOGPROJECT:92377BOREHOLE:P10-I2 of 2HYDRAULIC CONTROL INVESTIGATIONDATE:29 September 1992TARO-WEST QUARRYGEOLOGISTPWFOR:TARO AGGREGATES LTD.ELEVATION199.4 m ASL

	¥	00		S	AM	PLI	3							
DEPTH (m)	STRATIGRAPHIC DESC	CRIPTION SILVEN	NUMBER	TYPE	VALUE	WATER	REC	RQD		OVE (%)			RQ (%	
	/		Ž	 	z	×	*	×	25	50 75 1	oo	25	50 7	5 100
16 -	-Fractured zone from about 14.3 to 1 GOAT ISLAND DOLOSTONE(conti		_ 11	НQ			99	99_						
17 -			12	НQ			100	100						
18 -	-Minor occurrence of chert below abo	out 18.2 m.	-	НQ										
19 -							100	95_						
20 -	ANCASTER CHERT BEDS Brownish grey to grey, very fine cryst thick bedded dolostone with numerou and layers, occasional shale stringers,	s chert nodules	14	НQ			100	81						•
22 -	siliceous, minor occurrences of sphale mineralization usually associated with -Solution fracture obseved at about 2	rite n chert.	_ 15	НQ			99	94_						A
23 -	-Fractured zone from about 23.0 to 2	3.1 m.	16	НQ			100	100						
24.3 24	Borehole terminated at 24.29 m in do	lostone				-		_	_					

BOREHOLE LOG	PROJECT: 92377	BOREHOLE: P10-II 1 of 2
HYDRAULIC CONTROL INVEST	TIGATION	DATE: 30 September 1992
TARO-WEST QUARRY		GEOLOGIST PW
FOR TARO AGGREGATES LT	D.	ELEVATION 199.4 m ASL

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	STRATIGRAPHY		MONITOR DETAILS & NUMBER		H		ш	n			L.		3 *'	en.		D/	מנ	
DEPTH	IGF	STRATIGRAPHIC DESCRIPTION	LIA P	ER	INTERUA		VALUE	WATER	ပ္ပ	Q	KE			ERY	9	R(
(m)	RAT		5 H *	NUMBER		TYPE			REC	Rado		<u> </u>	%)) ———	ļ.,	(%	0)	\dashv
	STI		Kishinda a arenae	Ž	Ħ	í	z	*	*	*	2	5 5	0 7	5 100	2	5 50	75 10	0
0.5	19.561/57 0451/51/1 0651/55/2	TOPSOIL Dark brown, mottled light brown, clayey silt,																
0.8		rootlets, DTPL, firm.															ŀ	
1 -	A	CLAYEY SILT		Ī				:		•								
		Brown, mottled grey and rust brown, clayey silt,																
2 -		DTPL, firm. ERAMOSA DOLOSTONE		-						-					1		Ì	1 1
_	4	Greyish brown to brownish grey, fine crystalline, thin																
		bedded dolostone, locally weathered and porous to																
3 -		about 3.4 m.		l						•	1							
		-Locally interlaminated to thinly interbedded with									ļ							
4 -		shale below about 3.4 m.		-														
,																		
5 -					Ш					_	1							
•											1				1		1	
6 -				L							-				-			
													'					
6.6		VINEMOUNT SHALE																
7 -		Dark brownish grey, aphanitic to very fine		ľ							1							
7.0	畐	crystalline, thin to medium bedded shale, locally				İ												
7.8 8.2 8	Ħ	interlaminated to interbedded with dolostone, dolostone beds usually associated with bioturbation		_							-							
8.2		at lower contact and fossils at upper contact.																
	闫	-Grey dolostone from about 7.8 to 8.2 m, moderate																
9	扫	shale content locally.		ŀ	Ì						1							
	闫											į			1			
10 -				L	١						-				ł			
10 -						1												
	目										1							
11	딉			ł							1							
	闫	-Transitional below about 11.2 m.																
11.9 12	闫	COAT IN AND DOLOGROUP		-							-							
12	H	GOAT ISLAND DOLOSTONE Brownish grey to grey, fine crystalline, thin to thick		A Secretary											1			
100		bedded dolostone, minor shale content locally,								1					1			
13.0		occasional shale stringers.		-							1							
13.6		-Large gypsum nodule and gypsum seams between																
1		SHALE									1							
14		Dark brownish grey, medium bedded shale,	‡															
1		interlaminated with dolostone, bioturbation at upper	=															
L		contact.		<u>:1 </u>		1		1	L		_ _			r L	<u> </u>	1:-	_ <u>_</u>	

BOREHOLE LOGPROJECT:92377BOREHOLE:P10-II2 of 2HYDRAULIC CONTROL INVESTIGATIONDATE:30 September 1992TARO-WEST QUARRYGEOLOGISTPWFOR:TARO AGGREGATES LTD.ELEVATION199.4 m ASL

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DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL	N UALUE W	% WATER	% REC	% RQD	L	((%)	ER	_	 RQ (%)	00
15.5		-Fractured sone from about 14.3 to 14.5 m. GOAT ISLAND DOLOSTONE(continued)	#											1	I		口
		Borehole terminated at 15.50 m in dolostone. NOTE: Stratigraphy inferred from adjacent borehole P10-I. Borehole cored directly to 15.50 m, logged to confirm contacts and for monitor placement.															

BOREHOLE: P10-III 1 of 1 **BOREHOLE LOG** PROJECT: 92377 DATE: 1 October 1992 HYDRAULIC CONTROL INVESTIGATION GEOLOGIST PW TARO-WEST QUARRY ELEVATION 199.4 m ASL FOR: TARO AGGREGATES LTD.

FOR:	117	RO AGGREGATES LTD.		_							_				_			二
	¥		~	L		S	AM	PLI	3									1
DEPTH	ІСВРНУ	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	ER	INTERVAL		VALUE	WATER	၁	٥	RI			ERY			QD	
(m)	ΑT			NUMBER	H	TYPE	υA	MM	REC	RQD		(%))		(,	%)	
` ,	STRAT			₹	H	ΤY	z	×	×	×	2	5 5	0 7	5 100	2	5 50	75 1	100
	S	TOPSOIL			H						H			T	1	П	T	\top
0.5	903034 463634	Dark brown, mottled light brown, clayey silt,													1			
0.8		rootlets, DTPL, firm.			Ш			İ						1				11
1 -		CLAYEY SILT		ľ	$\parallel \parallel$		İ			-				1			-	1 1
		Brown, mottled grey and rust brown, clayey silt,			Ш				1					1				
		DTPL, firm.							-						l	1 1	ļ	
2 -		ERAMOSA DOLOSTONE		ŀ						-	1				1	1 1		
		Greyish brown to brownish grey, fine crystalline, thin											ÌÌ					
		bedded dolostone, locally weathered and porous to									l				l			
3 -	-	about 3.4 m.		ľ	П						1							
		-Locally interlaminated to thinly interbedded with															-	
		shale below about 3.4 m.									1				1			
4 -				ľ						1	1				1			
																	- [1
							1		Ì						1			
5 -	\square			Γ	Ш					-	1							
1												l			1			
												l						
6 .				ľ							1	1	Ì					
6.6					Ì		ļ											
	==	VINEMOUNT SHALE									1							
7	==	Dark brownish grey, aphanitic to very fine		-	١						1		1		Ì			
		crystalline, thin to medium bedded shale, locally							1									
7.8	==	interlaminated to interbedded with dolostone,					1]	İ				1		
8.2 8		dolostone beds usually associated with bioturbation			1			1			1				İ			
	==	at lower contact and fossils at upper contact.					1	1		1	1							
		-Grey dolostone from about 7.8 to 8.2 m, moderate]						Ì	
9	<u> </u>	shale content locally.							Ì		1				1			1
									1		1				1			
	F==			L						١.								1
10 -		4							1									
	==																	
1	==]									1							
11	1==	-Transitional below about 11.2 m.					1											
	=	- Italiaitional Delow about 11.2 iii.																
11.9	=		↓ ‡								1				١			
12	1/	GOAT ISLAND DOLOSTONE	***************************************															
1		Brownish grey to grey, fine crystalline, thin to thick	#															
13.0		bedded dolostone, minor shale content locally, occasional shale stringers.	,∐		\bot	<u> </u>	_	-	4—	 	1	\perp	+	++	+	+	$\vdash \vdash$	_
		-Large gypsum nodule and gypsum seams between	'															
		about 12.5 to 12.6 m.								1								
t		Borehole terminated at 12.98 m in dolostone.																
		NOTE: Stratigraphy inferred from adjacent borehole																
1		P10-I. Borehole cored directly to 12.98 m, logged to													١			
		confirm contacts and for monitor placement.		\perp							\perp							
		1 007 83								11			~	r L	^	1:	mi	tad

BOREHOLE LOGPROJECT:92377BOREHOLE:P10-IV 1 of 1HYDRAULIC CONTROL INVESTIGATIONDATE:1 October 1992TARO-WEST QUARRYGEOLOGIST PWFOR:TARO AGGREGATES LTD.ELEVATION 199.4 m ASL

DEPTH (m) STRATIGRAPHIC DESCRIPTION TOPSOIL O.5 O.8 TOPSOIL Dark brown, mottled light brown, clayey silt, rootlets, DTPL, firm. CLAYEY SILT Brown, mottled grey and rust brown, clayey silt, pDTPL, firm. ERAMOSA DOLOSTONE Greyish brown to brownish grey, fine crystalline, thin bedded dolostone, locally weathered and porous to about 3.4 m. Locally interlaminated to thinly interbedded with shale below about 3.4 m. SAMPLE C(%) (%) (%) (%) (%) (%) (%) (%	
TOPSOIL Dark brown, mottled light brown, clayey silt, protlets, DTPL, firm. CLAYBY SILT Brown, mottled grey and rust brown, clayey silt, DTPL, firm. ERAMOSA DOLOSTONE Greyish brown to brownish grey, fine crystalline, thin bedded dolostone, locally weathered and porous to about 3.4 m. -Locally interlaminated to thinly interbedded with shale below about 3.4 m. 5 VINEMOUNT SHALE Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale, locally	
Dark brown, mottled light brown, clayey silt, rootlets, DTPL, firm. CLAYEY SILT Brown, mottled grey and rust brown, clayey silt, DTPL, firm. ERAMOSA DOLOSTONE Greyish brown to brownish grey, fine crystalline, thin bedded dolostone, locally weathered and porous to about 3.4 m. -Locally interlaminated to thinly interbedded with shale below about 3.4 m. 5 -	100
1 CLAYEY SILT Brown, mottled grey and rust brown, clayey silt, DTPL, firm. 2 ERAMOSA DOLOSTONE Greyish brown to brownish grey, fine crystalline, thin bedded dolostone, locally weathered and porous to about 3.4 m. -Locally interlaminated to thinly interbedded with shale below about 3.4 m. 5 VINEMOUNT SHALE Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale, locally	
Brown, mottled grey and rust brown, clayey silt, DTPL, firm. ERAMOSA DOLOSTONE Greyish brown to brownish grey, fine crystalline, thin bedded dolostone, locally weathered and porous to about 3.4 m. -Locally interlaminated to thinly interbedded with shale below about 3.4 m. 5 - 4 - 5 - 7 - 7 - 9 - 9 - 9 - 9 - 9 - 9 - 9 - 9	
Greyish brown to brownish grey, fine crystalline, thin bedded dolostone, locally weathered and porous to about 3.4 m. -Locally interlaminated to thinly interbedded with shale below about 3.4 m. 5	
about 3.4 m. -Locally interlaminated to thinly interbedded with shale below about 3.4 m. 5	
shale below about 3.4 m. 5 - 6 6.6 VINEMOUNT SHALE Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale, locally	
6.6 7 WINEMOUNT SHALE Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale, locally	
6.6 7 —— YINEMOUNT SHALE Dark brownish grey, aphanitic to very fine —— crystalline, thin to medium bedded shale, locally	
6.6 7 WINEMOUNT SHALE Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale, locally	
Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale, locally	
8.2 8 dolostone beds usually associated with bioturbation	
at lower contact and fossils at upper contact. Grey dolostone from about 7.8 to 8.2 m, moderate shale content locally.	
9.6	
Borehole terminated at 9.55 m in shale.	71
NOTE: Stratigraphy inferred from adjacent borehole P10-I. Borehole cored directly to 9.55 m, logged to confirm contacts and for monitor placement.	

BOREHOLE LOGPROJECT:92377BOREHOLE:P10-V1 of 1HYDRAULIC CONTROL INVESTIGATIONTARO-WEST QUARRYGEOLOGISTPWGEOLOGIST PWFOR: TARO AGGREGATES LTD.

0.5 Dark 0.8 CLA Brow DTF ERA Grey	STRATIGRAPHIC DESCRIPTION PSOIL rk brown, mottled light brown, clayey silt, telets, DTPL, firm. AYEY SILT own, mottled grey and rust brown, clayey silt, PPL, firm. EAMOSA DOLOSTONE eyish brown to brownish grey, fine crystalline, thin ided dolostone, locally weathered and porous to	MONITOR DETAILS 1. NUMBER	NUMBER	INTERUAL	TYPE	N VALUE	% WATER	% REC	x RQD		(%	VER			QD %) 75 1	00
0.5 Dark 0.8 CLA 1 CLA Brow DTF ERA Grey	rk brown, mottled light brown, clayey silt, btlets, DTPL, firm. AYEY SILT own, mottled grey and rust brown, clayey silt, CPL, firm. AMOSA DOLOSTONE eyish brown to brownish grey, fine crystalline, thin		Z		-	2	×	*		25	50	75 10	0	25 50	75 1	00
0.5 Dark 0.8 CLA Brow DTF ERA Grey	rk brown, mottled light brown, clayey silt, btlets, DTPL, firm. AYEY SILT own, mottled grey and rust brown, clayey silt, CPL, firm. AMOSA DOLOSTONE eyish brown to brownish grey, fine crystalline, thin															
DTF 2 ERA Grey	PL, firm. AMOSA DOLOSTONE eyish brown to brownish grey, fine crystalline, thin				1				\downarrow							
Grey	eyish brown to brownish grey, fine crystalline, thin															
3 abou	out 3.4 m.															
-Loc	ocally interlaminated to thinly interbedded with ale below about 3.4 m.		-						-							
4.9	rehole terminated at 4.89 m in dolostone.	#								_	\perp		_		_	
P10	OTE: Stratigraphy inferred from adjacent borehole 0-I. Borehole cored directly to 4.89 m, logged to infirm contacts and for monitor placement.						,									

BOREHOLE LOG PROJECT: 92377

HYDRAULIC CONTROL INVESTIGATION
TARO-WEST QUARRY
FOR: TARO AGGREGATES LTD.

BOREHOLE: P11-I 1 of 2

DATE: 23 September 1992

GEOLOGIST PW
ELEVATION 200.9 m ASL

TOK.		RO AGGREGATES ETD.				-						, III A	
	₹		ا ~			SAN	1PL	E				i	
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS NUMBER	NUMBER	INTERUAL	N UALUE	i	% REC	% RQD		OVERY (%)	(QD %) 75 100
	$\otimes\!\!\otimes$	INDUSTRIAL WASTE		-1	S	S 20	12	50					
1 -		Black to dark brown foundry sand interlayered with clayey silt and sands, trace brick fragments and slag, moist, loose to compact.						50	-	1			
2 -		-Black cinder-like material from about 2.3 to 3.5 m.		4	S		35	45 50	-				
3 -				5	S	5 4	30	45	_				
4 -		-Numerous rock fragments below about 3.8 m.		- 6 -	S			30	-				
5 -				- - 8			12	3	-				
6 -					S			2	Ī				
7.2 7 -	▩	-Broken up dolostone from about 6.7 to 7.2 m.		- 1	Н	5		76	24			1	
7.7 8 -		VINEMOUNT SHALE Dark brownish grey to grey, aphanitic to very fine crystalline, thin bedded shale, locally interlaminated to interbedded with dolostone, dolostone beds usually associated with bioturbation at lower contact and fossils at upper contact, locally moderate dolostone content. -Grey dolostone from about 7.2 to 7.7 m, with		-	He He			100 100	-				
10 -		moderate shale contentWeathered to about 8.1 m.		- 5	н	5		100	88-		•		
11.6 12 -		GOAT ISLAND DOLOSTONE Brownish grey to grey, fine crystalline, thin to			W				1				
12.7 13 -		medium bedded dolostone, occasional shale stringers, minor to moderate shale content locally, -Fractured zone from about 11.9 to 12.2 m. SHALE		-	н	5		100	89				
14 -		Dark brownish grey, medium bedded shale, interlaminated with dolostone, bioturbation at upper contact. -Highly fractured from about 13.8 to 14.0 m.		- 7 8	Ho			100 100	0 - 73				
	لنست				H.		<u></u>					للللا	لللل

BOREHOLE LOGPROJECT:92377BOREHOLE:P11-I2 of 2HYDRAULIC CONTROL INVESTIGATIONTARO-WEST QUARRYGEOLOGISTPWGEOLOGIST PWFOR: TARO AGGREGATES LTD.

	놡		CΥ			S	AM.	PLE	2							
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL	TYPE	N VALUE	% WATER	% REC	% RQD		(%)	ERY	 RQ (%	
	Ś	-Fractured zone from about 14.0 to 16.5 m.	endre orres Brossiskied							-	-	3 30	73	100	30 7	
16 -		GOAT ISLAND DOLOSTONE(continued)		9	Ä				100	73						
17 -				10	H	HQ			100	98						
18 -				- 11 -	H	HQ			91	81						A
19.9 20 -		ANCASTER CHERT BEDS Brownish grey, very fine crystalline, thin to medium	77-23	12 - 13	M	- 1			100 100	76_ 88				=		A
21 -		bedded siliceous dolostone with numerous chert nodules and layers, minor occurrence of shale stringersFractures encountered between about 20.7 and 21.6 m.		14		HQ			94	87				=		•
22.3 22		Borehole terminated at 22.30 m in siliceous dolostone.														

BOREHOLE LOGPROJECT:92377BOREHOLE:P11-II1 of 2HYDRAULIC CONTROL INVESTIGATIONDATE:24 September 1992TARO-WEST QUARRYGEOLOGISTPWFOR:TARO AGGREGATES LTD.ELEVATION200.9 m ASL

	<u> </u>		T	1													
	STRATIGRAPHY		œ	_	7	S	AM	PL	Ľ	г							
DDD	A.	CORD ADVANCE CONTRACTOR	MONITOR DETAILS & NUMBER	İ	Ц		١	_			L						
DEPTH	l n	STRATIGRAPHIC DESCRIPTION	EEP	l ex	B		VALUE	WATER			RE	CO	VE	RY		RQ	D
(m)	F			鱼	Ü	m	₹	Γe	REC	ROD		(%	6)			(%)
	۱£		F 11 48	NUMBER	INTERUA	TYPE	z	 	*	*	<u> </u>	-	$\overline{}$	1		-	
	ι S	INDUSTRIAL WASTE		Ľ	Д	_		•`	<u> ``</u>		2	5 50	75 1	00	25	50 7	5 100
	₩	Black to dark brown foundry sand interlayered with		ĺ	Ш										1		
1	₩	clayey silt and sands, trace brick fragments and slag,		İ	П											ŀ	
1 .	₩	moist, loose to compact.		ŀ						_		İ				1	
İ	₩																
	₩																
2 .	₩			ļ						4							
	₩	-Black cinder-like material from about 2.3 to 3.5 m.			П												
	₩	2.000 chief had historial from about 2.0 to 0.0 fil.													İ		
3 -	₩			_	Ш					4							
	₩				П								i				
	₩				П												
4 -	₩	-Numerous rock fragments below about 3.8 m.			П					4	Ì						
	₩				$\ \ $		1										
	₩																
5	₩			_	П					4	l	1					
	₩						- 1				- 1						
	₩				П		1							11			
6 -	₩			_	П	İ	1		l	4							
	₩				П				- 1								
	₩				П					- 1							
7.2 7	₩	-Broken up dolostone from about 6.7 to 7.2 m.		-	Ш		- 1			4			İ				
		VINEMOUNT SHALE			$\ \ $				į								
7.7	4	Dark brownish grey to grey, aphanitic to very fine			П	1							l				
8 -		crystalline, thin bedded shale, locally interlaminated			П	- 1		- 1		4							
	긐	to interbedded with dolostone, dolostone beds usually			Ш		İ				-						
	믘	associated with bioturbation at lower contact and			П		l		ļ								
9 -	글	fossils at upper contact, locally moderate dolostone content.			$\ \ $				ı	4		1	1				
	킄	-Grey dolostone from about 7.2 to 7.7 m, with			П		1			- 1							
	==1	moderate shale content.			П	- 1											
10 -	긐	-Weathered to about 8.1 m.		-	П					4							
	==]	James va vo about U.I III.								-							
	긐									l					-		.
11	긐					- 1	1			4							
11.6	긐																
		GOAT ISLAND DOLOSTONE	1														
12		Brownish grey to grey, fine crystalline, thin to								4							
		medium bedded dolostone, occasional shale stringers,						1									
12.7	4	, minor to moderate shale content locally,															
13	크	'-Fracture zone from about 11.9 to 12.2 m.			$\ \ $					1							
13.4	ᆿ	SHALE			П				- 1								
ļ	4	Dark brownish grey, medium bedded shale,			П												
14	4	interlaminated with dolostone, bioturbation at upper		ĺ]							
	4	contact.															
ļ	4	-Highly fractured from about 13.8 to 14.0 m.															
					Ш					$oldsymbol{\perp}$		<u> </u>			\bot	\coprod	

BOREHOLE LOG	PROJECT: 92377	BOREHOLE: P11-II 2 of 2
HYDRAULIC CONTROL INVEST	IGATION	DATE: 24 September 1992
TARO-WEST QUARRY	•	GEOLOGIST PW
FOR: TARO AGGREGATES LT	D	ELEVATION 200.9 m ASL

16.9	STRATIGRAPHIC DESCRIPTION -Fractured zone from about 14.0 to 16.5 m. GOAT ISLAND DOLOSTONE (continued) Borehole terminated at 16.90 m in dolostone. NOTE: Stratigraphy inferred from adjacent borehole P11-I. Borehole cored directly to 16.90 m, logged to confirm contacts and for monitor placement.	MONITOR HAHHHHHH DETAILS & NUMBER	NUMBER	INTERUAL	TYPE	N UALUE	% WATER	% REC	% RQD	(%)	ERY 5 100	RQ (%	
16.9	Borehole terminated at 16.90 m in dolostone. NOTE: Stratigraphy inferred from adjacent borehole P11-I. Borehole cored directly to 16.90 m, logged to								-				
	NOTE: Stratigraphy inferred from adjacent borehole P11-I. Borehole cored directly to 16.90 m, logged to												

BOREHOLE LOGPROJECT:92377BOREHOLE:P11-III1 of 1HYDRAULIC CONTROL INVESTIGATIONDATE:28 September 1992TARO-WEST QUARRYGEOLOGISTPWFOR:TARO AGGREGATES LTD.ELEVATION200.9 m ASL

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DEPTH (m)	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS	NUMBER	INTERUAL		N UALUE	% WATER	% REC	% RQD	ļ,	(9	VE 6) 751	_	25	RQ (%		0
1 - 2 - 3 - 4 - 5 - 6 - 6	INDUSTRIAL WASTE Black to dark brown foundry sand interlayered with clayey silt and sands, trace brick fragments and slag, moist, loose to compact. -Black cinder-like material from about 2.3 to 3.5 m. -Numerous rock fragments below about 3.8 m.		Z		<u> </u>	Z	×	×	-	2	5 50	751		25	50	5 100)
7.2 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	-Broken up dolostone from about 6.7 to 7.2 m. VINEMOUNT SHALE Dark brownish grey to grey, aphanitic to very fine crystalline, thin bedded shale, locally interlaminated to interbedded with dolostone, dolostone beds usually associated with bioturbation at lower contact and fossils at upper contact, locally moderate dolostone content. -Grey dolostone from about 7.2 to 7.7 m, with moderate shale content. -Weathered to about 8.1 m. GOAT ISLAND DOLOSTONE Brownish grey to grey, fine crystalline, thin to medium bedded dolostone, occasional shale stringers, minor to moderate shale content locally, -Fracture zone from about 11.9 to 12.2 m. Borehole terminated at 12.74 m in dolostone. NOTE: Stratigraphy inferred from adjacent borehole P11-I. Borehole cored directly to 12.74 m, logged to confirm contacts and for monitor placement.																

BOREHOLE LOG BOREHOLE: P12-I 1 of 1 **PROJECT:** 92377 **DATE:** 9 February 1993 HYDRAULIC CONTROL INVESTIGATION TLC GEOLOGIST TARO-WEST QUARRY FOR: TARO AGGREGATES LTD. **ELEVATION** 201.2 m ASL

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	STRATIGRAPHY	ome of the contract of the con	MONITOR DETAILS NUMBER		đ		ш	œ			DE	·cc	W	ERY		RQ	n	
DEPTH	TIG	STRATIGRAPHIC DESCRIPTION	N E Z	NUMBER	INTERUA	,,,	VALUE	WATER	REC	RQD	K E		ر ۱ (%	SKI		(%		
(m)	R A		돈음~	₹		TYPE		3 %			-			1	-			\dashv
	S S	YND YGMDYAY DW I		Z 1	Ш	SS	2	×	100	<u>×</u>	2	5 50	75	100	25	50 7	75 10	믝
	▩	INDUSTRIAL FILL Black silty sand to sandy silt, trace gravel, moist to		^		33	-		100			ł	1					
	₩	wet, very loose to compact.												'				
1 .	₩				$\ \ $													l
	₩			2		SS	34		75				•					l
2 -	₩			ŀ						-	l							
	₩				П													
7	₩															İ		
3 -	₩			3		SS	3		41			-						
	₩												1				1	
4 -	₩			ŀ						-								
	₩												•					Ì
4.9		CLAYEY SILT TILL		L 4		SS	8		59	_								
1		Brownish grey to grey, clayey silt, some sub-rounded	4.															
		gravel minor rust staining, APL, firm.			Ш											İ		
6				5		SS	5		82	-			-	•				
						-												
7				L	П					-								
7.3		VINEMOUNT SHALE			$\ $								L	.				
8.1	吕	Dark brownish grey, aphanitic to very fine		1	M	HQ			79	28			Ī	'	1	•		. 1
8.1 8		crystalline, thin to medium bedded shale, locally		ļ .						-								
8.8		interlaminated to interbedded with dolostone, trace fossils.																
9		-Brownish grey dolostone encountered from about		ŀ	7													1
		8.1 to 8.8 m.			, m	***			100								•	l
9.9				2		HQ			100	88				1				
10.2 10 -		-Dolostone bed encountered from about 9.9 to 10.2	settrate charts attract															
		m.				НQ												
11						но			100	94	ł			+			•	
				Ĭ														
12.1 12					N													
12		GOAT ISLAND DOLOSTONE	**********			НQ				1								
		Brownish grey to grey, fine crystalline, thin to medium bedded dolostone, moderate shale content,	1 =	4		нQ			100	58				•		•		
13.2 13		occasional shale stringers, and calcite nodules.		<u> </u>	Ŋ,		_	_	1_	<u> </u>	_			\bot	\perp	$\sqcup \!\!\! \perp$		Ц
		-Bioturbation observed at bottom of core.	1		Γ													
1		Borehole terminated at 13.20 m. in dolostone.																
Printe	d: 4	OCT 93				·		٠	F	7	ia	rtr	1er	Le	e	Lin	nite	ر ≥d
- L THE	u. 4								-	_					'			

BOREHOLE LOGPROJECT:92377BOREHOLE:P13-I1 of 1HYDRAULIC CONTROL INVESTIGATIONDATE:13 February 1993TARO-WEST QUARRYGEOLOGISTSMA, TLCFOR:TARO AGGREGATES LTD.ELEVATION199.9 m ASL

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DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL	TYPE	N VALUE	% WATER	% REC	א תמם		(%)	ER 1	<u> </u>	('	QD %) 75 10
1 -		FILL Dark grey and brown clayey silt, some sand, gravel and organic matter, moist to saturated, loose to dense.				ss	8	18.5		_							
2 -		-Yellowish brown clay seam from 1.8 to 1.9 m.		-		ss	42	20.4 11.8		_			=				
3 -						ss		24.6 21.9		-	=						
4.4 5 - 5.5		ERAMOSA DOLOSTONE Grey brown to grey, fine crystalline, thin bedded dolostone, weathered, moderate to high shale content.				HQ HQ			88	0 7_					•		
6.3 6 - 6.9 7 -		VINEMOUNT SHALE Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale, locally interlaminated to interbedded with dolostone, trace fossils.		3		НQ			100	41						•	
8 -		-Greyish brown dolostone bed encountered from about 6.3 to 6.9 m.		. 4		НQ			100	58						4	
9 -				5 -		нQ			100	80							•
10.7 11 - 11.9		GOAT ISLAND DOLOSTONE Brownish grey to grey, fine crystalline, thin to medium bedded dolostone, moderate shale content occasional small vugs.		6		НQ			100	69							A
		Borehole terminated at 11.89 m in dolostone.															

BOREHOLE LOGPROJECT: 92377BOREHOLE: P14-I 1 of 1HYDRAULIC CONTROL INVESTIGATIONDATE: 27 January 1993TARO-WEST QUARRYGEOLOGIST SMAFOR: TARO AGGREGATES LTD.ELEVATION 196.9 m ASL

	ż		or or			S	AM	PLE	E				T			
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL	TYPE	N VALUE	% WATER	% REC	% RQD	(%	VER'		(9	QD %) 75 100	0
1 -		INDUSTRIAL FILL Brown mixture of sandy silt with clay, gravel, brick and black fine foundry sand, moist, loose.		. 1		ss	28	15.4	60							
2 -				ŀ		ss ss		17.9 22.6		-	-					
3.2 3		VINEMOUNT SHALE Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale, locally		4			>30 .15 r	17.9 n	100 92	3 9				•		
4.4		interlaminated to interbedded with dolostone, trace fossils and vugs. -Greyish brown dolostone bed encountered from about 3.8 to 4.4 m.		_ 2		НQ			100	96_					4	
6			7 (M				100	92					•	
7.7		GOAT ISLAND DOLOSTONE Brownish grey to grey, fine crystalline, thin to		- 4		нQ			100	96					4	
8.8		medium bedded dolostone, moderate shale content, occasional shale stringers. -Large open fracture encountered at about 8.4 mBioturbation observed at bottom of core. Borehole terminated at 8.80 m in dolostone.														
															4	
														Ш		Ц

BOREHOLE LOGPROJECT:92377BOREHOLE:P15-I1 of 1HYDRAULIC CONTROL INVESTIGATIONDATE:26 January 1993TARO-WEST QUARRYGEOLOGISTSMAFOR:TARO AGGREGATES LTD.ELEVATION197.4 m ASL

1011.		RO AGGREGATES ETD.							LLC	<u> </u>		<u></u>		197.	7 111		
	눛			\Box		S	AM	IPL	Ε								
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS L NUMBER	NUMBER	INTEROAL	TYPE	N UALUE	% WATER	% REC	% RQD	_	(%)		ļ_,	R()	6)
1 - 2 - 3 - 4.0 4 - 5.0 5 - 6 - 7 - 8 8 8.4 9 9.5	<u>s</u>	VINEMOUNT SHALE Dark brown to black mixture of clay, silt, sand, gravel and rock fill, Moist, compact. VINEMOUNT SHALE Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale, locally interlaminated to interbedded with dolostone, dolostone bed usually associated with bioturbation on lower contacts and fossils at upper contact. Brownish grey to greyish brown dolostone, moderate shale content locally, from about 4.0 to 5.0 m. GOAT ISLAND DOLOSTONE Brownish grey to grey, fine crystalline, thin to medium bedded dolostone, moderate shale content, occasional shale stringers. Bioturbation observed at bottom of core. Borehole terminated at 9.50 m in dolostone.		_ 1 3 _ 4 _ 2		ss ss	24	14 21.7 20.9 13.4	60 70 75	19 51 88		25 5	0 75	5100	25	50 :	75 100

BOREHOLE LOGPROJECT:92377BOREHOLE:P16-I1 of 1HYDRAULIC CONTROL INVESTIGATIONDATE:25 January 1993TARO-WEST QUARRYGEOLOGISTSMAFOR:TARO AGGREGATES LTD.ELEVATION196.8 m ASL

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DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL	TYPE	N UALUE	% WATER	% REC	% RQD	L.,	(%	VE 6) 751		25	RQ (%	0
1.1 1 -		FILL Grey clayey silt, some sand and gravel, moist.								-							
2 -		ERAMOSA DOLOSTONE Brownish grey to greyish brown, fine crystalline, thin bedded dolostone, weathered to about 1.4 m.			Ä	HQ HQ			60 100	0 31_							
2.5 3.2 3 -		VINEMOUNT SHALE Dark brownish grey, aphanitic to very fine		_						-							
4.2 4 -		crystalline, thin to medium bedded shale, locally interlaminated to interbedded with dolostone, trace fossils. Large dolostone bed from about 1.1 - 1.4 m.		3		НQ			90	49							
5 -		-Vertical fracture at about 2.2 m to 2.4 m -Greyish brown dolostone bed encountered from about 3.2 to 4.2 m, transitional.		L 4		НQ			100	75-							
6 -				5		НQ			100	97				•			
7 -		GOAT ISLAND DOLOSTONE															
8.7		Brownish grey to grey, fine crystalline, thin to medium bedded dolostone, moderate shale content, occasional shale stringers, open fractures below about		6		HQ			97	96							
9.4	돌	8.0 m. SHALE Dark brownish grey, medium bedded shale, interlaminated with dolostone, bioturbation at upper contact. Borehole terminated at 9.35 m in shale.		-													
		,															
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BOREHOLE LOGPROJECT:92377BOREHOLE:P17-I1 of 1HYDRAULIC CONTROL INVESTIGATIONDATE:22 January 1993GEOLOGISTSMAFOR: TARO AGGREGATES LTD.

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DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	NUMBER	INTERUAL	TYPE	VALUE	WATER	REC	RQD	RI		V) %)	ERY		RÇ (%	
	ST			ž	Ħ	F	z	×	×	×	2	25 50	75	100	25	50	75 100
1.2 1 -		FILL Greyish brown clayey silt, some sand and gravel, DTPL, very stiff to hard.			鰾	SS HQ	> 3 0		52 79								
2 -		ERAMOSA DOLOSTONE Brownish grey to greyish brown, fine crystalline, thin bedded dolostone, localized shale content, numerous clay partings, some fossils and vugs.			M	HQ			97	23							
3.2 3 -		VINEMOUNT SHALE Dark brownish grey, aphanitic to very fine		3		НQ			100	5 2							
4.9 5 -		crystalline, thin to medium bedded shale, locally interlaminated to interbedded with dolostone, dolostone beds usually associated with bioturbation at lower contact and fossils at upper contact. -Greyish brown dolostone bed encountered from about 4.0 to 4.9 m.		4		НQ			93	48							
6 -				5		НQ			100	82							•
8.2 8				. 6		нQ			100	88.							
9 -		GOAT ISLAND DOLOSTONE Brownish grey to grey, fine crystalline, thin to medium bedded dolostone, locally moderate shale content, minor occurrances of gypsum and shale	+++++++++++++++++++++++++++++++++++++++	7						Ţ							
9.7 ^{10.1} 10		stringersLarge fracture encountered at about 9.2 mLarge vug with calcite crystals encountered at about 9.3 m.		7		HQ			100	100							
		SHALE Dark brownish grey, medium bedded shale, interlaminated with dolostone, bioturbation at upper contact. Borehole terminated at 10.06 m in shale															

BOREHOLE LOGPROJECT:92377BOREHOLE:CW21 of 1HYDRAULIC CONTROL INVESTIGATIONDATE:1 October 1992GEOLOGISTBJFOR: TARO AGGREGATES LTD.

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DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS	NUMBER	INTERUAL	TYPE	N VALUE	% WATER	% REC	א ממם	ļ	(%)			RQ)
	200	TANDALOGIDA A PULY		_	4	_	-				2	5 50	75	100	25	50	75 100
1 -		INDUSTRIAL FILL Dark brown to black heterogeneous mix of sand, silt and clay and fine gravel, moist, loose to compact.		-						-							
2 -										-							
4																	
5 -																	
6		-Wet below about 6.6 m.															
7.5		VINEMOUNT SHALE		_													
8.2 8		Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale, locally interlaminated to interbedded with dolostone, trace															
9		fossils. -Medium grey heavily fractured dolostone from about		ŀ													
10 -		7.5 to 8.2 m.								-							
11.6 11.9		COAT ICI AND DOLOCTONE															
11.9		GOAT ISLAND DOLOSTONE Brownish grey to grey, fine crystalline, thin to medium bedded dolostone, moderate shale content, occasional shale stringers and vugs.															
		Borehole terminated at 11.89 m in dolostone. NOTE: Borehole drilled directly to 11.89 m with a water well rig, stratigraphy inferred from adjacent borehole P2-OW1.															
											\perp						oited

BOREHOLE LOGPROJECT:92377BOREHOLE:CW31 of 1HYDRAULIC CONTROL INVESTIGATIONDATE:2 October 1992TARO-WEST QUARRYGEOLOGISTBJFOR:TARO AGGREGATES LTD.ELEVATION200.3 m ASL

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DEPTH	STRATIGRAPHY	CTDATIONADIUS DESCRIPTION	Į į	DETAILS & NUMBER		H		ш	ıα			L.	-01	.	en.		n.c	. T.	١
	LIG	STRATIGRAPHIC DESCRIPTION	H	1 Z Z	NUMBER	INTERUA		VALUE	WATER	b	0	KI			ERY		RÇ		١
(m)	A.		2	6 0 4	显		TYPE	5	3	REC	RQD	l	(%)			(%)	ı
	STI				Z	H		z	*	*	×	2	5 50	75	100	25	50	75 100	\Box
0.3	***	FILL	T			Ħ										T	T	TT	\dashv
	\mathbb{Z}	Medium to dark brown silty sand with clay and \int																	
		gravel, metal fragments, moist.											i						1
']	4	ERAMOSA DOLOSTONE			Ī	Ш			i		•	1						1 1	
	4	Brownish grey to grey, fine crystalline, thin bedded			l	Н								-		1		1 1	
2 -		dolostone, weathered and very fractured, locally				П										ł			
']		vuggy, minor occurrence of clay infilled fractures and shale stringers.			Г						-	1				-	İ		-1
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5 -	4				_						_								
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5.8																			
6		VINEMOUNT SHALE			-	П					-								ŀ
	==	Dark brownish grey, aphanitic to very fine				П													ı
6.7	\equiv	crystalline, thin to medium bedded shale, locally				П									1 [
7.3 7		interlaminated to interbedded with dolostone, trace			-						-								
	==	fossils, minor occurrence of clay seams.				П													
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10.9	=1				_														
'' }	\dashv	GOAT ISLAND DOLOSTONE		ı	-	$\ \ $					1								
1		Brownish grey to grey, fine crystalline, thin to				$\ \ $				•									
12.0		medium bedded dolostone, moderate shale content locally, occasional shale stringers and calcite nodules,			_														
12.2	1	minor ocurrences of sphalerite mineralization.	\vdash			₩						Н	+	+	++	+	+	\vdash	\dashv
		SHALE																	
		Borehole terminated at 12.19 m in shale.						1											
]		NOTE: Borehole drilled with a water well rig,																	
]		stratigraphy inferred from adjacent borehole P3-I.		.						1									
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1 of 1 **BOREHOLE:** CW4 **BOREHOLE LOG** PROJECT: 92377 **DATE:** 5 February 1993 HYDRAULIC CONTROL INVESTIGATION GEOLOGIST TWWL TARO-WEST QUARRY ELEVATION 199.9 m ASL FOR: TARO AGGREGATES LTD.

	<u>≻</u>			\Box			S	AM.	PLI	Ξ									l
DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS	A NUMBER	NOTIBER	INTERUAL	TYPE	N VALUE	% WATER	% REC	% RQD		(%)	ERY	L,		QD %) 75 1	00
0.5		FILL Medium to dark brown silty sand with gravel and																	
1 -		ERAMOSA DOLOSTONE Brownish grey to grey, fine crystalline, thin bedded																	
2 -		dolostone, numerous fractures, occasional shale stringers, locally vuggy, minor occurrence of calcite nodules.																	
3 -				ŀ															
4 -				-															
5 -				-							•								
6.3		-Becoming shaly below about 6.1 m.	-	ŀ								1							
7.3		VINEMOUNT SHALE Dark brownish grey, aphanitic to very fine crystalline, thin bedded shale, locally interlaminated to interbedded with dolostone, trace fossils.		-								-							
7.9		-Dolostone bed from about 7.3 to 7.9 m, moderate shale content locally.		-															
9				-	,														
10 -					•														
11.2 11	E	GOAT ISLAND DOLOSTONE	-	ł								1							
12.7		Brownish grey to grey, fine crystalline, thin to medium bedded dolostone, moderate shale content, occasional shale stringers and calcite nodules.		-															
		Borehole terminated at 12.68 m in dolostone. NOTE: Borehole drilled with a water well rig, stratigraphy inferred from adjacent borehole P4-I.																	
Printe	d: 4	OCT 93	<u> </u>								1	⊥ Ga	rt	ne	r L	ee	Li	mit	ted

BOREHOLE LOG PROJECT: 92377

BOREHOLE: CW5 1 of 1

HYDRAULIC CONTROL INVESTIGATION

TARO-WEST QUARRY

FOR: TARO AGGREGATES LTD.

BOREHOLE: CW5 1 of 1

DATE: 1 October 1992

GEOLOGIST BJ

ELEVATION 197.3 m ASL

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DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONTTOR	DETAILS & NUMBER	NUMBER	INTERUAL	N VALUE	% WATER	% REC	% RQD	<u> </u>	(% 5 50	6)		 RQ:	
1.0 1 - 2 - 3.1 3 -		ERAMOSA DOLOSTONE Brownish grey to greyish brown, fine crystalline, thin bedded dolostone, locally weathered and porous.								•						
3.9 4 5.1 5 6		VINEMOUNT SHALE Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale, occasional mud seams, locally interlaminated to interbedded with dolostone, dolostone beds usually associated with bioturbation at lower contact and fossils at upper contact. -Dark grey, fine to medium dolostone with moderate to high shale content between about 3.9 to 5.1 m.			-					-						
7 - 8 - 8.6 9 -		GOAT ISLAND DOLOSTONE Brownish grey to grey, fine crystalline, thin to medium bedded dolostone, moderate shale content locally, minor occurrences of gypsum infilling and sphalerite mineralization from about 9.2 to 10.2 m. -Large fracture at about 8.9 m.			-					-						
		Borehole terminated at 9.63 m in shale. NOTE: CW5 was drilled using a water well rig, stratigraphy inferred from adjacent location P5. A 0.6 m differance in elevation occurs between the locations.														

BOREHOLE LOG	PROJECT: 92377	BOREHOLE: CW7 1 of 2
HYDRAULIC CONTROL INVI	DATE: 30 September 1993	
TARO-WEST QUARRY	GEOLOGIST TWWL	
FOR: TARO AGGREGATES	LTD.	ELEVATION 201.9 m ASL

	¥		SAMPLE															
DEPTH CALL		STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER				VALUE	Or.	j.	RQD			rn.		D.O			
				ЩÄ	INTERUA			WATER			RECOVERY (%)			RQD (%)				
(m)	RA		문법.	NUMBER		TYPE			REC		Щ			i				\dashv
	5			Z	Д	-	Z	×	×	×	2	5 50	75	100	25	50 7	75 10	0
	▩	FILL Dark yellowish brown clayey silt, some fine sand and																ļ
	₩	fine gravel.																
1 -	₩									-								
	₩																	
2.3 2	₩			-						-								
2.3	***	ERAMOSA DOLOSTONE																
_		Brownish grey to greyish brown, fine crystalline, thin		4														
3 -		bedded dolostone, locally weathered and porous.		Ī														
4 -				ŀ						-			Ì					
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6 -				ŀ	1						1							
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8.3			1	t							1							
		VINEMOUNT SHALE																
9	闫	Dark brownish grey, aphanitic to very fine crystalline, thin to medium bedded shale, locally		-														
		interlaminated to interbedded with dolostone, trace																
	邑	fossils.																
10 -	闫			Γ	1	i				-	1							
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12	闫																	
	邑																	
13	闫			ł							1							
13.7																		
•	Ħ	GOAT ISLAND DOLOSTONE	1															
14		Brownish grey to grey, fine crystalline, thin to																
1		medium bedded dolostone, moderate shale content,		\perp	\perp	<u> </u>		<u> </u>		ļ	_					\perp	_	1
14.8		occasional shale stringers. OCT 93	1			<u> </u>	1	L				-		r Le	<u> </u>	:		