



USGS Site Vicinity Plan WCS Consolidated Interim Storage Facility WCS Andrews, Texas

DATE: 08/10/2015

GEOS Project No. 31-151247 FIGURE:

2

Boring Location Plan WCS Consolidated Interim Storage Facility WCS Andrews, Texas

08/10/2015

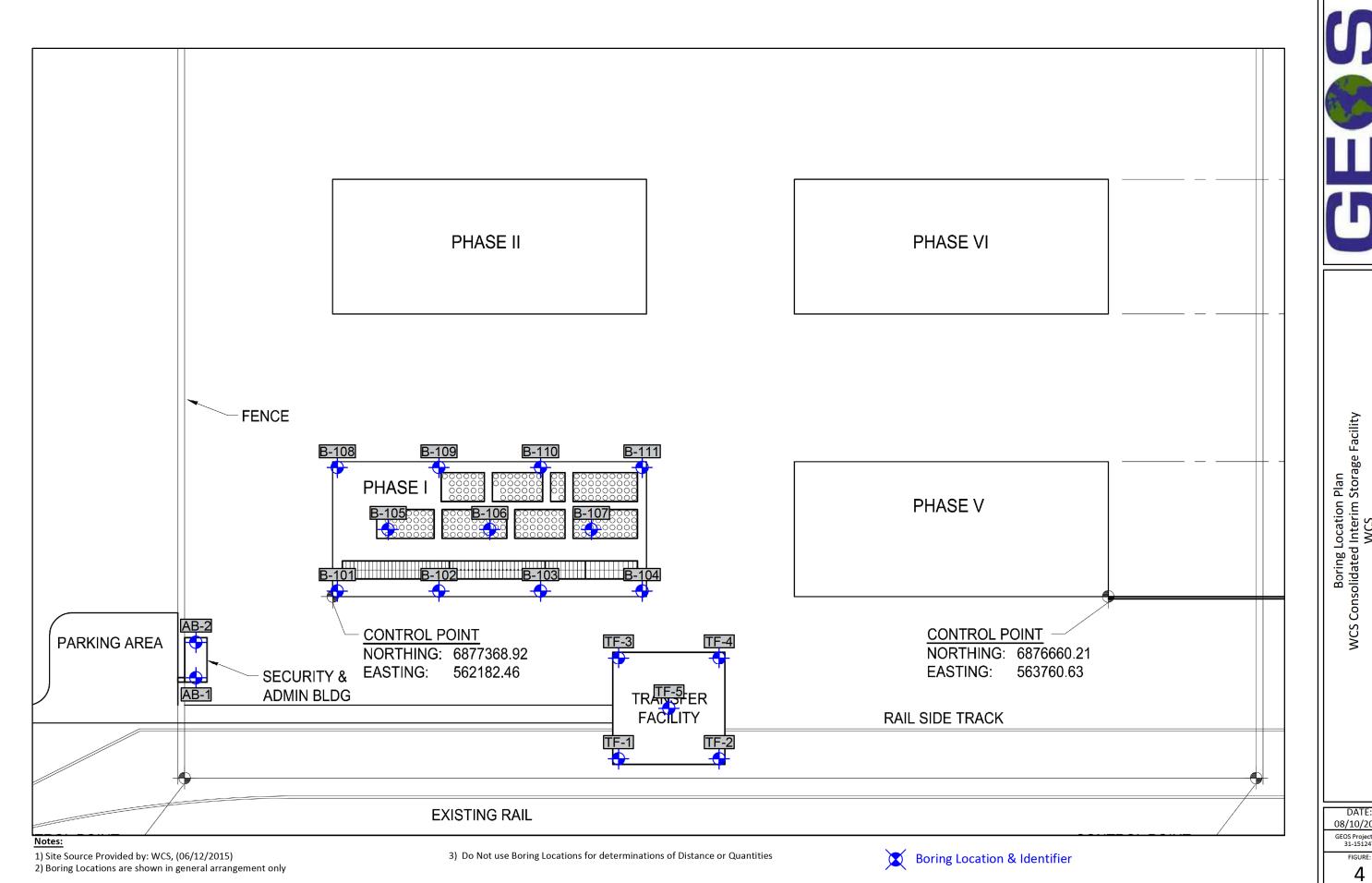
GEOS Project No. 31-151247

FIGURE:

3) Do Not use Boring Locations for determinations of Distance or Quantities

Boring Location & Identifier

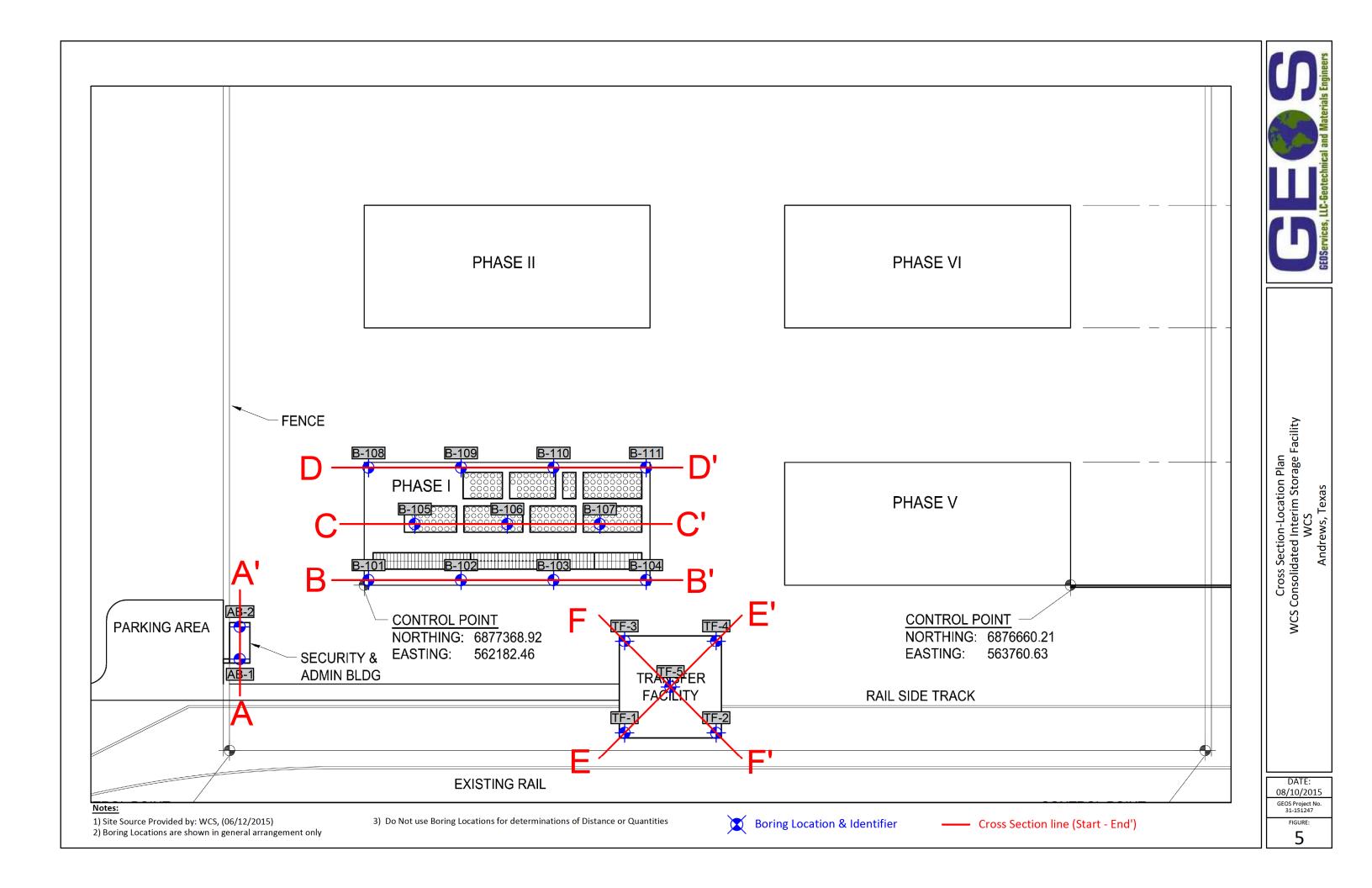
1) Site Source Provided by: WCS, (06/12/2015)

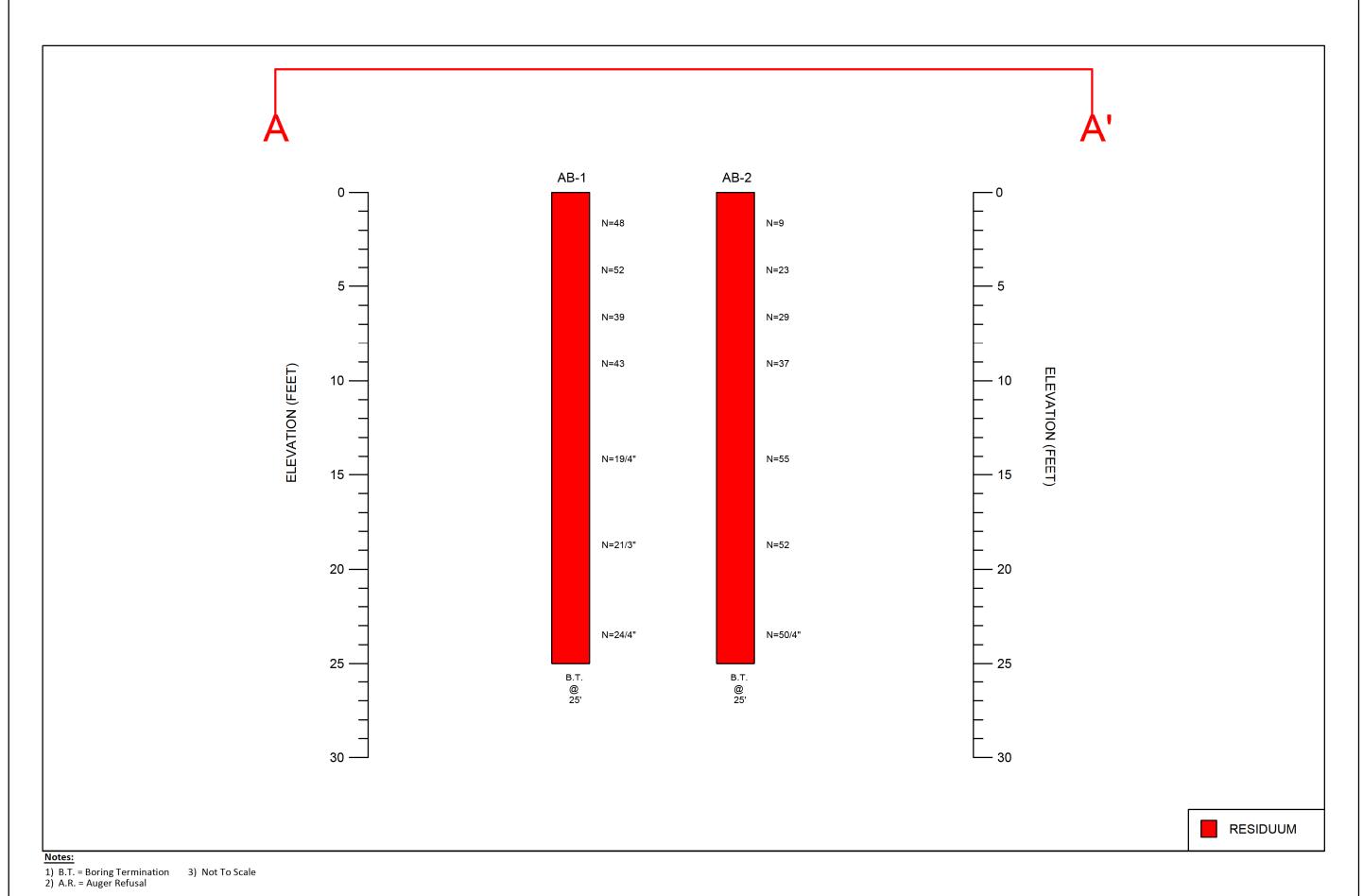


Boring Location Plan WCS Consolidated Interim Storage Facility WCS Andrews, Texas

08/10/2015

GEOS Project No. 31-151247



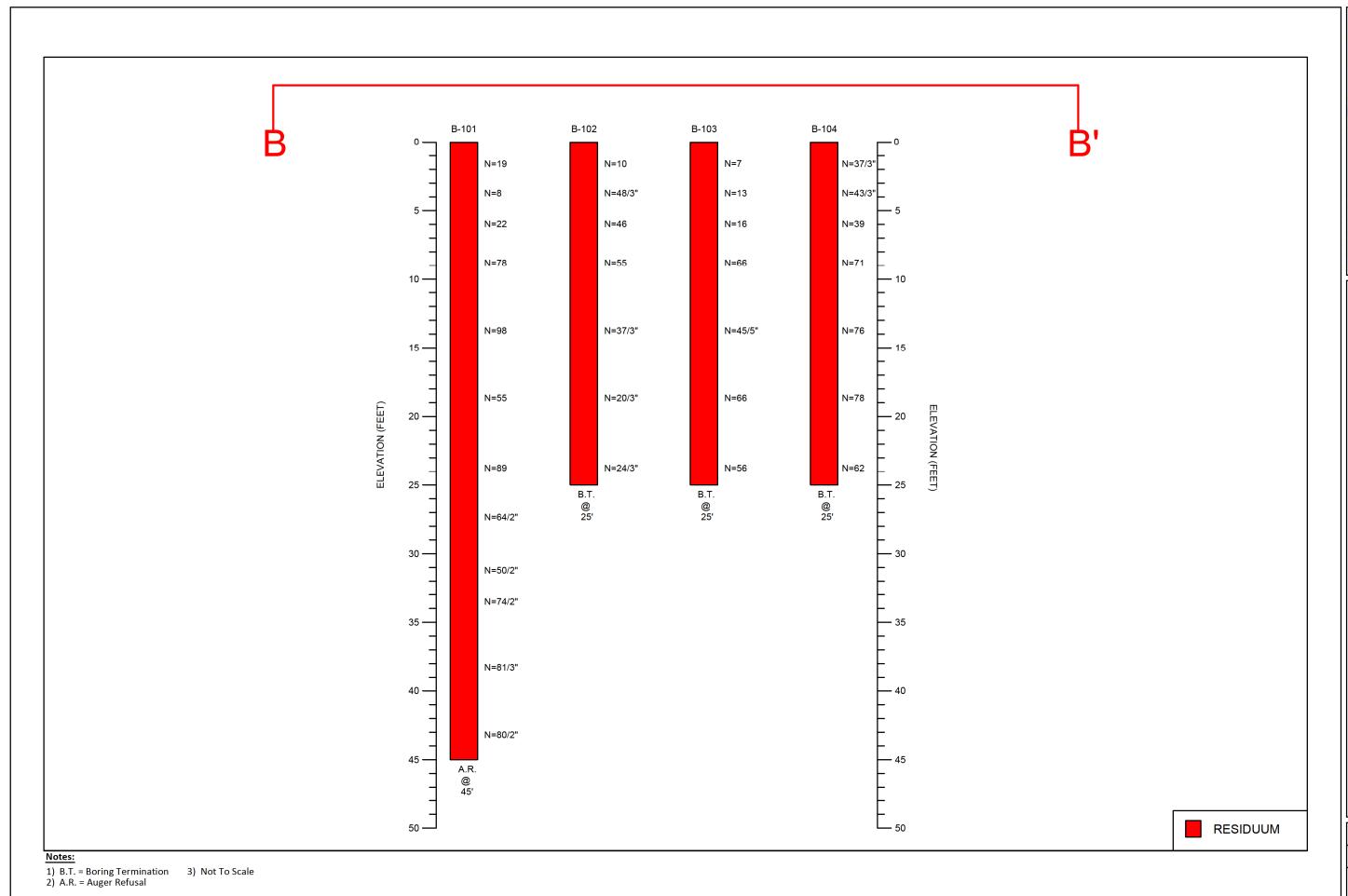


Boring Cross-Section
WCS Consolidated Interim Storage Facility
WCS
Andrews, Texas

DATE: 08/10/2015

GEOS Project No. 31-151247 FIGURE:

6

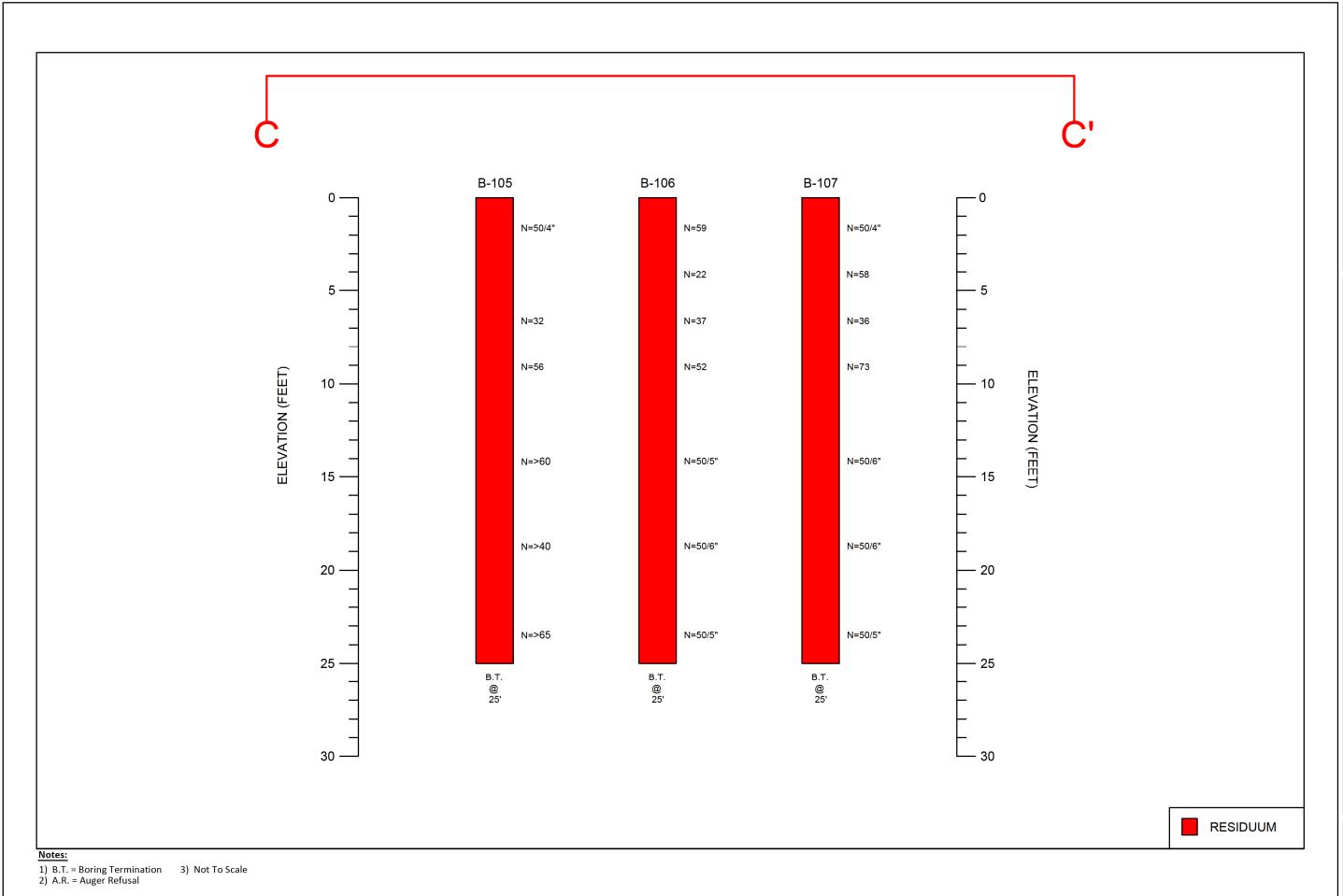


Boring Cross-Section WCS Consolidated Interim Storage Facility WCS Andrews, Texas

DATE: 08/10/2015

GEOS Project No. 31-151247 FIGURE:

7

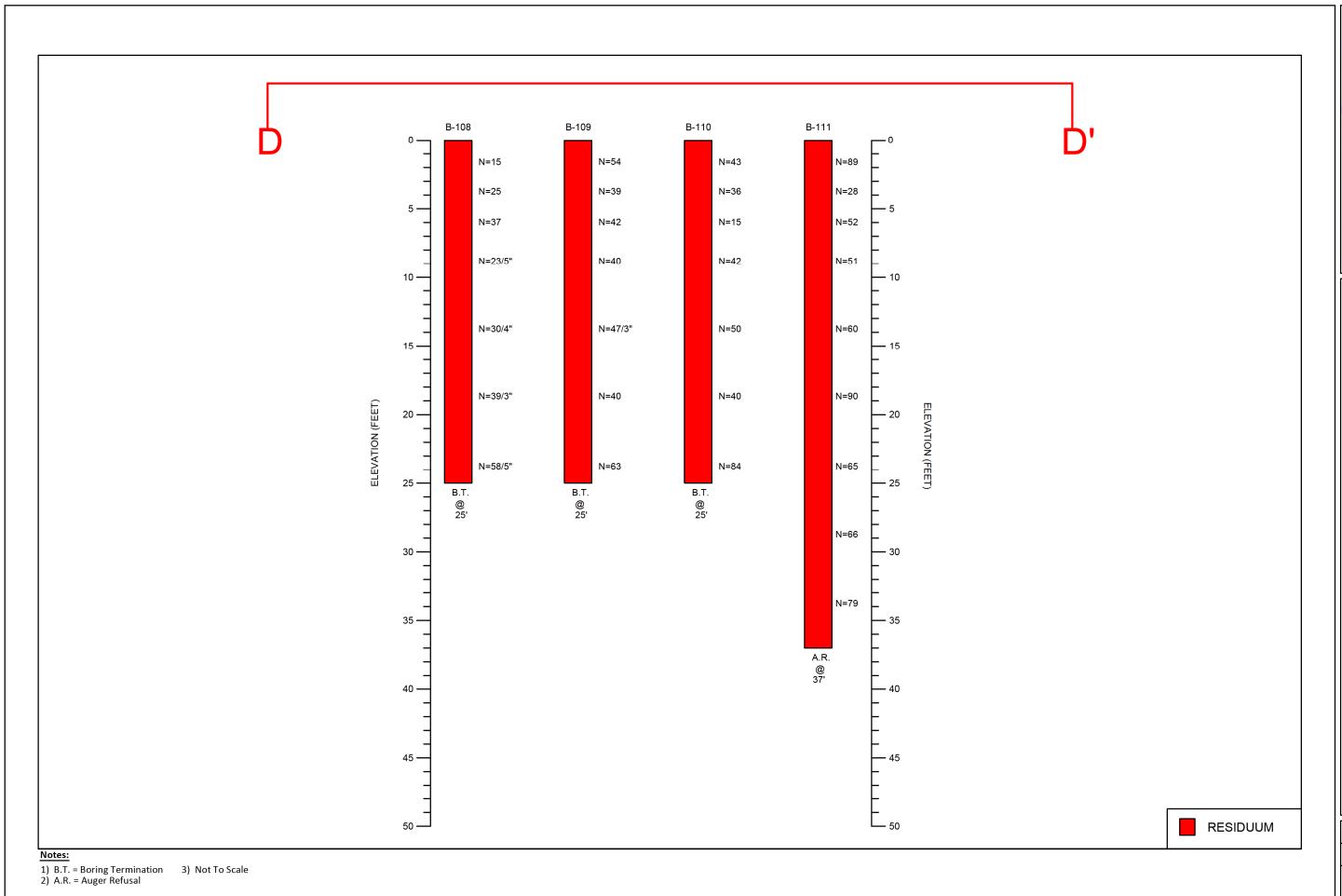


Boring Cross-Section
WCS Consolidated Interim Storage Facility
WCS
Andrews, Texas

DATE: 08/10/2015

GEOS Project No. 31-151247

FIGURE:

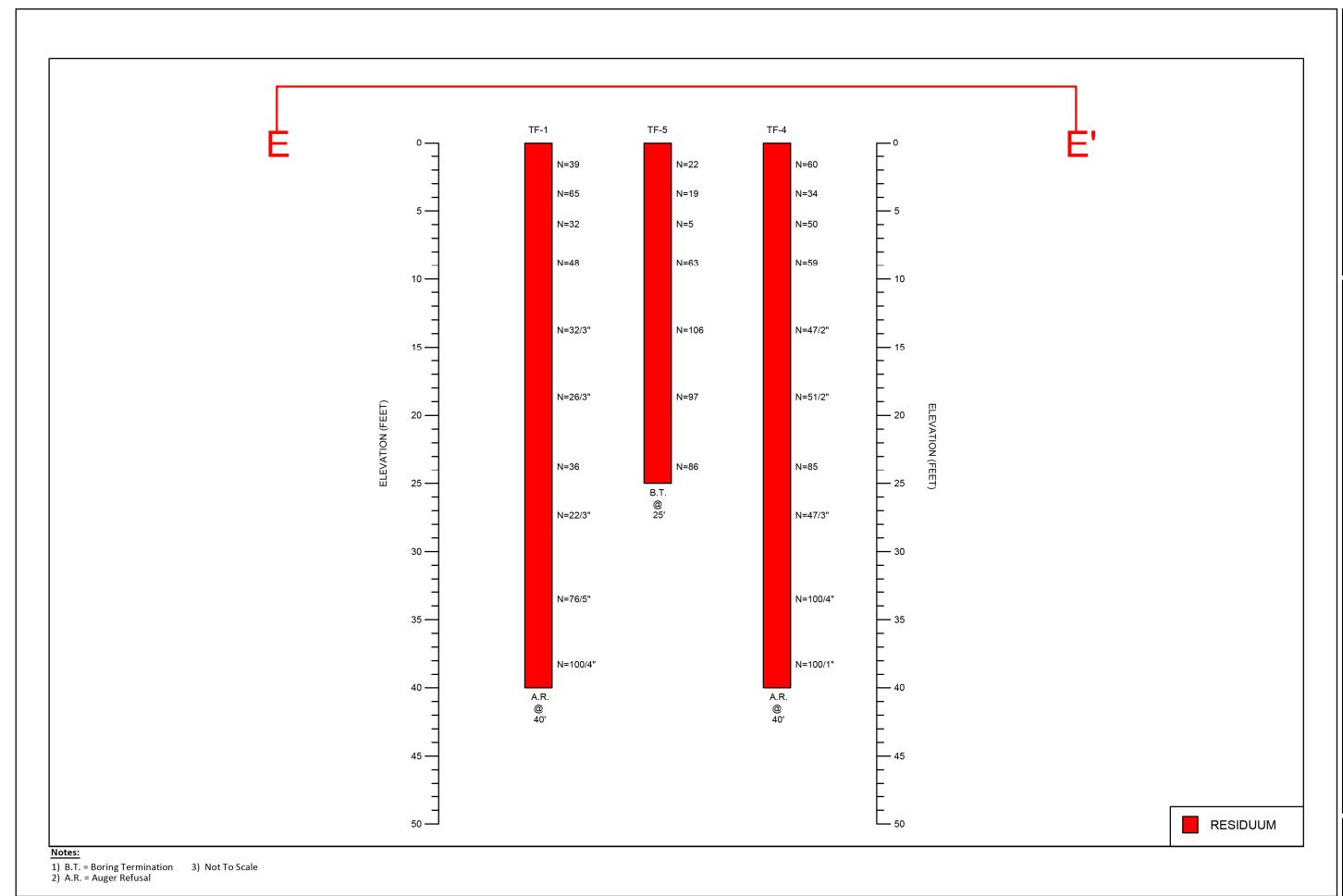


Boring Cross-Section WCS Consolidated Interim Storage Facility WCS Andrews, Texas

DATE: 08/10/2015

GEOS Project No. 31-151247 FIGURE:

9

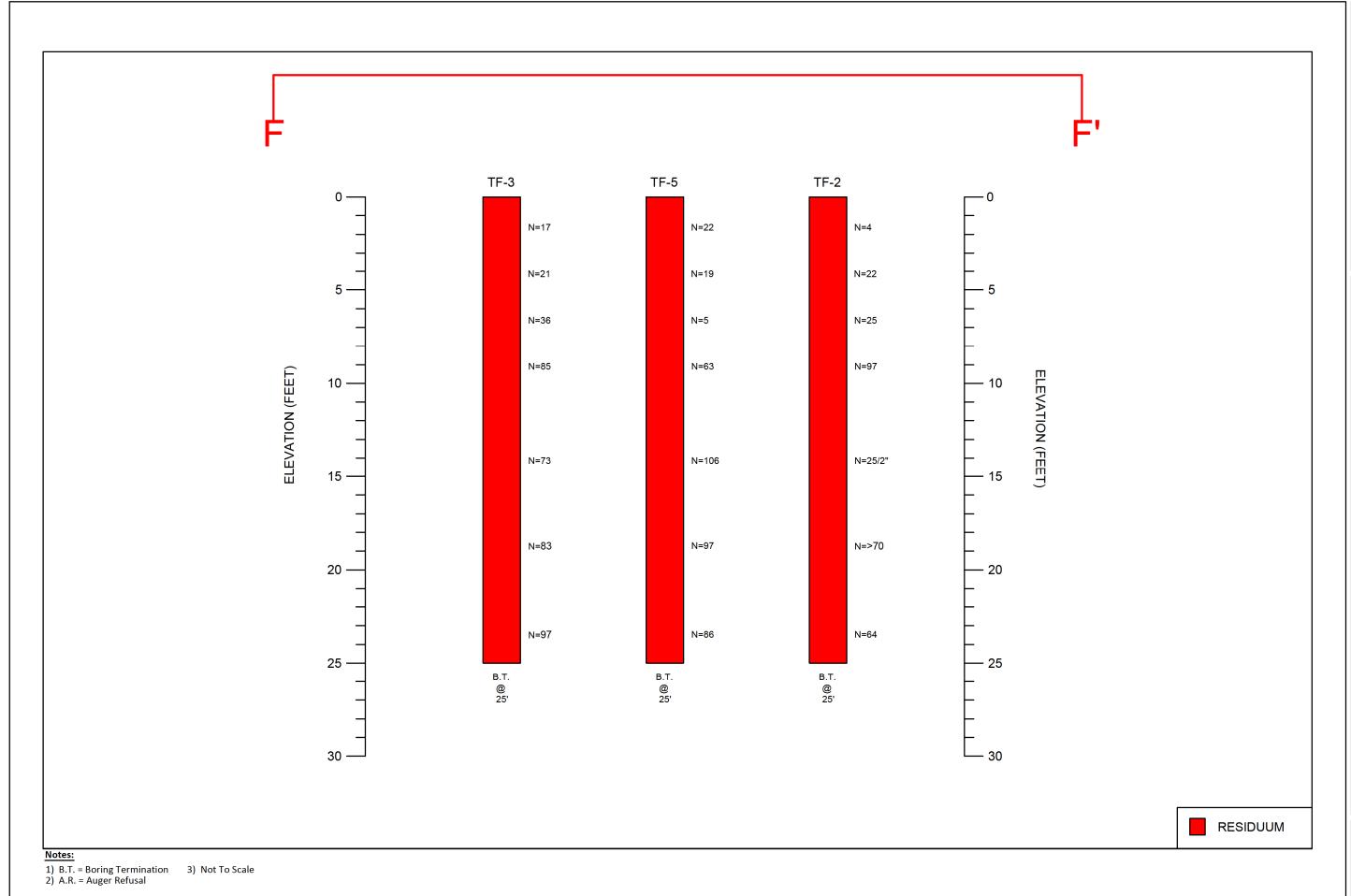


Boring Cross-Section
WCS Consolidated Interim Storage Facility
WCS
Andrews, Texas

DATE: 08/10/2015

GEOS Project No. 31-151247 FIGURE:

10



Boring Cross-Section
WCS Consolidated Interim Storage Facility
WCS
Andrews, Texas

DATE: 08/10/2015

GEOS Project No. 31-151247

FIGURE:

#### FINE AND COARSE GRAINED SOIL PROPERTIES

PARTICLE SIZE

COARSE GRAINED SOILS (SANDS & GRAVELS)

FINE GRAINED SOILS (SILTS & CLAYS)

BOULDERS: COBBLES: GRAVEL: COARSE SAND: MEDIUM SAND: FINE SAND: SILTS & CLAYS: GREATER THAN 300 mm 75 mm to 300 mm 4.74 mm to 75 mm 2 mm to 4.74 mm 0.425 mm to 2 mm 0.075 mm to 0.425 mm LESS THAN 0.075 mm 
 N-VALUE
 RELATIVE DENSITY

 0 - 4
 VERY LOOSE

 5 - 10
 LOOSE

 11 - 30
 MEDIUM DENSE

 31 - 50
 DENSE

 OVER 50
 VERY DENSE

Qu, PSF N-VALUE CONSISTENCY 0-2 VERY SOFT 0 - 500 500 - 1000 1000 - 2000 SOFT FIRM 3 - 4 5-8 9 - 15 STIFF 2000 - 4000 16 - 30 VERY STIFF 4000 - 8000 OVER 31 8000 +

#### STANDARD PENETRATION TEST (ASTM D1586)

THE STANDARD PENETRATION TEST AS DEFINED BY ASTM D1586 IS A METHOD TO OBTAIN A DISTURBED SOIL SAMPLE FOR EXAMINATION AND TESTING AND TO OBTAIN RELATIVE DENSITY AND CONSISTENCY INFORMATON. THE 1.4 INCH I.D./2.0 INCH 0.D. SAMPLER IS DRIVEN 3-SIX INCH INCREMENTS WITH A 140 LB. HAMMER FALLING 3.0 INCHES. THE BLOW COUNTS REQUIRED TO DRIVE THE SAMPLER THE FINAL 2 INCREMENTS ARE ADDED TOGETHER AND DESIGNATED THE N-VALUE. AT TIMES, THE SAMPLER CAN NOT BE DRIVEN THE FULL 18 INCHES. THE FOLLOWING REPRESENTS OUR INTERPRETATION OF THE STANDARD PENETRATION TEST WITH VARIATIONS.

#### **BLOWS/FOOT (N-VALUE)**

#### **DESCRIPTION**

25	25 BLOWS DROVE SAMPLER 12" AFTER INITIAL 6" SEATING
75/10"	75 BLOWS DROVE SAMPLER 10" AFTER INITIAL 6" SEATING
50/PR	PENETRATION REFUSAL OF SAMPLER AFTER INITIAL 6" SEATING

#### SAMPLING SYMBOLS

ST: UNDISTURBED SAMPLE
SS: SPLIT SPOON SAMPLE
CORE: ROCK CORE SAMPLE
AU: AUGER OR BAG SAMPLE

#### SOIL PROPERTY SYMBOLS

 N:
 STANDARD PENETRATION, BPF

 M:
 MOISTURE CONTENT %

 LL:
 LIQUID LIMIT %

 PI:
 PLASTICITY INDEX %

 OD:
 POCKET PENETROMETER VALUE. T

Qp: POCKET PENETROMETER VALUE, TSF
Qu: UNCONFINED COMPRESSIVE STRENGTH, TSF
DUW: DRY UNIT WEIGHT. PCF

#### **ROCK PROPERTIES**

SOFT:

#### **ROCK HARDNESS**

ROCK QUALITY DESIGNATION (RQD)

 PERCENT
 QUALITY

 90 TO 100
 EXCELLENT

 75 TO 90
 GOOD

 50 TO 75
 FAIR

 25 TO 50
 POOR

 0 TO 25
 VERY POOR

VERY SOFT: ROCK DISINTEGRATES OR EASILY COMPRESSES TO TOUCH: CAN BE HARD TO VERY HARD SOIL.

ROCK IS COHERANT BUT BREAKS EASILY TO THUMB PRESSURE

AT SHARP EDGES AND CRUMBLES WITH FIRM HAND PRESSURE.

MODERATELY HARD: SMALL PIECES CAN BE BROKEN OFF ALONG SHARP EDGES BY CONSIDERABLE HARD THUMB PRESSURE: CAN BE BROKEN BY LIGHT HAMMER BLOWS.

HARD: ROCK CAN NOT BE BROKEN BY THUMB PRESSURE, BUT CAN BE BROKEN BY MODERATE HAMMER BLOWS.

DE BROKERS I MODEL VITE I WINNER DEG VOL

VERY HARD: ROCK CAN BE BROKEN BY HEAVY HAMMER BLOWS.





REMARKS:

### Consolidated Interim Storage Facility Andrews, Texas

L	OG OF BORING	B-101
	SHEET 1 OF	3
RILLING CO	Apex Geosc	ience Inc.
DRILLER		
	•	

									DRILLER	
BORING NO. / LOCATION					B-101			LOGGED BY	Sammy Joe Allison	
DATE	July 21, 20	15	SURFACE ELEV. FT.					WATER LE	EVEL DATA (IF APPLICABLE)	
REFUSAL:	Yes	DEPTH	45.0	FT.	ELEV.		FT.		COMPLETION:	DEPTH Dry FT.
SAMPLED	45.0 FT.		13.7	М	_					ELEVFT.
TOP OF ROCK		DEPTH	45.0	FT.	ELEV.		FT.			
BEGAN CORING		DEPTH		FT.	ELEV.		FT.		AFTER 24 HRS.	DEPTH N/A FT.
FOOTAGE CORED	(LF)			FT.						ELEVFT.
BOTTOM OF HOLE	DEPTH	·	45.0	FT.	ELEV.		FT.			
BORING ADVANCE	ED BY:				POWER AUGERING _	Х		WASHBORING		

1	STRATUM	SAMPLE	E DEPTH	SAMPLE		FIELD		LABOR	ATORY		
	DEPTH	FROM	то	OR	SAMPLE	RESULTS		RES	SULTS		STRATUM DESCRIPTION
FT	. ELEV.	FT.	FT.	RUN NO.	TYPE	N-Value	Qp	LL	PI	% <b>М</b>	
2.	- - - 52.5	1.0	2.5	1	SS	3-12-7 N=19				3.6	- - - -
	- -	3.0	4.5	2	SS	5-5-3 N=8				3.9	Silty SAND (SM) with caliche - brown; fine grained; medium dense; dry; (RESIDUUM)
5.0	5.0 	5.0	6.5	3	SS	4-10-12 N=22				6.5	- - -
7.5 10.	57.5 	8.0	9.5	4	SS	17-30-48 N=78				7.8	- - - - -
12. 15.	12.5 12.5 15.0 15.0	13.0	14.5	5	SS	30-59-39 N=98				6.7	Silty SAND (SM) with caliche - orangish brown; fine grained; very dense; dry; (RESIDUUM)
20.	.517.5   .020.0	18.0	19.5	6	SS	20-24-31 N=55				5.7	- - - -



BORING NO. / LOCATION

### Consolidated Interim Storage Facility Andrews, Texas

GEOServices Project No.: 31-151247

B-101

L	OG OF BORING	B-101
	SHEET 2 OF	3
DRILLING CO	Apex Geosc	ience Inc.
DRILLER		
LOGGED BY	Sammy Jo	e Allison

DATE	July 21, 201	15	SURF	ACE ELEV.		FT.				WATER LEVEL DATA (IF APPLICABLE)
REFUSAL:	Yes	DEPTH 45.0				FT.				COMPLETION: DEPTH Dry FT.
SAMPLED	45.0 FT.	13.7	М							ELEVFT.
TOP OF ROCK		DEPTH 45.0	FT.	ELEV.		FT.				
BEGAN CORING		DEPTH	FT.	ELEV.		FT.				AFTER 24 HRS. DEPTH N/A FT.
FOOTAGE CORED (L	_F)		FT.							ELEVFT.
BOTTOM OF HOLE [	DEPTH	45.0	FT.	ELEV.		FT.				
BORING ADVANCED	BY:		POWER /	AUGERING	Х	_	١	WASH	BORIN	G
STRATUM	SAMP	LE DEPTH	SAMPLE		FIELD		LABOR	ATORY		
DEPTH	FROM	то	OR	SAMPLE	RESULTS		RES	SULTS		STRATUM DESCRIPTION
FT. ELEV.	FT.	FT.	RUN NO.	TYPE	N-Value	Qp	LL	PI	%М	
_										CONTINUED
_										<del>_</del>
_										_
_										<del>_</del>
22.5 <b>–</b> -22.5										-
_										<del>-</del>
-	23.0	24.5	7	ss	23-34-55				5.7	-
_					N=89					_
<b>–</b>										<del>-</del>
25.0 — -25.0										
_										<u> </u>
_										_
_										_
27.5 <b>-</b> -27.5										_
_										
_	28.0	28.7	8	SS	42-64/2" N=64/2"					_
_					11-0-1/2					<del>_</del>
-										-
30.0 — -30.0										<ul><li>Silty SAND (SM) with caliche - orangish brown;</li></ul>
-										<ul> <li>fine grained; very dense; dry; (RESIDUUM)</li> </ul>
	31.0	31.2	9	ss	N=50/2"				5.7	
<u>-</u>										<u>-</u>
32.5 <b>–</b> -32.5										
-02.0 										
_	33.0	33.2	10	SS	N=74/2"				7.7	_
										_
_										-
35.0 — -35.0										<del>_</del>
_										-
_										<del>-</del>
-										-
- 07.5										_
37.5 <b>–</b> -37.5										<u> </u>
_	38.0	38.3	11	SS	N=81/3"					
_										<u> </u>
_										_
40.0 — -40.0		1								
REMARKS:										



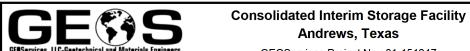
L	OG OF BORING	B-101
	SHEET 3 OF	3
RILLING CO	Apex Geosc	ience Inc.
DRILLER		
	•	

										DRILLER
BORING NO. / LOCAT	ΓΙΟΝ			B-101						LOGGED BY Sammy Joe Allison
DATE	July 21, 201	15	SURF	ACE ELEV.		FT.				WATER LEVEL DATA (IF APPLICABLE)
REFUSAL:	Yes	DEPTH 45.0								COMPLETION: DEPTH Dry FT.
SAMPLED	45.0 FT.	13.7								ELEVFT.
TOP OF ROCK		DEPTH 45.0		ELEV.		FT.				
BEGAN CORING		DEPTH	FT.	ELEV.		FT.				AFTER 24 HRS. DEPTH N/A FT.
FOOTAGE CORED (L										ELEVFT.
BOTTOM OF HOLE [	DEPTH	45.0	FT.	ELEV.		FT.				
BORING ADVANCED	BY:		POWER	AUGERING	X	•	١	WASH	BORIN	G
STRATUM	SAMP	LE DEPTH	SAMPLE		FIELD		LABOR	ATORY		
DEPTH	FROM	то	OR	SAMPLE	RESULTS		RES	SULTS		STRATUM DESCRIPTION
FT. ELEV.	FT.	FT.	RUN NO.	TYPE	N-Value	Qp	LL	PI	%M	
-										CONTINUED -
_										<del>-</del>
-										_
										Cilta CAND (OM) with a diabat a grant with horse
42.5 <b>–</b> -42.5										<ul> <li>Silty SAND (SM) with caliche - orangish brown;</li> <li>fine grained; very dense; dry; (RESIDUUM)</li> </ul>
_	43.0	43.2	12	SS	N=80/2"					- Integraniea, very deniee, ary, (NZOIDOSIN)
_										_
-										_
45.0 — -45.0										AUGER REFUSAL AT 45 FEET
-										_
_										
_										<u></u>
47.5 <b>–</b> -47.5										_
_										_
_										_
_										<del>-</del>
<del>-</del>										_
50.0 — -50.0										
<u>-</u>										<u></u>
_										_
_										<del>_</del>
52.5 <b>–</b> -52.5										_
_										<del>-</del>
-										-
<del>_</del>										<del>-</del>
55.0 <del>-</del> -55.0										<u></u>
-										_
_										<del> -</del>
-										_
_										<del>-</del>
57.5 <b>–</b> -57.5										-
_										
										_
_										-
60.0 — -60.0										
REMARKS:										



LO	G OF BORING	B-102
	SHEET 1 OF	2
DRILLING CO	Apex Geosc	ience Inc.
DRILLER	•	

BORING NO. / LOCA	TION			B-102						LOGGED BY Sammy Joe Allison
DATE	July 16, 2015	5	SURF	ACE ELEV.		FT.				WATER LEVEL DATA (IF APPLICABLE)
REFUSAL:		DEPTH								COMPLETION: DEPTH Dry FT.
SAMPLED	25.0 FT.	7.6	M			_				ELEV. FT.
TOP OF ROCK		DEPTH		ELEV.		FT.				
BEGAN CORING	[	DEPTH	FT.	ELEV.		FT.				AFTER 24 HRS. DEPTH N/A FT.
FOOTAGE CORED (L			-			-				ELEV. FT.
BOTTOM OF HOLE I	DEPTH	25.0	FT.	ELEV.		FT.				
BORING ADVANCED	BY:		POWER /	AUGERING	Х	_	,	WASH	BORIN	G
STRATUM	SAMPL	E DEPTH	SAMPLE		FIELD		LABOR	ATORY		
DEPTH	FROM	то	OR	SAMPLE	RESULTS		RE	SULTS		STRATUM DESCRIPTION
FT. ELEV.	FT.	FT.	RUN NO.	TYPE	N-Value	Qp	LL	PI	%M	
- - - 2.52.5	1.0	2.5	1	SS	7-6-4 N=10				3.4	- Silty SAND (SM) with caliche - brown; fine - grained; loose to very dense; dry; (RESIDUUM)
	3.0	3.8	2	SS	10-48/3" N=48/3"				2.8	_
5.0 — -5.0 — — —	5.0	6.5	3	SS	16-26-20 N=46				2.9	
7.57.5 	8.0	9.5	4	SS	25-28-27 N=55				4.0	Silty SAND (SM) with caliche - light brown; fine grained; dense to very dense; dry; (RESIDUUM
12.512.5 15.0 	13.0	13.8	5	SS	34-37/3" N=37/3"				6.0	- Silty SAND (SM) with caliche - orangish brown fine grained; very dense; dry; (RESIDUUM)
17.517.5 - - - 20.020.0	18.0	18.8	6	ss	43-20/3" N=20/3"				5.8	<u>-</u> - <u>-</u>
REMARKS:										



LOG OF BORING B-102 SHEET 2 OF 2

al and Materials En	igineers	GEO	OServices F	Project No.: :	31-15	1247			DRILLING COApex Geoscience Inc DRILLER
ION			B-102						LOGGED BY Sammy Joe Allison
July 16, 2015		SURF	ACE ELEV.		FT.				WATER LEVEL DATA (IF APPLICABLE)
No E	DEPTH	FT.	-		FT.				COMPLETION: DEPTH Dry FT.
25.0 FT.	7.6	M	-		_				ELEVFT.
		FT.			•				
	DEPTH	-	ELEV.		FT.				AFTER 24 HRS. DEPTH N/A FT.
	25.0	-	EL E\/						ELEVFT.
	25.0	-	-		F1.				
BY:		POWER	AUGERING	X	•	١	WASH	BORIN	G
		SAMPLE		FIELD					
			1 h					0/ N/I	STRATUM DESCRIPTION
FI.	FI.	RUN NO.	TYPE	N-value	цp	LL	PI	%IVI	CONTINUED
									<del>-</del>
									<del>-</del> -
									<u> </u>
									<ul> <li>Silty SAND (SM) with caliche - orangish brown;</li> </ul>
22.0	22.0	7		26-24/3"					fine grained; very dense; dry; (RESIDUUM)
23.0	23.0	<b>'</b>	33	N=24/3"				2.9	<u>-</u>
									_
									BORING TERMINATED AT 25 FEET
									_
									_
									-
									_
									- <del>-</del>
									_
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									-
									<del>_</del> -
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									_
		<u> </u>			<u> </u>	<u> </u>			
	ON  July 16, 2015  No  25.0 FT.  C  C  E  E  E  E  T  E  E  T  SY:	No	ON    July 16, 2015   SURF.     No	ON B-102  July 16, 2015 SURFACE ELEV.  NO DEPTH FT. ELEV.  25.0 FT. 7.6 M  DEPTH FT. ELEV.  DEPTH FT. ELEV.  FT. ELEV.  FT. ELEV.  SY: POWER AUGERING  SAMPLE DEPTH OR SAMPLE  FT. RUN NO. TYPE	ON B-102  July 16, 2015 SURFACE ELEV.  No DEPTH FT. ELEV.  25.0 FT. 7.6 M  DEPTH FT. ELEV.  DEPTH FT. ELEV.  FT. ELEV.  3Y: POWER AUGERING X  SAMPLE DEPTH SAMPLE FROM TO OR SAMPLE RESULTS  FT. RUN NO. TYPE N-Value	ON B-102  July 16, 2015 SURFACE ELEV. FT.  NO DEPTH FT. ELEV. FT.  25.0 FT. 7.6 M  DEPTH FT. ELEV. FT.  DEPTH FT. ELEV. FT.  FT.  SY: POWER AUGERING X  SAMPLE DEPTH OR SAMPLE RESULTS  FT. RUN NO. TYPE N-Value Qp	ON B-102  July 16, 2015 SURFACE ELEV. FT.  No DEPTH FT. ELEV. FT.  DEPTH FT. ELEV. FT.  DEPTH FT. ELEV. FT.  ON DEPTH FT. ELEV. FT.  DEPTH FT. ELEV. FT.  SY: POWER AUGERING X  SAMPLE DEPTH SAMPLE RESULTS RESULTS  FT. RUN NO. TYPE N-Value Qp LL  23.0 23.8 7 SS 26-24/3"	ON B-102  July 16, 2015 SURFACE ELEV. FT.  No DEPTH FT. ELEV. FT.  DEPTH FT. ELEV. FT.  DEPTH FT. ELEV. FT.  ON DEPTH FT. ELEV. FT.  DEPTH FT. ELEV. FT.  DEPTH FT. ELEV. FT.  DEPTH ST.  EPTH 25.0 FT.  POWER AUGERING X WASHING X WASHING SAMPLE DEPTH OR SAMPLE RESULTS RESULTS  FT. FT. RUN NO. TYPE N-Value Qp LL PI	DEPTH

<b>GE®S</b>
GEOServices LLC-Geotechnical and Materials Engineers

L	OG OF BORING	B-103
	SHEET 1 OF	2
ING CO	Apex Geosci	ience Inc.

GEOServices, LLC-Geotechnic	cal and Materials Er	igineers	GE	OServices <sup>1</sup>	Project No.: 3	31-15	D	RILLING CO					
DODING NO /LOCAT	CON			P 103		—				┙ ╷	DRILLER		
BORING NO. / LOCAT			0,105	B-103		—		•			OGGED BY		
DATE REFUSAL: SAMPLED	25.0 FT.	7.6	FT.	ELEV.		FT.				СОМ	WATER LE	EVEL DATA (IF APPLICABLE)  DEPTH Dry FT.  ELEV. FT.	
TOP OF ROCK BEGAN CORING FOOTAGE CORED (LI BOTTOM OF HOLE D	F)	DEPTH	FT.	ELEV.		FT.				AFTE	ER 24 HRS.	DEPTH N/A FT. ELEV. FT.	
BORING ADVANCED			-		×	-	1	WASHE	BORII	NG			
STRATUM	SAMPLI	E DEPTH	SAMPLE	$\Box$	FIELD		LABOR	ATORY		Τ			
DEPTH	FROM	то	OR	SAMPLE	RESULTS		RES	SULTS		_	s	TRATUM DESCRIPTION	
FT. ELEV.	FT.	FT.	RUN NO.	TYPE	N-Value	Qp	LL	PI	%M	<u> </u>			
- - - 2.52.5	1.0	2.5	1	SS	2-3-4 N=7		26	NP	4.3	- - -		<b>(SM)</b> with caliche - brown; fine ; loose; dry; <b>(RESIDUUM)</b>	
	3.0	4.5	2	SS	8-5-8 N=13				4.8	_ _ _			
	5.0	6.5	3	SS	7-7-9 N=16				5.8	- - -			
7.57.5 	8.0	9.5	4	ss	16-27-39 N=66				7.1			<b>M)</b> with caliche - light brown; fine dium dense to very dense; dry; (RESIDUUM)	
12.512.5 12.5 15.0 15.0	13.0	14.4	5	SS	23-35-45/5" N=45/5"				6.3	- - - - - - -			
17.517.5   20.020.0	18.0	19.5	6	SS	17-26-40 N=66				6.1	- - Sil - -		SM) with trace caliche - orangish ne grained; very dense; dry; (RESIDUUM)	
REMARKS:													



L	OG OF BORING	B-103
	SHEET 2 OF	2
RILLING CO	Apex Geosc	ience Inc.
DRILLER		
LOCCED BY	Sammy lo	Allicon

				OL.	OCCI VIOCO	1 10,000 110	01 10	1271			DRILLER
BORING NO. /	LOCAT	TION			B-103						LOGGED BY Sammy Joe Allison
DATE		July 17, 2015		SURF			FT		•		WATER LEVEL DATA (IF APPLICABLE)
REFUSAL:			DEPTH	- FT.			-				COMPLETION: DEPTH Dry FT.
SAMPLED	•	25.0 FT.	7.6	-			-				ELEV. FT.
TOP OF ROCK	(		DEPTH	FT.	ELEV.		FT.				
BEGAN CORIN	IG	[	DEPTH	FT.			-				AFTER 24 HRS. DEPTH N/A FT.
FOOTAGE CO	RED (L	F)		FT.							ELEVFT.
воттом ог н	OLE D	DEPTH	25.0	FT.	ELEV.		FT.				
BORING ADVA	NCED	BY:		POWER	AUGERING	Х	_	,	WASH	BORI	ING
STRATUM	1	SAMPLI	E DEPTH	SAMPLE		FIELD		LABOR	ABORATORY		
DEPTH		FROM	то	OR	SAMPLE	RESULTS		RE	SULTS		STRATUM DESCRIPTION
FT. E	LEV.	FT.	FT.	RUN NO.	TYPE	N-Value	Qp	LL	PI	%N	CONTINUED
-											- CONTINUED
-											
I _											L
22.5 <b>–</b> -:	22.5										Silty SAND (SM) with trace caliche - orangish
_											brown; fine grained; very dense; dry; (RESIDUUM)
-		23.0	24.5	7	ss	17-23-33				4.5	- I <b>-</b>
<u> </u>		25.0	24.5	,	33	N=56				4.5	´ <del> -</del>
-	05.0										-
25.0 — -	25.0										BORING TERMINATED AT 25 FEET
I _											
_											-
<b>—</b>											<b></b>
27.5 <b>–</b> -:	27.5										-
I —											<b>—</b>
_											Ĺ
I –											_
30.0 <b>—</b> -	30.0										<b>L</b>
-											-
_											<b></b>
-											-
32.5 <b>–</b> -	32.5										
J2.5 — -	32.3										
- 1											_
l –											<u> </u>
-											-
35.0 <b>—</b> -:	35.0										<b>F</b>
_											-
I -											
<b>.</b>											<b>L</b>
37.5 <b>–</b> -	37.5										-
<b>I</b> –											<b></b>
-											-
_											
40.0 — -	<sub>40.0</sub>										<u> </u>
REMA											
T CIVIA	11113.										



L	OG OF BORING	B-104
	SHEET 1 OF	2
DRILLING CO	Apex Geosc	ience Inc.
DRILLER		

											DRILLER				
BORING NO. / LOCA	ATION					B-104			LOGGED BY	Y Sammy Joe Allison					
DATE	DATE July 16, 2015				_	SURFACE ELEV.			FT.		WATER LE	WATER LEVEL DATA (IF APPLICABLE			
REFUSAL:	No	_	DEPTH		FT.	ELEV.			FT.		COMPLETION:	DEPTH	Dry	FT.	
SAMPLED	25.0	FT.		7.6	М							ELEV.		FT.	
TOP OF ROCK		_	DEPTH		FT.	ELEV.			FT.					_	
BEGAN CORING			DEPTH		FT.	ELEV.			FT.		AFTER 24 HRS.	DEPTH	N/A	FT.	
FOOTAGE CORED	(LF)				FT.							ELEV.		FT.	
BOTTOM OF HOLE	DEPTH			25.0	FT.	ELEV.			FT.					_	
BORING ADVANCE	D BY:					POWER AUGERING		Χ		WASHBORING					

STRATUM	SAMPLE	DEPTH	SAMPLE		FIELD		LABORATORY			
DEPTH	FROM	то	or	SAMPLE	RESULTS		RE	SULTS		STRATUM DESCRIPTION
FT. ELEV.	FT.	FT.	RUN NO.	TYPE	N-Value	Qр	LL	PI	%М	
- - - 2.52.5	1.0	2.3	1	SS	2-32-37/3" N=37/3"				3.1	Silty SAND (SM) with caliche - brown; fine grained; very dense; dry; (RESIDUUM)
- -	3.0	3.8	2	SS	64-43/3" N=43/3"				2.5	_
5.05.0	5.0	6.5	3	SS	13-18-21 N=39				4.1	Silty SAND (SM) with caliche - light brown; fine
7.57.5 	8.0	9.5	4	SS	17-26-45 N=71				6.9	grained; very dense; dry; (RESIDUUM)
12.512.5 15.0 15.0	13.0	14.5	5	SS	18-33-43 N=76				6.0	- Silty SAND (SM) with trace caliche - orangish brown; fine grained; very dense; dry; (RESIDUUM)
17.517.5 	18.0	19.5	6	SS	23-28-50 N=78				4.6	- - - -
REMARKS:										



L	OG OF BORING	B-104
	SHEET 2 OF	2
RILLING CO	Apex Geosc	ience Inc.
DRILLER		
_		

			OL.	000111000	1 10,000 140	01 10				DRILLER
BORING NO. / LOCAT	ΓΙΟΝ			B-104						LOGGED BY Sammy Joe Allison
DATE	July 16, 2015		SURF	ACE ELEV.		FT.				WATER LEVEL DATA (IF APPLICABLE)
REFUSAL:		EPTH	-			•				COMPLETION: DEPTH Dry FT.
SAMPLED	25.0 FT.	7.6	M	•		•				ELEVFT.
TOP OF ROCK		EPTH	FT.	ELEV.		FT.				
BEGAN CORING		EPTH	FT.	ELEV.		FT.				AFTER 24 HRS. DEPTH N/A FT.
FOOTAGE CORED (L	.F)		FT.							ELEVFT.
BOTTOM OF HOLE	DEPTH	25.0	FT.	ELEV.		FT.				
BORING ADVANCED	BY:		POWER /	AUGERING	X		٧	VASHI	BORIN	G
STRATUM	SAMPLE	DEPTH	SAMPLE		FIELD		LABOR	ATORY		
DEPTH	FROM	то	OR	SAMPLE	RESULTS	1	RES	ULTS		STRATUM DESCRIPTION
FT.       ELEV.	FT.	FT.	RUN NO.	TYPE	N-Value	Qp	LL	PI	%M	CONTINUED
22.522.525.025.027.527.530.0	23.0	24.5	7	SS	15-23-39 N=62				3.1	Silty SAND (SM) with trace caliche - orangish brown; fine grained; very dense; dry; (RESIDUUM)  BORING TERMINATED AT 25 FEET  BORING TERMINATED AT 25 FEET
32.532.535.035.037.537.540.0										- - - - - - - - - - - - -
REMARKS:										



L	OG OF BORING	B-105
	SHEET 1 OF	2
RILLING CO	Apex Geosc	ience Inc.
DRILLER		

											DRILLER				
BORING NO. / LOCA	ATION				B-105						LOGGED BY	S	ammy .	Joe Allison	
DATE	July 15, 20	15		SURFA	ACE ELEV.		FT.				WATER L	EVEL DATA	A (IF AF	PLICABLE	≣)
REFUSAL:	No	DEPTH		FT.	ELEV.		FT.				COMPLETION:	DEPTH	Dry	FT.	
SAMPLED	25.0 FT.		7.6	M								ELEV.		FT.	
TOP OF ROCK		DEPTH		FT.	ELEV.		FT.							_	
BEGAN CORING		DEPTH		FT.	ELEV.		FT.				AFTER 24 HRS.	DEPTH	N/A	FT.	
FOOTAGE CORED	(LF)			FT.								ELEV.		FT.	
BOTTOM OF HOLE	DEPTH		25.0	FT.	ELEV.		FT.					·			
BORING ADVANCE	D BY:			POWER A	UGERING	X		٧	VASHE	BORING	3	-			
STRATUM	SAMF	LE DEPTH	1	SAMPLE		FIELD		LABOR	ATORY						
DEPTH	FROM	T	0	OR	SAMPLE	RESULTS		RES	ULTS		s	TRATUM DE	SCRIPTI	ON	
FT				DUN NO	TVDE	NI Malara	0		- Di	0/ 8/4					

SIRA			DEPTH	SAMPLE		FIELD		LABORATORY			
DEF		FROM	то	OR	SAMPLE	RESULTS		RES	SULTS		STRATUM DESCRIPTION
FT.	ELEV.	FT.	FT.	RUN NO.	TYPE	N-Value	Qp	LL	PI	%M	
	- - -2.5	1.0	1.8	1	SS	6-50/4" N=50/4"				3.3	Silty SAND (SM) with caliche - brown; fine grained; very dense; dry; (RESIDUUM)  -
5.0 —	- 5.0 - - 7.5	5.0	6.5	2	SS	10-14-18 N=32				5.3	- - - - - - -
- 10.0 —	- - 10.0	8.0	9.5	3	SS	14-27-29 N=56				8.1	
12.5 -	- -12.5 -	13.0	13.5	4	SS	60+ N=>60				4.8	Silty SAND (SM) with caliche - orangish brown; fine grained; dense to very dense; dry; (RESIDUUM)
17.5 — ———————————————————————————————————	-	18.0	19.0	5	SS	30-40+ N=>40				4.1	- - - - -
	EMARKS:										



L	OG OF BORING	B-105						
	SHEET 2 OF							
DRILLING CO	Apex Geosc	ience Inc.						
DRILLER								
LOGGED BY	Sammy lo	o Allicon						

			02.	300111000	1 10,000 110	01 10				DRILLER
BORING NO. / LOCAT	RING NO. / LOCATION B-105								LOGGED BY Sammy Joe Allison	
DATE	July 16, 2015		SURF	ACE ELEV.		WATER LEVEL DATA (IF APPLICABLE)				
REFUSAL:			FT.			-				COMPLETION: DEPTH Dry FT.
SAMPLED	25.0 FT.	7.6	М	'						ELEV. FT.
TOP OF ROCK		EPTH	FT.							
BEGAN CORING		EPTH	FT.	ELEV.		FT.				AFTER 24 HRS. DEPTH N/A FT.
FOOTAGE CORED (L			FT.							ELEVFT.
BOTTOM OF HOLE	DEPTH	25.0	FT.	ELEV.		FT.				
BORING ADVANCED	BY:		POWER /	AUGERING	Х	•	١	WASH	BORING	<u> </u>
STRATUM	SAMPLE	DEPTH	SAMPLE		FIELD		LABOR	ATORY		
DEPTH	FROM	TO	OR	SAMPLE	RESULTS			ULTS	0/11	STRATUM DESCRIPTION
FT.       ELEV.	FT.	FT.	RUN NO.	TYPE	N-Value	Qp	LL	PI	% <b>M</b>	CONTINUED
-										- CONTINUED
_										_
-										_
22.5 <b>–</b> -22.5										Silty SAND (SM) with caliche - orangish brown;
_										fine grained; dense to very dense; dry;
_	23.0	23.5	6	SS	65+ N=>65					(RESIDUUM)
_					11-203					_
-										-
25.0 — -25.0										BORING TERMINATED AT 25 FEET
_										
_										_
_										_
27.5 <b>–</b> -27.5										_
_										<del>-</del>
-										-
_										_
30.0 — -30.0										<u> </u>
_										_
<del></del>									-	_
-										-
_										_
32.5 <b>–</b> -32.5										<u>-</u>
_										_
_										_
-										_
35.0 — -35.0										_
-										-
_										_
										<u>-</u>
37.5 <b>–</b> -37.5										
_										_
-										-
<b>—</b>										_
-										-
40.0 — -40.0										
REMARKS:										



Lo	OG OF BORING	B-106
	SHEET 1 OF	2
DRILLING CO	Apex Geosc	ience Inc.
DRILLER	<u> </u>	

BORING NO. / LOCA	TION			B 106						LOCCED BY Semmy les Allisen
				B-106						LOGGED BY Sammy Joe Allison
DATE	July 16, 2015		SURF	ACE ELEV.		FT.				WATER LEVEL DATA (IF APPLICABLE)
REFUSAL:	No	DEPTH	FT.	ELEV.		FT.				COMPLETION: DEPTH Dry FT.
SAMPLED	25.0 FT.	7.6	_M							ELEVFT.
TOP OF ROCK	I	DEPTH	_FT.	ELEV.		FT.				
BEGAN CORING	1	DEPTH	FT.	ELEV.		FT.				AFTER 24 HRS. DEPTH N/A FT.
FOOTAGE CORED (	LF)		FT.							ELEV. FT.
BOTTOM OF HOLE	DEPTH	25.0	FT.	ELEV.		FT.				
BORING ADVANCED	BY:		POWER	AUGERING	Х	-	,	WASH	BORIN	G
STRATUM	SAMPL	E DEPTH	SAMPLE		FIELD		LABOR	ATORY	,	
DEPTH	FROM	то	or	SAMPLE	RESULTS		RE	SULTS		STRATUM DESCRIPTION
FT. ELEV.	FT.	FT.	RUN NO.	TYPE	N-Value	Qp	LL	PI	%М	
_										<del>-</del>
<u> </u>					40.00.00					Silty SAND (SM) with caliche - brown; fine
_	1.0	2.5	1	SS	13-33-26 N=59				4.5	grained; very dense; dry; (RESIDUUM)
2.5 <b>–</b> -2.5					11-55					
2.52.5										
I _					0.44.0					
_	3.0	4.5	2	SS	9-14-8 N=22				3.9	
I _					" 22					
5.0 <del>-</del> -5.0										_
5.0 <b>—</b> -5.0					44 40 04					
I -	5.0	6.5	3	SS	11-16-21 N=37				3.9	<del>-</del>
<b>–</b>					N-37					
_										Silty SAND (SM) with trace caliche - light brown
										fine grained; medium dense to very dense; dry;
7.5 <b>–</b> -7.5										- (RESIDUUM)
<u> </u>										
<b>-</b>	8.0	9.5	4	SS	7-19-33 N=52				5.3	<del>-</del>
I –					11-52					
										_
10.0 — -10.0										
_										<del>-</del>
_										
_										
12.5 <b>–</b> -12.5										
12.512.5										
I _	13.0	13.9	5	ss	33-50/5"				6.7	
_	13.0	13.9	3	33	N=50/5"				0.7	
I _										
15.0 — -15.0										<u> </u>
13.0 — -13.0										Silty SAND (SM) with trace caliche - orangish
<u> </u>										brown; fine grained; very dense; dry;
I _										(RESIDUUM)
<u> </u>										
17.5 <b>–</b> -17.5	1									
17.5 = -17.5	1									<u> </u>
I	1				25-35-50/6"					_
	18.0	19.5	6	SS	N=50/6"				6.8	<u> </u>
_ _	1									_
20.0 — -20.0										
				· · · · · ·						
REMARKS	:									



l	OG OF BORING	B-106
	SHEET 2 OF	2
LLING CO	Apex Geosci	ience Inc.
DRILLER		

					,					DRILLER
BORING NO. / LOCA	TION			B-106						LOGGED BY Sammy Joe Allison
DATE	July 16, 2015	;	SURF	ACE ELEV.		FT.				WATER LEVEL DATA (IF APPLICABLE)
REFUSAL:	No [	DEPTH	FT.	ELEV.		FT.				COMPLETION: DEPTH Dry FT.
SAMPLED	25.0 FT.	7.6	М							ELEVFT.
TOP OF ROCK		DEPTH	FT.	ELEV.		FT.				
BEGAN CORING		DEPTH	FT.	ELEV.		FT.				AFTER 24 HRS. DEPTH N/A FT.
FOOTAGE CORED (L			FT.							ELEVFT.
BOTTOM OF HOLE [	DEPTH	25.0	FT.	ELEV.		FT.				
BORING ADVANCED	BY:		POWER /	AUGERING	Х		١	WASHI	BORIN	IG
STRATUM		E DEPTH	SAMPLE		FIELD		LABOR			
DEPTH	FROM	TO	OR	SAMPLE	RESULTS			ULTS	0/84	STRATUM DESCRIPTION
FT.       ELEV.	FT.	FT.	RUN NO.	TYPE	N-Value	Qp	LL	PI	%M	CONTINUED
-										-
_										
_										_
22.5 <b>–</b> -22.5										Silty SAND (SM) with trace caliche - orangish
_										brown; fine grained; very dense; dry; (RESIDUUM)
-	23.0	24.4	7	SS	12-37-50/5"				6.2	- (KESIDOOM)
_	20.0		,		N=50/5"				0.2	<del>-</del>
<b>–</b> 25.0 <b>–</b> -25.0										<del>-</del>
25.0 — -25.0 -										BORING TERMINATED AT 25 FEET
_										_
_										_
_										<del>-</del>
27.5 <b>–</b> -27.5										-
_										<del>_</del>
_										_
_										_
30.0 — -30.0										<b>–</b>
-										-
_										_
_										<del>-</del>
32.5 <b>–</b> -32.5										
— OZ.0										_
-										_
_										<b>—</b>
-										-
35.0 — -35.0										
_										_
_										_
_										<u> </u>
37.5 <b>–</b> -37.5										_
_										<del>-</del>
_										<del>-</del>
<del>-</del>										
40.0 — -40.0										
REMARKS:										



L	OG OF BORING	B-107
	SHEET 1 OF	2
DRILLING CO	Apex Geosc	ience Inc.
DRILLER		
LOCCED BY	Commu lo	o Allicon

									DRILLER			
BORING NO. / LOCA	ING NO. / LOCATION B-107					LOGGED BY	S	Sammy Joe Allison				
DATE	July 16, 2	015	SURFACE ELEV. FT.				WATER L	WATER LEVEL DATA (IF APPLICABLE)				
REFUSAL:	No	DEPTH		FT.	ELEV.		FT.		COMPLETION:	DEPTH	Dry FT.	
SAMPLED	25.0 FT		7.6	M			_			ELEV.	FT.	
TOP OF ROCK		DEPTH		FT.	ELEV.		FT.			_		
BEGAN CORING		DEPTH		FT.	ELEV.		FT.		AFTER 24 HRS.	DEPTH	N/A FT.	
FOOTAGE CORED (	LF)			FT.						ELEV.	FT.	
BOTTOM OF HOLE	DEPTH		25.0	FT.	ELEV.		FT.			_		
BORING ADVANCED	BY:			POW	ER AUGERING	X	_	WASHBORING	G			
STRATUM	SAI	MPLE DEPT	н	SAMPL	.E	FIELD		LABORATORY				

STRATUM	SAMPLI	E DEPTH	SAMPLE		FIELD		LABORATORY			
DEPTH	FROM	то	OR	SAMPLE	RESULTS		RES	SULTS		STRATUM DESCRIPTION
FT. ELEV.	FT.	FT.	RUN NO.	TYPE	N-Value	Qp	LL	PI	%M	
- - - 2.52.5	1.0	1.8	1	SS	7-50/4" N=50/4"				5.3	Silty SAND (SM) with caliche - brown; fine grained; very dense; dry; (RESIDUUM)  -
- - -	3.0	4.5	2	SS	7-25-33 N=58				4.5	_ - _ -
5.0 — -5.0 — — —	5.0	6.5	3	ss	9-16-20 N=36				4.1	- Silty SAND (SM) with trace caliche - light brown;
7.57.5 	8.0	9.5	4	ss	22-32-41 N=73				5.7	fine grained; very dense; dry; (RESIDUUM)
	13.0	14.0	5	SS	31-50/6" N=50/6"				7.2	- Silty SAND (SM) with trace caliche - orangish brown; fine grained; very dense; dry; (RESIDUUM)
17.517.5 	18.0	19.5	6	SS	16-32-50/6" N=50/6"				6.3	- - - - -
REMARKS:										



L	OG OF BORING	B-107
	SHEET 2 OF	2
DRILLING CO	Apex Geosc	ience Inc.
DRILLER		
LOGGED BY	Sammy lo	- Allison

			OL.	300111000	r roject rvo v	01 10				DRILLER
BORING NO. / LOCAT	TION			B-107						LOGGED BY Sammy Joe Allison
	July 16, 2015		SURF	ACE ELEV.		FT.				WATER LEVEL DATA (IF APPLICABLE)
REFUSAL:		DEPTH				•				COMPLETION: DEPTH Dry FT.
SAMPLED	25.0 FT.	7.6	_			•				ELEV. FT.
TOP OF ROCK		DEPTH	FT.	ELEV.		FT.				
BEGAN CORING		DEPTH	FT.	ELEV.		FT.				AFTER 24 HRS. DEPTH N/A FT.
FOOTAGE CORED (L	<b>.</b> F)		FT.							ELEVFT.
BOTTOM OF HOLE	DEPTH	25.0	FT.	ELEV.		FT.				
BORING ADVANCED	BY:		POWER /	AUGERING	X		١	NASH	BORIN	NG
STRATUM	SAMPLE	DEPTH	SAMPLE		FIELD		LABOR	ATORY		
DEPTH	FROM	то	OR	SAMPLE	RESULTS	т —	RES	SULTS		STRATUM DESCRIPTION
FT.    ELEV.	FT.	FT.	RUN NO.	TYPE	N-Value	Qp	LL	PI	%M	
-										CONTINUED -
_										<b>—</b>
-										-
22.5 <b>–</b> -22.5										Silty SAND (SM) with trace caliche - orangish
_										brown; fine grained; very dense; dry;
-	23.0	24.4	7	SS	15-32-50/5"				4.2	(RESIDUUM)
_	25.0	24.4	,	33	N=50/5"				4.2	<b>—</b>
-										-
25.0 — -25.0 —										BORING TERMINATED AT 25 FEET
_										
_										-
_										<b></b>
27.5 <b>–</b> -27.5										-
_										<b>F</b>
_										
_										_
30.0 — -30.0										<b>L</b>
_										-
_										<b>—</b>
-										-
32.5 <b>–</b> -32.5										
——————————————————————————————————————										
_										-
_										<b></b>
-										-
35.0 — -35.0										
_										
_										_
_										<b>L</b>
37.5 <b>–</b> -37.5										-
_										<b>—</b>
_										-
_										
40.0 — -40.0										
REMARKS:										



GEOServices Project No.: 31-151247

Lo	OG OF BORING	B-108
	2	
DRILLING CO	Apex Geosc	ience Inc.
DRILLER		
100055 51/	6 1	A 11:

												DRILLER	
BORING N	NO. / LOCAT	ΓΙΟΝ				B-108						LOGGED BY	Sammy Joe Allison
DATE		July 15, 20	15		SURF	ACE ELEV.		FT.				WATER LI	EVEL DATA (IF APPLICABLE)
REFUSAL	:	No	DEPTH		FT.	ELEV.		FT.				COMPLETION:	DEPTH Dry FT.
SAMPLED	)	25.0 FT.		7.6	М								ELEVFT.
TOP OF R	ROCK		DEPTH		FT.	ELEV.		FT.					
BEGAN C	ORING		DEPTH		FT.	ELEV.		FT.				AFTER 24 HRS.	DEPTH N/A FT.
FOOTAGE	E CORED (L	.F)			FT.								ELEVFT.
воттом	OF HOLE	DEPTH		25.0	FT.	ELEV.		FT.					
BORING A	ADVANCED	BY:			POWER	AUGERING	X	-	,	WASH	BORIN	IG	
STR	ATUM	SAMI	LE DEPTH	1	SAMPLE		FIELD		LABOR	ATORY			
DE	PTH	FROM	1	О	or	SAMPLE	RESULTS		RESULTS		s	TRATUM DESCRIPTION	
FT.	ELEV.	FT.	F	T.	RUN NO.	TYPE	N-Value	Qp	LL	PI	%М		

I	STRATUM	SAMPLE	DEPTH	SAMPLE		FIELD		LABOR	ATORY		
	DEPTH	FROM	то	OR	SAMPLE	RESULTS		RES	ULTS		STRATUM DESCRIPTION
FT.	ELEV.	FT.	FT.	RUN NO.	TYPE	N-Value	Qp	LL	PI	%M	
2.5	- - 2.5	1.0	2.5	1	SS	1-5-10 N=15				4.9	Silty SAND (SM) with caliche - brown to light brown; fine grained; medium dense; dry; (RESIDUUM)
	<del>-</del>	3.0	4.5	2	SS	2-9-16 N=25				4.9	<u>-</u> -
5.0	5.0 	5.0	6.5	3	SS	10-17-20 N=37				6.0	<u>-</u>
7.5 10.0		8.0	9.4	4	SS	14-32-23/5" N=23/5"				6.3	- - - - -
12.5 15.0		13.0	13.8	5	ss	22-30/4" N=30/4"				8.4	Silty SAND (SM) with caliche - orangish brown; fine grained; dense to very dense; dry; (RESIDUUM)
17.5 20.0		18.0	18.8	6	ss	38-39/3" N=39/3"				6.6	-  -  -  -  -  -

REMARKS:



L	OG OF BORING	B-108
	SHEET 2 OF	2
RILLING CO	Apex Geosc	ience Inc.
DRILLER		
1 000ED DV	Communic In	a Alliaan

			GE	JSelvices	Project No	31-13	1247			DRILLING CO Apex Geoscience inc.  DRILLER
BORING NO. / LOCA	TION			B-108						LOGGED BY Sammy Joe Allison
DATE	July 15, 2015		SURF	ACE ELEV.		FT.		•		WATER LEVEL DATA (IF APPLICABLE)
REFUSAL:		DEPTH	_							COMPLETION: DEPTH Dry FT.
SAMPLED	25.0 FT.	7.6		•		-				ELEV. FT.
TOP OF ROCK		DEPTH	FT.	ELEV.		FT.				
BEGAN CORING	[	DEPTH	FT.	ELEV.		FT.				AFTER 24 HRS. DEPTH N/A FT.
FOOTAGE CORED (I	LF)		FT.							ELEV. FT.
BOTTOM OF HOLE	DEPTH	25.0	FT.	ELEV.		FT.				
BORING ADVANCED	BY:		POWER	AUGERING	Х	-	,	WASH	BORIN	G
STRATUM	SAMPL	E DEPTH	SAMPLE		FIELD		LABOR	ATORY		
DEPTH	FROM	то	OR	SAMPLE	RESULTS		RE	SULTS		STRATUM DESCRIPTION
FT. ELEV.	FT.	FT.	RUN NO.	TYPE	N-Value	Qp	LL	PI	%М	CONTINUED
-										- CONTINUED
_										<del>_</del>
-										_
										Silty SAND (SM) with caliche - orangish brown;
— -22.5										fine grained; dense to very dense; dry;
_	23.0	23.4	7	SS	N=58/5"				6	(RESIDUUM)
_										<del>_</del>
-										-
25.0 — -25.0										BORING TERMINATED AT 25 FEET
_										<u>-</u>
_ _										
_										_
27.5 <b>–</b> -27.5										-
_										<del>-</del>
-										-
_										_
30.0 — -30.0										<u>_</u>
-										_
_										<u> </u>
-										-
										_
32.532.5										<u>-</u>
_										_ -
_										<u> </u>
-										_
35.0 — -35.0										<del>-</del>
_										-
_										
_										_
37.5 <b>–</b> -37.5										_
_										<del>_</del>
-										-
_										<del>-</del>
<b>-</b> 40.0 <b>-</b> -40.0										<u>-</u>
REMARKS:	:									



L	OG OF BORING	B-109
	SHEET 1 OF	2
RILLING CO	Apex Geosci	ience Inc.
DRILLER		
		• ***

BORING NO. / LOCATION  DATE July 15, 20  REFUSAL: NO  SAMPLED 25.0 FT.  TOP OF ROCK  BEGAN CORING  FOOTAGE CORED (LF)  BOTTOM OF HOLE DEPTH  BORING ADVANCED BY:  STRATUM SAMP  DEPTH FROM  FT. ELEV. FT.  2.5  3.0  - 5.0  7.5  7.5	DEPTH 7.6  DEPTH 25.0  25.0  PLE DEPTH TO FT.	FT.  FT.  FT.  FT.  FT.	ELEV. ELEV.		FT. FT. FT.	LABOR		BORIN <sup>O</sup>	WATER LEVEL DATA (IF APPLICABLE)  COMPLETION: DEPTH Dry FT. ELEV. FT.  AFTER 24 HRS. DEPTH N/A FT. ELEV. FT.
REFUSAL: No SAMPLED 25.0 FT.  TOP OF ROCK BEGAN CORING FOOTAGE CORED (LF) BOTTOM OF HOLE DEPTH BORING ADVANCED BY:  STRATUM FROM FT. ELEV. FT. 2.5 2.5 5.0 5.0 7.5 7.5 7.5 7.5 8.0	DEPTH	FT. FT. FT. FT. SAMPLE OR	ELEV. ELEV. ELEV. AUGERING	X FIELD RESULTS	FT. FT. FT.	LABOR		BORIN <sup>O</sup>	COMPLETION: DEPTH Dry FT.  ELEV. FT.  AFTER 24 HRS. DEPTH N/A FT.  ELEV. FT.
SAMPLED   25.0   FT.     TOP OF ROCK     BEGAN CORING     FOOTAGE CORED (LF)     BOTTOM OF HOLE DEPTH     BORING ADVANCED BY:     STRATUM   SAMP     FROM     FT.     ELEV.   FT.     -	7.6 DEPTH	FT. FT. FT. FT. SAMPLE OR	ELEV. ELEV. ELEV. AUGERING	X FIELD RESULTS	FT. FT. FT.	LABOR		BORING	ELEVFT.  AFTER 24 HRS. DEPTH N/A FT.  ELEVFT.
TOP OF ROCK  BEGAN CORING  FOOTAGE CORED (LF)  BOTTOM OF HOLE DEPTH  BORING ADVANCED BY:  STRATUM SAMF  DEPTH FROM  FT.   ELEV. FT.  -   1.0  2.52.5  -   3.0  -   5.0  -   5.0  -   6.0  7.57.5  -   8.0  -   8.0  -   6.0	DEPTH	FT. FT. FT. POWER A	ELEV.  ELEV.  AUGERING  SAMPLE	X FIELD RESULTS	FT.	LABOR		BORIN <sup>(</sup>	AFTER 24 HRS. DEPTH N/A FT. ELEV. FT.
BEGAN CORING FOOTAGE CORED (LF) BOTTOM OF HOLE DEPTH  BORING ADVANCED BY:    STRATUM	DEPTH 25.0  PLE DEPTH TO FT.	FT. FT. POWER A	ELEV.  ELEV.  AUGERING  SAMPLE	X FIELD RESULTS	FT.	LABOR		BORING	ELEVFT.
FOOTAGE CORED (LF) BOTTOM OF HOLE DEPTH  BORING ADVANCED BY:    STRATUM	25.0  PLE DEPTH  TO  FT.	FT. FT. POWER A SAMPLE OR	ELEV.	X FIELD RESULTS	FT.	LABOR		BORING	ELEVFT.
BOTTOM OF HOLE DEPTH BORING ADVANCED BY:    STRATUM	TO FT.	POWER A	ELEV.	X FIELD RESULTS	-	LABOR		BORING	
STRATUM   FROM   FROM	TO FT.	POWER A	AUGERING SAMPLE	X FIELD RESULTS	-	LABOR		BORING	<u> </u>
STRATUM FROM  FT.     ELEV. FT.	TO FT.	SAMPLE OR	SAMPLE	FIELD RESULTS	-	LABOR		BORING	G
DEPTH   FROM   FT.     ELEV.   FT.	TO FT.	OR	1 P	RESULTS			ATORY	Т	
DEPTH   FROM   FT.     ELEV.   FT.	TO FT.	OR	1 P	RESULTS					
FT.     ELEV.   FT.	FT.	1	1 P			RES	SULTS		STRATUM DESCRIPTION
- 1.0 2.52.5 - 3.0 - 3.0 - 5.05.0 - 7.57.5 - 8.0 - 8.0					Qp	LL	PI	%М	
2.52.5 - 3.0 - 5.05.0 - 5.07.5 - 8.07.5 - 8.07.5	2.5							74	
5.0 — -5.0 — 5.0 — 5.0 — 7.5 — -7.5 — 8.0		1	SS	3-31-23 N=54				3.4	<ul> <li>Silty SAND (SM) with caliche - brown; fine</li> <li>grained; very dense; dry; (RESIDUUM)</li> </ul>
7.57.5 - 8.0	4.5	2	SS	6-15-24 N=39				4.2	- - - -
- - -	6.5	3	SS	10-18-24 N=42				3.8	
-	9.0	4	SS	29-40+ N=>40				3.2	grained; dense to very dense; dry; (RESIDUUM)
12.512.513.0	13.3	5	ss	47/3" N=47/3"				8.5	Silty SAND (SM) with caliche - orangish brown; fine grained; very dense; dry; (RESIDUUM)
17.517.5 17.5 	18.7	6	ss	42-40+ N=>40				6.3	- - - - -



LC	OG OF BORING	B-109
	SHEET 2 OF	2
DRILLING CO	Apex Geosc	ience Inc.
DRILLER		
_		

										DRILLER
BORING NO. / LOCA	TION			B-109						LOGGED BY Sammy Joe Allison
DATE	July 15, 2015	5	SURF	ACE ELEV.		FT.				WATER LEVEL DATA (IF APPLICABLE)
			FT.			FT.				COMPLETION: DEPTH Dry FT.
SAMPLED	25.0 FT.	7.6	М							ELEVFT.
TOP OF ROCK	I	DEPTH	FT.							
BEGAN CORING		DEPTH	FT.	ELEV.		FT.				AFTER 24 HRS. DEPTH N/A FT.
FOOTAGE CORED (L			FT.							<b>ELEV.</b> FT.
BOTTOM OF HOLE [	DEPTH	25.0	FT.	ELEV.		FT.				
BORING ADVANCED	BY:		POWER /	AUGERING	X		١	NASH	BORIN	G
STRATUM	SAMPL	E DEPTH	SAMPLE		FIELD		LABORATORY			
DEPTH II II	FROM	то	OR	SAMPLE	RESULTS			SULTS		STRATUM DESCRIPTION
FT.       ELEV.	FT.	FT.	RUN NO.	TYPE	N-Value	Qp	LL	PI	%М	CONTINUED
-										- CONTINUED
_										<del>-</del>
-										-
— 22.5 <b>–</b> -22.5										Cite CAND (CM) with a disk a second by horse
22.5 <b>–</b> -22.5					32-33-30					<ul> <li>Silty SAND (SM) with caliche - orangish brown;</li> <li>fine grained; very dense; dry; (RESIDUUM)</li> </ul>
_ _	23.0	24.5	7	SS	32-33-30 N=63				4.7	- Inte granted, very dense, dry, (NESIDOSIN)
_										_
_										_
25.0 — -25.0										BORING TERMINATED AT 25 FEET
-										- BOKING TEKNINATED AT 201 EET
_										<del>-</del>
_										-
27.5 <b>–</b> -27.5										
<u> </u>										_
_										_
_										<u> </u>
-										_
30.0 — -30.0										<del>-</del>
-										-
_										_
-										<del>-</del>
32.5 <b>–</b> -32.5										
32.5 = -32.5										<u> </u>
_										<b>-</b>
_										<u> </u>
_										_
35.0 — -35.0										<b>—</b>
-										-
_										<del>-</del>
_										<del>-</del>
37.5 <b>–</b> -37.5										_
37.537.5										<u>-</u>
_										_
_										<u> </u>
-										_
40.0 — -40.0						<u> </u>				
REMARKS:										



L	OG OF BORING	B-110
	SHEET 1 OF	2
NG CO	Apex Geosc	ience Inc.
'		

GEOSETVICES, LLG-GEOTECHNIC	cal and Materials En	gineers	GEO	OServices F	Project No.: 3	31-15	1247			DRILLING CO Apex Geoscience Inc.  DRILLER
BORING NO. / LOCAT	TION			B-110						LOGGED BY Sammy Joe Allison
DATE	July 16, 2015		SURF	ACE ELEV.		FT.		•		WATER LEVEL DATA (IF APPLICABLE)
REFUSAL: SAMPLED			FT.	ELEV.		FT.				COMPLETION: DEPTH Dry FT.  ELEV. FT.
TOP OF ROCK		DEPTH	FT.	ELEV.		FT.				
BEGAN CORING	D	DEPTH	FT.	ELEV.		FT.				AFTER 24 HRS. DEPTH N/A FT.
FOOTAGE CORED (L	.F)		FT.	_						ELEVFT.
BOTTOM OF HOLE D	EPTH	25.0	FT.	ELEV.		FT.				
BORING ADVANCED	BY:		POWER	AUGERING_	Х		\	WASHE	30RIN	
STRATUM	SAMPLE		SAMPLE		FIELD		LABOR			
DEPTH	FROM	TO	OR	SAMPLE	RESULTS	1		RESULTS		STRATUM DESCRIPTION
FT.       ELEV.	FT.	FT.	RUN NO.	TYPE	N-Value	Qp	LL	PI	%M	
2.52.5	1.0	2.5	1	SS	4-27-16 N=43		29	NP	5.0	Silty SAND (SM) with caliche - brown; fine grained; dense; dry; (RESIDUUM)
<u>-</u>	3.0	4.5	2	SS	14-18-18 N=36				4.7	<u>-</u> -
5.0 — -5.0 — —	5.0	6.5	3	SS	8-7-6 N=15				6.0	
7.57.5 7.5 10.0	8.0	9.5	4	ss	9-14-28 N=42				8.9	Silty SAND (SM) with caliche - light brown; fine grained; medium dense to very dense; dry; (RESIDUUM)
12.512.5 - - - - 15.015.0	13.0	14.0	5	ss	23-50+ N=>50				7.1	- (INESISSONI)
17.517.5   20.020.0	18.0	19.0	6	SS	36-40+ N=>40				5.1	Silty SAND (SM) with caliche - orangish brown; fine grained; very dense; dry; (RESIDUUM)
REMARKS:										



LC	OG OF BORING	B-110
	SHEET 2 OF	2
DRILLING CO	Apex Geosc	ience Inc.
DRILLER		
LOGGED BY	Sammy lo	a Allison

,			GEC	Joervices	Project No	31-13	1247			DRILLING CO Apex Geoscience Inc.  DRILLER
BORING NO. / LOCAT	TION			B-110						LOGGED BY Sammy Joe Allison
	July 16, 2015		SURF	ACE ELEV.		FT.				WATER LEVEL DATA (IF APPLICABLE)
	No E	7.6 DEPTH	FT.	ELEV.		FT.				COMPLETION: DEPTH Dry FT.  ELEV. FT.
BEGAN CORING FOOTAGE CORED (L BOTTOM OF HOLE D	.F)	25.0	FT. FT.							AFTER 24 HRS. DEPTH N/A FT. ELEV. FT.
BORING ADVANCED	BY:		POWER A	AUGERING	Х	_	٧	WASH	BORIN	IG
STRATUM	SAMPLE	E DEPTH	SAMPLE		FIELD		LABOR	ATORY		
DEPTH	FROM	то	OR	SAMPLE	RESULTS		RES	ULTS		STRATUM DESCRIPTION
FT. ELEV.	FT.	FT.	RUN NO.	TYPE	N-Value	Qp	LL	PI	%M	CONTINUED
22.522.5 25.0 25.0 27.5 30.0 30.0 30.0 33.5 33.5 33.5 33.5 33.5 33.5 33.5 33.5 33.5 33.5 33.5	23.0	24.5	7	SS	20-32-52 N=84				4.4	Silty SAND (SM) with caliche - orangish brown; fine grained; very dense; dry; (RESIDUUM)  BORING TERMINATED AT 25 FEET  BORING TERMINATED AT 25 FEET
REMARKS:										
KEIVIAKKS:										



L	OG OF BORING	B-111
	SHEET 1 OF	2
ILLING CO	Apex Geosc	ience Inc.
DRILLER		
		· · · · · · · · · · · · · · · · · · ·

								DIVILLEN	
ORING NO. / LOCATION			B-111			LOGGED BY	Sammy Joe Allison		
DATE	July 20, 20	15		SURFACE ELEV		FT.		WATER LE	EVEL DATA (IF APPLICABLE)
REFUSAL:	Yes	DEPTH	37.0 F	T. ELEV		FT.		COMPLETION:	DEPTH Dry FT.
SAMPLED	37.0 FT.		11.3	М					ELEVFT.
TOP OF ROCK	<u> </u>	DEPTH	37.0 F	T. ELEV	·	FT.			
BEGAN CORING		DEPTH		T. ELEV		FT.		AFTER 24 HRS.	DEPTH N/A FT.
FOOTAGE CORED	(LF)			FT.					ELEVFT.
BOTTOM OF HOLE	DEPTH		37.0 F	T. ELEV	. <u> </u>	FT.			
BORING ADVANCE	D BY:			POWER AUGERING	S X	_	WASHBORING		

STRATUM	SAMPLE	E DEPTH	SAMPLE		FIELD		LABOR	ATORY		
DEPTH	FROM	то	or	SAMPLE	RESULTS		RES	SULTS		STRATUM DESCRIPTION
FT. ELEV.	FT.	FT.	RUN NO.	TYPE	N-Value	Qp	LL	PI	%М	
- - - 2.52.5	1.0	2.5	1	<i>\$</i>	5-24-65 N=89				6.7	Silty SAND (SM) with caliche - brown; fine grained; very dense; dry; (RESIDUUM)
- -	3.0	4.5	2	SS	15-16-12 N=28				4.5	<u>-</u> -
5.0 — -5.0 — — —	5.0	6.5	3	SS	12-19-33 N=52				5.2	
7.57.5 7.5 10.0 10.0	8.0	9.5	4	SS	14-19-32 N=51				4.3	fine grained; medium dense to very dense; dry;  (RESIDUUM)
12.512.5 15.0 15.0	13.0	14.0	5	SS	35-60+ N=>60				6.6	Silty SAND (SM) with trace caliche - orangish brown; fine grained; very dense; dry; (RESIDUUM)
17.517.5 	18.0	19.0	6	ss	32-90+ N=>90				5.8	
REMARKS:										



L	OG OF BORING	B-111
	SHEET 2 OF	2
DRILLING CO	Apex Geosci	ience Inc.
DRILLER		
LOGGED BY	Sammy Joe	e Allison

BORING NO. / LOCA	TION			B-111						LOGGED BY Sammy Joe Allison
DATE	July 20, 2015	5	SURF	ACE ELEV.		FT.				WATER LEVEL DATA (IF APPLICABLE)
REFUSAL:		DEPTH 37.0								COMPLETION: DEPTH Dry FT.
	37.0 FT.					-				ELEV. FT.
TOP OF ROCK		DEPTH 37.0	FT.	ELEV.		FT.				
BEGAN CORING	I	DEPTH	FT.	ELEV.		FT.				AFTER 24 HRS. DEPTH N/A FT.
FOOTAGE CORED (L			•			-				ELEV. FT.
BOTTOM OF HOLE (	DEPTH	37.0	FT.	ELEV.		FT.				
BORING ADVANCED	BY:		POWER A	AUGERING	Х	-	,	WASH	BORIN	NG
STRATUM	SAMPL	E DEPTH	SAMPLE		FIELD		LABOR	ATORY		
DEPTH	FROM	то	OR	SAMPLE	RESULTS		RE	SULTS		STRATUM DESCRIPTION
FT. ELEV.	FT.	FT.	RUN NO.	TYPE	N-Value	Qp	LL	PI	%М	
_										CONTINUED
_										
_										-
_										<b>L</b>
22.5 <b>–</b> -22.5										-
_					27.05.					$\vdash$
_	23.0	24.0	7	SS	37-65+ N=>65				6	-
_					., 55					<b>—</b>
-										-
25.0 — -25.0										⊢ ⊢
-										-
_										
_										-
27.5 <b>–</b> -27.5										
21.521.5										
<u> </u>					34-33-33					Silty SAND (SM) with trace caliche - orangish
_	28.0	29.5	8	SS	N=66				4.3	brown; fine grained; very dense; dry;
_										(RESIDUUM)
30.0 — -30.0										<b>L</b>
_										-
_										$\vdash$
-										-
_										$\vdash$
32.5 <b>–</b> -32.5										-
_										
_	33.0	34.5	9	SS	24-31-48 N=79				2.5	[-
_					N-79					
35.0 — -35.0										
										_
_										
_										-
_										ALIOED REFLICAL AT AT EFFT
37.5 <b>–</b> -37.5										AUGER REFUSAL AT 37 FEET
I —						I				$\vdash$
_										-
_										<b></b>
l						I				-
40.0 — -40.0			<u> </u>							1
DEMARKS.										

G	E	<b>5</b>	S
GFBServices II	C.Geetechn	ical and Mater	iale Fraineare

L	OG OF BORING	AB-1				
	SHEET 1 OF	2				
RILLING CO	Apex Geosc	ience Inc.				
DRILLER						

											DRILLER				
BORING NO. / LOCATION				AB-1							LOGGED BY	s	ammy J	Joe Allison	
DATE	July 1	5, 20	15	SURFACE ELEV.				FT.		WATER LI	EVEL DAT	(IF AF	PLICABLE	)	
REFUSAL:	No		DEPTH		FT.		ELEV.		FT.		COMPLETION:	DEPTH	Dry	FT.	
SAMPLED	25.0	FT.		7.6	М							ELEV.		FT.	
TOP OF ROCK			DEPTH		FT.		ELEV.		FT.			_		_	
BEGAN CORING			DEPTH		FT.		ELEV.		FT.		AFTER 24 HRS.	DEPTH	N/A	FT.	
FOOTAGE CORED (	LF)				FT.							ELEV.		FT.	
BOTTOM OF HOLE	DEPTH			25.0	FT.		ELEV.		FT.			_		_	
BORING ADVANCED	D BY:					POWER A	UGERING	X	_	WASHBORIN	G				
STRATUM		SAME	PLE DEPTH	1	,	SAMPLE		FIELD		LABORATORY					

STRATUM	SAMPLE	DEPTH	SAMPLE		FIELD		LABOR	ATORY		
DEPTH	FROM	то	OR	SAMPLE	RESULTS		RES	SULTS		STRATUM DESCRIPTION
FT. ELEV.	FT.	FT.	RUN NO.	TYPE	N-Value	Qp	LL	PI	%М	
- - - 2.52.5	1.0	2.5	1	SS	20-32-16 N=48				3.3	Silty SAND (SM) with caliche - brown; fine grained; dense; dry; (RESIDUUM)
- -	3.0	4.5	2	SS	22-30-22 N=52				3.9	Silty SAND (SM) with caliche - light brown; fine grained; very dense; dry; (RESIDUUM)
5.0 — -5.0 — —	5.0	6.5	3	SS	13-20-19 N=39				6.7	<u>-</u> -
7.57.5 10.0 10.0	8.0	9.5	4	ss	13-19-24 N=43				6.2	Silty SAND (SM) with caliche - orangish brown; fine grained; dense to very dense; dry; (RESIDUUM)
- 12.512.5 - - - 15.015.0	13.0	14.3	5	ss	16-19-19/4" N=19/4"				4.3	- (RESIDOUM)
- 17.517.5 - - - 20.020.0	18.0	18.8	6	SS	29-21/3" N=21/3"				4.9	Silty SAND (SM) with trace caliche - orangish brown; fine grained; very dense; dry; (RESIDUUM)
REMARKS:										



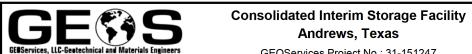
L	OG OF BORING	AB-1
	SHEET 2 OF	2
DRILLING CO	Apex Geosci	ience Inc.
DRILLER		
LOGGED BY	Sammy Joe	Allison

oragei vices, rro-ocateciniic	al alla Materials Li	gilleer 5	GEC	)Services i	Project No.: 3	31-15	1247			DRILLING CO Apex Geoscience Inc.  DRILLER
BORING NO. / LOCAT	ION			AB-1						LOGGED BY Sammy Joe Allison
	July 15, 2015		SURF			FT.		'		WATER LEVEL DATA (IF APPLICABLE)
REFUSAL:		EPTH	FT.							COMPLETION: DEPTH Dry FT.
SAMPLED	25.0 FT.	7.6	М	•						ELEVFT.
TOP OF ROCK		EPTH	FT.			_				
BEGAN CORING		EPTH	FT.	ELEV.		FT.				AFTER 24 HRS. DEPTH N/A FT.
FOOTAGE CORED (LE BOTTOM OF HOLE D		25.0	FT.	FI F\/		СТ				ELEVFT.
		25.0	•			•' '	,	WASHI		
BORING ADVANCED			1	OGERING.	X	•				1
STRATUM	SAMPLE FROM		SAMPLE OR	SAMPLE	FIELD RESULTS		LABOR	ATORY SULTS		STRATUM DESCRIPTION
DEPTH  FT.         ELEV.	FT.	TO FT.	RUN NO.	TYPE	N-Value	Qp	LL	PI	%M	STRATUM DESCRIPTION
_						٦,			70	CONTINUED
_										
-										-
										Silty SAND (SM) with trace caliche - orangish
22.5 <b>–</b> -22.5										brown; fine grained; very dense; dry;
_	23.0	23.8	7	ss	26-24/4"				3.2	(RESIDUUM)
_					N=24/4"					$\vdash$
-										-
25.0 — -25.0										BORING TERMINATED AT 25 FEET
_										
-										-
										<del> </del>
27.5 <b>–</b> -27.5										
_										_
_										H
-										-
30.0 — -30.0										
_										<u> </u>
-										-
										F
32.5 <b>-</b> -32.5										
_										-
_										<b>—</b>
<b>-</b> 35.0 <b>-</b> -35.0										-
35.0 — -35.0 -										
_										<b>L</b>
-										-
<del></del>										F
37.5 <b>-</b> -37.5										
-										-
_										<b></b>
<b>-</b> 40.0 <b>-</b> -40.0										-
REMARKS:										



LC	OG OF BORING	AB-2
	SHEET 1 OF	2
DRILLING CO	Apex Geosc	ience Inc.
DRILLER		
LOGGED BY	Commy lo	o Allicon

												DRILLER
BORIN	G NO	D. / LOCA	TION			AB-2						LOGGED BY Sammy Joe Allison
DATE			July 13, 201	5	SURF	ACE ELEV.		FT.				WATER LEVEL DATA (IF APPLICABLE)
REFUS	SAL:		No	DEPTH	FT.	ELEV.		FT.				COMPLETION: DEPTH Dry FT.
SAMPL	_ED		25.0 FT.	7.6	M			_				ELEVFT.
TOP O	FRC	CK		DEPTH	FT.	ELEV.		FT.				
BEGAN	A CO	RING		DEPTH	FT.	ELEV.		FT.				AFTER 24 HRS. DEPTH N/A FT.
		CORED (L			FT.							ELEVFT.
воттс	о мо	F HOLE [	DEPTH	25.0	FT.	ELEV.		FT.				
BORIN	G AE	OVANCED	BY:		POWER	AUGERING	Х	_	,	WASH	BORIN	G
s	STRA	тим	SAMPI	E DEPTH	SAMPLE		FIELD		LABOR	ATORY	,	
	DEP	тн	FROM	то	OR	SAMPLE	RESULTS		RE	SULTS		STRATUM DESCRIPTION
FT.		ELEV.	FT.	FT.	RUN NO.	TYPE	N-Value	Qp	LL	PI	%М	
	_											-
	_											<u> </u>
	_			0.5			4-4-5					Silty SAND (SM) with caliche - brown; fine
	_		1.0	2.5	1	SS	N=9				4.8	grained; loose; dry; (RESIDUUM)
2.5	-	-2.5										<del>-</del>
	_											
	-		3.0	4.5	2	SS	10-10-13 N=23				5.7	<del>-</del>
	_	1					N-25					
5.0	_	-5.0										Silty SAND (SM) with caliche - light brown; fine
0.0	_	0.0					11-12-17					grained; medium dense; dry; (RESIDUUM)
	_		5.0	6.5	3	SS	N=29				5.5	<u> </u>
	-											<del>-</del>
	_											
7.5	-	-7.5										-
	_	ı					40.47.00					_
	_		8.0	9.5	4	SS	10-17-20 N=37				3.7	<u>-</u>
	_											Silty SAND (SM) with trace caliche - orangish
10.0	_	-10.0										brown; dense; dry; <b>(RESIDUUM)</b>
	-											-
	_	•										<del>_</del>
	-											-
40.5	_	10.5										
12.5	_	-12.5										<u>-</u>
	_						7-25-30					_
	_		13.0	14.5	5	SS	N=55				3.4	<u> </u>
	-											_
15.0	_	-15.0										<del>_</del>
	-											<ul> <li>Silty SAND (SM) with caliche - orangish brown;</li> </ul>
	_	1										fine grained; very dense; dry; (RESIDUUM)
	_											<u>-</u>
17.5	_	-17.5										_
	_											<u></u>
	-		18.0	19.5			16-22-30				] , ,	<del> -</del>
	_		10.0	19.5	6	SS	N=52				3.1	<del>-</del>
l _	-											<del> -</del>
20.0	_	-20.0			1							
ı	DE	MADKE										



L	OG OF BORING	AB-2
	SHEET 2 OF	2
DRILLING CO	Apex Geosc	ience Inc.
DRILLER		
LOGGED BY	Sammy Io	o Allicon

orazei vices, tro-destecinin	Cal alla Materials Li	gilleers	GEC	JServices I	Project No.: 3	31-15	1247			DRILLING CO Apex Geoscience Inc.  DRILLER
BORING NO. / LOCAT	ΓΙΟΝ	LOGGED BY Sammy Joe Allison								
DATE	July 13, 2015		SURF	ACE ELEV.		FT.				WATER LEVEL DATA (IF APPLICABLE)
REFUSAL:			FT.							COMPLETION: DEPTH Dry FT.
SAMPLED	25.0 FT.	7.6	M							ELEVFT.
TOP OF ROCK			FT.							
BEGAN CORING FOOTAGE CORED (L		DEPTH	FT. FT.	ELEV.		FT.				AFTER 24 HRS. DEPTH N/A FT.  ELEV. FT.
BOTTOM OF HOLE		25.0		ELEV.		FT.				F1.
BORING ADVANCED			•		×	•	V	WASHE	BORIN	<b></b>
STRATUM	SAMPLE	DEPTH	SAMPLE	<del>-                                    </del>	FIELD	<u>-</u>	LABOR			
DEPTH	FROM	то	OR	SAMPLE	RESULTS			OLTS		STRATUM DESCRIPTION
FT. ELEV.	FT.	FT.	RUN NO.	TYPE	N-Value	Qp	LL	PI	%М	CONTINUED
22.522.525.027.527.530.030.030.030.035.035.037.537.537.5	23.0	23.8	7	SS	38-50/4" N=50/4"					Silty SAND (SM) with caliche - orangish brown; fine grained; very dense; dry; (RESIDUUM)  BORING TERMINATED AT 25 FEET  BORING TERMINATED AT 25 FEET
40.0 — -40.0 REMARKS:										
'	·		·							



L	OG OF BORING	TF-1
	SHEET 1 OF	2
DRILLING CO	Apex Geosc	ience Inc.
DRILLER		
LOGGED BY	Sammy Jo	e Allison

									DRILLER			
BORING NO. / LOCA	TION				TF-1		LOGGED BY	Sa	ammy Joe Allison			
DATE	July 16, 20	15		SUR	ACE ELEV.		FT.		WATER LE	EVEL DATA	(IF APPLICABLE	E)
REFUSAL:	Yes	DEPTH	40.0	FT.	ELEV.		FT.		COMPLETION:	DEPTH	Dry FT.	
SAMPLED	40.0 FT.		12.2	М						ELEV.	FT.	
TOP OF ROCK		DEPTH	40.0	FT.	ELEV.		FT.			_		
BEGAN CORING		DEPTH		FT.	ELEV.		FT.		AFTER 24 HRS.	DEPTH	N/A FT.	
FOOTAGE CORED (I	LF)			FT.						ELEV.	FT.	
BOTTOM OF HOLE	DEPTH		40.0	FT.	ELEV.		FT.			_		
BORING ADVANCED	BY:			POWER	AUGERING	X	_	WASHBORING	G			
STRATUM	SAMI	PLE DEPTH	ł	SAMPLE		FIELD		LABORATORY				

STRATUM	SAMPLE	DEPTH	SAMPLE		FIELD		LABOR	ATORY		
DEPTH	FROM	то	OR	SAMPLE	RESULTS		RE	SULTS		STRATUM DESCRIPTION
FT. ELEV.	FT.	FT.	RUN NO.	TYPE	N-Value	Qp	LL	PI	%М	
_ _ _ _ 2.52.5	1.0	2.5	1	ss	4-24-15 N=39				3.0	Silty SAND (SM) with caliche - grayish brown and brown; fine grained; dense; dry; (RESIDUUM)
- -	3.0	4.5	2	SS	24-38-27 N=65				2.8	<u>-</u> -
5.0 — -5.0 — —	5.0	6.5	3	SS	11-12-20 N=32				4.8	- Silty SAND (SM) with caliche -light brown to
7.57.5 	8.0	9.5	4	SS	20-20-28 N=48				2.8	brown; fine grained; very dense to dense; dry; (RESIDUUM)  RESIDUUM)
12.512.5 15.0 15.0	13.0	14.3	5	ss	20-48-32/3" N=32/3"				5.8	- Silty SAND (SM) with trace caliche - orangish brown; fine grained; very dense; dry; (RESIDUUM)
17.517.5 	18.0	19.3	6	SS	26-48-26/3" N=26/3"				5.4	- - -
REMARKS:										



L	OG OF BORING	TF-1
	SHEET 2 OF	2
DRILLING CO	Apex Geosc	cience Inc.
DRILLER		
LOGGED BY	Sammy Jo	e Allison

									DRILLER			
BORING NO. / LOCA	TION				TF-1				LOGGED BY	Sa	mmy Joe Allison	ı
DATE	July 21, 20	15		SURF/	ACE ELEV.		FT.		WATER LI	EVEL DATA	(IF APPLICABL	.E)
REFUSAL:	Yes	DEPTH	40.0	FT.	ELEV.		FT.		COMPLETION:	DEPTH_	Dry FT.	
SAMPLED	40.0 FT.	-	12.2	М	_		•			ELEV.	FT.	
TOP OF ROCK		DEPTH	40.0	FT.	ELEV.		FT.			_		
BEGAN CORING		DEPTH		FT.	ELEV.		FT.		AFTER 24 HRS.	DEPTH_	N/A FT.	
FOOTAGE CORED (L	_F)	_		FT.	_					ELEV.	FT.	
BOTTOM OF HOLE [	DEPTH		40.0	FT.	ELEV.		FT.			_		
BORING ADVANCED	BY:			POWER A	UGERING	Х	•	WASHBORING				
STRATUM	SAMF	PLE DEPTH	í	SAMPLE		FIELD		LABORATORY				
DEPTH	FROM	Т	0	OR	SAMPLE	RESULTS		RESULTS	s	TRATUM DES	CRIPTION	

1	SIKA		SAMPLE		SAMPLE		FIELD		LABUR				
	DEP	TH	FROM	то	OR	SAMPLE	RESULTS		RE	SULTS		STRATUM DESCRIPTION	
FT	.	ELEV.	FT.	FT.	RUN NO.	TYPE	N-Value	Qp	LL	PI	%M		
22. 25.	5	-22.5 - -25.0	23.0	24.5	7	\$\$	15-16-20 N=36				2.7	CONTINUED  - Silty SAND (SM) with trace caliche - orangish brown; fine grained; very dense; dry; (RESIDUUM)	
30.	- - -	-27.5 -27.5 -	28.0	29.3	8	ss	28-50-22/3" N=22/3"				3.0	- - - - - -	
32. 35.	5	-32.5 - - 35.0	33.0	33.4	10	ss	N=76/5"				3.7	- Silty SAND (SM) with trace caliche - orangish brown; fine grained; very dense; dry; (RESIDUUM)	
37. 40.	5 0 -	-37.5	38.0	38.3	11	SS	N=100/4"				4.6	- - - - - - - AUGER REFUSAL AT 40 FEET	
	RE	MARKS:										7.00=1.7.1.30AE AT 70 FEE	



L	OG OF BORING	TF-2
	SHEET 1 OF	2
DRILLING CO	Apex Geosc	cience Inc.
DRILLER		
LOGGED BY	Sammy Jo	e Allison

										DIVILLEN	
BORING NO. / LOCATION						TF-2				LOGGED BY	Sammy Joe Allison
DATE	15		_	SURFACE ELEV.		FT.		WATER LE	EVEL DATA (IF APPLICABLE)		
REFUSAL:	No		DEPTH		FT.	ELEV.		FT.		COMPLETION:	DEPTH Dry FT.
SAMPLED	25.0	FT.		7.6	М			_			ELEV. FT.
TOP OF ROCK		_	DEPTH		FT.	ELEV.		FT.			
BEGAN CORING			DEPTH		FT.	ELEV.		FT.		AFTER 24 HRS.	DEPTH N/A FT.
FOOTAGE CORED	(LF)				FT.			_			ELEVFT.
BOTTOM OF HOLE	DEPTH			25.0	FT.	ELEV.		FT.			
BORING ADVANCE	D BY:					POWER AUGERING	X		WASHBORING		

STRATUM	SAMPLE	DEPTH	SAMPLE		FIELD		LABOR	ATORY	,	
DEPTH	FROM	то	OR	SAMPLE	RESULTS		RE	SULTS		STRATUM DESCRIPTION
FT. ELEV.	FT.	FT.	RUN NO.	TYPE	N-Value	Qp	LL	PI	%М	
- - - - 2.52.5	1.0	2.5	1	SS	1-2-2 N=4		28	NP	4.3	Silty SAND (SM) with trace caliche - brown; fine grained; very loose; dry; (RESIDUUM)
<u>-</u>	3.0	4.5	2	ss	9-11-11 N=22				4.8	<u>-</u> _
5.0 — -5.0 — — — —	5.0	6.5	3	SS	8-10-15 N=25				3.9	- Silty SAND (SM) with trace caliche - light brown;
7.57.5 	8.0	9.5	4	ss	15-40-57 N=97				6.7	— fine grained; medium dense to very dense; dry;  — (RESIDUUM)  — — — — — —
12.512.5 15.0 15.0	13.0	14.2	5	ss	25-55-25/2" N=25/2"				5.9	- Silty SAND (SM) with trace caliche - orangish brown; fine grained; very dense; dry; (RESIDUUM)
- 17.517.5 - - - 20.020.0	18.0	18.8	6	ss	23-70+ N=>70				5.9	-  -  -  -  -  -
REMARKS:										



L	LOG OF BORING									
	SHEET 2 OF	2								
DRILLING CO	Apex Geosc	ience Inc.								
DRILLER										
LOGGED BY	Sammy Jo	e Allison								

											DRILLER				
BORING NO. / LOCA	TION						TF-2		LOGGED BY	s	ammy	Joe Allison			
DATE	July 1	6, 20	15		_	SURFA	CE ELEV.		FT.		WATER LI	EVEL DAT	۱ (IF AF	PPLICABLE	)
REFUSAL:	No		DEPTH		FT.		ELEV.		FT.		COMPLETION:	DEPTH	Dry	FT.	
SAMPLED	25.0	FT.		7.6	М							ELEV.		FT.	
TOP OF ROCK			DEPTH		FT.		ELEV.		FT.			_		_	
BEGAN CORING			DEPTH		FT.		ELEV.		FT.		AFTER 24 HRS.	DEPTH	N/A	FT.	
FOOTAGE CORED (	LF)				FT.							ELEV.		FT.	
BOTTOM OF HOLE	DEPTH			25.0	FT.		ELEV.		FT.			_		_	
BORING ADVANCE	D BY:					POWER AL	JGERING	Х		WASHBORING					
OTD ATURA			N E DEDTI			OAMBI E		FIEL B		LABORATORY					

STRATUM	SAMPLE	DEPTH	SAMPLE		FIELD		LABOR	ATORY		
DEPTH	FROM	то	OR	SAMPLE	RESULTS		RESULTS			STRATUM DESCRIPTION
FT. ELEV.	FT.	FT.	RUN NO.	TYPE	N-Value	Qp	LL	PI	%M	
- - - 22.522.5 - - -	23.0	24.5	7	SS	8-29-35 N=64				4.2	CONTINUED  Silty SAND (SM) with trace caliche - orangish brown; fine grained; very dense; dry; (RESIDUUM)
25.0 — -25.0 — — —										BORING TERMINATED AT 25 FEET  -
27.527.5 - - -										- - - -
30.0 — -30.0 - - -										- - - -
32.5 <b>-</b> -32.5 <b>-</b> <b>-</b> <b>-</b> <b>-</b>										- - - -
35.0 — -35.0 — — —										_ - _ _
37.537.5 - - -										- - - -
40.0 — -40.0 REMARKS:										

<b>GE®S</b>
GFBServices, LLC-Geotechnical and Materials Engineers

GEOServices Project No.: 31-151247

L	OG OF BORING	TF-3
	SHEET 1 OF	2
RILLING CO	Apex Geosc	ience Inc.
DRILLER		
<del>-</del>		

				GEO	Joervices	Project No	31-13	1247			DRILLING CO	Apex Geoscience inc.
											DRILLER	
BORING NO. / LOCA	TION				TF-3						LOGGED BY	Sammy Joe Allison
DATE	July 16, 20	15	SURFACE ELEV.				FT.				WATER LE	EVEL DATA (IF APPLICABLE)
REFUSAL:	No	DEPTH		FT.	ELEV.		FT.				COMPLETION:	DEPTH Dry FT.
SAMPLED	25.0 FT.	_	7.6	М								ELEVFT.
TOP OF ROCK		DEPTH		FT.	ELEV.		FT.					
BEGAN CORING		DEPTH		FT.	ELEV.		FT.				AFTER 24 HRS.	DEPTH N/A FT.
FOOTAGE CORED (	(LF)	_		FT.								ELEV. FT.
BOTTOM OF HOLE	DEPTH	_	25.0	FT.	ELEV.		FT.					
BORING ADVANCED	D BY:			POWER A	AUGERING	Х	_	,	WASH	BORI	NG	
STRATUM	SAMF	LE DEPTH		SAMPLE		FIELD		LABOR	ATORY	,		
DEPTH	FROM	тс	)	OR	SAMPLE	RESULTS	i	RE	SULTS		s <sup>.</sup>	TRATUM DESCRIPTION
FT. ELEV.	FT.	FT	ī	RUN NO.	TYPE	N-Value	Qp	LL	PI	%М		
_											_	
_											L SHEES AND (S	NAV voidle entirele e municiple le universi
1					1		I	I	I	I	J SHILY SAND (S	<b>M)</b> with caliche - grayish brown;

FT. ELEV.	FT.	FT.	RUN NO.	TYPE	N-Value	Qp	LL	PI	%М	
- - - 2.52.5	1.0	2.5	1	SS	11-9-8 N=17				4.3	Silty SAND (SM) with caliche - grayish brown; fine grained; medium desne; dry; (RESIDUUM)
- - -	3.0	4.5	2	SS	17-11-10 N=21				4.6	-
5.0 — -5.0 — — —	5.0	6.5	3	SS	14-16-20 N=36				3.9	Silty SAND (SM) with caliche - brown; fine grained; very dense to dense; dry; (RESIDUUM)
7.57.5 10.0 10.0	8.0	9.5	4	SS	17-37-48 N=85				5.5	- - - - -
12.512.5 12.5 15.0 15.0	13.0	14.5	5	ss	18-28-45 N=73				9.0	Silty SAND (SM) with trace caliche - orangish brown; fine grained; very dense; dry; (RESIDUUM) -
17.517.5 17.5 	18.0	19.5	6	SS	17-33-50 N=83				4.5	

REMARKS:



REMARKS:

## Consolidated Interim Storage Facility Andrews, Texas

L	LOG OF BORING									
	SHEET 2 OF	2								
DRILLING CO	Apex Geosc	ience Inc.								
DRILLER										
LOGGED BY	Sammy Jo	e Allison								

										DIVILLEN	
BORING NO. / LOCATION						TF-3			LOGGED BY	Sammy Joe Allison	
DATE	July 1	6, 20	15		_	SURFACE ELEV.		FT.		WATER LE	EVEL DATA (IF APPLICABLE)
REFUSAL:	No		DEPTH		FT.	ELEV.		FT.		COMPLETION:	DEPTH Dry FT.
SAMPLED	25.0	FT.		7.6	М						ELEVFT.
TOP OF ROCK			DEPTH		FT.	ELEV.		FT.			<del></del>
BEGAN CORING			DEPTH		FT.	ELEV.		FT.		AFTER 24 HRS.	DEPTH N/A FT.
FOOTAGE CORED	(LF)				FT.						ELEVFT.
BOTTOM OF HOLE	DEPTH			25.0	FT.	ELEV.		FT.			
BORING ADVANCE	ED BY:					POWER AUGERING	Χ		WASHBORING		

	STRATUM	SAMPLE	DEPTH	SAMPLE		FIELD		LABOR	ATORY		
	DEPTH	FROM	то	OR	SAMPLE	RESULTS		RES	SULTS		STRATUM DESCRIPTION
	FT. ELEV.	FT.	FT.	RUN NO.	TYPE	N-Value	Qp	LL	PI	%М	
											CONTINUED
	-										<b>[</b>
ı	_										
	_										<b> -</b>
١.	_ <b>_</b>										Silty SAND (SM) with trace caliche - orangish
$\frac{2}{}$	2.5 <b>–</b> -22.5										brown; fine grained; very dense; dry;
	_										(RESIDUUM)
	-	23.0	24.5	7	SS	34-37-60 N=97				3.8	<u> </u>
	_					N=97					<b>–</b>
١.											-
2	5.0 — -25.0										BORING TERMINATED AT 25 FEET
	-										-
	_										<b>–</b>
	-										-
Ι.	—										<b>–</b>
2	7.5 <b>–</b> -27.5										-
	_										<b>–</b>
	-										-
	_										<b>–</b>
Ι.	<b>-</b>										-
3	0.0 — -30.0										<b>—</b>
	-										-
	<del>-</del>										
	-										<b> -</b>
1.											_
3	2.5 <b>–</b> -32.5										-
	_										<b>–</b>
	-										-
	_										<b>–</b>
Ι.											<b> -</b>
3	5.0 — -35.0										<b>–</b>
	-										-
	_										
	-										<b> -</b>
											<b></b>
$I^3$	7.5 <b>–</b> -37.5										-
	_										<b></b>
	-										<b> -</b>
1	_										<b></b>
1.	- 40.5										<b> -</b>
I 4	0.0 — -40.0										



GEOServices Project No.: 31-151247

L	OG OF BORING	TF-4
	SHEET 1 OF	2
DRILLING CO	Apex Geosc	ience Inc.
DRILLER		
LOGGED BY	Sammy Jo	e Allison

			_	OL.	JOCI VIOCS	i rojectivo v	01 10	1271			Apex decisalence inc.
BORIN	IG NO. / LOCA	TION			TF-4						DRILLER  LOGGED BY Sammy Joe Allison
									•		_
DATE		July 16, 2015					•				WATER LEVEL DATA (IF APPLICABLE)
REFUS			DEPTH 40.0	_	ELEV.		FT.				COMPLETION: DEPTH Dry FT.
SAMP		40.0 FT.	12.2	-	E1 E) /						ELEVFT.
	F ROCK		DEPTH	FT.			•				AFTER OALIDO DERTIL AVA ST
	N CORING		DEPTH	FT.	ELEV.		FT.				AFTER 24 HRS. DEPTH N/A FT.
	AGE CORED (L OM OF HOLE [		40.0	FT.	EL EV		СТ				ELEVFT.
ВОТТ	JIVI OF HOLE I	DEPIN	40.0	-			•				
BORIN	IG ADVANCED	9 BY:		POWER	AUGERING	X	•	<u>'</u>	WASH	BORIN	G
:	STRATUM	<b>-</b>	E DEPTH	SAMPLE		FIELD		LABOR		•	
	DEPTH	FROM	то	OR	SAMPLE	RESULTS	1	<del>                                     </del>	SULTS		STRATUM DESCRIPTION
FT.	ELEV.	FT.	FT.	RUN NO.	TYPE	N-Value	Qp	LL	PI	%M	
	-										_
	_										Silty SAND (SM) with caliche - grayish brown;
	-	1.0	2.5	1	SS	4-40-20				3.7	fine grained; very dense; dry; (RESIDUUM)
2.5	_					N=60					
2.5	<b>-</b> -2.5										1
	_					18-18-16					-
	_	3.0	4.5	2	SS	N=34				3.9	_
	_										
5.0	<b>—</b> -5.0										Silty SAND (SM) with trace caliche - light brown; fine grained; dense to very dense; dry;
	-	5.0	6.5	3	SS	20-20-30				6.6	(RESIDUUM)
	_	5.0	0.5	3	33	N=50				0.0	
	-										<del>-</del>
7.5											_
7.5	<b>-</b> -7.5										
	_					14-24-35					
	_	8.0	9.5	4	SS	N=59				7.4	_
	_										_
10.0	<del></del>										<del>_</del>
	-										<del>-</del>
	_										<del>-</del>
	-										-
12.5	<b>–</b> -12.5										
12.5											<u> </u>
	_	13.0	14.2	5	ss	20-35-47/2"				5.2	<ul> <li>Silty SAND (SM) with trace caliche - brown; fine</li> </ul>
	_					N=47/2"					grained; very dense; dry; (RESIDUUM)
	-										_
15.0	<b>—</b> -15.0										<del>-</del>
	-										<del> -</del>
	_										<del>-</del>
	-										<b> -</b>
17.5	<b>–</b> -17.5										
17.5	— -11.3 —										<u> </u>
	_	18.0	19.2	6	ss	19-34-51/2"				4.3	_
I		1	]	Ī	1	N=51/2"	I	I	I	l ¨	

REMARKS:



L	OG OF BORING	TF-4
	SHEET 2 OF	2
DRILLING CO	Apex Geosc	ience Inc.
DRILLER		
LOGGED BY	Sammy Jo	e Allison

								DIVILLEN	
BORING NO. / LOC	ATION			TF-4				LOGGED BY	Sammy Joe Allison
DATE	July 21, 20	15		SURFACE ELEV.		FT.		WATER LE	EVEL DATA (IF APPLICABLE)
REFUSAL:	Yes	DEPTH	40.0 F	T. ELEV.		FT.		COMPLETION:	DEPTH Dry FT.
SAMPLED	40.0 FT.		12.2 N	1		_			ELEVFT.
TOP OF ROCK		DEPTH	40.0 F	T. ELEV.		FT.			
BEGAN CORING		DEPTH	F	T. ELEV.		FT.		AFTER 24 HRS.	DEPTH N/A FT.
FOOTAGE CORED	(LF)		F	T.		_			ELEV. FT.
BOTTOM OF HOLE	DEPTH		40.0 F	T. ELEV.		FT.			
BORING ADVANCE	D BY:			POWER AUGERING	X		WASHBORING	•	

STRATUM	SAMPLE	DEPTH	SAMPLE		FIELD		LABOR	ATORY		
DEPTH	FROM	то	or	SAMPLE	RESULTS		RES	SULTS		STRATUM DESCRIPTION
FT. ELEV.	FT.	FT.	RUN NO.	TYPE	N-Value	Qp	LL	PI	%M	
- - - 22.522.5 - - - 25.025.0	23.0	24.5	7	SS	20-34-51 N=85				3.9	CONTINUED  CONTINUED  Silty SAND (SM) - orangish brown; fine grained; very dense; dry; (RESIDUUM)
27.527.5 	28.0	28.8	8	SS	62-47/3" N=47/3"				6.5	
32.532.5 	33.0	33.3	9	SS	N=100/4"				3.3	
- 37.537.5 - - - 40.040.0	38.0	38.1	10	SS	N=100/1"				3.5	- - - - - -
REMARKS:										AUGER REFUSAL AT 40 FEET



L	OG OF BORING	TF-5
	SHEET 1 OF	2
DRILLING CO	Apex Geosc	ience Inc.
DRILLER		
LOGGED BY	Sammy Jo	e Allison

										DRILLER			
BORING NO. / LOCA	TION					TF-5				LOGGED BY	S	ammy Joe Alliso	n
DATE	July 16	6, 2015			SURF	ACE ELEV.		FT.		WATER LE	EVEL DATA	A (IF APPLICABI	LE)
REFUSAL:	No	DEP.	ТН	FT		ELEV.		FT.		COMPLETION:	DEPTH	Dry FT.	
SAMPLED	25.0	FT.	7	7.6 м							ELEV.	FT.	
TOP OF ROCK		DEP.	тн	FT		ELEV.		FT.					
BEGAN CORING		DEP.	тн	FT		ELEV.		FT.		AFTER 24 HRS.	DEPTH	N/A FT.	
FOOTAGE CORED (L	LF)			FT							ELEV.	FT.	
BOTTOM OF HOLE	DEPTH		2	5.0 FT		ELEV.		FT.			_		
BORING ADVANCED	BY:				POWER A	UGERING	X	_	WASHBORING	3			
STRATUM		SAMPLE DE	PTH		SAMPLE		FIELD		LABORATORY				

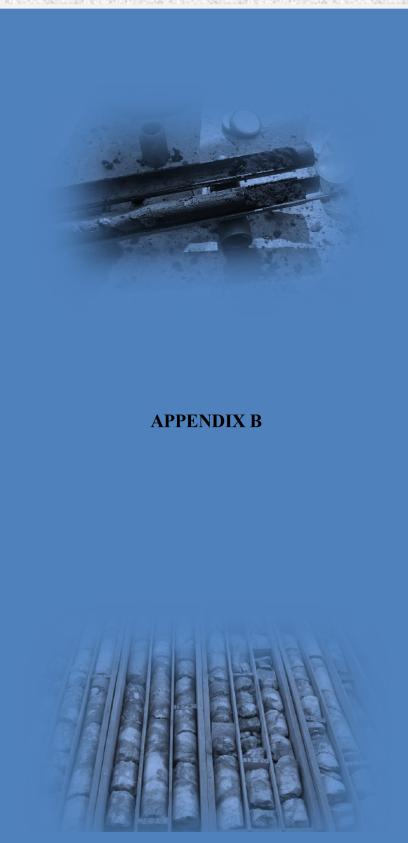
STRATUM	SAMPLE	E DEPTH	SAMPLE		FIELD		LABOR	ATORY		
DEPTH	FROM	то	OR	SAMPLE	RESULTS		RE	SULTS		STRATUM DESCRIPTION
FT. ELEV.	FT.	FT.	RUN NO.	TYPE	N-Value	Qp	LL	PI	%М	
- - - - 2.52.5	1.0	2.5	1	ss	18-10-12 N=22				4.6	Silty SAND (SM) with caliche - grayish brown; fine grained; medium dense; dry; (RESIDUUM)
- -	3.0	4.5	2	SS	6-11-8 N=19				5.2	<u>-</u> -
5.0 — -5.0 — — —	5.0	6.5	3	SS	2-2-3 N=5				5.5	Silty SAND (SM) with caliche - light brown; fine
7.57.5 	8.0	9.5	4	ss	15-24-39 N=63				8.1	grained; medium dense to loose to very dense; dry; (RESIDUUM)  -
12.512.5 15.0 15.0	13.0	14.5	5	ss	26-46-60 N=106				6.4	Silty SAND (SM) with trace caliche - orangish brown; fine grained; very dense; dry; (RESIDUUM)
17.517.5 	18.0	19.3	6	SS	22-39-58 N=97				5.0	- - - -
REMARKS:										



L	OG OF BORING	TF-5
	SHEET 2 OF	2
DRILLING CO	Apex Geosc	cience Inc.
DRILLER		
LOGGED BY	Sammy Jo	e Allison

BORNING HO_I_LOCATION	GEOSERVICES, LLG-GEOTECHNIC	cal and Materials Ei	ngineers	GE	OServices I	Project No.:	31-15	1247			DRILLING CO Apex Geoscience Inc.  DRILLER
Note	BORING NO. / LOCAT	ION			TF-5						
No	DATE	July 16, 2015		SURF	ACE ELEV.		FT.		•		WATER LEVEL DATA (IF APPLICABLE)
The proof of the	REFUSAL:	No [	DEPTH	-			FT.				
DECAM   DEPTH   FT   ELEV   FT   FT   ELEV   FT   FT   ELEV   FT	SAMPLED	25.0 FT.	7.6	M			_				ELEVFT.
FOOTAGE CORED (LF) SOUTOM OF HOLE DEPTH    SAMPLE DEPTH   SAMPLE D	TOP OF ROCK			-			-				
SOTING OF HOLE DEPTH   25.0 FT.   ELEV.   FT.   FT.   POWER AUGERING   X   WASHBORING   X			DEPTH	-	ELEV.		FT.				
STRATUM   SAMPLE DEPTH   SAMPLE DEPTH   SAMPLE   DOWER AUGUS   TYPE   RESULTS   RESULTS   STRATUM DESCRIPTION			25.0	-	FI FV		FT				ELEVF1.
STRATUM   SAMPLE DEFTH   FROM   TO   OR   SAMPLE   FIELD   RESULTS   RESU				_	•		• • •	,	MASH	RODIN	
No.   Property   Pro		T			T I		•				<u> </u>
FT.			I	-	SAMDLE						STRATIIM DESCRIPTION
22.5	11 11			1	1 1					%М	STRATOM DESCRIPTION
22.5				Non no.	1 2		~~			70	CONTINUED
22.5	_										_ <del>_</del>
22.5	-										_
22.5	_										Silty SAND (SM) with trace caliche - orangish
25.0	22.5 <b>–</b> -22.5										
25.0	_					24-41-45					(RESIDUUM)
27.527.527.530.030.030.535.035.035.037.5 -	_	23.0	24.5	7	SS					4.2	<u> </u>
27.527.527.530.030.030.535.035.035.037.5 -	-										-
30.0 — -30.0 — -30.5 — -32.5 — -32.5 — -35.0 — -35.0 — -37.5 — -37.5 — -37.5 — -40.0 — -40.0	25.0 — -25.0										BORING TERMINATED AT 25 FEET
30.0 — -30.0 — -30.5 — -32.5 — -32.5 — -35.0 — -35.0 — -37.5 — -37.5 — -37.5 — -40.0 — -40.0	_										_
30.0 — -30.0 — -30.5 — -32.5 — -32.5 — -35.0 — -35.0 — -37.5 — -37.5 — -37.5 — -40.0 — -40.0	-										-
30.0 — -30.0 — -30.5 — -32.5 — -32.5 — -35.0 — -35.0 — -37.5 — -37.5 — -37.5 — -40.0 — -40.0											<del>-</del>
32.532.532.535.0	27.527.5										<u>_</u>
32.532.532.535.0	_										_
32.532.532.535.0	_										<del>-</del>
32.532.532.535.0	- 20.0										-
35.0 — -35.0 	30.0 — -30.0 -										<del>-</del>
35.0 — -35.0 	_										<u> </u>
35.0 — -35.0 	-										-
35.0 — -35.0 	<del></del>										
37.537.5 											_
37.537.5 	-										_
37.537.5 	_										<del>-</del>
37.537.5 	- 35.0 — -35.0										<u>-</u>
- - - 40.040.0	-										_
- - - 40.040.0	_										<del>_</del>
- - - 40.040.0	-										-
- - - 40.040.0	<del></del>										_
	— Orio										<u> </u>
	-										-
	_										<del>-</del> -
	40.0 — -40.0										
	DEMARKS:										





### Consolidated Interim Storage Facility - Andrews, Texas GEOServices Project No. 31-151247

	1	, ,		st 3, 2013			Tall   1	
		_	Natural				Finer than	
Boring	Sample	Depth	Moisture		tterberg Limi		200 Sieve	Soil
Number	Number	(feet)	Content	LL	PL	PI	(%)	Type
	1	1.0 - 2.5	3.6%				48	
	2	3.0 - 4.5	3.9%					
	3	5.0 - 6.5	6.5%					
	4	8.0 - 9.5	7.8%				37	
B-101	5	13.0 - 14.5	6.7%					
	6	18.0 - 19.5	5.7%					
	7	23.0 - 24.5	5.7%					
	9	31.0 - 31.2	5.7%					
	10	33.0 - 33.2	7.7%					
					_			
	1	1.0 - 2.5	3.4%					
	2	3.0 - 3.8	2.8%					
	3	5.0 - 6.5	2.9%					
B-102	4	8.0 - 9.5	4.0%					
	5	13.0 - 13.8	6.0%					
	6	18.0 - 18.8	5.8%					
	7	23.0 - 23.8	2.9%					
	1	1.0 - 2.5	4.3%	26	N.P.			
	2	3.0 - 4.5	4.8%					
	3	5.0 - 6.5	5.8%					
B-103	4	8.0 - 9.5	7.1%					
	5	13.0 - 14.4	6.3%					
	6	18.0 - 19.5	6.1%				1	
	7	23.0 - 24.5	4.5%					
	1	1.0 - 2.3	3.1%					
	2	3.0 - 3.8	2.5%					
	3	5.0 - 6.5	4.1%					
B-104	4	8.0 - 9.5	6.9%				1	
	5	13.0 - 14.5	6.0%					
	6	18.0 - 19.5	4.6%				†	
	7	23.0 - 24.5	3.1%				1 1	
	·	25.0 21.5	5.170					
	1	1.0 - 1.8	3.3%				<del>1</del> 1	
	2	5.0 - 6.5	5.3%		<del>                                     </del>		+ +	
B-105	3	8.0 - 9.5	8.1%				+	
D-103	4	13.0 - 13.5	4.8%				+ +	
	6	18.0 - 19.0	4.870				+ +	
	0	10.0 - 19.0	4.170					



#### Consolidated Interim Storage Facility - Andrews, Texas GEOServices Project No. 31-151247

	T	, ,		ist 5, 2015	,		1	
			Natural				Finer than	
Boring	Sample	Depth	Moisture		tterberg Lim		200 Sieve	Soil
Number	Number	(feet)	Content	LL	PL	PI	(%)	Туре
	1	1.0 - 2.5	4.5%					
	2	3.0 - 4.5	3.9%					
	3	5.0 - 6.5	3.9%					
B-106	4	8.0 - 9.5	5.3%				41	
	5	13.0 - 13.9	6.7%					
	6	18.0 - 19.5	6.8%					
	7	23.0 - 24.4	6.2%					
	1	1.0 - 1.8	5.3%					
	2	3.0 - 4.5	4.5%					
	3	5.0 - 6.5	4.1%					
B-107	4	8.0 - 9.5	5.7%					
	5	13.0 - 14.0	7.2%					
	6	18.0 - 19.5	6.3%					
	7	23.0 - 24.4	4.2%					
							•	
	1	1.0 - 2.5	4.9%					
	2	3.0 - 4.5	4.9%				1	
	3	5.0 - 6.5	6.0%				1 1	
B-108	4	8.0 - 9.4	6.3%					
	5	13.0 - 13.8	8.4%					
	6	18.0 - 18.8	6.6%					
	7	23.0 - 23.4	6.0%					
	,	20.0 20.1	0.070	<u> </u>				
	1	1.0 - 2.5	3.4%					
	2	3.0 - 4.5	4.2%				1	
	3	5.0 - 6.5	3.8%				+ +	
B-109	4	8.0 - 9.0	3.2%				+ +	
	5	13.0 - 13.3	8.5%				+ +	
	6	18.0 - 18.7	6.3%				+ +	
	7	23.0 - 24.5	4.7%	<del>                                     </del>			+ +	
	<u>'</u>	23.0 - 24.3	T. / /0	1	1			
	1	1.0 - 2.5	5.0%	29	N.P.		Т	
	2	3.0 - 4.5	4.7%		IN.F.		+ +	
	3	5.0 - 6.5	6.0%				+ +	
B-110	4	5.0 - 6.5 8.0 - 9.5	8.9%				+	
D-110							+	
	5	13.0 - 14.0	7.1%		-		+	
	6	18.0 - 19.0	5.1%				+ +	
	7	23.0 - 24.5	4.4%					



#### Consolidated Interim Storage Facility - Andrews, Texas GEOServices Project No. 31-151247

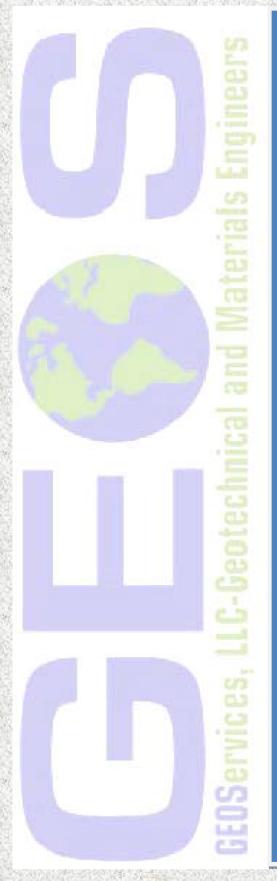
	1			st 5, 2015				
			Natural				Finer than	
Boring	Sample	Depth	Moisture		tterberg Lim		200 Sieve	Soil
Number	Number	(feet)	Content	LL	PL	PI	(%)	Туре
	1	1.0 - 2.5	6.7%				1	
	2	3.0 - 4.5	4.5%				44	
	3	5.0 - 6.5	5.2%					
	4	8.0 - 9.5	4.3%					
B-111	5	13.0 - 14.0	6.6%				30	
	6	18.0 - 19.0	5.8%					
	7	23.0 - 24.0	6.0%					
	8	28.0 - 29.5	4.3%					
	9	33.0 - 34.5	2.5%					
	1	1.0 - 2.5	3.3%					
	2	3.0 - 4.5	3.9%					
	3	5.0 - 6.5	6.7%					
AB-1	4	8.0 - 9.5	6.2%				24	
	5	13.0 - 14.3	4.3%					
	6	18.0 - 18.8	4.9%					
	7	23.0 - 23.8	3.2%					
		2010 2010	0.270					
	1	1.0 - 2.5	4.8%				35	
	2	3.0 - 4.5	5.7%				35	
	3	5.0 - 6.5	5.5%				1	
AB-2	4	8.0 - 9.5	3.7%				1	
	5	13.0 - 14.5	3.4%				1	
	6	18.0 - 19.5	3.1%				1	
		10.0 19.5	3.170	l	<u> </u>			
	1	1.0 - 2.5	3.0%		1		T	
	2	3.0 - 4.5	2.8%				45	
	3	5.0 - 6.5	4.8%				43	
	4	8.0 - 9.5	2.8%				1	
	5	13.0 - 14.3	5.8%				+ +	
TF-1	6	18.0 - 19.3	5.4%				+	
	7		2.7%				+	
	8	23.0 - 24.5					+ +	
		28.0 - 29.3	3.0%				+	
	9	33.0 - 33.4	3.7%					
	10	38.0 - 38.3	4.6%					
	1 1	10.25	4.20/	20	l ND		т т	
	1	1.0 - 2.5	4.3%	28	N.P.		+	
	2	3.0 - 4.5	4.8%				+	
TDD .	3	5.0 - 6.5	3.9%				+ +	
TF-2	4	8.0 - 9.5	6.7%				+	
	5	13.0 - 14.2	5.9%				+	
	6	18.0 - 18.8	5.9%				1	
	7	23.0 - 24.5	4.2%					

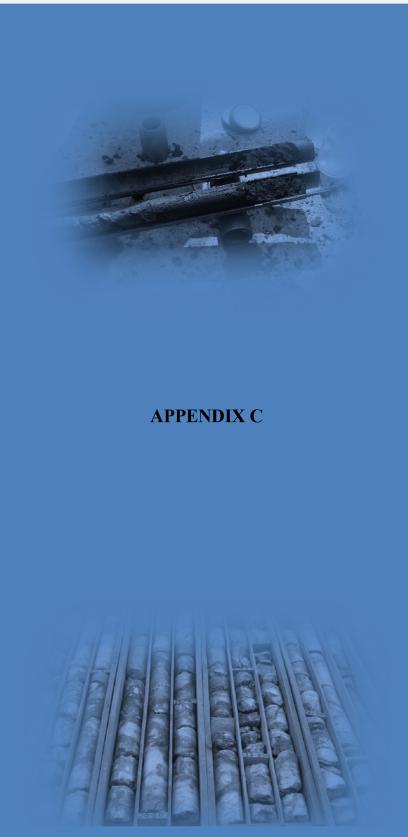


#### Consolidated Interim Storage Facility - Andrews, Texas GEOServices Project No. 31-151247

		Depth	Natural				Finer than			
Boring	Sample		Moisture		tterberg Lim	200 Sieve	Soil Type			
Number	Number	(feet)	Content	LL	LL PL PI			(%)		
	1	1.0 - 2.5	4.3%							
TF-3	2	3.0 - 4.5	4.6%							
	3	5.0 - 6.5	3.9%							
	4	8.0 - 9.5	5.5%							
	5	13.0 - 14.5	9.0%							
	6	18.0 - 19.5	4.5%							
	7	23.0 - 24.5	3.8%							
	1	1.0 - 2.5	3.7%							
	2	3.0 - 4.5	3.9%							
	3	5.0 - 6.5	6.6%							
	4	8.0 - 9.5	7.4%							
TF-4	5	13.0 - 14.2	5.2%				34			
1 F <del>- 4</del>	6	18.0 - 19.2	4.3%							
	7	23.0 - 24.5	3.9%							
	8	28.0 - 28.8	6.5%							
	9	33.0 - 33.3	3.3%							
	10	38.0 - 38.1	3.5%							
	1	1.0 - 2.5	4.6%							
TF-5	2	3.0 - 4.5	5.2%							
	3	5.0 - 6.5	5.5%							
	4	8.0 - 9.5	8.1%							
	5	13.0 - 14.5	6.4%							
	6	18.0 - 19.5	5.0%							
	7	23.0 - 24.5	4.2%							







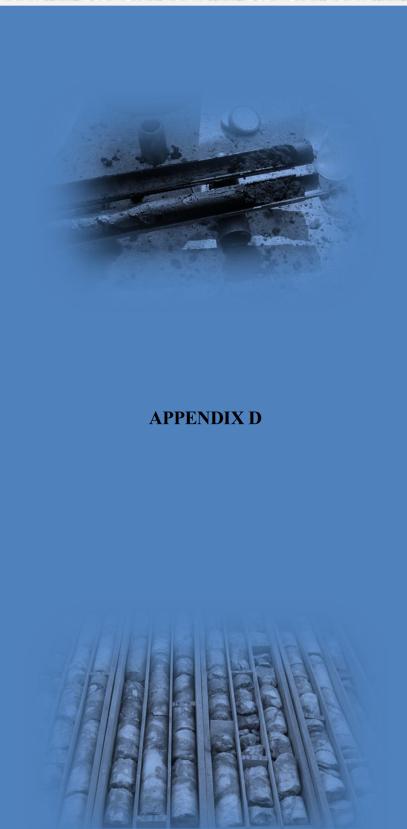
#### STATIC ELASTIC MODULUS CALCULATION

Total Depth Below	Depth	Depth	Shear Wave	Poisson's	Total	Mass	Shear	Shear	Elastic	Elastic	Modulus	Static Elastic
Ground Surface	Below Slab	Range	Velocity	Ratio	Unit Wt.	Density	Modulus	Modulus	Modulus	Modulus	Degradation	Modulus
d	z	Below Slab	$V_s$	μ	$\gamma_{\rm t}$	ρ	$G_0$	$G_0$	Eo	Eo	E/E <sub>o</sub>	E <sub>s</sub>
ft	ft	ft	ft/sec		pcf	slug/ft <sup>3</sup>	psf	psi	psf	psi		psi
5	3	0-3	820.3	0.35	125	3.88	2612159	18140	7052829	48978	0.2	9796
10	7	3-10	820.3	0.35	125	3.88	2612159	18140	7052829	48978	0.2	9796
15	12	10-15	1394	0.35	125	3.88	7543618	52386	20367769	141443	0.2	28289
21	18	15-21	1498	0.35	125	3.88	8711196	60494	23520228	163335	0.2	32667
25	22	21-25	1498	0.35	125	3.88	8711196	60494	23520228	163335	0.2	32667
30	27	25-30	1498	0.35	125	3.88	8711196	60494	23520228	163335	0.2	32667
35	32	30-35	1498	0.35	125	3.88	8711196	60494	23520228	163335	0.2	32667
40	37	35-40	2558	0.35	125	3.88	25401258	176398	68583396	476274	0.2	95255
45	42	40-45	2558	0.35	125	3.88	25401258	176398	68583396	476274	0.2	95255
50	47	45-50	2558	0.35	125	3.88	25401258	176398	68583396	476274	0.2	95255
55	52	50-55	2558	0.35	125	3.88	25401258	176398	68583396	476274	0.2	95255
60	57	55-60	2558	0.35	125	3.88	25401258	176398	68583396	476274	0.2	95255
65	62	60-65	2228	0.35	125	3.88	19270124	133820	52029335	361315	0.2	72263
70	67	65-70	2228	0.35	125	3.88	19270124	133820	52029335	361315	0.2	72263
75	72	70-75	2228	0.35	125	3.88	19270124	133820	52029335	361315	0.2	72263
80	77	75-80	2228	0.35	125	3.88	19270124	133820	52029335	361315	0.2	72263
85	82	80-85	2228	0.35	125	3.88	19270124	133820	52029335	361315	0.2	72263
90	87	85-90	2228	0.35	125	3.88	19270124	133820	52029335	361315	0.2	72263
95	92	90-95	2228	0.35	125	3.88	19270124	133820	52029335	361315	0.2	72263
100	97	95-100	2228	0.35	125	3.88	19270124	133820	52029335	361315	0.2	72263

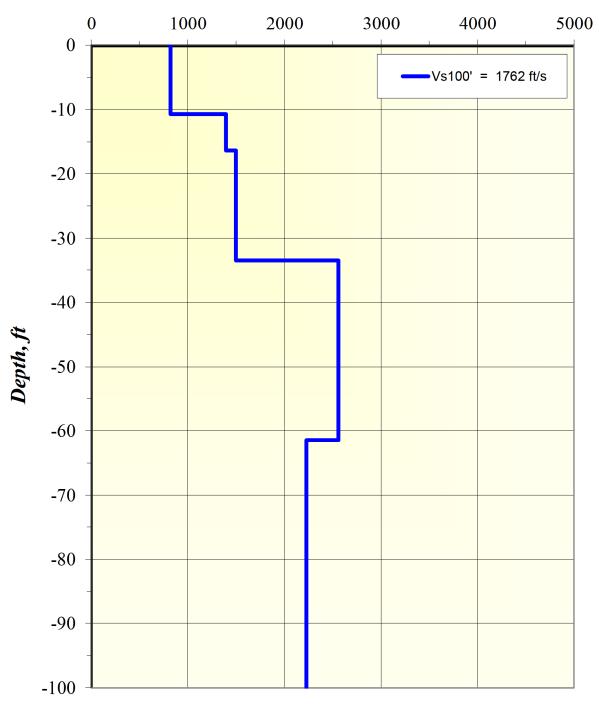
Notes: Shear wave velocities were those calculated during site specific seismic study. The plot is attached to this document





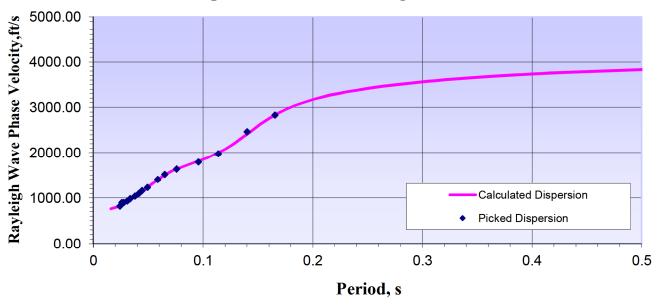


### CISF-Andrews, Texas: Vs Model



Shear-Wave Velocity, ft/s

CISF - Andrews, Texas: Supportive Illustration
Dispersion Curve Showing Picks and Fit



p-f Image with Dispersion Modeling Picks

