

Location Lenex MW-10	Date(s) Drilled 12/10/14 wed	Drilling Contractor Cascade Drilling	Bearing (Azimuth)
Ground Surface Elevation (ft)	Logged by J. Sobczak	Drill Rig Type Posonic 600T	Plunge (Degrees) Vert
Horizontal/Vertical Datum	Reviewed by	Borehole Diameter (in) 10" / 6"	Total Depth (ft)

Depth (ft)	Notes	Sample Information					Geologic Unit	MATERIAL DESCRIPTION	SOIL COLOR
		Penetration (Graphic)	Type and No.	Blows per 6 in.	Penetration (in)	Recovery (in)			

CONFIDENTIAL DRAFT

Subject to Revision

MATERIAL DESCRIPTION

SOIL COLOR

60									
61									
62									
63								(SP) Poorly graded sand, 100% very fine to fine, Subrounded, trace silt	10YA 4/3 Brown
64									
65									
66									
67									
68								(SP) Poorly graded sand, 90% sand F-C, Subangular to Subrounded, F-C gravel, QFMA (69-70' very fine sand w/ gravel trace silt)	10YR 5/3 Brown
69									
70									
71									
72								(SM) Silty sand, 85% very fine sand, Subangular to subrounded, 15% silt, QFMA	2.5Y 4/3 Olive Brown
73									
74									
75									
76									
77									
78									
79									
80								(SP) Poorly graded sand, 95% sand F-C, Subangular to subrounded, 5% silt	
81									
82									2.5Y 4/3 Olive Brown
83								(SM) Silty Sand, 85% very fine sand, Subangular to subrounded, 15% silt QFMA	2.5Y 4/3 Olive Brown
84									
85								(SP) Poorly graded sand w/ gravel, 65% F-C sand, subangular to subrounded, 30% F-C gravel, QA, 5% clay low plasticity	5YR 5/6 Yellowish red
86									5YR 5/6 Yellowish red
87								(SP) Poorly graded sand w/ gravel, 85% F-C sand, Subangular to subrounded, 10% F-C gravel, QA	2.5Y 5/4 light olive Brown
88									
89								(SP) Poorly Graded sand, 90% F-C sand, Subangular to subrounded, 10% F-C gravel, QFA	
90									

1004
1255

1309

1345



LOG OF BORING

SHEET 4 OF 12

Location <i>Cemex / MW-10</i>	Date(s) Drilled <i>12/10/14 wed</i>	Drilling Contractor <i>Cascade Drilling</i>	Bearing (Azimuth)
Ground Surface Elevation (ft)	Logged by <i>J. Sobolew</i>	Drill Rg Type <i>Pro Sonic 600T</i>	Plunge (Degrees) Vert
Horizontal/Vertical Datum	Reviewed by	Borehole Diameter (in) <i>10" / 6"</i>	Total Depth (ft)

Subject to Revision

MATERIAL DESCRIPTION

SOIL COLOR

[illegible]

Location Cemex/MW-10	Date(s) Drilled 12/10/14 Wed	Drilling Contractor Cascade Drilling	Bearing (Azimuth)
Ground Surface Elevation (ft)	Logged by J. Sobolew	Drill Rig Type Prosonic 600T	Plunge (Degrees) Vert
Horizontal/Vertical Datum	Reviewed by	Borehole Diameter (in) 9 7/8" / 6"	Total Depth (ft)

Depth (ft)	Notes	Sample Information					Geologic Unit	MATERIAL DESCRIPTION	SOIL COLOR
		Penetration (Graphic)	Type and No.	Blows per 6 in.	Penetration (in)	Recovery (in)			

CONFIDENTIAL DRAFT
Subject to Revision
MATERIAL DESCRIPTION

120									
121									
122									
123									
124									
125									
126									
127									
128									
129									
130									
131									
132									
133									
134									
135									
136									
137									
138									
139									
140									
141									
142									
143									
144									
145									
146									
147									
148									
149									
150									

121' (SM) Silty Sand, 85% F-M sand, predominantly fine, subrounded, 15% silt, QFMA, interbeds of coarse sand and gravel. Iron oxidation 121-122. Gravel up to 3mm clay balls

123' 123.6' 125' (SP) Poorly Graded sand, 85% F-C sand, angular to subangular, 10% F. gravel, 5% silt, QFA

126' 127' (SC) Clayey sand, 80% Fine sand, subangular, 20% clay, low plasticity, QA

(SP/SC) Poorly graded sand w/clay and gravel 75% F-C sand, subangular to subrounded, 15% F-C gravel, 10% clay Medium Plasticity

133.5' 135' (SM) Silty Sand, 80% F-C sand, subangular to subrounded, low plasticity, QMA

(ML) Silt, 95% silt, F-M sand 5%, subangular, Quartz, Trace to 5% clay (140.2-147')

(CH) Fat Clay, 100% clay, high plasticity, trace sand, subrounded, Q

147' 149.5'

7.5 YR 5/6 Strong Brown (121-122') 10 YR 5/4 yellowish brown 10 YR 5/4 yellowish brown 7.5 YR 5/6 strong brown

7.5 YR 5/4 Brown

5 YR 4/6 Yellowish Red (132-133.5')

2.5 Y 6/3 light yellowish Brown

7.5 YR Brown (135-140.2')

7.5 YR 4/6 Strong Brown (140.2-147')

2.5 Y 4/2 dark grayish brown

Location <i>Cemex / MW-1D</i>	Date(s) Drilled <i>12/19/14 4:30 PM day</i>	Drilling Contractor <i>Cascade Drilling</i>	Bearing (Azimuth)
Ground Surface Elevation (ft)	Logged by <i>J. Sobolew</i>	Drill Rig Type <i>Prosonic 600T</i>	Plunge (Degrees) <i>Vert</i>
Horizontal/Vertical Datum	Reviewed by	Borehole Diameter (in) <i>9 7/8" / 6" core</i>	Total Depth (ft)

Depth (ft)	Notes	Sample Information					Geologic Unit	CONFIDENTIAL DRAFT Subject to Revision MATERIAL DESCRIPTION	SOIL COLOR
		Penetration (Graphic)	Type and No.	Blows per 6 in.	Penetration (in)	Recovery (in)			

150									
151									
152									
153									
154									
155									
156									
157									
158									
159									
160									
161									
162									
163									
164									
165									
166									
167									
168									
169									
170									
171									
172									
173									
174									
175									
176									
177									
178									
179									
180									

SM/SC Silty sand / clayey sand, 85% F-M sand, subangular, medium sorting, low plasticity, QA

2.5 y
5/4
light
olive brown

SC Clayey sand, 85% fine sand, subangular, clay 15% low to medium plasticity.

10YR
4/4
dark yellowish
brown

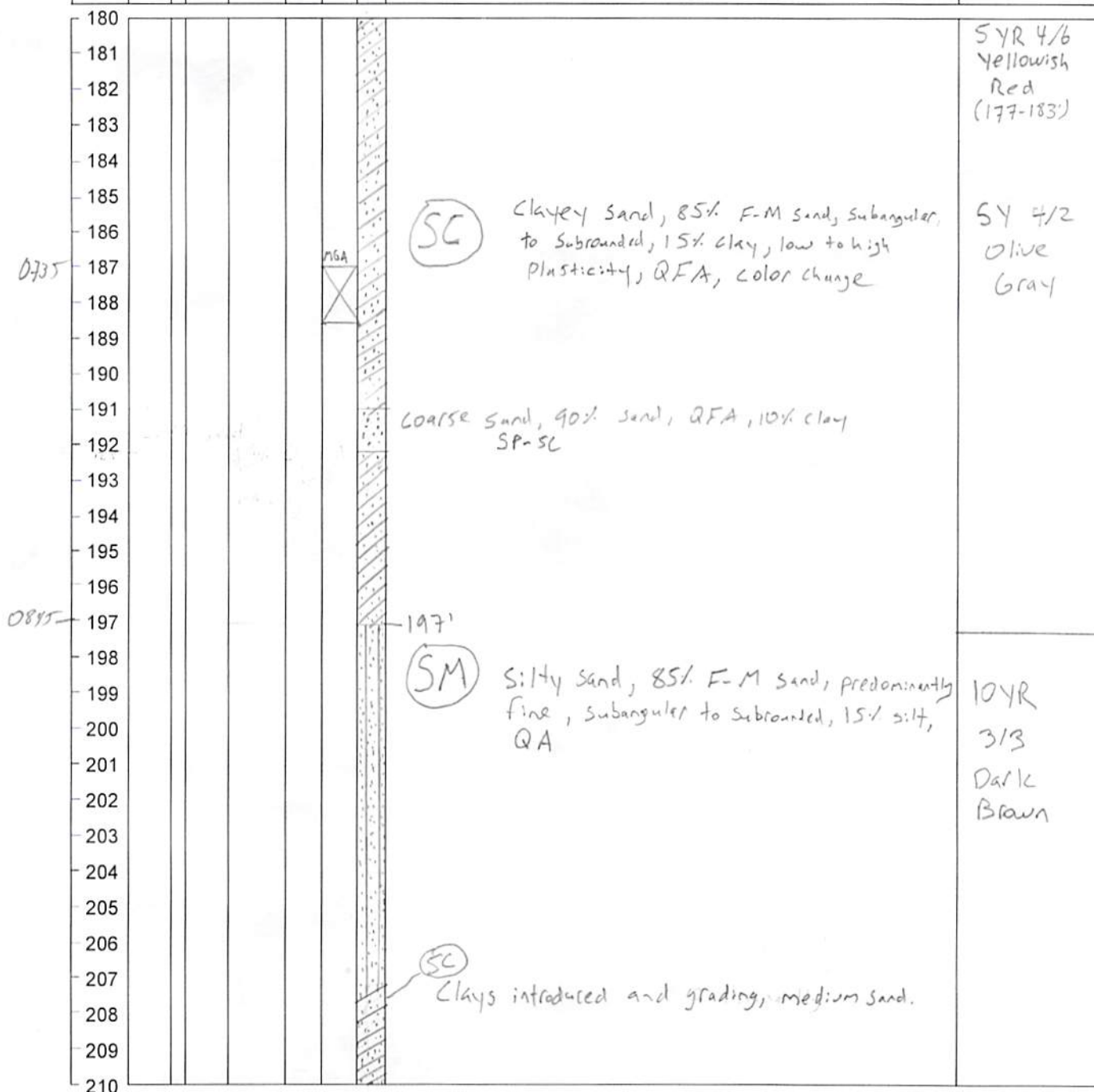
SP Poorly graded sand, 95% F-M sand, subangular, 5% silt, trace coarse sand, QFA

10YR
4/4
dark
yellowish
brown

1015

12/11/14 1106
12/12/14 0700

Location Cemex / NW-10		Date(s) Drilled 12/12/14 Friday	Drilling Contractor Cascade Drilling	Bearing (Azimuth)				
Ground Surface Elevation (ft)		Logged by J. Sobolew	Drill Rig Type Prosonic 600T	Plunge (Degrees) Vert				
Horizontal/Vertical Datum		Reviewed by	Borehole Diameter (in) 9 7/8" / 6" core	Total Depth (ft)				
Depth (ft)	Notes	Sample Information				Geologic Unit	CONFIDENTIAL DRAFT Subject to Revision MATERIAL DESCRIPTION	SOIL COLOR
		Penetration (Graphic)	Type and No.	Blows per 6 in.	Penetration (in)			



Location Cemex / MW-10	Date(s) Drilled 12/12/14 Friday	Drilling Contractor Cascade Drilling	Bearing (Azimuth)
Ground Surface Elevation (ft)	Logged by J. Sobolew	Drill Rig Type Prosonic 600T	Plunge (Degrees) Vert
Horizontal/Vertical Datum	Reviewed by	Borehole Diameter (in) 9 7/8" / 6" core	Total Depth (ft)

Depth (ft)	Notes	Sample Information					Geologic Unit	CONFIDENTIAL DRAFT Subject to Revision MATERIAL DESCRIPTION	SOIL COLOR
		Penetration (Graphic)	Type and No.	Blows per 6 in.	Penetration (in)	Recovery (in)			

210									
211									
212									
213									
214									
215									
216									
1000 217									
218									
219									
220									
221									
222									
223									
224									
225									
226									
227									
228									
229									
230									
231									
232									
233									
234									
235									
236									
1100 237									
238									
239									
240									

212.5'

(CH)

Fat clay, 100% clay, trace fine sand, subangular, Quartz, high plasticity

2.5Y
5/3
Light
Olive
Brown

(CL/ML)

Clayey silt w/interbeds of poorly graded sand w/gravel

223.5'

(CH)

Fat clay w/sand, 85% clay, 15% Sand F-M, subangular, QFMA, medium to high plasticity

2.5Y
6/6
Olive
Yellow

227'

(CH)

Fat Clay, 100% clay, high Plasticity
Small interbeds of poorly graded sand, Quartz

5Y
5/2
Olive
Gray

(SP)

Poorly graded sand w/gravel, QFMA, large cobbles up to 26mm

Location Cemex / MW-10	Date(s) Drilled 12/12/14 Friday	Drilling Contractor Cascade Drilling	Bearing (Azimuth)
Ground Surface Elevation (ft)	Logged by J. Sobolew	Drill Rig Type Prosonic 600T	Plunge (Degrees) Vert
Horizontal/Vertical Datum	Reviewed by	Borehole Diameter (in) 8" / 6" core	Total Depth (ft) 337

Depth (ft)	Notes	Sample Information					Geologic Unit	CONFIDENTIAL DRAFT Subject to Revision MATERIAL DESCRIPTION	SOIL COLOR
		Penetration (Graphic)	Type and No.	Blows per 6 in.	Penetration (in)	Recovery (in)			

240									
241									
242									
243									
244									
245									
246									
1303 247									
248									
249									
250									
251									
252									
253									
254									
255									
256									
1545 257									
258									
259									
260									
261									
262									
263									
264									
265									
266									
12/12/14 1620 267									
12/13/14 0700 268									
269									
270									

241'

(CL)

Sandy lean clay, 65% clay, low to medium plasticity

(SP)

Poorly graded sand w/ gravel, 55% F-C sand, 40% F-C gravel, subangular to subrounded, 5% silt, large cobbles up to 46mm. Grading

247'

(CH)

Fat clay, 100% Fat clay, high plasticity

263'

(CH)

Sandy Fat clay w/ gravel, 60% clay, medium to high plasticity, 30% sand F-C, 10% gravel F-C, subangular to subrounded, QA

267'

(CL)

Lean clay w/ sand, 85% clay, medium plasticity 10% F-C sand, 5% gravel F, subangular to subrounded, QFMA

269.2'

5Y 6/2
light
Olive
Gray

2.5Y
6/3
light
Yellowish
brown

5Y 6/3
Pale
Olive
247-250.5'

6Y 1
4/dark
gray

2.5Y
5/3
light Olive
Brown

5Y 5/2
Olive
Gray

Location Cemex/MW-10	Date(s) Drilled 12/13/14 Saturday	Drilling Contractor Cascade Drilling	Bearing (Azimuth)
Ground Surface Elevation (ft)	Logged by J. Sobolew	Drill Rig Type Prosonic 600T	Plunge (Degrees) Vert
Horizontal/Vertical Datum	Reviewed by	Borehole Diameter (in) 8" S.C. / 6" Core	Total Depth (ft) 337

Depth (ft)	Notes	Sample Information					Geologic Unit	CONFIDENTIAL DRAFT Subject to Revision MATERIAL DESCRIPTION	SOIL COLOR
		Penetration (Graphic)	Type and No.	Blows per 6 in.	Penetration (in)	Recovery (in)			

270									
271									
272									
273									
274									
275									
276									
277									
278									
279									
280									
281									
282									
283									
284									
285									
286									
287									
288									
289									
290									
291									
292									
293									
294									
295									
296									
297									
298									
299									
300									

(SP-SC) Poorly graded sand w/ clay and gravel, 75% F-C sand, 15% F-C gravel, subangular, 10% clay, low to medium plasticity, predominantly Quartz.

(SC) Clayey Gravel w/ sand, 45% gravel F-C, 40% sand F-C, 15% clay low to medium plasticity large cobbles 81mm, chert, QFMA, interbeds of clay

(CH) Fat clay, 100% clay, medium plasticity, brittle, trace interbeds of sand.

(SP) Poorly graded sand, 90% sand, F-C, 10% Fine gravel, subangular to subrounded QFMA, grading up to 41 mm cobbles (15% gravel, 85% sand).

(ML) Sandy silt, 70% silt, 30% very fine sand, subrounded, QFM

(SP) 100% fine sand

(SP) Poorly graded sand, 95% sand, F-C, subangular to subrounded, 5% gravel, trace silt, QFMA
Fine sand
25% gravel up to 30mm

2.5Y 6/2
Gray

10YR 6/4
light yellowish
brown

6Y 1 4/
dark gray (clay)

10YR 6/4
light yellowish
brown

10YR
6/3
pale
brown

7.5Y
5/4
brown

10YR
6/4
light
yellowish
brown

Location Lemex / MW-10	Date(s) Drilled 12/13/14 Saturday	Drilling Contractor Cascade Drilling	Bearing (Azimuth)
Ground Surface Elevation (ft)	Logged by J. Sobdew	Drill Rig Type Prosonic 600T	Plunge (Degrees) Vert
Horizontal/Vertical Datum	Reviewed by	Borehole Diameter (in) 8" s.c. / 6" core	Total Depth (ft) 337

Depth (ft)	Notes	Sample Information					Geologic Unit	MATERIAL DESCRIPTION	SOIL COLOR
		Penetration (Graphic)	Type and No.	Blows per 6 in.	Penetration (in)	Recovery (in)			

CONFIDENTIAL DRAFT

Subject to Revision

MATERIAL DESCRIPTION

SOIL COLOR

300									
301									
302									
303									
304									
305									
306									
307									
308									
309	308.5		25% clay						
310	311.6								
311									
312			Sp 85% sand - predom F-M						
313			10% gravel						
314	313.5		5% clay						
315			15-20% clay, 25% silt sand						
316	315.3								
317									
318									
319									
320									
321									
322									
323									
324									
325									
326									
327									
328									
329									
330									

SW-SC

Well graded sand w/ clay and gravel, 65% sand F-C, predominantly F-M, 25% F-C gravel, subangular to subrounded, 10% clay, low plasticity

10YR
5/4
Yellowish
Brown

SP

Poorly graded sand, 95% sand F-M, subrounded, predominantly very fine to fine, 5% silt

7.5YR
4/2
Brown

ML

Silt, 100% silt, trace very fine sand, subrounded, QM

7.5 YR
4/4
Brown

325.1' Poorly graded, 100% F-M sand, subangular to subrounded, trace silt, QMA

10YR 5/3
Brown

Brittle clay
(327-329.3')

10 YR 4/4
(327-329.3)
Brown

Location Cemex / MW-10	Date(s) Drilled 12/13/14 Saturday	Drilling Contractor Cascade Drilling	Bearing (Azimuth)
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Horizontal/Vertical Datum	Reviewed by	Borehole Diameter (in) 8" S.C. / 6" core	Total Depth (ft) 337

Depth (ft)	Notes	Sample Information					Geologic Unit	CONFIDENTIAL DRAFT Subject to Revision MATERIAL DESCRIPTION	SOIL COLOR
		Penetration (Graphic)	Type and No.	Blows per 6 in.	Penetration (in)	Recovery (in)			

330								(CH) Fat Clay, 100% clay, high plasticity	5Y 5/2 Olive Gray
331									
332									
333									
334									
335									
336									
337									
338									
339									
340									
341									
342									
343									
344									
345									
346									
347									
348									
349									
350									
351									
352									
353									
354									
355									
356									
357									
358									
359									
360									

1257

337'