

July 13, 1990

#### DIMENSIONS, INC.

Soil and Hydrogeologic Investigations 1091 Jamison Road • Elma, NY 14059 • 1716) 655-1717

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WELL REPLACEMENT AND DEVELOPMENT REPORT

Landfill Site, Witmer Road

Town of Niagara

for

SKW ALLOYS

#### INTRODUCTION:

The purpose of this report is to describe the well procedures and findings on the newly installed replacement well at the SKW Alloy facility. Monitoring well #5R had been obliterated during excavation and/or filling procedures around the site. Replacement of old well #5R was requested by Dick Snyder of SNYDER ENGINEERING.

#### FINDINGS:

The soil sequence described at this new location was very similar to the old profile at MW #5R. Soil fill to a depth of 8.0 feet was placed on clayey to coarse silty lake sediment to 12.0 feet. A 4.5 foot thick water sorted and deposited sand layer was encountered to a depth of 16.5 feet to the contact boundary of the glacial till. The new well screen was positioned across this 4.5 foot saturated sand horizon immediately above the glacial till. This sand section appeared thicker at this location than at the original MW #5R. 41780 Page 2



The newly installed monitoring well #5R replacement was developed on May 15, 1990.  $\lambda$  1 1/2 inch stainless steel bailer was used for well development and steam cleaned prior to inserting into the well.

DIMENSIONS, INC.

Soil Investigations and Natural Resource Assessments

The static water level was recorded at 7.6 feet below ground surface. The volume of water in the well was calculated to be 1.6 gal/well volume. Three well volumes were then removed. The water extracted during development had a fairly high silt content with a distinct reddish brown color. Recharge to the well was slow due to the very fine size sandy soil and high silt content. Further development would be required to obtain silt-free water. No apparent odor or unusual signs of contamination were noticed. All water removed during development was disposed of by re-introducing it to the top of the landfill.

Prevared by, / Dale M. Gramza

Geologist

DMG/eal 4178c



APPROXIMATE LOCATION OF RECENTLY INSTALLED WELLS

FIGURE 5



Test Borings and Logs 797 Center Street • East Aurora, New York 14052 • (716) 655-1717

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SURF. ELEV.

PROJECT 1

HOLE NO. \_1

<u>Piezometer Installation</u> <u>Airco Alloys - Niagara Falls</u>

LOCATION See survey

CLIENT Secured Landfill Contractors, Inc. DATE STARTED 12/15/78 COMPLETED 12/15/78





i would thangle showing the percentages of elay (less than 0.002 mm), silt (0.002-0.05 mm), and sand (0.05-2.0 mm) in the basic soil textural classes (adapted from Soil Survey Staff, 1951).



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PROJECT <u>Fiezometer Installation</u> <u>Airco Alloys - Niagara Falls</u>

LOCATION See survey

Secured Landfill Contractors, Inc. DATE STARTED 12/27/78 COMPLETED 12/27/78 CLIENT

DEPTH	a le	8[2	BLC S	OWS AMPE	ON ER (	a Lo		We	e11	WATED TABLE & DEMADYC	
(feet)	SAN SAN	1/1	6	12/	18/24	N	DESCRIPTION & CLASSIFICATION			WATER TABLE & REMARKS	
		ļ					Noist brownish grav and grav	1	Γ	Fill material and	
					┼──		powdery slag fill			disturbed soil to	
	1	+								ey lake sediments	
							2.5			to 7.5 feet over	
	2	22	20	27		41	Moist brownish gray to gray	g		water sorted stra- tified sediment to	
			<b> </b>		<u> </u>		(CLAYEY-SILT) with 2-3% fine	tt		12.1 feet over	
	1	<u> </u> ה ז	12	20		37	dolomitic gravel fragments,	10		dense loamy glacial	
5				2	Í –		YELY TITH, SIIGHULY DIASULC	100	e	ull vo iciusal.	
							Moist highly mottled brownish	f t	ret		
*		ļ					desiccation cracks, very firm,	2	nc		
					<u> </u>		(stiff), plastic	B	ပိ		
							7.5	tt	~8		
							Moist to sythemaly poist and	٦Å	t e		
		ļ			ļ		dish, brown heavy silt loam	th	oni		
							(SAND-SILT-CLAY) with 5 to	W	nt		
10	4	6	7	17	2	24	and grav densely packed SILT	20	Be		
			·				lenses, firm to friable,	<u>а</u>			
							slightly plastic	Ln.		шe	
		8	8	20	17	30		N		Sample #5 con-	
	5						clear transition to 12.1	<u> -</u>		rock fragments.	
							Extremely moist reddish gray	=	L.	Well notes: 2 in.	
							with 5 to 10% gravel, soft	=	av	inside diameter PVC	
									5	ft. slotted every	
15							14.5		سسيمين	$\frac{1}{4}-\frac{1}{2}$ " installed with	
<u>-</u>							Refusal encountered at 14.5			3 It. stickup a-	
							166 C			bove Browne.	
										Water table 7.5 ft.	
										completion.	
		L	i			l		L			
dew	N =	NU	MBER	OF	BLO	ws i	0 DRIVE " SPOON WITH	Ib. V	VT. F	ALLING <u>30</u> " PER BLOW.	
	LOG	GED	BY	0	wer	IS		HEET	·	1OF25	



Textural triangle showing the percentages of clay (less than 0.002 mm), silt (0.002-0.05 mm), and and (0.05-2.0 mm) in the basic soil textural classes (adapted from Soil Survey Staff, 1951).

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\_\_\_\_3 HOLE NO.

PROJECT

LOCATION See survey /

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<u>Piezometer Installation</u> Airco Alloys - Niagara Falls

Secured Landfill Contractors. Inc. DATE STARTED 12/28/78 COMPLETED 12/28/78 CLIENT

DEPTH	AMPLE NO.	•/	BLC	OWS	ON ER	N	DESCRIPTION & CLASSIFICATION	W	<b>el</b> ]	1	WATER TABLE & REMARKS
_(feet)		B2 21	12	18		66	Moist brown mixed silty clay soil and slaggy fill materi- al, loose but firm in place.	om 2 ft. alotted		oncrete	Fill material to six feet over disturbed silty lake sediments to 8 ft. over very fine sands to 13 ft. over glacial till (hardpan) to re- fusal.
	2	16	10	103		33	6.0 Moist highly mottled grayish			te k C	fill noted five feet below sur- face.
·							brown SILTY-CLAY with 2% fine gravel, firm, plastic 8.			entoni	Noticeable auger resistance to 12
10	3	35	4	556			Extremely moist becoming wet faintly mottled reddish brown to brown very fine loamy sand (SAND), well sorted, non- plastic, very firm in place.	in later star	U. ORLDUN BUBBL	Щ	Water 1 foot be- low surface at completion. <u>11.2</u> <u>Well notes:</u> 2 in. inside diameter carbon steel well with bottom 2 ft.
15	4	62	85	100			Extremely moist brown gravelly loam, (SAND-SILT-CLAY) with 15-20% subangular dolomitic gravel & occasional cobble/ boulders, nonplastic, very firm in place, brittle. 15. Refusal encountered at 15.2 feet.	2		Gravel	slotted with 1 foot stickup a- bove surface.
dew	N =				F BL	ows	TO DRIVE _ 2 " SPOON _ 12 " WITH _ 140	Ib SHI	. WT	Г. F. ]	ALLING <u>30</u> " PER BLOW.

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1. triangle showing the percentages of clay (less than 0.002 mm), silt (0.002-0.05 mm), and sand (0.05-2.0 hun) in the basic soil textural classes (adapted from Soil Survey Staff, 1951).

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PROJECT Piezometer Installation

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LOCATION See survey

Airco Alloys - Niagara Falls

CLIENT

Secured Landfill Contractors, Inc. DATE STARTED 12/29/78 COMPLETED 12/29/78

DEPTH	BLOWS ON									
(feet)	SAM	"	6	12/	18/24	N	DESCRIPTION & CLASSIFICATION			WATER TABLE & REMARKS
	1	36	55	61		116	Moist light gray powdery fill with 25% fine slag fragments, very firm in place, nonplas- tic			Slaggy fill to 6 feet over silty lake sediments to 10 feet over gra- velly glacial till to refusal.
5							Coarse slag fill	otted		<u>Pipe notes:</u> 2 in.
	2	11	13	17		30	6.0 Moist dark grayish brown silt loam (CLAYLY-SILT) topsoil, friable, slightly plastic	2 ft. 81	crete	Inside diameter PVC well with bot- tom two feet slot- ted every $\frac{1}{4} - \frac{1}{2}$ in. installed with
10		18 Sh	23 e15 mp1	¥	tul	41 e en	clear transition to7.0 moist reddish brown SILTY- CLAY with fine desiccation cracks, finely laminated clays, very firm, plastic 10.0	ith bottom 2	onite & Conc	28 inches stickup above ground.
		7	5	6		11	Extremely moist becoming wet brown loam (SAND-SILT-CLAY) with 20% dolomitic gravel, soft, nonplastic	PYC pipe w:	Bento	
15								11112 In.	avel	13.5 Water at 15.0 feet at comple-
							16.7 Refusal at 16.7 feet	=	Gr	tion
dew	N =	NUM	IBER	OF	BLOV La	ws ro	D DRIVE " SPOON _12_ " WITH 140 : urdt SPOON _12_ " WITH 140 :	b. W	т. ғ <i>і</i>	ALLING <u>30</u> PER BLOW <u>1</u> OF <u>1</u> 27



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Textural triangle showing the percentages of clay (less than 0.002 mm), silt (0.002-0.05 mm), and one (0.05-2.0 mm) in the basic soil textural classes (adapted from Soil Survey Staff, 1951).

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CLIENT

4178 HOLE NO. 5

PROJECT LIEZOMETER Installation LOCATION See survey Airco Alloys - Niagara Falls

Secured Landfill Contractors. Inc. DATE STARTED 12/29/78 COMPLETED 12/29/78

DEPTH	PLE.		BLO SA	WS (	ON IR		DESCRIPTION & CLASSIFICATION	We:	11	WATER TABLE & REMARKS	
(feet)	SAM	"/"	6/12	12/ 18	1N 24	N					
							Moist dark brown medium and coarse size slag fill			Slag fill to 2.5 feet over silty	
	1	18	19	23		42	Moist dark grayish brown sil- ty clay loam (CLAYLY-SILT) with 2-5% fine subangular gra-	ted		sediments to 13.5 feet over stratified sand to 20.5 feet	
5	2	7	14	17		31	vel, wood fragments, friable but firm in place, disturbed Moist to extremely moist highly mottled grayish brown	ft. slott		over dense loamy glacial till to refusal.	
							SILTY-CLAY with dessication cracks, firm, plastic	ottom 2	nite		
28" feed 24.5" recover:		 					Extremely moist reddish brown	with bo	& Bentor		
10	3	13	15			28	silt lenses, finely laminated clays, firm, plastic, and co- hesive	n steel	norete		
	<u>4</u>	11	14		3	27	(Silt strata entered in Shel- by tube) 13.	1. Carbo	Co		
15	5	2	327	3	0	57	Extremely moist brown stra- tified very fine sand (SAND), friable but very firm in	2 ir	and the second secon		
										Continued on pg. 2	
dew	N LO		JMBI D BY	ER C	)F BI	_ows har	TO DRIVE " SPOON " WITH dt & Pitt	- <sup>ib.</sup> Shee	wt. 7	ALLING 30 " PER BLOW. <u>1</u> OF 2 29	



Textural transfe showing the percentages of elay (less than 0.002 mm), silt (0.002-0.05 mm), and sand (0.05-2.0 mm) in the basic soil textural classes (adapted from Soil Survey Staff, 1951).

# HOLE #5:

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#### 4L78 HOLENO. 5 (continued)

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PROJECT Fiezometer Installation

· LOCATION See survey

CLIENT

Airco Alloys - Niagara Falls Secured Landfill Contractors, Inc Date STARTED 12/29/78 COMPLETED 12/29/78

DEPTH	MPLE 0.		BLO	OWS		1	DESCRIPTION & CLASSIFICATION	Well		WATER TABLE & REMARKS
(feet)	N S Z	° 6	12	12/18	11 24	N				
•									te	
							Ctuatified years fine conde		r&	
							Stratilied very line sands		te nc	
									品	
20	;	24	33	40		82			t0	Acontact with till
	6						20.5	ļ	en	
							Extremely moist brown dense		<b>P</b>	20.8
					ļ	ļ	sandy loam (SILTY-SAND), very			
						<u> </u>	firm in place, brittle, non-			
					<u> </u>	<u> </u>	plastic, 20 to 25% subangular	-	10	
					ļ	ļ	dolomitic gravel		ra	Water 16 feet be-
					ļ	<u> </u>		10	0	low surface at
	ļ		ļ	ļ		ļ	24.2			completion
				ļ		<u> </u>				
25	<u> </u>		ļ	ļ	ļ	ļ	2960-21 at $21/2$ foot		W	<u>ell notes:</u> 2 in. in
			ļ	ļ	ŀ		Reiusal at 24.2 leet		8	ide diameter carbon
	ļ		ļ			-			3	teel with bottom 2
	ļ		ļ			1			L f	eet stokun above
									g	round
	<u> </u>		ļ						0	
		ļ	ļ	ļ	<u> </u>	ļ				
	<b></b>		<u> </u>							
		1			+					*
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			<u> </u>		· · ·					
			┼		<u> </u>	+				
			+	+-	+	+				
			+	+						
			+	+	+	+				
			+	+	+	+				
		<u> </u>	+	+	+	+		ł		
dew	N =	NU GED	IMBE BY	R OF	BLO	ows	TO DRIVE " SPOON WITH40 t Pitto	16. N	VT. F.	ALLING " PER BLOW. 2 OF 2



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HOLE NO. \_\_\_\_6\_

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PROJECT <u>Airco Alloys, Niagara Falls, N.Y.</u> Shelby tube soil sampling

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LOCATION ADD	rox. 135	from shifting	
bui	lding (see	survey)	
DATE STARTED	6/8/79	COMPLETED 6/8/79	

CLIENT Secure Landfill Contractors, Inc.

DEPTH	17		BU S.	OWS	ON ER				ION & CLASSIFICATION WATER TABLE & REMARKS		
(feet)	N N N	1)/6	6/12	12/	18/24	N				WAISE TADLE & REMARKS	
	1	14	10	10		10		Moist to extremely moist blackish gray grading to a reddish brown heavy silt loam (CLAYEY-SILT) fill, with 15 to 20% slag fragments, firm in place.		Surface 2 inches of fill consisting of large size angular slag fragments. Fill to 8.5 feet over	
5										ments to 15.5 feet over coarse silty lake sediments to 20.5 feet over loamy glacial till to	
	2	3	3	3		3.				refusal.	
										t	
							 	Moist faintly mottled reddish	- 8.5		
10	3	13	12	13		12		gray desiccation cracks and gray silt lenses, very firm, sticky,			
					<u> </u>			plastic.		Shelby sample taken from 11.5 to 13.5 foot donths with full	
	SH	IB	<u>r</u>	┣						24 inch recovery.	
	+	S	加				1				
			SAI	PU							
1.6		<b> </b>									
13	4	6	9	9		9	+ 	clear transition to	15.5	•	
								coarse silt loam (SANDY-SILT), stratified, nonplastic.			
									Cont	inued on page ?	

 $N = NUMBER OF BLOWS TO DRIVE \underline{2} "SPOON \underline{6} "WITH \underline{300} \text{ ib. WT. FALLING } \underline{30} "PER BLOW",$   $d_{jr} \qquad \text{LOGGED BY} \quad \underline{\text{Steven J. Pitt, Soil Scientist}} \qquad \text{SHEET} \quad \underline{1} \quad \text{OF} \quad \underline{2}$ 

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Textural triangle showing the percentages of clav closs than 0.002 mm t, silt (0.002-0.05 mm), and sand (0.03-2.0 mm) in the basic soil textural classes (adapted from Soil Survey Statl, 1951).

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HOLE NO. 6 cont.

SURF. ELEV.

2F79	PROJECT	Airco Alloys, Niagara Falls, N.Y.	LOCATION <u>Approx. 135</u> from shifting
	CLIENT	Secure Landfill Contractors, Inc.	DATE STARTED 6/8/79 COMPLETED 6/8/79

DEPTH	3	BLOWS ON SAMPLER			ON ER			WATER TABLE & REMARKS		
(feet)	NY SAW	0/6	6/12	12/18	18/24	N				
	<b> </b>									
	<b> </b>						Some as last horizon described on previous page.			
20	5	8	9	9		9		20.5		
	<b> </b>						Extremely moist to wet reddish	20.5		
			<u> </u>				brown fine sandy loam (SILTY-			
							SAND) with 10 to 15% subangular and subrounded dolometic gravel.			
<u></u>	<u> </u>				<b> </b>		firm in place, massive soil			
		<u> </u>		-		<u> </u>	structure.	23.0'		
						<u> </u>				
25			ļ	ļ			Refusal at 23.0	Water level 13 feet		
								below surface at completion.		
	<u> </u>									
	-	-								
	<u> </u>		ļ	ļ	ļ					
			<u> </u>					N N		
	<u>  </u>		ļ							
		<u> </u>				·				
			<u> </u>	<u> </u>		<u> </u>				
						<u> </u>				
	N	NH	MRF		BI O	ws :	то drive 2 " spoon 6 " with 300	Ib. WT. FALLING 30 "PER BLOW"		
djr				St	200	л. Т	Pitt Soil Scientist	2 2		
•	LOG	GED	BY		= रस		S	HEET OF		

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Textural triangle showing the percentages of clay class than 0.002 mm<sub>2</sub>, silt (0.002-0.05 mm<sub>2</sub>, and sand (0.05-2.0 mm<sup>2</sup>) in the basic soil textural classes (adapted from Scal Survey Scalt, 1951).



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LOCATION \_

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HOLE NO. \_\_\_\_\_ 7\_\_\_\_\_

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Airco Alloys, Niagara Falls, N.Y. 2F79 PROJECT

CLIENT

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Shelby tube sampling Secured Landfill Contractors, Inc.

DATE STARTED \_6/8/79\_ COMPLETED \_6/8/79\_

See survey

DEPTH	al MPLE		BLC S		ON ER		DESCRIPTION & CLASSIFICATION		WATER TABLE & REMARKS
(feet)	3-		/12	18	24	N			·
		ļ		ļ			Extremely moist becomming wet below		High blow counts in
					ļ		3 feet, blackish gray slag, con-		the fill zone indi-
	<u> </u>	<b> </b>			<u> </u>		cvete and flyash with occasional		cate stone being
	<u> </u>						heavy silt loam soil (CLAYEY-SILT).		Fill to 9.0 feet
	+	ŀ					nonsoil very firm in place, loose		over clayey lake
	$\left  \right _{1}$	15	18	28	+	18	when disturbed		sediment to 14.5
	<b>h</b>								ial till to refusal.
5									
	2	41	24	18	<b> </b>	24			
			<b> </b>	<b> </b>					
	-								
			┝──	+-					
	+	1			†				
								¦ 9.0'	
	ļ	<u> </u>	ļ						
10	<u> </u>	-		-					
	3	6	6	μ1	╂	6	Moist distinctly mottled reddisn brown (SULTY-CLAY) with vertical		
	S	EL	¥	+	+	+	gray desiccation cracks and gray		
			С П	rt		<u>† – –</u>	silt lenses, very firm, sticky,		Shelby sample #7
·	<b> </b>	+	S	AMP.	Ē	1	plastic		taken from 11.5 to
	1	$\square$	t						12.6 feet with 14
									Har lecovery.
		ļ	<u> </u>			ļ			
15	<b> </b>				<u> </u>			14.5	
<u>15</u>	+	9	10	19	+	+	Extremely moist brown to reddish		
	+4	ŕ	10			<u>+'</u> -	with 10 to 15% subangular and subround	ed dolon	itic
Ţ		$\uparrow$	$\square$	+-	1	1	gravel fragments, massive, plastic and	sticky	18.0'
18								 	Water table 5 feet be
							KEIUSAL AL IO.U IEEL	<u> </u>	have able 5 leer be
									completion.
	N =	= NU	MBE	R OF	BLC	ows	0 DRIVE SPOON WITH	Ib. WT. FA	LLING <u>20</u> " PER BLOW.
djr	LOG	GED	BY	St	eve	J.	Pitt, Soil Scientist	SHEET	0F



Textural triangle showing the percentages of clay "less than 0.002 nm s silt (0.002.0.05 mm s and sand (0.05-2.0 mm) in the basic soil textural classes stadapted from Soil Survey Statt, 1951).



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SURF. ELEV.

HOLE NO. <u>8</u>

2F79

PROJECT <u>Airco Alloys, Niagara Falls, N.Y.</u> LOCATION <u>See survey</u> <u>Shelby tube sampling</u> CLIENT <u>Secured Landfill Contractors, Inc.</u> DATE STARTED <u>6/9/79</u> COMPLETED <u>6/9/79</u>

DEPTH	JAE .		BLC S/	WS			DESCRIPTION & CLASSIFICATION		WATER TABLE & REMARKS
(feet)	ŠAV	1	6/12	12/18	18/24	N			
	1	13	25	40		65	Moist black mixed wood chips, cinders and slag, loose		Nonsoil fill to 2.5 ft. over clayey and silty lake sediments
								2.5	becoming coarser tex- tured with depth to 15.0 ft. over water
	S	EL TU	SY SE				Moist reddish brown silty clay (CLAPER SILT) thinly laminated clays with gray silt lenses, extremely firm (stiff)		sorted very fine sands to 21.0 ft. over loamy glacial till to re-
5		S	MP	E			- $        -$	5.0	fusal.
		13	21			44			
·							Moist roddish brown silty clay loam		
							(CLAYEY-SILT) thinly lamianted silts and clays with occasional gray silt		
10		+					lens, firm, plastic, slightly sticky		Shelby tube penetra-
	3	12	13	13	<u>s</u>	26			SILT between 3 and 5 foot depths with 11
									in. of recovery.
		+		+		+			
15	4	8	7	7		14		15.0	
							with coarse silt lenses, thinly bed- ded, firm in place		
	-		+	+-		+		Con	tinued on page #2
dew	N =	= NU			F BL	ows ald	TO DRIVE _2 SPOON _12 WITH140 W. Owens, Soil Scientist	, Ib. WT. Sheet _	FALLING <u>30</u> PER BLOW .



HOLE #8

Textural triangle showing the percentages of elay (less than 0.002 mm), silt (0.002.0.05 mm), and sand (0.05-2.0 mm) in the basic soil textural classes (adapted from Soil Survey Staff, 1951).



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DATE STARTED

HOLENO. <u>8, continued</u>

SURF. ELEV.

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Airco Alloys, Niagara Falls, N.Y. Shelby tube sampling PROJECT

CLIENT

LOCATION See survey

Secured Landfill Contractors, Inc.

6/9/79	COMPLETED	6/9/79

DEPTH	JA o		BL( S	OWS	ON ER				WATER TABLE & PEMARYC			
(feet)	Šž	1) 6	6/12	12/18	18/24	N				TOTAL TOPE & REMARKS		
				<u> </u>			ł			•		
			<u> </u>					Same as previous page				
							1	balle as previous, page.				
20	ļ				ļ		ļ					
	<u> </u>	6	6	18	-	24			21.0			
	5							Extremely moist pink sandy loam (SIL-		· ·		
							Ν	TY-SAND) with 5 to 10% fine subangu-				
								plastic	21.6			
							İ	Refusal at 21 6 feet		Water table 12 4 ft		
				ļ				Refusal at 21.0 feet.		below surface at		
25										completion.		
<u></u>												
								•				
	$\vdash$											
	1											
dew	N =	NU	ABEF	r of	BLO	ws t	o dr	RIVE _2 SPOON _12" WITH _140	Ib. WT. FA	LLING 30 "PER BLOW:		
	LOGO	GED	BY		Don	ald	W.	Owens, Soil Scientist SI	HEET2	OF		



HOLE #8, continued

Textural triangle showing the percentages of chy (less than 0.002 mm), silt (0.002-0.05 mm), and sand (0.05-2.0 mm) in the basic soil textural classes (adapted from Soil Survey Staff, 1951).

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HOLE NO. 9

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DEPTH	o'PLE	BLOWS ON SAMPLER									
(feet)	Šž	0/6	6/12	12/	18/24	N		WATER TABLE & REMARKS			
							Moist becoming wet at 1.5 ft., black cinders, metal filings, and slag, very firm in place, very friable when dis- turbed, nonplastic	Sample #1 was from the fill only.			
5		13	22	3		59		Shelby tube penetra- ting 2 ft. of SILTY- 4.5 CLAY between 5 and 7 foot depths with 10			
	2	SH 1 SA 20	EI F UBF MPI 28	Y E 32	· · ·	60	Moist roddich brown STITY-(TAY with	inches of recovery. Nonsoil fill to 4.5 ft. over clayey lake sediments to 15.0 ft.			
10							vertical gray desiccation cracks and thin silt lenses, extremely firm (stiff), plastic, sticky	over coarse silt lake sediments to 16.5 ft. over loamy glacial till to refusal.			
10	3	22	30	34		64					
15											
	4	24	. 32	38		70	<ul> <li> clear transition to</li> <li>Wet pink coarse silt loam (SANDY-SILT) with very fine sand lenses, medium consistence, stratified, nonplastic</li> </ul>	15.0			
	H	10	<u> 4</u>				(See page #2)	Continued on page #2			
dew	N =		MBEF	R OF	BLO nal	ws t d W	O DRIVE <u>2</u> "SPOON <u>12</u> WITH <u>140</u> . Owens, Soil Scientist S	Ib. WT. FALLING <u>30</u> " PER BLOW. HEET <u>1</u> OF <u>2</u>			

SURF. ELEV.



Textural triangle showing the percentages of clay (less (bar) 0.002 mm), silt (0.002(0.05 mm)), and sand (0.05-2.0 mm)) in the basic soil textural classes (adapted from Soil Survey Staff, 1951).

HOLE #9

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SURF. ELEV.

HOLE NO. 9, continued

2F79

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PROJECT

CLIENT

Airco Alloys, Niagara Falls, N.Y. Shelby tube sampling

Secured Landfill Contractors, Inc.

LOCATION 100 ft. south of original site between railroad tracks (see survey DATE STARTED 6/9/79 COMPLETED 6/9/79

DEPTH	PLE.	BLOWS ON SAMPLER				WATER TARIE & REMARKS			
(feat)	MAS	0 6	12 / 1	18	24	N	DESCRIPTION & CLASSIFICATION		WATER TABLE & REMARKS
(I&I)_	6	36 1		2 2	23	22	Extremely moist pink sandy loam (SIL- TY-SAND) with 5 to 15% subangular do- lomitic gravel, nonplastic		
20		25 1		<del>0/</del>	╉				
20	7		1	/2"				20.7	
							Refusal at 20.7 feet.		Water table 15 ft. below surface at completion and rising.
					1				Noticed seepage from nonsoil fill zone.
25				+	+	_			
				+	$\uparrow$	-			
				-	╉				
					1				
			_						
				+	+				
				$\top$	╈				
					T	$\square$			
				+	_	_	•		
				Ļ	Ţ				
	$\left  - \right $			+-	╀	$\neg$			
			+	+	╈				
			1						
	$\left  - \right $			+	+	4			
	L	I				L		L	•
dew	N =	NUMB	ER O	F BL	.OW	'S T	0 DRIVE " SPOON " WITH 140	id. WT. FA	ILLING <u>30</u> "PER BLOW.",
	LOG	GED BY	D	ona	10	W	. Owens, Soil Scientist s	HEET _2	OF



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Textural triangle showing the percentages of clav class than 0.002 game, silt (0.002.0.05 mm), and sand (0.05-2.0 mm) in the basic soil textural classes (adapted from Soil Survey Staff, 1951).



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HOLE NO. \_\_\_\_\_\_

CLIENT

SURF. ELEV.

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2F79

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PROJECT <u>Airco Alloys, Niagara Falls, N.Y.</u> Shelby tube soil sampling

LOCATION See survey

Secured Landtill Contractors, Inc.

6/11/79 COMPLETED 6/11/79 DATE STARTED

DEPTH	2	BLOWS ON SAMPLER					ł		WATER TABLE & REMARKS				
(feat)	SAM	1/6	6/12	12	18/24	м		DESCRIPTION & CONSUMERTION	WATER TABLE & REMARKS				
(leet)		F o	15	21	<u> </u>	26		Moist blackish gray, with layers	Industrial fill to				
		-4	12	121			1	of reddish brown, granular tex-	3.5 feet over water				
				1			l	tured industrial fill consisting	sorted sand sedi-				
				1			$\mathbb{N}$	flyash, slag and other industrial	ments to 13.0 feet				
/	F				<u> </u>		$  \setminus$	waste materials, friable, but	a ' glacial till that				
	Ch	116					1 `	lini il piace.	1.3 may contain some				
3		hub	s	<b>i</b> 1			]		larger size boulders				
(		S	mp	e			V		to refusal.				
	-		ŀ	+	<u> </u>	<u> </u>	1	Moist distinctly mottled brown					
5	2	7	11	21	ļ	32		sility-clay, with vertical des-					
		ļ	ļ		ļ		1.	fine sand lenses, occasional	Shelby sample taken				
			ļ	ļ	ļ	ļ	\	stone fragments, very firm,	from 2.3 to 4.3				
	<b></b>	ļ	ļ	ļ	ļ	<u> </u>	'	slightly plastic.	i samle compacted to				
	<b></b>	ļ	ļ	<b> </b>	ļ	<b> </b>			+ 3.5 19 inches. SILTY-				
			<u> </u>					Extremely moist becomming wet at	SAND noticed at				
			<u> </u>		┼──		-	62 feet, distinctly mottled	bottom of Shelby				
		<u> </u>		+-	┼──	+		brownish red, fine sandy loam	tube sample.				
	-			+	1	+-	1	(SILIY-SAND) grading to file					
10	1	15	21	24	1	45		firm in place.					
	+			<u> -</u>	<u>†</u>	1	1	<b>`</b>					
		†			1		1						
							1						
							]		Increase in stone				
							↓		- 13.0 fragments noticed by				
		<u> </u>	<u> </u>	ļ	ļ	ļ	4	Extremely moist to wet brownish	auger penetration.				
			<u> </u>				ł	red fine sandy loam (SILLI-SAVD),					
	-	-	<u> </u>		<u> </u>		4	rounded gravel, very firm in place,					
15	4	40	71	+11	₩"	<b></b>	-	nonplastic, massive soil structure.					
				$\vdash'$	1			-	16.1				
		+	+	+		+-			•				
	-	+		+	+		1	Refusal at 16.1 feet.	Water level 6.5 feet				
	-	+	+	+	t	+	1		below surface at				
						1	.L		coupletion				
	N =	. NU	MBE	r of	BLC	ows	to df	RIVE " SPOON WITH	Ib. WT. FALLING " PER BLOW.				
djr					-				1 1				
-	LOG	GED	BY	_St	eve	20	L P	tt, Soll Scientist S	SHEET OF				



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Textural triangle showing the percentages of clay class than 0.002 mm), silt (0.002-0.05 mm), and sand (0.05-2.0 mm) in the basic soil textural classes (adapted from Soil Survey Staff, 1951).



## EARTH DIMENSIONS, INC.

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HOLE NO. \_\_\_\_\_

SURF. ELEV.

PROJECT <u>Airco Alloys, Niagara Falls, N.Y.</u> Shelby tube soil sampling 2F79 CLIENT

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Secured Landfill Contractors, Inc.

LOCATION See survey

DATE STARTED 6/11/79 COMPLETED 6/11/79

DEPTH	AMPLE NO.	BLOWS ON SAMPLER					DESCRIPTION & CLASSIFICATION	WATER TABLE & REMARKS			
<del>(feet)</del>		35	<u>6</u> 9	86	24	155	Moist blackish gray grading to whitish gray granular textured industrial fill, very dense almost cemented in areas, friable when disturbed.		Industrial waste fill to 2.8 feet over clayey lake sediment to 8.4 feet over coarse silt and fine sand		
5	2 .SH .3	10 ILB UB S 11	14 Y DIL SAU 14	15	F	29	Moist reddish brown, distinctly mottled SILTY-CIAY with vertical desiccation cracks and coarse silty-fine sand lenses, occasional stone fragments, very firm, sticky plastic.	2.8	<pre>lake sediment to 9.0 feet over loamy giacial till to refusal. Shelby tube sampling from 4.0 to 6.0 ft. depths, 24 inch sam- ple compacted to 19 inches.</pre>		
10	6	34	16	56		74	<ul> <li>clear transition to</li> <li>Extremely moist reddish brown, distinctly mottled, fine sandy loam (SILTY-SAND) and coarse silt loam (SANDY-SILT stratified, medium consistence, non-plastic</li> <li>Extremely moist reddish brown fine sandy loam (SILTY-SAND) with 10 to 15% subangular and subrounded dolomitic gravel, very firm in place, non-plastic, massive soil structure</li> </ul>	8.4' 9.0' 12.8'			
15							Refusal at 12.8 feet		Water level 7.0 feet below surface at completion		
	N =	iged	MBE BY	R OF	BLO	)ws ze J	TO DRIVE " SPOON 12 " WITH 140 . Pitt, Soil Scientist SI	Ib. WT. FA	LLING <u>30</u> "PER BLOW.		



Textural triangle showing the percentages of clay (less than 0.002 mm), silt (0.002-0.05 mm), and sand (0.05-2.0 mm) in the basic soil textural classes (adapted from Soil Survey Staff, 1951).

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## DIMENSIONS, INC.

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			SURF. ELEV.
WELL &	HOLE NO12	- Ningara Falls, New York LOCATION See	e survey
2F79	PROJECT <u>Airco All</u> <u>Monitori</u>	ng well installation Tag Date STARIED	6/12/79 COMPLETED 6/12/79
	CLIENT Secured I	andfill Contractors, Inc. Dont Spanne	
	BLOWS ON		WELL WATER TABLE & REMARKS WELL
(Seat)	14WVS		
(reel)	1 4 5 5 7 5	Moist dark brown silt loam (CLAYEY-	1.0
		SILT) fill/topsoli, very files 2.0	Pack
			3.0 3.0
		-	5.0 5.0
5			
	2 4 4 5 5	5 	
		brown, silty clay (CLAYEY-SILT),	ite
		- thinly laminated, very Linky I tic, sticky	Bentonite
		-	
			pipe
10			IMC
	3 4 3 4 9		nch
			4 i
		-	13.0
		$$ clear transition to $-\frac{14}{2}$	<u>.5</u>
15	4 1 2 3 2	3 Extremely moist to wet brownish red	pg
		ly laminated soil liquified when dis	
			17.5
-		<u>    See page #4</u>	00 if WT. FALLING 30 "PER BLOW.
dew	N = NUMBER OF BLC	DWS TO DRIVE SPOON WITH	SHEFT 1OF 2
	LOGGED BY Steve	an J. Pitt, Soil Scientist	



Textural triangle showing the percentages of clay (less than 0.002 mm), silt (0.002-0.05 mm), and sand (0.05-2.0 mm) in the basic soil textural classes (adapted from Soil Survey Staff, 1951).

WELL & HOLE #12

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SURF. ELEV.

WELL & HOLE NO. <u>12, continued</u>

PROJECT <u>Airco Alloys, Niagara Falls, New York</u> LOCATION <u>See survey</u> <u>Monitoring well installation</u>

CLIENT

2F79

Secured Landfill Contractors, Inc.

6/12/79 COMPLETED 6/12/79 DATE STARTED

DEPTH	3	BLOWS ON SAMPLER					WELL	WATER TABLE & REMARKS		
	W	<b>9</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b>				N				
(feet)	\$	н			/24		$\setminus$	Extremely moist to wet, brownish red coarse silt loam (SANDY-SILT) with 10 to 15% subangular and subrounded gra- vel, nonplastic, massive soil struc-	Sand	18.0
								ture		
								Refusal at 18.0 feet. Shallow well #12-A notes: A 7.5 ft. X 2 in. PVC pipe slotted 2 ft. from bottom was placed in a 5.0 ft. hole. Six inches of sand was placed on the bottom of the hole. Sand was packed around sides of well to 1.0 ft. A bentonite cap was then placed on well. This left a 3.0 ft. aticket no No well screen surrounds	Soil f ft. ov lake s over o sedime loamy fusal Water surfa	fill/topsoil to 2.0 ver silty and clayey sediments to 14.5 ft. coarse silty lake ents to 17.0 ft. over glacial till to re- level 13.0 ft. below ce at completion.
	·							well slots. Deep well notes: A 20 X 4 in. PVC pipe, slotted 2 in. from bottom with a stainless steel		
								while screen covering slots, was placed in a 18.0 ft. hole. 6 in. of sand was placed at the bottom of the hole. Sand was then packed along sides of well up to 13.0 ft. Benton- ite pellets were used to seal pipe at the CLAYEY-SILT level, then loose bentonite was filled to the surface, this left a 2.5 ft. stick-up.		
dew	N			BER (	OF BI	LOW:	s to J.	DRIVE <u>2</u> "SPOON <u>6</u> "WITH <u>300</u> Pitt, Soil Scientist	_ 1b. WT. F Sheet _2	ALLING <u>30</u> " PER BLOW.









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WELL & HOLE NO. 13

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 DEPTH	DIE .	BLOWS ON SAMPLER					DESCRIPTION & CLASSIFICATION	WEI	.T. w	WATER TABLE & REMARKS WELL	
(feet)	NAS	"/"	11/12	12/	14/24				- <b>1</b>		
	1	7	5	5	7	5	Moist black and whitish gray indis- trial fill consisting of fly ash, slag and very dense gray material, friable but very firm in place			1.0 (1)	
 							3.0	_		Cch	
	 								te	Pack	
 5									di.	and and	
	2	5	5	6	6	6	Moist reddish brown, highly mottled		Bent	6.5 <u>-</u> 6.7 <u>-</u>	
				ļ		<u> </u>	cation cracks and silt lenses, occa-			<u>7.0</u> <u>Janu</u>	
 							sional stone fragments, very firm, plastic, sticky	ipe			
10								C p		10.0	
 10	3	5	4	5	6	5		4 inch P		1) Bentonite	
 							$$ celar transition to $\frac{13.0}{2}$		ack		
 15	4	2	2	4	6	4	Extremely moist to wet brownish red coarse silt loam (SANDY-SILT), medi- um consistance, nonplastic		Sand p		
							Continued on page #2				
 dew	N =	: NU	IMBE	R OF	F BL(	ows	TO DRIVE _2 SPOON _6 WITH _300	15. W	ſ. FALL	ING 30 PER BLOW	
	LOG	IGED	ΒY	S	teve	n.	. Pitt, Soil Scientist	SHEET		OF 2	

SURF. ELEV



Textural triangle showing the percentages of clay (less than 0.002 mm), silt (0.002-0.05 mm), and sand (0.05-2.0 mm) in the basic soil textural classes (adapted from Soil Survey Staft, 1951).

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WELL & HOLE #13

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WELL & HOLE NO. 13, continued

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2F79	PROJECT	Airco Alloys, Niagara Falls, New York	LOCATION	See survey		
	CLIENT	Secured Landfill Contractors, Inc.	DATE STARTED	6/12/79	COMPLETED	6/12/79

DEPTH	SAMPLE NO.	~	BLOWS ON SAMPLER	1 ×	DESCRIPTION & CLASSIFICATION	WELL Y	ATER TABLE & REMARKS
20	5	6	rab sam		Same as previous page 18.3 Extremely moist to wet brownish red coarse silt loam (SANDY-SILT) with 10 to 15% subangular and subrounded gravel, very firm, nonplastic 20.0	Sand Pack	18.0
					Refusal at 20.0 feet.		Water level 12.0 ft. below surface at completion.
					Shallow well #13-A notes: 10 ft. by 2 in. PVC pipe slotted 2 ft. on bottom was placed in a 7.0 ft. hole. Well sits on top of 6 in. of sand, with sand packed along sides to 10.0 ft., a bentonite seal was placed to surface, this left a 3.5 ft. stick- up. Deep well notes:	Nonso fill lake over dimen loamy fusal	il industrial waste to 3.0 ft. over clayey sediments to 13.0 ft. coarse silty lake se- ts to 18.3 ft. over glacial till to re-
		,			20 ft. X 4 in. PVC pipe slotted 2 ft. on bottom with stainless steel rapped around slots. Well sits on top of 2 ft. of sand with sand packed along sides to 10.0 ft. A bentonite seal was placed from 10.0 ft. to surface. There was a 2 ft. stick-up.		
dew	N =	NU GED	I I I I I I I I I I I I I I I I I I I	 _ows _oven	TO ORIVE _2 SPOON6 WITH300 J. Pitt, Soil Scientist	Ib. WT. FAL	LING <u>30</u> " PER BLOW. 2 OF <u>2</u>



WELL & HOLE #13, continued

Textural triangle showing the percentages of clay (less than 0.002 mm), silt (0.002-0.05 mm), and sand (0.05-2.0 mm) in the basic soil textural classes (adapted from Soil Survey Stafl, 1951).



SKW, Niagara Falls, New York

Secured Landfill Contractors, Inc.

SURF. ELEV.

DATE STARTED 9/19/80 COMPLETED 9/19/80

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PROJECT

DEPTH	APLE O.	BLOWS ON SAMPLER		BLOWS ON SAMPLER DESCRIPTION & CLASSIFICATION					WATED TABLE & DEMARYS							
ieet)	SAA	SAN	SAN	A S	SAN	SAA	SAN	0/6	$\frac{6}{12}$	12/	18/24	N				WATER TABLE & REMARKS
	1	1	2	4	18	6		Extremely moist dark brown wood	0.5	Fill to ) 0 foot						
	$\frac{1}{1}$							Extremely moist dark gray cindery	1.0	over silty lake sediment to 10.0						
	2	7	11	18	24	29		Moist highly mottled brownish gray		feet over coarse silty lake sediment						
	2 2							very firm	2.0	dense loamy glacial till to refusal.						
-	3	6	10	15	20	25	N,	`clear transition to	2.0							
	3				 			Moist distinctly mottled grayish brown silty clay loam (CLAYEY-SILT)								
	34	4	9	20	24	29	١,	with vertical gray desiccation cracks, very firm	4.0							
.  -	4 4							clear transition to	<b>I. Z</b>							
	4	6	11	13	15	24		clay loam (CLAYEY-SILT) with extreme. moist thin coarse silt lenses.	у							
	5 5							very firm	<u>1</u> 0 <u>.</u> 0							
_10	5	4	9	19	11	28	/ /	Extremely moist brown silt loam								
	6							SAND lenses, nonplastic								
-	6						•	/ -clear transition to $$	<u>14.0</u>							
	7	1	1	2	3	3	/	Wet brown coarse silt loam (SANDY-								
-	7					_	/	lenses, nonplastic, soil material								
F	/ 7						/	soft								
, - F	8	1	1	5	11	6	,	/clear transition to	<u>15.5</u>							
	8 8						/	Wet grayish brown gravelly loam (SANDY-SILT) with 15 to 25% mostly		Water table at 14.0 feet below surface						
,	8	16	100	/0			_	dolomitic gravels, very firm, massive soil structure		at completion.						
				Ĺ		[			16.5							

Secured Landfill Soil Investigation LOCATION See survey

N = NUMBER OF BLOWS TO DRIVE \_\_\_\_\_ " SPOON \_\_\_\_\_ " WITH \_\_\_\_\_\_ Ib. WT. FALLING \_\_\_\_\_ " PER BLOW.

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SHEET \_\_\_\_\_ OF \_\_\_\_\_

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Textural triangle showing the percentages of clay (less than 0.002 mm), silt (0.002-0.05 mm) and sand (0.05-2.0 mm) in the basic son textural classes (adapted from Soil Survey Staff, 1951).

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HOLE NO. \_\_\_\_\_17\_

SURF. ELEV.

2F79c PROJECT <u>Secured Landtill Soil Investigation</u> SKW, Niagara Falls, New York

CLIENT

Secured Landfill Contractors, Inc.

bh LOGGED BY Donald W. Owens/Soil Scientist

LOCATION See survey

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SHEET \_\_\_\_\_ OF \_\_\_\_

DATE STARTED \_\_\_\_\_\_\_ COMPLETED \_\_\_\_\_\_\_9/19/80\_\_\_\_\_

DEPTH			r	DESCRIPTION & CLASSIFICATION	WATER TABLE & REMARKS				
(feet)	SA S	06	6	12/18	18/24	N			
(2000)	1	11	16	17	16	33	Moist black cindery slag fill, very firm	1.5	
	1						Moist reddish brown silty clay loam		Non soil fill to
	1	ļ	<b> </b>	ļ	<u> </u>		(CLAYEY-SILT) fill with 2-5% gravel,		silty soil fill
<u> </u>	2	7	10	17	26	27	very firm	2.0	to 2.0 feet over
	2						Moist distinctly mottled brown silty		silty lake sedi- ment to 4.5 feet
	2						vertical gray desiccation cracks,		over coarse silty
	3	12	16	19	20	35	very firm	4.5	lake sediment to
5_	3	 	ļ	ļ	ļ			1 4.2 -	very fine sandy
(.	13						Moist brown coarse silt loam		loam lake sediment
ι,	4	7	10	12	17	22	(SANDY-SILF), thinly bedded silts,		loamy glacial till
	4						a = - or a des downward to $$	_8.0	to refusal.
-	4						/ Futurm lu moist bran coarse silt		
	4	<b> </b>	ļ	ļ			loam (SANDY-SILT), thinly bedded		
	5	6	7_	<u>7</u>	12	14	silts with very thin fine sand		
	5						lenses, nonplastic	10.0	
10	5						$\int$ clear transition to $$	<u><u>1</u>2<u>.</u>0_</u>	<b>-</b> .
	6	1	7	6	7	13	/Wet brown very fine sandy loam		
	6				ļ		/ (SANDY-SILT), nonplastic		
	6			<u> </u>			/	16.0	
	7	1	7	10	15	17	r = -creat transition to $ creat$		
	7					-14	Wet grayish brown gravelly loam		
	7						/ dolomitic gravel, firm, massive		
	7		10		10	0(	soil structure		·
	8	6	12	14	13	20			
15	8	N	h <del>r</del>	been	ver	7	1		
	8					·	• •		
(	G	4	7	12	15	19			
$\sum_{i \in I}$	9								continued on page 2
	N =	NU	MBEF	R OF	BLO	ws 1	O DRIVE ? SPOON ? WITH	Ib. WT. FAL	LING <u>30</u> " PER BLOW.



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Textural triangle showing the percentages of clay (less than 0.002 mm), silt (0.002-0.05 mm), and sand (0.05-2.0 mm) in the basic soil textural classes (adapted from Soil Survey Staff, 1951).

		Test Borings and Logs 797 Center Street • East Aurora, New Yor	k 14052 ● (716) 655-1717
	HOLE NO. <u>17 co</u>	ntinued	SURF. ELEV.
F79c	PROJECT Secured	Landfill Soil Investigation LOCATION	see survey
	CLIENT <u>Secured</u>	Landfill Contractors, Inc. DATE STARTED	9/19/80 COMPLETED 9/19/80
DEPTH	BLOWS ON SAMPLER WZ 0 6 12 18 24	DESCRIPTION & CLASSIFICATION	WATER TABLE & REMARKS
	_9 10 19 23 100/4" 10 10	Wet grayish brown gravelly loam (SANDY-SILT) with 15 to 25% mostly dolomitic gravel, firm, massive soil structure	19.3
20		Refusal at 19.3 feet	Water table at 10.7 feet below surface at completion
e Se f			

bh	LOGGED BY	Donald W.	Owens/Soil Scientis	t

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Textural triangle showing the percentages of clay (less than 0.002 mm), silt (0.002-0.05 mm), and sand (0.05-2.0 mm) in the basic soil textural classes (adapted from Soil Survey Staff, 1951).

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PROJECT Secured Landfill Soil Investigation

#### IENSIONS, INC.

ings and Logs er Street • East Aurora, New York 14052 • (716) 655-1717

SURF. ELEV.

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CLIENT

HOLE NO. <u>18</u>

SKW, Niagara Falls, New York Secured Landfill Contractors, Inc.

See survey LOCATION

DATE STARTED 9/20/80 COMPLETED 9/20/80

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	DEPTH	MPLE 0.		BLC	MPL	ON ER	r		DESCRIPTION & CLASSIFICATION		WATER TABLE & REMARKS
$\epsilon$	et)	SA	1	6	12/	14/24	N				
		1	3	6	15	25	21		Moist black cindery slag, loose	0.5	
		1	L						Moist reddish brown silty clay loam		Nonsoil fill to 0.5
		1							(CLAYEY-SILT) fill with 2 to 5%	15	soil fill to 1.5
			17	25	22	10	1.7		stone fragments, very firm	2.5	feet over nonsoil
-		2		25	22		47	<u> </u>	Moist gray cemented stag	2.5	soil fill to 5.0 feet
		2							Wet grayish yellow sand size slag,	3.5	over silty lake
		2							Moist roddish brown silty clay los		sediment to 7.0 feet
		3	3	6	12	17	18		(CLAYEY-SILT) fill with 2 to 5%		loam lake sediment
	5	2							gravels, very firm	5.0	to 17.5 feet over
	(	3							Extremely moist dark gray silty clay		to refusal.
	۱. ۱	4	7	17	26	27	43	$\backslash$	loam (CLAYEY-SILT) original topsoil,	5.7	
		4						$1^{1}$	Moint distinctly mottled brownish		
		4				ļ		$\Lambda$	gray silty clay loam (CLAYEY-SILT),		
		4	0	12	12	16	25		very firm	6.0	
		$\frac{2}{5}$	0	12	1.5	10	22		- clear transition to	_0.0_	
		5							Moist distinctly mottled reddish		
	10	5							brown silty clay loam (CLAYEY-SILT)		
		6	6	9	8	9	17		tion cracks, very firm	7 0	Water table at 6.5
		6					<b> </b>	1		7.0	feet below surface
		6									at completion.
			1	4	4	5	8	1			
	i	7									
		7					ļ				
		7						ł	Wet reddish brown very fine sandy		
	15	8	4	5	7_	10	12	-	loam (SILTY-SAND) bedded with thin		
		8						1	The sand tenses, nonplastic		
		8		ļ							
	7	9	9	10	20	23	30	4			
	$\langle \cdot \rangle$	9		<u> </u>						_1 <u>7</u> .5 _	continued on page ?
		<u> </u>	<u> </u>	<u> </u>	L	L	I		see hage rwu		withing on page 2
		N =	NU	MBE	r of	BLC	WS	to driv	/e " SPOON12 " WITH _140	Ib. WT. FAL	Ling " Per Blow.
Ъ	n	LOG	GED	BY		)ona	ld	W. Ow	ens/Soil Scientist S	HEET <u>1</u>	OF







Test Borings and Logs 797 Center Street • East Aurora, New York 14052 • (716) 655-1717

HOLE NO. 18 continued

SURF. ELEV.

2F79c	PROJECT	Secured Landfill soil investigation	LOCATION	See surv	7ev	
		SKW, Niagara Falls, New York				
	CLIENT	Secured Landfill Contractors	DATE STARTED	9/20/80	COMPLETED	9/20/80

	BLOWS ON SAMPLER				WATER TABLE & REMARKS			
<u>(eet)</u>	SAN	л Б	6	12/	18/24	N		
	9	26	100	//.11			Wet grayish brown gravelly sandy	
	10	20		<u> </u>			mostly dolomitic gravel, firm,	
20							massive soll structure	18.8
							Refusal at 18.8 feet.	
·								
(								
,								
<u></u>								
					<b></b>			
		<b> </b>	<b> </b>					
19-11-11-11-11-1-1-1-1-1-1-1-1-1-1-1-1-								
7		[						
<u> </u>								
	N ==	NU	MBE	R OF	BLO	WS	TO DRIVE " SPOON " WITH 140	Ib. WT. FALLING <u>30</u> " PER BLOW.
bh	LOG	GED	BY		Do	nal	d W. Owens/Soil Scientist	SHEET OF
							· * ·	and a second



Textural triangle showing the percentages of clay (less than 0.002 mm), silt (0.002-0.05 mm), and sand (0.05-2.0 mm) in the basic soil textural classes (adapted from Soil Survey Staff, 1951).



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Test Borings and Logs 797 Center Street • East Aurora, New York 14052 • (716) 655-1717

19 HOLE NO.

SURF. ELEV.

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PROJECT <u>Secured Landfill Soil Investigation</u> SKW, Niagara Falls, New York 2F79c

CLIENT

LOCATION

See survey

Secured Landfill Contractors, Inc.

DATE STARTED 9/20/80 COMPLETED 9/20/80

	APLE 0.		BLC S/	OWS AMPLI				DESCRIPTION & CLASSIFICATION		WATER TABLE & REMARKS
(feet)	SAN	0	6	12/	18	N				
	1	35	45	49	97	94		Moist mixed black and white cemented		
	1							1.3 foot depth reddish brown		Mostly nonsoil fill
	1							(CLAYEY-SILT) fill	2.0	to 2.0 feet over
								Moist brown silty clay loam (CLAYEY-		over silty lake
	$\frac{2}{2}$	6	8	11	15	19		SILT) fill with 2-5% gravel, very	20	sediment to 6.0 feet
	2								2.0	over coarse silty lake sediment to 8.0
	2							Moist black silty clay loam (CLAYEY-STLT) original topsoil, very		feet over silty lake
_	3	10	12	24	26	36		firm	4.0	sediment to 16.5 feet
5	3							Moist distinctly mottled brown		till to refusal.
	3						Ì	silty clay loam (CLAYEY-SILT) with		
(	2	~		01	07	20	N N	very firm		
	4	9	1/	21	21	38	$\mathbf{N}$	clear transition to	5.0_	·
	4						Ň	Moist reddish brown silty clay loam		
	4							silt lenses, very firm		
	5	8	16	26	32	42			6.0	
	5							Moist brown coarse silt loam (SANDY-		
10	5	·					``	SILT), bedded, nonplastic	0 0	
	6	10	11	18	20	29		clear transition to $$	9.5 −	1
	6							Extremely moist brown coarse silt	-	
	6							loam (SANDY-SILT), bedded and with t	hin	
	6		ļ					(CLAYEY-SILT), nonplastic		
	7	3	3	4	8	7		clear transition to	12.0 _	
	7			<b> </b>			Ŷ	Wet brown interbeds silty clay		
	7							(CLAYEY-SILT) and coarse silt loam		
	8	2	4	8	6	12		(SANDY-SILT), soft	16 5	
15	8	ļ	ļ	ļ				clear transition to		
	8	<b> </b>					· /	with 10 to 15% mostly dolomitic		
		-		100	(3.1)		/	gravel, soft, massive soil		
7	9	┣┻	┟┸┈	μου	/*	]		structure	17 1	
<u> </u>	9							Refusal at 17.1 feet.	1/.1	
										00
	N =	NU	MBEI	r of	BLO	WS T	to drivi	<u>2</u> " SPOON <u>12</u> " WITH <u>140</u>	Ib. WT. FA	LLING <u>30</u> " PER BLOW.
bh	LOG	GED	BY	_ <u>D</u>	ona	<u>1d </u>	J. Owe	ns/Soil Scientist S	HEET <u>1</u>	OF _1



Textural triangle showing the percentages of clay (less than 0.002 mm), silt (0.002-0.05 mm), and sand (0.05-2.0 mm) in the basic soil textural classes (adapted from Soil Survey Staff, 1951).

	MINI HOLE PROJE 4L781 CLIEN	TORI NO. ECT b T	NG MON 3R- Lanu SKW	ELL 88 itc dfi AL	CAR Dring w 11 sit	ell : e. W	) D Soil Roya	I N Invectoft C	<b>IE</b> stigat Campus	<b>N S</b> tions of s, 31 S.	IO and l Grov	Natura e St. • LOCA ngara DATE	, 1 East An ATION I ity STARTE	N ( urce urora,	Asse NY 1	ssment 4052 Su h_of_1 W_and 16/88	8 • (710 JRF. EL Eirst 18' COMI	6) 655- .EV S_of PLETED	Ifill f NE tre Cor 11/16	aci nch ner /88
		BLO SAN	VS ON				DESCRI	PTION	& CLAS	SIFICATI	ON			WE	LL	WATEF	TABLE	& REMA	RKS	
						Ext: clay mos sti: with Mois (SI) find cal Ext: tlee find to bedd 	remely y load tly f ff, wh st di LTY-C. e size gray 	y mo m (C ine i eak i e si stind LAY) e grad des grad dy no dish dy lo t, co fy wi cleat y mo ly so asion y fin with , ma grad dy so asion y fin with , ma stind (SIL uban al co ize i ttle	ist of LAYES size block ze ro ctly with avel iccat es do ist t brow oam ( ompace hen of r tra ist t SANDY ubang nal of ssive es do ist t SANDY ubang nal of ssive es do ist t ssive es do ist t ssive	dark Y-SIL suba ky so pots mott h 1 t with tion with tion with tion with tion (SILT ct, h distu ansit Y-SIL gular cobbl coa ight soi coa to we AND) r dol siste	brow T) w ngul il s led o 5% rac rd t brow T) w t brow T) w e, l brit brit t brow T) w e, l st t brow T) w e, l st t brow T) w e, s i on t brow T) w t brow T) w t brow T br	vn sil vith 1 Lar gr struct brown s most arly v cks to aintly v cks to aintly v what end to - to - to - to - to - to - to - to -	ty to 3 avel, ure 2.0 ly erti- 4.5 mot- ry hith ency nly 6.0 ra- 5 to gra- to sand, on- re 8.5 ravel, o 40% avel, o ense ive 9.7	2" PVC #10 slotted 2" Inside diameter screen PVC riser pipe	(1) (2) (2) Adv to Wat bel con soi	2.7 4.0 4.7 9.7 vanced 9.7 f cer le low gr npleti il sam	Posisil to clay meniove: and find siliove: tili (1) (2) 6 5 eet. evel of ple.	sible ty la 2.0 f yey l t to r wat depo e san t to r loa l to Ceme grou Bent seal /8 in at 9. surf could	disturke sed eet over ake sed 4.5 feed er sor sited with 6.0 fee my glac refusa nt ben t. onite p ch auge 5 feet ace at not	cbed imen ar li- et ted very som at cial l. toni- pell: ers
Company and a state of the second sec					-	Refi	sal a	at 9	.7 fe	eet.										
N I	= NUN GGED E	IBER J BY <u>1</u>	OF BL Dona Dale	OWS ld M.	S TO DRIV W. Owe Gramz	/E ens/Se :a/Geo	2 Dil So Dlogi:	"S cien st	POON tist	12	11	WITH	140	ib. W SHEET	T. FAI	_LING	30	)"P 1	PER BLOW	

MONITORING WELL HOLE NO. <u>5R-88</u> PROJECT <u>Monitoring</u> 4L78b <u>Landfill</u> CLIENT <u>SKW ALLOYS</u>	g well installation LOCATIONS and Mathematical Providence of Niagara S. INC. DATE ST	Aurora, NY I <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u> <u>()</u>	ssments 4052 • (716) 655-1717 SURF. ELEV witely 250 ft. S of S toe t LF, 50 ft. W of No. 17 16/88 COMPLETED <u>11/16/88</u>
BLOWS ON SAMPLER	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
$   \begin{array}{ccccccccccccccccccccccccccccccccccc$	Extremely moist black very gravel sandy loam (SILTY-SAND) fill with to 60% mostly angular to subangul gravel and slag, occasional cobbl very fine to coarse size sand, li silt, very dense in place, loose disturbed Extremely moist distinctly mottle reddish brown (SILTY-CLAY) fill, stiff Extremely moist to wet faintly mo ed black very gravelly sandy loam (SILTY-SAND) fill with 40 to 60% ly subangular gravel and slag, ve fine to coarse size sand, little loose and compact, loose when dis ed Extremely moist distinctly mottle grayish brown (SILTY-CLAY), stiff weak thinly laminated with very t coarse silt lenses, noticed black coloration along nearly vertical desiccation cracks grades downward to Extremely moist alternating reddi brown (SILTY-CLAY) very stiff, we thinly laminated with very thin c silt lenses and nearly vertical g desiccation cracks clear transition to 1 Extremely moist reddish brown sil loam (SANDY-SILT), compact weak to bedded, soil material tends to li when disturbed grades downward to 1 Not brown very fine candy leam (S	VC #10 slotted Two (2) inch inside diameter PVC riser pipe screen (1) Comment PVC riser pipe size sand (1) Cement-bentonite grout	Mixed sand and gra- vel fill with slag and little silt to 2.0 feet over claye soil fill to 2.5 feet over sand and gravel fill with slag and little sil to 6.0 feet over clayey lake sedimer to 11.0 feet over coarse silty lake sediment to 14.0 feet over water sor ed and deposited very fine size sand with some silt to 15.5 feet over loam glacial till to end 10.0 of boring. Water level at 16.3 feet below ground 12.0 surface at comple- tion of soil sampl- ing. 13.5 (1) Bentonite pelle seal.

						<b>EARTH</b> <b>DIMENSIONS</b> , 1 Soil Investigations and Natural Reso Roycroft Campus, 31 S. Grove St. • East A	<b>NC.</b> urce Assessments urora, NY 14052 • (716) 655-1717
. e	MC HC	NI' )LE I	TORI NO.	NG 5R-	WEL -88	L <u>conti</u> nued	SURF. ELEV.
	PR 4 CLI	oje L78 IENT	CT 3D	Mor Lar SKV	nito odf V Al	Dring well installation LOCATION ill site, Whitmer Rd. town of Niagara LLOYS, INC. DATE STARTS	Approximately 250 ft. S of S toe of first LF, 50 ft. W of No. 17 ED <u>11/16/88</u> COMPLETED <u>11/17/88</u>
	DULINUL	27.	BLO SAN	VS ON IPLER	I N	DESCRIPTION & CLASSIFICATION	WATER TABLE & REMARKS
	<u>s</u>					Wet brown gravelly loam (SILTY- SAND) with 15 to 25% mostly sugan- gular gravel, very fine to medium size sand, some silt, compact, massive soil structure	19.3
						Refusal at 19.3 feet.	Water level at 16.3 feet below ground surface at completion of soil sampl- ing.
****							
and and any transferration of the second sec							
5							
Redening and the second second second							
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N =	= N GE	UM D B	BER I BY_	OF BI Dona Dale	_0₩ 1d ≥ M	S TO DRIVE "SPOON12_" WITH140 W. Owens/Soil Scientist . Gramza/Geologist	Ib. WT. FALLING <u>30</u> " PER BLOW. SHEET <u>2</u> OF <u>2</u>

			Ć				EAR	TH	So Ro	DII nil Inv ycroft	M E vestige Camp	NS ations us, 31 S	and S. Gro	<b>DNS</b> Natur	<b>S</b> , ral Res • East	I sou Au	N ( urce	Z . Asse NY :	e <b>ssmen</b> 14052	<i>ts</i> • (71	6) 655	-1717	
		нC HC	NIT LE N	ORI 0.	NG 1	4N_	<b>با</b> د								·				S	URF. E	LEV.		
		PR	OJEC	T	Mor	<u>nito</u>	oring v ill si	well : te. Wi	inst. nitm	allat er Ré	tion 1. to		F Ni	L0 agara		18	3 fe	et s	south	of c	rigir	al MW	14N
		4 CU	[,78] ENT	D	SKV	I AI	LLOYS,	INC.					<u> </u>	DA	TE STAF	rtei ,	D.	11/	17/88	CON	IPLETED	11/1	7/88
				BLOY SAM	IS OF	N 1			DESC	RIPTION	N & CLA	SSIFICA	TION				WE	LL	WATE	R TABL	E & REM	ARKS	
						-23 -23 -23 -13 -13 -13 -19 -10 -10 -10 -10 -10 -10 -10 -10 -10 -10		Adva ing blac fill grav dens ed Mois brow very foot with and desi Clay ly 1 silt desi Extr gray SILT very Wet SILT sand liqu ded	inced to 4 with rel a se in sti- a den sti- a den sti- sti- sti- sti- sti- sti- sti- sti-	i 6 5 l.0 f sry g ih 50 ind s ipla intl id re iff, ry th ision grad intl AYEY ision grad intl AYEY ison grad intl ises ion grad intl ises ion brow stiff in co clea ly mo ick ( clea S	/8" eet, rave lag lce, y mo ddis beco weak in c al n crac les do y mo -SIL and crac les do y mo -SIL ist ist has arse brow ittl has sist ittl has sist crac crac crac les do y mo -SIL trac brow ittl has sist crac crac crac crac crac crac crac cra	auger auge lly 1 70% m with loose ttled h bro ming ourse early ks ownwa ttled T), s h ver nearl ks ownwa ttled T), s h ver nearl tty c inly o lic alter turbe nal t Y-CL ansit ext s	s where de look and the look an	ithou bris y san ly sul bles, en dia terna (SILT d belo lamind to - belo f, we hin co artica to - lt loo ded, a y when ing g (CLA ing g (CLA ing s to - belo to - com (Silt to - ing s to - belo to - to	t sam wet d (SAN bangui very sturb- ilty ow 6.0 ated nses l gray 8 ated nses l gray 10 ated nses l gray 10 ated n dis- 10 ated n dis- 10 ated d s- 10 ated dis- 10 ated dis- 10 ated dis- 10 ated dis- 		Two (2) inch PVC Two (2) Inch inside diameter PVC riser pipe #10 slotted screen	#2 size sand [] Cement bentonite grout	12.3 14.1 15.3	Sand with feet sedi over lake feet sedi over lake litt feet cial bori (1) WR-S tion rods WH-S tion	and slag over ment coar sed: cover and de sed: cover and de size cle size cle si cle size cle size cle size cle size cle	grave g to 4 c clay to 10 cse si iment c clay to 14 cse si iment and to c vate eposit e sand ilt to e onite er per hamme on she	l fil .0 rey la .0 fee lty to 13 rey lak .0 fee lty with 0 fee lty with 0 fee lty with 0 fee lty of ee lty with 0 fee lty of ee lty of ee lty of ee lty of ee lty of ee lty with 0 fee lty ed ver left of ee ced ver left pellet etra- pt of etra- pt of etra- e
Concernation of the second sec	= 0G(	NU SED	MBI BY	ER C I	F BI Xona Xal	LOW ald e M	S TO DRI W. Ow I. Gran	IVE æns/S uza/Ge	2 oil oloc	Scien Jist	SPOON ntis	<u>12</u> t	) 	" WITH	140_	 SI	Ib. W HEET	T. FA	LLING 1 (	<u>30</u> DF <u></u>	2	PER BLO	<b>W</b> .

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HO MD	NITO LE NO	RIN	G W 4N	ELL con	<u>tinu</u> e	đ	2									SL	JRF. EI	LEV		
entered profil	JJECT	Mo	nit	ori	ng we	<u>ll in</u> Whi	stall	atio	on town	of N	liaga	LOCAT ra	ION _	18 fee	et :	south	of	origi	nal M	<u>W</u> :
	1,78d Ent	L. Sł	W F	LLO	YS. I	NC.						DATE	STARTE	D <u>1</u>	1/1	7/88_	СОМ	PLETED	<u>11/</u>	17/
	B 3/0/	LOWS		N		;	DESCRIP	TION 8	CLASS	SIFICATIO	)N			WEL	L	WATEF		E & REM	ARKS	
	12	4		27	```	Wet loar	reddi 1 (SII	ish LTY-	brown SAND	) ver ) wit	y fir h lit	ne sar tle s	ndy silt, when	(1) (2)		20.3				
-			17		ì	dist	urbed	1, t	hinly	y bed	ded		19.0			22.0				
		+	$\left  \right $		$\setminus$	Wet (SI	brown LTY-SA	grac n gr AND)	es do avel wit	ownwa ly sa n 15	ndy to 3	२ Loam २१ mos	stly	(	1)	Two ( slott	2) i ed s	nch H screer	PVC #2	10
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EA	RTH DIMENSIONS, INC.		
	Soil Investigations and Monitoring Well Installa	<b>stions</b>	
MONITORING WELL HOLENO 58 Replacement	1091  Jamison Road = Elma, N1 14039 = (71)	EUV	
PROJECT Well replaceme			
4L78c Landfill Site,	Witmer Road, Town of Niagara		an a
CLIENT SKW ALLOYS	DATE STARTED	<u>/90</u> co	MPLETED 5/10/90
DEPTH FEET Z U E 112 16 N	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Moist gray very gravelly sandy loam (SILTY-SAND) fill with 60 to 70% crushed gravel and slag with very fine to very coarse sand size, little silt compact in place, loose when dis- turbed 0.5 Moist distinctly mottled mixed brown and light reddish brown gravelly silt loam (CLAYEY-SILT) fill with 15 to 25% gravel and slag, trace to little very fine size sand, very stiff 4.0 Wet brown very gravelly sandy loam (SILTY-SAND) fill with 60 to 70% mostly subangular gravel, very fine to coarse size sand, little silt, very dense in place, loose when disturb- ed clear transition to <u>6.0</u> Extremely moist faintly mottled mixed grayish brown gravelly silt loam (SANDY-SILT) fill with 15 to 25% gravel, little very fine to medium size sand and brown silt loam (CLAYEY- SILT) fill with trace very fine size sand <u>8.0</u> Extremely moist distinctly mottled brown silty clay loam (CLAYEY-SILT), firm, weakly thinly laminated with 'very thin coarse silt lenses <u>10.0</u> L grades downward to <u>10.0</u> Moist faintly mottled brown silt loam (SILT) terding toward (CLAYEY-SILT), stiff, weakly thinly laminated i 12.0 Wet reddish brown very fine sandy loam (SILTY-SAND) with little to some silt, loose becoming compact below 14.0 feet soil material readily liquifies when distry thin by badied with	Processor     Processor     Processor       #2 Size Sand     0     0	Sand and gravel fill to 0.5 feet over silty soil fill with little gravel, trace to little sand to 4.0 feet over sand and gravel fill with little silt to 6.0 feet over mixed coarse silty and silty soil fill to 8.0 feet over clayey lake sediment to 10.0 feet over coarse silty to silty lake (bediment to 12.0 feet over water sorted and deposited sand with little to some silt to 16.5 feet over loamy glacial till to refusal. 10.0 10.7 12.0 (1) Bentmite pellet seal (2) 550 fine size sand Water level at 10.2 feet below ground sur- face at completion. 17.0 8.1 Screen #10 slotted.
201	\ disturbed, thinly bedded, noticed thin \ (CLAYEY-SILT) LENSES between 12.0 to	1	Continued on sheet 1A.
N = NUMBER OF BLOWS TO DRIV	\ <u>14.0 foot depth</u> <u>16.5</u> <u>2</u> "SPOON <u>12</u> "WITH <u>140</u> ID	. WT. FALLING	30 PER BLOW
eal LOGGED BY Dale M. Gr	amza/Geologist	SHEET	OF <u>1A</u>

	Soil Investigations and	d Monitoring Well Insta Fime NV 14059	allations (716) 655-17	17	
TORING WELL	iontinued	· Linia, IVI 14099 •		17	
~ Well replacement		See S	urvev		
C Landfill Site W	litmer Road Trave of Ni				
Sky allove	THET ROAD, TOWN OF INT	ayara			
		DATE STARTED5/	10790	COMPLETED _	5/10/90
$\begin{array}{c c} \textbf{H} & \textbf{BLOWS ON} \\ \hline \textbf{L} & \textbf{O} \\ \hline \textbf{SAMPLER} \\ \hline \textbf{VZ} & \textbf{L} & \textbf{E} & 12 \\ \hline \textbf{M} & \textbf{L} \\ \hline \textbf{S} & \textbf{S} \\ \hline $	DESCRIPTION & CLASS	IFICATION	WELL	WATER T	BLE & REMARKS
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	See previous si	œt.	inside diameter PVC pipe	7.0	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		16.5	tted PVC 2" PVC creen • 0	10.0 10.7 12.0 (1) (2)	Bentonite Pellet Seal 550 fine size
10 19 19 15 10 10 10 10 10 10 10 10 10 10	Moist reddish brown (SILTY-SAND) with 13 subangular gravel, w size sand, little to very dense with brin massive soil structu	gravelly loam 5 to 30% mostly very fine to fine 5 some silt, ttle consistence, 18.1	12 Size S	<u>17.0</u> 18.1	sand
	Refusal at 18 1 feet	-		:	

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