

Pickering, Cole, & Hivner
 1070 W. 124 Avenue, Suite 300
 Westminster, CO. 80234
 Telephone: 303.996.2999

SUMMARY OF LABORATORY RESULTS

ORIGINAL INVESTIGATION

CLIENT KB Home Colorado

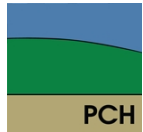
PROJECT NAME Sweetgrass Filing No. 4 - Preliminary Geotech

PROJECT NUMBER 12.426.16

PROJECT LOCATION Dacono, Colorado

LAB SUMMARY - GINT STD US LAB.GDT - 2/17/17 13:35 - C:\USERS\PUBLIC\DOCUMENTS\BENTLEY\GINT\PROJECTS\GEO 2016\12.426.16 SWEETGRASS F4.GPJ

Borehole	Depth	Soil Description	Water Content (%)	Dry Density (pcf)	Swell (+) or Consolidation (-)/ Surcharge (%/psf)	Water Soluble Sulfates (ppm)	Passing #200 Sieve (%)	Atterberg Limits		
								Liquid Limit	Plastic Limit	Plasticity Index
1	4	LEAN CLAY with SAND	21.7	106.8	+0.1/500		77	45	21	24
1	9	CLAYSTONE BEDROCK	22.0	111.4	+3.0/500		83	49	20	29
1	14	CLAYSTONE BEDROCK	10.2	97.5						
1	19	CLAYSTONE BEDROCK	6.0	117.9						
2A	4	FAT CLAY	18.3	106.2	+0.2/500	3200	90	50	20	30
2A	9	CLAYSTONE BEDROCK	16.2	114.6						
2A	14	CLAYSTONE BEDROCK	4.9	97.8	-1.3/1000		79	46	21	25
2A	19	CLAYSTONE BEDROCK	11.9	127.0						
2B	4	FAT CLAY	19.1	106.1	+0.6/500		100	50	20	30
2B	9	CLAYSTONE BEDROCK	13.3	120.5						
2B	14	CLAYSTONE BEDROCK	12.6	124.5						
2B	19	CLAYSTONE BEDROCK	14.7	119.9						
2B	24	CLAYSTONE BEDROCK	17.1	110.1						
2B	34	CLAYSTONE BEDROCK	7.2	125.5						
3	4	LEAN CLAY with SAND	15.9	95.2						
3	9	LEAN CLAY with SAND	24.3	98.6						
3	14	CLAYSTONE BEDROCK	14.7	103.6	+0.8/1000					
3	19	CLAYSTONE BEDROCK	13.9	118.5						
4	4	LEAN to FAT CLAY	20.0	101.9						
4	9	CLAYSTONE BEDROCK	14.1	121.2	+6.0/500					
4	14	CLAYSTONE BEDROCK	11.7	116.0						
4	19	CLAYSTONE BEDROCK	7.8	124.0						
5	2	LEAN CLAY	34.7	96.6	+1.9/200		92	49	20	29
5	4	LEAN CLAY with SAND	15.7	116.4						
5	9	CLAYSTONE BEDROCK	14.3	115.1	+9.8/500					
5	14	CLAYSTONE BEDROCK	12.0	128.0						
5	19	CLAYSTONE BEDROCK	12.8	123.0						
6	4	LEAN to FAT CLAY	23.8	103.8						
6	9	CLAYSTONE BEDROCK	18.7	110.3	+7.5/500					
6	14	CLAYSTONE BEDROCK	10.5	113.7						



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ORIGINAL INVESTIGATION CONTINUED

CLIENT KB Home Colorado

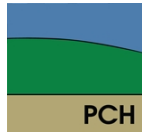
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Borehole	Depth	Soil Description	Water Content (%)	Dry Density (pcf)	Swell (+) or Consolidation (-)/ Surcharge (%/psf)	Water Soluble Sulfates (ppm)	Passing #200 Sieve (%)	Atterberg Limits		
								Liquid Limit	Plastic Limit	Plasticity Index
6	19	CLAYSTONE BEDROCK	11.0	126.7						
7	4	FAT CLAY	17.9	107.3	+3.0/500		97	50	20	30
7	9	CLAYSTONE BEDROCK	21.1	103.3						
7	14	CLAYSTONE BEDROCK	8.5	115.5						
7	19	CLAYSTONE BEDROCK	6.1	93.8						
8	4	LEAN to FAT CLAY	19.2	102.8						
8	9	CLAYSTONE BEDROCK	13.5	120.2	+6.8/500	3800				
8	14	CLAYSTONE BEDROCK	14.0	123.3						
8	19	LIGNITE	36.3	78.9						
9	4	LEAN to FAT CLAY	10.8	111.5						
9	9	CLAYSTONE BEDROCK	16.3	113.7	+7.2/500	1800	98	50	20	30
9	14	CLAYSTONE BEDROCK	16.7	116.1						
9	19	CLAYSTONE BEDROCK	13.6	123.7						
9	24	CLAYSTONE BEDROCK	10.8	125.6						
9	34	CLAYSTONE BEDROCK	6.4	128.0						
10	4	FAT CLAY	18.5	107.5	+6.9/500					
10	9	WEATHERED CLAYSTONE BEDROCK	25.4	99.7						
10	14	WEATHERED CLAYSTONE BEDROCK	17.5	109.6	+8.5/500		100	51	21	30
10	19	CLAYSTONE BEDROCK	18.0	114.9						
10	24	CLAYSTONE BEDROCK	19.9	111.4						
10	34	CLAYSTONE BEDROCK	19.8	110.2						
11	4	FAT CLAY	17.6	108.0	+4.7/500					
11	9	FAT CLAY	17.4	111.1	+5.7/500		99	50	20	30
11	14	WEATHERED CLAYSTONE BEDROCK	19.3	110.4						
11	19	CLAYSTONE BEDROCK	12.6	123.7						
11	24	CLAYSTONE BEDROCK	11.7	127.6						
11	34	CLAYSTONE BEDROCK	13.4	120.6						
TP1	0	LEAN CLAY(CL)					91	47	21	26
TP1	4	CLAYSTONE BEDROCK					96	47	21	26
TP2	0	LEAN CLAY (CL)					92	47	21	26



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SUMMARY OF LABORATORY RESULTS

ORIGINAL INVESTIGATION CONCLUDED AND CLAY SET VS WATER COMPARISON

CLIENT KB Home Colorado

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Borehole	Depth	Soil Description	Water Content (%)	Dry Density (pcf)	Swell (+) or Consolidation (-)/ Surcharge (%/psf)	Water Soluble Sulfates (ppm)	Passing #200 Sieve (%)	Atterberg Limits		
								Liquid Limit	Plastic Limit	Plasticity Index
TP2	4.5	CLAYSTONE BEDROCK					94	48	21	27
TP3	0	LEAN CLAY(CL)					89	46	21	25
TP3	4.5	CLAYSTONE BEDROCK					96	47	20	27
TP4	0	LEAN CLAY (CL)					92	47	21	26
TP4	5	CLAYSTONE BEDROCK					97	49	20	29
TP5	0	LEAN CLAY(CL)					86	45	20	25
TP5	8	CLAYSTONE BEDROCK					94	45	21	24
TP6	0	LEAN CLAY(CL)					90	47	21	26
TP6	8	CLAYSTONE BEDROCK					94	47	21	26
TP7	0	LEAN CLAY(CL)					88	33	21	12
TP7	7	CLAYSTONE BEDROCK					97	50	20	30
TP8	0	LEAN CLAY with SAND(CL)					80	45	22	23
TP8	4	CLAYSTONE BEDROCK					94	45	21	24
TP9	0	LEAN CLAY with SAND(CL)					76	43	22	21
SOIL TREATED WITH WATER ONLY										
<u>_7</u>	<u>10</u>	<u>Recompacted Clay+Claystone: 95% @ Optimum</u>	<u>16.8</u>	<u>107.3</u>	<u>+7.4/500</u>		<u>94</u>			
<u>_7</u>	<u>11</u>	<u>Recompacted Clay+Claystone: 95% @ +3%</u>	<u>19.0</u>	<u>107.1</u>	<u>+4.3/500</u>					
<u>_9</u>	<u>0</u>	<u>Recompacted Clay: 95% @ Optimum</u>	<u>17.2</u>	<u>104.1</u>	<u>+7.1/500</u>					
<u>_10-CL</u>	<u>0</u>	<u>Recompacted Clay: 95% @ +1%</u>	<u>18.2</u>	<u>104.1</u>	<u>+5.2/500</u>		<u>92</u>			
<u>_10-CL</u>	<u>1</u>	<u>Recompacted Clay: 95% @ +3%</u>	<u>20.2</u>	<u>104.2</u>	<u>+2.3/500</u>					
<u>_10-CS</u>	<u>10</u>	<u>Recompacted Claystone: 95% @ +1%</u>	<u>18.8</u>	<u>103.2</u>			<u>95</u>			
<u>_10-CS</u>	<u>11</u>	<u>Recompacted Claystone: 95% @ +3%</u>	<u>20.5</u>	<u>103.2</u>						
<u>_Comp-CS</u>	<u>20.1</u>	<u>Recompacted Claystone: 95% @ Optimum</u>	<u>17.8</u>	<u>102.4</u>	<u>+9.1/500</u>					
<u>_Comp-CS</u>	<u>21</u>	<u>Recompacted Claystone: 95% @ +4%</u>	<u>21.4</u>	<u>101.7</u>	<u>+6.6/500</u>					
<u>_TP4 CL</u>	<u>0</u>	<u>LEAN CLAY PROCTOR</u>	<u>14.8</u>	<u>112.7</u>						
<u>_TP4 CL</u>	<u>0.1</u>	<u>LEAN CLAY w/ CLAY SET @ OPTIMUM</u>	<u>15.1</u>	<u>106.9</u>	<u>+0.6/500</u>			<u>40</u>	<u>23</u>	<u>17</u>
<u>_TP4 CL</u>	<u>0.2</u>	<u>LEAN CLAY w/ CLAY SET@ +3%</u>	<u>17.9</u>	<u>107.2</u>	<u>+0.6/500</u>			<u>40</u>	<u>23</u>	<u>17</u>
<u>TP4/7 CS</u>	<u>0</u>	<u>CLAYSTONE BEDROCK PROCTOR</u>	<u>19.1</u>	<u>106.9</u>						
<u>TP4/7 CS</u>	<u>0.1</u>	<u>CLAYSTONE BEDROCK w/ CLAY SET @ OPTIMUM</u>	<u>19.0</u>	<u>101.7</u>	<u>+2.3/500</u>			<u>43</u>	<u>23</u>	<u>20</u>
<u>TP4/7 CS</u>	<u>0.2</u>	<u>CLAYSTONE BEDROCK w/ CLAY SET@ +3%</u>	<u>22.0</u>	<u>101.8</u>	<u>+0.7/500</u>			<u>42</u>	<u>22</u>	<u>20</u>