SUBMITTAL

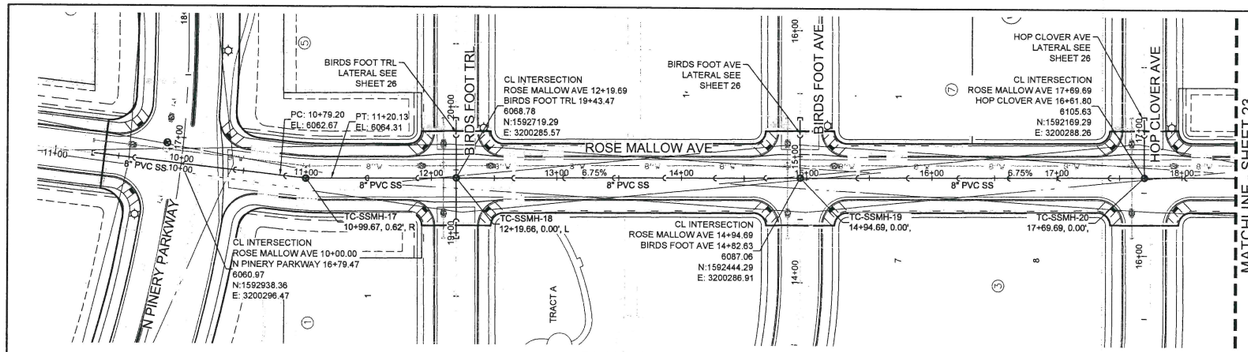
Kelley Trucking inc.
Earthmoving Contractors
Golden, CO • kelleytruckinginc.com

Submittal number	106.0	Date	03/09/2020
Project	TRAILS AT CROWFOOT F1	6954 N. CROWFOOT VALLEY RD. PARKER, CO 80134	
Project number	201810		
Spec section			
Subsection		Status	Open
Current action	Submitted	Ball in court	
Topic	Back fill Report: Rose Mallow, North Pinery Parkway to Rose Mallow Way		

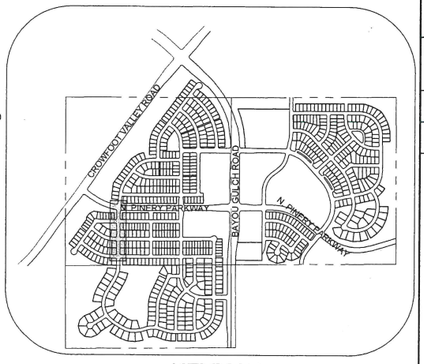
Submitter	MICHAEL TOMAS SNYDER
Reviewer	
Cc	

Date submitted	03/09/2020	Submission due date	03/09/2020
Released for review	03/09/2020	Review due date	03/16/2020
Date returned		Required on site date	
Date closed			

Notes
Please see attached back fill reports for Rose Mallow Ave. from North Pinery Parkway to Rose Mallow Way.



PLAN: ROSE MALLOW AVE STA: 9+00.00 TO 18+50.00
HORIZONTAL SCALE: 1" = 50'



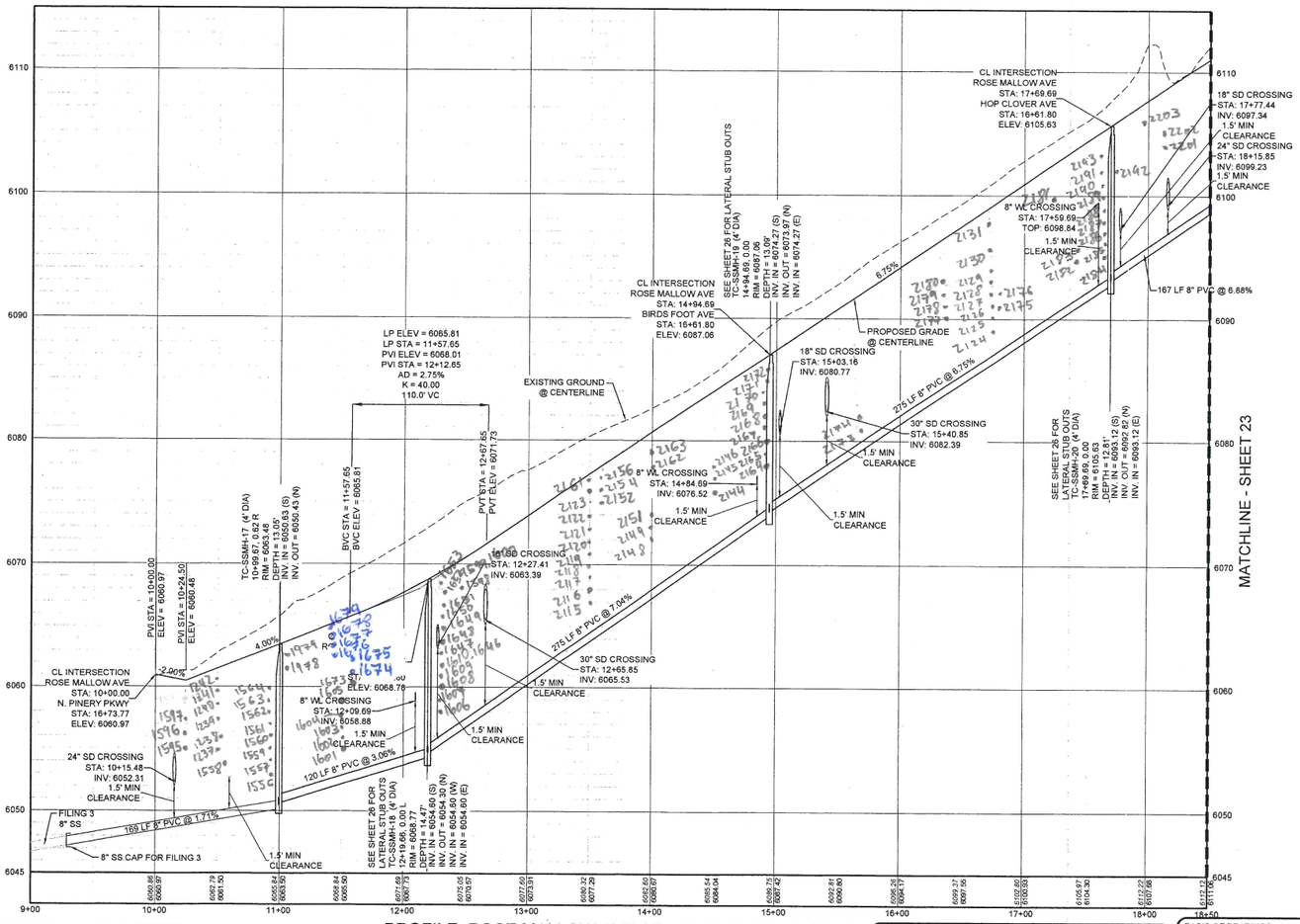
KEYMAP
N.T.S.

LEGEND

BLOCK NUMBER	PROPOSED RANGE POINT
LOT TYPE	CENTERLINE
LOT NUMBER	RIGHT-OF-WAY
PROPOSED BUTTERFLY VALVE	PROPERTY LINE
PROPOSED CAP WITH END OF LINE BLOWOFF	EDGE OF PAVEMENT
PROPOSED REDUCER	PROPOSED DIRECTION OF FLOW
PROPOSED VALVE	PROPOSED SLOPE & DIRECTION
PROPOSED FIRE HYDRANT	EXISTING 5' CONTOUR
PROPOSED WL FITTING WITH THRUST BLOCK	EXISTING 1' CONTOUR
PROPOSED FLARED END SECTION	PROPOSED 5' CONTOUR
PROPOSED LOW POINT BLOW-OFF	PROPOSED 1' CONTOUR
PROPOSED AIR VALVE	PROPOSED STORM DRAIN
FUTURE PHASE VALVE	PROPOSED SEWER LINE WITH MANHOLE
FUTURE FIRE HYDRANT	PROPOSED SEWER LATERAL
PROPOSED LIGHT POLE	PROPOSED WATER LINE
PROPOSED SIDEWALK	PROPOSED WATER LATERAL W/ METER
PROPOSED SIDEWALK RAMP	SECTION LINE
EXISTING ELEVATION	FILING BOUNDARY
PROPOSED DESIGN ELEVATION	EXISTING FIBER OPTIC LINE
PROPOSED STORM DRAIN INLET	EXISTING OVERHEAD POWER
PROPOSED STORM DRAIN MANHOLE	EXISTING TELEPHONE LINE

ABBREVIATIONS

AD	ANGLE DIFFERENCE	MH	MANHOLE
AV	AIR VAC RELEASE VALVE	N.T.S.	NOT TO SCALE
BVC	BEGIN VERTICAL CURVE	PVC	POLYVINYL CHLORIDE
BVP	BEGIN VERTICAL PROFILE	PVI	PT. OF VERTICAL INTERSECTION
CRO	CAP WITH BLOW OFF	PVT	POINT OF VERTICAL TANGENT
CRR	CURB RETURN RADIUS	RCBC	REINFORCED CONCRETE BOX CULVERT
EL	ELEVATION	RCP	REINFORCED CONCRETE PIPE
EP	EDGE OF PAVEMENT	ROW	RIGHT OF WAY
EVC	END VERTICAL CURVE	SC	SANITARY CAP
EVP	END VERTICAL PROFILE	SD	STORM DRAIN
FG	FINISHED GROUND	SL	SECTION LINE
FH	FIRE HYDRANT	SS	SANITARY SEWER
FL	FLOW LINE	STA	STATION
GV	GATE VALVE	T.O.P.	TOP OF PIPE
HCR	HANDICAP CURB RAMP	UE	UTILITY EASEMENT
HP	HIGH POINT	VC	VERTICAL CURVE
INV	INVERT	WL	WATER LINE
K	CURVATURE COEFFICIENT	WLC	WATER LINE CONNECTION
LF	LINEAR FEET	WSE	WATER SURFACE ELEVATION



PROFILE: ROSE MALLOW AVE STA: 9+00.00 TO 18+50.00
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

CALL 811
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1-800-922-1987
UNCC UTILITY NOTIFICATION CENTER OF COLORADO

BENCHMARK
DOUGLAS COUNTY CONTROL POINT KNOWN AS 1.060032, BEING A 3-1/4" ALUMINUM CAP, BEING LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 6 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, HAVING A PUBLISHED ELEVATION OF 1799.2870 METERS (5903.13 FEET) NAVD '88 DATUM.

BASIS OF BEARINGS:
THE EAST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 9 BEING MONUMENTED AT THE NORTHEAST CORNER OF SAID SECTION 9 BY A 3-1/4" ALUMINUM CAP STAMPED LS 23053 AND AT THE EAST QUARTER CORNER OF SAID SECTION 9 BY A 2-1/2" ALUMINUM CAP STAMPED LS 6935 BEING CONSIDERED TO BEAR SOUTH 00°15'06" EAST, 2648.70 FEET.

PREPARED UNDER THE SUPERVISION OF
COLORADO LICENSED BRIAN P. WILSON 0050067 PROFESSIONAL ENGINEER
BRIAN P. WILSON
COLORADO P.E. 0050067

APPROVED
NOV 29 2018
PARKER WATER AND SANITATION DISTRICT

No.	Revisions	Date	Init.	Appr.	Date

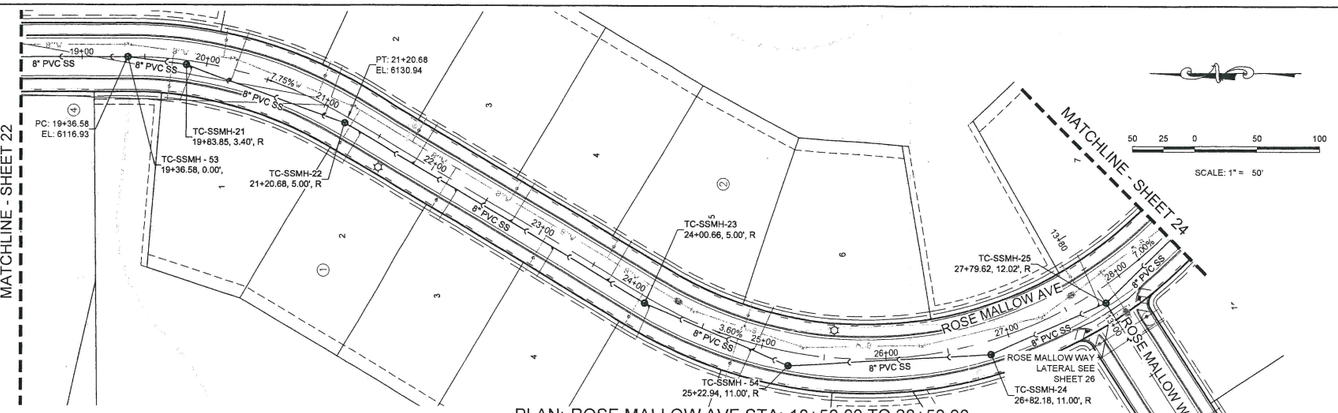
CVL CONSULTANTS
10333 E. Dry Creek Rd.
Suite 240
Englewood, CO 80112
Tel: (720) 482-9526
Fax: (720) 482-9546

HR 935 LLC
7333 South Alton Way
CENTENNIAL, CO 80112

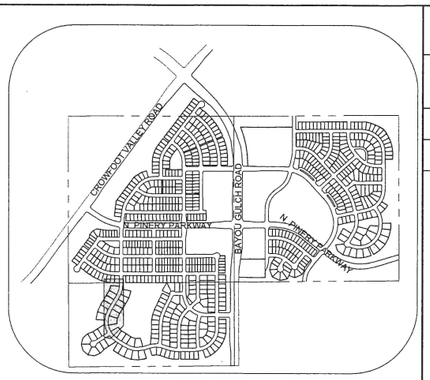
TRAILS AT CROWFOOT
FILING 1 CONSTRUCTION DRAWINGS
SANITARY SEWER PLAN AND PROFILE
ROSE MALLOW AVE

SCALE: AS SHOWN
FILE NO: 81302837701
DRAWN BY: KJD
CHECKED BY: JJ
DATE: APRIL 2017
SHEET NUMBER 22

N:\PROJECTS\HESS RANCH\CAD\ENGINEERING\SHEET SETS\CIVIS\F\PARKER WATER AND SANITATION\SANITARY PLAN AND PROFILE\1 ROSE MALLOW AVE SANITARY.DWG, BRIAHN, 4/11/2018 10:06 AM



PLAN: ROSE MALLOW AVE STA: 18+50.00 TO 28+50.00
HORIZONTAL SCALE: 1" = 50'



KEYMAP
N.T.S.

LEGEND

(2) BLOCK NUMBER	PROPOSED RANGE POINT
(A) LOT TYPE	CENTERLINE
6 LOT NUMBER	RIGHT-OF-WAY
PROPOSED BUTTERFLY VALVE	PROPERTY LINE
PROPOSED CAP WITH END OF LINE BLOWOFF	EDGE OF PAVEMENT
PROPOSED REDUCER	PROPOSED DIRECTION OF FLOW
PROPOSED VALVE	1.0% PROPOSED SLOPE & DIRECTION
PROPOSED FIRE HYDRANT	EXISTING 5' CONTOUR
PROPOSED WL FITTING WITH THRUST BLOCK	EXISTING 1' CONTOUR
PROPOSED FLARED END SECTION	5620 PROPOSED 5' CONTOUR
PROPOSED LOW POINT BLOW-OFF	5607 PROPOSED 1' CONTOUR
PROPOSED AIR VALVE	PROPOSED STORM DRAIN
FUTURE PHASE VALVE	PROPOSED SEWER LINE WITH MANHOLE
FUTURE FIRE HYDRANT	PROPOSED SEWER LATERAL
PROPOSED LIGHT POLE	8"W PROPOSED WATER LINE
PROPOSED SIDEWALK	PROPOSED WATER LATERAL W/ METER
PROPOSED SIDEWALK RAMP	SECTION LINE
EXISTING ELEVATION	FILING BOUNDARY
10.00 PROPOSED DESIGN ELEVATION	EXISTING FIBER OPTIC LINE
PROPOSED STORM DRAIN INLET	EXISTING OVERHEAD POWER
PROPOSED STORM DRAIN MANHOLE	EXISTING TELEPHONE LINE

ABBREVIATIONS

AD	ANGLE DIFFERENCE	MH	MANHOLE
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HCR	HANDICAP CURB RAMP	UE	UTILITY EASEMENT
HP	HIGH POINT	VC	VERTICAL CURVE
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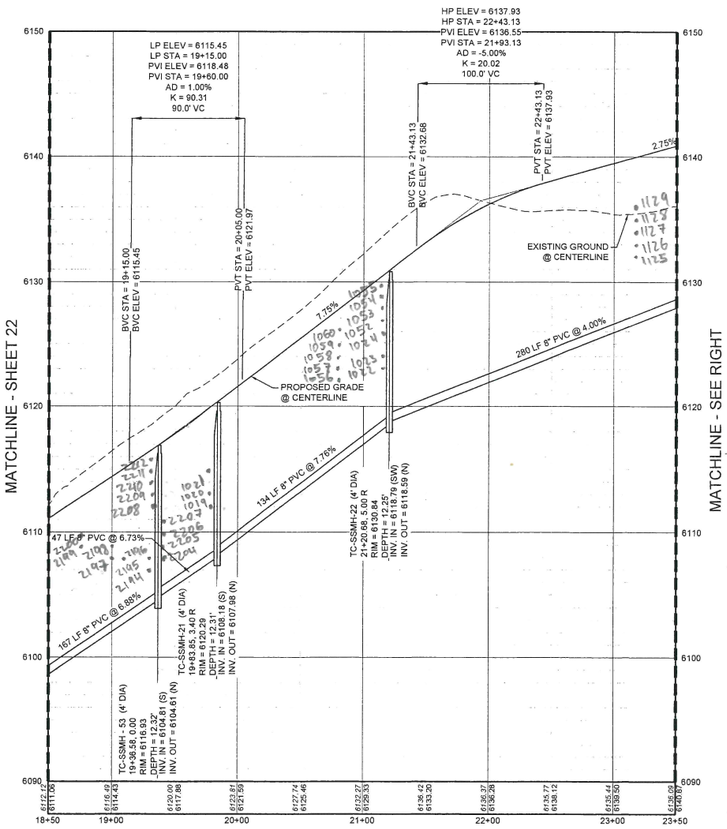
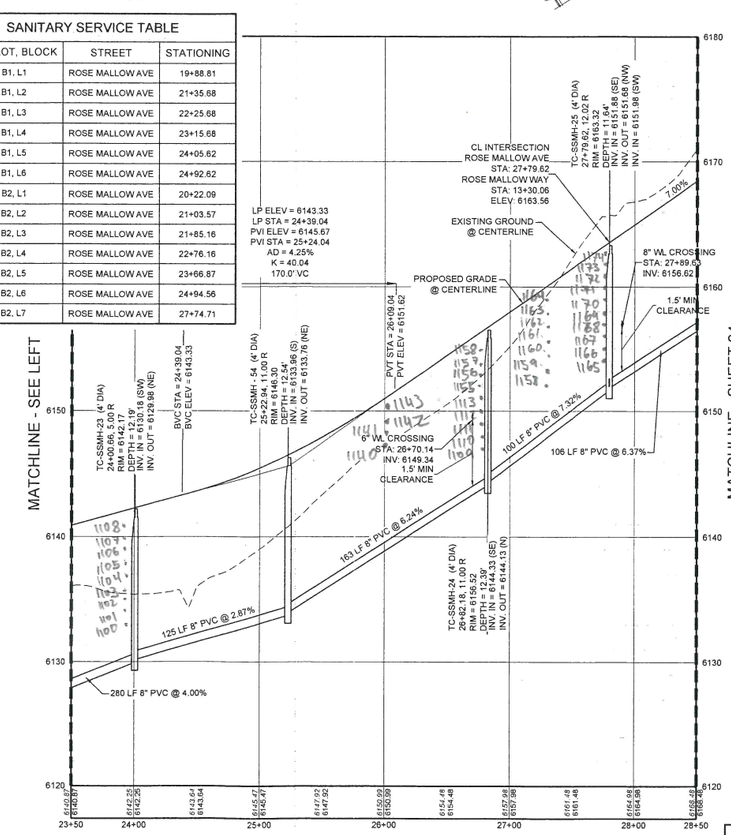


PROFILE: ROSE MALLOW AVE STA: 18+50.00 TO 23+50.00
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

SANITARY SERVICE TABLE

FILING, LOT, BLOCK	STREET	STATIONING
F8, B1, L1	ROSE MALLOW AVE	19+88.81
F8, B1, L2	ROSE MALLOW AVE	21+35.68
F8, B1, L3	ROSE MALLOW AVE	22+25.68
F8, B1, L4	ROSE MALLOW AVE	23+15.68
F8, B1, L5	ROSE MALLOW AVE	24+05.62
F8, B1, L6	ROSE MALLOW AVE	24+92.62
F8, B2, L1	ROSE MALLOW AVE	20+22.09
F8, B2, L2	ROSE MALLOW AVE	21+03.57
F8, B2, L3	ROSE MALLOW AVE	21+85.16
F8, B2, L4	ROSE MALLOW AVE	22+76.16
F8, B2, L5	ROSE MALLOW AVE	23+66.87
F8, B2, L6	ROSE MALLOW AVE	24+94.56
F8, B2, L7	ROSE MALLOW AVE	27+74.71



PROFILE: ROSE MALLOW AVE STA: 23+50.00 TO 28+50.00
HORIZONTAL: 1" = 50'
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DOUGLAS COUNTY CONTROL POINT KNOWN AS 1.060032, BEING A 3-1/4" ALUMINUM CAP, BEING LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 6 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, HAVING A PUBLISHED ELEVATION OF 1799.2870 METERS (5903.13 FEET) NAVD '88 DATUM.

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PREPARED UNDER THE SUPERVISION OF
COLORADO LICENSED BRIAN P. WILSON 0050067 PROFESSIONAL ENGINEER
4-11-18
BRIAN P. WILSON
COLORADO P.E. 0050067

APPROVED
NOV 29 2018
PARKER WATER AND SANITATION DISTRICT

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N:\PROJECTS\WESS RANCH\CAD\ENGINEERING\SHEET SETS\CSD\F1\PARKER WATER AND SANITATION\SANITARY PLAN AND PROFILE\F1 ROSE MALLOW AVE SANITARY.DWG, BRANN, 4/11/2018 10:06 AM

No.	Revisions	Date	Init.	Appr.	Date

CVL CONSULTANTS
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CENTENNIAL, CO 80112

TRAILS AT CROWFOOT
FILING 1 CONSTRUCTION DRAWINGS
SANITARY SEWER PLAN AND PROFILE
ROSE MALLOW AVE

SCALE: AS SHOWN
DRAWN BY: KJD
CHECKED BY: JJ
DATE: APRIL 2017
FILE NO: 81302823701
SHEET NUMBER 23

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000094
07/10/2019
Report Date: 7/25/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
946		7/10/19	1	698A	SC	12.5	118.5	12.4	118.4	8	100	100	-2 / 2	A
947		7/10/19	1	698A	SC	12.5	118.5	12.4	118.0	8	100	100	-2 / 2	A
948		7/10/19	1	698A	SC	12.5	118.5	12.2	118.4	8	100	100	-2 / 2	A
949		7/10/19	1	698A	SC	12.5	118.5	12.0	118.6	8	100	100	-2 / 2	A
950		7/10/19	1	698A	SC	12.5	118.5	12.7	118.1	8	100	100	-2 / 2	A
951		7/10/19	6	698A	SC	11.0	120.5	11.7	120.1	8	100	100	-2 / 2	A
952		7/10/19	6	698A	SC	11.0	120.5	11.6	119.9	8	100	100	-2 / 2	A
953		7/10/19	6	698A	SC	11.0	120.5	11.9	119.9	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
946	Inlet Backfill: Inlet #63, Bayou Gulch Road, 80' SE of Crowfoot Valley Road	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
947	Inlet Backfill: Inlet #63, Bayou Gulch Road, 80' SE of Crowfoot Valley Road	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
948	Inlet Backfill: Inlet #63, Bayou Gulch Road, 80' SE of Crowfoot Valley Road	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
949	Inlet Backfill: Inlet #63, Bayou Gulch Road, 80' SE of Crowfoot Valley Road	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
950	Inlet Backfill: Inlet #63, Bayou Gulch Road, 80' SE of Crowfoot Valley Road	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
951	Inlet Backfill: Scarlet Sage Avenue and Scarlet Sage Street, S side of Scarlet Sage Avenue	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
952	Inlet Backfill: Scarlet Sage Avenue and Scarlet Sage Street, S side of Scarlet Sage Avenue	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
953	Inlet Backfill: Scarlet Sage Avenue and Scarlet Sage Street, S side of Scarlet Sage Avenue	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000094
07/10/2019
Report Date: 7/25/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
954		7/10/19	6	698A	SC	11.0	120.5	11.3	120.1	8	100	100	-2 / 2	A
955		7/10/19	6	698A	SC	11.0	120.5	11.6	120.2	8	100	100	-2 / 2	A
956		7/10/19	6	698A	SC	11.0	120.5	12.2	120.0	8	100	100	-2 / 2	A
957		7/10/19	6	698A	SC	11.0	120.5	11.5	120.1	8	100	100	-2 / 2	A
958		7/10/19	6	698A	SC	11.0	120.5	11.7	120.0	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
954	Inlet Backfill: Scarlet Sage Avenue and Scarlet Sage Street, S side of Scarlet Sage Avenue	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
955	Inlet Backfill: Scarlet Sage Avenue and Shasta Daisy Street, S side of Scarlet Sage Avenue	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
956	Inlet Backfill: Scarlet Sage Avenue and Shasta Daisy Street, S side of Scarlet Sage Avenue	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
957	Inlet Backfill: Scarlet Sage Avenue and Shasta Daisy Street, S side of Scarlet Sage Avenue	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
958	Inlet Backfill: Scarlet Sage Avenue and Shasta Daisy Street, S side of Scarlet Sage Avenue	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **958:** As requested by Rick with Kelley Trucking, site visits were made to observe and test inlet backfill. We observed the contractor process/place fill with the excavator, add moisture with the water wagon, and apply compactive effort with the sheepsfoot roller.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000095
07/11/2019
Report Date: 7/25/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
959		7/11/19	7	698A	CL	16.5	107.5	17.1	106.4	8	99	95	0 / 4	A
960		7/11/19	7	698A	CL	16.5	107.5	17.3	106.0	8	99	95	0 / 4	A
961		7/11/19	7	698A	CL	16.5	107.5	16.8	106.7	8	99	95	0 / 4	A
962		7/11/19	7	698A	CL	16.5	107.5	17.5	105.4	8	98	95	0 / 4	A
963		7/11/19	7	698A	CL	16.5	107.5	17.1	105.5	8	98	95	0 / 4	A
964		7/11/19	7	698A	CL	16.5	107.5	17.3	105.7	8	98	95	0 / 4	A
965		7/11/19	7	698A	CL	16.5	107.5	16.7	106.8	8	99	95	0 / 4	A
966		7/11/19	7	698A	CL	16.5	107.5	17.3	106.6	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
959	Manhole: MH-247, 1' W of W side	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
960	Manhole: MH-247, 1' W of W side	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
961	Manhole: MH-247, 1' W of W side	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
962	Manhole: MH-247, 1' E of E side	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
963	Manhole: MH-247, 1' E of E side	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
964	Manhole: MH-247, 1' N of N side	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
965	Manhole: MH-247, 1' N of N side	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
966	Manhole: MH-247, 1' N of N side	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000095
07/11/2019
Report Date: 7/25/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
967		7/11/19	7	698A	CL	16.5	107.5	17.2	106.4	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
967	Manhole: MH-247, 1' N of N side	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **967:** As requested by Rick with Kelley Trucking, site visits were made to observe and test inlet backfill. We observed the contractor process/place fill with the loader, add moisture with the water wagon, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000096
07/15/2019
Report Date: 7/25/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
968		7/15/19	4	698A	CL	16.0	109.0	16.8	108.6	8	100	95	0 / 4	A
969		7/15/19	4	698A	CL	16.0	109.0	16.7	107.6	8	99	95	0 / 4	A
970		7/15/19	4	698A	CL	16.0	109.0	16.9	107.4	8	99	95	0 / 4	A
971		7/15/19	4	698A	CL	16.0	109.0	17.2	106.7	8	98	95	0 / 4	A
972		7/15/19	6	698A	SC	11.0	120.5	11.5	120.3	8	100	100	-2 / 2	A
973		7/15/19	6	698A	SC	11.0	120.5	11.4	120.1	8	100	100	-2 / 2	A
974		7/15/19	6	698A	SC	11.0	120.5	11.7	120.3	8	100	100	-2 / 2	A
975		7/15/19	6	698A	SC	11.0	120.5	11.2	120.4	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
968	Manhole: HVAC MH, Scarlet Sage Avenue and Scarlet Sage Street	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
969	Manhole: HVAC MH, Scarlet Sage Avenue and Scarlet Sage Street	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
970	Manhole: HVAC MH, Scarlet Sage Avenue and Scarlet Sage Street	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
971	Manhole: HVAC MH, Scarlet Sage Avenue and Scarlet Sage Street	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
972	Manhole: HVAC MH, Scarlet Sage Avenue and Bayou Gulch Road, 40' E of intersection on Scarlet Sage Avenue	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
973	Manhole: HVAC MH, Scarlet Sage Avenue and Bayou Gulch Road, 40' E of intersection on Scarlet Sage Avenue	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
974	Manhole: HVAC MH, Scarlet Sage Avenue and Bayou Gulch Road, 40' E of intersection on Scarlet Sage Avenue	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
975	Manhole: HVAC MH, Scarlet Sage Avenue and Bayou Gulch Road, 40' E of intersection on Scarlet Sage Avenue	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **975:** As requested by Rick with Kelley Trucking, site visits were made to observe and test manhole backfill. We observed the contractor process/place fill with the loader, add moisture with the water wagon, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
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Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000097
07/16/2019
Report Date: 7/25/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
976		7/16/19	5	698A	SC	13.5	114.5	13.6	114.8	8	100	100	-2 / 2	A
977		7/16/19	5	698A	SC	13.5	114.5	13.5	114.4	8	100	100	-2 / 2	A
978		7/16/19	5	698A	SC	13.5	114.5	13.9	114.7	8	100	100	-2 / 2	A
979		7/16/19	5	698A	SC	13.5	114.5	13.5	114.7	8	100	100	-2 / 2	A
980		7/16/19	5	698A	SC	13.5	114.5	13.4	114.6	8	100	100	-2 / 2	A
981		7/16/19	5	698A	SC	13.5	114.5	14.0	114.5	8	100	100	-2 / 2	A
982		7/16/19	5	698A	SC	13.5	114.5	13.4	114.4	8	100	100	-2 / 2	A
983		7/16/19	5	698A	SC	13.5	114.5	13.4	114.8	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
976	Sanitary Trench Backfill: Service, Lot 2 Block 2 Filing 8	11.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
977	Sanitary Trench Backfill: Service, Lot 2 Block 2 Filing 8	10.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
978	Sanitary Trench Backfill: Service, Lot 2 Block 2 Filing 8	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
979	Sanitary Trench Backfill: Service, Lot 2 Block 2 Filing 8	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
980	Sanitary Trench Backfill: Service, Lot 2 Block 2 Filing 8	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
981	Sanitary Trench Backfill: Service, Lot 2 Block 2 Filing 8	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
982	Sanitary Trench Backfill: Service, Lot 3 Block 2 Filing 8	11.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
983	Sanitary Trench Backfill: Service, Lot 3 Block 2 Filing 8	10.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000097
07/16/2019
Report Date: 7/25/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
984		7/16/19	5	698A	SC	13.5	114.5	13.6	114.3	8	100	100	-2 / 2	A
985		7/16/19	5	698A	SC	13.5	114.5	13.5	114.7	8	100	100	-2 / 2	A
986		7/16/19	5	698A	SC	13.5	114.5	13.0	114.7	8	100	100	-2 / 2	A
987		7/16/19	5	698A	SC	13.5	114.5	13.3	114.8	8	100	100	-2 / 2	A
988		7/16/19	4	698A	CL	16.0	109.0	18.7	107.3	8	98	95	0 / 4	A
989		7/16/19	4	698A	CL	16.0	109.0	18.8	107.2	8	98	95	0 / 4	A
990		7/16/19	4	698A	CL	16.0	109.0	19.0	107.2	8	98	95	0 / 4	A
991		7/16/19	4	698A	CL	16.0	109.0	18.5	107.4	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
984	Sanitary Trench Backfill: Service, Lot 3 Block 2 Filing 8	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
985	Sanitary Trench Backfill: Service, Lot 3 Block 2 Filing 8	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
986	Sanitary Trench Backfill: Service, Lot 3 Block 2 Filing 8	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
987	Sanitary Trench Backfill: Service, Lot 3 Block 2 Filing 8	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
988	Sanitary Trench Backfill: Service, Lot 1 Block 1 Filing 8	11.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
989	Sanitary Trench Backfill: Service, Lot 1 Block 1 Filing 8	10.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
990	Sanitary Trench Backfill: Service, Lot 1 Block 1 Filing 8	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
991	Sanitary Trench Backfill: Service, Lot 1 Block 1 Filing 8	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000097
07/16/2019
Report Date: 7/25/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
992		7/16/19	4	698A	CL	16.0	109.0	18.3	107.2	8	98	95	0 / 4	A
993		7/16/19	4	698A	CL	16.0	109.0	18.4	107.8	8	99	95	0 / 4	A
994		7/16/19	6	698A	SC	11.0	120.5	11.5	120.3	8	100	100	-2 / 2	A
995		7/16/19	6	698A	SC	11.0	120.5	11.3	120.3	8	100	100	-2 / 2	A
996		7/16/19	6	698A	SC	11.0	120.5	11.7	120.1	8	100	100	-2 / 2	A
997		7/16/19	6	698A	SC	11.0	120.5	11.7	120.3	8	100	100	-2 / 2	A
998		7/16/19	6	698A	SC	11.0	120.5	11.1	120.3	8	100	100	-2 / 2	A
999		7/16/19	6	698A	SC	11.0	120.5	11.5	120.5	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
992	Sanitary Trench Backfill: Service, Lot 1 Block 1 Filing 8	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
993	Sanitary Trench Backfill: Service, Lot 1 Block 1 Filing 8	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
994	Sanitary Trench Backfill: Service, Lot 5 Block 2 Filing 8	11.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
995	Sanitary Trench Backfill: Service, Lot 5 Block 2 Filing 8	10.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
996	Sanitary Trench Backfill: Service, Lot 5 Block 2 Filing 8	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
997	Sanitary Trench Backfill: Service, Lot 5 Block 2 Filing 8	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
998	Sanitary Trench Backfill: Service, Lot 5 Block 2 Filing 8	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
999	Sanitary Trench Backfill: Service, Lot 5 Block 2 Filing 8	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000097
07/16/2019
Report Date: 7/25/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
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Trails at Crowfoot, Filings 1 and 9
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Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1000		7/16/19	6	698A	SC	11.0	120.5	11.8	120.2	8	100	100	-2 / 2	A
1001		7/16/19	6	698A	SC	11.0	120.5	11.6	119.9	8	100	100	-2 / 2	A
1002		7/16/19	6	698A	SC	11.0	120.5	11.4	120.4	8	100	100	-2 / 2	A
1003		7/16/19	6	698A	SC	11.0	120.5	11.1	120.7	8	100	100	-2 / 2	A
1004		7/16/19	6	698A	SC	11.0	120.5	11.3	120.1	8	100	100	-2 / 2	A
1005		7/16/19	6	698A	SC	11.0	120.5	11.0	120.6	8	100	100	-2 / 2	A
1006		7/16/19	6	698A	SC	11.0	120.5	11.4	120.6	8	100	100	-2 / 2	A
1007		7/16/19	6	698A	SC	11.0	120.5	11.1	120.3	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1000	Sanitary Trench Backfill: Service, Lot 3 Block 1 Filing 8	11.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1001	Sanitary Trench Backfill: Service, Lot 3 Block 1 Filing 8	10.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1002	Sanitary Trench Backfill: Service, Lot 3 Block 1 Filing 8	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1003	Sanitary Trench Backfill: Service, Lot 3 Block 1 Filing 8	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1004	Sanitary Trench Backfill: Service, Lot 3 Block 1 Filing 8	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1005	Sanitary Trench Backfill: Service, Lot 3 Block 1 Filing 8	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1006	Sanitary Trench Backfill: Service, Lot 2 Block 1 Filing 8	11.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1007	Sanitary Trench Backfill: Service, Lot 2 Block 1 Filing 8	10.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Compaction Test Report

Report #: SNG-000097
07/16/2019
Report Date: 7/25/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1008		7/16/19	6	698A	SC	11.0	120.5	11.5	120.2	8	100	100	-2 / 2	A
1009		7/16/19	6	698A	SC	11.0	120.5	11.3	120.6	8	100	100	-2 / 2	A
1010		7/16/19	6	698A	SC	11.0	120.5	11.6	120.4	8	100	100	-2 / 2	A
1011		7/16/19	6	698A	SC	11.0	120.5	10.9	120.6	8	100	100	-2 / 2	A
1012		7/16/19	3	698A	CL	16.0	111.0	17.5	109.3	8	98	95	0 / 4	A
1013		7/16/19	3	698A	CL	16.0	111.0	17.7	109.0	8	98	95	0 / 4	A
1014		7/16/19	3	698A	CL	16.0	111.0	17.8	109.2	8	98	95	0 / 4	A
1015		7/16/19	3	698A	CL	16.0	111.0	17.2	109.3	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1008	Sanitary Trench Backfill: Service, Lot 2 Block 1 Filing 8	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1009	Sanitary Trench Backfill: Service, Lot 2 Block 1 Filing 8	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1010	Sanitary Trench Backfill: Service, Lot 2 Block 1 Filing 8	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1011	Sanitary Trench Backfill: Service, Lot 2 Block 1 Filing 8	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1012	Sanitary Trench Backfill: Service, Lot 1 Block 2 Filing 8	11.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1013	Sanitary Trench Backfill: Service, Lot 1 Block 2 Filing 8	10.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1014	Sanitary Trench Backfill: Service, Lot 1 Block 2 Filing 8	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1015	Sanitary Trench Backfill: Service, Lot 1 Block 2 Filing 8	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000097
07/16/2019
Report Date: 7/25/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1016		7/16/19	3	698A	CL	16.0	111.0	17.0	109.3	8	98	95	0 / 4	A
1017		7/16/19	3	698A	CL	16.0	111.0	17.9	109.2	8	98	95	0 / 4	A
1018		7/16/19	3	698A	CL	16.0	111.0	17.7	109.1	8	98	95	0 / 4	A
1019		7/16/19	5	698A	SC	13.5	114.5	14.2	114.1	8	100	100	-2 / 2	A
1020		7/16/19	5	698A	SC	13.5	114.5	14.4	114.2	8	100	100	-2 / 2	A
1021		7/16/19	5	698A	SC	13.5	114.5	14.5	114.1	8	100	100	-2 / 2	A
1022		7/16/19	5	698A	SC	13.5	114.5	13.8	114.9	8	100	100	-2 / 2	A
1023		7/16/19	5	698A	SC	13.5	114.5	13.8	114.8	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1016	Sanitary Trench Backfill: Service, Lot 1 Block 2 Filing 8	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1017	Sanitary Trench Backfill: Service, Lot 1 Block 2 Filing 8	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1018	Sanitary Trench Backfill: Service, Lot 1 Block 2 Filing 8	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1019	Manhole: SS MH-21, Rose Mallow Way	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1020	Manhole: SS MH-21, Rose Mallow Way, 1' S of S side	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1021	Manhole: SS MH-21, Rose Mallow Way, 1' W of W side	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1022	Manhole: SS MH-22, Rose Mallow Way, 1' N of N side	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1023	Manhole: SS MH-22, Rose Mallow Way, 1' N of N side	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1018:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water wagon, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000097
07/16/2019
Report Date: 7/25/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1024		7/16/19	5	698A	SC	13.5	114.5	13.7	114.2	8	100	100	-2 / 2	A
1025		7/16/19	5	698A	SC	13.5	114.5	14.4	114.0	8	100	100	-2 / 2	A
1026		7/16/19	5	698A	SC	13.5	114.5	13.8	114.1	8	100	100	-2 / 2	A
1027		7/16/19	5	698A	SC	13.5	114.5	13.6	114.6	8	100	100	-2 / 2	A
1028		7/16/19	5	698A	SC	13.5	114.5	13.8	114.6	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1024	Manhole: SS MH-22, Rose Mallow Way, 1' E of E side	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1025	Manhole: SS MH-21, Rose Mallow Way, 1' E of E side	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1026	Manhole: SS MH-21, Rose Mallow Way, 1' E of E side	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1027	Manhole: SS MH-21, Rose Mallow Way, 1' E of E side	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1028	Manhole: SS MH-21, Rose Mallow Way, 1' E of E side	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

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Compaction Test Report

Report #: SNG-000098
07/17/2019
Report Date: 7/25/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1029		7/17/19	3	698A	CL	16.0	111.0	17.0	110.1	8	99	95	0 / 4	A
1030		7/17/19	3	698A	CL	16.0	111.0	17.3	110.5	8	100	95	0 / 4	A
1031		7/17/19	3	698A	CL	16.0	111.0	17.3	108.8	8	98	95	0 / 4	A
1032		7/17/19	3	698A	CL	16.0	111.0	17.1	108.8	8	98	95	0 / 4	A
1033		7/17/19	3	698A	CL	16.0	111.0	17.2	109.6	8	99	95	0 / 4	A
1034		7/17/19	6	698A	SC	11.0	120.5	11.6	120.4	8	100	100	-2 / 2	A
1035		7/17/19	6	698A	SC	11.0	120.5	11.4	120.1	8	100	100	-2 / 2	A
1036		7/17/19	6	698A	SC	11.0	120.5	11.5	120.4	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1029	Sanitary Trench Backfill: Service, Lot 1 Block 1 Filing 8	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1030	Sanitary Trench Backfill: Service, Lot 1 Block 1 Filing 8	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1031	Sanitary Trench Backfill: Service, Lot 1 Block 1 Filing 8	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1032	Sanitary Trench Backfill: Service, Lot 1 Block 1 Filing 8	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1033	Sanitary Trench Backfill: Service, Lot 1 Block 1 Filing 8	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1034	Sanitary Trench Backfill: Service, Lot 4 Block 2 Filing 8	11.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1035	Sanitary Trench Backfill: Service, Lot 4 Block 2 Filing 8	10.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1036	Sanitary Trench Backfill: Service, Lot 4 Block 2 Filing 8	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000098
07/17/2019
Report Date: 7/25/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1037		7/17/19	6	698A	SC	11.0	120.5	11.4	120.1	8	100	100	-2 / 2	A
1038		7/17/19	6	698A	SC	11.0	120.5	11.8	120.1	8	100	100	-2 / 2	A
1039		7/17/19	6	698A	SC	11.0	120.5	11.4	119.9	8	100	100	-2 / 2	A
1040		7/17/19	1	698A	SC	12.5	118.5	12.6	118.0	8	100	100	-2 / 2	A
1041		7/17/19	1	698A	SC	12.5	118.5	12.1	118.3	8	100	100	-2 / 2	A
1042		7/17/19	1	698A	SC	12.5	118.5	12.5	118.3	8	100	100	-2 / 2	A
1043		7/17/19	1	698A	SC	12.5	118.5	12.5	118.0	8	100	100	-2 / 2	A
1044		7/17/19	1	698A	SC	12.5	118.5	12.7	118.2	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1037	Sanitary Trench Backfill: Service, Lot 4 Block 2 Filing 8	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1038	Sanitary Trench Backfill: Service, Lot 4 Block 2 Filing 8	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1039	Sanitary Trench Backfill: Service, Lot 4 Block 2 Filing 8	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1040	Sanitary Trench Backfill: Service, Lot 4 Block 1 Filing 8	11.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1041	Sanitary Trench Backfill: Service, Lot 4 Block 1 Filing 8	10.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1042	Sanitary Trench Backfill: Service, Lot 4 Block 1 Filing 8	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1043	Sanitary Trench Backfill: Service, Lot 4 Block 1 Filing 8	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1044	Sanitary Trench Backfill: Service, Lot 4 Block 1 Filing 8	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000098
07/17/2019
Report Date: 7/25/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1045		7/17/19	1	698A	SC	12.5	118.5	12.2	118.2	8	100	100	-2 / 2	A
1046		7/17/19	2	698A	CL	15.0	112.0	16.1	110.3	8	98	95	0 / 4	A
1047		7/17/19	2	698A	CL	15.0	112.0	16.4	109.8	8	98	95	0 / 4	A
1048		7/17/19	2	698A	CL	15.0	112.0	16.4	110.3	8	98	95	0 / 4	A
1049		7/17/19	2	698A	CL	15.0	112.0	16.0	109.9	8	98	95	0 / 4	A
1050		7/17/19	2	698A	CL	15.0	112.0	16.1	110.4	8	99	95	0 / 4	A
1051		7/17/19	4	698A	CL	16.0	109.0	16.8	108.6	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1045	Sanitary Trench Backfill: Service, Lot 4 Block 1 Filing 8	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1046	Sanitary Trench Backfill: Service, Lot 1 Block 2 Filing 8	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1047	Sanitary Trench Backfill: Service, Lot 1 Block 2 Filing 8	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1048	Sanitary Trench Backfill: Service, Lot 1 Block 2 Filing 8	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1049	Sanitary Trench Backfill: Service, Lot 1 Block 2 Filing 8	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1050	Sanitary Trench Backfill: Service, Lot 1 Block 2 Filing 8	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1051	Sanitary Trench Backfill: Mainline adjacent to Lot 1 Block 2 Filing 8, service	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1051:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water wagon, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000099
07/18/2019
Report Date: 7/25/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1052		7/18/19	2	698A	CL	15.0	112.0	15.8	109.5	8	98	95	0 / 4	A
1053		7/18/19	2	698A	CL	15.0	112.0	16.1	109.0	8	97	95	0 / 4	A
1054		7/18/19	2	698A	CL	15.0	112.0	16.9	108.8	8	97	95	0 / 4	A
1055		7/18/19	2	698A	CL	15.0	112.0	16.9	108.8	8	97	95	0 / 4	A
1056		7/18/19	2	698A	CL	15.0	112.0	17.0	108.9	8	97	95	0 / 4	A
1057		7/18/19	2	698A	CL	15.0	112.0	17.6	108.5	8	97	95	0 / 4	A
1058		7/18/19	2	698A	CL	15.0	112.0	16.3	109.0	8	97	95	0 / 4	A
1059		7/18/19	2	698A	CL	15.0	112.0	16.9	108.9	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1052	Manhole: SS MH-22, 1' S of S side	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1053	Manhole: SS MH-22, 1' S of S side	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1054	Manhole: SS MH-22, 1' N of N side	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1055	Manhole: SS MH-22, 1' N of N side	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1056	Sanitary Trench Backfill: Mainline, 25' W of MH-22	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1057	Sanitary Trench Backfill: Mainline, 25' W of MH-22	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1058	Sanitary Trench Backfill: Mainline, 25' W of MH-22	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1059	Sanitary Trench Backfill: Mainline, 25' W of MH-22	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000099
07/18/2019
Report Date: 7/25/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1060		7/18/19	2	698A	CL	15.0	112.0	15.8	110.2	8	98	95	0 / 4	A
1061		7/18/19	5	698A	SC	13.5	114.5	13.4	114.5	8	100	100	-2 / 2	A
1062		7/18/19	5	698A	SC	13.5	114.5	13.7	114.4	8	100	100	-2 / 2	A
1063		7/18/19	5	698A	SC	13.5	114.5	13.2	114.8	8	100	100	-2 / 2	A
1064		7/18/19	5	698A	SC	13.5	114.5	12.9	114.9	8	100	100	-2 / 2	A
1065		7/18/19	5	698A	SC	13.5	114.5	13.1	114.6	8	100	100	-2 / 2	A
1066		7/18/19	5	698A	SC	13.5	114.5	13.1	114.2	8	100	100	-2 / 2	A
1067		7/18/19	5	698A	SC	13.5	114.5	14.0	114.4	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1060	Sanitary Trench Backfill: Mainline, 25' W of MH-22	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1061	Sanitary Trench Backfill: Service, Lot 2 Block 1 Filing 8	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1062	Sanitary Trench Backfill: Service, Lot 2 Block 1 Filing 8	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1063	Sanitary Trench Backfill: Service, Lot 2 Block 1 Filing 8	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1064	Sanitary Trench Backfill: Service, Lot 2 Block 1 Filing 8	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1065	Sanitary Trench Backfill: Service, Lot 2 Block 1 Filing 8	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1066	Sanitary Trench Backfill: Service, Lot 2 Block 2 Filing 8	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1067	Sanitary Trench Backfill: Service, Lot 2 Block 2 Filing 8	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000099
07/18/2019
Report Date: 7/25/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1068		7/18/19	5	698A	SC	13.5	114.5	13.3	114.4	8	100	100	-2 / 2	A
1069		7/18/19	5	698A	SC	13.5	114.5	13.3	114.8	8	100	100	-2 / 2	A
1070		7/18/19	5	698A	SC	13.5	114.5	12.7	114.7	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1068	Sanitary Trench Backfill: Service, Lot 2 Block 2 Filing 8	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1069	Sanitary Trench Backfill: Service, Lot 2 Block 2 Filing 8	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1070	Sanitary Trench Backfill: Service, Lot 2 Block 2 Filing 8	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1070:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
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Compaction Test Report

Report #: SNG-000100
07/19/2019
Report Date: 7/25/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1071		7/19/19	6	698A	SC	11.0	120.5	11.0	120.4	8	100	100	-2 / 2	A
1072		7/19/19	6	698A	SC	11.0	120.5	11.7	120.1	8	100	100	-2 / 2	A
1073		7/19/19	6	698A	SC	11.0	120.5	12.0	120.1	8	100	100	-2 / 2	A
1074		7/19/19	6	698A	SC	11.0	120.5	11.4	120.2	8	100	100	-2 / 2	A
1075		7/19/19	6	698A	SC	11.0	120.5	11.9	120.1	8	100	100	-2 / 2	A
1076		7/19/19	6	698A	SC	11.0	120.5	11.5	120.3	8	100	100	-2 / 2	A
1077		7/19/19	6	698A	SC	11.0	120.5	11.3	120.3	8	100	100	-2 / 2	A
1078		7/19/19	6	698A	SC	11.0	120.5	11.6	120.2	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1071	Sanitary Trench Backfill: Service, Lot 4 Block 1 Filing 8	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1072	Sanitary Trench Backfill: Service, Lot 4 Block 1 Filing 8	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1073	Sanitary Trench Backfill: Service, Lot 4 Block 1 Filing 8	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1074	Sanitary Trench Backfill: Service, Lot 4 Block 1 Filing 8	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1075	Sanitary Trench Backfill: Service, Lot 4 Block 1 Filing 8	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1076	Sanitary Trench Backfill: Service, Lot 4 Block 2 Filing 8	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1077	Sanitary Trench Backfill: Service, Lot 4 Block 2 Filing 8	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1078	Sanitary Trench Backfill: Service, Lot 4 Block 2 Filing 8	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000100
07/19/2019
Report Date: 7/25/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1079		7/19/19	6	698A	SC	11.0	120.5	11.5	120.4	8	100	100	-2 / 2	A
1080		7/19/19	6	698A	SC	11.0	120.5	11.0	120.5	8	100	100	-2 / 2	A
1081		7/19/19	4	698A	CL	16.0	109.0	17.5	108.0	8	99	95	0 / 4	A
1082		7/19/19	4	698A	CL	16.0	109.0	16.7	109.3	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1079	Sanitary Trench Backfill: Service, Lot 4 Block 2 Filing 8	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1080	Sanitary Trench Backfill: Service, Lot 4 Block 2 Filing 8	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1081	Sanitary Trench Backfill: Mainline, Bayou Gulch 150' S of N Pinery Pkwy	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1082	Sanitary Trench Backfill: Mainline, Bayou Gulch 150' S of N Pinery Pkwy	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1082:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water wagon, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000101
07/22/2019
Report Date: 8/5/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1083		7/22/19	8	698A	CL	18.0	109.0	19.0	106.8	8	98	95	0 / 4	A
1084		7/22/19	8	698A	CL	18.0	109.0	19.4	107.4	8	99	95	0 / 4	A
1085		7/22/19	8	698A	CL	18.0	109.0	20.5	107.2	8	98	95	0 / 4	A
1086		7/22/19	5	698A	SC	13.5	114.5	13.6	114.6	8	100	100	-2 / 2	A
1087		7/22/19	5	698A	SC	13.5	114.5	13.5	114.4	8	100	100	-2 / 2	A
1088		7/22/19	5	698A	SC	13.5	114.5	13.8	114.6	8	100	100	-2 / 2	A
1089		7/22/19	5	698A	SC	13.5	114.5	13.3	114.5	8	100	100	-2 / 2	A
1090		7/22/19	5	698A	SC	13.5	114.5	14.0	114.1	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1083	Sanitary Trench Backfill: Mainline, Bayou Gulch Road, 150' S of N Pinery Pkwy	10.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1084	Sanitary Trench Backfill: Mainline, Bayou Gulch Road, 150' S of N Pinery Pkwy	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1085	Sanitary Trench Backfill: Mainline, Bayou Gulch Road, 150' S of N Pinery Pkwy	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1086	Sanitary Trench Backfill: Service, Lot 3 Block 2 Filing 8	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1087	Sanitary Trench Backfill: Service, Lot 3 Block 2 Filing 8	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1088	Sanitary Trench Backfill: Service, Lot 3 Block 2 Filing 8	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1089	Sanitary Trench Backfill: Service, Lot 3 Block 2 Filing 8	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1090	Sanitary Trench Backfill: Service, Lot 3 Block 2 Filing 8	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
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Compaction Test Report

Report #: SNG-000101
07/22/2019
Report Date: 8/5/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1091		7/22/19	6	698A	SC	11.0	120.5	11.5	120.3	8	100	100	-2 / 2	A
1092		7/22/19	6	698A	SC	11.0	120.5	11.0	120.5	8	100	100	-2 / 2	A
1093		7/22/19	6	698A	SC	11.0	120.5	10.8	120.5	8	100	100	-2 / 2	A
1094		7/22/19	6	698A	SC	11.0	120.5	11.3	120.5	8	100	100	-2 / 2	A
1095		7/22/19	6	698A	SC	11.0	120.5	11.2	120.4	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1091	Sanitary Trench Backfill: Service, Lot 3 Block 1 Filing 8	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1092	Sanitary Trench Backfill: Service, Lot 3 Block 1 Filing 8	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1093	Sanitary Trench Backfill: Service, Lot 3 Block 1 Filing 8	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1094	Sanitary Trench Backfill: Service, Lot 3 Block 1 Filing 8	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1095	Sanitary Trench Backfill: Service, Lot 3 Block 1 Filing 8	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1095:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000102
07/23/2019
Report Date: 8/5/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1096		7/23/19	3	698A	CL	16.0	111.0	16.6	107.9	8	97	95	0 / 4	A
1097		7/23/19	3	698A	CL	16.0	111.0	17.5	107.4	8	97	95	0 / 4	A
1098		7/23/19	3	698A	CL	16.0	111.0	17.3	107.6	8	97	95	0 / 4	A
1099		7/23/19	3	698A	CL	16.0	111.0	17.9	107.2	8	97	95	0 / 4	A
1100		7/23/19	3	698A	CL	16.0	111.0	17.8	108.5	8	98	95	0 / 4	A
1101		7/23/19	3	698A	CL	16.0	111.0	17.0	108.5	8	98	95	0 / 4	A
1102		7/23/19	3	698A	CL	16.0	111.0	17.1	108.8	8	98	95	0 / 4	A
1103		7/23/19	3	698A	CL	16.0	111.0	17.1	108.4	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1096	Sanitary Trench Backfill: Service, Lot 5 Block 1 Filing 8	10.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1097	Sanitary Trench Backfill: Service, Lot 5 Block 1 Filing 8	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1098	Sanitary Trench Backfill: Service, Lot 5 Block 1 Filing 8	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1099	Sanitary Trench Backfill: Service, Lot 5 Block 1 Filing 8	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1100	Manhole: SSMH-23, 1' N of N side	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1101	Manhole: SSMH-23, 1' N of N side	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1102	Manhole: SSMH-23, 1' S of S side	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1103	Manhole: SSMH-23, 1' S of S side	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000102
07/23/2019
Report Date: 8/5/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1104		7/23/19	3	698A	CL	16.0	111.0	17.1	107.8	8	97	95	0 / 4	A
1105		7/23/19	3	698A	CL	16.0	111.0	17.8	108.5	8	98	95	0 / 4	A
1106		7/23/19	3	698A	CL	16.0	111.0	16.3	109.1	8	98	95	0 / 4	A
1107		7/23/19	3	698A	CL	16.0	111.0	16.9	108.0	8	97	95	0 / 4	A
1108		7/23/19	3	698A	CL	16.0	111.0	17.0	108.8	8	98	95	0 / 4	A
1109		7/23/19	2	698A	CL	15.0	112.0	16.9	110.9	8	99	95	0 / 4	A
1110		7/23/19	2	698A	CL	15.0	112.0	16.9	110.3	8	98	95	0 / 4	A
1111		7/23/19	2	698A	CL	15.0	112.0	16.8	110.7	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1104	Manhole: SSMH-23, 1' W of W side	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1105	Manhole: SSMH-23, 1' W of W side	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1106	Manhole: SSMH-23, 1' E of E side	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1107	Manhole: SSMH-23, 1' E of E side	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1108	Manhole: SSMH-23, 1' E of E side	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1109	Manhole: SSMH-24, 1' S of S side	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1110	Manhole: SSMH-24, 1' S of S side	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1111	Manhole: SSMH-24, 1' W of W side	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000102
07/23/2019
Report Date: 8/5/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1112		7/23/19	2	698A	CL	15.0	112.0	17.4	109.8	8	98	95	0 / 4	A
1113		7/23/19	2	698A	CL	15.0	112.0	16.6	110.9	8	99	95	0 / 4	A
1114		7/23/19	6	698A	SC	11.0	120.5	11.3	120.3	8	100	100	-2 / 2	A
1115		7/23/19	6	698A	SC	11.0	120.5	11.7	120.2	8	100	100	-2 / 2	A
1116		7/23/19	6	698A	SC	11.0	120.5	11.5	120.4	8	100	100	-2 / 2	A
1117		7/23/19	6	698A	SC	11.0	120.5	11.0	120.4	8	100	100	-2 / 2	A
1118		7/23/19	6	698A	SC	11.0	120.5	11.8	120.2	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1112	Manhole: SSMH-24, 1' W of W side	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1113	Manhole: SSMH-24, 1' N of N side	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1114	Sanitary Trench Backfill: Service, Lot 5 Block 2 Filing 8	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1115	Sanitary Trench Backfill: Service, Lot 5 Block 2 Filing 8	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1116	Sanitary Trench Backfill: Service, Lot 5 Block 2 Filing 8	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1117	Sanitary Trench Backfill: Service, Lot 5 Block 2 Filing 8	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1118	Sanitary Trench Backfill: Service, Lot 5 Block 2 Filing 8	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1118:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
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Compaction Test Report

Report #: SNG-000103
07/24/2019
Report Date: 8/5/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1119		7/24/19	3	698A	CL	16.0	111.0	16.1	110.6	8	100	95	0 / 4	A
1120		7/24/19	3	698A	CL	16.0	111.0	16.7	109.8	8	99	95	0 / 4	A
1121		7/24/19	3	698A	CL	16.0	111.0	17.0	109.3	8	98	95	0 / 4	A
1122		7/24/19	3	698A	CL	16.0	111.0	17.6	108.5	8	98	95	0 / 4	A
1123		7/24/19	3	698A	CL	16.0	111.0	17.1	109.0	8	98	95	0 / 4	A
1124		7/24/19	3	698A	CL	16.0	111.0	17.1	108.9	8	98	95	0 / 4	A
1125		7/24/19	5	698A	SC	13.5	114.5	14.4	114.3	8	100	100	-2 / 2	A
1126		7/24/19	5	698A	SC	13.5	114.5	14.3	114.1	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1119	Sanitary Trench Backfill: Service, Lot 5 Block 1 Filing 8	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1120	Sanitary Trench Backfill: Service, Lot 5 Block 1 Filing 8	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1121	Sanitary Trench Backfill: Service, Lot 5 Block 1 Filing 8	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1122	Sanitary Trench Backfill: Service, Lot 5 Block 1 Filing 8	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1123	Sanitary Trench Backfill: Service, Lot 5 Block 1 Filing 8	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1124	Sanitary Trench Backfill: Service, Lot 5 Block 1 Filing 8	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1125	Sanitary Trench Backfill: Mainline, 30' W of MH-23	10.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1126	Sanitary Trench Backfill: Mainline, 30' W of MH-23	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000103
07/24/2019
Report Date: 8/5/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1127		7/24/19	5	698A	SC	13.5	114.5	13.8	114.4	8	100	100	-2 / 2	A
1128		7/24/19	5	698A	SC	13.5	114.5	13.6	114.8	8	100	100	-2 / 2	A
1129		7/24/19	5	698A	SC	13.5	114.5	13.2	114.8	8	100	100	-2 / 2	A
1130		7/24/19	5	698A	SC	13.5	114.5	13.8	114.4	8	100	100	-2 / 2	A
1131		7/24/19	5	698A	SC	13.5	114.5	14.0	114.7	8	100	100	-2 / 2	A
1132		7/24/19	5	698A	SC	13.5	114.5	13.8	114.4	8	100	100	-2 / 2	A
1133		7/24/19	5	698A	SC	13.5	114.5	14.1	114.5	8	100	100	-2 / 2	A
1134		7/24/19	5	698A	SC	13.5	114.5	13.7	114.7	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1127	Sanitary Trench Backfill: Mainline, 30' W of MH-23	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1128	Sanitary Trench Backfill: Mainline, 25' W of MH-23	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1129	Sanitary Trench Backfill: Mainline, 25' W of MH-23	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1130	Sanitary Trench Backfill: Mainline, 25' W of MH-23	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1131	Sanitary Trench Backfill: Service, Lot 6 Block 1 Filing 8	10.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1132	Sanitary Trench Backfill: Service, Lot 6 Block 1 Filing 8	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1133	Sanitary Trench Backfill: Service, Lot 6 Block 1 Filing 8	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1134	Sanitary Trench Backfill: Service, Lot 6 Block 1 Filing 8	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Compaction Test Report

Report #: SNG-000103
07/24/2019
Report Date: 8/5/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1135		7/24/19	5	698A	SC	13.5	114.5	13.3	114.7	8	100	100	-2 / 2	A
1136		7/24/19	3	698A	CL	16.0	111.0	16.9	108.8	8	98	95	0 / 4	A
1137		7/24/19	3	698A	CL	16.0	111.0	17.6	109.4	8	99	95	0 / 4	A
1138		7/24/19	3	698A	CL	16.0	111.0	17.8	108.5	8	98	95	0 / 4	A
1139		7/24/19	3	698A	CL	16.0	111.0	17.3	108.4	8	98	95	0 / 4	A
1140		7/24/19	3	698A	CL	16.0	111.0	16.6	111.3	8	100	95	0 / 4	A
1141		7/24/19	3	698A	CL	16.0	111.0	17.8	109.4	8	99	95	0 / 4	A
1142		7/24/19	3	698A	CL	16.0	111.0	17.7	109.3	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1135	Sanitary Trench Backfill: Service, Lot 6 Block 1 Filing 8	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1136	Sanitary Trench Backfill: Service, Lot 6 Block 2 Filing 8	10.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1137	Sanitary Trench Backfill: Service, Lot 6 Block 2 Filing 8	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1138	Sanitary Trench Backfill: Service, Lot 6 Block 2 Filing 8	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1139	Sanitary Trench Backfill: Service, Lot 6 Block 2 Filing 8	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1140	Sanitary Trench Backfill: Mainline, 50' E of SSMH-24	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1141	Sanitary Trench Backfill: Mainline, 50' E of SSMH-24	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1142	Sanitary Trench Backfill: Mainline, 50' E of SSMH-24	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000103
07/24/2019
Report Date: 8/5/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1143		7/24/19	3	698A	CL	16.0	111.0	17.7	109.7	8	99	95	0 / 4	A
1144		7/24/19	5	698A	SC	13.5	114.5	13.9	114.3	8	100	100	-2 / 2	A
1145		7/24/19	5	698A	SC	13.5	114.5	13.6	114.3	8	100	100	-2 / 2	A
1146		7/24/19	5	698A	SC	13.5	114.5	13.8	114.6	8	100	100	-2 / 2	A
1147		7/24/19	3	698A	CL	16.0	111.0	16.9	110.1	8	99	95	0 / 4	A
1148		7/24/19	3	698A	CL	16.0	111.0	17.2	109.0	8	98	95	0 / 4	A
1149		7/24/19	3	698A	CL	16.0	111.0	17.6	109.3	8	98	95	0 / 4	A
1150		7/24/19	3	698A	CL	16.0	111.0	16.8	109.7	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1143	Sanitary Trench Backfill: Mainline, 50' E of SSMH-24	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1144	Sanitary Trench Backfill: Service, Lot 6 Block 1 Filing 8	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1145	Sanitary Trench Backfill: Service, Lot 6 Block 1 Filing 8	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1146	Sanitary Trench Backfill: Service, Lot 6 Block 1 Filing 8	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1147	Sanitary Trench Backfill: Service, Lot 6 Block 2 Filing 8	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1148	Sanitary Trench Backfill: Service, Lot 6 Block 2 Filing 8	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1149	Sanitary Trench Backfill: Service, Lot 6 Block 2 Filing 8	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1150	Sanitary Trench Backfill: Service, Lot 6 Block 2 Filing 8	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1149:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000104
07/25/2019
Report Date: 8/5/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1151		7/25/19	3	698A	CL	16.0	111.0	16.8	109.7	8	99	95	0 / 4	A
1152		7/25/19	3	698A	CL	16.0	111.0	17.2	109.6	8	99	95	0 / 4	A
1153		7/25/19	3	698A	CL	16.0	111.0	17.3	109.4	8	99	95	0 / 4	A
1154		7/25/19	3	698A	CL	16.0	111.0	17.6	109.4	8	99	95	0 / 4	A
1155		7/25/19	3	698A	CL	16.0	111.0	18.0	108.6	8	98	95	0 / 4	A
1156		7/25/19	3	698A	CL	16.0	111.0	18.1	108.5	8	98	95	0 / 4	A
1157		7/25/19	3	698A	CL	16.0	111.0	17.8	108.7	8	98	95	0 / 4	A
1158		7/25/19	3	698A	CL	16.0	111.0	17.9	108.8	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1151	Sanitary Trench Backfill: Service, Lot 6 Block 2 Filing 8	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1152	Sanitary Trench Backfill: Service, Lot 6 Block 2 Filing 8	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1153	Sanitary Trench Backfill: Service, Lot 6 Block 1 Filing 8	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1154	Sanitary Trench Backfill: Service, Lot 6 Block 1 Filing 8	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1155	Manhole: SSMH-24, 1' S of S side	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1156	Manhole: SSMH-24, 1' N of N side	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1157	Manhole: SSMH-24, 1' E of E side	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1158	Manhole: SSMH-24, 1' W of W side	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1158:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

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Compaction Test Report

Report #: SNG-000105
07/26/2019
Report Date: 8/5/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1159		7/26/19	7	698A	CL	16.5	107.5	17.3	105.4	8	98	95	0 / 4	A
1160		7/26/19	7	698A	CL	16.5	107.5	17.5	105.6	8	98	95	0 / 4	A
1161		7/26/19	7	698A	CL	16.5	107.5	17.6	105.7	8	98	95	0 / 4	A
1162		7/26/19	7	698A	CL	16.5	107.5	17.2	105.6	8	98	95	0 / 4	A
1163		7/26/19	7	698A	CL	16.5	107.5	17.4	105.5	8	98	95	0 / 4	A
1164		7/26/19	7	698A	CL	16.5	107.5	17.6	105.7	8	98	95	0 / 4	A
1165		7/26/19	3	698A	CL	16.0	111.0	17.2	109.6	8	99	95	0 / 4	A
1166		7/26/19	3	698A	CL	16.0	111.0	16.7	109.6	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1159	Sanitary Trench Backfill: Mainline, 50' SW of SSMH-24	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1160	Sanitary Trench Backfill: Mainline, 50' SW of SSMH-24	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1161	Sanitary Trench Backfill: Mainline, 50' SW of SSMH-24	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1162	Sanitary Trench Backfill: Mainline, 50' SW of SSMH-24	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1163	Sanitary Trench Backfill: Mainline, 50' SW of SSMH-24	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1164	Sanitary Trench Backfill: Mainline, 50' SW of SSMH-24	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1165	Manhole: SSMH-25, 1' S of S side	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1166	Manhole: SSMH-25, 1' S of S side	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000105
07/26/2019
Report Date: 8/5/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1167		7/26/19	3	698A	CL	16.0	111.0	17.8	108.7	8	98	95	0 / 4	A
1168		7/26/19	3	698A	CL	16.0	111.0	17.0	109.3	8	98	95	0 / 4	A
1169		7/26/19	3	698A	CL	16.0	111.0	17.0	109.1	8	98	95	0 / 4	A
1170		7/26/19	3	698A	CL	16.0	111.0	17.4	108.9	8	98	95	0 / 4	A
1171		7/26/19	3	698A	CL	16.0	111.0	17.6	109.0	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1167	Manhole: SSMH-25, 1' N of N side	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1168	Manhole: SSMH-25, 1' N of N side	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1169	Manhole: SSMH-25, 1' N of N side	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1170	Manhole: SSMH-25, 1' E of E side	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1171	Manhole: SSMH-25, 1' E of E side	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1171:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000106
07/27/2019
Report Date: 8/5/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1172		7/27/19	3	698A	CL	16.0	111.0	17.8	108.9	8	98	95	0 / 4	A
1173		7/27/19	3	698A	CL	16.0	111.0	17.2	109.0	8	98	95	0 / 4	A
1174		7/27/19	3	698A	CL	16.0	111.0	17.0	109.1	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1172	Manhole: SSMH-25, 1' W of W side	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1173	Manhole: SSMH-25, 1' W of W side	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1174	Manhole: SSMH-25, 1' W of W side	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1174:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000107
07/29/2019
Report Date: 8/5/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1175		7/29/19	6	698A	SC	11.0	120.5	11.5	120.5	8	100	100	-2 / 2	A
1176		7/29/19	6	698A	SC	11.0	120.5	11.9	120.0	8	100	100	-2 / 2	A
1177		7/29/19	6	698A	SC	11.0	120.5	11.5	120.1	8	100	100	-2 / 2	A
1178		7/29/19	6	698A	SC	11.0	120.5	11.9	119.9	8	100	100	-2 / 2	A
1179		7/29/19	6	698A	SC	11.0	120.5	11.4	120.4	8	100	100	-2 / 2	A
1180		7/29/19	5	698A	SC	13.5	114.5	13.8	114.6	8	100	100	-2 / 2	A
1181		7/29/19	5	698A	SC	13.5	114.5	13.2	114.8	8	100	100	-2 / 2	A
1182		7/29/19	5	698A	SC	13.5	114.5	13.6	114.8	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1175	Manhole: SSMH-26, 1' E of E side	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1176	Manhole: SSMH-26, 1' E of E side	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1177	Manhole: SSMH-26, 1' S of S side	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1178	Manhole: SSMH-26, 1' S of S side	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1179	Manhole: SSMH-26, 1' N of N side	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1180	Sanitary Trench Backfill: Lot 7 Block 2 Filing 8	11.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1181	Sanitary Trench Backfill: Lot 7 Block 2 Filing 8	10.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1182	Sanitary Trench Backfill: Lot 7 Block 2 Filing 8	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000107
07/29/2019
Report Date: 8/5/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1183		7/29/19	5	698A	SC	13.5	114.5	13.8	114.4	8	100	100	-2 / 2	A
1184		7/29/19	5	698A	SC	13.5	114.5	14.0	114.6	8	100	100	-2 / 2	A
1185		7/29/19	5	698A	SC	13.5	114.5	13.9	114.6	8	100	100	-2 / 2	A
1186		7/29/19	6	698A	SC	11.0	120.5	11.5	120.3	8	100	100	-2 / 2	A
1187		7/29/19	6	698A	SC	11.0	120.5	11.2	120.3	8	100	100	-2 / 2	A
1188		7/29/19	6	698A	SC	11.0	120.5	11.5	120.1	8	100	100	-2 / 2	A
1189		7/29/19	6	698A	SC	11.0	120.5	11.8	119.9	8	100	100	-2 / 2	A
1190		7/29/19	2	698A	CL	15.0	112.0	16.8	110.1	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1183	Sanitary Trench Backfill: Lot 7 Block 2 Filing 8	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1184	Sanitary Trench Backfill: Lot 7 Block 2 Filing 8	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1185	Sanitary Trench Backfill: Lot 7 Block 2 Filing 8	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1186	Sanitary Trench Backfill: Service, Lot 15 Block 1 Filing 8	11.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1187	Sanitary Trench Backfill: Service, Lot 15 Block 1 Filing 8	10.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1188	Sanitary Trench Backfill: Service, Lot 15 Block 1 Filing 8	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1189	Sanitary Trench Backfill: Service, Lot 15 Block 1 Filing 8	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1190	Sanitary Trench Backfill: Service, Lot 15 Block 1 Filing 8	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000107
07/29/2019
Report Date: 8/5/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1191		7/29/19	2	698A	CL	15.0	112.0	15.5	112.2	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1191	Sanitary Trench Backfill: Service, Lot 15 Block 1 Filing 8	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1191:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000108
07/30/2019
Report Date: 8/5/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1192		7/30/19	1	698A	SC	12.5	118.5	11.5	118.4	8	100	100	-2 / 2	A
1193		7/30/19	1	698A	SC	12.5	118.5	11.4	118.8	8	100	100	-2 / 2	A
1194		7/30/19	5	698A	SC	13.5	114.5	14.3	115.7	8	101	100	-2 / 2	A
1195		7/30/19	5	698A	SC	13.5	114.5	12.0	115.9	8	101	100	-2 / 2	A
1196		7/30/19	1	698A	SC	12.5	118.5	12.2	118.6	8	100	100	-2 / 2	A
1197		7/30/19	1	698A	SC	12.5	118.5	12.5	119.3	8	101	100	-2 / 2	A
1198		7/30/19	2	698A	CL	15.0	112.0	15.0	112.3	8	100	95	0 / 4	A
1199		7/30/19	5	698A	SC	13.5	114.5	12.3	114.8	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1192	Sanitary Trench Backfill: SSMH-26	6.0	BG	XPLORER / 3500 / 3393 / 2/4/2019	Acks, Alex
1193	Sanitary Trench Backfill: SSMH-26	6.0	BG	XPLORER / 3500 / 3393 / 2/4/2019	Acks, Alex
1194	Sanitary Trench Backfill: SSMH-26	4.0	BG	XPLORER / 3500 / 3393 / 2/4/2019	Acks, Alex
1195	Sanitary Trench Backfill: SSMH-26	3.0	BG	XPLORER / 3500 / 3393 / 2/4/2019	Acks, Alex
1196	Sanitary Trench Backfill: Rose Mallow Avenue, STA 28+70	4.0	BG	XPLORER / 3500 / 3393 / 2/4/2019	Acks, Alex
1197	Sanitary Trench Backfill: Rose Mallow Avenue, STA 28+00	2.0	BG	XPLORER / 3500 / 3393 / 2/4/2019	Acks, Alex
1198	Sanitary Trench Backfill: Rose Mallow Avenue, STA 27+75	1.0	BG	XPLORER / 3500 / 3393 / 2/4/2019	Acks, Alex
1199	Sanitary Trench Backfill: Rose Mallow Avenue, STA 29+20	3.0	BG	XPLORER / 3500 / 3393 / 2/4/2019	Acks, Alex

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1199:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
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Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000109
07/31/2019
Report Date: 8/17/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1200		7/31/19	5	698A	SC	13.5	114.5	14.1	114.5	8	100	100	-2 / 2	A
1201		7/31/19	5	698A	SC	13.5	114.5	13.8	114.1	8	100	100	-2 / 2	A
1202		7/31/19	5	698A	SC	13.5	114.5	13.8	114.6	8	100	100	-2 / 2	A
1203		7/31/19	5	698A	SC	13.5	114.5	13.5	114.4	8	100	100	-2 / 2	A
1204		7/31/19	5	698A	SC	13.5	114.5	13.9	114.4	8	100	100	-2 / 2	A
1205		7/31/19	5	698A	SC	13.5	114.5	13.9	114.5	8	100	100	-2 / 2	A
1206		7/31/19	5	698A	SC	13.5	114.5	13.5	114.6	8	100	100	-2 / 2	A
1207		7/31/19	5	698A	SC	13.5	114.5	13.5	114.4	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1200	Sanitary Trench Backfill: Service, Lot 8 Block 2 Filing 8	11.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1201	Sanitary Trench Backfill: Service, Lot 8 Block 2 Filing 8	10.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1202	Sanitary Trench Backfill: Service, Lot 8 Block 2 Filing 8	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1203	Sanitary Trench Backfill: Service, Lot 8 Block 2 Filing 8	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1204	Sanitary Trench Backfill: Service, Lot 8 Block 2 Filing 8	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1205	Sanitary Trench Backfill: Service, Lot 8 Block 2 Filing 8	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1206	Sanitary Trench Backfill: Service, Lot 8 Block 2 Filing 8	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1207	Sanitary Trench Backfill: Service, Lot 8 Block 2 Filing 8	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000109
07/31/2019
Report Date: 8/17/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
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Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1208		7/31/19	5	698A	SC	13.5	114.5	13.6	114.6	8	100	100	-2 / 2	A
1209		7/31/19	5	698A	SC	13.5	114.5	13.8	114.6	8	100	100	-2 / 2	A
1210		7/31/19	5	698A	SC	13.5	114.5	13.5	114.4	8	100	100	-2 / 2	A
1211		7/31/19	5	698A	SC	13.5	114.5	13.8	114.5	8	100	100	-2 / 2	A
1212		7/31/19	5	698A	SC	13.5	114.5	13.4	114.5	8	100	100	-2 / 2	A
1213		7/31/19	5	698A	SC	13.5	114.5	13.6	114.3	8	100	100	-2 / 2	A
1214		7/31/19	5	698A	SC	13.5	114.5	13.4	114.5	8	100	100	-2 / 2	A
1215		7/31/19	5	698A	SC	13.5	114.5	13.6	114.3	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1208	Sanitary Trench Backfill: Service, Lot 8 Block 2 Filing 8	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1209	Sanitary Trench Backfill: Service, Lot 8 Block 2 Filing 8	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1210	Sanitary Trench Backfill: Service, Lot 8 Block 2 Filing 8	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1211	Sanitary Trench Backfill: Service, Lot 16 Block 1 Filing 8	11.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1212	Sanitary Trench Backfill: Service, Lot 16 Block 1 Filing 8	10.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1213	Sanitary Trench Backfill: Service, Lot 16 Block 1 Filing 8	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1214	Sanitary Trench Backfill: Service, Lot 16 Block 1 Filing 8	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1215	Sanitary Trench Backfill: Service, Lot 16 Block 1 Filing 8	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Denver
1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000109
07/31/2019
Report Date: 8/17/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
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Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1216		7/31/19	5	698A	SC	13.5	114.5	14.1	114.4	8	100	100	-2 / 2	A
1217		7/31/19	5	698A	SC	13.5	114.5	13.8	114.6	8	100	100	-2 / 2	A
1218		7/31/19	5	698A	SC	13.5	114.5	13.7	114.7	8	100	100	-2 / 2	A
1219		7/31/19	5	698A	SC	13.5	114.5	13.9	114.2	8	100	100	-2 / 2	A
1220		7/31/19	5	698A	SC	13.5	114.5	13.8	114.5	8	100	100	-2 / 2	A
1221		7/31/19	5	698A	SC	13.5	114.5	13.6	114.7	8	100	100	-2 / 2	A
1222		7/31/19	5	698A	SC	13.5	114.5	14.0	114.4	8	100	100	-2 / 2	A
1223		7/31/19	5	698A	SC	13.5	114.5	13.6	114.5	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1216	Sanitary Trench Backfill: Service, Lot 16 Block 1 Filing 8	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1217	Sanitary Trench Backfill: Service, Lot 16 Block 1 Filing 8	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1218	Sanitary Trench Backfill: Service, Lot 16 Block 1 Filing 8	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1219	Sanitary Trench Backfill: Service, Lot 16 Block 1 Filing 8	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1220	Sanitary Trench Backfill: Service, Lot 16 Block 1 Filing 8	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1221	Sanitary Trench Backfill: Service, Lot 16 Block 1 Filing 8	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1222	Sanitary Trench Backfill: Service, Lot 9 Block 2 Filing 8	11.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1223	Sanitary Trench Backfill: Service, Lot 9 Block 2 Filing 8	10.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Denver
1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000109
07/31/2019
Report Date: 8/17/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
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Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1224		7/31/19	5	698A	SC	13.5	114.5	13.9	114.0	8	100	100	-2 / 2	A
1225		7/31/19	5	698A	SC	13.5	114.5	13.8	114.4	8	100	100	-2 / 2	A
1226		7/31/19	5	698A	SC	13.5	114.5	14.0	114.4	8	100	100	-2 / 2	A
1227		7/31/19	5	698A	SC	13.5	114.5	13.5	114.5	8	100	100	-2 / 2	A
1228		7/31/19	6	698A	SC	11.0	120.5	11.8	120.0	8	100	100	-2 / 2	A
1229		7/31/19	6	698A	SC	11.0	120.5	11.6	120.2	8	100	100	-2 / 2	A
1230		7/31/19	6	698A	SC	11.0	120.5	11.2	120.3	8	100	100	-2 / 2	A
1231		7/31/19	6	698A	SC	11.0	120.5	11.5	120.4	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1224	Sanitary Trench Backfill: Service, Lot 9 Block 2 Filing 8	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1225	Sanitary Trench Backfill: Service, Lot 9 Block 2 Filing 8	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1226	Sanitary Trench Backfill: Service, Lot 9 Block 2 Filing 8	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1227	Sanitary Trench Backfill: Service, Lot 9 Block 2 Filing 8	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1228	Sanitary Trench Backfill: Mainline, 80' E of SSMH-26 on Rose Mallow Avenue	10.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1229	Sanitary Trench Backfill: Mainline, 80' E of SSMH-26 on Rose Mallow Avenue	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1230	Sanitary Trench Backfill: Mainline, 70' E of SSMH-26 on Rose Mallow Avenue	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1231	Sanitary Trench Backfill: Mainline, 70' E of SSMH-26 on Rose Mallow Avenue	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000109
07/31/2019
Report Date: 8/17/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1232		7/31/19	6	698A	SC	11.0	120.5	11.5	120.4	8	100	100	-2 / 2	A
1233		7/31/19	5	698A	SC	13.5	114.5	13.8	114.6	8	100	100	-2 / 2	A
1234		7/31/19	5	698A	SC	13.5	114.5	13.3	114.6	8	100	100	-2 / 2	A
1235		7/31/19	5	698A	SC	13.5	114.5	13.5	114.6	8	100	100	-2 / 2	A
1236		7/31/19	5	698A	SC	13.5	114.5	13.6	114.8	8	100	100	-2 / 2	A
1237		7/31/19	5	698A	SC	13.5	114.5	13.8	114.8	8	100	100	-2 / 2	A
1238		7/31/19	5	698A	SC	13.5	114.5	14.1	114.6	8	100	100	-2 / 2	A
1239		7/31/19	5	698A	SC	13.5	114.5	13.6	114.8	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1232	Sanitary Trench Backfill: Mainline, 70' E of SSMH-26 on Rose Mallow Avenue	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1233	Sanitary Trench Backfill: Mainline, 30' SE of SSMH-26 on Rose Mallow Avenue	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1234	Sanitary Trench Backfill: Mainline, 30' SE of SSMH-26 on Rose Mallow Avenue	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1235	Sanitary Trench Backfill: Mainline, 30' SE of SSMH-26 on Rose Mallow Avenue	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1236	Sanitary Trench Backfill: Mainline, 30' SE of SSMH-26 on Rose Mallow Avenue	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1237	Sanitary Trench Backfill: Mainline, N Pinery Pkwy and Rose Mallow Street intersection	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1238	Sanitary Trench Backfill: Mainline, N Pinery Pkwy and Rose Mallow Street intersection	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1239	Sanitary Trench Backfill: Mainline, N Pinery Pkwy and Rose Mallow Street intersection	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000109
07/31/2019
Report Date: 8/17/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1240		7/31/19	5	698A	SC	13.5	114.5	13.5	114.8	8	100	100	-2 / 2	A
1241		7/31/19	5	698A	SC	13.5	114.5	13.9	114.8	8	100	100	-2 / 2	A
1242		7/31/19	5	698A	SC	13.5	114.5	13.7	114.8	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1240	Sanitary Trench Backfill: Mainline, N Pinery Pkwy and Rose Mallow Street intersection	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1241	Sanitary Trench Backfill: Mainline, N Pinery Pkwy and Rose Mallow Street intersection	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1242	Sanitary Trench Backfill: Mainline, N Pinery Pkwy and Rose Mallow Street intersection	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1242:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test sanitary sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water wagon, and apply compactive effort with the rex.

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Compaction Test Report

Report #: SNG-000110
08/01/2019
Report Date: 8/31/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
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Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1243		8/1/19	5	698A	SC	13.5	114.5	15.2	114.8	8	100	100	-2 / 2	A
1244		8/1/19	5	698A	SC	13.5	114.5	14.7	115.0	8	100	100	-2 / 2	A
1245		8/1/19	5	698A	SC	13.5	114.5	14.4	115.0	8	100	100	-2 / 2	A
1246		8/1/19	5	698A	SC	13.5	114.5	14.9	115.0	8	100	100	-2 / 2	A
1247		8/1/19	5	698A	SC	13.5	114.5	14.6	115.0	8	100	100	-2 / 2	A
1248		8/1/19	5	698A	SC	13.5	114.5	15.0	114.7	8	100	100	-2 / 2	A
1249		8/1/19	3	698A	CL	16.0	111.0	17.0	108.4	8	98	95	0 / 4	A
1250		8/1/19	3	698A	CL	16.0	111.0	17.4	108.3	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1243	Sanitary Trench Backfill: Service, Lot 9 Block 2 Filing 8	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1244	Sanitary Trench Backfill: Service, Lot 9 Block 2 Filing 8	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1245	Sanitary Trench Backfill: Service, Lot 9 Block 2 Filing 8	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1246	Sanitary Trench Backfill: Service, Lot 9 Block 2 Filing 8	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1247	Sanitary Trench Backfill: Service, Lot 9 Block 2 Filing 8	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1248	Sanitary Trench Backfill: Service, Lot 9 Block 2 Filing 8	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1249	Sanitary Trench Backfill: Service, Lot 17 Block 1 Filing 8	11.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1250	Sanitary Trench Backfill: Service, Lot 17 Block 1 Filing 8	10.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000110
08/01/2019
Report Date: 8/31/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1251		8/1/19	3	698A	CL	16.0	111.0	16.7	108.3	8	98	95	0 / 4	A
1252		8/1/19	3	698A	CL	16.0	111.0	17.6	108.9	8	98	95	0 / 4	A
1253		8/1/19	3	698A	CL	16.0	111.0	17.1	108.8	8	98	95	0 / 4	A
1254		8/1/19	3	698A	CL	16.0	111.0	17.4	108.7	8	98	95	0 / 4	A
1255		8/1/19	5	698A	SC	13.5	114.5	13.9	114.5	8	100	100	-2 / 2	A
1256		8/1/19	5	698A	SC	13.5	114.5	13.6	114.8	8	100	100	-2 / 2	A
1257		8/1/19	5	698A	SC	13.5	114.5	14.1	114.3	8	100	100	-2 / 2	A
1258		8/1/19	5	698A	SC	13.5	114.5	14.3	114.7	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1251	Sanitary Trench Backfill: Service, Lot 17 Block 1 Filing 8	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1252	Sanitary Trench Backfill: Service, Lot 17 Block 1 Filing 8	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1253	Sanitary Trench Backfill: Service, Lot 17 Block 1 Filing 8	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1254	Sanitary Trench Backfill: Service, Lot 17 Block 1 Filing 8	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1255	Sanitary Trench Backfill: Service, Lot 10 Block 2 Filing 8	11.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1256	Sanitary Trench Backfill: Service, Lot 10 Block 2 Filing 8	10.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1257	Sanitary Trench Backfill: Service Lot 10 Block 2 Filing 8	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1258	Sanitary Trench Backfill: Service, Lot 10 Block 2 Filing 8	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Denver
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Compaction Test Report

Report #: SNG-000110
08/01/2019
Report Date: 8/31/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1259		8/1/19	5	698A	SC	13.5	114.5	13.8	114.7	8	100	100	-2 / 2	A
1260		8/1/19	3	698A	CL	16.0	111.0	17.1	108.8	8	98	95	0 / 4	A
1261		8/1/19	3	698A	CL	16.0	111.0	17.0	109.1	8	98	95	0 / 4	A
1262		8/1/19	3	698A	CL	16.0	111.0	17.1	108.5	8	98	95	0 / 4	A
1263		8/1/19	3	698A	CL	16.0	111.0	17.7	108.9	8	98	95	0 / 4	A
1264		8/1/19	3	698A	CL	16.0	111.0	17.3	108.8	8	98	95	0 / 4	A
1265		8/1/19	3	698A	CL	16.0	111.0	17.6	108.3	8	98	95	0 / 4	A
1266		8/1/19	3	698A	CL	16.0	111.0	17.3	108.8	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1259	Sanitary Trench Backfill: Service, Lot 18 Block 1 Filing 8	11.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1260	Sanitary Trench Backfill: Service, Lot 18 Block 1 Filing 8	10.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1261	Sanitary Trench Backfill: Service, Lot 18 Block 1 Filing 8	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1262	Sanitary Trench Backfill: Service, Lot 18 Block 1 Filing 8	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1263	Sanitary Trench Backfill: Service, Lot 18 Block 1 Filing 8	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1264	Sanitary Trench Backfill: Service, Lot 18 Block 1 Filing 8	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1265	Manhole: SSMH 27, 1' W of W side	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1266	Manhole: SSMH 27, 1' W of W side	10.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000110
08/01/2019
Report Date: 8/31/2019
Test Method: ASTM D 6938

Client:
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Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1267		8/1/19	3	698A	CL	16.0	111.0	17.0	108.8	8	98	95	0 / 4	A
1268		8/1/19	3	698A	CL	16.0	111.0	17.6	108.9	8	98	95	0 / 4	A
1269		8/1/19	3	698A	CL	16.0	111.0	17.5	109.0	8	98	95	0 / 4	A
1270		8/1/19	3	698A	CL	16.0	111.0	16.8	109.4	8	99	95	0 / 4	A
1271		8/1/19	3	698A	CL	16.0	111.0	17.4	108.9	8	98	95	0 / 4	A
1272		8/1/19	3	698A	CL	16.0	111.0	17.6	108.8	8	98	95	0 / 4	A
1273		8/1/19	3	698A	CL	16.0	111.0	17.1	108.9	8	98	95	0 / 4	A
1274		8/1/19	3	698A	CL	16.0	111.0	17.5	109.1	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1267	Manhole: SSMH 27, 1' W of W side	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1268	Manhole: SSMH 27, 1' E of E side	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1269	Manhole: SSMH 27, 1' E of E side	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1270	Manhole: SSMH 27, 1' N of N side	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1271	Manhole: SSMH 27, 1' N of N side	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1272	Manhole: SSMH 27, 1' S of S side	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1273	Manhole: SSMH 27, 1' S of S side	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1274	Manhole: SSMH 27, 1' W of W side	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000110
08/01/2019
Report Date: 8/31/2019
Test Method: ASTM D 6938

Client:
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Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1275		8/1/19	3	698A	CL	16.0	111.0	17.1	109.1	8	98	95	0 / 4	A
1276		8/1/19	2	698A	CL	15.0	112.0	16.7	110.4	8	99	95	0 / 4	A
1277		8/1/19	2	698A	CL	15.0	112.0	17.2	109.7	8	98	95	0 / 4	A
1278		8/1/19	2	698A	CL	15.0	112.0	16.5	110.6	8	99	95	0 / 4	A
1279		8/1/19	3	698A	CL	16.0	111.0	16.3	110.4	8	99	95	0 / 4	A
1280		8/1/19	3	698A	CL	16.0	111.0	17.7	108.8	8	98	95	0 / 4	A
1281		8/1/19	3	698A	CL	16.0	111.0	17.2	109.0	8	98	95	0 / 4	A
1282		8/1/19	3	698A	CL	16.0	111.0	17.0	109.1	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1275	Manhole: SSMH 27, 1' W of W side	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1276	Sanitary Trench Backfill: Mainline, 30' N of SSMH-27	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1277	Sanitary Trench Backfill: Mainline, 30' N of SSMH-27	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1278	Sanitary Trench Backfill: Mainline, 30' N of SSMH-27	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1279	Sanitary Trench Backfill: Service, Lot 18 Block 1 Filing 8	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1280	Sanitary Trench Backfill: Service, Lot 18 Block 1 Filing 8	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1281	Sanitary Trench Backfill: Service, Lot 18 Block 1 Filing 8	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1282	Sanitary Trench Backfill: Service, Lot 18 Block 1 Filing 8	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000111
08/02/2019
Report Date: 8/31/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1283		8/2/19	3	698A	CL	16.0	111.0	17.5	110.0	8	99	95	0 / 4	A
1284		8/2/19	3	698A	CL	16.0	111.0	17.7	109.9	8	99	95	0 / 4	A
1285		8/2/19	3	698A	CL	16.0	111.0	17.5	110.9	8	100	95	0 / 4	A
1286		8/2/19	3	698A	CL	16.0	111.0	17.3	110.3	8	99	95	0 / 4	A
1287		8/2/19	3	698A	CL	16.0	111.0	17.0	110.5	8	100	95	0 / 4	A
1288		8/2/19	3	698A	CL	16.0	111.0	17.6	109.4	8	99	95	0 / 4	A
1289		8/2/19	3	698A	CL	16.0	111.0	16.9	109.8	8	99	95	0 / 4	A
1290		8/2/19	5	698A	SC	13.5	114.5	13.5	114.0	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1283	Sanitary Trench Backfill: Service, Lot 10 Block 2 Filing 8	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1284	Sanitary Trench Backfill: Service, Lot 10 Block 2 Filing 8	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1285	Sanitary Trench Backfill: Service, Lot 10 Block 2 Filing 8	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1286	Sanitary Trench Backfill: Service, Lot 10 Block 2 Filing 8	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1287	Sanitary Trench Backfill: Service, Lot 10 Block 2 Filing 8	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1288	Sanitary Trench Backfill: Service, Lot 10 Block 2 Filing 8	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1289	Sanitary Trench Backfill: Service, Lot 10 Block 2 Filing 8	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1290	Sanitary Trench Backfill: Service, Lot 17 Block 1 Filing 8	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000111
08/02/2019
Report Date: 8/31/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1291		8/2/19	5	698A	SC	13.5	114.5	14.4	114.0	8	100	100	-2 / 2	A
1292		8/2/19	5	698A	SC	13.5	114.5	14.1	114.3	8	100	100	-2 / 2	A
1293		8/2/19	5	698A	SC	13.5	114.5	13.8	114.3	8	100	100	-2 / 2	A
1294		8/2/19	5	698A	SC	13.5	114.5	13.9	114.2	8	100	100	-2 / 2	A
1295		8/2/19	5	698A	SC	13.5	114.5	13.9	114.4	8	100	100	-2 / 2	A
1296		8/2/19	5	698A	SC	13.5	114.5	13.5	114.2	8	100	100	-2 / 2	A
1297		8/2/19	5	698A	SC	13.5	114.5	13.7	114.5	8	100	100	-2 / 2	A
1298		8/2/19	5	698A	SC	13.5	114.5	13.9	114.4	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1291	Sanitary Trench Backfill: Service, Lot 17 Block 1 Filing 8	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1292	Sanitary Trench Backfill: Service, Lot 17 Block 1 Filing 8	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1293	Sanitary Trench Backfill: Service, Lot 17 Block 1 Filing 8	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1294	Sanitary Trench Backfill: Service, Lot 17 Block 1 Filing 8	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1295	Sanitary Trench Backfill: Mainline adjacent to Lot 17 Block 1 Filing 8	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1296	Sanitary Trench Backfill: Mainline adjacent to Lot 17 Block 1 Filing 8	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1297	Sanitary Trench Backfill: Mainline adjacent to Lot 17 Block 1 Filing 8	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1298	Sanitary Trench Backfill: Mainline adjacent to Lot 9 Block 2 Filing 8	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000111
08/02/2019
Report Date: 8/31/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1299		8/2/19	5	698A	SC	13.5	114.5	13.4	114.6	8	100	100	-2 / 2	A
1300		8/2/19	5	698A	SC	13.5	114.5	13.6	114.8	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1299	Sanitary Trench Backfill: Mainline adjacent to Lot 9 Block 2 Filing 8	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1300	Sanitary Trench Backfill: Mainline adjacent to Lot 9 Block 2 Filing 8	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1300:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor place fill with the loader, add moisture with the water truck, and process with the rex. Compactive effort was applied with equipment traffic.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000112
08/06/2019
Report Date: 8/31/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1301		8/6/19	9	698A	CL	20.5	103.5	22.3	102.0	8	99	95	0 / 4	A
1302		8/6/19	9	698A	CL	20.5	103.5	22.9	100.7	8	97	95	0 / 4	A
1303		8/6/19	9	698A	CL	20.5	103.5	23.1	100.0	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1301	Sanitary Trench Backfill: Mainline, 150' S of SSMH-122, Bayou Gulch Road	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1302	Sanitary Trench Backfill: Mainline, 150' S of SSMH-122, Bayou Gulch Road	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1303	Sanitary Trench Backfill: Mainline, 150' S of SSMH-122, Bayou Gulch Road	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1303:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. The backfill was prepared prior to our arrival.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000113
08/07/2019
Report Date: 8/31/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1304		8/7/19	2	698A	CL	15.0	112.0	16.1	110.3	8	98	95	0 / 4	A
1305		8/7/19	2	698A	CL	15.0	112.0	16.6	109.9	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1304	Sanitary Trench Backfill: SSMH 120, Bayou Gulch Road, S of N Pinery Pkwy, 1' W of W side	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1305	Sanitary Trench Backfill: SSMH 121, Bayou Gulch Road, S of N Pinery Pkwy, 1' W of W side	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1305:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor place fill with the loader, add moisture with the water truck, and apply compactive effort was applied with equipment traffic.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000114
08/19/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1306		8/19/19	6	698A	SC	11.0	120.5	11.7	120.1	8	100	100	-2 / 2	A
1307		8/19/19	6	698A	SC	11.0	120.5	11.4	120.2	8	100	100	-2 / 2	A
1308		8/19/19	6	698A	SC	11.0	120.5	11.3	120.2	8	100	100	-2 / 2	A
1309		8/19/19	6	698A	SC	11.0	120.5	11.6	120.2	8	100	100	-2 / 2	A
1310		8/19/19	6	698A	SC	11.0	120.5	11.4	120.3	8	100	100	-2 / 2	A
1311		8/19/19	6	698A	SC	11.0	120.5	11.7	120.0	8	100	100	-2 / 2	A
1312		8/19/19	6	698A	SC	11.0	120.5	11.3	120.1	8	100	100	-2 / 2	A
1313		8/19/19	9	698A	CL	20.5	103.5	23.8	99.2	8	96	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1306	Manhole: SSMH 120, Bayou Gulch Road, S of N Pinery Pkwy	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1307	Manhole: SSMH 120, Bayou Gulch Road, S of N Pinery Pkwy	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1308	Manhole: SSMH 121, Bayou Gulch Road, S of N Pinery Pkwy	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1309	Manhole: SSMH 121, Bayou Gulch Road, S of N Pinery Pkwy	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1310	Sanitary Trench Backfill: Mainline, 100' S of MH 120, Bayou Gulch Road	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1311	Sanitary Trench Backfill: Mainline, 100' S of MH 120, Bayou Gulch Road	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1312	Sanitary Trench Backfill: Mainline, 100' S of MH 120, Bayou Gulch Road	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1313	Manhole: SSMH 122, Bayou Gulch Road, S of N Pinery Pkwy	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000114
08/19/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1314		8/19/19	9	698A	CL	20.5	103.5	23.4	100.2	8	97	95	0 / 4	A
1315		8/19/19	9	698A	CL	20.5	103.5	23.2	99.9	8	97	95	0 / 4	A
1316		8/19/19	9	698A	CL	20.5	103.5	22.3	101.5	8	98	95	0 / 4	A
1317		8/19/19	9	698A	CL	20.5	103.5	22.9	100.7	8	97	95	0 / 4	A
1318		8/19/19	9	698A	CL	20.5	103.5	22.6	101.4	8	98	95	0 / 4	A
1319		8/19/19	6	698A	SC	11.0	120.5	11.6	120.2	8	100	100	-2 / 2	A
1320		8/19/19	6	698A	SC	11.0	120.5	11.6	119.9	8	100	100	-2 / 2	A
1321		8/19/19	6	698A	SC	11.0	120.5	11.3	120.4	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1314	Manhole: SSMH 122, Bayou Gulch Road, S of N Pinery Pkwy	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1315	Manhole: SSMH 122, Bayou Gulch Road, S of N Pinery Pkwy	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1316	Manhole: SSMH 123, Bayou Gulch Road, S of N Pinery Pkwy	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1317	Manhole: SSMH 123, Bayou Gulch Road, S of N Pinery Pkwy	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1318	Manhole: SSMH 123, Bayou Gulch Road, S of N Pinery Pkwy	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1319	Sanitary Trench Backfill: Mainline, 150' S of SSMH 21, Bayou Gulch	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1320	Sanitary Trench Backfill: Mainline, 150' S of SSMH 21, Bayou Gulch	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1321	Sanitary Trench Backfill: Mainline, 150' S of SSMH 21, Bayou Gulch	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000114
08/19/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1322		8/19/19	6	698A	SC	11.0	120.5	11.5	120.3	8	100	100	-2 / 2	A
1323		8/19/19	6	698A	SC	11.0	120.5	11.4	120.2	8	100	100	-2 / 2	A
1324		8/19/19	6	698A	SC	11.0	120.5	11.6	120.2	8	100	100	-2 / 2	A
1325		8/19/19	6	698A	SC	11.0	120.5	11.5	120.3	8	100	100	-2 / 2	A
1326		8/19/19	6	698A	SC	11.0	120.5	11.3	120.2	8	100	100	-2 / 2	A
1327		8/19/19	6	698A	SC	11.0	120.5	8.0	124.4	8	103	100	-2 / 2	B
1328		8/19/19	6	698A	SC	11.0	120.5	11.6	120.1	8	100	100	-2 / 2	A
1329	1327	8/19/19	6	698A	SC	11.0	120.5	11.5	120.1	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1322	Sanitary Trench Backfill: Mainline, 150' S of SSMH 122, Bayou Gulch	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1323	Sanitary Trench Backfill: Mainline, 150' S of SSMH 122, Bayou Gulch	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1324	Sanitary Trench Backfill: Mainline, 150' S of SSMH 122, Bayou Gulch	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1325	Sanitary Trench Backfill: Mainline, 50' N of SSMH 123, Bayou Gulch	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1326	Sanitary Trench Backfill: Mainline, 50' N of SSMH 123, Bayou Gulch	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1327	Sanitary Trench Backfill: Mainline, 50' N of SSMH 123, Bayou Gulch	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1328	Sanitary Trench Backfill: Mainline, 50' N of SSMH 123, Bayou Gulch	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1329	Sanitary Trench Backfill: Mainline, 50' N of SSMH 123, Bayou Gulch	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.
B: Test results do not comply with specifications.	**1328:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench and manhole backfill. We observed the contractor place fill with the scrapers, add moisture with the water wagon, and process with the dozer. Compactive effort was applied with equipment traffic.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000115
08/21/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1330		8/21/19	4	698A	CL	16.0	109.0	18.4	105.2	8	97	95	0 / 4	A
1331		8/21/19	4	698A	CL	16.0	109.0	18.6	105.5	8	97	95	0 / 4	A
1332		8/21/19	4	698A	CL	16.0	109.0	17.7	106.0	8	97	95	0 / 4	A
1333		8/21/19	4	698A	CL	16.0	109.0	18.0	106.1	8	97	95	0 / 4	A
1334		8/21/19	4	698A	CL	16.0	109.0	18.5	105.8	8	97	95	0 / 4	A
1335		8/21/19	4	698A	CL	16.0	109.0	18.5	105.3	8	97	95	0 / 4	A
1336		8/21/19	4	698A	CL	16.0	109.0	17.9	105.7	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1330	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 75' W of Bayou Gulch Road	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1331	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 75' W of Bayou Gulch Road	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1332	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 75' W of Bayou Gulch Road	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1333	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 100' E of Hop Clover Trail	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1334	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 100' E of Hop Clover Trail	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1335	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 100' E of Hop Clover Trail	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1336	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 100' E of Hop Clover Trail	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1332:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench and manhole backfill. We observed the contractor place fill with the scrapers, add moisture with the water wagon, and process with the dozer. Compactive effort was applied with equipment traffic. **1336:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000116
08/23/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1337		8/23/19	4	698A	CL	16.0	109.0	18.3	105.8	8	97	95	0 / 4	A
1338		8/23/19	4	698A	CL	16.0	109.0	17.7	106.7	8	98	95	0 / 4	A
1339		8/23/19	4	698A	CL	16.0	109.0	17.5	106.0	8	97	95	0 / 4	A
1340		8/23/19	4	698A	CL	16.0	109.0	18.4	105.8	8	97	95	0 / 4	A
1341		8/23/19	4	698A	CL	16.0	109.0	18.5	105.8	8	97	95	0 / 4	A
1342		8/23/19	9	698A	CL	20.5	103.5	22.6	101.0	8	98	95	0 / 4	A
1343		8/23/19	9	698A	CL	20.5	103.5	23.2	100.8	8	97	95	0 / 4	A
1344		8/23/19	9	698A	CL	20.5	103.5	22.4	101.2	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1337	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 80' E of Hop Clover Trail	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1338	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 80' E of Hop Clover Trail	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1339	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 80' E of Hop Clover Trail	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1340	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 80' E of Hop Clover Trail	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1341	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 80' E of Hop Clover Trail	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1342	Sanitary Trench Backfill: Service, Lot 9 Block 5 Filing 6	10.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1343	Sanitary Trench Backfill: Service, Lot 9 Block 5 Filing 6	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1344	Sanitary Trench Backfill: Service, Lot 9 Block 5 Filing 6	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000116
08/23/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1345		8/23/19	9	698A	CL	20.5	103.5	23.2	100.7	8	97	95	0 / 4	A
1346		8/23/19	9	698A	CL	20.5	103.5	23.0	101.3	8	98	95	0 / 4	A
1347		8/23/19	9	698A	CL	20.5	103.5	22.8	101.5	8	98	95	0 / 4	A
1348		8/23/19	9	698A	CL	20.5	103.5	22.5	101.1	8	98	95	0 / 4	A
1349		8/23/19	9	698A	CL	20.5	103.5	23.0	101.9	8	98	95	0 / 4	A
1350		8/23/19	9	698A	CL	20.5	103.5	23.3	101.5	8	98	95	0 / 4	A
1351		8/23/19	9	698A	CL	20.5	103.5	23.3	101.1	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1345	Sanitary Trench Backfill: Service, Lot 9 Block 5 Filing 6	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1346	Sanitary Trench Backfill: Service, Lot 9 Block 5 Filing 6	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1347	Sanitary Trench Backfill: Service, Lot 1 Block 6 Filing 6	12.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1348	Sanitary Trench Backfill: Service, Lot 1 Block 6 Filing 6	11.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1349	Sanitary Trench Backfill: Service, Lot 1 Block 6 Filing 6	10.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1350	Sanitary Trench Backfill: Service, Lot 1 Block 6 Filing 6	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1351	Sanitary Trench Backfill: Service, Lot 1 Block 6 Filing 6	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1351:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench and manhole backfill. We observed the contractor place fill with the scrapers, add moisture with the water wagon, and process with the dozer. Compactive effort was applied with equipment traffic.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000117
08/24/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1352		8/24/19	9	698A	CL	20.5	103.5	23.6	100.0	8	97	95	0 / 4	A
1353		8/24/19	9	698A	CL	20.5	103.5	22.6	101.2	8	98	95	0 / 4	A
1354		8/24/19	9	698A	CL	20.5	103.5	22.5	101.5	8	98	95	0 / 4	A
1355		8/24/19	9	698A	CL	20.5	103.5	23.1	100.8	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1352	Sanitary Trench Backfill: Mainline, 25' N of Lot 1 Block 6 Filing 6 service	10.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1353	Sanitary Trench Backfill: Mainline, 25' N of Lot 1 Block 6 Filing 6 service	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1354	Sanitary Trench Backfill: Mainline, 25' N of Lot 1 Block 6 Filing 6 service	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
1355	Sanitary Trench Backfill: Mainline, 25' N of Lot 1 Block 6 Filing 6 service	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1355:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench and manhole backfill. We observed the contractor place fill with the scrapers, add moisture with the water wagon, and process with the dozer. Compactive effort was applied with equipment traffic.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000118
08/26/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1356		8/26/19	7	698A	CL	16.5	107.5	18.7	106.4	8	99	95	0 / 4	A
1357		8/26/19	7	698A	CL	16.5	107.5	17.8	104.0	8	97	95	0 / 4	A
1358		8/26/19	9	698A	CL	20.5	103.5	21.7	101.3	8	98	95	0 / 4	A
1359		8/26/19	9	698A	CL	20.5	103.5	21.2	102.4	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1356	Sanitary Trench Backfill: Mainline, 20' N of intersection of Shasta Daisy Street and Hops Clover Trail	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1357	Sanitary Trench Backfill: Mainline, 20' N of intersection of Shasta Daisy Street and Hops Clover Trail	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1358	Sanitary Trench Backfill: Service, L9 B5 F6	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1359	Sanitary Trench Backfill: Service, L9 B5 F6	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1359:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench and manhole backfill. We observed the contractor place fill with the scrapers, add moisture with the water wagon, and process with the rex. Compactive effort was applied with equipment traffic.

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Compaction Test Report

Report #: SNG-000119
08/27/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1360		8/27/19	9	698A	CL	20.5	103.5	20.5	103.0	8	100	95	0 / 4	A
1361		8/27/19	9	698A	CL	20.5	103.5	21.0	102.2	8	99	95	0 / 4	A
1362		8/27/19	9	698A	CL	20.5	103.5	22.7	101.0	8	98	95	0 / 4	A
1363		8/27/19	9	698A	CL	20.5	103.5	22.4	101.3	8	98	95	0 / 4	A
1364		8/27/19	8	698A	CL	18.0	109.0	20.5	108.2	8	99	95	0 / 4	A
1365		8/27/19	8	698A	CL	18.0	109.0	20.0	107.4	8	99	95	0 / 4	A
1366		8/27/19	8	698A	CL	18.0	109.0	20.1	105.1	8	96	95	0 / 4	A
1367		8/27/19	8	698A	CL	18.0	109.0	19.3	104.4	8	96	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1360	Sanitary Trench Backfill: Mainline, 15' S of service at L9 B5 F6	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1361	Sanitary Trench Backfill: Service, L9 B5 F6	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1362	Sanitary Trench Backfill: Service, L9 B5 F6	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1363	Sanitary Trench Backfill: Service, L9 B5 F6	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1364	Sanitary Trench Backfill: Service, L8 B5 F6	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1365	Sanitary Trench Backfill: Service, L8 B5 F6	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1366	Sanitary Trench Backfill: Service, L8 B5 F6	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1367	Sanitary Trench Backfill: Service, L8 B5 F6	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000119
08/27/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1368		8/27/19	9	698A	CL	20.5	103.5	22.0	99.1	8	96	95	0 / 4	A
1369		8/27/19	9	698A	CL	20.5	103.5	22.5	98.8	8	95	95	0 / 4	A
1370		8/27/19	9	698A	CL	20.5	103.5	20.8	98.4	8	95	95	0 / 4	A
1371		8/27/19	9	698A	CL	20.5	103.5	21.1	98.2	8	95	95	0 / 4	A
1372		8/27/19	9	698A	CL	20.5	103.5	22.1	101.3	8	98	95	0 / 4	A
1373		8/27/19	9	698A	CL	20.5	103.5	22.7	100.0	8	97	95	0 / 4	A
1374		8/27/19	9	698A	CL	20.5	103.5	21.9	101.1	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1368	Sanitary Trench Backfill: Service, L1 B6 F6	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1369	Sanitary Trench Backfill: Service, L1 B6 F6.	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1370	Sanitary Trench Backfill: Service, L1 B6 F6.	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1371	Sanitary Trench Backfill: Service, L1 B6 F6	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1372	Sanitary Trench Backfill: Service, L1 B6 F6	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1373	Sanitary Trench Backfill: Service, L1 B6 F6	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1374	Sanitary Trench Backfill: Service, L1 B6 F6	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1374:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench and manhole backfill. We observed the contractor place fill with the scrapers, add moisture with the water wagon, and process with the rex. Compactive effort was applied with equipment traffic.

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Compaction Test Report

Report #: SNG-000120
08/28/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1375		8/28/19	9	698A	CL	20.5	103.5	20.5	97.9	8	95	95	0 / 4	A
1376		8/28/19	9	698A	CL	20.5	103.5	20.5	101.3	8	98	95	0 / 4	A
1377		8/28/19	9	698A	CL	20.5	103.5	20.5	98.1	8	95	95	0 / 4	A
1378		8/28/19	9	698A	CL	20.5	103.5	20.6	101.4	8	98	95	0 / 4	A
1379		8/28/19	9	698A	CL	20.5	103.5	20.8	97.9	8	95	95	0 / 4	A
1380		8/28/19	9	698A	CL	20.5	103.5	20.7	98.3	8	95	95	0 / 4	A
1381		8/28/19	9	698A	CL	20.5	103.5	20.5	102.3	8	99	95	0 / 4	A
1382		8/28/19	9	698A	CL	20.5	103.5	20.7	103.7	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1375	Sanitary Trench Backfill: SSMH 125, S side	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1376	Sanitary Trench Backfill: SSMH 125, S side	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1377	Sanitary Trench Backfill: SSMH 125, N side	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1378	Sanitary Trench Backfill: SSMH 125, N side	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1379	Sanitary Trench Backfill: SSMH 125, S side	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1380	Sanitary Trench Backfill: SSMH 125, S side	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1381	Sanitary Trench Backfill: SSMH 125, E side	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1382	Sanitary Trench Backfill: SSMH 125, N side	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1382:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000121
08/29/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1383		8/29/19	9	698A	CL	20.5	103.5	21.3	99.0	8	96	95	0 / 4	A
1384		8/29/19	9	698A	CL	20.5	103.5	21.2	98.8	8	95	95	0 / 4	A
1385		8/29/19	9	698A	CL	20.5	103.5	21.5	99.8	8	96	95	0 / 4	A
1386		8/29/19	9	698A	CL	20.5	103.5	22.5	98.2	8	95	95	0 / 4	A
1387		8/29/19	9	698A	CL	20.5	103.5	21.4	100.3	8	97	95	0 / 4	A
1388		8/29/19	9	698A	CL	20.5	103.5	20.6	102.6	8	99	95	0 / 4	A
1389		8/29/19	9	698A	CL	20.5	103.5	21.1	103.9	8	100	95	0 / 4	A
1390		8/29/19	9	698A	CL	20.5	103.5	20.8	102.1	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1383	Sanitary Trench Backfill: SSMH 125, E side	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1384	Sanitary Trench Backfill: SSMH 125, E side	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1385	Sanitary Trench Backfill: SSMH 57, E side	12.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1386	Sanitary Trench Backfill: SSMH 57, E side	11.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1387	Sanitary Trench Backfill: SSMH 57, E side	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1388	Sanitary Trench Backfill: SSMH 57, W side	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1389	Sanitary Trench Backfill: SSMH 57, W side	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1390	Sanitary Trench Backfill: SSMH 57, W side	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000121
08/29/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1391		8/29/19	9	698A	CL	20.5	103.5	23.8	98.4	8	95	95	0 / 4	A
1392		8/29/19	9	698A	CL	20.5	103.5	22.4	98.2	8	95	95	0 / 4	A
1393		8/29/19	9	698A	CL	20.5	103.5	23.1	98.2	8	95	95	0 / 4	A
1394		8/29/19	9	698A	CL	20.5	103.5	23.5	100.6	8	97	95	0 / 4	A
1395		8/29/19	9	698A	CL	20.5	103.5	23.3	99.6	8	96	95	0 / 4	A
1396		8/29/19	9	698A	CL	20.5	103.5	21.9	102.5	8	99	95	0 / 4	A
1397		8/29/19	9	698A	CL	20.5	103.5	23.1	99.6	8	96	95	0 / 4	A
1398		8/29/19	9	698A	CL	20.5	103.5	23.0	99.5	8	96	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1391	Sanitary Trench Backfill: Service, L8 B5 F6	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1392	Sanitary Trench Backfill: Service, L8 B5 F6	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1393	Sanitary Trench Backfill: Service, L8 B5 F6	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1394	Sanitary Trench Backfill: Service, L8 B5 F6	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1395	Sanitary Trench Backfill: Service, L8 B5 F6	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1396	Sanitary Trench Backfill: Service, L8 B5 F6	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1397	Sanitary Trench Backfill: Service, L2 B6 F6	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1398	Sanitary Trench Backfill: Service, L2 B6 F6	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000121
08/29/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1399		8/29/19	9	698A	CL	20.5	103.5	24.4	98.2	8	95	95	0 / 4	A
1400		8/29/19	9	698A	CL	20.5	103.5	23.5	98.4	8	95	95	0 / 4	A
1401		8/29/19	9	698A	CL	20.5	103.5	20.5	100.3	8	97	95	0 / 4	A
1402		8/29/19	9	698A	CL	20.5	103.5	20.5	100.6	8	97	95	0 / 4	A
1403		8/29/19	9	698A	CL	20.5	103.5	20.8	100.0	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1399	Sanitary Trench Backfill: Service, L2 B6 F6	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1400	Sanitary Trench Backfill: Service, L2 B6 F6	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1401	Sanitary Trench Backfill: Service, L7 B5 F6	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1402	Sanitary Trench Backfill: Service, L7 B5 F6	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1403	Sanitary Trench Backfill: Service, L7 B5 F6	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1403:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000122
08/30/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1404		8/30/19	9	698A	CL	20.5	103.5	21.3	101.6	8	98	95	0 / 4	A
1405		8/30/19	9	698A	CL	20.5	103.5	21.8	102.6	8	99	95	0 / 4	A
1406		8/30/19	9	698A	CL	20.5	103.5	22.2	101.9	8	98	95	0 / 4	A
1407		8/30/19	9	698A	CL	20.5	103.5	23.4	100.5	8	97	95	0 / 4	A
1408		8/30/19	9	698A	CL	20.5	103.5	22.1	102.1	8	99	95	0 / 4	A
1409		8/30/19	9	698A	CL	20.5	103.5	21.4	102.1	8	99	95	0 / 4	A
1410		8/30/19	4	698A	CL	16.0	109.0	18.2	107.3	8	98	95	0 / 4	A
1411		8/30/19	4	698A	CL	16.0	109.0	17.8	108.0	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1404	Sanitary Trench Backfill: Service, L2 B6 F6	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1405	Sanitary Trench Backfill: Service, L2 B6 F6	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1406	Sanitary Trench Backfill: Service, L2 B6 F6	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1407	Sanitary Trench Backfill: Service, L2 B6 F6	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1408	Sanitary Trench Backfill: Service, L2 B6 F6	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1409	Sanitary Trench Backfill: Service, L2 B6 F6	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1410	Sanitary Trench Backfill: Service, L7 B5 F6	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1411	Sanitary Trench Backfill: Service, L7 B5 F6	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Denver
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Compaction Test Report

Report #: SNG-000122
08/30/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1412		8/30/19	9	698A	CL	20.5	103.5	22.1	101.2	8	98	95	0 / 4	A
1413		8/30/19	9	698A	CL	20.5	103.5	22.2	102.7	8	99	95	0 / 4	A
1414		8/30/19	9	698A	CL	20.5	103.5	21.6	104.4	8	101	95	0 / 4	A
1415		8/30/19	9	698A	CL	20.5	103.5	23.0	103.0	8	100	95	0 / 4	A
1416		8/30/19	9	698A	CL	20.5	103.5	24.4	99.6	8	96	95	0 / 4	A
1417		8/30/19	9	698A	CL	20.5	103.5	21.8	102.5	8	99	95	0 / 4	A
1418		8/30/19	9	698A	CL	20.5	103.5	22.7	102.1	8	99	95	0 / 4	A
1419		8/30/19	9	698A	CL	20.5	103.5	22.5	101.5	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1412	Sanitary Trench Backfill: Service, L7 B5 F6	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1413	Sanitary Trench Backfill: Service, L3 B6 F6	12.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1414	Sanitary Trench Backfill: Service, L3 B6 F6	11.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1415	Sanitary Trench Backfill: Service, L3 B6 F6	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1416	Sanitary Trench Backfill: Service, L3 B6 F6	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1417	Sanitary Trench Backfill: Service, L3 B6 F6	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1418	Sanitary Trench Backfill: Service, L3 B6 F6	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1419	Sanitary Trench Backfill: SSMH 57, E side	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000122
08/30/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
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Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1420		8/30/19	9	698A	CL	20.5	103.5	22.7	101.0	8	98	95	0 / 4	A
1421		8/30/19	9	698A	CL	20.5	103.5	22.2	100.9	8	97	95	0 / 4	A
1422		8/30/19	9	698A	CL	20.5	103.5	22.7	100.5	8	97	95	0 / 4	A
1423		8/30/19	9	698A	CL	20.5	103.5	23.7	99.9	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1420	Sanitary Trench Backfill: SSMH 57, W side	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1421	Sanitary Trench Backfill: Mainline, 15' S of L3 B6 F6 service	12.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1422	Sanitary Trench Backfill: Mainline, 15' S of L3 B6 F6 service	11.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1423	Sanitary Trench Backfill: Mainline, 15' S of L3 B6 F6 service	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1423:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

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Denver
1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000123
09/03/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
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Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1424		9/3/19	9	698A	CL	20.5	103.5	20.7	100.2	8	97	95	0 / 4	A
1425		9/3/19	9	698A	CL	20.5	103.5	20.8	100.3	8	97	95	0 / 4	A
1426		9/3/19	9	698A	CL	20.5	103.5	21.5	99.6	8	96	95	0 / 4	A
1427		9/3/19	9	698A	CL	20.5	103.5	20.6	100.2	8	97	95	0 / 4	A
1428		9/3/19	9	698A	CL	20.5	103.5	20.5	100.7	8	97	95	0 / 4	A
1429		9/3/19	9	698A	CL	20.5	103.5	20.7	99.8	8	96	95	0 / 4	A
1430		9/3/19	9	698A	CL	20.5	103.5	22.3	100.5	8	97	95	0 / 4	A
1431		9/3/19	9	698A	CL	20.5	103.5	21.5	100.6	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1424	Sanitary Trench Backfill: Service, L7 B5 F6	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1425	Sanitary Trench Backfill: Service, L7 B5 F6	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1426	Sanitary Trench Backfill: Service, L7 B5 F6	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1427	Sanitary Trench Backfill: Service, L7 B5 F6	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1428	Sanitary Trench Backfill: SSMH 57	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1429	Sanitary Trench Backfill: SSMH 57	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1430	Sanitary Trench Backfill: SSMH 57	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1431	Sanitary Trench Backfill: SSMH 57	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
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Compaction Test Report

Report #: SNG-000123
09/03/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1432		9/3/19	9	698A	CL	20.5	103.5	22.0	99.5	8	96	95	0 / 4	A
1433		9/3/19	9	698A	CL	20.5	103.5	21.3	100.2	8	97	95	0 / 4	A
1434		9/3/19	9	698A	CL	20.5	103.5	21.7	100.3	8	97	95	0 / 4	A
1435		9/3/19	9	698A	CL	20.5	103.5	22.9	101.2	8	98	95	0 / 4	A
1436		9/3/19	9	698A	CL	20.5	103.5	23.1	100.3	8	97	95	0 / 4	A
1437		9/3/19	9	698A	CL	20.5	103.5	20.6	100.9	8	97	95	0 / 4	A
1438		9/3/19	9	698A	CL	20.5	103.5	20.7	98.2	8	95	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1432	Sanitary Trench Backfill: Service, L3 B6 F6	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1433	Sanitary Trench Backfill: Service, L3 B6 F6	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1434	Sanitary Trench Backfill: Service, L3 B6 F6	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1435	Sanitary Trench Backfill: Service, L3 B6 F6	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1436	Sanitary Trench Backfill: Service, L3 B6 F6	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1437	Sanitary Trench Backfill: Service, L3 B6 F6	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1438	Sanitary Trench Backfill: Mainline, 15' S of SSMH 57	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1438:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Compaction Test Report

Report #: SNG-000124
09/04/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1439		9/4/19	9	698A	CL	20.5	103.5	20.5	99.3	8	96	95	0 / 4	A
1440		9/4/19	9	698A	CL	20.5	103.5	20.6	99.6	8	96	95	0 / 4	A
1441		9/4/19	9	698A	CL	20.5	103.5	23.1	101.8	8	98	95	0 / 4	A
1442		9/4/19	9	698A	CL	20.5	103.5	24.1	101.1	8	98	95	0 / 4	A
1443		9/4/19	9	698A	CL	20.5	103.5	20.8	102.5	8	99	95	0 / 4	A
1444		9/4/19	9	698A	CL	20.5	103.5	20.6	103.6	8	100	95	0 / 4	A
1445		9/4/19	9	698A	CL	20.5	103.5	23.4	100.3	8	97	95	0 / 4	A
1446		9/4/19	9	698A	CL	20.5	103.5	20.5	102.9	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1439	Sanitary Trench Backfill: MH 126, N side	14.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1440	Sanitary Trench Backfill: MH 126, N side	13.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1441	Sanitary Trench Backfill: MH 126, S side	12.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1442	Sanitary Trench Backfill: MH 126, S side	11.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1443	Sanitary Trench Backfill: MH 126, N side	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1444	Sanitary Trench Backfill: MH 126, S side	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1445	Sanitary Trench Backfill: MH 126, S side	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1446	Sanitary Trench Backfill: MH 126, N side	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000124
09/04/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1447		9/4/19	9	698A	CL	20.5	103.5	22.2	100.9	8	97	95	0 / 4	A
1448		9/4/19	9	698A	CL	20.5	103.5	21.8	101.2	8	98	95	0 / 4	A
1449		9/4/19	9	698A	CL	20.5	103.5	24.2	100.6	8	97	95	0 / 4	A
1450		9/4/19	9	698A	CL	20.5	103.5	20.7	102.5	8	99	95	0 / 4	A
1451		9/4/19	9	698A	CL	20.5	103.5	20.7	101.5	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1447	Sanitary Trench Backfill: Service, L4 B6 F6	14.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1448	Sanitary Trench Backfill: Service, L4 B6 F6	13.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1449	Sanitary Trench Backfill: Service, L4 B6 F6	12.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1450	Sanitary Trench Backfill: Service, L4 B6 F6	11.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1451	Sanitary Trench Backfill: Service, L4 B6 F6	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1451:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test sanitary sewer trench backfill. We observed the contractor place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000125
09/06/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1452		9/6/19	8	698A	CL	18.0	109.0	19.8	106.3	8	98	95	0 / 4	A
1453		9/6/19	8	698A	CL	18.0	109.0	19.8	107.6	8	99	95	0 / 4	A
1454		9/6/19	8	698A	CL	18.0	109.0	20.9	105.5	8	97	95	0 / 4	A
1455		9/6/19	8	698A	CL	18.0	109.0	18.5	108.8	8	100	95	0 / 4	A
1456		9/6/19	8	698A	CL	18.0	109.0	20.3	106.3	8	98	95	0 / 4	A
1457		9/6/19	8	698A	CL	18.0	109.0	18.0	107.8	8	99	95	0 / 4	A
1458		9/6/19	8	698A	CL	18.0	109.0	18.5	108.6	8	100	95	0 / 4	A
1459		9/6/19	8	698A	CL	18.0	109.0	18.4	107.7	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1452	Sanitary Trench Backfill: SSMH 127, E side	14.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1453	Sanitary Trench Backfill: SSMH 127, S side	13.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1454	Sanitary Trench Backfill: SSMH 127, N side	12.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1455	Sanitary Trench Backfill: SSMH 127, N side	11.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1456	Sanitary Trench Backfill: Service, L6 B5 F6	14.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1457	Sanitary Trench Backfill: Service, L6 B5 F6	13.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1458	Sanitary Trench Backfill: Service, L6 B5 F6	12.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1459	Sanitary Trench Backfill: Service. L6 B5 F6	11.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1459:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test sanitary sewer trench backfill. We observed the contractor place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000126
09/07/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1460		9/7/19	9	698A	CL	20.5	103.5	24.4	100.5	8	97	95	0 / 4	A
1461		9/7/19	9	698A	CL	20.5	103.5	24.3	101.0	8	98	95	0 / 4	A
1462		9/7/19	9	698A	CL	20.5	103.5	23.7	98.0	8	95	95	0 / 4	A
1463		9/7/19	9	698A	CL	20.5	103.5	23.2	98.5	8	95	95	0 / 4	A
1464		9/7/19	9	698A	CL	20.5	103.5	23.5	99.0	8	96	95	0 / 4	A
1465		9/7/19	9	698A	CL	20.5	103.5	24.5	99.2	8	96	95	0 / 4	A
1466		9/7/19	9	698A	CL	20.5	103.5	23.4	100.8	8	97	95	0 / 4	A
1467		9/7/19	9	698A	CL	20.5	103.5	23.6	98.5	8	95	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1460	Sanitary Trench Backfill: SSMH 126, W side	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1461	Sanitary Trench Backfill: SSMH 126, W side	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1462	Sanitary Trench Backfill: SSMH 126, N side	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1463	Sanitary Trench Backfill: Service, L4 B6 F6	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1464	Sanitary Trench Backfill: Service, L4 B6 F6	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1465	Sanitary Trench Backfill: Service, L4 B6 F6	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1466	Sanitary Trench Backfill: Service, L4 B6 F6	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1467	Sanitary Trench Backfill: Mainline, 15' S of MH 126	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1467:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test sanitary sewer trench backfill. We observed the contractor place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000127
09/09/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1468		9/9/19	9	698A	CL	20.5	103.5	23.6	98.4	8	95	95	0 / 4	A
1469		9/9/19	9	698A	CL	20.5	103.5	23.8	100.1	8	97	95	0 / 4	A
1470		9/9/19	9	698A	CL	20.5	103.5	20.6	102.1	8	99	95	0 / 4	A
1471		9/9/19	9	698A	CL	20.5	103.5	21.2	102.8	8	99	95	0 / 4	A
1472		9/9/19	9	698A	CL	20.5	103.5	23.3	100.9	8	97	95	0 / 4	A
1473		9/9/19	9	698A	CL	20.5	103.5	21.6	102.2	8	99	95	0 / 4	A
1474		9/9/19	9	698A	CL	20.5	103.5	22.9	98.0	8	95	95	0 / 4	A
1475		9/9/19	9	698A	CL	20.5	103.5	23.9	98.0	8	95	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1468	Sanitary Trench Backfill: SSMH 126	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1469	Sanitary Trench Backfill: SSMH 126	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1470	Sanitary Trench Backfill: SSMH 126	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1471	Sanitary Trench Backfill: SSMH 126	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1472	Sanitary Trench Backfill: Service, L4 B6 F6	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1473	Sanitary Trench Backfill: Service, L4 B6 F6	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1474	Sanitary Trench Backfill: Service, L4 B6 F6	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1475	Sanitary Trench Backfill: Service, L4 B6 F6	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000127
09/09/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1476		9/9/19	9	698A	CL	20.5	103.5	22.9	99.2	8	96	95	0 / 4	A
1477		9/9/19	9	698A	CL	20.5	103.5	21.0	99.8	8	96	95	0 / 4	A
1478		9/9/19	8	698A	CL	18.0	109.0	19.4	106.9	8	98	95	0 / 4	A
1479		9/9/19	8	698A	CL	18.0	109.0	19.2	105.6	8	97	95	0 / 4	A
1480		9/9/19	8	698A	CL	18.0	109.0	19.4	107.0	8	98	95	0 / 4	A
1481		9/9/19	8	698A	CL	18.0	109.0	19.2	106.5	8	98	95	0 / 4	A
1482		9/9/19	8	698A	CL	18.0	109.0	20.2	104.8	8	96	95	0 / 4	A
1483		9/9/19	8	698A	CL	18.0	109.0	18.1	107.2	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1476	Sanitary Trench Backfill: Service, L4 B6 F6	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1477	Sanitary Trench Backfill: Service, L4 B6 F6	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1478	Sanitary Trench Backfill: Service, L5 B6 F6	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1479	Sanitary Trench Backfill: Service, L5 B6 F6	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1480	Sanitary Trench Backfill: Service, L5 B6 F6	13.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1481	Sanitary Trench Backfill: Service, L5 B6 F6	12.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1482	Sanitary Trench Backfill: Service, L5 B6 F6	11.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1483	Sanitary Trench Backfill: Service, L5 B6 F6	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000127
09/09/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1484		9/9/19	8	698A	CL	18.0	109.0	18.7	107.9	8	99	95	0 / 4	A
1485		9/9/19	8	698A	CL	18.0	109.0	18.4	108.4	8	99	95	0 / 4	A
1486		9/9/19	8	698A	CL	18.0	109.0	19.2	106.7	8	98	95	0 / 4	A
1487		9/9/19	8	698A	CL	18.0	109.0	19.4	107.0	8	98	95	0 / 4	A
1488		9/9/19	8	698A	CL	18.0	109.0	18.1	106.8	8	98	95	0 / 4	A
1489		9/9/19	8	698A	CL	18.0	109.0	18.0	107.5	8	99	95	0 / 4	A
1490		9/9/19	8	698A	CL	18.0	109.0	19.4	106.8	8	98	95	0 / 4	A
1491		9/9/19	8	698A	CL	18.0	109.0	18.0	107.2	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1484	Sanitary Trench Backfill: Service, L6 B5 F6	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1485	Sanitary Trench Backfill: Service, L6 B5 F6	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1486	Sanitary Trench Backfill: Service, L6 B5 F6	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1487	Sanitary Trench Backfill: Service, L6 B5 F6.	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1488	Sanitary Trench Backfill: SSMH 127	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1489	Sanitary Trench Backfill: SSMH 127	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1490	Sanitary Trench Backfill: SSMH 127	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1491	Sanitary Trench Backfill: SSMH 127	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000127
09/09/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1492		9/9/19	8	698A	CL	18.0	109.0	18.5	106.9	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1492	Sanitary Trench Backfill: Mainline, 15' N of MH 127	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1492:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test sanitary sewer trench backfill. We observed the contractor place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000128
09/10/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1493		9/10/19	8	698A	CL	18.0	109.0	18.4	106.8	8	98	95	0 / 4	A
1494		9/10/19	8	698A	CL	18.0	109.0	19.0	106.7	8	98	95	0 / 4	A
1495		9/10/19	8	698A	CL	18.0	109.0	19.3	106.4	8	98	95	0 / 4	A
1496		9/10/19	8	698A	CL	18.0	109.0	18.6	106.6	8	98	95	0 / 4	A
1497		9/10/19	8	698A	CL	18.0	109.0	19.3	107.1	8	98	95	0 / 4	A
1498		9/10/19	8	698A	CL	18.0	109.0	18.3	105.9	8	97	95	0 / 4	A
1499		9/10/19	8	698A	CL	18.0	109.0	18.1	106.9	8	98	95	0 / 4	A
1500		9/10/19	8	698A	CL	18.0	109.0	18.8	106.4	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1493	Sanitary Trench Backfill: SSMH 127, N side	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1494	Sanitary Trench Backfill: SSMH 127, E side	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1495	Sanitary Trench Backfill: SSMH 127, S side	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1496	Sanitary Trench Backfill: SSMH 127, W side	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1497	Sanitary Trench Backfill: SSMH 127, W side	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1498	Sanitary Trench Backfill: SSMH 127, E side	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1499	Sanitary Trench Backfill: Service, L5 B6 F6	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1500	Sanitary Trench Backfill: Service, L5 B6 F6	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000128
09/10/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1501		9/10/19	8	698A	CL	18.0	109.0	18.2	107.6	8	99	95	0 / 4	A
1502		9/10/19	8	698A	CL	18.0	109.0	19.2	106.8	8	98	95	0 / 4	A
1503		9/10/19	8	698A	CL	18.0	109.0	18.4	107.1	8	98	95	0 / 4	A
1504		9/10/19	8	698A	CL	18.0	109.0	18.3	108.7	8	100	95	0 / 4	A
1505		9/10/19	8	698A	CL	18.0	109.0	18.8	107.6	8	99	95	0 / 4	A
1506		9/10/19	8	698A	CL	18.0	109.0	18.4	106.4	8	98	95	0 / 4	A
1507		9/10/19	8	698A	CL	18.0	109.0	18.2	106.7	8	98	95	0 / 4	A
1508		9/10/19	8	698A	CL	18.0	109.0	18.8	108.2	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1501	Sanitary Trench Backfill: Service, L5 B6 F6	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1502	Sanitary Trench Backfill: Service, L5 B6 F6	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1503	Sanitary Trench Backfill: Service, L5 B6 F6	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1504	Sanitary Trench Backfill: Service, L5 B6 F6	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1505	Sanitary Trench Backfill: Service, L5 B6 F6	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1506	Sanitary Trench Backfill: Service, L6 B5 F6	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1507	Sanitary Trench Backfill: Service, L6 B5 F6	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1508	Sanitary Trench Backfill: Service, L6 B5 F6	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000128
09/10/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1509		9/10/19	8	698A	CL	18.0	109.0	19.5	105.9	8	97	95	0 / 4	A
1510		9/10/19	8	698A	CL	18.0	109.0	19.0	106.6	8	98	95	0 / 4	A
1511		9/10/19	8	698A	CL	18.0	109.0	18.3	107.2	8	98	95	0 / 4	A
1512		9/10/19	8	698A	CL	18.0	109.0	19.3	105.3	8	97	95	0 / 4	A
1513		9/10/19	8	698A	CL	18.0	109.0	19.3	104.5	8	96	95	0 / 4	A
1514		9/10/19	8	698A	CL	18.0	109.0	19.8	105.0	8	96	95	0 / 4	A
1515		9/10/19	8	698A	CL	18.0	109.0	18.7	107.4	8	99	95	0 / 4	A
1516		9/10/19	8	698A	CL	18.0	109.0	18.1	107.4	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1509	Sanitary Trench Backfill: Service, L6 B5 F6	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1510	Sanitary Trench Backfill: Service, L6 B5 F6	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1511	Sanitary Trench Backfill: Service, L6 B5 F6	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1512	Sanitary Trench Backfill: Service, L6 B6 F6	13.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1513	Sanitary Trench Backfill: Service, L6 B6 F6	12.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1514	Sanitary Trench Backfill: Service, L6 B6 F6	11.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1515	Sanitary Trench Backfill: Service, L6 B6 F6	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1516	Sanitary Trench Backfill: Service, L6 B6 F6	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000128
09/10/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1517		9/10/19	8	698A	CL	18.0	109.0	18.9	105.5	8	97	95	0 / 4	A
1518		9/10/19	8	698A	CL	18.0	109.0	18.8	107.4	8	99	95	0 / 4	A
1519		9/10/19	8	698A	CL	18.0	109.0	18.5	108.1	8	99	95	0 / 4	A
1520		9/10/19	8	698A	CL	18.0	109.0	19.2	106.6	8	98	95	0 / 4	A
1521		9/10/19	8	698A	CL	18.0	109.0	19.6	105.6	8	97	95	0 / 4	A
1522		9/10/19	8	698A	CL	18.0	109.0	18.5	105.7	8	97	95	0 / 4	A
1523		9/10/19	8	698A	CL	18.0	109.0	18.5	104.8	8	96	95	0 / 4	A
1524		9/10/19	8	698A	CL	18.0	109.0	21.6	104.7	8	96	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1517	Sanitary Trench Backfill: Service, L6 B6 F6	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1518	Sanitary Trench Backfill: SSMH 128, W side	13.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1519	Sanitary Trench Backfill: SSMH 128, N side	12.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1520	Sanitary Trench Backfill: SSMH 128, E side	11.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1521	Sanitary Trench Backfill: SSMH 128, S side	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1522	Sanitary Trench Backfill: SSMH 128, S side	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1523	Sanitary Trench Backfill: SSMH 128, N side	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1524	Sanitary Trench Backfill: SSMH 128, S side	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000128
09/10/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1525		9/10/19	8	698A	CL	18.0	109.0	18.1	108.6	8	100	95	0 / 4	A
1526		9/10/19	8	698A	CL	18.0	109.0	19.1	105.5	8	97	95	0 / 4	A
1527		9/10/19	8	698A	CL	18.0	109.0	19.4	105.8	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1525	Sanitary Trench Backfill: Mainline, 15' S of MH 127	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1526	Sanitary Trench Backfill: Mainline, 20' S of MH 127	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1527	Sanitary Trench Backfill: Mainline, 30' S of MH 127	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1527:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test sanitary sewer trench backfill. We observed the contractor place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000129
09/11/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1528		9/11/19	8	698A	CL	18.0	109.0	19.2	106.8	8	98	95	0 / 4	A
1529		9/11/19	8	698A	CL	18.0	109.0	20.2	106.7	8	98	95	0 / 4	A
1530		9/11/19	8	698A	CL	18.0	109.0	19.7	106.9	8	98	95	0 / 4	A
1531		9/11/19	8	698A	CL	18.0	109.0	18.7	104.7	8	96	95	0 / 4	A
1532		9/11/19	8	698A	CL	18.0	109.0	18.5	104.8	8	96	95	0 / 4	A
1533		9/11/19	8	698A	CL	18.0	109.0	21.2	105.2	8	97	95	0 / 4	A
1534		9/11/19	8	698A	CL	18.0	109.0	20.1	105.3	8	97	95	0 / 4	A
1535		9/11/19	8	698A	CL	18.0	109.0	19.8	108.7	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1528	Sanitary Trench Backfill: Mainline, 20' S of MH 127	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1529	Sanitary Trench Backfill: Mainline, 30' S of MH 127	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1530	Sanitary Trench Backfill: Mainline, 20' S of MH 127	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1531	Sanitary Trench Backfill: SSMH 128, W side	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1532	Sanitary Trench Backfill: SSMH 128, N side	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1533	Sanitary Trench Backfill: SSMH 128, E side	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1534	Sanitary Trench Backfill: SSMH 128, N side	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1535	Sanitary Trench Backfill: SSMH 128, S side	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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CTL | THOMPSON INCORPORATED

Denver
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Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000129
09/11/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1536		9/11/19	8	698A	CL	18.0	109.0	20.8	104.6	8	96	95	0 / 4	A
1537		9/11/19	8	698A	CL	18.0	109.0	19.9	107.8	8	99	95	0 / 4	A
1538		9/11/19	8	698A	CL	18.0	109.0	18.5	106.5	8	98	95	0 / 4	A
1539		9/11/19	8	698A	CL	18.0	109.0	20.5	105.3	8	97	95	0 / 4	A
1540		9/11/19	8	698A	CL	18.0	109.0	20.7	104.6	8	96	95	0 / 4	A
1541		9/11/19	8	698A	CL	18.0	109.0	19.6	103.9	8	95	95	0 / 4	A
1542		9/11/19	8	698A	CL	18.0	109.0	19.0	105.4	8	97	95	0 / 4	A
1543		9/11/19	8	698A	CL	18.0	109.0	18.3	107.3	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1536	Sanitary Trench Backfill: SSMH 128, W side	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1537	Sanitary Trench Backfill: SSMH 128, N side	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1538	Sanitary Trench Backfill: Service, L6 B6 F6	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1539	Sanitary Trench Backfill: Service, L6 B6 F6	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1540	Sanitary Trench Backfill: Service, L6 B6 F6	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1541	Sanitary Trench Backfill: Service, L6 B6 F6	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1542	Sanitary Trench Backfill: Service, L6 B6 F6	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1543	Sanitary Trench Backfill: Service, L6 B6 F6	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000129
09/11/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
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Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1544		9/11/19	8	698A	CL	18.0	109.0	19.1	106.7	8	98	95	0 / 4	A
1545		9/11/19	8	698A	CL	18.0	109.0	19.6	104.5	8	96	95	0 / 4	A
1546		9/11/19	8	698A	CL	18.0	109.0	18.0	106.3	8	98	95	0 / 4	A
1547		9/11/19	8	698A	CL	18.0	109.0	19.9	105.7	8	97	95	0 / 4	A
1548		9/11/19	8	698A	CL	18.0	109.0	19.6	107.4	8	99	95	0 / 4	A
1549		9/11/19	8	698A	CL	18.0	109.0	20.0	106.2	8	97	95	0 / 4	A
1550		9/11/19	3	698A	CL	16.0	111.0	16.1	109.8	8	99	95	0 / 4	A
1551		9/11/19	3	698A	CL	16.0	111.0	16.2	107.7	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1544	Sanitary Trench Backfill: Service, L6 B6 F6	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1545	Sanitary Trench Backfill: Mainline, 30' N of MH 129	12.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1546	Sanitary Trench Backfill: Mainline, 20' N of MH 129	11.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1547	Sanitary Trench Backfill: SSMH 129	12.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1548	Sanitary Trench Backfill: SSMH 129, E side	11.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1549	Sanitary Trench Backfill: SSMH 129, W side	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1550	Sanitary Trench Backfill: Service, L7 B6 F6	12.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1551	Sanitary Trench Backfill: Service, L7 B6 F6	11.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

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09/11/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
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Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1552		9/11/19	3	698A	CL	16.0	111.0	17.4	105.8	8	95	95	0 / 4	A
1553		9/11/19	3	698A	CL	16.0	111.0	16.0	110.5	8	100	95	0 / 4	A
1554		9/11/19	3	698A	CL	16.0	111.0	16.6	111.1	8	100	95	0 / 4	A
1555		9/11/19	3	698A	CL	16.0	111.0	16.2	111.0	8	100	95	0 / 4	A
1556		9/11/19	2	698A	CL	15.0	112.0	15.6	113.9	8	102	95	0 / 4	A
1557		9/11/19	2	698A	CL	15.0	112.0	16.1	112.5	8	100	95	0 / 4	A
1558		9/11/19	2	698A	CL	15.0	112.0	15.8	113.3	8	101	95	0 / 4	A
1559		9/11/19	2	698A	CL	15.0	112.0	15.9	111.6	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1552	Sanitary Trench Backfill: Service, L7 B6 F6	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1553	Sanitary Trench Backfill: Service, L5 B5 F6	12.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1554	Sanitary Trench Backfill: Service, L5 B5 F6	11.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1555	Sanitary Trench Backfill: Service, L5 B5 F6	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1556	Sanitary Trench Backfill: N Pinery Pkwy and Rose Mallow Avenue, N side of SSMH 17	10.0	BG	XPLORER / 3500 / 1994 / 5/30/2019	Flynn, Christopher
1557	Sanitary Trench Backfill: N Pinery Pkwy and Rose Mallow Avenue, S side of SSMH 17	9.0	BG	XPLORER / 3500 / 1994 / 5/30/2019	Flynn, Christopher
1558	Sanitary Trench Backfill: N Pinery Pkwy and Rose Mallow Avenue, WML, 50' W of SSMH 17	9.0	BG	XPLORER / 3500 / 1994 / 5/30/2019	Flynn, Christopher
1559	Sanitary Trench Backfill: N Pinery Pkwy and Rose Mallow Avenue, N side of SSMH 17	8.0	BG	XPLORER / 3500 / 1994 / 5/30/2019	Flynn, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000129
09/11/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
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Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
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Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1560		9/11/19	2	698A	CL	15.0	112.0	16.6	110.8	8	99	95	0 / 4	A
1561		9/11/19	2	698A	CL	15.0	112.0	16.7	112.1	8	100	95	0 / 4	A
1562		9/11/19	2	698A	CL	15.0	112.0	16.7	112.3	8	100	95	0 / 4	A
1563		9/11/19	2	698A	CL	15.0	112.0	16.2	113.3	8	101	95	0 / 4	A
1564		9/11/19	2	698A	CL	15.0	112.0	17.0	111.3	8	99	95	0 / 4	A
1565		9/11/19	2	698A	CL	15.0	112.0	16.7	112.7	8	101	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1560	Sanitary Trench Backfill: N Pinery Pkwy and Rose Mallow Avenue, S side of SSMH 17	7.0	BG	XPLORER / 3500 / 1994 / 5/30/2019	Flynn, Christopher
1561	Sanitary Trench Backfill: N Pinery Pkwy and Rose Mallow Avenue, W side of SSMH 17	6.0	BG	XPLORER / 3500 / 1994 / 5/30/2019	Flynn, Christopher
1562	Sanitary Trench Backfill: N Pinery Pkwy and Rose Mallow Avenue, E side of SSMH 17	5.0	BG	XPLORER / 3500 / 1994 / 5/30/2019	Flynn, Christopher
1563	Sanitary Trench Backfill: N Pinery Pkwy and Rose Mallow Avenue, N side of SSMH 17	4.0	BG	XPLORER / 3500 / 1994 / 5/30/2019	Flynn, Christopher
1564	Sanitary Trench Backfill: N Pinery Pkwy and Rose Mallow Avenue, S side of SSMH 17	3.0	BG	XPLORER / 3500 / 1994 / 5/30/2019	Flynn, Christopher
1565	Sanitary Trench Backfill: N Pinery Pkwy and Rose Mallow Avenue, WML, 50' W of SSMH 17	8.0	BG	XPLORER / 3500 / 1994 / 5/30/2019	Flynn, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1565:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test sanitary sewer trench backfill. We observed the contractor place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

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Compaction Test Report

Report #: SNG-000130
09/12/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1566		9/12/19	8	698A	CL	18.0	109.0	19.2	106.6	8	98	95	0 / 4	A
1567		9/12/19	8	698A	CL	18.0	109.0	19.6	106.5	8	98	95	0 / 4	A
1568		9/12/19	9	698A	CL	20.5	103.5	23.1	103.4	8	100	95	0 / 4	A
1569		9/12/19	9	698A	CL	20.5	103.5	22.7	104.7	8	101	95	0 / 4	A
1570		9/12/19	9	698A	CL	20.5	103.5	20.8	103.8	8	100	95	0 / 4	A
1571		9/12/19	9	698A	CL	20.5	103.5	21.0	102.5	8	99	95	0 / 4	A
1572		9/12/19	9	698A	CL	20.5	103.5	22.0	102.3	8	99	95	0 / 4	A
1573		9/12/19	9	698A	CL	20.5	103.5	20.5	104.0	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1566	Sanitary Trench Backfill: Manhole. Sanitary Sewer MH #129. N side.	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1567	Sanitary Trench Backfill: Manhole. Sanitary Sewer MH #129. N side.	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1568	Sanitary Trench Backfill: Manhole. Sanitary Sewer MH #129. E side.	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1569	Sanitary Trench Backfill: Manhole. Sanitary Sewer MH #129. S side.	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1570	Sanitary Trench Backfill: Manhole. Sanitary Sewer MH #129. W side.	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1571	Sanitary Trench Backfill: Manhole. Sanitary Sewer MH #129. N side.	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1572	Sanitary Trench Backfill: Manhole. Sanitary Sewer MH #129. E side.	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1573	Sanitary Trench Backfill: Manhole. Sanitary Sewer MH #129. S side.	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

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Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1574		9/12/19	9	698A	CL	20.5	103.5	23.4	101.5	8	98	95	0 / 4	A
1575		9/12/19	3	698A	CL	16.0	111.0	16.3	109.2	8	98	95	0 / 4	A
1576		9/12/19	3	698A	CL	16.0	111.0	16.0	110.1	8	99	95	0 / 4	A
1577		9/12/19	9	698A	CL	20.5	103.5	21.7	103.5	8	100	95	0 / 4	A
1578		9/12/19	9	698A	CL	20.5	103.5	20.8	101.5	8	98	95	0 / 4	A
1579		9/12/19	9	698A	CL	20.5	103.5	20.9	101.8	8	98	95	0 / 4	A
1580		9/12/19	9	698A	CL	20.5	103.5	22.0	98.6	8	95	95	0 / 4	A
1581		9/12/19	9	698A	CL	20.5	103.5	20.6	100.5	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1574	Sanitary Trench Backfill: Manhole. Sanitary Sewer MH #129. W side.	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1575	Sanitary Trench Backfill: Service. L7 B6 F6	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1576	Sanitary Trench Backfill: Service. L7 B6 F6	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1577	Sanitary Trench Backfill: Service. L7 B6 F6	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1578	Sanitary Trench Backfill: Service. L7 B6 F6	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1579	Sanitary Trench Backfill: Service. L7 B6 F6	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1580	Sanitary Trench Backfill: Service. L7 B6 F6	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1581	Sanitary Trench Backfill: Service. L7 B6 F6	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

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09/12/2019
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Test Method: ASTM D 6938

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Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1582		9/12/19	9	698A	CL	20.5	103.5	20.9	102.4	8	99	95	0 / 4	A
1583		9/12/19	9	698A	CL	20.5	103.5	20.9	102.3	8	99	95	0 / 4	A
1584		9/12/19	3	698A	CL	16.0	111.0	16.3	111.2	8	100	95	0 / 4	A
1585		9/12/19	3	698A	CL	16.0	111.0	16.5	110.7	8	100	95	0 / 4	A
1586		9/12/19	3	698A	CL	16.0	111.0	16.8	109.2	8	98	95	0 / 4	A
1587		9/12/19	3	698A	CL	16.0	111.0	17.0	109.7	8	99	95	0 / 4	A
1588		9/12/19	3	698A	CL	16.0	111.0	16.6	110.6	8	100	95	0 / 4	A
1589		9/12/19	10	698A	CL	19.0	106.0	19.4	100.6	8	95	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1582	Sanitary Trench Backfill: Service. L7 B6 F6	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1583	Sanitary Trench Backfill: Service. L7 B6 F6	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1584	Sanitary Trench Backfill: Service. L5 B5 F6	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1585	Sanitary Trench Backfill: Service. L5 B5 F6	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1586	Sanitary Trench Backfill: Service. L5 B5 F6	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1587	Sanitary Trench Backfill: Service. L5 B5 F6	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1588	Sanitary Trench Backfill: Service. L5 B5 F6	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1589	Sanitary Trench Backfill: Service. L5 B5 F6	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000130
09/12/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1590		9/12/19	10	698A	CL	19.0	106.0	20.2	101.3	8	96	95	0 / 4	A
1591		9/12/19	10	698A	CL	19.0	106.0	20.4	102.5	8	97	95	0 / 4	A
1592		9/12/19	10	698A	CL	19.0	106.0	19.0	103.2	8	97	95	0 / 4	A
1593		9/12/19	9	698A	CL	20.5	103.5	21.1	103.6	8	100	95	0 / 4	A
1594		9/12/19	9	698A	CL	20.5	103.5	22.1	103.4	8	100	95	0 / 4	A
1595		9/12/19	3	698A	CL	16.0	111.0	18.0	108.9	8	98	95	0 / 4	A
1596		9/12/19	3	698A	CL	16.0	111.0	17.7	108.6	8	98	95	0 / 4	A
1597		9/12/19	3	698A	CL	16.0	111.0	17.9	108.4	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1590	Sanitary Trench Backfill: Service. L5 B5 F6	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1591	Sanitary Trench Backfill: Service. L5 B5 F6	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1592	Sanitary Trench Backfill: Service. L5 B5 F6	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1593	Sanitary Trench Backfill: Mainline. 15' S of MH #129.	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1594	Sanitary Trench Backfill: Mainline. 20' S of MH #129.	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1595	Sanitary Trench Backfill: Mainline. 65' W of SSMH #17. Rose Mallow Ave.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1596	Sanitary Trench Backfill: Mainline. 65' W of SSMH #17. Rose Mallow Ave.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1597	Sanitary Trench Backfill: Mainline. 65' W of SSMH #17. Rose Mallow Ave.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000130
09/12/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1598		9/12/19	2	698A	CL	15.0	112.0	18.3	108.3	8	97	95	0 / 4	A
1599		9/12/19	2	698A	CL	15.0	112.0	17.3	109.0	8	97	95	0 / 4	A
1600		9/12/19	2	698A	CL	15.0	112.0	17.3	108.8	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1598	Sanitary Trench Backfill: Mainline. 25' E of SSMH #18. Rose Mallow Ave.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1599	Sanitary Trench Backfill: Mainline. 25' E of SSMH #18. Rose Mallow Ave.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1600	Sanitary Trench Backfill: Mainline. 25' E of SSMH #18. Rose Mallow Ave.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1600:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000131
09/13/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1601		9/13/19	2	698A	CL	15.0	112.0	17.5	109.4	8	98	95	0 / 4	A
1602		9/13/19	2	698A	CL	15.0	112.0	18.1	109.3	8	98	95	0 / 4	A
1603		9/13/19	2	698A	CL	15.0	112.0	17.7	109.3	8	98	95	0 / 4	A
1604		9/13/19	2	698A	CL	15.0	112.0	18.3	109.1	8	97	95	0 / 4	A
1605		9/13/19	2	698A	CL	15.0	112.0	17.9	109.2	8	98	95	0 / 4	A
1606		9/13/19	2	698A	CL	15.0	112.0	17.5	109.4	8	98	95	0 / 4	A
1607		9/13/19	2	698A	CL	15.0	112.0	17.3	109.0	8	97	95	0 / 4	A
1608		9/13/19	2	698A	CL	15.0	112.0	17.6	109.2	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1601	Sanitary Trench Backfill: Mainline. 75' W of SSMH #18. Rose Mallow Ave.	12.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1602	Sanitary Trench Backfill: Mainline. 75' W of SSMH #18. Rose Mallow Ave.	11.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1603	Sanitary Trench Backfill: Mainline. 75' W of SSMH #18. Rose Mallow Ave.	10.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1604	Sanitary Trench Backfill: Mainline. 75' W of SSMH #18. Rose Mallow Ave.	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1605	Sanitary Trench Backfill: Mainline. 75' W of SSMH #18. Rose Mallow Ave.	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1606	Manhole: SSMH #18. 1' E of E side.	12.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1607	Manhole: SSMH #18. 1' W of W side.	11.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1608	Manhole: SSMH #18. 1' S of S side.	10.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000131
09/13/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
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Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1609		9/13/19	2	698A	CL	15.0	112.0	17.2	109.1	8	97	95	0 / 4	A
1610		9/13/19	2	698A	CL	15.0	112.0	17.4	109.5	8	98	95	0 / 4	A
1611		9/13/19	4	698A	CL	16.0	109.0	17.8	107.3	8	98	95	0 / 4	A
1612		9/13/19	4	698A	CL	16.0	109.0	18.3	107.1	8	98	95	0 / 4	A
1613		9/13/19	4	698A	CL	16.0	109.0	18.2	107.8	8	99	95	0 / 4	A
1614		9/13/19	4	698A	CL	16.0	109.0	16.4	109.1	8	100	95	0 / 4	A
1615		9/13/19	4	698A	CL	16.0	109.0	18.2	109.0	8	100	95	0 / 4	A
1616		9/13/19	4	698A	CL	16.0	109.0	16.0	109.9	8	101	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1609	Manhole: SSMH #18. 1' N of N side.	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1610	Manhole: SSMH #18. 1' W of W side.	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1611	Sanitary Trench Backfill: Service. L8 B6 F6	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1612	Sanitary Trench Backfill: Service. L8 B6 F6	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1613	Sanitary Trench Backfill: Service. L8 B6 F6	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1614	Sanitary Trench Backfill: Service. L8 B6 F6	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1615	Sanitary Trench Backfill: Service. L8 B6 F6	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1616	Sanitary Trench Backfill: Service. L8 B6 F6	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000131
09/13/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
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Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1617		9/13/19	4	698A	CL	16.0	109.0	17.8	106.6	8	98	95	0 / 4	A
1618		9/13/19	4	698A	CL	16.0	109.0	16.9	107.8	8	99	95	0 / 4	A
1619		9/13/19	4	698A	CL	16.0	109.0	17.5	105.5	8	97	95	0 / 4	A
1620		9/13/19	4	698A	CL	16.0	109.0	17.0	106.2	8	97	95	0 / 4	A
1621		9/13/19	4	698A	CL	16.0	109.0	17.1	107.3	8	98	95	0 / 4	A
1622		9/13/19	4	698A	CL	16.0	109.0	17.0	106.9	8	98	95	0 / 4	A
1623		9/13/19	4	698A	CL	16.0	109.0	16.4	108.2	8	99	95	0 / 4	A
1624		9/13/19	4	698A	CL	16.0	109.0	16.0	109.0	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1617	Sanitary Trench Backfill: Service. L8 B6 F6	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1618	Sanitary Trench Backfill: Service. L8 B6 F6	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1619	Sanitary Trench Backfill: Service. L8 B6 F6	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1620	Sanitary Trench Backfill: Service. L8 B6 F6	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1621	Sanitary Trench Backfill: Service. L4 B5 F6	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1622	Sanitary Trench Backfill: Service. L4 B5 F6	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1623	Sanitary Trench Backfill: Service. L4 B5 F6	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1624	Sanitary Trench Backfill: Service. L9 B6 F6	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000131
09/13/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
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Project:
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Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1625		9/13/19	4	698A	CL	16.0	109.0	18.3	108.8	8	100	95	0 / 4	A
1626		9/13/19	4	698A	CL	16.0	109.0	18.1	109.2	8	100	95	0 / 4	A
1627		9/13/19	4	698A	CL	16.0	109.0	17.1	109.6	8	101	95	0 / 4	A
1628		9/13/19	4	698A	CL	16.0	109.0	17.7	108.8	8	100	95	0 / 4	A
1629		9/13/19	4	698A	CL	16.0	109.0	17.1	109.2	8	100	95	0 / 4	A
1630		9/13/19	4	698A	CL	16.0	109.0	16.6	108.4	8	99	95	0 / 4	A
1631		9/13/19	4	698A	CL	16.0	109.0	18.1	108.1	8	99	95	0 / 4	A
1632		9/13/19	4	698A	CL	16.0	109.0	19.7	106.0	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1625	Sanitary Trench Backfill: Service. L9 B6 F6	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1626	Sanitary Trench Backfill: Service. L9 B6 F6	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1627	Sanitary Trench Backfill: Manhole. Sanitary Sewer MH #130. W side.	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1628	Sanitary Trench Backfill: Manhole. Sanitary Sewer MH #130. S side.	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1629	Sanitary Trench Backfill: Manhole. Sanitary Sewer MH #130. N side.	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1630	Sanitary Trench Backfill: Manhole. Sanitary Sewer MH #130. E side.	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1631	Sanitary Trench Backfill: Manhole. Sanitary Sewer MH #130. S side.	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1632	Sanitary Trench Backfill: Mainline. 15' SW of MH #130	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

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09/13/2019
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Test Method: ASTM D 6938

Client:
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Project:
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Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1633		9/13/19	4	698A	CL	16.0	109.0	18.3	108.6	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1633	Sanitary Trench Backfill: Mainline. 10' SW of MH #130	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1633:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000132
09/14/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1634		9/14/19	4	698A	CL	16.0	109.0	17.3	104.9	8	96	95	0 / 4	A
1635		9/14/19	4	698A	CL	16.0	109.0	17.0	106.1	8	97	95	0 / 4	A
1636		9/14/19	4	698A	CL	16.0	109.0	18.2	106.2	8	97	95	0 / 4	A
1637		9/14/19	4	698A	CL	16.0	109.0	17.8	104.9	8	96	95	0 / 4	A
1638		9/14/19	4	698A	CL	16.0	109.0	18.9	105.3	8	97	95	0 / 4	A
1639		9/14/19	4	698A	CL	16.0	109.0	18.3	106.3	8	98	95	0 / 4	A
1640		9/14/19	4	698A	CL	16.0	109.0	18.4	104.4	8	96	95	0 / 4	A
1641		9/14/19	4	698A	CL	16.0	109.0	18.4	105.7	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1634	Sanitary Trench Backfill: Manhole. Sanitary Sewer MH #56	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1635	Sanitary Trench Backfill: Manhole. Sanitary Sewer MH #56	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1636	Sanitary Trench Backfill: Manhole. Sanitary Sewer MH #56	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1637	Sanitary Trench Backfill: Manhole. Sanitary Sewer MH #56	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1638	Sanitary Trench Backfill: Manhole. Sanitary Sewer MH #56	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1639	Sanitary Trench Backfill: Manhole. Sanitary Sewer MH #56	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1640	Sanitary Trench Backfill: Manhole. Sanitary Sewer MH #131	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1641	Sanitary Trench Backfill: Manhole. Sanitary Sewer MH #131	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000132
09/14/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1642		9/14/19	4	698A	CL	16.0	109.0	17.8	106.6	8	98	95	0 / 4	A
1643		9/14/19	4	698A	CL	16.0	109.0	17.7	105.3	8	97	95	0 / 4	A
1644		9/14/19	4	698A	CL	16.0	109.0	18.8	107.6	8	99	95	0 / 4	A
1645		9/14/19	4	698A	CL	16.0	109.0	18.0	107.8	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1642	Sanitary Trench Backfill: Manhole. Sanitary Sewer MH #131	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1643	Sanitary Trench Backfill: Manhole. Sanitary Sewer MH #131	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1644	Sanitary Trench Backfill: Manhole. Sanitary Sewer MH #131	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1645	Sanitary Trench Backfill: Manhole. Sanitary Sewer MH #131	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1645:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000133
09/16/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1646		9/16/19	2	698A	CL	15.0	112.0	15.6	112.5	8	100	95	0 / 4	A
1647		9/16/19	2	698A	CL	15.0	112.0	15.9	111.6	8	100	95	0 / 4	A
1648		9/16/19	2	698A	CL	15.0	112.0	16.1	111.2	8	99	95	0 / 4	A
1649		9/16/19	2	698A	CL	15.0	112.0	15.8	111.3	8	99	95	0 / 4	A
1650		9/16/19	2	698A	CL	15.0	112.0	16.5	110.1	8	98	95	0 / 4	A
1651		9/16/19	2	698A	CL	15.0	112.0	17.4	109.5	8	98	95	0 / 4	A
1652		9/16/19	2	698A	CL	15.0	112.0	17.7	109.6	8	98	95	0 / 4	A
1653		9/16/19	2	698A	CL	15.0	112.0	17.2	109.6	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1646	Manhole: SSMH 18, Rose Mallow Ave and N Pinery Pkwy, 1' E of E side	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1647	Manhole: SSMH 18, Rose Mallow Ave and N Pinery Pkwy, 1' E of E side	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1648	Manhole: SSMH 18, Rose Mallow Ave and N Pinery Pkwy, 1' N of N side	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1649	Manhole: SSMH 18, Rose Mallow Ave and N Pinery Pkwy, 1' N of N side	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1650	Manhole: SSMH 18, Rose Mallow Ave and N Pinery Pkwy, 1' W of W side	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1651	Manhole: SSMH 18, Rose Mallow Ave and N Pinery Pkwy, 1' W of W side	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1652	Manhole: SSMH 18, Rose Mallow Ave and N Pinery Pkwy, 1' E of E side	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1653	Manhole: SSMH 18, Rose Mallow Avenue and N Pinery Pkwy, 1' E of E side	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000133
09/16/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1654		9/16/19	2	698A	CL	15.0	112.0	15.8	112.6	8	101	95	0 / 4	A
1655		9/16/19	2	698A	CL	15.0	112.0	16.8	111.6	8	100	95	0 / 4	A
1656		9/16/19	2	698A	CL	15.0	112.0	16.2	112.3	8	100	95	0 / 4	A
1657		9/16/19	4	698A	CL	16.0	109.0	19.5	106.0	8	97	95	0 / 4	A
1658		9/16/19	4	698A	CL	16.0	109.0	19.8	106.4	8	98	95	0 / 4	A
1659		9/16/19	4	698A	CL	16.0	109.0	18.0	106.6	8	98	95	0 / 4	A
1660		9/16/19	4	698A	CL	16.0	109.0	17.1	106.5	8	98	95	0 / 4	A
1661		9/16/19	4	698A	CL	16.0	109.0	18.2	106.8	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1654	Sanitary Trench Backfill: SSMH 130, E side	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1655	Sanitary Trench Backfill: SSMH 130, S side	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1656	Sanitary Trench Backfill: SSMH 130, W side	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1657	Sanitary Trench Backfill: SSMH 130, N side	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1658	Sanitary Trench Backfill: SSMH 130, E side	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1659	Sanitary Trench Backfill: Service, L9 F6 B6	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1660	Sanitary Trench Backfill: Service, L9 F6 B6	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1661	Sanitary Trench Backfill: Service, L9 F6 B6	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Compaction Test Report

Report #: SNG-000133
09/16/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1662		9/16/19	4	698A	CL	16.0	109.0	19.6	104.2	8	96	95	0 / 4	A
1663		9/16/19	4	698A	CL	16.0	109.0	16.8	106.2	8	97	95	0 / 4	A
1664		9/16/19	4	698A	CL	16.0	109.0	18.2	105.3	8	97	95	0 / 4	A
1665		9/16/19	4	698A	CL	16.0	109.0	18.9	104.5	8	96	95	0 / 4	A
1666		9/16/19	4	698A	CL	16.0	109.0	17.8	105.7	8	97	95	0 / 4	A
1667		9/16/19	4	698A	CL	16.0	109.0	17.3	105.5	8	97	95	0 / 4	A
1668		9/16/19	4	698A	CL	16.0	109.0	16.0	107.1	8	98	95	0 / 4	A
1669		9/16/19	4	698A	CL	16.0	109.0	16.0	108.0	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1662	Sanitary Trench Backfill: Service, L9 F6 B6	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1663	Sanitary Trench Backfill: Service, L9 F6 B6	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1664	Sanitary Trench Backfill: Service, L9 F6 B6	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1665	Sanitary Trench Backfill: Service, L9 F6 B6	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1666	Sanitary Trench Backfill: Service, L4 F5 B6	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1667	Sanitary Trench Backfill: Service, L4 F5 B6	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1668	Sanitary Trench Backfill: Service, L4 F5 B6	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1669	Sanitary Trench Backfill: Service, L4 F5 B6	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000133
09/16/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1670		9/16/19	4	698A	CL	16.0	109.0	18.3	105.3	8	97	95	0 / 4	A
1671		9/16/19	4	698A	CL	16.0	109.0	18.3	105.7	8	97	95	0 / 4	A
1672		9/16/19	4	698A	CL	16.0	109.0	17.4	106.4	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1670	Sanitary Trench Backfill: Service, L4 F5 B6	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1671	Sanitary Trench Backfill: Service, L4 F5 B6	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1672	Sanitary Trench Backfill: Service, L4 F5 B6	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1672:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000134
09/17/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1673		9/17/19	2	698A	CL	15.0	112.0	16.3	112.0	8	100	95	0 / 4	A
1674		9/17/19	2	698A	CL	15.0	112.0	16.5	111.4	8	99	95	0 / 4	A
1675		9/17/19	2	698A	CL	15.0	112.0	16.2	111.5	8	100	95	0 / 4	A
1676		9/17/19	2	698A	CL	15.0	112.0	18.3	110.1	8	98	95	0 / 4	A
1677		9/17/19	2	698A	CL	15.0	112.0	16.7	111.3	8	99	95	0 / 4	A
1678		9/17/19	2	698A	CL	15.0	112.0	16.5	111.1	8	99	95	0 / 4	A
1679		9/17/19	2	698A	CL	15.0	112.0	16.0	111.7	8	100	95	0 / 4	A
1680		9/17/19	2	698A	CL	15.0	112.0	15.5	112.1	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1673	Sanitary Trench Backfill: Mainline, 50' W of SSMH 18, Rose Mallow Avenue	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1674	Sanitary Trench Backfill: Mainline, 50' W of SSMH 18, Rose Mallow Avenue	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1675	Sanitary Trench Backfill: Mainline, 50' W of SSMH 18, Rose Mallow Avenue	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1676	Sanitary Trench Backfill: Mainline, 65' W of SSMH 18, Rose Mallow Avenue	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1677	Sanitary Trench Backfill: Mainline, 65' W of SSMH 18, Rose Mallow Avenue	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1678	Sanitary Trench Backfill: Mainline, 65' W of SSMH 18, Rose Mallow Avenue	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1679	Sanitary Trench Backfill: Mainline, 65' W of SSMH 18, Rose Mallow Avenue	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1680	Sanitary Trench Backfill: SSMH 132, N side	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000134
09/17/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
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Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1681		9/17/19	2	698A	CL	15.0	112.0	15.0	111.8	8	100	95	0 / 4	A
1682		9/17/19	2	698A	CL	15.0	112.0	15.5	112.4	8	100	95	0 / 4	A
1683		9/17/19	2	698A	CL	15.0	112.0	15.5	111.2	8	99	95	0 / 4	A
1684		9/17/19	2	698A	CL	15.0	112.0	17.1	108.8	8	97	95	0 / 4	A
1685		9/17/19	2	698A	CL	15.0	112.0	16.8	108.6	8	97	95	0 / 4	A
1686		9/17/19	2	698A	CL	15.0	112.0	17.6	109.4	8	98	95	0 / 4	A
1687		9/17/19	2	698A	CL	15.0	112.0	17.3	109.9	8	98	95	0 / 4	A
1688		9/17/19	2	698A	CL	15.0	112.0	16.0	110.1	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1681	Sanitary Trench Backfill: SSMH 132, S side	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1682	Sanitary Trench Backfill: SSMH 132, E side	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1683	Sanitary Trench Backfill: SSMH 132, W side	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1684	Sanitary Trench Backfill: SSMH 132, N side	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1685	Sanitary Trench Backfill: SSMH 132, E side	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1686	Sanitary Trench Backfill: SSMH 132, S side	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1687	Sanitary Trench Backfill: SSMH 132, W side	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1688	Sanitary Trench Backfill: SSMH 132, N side	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000134
09/17/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1689		9/17/19	2	698A	CL	15.0	112.0	15.1	109.5	8	98	95	0 / 4	A
1690		9/17/19	2	698A	CL	15.0	112.0	16.1	110.3	8	98	95	0 / 4	A
1691		9/17/19	2	698A	CL	15.0	112.0	15.0	112.0	8	100	95	0 / 4	A
1692		9/17/19	2	698A	CL	15.0	112.0	16.3	109.7	8	98	95	0 / 4	A
1693		9/17/19	2	698A	CL	15.0	112.0	17.5	109.4	8	98	95	0 / 4	A
1694		9/17/19	2	698A	CL	15.0	112.0	18.5	109.2	8	98	95	0 / 4	A
1695		9/17/19	2	698A	CL	15.0	112.0	15.4	112.7	8	101	95	0 / 4	A
1696		9/17/19	2	698A	CL	15.0	112.0	15.7	112.0	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1689	Sanitary Trench Backfill: SSMH 132, N side	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1690	Sanitary Trench Backfill: Mainline, 10' E of MH 132	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1691	Sanitary Trench Backfill: Mainline, 10' E of MH 132	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1692	Sanitary Trench Backfill: Mainline, 10' E of MH 132	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1693	Sanitary Trench Backfill: Mainline, 15' W of MH 132	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1694	Sanitary Trench Backfill: Mainline, 15' W of MH 132	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1695	Sanitary Trench Backfill: Mainline, 15' E of MH 132	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1696	Sanitary Trench Backfill: Service, L10 B4 F7	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000134
09/17/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1697		9/17/19	2	698A	CL	15.0	112.0	16.0	112.2	8	100	95	0 / 4	A
1698		9/17/19	2	698A	CL	15.0	112.0	15.6	112.3	8	100	95	0 / 4	A
1699		9/17/19	2	698A	CL	15.0	112.0	15.8	112.7	8	101	95	0 / 4	A
1700		9/17/19	2	698A	CL	15.0	112.0	16.4	110.9	8	99	95	0 / 4	A
1701		9/17/19	2	698A	CL	15.0	112.0	15.4	110.4	8	99	95	0 / 4	A
1702		9/17/19	2	698A	CL	15.0	112.0	16.6	109.0	8	97	95	0 / 4	A
1703		9/17/19	2	698A	CL	15.0	112.0	16.8	109.7	8	98	95	0 / 4	A
1704		9/17/19	2	698A	CL	15.0	112.0	16.8	109.8	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1697	Sanitary Trench Backfill: Service, L10 B4 F7	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1698	Sanitary Trench Backfill: Service, L10 B4 F7	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1699	Sanitary Trench Backfill: Service, L10 B4 F7	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1700	Sanitary Trench Backfill: Service, L10 B4 F7	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1701	Sanitary Trench Backfill: Service, L10 B4 F7	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1702	Sanitary Trench Backfill: Service, L10 B4 F7	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1703	Sanitary Trench Backfill: SSMH 55	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1704	Sanitary Trench Backfill: SSMH 55, E side	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Compaction Test Report

Report #: SNG-000134
09/17/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1705		9/17/19	2	698A	CL	15.0	112.0	16.3	111.7	8	100	95	0 / 4	A
1706		9/17/19	2	698A	CL	15.0	112.0	17.0	111.5	8	100	95	0 / 4	A
1707		9/17/19	2	698A	CL	15.0	112.0	18.3	108.1	8	97	95	0 / 4	A
1708		9/17/19	2	698A	CL	15.0	112.0	17.0	109.2	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1705	Sanitary Trench Backfill: SSMH 55 N side	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1706	Sanitary Trench Backfill: SSMH 55 S side	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1707	Sanitary Trench Backfill: SSMH 55S side	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1708	Sanitary Trench Backfill: SSMH 55, W side	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1708:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000135
09/18/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1709		9/18/19	2	698A	CL	15.0	112.0	15.9	111.7	8	100	95	0 / 4	A
1710		9/18/19	2	698A	CL	15.0	112.0	15.5	111.7	8	100	95	0 / 4	A
1711		9/18/19	2	698A	CL	15.0	112.0	15.5	111.0	8	99	95	0 / 4	A
1712		9/18/19	2	698A	CL	15.0	112.0	15.8	110.0	8	98	95	0 / 4	A
1713		9/18/19	2	698A	CL	15.0	112.0	16.4	108.7	8	97	95	0 / 4	A
1714		9/18/19	2	698A	CL	15.0	112.0	16.5	110.0	8	98	95	0 / 4	A
1715		9/18/19	2	698A	CL	15.0	112.0	16.1	109.6	8	98	95	0 / 4	A
1716		9/18/19	2	698A	CL	15.0	112.0	15.6	110.7	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1709	Sanitary Trench Backfill: SSMH 55	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1710	Sanitary Trench Backfill: SSMH 55	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1711	Sanitary Trench Backfill: SSMH 55	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1712	Sanitary Trench Backfill: SSMH 55	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1713	Sanitary Trench Backfill: Service, L10 B4 F7	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1714	Sanitary Trench Backfill: Service, L10 B4 F7	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1715	Sanitary Trench Backfill: Service, L10 B4 F7	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1716	Sanitary Trench Backfill: Service, L9 B4 F7	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000135
09/18/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1717		9/18/19	2	698A	CL	15.0	112.0	15.8	110.6	8	99	95	0 / 4	A
1718		9/18/19	2	698A	CL	15.0	112.0	15.6	109.9	8	98	95	0 / 4	A
1719		9/18/19	2	698A	CL	15.0	112.0	15.7	109.4	8	98	95	0 / 4	A
1720		9/18/19	2	698A	CL	15.0	112.0	15.9	112.1	8	100	95	0 / 4	A
1721		9/18/19	2	698A	CL	15.0	112.0	16.8	111.5	8	100	95	0 / 4	A
1722		9/18/19	2	698A	CL	15.0	112.0	18.7	108.4	8	97	95	0 / 4	A
1723		9/18/19	2	698A	CL	15.0	112.0	17.5	109.9	8	98	95	0 / 4	A
1724		9/18/19	2	698A	CL	15.0	112.0	17.2	109.5	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1717	Sanitary Trench Backfill: Service, L9 B4 F7	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1718	Sanitary Trench Backfill: Service, L9 B4 F7	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1719	Sanitary Trench Backfill: Service, L9 B4 F7	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1720	Sanitary Trench Backfill: Service, L9 B4 F7	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1721	Sanitary Trench Backfill: Service, L9 B4 F7	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1722	Sanitary Trench Backfill: Service, L9 B4 F7	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1723	Sanitary Trench Backfill: Service, L9 B4 F7	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1724	Sanitary Trench Backfill: Service, L9 B4 F7	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000135
09/18/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1725		9/18/19	2	698A	CL	15.0	112.0	16.3	109.7	8	98	95	0 / 4	A
1726		9/18/19	2	698A	CL	15.0	112.0	15.7	109.9	8	98	95	0 / 4	A
1727		9/18/19	2	698A	CL	15.0	112.0	15.4	112.2	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1725	Sanitary Trench Backfill: Service, L9 B4 F7	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1726	Sanitary Trench Backfill: Mainline, 15' W of MH 55	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1727	Sanitary Trench Backfill: Mainline, 15' W of MH 55	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1727:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

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Compaction Test Report

Report #: SNG-000136
09/03/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1796		9/3/19	14	ASTM D698A	SC	11.0	120.5	11.5	120.3	8	100	100	-2 / 2	A
1797		9/3/19	14	ASTM D698A	SC	11.0	120.5	11.4	120.2	8	100	100	-2 / 2	A
1798		9/3/19	14	ASTM D698A	SC	11.0	120.5	11.4	120.5	8	100	100	-2 / 2	A
1799		9/3/19	14	ASTM D698A	SC	11.0	120.5	11.6	120.1	8	100	100	-2 / 2	A
1800		9/3/19	14	ASTM D698A	SC	11.0	120.5	11.2	120.2	8	100	100	-2 / 2	A
1801		9/3/19	14	ASTM D698A	SC	11.0	120.5	11.3	120.2	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1796	Utility Sleeve Backfill: Utility sleeve #8, N Pinery Pkwy and Rose Mallow Ave	2.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
1797	Utility Sleeve Backfill: Utility sleeve #8, N Pinery Pkwy and Rose Mallow Ave	1.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
1798	Utility Sleeve Backfill: Utility sleeve, N Pinery Pkwy and Shasta Daisy St, NW side of intersection	2.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
1799	Utility Sleeve Backfill: Utility sleeve, N Pinery Pkwy and Shasta Daisy St, NW side of intersection	1.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
1800	Utility Sleeve Backfill: Utility sleeve 13, N Pinery Pkwy and Shasta Daisy St, E side of intersection	2.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
1801	Utility Sleeve Backfill: Utility sleeve 13, N Pinery Pkwy and Shasta Daisy St, E side of intersection	1.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1801:** As requested by Rick with Kelley Trucking, site visits were made to observe and test utility sleeve backfill. We observed the contractor process/place fill with the excavator and apply compactive effort with the sheepsfoot roller. Application of moisture was not required.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000137
09/04/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1802		9/4/19	14	ASTM D698A	SC	11.0	120.5	11.5	120.3	8	100	100	-2 / 2	A
1803		9/4/19	14	ASTM D698A	SC	11.0	120.5	11.4	120.2	8	100	100	-2 / 2	A
1804		9/4/19	14	ASTM D698A	SC	11.0	120.5	11.6	120.2	8	100	100	-2 / 2	A
1805		9/4/19	14	ASTM D698A	SC	11.0	120.5	11.2	120.2	8	100	100	-2 / 2	A
1806		9/4/19	14	ASTM D698A	SC	11.0	120.5	11.6	120.3	8	100	100	-2 / 2	A
1807		9/4/19	14	ASTM D698A	SC	11.0	120.5	11.3	120.1	8	100	100	-2 / 2	A
1808		9/4/19	14	ASTM D698A	SC	11.0	120.5	11.2	120.3	8	100	100	-2 / 2	A
1809		9/4/19	14	ASTM D698A	SC	11.0	120.5	11.1	120.5	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1802	Utility Sleeve Backfill: Utility sleeve #17, N Pinery Pkwy and Bayou Gulch Rd, 75' S of intersection	4.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
1803	Utility Sleeve Backfill: Utility sleeve #17, N Pinery Pkwy and Bayou Gulch Rd, 75' S of intersection	3.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
1804	Utility Sleeve Backfill: Utility sleeve #17, N Pinery Pkwy and Bayou Gulch Rd, 75' S of intersection	2.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
1805	Utility Sleeve Backfill: Utility sleeve #17, N Pinery Pkwy and Bayou Gulch Rd, 75' S of intersection	1.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
1806	Utility Sleeve Backfill: Utility sleeve #15, N Pinery Pkwy	4.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
1807	Utility Sleeve Backfill: Utility sleeve #15, N Pinery Pkwy	3.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
1808	Utility Sleeve Backfill: Utility sleeve #15, N Pinery Pkwy	2.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
1809	Utility Sleeve Backfill: Utility sleeve #15, N Pinery Pkwy	1.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000137
09/04/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1810		9/4/19	14	ASTM D698A	SC	11.0	120.5	11.5	120.3	8	100	100	-2 / 2	A
1811		9/4/19	14	ASTM D698A	SC	11.0	120.5	11.3	120.2	8	100	100	-2 / 2	A
1812		9/4/19	14	ASTM D698A	SC	11.0	120.5	11.7	120.1	8	100	100	-2 / 2	A
1813		9/4/19	14	ASTM D698A	SC	11.0	120.5	11.3	120.3	8	100	100	-2 / 2	A
1814		9/4/19	14	ASTM D698A	SC	11.0	120.5	11.1	120.5	8	100	100	-2 / 2	A
1815		9/4/19	14	ASTM D698A	SC	11.0	120.5	11.5	120.4	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1810	Utility Sleeve Backfill: Utility sleeve 14, N Pinery Pkwy and Shasta Daisy St, NE corner of intersection	3.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
1811	Utility Sleeve Backfill: Utility sleeve 14, N Pinery Pkwy and Shasta Daisy St, NE corner of intersection	2.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
1812	Utility Sleeve Backfill: Utility sleeve 14, N Pinery Pkwy and Shasta Daisy St, NE corner of intersection	1.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
1813	Utility Sleeve Backfill: Utility sleeve 11, N Pinery Pkwy and Shasta Daisy St, W side of intersection	3.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
1814	Utility Sleeve Backfill: Utility sleeve 11, N Pinery Pkwy and Shasta Daisy St, W side of intersection	2.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
1815	Utility Sleeve Backfill: Utility sleeve 11, N Pinery Pkwy and Shasta Daisy St, W side of intersection	1.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1815:** As requested by Rick with Kelley Trucking, site visits were made to observe and test utility sleeve backfill. We observed the contractor process/place fill with the excavator and apply compactive effort with the sheepsfoot roller. Application of moisture was not required.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Compaction Test Report

Report #: SNG-000138
09/05/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1816		9/5/19	4	698A	CL	16.0	109.0	17.5	106.0	8	97	95	NA	E
1817		9/5/19	9	698A	CL	20.5	103.5	17.4	105.9	8	102	95	NA	E
1818		9/5/19	14	ASTM D698A	SC	11.0	120.5	10.9	120.3	8	100	100	-2 / 2	A
1819		9/5/19	14	ASTM D698A	SC	11.0	120.5	11.3	120.5	8	100	100	-2 / 2	A
1820		9/5/19	14	ASTM D698A	SC	11.0	120.5	11.6	119.9	8	100	100	-2 / 2	A
1821		9/5/19	14	ASTM D698A	SC	11.0	120.5	11.6	120.2	8	100	100	-2 / 2	A
1822		9/5/19	14	ASTM D698A	SC	11.0	120.5	11.5	120.1	8	100	100	-2 / 2	A
1823		9/5/19	14	ASTM D698A	SC	11.0	120.5	11.4	120.4	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1816	Informational Testing: Box culvert wing wall subgrade, Bayou Gulch Rd and Crowfoot Valley Road, 10' W of NW corner	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1817	Informational Testing: Box culvert wing wall subgrade, Bayou Gulch Rd and Crowfoot Valley Road, 10' SW of SW corner	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1818	Utility Sleeve Backfill: Utility sleeve #1, Scarlet Sage Ave and Alpine Phlox St	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1819	Utility Sleeve Backfill: Utility sleeve #1, Scarlet Sage Ave and Alpine Phlox St	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1820	Utility Sleeve Backfill: Utility sleeve #1, Scarlet Sage Ave and Alpine Phlox St	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1821	Utility Sleeve Backfill: Utility sleeve #1, Scarlet Sage Ave and Alpine Phlox St	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1822	Utility Sleeve Backfill: Utility sleeve #2, Scarlet Sage Ave	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1823	Utility Sleeve Backfill: Utility sleeve #2, Scarlet Sage Ave	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
E: Test number for data entry purposes only. **A:** Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000138
09/05/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1824		9/5/19	14	ASTM D698A	SC	11.0	120.5	11.2	120.4	8	100	100	-2 / 2	A
1825		9/5/19	14	ASTM D698A	SC	11.0	120.5	11.3	120.5	8	100	100	-2 / 2	A
1826		9/5/19	14	ASTM D698A	SC	11.0	120.5	11.4	120.5	8	100	100	-2 / 2	A
1827		9/5/19	14	ASTM D698A	SC	11.0	120.5	11.4	120.2	8	100	100	-2 / 2	A
1828		9/5/19	14	ASTM D698A	SC	11.0	120.5	11.1	120.3	8	100	100	-2 / 2	A
1829		9/5/19	14	ASTM D698A	SC	11.0	120.5	11.3	120.3	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1824	Utility Sleeve Backfill: Utility sleeve #2, Scarlet Sage Ave	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1825	Utility Sleeve Backfill: Utility sleeve #2, Scarlet Sage Ave	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1826	Utility Sleeve Backfill: Utility sleeve #5, N Pinery Pkwy and Alpine Phlox St	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1827	Utility Sleeve Backfill: Utility sleeve #5, N Pinery Pkwy and Alpine Phlox St	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1828	Utility Sleeve Backfill: Utility sleeve #5, N Pinery Pkwy and Alpine Phlox St	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1829	Utility Sleeve Backfill: Utility sleeve #5, N Pinery Pkwy and Alpine Phlox St	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1829:** As requested by Rick with Kelley Trucking, site visits were made to observe and test utility sleeve backfill. We observed the contractor process/place fill with the excavator and apply compactive effort with the sheepsfoot roller. Application of moisture was not required.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000139
09/06/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1830		9/6/19	9	698A	CL	20.5	103.5	23.0	100.3	8	97	95	0 / 4	A
1831		9/6/19	9	698A	CL	20.5	103.5	23.4	100.6	8	97	95	0 / 4	A
1832		9/6/19	9	698A	CL	20.5	103.5	22.1	101.4	8	98	95	0 / 4	A
1833		9/6/19	9	698A	CL	20.5	103.5	22.1	101.1	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1830	Utility Sleeve Backfill: Utility sleeve #18, Bayou Gulch Rd, 300' N of Shasta Daisy St	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1831	Utility Sleeve Backfill: Utility sleeve #18, Bayou Gulch Rd, 300' N of Shasta Daisy St	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1832	Utility Sleeve Backfill: Utility sleeve #18, Bayou Gulch Rd, 300' N of Shasta Daisy St	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1833	Utility Sleeve Backfill: Utility sleeve #18, Bayou Gulch Rd, 300' N of Shasta Daisy St	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1833:** As requested by Rick with Kelley Trucking, site visits were made to observe and test utility sleeve backfill. The backfill was prepared prior to our arrival.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

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Compaction Test Report

Report #: SNG-000140
09/13/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1794		9/13/19	2	698A	CL	15.0	112.0	13.4	114.1	8	102	100	-2 / 2	A
1795		9/13/19	2	698A	CL	15.0	112.0	13.4	114.8	8	102	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1794	Manhole: AV MH 20, Bayou Gulch Road and Crowfoot Valley Road, 1' W of W side	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1795	Manhole: AV MH 20, Bayou Gulch Road and Crowfoot Valley Road, 1' W of W side	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000141
09/18/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1834		9/18/19	5	698A	SC	13.5	114.5	13.5	114.9	8	100	100	-2 / 2	A
1835		9/18/19	5	698A	SC	13.5	114.5	13.4	114.5	8	100	100	-2 / 2	A
1836		9/18/19	5	698A	SC	13.5	114.5	13.7	114.5	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1834	Utility Sleeve Backfill: Utility Sleeve #10, N Pinery Pkwy, 300' E of Rose Mallow Ave	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1835	Utility Sleeve Backfill: Utility Sleeve #10, N Pinery Pkwy, 300' E of Rose Mallow Ave	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1836	Utility Sleeve Backfill: Utility Sleeve #10, N Pinery Pkwy, 300' E of Rose Mallow Ave	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1836:** As requested by Rick with Kelley Trucking, site visits were made to observe and test utility sleeve backfill. We observed the contractor process/place fill with the excavator and apply compactive effort with the sheepsfoot roller on the excavator. Application of moisture was not required.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000142
09/19/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1728		9/19/19	2	698A	CL	15.0	112.0	15.7	109.9	8	98	95	0 / 4	A
1729		9/19/19	2	698A	CL	15.0	112.0	17.0	110.6	8	99	95	0 / 4	A
1730		9/19/19	2	698A	CL	15.0	112.0	15.3	112.2	8	100	95	0 / 4	A
1731		9/19/19	2	698A	CL	15.0	112.0	15.9	112.1	8	100	95	0 / 4	A
1732		9/19/19	2	698A	CL	15.0	112.0	15.2	112.4	8	100	95	0 / 4	A
1733		9/19/19	2	698A	CL	15.0	112.0	15.9	111.0	8	99	95	0 / 4	A
1734		9/19/19	2	698A	CL	15.0	112.0	16.5	110.3	8	98	95	0 / 4	A
1735		9/19/19	2	698A	CL	15.0	112.0	15.5	111.3	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1728	Sanitary Trench Backfill: Service, L8 B4 F7	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1729	Sanitary Trench Backfill: Service, L8 B4 F7	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1730	Sanitary Trench Backfill: Service, L8 B4 F7	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1731	Sanitary Trench Backfill: Service, L8 B4 F7	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1732	Sanitary Trench Backfill: Service, L8 B4 F7	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1733	Sanitary Trench Backfill: Service, L8 B4 F7	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1734	Sanitary Trench Backfill: Service, L8 B4 F7	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1735	Sanitary Trench Backfill: Service, L8 B4 F7	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000142
09/19/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1736		9/19/19	2	698A	CL	15.0	112.0	16.0	109.8	8	98	95	0 / 4	A
1737		9/19/19	2	698A	CL	15.0	112.0	16.1	108.6	8	97	95	0 / 4	A
1738		9/19/19	2	698A	CL	15.0	112.0	16.6	108.4	8	97	95	0 / 4	A
1739		9/19/19	2	698A	CL	15.0	112.0	15.7	109.9	8	98	95	0 / 4	A
1740		9/19/19	2	698A	CL	15.0	112.0	15.5	111.1	8	99	95	0 / 4	A
1741		9/19/19	2	698A	CL	15.0	112.0	15.9	111.3	8	99	95	0 / 4	A
1742		9/19/19	2	698A	CL	15.0	112.0	16.1	112.2	8	100	95	0 / 4	A
1743		9/19/19	2	698A	CL	15.0	112.0	16.1	111.4	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1736	Sanitary Trench Backfill: Service, L8 B4 F7	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1737	Sanitary Trench Backfill: Service, L8 B4 F7	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1738	Sanitary Trench Backfill: Service, L7 B4 F7	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1739	Sanitary Trench Backfill: Service, L7 B4 F7	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1740	Sanitary Trench Backfill: Service, L7 B4 F7	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1741	Sanitary Trench Backfill: Service, L7 B4 F7	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1742	Sanitary Trench Backfill: Service, L7 B4 F7	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1743	Sanitary Trench Backfill: Service, L7 B4 F7	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000142
09/19/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1744		9/19/19	2	698A	CL	15.0	112.0	15.7	109.9	8	98	95	0 / 4	A
1745		9/19/19	2	698A	CL	15.0	112.0	15.2	111.1	8	99	95	0 / 4	A
1746		9/19/19	2	698A	CL	15.0	112.0	15.0	112.5	8	100	95	0 / 4	A
1747		9/19/19	2	698A	CL	15.0	112.0	15.0	111.6	8	100	95	0 / 4	A
1748		9/19/19	2	698A	CL	15.0	112.0	16.0	111.8	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1744	Sanitary Trench Backfill: Mainline, 15' E of service for L8 B4 F7	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1745	Sanitary Trench Backfill: Mainline, 15' E of service for L8 B4 F7	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1746	Sanitary Trench Backfill: Mainline, 10' W of service for L8 B4 F7	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1747	Sanitary Trench Backfill: Mainline, 10' W of service for L8 B4 F7	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1748	Sanitary Trench Backfill: Mainline, 10' W of service for L8 B4 F7	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1748:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000143
09/20/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1749		9/20/19	2	698A	CL	15.0	112.0	15.8	110.0	8	98	95	0 / 4	A
1750		9/20/19	2	698A	CL	15.0	112.0	15.6	109.8	8	98	95	0 / 4	A
1751		9/20/19	2	698A	CL	15.0	112.0	16.8	109.0	8	97	95	0 / 4	A
1752		9/20/19	2	698A	CL	15.0	112.0	16.1	108.1	8	97	95	0 / 4	A
1753		9/20/19	2	698A	CL	15.0	112.0	15.8	109.1	8	97	95	0 / 4	A
1754		9/20/19	2	698A	CL	15.0	112.0	15.8	109.6	8	98	95	0 / 4	A
1755		9/20/19	2	698A	CL	15.0	112.0	16.7	109.7	8	98	95	0 / 4	A
1756		9/20/19	2	698A	CL	15.0	112.0	15.3	112.1	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1749	Sanitary Trench Backfill: Service, L7 B4 F7	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1750	Sanitary Trench Backfill: Service, L7 B4 F7	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1751	Sanitary Trench Backfill: Service, L7 B4 F	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1752	Sanitary Trench Backfill: Service, L7 B4 F7	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1753	Sanitary Trench Backfill: Mainline, 15' E of service for L7 B4 F7	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1754	Sanitary Trench Backfill: Mainline, 15' E of service for L7 B4 F7	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1755	Sanitary Trench Backfill: Mainline, 15' E of service for L7 B4 F7	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1756	Sanitary Trench Backfill: SSMH 133, W side	12.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000143
09/20/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1757		9/20/19	2	698A	CL	15.0	112.0	16.5	112.1	8	100	95	0 / 4	A
1758		9/20/19	2	698A	CL	15.0	112.0	17.1	110.4	8	99	95	0 / 4	A
1759		9/20/19	2	698A	CL	15.0	112.0	16.5	111.3	8	99	95	0 / 4	A
1760		9/20/19	2	698A	CL	15.0	112.0	15.2	112.2	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1757	Sanitary Trench Backfill: SSMH 133, E side	11.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1758	Sanitary Trench Backfill: SSMH 133, W side	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1759	Sanitary Trench Backfill: SSMH 133, N side	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1760	Sanitary Trench Backfill: SSMH 133, N side	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1760:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000144
09/21/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1761		9/21/19	2	698A	CL	15.0	112.0	15.2	112.0	8	100	95	NA	E

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1761	Cancelled on Site: Sanitary sewer trench backfill			XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
E: Test number for data entry purposes only.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1761:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. The backfill was prepared prior to our arrival.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000145
09/23/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1762		9/23/19	2	698A	CL	15.0	112.0	15.4	109.0	8	97	95	0 / 4	A
1763		9/23/19	2	698A	CL	15.0	112.0	16.3	109.2	8	98	95	0 / 4	A
1764		9/23/19	2	698A	CL	15.0	112.0	15.4	109.4	8	98	95	0 / 4	A
1765		9/23/19	2	698A	CL	15.0	112.0	16.4	111.2	8	99	95	0 / 4	A
1766		9/23/19	2	698A	CL	15.0	112.0	15.5	111.8	8	100	95	0 / 4	A
1767		9/23/19	2	698A	CL	15.0	112.0	15.3	108.5	8	97	95	0 / 4	A
1768		9/23/19	2	698A	CL	15.0	112.0	16.7	107.3	8	96	95	0 / 4	A
1769		9/23/19	2	698A	CL	15.0	112.0	16.5	108.6	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1762	Sanitary Trench Backfill: SSMH 133, E side	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1763	Sanitary Trench Backfill: SSMH 133, N side	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1764	Sanitary Trench Backfill: SSMH 133, N side	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1765	Sanitary Trench Backfill: SSMH 133, N side	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1766	Sanitary Trench Backfill: SSMH 133, N side	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1767	Sanitary Trench Backfill: Service, L6 B4 F7	12.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1768	Sanitary Trench Backfill: Service, L6 B4 F7	11.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1769	Sanitary Trench Backfill: Service, L6 B4 F7	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000145
09/23/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1770		9/23/19	2	698A	CL	15.0	112.0	16.0	109.9	8	98	95	0 / 4	A
1771		9/23/19	2	698A	CL	15.0	112.0	15.7	112.0	8	100	95	0 / 4	A
1772		9/23/19	2	698A	CL	15.0	112.0	15.1	112.2	8	100	95	0 / 4	A
1773		9/23/19	2	698A	CL	15.0	112.0	15.1	111.6	8	100	95	0 / 4	A
1774		9/23/19	2	698A	CL	15.0	112.0	15.6	110.6	8	99	95	0 / 4	A
1775		9/23/19	2	698A	CL	15.0	112.0	15.8	108.2	8	97	95	0 / 4	A
1776		9/23/19	2	698A	CL	15.0	112.0	16.1	108.5	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1770	Sanitary Trench Backfill: Service, L6 B4 F7	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1771	Sanitary Trench Backfill: Service, L6 B4 F7	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1772	Sanitary Trench Backfill: Service, L6 B4 F7	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1773	Sanitary Trench Backfill: Service, L6 B4 F7	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1774	Sanitary Trench Backfill: Service, L6 B4 F7	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1775	Sanitary Trench Backfill: Mainline, 5' W of service for L6 B4 F7	12.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1776	Sanitary Trench Backfill: Mainline, 5' W of service for L6 B4 F7	11.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1776:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000146
09/24/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1777		9/24/19	2	698A	CL	15.0	112.0	15.5	112.3	8	100	95	0 / 4	A
1778		9/24/19	2	698A	CL	15.0	112.0	16.5	111.6	8	100	95	0 / 4	A
1779		9/24/19	2	698A	CL	15.0	112.0	15.9	110.6	8	99	95	0 / 4	A
1780		9/24/19	2	698A	CL	15.0	112.0	15.1	111.6	8	100	95	0 / 4	A
1781		9/24/19	2	698A	CL	15.0	112.0	15.4	111.5	8	100	95	0 / 4	A
1782		9/24/19	2	698A	CL	15.0	112.0	16.8	110.4	8	99	95	0 / 4	A
1783		9/24/19	2	698A	CL	15.0	112.0	15.5	110.3	8	98	95	0 / 4	A
1784		9/24/19	2	698A	CL	15.0	112.0	15.8	111.7	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1777	Sanitary Trench Backfill: Service, L6 B4 F7	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1778	Sanitary Trench Backfill: Service, L6 B4 F7	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1779	Sanitary Trench Backfill: Service, L6 B4 F7	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1780	Sanitary Trench Backfill: Service, L6 B4 F7	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1781	Sanitary Trench Backfill: Mainline, 20' W of service for L6 B4 F7	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1782	Sanitary Trench Backfill: Mainline, 20' W of service for L6 B4 F7	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1783	Sanitary Trench Backfill: Mainline, 20' W of service for L6 B4 F7	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1784	Sanitary Trench Backfill: SSMH 133, E side	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000146
09/24/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1785		9/24/19	2	698A	CL	15.0	112.0	15.5	110.7	8	99	95	0 / 4	A
1786		9/24/19	2	698A	CL	15.0	112.0	15.0	112.7	8	101	95	0 / 4	A
1787		9/24/19	2	698A	CL	15.0	112.0	15.4	111.6	8	100	95	0 / 4	A
1788		9/24/19	2	698A	CL	15.0	112.0	15.5	111.4	8	99	95	0 / 4	A
1789		9/24/19	2	698A	CL	15.0	112.0	15.8	110.5	8	99	95	0 / 4	A
1790		9/24/19	2	698A	CL	15.0	112.0	15.7	110.7	8	99	95	0 / 4	A
1791		9/24/19	2	698A	CL	15.0	112.0	16.2	110.1	8	98	95	0 / 4	A
1792		9/24/19	2	698A	CL	15.0	112.0	15.7	110.3	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1785	Sanitary Trench Backfill: SSMH 133, W side	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1786	Sanitary Trench Backfill: SSMH 134, S side	11.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1787	Sanitary Trench Backfill: SSMH 134, S side	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1788	Sanitary Trench Backfill: SSMH 134, N side	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1789	Sanitary Trench Backfill: SSMH 134, E side	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1790	Sanitary Trench Backfill: Service, L5 B4 F7	11.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1791	Sanitary Trench Backfill: Service, L5 B4 F7	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1792	Sanitary Trench Backfill: Service, L5 B4 F7	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Denver
1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000146
09/24/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1793		9/24/19	2	698A	CL	15.0	112.0	15.9	110.4	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1793	Sanitary Trench Backfill: Service, L5 B4 F7	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1793:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000147
09/25/2019
Report Date: 10/10/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1837		9/25/19	2	698A	CL	15.0	112.0	17.7	109.3	8	98	95	0 / 4	A
1838		9/25/19	2	698A	CL	15.0	112.0	17.3	109.9	8	98	95	0 / 4	A
1839		9/25/19	2	698A	CL	15.0	112.0	15.1	111.4	8	99	95	0 / 4	A
1840		9/25/19	2	698A	CL	15.0	112.0	15.6	110.5	8	99	95	0 / 4	A
1841		9/25/19	5	698A	SC	13.5	114.5	15.0	114.2	8	100	100	-2 / 2	A
1842		9/25/19	5	698A	SC	13.5	114.5	14.0	114.9	8	100	100	-2 / 2	A
1843		9/25/19	5	698A	SC	13.5	114.5	14.9	114.6	8	100	100	-2 / 2	A
1844		9/25/19	5	698A	SC	13.5	114.5	13.4	114.1	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1837	Sanitary Trench Backfill: Service, L5 B4 F7	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1838	Sanitary Trench Backfill: Service, L5 B4 F7	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1839	Sanitary Trench Backfill: Service, L5 B4 F7	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1840	Sanitary Trench Backfill: Service, L5 B4 F7	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1841	Sanitary Trench Backfill: Service, L5 B4 F7	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1842	Sanitary Trench Backfill: Service, L5 B4 F7	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1843	Sanitary Trench Backfill: Service, L5 B4 F7	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1844	Sanitary Trench Backfill: Service, L4 B4 F7	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000147
09/25/2019
Report Date: 10/10/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1845		9/25/19	5	698A	SC	13.5	114.5	12.1	115.0	8	100	100	-2 / 2	A
1846		9/25/19	5	698A	SC	13.5	114.5	13.0	114.1	8	100	100	-2 / 2	A
1847		9/25/19	5	698A	SC	13.5	114.5	11.9	114.8	8	100	100	-2 / 2	A
1848		9/25/19	5	698A	SC	13.5	114.5	12.8	114.0	8	100	100	-2 / 2	A
1849		9/25/19	5	698A	SC	13.5	114.5	13.4	114.2	8	100	100	-2 / 2	A
1850		9/25/19	5	698A	SC	13.5	114.5	11.8	114.8	8	100	100	-2 / 2	A
1851		9/25/19	5	698A	SC	13.5	114.5	12.4	114.9	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1845	Sanitary Trench Backfill: Service, L4 B4 F7	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1846	Sanitary Trench Backfill: Service, L4 B4 F7	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1847	Sanitary Trench Backfill: Service, L4 B4 F7	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1848	Sanitary Trench Backfill: SSMH 134, S side	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1849	Sanitary Trench Backfill: SSMH 134, S side	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1850	Sanitary Trench Backfill: SSMH 134, N side	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1851	Sanitary Trench Backfill: SSMH 134, N side	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1851:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000148
09/26/2019
Report Date: 10/10/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1852		9/26/19	1	698A	SC	12.5	118.5	12.6	119.0	8	100	100	-2 / 2	A
1853		9/26/19	1	698A	SC	12.5	118.5	12.1	118.8	8	100	100	-2 / 2	A
1854		9/26/19	1	698A	SC	12.5	118.5	11.7	119.0	8	100	100	-2 / 2	A
1855		9/26/19	5	698A	SC	13.5	114.5	11.9	114.4	8	100	100	-2 / 2	A
1856		9/26/19	5	698A	SC	13.5	114.5	11.7	114.1	8	100	100	-2 / 2	A
1857		9/26/19	5	698A	SC	13.5	114.5	11.7	114.9	8	100	100	-2 / 2	A
1858		9/26/19	5	698A	SC	13.5	114.5	11.5	114.6	8	100	100	-2 / 2	A
1859		9/26/19	2	698A	CL	15.0	112.0	15.6	111.9	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1852	Sanitary Trench Backfill: Mainline, 10' W of service for L4 B4 F7	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1853	Sanitary Trench Backfill: Mainline, 10' W of service for L4 B4 F7	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1854	Sanitary Trench Backfill: Mainline, 10' W of service for L4 B4 F7	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1855	Sanitary Trench Backfill: Mainline, 10' E of service for L4 B4 F7	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1856	Sanitary Trench Backfill: Mainline, 10' E of service for L4 B4 F7	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1857	Sanitary Trench Backfill: Mainline, 10' E of service for L2 B4 F7	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1858	Sanitary Trench Backfill: Mainline, 10' E of service for L2 B4 F7	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1859	Sanitary Trench Backfill: Service, L3 B4 F7	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Compaction Test Report

Report #: SNG-000148
09/26/2019
Report Date: 10/10/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1860		9/26/19	2	698A	CL	15.0	112.0	17.0	110.6	8	99	95	0 / 4	A
1861		9/26/19	2	698A	CL	15.0	112.0	16.5	110.7	8	99	95	0 / 4	A
1862		9/26/19	5	698A	SC	13.5	114.5	11.7	114.8	8	100	100	-2 / 2	A
1863		9/26/19	5	698A	SC	13.5	114.5	11.9	114.1	8	100	100	-2 / 2	A
1864		9/26/19	5	698A	SC	13.5	114.5	11.7	114.5	8	100	100	-2 / 2	A
1865		9/26/19	5	698A	SC	13.5	114.5	11.8	114.7	8	100	100	-2 / 2	A
1866		9/26/19	5	698A	SC	13.5	114.5	12.3	114.3	8	100	100	-2 / 2	A
1867		9/26/19	5	698A	SC	13.5	114.5	12.3	114.1	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1860	Sanitary Trench Backfill: Service, L3 B4 F7	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1861	Sanitary Trench Backfill: Service, L3 B4 F7	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1862	Sanitary Trench Backfill: Service, L3 B4 F7	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1863	Sanitary Trench Backfill: Service, L3 B4 F7	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1864	Sanitary Trench Backfill: Service, L3 B4 F7	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1865	Sanitary Trench Backfill: Service, L3 B4 F7	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1866	Sanitary Trench Backfill: Service, L3 B4 F7	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1867	Sanitary Trench Backfill: Service, L3 B4 F7	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000148
09/26/2019
Report Date: 10/10/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1868		9/26/19	5	698A	SC	13.5	114.5	14.5	114.2	8	100	100	-2 / 2	A
1869		9/26/19	5	698A	SC	13.5	114.5	13.9	114.5	8	100	100	-2 / 2	A
1870		9/26/19	5	698A	SC	13.5	114.5	12.5	114.3	8	100	100	-2 / 2	A
1871		9/26/19	5	698A	SC	13.5	114.5	13.6	114.8	8	100	100	-2 / 2	A
1872		9/26/19	5	698A	SC	13.5	114.5	12.1	114.3	8	100	100	-2 / 2	A
1873		9/26/19	5	698A	SC	13.5	114.5	12.0	114.7	8	100	100	-2 / 2	A
1874		9/26/19	5	698A	SC	13.5	114.5	11.6	114.4	8	100	100	-2 / 2	A
1875		9/26/19	5	698A	SC	13.5	114.5	12.1	114.2	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1868	Sanitary Trench Backfill: Service, L4 B4 F7	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1869	Sanitary Trench Backfill: Service, L4 B4 F7	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1870	Sanitary Trench Backfill: Service, L4 B4 F7	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1871	Sanitary Trench Backfill: Service, L4 B4 F7	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1872	Sanitary Trench Backfill: Service, L4 B4 F7	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1873	Sanitary Trench Backfill: Service, L4 B4 F7	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1874	Sanitary Trench Backfill: SSMH 134, E side	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1875	Sanitary Trench Backfill: SSMH 134, W side	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000148
09/26/2019
Report Date: 10/10/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1876		9/26/19	5	698A	SC	13.5	114.5	12.2	114.3	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1876	Sanitary Trench Backfill: SSMH 134, S side	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1876:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000149
09/27/2019
Report Date: 10/10/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1877		9/27/19	2	698A	CL	15.0	112.0	15.1	111.7	8	100	95	0 / 4	A
1878		9/27/19	2	698A	CL	15.0	112.0	15.9	110.5	8	99	95	0 / 4	A
1879		9/27/19	2	698A	CL	15.0	112.0	15.3	110.4	8	99	95	0 / 4	A
1880		9/27/19	2	698A	CL	15.0	112.0	16.4	111.5	8	100	95	0 / 4	A
1881		9/27/19	2	698A	CL	15.0	112.0	16.6	110.3	8	98	95	0 / 4	A
1882		9/27/19	2	698A	CL	15.0	112.0	16.8	110.0	8	98	95	0 / 4	A
1883		9/27/19	2	698A	CL	15.0	112.0	17.7	109.5	8	98	95	0 / 4	A
1884		9/27/19	2	698A	CL	15.0	112.0	16.0	110.2	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1877	Sanitary Trench Backfill: Service, L2 B4 F7	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1878	Sanitary Trench Backfill: Service, L2 B4 F7	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1879	Sanitary Trench Backfill: Service, L2 B4 F7	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1880	Sanitary Trench Backfill: Service, L2 B4 F7	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1881	Sanitary Trench Backfill: Service, L2 B4 F7	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1882	Sanitary Trench Backfill: Service, L2 B4 F7	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1883	Sanitary Trench Backfill: Service, L2 B4 F7	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1884	Sanitary Trench Backfill: Service, L2 B4 F7	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
1971 West 12th Avenue
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Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000149
09/27/2019
Report Date: 10/10/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1885		9/27/19	2	698A	CL	15.0	112.0	15.9	109.8	8	98	95	0 / 4	A
1886		9/27/19	2	698A	CL	15.0	112.0	16.4	109.8	8	98	95	0 / 4	A
1887		9/27/19	2	698A	CL	15.0	112.0	18.1	108.6	8	97	95	0 / 4	A
1888		9/27/19	2	698A	CL	15.0	112.0	17.3	110.3	8	98	95	0 / 4	A
1889		9/27/19	2	698A	CL	15.0	112.0	17.3	109.2	8	98	95	0 / 4	A
1890		9/27/19	2	698A	CL	15.0	112.0	17.8	110.6	8	99	95	0 / 4	A
1891		9/27/19	2	698A	CL	15.0	112.0	15.4	112.6	8	101	95	0 / 4	A
1892		9/27/19	2	698A	CL	15.0	112.0	15.3	112.4	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1885	Sanitary Trench Backfill: Service, L2 B4 F7	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1886	Sanitary Trench Backfill: Service, L2 B4 F7	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1887	Sanitary Trench Backfill: SSMH 135, W side	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1888	Sanitary Trench Backfill: SSMH 135, E side	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1889	Sanitary Trench Backfill: SSMH 135, N side	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1890	Sanitary Trench Backfill: SSMH 135, S side	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1891	Sanitary Trench Backfill: SSMH 135, S side	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1892	Sanitary Trench Backfill: SSMH 135, E side	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000149
09/27/2019
Report Date: 10/10/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1893		9/27/19	2	698A	CL	15.0	112.0	16.0	112.2	8	100	95	0 / 4	A
1894		9/27/19	2	698A	CL	15.0	112.0	15.4	112.1	8	100	95	0 / 4	A
1895		9/27/19	2	698A	CL	15.0	112.0	15.7	112.8	8	101	95	0 / 4	A
1896		9/27/19	2	698A	CL	15.0	112.0	15.4	112.4	8	100	95	0 / 4	A
1897		9/27/19	2	698A	CL	15.0	112.0	17.2	107.6	8	96	95	0 / 4	A
1898		9/27/19	2	698A	CL	15.0	112.0	16.4	109.5	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1893	Sanitary Trench Backfill: SSMH 135, W side	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1894	Sanitary Trench Backfill: SSMH 135, W side	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1895	Sanitary Trench Backfill: SSMH 135, N side	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1896	Sanitary Trench Backfill: SSMH 135, S side	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1897	Sanitary Trench Backfill: Mainline, 10' E of SSMH 135	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1898	Sanitary Trench Backfill: Mainline, 10' E of SSMH 135	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1898:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test sanitary sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

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Compaction Test Report

Report #: SNG-000150
09/30/2019
Report Date: 10/10/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1899		9/30/19	4	698A	CL	16.0	109.0	16.1	108.4	8	99	95	0 / 4	A
1900		9/30/19	4	698A	CL	16.0	109.0	18.1	106.8	8	98	95	0 / 4	A
1901		9/30/19	4	698A	CL	16.0	109.0	17.8	108.1	8	99	95	0 / 4	A
1902		9/30/19	4	698A	CL	16.0	109.0	16.4	108.8	8	100	95	0 / 4	A
1903		9/30/19	4	698A	CL	16.0	109.0	17.1	107.9	8	99	95	0 / 4	A
1904		9/30/19	4	698A	CL	16.0	109.0	16.4	109.4	8	100	95	0 / 4	A
1905		9/30/19	4	698A	CL	16.0	109.0	16.4	107.2	8	98	95	0 / 4	A
1906		9/30/19	4	698A	CL	16.0	109.0	16.5	107.4	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1899	Sanitary Trench Backfill: Service, L1 B4 F7	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1900	Sanitary Trench Backfill: Service, L1 B4 F7	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1901	Sanitary Trench Backfill: Service, L1 B4 F7	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1902	Sanitary Trench Backfill: Service, L1 B4 F7	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1903	Sanitary Trench Backfill: Service, L1 B4 F7	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1904	Sanitary Trench Backfill: Service, L1 B4 F7	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1905	Sanitary Trench Backfill: Service, L1 B4 F7	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1906	Sanitary Trench Backfill: Service, L1 B4 F7	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
1971 West 12th Avenue
Denver, CO 80204
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Compaction Test Report

Report #: SNG-000150
09/30/2019
Report Date: 10/10/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1907		9/30/19	4	698A	CL	16.0	109.0	17.0	108.4	8	99	95	0 / 4	A
1908		9/30/19	4	698A	CL	16.0	109.0	16.6	108.5	8	100	95	0 / 4	A
1909		9/30/19	4	698A	CL	16.0	109.0	16.3	109.2	8	100	95	0 / 4	A
1910		9/30/19	4	698A	CL	16.0	109.0	17.0	107.0	8	98	95	0 / 4	A
1911		9/30/19	4	698A	CL	16.0	109.0	16.2	107.8	8	99	95	0 / 4	A
1912		9/30/19	4	698A	CL	16.0	109.0	18.5	106.0	8	97	95	0 / 4	A
1913		9/30/19	4	698A	CL	16.0	109.0	18.7	106.0	8	97	95	0 / 4	A
1914		9/30/19	4	698A	CL	16.0	109.0	19.3	105.8	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1907	Sanitary Trench Backfill: Service, L1 B4 F7	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1908	Sanitary Trench Backfill: Service, L1 B4 F7	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1909	Sanitary Trench Backfill: Mainline, 15' W of SS MH 135	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1910	Sanitary Trench Backfill: Mainline, 15' W of SS MH 135	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1911	Sanitary Trench Backfill: Mainline, 15' E of SSMH 136	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1912	Sanitary Trench Backfill: SSMH #136. 1' W of W side.	10.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1913	Sanitary Trench Backfill: SSMH #136. 1' W of W side.	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1914	Sanitary Trench Backfill: SSMH #136. 1' N of N side.	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1911:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

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Denver
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Compaction Test Report

Report #: SNG-000150
09/30/2019
Report Date: 10/10/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1915		9/30/19	4	698A	CL	16.0	109.0	18.4	106.1	8	97	95	0 / 4	A
1916		9/30/19	4	698A	CL	16.0	109.0	18.6	106.3	8	98	95	0 / 4	A
1917		9/30/19	4	698A	CL	16.0	109.0	18.7	106.3	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1915	Sanitary Trench Backfill: SSMH #136. 1' N of N side.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1916	Sanitary Trench Backfill: SSMH #136. 1' N of N side.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1917	Sanitary Trench Backfill: SSMH #136. 1' S of S side.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000151
10/01/2019
Report Date: 10/10/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1918		10/1/19	4	698A	CL	16.0	109.0	17.2	106.4	8	98	95	0 / 4	A
1919		10/1/19	4	698A	CL	16.0	109.0	16.7	107.1	8	98	95	0 / 4	A
1920		10/1/19	4	698A	CL	16.0	109.0	17.6	105.1	8	96	95	0 / 4	A
1921		10/1/19	4	698A	CL	16.0	109.0	17.4	105.7	8	97	95	0 / 4	A
1922		10/1/19	4	698A	CL	16.0	109.0	17.7	106.4	8	98	95	0 / 4	A
1923		10/1/19	4	698A	CL	16.0	109.0	19.8	104.5	8	96	95	0 / 4	A
1924		10/1/19	4	698A	CL	16.0	109.0	16.4	108.4	8	99	95	0 / 4	A
1925		10/1/19	4	698A	CL	16.0	109.0	17.0	108.4	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1918	Sanitary Trench Backfill: Manhole, SS MH 136 E side.	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1919	Sanitary Trench Backfill: Manhole, SS MH 136 S side.	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1920	Sanitary Trench Backfill: Manhole, SS MH 136 W side.	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1921	Sanitary Trench Backfill: Manhole, SS MH 136 W side.	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1922	Sanitary Trench Backfill: Mainline, 20' W of SS MH 136	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1923	Sanitary Trench Backfill: Mainline, 30' W of SS MH 136	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1924	Sanitary Trench Backfill: Mainline, 30' W of SS MH 136	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1925	Sanitary Trench Backfill: Mainline, 40' W of SS MH 136	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000151
10/01/2019
Report Date: 10/10/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1926		10/1/19	4	698A	CL	16.0	109.0	16.7	107.7	8	99	95	0 / 4	A
1927		10/1/19	4	698A	CL	16.0	109.0	16.0	108.2	8	99	95	0 / 4	A
1928		10/1/19	4	698A	CL	16.0	109.0	16.7	108.1	8	99	95	0 / 4	A
1929		10/1/19	4	698A	CL	16.0	109.0	17.3	106.3	8	98	95	0 / 4	A
1930		10/1/19	4	698A	CL	16.0	109.0	17.3	107.4	8	99	95	0 / 4	A
1931		10/1/19	4	698A	CL	16.0	109.0	17.2	109.1	8	100	95	0 / 4	A
1932		10/1/19	4	698A	CL	16.0	109.0	16.9	108.0	8	99	95	0 / 4	A
1933		10/1/19	4	698A	CL	16.0	109.0	16.1	108.8	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1926	Sanitary Trench Backfill: Mainline, 40' W of SS MH 136	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1927	Sanitary Trench Backfill: Mainline, 30' E of SS MH 137	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1928	Sanitary Trench Backfill: Mainline, 30' E of SS MH 137	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1929	Sanitary Trench Backfill: Mainline, 15' E of SS MH 137	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1930	Sanitary Trench Backfill: Mainline, 15' E of SS MH 137	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1931	Sanitary Trench Backfill: Manhole, SS MH 137 N side.	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1932	Sanitary Trench Backfill: Manhole, SS MH 137 W side.	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1933	Sanitary Trench Backfill: Manhole, SS MH 137 W side.	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000151
10/01/2019
Report Date: 10/10/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1934		10/1/19	4	698A	CL	16.0	109.0	17.9	106.5	8	98	95	0 / 4	A
1935		10/1/19	4	698A	CL	16.0	109.0	17.4	105.8	8	97	95	0 / 4	A
1936		10/1/19	4	698A	CL	16.0	109.0	17.3	107.6	8	99	95	0 / 4	A
1937		10/1/19	4	698A	CL	16.0	109.0	16.1	109.0	8	100	95	0 / 4	A
1938		10/1/19	4	698A	CL	16.0	109.0	17.8	107.6	8	99	95	0 / 4	A
1939		10/1/19	4	698A	CL	16.0	109.0	17.8	106.9	8	98	95	0 / 4	A
1940		10/1/19	4	698A	CL	16.0	109.0	16.7	108.8	8	100	95	0 / 4	A
1941		10/1/19	4	698A	CL	16.0	109.0	18.0	106.2	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1934	Sanitary Trench Backfill: Manhole, SS MH 137 E side.	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1935	Sanitary Trench Backfill: Manhole, SS MH 137 S side.	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1936	Sanitary Trench Backfill: Manhole, SS MH 137 S side.	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1937	Sanitary Trench Backfill: Service, L11 B2 F8	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1938	Sanitary Trench Backfill: Service, L11 B2 F8	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1939	Sanitary Trench Backfill: Service, L11 B2 F8	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1940	Sanitary Trench Backfill: Service, L11 B2 F8	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1941	Sanitary Trench Backfill: Service, L11 B2 F8	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
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Compaction Test Report

Report #: SNG-000151
10/01/2019
Report Date: 10/10/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1942		10/1/19	4	698A	CL	16.0	109.0	18.0	106.0	8	97	95	0 / 4	A
1943		10/1/19	4	698A	CL	16.0	109.0	16.6	107.9	8	99	95	0 / 4	A
1944		10/1/19	4	698A	CL	16.0	109.0	18.8	105.5	8	97	95	0 / 4	A
1945		10/1/19	4	698A	CL	16.0	109.0	17.6	106.6	8	98	95	0 / 4	A
1946		10/1/19	4	698A	CL	16.0	109.0	16.2	108.6	8	100	95	0 / 4	A
1947		10/1/19	4	698A	CL	16.0	109.0	16.9	107.6	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1942	Sanitary Trench Backfill: Service, L20 B1 F8	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1943	Sanitary Trench Backfill: Service, L20 B1 F8	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1944	Sanitary Trench Backfill: Service, L20 B1 F8	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1945	Sanitary Trench Backfill: Service, L20 B1 F8	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1946	Sanitary Trench Backfill: Service, L20 B1 F8	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1947	Sanitary Trench Backfill: Service, L20 B1 F8	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000152
10/02/2019
Report Date: 10/10/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1948		10/2/19	3	698A	CL	16.0	111.0	17.4	108.5	8	98	95	0 / 4	A
1949		10/2/19	3	698A	CL	16.0	111.0	17.7	108.2	8	97	95	0 / 4	A
1950		10/2/19	3	698A	CL	16.0	111.0	17.2	108.3	8	98	95	0 / 4	A
1951		10/2/19	3	698A	CL	16.0	111.0	17.9	108.4	8	98	95	0 / 4	A
1952		10/2/19	3	698A	CL	16.0	111.0	17.8	108.7	8	98	95	0 / 4	A
1953		10/2/19	3	698A	CL	16.0	111.0	17.6	109.1	8	98	95	0 / 4	A
1954		10/2/19	3	698A	CL	16.0	111.0	17.2	109.3	8	98	95	0 / 4	A
1955		10/2/19	3	698A	CL	16.0	111.0	17.4	109.5	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1948	Manhole: SSMH-21. 1' E of E side.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1949	Manhole: SSMH-21. 1' E of E side.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1950	Manhole: SSMH-21. 1' E of E side.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1951	Manhole: SSMH-21. 1' E of E side.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1952	Manhole: SSMH-21. 1' E of E side.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1953	Manhole: SSMH-21. 1' E of E side.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1954	Manhole: SSMH-21. 1' E of E side.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1955	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 30+30.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
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Compaction Test Report

Report #: SNG-000152
10/02/2019
Report Date: 10/10/2019
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Client:
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Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1956		10/2/19	3	698A	CL	16.0	111.0	17.3	109.5	8	99	95	0 / 4	A
1957		10/2/19	3	698A	CL	16.0	111.0	17.9	109.1	8	98	95	0 / 4	A
1958		10/2/19	3	698A	CL	16.0	111.0	17.6	109.5	8	99	95	0 / 4	A
1959		10/2/19	3	698A	CL	16.0	111.0	17.0	109.8	8	99	95	0 / 4	A
1960		10/2/19	3	698A	CL	16.0	111.0	17.9	109.2	8	98	95	0 / 4	A
1961		10/2/19	3	698A	CL	16.0	111.0	17.4	109.2	8	98	95	0 / 4	A
1962		10/2/19	3	698A	CL	16.0	111.0	18.1	109.2	8	98	95	0 / 4	A
1963		10/2/19	3	698A	CL	16.0	111.0	17.9	109.2	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1956	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 30+30.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1957	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 30+30.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1958	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 30+30.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1959	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 30+30.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1960	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 30+30.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1961	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 30+30.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1962	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 32+80.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1963	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 32+80.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
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10/02/2019
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Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1964		10/2/19	3	698A	CL	16.0	111.0	18.1	108.9	8	98	95	0 / 4	A
1965		10/2/19	3	698A	CL	16.0	111.0	17.9	109.3	8	98	95	0 / 4	A
1966		10/2/19	3	698A	CL	16.0	111.0	17.7	109.2	8	98	95	0 / 4	A
1967		10/2/19	3	698A	CL	16.0	111.0	17.9	109.1	8	98	95	0 / 4	A
1968		10/2/19	3	698A	CL	16.0	111.0	17.7	109.7	8	99	95	0 / 4	A
1969		10/2/19	3	698A	CL	16.0	111.0	18.4	109.1	8	98	95	0 / 4	A
1970		10/2/19	3	698A	CL	16.0	111.0	17.9	109.2	8	98	95	0 / 4	A
1971		10/2/19	3	698A	CL	16.0	111.0	17.2	109.8	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1964	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 32+80.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1965	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 32+80.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1966	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 32+80.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1967	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 32+80.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1968	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 32+80.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1969	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 36+75.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1970	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 36+75.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1971	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 36+75.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
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Compaction Test Report

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Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1972		10/2/19	3	698A	CL	16.0	111.0	16.9	109.9	8	99	95	0 / 4	A
1973		10/2/19	3	698A	CL	16.0	111.0	17.7	109.1	8	98	95	0 / 4	A
1974		10/2/19	3	698A	CL	16.0	111.0	17.5	109.5	8	99	95	0 / 4	A
1975		10/2/19	3	698A	CL	16.0	111.0	17.9	109.6	8	99	95	0 / 4	A
1976		10/2/19	3	698A	CL	16.0	111.0	17.6	109.8	8	99	95	0 / 4	A
1977		10/2/19	5	698A	SC	13.5	114.5	13.8	114.6	8	100	100	-2 / 2	A
1978		10/2/19	5	698A	SC	13.5	114.5	13.7	114.9	8	100	100	-2 / 2	A
1979		10/2/19	5	698A	SC	13.5	114.5	13.4	114.5	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1972	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 36+75.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1973	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 36+75.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1974	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 36+75.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1975	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 36+75.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1976	Manhole: SSMH #17. 1' E of E side.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1977	Manhole: SSMH #17. 1' E of E side.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1978	Manhole: SSMH #17. 1' E of E side.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1979	Manhole: SSMH #17. 1' E of E side.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000152
10/02/2019
Report Date: 10/10/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1980		10/2/19	3	698A	CL	16.0	111.0	17.6	109.8	8	99	95	0 / 4	A
1981		10/2/19	3	698A	CL	16.0	111.0	16.9	110.3	8	99	95	0 / 4	A
1982		10/2/19	3	698A	CL	16.0	111.0	17.1	110.4	8	99	95	0 / 4	A
1983		10/2/19	3	698A	CL	16.0	111.0	18.3	109.4	8	99	95	0 / 4	A
1984		10/2/19	3	698A	CL	16.0	111.0	17.5	109.6	8	99	95	0 / 4	A
1985		10/2/19	5	698A	SC	13.5	114.5	13.4	114.5	8	100	100	-2 / 2	A
1986		10/2/19	5	698A	SC	13.5	114.5	13.3	114.9	8	100	100	-2 / 2	A
1987		10/2/19	4	698A	CL	16.0	109.0	18.1	107.0	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1980	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 38+50.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1981	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 38+50.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1982	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 38+50.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1983	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 38+50.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1984	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 38+50.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1985	Manhole: SSMH #16. 1' N of N side.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1986	Manhole: SSMH #16. 1' E of E side.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1987	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 40+90.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

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Client:
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Project:
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NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1988		10/2/19	4	698A	CL	16.0	109.0	18.2	106.5	8	98	95	0 / 4	A
1989		10/2/19	4	698A	CL	16.0	109.0	18.1	106.9	8	98	95	0 / 4	A
1990		10/2/19	4	698A	CL	16.0	109.0	18.2	106.7	8	98	95	0 / 4	A
1991		10/2/19	5	698A	SC	13.5	114.5	13.9	114.7	8	100	100	-2 / 2	A
1992		10/2/19	5	698A	SC	13.5	114.5	13.7	114.2	8	100	100	-2 / 2	A
1993		10/2/19	5	698A	SC	13.5	114.5	12.9	114.9	8	100	100	-2 / 2	A
1994		10/2/19	3	698A	CL	16.0	111.0	17.9	109.2	8	98	95	0 / 4	A
1995		10/2/19	3	698A	CL	16.0	111.0	18.0	109.1	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1988	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 40+90.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1989	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 40+90.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1990	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 40+90.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1991	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 40+90.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1992	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 40+90.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1993	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 40+90.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1994	Manhole: SSMH #14. 1' W of W side.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1995	Manhole: SSMH #14. 1' W of W side.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Project:
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Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1996		10/2/19	3	698A	CL	16.0	111.0	18.1	109.4	8	99	95	0 / 4	A
1997		10/2/19	3	698A	CL	16.0	111.0	17.7	109.5	8	99	95	0 / 4	A
1998		10/2/19	3	698A	CL	16.0	111.0	17.9	109.5	8	99	95	0 / 4	A
1999		10/2/19	3	698A	CL	16.0	111.0	17.9	109.2	8	98	95	0 / 4	A
2000		10/2/19	3	698A	CL	16.0	111.0	18.1	109.3	8	98	95	0 / 4	A
2001		10/2/19	3	698A	CL	16.0	111.0	18.0	109.6	8	99	95	0 / 4	A
2002		10/2/19	3	698A	CL	16.0	111.0	17.8	109.2	8	98	95	0 / 4	A
2003		10/2/19	3	698A	CL	16.0	111.0	17.8	109.4	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1996	Manhole: SSMH #14. 1' W of W side.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1997	Manhole: SSMH #14. 1' W of W side.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1998	Manhole: SSMH #14. 1' W of W side.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1999	Manhole: SSMH #14. 1' W of W side.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2000	Manhole: SSMH #14. 1' W of W side.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2001	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 45+20	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2002	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 45+20	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2003	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 45+20	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2004		10/2/19	3	698A	CL	16.0	111.0	17.9	109.2	8	98	95	0 / 4	A
2005		10/2/19	3	698A	CL	16.0	111.0	17.9	109.8	8	99	95	0 / 4	A
2006		10/2/19	9	698A	CL	20.5	103.5	22.7	100.4	8	97	95	0 / 4	A
2007		10/2/19	9	698A	CL	20.5	103.5	23.1	100.8	8	97	95	0 / 4	A
2008		10/2/19	9	698A	CL	20.5	103.5	23.6	99.9	8	97	95	0 / 4	A
2009		10/2/19	9	698A	CL	20.5	103.5	22.6	100.7	8	97	95	0 / 4	A
2010		10/2/19	9	698A	CL	20.5	103.5	22.4	100.9	8	97	95	0 / 4	A
2011		10/2/19	9	698A	CL	20.5	103.5	21.5	102.1	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2004	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 45+20	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2005	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 45+20	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2006	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 50+20	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2007	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 50+20	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2008	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 50+20	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2009	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 50+20	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2010	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 50+20	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2011	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 50+20	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2012		10/2/19	9	698A	CL	20.5	103.5	22.0	101.5	8	98	95	0 / 4	A
2013		10/2/19	9	698A	CL	20.5	103.5	21.6	101.3	8	98	95	0 / 4	A
2014		10/2/19	9	698A	CL	20.5	103.5	21.1	101.4	8	98	95	0 / 4	A
2015		10/2/19	9	698A	CL	20.5	103.5	24.1	99.3	8	96	95	0 / 4	A
2016		10/2/19	9	698A	CL	20.5	103.5	22.9	99.1	8	96	95	0 / 4	A
2017		10/2/19	9	698A	CL	20.5	103.5	22.3	98.8	8	95	95	0 / 4	A
2018		10/2/19	9	698A	CL	20.5	103.5	23.6	98.2	8	95	95	0 / 4	A
2019		10/2/19	9	698A	CL	20.5	103.5	24.1	99.3	8	96	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2012	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 50+20	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2013	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 50+20	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2014	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 50+20	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2015	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 23+00	5.0		XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2016	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 23+00	4.0		XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2017	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 23+00	3.0		XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2018	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 23+00	2.0		XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2019	Sanitary Trench Backfill: N Crowfoot Valley Outfall, Station 23+00	1.0		XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2020		10/2/19	10	698A	CL	19.0	106.0	19.4	105.8	8	100	95	0 / 4	A
2021		10/2/19	10	698A	CL	19.0	106.0	20.5	102.9	8	97	95	0 / 4	A
2022		10/2/19	10	698A	CL	19.0	106.0	20.8	102.2	8	96	95	0 / 4	A
2023		10/2/19	9	698A	CL	20.5	103.5	21.6	100.5	8	97	95	0 / 4	A
2024		10/2/19	4	698A	CL	16.0	109.0	16.5	104.6	8	96	95	0 / 4	A
2025		10/2/19	4	698A	CL	16.0	109.0	17.0	105.8	8	97	95	0 / 4	A
2026		10/2/19	4	698A	CL	16.0	109.0	17.0	104.7	8	96	95	0 / 4	A
2027		10/2/19	4	698A	CL	16.0	109.0	16.9	108.8	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2020	Sanitary Trench Backfill: SSMH-25	7.0		XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2021	Sanitary Trench Backfill: SSMH-25	6.0		XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2022	Sanitary Trench Backfill: SSMH-25	2.0		XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2023	Sanitary Trench Backfill: SSMH-25	1.0		XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2024	Sanitary Trench Backfill: Service, L20 B1 F8	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
2025	Sanitary Trench Backfill: Service, L20 B1 F8	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
2026	Sanitary Trench Backfill: Service, L20 B1 F8	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
2027	Sanitary Trench Backfill: Service, L20 B1 F8	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
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Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2028		10/2/19	4	698A	CL	16.0	109.0	18.1	105.9	8	97	95	0 / 4	A
2029		10/2/19	4	698A	CL	16.0	109.0	16.3	108.7	8	100	95	0 / 4	A
2030		10/2/19	4	698A	CL	16.0	109.0	16.7	107.2	8	98	95	0 / 4	A
2031		10/2/19	4	698A	CL	16.0	109.0	18.1	108.5	8	100	95	0 / 4	A
2032		10/2/19	4	698A	CL	16.0	109.0	17.6	107.4	8	99	95	0 / 4	A
2033		10/2/19	4	698A	CL	16.0	109.0	17.9	108.7	8	100	95	0 / 4	A
2034		10/2/19	4	698A	CL	16.0	109.0	16.6	109.2	8	100	95	0 / 4	A
2035		10/2/19	4	698A	CL	16.0	109.0	17.7	109.4	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2028	Sanitary Trench Backfill: Service, L11 B2 F8	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
2029	Sanitary Trench Backfill: Service, L11 B2 F8	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
2030	Sanitary Trench Backfill: Service, L11 B2 F8	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
2031	Sanitary Trench Backfill: Service, L11 B2 F8	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
2032	Sanitary Trench Backfill: Service, L11 B2 F8	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
2033	Sanitary Trench Backfill: Service, L19 B1 F8	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
2034	Sanitary Trench Backfill: Service, L19 B1 F8	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
2035	Sanitary Trench Backfill: Service, L19 B1 F8	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000152
10/02/2019
Report Date: 10/10/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2036		10/2/19	4	698A	CL	16.0	109.0	16.3	109.2	8	100	95	0 / 4	A
2037		10/2/19	4	698A	CL	16.0	109.0	17.4	108.5	8	100	95	0 / 4	A
2038		10/2/19	4	698A	CL	16.0	109.0	17.7	108.2	8	99	95	0 / 4	A
2039		10/2/19	4	698A	CL	16.0	109.0	17.1	108.5	8	100	95	0 / 4	A
2040		10/2/19	4	698A	CL	16.0	109.0	17.6	109.4	8	100	95	0 / 4	A
2041		10/2/19	4	698A	CL	16.0	109.0	16.9	108.2	8	99	95	0 / 4	A
2042		10/2/19	4	698A	CL	16.0	109.0	16.9	108.0	8	99	95	0 / 4	A
2043		10/2/19	4	698A	CL	16.0	109.0	17.6	108.8	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2036	Sanitary Trench Backfill: Service, L19 B1 F8	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
2037	Sanitary Trench Backfill: Service, L19 B1 F8	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
2038	Sanitary Trench Backfill: Service, L19 B1 F8	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
2039	Sanitary Trench Backfill: Service, L19 B1 F8	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
2040	Sanitary Trench Backfill: Service, L19 B1 F8	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
2041	Sanitary Trench Backfill: Service, L19 B1 F8	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
2042	Sanitary Trench Backfill: Manhole, SS MH 137 N side	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
2043	Sanitary Trench Backfill: Manhole, SS MH 137 N side	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000152
10/02/2019
Report Date: 10/10/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2044		10/2/19	4	698A	CL	16.0	109.0	18.0	108.1	8	99	95	0 / 4	A
2045		10/2/19	4	698A	CL	16.0	109.0	17.8	108.5	8	100	95	0 / 4	A
2046		10/2/19	4	698A	CL	16.0	109.0	18.8	105.2	8	97	95	0 / 4	A
2047		10/2/19	4	698A	CL	16.0	109.0	17.9	106.1	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2044	Sanitary Trench Backfill: Manhole, SS MH 137 S side	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
2045	Sanitary Trench Backfill: Manhole, SS MH 137 S side	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
2046	Sanitary Trench Backfill: Manhole, SS MH 138 N side	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
2047	Sanitary Trench Backfill: Manhole, SS MH 138 N side	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000153
10/02/2019
Report Date: 10/10/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2048		10/2/19	4	698A	CL	16.0	109.0	16.4	108.5	8	100	95	0 / 4	A
2049		10/2/19	4	698A	CL	16.0	109.0	17.7	108.7	8	100	95	0 / 4	A
2050		10/2/19	4	698A	CL	16.0	109.0	17.4	107.5	8	99	95	0 / 4	A
2051		10/2/19	4	698A	CL	16.0	109.0	17.5	109.4	8	100	95	0 / 4	A
2052		10/2/19	4	698A	CL	16.0	109.0	17.9	107.3	8	98	95	0 / 4	A
2053		10/2/19	4	698A	CL	16.0	109.0	18.5	105.6	8	97	95	0 / 4	A
2054		10/2/19	4	698A	CL	16.0	109.0	17.1	107.9	8	99	95	0 / 4	A
2055		10/2/19	4	698A	CL	16.0	109.0	17.3	107.8	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2048	Sanitary Trench Backfill: Manhole, SS MH 138 S side	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
2049	Sanitary Trench Backfill: Manhole, SS MH 138 S side	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
2050	Sanitary Trench Backfill: Manhole, SS MH 138 E side	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
2051	Sanitary Trench Backfill: Manhole, SS MH 138 W side	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
2052	Sanitary Trench Backfill: Manhole, SS MH 138 N side	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
2053	Sanitary Trench Backfill: Manhole, SS MH 138 N side	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
2054	Sanitary Trench Backfill: Manhole, SS MH 138 S side	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
2055	Sanitary Trench Backfill: Mainline, 15' W of MH 137	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

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Compaction Test Report

Report #: SNG-000153
10/02/2019
Report Date: 10/10/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2056		10/2/19	4	698A	CL	16.0	109.0	16.9	108.6	8	100	95	0 / 4	A
2057		10/2/19	4	698A	CL	16.0	109.0	18.2	107.7	8	99	95	0 / 4	A
2058		10/2/19	4	698A	CL	16.0	109.0	16.5	108.8	8	100	95	0 / 4	A
2059		10/2/19	4	698A	CL	16.0	109.0	17.4	107.2	8	98	95	0 / 4	A
2060		10/2/19	4	698A	CL	16.0	109.0	17.2	107.7	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2056	Sanitary Trench Backfill: Mainline, 15' W of MH 137	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
2057	Sanitary Trench Backfill: Mainline, 15' W of MH 137	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
2058	Sanitary Trench Backfill: Mainline, 30' W of MH 137	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
2059	Sanitary Trench Backfill: Mainline, 30' W of MH 137	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
2060	Sanitary Trench Backfill: Mainline, 15' E of MH 138	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **2060:** As requested with Rick with Kelley Trucking, a site visit was made to observe and test sanitary sewer trench backfill. We observed the contractor place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000154
10/09/2019
Report Date: 10/10/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2062		10/9/19	6	698A	SC	11.0	120.5	11.9	119.9	8	100	100	-2 / 2	A
2063		10/9/19	6	698A	SC	11.0	120.5	11.5	120.3	8	100	100	-2 / 2	A
2064		10/9/19	6	698A	SC	11.0	120.5	11.8	120.1	8	100	100	-2 / 2	A
2065		10/9/19	6	698A	SC	11.0	120.5	11.4	120.1	8	100	100	-2 / 2	A
2066		10/9/19	6	698A	SC	11.0	120.5	11.3	120.3	8	100	100	-2 / 2	A
2067		10/9/19	6	698A	SC	11.0	120.5	11.6	120.3	8	100	100	-2 / 2	A
2068		10/9/19	6	698A	SC	11.0	120.5	11.3	120.3	8	100	100	-2 / 2	A
2069		10/9/19	6	698A	SC	11.0	120.5	11.4	120.4	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2062	Manhole: Manhole. SSMH #72. Alpine Phlox St. STA 20+00.	10.0		XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2063	Manhole: Manhole. SSMH #72. Alpine Phlox St. STA 20+00.	9.0		XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2064	Manhole: Manhole. SSMH #72. Alpine Phlox St. STA 20+00.	8.0		XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2065	Manhole: Manhole. SSMH #72. Alpine Phlox St. STA 20+00.	7.0		XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2066	Manhole: Manhole. SSMH #72. Alpine Phlox St. STA 20+00.	6.0		XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2067	Manhole: Manhole. SSMH #72. Alpine Phlox St. STA 20+00.	5.0		XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2068	Manhole: Manhole. SSMH #72. Alpine Phlox St. STA 20+00.	4.0		XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2069	Manhole: Manhole. SSMH #72. Alpine Phlox St. STA 20+00.	3.0		XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000154
10/09/2019
Report Date: 10/10/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2070		10/9/19	6	698A	SC	11.0	120.5	11.0	120.4	8	100	100	-2 / 2	A
2071		10/9/19	6	698A	SC	11.0	120.5	10.5	121.0	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2070	Manhole: Manhole. SSMH #72. Alpine Phlox St. STA 20+00.	2.0		XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2071	Manhole: Manhole. SSMH #72. Alpine Phlox St. STA 20+00.	1.0		XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000155
10/01/2019
Report Date: 10/14/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2061		10/1/19	5	698A	SC	13.5	114.5	14.0	114.0	8	100	100	NA	E

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2061	Cancelled on Site: Sanitary sewer trench backfill			XPLORER / 3500 / 3380 / 2/15/2019	Colon, Justin

Remarks	Comments
E: Test number for data entry purposes only.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **2061:** As requested, a site visit was made to observe and test sanitary sewer trench backfill. Testing was cancelled on site.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000156
10/19/2019
Report Date: 11/6/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2072		10/19/19	6	698A	SC	11.0	120.5	10.9	120.6	8	100	100	-2 / 2	A
2073		10/19/19	6	698A	SC	11.0	120.5	11.1	120.4	8	100	100	-2 / 2	A
2074		10/19/19	6	698A	SC	11.0	120.5	10.8	120.8	8	100	100	-2 / 2	A
2075		10/19/19	6	698A	SC	11.0	120.5	11.3	120.4	8	100	100	-2 / 2	A
2076		10/19/19	6	698A	SC	11.0	120.5	11.2	120.2	8	100	100	-2 / 2	A
2077		10/19/19	6	698A	SC	11.0	120.5	11.0	120.6	8	100	100	-2 / 2	A
2078		10/19/19	6	698A	SC	11.0	120.5	10.9	120.7	8	100	100	-2 / 2	A
2079		10/19/19	6	698A	SC	11.0	120.5	11.5	120.4	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2072	Sanitary Trench Backfill: Service, SE side Alpine Phlox St, building on NW corner of Filing 1, 200' SE of intersection of Alpine Phlox St and Scarlet Sage Ave	13.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2073	Sanitary Trench Backfill: Service, SE side Alpine Phlox St, building on NW corner of Filing 1, 200' SE of intersection of Alpine Phlox St and Scarlet Sage Ave	12.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2074	Sanitary Trench Backfill: Service, SE side Alpine Phlox St, building on NW corner of Filing 1, 200' SE of intersection of Alpine Phlox St and Scarlet Sage Ave	11.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2075	Sanitary Trench Backfill: Service, SE side Alpine Phlox St, building on NW corner of Filing 1, 200' SE of intersection of Alpine Phlox St and Scarlet Sage Ave	10.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2076	Sanitary Trench Backfill: Service, SE side Alpine Phlox St, building on NW corner of Filing 1, 200' SE of intersection of Alpine Phlox St and Scarlet Sage Ave	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2077	Sanitary Trench Backfill: Service, SE side Alpine Phlox St, building on NW corner of Filing 1, 200' SE of intersection of Alpine Phlox St and Scarlet Sage Ave	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2078	Sanitary Trench Backfill: Service, SE side Alpine Phlox St, building on NW corner of Filing 1, 200' SE of intersection of Alpine Phlox St and Scarlet Sage Ave	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2079	Sanitary Trench Backfill: Service, SE side Alpine Phlox St, building on NW corner of Filing 1, 200' SE of intersection of Alpine Phlox St and Scarlet Sage Ave	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000156
10/19/2019
Report Date: 11/6/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2080		10/19/19	6	698A	SC	11.0	120.5	11.1	120.3	8	100	100	-2 / 2	A
2081		10/19/19	6	698A	SC	11.0	120.5	10.7	120.9	8	100	100	-2 / 2	A
2082		10/19/19	6	698A	SC	11.0	120.5	11.1	120.5	8	100	100	-2 / 2	A
2083		10/19/19	6	698A	SC	11.0	120.5	11.0	120.4	8	100	100	-2 / 2	A
2084		10/19/19	6	698A	SC	11.0	120.5	11.2	120.3	8	100	100	-2 / 2	A
2085		10/19/19	6	698A	SC	11.0	120.5	10.9	120.5	8	100	100	-2 / 2	A
2086		10/19/19	6	698A	SC	11.0	120.5	11.5	120.1	8	100	100	-2 / 2	A
2087		10/19/19	6	698A	SC	11.0	120.5	11.1	120.3	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2080	Sanitary Trench Backfill: Service, SE side Alpine Phlox St, building on NW corner of Filing 1, 200' SE of intersection of Alpine Phlox St and Scarlet Sage Ave	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2081	Sanitary Trench Backfill: Mainline, Alpine Phlox St adjacent to building on NW corner of Filing 1, 200' SE of intersection of Alpine Phlox St and Scarlet Sage Ave	13.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2082	Sanitary Trench Backfill: Mainline, Alpine Phlox St adjacent to building on NW corner of Filing 1, 200' SE of intersection of Alpine Phlox St and Scarlet Sage Ave	12.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2083	Sanitary Trench Backfill: Mainline, Alpine Phlox St adjacent to building on NW corner of Filing 1, 200' SE of intersection of Alpine Phlox St and Scarlet Sage Ave	11.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2084	Sanitary Trench Backfill: Mainline, Alpine Phlox St adjacent to building on NW corner of Filing 1, 200' SE of intersection of Alpine Phlox St and Scarlet Sage Ave	10.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2085	Sanitary Trench Backfill: Mainline, Alpine Phlox St adjacent to building on NW corner of Filing 1, 200' SE of intersection of Alpine Phlox St and Scarlet Sage Ave	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2086	Sanitary Trench Backfill: Mainline, Alpine Phlox St adjacent to building on NW corner of Filing 1, 200' SE of intersection of Alpine Phlox St and Scarlet Sage Ave	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2087	Sanitary Trench Backfill: Mainline, Alpine Phlox St adjacent to building on NW corner of Filing 1, 200' SE of intersection of Alpine Phlox St and Scarlet Sage Ave	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

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Compaction Test Report

Report #: SNG-000156
10/19/2019
Report Date: 11/6/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2088		10/19/19	6	698A	SC	11.0	120.5	10.9	120.7	8	100	100	-2 / 2	A
2089		10/19/19	6	698A	SC	11.0	120.5	11.0	120.5	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2088	Sanitary Trench Backfill: Mainline, Alpine Phlox St adjacent to building on NW corner of Filing 1, 200' SE of intersection of Alpine Phlox St and Scarlet Sage Ave	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2089	Sanitary Trench Backfill: Mainline, Alpine Phlox St adjacent to building on NW corner of Filing 1, 200' SE of intersection of Alpine Phlox St and Scarlet Sage Ave	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **2089:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test sanitary sewer trench backfill. We observed the contractor place fill with the excavator and loader, add moisture with the water wagon, and apply compactive effort with the sheepsfoot roller.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Compaction Test Report

Report #: SNG-000157
10/22/2019
Report Date: 11/6/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2090		10/21/19	6	698A	SC	11.0	120.5	11.5	120.3	8	100	100	-2 / 2	A
2091		10/21/19	6	698A	SC	11.0	120.5	11.0	120.5	8	100	100	-2 / 2	A
2092		10/21/19	6	698A	SC	11.0	120.5	11.2	120.4	8	100	100	-2 / 2	A
2093		10/21/19	6	698A	SC	11.0	120.5	11.3	120.5	8	100	100	-2 / 2	A
2094		10/21/19	6	698A	SC	11.0	120.5	11.3	120.2	8	100	100	-2 / 2	A
2095		10/21/19	6	698A	SC	11.0	120.5	11.4	120.4	8	100	100	-2 / 2	A
2096		10/21/19	6	698A	SC	11.0	120.5	11.3	120.2	8	100	100	-2 / 2	A
2097		10/21/19	6	698A	SC	11.0	120.5	11.6	120.2	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2090	Sanitary Trench Backfill: Mainline, Alpine Phlox Street, 25' of SSMH-244	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2091	Sanitary Trench Backfill: Mainline, Alpine Phlox Street, 25' of SSMH-244	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2092	Sanitary Trench Backfill: Mainline, Alpine Phlox Street, 25' of SSMH-244	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2093	Sanitary Trench Backfill: Mainline, Alpine Phlox Street, 25' of SSMH-244	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2094	Sanitary Trench Backfill: Mainline, Alpine Phlox Street, 25' of SSMH-244	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2095	Sanitary Trench Backfill: Service, Alpine Phlox St, 25' NW of SSMH-244	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2096	Sanitary Trench Backfill: Service, Alpine Phlox St, 25' NW of SSMH-244	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2097	Sanitary Trench Backfill: Service, Alpine Phlox St, 25' NW of SSMH-244	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000157
10/22/2019
Report Date: 11/6/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2098		10/21/19	6	698A	SC	11.0	120.5	11.2	120.4	8	100	100	-2 / 2	A
2099		10/21/19	6	698A	SC	11.0	120.5	9.5	120.9	8	100	100	-2 / 2	A
2100		10/21/19	6	698A	SC	11.0	120.5	9.9	120.4	8	100	100	-2 / 2	A
2101		10/21/19	6	698A	SC	11.0	120.5	9.2	120.8	8	100	100	-2 / 2	A
2102		10/21/19	6	698A	SC	11.0	120.5	10.2	121.0	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2098	Sanitary Trench Backfill: Service, Alpine Phlox St, 25' NW of SSMH-244	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2099	Manhole: Scarlet Sage Ave and Alpine Phlox St intersection, 1' N of SS MH 242	10.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew
2100	Manhole: Scarlet Sage Ave and Alpine Phlox St intersection, 1' W of SS MH 242	9.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew
2101	Manhole: Scarlet Sage Ave and Alpine Phlox St intersection, 1' S of SS MH 242	8.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew
2102	Manhole: Scarlet Sage Ave and Alpine Phlox intersection, 1' E of SS MH-242	7.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **2102:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test sanitary sewer trench backfill. We observed the contractor place fill with the excavator and loader, add moisture with the water wagon, and apply compactive effort with the sheepsfoot roller.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000158
10/22/2019
Report Date: 11/6/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2103		10/22/19	6	698A	SC	11.0	120.5	10.1	120.3	8	100	100	-2 / 2	A
2104		10/22/19	6	698A	SC	11.0	120.5	9.4	123.8	8	103	100	-2 / 2	A
2105		10/22/19	6	698A	SC	11.0	120.5	10.9	120.8	8	100	100	-2 / 2	A
2106		10/22/19	6	698A	SC	11.0	120.5	11.0	120.2	8	100	100	-2 / 2	A
2107		10/22/19	6	698A	SC	11.0	120.5	10.5	120.4	8	100	100	-2 / 2	A
2108		10/22/19	6	698A	SC	11.0	120.5	9.9	120.8	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2103	Manhole: Scarlet Sage Ave and Alpine Phlox St intersection, 1' N of SS MH 242	6.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew
2104	Manhole: Scarlet Sage Ave and Alpine Phlox St intersection, 1' W of SS MH 242	5.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew
2105	Manhole: Scarlet Sage Ave and Alpine Phlox St intersection, 1' S of SS MH 242	4.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew
2106	Manhole: Scarlet Sage Ave and Alpine Phlox intersection, 1' E of SS MH-242	3.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew
2107	Manhole: Scarlet Sage Ave and Alpine Phlox St intersection, 1' N of SS MH 242	2.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew
2108	Manhole: Scarlet Sage Ave and Alpine Phlox St intersection, 1' W of SS MH 242	1.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **2108:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test sanitary sewer trench backfill. We observed the contractor place fill with the excavator and loader, add moisture with the water wagon, and apply compactive effort with the sheepsfoot roller.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000159
10/23/2019
Report Date: 11/6/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2109		10/23/19	4	698A	CL	16.0	109.0	16.6	105.7	8	97	95	0 / 4	A
2110		10/23/19	4	698A	CL	16.0	109.0	16.1	106.2	8	97	95	0 / 4	A
2111		10/23/19	4	698A	CL	16.0	109.0	17.9	103.6	8	95	95	0 / 4	A
2112		10/23/19	4	698A	CL	16.0	109.0	16.0	108.8	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2109	Sanitary Trench Backfill: Service, Lot 6 Block 4 Filing 6 on Rose Mallow Avenue, 1' N of SS MH-132	10.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew
2110	Sanitary Trench Backfill: Service, Lot 6 Block 4 Filing 6 on Rose Mallow Avenue, 1' E of SS MH-132	9.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew
2111	Sanitary Trench Backfill: Service, Lot 6 Block 4 Filing 6 on Rose Mallow Avenue, 1' S of SS MH-132	8.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew
2112	Sanitary Trench Backfill: Service, Lot 6 Block 4 Filing 6 on Rose Mallow Avenue, 1' W of SS MH-132	7.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **2112:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer/manhole backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000160
10/24/2019
Report Date: 11/6/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2113		10/24/19	4	698A	CL	16.0	109.0	16.2	109.1	8	100	95	0 / 4	A
2114		10/24/19	4	698A	CL	16.0	109.0	16.0	107.1	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2113	Sanitary Trench Backfill: Service, Lot 6 Block 4 Filing 6 on Rose Mallow Avenue, 1' N of SS MH-132	6.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew
2114	Sanitary Trench Backfill: Service, Lot 6 Block 4 Filing 6 on Rose Mallow Avenue, 1' E of SS MH-132	5.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **2114:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer/manhole backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000161
10/31/2019
Report Date: 11/6/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2144		10/31/19	8	698A	CL	18.0	109.0	19.2	106.4	8	98	95	0 / 4	A
2145		10/31/19	8	698A	CL	18.0	109.0	19.0	106.5	8	98	95	0 / 4	A
2146		10/31/19	8	698A	CL	18.0	109.0	18.8	106.6	8	98	95	0 / 4	A
2148		10/31/19	15	ASTM D698A	CL	16.5	111.5	17.1	109.4	8	98	95	0 / 4	A
2149		10/31/19	15	ASTM D698A	CL	16.5	111.5	17.6	108.9	8	98	95	0 / 4	A
2151		10/31/19	15	ASTM D698A	CL	16.5	111.5	17.1	109.5	8	98	95	0 / 4	A
2152		10/31/19	15	ASTM D698A	CL	16.5	111.5	17.6	109.9	8	99	95	0 / 4	A
2154		10/31/19	15	ASTM D698A	CL	16.5	111.5	17.0	110.1	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2144	Sanitary Trench Backfill: Mainline, Rose Mallow Avenue, 40' N of SSMH-19	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2145	Sanitary Trench Backfill: Mainline, Rose Mallow Avenue, 40' N of SSMH-19	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2146	Sanitary Trench Backfill: Mainline, Rose Mallow Avenue, 40' N of SSMH-19	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2148	Sanitary Trench Backfill: Mainline, Rose Mallow Avenue, 110' N of SSMH-19	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2149	Sanitary Trench Backfill: Mainline, Rose Mallow Avenue, 110' N of SSMH-19	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2151	Sanitary Trench Backfill: Mainline, Rose Mallow Avenue, 110' N of SSMH-19	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2152	Sanitary Trench Backfill: Mainline, Rose Mallow Avenue, 175' N of SSMH-19	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2154	Sanitary Trench Backfill: Mainline, Rose Mallow Avenue, 175' N of SSMH-19	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000161
10/31/2019
Report Date: 11/6/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2156		10/31/19	15	ASTM D698A	CL	16.5	111.5	18.1	108.4	8	97	95	0 / 4	A
2161		10/31/19	15	ASTM D698A	CL	16.5	111.5	17.8	108.9	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2156	Sanitary Trench Backfill: Mainline, Rose Mallow Avenue, 180' N of SSMH-19	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2161	Sanitary Trench Backfill: Mainline, Rose Mallow Avenue, 180' N of SSMH-19	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **2161:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer/manhole backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000162
11/01/2019
Report Date: 11/6/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2162		11/1/19	15	ASTM D698A	CL	16.5	111.5	17.7	108.6	8	97	95	0 / 4	A
2163		11/1/19	15	ASTM D698A	CL	16.5	111.5	18.2	108.6	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2162	Sanitary Trench Backfill: Mainline, Rose Mallow Avenue, 100' N of SSMH-19	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2163	Sanitary Trench Backfill: Mainline, Rose Mallow Avenue, 100' N of SSMH-19	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **2163:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer/manhole backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000163
11/02/2019
Report Date: 11/6/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2164		11/2/19	9	698A	CL	20.5	103.5	21.6	102.1	8	99	95	0 / 4	A
2165		11/2/19	9	698A	CL	20.5	103.5	22.1	101.4	8	98	95	0 / 4	A
2166		11/2/19	9	698A	CL	20.5	103.5	22.4	101.1	8	98	95	0 / 4	A
2167		11/2/19	9	698A	CL	20.5	103.5	22.8	101.2	8	98	95	0 / 4	A
2168		11/2/19	15	ASTM D698A	CL	16.5	111.5	17.8	108.9	8	98	95	0 / 4	A
2169		11/2/19	15	ASTM D698A	CL	16.5	111.5	17.4	109.2	8	98	95	0 / 4	A
2170		11/2/19	15	ASTM D698A	CL	16.5	111.5	17.6	109.2	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2164	Manhole: SSMH-19, Rose Mallow Avenue, 1' W of W side	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2165	Manhole: SSMH-19, Rose Mallow Avenue, 1' E of E side	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2166	Manhole: SSMH-19. Rose Mallow Avenue, 1' N of N side	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2167	Manhole: SSMH-19, Rose Mallow Avenue, 1' S of S side	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2168	Manhole: SSMH-19, Rose Mallow Avenue, 1' W of W side	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2169	Manhole: SSMH-19, Rose Mallow Avenue, 1' E of E side	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2170	Manhole: SSMH-19, Rose Mallow Avenue, 1' N of N side	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **2170:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer/manhole backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

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Compaction Test Report

Report #: SNG-000164
11/4/2019
Report Date: 11/6/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2115		11/4/19	3	698A	CL	16.0	111.0	18.4	109.6	8	99	95	0 / 4	A
2116		11/4/19	3	698A	CL	16.0	111.0	17.0	111.6	8	101	95	0 / 4	A
2117		11/4/19	3	698A	CL	16.0	111.0	19.0	107.1	8	96	95	0 / 4	A
2118		11/4/19	3	698A	CL	16.0	111.0	17.5	108.0	8	97	95	0 / 4	A
2119		11/4/19	4	698A	CL	16.0	109.0	19.6	105.2	8	97	95	0 / 4	A
2120		11/4/19	4	698A	CL	16.0	109.0	18.2	104.9	8	96	95	0 / 4	A
2121		11/4/19	4	698A	CL	16.0	109.0	19.3	103.8	8	95	95	0 / 4	A
2122		11/4/19	3	698A	CL	16.0	111.0	16.1	112.9	8	102	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2115	Sanitary Trench Backfill: Rose Mallow Avenue, STA 13+50	10.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2116	Sanitary Trench Backfill: Rose Mallow Avenue, STA 13+50	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2117	Sanitary Trench Backfill: Rose Mallow Avenue, STA 13+50	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2118	Sanitary Trench Backfill: Rose Mallow Avenue, STA 13+50	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2119	Sanitary Trench Backfill: Rose Mallow Avenue, STA 13+50	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2120	Sanitary Trench Backfill: Rose Mallow Avenue, STA 13+50	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2121	Sanitary Trench Backfill: Rose Mallow Avenue, STA 13+50	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2122	Sanitary Trench Backfill: Rose Mallow Avenue, STA 13+50	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

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11/4/2019
Report Date: 11/6/2019
Test Method: ASTM D 6938

Client:
E5X Management
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Project:
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Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2123		11/4/19	2	698A	CL	15.0	112.0	18.2	109.1	8	97	95	0 / 4	A
2124		11/4/19	2	698A	CL	15.0	112.0	16.6	109.1	8	97	95	0 / 4	A
2125		11/4/19	2	698A	CL	15.0	112.0	17.4	106.9	8	95	95	0 / 4	A
2126		11/4/19	4	698A	CL	16.0	109.0	17.0	109.4	8	100	95	0 / 4	A
2127		11/4/19	4	698A	CL	16.0	109.0	18.6	109.4	8	100	95	0 / 4	A
2128		11/4/19	7	698A	CL	16.5	107.5	19.7	103.8	8	97	95	0 / 4	A
2129		11/4/19	7	698A	CL	16.5	107.5	19.8	105.8	8	98	95	0 / 4	A
2130		11/4/19	3	698A	CL	16.0	111.0	17.9	109.4	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2123	Sanitary Trench Backfill: Rose Mallow Avenue, STA 13+50	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2124	Sanitary Trench Backfill: Rose Mallow Avenue, STA 16+75	10.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2125	Sanitary Trench Backfill: Rose Mallow Avenue, STA 16+75	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2126	Sanitary Trench Backfill: Rose Mallow Avenue, STA 16+75	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2127	Sanitary Trench Backfill: Rose Mallow Avenue, STA 16+75	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2128	Sanitary Trench Backfill: Rose Mallow Avenue, STA 16+75	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2129	Sanitary Trench Backfill: Rose Mallow Avenue, STA 16+75	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2130	Sanitary Trench Backfill: Rose Mallow Avenue, STA 16+75	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

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11/4/2019
Report Date: 11/6/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
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Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2131		11/4/19	3	698A	CL	16.0	111.0	18.8	108.2	8	97	95	0 / 4	A
2132		11/4/19	8	698A	CL	18.0	109.0	18.6	106.7	8	98	95	0 / 4	A
2133		11/4/19	3	698A	CL	16.0	111.0	18.8	110.6	8	100	95	0 / 4	A
2134		11/4/19	5	698A	SC	13.5	114.5	14.9	114.6	8	100	100	-2 / 2	A
2135		11/4/19	3	698A	CL	16.0	111.0	16.9	109.9	8	99	95	0 / 4	A
2136		11/4/19	3	698A	CL	16.0	111.0	16.6	109.9	8	99	95	0 / 4	A
2137		11/4/19	2	698A	CL	15.0	112.0	18.5	106.3	8	95	95	0 / 4	A
2138		11/4/19	2	698A	CL	15.0	112.0	18.1	108.5	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2131	Sanitary Trench Backfill: Rose Mallow Avenue, STA 16+75	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2132	Sanitary Trench Backfill: N Pinery Pkwy Avenue, STA 36+25	12.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2133	Sanitary Trench Backfill: N Pinery Pkwy Avenue, STA 36+25	11.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2134	Sanitary Trench Backfill: N Pinery Pkwy Avenue, STA 36+25	10.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2135	Sanitary Trench Backfill: N Pinery Pkwy Avenue, STA 36+25	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2136	Sanitary Trench Backfill: N Pinery Pkwy Avenue, STA 36+25	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2137	Sanitary Trench Backfill: N Pinery Pkwy Avenue, STA 36+25	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2138	Sanitary Trench Backfill: N Pinery Pkwy Avenue, STA 36+25	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000164
11/4/2019
Report Date: 11/6/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
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Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2139		11/4/19	2	698A	CL	15.0	112.0	19.0	107.1	8	96	95	0 / 4	A
2140		11/4/19	2	698A	CL	15.0	112.0	18.5	108.0	8	96	95	0 / 4	A
2141		11/4/19	3	698A	CL	16.0	111.0	19.1	107.1	8	96	95	0 / 4	A
2142		11/4/19	3	698A	CL	16.0	111.0	17.2	111.9	8	101	95	0 / 4	A
2143		11/4/19	5	698A	SC	13.5	114.5	13.9	114.1	8	100	100	-2 / 2	A
2147		11/4/19	3	698A	CL	16.0	111.0	18.2	108.5	8	98	95	0 / 4	A
2150		11/4/19	3	698A	CL	16.0	111.0	17.6	108.7	8	98	95	0 / 4	A
2153		11/4/19	3	698A	CL	16.0	111.0	17.2	106.7	8	96	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2139	Sanitary Trench Backfill: N Pinery Pkwy Avenue, STA 36+25	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2140	Sanitary Trench Backfill: N Pinery Pkwy Avenue, STA 36+25	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2141	Sanitary Trench Backfill: N Pinery Pkwy Avenue, STA 36+25	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2142	Sanitary Trench Backfill: N Pinery Pkwy Avenue, STA 36+25	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2143	Sanitary Trench Backfill: N Pinery Pkwy Avenue, STA 39+00	11.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2147	Sanitary Trench Backfill: N Pinery Pkwy Avenue, STA 39+00	10.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2150	Sanitary Trench Backfill: N Pinery Pkwy Avenue, STA 39+00	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2153	Sanitary Trench Backfill: N Pinery Pkwy Avenue, STA 39+00	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Client:
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Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2155		11/4/19	5	698A	SC	13.5	114.5	15.1	114.1	8	100	100	-2 / 2	A
2157		11/4/19	5	698A	SC	13.5	114.5	15.0	114.7	8	100	100	-2 / 2	A
2158		11/4/19	5	698A	SC	13.5	114.5	15.1	115.4	8	101	100	-2 / 2	A
2159		11/4/19	3	698A	CL	16.0	111.0	17.9	110.3	8	99	95	0 / 4	A
2160		11/4/19	3	698A	CL	16.0	111.0	17.2	110.5	8	100	95	0 / 4	A
2171		11/4/19	7	698A	CL	16.5	107.5	20.0	103.3	8	96	95	0 / 4	A
2172		11/4/19	7	698A	CL	16.5	107.5	18.1	106.1	8	99	95	0 / 4	A
2173		11/4/19	15	ASTM D698A	CL	16.5	111.5	18.0	108.8	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2155	Sanitary Trench Backfill: N Pinery Pkwy Avenue, STA 39+00	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2157	Sanitary Trench Backfill: N Pinery Pkwy Avenue, STA 39+00	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2158	Sanitary Trench Backfill: N Pinery Pkwy Avenue, STA 39+00	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2159	Sanitary Trench Backfill: N Pinery Pkwy Avenue, STA 39+00	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2160	Sanitary Trench Backfill: N Pinery Pkwy Avenue, STA 39+00	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2171	Manhole: SSMH-19, Rose Mallow Avenue, 1' S of S side	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2172	Manhole: SSMH-19, Rose Mallow Avenue, 1' S of S side	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2173	Sanitary Trench Backfill: Mainline, Rose Mallow Avenue, 60' S of SSMH-19	11.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000164
11/4/2019
Report Date: 11/6/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2174		11/4/19	15	ASTM D698A	CL	16.5	111.5	17.9	108.8	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2174	Sanitary Trench Backfill: Mainline, Rose Mallow Avenue, 60' S of SSMH-19	10.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **2174:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer/manhole backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000165
11/05/2019
Report Date: 11/18/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2175		11/5/19	15	ASTM D698A	CL	16.5	111.5	17.2	109.2	8	98	95	0 / 4	A
2176		11/5/19	15	ASTM D698A	CL	16.5	111.5	17.2	109.7	8	98	95	0 / 4	A
2177		11/5/19	15	ASTM D698A	CL	16.5	111.5	18.1	108.9	8	98	95	0 / 4	A
2178		11/5/19	15	ASTM D698A	CL	16.5	111.5	17.3	110.7	8	99	95	0 / 4	A
2179		11/5/19	15	ASTM D698A	CL	16.5	111.5	17.8	108.6	8	97	95	0 / 4	A
2180		11/5/19	15	ASTM D698A	CL	16.5	111.5	18.5	107.0	8	96	95	0 / 4	A
2181		11/5/19	15	ASTM D698A	CL	16.5	111.5	19.5	106.5	8	96	95	0 / 4	A
2182		11/5/19	15	ASTM D698A	CL	16.5	111.5	19.0	108.4	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2175	Sanitary Trench Backfill: Mainline, Rose Mallow Avenue, 155' S SSMH-19	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2176	Sanitary Trench Backfill: Mainline, Rose Mallow Avenue, 155' S SSMH-19	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2177	Sanitary Trench Backfill: Mainline, Rose Mallow Avenue, 140' S SSMH-19	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2178	Sanitary Trench Backfill: Mainline, Rose Mallow Avenue, 140' S SSMH-19	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2179	Sanitary Trench Backfill: Mainline, Rose Mallow Avenue, 160' S SSMH-19	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2180	Sanitary Trench Backfill: Mainline, Rose Mallow Avenue, 145' S SSMH-19	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2181	Sanitary Trench Backfill: Mainline, Rose Mallow Avenue, 45' N SSMH-20	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2182	Sanitary Trench Backfill: Mainline, Rose Mallow Avenue, 30' N SSMH-20	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000165
11/05/2019
Report Date: 11/18/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2183		11/5/19	15	ASTM D698A	CL	16.5	111.5	18.8	108.4	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2183	Sanitary Trench Backfill: Mainline, Rose Mallow Avenue, 30' N SSMH-20	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **2183:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
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Compaction Test Report

Report #: SNG-000166
11/06/2019
Report Date: 11/18/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2184		11/6/19	15	ASTM D698A	CL	16.5	111.5	16.7	109.3	8	98	95	0 / 4	A
2185		11/6/19	15	ASTM D698A	CL	16.5	111.5	16.9	109.9	8	99	95	0 / 4	A
2186		11/6/19	15	ASTM D698A	CL	16.5	111.5	16.5	110.4	8	99	95	0 / 4	A
2187		11/6/19	15	ASTM D698A	CL	16.5	111.5	16.8	109.7	8	98	95	0 / 4	A
2188		11/6/19	15	ASTM D698A	CL	16.5	111.5	16.6	110.1	8	99	95	0 / 4	A
2189		11/6/19	15	ASTM D698A	CL	16.5	111.5	18.4	107.4	8	96	95	0 / 4	A
2190		11/6/19	11	ASTM D698A	CL	22.0	101.5	25.1	100.1	8	99	95	0 / 4	A
2191		11/6/19	10	698A	CL	19.0	106.0	21.4	102.9	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2184	Manhole: Rose Mallow Avenue, 2' N of N side of SSMH-20	10.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2185	Manhole: Rose Mallow Avenue, 2' N of North side of SSMH-20	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2186	Manhole: Rose Mallow Avenue, 1' E of E side of SSMH-20	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2187	Manhole: Rose Mallow Avenue, 1' E of E side of SSMH-20	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2188	Manhole: Rose Mallow Avenue, 1' N of N side of SSMH-20	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2189	Manhole: Rose Mallow Avenue, 1' N of N side of SSMH-20	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2190	Manhole: Rose Mallow Avenue, 1' W of W side of SSMH-20	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2191	Manhole: Rose Mallow Avenue, 1' E of E side of SSMH-20	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **2191:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Compaction Test Report

Report #: SNG-000167
11/07/2019
Report Date: 11/18/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2192		11/7/19	15	ASTM D698A	CL	16.5	111.5	17.4	109.6	8	98	95	0 / 4	A
2193		11/7/19	15	ASTM D698A	CL	16.5	111.5	18.1	109.4	8	98	95	0 / 4	A
2194		11/7/19	15	ASTM D698A	CL	16.5	111.5	18.3	108.2	8	97	95	0 / 4	A
2195		11/7/19	15	ASTM D698A	CL	16.5	111.5	18.7	107.0	8	96	95	0 / 4	A
2196		11/7/19	15	ASTM D698A	CL	16.5	111.5	17.3	106.5	8	96	95	0 / 4	A
2197		11/7/19	15	ASTM D698A	CL	16.5	111.5	16.8	109.2	8	98	95	0 / 4	A
2198		11/7/19	15	ASTM D698A	CL	16.5	111.5	18.1	107.4	8	96	95	0 / 4	A
2199		11/7/19	15	ASTM D698A	CL	16.5	111.5	16.5	110.0	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2192	Manhole: Rose Mallow Avenue, 1' W of W side SSMH-20	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Ruckhaus, Manya
2193	Manhole: Rose Mallow Avenue, 1' E of E side SSMH-20	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Ruckhaus, Manya
2194	Sanitary Trench Backfill: Mainline, Rose Mallow Avenue, 180' S SSMH-20	10.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Ruckhaus, Manya
2195	Sanitary Trench Backfill: Mainline, Rose Mallow Avenue, 180' S SSMH-20	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Ruckhaus, Manya
2196	Sanitary Trench Backfill: Mainline, Rose Mallow Avenue, 150' S SSMH-20	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Ruckhaus, Manya
2197	Sanitary Trench Backfill: Mainline, Rose Mallow Avenue, 100' S SSMH-20.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Ruckhaus, Manya
2198	Sanitary Trench Backfill: Mainline, Rose Mallow Avenue, 100' S SSMH-20	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Ruckhaus, Manya
2199	Sanitary Trench Backfill: Mainline, Rose Mallow Avenue, 75' S SSMH-20	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Ruckhaus, Manya

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000167
11/07/2019
Report Date: 11/18/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2200		11/7/19	15	ASTM D698A	CL	16.5	111.5	17.6	109.3	8	98	95	0 / 4	A
2201		11/7/19	15	ASTM D698A	CL	16.5	111.5	16.7	110.0	8	99	95	0 / 4	A
2202		11/7/19	15	ASTM D698A	CL	16.5	111.5	16.8	110.4	8	99	95	0 / 4	A
2203		11/7/19	15	ASTM D698A	CL	16.5	111.5	17.6	108.7	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2200	Sanitary Trench Backfill: Mainline, Rose Mallow Avenue, 75' S SSMH-20	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Ruckhaus, Manya
2201	Sanitary Trench Backfill: Mainline, Rose Mallow Avenue, 50' S SSMH-20	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Ruckhaus, Manya
2202	Sanitary Trench Backfill: Mainline, Rose Mallow Avenue, 50' S SSMH-20	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Ruckhaus, Manya
2203	Sanitary Trench Backfill: Mainline, Rose Mallow Avenue, 25' S SSMH-20	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Ruckhaus, Manya

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **2203:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
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Compaction Test Report

Report #: SNG-000168
11/08/2019
Report Date: 11/18/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2204		11/8/19	15	ASTM D698A	CL	16.5	111.5	16.5	109.6	8	98	95	0 / 4	A
2205		11/8/19	15	ASTM D698A	CL	16.5	111.5	19.8	105.5	8	95	95	0 / 4	A
2206		11/8/19	15	ASTM D698A	CL	16.5	111.5	18.5	107.2	8	96	95	0 / 4	A
2207		11/8/19	15	ASTM D698A	CL	16.5	111.5	16.8	109.7	8	98	95	0 / 4	A
2208		11/8/19	15	ASTM D698A	CL	16.5	111.5	17.6	108.6	8	97	95	0 / 4	A
2209		11/8/19	15	ASTM D698A	CL	16.5	111.5	17.4	109.7	8	98	95	0 / 4	A
2210		11/8/19	15	ASTM D698A	CL	16.5	111.5	17.1	109.5	8	98	95	0 / 4	A
2211		11/8/19	15	ASTM D698A	CL	16.5	111.5	16.9	105.9	8	95	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2204	Manhole: SSMH-53, Rose Mallow Avenue, 1' E of E side	9.0	BG	XPLORER / 3500 / 2025 / 1/22/2019	Ruckhaus, Manya
2205	Manhole: SSMH-53, Rose Mallow Avenue, 1' W of W side	8.0	BG	XPLORER / 3500 / 2025 / 1/22/2019	Ruckhaus, Manya
2206	Manhole: SSMH-53, Rose Mallow Avenue, 1' W of W side	7.0	BG	XPLORER / 3500 / 2025 / 1/22/2019	Ruckhaus, Manya
2207	Manhole: SSMH-53, Rose Mallow Avenue, 1' N of N side	6.0	BG	XPLORER / 3500 / 2025 / 1/22/2019	Ruckhaus, Manya
2208	Manhole: SSMH-53, Rose Mallow Avenue, 1' N of N side	5.0	BG	XPLORER / 3500 / 2025 / 1/22/2019	Ruckhaus, Manya
2209	Manhole: SSMH-53, Rose Mallow Avenue, 1' S of S side	4.0	BG	XPLORER / 3500 / 2025 / 1/22/2019	Ruckhaus, Manya
2210	Manhole: SSMH-53, Rose Mallow Avenue, 1' S of S side	3.0	BG	XPLORER / 3500 / 2025 / 1/22/2019	Ruckhaus, Manya
2211	Manhole: SSMH-53, Rose Mallow Avenue, 1' N of N side	2.0	BG	XPLORER / 3500 / 2025 / 1/22/2019	Ruckhaus, Manya

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Denver, CO 80204
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Compaction Test Report

Report #: SNG-000168
11/08/2019
Report Date: 11/18/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2212		11/8/19	15	ASTM D698A	CL	16.5	111.5	17.3	106.6	8	96	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2212	Manhole: SSMH-53, Rose Mallow Avenue, 1' N of N side	1.0	BG	XPLORER / 3500 / 2025 / 1/22/2019	Ruckhaus, Manya

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **2212:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000169
11/09/2019
Report Date: 11/18/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2213		11/9/19	3	698A	CL	16.0	111.0	16.6	106.1	8	96	95	0 / 4	A
2214		11/9/19	3	698A	CL	16.0	111.0	17.7	104.9	8	95	95	0 / 4	A
2215		11/9/19	3	698A	CL	16.0	111.0	16.1	106.6	8	96	95	0 / 4	A
2216		11/9/19	3	698A	CL	16.0	111.0	18.0	105.0	8	95	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2213	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 100' S of Hop Clover Avenue and Shasta Daisy Street intersection	9.0	BG	XPLORER / 3500 / 2025 / 1/22/2019	Ruckhaus, Manya
2214	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 100' S of Hop Clover Avenue and Shasta Daisy Street intersection	8.0	BG	XPLORER / 3500 / 2025 / 1/22/2019	Ruckhaus, Manya
2215	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 175' S of Hop Clover Avenue and Shasta Daisy Street intersection	7.0	BG	XPLORER / 3500 / 2025 / 1/22/2019	Ruckhaus, Manya
2216	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 175' S of Hop Clover Avenue and Shasta Daisy Street intersection	6.0	BG	XPLORER / 3500 / 2025 / 1/22/2019	Ruckhaus, Manya

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **2216:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000170
11/11/2019
Report Date: 12/3/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2217		11/11/19	4	698A	CL	16.0	109.0	17.2	106.3	8	98	95	0 / 4	A
2218		11/11/19	4	698A	CL	16.0	109.0	17.7	106.4	8	98	95	0 / 4	A
2219		11/11/19	4	698A	CL	16.0	109.0	17.3	106.7	8	98	95	0 / 4	A
2220		11/11/19	4	698A	CL	16.0	109.0	18.3	105.5	8	97	95	0 / 4	A
2221		11/11/19	4	698A	CL	16.0	109.0	17.7	106.3	8	98	95	0 / 4	A
2222		11/11/19	4	698A	CL	16.0	109.0	18.2	107.2	8	98	95	0 / 4	A
2223		11/11/19	4	698A	CL	16.0	109.0	18.3	106.6	8	98	95	0 / 4	A
2224		11/11/19	4	698A	CL	16.0	109.0	17.2	107.2	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2217	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 80' NE of SSMH-85	10.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2218	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 80' NE of SSMH-85	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2219	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 80' NE of SSMH-85	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2220	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 80' NE of SSMH-85	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2221	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 80' NE of SSMH-85	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2222	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 50' NE of SSMH-85	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2223	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 50' NE of SSMH-85	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2224	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 50' NE of SSMH-85	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000170
11/11/2019
Report Date: 12/3/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2225		11/11/19	4	698A	CL	16.0	109.0	17.5	106.3	8	98	95	0 / 4	A
2226		11/11/19	4	698A	CL	16.0	109.0	17.2	106.9	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2225	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 50' NE of SSMH-85	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2226	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 50' NE of SSMH-85	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **2226:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test sanitary sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Compaction Test Report

Report #: SNG-000171
11/12/2019
Report Date: 12/3/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2227		11/12/19	3	698A	CL	16.0	111.0	17.9	108.1	8	97	95	0 / 4	A
2228		11/12/19	3	698A	CL	16.0	111.0	17.9	108.1	8	97	95	0 / 4	A
2229		11/12/19	3	698A	CL	16.0	111.0	17.9	108.1	8	97	95	0 / 4	A
2230		11/12/19	3	698A	CL	16.0	111.0	18.1	107.9	8	97	95	0 / 4	A
2231		11/12/19	3	698A	CL	16.0	111.0	17.4	108.0	8	97	95	0 / 4	A
2232		11/12/19	3	698A	CL	16.0	111.0	17.1	108.7	8	98	95	0 / 4	A
2233		11/12/19	3	698A	CL	16.0	111.0	16.2	109.7	8	99	95	0 / 4	A
2234		11/12/19	4	698A	CL	16.0	109.0	19.2	106.4	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2227	Manhole: SSMH-85, 1' W of W side	11.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2228	Manhole: SSMH-85, 1' E of E side	10.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2229	Manhole: SSMH-85, 1' S of S side	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2230	Manhole: SSMH-85, 1' N of N side	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2231	Manhole: SSMH-85, 1' W of W side	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2232	Manhole: SSMH-85, 1' W of W side	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2233	Manhole: SSMH-85, 1' E of E side	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2234	Sanitary Trench Backfill: Service, Lot 1 Block 1 Filing 7	11.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000171
11/12/2019
Report Date: 12/3/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2235		11/12/19	4	698A	CL	16.0	109.0	19.0	106.9	8	98	95	0 / 4	A
2236		11/12/19	4	698A	CL	16.0	109.0	17.9	108.1	8	99	95	0 / 4	A
2237		11/12/19	4	698A	CL	16.0	109.0	18.0	107.5	8	99	95	0 / 4	A
2238		11/12/19	4	698A	CL	16.0	109.0	17.6	107.6	8	99	95	0 / 4	A
2239		11/12/19	4	698A	CL	16.0	109.0	17.2	108.6	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2235	Sanitary Trench Backfill: Service, Lot 1 Block 1 Filing 7	10.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2236	Sanitary Trench Backfill: Service, Lot 1 Block 1 Filing 7	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2237	Sanitary Trench Backfill: Service, Lot 1 Block 1 Filing 7	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2238	Sanitary Trench Backfill: Service, Lot 1 Block 1 Filing 7	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2239	Sanitary Trench Backfill: Service, Lot 1 Block 1 Filing 7	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **2239:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test sanitary sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader and rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000172
11/13/2019
Report Date: 12/3/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2240		11/13/19	3	698A	CL	16.0	111.0	16.3	108.3	8	98	95	0 / 4	A
2241		11/13/19	3	698A	CL	16.0	111.0	16.3	109.8	8	99	95	0 / 4	A
2242		11/13/19	3	698A	CL	16.0	111.0	16.4	110.1	8	99	95	0 / 4	A
2243		11/13/19	3	698A	CL	16.0	111.0	16.1	109.7	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2240	Sanitary Trench Backfill: SSMH-85, Shasta Daisy Street, 1' E of E side	4.0	BG	XPLORER / 3500 / 2025 / 1/22/2019	Ruckhaus, Manya
2241	Sanitary Trench Backfill: SSMH-85, Shasta Daisy Street, 1' E of E side	3.0	BG	XPLORER / 3500 / 2025 / 1/22/2019	Ruckhaus, Manya
2242	Sanitary Trench Backfill: SSMH-85, Shasta Daisy Street, 1' W of W side	2.0	BG	XPLORER / 3500 / 2025 / 1/22/2019	Ruckhaus, Manya
2243	Sanitary Trench Backfill: SSMH-85, Shasta Daisy Street, 1' W of W side	1.0	BG	XPLORER / 3500 / 2025 / 1/22/2019	Ruckhaus, Manya

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **2243:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test sanitary sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000173
11/14/2019
Report Date: 12/3/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2244		11/14/19	5	698A	SC	13.5	114.5	13.7	114.7	8	100	100	-2 / 2	A
2245		11/14/19	3	698A	CL	16.0	111.0	18.0	108.9	8	98	95	0 / 4	A
2246		11/14/19	3	698A	CL	16.0	111.0	17.8	109.1	8	98	95	0 / 4	A
2247		11/14/19	3	698A	CL	16.0	111.0	17.6	109.4	8	99	95	0 / 4	A
2248		11/14/19	3	698A	CL	16.0	111.0	18.1	109.3	8	98	95	0 / 4	A
2249		11/14/19	3	698A	CL	16.0	111.0	18.1	107.4	8	97	95	0 / 4	A
2250		11/14/19	3	698A	CL	16.0	111.0	17.2	109.3	8	98	95	0 / 4	A
2251		11/14/19	3	698A	CL	16.0	111.0	17.8	108.2	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2244	Sanitary Trench Backfill: Service, Lot 1 Block 1 Filing 7	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2245	Sanitary Trench Backfill: Service, Lot 1 Block 1 Filing 7	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2246	Sanitary Trench Backfill: Service, Lot 1 Block 1 Filing 7	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2247	Sanitary Trench Backfill: Service, Lot 1 Block 1 Filing 7	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2248	Sanitary Trench Backfill: Service, Lot 1 Block 1 Filing 7	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2249	Manhole: SSMH-85, Shasta Daisy Street, 1' N of N side	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2250	Manhole: SSMH-85, Shasta Daisy Street, 1' S of S side	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2251	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 40' S of SSMH-85	10.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000173
11/14/2019
Report Date: 12/3/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2252		11/14/19	3	698A	CL	16.0	111.0	17.4	109.5	8	99	95	0 / 4	A
2253		11/14/19	3	698A	CL	16.0	111.0	17.4	108.7	8	98	95	0 / 4	A
2254		11/14/19	3	698A	CL	16.0	111.0	17.7	109.2	8	98	95	0 / 4	A
2255		11/14/19	3	698A	CL	16.0	111.0	17.2	109.6	8	99	95	0 / 4	A
2256		11/14/19	3	698A	CL	16.0	111.0	18.0	108.3	8	98	95	0 / 4	A
2257		11/14/19	3	698A	CL	16.0	111.0	18.1	108.9	8	98	95	0 / 4	A
2258		11/14/19	3	698A	CL	16.0	111.0	18.5	107.7	8	97	95	0 / 4	A
2259		11/14/19	3	698A	CL	16.0	111.0	17.8	108.7	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2252	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 40' S of SSMH-85	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2253	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 40' S of SSMH-85	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2254	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 60' S of SSMH-85	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2255	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 60' S of SSMH-85	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2256	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 60' S of SSMH-85	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2257	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 70' S of SSMH-85	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2258	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 70' S of SSMH-85	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2259	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 70' S of SSMH-85	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000173
11/14/2019
Report Date: 12/3/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
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Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2260		11/14/19	3	698A	CL	16.0	111.0	18.1	109.1	8	98	95	0 / 4	A
2261		11/14/19	5	698A	SC	13.5	114.5	13.4	114.5	8	100	100	-2 / 2	A
2262		11/14/19	5	698A	SC	13.5	114.5	13.2	114.5	8	100	100	-2 / 2	A
2263		11/14/19	5	698A	SC	13.5	114.5	13.6	114.3	8	100	100	-2 / 2	A
2264		11/14/19	5	698A	SC	13.5	114.5	13.4	114.2	8	100	100	-2 / 2	A
2265		11/14/19	5	698A	SC	13.5	114.5	13.8	114.4	8	100	100	-2 / 2	A
2266		11/14/19	5	698A	SC	13.5	114.5	13.7	114.8	8	100	100	-2 / 2	A
2267		11/14/19	5	698A	SC	13.5	114.5	13.3	114.7	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2260	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 70' S of SSMH-85	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2261	Manhole: SSMH-89, Shasta Daisy Street, 1' W of W side	11.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2262	Manhole: SSMH-89, Shasta Daisy Street, 1' W of W side	10.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2263	Manhole: SSMH-89, Shasta Daisy Street, 1' E of E side	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2264	Manhole: SSMH-89, Shasta Daisy Street, 1' S of S side	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2265	Manhole: SSMH-89, Shasta Daisy Street, 1' S of S side	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2266	Manhole: SSMH-89, Shasta Daisy Street, 1' N of N side	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2267	Manhole: SSMH-89, Shasta Daisy Street, 1' N of N side	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000173
11/14/2019
Report Date: 12/3/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2268		11/14/19	5	698A	SC	13.5	114.5	13.5	114.9	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2268	Manhole: SSMH-89, Shasta Daisy Street, 1' W of W side	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **2268:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test sanitary sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader and rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000174
11/15/2019
Report Date: 12/3/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2269		11/15/19	5	698A	SC	13.5	114.5	13.6	114.8	8	100	100	-2 / 2	A
2270		11/15/19	5	698A	SC	13.5	114.5	13.3	114.6	8	100	100	-2 / 2	A
2271		11/15/19	5	698A	SC	13.5	114.5	13.4	114.5	8	100	100	-2 / 2	A
2272		11/15/19	5	698A	SC	13.5	114.5	13.5	114.6	8	100	100	-2 / 2	A
2273		11/15/19	5	698A	SC	13.5	114.5	13.5	114.4	8	100	100	-2 / 2	A
2274		11/15/19	5	698A	SC	13.5	114.5	13.7	114.2	8	100	100	-2 / 2	A
2275		11/15/19	5	698A	SC	13.5	114.5	13.8	114.4	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2269	Manhole: Shasta Daisy Street, SSMH-90, 1' N of N side	10.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2270	Manhole: Shasta Daisy Street, SSMH-90, 1' N of N side	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2271	Manhole: Shasta Daisy Street, SSMH-90, 1' S of S side	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2272	Manhole: Shasta Daisy Street, SSMH-90, 1' S of S side	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2273	Manhole: Shasta Daisy Street, SSMH-90, 1' W of W side	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2274	Manhole: Shasta Daisy Street, SSMH-90, 1' W of W side	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2275	Manhole: Shasta Daisy Street, SSMH-90, 1' E of E side	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **2275:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test sanitary sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader and rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000175
11/16/2019
Report Date: 12/3/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2276		11/16/19	4	698A	CL	16.0	109.0	17.5	106.7	8	98	95	0 / 4	A
2277		11/16/19	4	698A	CL	16.0	109.0	17.7	107.0	8	98	95	0 / 4	A
2278		11/16/19	4	698A	CL	16.0	109.0	17.9	107.0	8	98	95	0 / 4	A
2279		11/16/19	4	698A	CL	16.0	109.0	17.1	106.4	8	98	95	0 / 4	A
2280		11/16/19	4	698A	CL	16.0	109.0	17.5	106.5	8	98	95	0 / 4	A
2281		11/16/19	4	698A	CL	16.0	109.0	16.6	107.7	8	99	95	0 / 4	A
2282		11/16/19	4	698A	CL	16.0	109.0	18.1	105.7	8	97	95	0 / 4	A
2283		11/16/19	4	698A	CL	16.0	109.0	17.6	106.7	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2276	Manhole: SSMH-89, Shasta Daisy Street, 1' N of N side	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2277	Manhole: SSMH-89, Shasta Daisy Street, 1' S of S side	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2278	Manhole: SSMH-89, Shasta Daisy Street, 1' W of W side	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2279	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 75' S of SSMH-89	11.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2280	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 75' S of SSMH-89	10.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2281	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 75' S of SSMH-89	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2282	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 75' S of SSMH-89	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2283	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 75' S of SSMH-89	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000175
11/16/2019
Report Date: 12/3/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2284		11/16/19	4	698A	CL	16.0	109.0	17.3	106.9	8	98	95	0 / 4	A
2285		11/16/19	4	698A	CL	16.0	109.0	18.0	106.5	8	98	95	0 / 4	A
2286		11/16/19	4	698A	CL	16.0	109.0	17.7	106.0	8	97	95	0 / 4	A
2287		11/16/19	4	698A	CL	16.0	109.0	17.4	106.8	8	98	95	0 / 4	A
2288		11/16/19	4	698A	CL	16.0	109.0	17.9	106.5	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2284	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 55' S of SSMH-89	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2285	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 55' S of SSMH-89	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2286	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 55' S of SSMH-89	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2287	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 40' S of SSMH-89	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2288	Sanitary Trench Backfill: Mainline, Shasta Daisy Street, 40' S of SSMH-89	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **2288:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test sanitary sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader and rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000176
11/18/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2289		11/18/19	3	698A	CL	16.0	111.0	17.1	107.5	8	97	95	0 / 4	A
2290		11/18/19	3	698A	CL	16.0	111.0	17.1	107.5	8	97	95	0 / 4	A
2291		11/18/19	3	698A	CL	16.0	111.0	17.0	107.8	8	97	95	0 / 4	A
2292		11/18/19	3	698A	CL	16.0	111.0	17.5	107.5	8	97	95	0 / 4	A
2293		11/18/19	3	698A	CL	16.0	111.0	17.1	107.9	8	97	95	0 / 4	A
2294		11/18/19	3	698A	CL	16.0	111.0	16.8	107.8	8	97	95	0 / 4	A
2295		11/18/19	3	698A	CL	16.0	111.0	17.1	108.5	8	98	95	0 / 4	A
2296		11/18/19	3	698A	CL	16.0	111.0	17.0	108.5	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2289	Manhole: SSMH-82. Shasta Daisy St and Hop Clover Ave.	12.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2290	Manhole: SSMH-82. Shasta Daisy St and Hop Clover Ave. 1' W of W side	12.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2291	Manhole: SSMH-82. Shasta Daisy St and Hop Clover Ave. 1' W of W side	11.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2292	Manhole: SSMH-82. Shasta Daisy St and Hop Clover Ave. 1' N of N side	10.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2293	Manhole: SSMH-82. Shasta Daisy St and Hop Clover Ave. 1' N of N side	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2294	Manhole: SSMH-82. Shasta Daisy St and Hop Clover Ave. 1' E of E side	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2295	Manhole: SSMH-82. Shasta Daisy St and Hop Clover Ave. 1' E of E side	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2296	Manhole: SSMH-82. Shasta Daisy St and Hop Clover Ave. 1' S of S side	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000176
11/18/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2297		11/18/19	3	698A	CL	16.0	111.0	16.9	108.4	8	98	95	0 / 4	A
2298		11/18/19	3	698A	CL	16.0	111.0	17.3	108.6	8	98	95	0 / 4	A
2299		11/18/19	3	698A	CL	16.0	111.0	17.1	108.3	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2297	Manhole: SSMH-82. Shasta Daisy St and Hop Clover Ave. 1' S of S side	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2298	Manhole: SSMH-82. Shasta Daisy St and Hop Clover Ave. 1' S of S side	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2299	Manhole: SSMH-82. Shasta Daisy St and Hop Clover Ave. 1' S of S side	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **2299:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000177
11/19/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2300		11/19/19	3	698A	CL	16.0	111.0	17.1	108.7	8	98	95	0 / 4	A
2301		11/19/19	3	698A	CL	16.0	111.0	17.7	108.0	8	97	95	0 / 4	A
2302		11/19/19	3	698A	CL	16.0	111.0	17.9	108.1	8	97	95	0 / 4	A
2303		11/19/19	8	698A	CL	18.0	109.0	20.4	105.3	8	97	95	0 / 4	A
2304		11/19/19	8	698A	CL	18.0	109.0	19.7	105.9	8	97	95	0 / 4	A
2305		11/19/19	8	698A	CL	18.0	109.0	20.5	105.5	8	97	95	0 / 4	A
2306		11/19/19	8	698A	CL	18.0	109.0	19.6	106.1	8	97	95	0 / 4	A
2307		11/19/19	8	698A	CL	18.0	109.0	19.6	106.5	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2300	Manhole: SSMH-82. Shasta Daisy St and Hop Clover Ave. 1' W of W side	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2301	Manhole: SSMH-82. Shasta Daisy St and Hop Clover Ave. 1' N of N side	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2302	Manhole: SSMH-82. Shasta Daisy St and Hop Clover Ave. 1' E of E side	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2303	Sanitary Trench Backfill: Service. Lot 3 Block 2 Filing 16.	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2304	Sanitary Trench Backfill: Service. Lot 3 Block 2 Filing 16.	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2305	Sanitary Trench Backfill: Service. Lot 3 Block 2 Filing 16.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2306	Sanitary Trench Backfill: Service. Lot 3 Block 2 Filing 16.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2307	Sanitary Trench Backfill: Service. Lot 3 Block 2 Filing 16.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000177
11/19/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2308		11/19/19	8	698A	CL	18.0	109.0	19.3	106.3	8	98	95	0 / 4	A
2309		11/19/19	8	698A	CL	18.0	109.0	19.8	106.2	8	97	95	0 / 4	A
2310		11/19/19	8	698A	CL	18.0	109.0	20.1	105.9	8	97	95	0 / 4	A
2311		11/19/19	8	698A	CL	18.0	109.0	19.6	106.1	8	97	95	0 / 4	A
2312		11/19/19	8	698A	CL	18.0	109.0	21.0	105.3	8	97	95	0 / 4	A
2313		11/19/19	8	698A	CL	18.0	109.0	20.4	105.8	8	97	95	0 / 4	A
2314		11/19/19	8	698A	CL	18.0	109.0	19.4	106.3	8	98	95	0 / 4	A
2315		11/19/19	8	698A	CL	18.0	109.0	19.5	106.7	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2308	Sanitary Trench Backfill: Service. Lot 3 Block 2 Filing 16.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2309	Sanitary Trench Backfill: Service. Lot 3 Block 2 Filing 16.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2310	Sanitary Trench Backfill: Service. Lot 3 Block 2 Filing 16.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2311	Sanitary Trench Backfill: Service. Lot 3 Block 2 Filing 16.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2312	Sanitary Trench Backfill: Service. Lot 4 Block 2 Filing 16.	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2313	Sanitary Trench Backfill: Service. Lot 4 Block 2 Filing 16.	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2314	Sanitary Trench Backfill: Service. Lot 4 Block 2 Filing 16.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2315	Sanitary Trench Backfill: Service. Lot 4 Block 2 Filing 16.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000177
11/19/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2316		11/19/19	8	698A	CL	18.0	109.0	19.9	106.4	8	98	95	0 / 4	A
2317		11/19/19	8	698A	CL	18.0	109.0	20.2	106.3	8	98	95	0 / 4	A
2318		11/19/19	8	698A	CL	18.0	109.0	19.5	106.2	8	97	95	0 / 4	A
2319		11/19/19	8	698A	CL	18.0	109.0	19.8	106.5	8	98	95	0 / 4	A
2320		11/19/19	8	698A	CL	18.0	109.0	19.3	106.8	8	98	95	0 / 4	A
2321		11/19/19	8	698A	CL	18.0	109.0	19.9	106.6	8	98	95	0 / 4	A
2322		11/19/19	8	698A	CL	18.0	109.0	19.6	106.6	8	98	95	0 / 4	A
2323		11/19/19	8	698A	CL	18.0	109.0	19.5	106.1	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2316	Sanitary Trench Backfill: Service. Lot 4 Block 2 Filing 16.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2317	Sanitary Trench Backfill: Service. Lot 4 Block 2 Filing 16.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2318	Sanitary Trench Backfill: Service. Lot 4 Block 2 Filing 16.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2319	Sanitary Trench Backfill: Service. Lot 4 Block 2 Filing 16.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2320	Sanitary Trench Backfill: Service. Lot 4 Block 2 Filing 16.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2321	Sanitary Trench Backfill: Service. Lot 1 Block 2 Filing 16.	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2322	Sanitary Trench Backfill: Service. Lot 1 Block 2 Filing 16.	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2323	Sanitary Trench Backfill: Service. Lot 1 Block 2 Filing 16.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000177
11/19/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2324		11/19/19	8	698A	CL	18.0	109.0	20.3	106.5	8	98	95	0 / 4	A
2325		11/19/19	8	698A	CL	18.0	109.0	20.0	106.9	8	98	95	0 / 4	A
2326		11/19/19	8	698A	CL	18.0	109.0	19.5	106.8	8	98	95	0 / 4	A
2327		11/19/19	8	698A	CL	18.0	109.0	19.8	107.0	8	98	95	0 / 4	A
2328		11/19/19	8	698A	CL	18.0	109.0	19.6	106.9	8	98	95	0 / 4	A
2329		11/19/19	8	698A	CL	18.0	109.0	19.7	106.6	8	98	95	0 / 4	A
2330		11/19/19	8	698A	CL	18.0	109.0	19.9	106.9	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2324	Sanitary Trench Backfill: Service. Lot 1 Block 2 Filing 16.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2325	Sanitary Trench Backfill: Service. Lot 1 Block 2 Filing 16.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2326	Sanitary Trench Backfill: Service. Lot 2 Block 2 Filing 16.	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2327	Sanitary Trench Backfill: Service. Lot 2 Block 2 Filing 16.	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2328	Sanitary Trench Backfill: Service. Lot 2 Block 2 Filing 16.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2329	Sanitary Trench Backfill: Service. Lot 2 Block 2 Filing 16.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2330	Sanitary Trench Backfill: Service. Lot 2 Block 2 Filing 16.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **2330:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

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Denver
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Compaction Test Report

Report #: SNG-000178
11/20/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2331		11/20/19	8	698A	CL	18.0	109.0	19.4	106.2	8	97	95	0 / 4	A
2332		11/20/19	8	698A	CL	18.0	109.0	19.3	106.9	8	98	95	0 / 4	A
2333		11/20/19	8	698A	CL	18.0	109.0	19.9	106.9	8	98	95	0 / 4	A
2334		11/20/19	8	698A	CL	18.0	109.0	19.4	106.9	8	98	95	0 / 4	A
2335		11/20/19	8	698A	CL	18.0	109.0	20.0	106.9	8	98	95	0 / 4	A
2336		11/20/19	8	698A	CL	18.0	109.0	19.4	107.0	8	98	95	0 / 4	A
2337		11/20/19	8	698A	CL	18.0	109.0	20.2	106.2	8	97	95	0 / 4	A
2338		11/20/19	8	698A	CL	18.0	109.0	20.1	106.7	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2331	Sanitary Trench Backfill: Mainline. Adjacent to Lot 2 Block 2 Filing 16.	10.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2332	Sanitary Trench Backfill: Mainline. Adjacent to Lot 2 Block 2 Filing 16.	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2333	Sanitary Trench Backfill: Mainline. Adjacent to Lot 2 Block 2 Filing 16.	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2334	Sanitary Trench Backfill: Mainline. Adjacent to Lot 5 Block 2 Filing 16.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2335	Sanitary Trench Backfill: Mainline. Adjacent to Lot 5 Block 2 Filing 16.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2336	Sanitary Trench Backfill: Mainline. Adjacent to Lot 3 Block 2 Filing 16.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2337	Sanitary Trench Backfill: Mainline. Adjacent to Lot 3 Block 2 Filing 16.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2338	Sanitary Trench Backfill: Mainline. Adjacent to Lot 3 Block 2 Filing 16.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000178
11/20/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2339		11/20/19	8	698A	CL	18.0	109.0	20.8	106.3	8	98	95	0 / 4	A
2340		11/20/19	8	698A	CL	18.0	109.0	20.0	107.0	8	98	95	0 / 4	A
2341		11/20/19	8	698A	CL	18.0	109.0	20.2	106.6	8	98	95	0 / 4	A
2342		11/20/19	8	698A	CL	18.0	109.0	20.2	106.7	8	98	95	0 / 4	A
2343		11/20/19	8	698A	CL	18.0	109.0	20.2	106.8	8	98	95	0 / 4	A
2344		11/20/19	8	698A	CL	18.0	109.0	20.3	106.6	8	98	95	0 / 4	A
2345		11/20/19	8	698A	CL	18.0	109.0	20.2	106.9	8	98	95	0 / 4	A
2346		11/20/19	8	698A	CL	18.0	109.0	20.4	106.8	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2339	Sanitary Trench Backfill: Mainline. Adjacent to Lot 3 Block 2 Filing 16.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2340	Sanitary Trench Backfill: Service. Lot 5 Block 2 Filing 16.	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2341	Sanitary Trench Backfill: Service. Lot 5 Block 2 Filing 16.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2342	Sanitary Trench Backfill: Service. Lot 5 Block 2 Filing 16.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2343	Sanitary Trench Backfill: Service. Lot 5 Block 2 Filing 16.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2344	Sanitary Trench Backfill: Service. Lot 6 Block 2 Filing 16.	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2345	Sanitary Trench Backfill: Service. Lot 6 Block 2 Filing 16.	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2346	Sanitary Trench Backfill: Service. Lot 6 Block 2 Filing 16.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000178
11/20/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2347		11/20/19	8	698A	CL	18.0	109.0	19.9	106.9	8	98	95	0 / 4	A
2348		11/20/19	8	698A	CL	18.0	109.0	20.3	106.9	8	98	95	0 / 4	A
2349		11/20/19	8	698A	CL	18.0	109.0	21.0	106.3	8	98	95	0 / 4	A
2350		11/20/19	8	698A	CL	18.0	109.0	21.1	106.4	8	98	95	0 / 4	A
2351		11/20/19	8	698A	CL	18.0	109.0	20.4	106.7	8	98	95	0 / 4	A
2352		11/20/19	8	698A	CL	18.0	109.0	20.2	106.9	8	98	95	0 / 4	A
2353		11/20/19	8	698A	CL	18.0	109.0	20.5	106.7	8	98	95	0 / 4	A
2354		11/20/19	8	698A	CL	18.0	109.0	20.1	106.7	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2347	Sanitary Trench Backfill: Service. Lot 6 Block 2 Filing 16.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2348	Sanitary Trench Backfill: Service. Lot 6 Block 2 Filing 16.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2349	Manhole: SSMH-102. Shasta Daisy St. 1' S of S side.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2350	Manhole: SSMH-102. Shasta Daisy St. 1' S of S side.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2351	Manhole: SSMH-102. Shasta Daisy St. 1' S of S side.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2352	Manhole: SSMH-102. Shasta Daisy St. 1' W of W side.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2353	Manhole: SSMH-102. Shasta Daisy St. 1' N of N side.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2354	Manhole: SSMH-102. Shasta Daisy St. 1' E of E side.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **2354:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000179
11/21/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2355		11/21/19	8	698A	CL	18.0	109.0	19.2	107.2	8	98	95	0 / 4	A
2356		11/21/19	8	698A	CL	18.0	109.0	20.2	106.1	8	97	95	0 / 4	A
2357		11/21/19	8	698A	CL	18.0	109.0	19.4	106.9	8	98	95	0 / 4	A
2358		11/21/19	8	698A	CL	18.0	109.0	19.6	106.7	8	98	95	0 / 4	A
2359		11/21/19	8	698A	CL	18.0	109.0	19.9	106.8	8	98	95	0 / 4	A
2360		11/21/19	8	698A	CL	18.0	109.0	20.2	106.7	8	98	95	0 / 4	A
2361		11/21/19	8	698A	CL	18.0	109.0	20.4	106.6	8	98	95	0 / 4	A
2362		11/21/19	8	698A	CL	18.0	109.0	19.9	106.7	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2355	Sanitary Trench Backfill: Service. Lot 1 Block 2 Filing 16.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2356	Sanitary Trench Backfill: Service. Lot 1 Block 2 Filing 16.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2357	Sanitary Trench Backfill: Service. Lot 1 Block 2 Filing 16.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2358	Sanitary Trench Backfill: Service. Lot 1 Block 2 Filing 16.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2359	Sanitary Trench Backfill: Service. Lot 2 Block 2 Filing 16.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2360	Sanitary Trench Backfill: Service. Lot 2 Block 2 Filing 16.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2361	Sanitary Trench Backfill: Service. Lot 2 Block 2 Filing 16.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2362	Sanitary Trench Backfill: Service. Lot 2 Block 2 Filing 16.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **2362:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000180
11/23/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2363		11/23/19	8	698A	CL	18.0	109.0	19.4	107.0	8	98	95	0 / 4	A
2364		11/23/19	8	698A	CL	18.0	109.0	19.3	107.0	8	98	95	0 / 4	A
2365		11/23/19	8	698A	CL	18.0	109.0	19.2	107.2	8	98	95	0 / 4	A
2366		11/23/19	8	698A	CL	18.0	109.0	19.1	106.9	8	98	95	0 / 4	A
2367		11/23/19	8	698A	CL	18.0	109.0	19.6	106.9	8	98	95	0 / 4	A
2368		11/23/19	8	698A	CL	18.0	109.0	19.8	106.8	8	98	95	0 / 4	A
2369		11/23/19	8	698A	CL	18.0	109.0	20.1	106.7	8	98	95	0 / 4	A
2370		11/23/19	8	698A	CL	18.0	109.0	20.0	106.5	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2363	Sanitary Trench Backfill: Service. Lot 5 Block 2 Filing 16.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2364	Sanitary Trench Backfill: Service. Lot 5 Block 2 Filing 16.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2365	Sanitary Trench Backfill: Service. Lot 5 Block 2 Filing 16.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2366	Sanitary Trench Backfill: Service. Lot 5 Block 2 Filing 16.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2367	Sanitary Trench Backfill: Service. Lot 6 Block 2 Filing 16.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2368	Sanitary Trench Backfill: Service. Lot 6 Block 2 Filing 16.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2369	Sanitary Trench Backfill: Service. Lot 6 Block 2 Filing 16.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2370	Sanitary Trench Backfill: Service. Lot 6 Block 2 Filing 16.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000180
11/23/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2371		11/23/19	8	698A	CL	18.0	109.0	19.3	107.2	8	98	95	0 / 4	A
2372		11/23/19	8	698A	CL	18.0	109.0	19.2	107.5	8	99	95	0 / 4	A
2373		11/23/19	8	698A	CL	18.0	109.0	19.5	107.3	8	98	95	0 / 4	A
2374		11/23/19	8	698A	CL	18.0	109.0	19.8	107.2	8	98	95	0 / 4	A
2375		11/23/19	8	698A	CL	18.0	109.0	19.5	106.8	8	98	95	0 / 4	A
2376		11/23/19	8	698A	CL	18.0	109.0	19.8	107.0	8	98	95	0 / 4	A
2377		11/23/19	8	698A	CL	18.0	109.0	19.6	106.9	8	98	95	0 / 4	A
2378		11/23/19	8	698A	CL	18.0	109.0	19.3	107.4	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2371	Manhole: SSMH-79. Shasta Daisy St. 1' E of E side.	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2372	Manhole: SSMH-79. Shasta Daisy St. 1' E of E side.	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2373	Manhole: SSMH-79. Shasta Daisy St. 1' W of W side.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2374	Manhole: SSMH-79. Shasta Daisy St. 1' S of S side.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2375	Manhole: SSMH-79. Shasta Daisy St. 1' S of S side.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2376	Manhole: SSMH-79. Shasta Daisy St. 1' N of N side.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2377	Manhole: SSMH-79. Shasta Daisy St. 1' N of N side.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2378	Manhole: SSMH-79. Shasta Daisy St. 1' N of N side.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000180
11/23/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2379		11/23/19	8	698A	CL	18.0	109.0	19.3	107.6	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2379	Manhole: SSMH-79. Shasta Daisy St. 1' W of W side.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **2379:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000181
11/25/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2380		11/25/19	3	698A	CL	16.0	111.0	17.5	107.7	8	97	95	0 / 4	A
2381		11/25/19	3	698A	CL	16.0	111.0	17.5	107.7	8	97	95	0 / 4	A
2382		11/25/19	3	698A	CL	16.0	111.0	17.1	108.2	8	97	95	0 / 4	A
2383		11/25/19	3	698A	CL	16.0	111.0	17.8	107.9	8	97	95	0 / 4	A
2384		11/25/19	3	698A	CL	16.0	111.0	16.9	108.1	8	97	95	0 / 4	A
2385		11/25/19	3	698A	CL	16.0	111.0	17.7	107.9	8	97	95	0 / 4	A
2386		11/25/19	3	698A	CL	16.0	111.0	17.1	107.7	8	97	95	0 / 4	A
2387		11/25/19	3	698A	CL	16.0	111.0	18.1	107.6	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2380	Sanitary Trench Backfill: SSMH-79. Shasta Daisy st and Bird's Foot Ave. 40' W of intersection	13.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2381	Sanitary Trench Backfill: SSMH-79. Shasta Daisy st and Bird's Foot Ave. 40' W of intersection	12.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2382	Sanitary Trench Backfill: SSMH-79. Shasta Daisy st and Bird's Foot Ave. 40' W of intersection	11.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2383	Sanitary Trench Backfill: SSMH-79. Shasta Daisy st and Bird's Foot Ave. 40' W of intersection	10.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2384	Sanitary Trench Backfill: SSMH-79. Shasta Daisy st and Bird's Foot Ave. 60' W of intersection	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2385	Sanitary Trench Backfill: SSMH-79. Shasta Daisy st and Bird's Foot Ave. 60' W of intersection	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2386	Sanitary Trench Backfill: SSMH-79. Shasta Daisy st and Bird's Foot Ave. 60' W of intersection	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2387	Sanitary Trench Backfill: SSMH-79. Shasta Daisy st and Bird's Foot Ave. 60' W of intersection	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **2387:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000182
12/02/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2388		12/2/19	3	698A	CL	16.0	111.0	16.1	105.1	8	95	95	0 / 4	A
2389		12/2/19	3	698A	CL	16.0	111.0	16.1	105.2	8	95	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2388	Sanitary Trench Backfill: Mainline. Shasta Daisy St & Birdsfoot Ave. 10' W of intersection.	3.0	BG	XPLORER / 3500 / 2027 / 1/11/2019	Rabie, Dennis
2389	Sanitary Trench Backfill: Mainline. Shasta Daisy St & Birdsfoot Ave. 10' W of intersection.	2.0	BG	XPLORER / 3500 / 2027 / 1/11/2019	Rabie, Dennis

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **2389:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000183
12/03/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2390		12/3/19	3	698A	CL	16.0	111.0	16.1	112.3	8	101	95	0 / 4	A
2391		12/3/19	3	698A	CL	16.0	111.0	16.9	111.5	8	100	95	0 / 4	A
2392		12/3/19	3	698A	CL	16.0	111.0	18.1	108.7	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2390	Sanitary Trench Backfill: Mainline. Shasta Daisy St & Birdsfoot Ave. 10' W of intersection.	4.0	BG	XPLORER / 3500 / 2027 / 1/11/2019	Rabie, Dennis
2391	Sanitary Trench Backfill: Mainline. Shasta Daisy St & Birdsfoot Ave. 10' W of intersection.	5.0	BG	XPLORER / 3500 / 2027 / 1/11/2019	Rabie, Dennis
2392	Sanitary Trench Backfill: Mainline. Shasta Daisy St & Birdsfoot Ave. 10' W of intersection.	1.0	BG	XPLORER / 3500 / 2027 / 1/11/2019	Rabie, Dennis

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **2392:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer trench backfill. We observed the contractor place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000184
02/12/2020
Report Date: 2/17/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2393		2/12/20	8	698A	CL	18.0	109.0	20.0	105.7	8	97	95	0 / 4	A
2394		2/12/20	8	698A	CL	18.0	109.0	20.3	104.4	8	96	95	0 / 4	A
2395		2/12/20	8	698A	CL	18.0	109.0	19.6	105.7	8	97	95	0 / 4	A
2396		2/12/20	8	698A	CL	18.0	109.0	20.3	105.4	8	97	95	0 / 4	A
2397		2/12/20	8	698A	CL	18.0	109.0	20.4	105.5	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2393	Manhole: SSMH-132, Hop Clover Trail and Shasta Daisy Lane, 1' W of W side	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2394	Manhole: SSMH-132, Hop Clover Trail and Shasta Daisy Lane, 1' S of S side	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2395	Manhole: SSMH-132, Hop Clover Trail and Shasta Daisy Lane, 1' N of N side	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2396	Manhole: SSMH-132. Hop Clover Trl and Shasta Daisy Ln. 1' E of E side	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
2397	Manhole: SSMH-132, Hop Clover Trail and Shasta Daisy Lane, 1' W of W side	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **2397:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test sanitary sewer manhole backfill. We observed the contractor process/place fill with the excavator, add moisture with the water truck, and apply compactive effort with the sheepsfoot roller on the excavator.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000185
02/13/2020
Report Date: 2/17/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2398		2/13/20	8	698A	CL	18.0	109.0	19.0	103.2	8	95	95	0 / 4	A
2399		2/13/20	8	698A	CL	18.0	109.0	18.4	104.8	8	96	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2398	Manhole: W of MH 56, S of Hop Clover Trail, STA 28+83.32	8.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly
2399	Manhole: W of MH 56, S of Hop Clover Trail, STA 28+83.32	7.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000186
02/13/2020
Report Date: 3/2/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2400		2/13/20	8	698A	CL	18.0	109.0	18.0	106.9	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2400	Manhole: W of MH 56, S of Hop Clover Trail, STA 28+83.32	6.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **2400:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer manhole backfill. We observed the contractor process/place fill with the excavator and loader, add moisture with the water truck, and apply compactive effort with the sheepsfoot roller.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000187
02/14/2020
Report Date: 3/2/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2401		2/14/20	8	698A	CL	18.0	109.0	21.1	103.8	8	95	95	0 / 4	A
2402		2/14/20	8	698A	CL	18.0	109.0	22.0	104.0	8	95	95	0 / 4	A
2403		2/14/20	8	698A	CL	18.0	109.0	20.5	103.4	8	95	95	0 / 4	A
2404		2/14/20	8	698A	CL	18.0	109.0	19.9	104.9	8	96	95	0 / 4	A
2405		2/14/20	8	698A	CL	18.0	109.0	19.1	104.2	8	96	95	0 / 4	A
2406		2/14/20	8	698A	CL	18.0	109.0	20.6	104.8	8	96	95	0 / 4	A
2407		2/14/20	8	698A	CL	18.0	109.0	19.9	104.7	8	96	95	0 / 4	A
2408		2/14/20	8	698A	CL	18.0	109.0	19.2	103.1	8	95	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2401	Manhole: MH 56, Hop Clover Trail, STA 28+83.32, 1' W of MH	7.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly
2402	Manhole: MH 56, Hop Clover Trail, STA 28+83.32, 1' E of MH	6.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly
2403	Manhole: MH 56, Hop Clover Trail, STA 28+83.32, 1' N of MH	5.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly
2404	Manhole: SSMH 131, Hop Clover Trail, STA 28+83.32, 1' N of MH	8.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly
2405	Manhole: SSMH 131, Hop Clover Trail, STA 28+83.32, 1' S of MH	7.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly
2406	Manhole: SSMH 131, Hop Clover Trail, STA 28+83.32, 1' E of MH	6.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly
2407	Manhole: SSMH 131, Hop Clover Trail, STA 28+83.32, 1' W of MH	5.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly
2408	Manhole: SSMH 131, Hop Clover Trail, STA 28+83.32, 1' S of MH	4.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000187
02/14/2020
Report Date: 3/2/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2409		2/14/20	8	698A	CL	18.0	109.0	19.1	103.1	8	95	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2409	Manhole: SSMH 131, Hop Clover Trail, STA 28+83.32, 1' N of MH	3.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **2409:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer manhole backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the sheepsfoot roller.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000188
02/15/2020
Report Date: 3/2/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-315
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

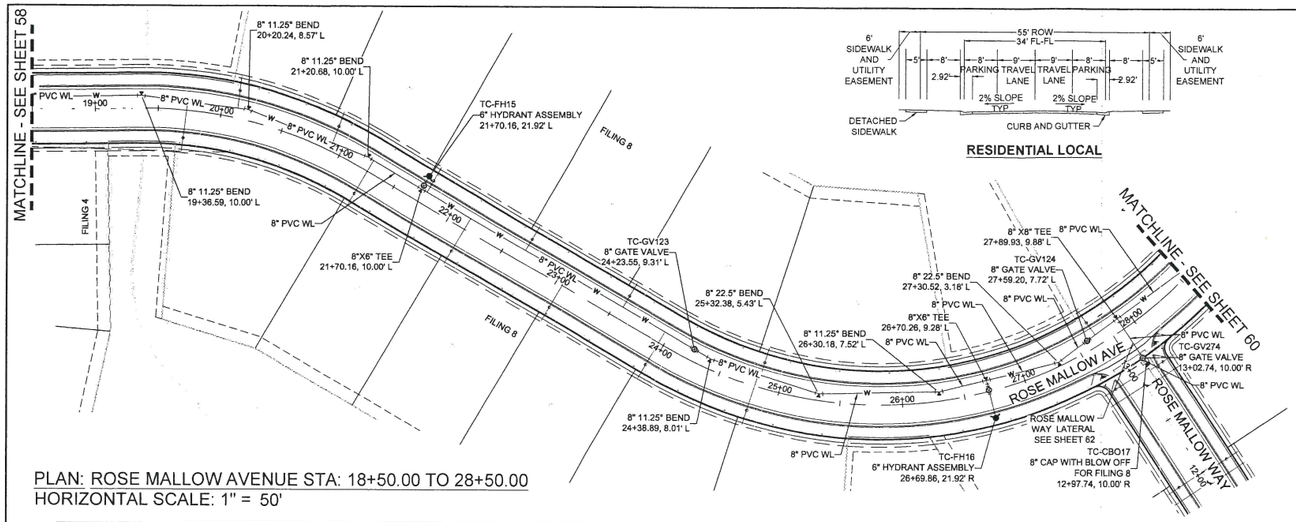
Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
2410		2/15/20	8	698A	CL	18.0	109.0	20.5	103.1	8	95	95	0 / 4	A
2411		2/15/20	8	698A	CL	18.0	109.0	19.4	103.1	8	95	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
2410	Manhole: SSMH 130, Hop Clover Trail, STA 44+20.21, 1' N of MH	4.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly
2411	Manhole: SSMH 130, Hop Clover Trail, STA 44+20.21, 1' W of MH	5.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **2411:** As requested by Rick with Kelley Trucking, site visits were made to observe and test sanitary sewer manhole backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the sheepsfoot roller.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

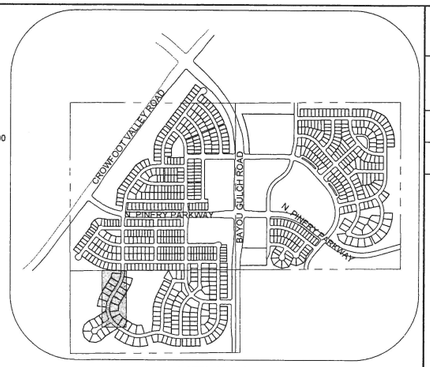


PLAN: ROSE MALLOW AVENUE STA: 18+50.00 TO 28+50.00
HORIZONTAL SCALE: 1" = 50'

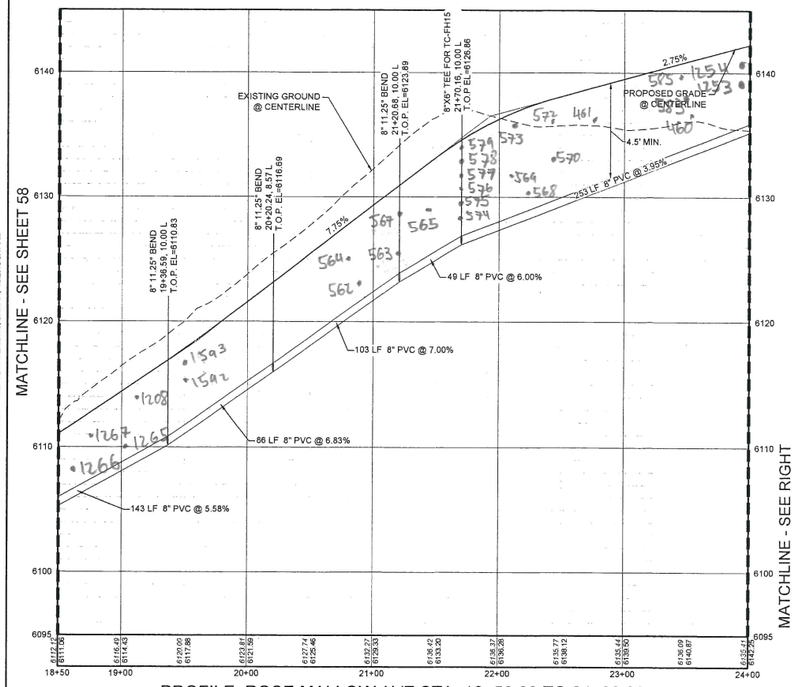
RESIDENTIAL LOCAL

SCALE: 1" = 50'

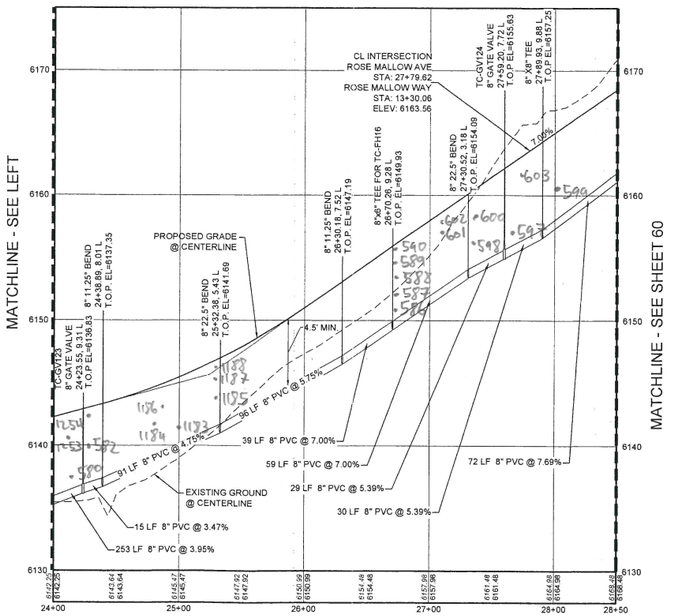
WATER SERVICE TABLE		
FILING, LOT, BLOCK	STREET	STATIONING
F8, B1, L1	ROSE MALLOW AVE	19+72.71
F8, B1, L2	ROSE MALLOW AVE	21+25.68
F8, B1, L3	ROSE MALLOW AVE	22+15.68
F8, B1, L4	ROSE MALLOW AVE	23+05.68
F8, B1, L5	ROSE MALLOW AVE	23+95.68
F8, B2, L1	ROSE MALLOW AVE	20+12.19
F8, B2, L2	ROSE MALLOW AVE	20+91.06
F8, B2, L3	ROSE MALLOW AVE	21+75.16
F8, B2, L4	ROSE MALLOW AVE	22+66.16
F8, B2, L5	ROSE MALLOW AVE	23+56.87
F8, B2, L6	ROSE MALLOW AVE	24+82.03
F8, B2, L7	ROSE MALLOW AVE	27+67.44



KEYMAP
N.T.S.



PROFILE: ROSE MALLOW AVE STA: 18+50.00 TO 24+00.00
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'



PROFILE: ROSE MALLOW AVE STA: 24+00.00 TO 28+50.00
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

LEGEND

BLOCK NUMBER	PROPOSED RANGE POINT
LOT TYPE	CENTERLINE
LOT NUMBER	RIGHT-OF-WAY
PROPOSED BUTTERFLY VALVE	PROPERTY LINE
PROPOSED CAP WITH END OF LINE BLOWOFF	EDGE OF PAVEMENT
PROPOSED REDUCER	PROPOSED DIRECTION OF FLOW
PROPOSED VALVE	PROPOSED SLOPE & DIRECTION
PROPOSED FIRE HYDRANT	EXISTING 5' CONTOUR
PROPOSED WL FITTING WITH THRUST BLOCK	EXISTING 1' CONTOUR
PROPOSED FLARED END SECTION	PROPOSED 5' CONTOUR
PROPOSED LOW POINT BLOW-OFF	PROPOSED 1' CONTOUR
PROPOSED AIR VALVE	PROPOSED STORM DRAIN
FUTURE PHASE VALVE	PROPOSED SEWER LINE WITH MANHOLE
FUTURE FIRE HYDRANT	PROPOSED SEWER LATERAL
PROPOSED LIGHT POLE	PROPOSED WATER LINE
PROPOSED SIDEWALK	PROPOSED WATER LATERAL W/ METER
PROPOSED SIDEWALK RAMP	SECTION LINE
EXISTING ELEVATION	FILING BOUNDARY
PROPOSED DESIGN ELEVATION	EXISTING FIBER OPTIC LINE
PROPOSED STORM DRAIN INLET	EXISTING OVERHEAD POWER
PROPOSED STORM DRAIN MANHOLE	EXISTING TELEPHONE LINE

ABBREVIATIONS

AD	ANGLE DIFFERENCE	MH	MANHOLE
AV	AIR VAC RELEASE VALVE	N.T.S.	NOT TO SCALE
BVC	BEGIN VERTICAL CURVE	PVC	POLYVINYL CHLORIDE
BVP	BEGIN VERTICAL PROFILE	PVI	PT. OF VERTICAL INTERSECTION
CBO	CAP WITH BLOW OFF	PVT	POINT OF VERTICAL TANGENT
CRR	CURB RETURN RADIUS	RCBC	REINFORCED CONCRETE BOX CULVERT
EL	ELEVATION	RCP	REINFORCED CONCRETE PIPE
EP	EDGE OF PAVEMENT	ROW	RIGHT OF WAY
EVC	END VERTICAL CURVE	SC	SANITARY CAP
EVP	END VERTICAL PROFILE	SD	STORM DRAIN
FG	FINISHED GROUND	SL	SECTION LINE
FH	FIRE HYDRANT	SS	SANITARY SEWER
FL	FLOW LINE	STA	STATION
GV	GATE VALVE	T.O.P.	TOP OF PIPE
HCR	HANDICAP CURB RAMP	UE	UTILITY EASEMENT
HP	HIGH POINT	VC	VERTICAL CURVE
INV	INVERT	WL	WATER LINE
K	CURVATURE COEFFICIENT	WLC	WATER LINE CONNECTION
LF	LINEAR FEET	WSE	WATER SURFACE ELEVATION

APPROVED
NOV 29 2018
PARKER WATER AND SANITATION DISTRICT

CALL 811
TWO WORKING DAYS
BEFORE YOU DIG
1-800-922-1987
UNCC UTILITY NOTIFICATION CENTER OF COLORADO

BENCHMARK
DOUGLAS COUNTY CONTROL POINT KNOWN AS 1.060032, BEING A 3-1/4" ALUMINUM CAP, BEING LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 6 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, HAVING A PUBLISHED ELEVATION OF 1799.2870 METERS (5903.13 FEET) NAVD '88 DATUM.

BASIS OF BEARINGS:
THE EAST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 9 BEING MONUMENTED AT THE NORTHEAST CORNER OF SAID SECTION 9 BY A 3-1/4" ALUMINUM CAP STAMPED LS 23053 AND AT THE EAST QUARTER CORNER OF SAID SECTION 9 BY A 2-1/2" ALUMINUM CAP STAMPED LS 6935 BEING CONSIDERED TO BEAR SOUTH 00°15'06" EAST, 2648.70 FEET.

PREPARED UNDER THE SUPERVISION OF
COLORADO LICENSED BRIAN P. WILSON P.E. 0050067 PROFESSIONAL ENGINEER
BRIAN P. WILSON
COLORADO P.E. 0050067

No.	Revisions	Date	Init.	Appr.	Date

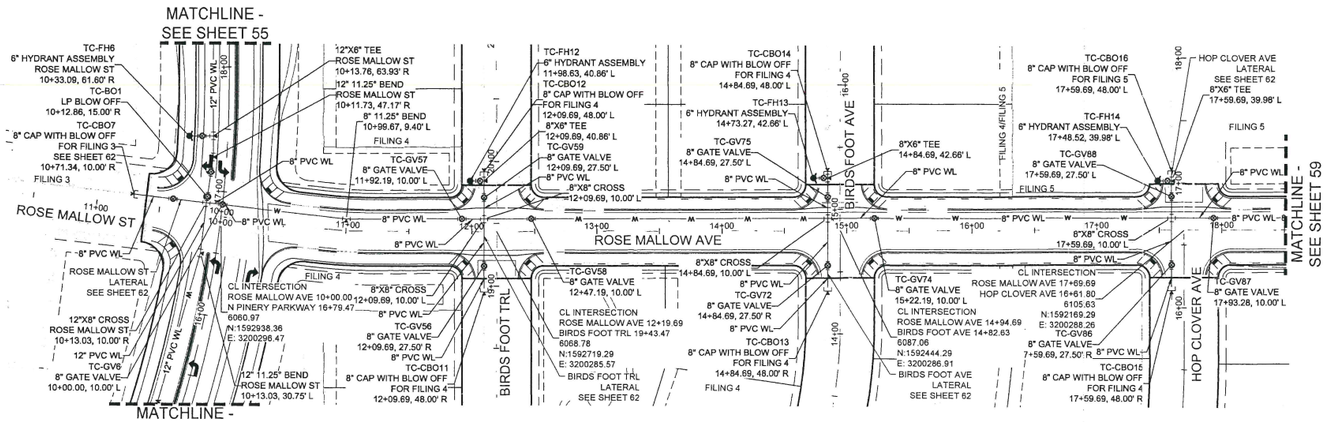
CVL CONSULTANTS
10333 E. Dry Creek Rd.
Suite 240
Englewood, CO 80112
PHONE: (720) 482-9526
Fax: (720) 482-9546

HR 935 LLC
7333 South Alton Way
CENTENNIAL, CO 80112

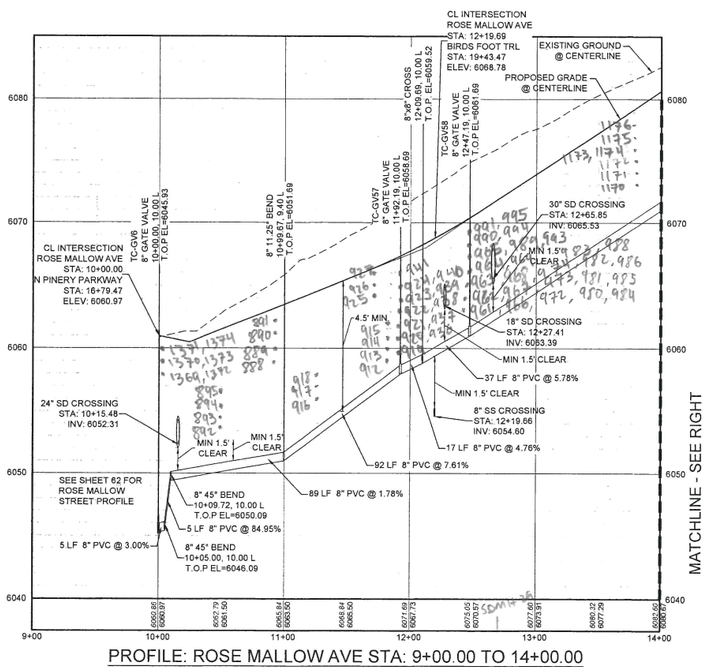
TRAILS AT CROWFOOT
FILING 1 CONSTRUCTION DRAWINGS
WATER PLAN & PROFILE
ROSE MALLOW AVENUE

SCALE:	AS SHOWN		
DRAWN BY:	RHR	FILE NO:	81302837.01
CHECKED BY:	JJ		
DATE:	APRIL 2017		
SHEET NUMBER	59		

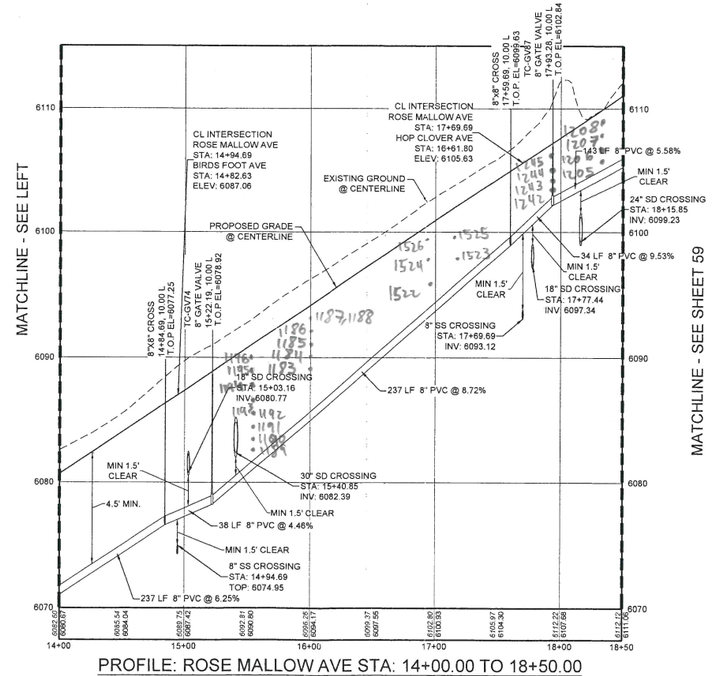
N:\PROJECTS\HESS RANCH\CAD\ENGINEERING\SHEET SETS\CD\SF1\PARKER WATER AND SANITATION\WATER PLAN AND PROFILE\F1 ROSE MALLOW AVENUE WATER DWG, BRIANW, 4/5/2018 5:47 PM



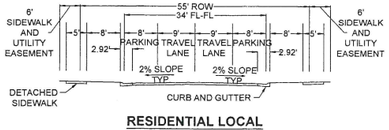
PLAN: ROSE MALLOW AVE STA: 10+00.00 TO 18+50.00
HORIZONTAL SCALE: 1" = 50'



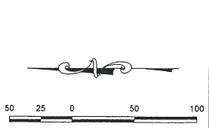
PROFILE: ROSE MALLOW AVE STA: 9+00.00 TO 14+00.00
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

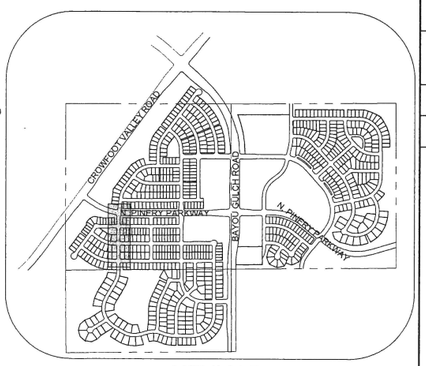


PROFILE: ROSE MALLOW AVE STA: 14+00.00 TO 18+50.00
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'



RESIDENTIAL LOCAL





KEYMAP
N.T.S.

LEGEND

(2) BLOCK NUMBER	PROPOSED RANGE POINT
(A) LOT TYPE	CENTERLINE
6 LOT NUMBER	RIGHT-OF-WAY
PROPOSED BUTTERFLY VALVE	PROPERTY LINE
PROPOSED CAP WITH END OF LINE BLOWOFF	EDGE OF PAVEMENT
PROPOSED REDUCER	PROPOSED DIRECTION OF FLOW
PROPOSED VALVE	1.0% PROPOSED SLOPE & DIRECTION
PROPOSED FIRE HYDRANT	EXISTING 5' CONTOUR
PROPOSED WL FITTING WITH THRUST BLOCK	EXISTING 1' CONTOUR
PROPOSED FLARED END SECTION	5620 PROPOSED 5' CONTOUR
PROPOSED LOW POINT BLOW-OFF	5607 PROPOSED 1' CONTOUR
PROPOSED AIR VALVE	PROPOSED STORM DRAIN
FUTURE PHASE VALVE	PROPOSED SEWER LINE WITH MANHOLE
FUTURE FIRE HYDRANT	PROPOSED SEWER LATERAL
PROPOSED LIGHT POLE	8"W PROPOSED WATER LINE
PROPOSED SIDEWALK	PROPOSED WATER LATERAL W/ METER
PROPOSED SIDEWALK RAMP	SECTION LINE
EXISTING ELEVATION	FILING BOUNDARY
10.00 PROPOSED DESIGN ELEVATION	EXISTING FIBER OPTIC LINE
PROPOSED STORM DRAIN INLET	EXISTING OVERHEAD POWER
(4) (5) (6) PROPOSED STORM DRAIN MANHOLE	EXISTING TELEPHONE LINE

ABBREVIATIONS

AD	ANGLE DIFFERENCE	MH	MANHOLE
AV	AIR VAC RELEASE VALVE	N.T.S.	NOT TO SCALE
BVC	BEGIN VERTICAL CURVE	PVC	POLYVINYL CHLORIDE
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CRR	CURB RETURN RADIUS	RCBC	REINFORCED CONCRETE BOX CULVERT
EL	ELEVATION	RCP	REINFORCED CONCRETE PIPE
EP	EDGE OF PAVEMENT	ROW	RIGHT OF WAY
EVC	END VERTICAL CURVE	SC	SANITARY CAP
EVP	END VERTICAL PROFILE	SD	STORM DRAIN
FG	FINISHED GROUND	SL	SECTION LINE
FH	FIRE HYDRANT	SS	SANITARY SEWER
FL	FLOW LINE	STA	STATION
GV	GATE VALVE	T.O.P.	TOP OF PIPE
HCR	HANDICAP CURB RAMP	UE	UTILITY EASEMENT
HP	HIGH POINT	VC	VERTICAL CURVE
INV	INVERT	WL	WATER LINE
K	CURVATURE COEFFICIENT	WLC	WATER LINE CONNECTION
LF	LINEAR FEET	WSE	WATER SURFACE ELEVATION

CALL 811 TWO WORKING DAYS BEFORE YOU DIG UNCC UTILITY NOTIFICATION CENTER OF COLORADO 1-800-922-1987

BENCHMARK
DOUGLAS COUNTY CONTROL POINT KNOWN AS 1.060032, BEING A 3-1/4" ALUMINUM CAP, BEING LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 6 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, HAVING A PUBLISHED ELEVATION OF 1799.2870 METERS (5903.13 FEET) NAVD '88 DATUM.

BASIS OF BEARINGS:
THE EAST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 9 BEING MONUMENTED AT THE NORTHEAST CORNER OF SAID SECTION 9 BY A 3-1/4" ALUMINUM CAP STAMPED LS 23053 AND AT THE EAST QUARTER CORNER OF SAID SECTION 9 BY A 2-1/2" ALUMINUM CAP STAMPED LS 6935 BEING CONSIDERED TO BEAR SOUTH 00°15'06" EAST, 2648.70 FEET.

PREPARED UNDER THE SUPERVISION OF
COLORADO LICENSED BRIAN P. WILSON 0050067 PROFESSIONAL ENGINEER
BRIAN P. WILSON
COLORADO P.E. 0050067

APPROVED
NOV 29 2018
PARKER WATER AND SANITATION DISTRICT

No.	Revisions	Date	Intl.	Appr.	Date

CVL CONSULTANTS
10333 E. Dry Creek Rd. Suite 240 Englewood, CO 80112 Tel: (720) 482-9526 Fax: (720) 482-9546

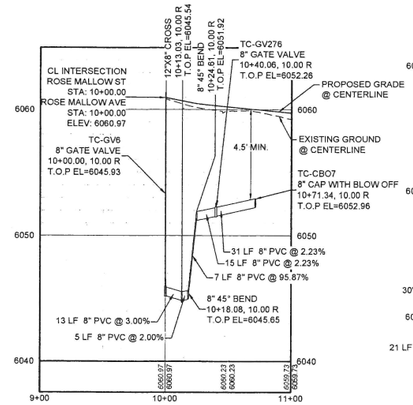
HR 935 LLC
7555 E. HAMPDEN AVE. #600
CENTENNIAL, CO 80112

TRAILS AT CROWFOOT
FILING 1 CONSTRUCTION DRAWINGS
WATER PLAN & PROFILE
ROSE MALLOW AVENUE

SCALE: AS SHOWN
FILE NO: 8130283701
DRAWN BY: RRR
CHECKED BY: JJJ
DATE: APRIL 2017
SHEET NUMBER 58

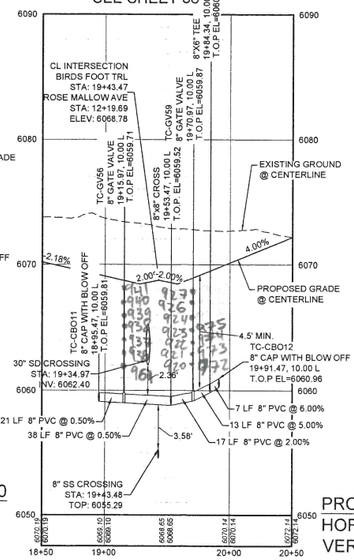
N:\PROJECTS\HESS RANCH\CAD\ENGINEERING\SHEET SETS\CSY5F1\PARKER WATER AND SANITATION\WATER PLAN AND PROFILE\FT ROSE MALLOW AVENUE WATER.DWG, BRIAN M, 4/19/2018 1:45 PM

ROSE MALLOW ST LATERAL
SEE SHEET 58



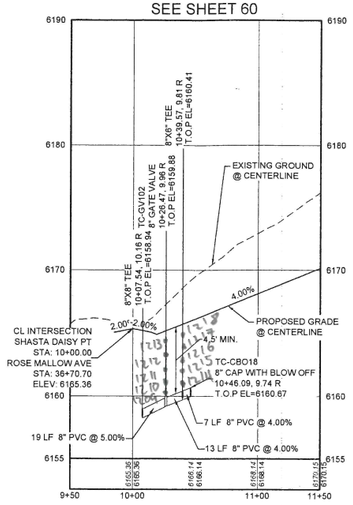
PROFILE: ROSE MALLOW ST STA: 9+00.00 TO 11+00.00
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

BIRDS FOOT TRL LATERAL
SEE SHEET 58



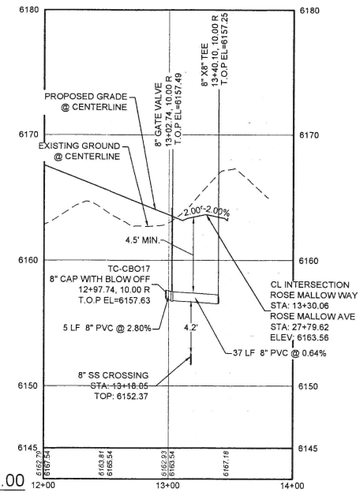
PROFILE: BIRDS FOOT TRL STA: 18+50.00 TO 20+50.00
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

SHASTA DAISY PT LATERAL
SEE SHEET 60

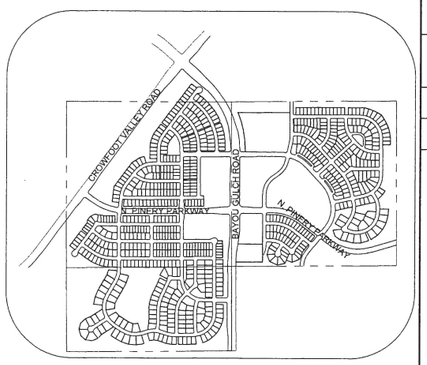


PROFILE: SHASTA DAISY PT STA: 9+50.00 TO 11+50.00
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

ROSE MALLOW WAY LATERAL
SEE SHEET 59

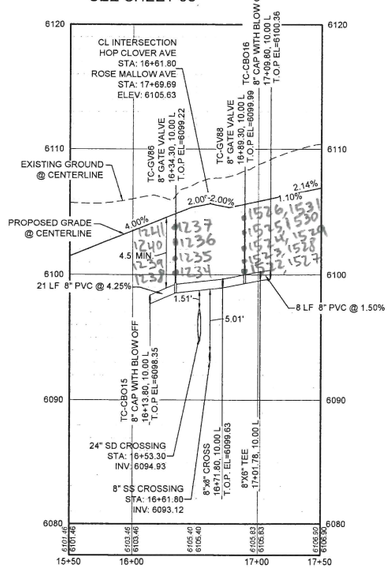


PROFILE: ROSE MALLOW WAY STA: 12+00.00 TO 14+00.00
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'



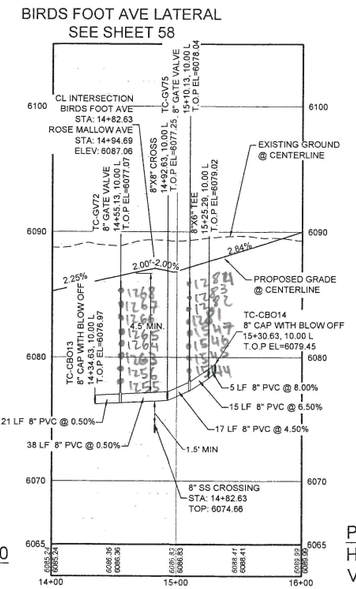
KEYMAP
N.T.S.

HOP CLOVER AVE LATERAL
SEE SHEET 58



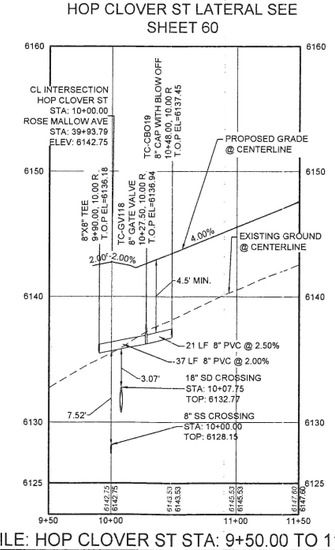
PROFILE: HOP CLOVER AVE STA: 15+50.00 TO 17+50.00
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

BIRDS FOOT AVE LATERAL
SEE SHEET 58



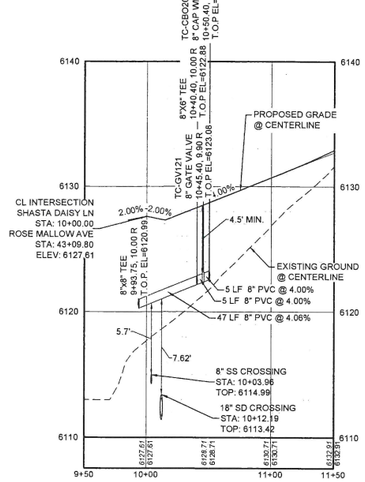
PROFILE: BIRDS FOOT AVE STA: 14+00.00 TO 16+00.00
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

HOP CLOVER ST LATERAL SEE SHEET 60



PROFILE: HOP CLOVER ST STA: 9+50.00 TO 11+50.00
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

SHASTA DAISY LN LATERAL
SEE SHEET 61



PROFILE: SHASTA DAISY LN STA: 9+50.00 TO 11+50.00
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

LEGEND

(2) BLOCK NUMBER	PROPOSED RANGE POINT
(A) LOT TYPE	CENTERLINE
6 LOT NUMBER	RIGHT-OF-WAY
PROPOSED BUTTERFLY VALVE	PROPERTY LINE
PROPOSED CAP WITH END OF LINE BLOWOFF	EDGE OF PAVEMENT
PROPOSED REDUCER	PROPOSED DIRECTION OF FLOW
PROPOSED VALVE	1.0% PROPOSED SLOPE & DIRECTION
PROPOSED FIRE HYDRANT	EXISTING 5' CONTOUR
PROPOSED WL FITTING WITH THRUST BLOCK	EXISTING 1' CONTOUR
PROPOSED FLARED END SECTION	5620 PROPOSED 5' CONTOUR
PROPOSED LOW POINT BLOW-OFF	5607 PROPOSED 1' CONTOUR
PROPOSED AIR VALVE	PROPOSED STORM DRAIN
FUTURE PHASE VALVE	PROPOSED SEWER LINE WITH MANHOLE
FUTURE FIRE HYDRANT	PROPOSED SEWER LATERAL
PROPOSED LIGHT POLE	8"W PROPOSED WATER LINE
PROPOSED SIDEWALK	PROPOSED WATER LATERAL W/ METER
PROPOSED SIDEWALK RAMP	SECTION LINE
EXISTING ELEVATION	FILING BOUNDARY
10.00 PROPOSED DESIGN ELEVATION	EXISTING FIBER OPTIC LINE
PROPOSED STORM DRAIN INLET	EXISTING OVERHEAD POWER
PROPOSED STORM DRAIN MANHOLE	EXISTING TELEPHONE LINE

ABBREVIATIONS

AD	ANGLE DIFFERENCE	MH	MANHOLE
AV	AIR VAC RELEASE VALVE	N.T.S.	NOT TO SCALE
BVC	BEGIN VERTICAL CURVE	PVC	POLYVINYL CHLORIDE
BVP	BEGIN VERTICAL PROFILE	PVI	PT. OF VERTICAL INTERSECTION
CBO	CAP WITH BLOW OFF	PVT	POINT OF VERTICAL TANGENT
CRR	CURB RETURN RADIUS	RCBC	REINFORCED CONCRETE BOX CULVERT
EL	ELEVATION	RCP	REINFORCED CONCRETE PIPE
EP	EDGE OF PAVEMENT	ROW	RIGHT OF WAY
EVC	END VERTICAL CURVE	SC	SANITARY CAP
EVP	END VERTICAL PROFILE	SD	STORM DRAIN
FG	FINISHED GROUND	SL	SECTION LINE
FH	FIRE HYDRANT	SS	SANITARY SEWER
FL	FLOW LINE	STA	STATION
GV	GATE VALVE	T.O.P.	TOP OF PIPE
HCR	HANDICAP CURB RAMP	UE	UTILITY EASEMENT
HP	HIGH POINT	VC	VERTICAL CURVE
INV	INVERT	WL	WATER LINE
K	CURVATURE COEFFICIENT	WLC	WATER LINE CONNECTION
LF	LINEAR FEET	WSE	WATER SURFACE ELEVATION

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TWO WORKING DAYS
BEFORE YOU DIG
1-800-922-1987
UNCC UTILITY NOTIFICATION CENTER OF COLORADO

BENCHMARK
DOUGLAS COUNTY CONTROL POINT KNOWN AS 1.060032, BEING A 3-1/4" ALUMINUM CAP, BEING LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 6 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, HAVING A PUBLISHED ELEVATION OF 1799.2870 METERS (5903.13 FEET) NAVD '88 DATUM.

BASIS OF BEARINGS:
THE EAST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 9 BEING MONUMENTED AT THE NORTHEAST CORNER OF SAID SECTION 9 BY A 3-1/4" ALUMINUM CAP STAMPED LS 23053 AND AT THE EAST QUARTER CORNER OF SAID SECTION 9 BY A 2-1/2" ALUMINUM CAP STAMPED LS 6935 BEING CONSIDERED TO BEAR SOUTH 00°15'06" EAST, 2648.70 FEET.

PREPARED UNDER THE SUPERVISION OF
COLORADO LICENSED BRIAN P. WILSON 0050067 PROFESSIONAL ENGINEER
BRIAN P. WILSON
COLORADO P.E. 0050067

APPROVED
NOV 29 2018
PARKER WATER AND SANITATION DISTRICT

No.	Revisions	Date	Init.	Appr.	Date

CVL CONSULTANTS
10333 E. Dry Creek Rd.
Suite 240
Englewood, CO 80112
Tel: (720) 482-9526
Fax: (720) 482-9546

HR 935 LLC
7353 South Alton Way
CENTENNIAL, CO 80112

TRAILS AT CROWFOOT
FILING 1 CONSTRUCTION DRAWINGS
WATER PLAN & PROFILE
ROSE MALLOW AVENUE LATERALS

SCALE: AS SHOWN
FILE NO: 81302837O1
DRAWN BY: RHR
CHECKED BY: JJJ
DATE: APRIL 2017
SHEET NUMBER 62

N:\PROJECTS\HESS RANCH\ACAD\ENGINEERING\SHEET SETS\CD'S\FIP\PARKER WATER AND SANITATION\WATER PLAN AND PROFILE\F1 ROSE MALLOW AVENUE WATER DWG, BRIMAN, 4/6/2018 5:49 PM

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000048
07/15/2019
Report Date: 8/5/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
404		7/15/19	6	698A	SC	11.0	120.5	11.7	120.3	8	100	100	-2 / 2	A
405		7/15/19	6	698A	SC	11.0	120.5	11.6	119.9	8	100	100	-2 / 2	A
406		7/15/19	5	698A	SC	13.5	114.5	12.8	114.5	8	100	100	-2 / 2	A
407		7/15/19	5	698A	SC	13.5	114.5	13.1	114.9	8	100	100	-2 / 2	A
408		7/15/19	5	698A	SC	13.5	114.5	13.3	114.4	8	100	100	-2 / 2	A
409		7/15/19	5	698A	SC	13.5	114.5	12.9	115.0	8	100	100	-2 / 2	A
410		7/15/19	5	698A	SC	13.5	114.5	12.8	114.0	8	100	100	-2 / 2	A
411		7/15/19	5	698A	SC	13.5	114.5	13.3	114.8	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
404	Waterline Trench Backfill: Mainline, N Pinery Pkwy, 110' N of Bayou Gulch Road	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
405	Waterline Trench Backfill: Mainline, N Pinery Pkwy, 110' N of Bayou Gulch Road	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
406	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 110' N of Bayou Gulch Road adjacent to Lots 2-3 Block 5 Filing 4	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
407	Waterline Trench Backfill: Valve box, N Pinery Pkwy adjacent to Lots 2-3 Block 5 Filing 4	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
408	Waterline Trench Backfill: Valve box, N Pinery Pkwy adjacent to Lots 2-3 Block 5 Filing 4	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
409	Waterline Trench Backfill: Valve box, N Pinery Pkwy adjacent to Lots 2-3 Block 5 Filing 4	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
410	Waterline Trench Backfill: Valve box, N Pinery Pkwy adjacent to Lots 2-3 Block 5 Filing 4	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
411	Waterline Trench Backfill: Valve box, N Pinery Pkwy adjacent to Lots 2-3 Block 5 Filing 4	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **411:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the excavator and loader, add moisture with the water wagon, and apply compactive effort with the sheepsfoot roller.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000049
07/16/2019
Report Date: 8/5/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
412		7/16/19	6	698A	SC	11.0	120.5	11.5	120.0	8	100	100	-2 / 2	A
413		7/16/19	6	698A	SC	11.0	120.5	11.8	119.9	8	100	100	-2 / 2	A
414		7/16/19	6	698A	SC	11.0	120.5	11.4	120.2	8	100	100	-2 / 2	A
415		7/16/19	6	698A	SC	11.0	120.5	11.6	120.3	8	100	100	-2 / 2	A
416		7/16/19	6	698A	SC	11.0	120.5	11.3	120.5	8	100	100	-2 / 2	A
417		7/16/19	6	698A	SC	11.0	120.5	11.4	120.1	8	100	100	-2 / 2	A
418		7/16/19	6	698A	SC	11.0	120.5	11.4	120.6	8	100	100	-2 / 2	A
419		7/16/19	6	698A	SC	11.0	120.5	11.2	120.4	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
412	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 50' E of intersection with Rose Mallow Street, S side valve	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
413	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 50' E of intersection with Rose Mallow Street, S side valve	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
414	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 50' E of intersection with Rose Mallow Street, S side valve	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
415	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 50' E of intersection with Rose Mallow Street, N side valve	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
416	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 50' E of intersection with Rose Mallow Street, N side valve	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
417	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 50' E of intersection with Rose Mallow Street, N side valve	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
418	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 50' E of intersection with Rose Mallow Street, E side valve	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
419	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 50' E of intersection with Rose Mallow Street, E side valve	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000049
07/16/2019
Report Date: 8/5/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
420		7/16/19	6	698A	SC	11.0	120.5	11.7	120.2	8	100	100	-2 / 2	A
421		7/16/19	6	698A	SC	11.0	120.5	11.8	120.2	8	100	100	-2 / 2	A
422		7/16/19	6	698A	SC	11.0	120.5	11.0	120.4	8	100	100	-2 / 2	A
423		7/16/19	6	698A	SC	11.0	120.5	11.5	120.2	8	100	100	-2 / 2	A
424		7/16/19	3	698A	CL	16.0	111.0	16.9	109.8	8	99	95	0 / 4	A
425		7/16/19	3	698A	CL	16.0	111.0	17.7	108.6	8	98	95	0 / 4	A
426		7/16/19	3	698A	CL	16.0	111.0	17.8	109.0	8	98	95	0 / 4	A
427		7/16/19	2	698A	CL	15.0	112.0	17.0	110.9	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
420	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 50' E of intersection with Rose Mallow Street, E side valve	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
421	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 50' E of intersection with Rose Mallow Street, W side valve	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
422	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 50' E of intersection with Rose Mallow Street, W side valve	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
423	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 50' E of intersection with Rose Mallow Street, W side valve	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
424	Waterline Trench Backfill: Mainline, N Pinery Pkwy, 200' N of intersection with Alpine Phlox Street	10.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
425	Waterline Trench Backfill: Mainline, N Pinery Pkwy, 200' N of intersection with Alpine Phlox Street	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
426	Waterline Trench Backfill: Mainline, N Pinery Pkwy, 200' N of intersection with Alpine Phlox Street	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
427	Waterline Trench Backfill: Mainline, N Pinery Pkwy, 210' N of intersection with Alpine Phlox Street	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000049
07/16/2019
Report Date: 8/5/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
428		7/16/19	2	698A	CL	15.0	112.0	17.2	110.0	8	98	95	0 / 4	A
429		7/16/19	2	698A	CL	15.0	112.0	16.9	111.2	8	99	95	0 / 4	A
430		7/16/19	2	698A	CL	15.0	112.0	17.9	108.5	8	97	95	0 / 4	A
431		7/16/19	2	698A	CL	15.0	112.0	16.9	109.8	8	98	95	0 / 4	A
432		7/16/19	2	698A	CL	15.0	112.0	17.5	109.9	8	98	95	0 / 4	A
433		7/16/19	2	698A	CL	15.0	112.0	17.0	109.6	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
428	Waterline Trench Backfill: Mainline, N Pinery Pkwy, 210' N of intersection with Alpine Phlox Street	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
429	Waterline Trench Backfill: Mainline, N Pinery Pkwy, 210' N of intersection with Alpine Phlox Street	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
430	Waterline Trench Backfill: Mainline, N Pinery Pkwy, 190' N of intersection with Alpine Phlox Street	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
431	Waterline Trench Backfill: Mainline, N Pinery Pkwy, 190' N of intersection with Alpine Phlox Street	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
432	Waterline Trench Backfill: Mainline, N Pinery Pkwy, 190' N of intersection with Alpine Phlox Street	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
433	Waterline Trench Backfill: Mainline, N Pinery Pkwy, 190' N of intersection with Alpine Phlox Street	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **433:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the excavator and loader, add moisture with the water wagon, and apply compactive effort with the sheepsfoot roller.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000050
07/18/2019
Report Date: 8/5/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
434		7/18/19	5	698A	SC	13.5	114.5	13.9	114.0	8	100	100	-2 / 2	A
435		7/18/19	5	698A	SC	13.5	114.5	13.7	114.1	8	100	100	-2 / 2	A
436		7/18/19	5	698A	SC	13.5	114.5	13.9	114.5	8	100	100	-2 / 2	A
437		7/18/19	5	698A	SC	13.5	114.5	13.8	114.3	8	100	100	-2 / 2	A
438		7/18/19	5	698A	SC	13.5	114.5	13.5	114.3	8	100	100	-2 / 2	A
439		7/18/19	5	698A	SC	13.5	114.5	13.7	114.2	8	100	100	-2 / 2	A
440		7/18/19	5	698A	SC	13.5	114.5	13.6	114.3	8	100	100	-2 / 2	A
441		7/18/19	5	698A	SC	13.5	114.5	13.3	114.2	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
434	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 100' E of intersection with Bayou Gulch Road	10.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
435	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 100' E of intersection with Bayou Gulch Road	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
436	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 100' E of intersection with Bayou Gulch Road	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
437	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 100' E of intersection with Bayou Gulch Road	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
438	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 100' E of intersection with Bayou Gulch Road	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
439	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 100' E of intersection with Bayou Gulch Road	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
440	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 100' E of intersection with Bayou Gulch Road	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
441	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 100' E of intersection with Bayou Gulch Road	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000050
07/18/2019
Report Date: 8/5/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
442		7/18/19	5	698A	SC	13.5	114.5	13.8	114.5	8	100	100	-2 / 2	A
443		7/18/19	5	698A	SC	13.5	114.5	13.7	114.1	8	100	100	-2 / 2	A
444		7/18/19	2	698A	CL	15.0	112.0	16.5	111.4	8	99	95	0 / 4	A
445		7/18/19	2	698A	CL	15.0	112.0	17.3	110.3	8	98	95	0 / 4	A
446		7/18/19	2	698A	CL	15.0	112.0	17.3	110.4	8	99	95	0 / 4	A
447		7/18/19	2	698A	CL	15.0	112.0	16.4	110.7	8	99	95	0 / 4	A
448		7/18/19	2	698A	CL	15.0	112.0	16.5	111.5	8	100	95	0 / 4	A
449		7/18/19	2	698A	CL	15.0	112.0	16.2	110.7	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
442	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 100' E of intersection with Bayou Gulch Road	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
443	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 100' E of intersection with Bayou Gulch Road	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
444	Waterline Trench Backfill: Fire hydrant, N Pinery Pkwy, 200' E of intersection with Bayou Gulch Road	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
445	Waterline Trench Backfill: Fire hydrant, N Pinery Pkwy, 200' E of intersection with Bayou Gulch Road	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
446	Waterline Trench Backfill: Fire hydrant, N Pinery Pkwy, 200' E of intersection with Bayou Gulch Road	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
447	Waterline Trench Backfill: Fire hydrant, N Pinery Pkwy, 200' E of intersection with Bayou Gulch Road	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
448	Waterline Trench Backfill: Fire hydrant, N Pinery Pkwy, 200' E of intersection with Bayou Gulch Road	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
449	Waterline Trench Backfill: Fire hydrant, N Pinery Pkwy, 200' E of intersection with Bayou Gulch Road	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
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Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000050
07/18/2019
Report Date: 8/5/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
450		7/18/19	5	698A	SC	13.5	114.5	13.7	114.2	8	100	100	-2 / 2	A
451		7/18/19	5	698A	SC	13.5	114.5	13.7	114.2	8	100	100	-2 / 2	A
452		7/18/19	5	698A	SC	13.5	114.5	13.2	114.4	8	100	100	-2 / 2	A
453		7/18/19	5	698A	SC	13.5	114.5	13.6	114.6	8	100	100	-2 / 2	A
454		7/18/19	5	698A	SC	13.5	114.5	13.3	114.5	8	100	100	-2 / 2	A
455		7/18/19	5	698A	SC	13.5	114.5	13.8	114.4	8	100	100	-2 / 2	A
456		7/18/19	5	698A	SC	13.5	114.5	13.5	114.4	8	100	100	-2 / 2	A
457		7/18/19	5	698A	SC	13.5	114.5	13.7	114.3	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
450	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 200' E of intersection with Bayou Gulch Road	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
451	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 200' E of intersection with Bayou Gulch Road	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
452	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 200' E of intersection with Bayou Gulch Road	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
453	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 200' E of intersection with Bayou Gulch Road	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
454	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 200' E of intersection with Bayou Gulch Road	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
455	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 200' E of intersection with Bayou Gulch Road	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
456	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 200' E of intersection with Bayou Gulch Road	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
457	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 200' E of intersection with Bayou Gulch Road	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000050
07/18/2019
Report Date: 8/5/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **457:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the excavator and loader, add moisture with the water wagon, and apply compactive effort with the sheepsfoot roller.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000051
07/30/2019
Report Date: 8/5/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
458		7/30/19	2	698A	CL	15.0	112.0	18.3	109.9	8	98	95	0 / 4	A
459		7/30/19	2	698A	CL	15.0	112.0	16.6	111.1	8	99	95	0 / 4	A
460		7/30/19	5	698A	SC	13.5	114.5	14.0	116.0	8	101	100	-2 / 2	A
461		7/30/19	5	698A	SC	13.5	114.5	13.7	115.3	8	101	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
458	Waterline Trench Backfill: Bayou Gulch Road, STA 37+50	4.0	BG	XPLORER / 3500 / 3393 / 2/4/2019	Acks, Alex
459	Waterline Trench Backfill: Bayou Gulch Road, STA 38+00	2.0	BG	XPLORER / 3500 / 3393 / 2/4/2019	Acks, Alex
460	Waterline Trench Backfill: Rose Mallow Avenue, STA 23+50	4.0	BG	XPLORER / 3500 / 3393 / 2/4/2019	Acks, Alex
461	Waterline Trench Backfill: Rose Mallow Avenue, STA 22+70	3.0	BG	XPLORER / 3500 / 3393 / 2/4/2019	Acks, Alex

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **461:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

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Compaction Test Report

Report #: SNG-000052
07/31/2019
Report Date: 8/5/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
462		7/31/19	3	698A	CL	16.0	111.0	17.3	109.5	8	99	95	0 / 4	A
463		7/31/19	3	698A	CL	16.0	111.0	17.5	109.8	8	99	95	0 / 4	A
464		7/31/19	3	698A	CL	16.0	111.0	17.9	108.4	8	98	95	0 / 4	A
465		7/31/19	3	698A	CL	16.0	111.0	17.3	109.4	8	99	95	0 / 4	A
466		7/31/19	3	698A	CL	16.0	111.0	17.0	109.2	8	98	95	0 / 4	A
467		7/31/19	3	698A	CL	16.0	111.0	17.6	109.8	8	99	95	0 / 4	A
468		7/31/19	6	698A	SC	11.0	120.5	11.0	120.6	8	100	100	-2 / 2	A
469		7/31/19	6	698A	SC	11.0	120.5	11.5	120.4	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
462	Waterline Trench Backfill: Mainline, Alpine Phlox Street, STA 18+50	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
463	Waterline Trench Backfill: Mainline, Alpine Phlox Street, STA 18+50	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
464	Waterline Trench Backfill: Mainline, Alpine Phlox Street, STA 18+50	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
465	Waterline Trench Backfill: Mainline, Alpine Phlox Street, STA 18+50	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
466	Waterline Trench Backfill: Mainline, Alpine Phlox Street, STA 18+50	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
467	Waterline Trench Backfill: Mainline, Alpine Phlox Street, STA 18+50	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
468	Waterline Trench Backfill: Mainline, Alpine Phlox Street, STA 20+00	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
469	Waterline Trench Backfill: Mainline, Alpine Phlox Street, STA 20+00	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000052
07/31/2019
Report Date: 8/5/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
470		7/31/19	6	698A	SC	11.0	120.5	11.4	120.4	8	100	100	-2 / 2	A
471		7/31/19	6	698A	SC	11.0	120.5	11.2	120.3	8	100	100	-2 / 2	A
472		7/31/19	6	698A	SC	11.0	120.5	10.9	120.7	8	100	100	-2 / 2	A
473		7/31/19	6	698A	SC	11.0	120.5	11.2	120.9	8	100	100	-2 / 2	A
474		7/31/19	6	698A	SC	11.0	120.5	10.7	120.9	8	100	100	-2 / 2	A
475		7/31/19	6	698A	SC	11.0	120.5	10.6	120.8	8	100	100	-2 / 2	A
476		7/31/19	6	698A	SC	11.0	120.5	11.3	120.3	8	100	100	-2 / 2	A
477		7/31/19	6	698A	SC	11.0	120.5	11.5	120.4	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
470	Waterline Trench Backfill: Mainline, Alpine Phlox Street, STA 20+00	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
471	Waterline Trench Backfill: Mainline, Alpine Phlox Street, STA 20+00	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
472	Waterline Trench Backfill: Mainline, Alpine Phlox Street, STA 20+00	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
473	Waterline Trench Backfill: Mainline, Alpine Phlox Street, STA 20+00	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
474	Waterline Trench Backfill: Mainline, Alpine Phlox Street, STA 20+00	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
475	Waterline Trench Backfill: Mainline, Alpine Phlox Street, STA 20+00	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
476	Waterline Trench Backfill: Mainline, Alpine Phlox Street, STA 21+50	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
477	Waterline Trench Backfill: Mainline, Alpine Phlox Street, STA 21+50	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000052
07/31/2019
Report Date: 8/5/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
478		7/31/19	6	698A	SC	11.0	120.5	11.6	120.4	8	100	100	-2 / 2	A
479		7/31/19	6	698A	SC	11.0	120.5	11.2	120.3	8	100	100	-2 / 2	A
480		7/31/19	6	698A	SC	11.0	120.5	11.5	120.3	8	100	100	-2 / 2	A
481		7/31/19	6	698A	SC	11.0	120.5	11.3	120.3	8	100	100	-2 / 2	A
482		7/31/19	6	698A	SC	11.0	120.5	11.0	120.5	8	100	100	-2 / 2	A
483		7/31/19	6	698A	SC	11.0	120.5	11.7	120.1	8	100	100	-2 / 2	A
484		7/31/19	6	698A	SC	11.0	120.5	11.5	120.3	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
478	Waterline Trench Backfill: Mainline, Alpine Phlox Street, STA 21+50	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
479	Waterline Trench Backfill: Mainline, Alpine Phlox Street, STA 21+50	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
480	Waterline Trench Backfill: Mainline, Alpine Phlox Street, STA 21+50	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
481	Waterline Trench Backfill: Mainline, Alpine Phlox Street, STA 21+50	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
482	Waterline Trench Backfill: Mainline, Alpine Phlox Street, STA 21+50	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
483	Waterline Trench Backfill: Mainline, Alpine Phlox Street, STA 21+50	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
484	Waterline Trench Backfill: Mainline, Alpine Phlox Street, STA 21+50	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000053
07/31/2019
Report Date: 8/17/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
485		7/31/19	3	698A	CL	16.0	111.0	16.7	108.4	8	98	95	0 / 4	A
486		7/31/19	3	698A	CL	16.0	111.0	17.7	108.0	8	97	95	0 / 4	A
487		7/31/19	3	698A	CL	16.0	111.0	17.7	108.2	8	97	95	0 / 4	A
488		7/31/19	3	698A	CL	16.0	111.0	17.4	108.3	8	98	95	0 / 4	A
489		7/31/19	3	698A	CL	16.0	111.0	17.5	107.9	8	97	95	0 / 4	A
490		7/31/19	3	698A	CL	16.0	111.0	17.9	107.9	8	97	95	0 / 4	A
491		7/31/19	3	698A	CL	16.0	111.0	17.2	108.2	8	97	95	0 / 4	A
492		7/31/19	3	698A	CL	16.0	111.0	17.6	108.3	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
485	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 25' E of Bayou Gulch Road	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
486	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 25' E of Bayou Gulch Road	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
487	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 25' E of Bayou Gulch Road	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
488	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 25' E of Bayou Gulch Road	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
489	Waterline Trench Backfill: Valve box, Bayou Gulch Road, 30' S of N Pinery Pkwy	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
490	Waterline Trench Backfill: Valve box, Bayou Gulch Road, 30' S of N Pinery Pkwy	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
491	Waterline Trench Backfill: Valve box, Bayou Gulch Road, 30' S of N Pinery Pkwy	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
492	Waterline Trench Backfill: Valve box, Bayou Gulch Road, 30' S of N Pinery Pkwy	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000053
07/31/2019
Report Date: 8/17/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
493		7/31/19	3	698A	CL	16.0	111.0	18.0	107.9	8	97	95	0 / 4	A
494		7/31/19	3	698A	CL	16.0	111.0	17.4	107.9	8	97	95	0 / 4	A
495		7/31/19	5	698A	SC	13.5	114.5	13.8	114.4	8	100	100	-2 / 2	A
496		7/31/19	5	698A	SC	13.5	114.5	14.0	114.4	8	100	100	-2 / 2	A
497		7/31/19	5	698A	SC	13.5	114.5	13.6	114.3	8	100	100	-2 / 2	A
498		7/31/19	5	698A	SC	13.5	114.5	14.1	114.2	8	100	100	-2 / 2	A
499		7/31/19	5	698A	SC	13.5	114.5	13.7	114.4	8	100	100	-2 / 2	A
500		7/31/19	5	698A	SC	13.5	114.5	13.6	114.6	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
493	Waterline Trench Backfill: Valve box, Bayou Gulch Road, 10' N of N Pinery Pkwy	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
494	Waterline Trench Backfill: Valve box, Bayou Gulch Road, 10' N of N Pinery Pkwy	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
495	Waterline Trench Backfill: Valve box, TC-GV8, Bayou Gulch Road and N Pinery Pkwy	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
496	Waterline Trench Backfill: Valve box, TC-GV8, Bayou Gulch Road and N Pinery Pkwy	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
497	Waterline Trench Backfill: Valve box, TC-GV8, Bayou Gulch Road and N Pinery Pkwy	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
498	Waterline Trench Backfill: Valve box, TC-GV8, Bayou Gulch Road and N Pinery Pkwy	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
499	Waterline Trench Backfill: Valve box, TC-GV8, Bayou Gulch Road and N Pinery Pkwy	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
500	Waterline Trench Backfill: Valve box, TC-GV8, Bayou Gulch Road and N Pinery Pkwy	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **500:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water wagon, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000054
08/01/2019
Report Date: 8/17/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
501		8/1/19	9	698A	CL	20.5	103.5	21.9	101.8	8	98	95	0 / 4	A
502		8/1/19	9	698A	CL	20.5	103.5	23.3	100.4	8	97	95	0 / 4	A
503		8/1/19	9	698A	CL	20.5	103.5	23.0	100.2	8	97	95	0 / 4	A
504		8/1/19	9	698A	CL	20.5	103.5	22.9	99.9	8	97	95	0 / 4	A
505		8/1/19	6	698A	SC	11.0	120.5	11.5	120.4	8	100	100	-2 / 2	A
506		8/1/19	6	698A	SC	11.0	120.5	11.3	120.2	8	100	100	-2 / 2	A
507		8/1/19	6	698A	SC	11.0	120.5	11.6	120.3	8	100	100	-2 / 2	A
508		8/1/19	6	698A	SC	11.0	120.5	11.5	120.2	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
501	Waterline Trench Backfill: Fire hydrant, TCFH-54, N Pinery Pkwy and Bayou Gulch Road	10.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
502	Waterline Trench Backfill: Fire hydrant, TCFH-54, N Pinery Pkwy and Bayou Gulch Road	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
503	Waterline Trench Backfill: Fire hydrant, TCFH-54, N Pinery Pkwy and Bayou Gulch Road	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
504	Waterline Trench Backfill: Fire hydrant, TCFH-54, N Pinery Pkwy and Bayou Gulch Road	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
505	Waterline Trench Backfill: Fire hydrant, TCFH-54, N Pinery Pkwy and Bayou Gulch Road	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
506	Waterline Trench Backfill: Fire hydrant, TCFH-54, N Pinery Pkwy and Bayou Gulch Road	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
507	Waterline Trench Backfill: Fire hydrant, TCFH-54, N Pinery Pkwy and Bayou Gulch Road	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
508	Waterline Trench Backfill: Fire hydrant, TCFH-54, N Pinery Pkwy and Bayou Gulch Road	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000054
08/01/2019
Report Date: 8/17/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
509		8/1/19	6	698A	SC	11.0	120.5	11.5	120.0	8	100	100	-2 / 2	A
510		8/1/19	6	698A	SC	11.0	120.5	11.6	120.3	8	100	100	-2 / 2	A
511		8/1/19	5	698A	SC	13.5	114.5	13.3	114.9	8	100	100	-2 / 2	A
512		8/1/19	5	698A	SC	13.5	114.5	13.6	114.3	8	100	100	-2 / 2	A
513		8/1/19	5	698A	SC	13.5	114.5	14.1	114.3	8	100	100	-2 / 2	A
514		8/1/19	5	698A	SC	13.5	114.5	13.8	114.4	8	100	100	-2 / 2	A
515		8/1/19	5	698A	SC	13.5	114.5	13.7	114.7	8	100	100	-2 / 2	A
516		8/1/19	5	698A	SC	13.5	114.5	13.7	114.2	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
509	Waterline Trench Backfill: Fire hydrant, TCFH-54, N Pinery Pkwy and Bayou Gulch Road	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
510	Waterline Trench Backfill: Fire hydrant, TCFH-54, N Pinery Pkwy and Bayou Gulch Road	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
511	Waterline Trench Backfill: Valve box, 10' NE of TCFH-54, Alpine Phlox Street and N Pinery Pkwy	10.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
512	Waterline Trench Backfill: Valve box, 10' NE of TCFH-54, Alpine Phlox Street and N Pinery Pkwy	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
513	Waterline Trench Backfill: Valve box, 10' NE of TCFH-54, Alpine Phlox Street and N Pinery Pkwy	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
514	Waterline Trench Backfill: Valve box, 10' NE of TCFH-54, Alpine Phlox Street and N Pinery Pkwy	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
515	Waterline Trench Backfill: Valve box, 10' NE of TCFH-54, Alpine Phlox Street and N Pinery Pkwy	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
516	Waterline Trench Backfill: Valve box, 10' NE of TCFH-54, Alpine Phlox Street and N Pinery Pkwy	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000054
08/01/2019
Report Date: 8/17/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
517		8/1/19	5	698A	SC	13.5	114.5	14.2	114.3	8	100	100	-2 / 2	A
518		8/1/19	5	698A	SC	13.5	114.5	13.7	114.2	8	100	100	-2 / 2	A
519		8/1/19	5	698A	SC	13.5	114.5	13.5	114.6	8	100	100	-2 / 2	A
520		8/1/19	5	698A	SC	13.5	114.5	13.6	114.6	8	100	100	-2 / 2	A
521		8/1/19	3	698A	CL	16.0	111.0	17.0	109.1	8	98	95	0 / 4	A
522		8/1/19	3	698A	CL	16.0	111.0	17.2	109.0	8	98	95	0 / 4	A
523		8/1/19	3	698A	CL	16.0	111.0	17.5	109.1	8	98	95	0 / 4	A
524		8/1/19	3	698A	CL	16.0	111.0	17.1	108.8	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
517	Waterline Trench Backfill: Valve box, 10' NE of TCFH-54, Alpine Phlox Street and N Pinery Pkwy	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
518	Waterline Trench Backfill: Valve box, 10' NE of TCFH-54, Alpine Phlox Street and N Pinery Pkwy	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
519	Waterline Trench Backfill: Valve box, 10' NE of TCFH-54, Alpine Phlox Street and N Pinery Pkwy	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
520	Waterline Trench Backfill: Valve box, 10' NE of TCFH-54, Alpine Phlox Street and N Pinery Pkwy	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
521	Waterline Trench Backfill: Valve box, 15' N of TCFH-54, Alpine Phlox Street and N Pinery Pkwy	10.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
522	Waterline Trench Backfill: Valve box, 15' N of TCFH-54, Alpine Phlox Street and N Pinery Pkwy	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
523	Waterline Trench Backfill: Valve box, 15' N of TCFH-54, Alpine Phlox Street and N Pinery Pkwy	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
524	Waterline Trench Backfill: Valve box, 15' N of TCFH-54, Alpine Phlox Street and N Pinery Pkwy	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000054
08/01/2019
Report Date: 8/17/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
525		8/1/19	3	698A	CL	16.0	111.0	16.8	109.4	8	99	95	0 / 4	A
526		8/1/19	3	698A	CL	16.0	111.0	17.0	109.0	8	98	95	0 / 4	A
527		8/1/19	3	698A	CL	16.0	111.0	16.8	108.6	8	98	95	0 / 4	A
528		8/1/19	3	698A	CL	16.0	111.0	17.7	108.8	8	98	95	0 / 4	A
529		8/1/19	3	698A	CL	16.0	111.0	17.3	109.2	8	98	95	0 / 4	A
530		8/1/19	3	698A	CL	16.0	111.0	17.0	109.1	8	98	95	0 / 4	A
531		8/1/19	5	698A	SC	13.5	114.5	13.6	114.8	8	100	100	-2 / 2	A
532		8/1/19	5	698A	SC	13.5	114.5	13.6	114.3	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
525	Waterline Trench Backfill: Valve box, 15' N of TCFH-54, Alpine Phlox Street and N Pinery Pkwy	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
526	Waterline Trench Backfill: Valve box, 15' N of TCFH-54, Alpine Phlox Street and N Pinery Pkwy	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
527	Waterline Trench Backfill: Valve box, 15' N of TCFH-54, Alpine Phlox Street and N Pinery Pkwy	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
528	Waterline Trench Backfill: Valve box, 15' N of TCFH-54, Alpine Phlox Street and N Pinery Pkwy	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
529	Waterline Trench Backfill: Valve box, 15' N of TCFH-54, Alpine Phlox Street and N Pinery Pkwy	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
530	Waterline Trench Backfill: Valve box, 15' N of TCFH-54, Alpine Phlox Street and N Pinery Pkwy	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
531	Waterline Trench Backfill: Valve box, 60' NW of TCFH-54, Alpine Phlox Street and N Pinery Pkwy	10.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
532	Waterline Trench Backfill: Valve box, 60' NW of TCFH-54, Alpine Phlox Street and N Pinery Pkwy	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000054
08/01/2019
Report Date: 8/17/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
533		8/1/19	5	698A	SC	13.5	114.5	14.1	114.5	8	100	100	-2 / 2	A
534		8/1/19	5	698A	SC	13.5	114.5	13.8	114.4	8	100	100	-2 / 2	A
535		8/1/19	5	698A	SC	13.5	114.5	13.4	114.5	8	100	100	-2 / 2	A
536		8/1/19	5	698A	SC	13.5	114.5	13.8	114.6	8	100	100	-2 / 2	A
537		8/1/19	5	698A	SC	13.5	114.5	13.7	114.4	8	100	100	-2 / 2	A
538		8/1/19	5	698A	SC	13.5	114.5	13.5	114.4	8	100	100	-2 / 2	A
539		8/1/19	5	698A	SC	13.5	114.5	13.7	114.9	8	100	100	-2 / 2	A
540		8/1/19	5	698A	SC	13.5	114.5	13.8	114.4	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
533	Waterline Trench Backfill: Valve box, 60' NW of TCFH-54, Alpine Phlox Street and N Pinery Pkwy	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
534	Waterline Trench Backfill: Valve box, 60' NW of TCFH-54, Alpine Phlox Street and N Pinery Pkwy	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
535	Waterline Trench Backfill: Valve box, 60' NW of TCFH-54, Alpine Phlox Street and N Pinery Pkwy	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
536	Waterline Trench Backfill: Valve box, 60' NW of TCFH-54, Alpine Phlox Street and N Pinery Pkwy	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
537	Waterline Trench Backfill: Valve box, 60' NW of TCFH-54, Alpine Phlox Street and N Pinery Pkwy	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
538	Waterline Trench Backfill: Valve box, 60' NW of TCFH-54, Alpine Phlox Street and N Pinery Pkwy	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
539	Waterline Trench Backfill: Valve box, 60' NW of TCFH-54, Alpine Phlox Street and N Pinery Pkwy	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
540	Waterline Trench Backfill: Valve box, 60' NW of TCFH-54, Alpine Phlox Street and N Pinery Pkwy	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000054
08/01/2019
Report Date: 8/17/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
541		8/1/19	4	698A	CL	16.0	109.0	17.3	106.4	8	98	95	0 / 4	A
542		8/1/19	4	698A	CL	16.0	109.0	17.2	106.7	8	98	95	0 / 4	A
543		8/1/19	4	698A	CL	16.0	109.0	17.5	106.2	8	97	95	0 / 4	A
544		8/1/19	4	698A	CL	16.0	109.0	17.4	106.6	8	98	95	0 / 4	A
545		8/1/19	4	698A	CL	16.0	109.0	17.2	106.9	8	98	95	0 / 4	A
546		8/1/19	4	698A	CL	16.0	109.0	17.7	106.0	8	97	95	0 / 4	A
547		8/1/19	4	698A	CL	16.0	109.0	18.0	106.3	8	98	95	0 / 4	A
548		8/1/19	4	698A	CL	16.0	109.0	18.2	105.4	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
541	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 250' S of N Pinery Pkwy	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
542	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 250' S of N Pinery Pkwy	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
543	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 250' S of N Pinery Pkwy	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
544	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 250' S of N Pinery Pkwy	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
545	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 250' S of N Pinery Pkwy	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
546	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 100' S of N Pinery Pkwy	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
547	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 100' S of N Pinery Pkwy	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
548	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 100' S of N Pinery Pkwy	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Denver
1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000054
08/01/2019
Report Date: 8/17/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
549		8/1/19	4	698A	CL	16.0	109.0	18.1	105.9	8	97	95	0 / 4	A
550		8/1/19	4	698A	CL	16.0	109.0	17.7	106.4	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
549	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 100' S of N Pinery Pkwy	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
550	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 100' S of N Pinery Pkwy	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **550:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water wagon, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

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Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000055
08/02/2019
Report Date: 8/17/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
551		8/2/19	3	698A	CL	16.0	111.0	18.2	110.5	8	100	95	0 / 4	A
552		8/2/19	3	698A	CL	16.0	111.0	17.3	111.0	8	100	95	0 / 4	A
553		8/2/19	3	698A	CL	16.0	111.0	18.4	109.7	8	99	95	0 / 4	A
554		8/2/19	3	698A	CL	16.0	111.0	17.7	109.5	8	99	95	0 / 4	A
555		8/2/19	3	698A	CL	16.0	111.0	17.5	110.8	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
551	Waterline Trench Backfill: Valve box, Bayou Gulch Road, 300' S of N Pinery Pkwy	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
552	Waterline Trench Backfill: Valve box, Bayou Gulch Road, 300' S of N Pinery Pkwy	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
553	Waterline Trench Backfill: Valve box, Bayou Gulch Road, 300' S of N Pinery Pkwy	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
554	Waterline Trench Backfill: Valve box, Bayou Gulch Road, 300' S of N Pinery Pkwy	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
555	Waterline Trench Backfill: Valve box, Bayou Gulch Road, 300' S of N Pinery Pkwy	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **555:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water wagon, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000056
08/03/2019
Report Date: 8/31/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
556		8/3/19	3	698A	CL	16.0	111.0	17.1	108.9	8	98	95	0 / 4	A
557		8/3/19	3	698A	CL	16.0	111.0	17.3	107.8	8	97	95	0 / 4	A
558		8/3/19	3	698A	CL	16.0	111.0	17.0	109.3	8	98	95	0 / 4	A
559		8/3/19	3	698A	CL	16.0	111.0	17.3	109.2	8	98	95	0 / 4	A
560		8/3/19	3	698A	CL	16.0	111.0	17.4	109.5	8	99	95	0 / 4	A
561		8/3/19	3	698A	CL	16.0	111.0	17.7	109.7	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
556	Waterline Trench Backfill: Mainline, 450' S of N Pinery Pkwy and Bayou Gulch intersection	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
557	Waterline Trench Backfill: Mainline, 450' S of N Pinery Pkwy and Bayou Gulch intersection	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
558	Waterline Trench Backfill: Mainline, 450' S of N Pinery Pkwy and Bayou Gulch intersection	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
559	Waterline Trench Backfill: Mainline, 450' S of N Pinery Pkwy and Bayou Gulch intersection	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
560	Waterline Trench Backfill: Mainline, 450' S of N Pinery Pkwy and Bayou Gulch intersection	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
561	Waterline Trench Backfill: Mainline, 450' S of N Pinery Pkwy and Bayou Gulch intersection	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **561:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water wagon, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000057
08/05/2019
Report Date: 8/31/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
562		8/5/19	5	698A	SC	13.5	114.5	13.6	114.3	8	100	100	-2 / 2	A
563		8/5/19	5	698A	SC	13.5	114.5	13.8	114.3	8	100	100	-2 / 2	A
564		8/5/19	5	698A	SC	13.5	114.5	13.4	114.3	8	100	100	-2 / 2	A
565		8/5/19	5	698A	SC	13.5	114.5	13.7	114.6	8	100	100	-2 / 2	A
566		8/5/19	5	698A	SC	13.5	114.5	13.4	114.6	8	100	100	-2 / 2	A
567		8/5/19	5	698A	SC	13.5	114.5	13.6	114.3	8	100	100	-2 / 2	A
568		8/5/19	5	698A	SC	13.5	114.5	13.6	114.8	8	100	100	-2 / 2	A
569		8/5/19	5	698A	SC	13.5	114.5	13.8	114.3	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
562	Waterline Trench Backfill: Mainline, 25' W of Lot 2 Block 2 Filing 8 service	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
563	Waterline Trench Backfill: Mainline, 25' W of Lot 2 Block 2 Filing 8 service	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
564	Waterline Trench Backfill: Mainline, 25' W of Lot 2 Block 2 Filing 8 service	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
565	Waterline Trench Backfill: Mainline, 35' W of Lot 2 Block 2 Filing 8 service	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
566	Waterline Trench Backfill: Mainline, 35' W of Lot 2 Block 2 Filing 8 service	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
567	Waterline Trench Backfill: Mainline, 35' W of Lot 2 Block 2 Filing 8 service	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
568	Waterline Trench Backfill: Fire hydrant, 15' E of Lot 3 Block 2 Filing 8 service	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
569	Waterline Trench Backfill: Fire hydrant, 15' E of Lot 3 Block 2 Filing 8 service	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000057
08/05/2019
Report Date: 8/31/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
570		8/5/19	5	698A	SC	13.5	114.5	13.4	114.5	8	100	100	-2 / 2	A
571		8/5/19	5	698A	SC	13.5	114.5	13.4	114.6	8	100	100	-2 / 2	A
572		8/5/19	5	698A	SC	13.5	114.5	13.4	114.8	8	100	100	-2 / 2	A
573		8/5/19	5	698A	SC	13.5	114.5	13.7	114.5	8	100	100	-2 / 2	A
574		8/5/19	5	698A	SC	13.5	114.5	13.6	114.8	8	100	100	-2 / 2	A
575		8/5/19	5	698A	SC	13.5	114.5	13.8	114.4	8	100	100	-2 / 2	A
576		8/5/19	5	698A	SC	13.5	114.5	13.9	114.6	8	100	100	-2 / 2	A
577		8/5/19	5	698A	SC	13.5	114.5	13.6	114.3	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
570	Waterline Trench Backfill: Fire hydrant, 15' E of Lot 3 Block 2 Filing 8 service	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
571	Waterline Trench Backfill: Fire hydrant, 15' E of Lot 3 Block 2 Filing 8 service	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
572	Waterline Trench Backfill: Fire hydrant, 15' E of Lot 3 Block 2 Filing 8 service	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
573	Waterline Trench Backfill: Fire hydrant, 15' E of Lot 3 Block 2 Filing 8 service	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
574	Waterline Trench Backfill: Valve box, 15' E of Lot 3 Block 2 Filing 8 service	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
575	Waterline Trench Backfill: Valve box, 15' E of Lot 3 Block 2 Filing 8 service	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
576	Waterline Trench Backfill: Valve box, 15' E of Lot 3 Block 2 Filing 8 service	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
577	Waterline Trench Backfill: Valve box, 15' E of Lot 3 Block 2 Filing 8 service	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000057
08/05/2019
Report Date: 8/31/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
578		8/5/19	5	698A	SC	13.5	114.5	13.5	114.6	8	100	100	-2 / 2	A
579		8/5/19	5	698A	SC	13.5	114.5	13.6	114.9	8	100	100	-2 / 2	A
580		8/5/19	5	698A	SC	13.5	114.5	14.0	114.4	8	100	100	-2 / 2	A
581		8/5/19	5	698A	SC	13.5	114.5	13.6	114.6	8	100	100	-2 / 2	A
582		8/5/19	5	698A	SC	13.5	114.5	13.8	114.8	8	100	100	-2 / 2	A
583		8/5/19	5	698A	SC	13.5	114.5	13.8	114.7	8	100	100	-2 / 2	A
584		8/5/19	5	698A	SC	13.5	114.5	13.4	114.5	8	100	100	-2 / 2	A
585		8/5/19	5	698A	SC	13.5	114.5	14.0	114.6	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
578	Waterline Trench Backfill: Valve box, 15' E of Lot 3 Block 2 Filing 8 service	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
579	Waterline Trench Backfill: Valve box, 15' E of Lot 3 Block 2 Filing 8 service	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
580	Waterline Trench Backfill: Mainline adjacent to Lot 5 Block 1 Filing 8 service	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
581	Waterline Trench Backfill: Mainline adjacent to Lot 5 Block 1 Filing 8 service	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
582	Waterline Trench Backfill: Mainline adjacent to Lot 5 Block 1 Filing 8 service	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
583	Waterline Trench Backfill: Mainline adjacent to Lot 5 Block 1 Filing 8 service	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
584	Waterline Trench Backfill: Mainline adjacent to Lot 5 Block 1 Filing 8 service	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
585	Waterline Trench Backfill: Fire hydrant, 10' NE of SSMH-26 Filing 8	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Denver
1971 West 12th Avenue
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Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000057
08/05/2019
Report Date: 8/31/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
586		8/5/19	5	698A	SC	13.5	114.5	13.3	114.7	8	100	100	-2 / 2	A
587		8/5/19	5	698A	SC	13.5	114.5	13.4	114.4	8	100	100	-2 / 2	A
588		8/5/19	5	698A	SC	13.5	114.5	13.5	114.7	8	100	100	-2 / 2	A
589		8/5/19	5	698A	SC	13.5	114.5	13.6	114.5	8	100	100	-2 / 2	A
590		8/5/19	5	698A	SC	13.5	114.5	13.7	114.8	8	100	100	-2 / 2	A
591		8/5/19	5	698A	SC	13.5	114.5	13.4	114.6	8	100	100	-2 / 2	A
592		8/5/19	5	698A	SC	13.5	114.5	13.8	114.6	8	100	100	-2 / 2	A
593		8/5/19	5	698A	SC	13.5	114.5	13.4	114.8	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
586	Waterline Trench Backfill: Fire hydrant, 10' NE of SSMH-26 Filing 8	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
587	Waterline Trench Backfill: Fire hydrant, 10' NE of SSMH-26 Filing 8	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
588	Waterline Trench Backfill: Fire hydrant, 10' NE of SSMH-26 Filing 8	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
589	Waterline Trench Backfill: Fire hydrant, 10' NE of SSMH-26 Filing 8	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
590	Waterline Trench Backfill: Fire hydrant, 10' NE of SSMH-26 Filing 8	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
591	Waterline Trench Backfill: Valve box, 10' NE of SSMH-26 Filing 8	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
592	Waterline Trench Backfill: Valve box, 10' NE of SSMH-26 Filing 8	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
593	Waterline Trench Backfill: Valve box, 10' NE of SSMH-26 Filing 8	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000057
08/05/2019
Report Date: 8/31/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
594		8/5/19	5	698A	SC	13.5	114.5	13.6	114.7	8	100	100	-2 / 2	A
595		8/5/19	5	698A	SC	13.5	114.5	13.5	114.4	8	100	100	-2 / 2	A
596		8/5/19	5	698A	SC	13.5	114.5	13.6	114.6	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
594	Waterline Trench Backfill: Valve box, 10' NE of SSMH-26 Filing 8	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
595	Waterline Trench Backfill: Valve box, 10' NE of SSMH-26 Filing 8	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
596	Waterline Trench Backfill: Valve box, 10' NE of SSMH-26 Filing 8	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **596:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water wagon, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000058
08/06/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
597		8/6/19	3	698A	CL	16.0	111.0	17.3	109.2	8	98	95	0 / 4	A
598		8/6/19	3	698A	CL	16.0	111.0	17.0	109.2	8	98	95	0 / 4	A
599		8/6/19	3	698A	CL	16.0	111.0	17.3	109.1	8	98	95	0 / 4	A
600		8/6/19	3	698A	CL	16.0	111.0	17.5	109.1	8	98	95	0 / 4	A
601		8/6/19	3	698A	CL	16.0	111.0	17.2	109.0	8	98	95	0 / 4	A
602		8/6/19	3	698A	CL	16.0	111.0	17.5	109.1	8	98	95	0 / 4	A
603		8/6/19	3	698A	CL	16.0	111.0	17.0	109.2	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
597	Waterline Trench Backfill: Mainline, Rose Mallow Avenue and Rose Mallow Way intersection	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
598	Waterline Trench Backfill: Mainline, Rose Mallow Avenue and Rose Mallow Way intersection	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
599	Waterline Trench Backfill: Mainline, Rose Mallow Avenue and Rose Mallow Way intersection	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
600	Waterline Trench Backfill: Mainline, Rose Mallow Avenue and Rose Mallow Way intersection	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
601	Waterline Trench Backfill: Mainline, Rose Mallow Avenue and Rose Mallow Way intersection	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
602	Waterline Trench Backfill: Mainline, Rose Mallow Avenue and Rose Mallow Way intersection	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
603	Waterline Trench Backfill: Mainline, Rose Mallow Avenue and Rose Mallow Way intersection	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **603:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water wagon, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000059
08/15/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
604		8/15/19	6	698A	SC	11.0	120.5	11.6	119.9	8	100	100	-2 / 2	A
605		8/15/19	6	698A	SC	11.0	120.5	11.8	119.9	8	100	100	-2 / 2	A
606		8/15/19	6	698A	SC	11.0	120.5	11.5	120.3	8	100	100	-2 / 2	A
607		8/15/19	6	698A	SC	11.0	120.5	11.3	120.3	8	100	100	-2 / 2	A
608		8/15/19	6	698A	SC	11.0	120.5	11.4	120.3	8	100	100	-2 / 2	A
609		8/15/19	6	698A	SC	11.0	120.5	11.6	120.2	8	100	100	-2 / 2	A
610		8/15/19	6	698A	SC	11.0	120.5	11.2	120.3	8	100	100	-2 / 2	A
611		8/15/19	6	698A	SC	11.0	120.5	11.6	120.1	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
604	Waterline Trench Backfill: Fire hydrant, Crownvetch Circle adjacent to Lot 15 Block 4	8.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
605	Waterline Trench Backfill: Fire hydrant, Crownvetch Circle adjacent to Lot 15 Block 4	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
606	Waterline Trench Backfill: Fire hydrant, Crownvetch Circle adjacent to Lot 15 Block 4	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
607	Waterline Trench Backfill: Fire hydrant, Crownvetch Circle adjacent to Lot 15 Block 4	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
608	Waterline Trench Backfill: Fire hydrant, Crownvetch Circle adjacent to Lot 15 Block 4	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
609	Waterline Trench Backfill: Fire hydrant, Crownvetch Circle adjacent to Lot 15 Block 4	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
610	Waterline Trench Backfill: Fire hydrant, Crownvetch Circle adjacent to Lot 15 Block 4	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
611	Waterline Trench Backfill: Fire hydrant, Crownvetch Circle adjacent to Lot 15 Block 4	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Denver, CO 80204
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Compaction Test Report

Report #: SNG-000059
08/15/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
612		8/15/19	6	698A	SC	11.0	120.5	11.4	120.4	8	100	100	-2 / 2	A
613		8/15/19	6	698A	SC	11.0	120.5	11.1	120.3	8	100	100	-2 / 2	A
614		8/15/19	6	698A	SC	11.0	120.5	11.5	120.4	8	100	100	-2 / 2	A
615		8/15/19	6	698A	SC	11.0	120.5	11.5	120.1	8	100	100	-2 / 2	A
616		8/15/19	6	698A	SC	11.0	120.5	11.7	120.1	8	100	100	-2 / 2	A
617		8/15/19	6	698A	SC	11.0	120.5	11.7	120.1	8	100	100	-2 / 2	A
618		8/15/19	6	698A	SC	11.0	120.5	11.4	120.2	8	100	100	-2 / 2	A
619		8/15/19	6	698A	SC	11.0	120.5	11.5	120.4	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
612	Waterline Trench Backfill: Valve box, Crownvetch Circle adjacent to Lot 15 Block 4 fire hydrant, S side valve	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
613	Waterline Trench Backfill: Valve box, Crownvetch Circle adjacent to Lot 15 Block 4 fire hydrant, S side valve	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
614	Waterline Trench Backfill: Valve box, Crownvetch Circle adjacent to Lot 15 Block 4 fire hydrant, S side valve	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
615	Waterline Trench Backfill: Valve box, Crownvetch Circle adjacent to Lot 15 Block 4 fire hydrant, S side valve	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
616	Waterline Trench Backfill: Valve box, Crownvetch Circle adjacent to Lot 15 Block 4 fire hydrant, S side valve	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
617	Waterline Trench Backfill: Valve box, Crownvetch Circle adjacent to Lot 15 Block 4 fire hydrant, N side valve	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
618	Waterline Trench Backfill: Valve box, Crownvetch Circle adjacent to Lot 15 Block 4 fire hydrant, N side valve	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
619	Waterline Trench Backfill: Valve box, Crownvetch Circle adjacent to Lot 15 Block 4 fire hydrant, N side valve	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000059
08/15/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
620		8/15/19	6	698A	SC	11.0	120.5	11.3	120.3	8	100	100	-2 / 2	A
621		8/15/19	6	698A	SC	11.0	120.5	11.4	120.2	8	100	100	-2 / 2	A
622		8/15/19	6	698A	SC	11.0	120.5	11.1	120.2	8	100	100	-2 / 2	A
623		8/15/19	6	698A	SC	11.0	120.5	11.3	120.3	8	100	100	-2 / 2	A
624		8/15/19	6	698A	SC	11.0	120.5	11.7	120.2	8	100	100	-2 / 2	A
625		8/15/19	6	698A	SC	11.0	120.5	11.5	120.1	8	100	100	-2 / 2	A
626		8/15/19	6	698A	SC	11.0	120.5	11.6	120.2	8	100	100	-2 / 2	A
627		8/15/19	9	698A	CL	20.5	103.5	22.3	102.3	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
620	Waterline Trench Backfill: Valve box, Crownvetch Circle adjacent to Lot 15 Block 4 fire hydrant, N side valve	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
621	Waterline Trench Backfill: Valve box, Crownvetch Circle adjacent to Lot 15 Block 4 fire hydrant, N side valve	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
622	Waterline Trench Backfill: Valve box, Crownvetch Circle adjacent to Lot 15 Block 4 fire hydrant, W side valve	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
623	Waterline Trench Backfill: Valve box, Crownvetch Circle adjacent to Lot 15 Block 4 fire hydrant, W side valve	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
624	Waterline Trench Backfill: Valve box, Crownvetch Circle adjacent to Lot 15 Block 4 fire hydrant, W side valve	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
625	Waterline Trench Backfill: Valve box, Crownvetch Circle adjacent to Lot 15 Block 4 fire hydrant, W side valve	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
626	Waterline Trench Backfill: Valve box, Crownvetch Circle adjacent to Lot 15 Block 4 fire hydrant, W side valve	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
627	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 450' N of Shasta Daisy Street	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000059
08/15/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
628		8/15/19	9	698A	CL	20.5	103.5	23.6	100.2	8	97	95	0 / 4	A
629		8/15/19	9	698A	CL	20.5	103.5	23.1	100.8	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
628	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 450' N of Shasta Daisy Street	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
629	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 450' N of Shasta Daisy Street	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **629:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water wagon, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
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Compaction Test Report

Report #: SNG-000060
08/19/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
630		8/19/19	6	698A	SC	11.0	120.5	11.3	120.3	8	100	100	-2 / 2	A
631		8/19/19	6	698A	SC	11.0	120.5	11.6	120.2	8	100	100	-2 / 2	A
632		8/19/19	6	698A	SC	11.0	120.5	11.6	120.2	8	100	100	-2 / 2	A
633		8/19/19	6	698A	SC	11.0	120.5	11.4	120.1	8	100	100	-2 / 2	A
634		8/19/19	6	698A	SC	11.0	120.5	11.5	120.4	8	100	100	-2 / 2	A
635		8/19/19	6	698A	SC	11.0	120.5	11.4	120.3	8	100	100	-2 / 2	A
636		8/19/19	6	698A	SC	11.0	120.5	11.7	120.2	8	100	100	-2 / 2	A
637		8/19/19	6	698A	SC	11.0	120.5	11.3	120.2	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
630	Waterline Trench Backfill: Valve box, Bayou Gulch Road, 50' NE of SSMH 121	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
631	Waterline Trench Backfill: Valve box, Bayou Gulch Road, 50' NE of SSMH 121	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
632	Waterline Trench Backfill: Valve box, Bayou Gulch Road, 50' NE of SSMH 121	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
633	Waterline Trench Backfill: Valve box, Bayou Gulch Road, 50' SE of SSMH 122	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
634	Waterline Trench Backfill: Valve box, Bayou Gulch Road, 50' SE of SSMH 122	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
635	Waterline Trench Backfill: Valve box, Bayou Gulch Road, 50' SE of SSMH 122	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
636	Waterline Trench Backfill: Valve box, Bayou Gulch Road, 150' SE of SSMH 122	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
637	Waterline Trench Backfill: Valve box, Bayou Gulch Road, 150' SE of SSMH 122	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000060
08/19/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
638		8/19/19	6	698A	SC	11.0	120.5	11.6	120.3	8	100	100	-2 / 2	A
639		8/19/19	6	698A	SC	11.0	120.5	11.6	120.1	8	100	100	-2 / 2	A
640		8/19/19	6	698A	SC	11.0	120.5	11.4	120.2	8	100	100	-2 / 2	A
641		8/19/19	6	698A	SC	11.0	120.5	11.3	120.2	8	100	100	-2 / 2	A
642		8/19/19	6	698A	SC	11.0	120.5	11.6	120.3	8	100	100	-2 / 2	A
643		8/19/19	6	698A	SC	11.0	120.5	11.8	119.9	8	100	100	-2 / 2	A
644		8/19/19	3	698A	CL	16.0	111.0	18.1	105.9	8	95	95	0 / 4	A
645		8/19/19	3	698A	CL	16.0	111.0	18.0	107.5	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
638	Waterline Trench Backfill: Valve box, Bayou Gulch Road, 150' SE of SSMH 122	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
639	Waterline Trench Backfill: Valve box, Bayou Gulch Road, 150' SE of SSMH 122	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
640	Waterline Trench Backfill: Fire hydrant, Bayou Gulch Road, 165' SE of SSMH 122, 15' E of previous valve box	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
641	Waterline Trench Backfill: Fire hydrant, Bayou Gulch Road, 165' SE of SSMH 122, 15' E of previous valve box	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
642	Waterline Trench Backfill: Fire hydrant, Bayou Gulch Road, 165' SE of SSMH 122, 15' E of previous valve box	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
643	Waterline Trench Backfill: Fire hydrant, Bayou Gulch Road, 165' SE of SSMH 122, 15' E of previous valve box	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
644	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 300' S of intersection between Bayou Gulch Road and N Pinery Pkwy	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
645	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 300' S of intersection between Bayou Gulch Road and N Pinery Pkwy	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000060
08/19/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
646		8/19/19	3	698A	CL	16.0	111.0	17.9	107.9	8	97	95	0 / 4	A
647		8/19/19	3	698A	CL	16.0	111.0	17.3	108.8	8	98	95	0 / 4	A
648		8/19/19	5	698A	SC	13.5	114.5	13.4	114.8	8	100	100	-2 / 2	A
649		8/19/19	5	698A	SC	13.5	114.5	13.5	114.8	8	100	100	-2 / 2	A
650		8/19/19	5	698A	SC	13.5	114.5	13.8	114.5	8	100	100	-2 / 2	A
651		8/19/19	5	698A	SC	13.5	114.5	13.9	114.7	8	100	100	-2 / 2	A
652		8/19/19	5	698A	SC	13.5	114.5	14.1	114.3	8	100	100	-2 / 2	A
653		8/19/19	5	698A	SC	13.5	114.5	13.8	114.7	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
646	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 300' S of intersection between Bayou Gulch Road and N Pinery Pkwy	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
647	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 300' S of intersection between Bayou Gulch Road and N Pinery Pkwy	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
648	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 500' S of intersection between Bayou Gulch Road and N Pinery Pkwy	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
649	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 500' S of intersection between Bayou Gulch Road and N Pinery Pkwy	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
650	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 500' S of intersection between Bayou Gulch Road and N Pinery Pkwy	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
651	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 500' S of intersection between Bayou Gulch Road and N Pinery Pkwy	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
652	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 150' N of SSMH 122	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
653	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 150' N of SSMH 122	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000060
08/19/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
654		8/19/19	5	698A	SC	13.5	114.5	13.7	114.5	8	100	100	-2 / 2	A
655		8/19/19	5	698A	SC	13.5	114.5	13.4	114.5	8	100	100	-2 / 2	A
656		8/19/19	2	698A	CL	15.0	112.0	16.3	109.9	8	98	95	0 / 4	A
657		8/19/19	2	698A	CL	15.0	112.0	16.2	109.6	8	98	95	0 / 4	A
658		8/19/19	2	698A	CL	15.0	112.0	16.0	109.8	8	98	95	0 / 4	A
659		8/19/19	2	698A	CL	15.0	112.0	16.2	109.8	8	98	95	0 / 4	A
660		8/19/19	2	698A	CL	15.0	112.0	15.8	110.2	8	98	95	0 / 4	A
661		8/19/19	2	698A	CL	15.0	112.0	16.0	110.0	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
654	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 150' N of SSMH 122	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
655	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 150' N of SSMH 122	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
656	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 200' N of Shasta Daisy Street	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
657	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 200' N of Shasta Daisy Street	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
658	Waterline Trench Backfill: Valve box, Shasta Daisy Street, 15' NW of intersection between Bayou Gulch Road and Shasta Daisy Street	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
659	Waterline Trench Backfill: Valve box, Shasta Daisy Street, 15' NW of intersection between Bayou Gulch Road and Shasta Daisy Street	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
660	Waterline Trench Backfill: Valve box, Shasta Daisy Street, 15' NW of intersection between Bayou Gulch Road and Shasta Daisy Street	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
661	Waterline Trench Backfill: Valve box, Shasta Daisy Street, 15' NW of intersection between Bayou Gulch Road and Shasta Daisy Street	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Denver
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Compaction Test Report

Report #: SNG-000060
08/19/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
662		8/19/19	2	698A	CL	15.0	112.0	16.5	109.5	8	98	95	0 / 4	A
663		8/19/19	2	698A	CL	15.0	112.0	15.4	110.0	8	98	95	0 / 4	A
664		8/19/19	2	698A	CL	15.0	112.0	16.2	109.7	8	98	95	0 / 4	A
665		8/19/19	2	698A	CL	15.0	112.0	15.7	110.1	8	98	95	0 / 4	A
666		8/19/19	2	698A	CL	15.0	112.0	15.7	110.3	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
662	Waterline Trench Backfill: Valve box, Shasta Daisy Street, 25' SW of intersection between Bayou Gulch Road and Shasta Daisy Street	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
663	Waterline Trench Backfill: Valve box, Shasta Daisy Street, 25' SW of intersection between Bayou Gulch Road and Shasta Daisy Street	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
664	Waterline Trench Backfill: Valve box, Shasta Daisy Street, 25' SW of intersection between Bayou Gulch Road and Shasta Daisy Street	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
665	Waterline Trench Backfill: Valve box, Shasta Daisy Street, 25' SW of intersection between Bayou Gulch Road and Shasta Daisy Street	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
666	Waterline Trench Backfill: Valve box, Shasta Daisy Street, 25' SW of intersection between Bayou Gulch Road and Shasta Daisy Street	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **666:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water wagon, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000061
08/20/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
667		8/20/19	9	698A	CL	20.5	103.5	21.2	101.8	8	98	95	0 / 4	A
668		8/20/19	9	698A	CL	20.5	103.5	21.4	101.9	8	98	95	0 / 4	A
669		8/20/19	5	698A	SC	13.5	114.5	13.6	114.5	8	100	100	-2 / 2	A
670		8/20/19	5	698A	SC	13.5	114.5	13.9	114.0	8	100	100	-2 / 2	A
671		8/20/19	5	698A	SC	13.5	114.5	13.5	114.4	8	100	100	-2 / 2	A
672		8/20/19	5	698A	SC	13.5	114.5	14.0	114.4	8	100	100	-2 / 2	A
673		8/20/19	5	698A	SC	13.5	114.5	13.8	114.5	8	100	100	-2 / 2	A
674		8/20/19	5	698A	SC	13.5	114.5	13.8	114.4	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
667	Waterline Trench Backfill: Valve box, 40' N of Bayou Gulch Road and Shasta Daisy Street intersection	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
668	Waterline Trench Backfill: Valve box, 40' N of Bayou Gulch Road and Shasta Daisy Street intersection	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
669	Waterline Trench Backfill: Mainline adjacent to Lot 17 Block 1 Filing 8	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
670	Waterline Trench Backfill: Mainline adjacent to Lot 17 Block 1 Filing 8	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
671	Waterline Trench Backfill: Mainline adjacent to Lot 17 Block 1 Filing 8	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
672	Waterline Trench Backfill: Mainline adjacent to Lot 17 Block 1 Filing 8	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
673	Waterline Trench Backfill: Mainline adjacent to Lot 17 Block 1 Filing 8	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
674	Waterline Trench Backfill: Valve box adjacent to Lot 10 Block 2 Filing 8	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000061
08/20/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
675		8/20/19	5	698A	SC	13.5	114.5	13.6	114.3	8	100	100	-2 / 2	A
676		8/20/19	5	698A	SC	13.5	114.5	14.1	114.5	8	100	100	-2 / 2	A
677		8/20/19	5	698A	SC	13.5	114.5	13.7	114.1	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
675	Waterline Trench Backfill: Valve box adjacent to Lot 10 Block 2 Filing 8	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
676	Waterline Trench Backfill: Valve box adjacent to Lot 10 Block 2 Filing 8	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
677	Waterline Trench Backfill: Valve box adjacent to Lot 10 Block 2 Filing 8	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **677:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000062
08/23/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
678		8/23/19	3	698A	CL	16.0	111.0	17.3	108.6	8	98	95	0 / 4	A
679		8/23/19	3	698A	CL	16.0	111.0	17.5	107.7	8	97	95	0 / 4	A
680		8/23/19	3	698A	CL	16.0	111.0	17.4	108.5	8	98	95	0 / 4	A
681		8/23/19	3	698A	CL	16.0	111.0	17.0	108.1	8	97	95	0 / 4	A
682		8/23/19	3	698A	CL	16.0	111.0	17.1	108.3	8	98	95	0 / 4	A
683		8/23/19	3	698A	CL	16.0	111.0	17.6	108.1	8	97	95	0 / 4	A
684		8/23/19	3	698A	CL	16.0	111.0	17.7	108.2	8	97	95	0 / 4	A
685		8/23/19	3	698A	CL	16.0	111.0	17.8	107.7	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
678	Waterline Trench Backfill: Fire hydrant, Shasta Daisy Street, 50' W of Bayou Gulch Road and Shasta Daisy Street intersection	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
679	Waterline Trench Backfill: Fire hydrant, Shasta Daisy Street, 50' W of Bayou Gulch Road and Shasta Daisy Street intersection	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
680	Waterline Trench Backfill: Fire hydrant, Shasta Daisy Street, 50' W of Bayou Gulch Road and Shasta Daisy Street intersection	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
681	Waterline Trench Backfill: Valve box adjacent to fire hydrant, Shasta Daisy Street, 50' W of Bayou Gulch Road and Shasta Daisy Street intersection	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
682	Waterline Trench Backfill: Valve box adjacent to fire hydrant, Shasta Daisy Street, 50' W of Bayou Gulch Road and Shasta Daisy Street intersection	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
683	Waterline Trench Backfill: Valve box adjacent to fire hydrant, Shasta Daisy Street, 50' W of Bayou Gulch Road and Shasta Daisy Street intersection	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
684	Waterline Trench Backfill: Valve box, Shasta Daisy Street, 25' W of Bayou Gulch Road and Shasta Daisy Street intersection	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
685	Waterline Trench Backfill: Valve box, Shasta Daisy Street, 25' W of Bayou Gulch Road and Shasta Daisy Street intersection	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **685:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000063
08/26/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
686		8/26/19	9	698A	CL	20.5	103.5	21.6	100.7	8	97	95	0 / 4	A
687		8/26/19	9	698A	CL	20.5	103.5	22.2	100.4	8	97	95	0 / 4	A
688		8/26/19	9	698A	CL	20.5	103.5	21.3	101.5	8	98	95	0 / 4	A
689		8/26/19	9	698A	CL	20.5	103.5	21.9	100.7	8	97	95	0 / 4	A
690		8/26/19	4	698A	CL	16.0	109.0	17.4	106.7	8	98	95	0 / 4	A
691		8/26/19	4	698A	CL	16.0	109.0	17.8	105.9	8	97	95	0 / 4	A
692		8/26/19	4	698A	CL	16.0	109.0	18.3	105.3	8	97	95	0 / 4	A
693		8/26/19	14	ASTM D698A	SC	11.0	120.5	11.6	119.9	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
686	Waterline Trench Backfill: Mainline, 100' S of Bayou Gulch Road and Shasta Daisy Street	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
687	Waterline Trench Backfill: Mainline, 100' S of Bayou Gulch Road and Shasta Daisy Street	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
688	Waterline Trench Backfill: Mainline, 100' S of Bayou Gulch Road and Shasta Daisy Street	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
689	Waterline Trench Backfill: Mainline, 100' S of Bayou Gulch Road and Shasta Daisy Street	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
690	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 75' NE of STM-MH 24	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
691	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 75' NE of STM-MH 24	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
692	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 75' NE of STM-MH 24	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
693	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 75' NE of STM-MH 24	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000063
08/26/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
694		8/26/19	14	ASTM D698A	SC	11.0	120.5	11.5	120.3	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
694	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 75' NE of STM-MH 24	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **694:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000064
08/28/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
695		8/28/19	6	698A	SC	11.0	120.5	11.7	120.3	8	100	100	-2 / 2	A
696		8/28/19	6	698A	SC	11.0	120.5	11.4	120.4	8	100	100	-2 / 2	A
697		8/28/19	6	698A	SC	11.0	120.5	11.6	120.2	8	100	100	-2 / 2	A
698		8/28/19	3	698A	CL	16.0	111.0	17.4	108.4	8	98	95	0 / 4	A
699		8/28/19	3	698A	CL	16.0	111.0	17.8	107.5	8	97	95	0 / 4	A
700		8/28/19	3	698A	CL	16.0	111.0	17.3	107.6	8	97	95	0 / 4	A
701		8/28/19	3	698A	CL	16.0	111.0	17.1	108.2	8	97	95	0 / 4	A
702		8/28/19	9	698A	CL	20.5	103.5	21.6	100.7	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
695	Waterline Trench Backfill: Valve box, N section of Bayou Gulch Road, 500' S of SSMH-3 adjacent to fire hydrant	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
696	Waterline Trench Backfill: Valve box, N section of Bayou Gulch Road, 500' S of SSMH-3 adjacent to fire hydrant	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
697	Waterline Trench Backfill: Valve box, N section of Bayou Gulch Road, 500' S of SSMH-3 adjacent to fire hydrant	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
698	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 350' S of Shasta Daisy Street	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
699	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 350' S of Shasta Daisy Street	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
700	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 350' S of Shasta Daisy Street	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
701	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 350' S of Shasta Daisy Street	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
702	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 400' S of Shasta Daisy Street	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000064
08/28/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
703		8/28/19	9	698A	CL	20.5	103.5	21.6	101.5	8	98	95	0 / 4	A
704		8/28/19	9	698A	CL	20.5	103.5	22.7	100.4	8	97	95	0 / 4	A
705		8/28/19	9	698A	CL	20.5	103.5	23.2	99.7	8	96	95	0 / 4	A
706		8/28/19	9	698A	CL	20.5	103.5	22.4	101.0	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
703	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 400' S of Shasta Daisy Street	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
704	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 400' S of Shasta Daisy Street	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
705	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 400' S of Shasta Daisy Street	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
706	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 400' S of Shasta Daisy Street	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **706:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the excavator and dozer, add moisture with the water truck, and apply compactive effort with the sheepsfoot roller.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000065
09/03/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
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Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
707		9/3/19	6	698A	SC	11.0	120.5	10.9	120.7	8	100	100	-2 / 2	A
708		9/3/19	6	698A	SC	11.0	120.5	11.2	120.2	8	100	100	-2 / 2	A
709		9/3/19	6	698A	SC	11.0	120.5	11.0	120.5	8	100	100	-2 / 2	A
710		9/3/19	6	698A	SC	11.0	120.5	11.1	120.7	8	100	100	-2 / 2	A
711		9/3/19	6	698A	SC	11.0	120.5	10.8	120.8	8	100	100	-2 / 2	A
712		9/3/19	6	698A	SC	11.0	120.5	10.7	120.9	8	100	100	-2 / 2	A
713		9/3/19	6	698A	SC	11.0	120.5	11.2	120.6	8	100	100	-2 / 2	A
714		9/3/19	6	698A	SC	11.0	120.5	10.6	121.0	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
707	Waterline Trench Backfill: Mainline, Alpine Daisy Circle, STA 13+00	6.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
708	Waterline Trench Backfill: Mainline, Alpine Daisy Circle, STA 13+00	5.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
709	Waterline Trench Backfill: Mainline, Alpine Daisy Circle, STA 13+00	4.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
710	Waterline Trench Backfill: Mainline, Alpine Daisy Circle, STA 13+00	3.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
711	Waterline Trench Backfill: Mainline, Alpine Daisy Circle, STA 13+00	2.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
712	Waterline Trench Backfill: Mainline, Alpine Daisy Circle, STA 13+00	1.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
713	Waterline Trench Backfill: Mainline, Alpine Daisy Circle, STA 11+00	6.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
714	Waterline Trench Backfill: Mainline, Alpine Daisy Circle, STA 11+00	5.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

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Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
715		9/3/19	6	698A	SC	11.0	120.5	11.0	120.8	8	100	100	-2 / 2	A
716		9/3/19	6	698A	SC	11.0	120.5	10.7	120.8	8	100	100	-2 / 2	A
717		9/3/19	6	698A	SC	11.0	120.5	10.4	121.1	8	100	100	-2 / 2	A
718		9/3/19	6	698A	SC	11.0	120.5	10.7	120.7	8	100	100	-2 / 2	A
719		9/3/19	6	698A	SC	11.0	120.5	11.0	120.8	8	100	100	-2 / 2	A
720		9/3/19	6	698A	SC	11.0	120.5	10.9	120.6	8	100	100	-2 / 2	A
721		9/3/19	6	698A	SC	11.0	120.5	10.9	120.9	8	100	100	-2 / 2	A
722		9/3/19	6	698A	SC	11.0	120.5	10.8	120.8	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
715	Waterline Trench Backfill: Mainline, Alpine Daisy Circle, STA 11+00	4.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
716	Waterline Trench Backfill: Mainline, Alpine Daisy Circle, STA 11+00	3.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
717	Waterline Trench Backfill: Mainline, Alpine Daisy Circle, STA 11+00	2.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
718	Waterline Trench Backfill: Mainline, Alpine Daisy Circle, STA 11+00	1.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
719	Waterline Trench Backfill: Valve box, Alpine Daisy Circle and Scarlet Sage Avenue, TCGV 147	6.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
720	Waterline Trench Backfill: Valve box, Alpine Daisy Circle and Scarlet Sage Avenue, TCGV 147	5.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
721	Waterline Trench Backfill: Valve box, Alpine Daisy Circle and Scarlet Sage Avenue, TCGV 147	4.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
722	Waterline Trench Backfill: Valve box, Alpine Daisy Circle and Scarlet Sage Avenue, TCGV 147	3.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000065
09/03/2019
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Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
723		9/3/19	6	698A	SC	11.0	120.5	10.6	120.9	8	100	100	-2 / 2	A
724		9/3/19	6	698A	SC	11.0	120.5	10.5	121.1	8	100	100	-2 / 2	A
725		9/3/19	6	698A	SC	11.0	120.5	10.5	120.9	8	100	100	-2 / 2	A
726		9/3/19	6	698A	SC	11.0	120.5	10.4	121.1	8	100	100	-2 / 2	A
727		9/3/19	6	698A	SC	11.0	120.5	10.6	121.0	8	100	100	-2 / 2	A
728		9/3/19	6	698A	SC	11.0	120.5	10.6	121.1	8	100	100	-2 / 2	A
729		9/3/19	6	698A	SC	11.0	120.5	10.9	120.9	8	100	100	-2 / 2	A
730		9/3/19	6	698A	SC	11.0	120.5	11.1	120.7	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
723	Waterline Trench Backfill: Valve box, Alpine Daisy Circle and Scarlet Sage Avenue, TCGV 147	2.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
724	Waterline Trench Backfill: Valve box, Alpine Daisy Circle and Scarlet Sage Avenue, TCGV 147	1.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
725	Waterline Trench Backfill: Valve box, Alpine Daisy Circle and Scarlet Sage Avenue, TCGV 144	6.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
726	Waterline Trench Backfill: Valve box, Alpine Daisy Circle and Scarlet Sage Avenue, TCGV 144	5.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
727	Waterline Trench Backfill: Valve box, Alpine Daisy Circle and Scarlet Sage Avenue, TCGV 144	4.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
728	Waterline Trench Backfill: Valve box, Alpine Daisy Circle and Scarlet Sage Avenue, TCGV 144	3.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
729	Waterline Trench Backfill: Valve box, Alpine Daisy Circle and Scarlet Sage Avenue, TCGV 144	2.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
730	Waterline Trench Backfill: Valve box, Alpine Daisy Circle and Scarlet Sage Avenue, TCGV 144	1.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000065
09/03/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
731		9/3/19	6	698A	SC	11.0	120.5	11.3	120.6	8	100	100	-2 / 2	A
732		9/3/19	6	698A	SC	11.0	120.5	11.1	120.5	8	100	100	-2 / 2	A
733		9/3/19	6	698A	SC	11.0	120.5	10.8	121.0	8	100	100	-2 / 2	A
734		9/3/19	6	698A	SC	11.0	120.5	10.7	120.9	8	100	100	-2 / 2	A
735		9/3/19	6	698A	SC	11.0	120.5	10.3	120.9	8	100	100	-2 / 2	A
736		9/3/19	6	698A	SC	11.0	120.5	10.4	121.0	8	100	100	-2 / 2	A
737		9/3/19	6	698A	SC	11.0	120.5	11.3	120.2	8	100	100	-2 / 2	A
738		9/3/19	6	698A	SC	11.0	120.5	11.0	120.4	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
731	Waterline Trench Backfill: Mainline, Alpine Phlox Street and Scarlet Sage Avenue, STA 26+50	6.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
732	Waterline Trench Backfill: Mainline, Alpine Phlox Street and Scarlet Sage Avenue, STA 26+50	5.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
733	Waterline Trench Backfill: Mainline, Alpine Phlox Street and Scarlet Sage Avenue, STA 26+50	4.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
734	Waterline Trench Backfill: Mainline, Alpine Phlox Street and Scarlet Sage Avenue, STA 26+50	3.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
735	Waterline Trench Backfill: Mainline, Alpine Phlox Street and Scarlet Sage Avenue, STA 26+50	2.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
736	Waterline Trench Backfill: Mainline, Alpine Phlox Street and Scarlet Sage Avenue, STA 26+50	1.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
737	Waterline Trench Backfill: Mainline, Alpine Phlox Street and Scarlet Sage Avenue, STA 25+00	6.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
738	Waterline Trench Backfill: Mainline, Alpine Phlox Street and Scarlet Sage Avenue, STA 25+00	5.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

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09/03/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

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Test Results

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739		9/3/19	6	698A	SC	11.0	120.5	10.9	120.9	8	100	100	-2 / 2	A
740		9/3/19	6	698A	SC	11.0	120.5	10.6	120.8	8	100	100	-2 / 2	A
741		9/3/19	6	698A	SC	11.0	120.5	10.7	120.7	8	100	100	-2 / 2	A
742		9/3/19	6	698A	SC	11.0	120.5	10.7	121.0	8	100	100	-2 / 2	A
743		9/3/19	6	698A	SC	11.0	120.5	11.1	120.4	8	100	100	-2 / 2	A
744		9/3/19	6	698A	SC	11.0	120.5	10.8	121.0	8	100	100	-2 / 2	A
745		9/3/19	6	698A	SC	11.0	120.5	10.9	120.7	8	100	100	-2 / 2	A
746		9/3/19	6	698A	SC	11.0	120.5	10.6	120.8	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
739	Waterline Trench Backfill: Mainline, Alpine Phlox Street and Scarlet Sage Avenue, STA 25+00	4.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
740	Waterline Trench Backfill: Mainline, Alpine Phlox Street and Scarlet Sage Avenue, STA 25+00	3.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
741	Waterline Trench Backfill: Mainline, Alpine Phlox Street and Scarlet Sage Avenue, STA 25+00	2.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
742	Waterline Trench Backfill: Mainline, Alpine Phlox Street and Scarlet Sage Avenue, STA 25+00	1.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
743	Waterline Trench Backfill: Mainline, Alpine Phlox Street and Scarlet Sage Avenue, STA 23+00	6.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
744	Waterline Trench Backfill: Mainline, Alpine Phlox Street and Scarlet Sage Avenue, STA 23+00	5.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
745	Waterline Trench Backfill: Mainline, Alpine Phlox Street and Scarlet Sage Avenue, STA 23+00	4.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
746	Waterline Trench Backfill: Mainline, Alpine Phlox Street and Scarlet Sage Avenue, STA 23+00	3.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake

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A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
747		9/3/19	6	698A	SC	11.0	120.5	10.7	120.9	8	100	100	-2 / 2	A
748		9/3/19	6	698A	SC	11.0	120.5	10.6	120.7	8	100	100	-2 / 2	A
749		9/3/19	3	698A	CL	16.0	111.0	16.7	109.2	8	98	95	0 / 4	A
750		9/3/19	3	698A	CL	16.0	111.0	16.2	109.8	8	99	95	0 / 4	A
751		9/3/19	6	698A	SC	11.0	120.5	11.0	120.5	8	100	100	-2 / 2	A
752		9/3/19	6	698A	SC	11.0	120.5	10.5	121.1	8	100	100	-2 / 2	A
753		9/3/19	6	698A	SC	11.0	120.5	10.9	120.6	8	100	100	-2 / 2	A
754		9/3/19	6	698A	SC	11.0	120.5	10.4	121.0	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
747	Waterline Trench Backfill: Mainline, Alpine Phlox Street and Scarlet Sage Avenue, STA 23+00	2.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
748	Waterline Trench Backfill: Mainline, Alpine Phlox Street and Scarlet Sage Avenue, STA 23+00	1.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
749	Waterline Trench Backfill: Valve box, Scarlet Sage Avenue, TCGV 127	6.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
750	Waterline Trench Backfill: Valve box, Scarlet Sage Avenue, TCGV 127	5.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
751	Waterline Trench Backfill: Valve box, Scarlet Sage Avenue, TCGV 127	4.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
752	Waterline Trench Backfill: Valve box, Scarlet Sage Avenue, TCGV 127	3.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
753	Waterline Trench Backfill: Valve box, Scarlet Sage Avenue, TCGV 127	2.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
754	Waterline Trench Backfill: Valve box, Scarlet Sage Avenue, TCGV 127	1.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake

Remarks	Comments
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755		9/3/19	3	698A	CL	16.0	111.0	16.8	108.6	8	98	95	0 / 4	A
756		9/3/19	3	698A	CL	16.0	111.0	16.7	109.8	8	99	95	0 / 4	A
757		9/3/19	6	698A	SC	11.0	120.5	10.6	120.9	8	100	100	-2 / 2	A
758		9/3/19	6	698A	SC	11.0	120.5	11.1	120.4	8	100	100	-2 / 2	A
759		9/3/19	6	698A	SC	11.0	120.5	10.3	120.9	8	100	100	-2 / 2	A
760		9/3/19	6	698A	SC	11.0	120.5	10.7	121.0	8	100	100	-2 / 2	A
761		9/3/19	6	698A	SC	11.0	120.5	10.9	120.9	8	100	100	-2 / 2	A
762		9/3/19	6	698A	SC	11.0	120.5	11.1	120.8	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
755	Waterline Trench Backfill: Mainline, Scarlet Sage Avenue, STA 20+50	6.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
756	Waterline Trench Backfill: Mainline, Scarlet Sage Avenue, STA 20+50	5.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
757	Waterline Trench Backfill: Mainline, Scarlet Sage Avenue, STA 20+50	4.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
758	Waterline Trench Backfill: Mainline, Scarlet Sage Avenue, STA 20+50	3.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
759	Waterline Trench Backfill: Mainline, Scarlet Sage Avenue, STA 20+50	2.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
760	Waterline Trench Backfill: Mainline, Scarlet Sage Avenue, STA 20+50	1.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
761	Waterline Trench Backfill: Air Vac valve, Scarlet Sage Avenue and Bayou Gulch Road, TCAV 15	5.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
762	Waterline Trench Backfill: Air Vac valve, Scarlet Sage Avenue and Bayou Gulch Road, TCAV 15	4.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake

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763		9/3/19	6	698A	SC	11.0	120.5	11.1	120.4	8	100	100	-2 / 2	A
764		9/3/19	6	698A	SC	11.0	120.5	10.9	120.6	8	100	100	-2 / 2	A
765		9/3/19	6	698A	SC	11.0	120.5	10.4	121.0	8	100	100	-2 / 2	A
766		9/3/19	6	698A	SC	11.0	120.5	10.8	120.8	8	100	100	-2 / 2	A
767		9/3/19	6	698A	SC	11.0	120.5	10.6	120.9	8	100	100	-2 / 2	A
768		9/3/19	6	698A	SC	11.0	120.5	11.1	120.7	8	100	100	-2 / 2	A
769		9/3/19	6	698A	SC	11.0	120.5	10.5	121.1	8	100	100	-2 / 2	A
770		9/3/19	6	698A	SC	11.0	120.5	10.9	120.6	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
763	Waterline Trench Backfill: Air Vac valve, Scarlet Sage Avenue and Bayou Gulch Road, TCAV 15	3.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
764	Waterline Trench Backfill: Air Vac valve, Scarlet Sage Avenue and Bayou Gulch Road, TCAV 15	2.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
765	Waterline Trench Backfill: Air Vac valve, Scarlet Sage Avenue and Bayou Gulch Road, TCAV 15	1.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
766	Waterline Trench Backfill: Fire hydrant, Scarlet Sage Avenue and Bayou Gulch Road, TC-FH 57	5.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
767	Waterline Trench Backfill: Fire hydrant, Scarlet Sage Avenue and Bayou Gulch Road, TC-FH 57	4.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
768	Waterline Trench Backfill: Fire hydrant, Scarlet Sage Avenue and Bayou Gulch Road, TC-FH 57	3.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
769	Waterline Trench Backfill: Fire hydrant, Scarlet Sage Avenue and Bayou Gulch Road, TC-FH 57	2.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
770	Waterline Trench Backfill: Fire hydrant, Scarlet Sage Avenue and Bayou Gulch Road, TC-FH 57	1.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake

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Test Results

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771		9/3/19	2	698A	CL	15.0	112.0	16.0	110.0	8	98	95	0 / 4	A
772		9/3/19	2	698A	CL	15.0	112.0	16.0	109.4	8	98	95	0 / 4	A
773		9/3/19	6	698A	SC	11.0	120.5	10.6	121.0	8	100	100	-2 / 2	A
774		9/3/19	6	698A	SC	11.0	120.5	10.7	121.1	8	100	100	-2 / 2	A
775		9/3/19	6	698A	SC	11.0	120.5	10.6	120.9	8	100	100	-2 / 2	A
776		9/3/19	6	698A	SC	11.0	120.5	10.2	121.1	8	100	100	-2 / 2	A
777		9/3/19	3	698A	CL	16.0	111.0	17.1	108.3	8	98	95	0 / 4	A
778		9/3/19	3	698A	CL	16.0	111.0	17.1	108.6	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
771	Waterline Trench Backfill: Valve Box. Bayou Gulch Rd and Scarlet Sage Ave. STA 18+00.	6.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
772	Waterline Trench Backfill: Valve Box. Bayou Gulch Rd and Scarlet Sage Ave. STA 18+00.	5.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
773	Waterline Trench Backfill: Valve Box. Bayou Gulch Rd and Scarlet Sage Ave. STA 18+00.	4.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
774	Waterline Trench Backfill: Valve Box. Bayou Gulch Rd and Scarlet Sage Ave. STA 18+00.	3.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
775	Waterline Trench Backfill: Valve Box. Bayou Gulch Rd and Scarlet Sage Ave. STA 18+00.	2.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
776	Waterline Trench Backfill: Valve Box. Bayou Gulch Rd and Scarlet Sage Ave. STA 18+00.	1.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
777	Waterline Trench Backfill: Valve Box. Bayou Gulch Rd and Scarlet Sage Ave. TCGV#39	7.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
778	Waterline Trench Backfill: Valve Box. Bayou Gulch Rd and Scarlet Sage Ave. TCGV#39	6.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake

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779		9/3/19	3	698A	CL	16.0	111.0	17.5	108.2	8	97	95	0 / 4	A
780		9/3/19	3	698A	CL	16.0	111.0	17.0	108.0	8	97	95	0 / 4	A
781		9/3/19	6	698A	SC	11.0	120.5	10.9	120.9	8	100	100	-2 / 2	A
782		9/3/19	6	698A	SC	11.0	120.5	10.6	121.1	8	100	100	-2 / 2	A
783		9/3/19	6	698A	SC	11.0	120.5	10.6	121.3	8	101	100	-2 / 2	A
784		9/3/19	3	698A	CL	16.0	111.0	17.3	107.8	8	97	95	0 / 4	A
785		9/3/19	3	698A	CL	16.0	111.0	17.1	108.4	8	98	95	0 / 4	A
786		9/3/19	6	698A	SC	11.0	120.5	10.4	121.1	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
779	Waterline Trench Backfill: Valve Box. Bayou Gulch Rd and Scarlet Sage Ave. TCGV#39	5.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
780	Waterline Trench Backfill: Valve Box. Bayou Gulch Rd and Scarlet Sage Ave. TCGV#39	4.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
781	Waterline Trench Backfill: Valve Box. Bayou Gulch Rd and Scarlet Sage Ave. TCGV#39	3.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
782	Waterline Trench Backfill: Valve Box. Bayou Gulch Rd and Scarlet Sage Ave. TCGV#39	2.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
783	Waterline Trench Backfill: Valve Box. Bayou Gulch Rd and Scarlet Sage Ave. TCGV#39	1.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
784	Waterline Trench Backfill: Valve Box. Bayou Gulch Rd and Scarlet Sage Ave. TCGV#38	5.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
785	Waterline Trench Backfill: Valve Box. Bayou Gulch Rd and Scarlet Sage Ave. TCGV#38	4.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
786	Waterline Trench Backfill: Valve Box. Bayou Gulch Rd and Scarlet Sage Ave. TCGV#38	3.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000065
09/03/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
787		9/3/19	6	698A	SC	11.0	120.5	11.0	120.8	8	100	100	-2 / 2	A
788		9/3/19	6	698A	SC	11.0	120.5	10.6	121.0	8	100	100	-2 / 2	A
789		9/3/19	3	698A	CL	16.0	111.0	17.1	108.8	8	98	95	0 / 4	A
790		9/3/19	3	698A	CL	16.0	111.0	17.4	107.9	8	97	95	0 / 4	A
791		9/3/19	6	698A	SC	11.0	120.5	10.6	121.1	8	100	100	-2 / 2	A
792		9/3/19	6	698A	SC	11.0	120.5	10.7	120.8	8	100	100	-2 / 2	A
793		9/3/19	6	698A	SC	11.0	120.5	10.5	121.4	8	101	100	-2 / 2	A
794		9/3/19	3	698A	CL	16.0	111.0	17.0	108.6	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
787	Waterline Trench Backfill: Valve Box. Bayou Gulch Rd and Scarlet Sage Ave. TCGV#38	2.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
788	Waterline Trench Backfill: Valve Box. Bayou Gulch Rd and Scarlet Sage Ave. TCGV#38	1.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
789	Waterline Trench Backfill: Mainline. Scarlet Sage Ave and Scarlet Sage LN. STA 15+75	5.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
790	Waterline Trench Backfill: Mainline. Scarlet Sage Ave and Scarlet Sage LN. STA 15+75	4.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
791	Waterline Trench Backfill: Mainline. Scarlet Sage Ave and Scarlet Sage LN. STA 15+75	3.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
792	Waterline Trench Backfill: Mainline. Scarlet Sage Ave and Scarlet Sage LN. STA 15+75	2.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
793	Waterline Trench Backfill: Mainline. Scarlet Sage Ave and Scarlet Sage LN. STA 15+75	1.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
794	Waterline Trench Backfill: Valve Box. Scarlet Sage Ave and Scarlet Sage LN. TCGV#37.	4.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000065
09/03/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
795		9/3/19	6	698A	SC	11.0	120.5	10.5	121.1	8	100	100	-2 / 2	A
796		9/3/19	6	698A	SC	11.0	120.5	10.8	121.1	8	100	100	-2 / 2	A
797		9/3/19	6	698A	SC	11.0	120.5	10.6	120.9	8	100	100	-2 / 2	A
798		9/3/19	2	698A	CL	15.0	112.0	15.7	110.7	8	99	95	0 / 4	A
799		9/3/19	2	698A	CL	15.0	112.0	16.3	109.7	8	98	95	0 / 4	A
800		9/3/19	6	698A	SC	11.0	120.5	10.7	120.9	8	100	100	-2 / 2	A
801		9/3/19	6	698A	SC	11.0	120.5	10.7	121.1	8	100	100	-2 / 2	A
802		9/3/19	6	698A	SC	11.0	120.5	10.5	121.2	8	101	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
795	Waterline Trench Backfill: Valve Box. Scarlet Sage Ave and Scarlet Sage LN. TCGV#37.	3.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
796	Waterline Trench Backfill: Valve Box. Scarlet Sage Ave and Scarlet Sage LN. TCGV#37.	2.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
797	Waterline Trench Backfill: Valve Box. Scarlet Sage Ave and Scarlet Sage LN. TCGV#37.	1.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
798	Waterline Trench Backfill: Mainline. Scarlet Sage Ave. STA 14+00	5.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
799	Waterline Trench Backfill: Mainline. Scarlet Sage Ave. STA 14+00	4.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
800	Waterline Trench Backfill: Mainline. Scarlet Sage Ave. STA 14+00	3.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
801	Waterline Trench Backfill: Mainline. Scarlet Sage Ave. STA 14+00	2.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
802	Waterline Trench Backfill: Mainline. Scarlet Sage Ave. STA 14+00	1.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000065
09/03/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
803		9/3/19	3	698A	CL	16.0	111.0	16.6	109.3	8	98	95	0 / 4	A
804		9/3/19	3	698A	CL	16.0	111.0	17.0	108.4	8	98	95	0 / 4	A
805		9/3/19	6	698A	SC	11.0	120.5	10.7	121.2	8	101	100	-2 / 2	A
806		9/3/19	6	698A	SC	11.0	120.5	10.4	121.2	8	101	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
803	Waterline Trench Backfill: Valve Box. Scarlet Sage Ave and Scarlet Sage St. TCGV#34	5.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
804	Waterline Trench Backfill: Valve Box. Scarlet Sage Ave and Scarlet Sage St. TCGV#34	4.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
805	Waterline Trench Backfill: Valve Box. Scarlet Sage Ave and Scarlet Sage St. TCGV#34	3.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
806	Waterline Trench Backfill: Valve Box. Scarlet Sage Ave and Scarlet Sage St. TCGV#34	2.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000066
09/03/2019
Report Date: 9/9/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
807		9/3/19	6	698A	SC	11.0	120.5	10.6	121.3	8	101	100	-2 / 2	A
808		9/3/19	3	698A	CL	16.0	111.0	17.0	109.5	8	99	95	0 / 4	A
809		9/3/19	3	698A	CL	16.0	111.0	16.8	109.4	8	99	95	0 / 4	A
810		9/3/19	6	698A	SC	11.0	120.5	10.7	121.1	8	100	100	-2 / 2	A
811		9/3/19	6	698A	SC	11.0	120.5	10.5	121.2	8	101	100	-2 / 2	A
812		9/3/19	6	698A	SC	11.0	120.5	10.7	121.2	8	101	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
807	Waterline Trench Backfill: Valve Box. Scarlet Sage Ave and Scarlet Sage St. TCGV#34	1.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
808	Waterline Trench Backfill: Mainline. Scarlet Sage Ave. STA 12+00.	5.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
809	Waterline Trench Backfill: Mainline. Scarlet Sage Ave. STA 12+00.	4.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
810	Waterline Trench Backfill: Mainline. Scarlet Sage Ave. STA 12+00.	3.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
811	Waterline Trench Backfill: Mainline. Scarlet Sage Ave. STA 12+00.	2.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
812	Waterline Trench Backfill: Mainline. Scarlet Sage Ave. STA 12+00.	1.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000067
09/07/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
813		9/7/19	11	ASTM D698A	CL	22.0	101.5	24.2	98.9	8	97	95	0 / 4	A
814		9/7/19	11	ASTM D698A	CL	22.0	101.5	24.6	98.3	8	97	95	0 / 4	A
815		9/7/19	11	ASTM D698A	CL	22.0	101.5	24.4	98.7	8	97	95	0 / 4	A
816		9/7/19	11	ASTM D698A	CL	22.0	101.5	25.3	98.2	8	97	95	0 / 4	A
817		9/7/19	11	ASTM D698A	CL	22.0	101.5	23.6	99.6	8	98	95	0 / 4	A
818		9/7/19	11	ASTM D698A	CL	22.0	101.5	24.1	98.6	8	97	95	0 / 4	A
819		9/7/19	11	ASTM D698A	CL	22.0	101.5	24.4	98.8	8	97	95	0 / 4	A
820		9/7/19	11	ASTM D698A	CL	22.0	101.5	23.9	99.6	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
813	Waterline Trench Backfill: Valve box, Bayou Gulch Road, STA 57+00	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
814	Waterline Trench Backfill: Valve box, Bayou Gulch Road, STA 57+00	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
815	Waterline Trench Backfill: Valve box, Bayou Gulch Road, STA 57+00	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
816	Waterline Trench Backfill: Valve box, Bayou Gulch Road, STA 57+00	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
817	Waterline Trench Backfill: Valve box, Bayou Gulch Road, STA 57+00	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
818	Waterline Trench Backfill: Valve box, Bayou Gulch Road, STA 57+00	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
819	Waterline Trench Backfill: Valve box, Bayou Gulch Road, STA 57+00	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
820	Waterline Trench Backfill: Valve box, Bayou Gulch Road, STA 57+00	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **820:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000068
09/10/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
821		9/10/19	4	698A	CL	16.0	109.0	16.8	107.3	8	98	95	0 / 4	A
822		9/10/19	4	698A	CL	16.0	109.0	16.9	107.6	8	99	95	0 / 4	A
823		9/10/19	4	698A	CL	16.0	109.0	12.4	111.1	8	102	95	0 / 4	B
824		9/10/19	4	698A	CL	16.0	109.0	13.4	111.1	6	102	95	0 / 4	B

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
821	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 60' NE of SDMH 22	6.0	BG	XPLORER / 3500 / 1994 / 5/30/2019	Flynn, Christopher
822	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 60' NE of SDMH 22	5.0	BG	XPLORER / 3500 / 1994 / 5/30/2019	Flynn, Christopher
823	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 60' NE of SDMH 22	4.0	BG	XPLORER / 3500 / 1994 / 5/30/2019	Flynn, Christopher
824	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 60' NE of SDMH 22	3.0	BG	XPLORER / 3500 / 1994 / 5/30/2019	Flynn, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.
B: Test results do not comply with specifications.	**824:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test waterline trench backfill. We observed the contractor process/place fill with the mini-excavator and apply compactive effort with the jumping jack. No additional moisture was added. The contractor was informed of the failing test results.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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1971 West 12th Avenue
Denver, CO 80204
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Compaction Test Report

Report #: SNG-000069
09/12/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
825		9/12/19	8	698A	CL	18.0	109.0	20.4	106.0	8	97	95	0 / 4	A
826		9/12/19	8	698A	CL	18.0	109.0	18.3	107.7	8	99	95	0 / 4	A
827		9/12/19	8	698A	CL	18.0	109.0	19.2	106.6	8	98	95	0 / 4	A
828		9/12/19	8	698A	CL	18.0	109.0	18.6	106.9	8	98	95	0 / 4	A
829		9/12/19	8	698A	CL	18.0	109.0	18.9	106.6	8	98	95	0 / 4	A
830		9/12/19	9	698A	CL	20.5	103.5	22.1	102.5	8	99	95	0 / 4	A
831		9/12/19	9	698A	CL	20.5	103.5	22.5	102.5	8	99	95	0 / 4	A
832		9/12/19	9	698A	CL	20.5	103.5	21.2	103.0	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
825	Waterline Trench Backfill: Mainline, Bayou Gulch Road, S of Shasta Daisy Street, STA 57+50	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
826	Waterline Trench Backfill: Mainline, Bayou Gulch Road, S of Shasta Daisy Street, STA 57+50	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
827	Waterline Trench Backfill: Mainline, Bayou Gulch Road, S of Shasta Daisy Street, STA 57+50	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
828	Waterline Trench Backfill: Mainline, Bayou Gulch Road, S of Shasta Daisy Street, STA 57+50	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
829	Waterline Trench Backfill: Mainline, Bayou Gulch Road, S of Shasta Daisy Street, STA 57+50	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
830	Waterline Trench Backfill: Mainline, Bayou Gulch Road, S of Shasta Daisy Street, STA 58+00	11.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
831	Waterline Trench Backfill: Mainline, Bayou Gulch Road, S of Shasta Daisy Street, STA 58+00	10.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
832	Waterline Trench Backfill: Mainline, Bayou Gulch Road, S of Shasta Daisy Street, STA 58+00	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000069
09/12/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
833		9/12/19	9	698A	CL	20.5	103.5	21.7	102.4	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
833	Waterline Trench Backfill: Mainline, Bayou Gulch Road, S of Shasta Daisy Street, STA 58+00	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **833:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water wagon, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000070
09/13/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
836		9/13/19	4	698A	CL	16.0	109.0	19.4	105.7	8	97	95	0 / 4	A
837		9/13/19	4	698A	CL	16.0	109.0	18.1	107.0	8	98	95	0 / 4	A
838		9/13/19	4	698A	CL	16.0	109.0	17.5	107.3	8	98	95	0 / 4	A
839		9/13/19	4	698A	CL	16.0	109.0	17.6	107.6	8	99	95	0 / 4	A
840		9/13/19	4	698A	CL	16.0	109.0	17.8	108.0	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
836	Waterline Trench Backfill: Mainline, Shasta Daisy Street, 100' W of Bayou Gulch Road	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
837	Waterline Trench Backfill: Mainline, Shasta Daisy Street, 100' W of Bayou Gulch Road	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
838	Waterline Trench Backfill: Mainline, Shasta Daisy Street, 100' W of Bayou Gulch Road	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
839	Waterline Trench Backfill: Mainline, Shasta Daisy Street, 100' W of Bayou Gulch Road	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
840	Waterline Trench Backfill: Mainline, Shasta Daisy Street, 100' W of Bayou Gulch Road	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **840:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test waterline trench backfill. We observed the contractor process/place fill with the excavator and loader, add moisture with the water wagon, and apply compactive effort with the jumping jack.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000071
09/14/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
841		9/14/19	9	698A	CL	20.5	103.5	22.1	101.5	8	98	95	0 / 4	A
842		9/14/19	9	698A	CL	20.5	103.5	21.2	102.1	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
841	Waterline Trench Backfill: Mainline, Bayou Gulch Road, S of Shasta Daisy Street, STA 57+75	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
842	Waterline Trench Backfill: Mainline, Bayou Gulch Road, S of Shasta Daisy Street, STA 57+75	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **842:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test waterline trench backfill. We observed the contractor process/place fill with the excavator and loader, add moisture with the water wagon, and apply compactive effort with the jumping jack.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000072
09/18/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
841		9/18/19	9	698A	CL	20.5	103.5	22.3	101.6	8	98	95	0 / 4	A
842		9/18/19	9	698A	CL	20.5	103.5	22.1	102.2	8	99	95	0 / 4	A
843		9/18/19	9	698A	CL	20.5	103.5	23.0	101.0	8	98	95	0 / 4	A
844		9/18/19	9	698A	CL	20.5	103.5	22.8	101.5	8	98	95	0 / 4	A
845		9/18/19	9	698A	CL	20.5	103.5	22.4	100.9	8	97	95	0 / 4	A
846		9/18/19	9	698A	CL	20.5	103.5	22.2	102.0	8	99	95	0 / 4	A
847		9/18/19	9	698A	CL	20.5	103.5	22.8	101.4	8	98	95	0 / 4	A
848		9/18/19	9	698A	CL	20.5	103.5	21.8	101.5	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
841	Waterline Trench Backfill: Valve box, 50' S of Shasta Daisy Street and Hop Clover Trail	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
842	Waterline Trench Backfill: Valve box, 50' S of Shasta Daisy Street and Hop Clover Trail	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
843	Waterline Trench Backfill: Valve box, 50' S of Shasta Daisy Street and Hop Clover Trail	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
844	Waterline Trench Backfill: Valve box, 50' S of Shasta Daisy Street and Hop Clover Trail	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
845	Waterline Trench Backfill: Mainline, 35' S of Shasta Daisy Street and Hop Clover Trail	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
846	Waterline Trench Backfill: Mainline, 35' S of Shasta Daisy Street and Hop Clover Trail	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
847	Waterline Trench Backfill: Mainline, 35' S of Shasta Daisy Street and Hop Clover Trail	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
848	Waterline Trench Backfill: Mainline, 35' S of Shasta Daisy Street and Hop Clover Trail	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000072
09/18/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
849		9/18/19	9	698A	CL	20.5	103.5	22.2	101.3	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
849	Waterline Trench Backfill: Mainline, 35' S of Shasta Daisy Street and Hop Clover Trail	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **849:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000073
09/19/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
850		9/19/19	4	698A	CL	16.0	109.0	16.5	108.4	8	99	95	0 / 4	A
851		9/19/19	4	698A	CL	16.0	109.0	16.9	108.1	8	99	95	0 / 4	A
852		9/19/19	4	698A	CL	16.0	109.0	17.4	106.8	8	98	95	0 / 4	A
853		9/19/19	4	698A	CL	16.0	109.0	17.2	107.3	8	98	95	0 / 4	A
854		9/19/19	4	698A	CL	16.0	109.0	17.4	107.2	8	98	95	0 / 4	A
855		9/19/19	4	698A	CL	16.0	109.0	16.7	107.4	8	99	95	0 / 4	A
856		9/19/19	4	698A	CL	16.0	109.0	17.5	107.3	8	98	95	0 / 4	A
857		9/19/19	4	698A	CL	16.0	109.0	16.9	107.5	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
850	Waterline Trench Backfill: Valve box, 50' S of Shasta Daisy Street and Hop Clover Trail	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
851	Waterline Trench Backfill: Valve box, 50' S of Shasta Daisy Street and Hop Clover Trail	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
852	Waterline Trench Backfill: Valve box, 30' E of Shasta Daisy Street and Hop Clover Trail	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
853	Waterline Trench Backfill: Valve box, 30' E of Shasta Daisy Street and Hop Clover Trail	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
854	Waterline Trench Backfill: Valve box, 30' E of Shasta Daisy Street and Hop Clover Trail	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
855	Waterline Trench Backfill: Valve box, 30' E of Shasta Daisy Street and Hop Clover Trail	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
856	Waterline Trench Backfill: Valve box, 50' W of Shasta Daisy Street and Bayou Gulch Road intersection	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
857	Waterline Trench Backfill: Valve box, 50' W of Shasta Daisy Street and Bayou Gulch Road intersection	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000073
09/19/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
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Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
858		9/19/19	4	698A	CL	16.0	109.0	17.4	106.3	8	98	95	0 / 4	A
859		9/19/19	4	698A	CL	16.0	109.0	17.4	106.6	8	98	95	0 / 4	A
860		9/19/19	4	698A	CL	16.0	109.0	17.2	107.2	8	98	95	0 / 4	A
861		9/19/19	4	698A	CL	16.0	109.0	17.2	107.2	8	98	95	0 / 4	A
862		9/19/19	4	698A	CL	16.0	109.0	17.4	107.2	8	98	95	0 / 4	A
863		9/19/19	4	698A	CL	16.0	109.0	17.9	107.0	8	98	95	0 / 4	A
864		9/19/19	2	698A	CL	15.0	112.0	15.9	111.6	8	100	95	0 / 4	A
865		9/19/19	2	698A	CL	15.0	112.0	17.0	109.1	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
858	Waterline Trench Backfill: Valve box, 50' W of Shasta Daisy Street and Bayou Gulch Road intersection	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
859	Waterline Trench Backfill: Valve box, 50' W of Shasta Daisy Street and Bayou Gulch Road intersection	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
860	Waterline Trench Backfill: Fire hydrant, 50' W of Shasta Daisy Street and Bayou Gulch Road intersection	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
861	Waterline Trench Backfill: Fire hydrant, 50' W of Shasta Daisy Street and Bayou Gulch Road intersection	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
862	Waterline Trench Backfill: Fire hydrant, 50' W of Shasta Daisy Street and Bayou Gulch Road intersection	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
863	Waterline Trench Backfill: Fire hydrant, 50' W of Shasta Daisy Street and Bayou Gulch Road intersection	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
864	Waterline Trench Backfill: Mainline, 40' W of N Pinery Pkwy and Rose Mallow Ave intersection	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
865	Waterline Trench Backfill: Mainline, 40' W of N Pinery Pkwy and Rose Mallow Ave intersection	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000073
09/19/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
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Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
866		9/19/19	2	698A	CL	15.0	112.0	17.7	109.3	8	98	95	0 / 4	A
867		9/19/19	2	698A	CL	15.0	112.0	16.6	109.7	8	98	95	0 / 4	A
868		9/19/19	2	698A	CL	15.0	112.0	16.5	109.4	8	98	95	0 / 4	A
869		9/19/19	4	698A	CL	16.0	109.0	17.9	107.0	8	98	95	0 / 4	A
870		9/19/19	4	698A	CL	16.0	109.0	17.5	107.9	8	99	95	0 / 4	A
871		9/19/19	4	698A	CL	16.0	109.0	18.2	107.3	8	98	95	0 / 4	A
872		9/19/19	4	698A	CL	16.0	109.0	18.1	107.6	8	99	95	0 / 4	A
873		9/19/19	4	698A	CL	16.0	109.0	18.0	107.1	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
866	Waterline Trench Backfill: Mainline, 35' W of N Pinery Pkwy and Rose Mallow Ave intersection	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
867	Waterline Trench Backfill: Mainline, 35' W of N Pinery Pkwy and Rose Mallow Ave intersection	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
868	Waterline Trench Backfill: Mainline, 30' W of N Pinery Pkwy and Rose Mallow Ave intersection	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
869	Waterline Trench Backfill: Valve box, Hop Clover Trail adjacent to Lot 6 Block 6 Filing 6	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
870	Waterline Trench Backfill: Valve box, Hop Clover Trail adjacent to Lot 6 Block 6 Filing 6	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
871	Waterline Trench Backfill: Valve box, Hop Clover Trail adjacent to Lot 6 Block 6 Filing 6	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
872	Waterline Trench Backfill: Valve box, Hop Clover Trail adjacent to Lot 6 Block 6 Filing 6	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
873	Waterline Trench Backfill: Valve box, Hop Clover Trail adjacent to Lot 6 Block 6 Filing 6	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000073
09/19/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
874		9/19/19	4	698A	CL	16.0	109.0	16.3	109.1	8	100	95	0 / 4	A
875		9/19/19	4	698A	CL	16.0	109.0	17.9	107.4	8	99	95	0 / 4	A
876		9/19/19	4	698A	CL	16.0	109.0	17.2	107.3	8	98	95	0 / 4	A
877		9/19/19	4	698A	CL	16.0	109.0	17.5	107.3	8	98	95	0 / 4	A
878		9/19/19	4	698A	CL	16.0	109.0	17.0	107.5	8	99	95	0 / 4	A
933	188	9/19/19	1	698A	SC	12.5	118.5	12.4	118.2	8	100	100	-2 / 2	A
934	823	9/19/19	4	698A	CL	16.0	109.0	17.3	107.8	8	99	95	0 / 4	A
935	824	9/19/19	4	698A	CL	16.0	109.0	17.1	107.8	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
874	Waterline Trench Backfill: Mainline, Hop Clover Trail adjacent to Lot 5 Block 6 Filing 6	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
875	Waterline Trench Backfill: Mainline, Hop Clover Trail adjacent to Lot 5 Block 6 Filing 6	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
876	Waterline Trench Backfill: Mainline, Hop Clover Trail adjacent to Lot 5 Block 6 Filing 6	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
877	Waterline Trench Backfill: Mainline, Hop Clover Trail adjacent to Lot 5 Block 6 Filing 6	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
878	Waterline Trench Backfill: Mainline, Hop Clover Trail adjacent to Lot 5 Block 6 Filing 6	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
933	Waterline Trench Backfill: 2' W of gate valve at STA 24+00 near Scarlet and Alpine cross section	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
934	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 60' NE of SDMH 22	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
935	Waterline Trench Backfill: Valve box, N Pinery Pkwy, 60' NE of SDMH 22	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **935:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the excavator and apply compactive effort with the jumping jack.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000074
09/20/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
879		9/20/19	4	698A	CL	16.0	109.0	17.9	108.2	8	99	95	0 / 4	A
880		9/20/19	4	698A	CL	16.0	109.0	18.2	106.9	8	98	95	0 / 4	A
881		9/20/19	4	698A	CL	16.0	109.0	18.0	107.0	8	98	95	0 / 4	A
882		9/20/19	4	698A	CL	16.0	109.0	18.5	107.3	8	98	95	0 / 4	A
883		9/20/19	4	698A	CL	16.0	109.0	18.0	107.2	8	98	95	0 / 4	A
884		9/20/19	6	698A	SC	11.0	120.5	11.3	120.2	8	100	100	-2 / 2	A
885		9/20/19	6	698A	SC	11.0	120.5	11.5	119.9	8	100	100	-2 / 2	A
886		9/20/19	6	698A	SC	11.0	120.5	11.7	120.1	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
879	Waterline Trench Backfill: Mainline, Hop Clover Trail, 80' S of AV MH 7	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
880	Waterline Trench Backfill: Mainline, Hop Clover Trail, 80' S of AV MH 7	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
881	Waterline Trench Backfill: Mainline, Hop Clover Trail, 80' S of AV MH 7	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
882	Waterline Trench Backfill: Mainline, Hop Clover Trail, 80' S of AV MH 7	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
883	Waterline Trench Backfill: Mainline, Hop Clover Trail, 80' S of AV MH 7	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
884	Waterline Trench Backfill: Fire hydrant, N Pinery Pkwy, 50' E of Alpine Phlox St intersection	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
885	Waterline Trench Backfill: Fire hydrant, N Pinery Pkwy, 50' E of Alpine Phlox St intersection	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
886	Waterline Trench Backfill: Fire hydrant, N Pinery Pkwy, 50' E of Alpine Phlox St intersection	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000074
09/20/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
887		9/20/19	6	698A	SC	11.0	120.5	11.4	120.2	8	100	100	-2 / 2	A
888		9/20/19	2	698A	CL	15.0	112.0	16.6	111.7	8	100	95	0 / 4	A
889		9/20/19	2	698A	CL	15.0	112.0	17.0	110.9	8	99	95	0 / 4	A
890		9/20/19	2	698A	CL	15.0	112.0	17.2	111.2	8	99	95	0 / 4	A
891		9/20/19	2	698A	CL	15.0	112.0	16.5	111.3	8	99	95	0 / 4	A
892		9/20/19	2	698A	CL	15.0	112.0	17.1	109.8	8	98	95	0 / 4	A
893		9/20/19	2	698A	CL	15.0	112.0	16.9	110.3	8	98	95	0 / 4	A
894		9/20/19	2	698A	CL	15.0	112.0	16.8	110.8	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
887	Waterline Trench Backfill: Fire hydrant, N Pinery Pkwy, 50' E of Alpine Phlox St intersection	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
888	Waterline Trench Backfill: Mainline, Rose Mallow Avenue and N Pinery Pkwy adjacent to SSMH 17	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
889	Waterline Trench Backfill: Mainline, Rose Mallow Avenue and N Pinery Pkwy adjacent to SSMH 17	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
890	Waterline Trench Backfill: Mainline, Rose Mallow Avenue and N Pinery Pkwy adjacent to SSMH 17	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
891	Waterline Trench Backfill: Mainline, Rose Mallow Avenue and N Pinery Pkwy adjacent to SSMH 17	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
892	Waterline Trench Backfill: Mainline, Rose Mallow Avenue and N Pinery Pkwy, 50' W of SSMH 17	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
893	Waterline Trench Backfill: Mainline, Rose Mallow Avenue and N Pinery Pkwy, 50' W of SSMH 17	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
894	Waterline Trench Backfill: Mainline, Rose Mallow Avenue and N Pinery Pkwy, 50' W of SSMH 17	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000074
09/20/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
895		9/20/19	2	698A	CL	15.0	112.0	17.4	109.5	8	98	95	0 / 4	A
896		9/20/19	6	698A	SC	11.0	120.5	11.6	120.0	8	100	100	-2 / 2	A
897		9/20/19	6	698A	SC	11.0	120.5	11.5	120.3	8	100	100	-2 / 2	A
898		9/20/19	6	698A	SC	11.0	120.5	11.3	120.1	8	100	100	-2 / 2	A
899		9/20/19	4	698A	CL	16.0	109.0	17.2	108.2	8	99	95	0 / 4	A
900		9/20/19	4	698A	CL	16.0	109.0	17.5	107.5	8	99	95	0 / 4	A
901		9/20/19	4	698A	CL	16.0	109.0	17.1	107.9	8	99	95	0 / 4	A
902		9/20/19	4	698A	CL	16.0	109.0	17.4	107.6	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
895	Waterline Trench Backfill: Mainline, Rose Mallow Avenue and N Pinery Pkwy, 50' W of SSMH 17	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
896	Waterline Trench Backfill: Fire hydrant, N Pinery Pkwy, 50' E of Alpine Phlox St intersection	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
897	Waterline Trench Backfill: Fire hydrant, N Pinery Pkwy, 50' E of Alpine Phlox St intersection	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
898	Waterline Trench Backfill: Fire hydrant, N Pinery Pkwy, 50' E of Alpine Phlox St intersection	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
899	Waterline Trench Backfill: Valve box, Hop Clover Trail adjacent to Lot 6 Block 6 Filing 6	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
900	Waterline Trench Backfill: Valve box, Hop Clover Trail adjacent to Lot 6 Block 6 Filing 6	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
901	Waterline Trench Backfill: Mainline, Hop Clover Trail adjacent to Lot 7 Block 6 Filing 6	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
902	Waterline Trench Backfill: Mainline, Hop Clover Trail adjacent to Lot 7 Block 6 Filing 6	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000074
09/20/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
903		9/20/19	4	698A	CL	16.0	109.0	17.6	107.2	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
903	Waterline Trench Backfill: Mainline, Hop Clover Trail adjacent to Lot 7 Block 6 Filing 6	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **903:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the excavator and loader, add moisture with the water truck, and apply compactive effort with the sheepsfoot roller.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
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Compaction Test Report

Report #: SNG-000075
09/21/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
904		9/21/19	10	698A	CL	19.0	106.0	19.6	104.5	8	99	95	0 / 4	A
905		9/21/19	10	698A	CL	19.0	106.0	21.2	103.0	8	97	95	0 / 4	A
906		9/21/19	10	698A	CL	19.0	106.0	20.6	103.3	8	97	95	0 / 4	A
907		9/21/19	10	698A	CL	19.0	106.0	19.9	104.3	8	98	95	0 / 4	A
908		9/21/19	10	698A	CL	19.0	106.0	21.6	102.5	8	97	95	0 / 4	A
909		9/21/19	10	698A	CL	19.0	106.0	20.9	103.2	8	97	95	0 / 4	A
910		9/21/19	10	698A	CL	19.0	106.0	21.7	102.4	8	97	95	0 / 4	A
911		9/21/19	10	698A	CL	19.0	106.0	21.8	102.7	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
904	Waterline Trench Backfill: Mainline, Bayou Gulch Road, STA 57+70	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
905	Waterline Trench Backfill: Mainline, Bayou Gulch Road, STA 57+70	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
906	Waterline Trench Backfill: Mainline, Bayou Gulch Road, STA 57+70	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
907	Waterline Trench Backfill: Mainline, Bayou Gulch Road, STA 57+70	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
908	Waterline Trench Backfill: Mainline, Bayou Gulch Road, STA 57+90	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
909	Waterline Trench Backfill: Mainline, Bayou Gulch Road, STA 57+90	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
910	Waterline Trench Backfill: Mainline, Bayou Gulch Road, STA 57+90	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
911	Waterline Trench Backfill: Mainline, Bayou Gulch Road, STA 57+90	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **911:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the excavator, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

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Compaction Test Report

Report #: SNG-000076
09/23/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
912		9/23/19	2	698A	CL	15.0	112.0	16.3	111.1	8	99	95	0 / 4	A
913		9/23/19	2	698A	CL	15.0	112.0	16.8	110.8	8	99	95	0 / 4	A
914		9/23/19	2	698A	CL	15.0	112.0	17.0	110.2	8	98	95	0 / 4	A
915		9/23/19	2	698A	CL	15.0	112.0	16.7	111.3	8	99	95	0 / 4	A
916		9/23/19	2	698A	CL	15.0	112.0	17.1	110.1	8	98	95	0 / 4	A
917		9/23/19	2	698A	CL	15.0	112.0	16.7	110.2	8	98	95	0 / 4	A
918		9/23/19	2	698A	CL	15.0	112.0	17.2	110.2	8	98	95	0 / 4	A
919		9/23/19	2	698A	CL	15.0	112.0	16.3	111.1	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
912	Waterline Trench Backfill: Mainline, Rose Mallow Avenue and Bird's Foot Trail, 15' W of intersection	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
913	Waterline Trench Backfill: Mainline, Rose Mallow Avenue and Bird's Foot Trail, 15' W of intersection	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
914	Waterline Trench Backfill: Mainline, Rose Mallow Avenue and Bird's Foot Trail, 15' W of intersection	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
915	Waterline Trench Backfill: Mainline, Rose Mallow Avenue and Bird's Foot Trail, 15' W of intersection	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
916	Waterline Trench Backfill: Mainline, Rose Mallow Avenue and Bird's Foot Trail, 30' W of intersection	11.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
917	Waterline Trench Backfill: Mainline, Rose Mallow Avenue and Bird's Foot Trail, 30' W of intersection	10.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
918	Waterline Trench Backfill: Mainline, Rose Mallow Avenue and Bird's Foot Trail, 30' W of intersection	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
919	Waterline Trench Backfill: Valve Box, Rose Mallow Avenue and Bird's Foot Trail, 15' E of intersection, NE side valve	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000076
09/23/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
920		9/23/19	2	698A	CL	15.0	112.0	16.9	111.7	8	100	95	0 / 4	A
921		9/23/19	2	698A	CL	15.0	112.0	16.7	111.3	8	99	95	0 / 4	A
922		9/23/19	2	698A	CL	15.0	112.0	16.7	110.9	8	99	95	0 / 4	A
923		9/23/19	2	698A	CL	15.0	112.0	17.1	109.4	8	98	95	0 / 4	A
924		9/23/19	2	698A	CL	15.0	112.0	17.2	109.4	8	98	95	0 / 4	A
925		9/23/19	2	698A	CL	15.0	112.0	16.8	109.4	8	98	95	0 / 4	A
926		9/23/19	2	698A	CL	15.0	112.0	16.7	109.6	8	98	95	0 / 4	A
927		9/23/19	2	698A	CL	15.0	112.0	16.8	109.1	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
920	Waterline Trench Backfill: Valve Box, Rose Mallow Avenue and Bird's Foot Trail, 15' E of intersection, NE side valve	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
921	Waterline Trench Backfill: Valve Box, Rose Mallow Avenue and Bird's Foot Trail, 15' E of intersection, NE side valve	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
922	Waterline Trench Backfill: Valve Box, Rose Mallow Avenue and Bird's Foot Trail, 15' E of intersection, NE side valve	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
923	Waterline Trench Backfill: Valve Box, Rose Mallow Avenue and Bird's Foot Trail, 15' E of intersection, NE side valve	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
924	Waterline Trench Backfill: Valve Box, Rose Mallow Avenue and Bird's Foot Trail, 15' E of intersection, NE side valve	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
925	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Bird's Foot Trail, 35' W of intersection	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
926	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Bird's Foot Trail, 35' W of intersection	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
927	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Bird's Foot Trail, 35' W of intersection	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000076
09/23/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
928		9/23/19	9	698A	CL	20.5	103.5	22.9	100.7	8	97	95	0 / 4	A
929		9/23/19	9	698A	CL	20.5	103.5	23.9	100.7	8	97	95	0 / 4	A
930		9/23/19	9	698A	CL	20.5	103.5	22.9	100.8	8	97	95	0 / 4	A
931		9/23/19	9	698A	CL	20.5	103.5	23.4	100.7	8	97	95	0 / 4	A
932		9/23/19	9	698A	CL	20.5	103.5	23.1	100.5	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
928	Waterline Trench Backfill: Mainline, Bayou Gulch Road, STA 58+50	12.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
929	Waterline Trench Backfill: Mainline, Bayou Gulch Road, STA 58+50	11.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
930	Waterline Trench Backfill: Mainline, Bayou Gulch Road, STA 58+50	10.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
931	Waterline Trench Backfill: Mainline, Bayou Gulch Road, STA 58+50	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
932	Waterline Trench Backfill: Mainline, Bayou Gulch Road, STA 58+50	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **932:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000077
09/24/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
936		9/24/19	2	698A	CL	15.0	112.0	16.2	110.7	8	99	95	0 / 4	A
937		9/24/19	2	698A	CL	15.0	112.0	16.8	109.6	8	98	95	0 / 4	A
938		9/24/19	2	698A	CL	15.0	112.0	17.4	108.1	8	97	95	0 / 4	A
939		9/24/19	2	698A	CL	15.0	112.0	17.6	108.1	8	97	95	0 / 4	A
940		9/24/19	2	698A	CL	15.0	112.0	17.2	108.7	8	97	95	0 / 4	A
941		9/24/19	2	698A	CL	15.0	112.0	17.5	109.1	8	97	95	0 / 4	A
942		9/24/19	9	698A	CL	20.5	103.5	22.2	101.7	8	98	95	0 / 4	A
943		9/24/19	9	698A	CL	20.5	103.5	22.2	101.7	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
936	Waterline Trench Backfill: Valve box, Rose Mallow Avenue, 10' W of Rose Mallow Avenue and Bird's Foot Trail intersection	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
937	Waterline Trench Backfill: Valve box, Rose Mallow Avenue, 10' W of Rose Mallow Avenue and Bird's Foot Trail intersection	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
938	Waterline Trench Backfill: Valve box, Rose Mallow Avenue, 10' W of Rose Mallow Avenue and Bird's Foot Trail intersection	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
939	Waterline Trench Backfill: Valve box, Rose Mallow Avenue, 10' W of Rose Mallow Avenue and Bird's Foot Trail intersection	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
940	Waterline Trench Backfill: Valve box, Rose Mallow Avenue, 10' W of Rose Mallow Avenue and Bird's Foot Trail intersection	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
941	Waterline Trench Backfill: Valve box, Rose Mallow Avenue, 10' W of Rose Mallow Avenue and Bird's Foot Trail intersection	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
942	Waterline Trench Backfill: AV MH 7, Hop Clover Trail, 1' N of N side	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
943	Waterline Trench Backfill: AV MH 7, Hop Clover Trail, 1' S of S side	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000077
09/24/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
944		9/24/19	9	698A	CL	20.5	103.5	22.2	101.9	8	98	95	0 / 4	A
945		9/24/19	9	698A	CL	20.5	103.5	22.9	100.8	8	97	95	0 / 4	A
946		9/24/19	9	698A	CL	20.5	103.5	22.5	101.3	8	98	95	0 / 4	A
947		9/24/19	9	698A	CL	20.5	103.5	22.7	100.9	8	97	95	0 / 4	A
948		9/24/19	9	698A	CL	20.5	103.5	22.4	101.2	8	98	95	0 / 4	A
949		9/24/19	9	698A	CL	20.5	103.5	23.0	100.8	8	97	95	0 / 4	A
950		9/24/19	9	698A	CL	20.5	103.5	23.0	100.7	8	97	95	0 / 4	A
951		9/24/19	9	698A	CL	20.5	103.5	22.7	101.2	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
944	Waterline Trench Backfill: AV MH 7, Hop Clover Trail, 1' W of W side	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
945	Waterline Trench Backfill: AV MH 7, Hop Clover Trail, 1' E of E side	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
946	Waterline Trench Backfill: Valve box, Hop Clover Trail, 15' N of AV MH 7	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
947	Waterline Trench Backfill: Valve box, Hop Clover Trail, 15' N of AV MH 7	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
948	Waterline Trench Backfill: Valve box, Hop Clover Trail, 15' N of AV MH 7	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
949	Waterline Trench Backfill: Valve box, Hop Clover Trail, 15' N of AV MH 7	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
950	Waterline Trench Backfill: Fire hydrant, Hop Clover Trail, 15' NE of AV MH 7	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
951	Waterline Trench Backfill: Fire hydrant, Hop Clover Trail, 15' NE of AV MH 7	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Compaction Test Report

Report #: SNG-000077
09/24/2019
Report Date: 9/30/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
952		9/24/19	9	698A	CL	20.5	103.5	22.5	101.5	8	98	95	0 / 4	A
953		9/24/19	9	698A	CL	20.5	103.5	22.9	100.7	8	97	95	0 / 4	A
954		9/24/19	10	698A	CL	19.0	106.0	20.8	104.4	8	98	95	0 / 4	A
955		9/24/19	10	698A	CL	19.0	106.0	21.1	104.1	8	98	95	0 / 4	A
956		9/24/19	10	698A	CL	19.0	106.0	19.9	105.0	8	99	95	0 / 4	A
957		9/24/19	10	698A	CL	19.0	106.0	13.3	111.9	8	106	95	0 / 4	B
958		9/24/19	10	698A	CL	19.0	106.0	13.8	110.4	8	104	95	0 / 4	B

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
952	Waterline Trench Backfill: Fire hydrant, Hop Clover Trail, 15' NE of AV MH 7	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
953	Waterline Trench Backfill: Fire hydrant, Hop Clover Trail, 15' NE of AV MH 7	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
954	Waterline Trench Backfill: Mainline, Bayou Gulch Road, STA 58+75	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
955	Waterline Trench Backfill: Mainline, Bayou Gulch Road, STA 58+75	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
956	Waterline Trench Backfill: Mainline, Bayou Gulch Road, STA 58+75	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
957	Waterline Trench Backfill: Mainline, Bayou Gulch Road, STA 59+00	12.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
958	Waterline Trench Backfill: Mainline, Bayou Gulch Road, STA 59+00	11.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.
B: Test results do not comply with specifications.	**958:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex compactor.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Compaction Test Report

Report #: SNG-000078
09/25/2019
Report Date: 10/14/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
959	957	9/25/19	10	698A	CL	19.0	106.0	21.9	102.7	8	97	95	0 / 4	A
960	958	9/25/19	10	698A	CL	19.0	106.0	22.2	102.8	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
959	Waterline Trench Backfill: Mainline, Bayou Gulch Road, STA 59+00	12.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
960	Waterline Trench Backfill: Mainline, Bayou Gulch Road, STA 59+00	11.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **960:** As requested by Rick with Kelley Trucking, a site visit was made to observe and retest waterline trench backfill. We observed the contractor process/place the fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
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Compaction Test Report

Report #: SNG-000079
09/26/2019
Report Date: 10/14/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
961		9/26/19	5	698A	SC	13.5	114.5	13.8	114.6	8	100	100	-2 / 2	A
962		9/26/19	5	698A	SC	13.5	114.5	13.7	114.2	8	100	100	-2 / 2	A
963		9/26/19	5	698A	SC	13.5	114.5	13.8	114.4	8	100	100	-2 / 2	A
964		9/26/19	5	698A	SC	13.5	114.5	13.4	114.8	8	100	100	-2 / 2	A
965		9/26/19	5	698A	SC	13.5	114.5	13.6	114.3	8	100	100	-2 / 2	A
966		9/26/19	5	698A	SC	13.5	114.5	13.9	114.2	8	100	100	-2 / 2	A
967		9/26/19	5	698A	SC	13.5	114.5	13.8	114.1	8	100	100	-2 / 2	A
968		9/26/19	5	698A	SC	13.5	114.5	14.0	114.5	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
961	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Bird's Foot Trail valve, 10' NW of intersection	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
962	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Bird's Foot Trail valve, 10' NW of intersection	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
963	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Bird's Foot Trail valve, 10' NW of intersection	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
964	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Bird's Foot Trail valve, 10' NW of intersection	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
965	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Bird's Foot Trail valve, 10' NW of intersection	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
966	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Bird's Foot Trail valve,15' NW of intersection	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
967	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Bird's Foot Trail valve,15' NW of intersection	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
968	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Bird's Foot Trail valve,15' NW of intersection	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000079
09/26/2019
Report Date: 10/14/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
969		9/26/19	9	698A	CL	20.5	103.5	22.2	101.3	8	98	95	0 / 4	A
970		9/26/19	9	698A	CL	20.5	103.5	22.7	100.9	8	97	95	0 / 4	A
971		9/26/19	9	698A	CL	20.5	103.5	22.8	101.1	8	98	95	0 / 4	A
972		9/26/19	5	698A	SC	13.5	114.5	14.0	114.4	8	100	100	-2 / 2	A
973		9/26/19	5	698A	SC	13.5	114.5	13.6	114.3	8	100	100	-2 / 2	A
974		9/26/19	5	698A	SC	13.5	114.5	13.8	114.4	8	100	100	-2 / 2	A
975		9/26/19	5	698A	SC	13.5	114.5	13.7	114.4	8	100	100	-2 / 2	A
976		9/26/19	5	698A	SC	13.5	114.5	13.4	115.0	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
969	Waterline Trench Backfill: Valve box, Bayou Gulch Road, 125' N of S end of road	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
970	Waterline Trench Backfill: Valve box, Bayou Gulch Road, 125' N of S end of road	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
971	Waterline Trench Backfill: Valve box, Bayou Gulch Road, 125' N of S end of road	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
972	Waterline Trench Backfill: Valve box adjacent to FH at Rose Mallow Avenue and Bird's Foot Trail	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
973	Waterline Trench Backfill: Valve box adjacent to FH at Rose Mallow Avenue and Bird's Foot Trail	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
974	Waterline Trench Backfill: Valve box adjacent to FH at Rose Mallow Avenue and Bird's Foot Trail	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
975	Waterline Trench Backfill: Valve box adjacent to FH at Rose Mallow Avenue and Bird's Foot Trail	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
976	Waterline Trench Backfill: Fire hydrant, Rose Mallow Avenue and Bird's Foot Trail	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000079
09/26/2019
Report Date: 10/14/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
977		9/26/19	5	698A	SC	13.5	114.5	13.6	114.3	8	100	100	-2 / 2	A
978		9/26/19	5	698A	SC	13.5	114.5	14.0	114.5	8	100	100	-2 / 2	A
979		9/26/19	5	698A	SC	13.5	114.5	13.6	114.7	8	100	100	-2 / 2	A
980		9/26/19	5	698A	SC	13.5	114.5	13.6	114.9	8	100	100	-2 / 2	A
981		9/26/19	5	698A	SC	13.5	114.5	13.3	114.7	8	100	100	-2 / 2	A
982		9/26/19	5	698A	SC	13.5	114.5	13.4	114.6	8	100	100	-2 / 2	A
983		9/26/19	5	698A	SC	13.5	114.5	13.8	114.7	8	100	100	-2 / 2	A
984		9/26/19	5	698A	SC	13.5	114.5	13.5	114.4	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
977	Waterline Trench Backfill: Fire hydrant, Rose Mallow Avenue and Bird's Foot Trail	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
978	Waterline Trench Backfill: Fire hydrant, Rose Mallow Avenue and Bird's Foot Trail	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
979	Waterline Trench Backfill: Fire hydrant, Rose Mallow Avenue and Bird's Foot Trail	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
980	Waterline Trench Backfill: Valve box, 10' SW of FH at Rose Mallow Avenue and Bird's Foot Trail	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
981	Waterline Trench Backfill: Valve box, 10' SW of FH at Rose Mallow Avenue and Bird's Foot Trail	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
982	Waterline Trench Backfill: Valve box, 10' SW of FH at Rose Mallow Avenue and Bird's Foot Trail	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
983	Waterline Trench Backfill: Valve box, 10' SW of FH at Rose Mallow Avenue and Bird's Foot Trail	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
984	Waterline Trench Backfill: Valve box, 10' NW of FH at Rose Mallow Avenue and Bird's Foot Trail	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000079
09/26/2019
Report Date: 10/14/2019
Test Method: ASTM D 6938

Client:
E5X Management
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Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
985		9/26/19	5	698A	SC	13.5	114.5	13.6	114.5	8	100	100	-2 / 2	A
986		9/26/19	5	698A	SC	13.5	114.5	13.5	114.8	8	100	100	-2 / 2	A
987		9/26/19	5	698A	SC	13.5	114.5	13.8	114.7	8	100	100	-2 / 2	A
988		9/26/19	5	698A	SC	13.5	114.5	13.7	114.5	8	100	100	-2 / 2	A
989		9/26/19	5	698A	SC	13.5	114.5	13.5	114.4	8	100	100	-2 / 2	A
990		9/26/19	5	698A	SC	13.5	114.5	13.9	114.5	8	100	100	-2 / 2	A
991		9/26/19	5	698A	SC	13.5	114.5	13.6	114.5	8	100	100	-2 / 2	A
992		9/26/19	5	698A	SC	13.5	114.5	13.4	114.8	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
985	Waterline Trench Backfill: Valve box, 10' NW of FH at Rose Mallow Avenue and Bird's Foot Trail	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
986	Waterline Trench Backfill: Valve box, 10' NW of FH at Rose Mallow Avenue and Bird's Foot Trail	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
987	Waterline Trench Backfill: Valve box, 10' NW of FH at Rose Mallow Avenue and Bird's Foot Trail	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
988	Waterline Trench Backfill: Valve box, 10' NW of FH at Rose Mallow Avenue and Bird's Foot Trail	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
989	Waterline Trench Backfill: Valve box, 10' NW of FH at Rose Mallow Avenue and Bird's Foot Trail	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
990	Waterline Trench Backfill: Valve box, 10' NW of FH at Rose Mallow Avenue and Bird's Foot Trail	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
991	Waterline Trench Backfill: Valve box, 10' NW of FH at Rose Mallow Avenue and Bird's Foot Trail	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
992	Waterline Trench Backfill: Valve box, 10' SW of FH at Rose Mallow Avenue and Bird's Foot Trail	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000079
09/26/2019
Report Date: 10/14/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
993		9/26/19	5	698A	SC	13.5	114.5	13.8	114.7	8	100	100	-2 / 2	A
994		9/26/19	5	698A	SC	13.5	114.5	13.4	114.8	8	100	100	-2 / 2	A
995		9/26/19	5	698A	SC	13.5	114.5	13.3	114.6	8	100	100	-2 / 2	A
996		9/26/19	5	698A	SC	13.5	114.5	14.0	114.7	8	100	100	-2 / 2	A
997		9/26/19	5	698A	SC	13.5	114.5	13.7	114.2	8	100	100	-2 / 2	A
998		9/26/19	5	698A	SC	13.5	114.5	13.4	114.5	8	100	100	-2 / 2	A
999		9/26/19	5	698A	SC	13.5	114.5	13.4	114.6	8	100	100	-2 / 2	A
1000		9/26/19	5	698A	SC	13.5	114.5	13.8	114.4	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
993	Waterline Trench Backfill: Valve box, 10' SW of FH at Rose Mallow Avenue and Bird's Foot Trail	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
994	Waterline Trench Backfill: Valve box, 10' SW of FH at Rose Mallow Avenue and Bird's Foot Trail	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
995	Waterline Trench Backfill: Valve box, 10' SW of FH at Rose Mallow Avenue and Bird's Foot Trail	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
996	Waterline Trench Backfill: Valve box adjacent to FH at Rose Mallow Avenue and Bird's Foot Trail	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
997	Waterline Trench Backfill: Valve box adjacent to FH at Rose Mallow Avenue and Bird's Foot Trail	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
998	Waterline Trench Backfill: Valve box adjacent to FH at Rose Mallow Avenue and Bird's Foot Trail	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
999	Waterline Trench Backfill: Valve box adjacent to FH at Rose Mallow Avenue and Bird's Foot Trail	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1000	Waterline Trench Backfill: Fire hydrant, Rose Mallow Avenue and Bird's Foot Trail	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
1971 West 12th Avenue
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Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000079
09/26/2019
Report Date: 10/14/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1001		9/26/19	5	698A	SC	13.5	114.5	13.8	114.6	8	100	100	-2 / 2	A
1002		9/26/19	5	698A	SC	13.5	114.5	13.8	114.7	8	100	100	-2 / 2	A
1003		9/26/19	5	698A	SC	13.5	114.5	13.6	114.3	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1001	Waterline Trench Backfill: Fire hydrant, Rose Mallow Avenue and Bird's Foot Trail	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1002	Waterline Trench Backfill: Fire hydrant, Rose Mallow Avenue and Bird's Foot Trail	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1003	Waterline Trench Backfill: Fire hydrant, Rose Mallow Avenue and Bird's Foot Trail	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1003:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with equipment traffic.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
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Compaction Test Report

Report #: SNG-000080
09/27/2019
Report Date: 10/14/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1004		9/27/19	10	698A	CL	19.0	106.0	20.2	103.6	8	98	95	0 / 4	A
1005		9/27/19	10	698A	CL	19.0	106.0	20.1	104.2	8	98	95	0 / 4	A
1006		9/27/19	10	698A	CL	19.0	106.0	20.3	103.7	8	98	95	0 / 4	A
1007		9/27/19	5	698A	SC	13.5	114.5	13.6	114.5	8	100	100	-2 / 2	A
1008		9/27/19	5	698A	SC	13.5	114.5	13.4	114.5	8	100	100	-2 / 2	A
1009		9/27/19	5	698A	SC	13.5	114.5	13.9	114.5	8	100	100	-2 / 2	A
1010		9/27/19	5	698A	SC	13.5	114.5	13.5	114.3	8	100	100	-2 / 2	A
1011		9/27/19	5	698A	SC	13.5	114.5	13.6	114.5	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1004	Waterline Trench Backfill: Valve box, Bayou Gulch Road, 125' N of S end of road	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1005	Waterline Trench Backfill: Valve box, Bayou Gulch Road, 125' N of S end of road	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1006	Waterline Trench Backfill: Valve box, Bayou Gulch Road, 125' N of S end of road	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1007	Waterline Trench Backfill: Irrigation sleeve, Scarlet Sage Avenue and Shasta Daisy Street, N side of intersection	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1008	Waterline Trench Backfill: Irrigation sleeve, Scarlet Sage Avenue and Shasta Daisy Street, N side of intersection	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1009	Waterline Trench Backfill: Irrigation sleeve, Scarlet Sage Avenue and Shasta Daisy Street, N side of intersection	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1010	Waterline Trench Backfill: Irrigation sleeve, Bayou Gulch Road, 75' SE of Crowfoot Valley Road	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1011	Waterline Trench Backfill: Irrigation sleeve, Bayou Gulch Road, 75' SE of Crowfoot Valley Road	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000080
09/27/2019
Report Date: 10/14/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
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Trails at Crowfoot, Filings 1 and 9
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Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1012		9/27/19	5	698A	SC	13.5	114.5	13.8	114.1	8	100	100	-2 / 2	A
1013		9/27/19	5	698A	SC	13.5	114.5	13.9	114.5	8	100	100	-2 / 2	A
1014		9/27/19	5	698A	SC	13.5	114.5	13.8	114.3	8	100	100	-2 / 2	A
1015		9/27/19	5	698A	SC	13.5	114.5	13.5	114.6	8	100	100	-2 / 2	A
1016		9/27/19	10	698A	CL	19.0	106.0	21.9	103.0	8	97	95	0 / 4	A
1017		9/27/19	10	698A	CL	19.0	106.0	22.3	102.4	8	97	95	0 / 4	A
1018		9/27/19	10	698A	CL	19.0	106.0	21.3	103.1	8	97	95	0 / 4	A
1019		9/27/19	10	698A	CL	19.0	106.0	22.7	101.8	8	96	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1012	Waterline Trench Backfill: Irrigation sleeve, Bayou Gulch Road, 75' SE of Crowfoot Valley Road	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1013	Waterline Trench Backfill: Irrigation sleeve, Scarlet Sage Avenue and Shasta Daisy Street, S side of intersection	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1014	Waterline Trench Backfill: Irrigation sleeve, Scarlet Sage Avenue and Shasta Daisy Street, S side of intersection	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1015	Waterline Trench Backfill: Irrigation sleeve, Scarlet Sage Avenue and Shasta Daisy Street, S side of intersection	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1016	Waterline Trench Backfill: Valve box, Bayou Gulch Road, 35' N of S end	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1017	Waterline Trench Backfill: Valve box, Bayou Gulch Road, 35' N of S end	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1018	Waterline Trench Backfill: Valve box, Bayou Gulch Road, 35' N of S end	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1019	Waterline Trench Backfill: Valve box, Bayou Gulch Road, 35' N of S end	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000080
09/27/2019
Report Date: 10/14/2019
Test Method: ASTM D 6938

Client:
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Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1020		9/27/19	10	698A	CL	19.0	106.0	21.7	102.9	8	97	95	0 / 4	A
1021		9/27/19	10	698A	CL	19.0	106.0	21.7	103.2	8	97	95	0 / 4	A
1022		9/27/19	10	698A	CL	19.0	106.0	21.2	103.2	8	97	95	0 / 4	A
1023		9/27/19	10	698A	CL	19.0	106.0	20.8	103.6	8	98	95	0 / 4	A
1024		9/27/19	10	698A	CL	19.0	106.0	21.2	103.0	8	97	95	0 / 4	A
1025		9/27/19	10	698A	CL	19.0	106.0	21.7	102.8	8	97	95	0 / 4	A
1026		9/27/19	10	698A	CL	19.0	106.0	21.6	102.5	8	97	95	0 / 4	A
1027		9/27/19	10	698A	CL	19.0	106.0	20.1	104.2	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1020	Waterline Trench Backfill: Valve box, Bayou Gulch Road, 35' N of S end	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1021	Waterline Trench Backfill: Valve box, Bayou Gulch Road, 35' N of S end	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1022	Waterline Trench Backfill: Valve box, Bayou Gulch Road, 35' N of S end	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1023	Waterline Trench Backfill: Valve box, Bayou Gulch Road, E side of VB, 15' N of S end	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1024	Waterline Trench Backfill: Valve box, Bayou Gulch Road, E side of VB, 15' N of S end	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1025	Waterline Trench Backfill: Valve box, Bayou Gulch Road, E side of VB, 15' N of S end	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1026	Waterline Trench Backfill: Valve box, Bayou Gulch Road, E side of VB, 15' N of S end	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1027	Waterline Trench Backfill: Valve box, Bayou Gulch Road, E side of VB, 15' N of S end	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000080
09/27/2019
Report Date: 10/14/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1028		9/27/19	10	698A	CL	19.0	106.0	21.3	102.7	8	97	95	0 / 4	A
1029		9/27/19	10	698A	CL	19.0	106.0	22.0	102.7	8	97	95	0 / 4	A
1030		9/27/19	10	698A	CL	19.0	106.0	21.4	102.6	8	97	95	0 / 4	A
1031		9/27/19	10	698A	CL	19.0	106.0	21.1	103.5	8	98	95	0 / 4	A
1032		9/27/19	10	698A	CL	19.0	106.0	22.4	102.6	8	97	95	0 / 4	A
1033		9/27/19	10	698A	CL	19.0	106.0	21.9	102.4	8	97	95	0 / 4	A
1034		9/27/19	10	698A	CL	19.0	106.0	21.9	102.8	8	97	95	0 / 4	A
1035		9/27/19	10	698A	CL	19.0	106.0	21.6	102.9	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1028	Waterline Trench Backfill: Valve box, Bayou Gulch Road, E side of VB, 15' N of S end	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1029	Waterline Trench Backfill: Valve box, Bayou Gulch Road, W side of VB, 15' N of S end	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1030	Waterline Trench Backfill: Valve box, Bayou Gulch Road, W side of VB, 15' N of S end	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1031	Waterline Trench Backfill: Valve box, Bayou Gulch Road, W side of VB, 15' N of S end	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1032	Waterline Trench Backfill: Valve box, Bayou Gulch Road, W side of VB, 15' N of S end	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1033	Waterline Trench Backfill: Valve box, Bayou Gulch Road, W side of VB, 15' N of S end	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1034	Waterline Trench Backfill: Valve box, Bayou Gulch Road, W side of VB, 15' N of S end	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1035	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 25' N of S end	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000080
09/27/2019
Report Date: 10/14/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1036		9/27/19	10	698A	CL	19.0	106.0	21.3	103.0	8	97	95	0 / 4	A
1037		9/27/19	10	698A	CL	19.0	106.0	22.4	102.6	8	97	95	0 / 4	A
1038		9/27/19	10	698A	CL	19.0	106.0	22.2	102.5	8	97	95	0 / 4	A
1039		9/27/19	10	698A	CL	19.0	106.0	21.5	102.8	8	97	95	0 / 4	A
1040		9/27/19	10	698A	CL	19.0	106.0	22.3	101.9	8	96	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1036	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 25' N of S end	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1037	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 25' N of S end	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1038	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 25' N of S end	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1039	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 25' N of S end	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1040	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 25' N of S end	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1040:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with equipment traffic.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000081
09/30/2019
Report Date: 10/14/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1041		9/30/19	2	698A	CL	15.0	112.0	16.6	109.9	8	98	95	0 / 4	A
1042		9/30/19	2	698A	CL	15.0	112.0	17.2	108.2	8	97	95	0 / 4	A
1043		9/30/19	2	698A	CL	15.0	112.0	17.0	108.4	8	97	95	0 / 4	A
1044		9/30/19	2	698A	CL	15.0	112.0	16.7	108.7	8	97	95	0 / 4	A
1045		9/30/19	2	698A	CL	15.0	112.0	17.5	108.4	8	97	95	0 / 4	A
1046		9/30/19	2	698A	CL	15.0	112.0	17.3	108.2	8	97	95	0 / 4	A
1047		9/30/19	2	698A	CL	15.0	112.0	17.2	107.8	8	96	95	0 / 4	A
1048		9/30/19	2	698A	CL	15.0	112.0	17.0	108.3	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1041	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Bird's Foot Trail, 10' W of intersection	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1042	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Bird's Foot Trail, 10' W of intersection, 30' NW of SDMH 124	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1043	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Bird's Foot Trail, 10' W of intersection, 30' NW of SDMH 124	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1044	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Bird's Foot Trail, 10' W of intersection, 30' NW of SDMH 124	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1045	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Bird's Foot Trail, 10' W of intersection, 30' NW of SDMH 124	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1046	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Bird's Foot Trail, 10' W of intersection, 30' NW of SDMH 124	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1047	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Bird's Foot Trail, 10' W of intersection, 30' NW of SDMH 124	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1048	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Bird's Foot Trail, 13' W of intersection, 30' NW of SDMH 124	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000081
09/30/2019
Report Date: 10/14/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1049		9/30/19	2	698A	CL	15.0	112.0	16.9	108.2	8	97	95	0 / 4	A
1050		9/30/19	2	698A	CL	15.0	112.0	17.7	107.8	8	96	95	0 / 4	A
1051		9/30/19	2	698A	CL	15.0	112.0	17.1	108.5	8	97	95	0 / 4	A
1052		9/30/19	2	698A	CL	15.0	112.0	17.0	108.5	8	97	95	0 / 4	A
1053		9/30/19	2	698A	CL	15.0	112.0	17.1	108.5	8	97	95	0 / 4	A
1054		9/30/19	2	698A	CL	15.0	112.0	16.7	108.7	8	97	95	0 / 4	A
1055		9/30/19	6	698A	SC	11.0	120.5	11.3	120.1	8	100	100	-2 / 2	A
1056		9/30/19	6	698A	SC	11.0	120.5	11.5	120.3	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1049	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Bird's Foot Trail, 13' W of intersection, 30' NW of SDMH 124	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1050	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Bird's Foot Trail, 13' W of intersection, 30' NW of SDMH 124	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1051	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Bird's Foot Trail, 13' W of intersection, 30' NW of SDMH 124	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1052	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Bird's Foot Trail, 13' W of intersection, 30' NW of SDMH 124	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1053	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Bird's Foot Trail, 13' W of intersection, 30' NW of SDMH 124	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1054	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Bird's Foot Trail, 13' W of intersection, 30' NW of SDMH 124	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1055	Waterline Trench Backfill: Irrigation sleeve, Scarlet Sage Avenue, 110' E of Shasta Daisy Street, center of road	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1056	Waterline Trench Backfill: Irrigation sleeve, Scarlet Sage Avenue, 110' E of Shasta Daisy Street, center of road	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Denver
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Compaction Test Report

Report #: SNG-000081
09/30/2019
Report Date: 10/14/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1057		9/30/19	6	698A	SC	11.0	120.5	11.4	120.2	8	100	100	-2 / 2	A
1058		9/30/19	6	698A	SC	11.0	120.5	11.4	120.4	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1057	Waterline Trench Backfill: Irrigation sleeve, Scarlet Sage Avenue, 110' E of Shasta Daisy Street, center of road	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1058	Waterline Trench Backfill: Irrigation sleeve, Scarlet Sage Avenue, 110' E of Shasta Daisy Street, center of road	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1058:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with equipment traffic.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

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Compaction Test Report

Report #: SNG-000082
10/03/2019
Report Date: 10/14/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1059		10/3/19	4	698A	CL	16.0	109.0	18.3	103.4	8	95	95	0 / 4	A
1060		10/3/19	4	698A	CL	16.0	109.0	18.0	105.5	8	97	95	0 / 4	A
1061		10/3/19	4	698A	CL	16.0	109.0	17.4	106.2	8	97	95	0 / 4	A
1062		10/3/19	4	698A	CL	16.0	109.0	17.0	107.0	8	98	95	0 / 4	A
1063		10/3/19	4	698A	CL	16.0	109.0	17.2	106.4	8	98	95	0 / 4	A
1064		10/3/19	4	698A	CL	16.0	109.0	17.5	106.5	8	98	95	0 / 4	A
1065		10/3/19	4	698A	CL	16.0	109.0	16.0	107.5	8	99	95	0 / 4	A
1066		10/3/19	4	698A	CL	16.0	109.0	16.2	107.6	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1059	Waterline Trench Backfill: Waterline air valve MH, AV 18	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1060	Waterline Trench Backfill: Waterline air valve MH, AV 18	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1061	Waterline Trench Backfill: Waterline air valve MH, AV 18	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1062	Waterline Trench Backfill: Waterline air valve MH, AV 18	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1063	Waterline Trench Backfill: Mainline, 10' W of MH AV18	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1064	Waterline Trench Backfill: Mainline, 10' W of MH AV18	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1065	Waterline Trench Backfill: Mainline, 10' W of MH AV18	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1066	Waterline Trench Backfill: Mainline, 10' W of MH AV18	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000082
10/03/2019
Report Date: 10/14/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1067		10/3/19	4	698A	CL	16.0	109.0	16.6	106.6	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1067	Waterline Trench Backfill: Air vac valve, N of MH AV18	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1067:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with equipment traffic.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver, CO 80204
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Compaction Test Report

Report #: SNG-000083
10/16/2019
Report Date: 11/18/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1068		10/16/19	6	698A	SC	11.0	120.5	9.2	119.9	8	100	100	-2 / 2	A
1069		10/16/19	6	698A	SC	11.0	120.5	9.5	120.1	8	100	100	-2 / 2	A
1070		10/16/19	6	698A	SC	11.0	120.5	9.2	120.1	8	100	100	-2 / 2	A
1071		10/16/19	5	698A	SC	13.5	114.5	12.5	114.0	8	100	100	-2 / 2	A
1072		10/16/19	5	698A	SC	13.5	114.5	12.4	114.4	8	100	100	-2 / 2	A
1073		10/16/19	5	698A	SC	13.5	114.5	11.6	114.0	8	100	100	-2 / 2	A
1074		10/16/19	2	698A	CL	15.0	112.0	15.2	107.5	8	96	95	0 / 4	A
1075		10/16/19	2	698A	CL	15.0	112.0	15.3	107.8	8	96	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1068	Waterline Trench Backfill: 10' N on intersection of Bayou Gulch Road and Scarlet Sage Avenue, center of Scarlet Sage Avenue	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1069	Waterline Trench Backfill: 10' N on intersection of Bayou Gulch Road and Scarlet Sage Avenue, center of Scarlet Sage Avenue	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1070	Waterline Trench Backfill: 10' N on intersection of Bayou Gulch Road and Scarlet Sage Avenue, center of Scarlet Sage Avenue	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1071	Waterline Trench Backfill: 10' S of intersection of Alpine Phlox Street and Scarlet Sage Avenue, center of Scarlet Sage Avenue	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1072	Waterline Trench Backfill: 10' S of intersection of Alpine Phlox Street and Scarlet Sage Avenue, center of Scarlet Sage Avenue	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1073	Waterline Trench Backfill: 10' S of intersection of Alpine Phlox Street and Scarlet Sage Avenue, center of Scarlet Sage Avenue	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1074	Waterline Trench Backfill: 20' S of intersection of N Pinery Pkwy and Crowfoot, center of N Pinery Pkwy	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1075	Waterline Trench Backfill: 20' S of intersection of N Pinery Pkwy and Crowfoot, center of N Pinery Pkwy	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000083
10/16/2019
Report Date: 11/18/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1076		10/16/19	2	698A	CL	15.0	112.0	15.2	107.8	8	96	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1076	Waterline Trench Backfill: 20' S of intersection of N Pinery Pkwy and Crowfoot, center of N Pinery Pkwy	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1076:** As requested by Alejo with Kelley Trucking, a site visit was made to observe and test waterline trench backfill. The backfill was prepared prior to our arrival.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Compaction Test Report

Report #: SNG-000084
10/21/2019
Report Date: 11/18/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1077		10/21/19	1	698A	SC	12.5	118.5	10.6	118.3	8	100	100	-2 / 2	A
1078		10/21/19	1	698A	SC	12.5	118.5	10.8	118.2	8	100	100	-2 / 2	A
1079		10/21/19	1	698A	SC	12.5	118.5	10.7	118.1	8	100	100	-2 / 2	A
1086		10/21/19	6	698A	SC	11.0	120.5	10.9	120.7	8	100	100	-2 / 2	A
1087		10/21/19	6	698A	SC	11.0	120.5	11.5	120.5	8	100	100	-2 / 2	A
1088		10/21/19	6	698A	SC	11.0	120.5	11.3	120.2	8	100	100	-2 / 2	A
1089		10/21/19	6	698A	SC	11.0	120.5	11.5	120.1	8	100	100	-2 / 2	A
1090		10/21/19	6	698A	SC	11.0	120.5	11.5	120.3	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1077	Waterline Trench Backfill: Irrigation sleeve crossing on N Pinery Pkwy, 150' E of intersection of N Pinery Pkwy and Crowfoot Road	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1078	Waterline Trench Backfill: Irrigation sleeve crossing on N Pinery Pkwy, 150' E of intersection of N Pinery Pkwy and Crowfoot Road	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1079	Waterline Trench Backfill: Irrigation sleeve crossing on N Pinery Pkwy, 150' E of intersection of N Pinery Pkwy and Crowfoot Road	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1086	Waterline Trench Backfill: Mainline. Alpine Phlox St. 30' SE of SSMH-244.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1087	Waterline Trench Backfill: Mainline. Alpine Phlox St. 30' SE of SSMH-244.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1088	Waterline Trench Backfill: Mainline. Alpine Phlox St. 30' SE of SSMH-244.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1089	Waterline Trench Backfill: Mainline. Alpine Phlox St. 30' SE of SSMH-244.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1090	Waterline Trench Backfill: Mainline. Alpine Phlox St. 30' SE of SSMH-244.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1079:** As requested by Alejo with Environmental, a site visit was made to observe and test waterline trench backfill. The backfill was prepared prior to our arrival.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000085
10/22/2019
Report Date: 11/18/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1080		10/22/19	1	698A	SC	12.5	118.5	11.2	118.2	8	100	100	-2 / 2	A
1081		10/22/19	1	698A	SC	12.5	118.5	10.9	118.1	8	100	100	-2 / 2	A
1082		10/22/19	1	698A	SC	12.5	118.5	10.7	118.5	8	100	100	-2 / 2	A
1083		10/22/19	1	698A	SC	12.5	118.5	10.8	118.0	8	100	100	-2 / 2	A
1084		10/22/19	1	698A	SC	12.5	118.5	11.1	118.3	8	100	100	-2 / 2	A
1085		10/22/19	1	698A	SC	12.5	118.5	10.9	118.8	8	100	100	-2 / 2	A
1091		10/22/19	4	698A	CL	16.0	109.0	17.5	107.7	8	99	95	0 / 4	A
1092		10/22/19	4	698A	CL	16.0	109.0	17.7	107.8	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1080	Waterline Trench Backfill: Irrigation sleeve crossing, N half of N Pinery Pkwy, 200' E of intersection of N Pinery Pkwy and Rose Mallow Ave	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1081	Waterline Trench Backfill: Irrigation sleeve crossing, N half of N Pinery Pkwy, 200' E of intersection of N Pinery Pkwy and Rose Mallow Ave	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1082	Waterline Trench Backfill: Irrigation sleeve crossing, N half of N Pinery Pkwy, 200' E of intersection of N Pinery Pkwy and Rose Mallow Ave	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1083	Waterline Trench Backfill: Irrigation sleeve crossing on N Pinery Pkwy, 20' E of intersection of N Pinery Pkwy and Rose Mallow Ave	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1084	Waterline Trench Backfill: Irrigation sleeve crossing on N Pinery Pkwy, 20' E of intersection of N Pinery Pkwy and Rose Mallow Ave	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1085	Waterline Trench Backfill: Irrigation sleeve crossing on N Pinery Pkwy, 20' E of intersection of N Pinery Pkwy and Rose Mallow Ave	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1091	Waterline Trench Backfill: Mainline. Rose Mallow Ave. 275' W of Lot 14 Block 1 Filing 7.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1092	Waterline Trench Backfill: Mainline. Rose Mallow Ave. 275' W of Lot 14 Block 1 Filing 7.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1085:** As requested by Alejo with Environmental, a site visit was made to observe and test waterline trench backfill. The backfill was prepared prior to our arrival.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000085
10/22/2019
Report Date: 11/18/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1093		10/22/19	4	698A	CL	16.0	109.0	18.0	107.7	8	99	95	0 / 4	A
1094		10/22/19	4	698A	CL	16.0	109.0	17.4	108.1	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1093	Waterline Trench Backfill: Mainline. Rose Mallow Ave. 275' W of Lot 14 Block 1 Filing 7.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1094	Waterline Trench Backfill: Mainline. Rose Mallow Ave. 275' W of Lot 14 Block 1 Filing 7.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Compaction Test Report

Report #: SNG-000086
10/23/2019
Report Date: 11/18/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1095		10/23/19	1	698A	SC	12.5	118.5	12.0	118.8	8	100	100	-2 / 2	A
1096		10/23/19	1	698A	SC	12.5	118.5	11.6	118.8	8	100	100	-2 / 2	A
1097		10/23/19	1	698A	SC	12.5	118.5	11.1	119.6	8	101	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1095	Waterline Trench Backfill: Irrigation sleeve crossing, S half of N Pinery Pkwy, 200' E of intersection of N Pinery Pkwy and Rose Mallow Ave	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1096	Waterline Trench Backfill: Irrigation sleeve crossing, S half of N Pinery Pkwy, 200' E of intersection of N Pinery Pkwy and Rose Mallow Ave	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1097	Waterline Trench Backfill: Irrigation sleeve crossing, S half of N Pinery Pkwy, 200' E of intersection of N Pinery Pkwy and Rose Mallow Ave	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000087
10/24/2019
Report Date: 11/18/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1098		10/24/19	4	698A	CL	16.0	109.0	19.2	106.4	8	98	95	0 / 4	A
1099		10/24/19	4	698A	CL	16.0	109.0	18.1	107.6	8	99	95	0 / 4	A
1100		10/24/19	4	698A	CL	16.0	109.0	18.3	107.3	8	98	95	0 / 4	A
1101		10/24/19	4	698A	CL	16.0	109.0	17.9	107.8	8	99	95	0 / 4	A
1102		10/24/19	4	698A	CL	16.0	109.0	19.0	107.1	8	98	95	0 / 4	A
1103		10/24/19	4	698A	CL	16.0	109.0	18.2	107.3	8	98	95	0 / 4	A
1104		10/24/19	4	698A	CL	16.0	109.0	18.1	107.3	8	98	95	0 / 4	A
1105		10/24/19	4	698A	CL	16.0	109.0	17.4	108.1	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1098	Waterline Trench Backfill: Mainline. Rose Mallow Ave. 100' W of Lot 14 Block 1 Filing 7.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1099	Waterline Trench Backfill: Mainline. Rose Mallow Ave. 100' W of Lot 14 Block 1 Filing 7.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1100	Waterline Trench Backfill: Mainline. Rose Mallow Ave. 100' W of Lot 14 Block 1 Filing 7.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1101	Waterline Trench Backfill: Mainline. Rose Mallow Ave. 100' W of Lot 14 Block 1 Filing 7.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1102	Waterline Trench Backfill: Mainline. Rose Mallow Ave. 100' E of Lot 14 Block 1 Filing 7.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1103	Waterline Trench Backfill: Mainline. Rose Mallow Ave. 100' E of Lot 14 Block 1 Filing 7.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1104	Waterline Trench Backfill: Mainline. Rose Mallow Ave. 100' E of Lot 14 Block 1 Filing 7.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1105	Waterline Trench Backfill: Mainline. Rose Mallow Ave. 100' E of Lot 14 Block 1 Filing 7.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000088
10/25/2019
Report Date: 11/18/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1106		10/25/19	4	698A	CL	16.0	109.0	16.0	111.3	8	102	95	0 / 4	A
1107		10/25/19	4	698A	CL	16.0	109.0	16.0	112.5	8	103	95	0 / 4	A
1108		10/25/19	4	698A	CL	16.0	109.0	16.8	111.2	8	102	95	0 / 4	A
1109		10/25/19	4	698A	CL	16.0	109.0	16.6	110.6	8	101	95	0 / 4	A
1110		10/25/19	4	698A	CL	16.0	109.0	18.9	103.5	8	95	95	0 / 4	A
1111		10/25/19	4	698A	CL	16.0	109.0	18.4	104.4	8	96	95	0 / 4	A
1112		10/25/19	4	698A	CL	16.0	109.0	17.9	105.6	8	97	95	0 / 4	A
1113		10/25/19	4	698A	CL	16.0	109.0	17.5	108.9	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1106	Waterline Trench Backfill: 1' S of fire hydrant located 60' N of Shasta Daisy St and Hop Clover Trail intersection.	5.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew
1107	Waterline Trench Backfill: 1' S of fire hydrant located 60' N of Shasta Daisy St and Hop Clover Trail intersection.	4.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew
1108	Waterline Trench Backfill: 1' S of fire hydrant located 60' N of Shasta Daisy St and Hop Clover Trail intersection.	3.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew
1109	Waterline Trench Backfill: 1' S of fire hydrant located 60' N of Shasta Daisy St and Hop Clover Trail intersection.	2.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew
1110	Waterline Trench Backfill: Mainline. 40' E of fire hydrant N of Shasta Daisy St and Hop Clover Trail intersection.	5.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew
1111	Waterline Trench Backfill: Mainline. 40' E of fire hydrant N of Shasta Daisy St and Hop Clover Trail intersection.	4.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew
1112	Waterline Trench Backfill: Mainline. 40' E of fire hydrant N of Shasta Daisy St and Hop Clover Trail intersection.	3.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew
1113	Waterline Trench Backfill: Mainline. 40' E of fire hydrant N of Shasta Daisy St and Hop Clover Trail intersection.	2.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

CTL | THOMPSON INCORPORATED

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Compaction Test Report

Report #: SNG-000088
10/25/2019
Report Date: 11/18/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1114		10/25/19	4	698A	CL	16.0	109.0	18.0	109.4	8	100	95	0 / 4	A
1115		10/25/19	4	698A	CL	16.0	109.0	17.7	109.9	8	101	95	0 / 4	A
1116		10/25/19	4	698A	CL	16.0	109.0	18.4	107.7	8	99	95	0 / 4	A
1117		10/25/19	4	698A	CL	16.0	109.0	17.5	104.8	8	96	95	0 / 4	A
1118		10/25/19	4	698A	CL	16.0	109.0	16.2	110.8	8	102	95	0 / 4	A
1119		10/25/19	4	698A	CL	16.0	109.0	16.9	109.8	8	101	95	0 / 4	A
1120		10/25/19	4	698A	CL	16.0	109.0	17.7	109.4	8	100	95	0 / 4	A
1121		10/25/19	4	698A	CL	16.0	109.0	17.4	108.7	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1114	Waterline Trench Backfill: 50' E of fire hydrant N of Shasta Daisy St and Hop Clover Trail intersection. Water Valve 1.	5.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew
1115	Waterline Trench Backfill: 50' E of fire hydrant N of Shasta Daisy St and Hop Clover Trail intersection. Water Valve 1.	4.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew
1116	Waterline Trench Backfill: 50' E of fire hydrant N of Shasta Daisy St and Hop Clover Trail intersection. Water Valve 1.	3.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew
1117	Waterline Trench Backfill: 50' E of fire hydrant N of Shasta Daisy St and Hop Clover Trail intersection. Water Valve 1.	2.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew
1118	Waterline Trench Backfill: Water Valve 2. N side of Shasta Daisy St and Hop Clover Trail intersection. 2' N of Water Valve 1.	5.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew
1119	Waterline Trench Backfill: Water Valve 2. N side of Shasta Daisy St and Hop Clover Trail intersection. 2' N of Water Valve 1.	4.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew
1120	Waterline Trench Backfill: Water Valve 2. N side of Shasta Daisy St and Hop Clover Trail intersection. 2' N of Water Valve 1.	3.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew
1121	Waterline Trench Backfill: Water Valve 2. N side of Shasta Daisy St and Hop Clover Trail intersection. 2' N of Water Valve 1.	2.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000088
10/25/2019
Report Date: 11/18/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1122		10/25/19	4	698A	CL	16.0	109.0	17.5	110.3	8	101	95	0 / 4	A
1123		10/25/19	4	698A	CL	16.0	109.0	17.9	110.4	8	101	95	0 / 4	A
1124		10/25/19	4	698A	CL	16.0	109.0	18.5	111.9	8	103	95	0 / 4	A
1125		10/25/19	4	698A	CL	16.0	109.0	17.5	111.6	8	102	95	0 / 4	A
1126		10/25/19	4	698A	CL	16.0	109.0	16.5	106.2	8	97	95	0 / 4	A
1127		10/25/19	2	698A	CL	15.0	112.0	16.3	110.6	6	99	95	0 / 4	A
1128		10/25/19	2	698A	CL	15.0	112.0	17.6	108.3	6	97	95	0 / 4	A
1129		10/25/19	2	698A	CL	15.0	112.0	17.4	107.5	6	96	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1122	Waterline Trench Backfill: Water Valve 3. N side of Shasta Daisy St and Hop Clover Trail intersection. 2' N of Water Valve 2.	5.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew
1123	Waterline Trench Backfill: Water Valve 3. N side of Shasta Daisy St and Hop Clover Trail intersection. 2' N of Water Valve 2.	4.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew
1124	Waterline Trench Backfill: Water Valve 3. N side of Shasta Daisy St and Hop Clover Trail intersection. 2' N of Water Valve 2.	3.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew
1125	Waterline Trench Backfill: Water Valve 3. N side of Shasta Daisy St and Hop Clover Trail intersection. 2' N of Water Valve 2.	2.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew
1126	Waterline Trench Backfill: Water Valve 4. N side of Shasta Daisy St and Hop Clover Trail intersection. 2' N of Water Valve 3.	2.0	BG	XPLORER / 3500 / 3181 / 4/15/2019	Klein, Andrew
1127	Waterline Trench Backfill: N Pinery Pkwy station 14+50	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1128	Waterline Trench Backfill: N Pinery Pkwy station 14+50	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1129	Waterline Trench Backfill: N Pinery Pkwy station 14+50	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000088
10/25/2019
Report Date: 11/18/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1130		10/25/19	5	698A	SC	13.5	114.5	14.9	114.8	6	100	100	-2 / 2	A
1131		10/25/19	5	698A	SC	13.5	114.5	14.1	116.1	6	101	100	-2 / 2	A
1132		10/25/19	5	698A	SC	13.5	114.5	13.6	116.6	6	102	100	-2 / 2	A
1133		10/25/19	4	698A	CL	16.0	109.0	19.6	105.3	6	97	95	0 / 4	A
1134		10/25/19	3	698A	CL	16.0	111.0	16.5	111.5	6	100	95	0 / 4	A
1135		10/25/19	3	698A	CL	16.0	111.0	16.7	108.8	6	98	95	0 / 4	A
1136		10/25/19	3	698A	CL	16.0	111.0	16.5	108.9	6	98	95	0 / 4	A
1137		10/25/19	4	698A	CL	16.0	109.0	19.3	105.4	6	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1130	Waterline Trench Backfill: N Pinery Pkwy station 14+50	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1131	Waterline Trench Backfill: N Pinery Pkwy station 14+50	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1132	Waterline Trench Backfill: N Pinery Pkwy station 14+50	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1133	Waterline Trench Backfill: N Pinery Pkwy station 14+50	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1134	Waterline Trench Backfill: N Pinery Pkwy station 19+00	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1135	Waterline Trench Backfill: N Pinery Pkwy station 19+00	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1136	Waterline Trench Backfill: N Pinery Pkwy station 19+00	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1137	Waterline Trench Backfill: N Pinery Pkwy station 24+00	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

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10/25/2019
Report Date: 11/18/2019
Test Method: ASTM D 6938

Client:
E5X Management
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Englewood, CO 80112

Project:
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Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1138		10/25/19	2	698A	CL	15.0	112.0	17.6	109.9	6	98	95	0 / 4	A
1139		10/25/19	2	698A	CL	15.0	112.0	16.3	110.6	6	99	95	0 / 4	A
1140		10/25/19	5	698A	SC	13.5	114.5	15.1	114.1	6	100	100	-2 / 2	A
1141		10/25/19	4	698A	CL	16.0	109.0	17.9	107.8	6	99	95	0 / 4	A
1142		10/25/19	4	698A	CL	16.0	109.0	17.9	107.0	6	98	95	0 / 4	A
1143		10/25/19	4	698A	CL	16.0	109.0	18.5	106.6	6	98	95	0 / 4	A
1144		10/25/19	2	698A	CL	15.0	112.0	15.5	113.2	6	101	95	0 / 4	A
1145		10/25/19	2	698A	CL	15.0	112.0	16.7	113.1	6	101	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1138	Waterline Trench Backfill: N Pinery Pkwy station 24+00	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1139	Waterline Trench Backfill: N Pinery Pkwy station 26+00	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1140	Waterline Trench Backfill: N Pinery Pkwy station 26+00	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1141	Waterline Trench Backfill: N Pinery Pkwy station 28+00	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1142	Waterline Trench Backfill: N Pinery Pkwy station 28+00	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1143	Waterline Trench Backfill: N Pinery Pkwy station 28+00	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1144	Waterline Trench Backfill: N Pinery Pkwy station 28+00	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1145	Waterline Trench Backfill: N Pinery Pkwy station 28+00	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

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10/25/2019
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Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1146		10/25/19	3	698A	CL	16.0	111.0	17.9	107.5	6	97	95	0 / 4	A
1147		10/25/19	4	698A	CL	16.0	109.0	18.9	105.1	6	96	95	0 / 4	A
1148		10/25/19	4	698A	CL	16.0	109.0	19.1	104.5	6	96	95	0 / 4	A
1149		10/25/19	3	698A	CL	16.0	111.0	16.1	110.8	6	100	95	0 / 4	A
1150		10/25/19	5	698A	SC	13.5	114.5	15.0	115.0	6	100	100	-2 / 2	A
1151		10/25/19	2	698A	CL	15.0	112.0	16.4	111.2	6	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1146	Waterline Trench Backfill: N Pinery Pkwy station 30+00	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1147	Waterline Trench Backfill: N Pinery Pkwy station 30+00	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1148	Waterline Trench Backfill: N Pinery Pkwy station 30+00	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1149	Waterline Trench Backfill: N Pinery Pkwy station 30+00	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1150	Waterline Trench Backfill: N Pinery Pkwy station 30+00	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1151	Waterline Trench Backfill: N Pinery Pkwy station 30+00	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000089
10/31/2019
Report Date: 11/18/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
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Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1152		10/31/19	5	698A	SC	13.5	114.5	13.7	114.5	8	100	100	-2 / 2	A
1153		10/31/19	5	698A	SC	13.5	114.5	13.9	114.7	8	100	100	-2 / 2	A
1154		10/31/19	5	698A	SC	13.5	114.5	13.6	114.3	8	100	100	-2 / 2	A
1155		10/31/19	5	698A	SC	13.5	114.5	13.8	114.6	8	100	100	-2 / 2	A
1156		10/31/19	5	698A	SC	13.5	114.5	13.5	114.3	8	100	100	-2 / 2	A
1157		10/31/19	5	698A	SC	13.5	114.5	13.2	114.9	8	100	100	-2 / 2	A
1158		10/31/19	6	698A	SC	11.0	120.5	11.6	119.9	8	100	100	-2 / 2	A
1159		10/31/19	6	698A	SC	11.0	120.5	11.5	120.3	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1152	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 400' N of Bayou Gulch Road and Scarlet Sage Avenue intersection, E side of road	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1153	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 400' N of Bayou Gulch Road and Scarlet Sage Avenue intersection, E side of road	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1154	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 400' N of Bayou Gulch Road and Scarlet Sage Avenue intersection, E side of road	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1155	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 400' N of Bayou Gulch Road and Scarlet Sage Avenue intersection, E side of road	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1156	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 400' N of Bayou Gulch Road and Scarlet Sage Avenue intersection, E side of road	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1157	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 400' N of Bayou Gulch Road and Scarlet Sage Avenue intersection, E side of road	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1158	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 550' SW of Bayou Gulch Road and Crowfoot Valley Road intersection, E side of road	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1159	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 550' SW of Bayou Gulch Road and Crowfoot Valley Road intersection, E side of road	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

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10/31/2019
Report Date: 11/18/2019
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Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1160		10/31/19	6	698A	SC	11.0	120.5	11.3	120.1	8	100	100	-2 / 2	A
1161		10/31/19	6	698A	SC	11.0	120.5	11.6	120.2	8	100	100	-2 / 2	A
1162		10/31/19	6	698A	SC	11.0	120.5	11.3	120.1	8	100	100	-2 / 2	A
1163		10/31/19	6	698A	SC	11.0	120.5	11.6	120.0	8	100	100	-2 / 2	A
1164		10/31/19	4	698A	CL	16.0	109.0	17.4	107.7	8	99	95	0 / 4	A
1165		10/31/19	4	698A	CL	16.0	109.0	16.4	108.3	8	99	95	0 / 4	A
1166		10/31/19	4	698A	CL	16.0	109.0	17.1	107.1	8	98	95	0 / 4	A
1167		10/31/19	4	698A	CL	16.0	109.0	17.7	107.0	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1160	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 550' SW of Bayou Gulch Road and Crowfoot Valley Road intersection, E side of road	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1161	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 550' SW of Bayou Gulch Road and Crowfoot Valley Road intersection, E side of road	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1162	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 550' SW of Bayou Gulch Road and Crowfoot Valley Road intersection, E side of road	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1163	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 550' SW of Bayou Gulch Road and Crowfoot Valley Road intersection, E side of road	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1164	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 120' N of Bayou Gulch Road and Scarlet Sage Avenue intersection, E side of road	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1165	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 120' N of Bayou Gulch Road and Scarlet Sage Avenue intersection, E side of road	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1166	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 120' N of Bayou Gulch Road and Scarlet Sage Avenue intersection, E side of road	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1167	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 120' N of Bayou Gulch Road and Scarlet Sage Avenue intersection, E side of road	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
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Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000089
10/31/2019
Report Date: 11/18/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1168		10/31/19	4	698A	CL	16.0	109.0	18.0	106.9	8	98	95	0 / 4	A
1169		10/31/19	4	698A	CL	16.0	109.0	17.3	107.1	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1168	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 120' N of Bayou Gulch Road and Scarlet Sage Avenue intersection, E side of road	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1169	Waterline Trench Backfill: Mainline, Bayou Gulch Road, 120' N of Bayou Gulch Road and Scarlet Sage Avenue intersection, E side of road	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1169:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test waterline trench backfill. The backfill was prepared prior to our arrival.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
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Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000090
11/07/2019
Report Date: 11/18/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1170		11/7/19	2	698A	CL	15.0	112.0	16.2	110.2	8	98	95	0 / 4	A
1171		11/7/19	2	698A	CL	15.0	112.0	17.1	109.0	8	97	95	0 / 4	A
1172		11/7/19	2	698A	CL	15.0	112.0	17.3	108.6	8	97	95	0 / 4	A
1173		11/7/19	2	698A	CL	15.0	112.0	17.0	108.6	8	97	95	0 / 4	A
1174		11/7/19	2	698A	CL	15.0	112.0	17.1	108.7	8	97	95	0 / 4	A
1175		11/7/19	2	698A	CL	15.0	112.0	17.6	108.4	8	97	95	0 / 4	A
1176		11/7/19	2	698A	CL	15.0	112.0	17.2	108.3	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1170	Waterline Trench Backfill: Mainline, Rose Mallow Avenue, 115' SE of SDMH-29	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1171	Waterline Trench Backfill: Mainline, Rose Mallow Avenue, 115' SE of SDMH-29	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1172	Waterline Trench Backfill: Mainline, Rose Mallow Avenue, 115' SE of SDMH-29	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1173	Waterline Trench Backfill: Mainline, Rose Mallow Avenue, 135' SE of SDMH-29	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1174	Waterline Trench Backfill: Mainline, Rose Mallow Avenue, 135' SE of SDMH-29	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1175	Waterline Trench Backfill: Mainline, Rose Mallow Avenue, 135' SE of SDMH-29	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1176	Waterline Trench Backfill: Mainline, Rose Mallow Avenue, 135' SE of SDMH-29	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1176:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test waterline trench backfill. We observed the contractor process/place and compact the fill with the loader. No additional moisture was added.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000091
11/08/2019
Report Date: 11/18/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1177		11/8/19	1	698A	SC	12.5	118.5	12.8	118.3	8	100	100	-2 / 2	A
1178		11/8/19	1	698A	SC	12.5	118.5	12.4	118.4	8	100	100	-2 / 2	A
1179		11/8/19	1	698A	SC	12.5	118.5	13.0	118.3	8	100	100	-2 / 2	A
1180		11/8/19	1	698A	SC	12.5	118.5	13.6	118.2	8	100	100	-2 / 2	A
1181		11/8/19	1	698A	SC	12.5	118.5	13.3	118.2	8	100	100	-2 / 2	A
1182		11/8/19	1	698A	SC	12.5	118.5	13.4	118.2	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1177	Waterline Trench Backfill: Irrigation sleeve crossing, N Pinery Pkwy, 200' E of intersection of Shasta Daisy Street and N Pinery Pkwy	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1178	Waterline Trench Backfill: Irrigation sleeve crossing, N Pinery Pkwy, 200' E of intersection of Shasta Daisy Street and N Pinery Pkwy	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1179	Waterline Trench Backfill: Irrigation sleeve crossing, N Pinery Pkwy, 200' E of intersection of Shasta Daisy Street and N Pinery Pkwy	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1180	Waterline Trench Backfill: Irrigation sleeve crossing, N Pinery Pkwy, W bound side, 220' E of intersection of Shasta Daisy Street and N Pinery Pkwy	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1181	Waterline Trench Backfill: Irrigation sleeve crossing, N Pinery Pkwy, W bound side, 220' E of intersection of Shasta Daisy Street and N Pinery Pkwy	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1182	Waterline Trench Backfill: Irrigation sleeve crossing, N Pinery Pkwy, W bound side, 220' E of intersection of Shasta Daisy Street and N Pinery Pkwy	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1182:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test waterline trench backfill. The backfill was prepared prior to our arrival.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000092
11/07/2019
Report Date: 12/3/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1183		11/7/19	2	698A	CL	15.0	112.0	15.8	112.4	8	100	95	0 / 4	A
1184		11/7/19	2	698A	CL	15.0	112.0	16.7	110.4	8	99	95	0 / 4	A
1185		11/7/19	2	698A	CL	15.0	112.0	16.8	109.9	8	98	95	0 / 4	A
1186		11/7/19	2	698A	CL	15.0	112.0	16.2	110.2	8	98	95	0 / 4	A
1187		11/7/19	2	698A	CL	15.0	112.0	16.6	110.1	8	98	95	0 / 4	A
1188		11/7/19	2	698A	CL	15.0	112.0	16.2	110.5	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1183	Waterline Trench Backfill: Mainline, Rose Mallow Avenue, 100' SE of SDMH-23	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1184	Waterline Trench Backfill: Mainline, Rose Mallow Avenue, 100' SE of SDMH-23	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1185	Waterline Trench Backfill: Mainline, Rose Mallow Avenue, 100' SE of SDMH-23	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1186	Waterline Trench Backfill: Mainline, Rose Mallow Avenue, 100' SE of SDMH-23	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1187	Waterline Trench Backfill: Mainline, Rose Mallow Avenue, 100' SE of SDMH-23	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1188	Waterline Trench Backfill: Mainline, Rose Mallow Avenue, 100' SE of SDMH-23	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1188:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000093
11/09/2019
Report Date: 12/3/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1189		11/9/19	2	698A	CL	15.0	112.0	17.7	108.6	8	97	95	0 / 4	A
1190		11/9/19	2	698A	CL	15.0	112.0	17.5	109.1	8	97	95	0 / 4	A
1191		11/9/19	2	698A	CL	15.0	112.0	17.1	109.7	8	98	95	0 / 4	A
1192		11/9/19	2	698A	CL	15.0	112.0	17.7	109.4	8	98	95	0 / 4	A
1193		11/9/19	2	698A	CL	15.0	112.0	17.6	109.8	8	98	95	0 / 4	A
1194		11/9/19	2	698A	CL	15.0	112.0	16.8	110.1	8	98	95	0 / 4	A
1195		11/9/19	2	698A	CL	15.0	112.0	17.0	110.2	8	98	95	0 / 4	A
1196		11/9/19	2	698A	CL	15.0	112.0	17.4	109.6	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1189	Waterline Trench Backfill: Mainline, Rose Mallow Avenue, 50' S of Birdsfoot Avenue	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1190	Waterline Trench Backfill: Mainline, Rose Mallow Avenue, 50' S of Birdsfoot Avenue	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1191	Waterline Trench Backfill: Mainline, Rose Mallow Avenue, 50' S of Birdsfoot Avenue	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1192	Waterline Trench Backfill: Mainline, Rose Mallow Avenue, 50' S of Birdsfoot Avenue	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1193	Waterline Trench Backfill: Mainline, Rose Mallow Avenue, 50' S of Birdsfoot Avenue	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1194	Waterline Trench Backfill: Mainline, Rose Mallow Avenue, 50' S of Birdsfoot Avenue	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1195	Waterline Trench Backfill: Mainline, Rose Mallow Avenue, 50' S of Birdsfoot Avenue	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1196	Waterline Trench Backfill: Mainline, Rose Mallow Avenue, 50' S of Birdsfoot Avenue	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1196:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Compaction Test Report

Report #: SNG-000094
11/13/2019
Report Date: 12/3/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1197		11/13/19	8	698A	CL	18.0	109.0	18.0	103.3	8	95	95	0 / 4	A
1198		11/13/19	8	698A	CL	18.0	109.0	18.1	103.2	8	95	95	0 / 4	A
1199		11/13/19	8	698A	CL	18.0	109.0	18.2	103.7	8	95	95	0 / 4	A
1200		11/13/19	8	698A	CL	18.0	109.0	18.5	103.9	8	95	95	0 / 4	A
1201		11/13/19	8	698A	CL	18.0	109.0	18.2	106.0	8	97	95	0 / 4	A
1202		11/13/19	8	698A	CL	18.0	109.0	18.4	106.3	8	98	95	0 / 4	A
1203		11/13/19	8	698A	CL	18.0	109.0	18.2	109.0	8	100	95	0 / 4	A
1204		11/13/19	8	698A	CL	18.0	109.0	19.1	107.0	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1197	Waterline Trench Backfill: Fire hydrant, Rose Mallow Avenue, Lot 20 Block 1, Filing 8	4.0	BG	XPLORER / 3500 / 2025 / 1/22/2019	Ruckhaus, Manya
1198	Waterline Trench Backfill: Fire hydrant, Rose Mallow Avenue, Lot 20 Block 1, Filing 8	3.0	BG	XPLORER / 3500 / 2025 / 1/22/2019	Ruckhaus, Manya
1199	Waterline Trench Backfill: Fire hydrant, Rose Mallow Avenue, Lot 20 Block 1, Filing 8	2.0	BG	XPLORER / 3500 / 2025 / 1/22/2019	Ruckhaus, Manya
1200	Waterline Trench Backfill: Fire hydrant, Rose Mallow Avenue, Lot 20 Block 1, Filing 8	1.0	BG	XPLORER / 3500 / 2025 / 1/22/2019	Ruckhaus, Manya
1201	Waterline Trench Backfill: Gate valve, Rose Mallow Avenue adjacent to Lot 20 Block 1, Filing 8	4.0	BG	XPLORER / 3500 / 2025 / 1/22/2019	Ruckhaus, Manya
1202	Waterline Trench Backfill: Gate valve, Rose Mallow Avenue adjacent to Lot 20 Block 1, Filing 8	3.0	BG	XPLORER / 3500 / 2025 / 1/22/2019	Ruckhaus, Manya
1203	Waterline Trench Backfill: Gate valve, Rose Mallow Avenue adjacent to Lot 20 Block 1, Filing 8	2.0	BG	XPLORER / 3500 / 2025 / 1/22/2019	Ruckhaus, Manya
1204	Waterline Trench Backfill: Gate valve, Rose Mallow Avenue adjacent to Lot 20 Block 1, Filing 8	1.0	BG	XPLORER / 3500 / 2025 / 1/22/2019	Ruckhaus, Manya

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000094
11/13/2019
Report Date: 12/3/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1205		11/13/19	5	698A	SC	13.5	114.5	13.4	115.0	8	100	100	-2 / 2	A
1206		11/13/19	5	698A	SC	13.5	114.5	14.0	114.7	8	100	100	-2 / 2	A
1207		11/13/19	5	698A	SC	13.5	114.5	13.3	115.0	8	100	100	-2 / 2	A
1208		11/13/19	5	698A	SC	13.5	114.5	13.9	114.0	8	100	100	-2 / 2	A
1209		11/13/19	4	698A	CL	16.0	109.0	17.4	106.8	8	98	95	0 / 4	A
1210		11/13/19	4	698A	CL	16.0	109.0	17.5	106.9	8	98	95	0 / 4	A
1211		11/13/19	4	698A	CL	16.0	109.0	18.0	106.9	8	98	95	0 / 4	A
1212		11/13/19	4	698A	CL	16.0	109.0	17.2	107.5	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1205	Waterline Trench Backfill: Mainline, Rose Mallow Avenue adjacent to Lot Lot 10 Block 4 Filing 4	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1206	Waterline Trench Backfill: Mainline, Rose Mallow Avenue adjacent to Lot Lot 10 Block 4 Filing 4	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1207	Waterline Trench Backfill: Mainline, Rose Mallow Avenue adjacent to Lot Lot 10 Block 4 Filing 4	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1208	Waterline Trench Backfill: Mainline, Rose Mallow Avenue adjacent to Lot Lot 10 Block 4 Filing 4	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1209	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Shasta Daisy Point, E side valve, 30' N of SE corner of intersection	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1210	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Shasta Daisy Point, E side valve, 30' N of SE corner of intersection	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1211	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Shasta Daisy Point, E side valve, 30' N of SE corner of intersection	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1212	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Shasta Daisy Point, E side valve, 30' N of SE corner of intersection	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
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Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000094
11/13/2019
Report Date: 12/3/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1213		11/13/19	4	698A	CL	16.0	109.0	17.4	106.8	8	98	95	0 / 4	A
1214		11/13/19	4	698A	CL	16.0	109.0	18.2	106.8	8	98	95	0 / 4	A
1215		11/13/19	4	698A	CL	16.0	109.0	18.7	107.3	8	98	95	0 / 4	A
1216		11/13/19	4	698A	CL	16.0	109.0	18.0	107.1	8	98	95	0 / 4	A
1217		11/13/19	4	698A	CL	16.0	109.0	18.2	106.7	8	98	95	0 / 4	A
1218		11/13/19	4	698A	CL	16.0	109.0	18.0	106.9	8	98	95	0 / 4	A
1219		11/13/19	4	698A	CL	16.0	109.0	17.4	107.2	8	98	95	0 / 4	A
1220		11/13/19	4	698A	CL	16.0	109.0	17.0	108.9	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1213	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Shasta Daisy Point, E side valve, 30' N of SE corner of intersection	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1214	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Shasta Daisy Point, W side of valve, 30' N of SE corner of intersection, 5' W of previous valve box	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1215	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Shasta Daisy Point, W side of valve, 30' N of SE corner of intersection, 5' W of previous valve box	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1216	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Shasta Daisy Point, W side of valve, 30' N of SE corner of intersection, 5' W of previous valve box	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1217	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Shasta Daisy Point, W side of valve, 30' N of SE corner of intersection, 5' W of previous valve box	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1218	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Shasta Daisy Point, W side of valve, 30' N of SE corner of intersection, 5' W of previous valve box	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1219	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Shasta Daisy Point, 25' N of SE corner of intersection adjacent to FH	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1220	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Shasta Daisy Point, 25' N of SE corner of intersection adjacent to FH	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000094
11/13/2019
Report Date: 12/3/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1221		11/13/19	4	698A	CL	16.0	109.0	18.1	107.1	8	98	95	0 / 4	A
1222		11/13/19	4	698A	CL	16.0	109.0	18.1	107.2	8	98	95	0 / 4	A
1223		11/13/19	4	698A	CL	16.0	109.0	18.0	107.1	8	98	95	0 / 4	A
1224		11/13/19	4	698A	CL	16.0	109.0	18.1	107.3	8	98	95	0 / 4	A
1225		11/13/19	4	698A	CL	16.0	109.0	18.2	107.5	8	99	95	0 / 4	A
1226		11/13/19	4	698A	CL	16.0	109.0	17.5	108.0	8	99	95	0 / 4	A
1227		11/13/19	4	698A	CL	16.0	109.0	18.0	107.2	8	98	95	0 / 4	A
1228		11/13/19	4	698A	CL	16.0	109.0	17.4	108.0	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1221	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Shasta Daisy Point, 25' N of SE corner of intersection adjacent to FH	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1222	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Shasta Daisy Point, 25' N of SE corner of intersection adjacent to FH	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1223	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Shasta Daisy Point, 25' N of SE corner of intersection adjacent to FH	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1224	Waterline Trench Backfill: Fire hydrant, Rose Mallow Avenue and Shasta Daisy Point, 25' N of SE corner of intersection	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1225	Waterline Trench Backfill: Fire hydrant, Rose Mallow Avenue and Shasta Daisy Point, 25' N of SE corner of intersection	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1226	Waterline Trench Backfill: Fire hydrant, Rose Mallow Avenue and Shasta Daisy Point, 25' N of SE corner of intersection	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1227	Waterline Trench Backfill: Fire hydrant, Rose Mallow Avenue and Shasta Daisy Point, 25' N of SE corner of intersection	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1228	Waterline Trench Backfill: Fire hydrant, Rose Mallow Avenue and Shasta Daisy Point, 25' N of SE corner of intersection	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000094
11/13/2019
Report Date: 12/3/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1229		11/13/19	4	698A	CL	16.0	109.0	17.8	107.9	8	99	95	0 / 4	A
1230		11/13/19	4	698A	CL	16.0	109.0	17.6	107.6	8	99	95	0 / 4	A
1231		11/13/19	4	698A	CL	16.0	109.0	17.1	108.0	8	99	95	0 / 4	A
1232		11/13/19	4	698A	CL	16.0	109.0	18.0	107.7	8	99	95	0 / 4	A
1233		11/13/19	4	698A	CL	16.0	109.0	17.8	107.7	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1229	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Shasta Daisy Point, 15' N of SE corner of intersection	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1230	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Shasta Daisy Point, 15' N of SE corner of intersection	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1231	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Shasta Daisy Point, 15' N of SE corner of intersection	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1232	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Shasta Daisy Point, 15' N of SE corner of intersection	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1233	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Shasta Daisy Point, 15' N of SE corner of intersection	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1233:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000095
11/15/2019
Report Date: 12/3/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1234		11/15/19	2	698A	CL	15.0	112.0	17.1	112.0	8	100	95	0 / 4	A
1235		11/15/19	2	698A	CL	15.0	112.0	18.4	110.5	8	99	95	0 / 4	A
1236		11/15/19	2	698A	CL	15.0	112.0	17.5	111.5	8	100	95	0 / 4	A
1237		11/15/19	2	698A	CL	15.0	112.0	17.2	111.4	8	99	95	0 / 4	A
1238		11/15/19	2	698A	CL	15.0	112.0	17.0	111.4	8	99	95	0 / 4	A
1239		11/15/19	2	698A	CL	15.0	112.0	17.7	110.4	8	99	95	0 / 4	A
1240		11/15/19	2	698A	CL	15.0	112.0	17.9	110.9	8	99	95	0 / 4	A
1241		11/15/19	2	698A	CL	15.0	112.0	16.7	111.6	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1234	Waterline Trench Backfill: Water valve, 20' W of intersection of Rose Mallow Avenue and Hop Clover Avenue	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1235	Waterline Trench Backfill: Water valve, 20' W of intersection of Rose Mallow Avenue and Hop Clover Avenue	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1236	Waterline Trench Backfill: Water valve, 20' W of intersection of Rose Mallow Avenue and Hop Clover Avenue	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1237	Waterline Trench Backfill: Water valve, 20' W of intersection of Rose Mallow Avenue and Hop Clover Avenue	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1238	Waterline Trench Backfill: Water valve, 20' W of intersection of Rose Mallow Avenue and Hop Clover Avenue, N side of Hop Clover Avenue	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1239	Waterline Trench Backfill: Water valve, 20' W of intersection of Rose Mallow Avenue and Hop Clover Avenue, N side of Hop Clover Avenue	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1240	Waterline Trench Backfill: Water valve, 20' W of intersection of Rose Mallow Avenue and Hop Clover Avenue, N side of Hop Clover Avenue	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1241	Waterline Trench Backfill: Water valve, 20' W of intersection of Rose Mallow Avenue and Hop Clover Avenue, N side of Hop Clover Avenue	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000095
11/15/2019
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Test Method: ASTM D 6938

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Project:
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Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1242		11/15/19	2	698A	CL	15.0	112.0	17.6	108.9	8	97	95	0 / 4	A
1243		11/15/19	2	698A	CL	15.0	112.0	17.2	110.1	8	98	95	0 / 4	A
1244		11/15/19	2	698A	CL	15.0	112.0	17.0	110.1	8	98	95	0 / 4	A
1245		11/15/19	2	698A	CL	15.0	112.0	17.4	108.9	8	97	95	0 / 4	A
1246		11/15/19	2	698A	CL	15.0	112.0	17.4	108.3	8	97	95	0 / 4	A
1247		11/15/19	2	698A	CL	15.0	112.0	16.5	109.7	8	98	95	0 / 4	A
1248		11/15/19	2	698A	CL	15.0	112.0	18.7	109.5	8	98	95	0 / 4	A
1249		11/15/19	2	698A	CL	15.0	112.0	16.9	110.6	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1242	Waterline Trench Backfill: Water valve, 10' W of intersection of Rose Mallow Avenue and Hop Clover Avenue	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1243	Waterline Trench Backfill: Water valve, 10' W of intersection of Rose Mallow Avenue and Hop Clover Avenue	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1244	Waterline Trench Backfill: Water valve, 10' W of intersection of Rose Mallow Avenue and Hop Clover Avenue	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1245	Waterline Trench Backfill: Water valve, 10' W of intersection of Rose Mallow Avenue and Hop Clover Avenue	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1246	Waterline Trench Backfill: Water valve, 15' S of intersection of Rose Mallow Avenue and Hop Clover Avenue	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1247	Waterline Trench Backfill: Water valve, 15' S of intersection of Rose Mallow Avenue and Hop Clover Avenue	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1248	Waterline Trench Backfill: Water valve, 15' S of intersection of Rose Mallow Avenue and Hop Clover Avenue	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1249	Waterline Trench Backfill: Water valve, 15' S of intersection of Rose Mallow Avenue and Hop Clover Avenue	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000095
11/15/2019
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Test Method: ASTM D 6938

Client:
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Trails at Crowfoot, Filings 1 and 9
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Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1250		11/15/19	2	698A	CL	15.0	112.0	16.2	112.6	8	101	95	0 / 4	A
1251		11/15/19	2	698A	CL	15.0	112.0	17.5	112.7	8	101	95	0 / 4	A
1252		11/15/19	2	698A	CL	15.0	112.0	17.2	111.5	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1250	Waterline Trench Backfill: Water valve, 20' S of intersection of Rose Mallow Avenue and Birdsfoot Avenue	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1251	Waterline Trench Backfill: Water valve, 20' S of intersection of Rose Mallow Avenue and Birdsfoot Avenue	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1252	Waterline Trench Backfill: Water valve, 20' S of intersection of Rose Mallow Avenue and Birdsfoot Avenue	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1252:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000096
11/18/2019
Report Date: 12/3/2019
Test Method: ASTM D 6938

Client:
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7353 South Alton Way Suite A-100
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Trails at Crowfoot, Filings 1 and 9
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Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1253		11/18/19	2	698A	CL	15.0	112.0	15.0	109.7	8	98	95	0 / 4	A
1254		11/18/19	2	698A	CL	15.0	112.0	17.1	107.1	8	96	95	0 / 4	A
1255		11/18/19	2	698A	CL	15.0	112.0	17.5	108.3	8	97	95	0 / 4	A
1256		11/18/19	2	698A	CL	15.0	112.0	17.3	108.6	8	97	95	0 / 4	A
1257		11/18/19	2	698A	CL	15.0	112.0	17.7	108.4	8	97	95	0 / 4	A
1258		11/18/19	2	698A	CL	15.0	112.0	16.8	109.4	8	98	95	0 / 4	A
1259		11/18/19	2	698A	CL	15.0	112.0	17.0	108.4	8	97	95	0 / 4	A
1260		11/18/19	2	698A	CL	15.0	112.0	17.9	108.1	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1253	Waterline Trench Backfill: Mainline, Rose Mallow Avenue, 20' W of L5 B2 F8	2.0	BG	XPLORER / 3500 / 2025 / 1/22/2019	Ruckhaus, Manya
1254	Waterline Trench Backfill: Mainline, Rose Mallow Avenue, 20' W of L5 B2 F8	1.0	BG	XPLORER / 3500 / 2025 / 1/22/2019	Ruckhaus, Manya
1255	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Birdsfoot Avenue, 15' N of intersection	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1256	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Birdsfoot Avenue, 15' N of intersection	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1257	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Birdsfoot Avenue, 15' N of intersection	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1258	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Birdsfoot Avenue, 15' N of intersection	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1259	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Birdsfoot Avenue, 15' N of intersection	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1260	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Birdsfoot Avenue, 15' N of intersection	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1254:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader.

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Compaction Test Report

Report #: SNG-000096
11/18/2019
Report Date: 12/3/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1261		11/18/19	2	698A	CL	15.0	112.0	17.3	109.3	8	98	95	0 / 4	A
1262		11/18/19	2	698A	CL	15.0	112.0	17.8	108.2	8	97	95	0 / 4	A
1263		11/18/19	4	698A	CL	16.0	109.0	18.0	106.6	8	98	95	0 / 4	A
1264		11/18/19	4	698A	CL	16.0	109.0	17.6	107.2	8	98	95	0 / 4	A
1265		11/18/19	4	698A	CL	16.0	109.0	17.2	108.2	8	99	95	0 / 4	A
1266		11/18/19	4	698A	CL	16.0	109.0	17.6	107.6	8	99	95	0 / 4	A
1267		11/18/19	4	698A	CL	16.0	109.0	18.2	107.8	8	99	95	0 / 4	A
1268		11/18/19	4	698A	CL	16.0	109.0	17.1	107.9	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1261	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Birdsfoot Avenue, 15' N of intersection	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1262	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Birdsfoot Avenue, 15' N of intersection	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1263	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Birds Foot Avenue, 30' W of intersection	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1264	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Birds Foot Avenue, 30' W of intersection	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1265	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Birds Foot Avenue, 30' W of intersection	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1266	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Birds Foot Avenue, 30' W of intersection	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1267	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Birds Foot Avenue, 30' W of intersection	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1268	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Birds Foot Avenue, 30' W of intersection	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000096
11/18/2019
Report Date: 12/3/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1269		11/18/19	2	698A	CL	15.0	112.0	17.0	109.2	8	98	95	0 / 4	A
1270		11/18/19	2	698A	CL	15.0	112.0	16.9	109.7	8	98	95	0 / 4	A
1271		11/18/19	2	698A	CL	15.0	112.0	17.0	109.2	8	98	95	0 / 4	A
1272		11/18/19	2	698A	CL	15.0	112.0	17.1	108.9	8	97	95	0 / 4	A
1273		11/18/19	2	698A	CL	15.0	112.0	17.0	109.7	8	98	95	0 / 4	A
1274		11/18/19	2	698A	CL	15.0	112.0	17.0	109.1	8	97	95	0 / 4	A
1275		11/18/19	2	698A	CL	15.0	112.0	17.2	109.6	8	98	95	0 / 4	A
1276		11/18/19	2	698A	CL	15.0	112.0	16.0	110.0	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1269	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Birds Foot Avenue, 30' W of intersection, N side of valve box on Birds Foot Avenue	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1270	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Birds Foot Avenue, 30' W of intersection, N side of valve box on Birds Foot Avenue	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1271	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Birds Foot Avenue, 30' W of intersection, N side of valve box on Birds Foot Avenue	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1272	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Birds Foot Avenue, 30' W of intersection, N side of valve box on Birds Foot Avenue	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1273	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Birds Foot Avenue, 30' W of intersection, N side of valve box on Birds Foot Avenue	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1274	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Birds Foot Avenue, 30' W of intersection, N side of valve box on Birds Foot Avenue	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1275	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Birds Foot Avenue, 30' W of intersection, N side of valve box on Birds Foot Avenue	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1276	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Birds Foot Avenue, 30' W of intersection, N side of valve box on Birds Foot Avenue	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000096
11/18/2019
Report Date: 12/3/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1277		11/18/19	2	698A	CL	15.0	112.0	16.8	109.8	8	98	95	0 / 4	A
1278		11/18/19	2	698A	CL	15.0	112.0	17.5	109.3	8	98	95	0 / 4	A
1279		11/18/19	2	698A	CL	15.0	112.0	17.8	109.1	8	97	95	0 / 4	A
1280		11/18/19	2	698A	CL	15.0	112.0	17.0	109.2	8	98	95	0 / 4	A
1281		11/18/19	2	698A	CL	15.0	112.0	15.9	110.7	8	99	95	0 / 4	A
1282		11/18/19	2	698A	CL	15.0	112.0	17.0	109.6	8	98	95	0 / 4	A
1283		11/18/19	2	698A	CL	15.0	112.0	16.8	109.4	8	98	95	0 / 4	A
1284		11/18/19	2	698A	CL	15.0	112.0	17.0	109.7	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1277	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Birds Foot Avenue, 30' W of intersection, S side of valve box on Birds Foot Avenue	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1278	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Birds Foot Avenue, 30' W of intersection, S side of valve box on Birds Foot Avenue	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1279	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Birds Foot Avenue, 30' W of intersection, S side of valve box on Birds Foot Avenue	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1280	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Birds Foot Avenue, 30' W of intersection, S side of valve box on Birds Foot Avenue	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1281	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Birds Foot Avenue, 30' W of intersection, S side of valve box on Birds Foot Avenue	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1282	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Birds Foot Avenue, 30' W of intersection, S side of valve box on Birds Foot Avenue	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1283	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Birds Foot Avenue, 30' W of intersection, S side of valve box on Birds Foot Avenue	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1284	Waterline Trench Backfill: Valve box, Rose Mallow Avenue and Birds Foot Avenue, 30' W of intersection, S side of valve box on Birds Foot Avenue	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1284:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000097
12/03/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1285		12/3/19	2	698A	CL	15.0	112.0	17.3	109.1	8	97	95	0 / 4	A
1286		12/3/19	2	698A	CL	15.0	112.0	16.6	110.9	8	99	95	0 / 4	A
1287		12/3/19	2	698A	CL	15.0	112.0	16.5	110.3	8	98	95	0 / 4	A
1288		12/3/19	2	698A	CL	15.0	112.0	16.9	109.4	8	98	95	0 / 4	A
1289		12/3/19	5	698A	SC	13.5	114.5	12.3	114.1	8	100	100	-2 / 2	A
1290		12/3/19	5	698A	SC	13.5	114.5	12.3	114.0	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1285	Waterline Trench Backfill: Fire hydrant. 30' W of NW corner of the intersection of N Pinery Pkwy and Bayou Gultch Red.	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1286	Waterline Trench Backfill: Fire hydrant. 30' W of NW corner of the intersection of N Pinery Pkwy and Bayou Gultch Red.	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1287	Waterline Trench Backfill: Fire hydrant. 30' W of NW corner of the intersection of N Pinery Pkwy and Bayou Gultch Red.	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1288	Waterline Trench Backfill: Fire hydrant. 30' W of NW corner of the intersection of N Pinery Pkwy and Bayou Gultch Red.	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
1289	Waterline Trench Backfill: Shasta Daisy St & 25ft W of Hop Clover Trl.	4.0	BG	XPLORER / 3500 / 2027 / 1/11/2019	Rabie, Dennis
1290	Waterline Trench Backfill: Shasta Daisy St & 25ft W of Hop Clover Trl.	3.0	BG	XPLORER / 3500 / 2027 / 1/11/2019	Rabie, Dennis

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1290:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000098
12/04/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1291		12/4/19	4	698A	CL	16.0	109.0	17.5	104.7	8	96	95	0 / 4	A
1292		12/4/19	4	698A	CL	16.0	109.0	17.3	104.2	8	96	95	0 / 4	A
1293		12/4/19	4	698A	CL	16.0	109.0	16.5	103.3	8	95	95	0 / 4	A
1294		12/4/19	4	698A	CL	16.0	109.0	16.6	104.9	8	96	95	0 / 4	A
1295		12/4/19	4	698A	CL	16.0	109.0	16.2	105.0	8	96	95	0 / 4	A
1296		12/4/19	4	698A	CL	16.0	109.0	16.1	107.1	8	98	95	0 / 4	A
1297		12/4/19	4	698A	CL	16.0	109.0	16.0	105.7	8	97	95	0 / 4	A
1298		12/4/19	4	698A	CL	16.0	109.0	16.1	107.7	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1291	Waterline Trench Backfill: Shasta Daisy St & 25ft W of Hop Clover Trl.	2.0	BG	XPLORER / 3500 / 2027 / 1/11/2019	Rabie, Dennis
1292	Waterline Trench Backfill: Shasta Daisy St & 25ft W of Hop Clover Trl.	1.0	BG	XPLORER / 3500 / 2027 / 1/11/2019	Rabie, Dennis
1293	Waterline Trench Backfill: Shasta Daisy St & 100ft W of Hop Clover Trl.	3.0	BG	XPLORER / 3500 / 2027 / 1/11/2019	Rabie, Dennis
1294	Waterline Trench Backfill: Shasta Daisy St & 100ft W of Hop Clover Trl.	4.0	BG	XPLORER / 3500 / 2027 / 1/11/2019	Rabie, Dennis
1295	Waterline Trench Backfill: Water Valve. Shasta Daisy St & 2'SW of Hop Clover Trl.	4.0	BG	XPLORER / 3500 / 2027 / 1/11/2019	Rabie, Dennis
1296	Waterline Trench Backfill: Water Valve. Shasta Daisy St & 2'SW of Hop Clover Trl.	3.0	BG	XPLORER / 3500 / 2027 / 1/11/2019	Rabie, Dennis
1297	Waterline Trench Backfill: Water Valve. Shasta Daisy St & 2'SW of Hop Clover Trl.	2.0	BG	XPLORER / 3500 / 2027 / 1/11/2019	Rabie, Dennis
1298	Waterline Trench Backfill: Water Valve. Shasta Daisy St & 2'SW of Hop Clover Trl.	1.0	BG	XPLORER / 3500 / 2027 / 1/11/2019	Rabie, Dennis

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
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Compaction Test Report

Report #: SNG-000098
12/04/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1299		12/4/19	4	698A	CL	16.0	109.0	16.6	109.8	8	101	95	0 / 4	A
1300		12/4/19	4	698A	CL	16.0	109.0	16.2	109.3	8	100	95	0 / 4	A
1301		12/4/19	4	698A	CL	16.0	109.0	16.0	111.2	8	102	95	0 / 4	A
1302		12/4/19	4	698A	CL	16.0	109.0	16.0	103.2	8	95	95	0 / 4	A
1303		12/4/19	4	698A	CL	16.0	109.0	16.5	104.7	8	96	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1299	Waterline Trench Backfill: Shasta Daisy St & 25' W of Shasta Daisy Ln.	8.0	BG	XPLORER / 3500 / 2027 / 1/11/2019	Rabie, Dennis
1300	Waterline Trench Backfill: Shasta Daisy St & 25' W of Shasta Daisy Ln.	7.0	BG	XPLORER / 3500 / 2027 / 1/11/2019	Rabie, Dennis
1301	Waterline Trench Backfill: Shasta Daisy St & 25' W of Shasta Daisy Ln.	6.0	BG	XPLORER / 3500 / 2027 / 1/11/2019	Rabie, Dennis
1302	Waterline Trench Backfill: Shasta Daisy St & 25' W of Shasta Daisy Ln.	5.0	BG	XPLORER / 3500 / 2027 / 1/11/2019	Rabie, Dennis
1303	Waterline Trench Backfill: Shasta Daisy St & 25' W of Shasta Daisy Ln.	4.0	BG	XPLORER / 3500 / 2027 / 1/11/2019	Rabie, Dennis

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1303:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000099
12/06/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1305		12/6/19	7	698A	CL	16.5	107.5	18.6	104.7	8	97	95	0 / 4	A
1306		12/6/19	7	698A	CL	16.5	107.5	18.2	104.8	8	97	95	0 / 4	A
1307		12/6/19	7	698A	CL	16.5	107.5	18.4	104.9	8	98	95	0 / 4	A
1308		12/6/19	7	698A	CL	16.5	107.5	18.6	105.1	8	98	95	0 / 4	A
1309		12/6/19	7	698A	CL	16.5	107.5	19.5	104.7	8	97	95	0 / 4	A
1310		12/6/19	7	698A	CL	16.5	107.5	18.4	105.2	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1305	Waterline Trench Backfill: Mainline. Shasta Daisy St. Adjacent to Lot 10 Block 3 Filing 5.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1306	Waterline Trench Backfill: Mainline. Shasta Daisy St. Adjacent to Lot 10 Block 3 Filing 5.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1307	Waterline Trench Backfill: Mainline. Shasta Daisy St. Adjacent to Lot 10 Block 3 Filing 5.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1308	Waterline Trench Backfill: Mainline. Shasta Daisy St. Adjacent to Lot 10 Block 3 Filing 5.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1309	Waterline Trench Backfill: Mainline. Shasta Daisy St. Adjacent to Lot 10 Block 3 Filing 5.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1310	Waterline Trench Backfill: Mainline. Shasta Daisy St. Adjacent to Lot 10 Block 3 Filing 5.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1310:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000100
12/09/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1311		12/9/19	3	698A	CL	16.0	111.0	17.1	107.9	8	97	95	0 / 4	A
1312		12/9/19	3	698A	CL	16.0	111.0	17.2	107.6	8	97	95	0 / 4	A
1313		12/9/19	3	698A	CL	16.0	111.0	17.3	107.7	8	97	95	0 / 4	A
1314		12/9/19	3	698A	CL	16.0	111.0	17.2	107.4	8	97	95	0 / 4	A
1315		12/9/19	3	698A	CL	16.0	111.0	17.5	107.2	8	97	95	0 / 4	A
1316		12/9/19	3	698A	CL	16.0	111.0	17.3	107.8	8	97	95	0 / 4	A
1317		12/9/19	5	698A	SC	13.5	114.5	13.6	114.6	8	100	100	-2 / 2	A
1318		12/9/19	5	698A	SC	13.5	114.5	13.4	114.5	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1311	Waterline Trench Backfill: Mainline. Shasta Daisy St. 120' N of Shasta Daisy Pt.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1312	Waterline Trench Backfill: Mainline. Shasta Daisy St. 120' N of Shasta Daisy Pt.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1313	Waterline Trench Backfill: Mainline. Shasta Daisy St. 120' N of Shasta Daisy Pt.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1314	Waterline Trench Backfill: Mainline. Shasta Daisy St. 120' N of Shasta Daisy Pt.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1315	Waterline Trench Backfill: Mainline. Shasta Daisy St. 120' N of Shasta Daisy Pt.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1316	Waterline Trench Backfill: Mainline. Shasta Daisy St. 120' N of Shasta Daisy Pt.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1317	Waterline Trench Backfill: Mainline. Shasta Daisy St and Shasta Daisy Pt. 15' of WV.	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1318	Waterline Trench Backfill: Mainline. Shasta Daisy St and Shasta Daisy Pt. 15' of WV.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000100
12/09/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1319		12/9/19	5	698A	SC	13.5	114.5	13.5	114.4	8	100	100	-2 / 2	A
1320		12/9/19	5	698A	SC	13.5	114.5	14.0	114.2	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1319	Waterline Trench Backfill: Mainline. Shasta Daisy St and Shasta Daisy Pt. 15' of WV.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1320	Waterline Trench Backfill: Mainline. Shasta Daisy St and Shasta Daisy Pt. 15' of WV.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1320:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000101
12/10/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1321		12/10/19	7	698A	CL	16.5	107.5	16.7	106.5	8	99	95	0 / 4	A
1322		12/10/19	7	698A	CL	16.5	107.5	16.7	107.5	8	100	95	0 / 4	A
1323		12/10/19	7	698A	CL	16.5	107.5	16.8	105.1	8	98	95	0 / 4	A
1324		12/10/19	7	698A	CL	16.5	107.5	16.7	105.5	8	98	95	0 / 4	A
1325		12/10/19	5	698A	SC	13.5	114.5	13.7	114.2	8	100	100	-2 / 2	A
1326		12/10/19	5	698A	SC	13.5	114.5	13.2	115.0	8	100	100	-2 / 2	A
1327		12/10/19	5	698A	SC	13.5	114.5	13.5	114.4	8	100	100	-2 / 2	A
1328		12/10/19	5	698A	SC	13.5	114.5	13.7	114.4	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1321	Utility Sleeve Backfill: Irrigation Sleeve #19. Shasta Daisy St and N. Pinery Pkwy.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1322	Utility Sleeve Backfill: Irrigation Sleeve #19. Shasta Daisy St and N. Pinery Pkwy.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1323	Utility Sleeve Backfill: Irrigation Sleeve #20. Shasta Daisy St and N. Pinery Pkwy.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1324	Utility Sleeve Backfill: Irrigation Sleeve #20. Shasta Daisy St and N. Pinery Pkwy.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1325	Waterline Trench Backfill: Valve Box. Shasta Daisy St and Shasta Daisy Pt.	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1326	Waterline Trench Backfill: Valve Box. Shasta Daisy St and Shasta Daisy Pt.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1327	Waterline Trench Backfill: Valve Box. Shasta Daisy St and Shasta Daisy Pt.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1328	Waterline Trench Backfill: Valve Box. Shasta Daisy St and Shasta Daisy Pt.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000101
12/10/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1329		12/10/19	5	698A	SC	13.5	114.5	13.5	114.4	8	100	100	-2 / 2	A
1330		12/10/19	5	698A	SC	13.5	114.5	13.8	114.4	8	100	100	-2 / 2	A
1331		12/10/19	5	698A	SC	13.5	114.5	13.4	114.4	8	100	100	-2 / 2	A
1332		12/10/19	5	698A	SC	13.5	114.5	13.2	114.7	8	100	100	-2 / 2	A
1333		12/10/19	5	698A	SC	13.5	114.5	13.2	114.6	8	100	100	-2 / 2	A
1334		12/10/19	5	698A	SC	13.5	114.5	13.0	115.2	8	101	100	-2 / 2	A
1335		12/10/19	5	698A	SC	13.5	114.5	13.6	114.8	8	100	100	-2 / 2	A
1336		12/10/19	5	698A	SC	13.5	114.5	13.5	114.3	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1329	Waterline Trench Backfill: Valve Box. Shasta Daisy St and Shasta Daisy Pt.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1330	Waterline Trench Backfill: Valve Box. Shasta Daisy St and Shasta Daisy Pt.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1331	Waterline Trench Backfill: Valve Box. Shasta Daisy St and Shasta Daisy Pt.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1332	Waterline Trench Backfill: Valve Box. Shasta Daisy St and Shasta Daisy Pt.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1333	Waterline Trench Backfill: Mainline. 150' S of Shasta Daisy St and Shasta Daisy Pt.	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1334	Waterline Trench Backfill: Mainline. 150' S of Shasta Daisy St and Shasta Daisy Pt.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1335	Waterline Trench Backfill: Mainline. 150' S of Shasta Daisy St and Shasta Daisy Pt.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1336	Waterline Trench Backfill: Mainline. 110' S of Shasta Daisy St and Shasta Daisy Pt.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000101
12/10/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1337		12/10/19	5	698A	SC	13.5	114.5	12.9	114.8	8	100	100	-2 / 2	A
1338		12/10/19	5	698A	SC	13.5	114.5	13.0	114.9	8	100	100	-2 / 2	A
1339		12/10/19	5	698A	SC	13.5	114.5	13.2	115.0	8	100	100	-2 / 2	A
1340		12/10/19	5	698A	SC	13.5	114.5	13.5	114.4	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1337	Waterline Trench Backfill: Mainline. 110' S of Shasta Daisy St and Shasta Daisy Pt.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1338	Waterline Trench Backfill: Mainline. 110' S of Shasta Daisy St and Shasta Daisy Pt.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1339	Waterline Trench Backfill: Mainline. 110' S of Shasta Daisy St and Shasta Daisy Pt.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1340	Waterline Trench Backfill: Mainline. 110' S of Shasta Daisy St and Shasta Daisy Pt.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1340:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test waterline and irrigation trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000102
12/11/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1341		12/11/19	4	698A	CL	16.0	109.0	17.1	107.7	8	99	95	0 / 4	A
1342		12/11/19	4	698A	CL	16.0	109.0	17.4	106.6	8	98	95	0 / 4	A
1343		12/11/19	4	698A	CL	16.0	109.0	17.5	106.7	8	98	95	0 / 4	A
1344		12/11/19	4	698A	CL	16.0	109.0	17.4	107.1	8	98	95	0 / 4	A
1345		12/11/19	4	698A	CL	16.0	109.0	17.2	106.7	8	98	95	0 / 4	A
1346		12/11/19	4	698A	CL	16.0	109.0	18.0	106.3	8	98	95	0 / 4	A
1347		12/11/19	4	698A	CL	16.0	109.0	17.9	106.8	8	98	95	0 / 4	A
1348		12/11/19	4	698A	CL	16.0	109.0	18.2	106.7	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1341	Waterline Trench Backfill: Mainline. 50' N of Shasta Daisy St and Hop Clover St.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1342	Waterline Trench Backfill: Mainline. 50' N of Shasta Daisy St and Hop Clover St.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1343	Waterline Trench Backfill: Mainline. 50' N of Shasta Daisy St and Hop Clover St.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1344	Waterline Trench Backfill: Mainline. 30' N of Shasta Daisy St and Hop Clover St.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1345	Waterline Trench Backfill: Mainline. 30' N of Shasta Daisy St and Hop Clover St.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1346	Waterline Trench Backfill: Mainline. 30' N of Shasta Daisy St and Hop Clover St.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1347	Waterline Trench Backfill: Mainline. 30' N of Shasta Daisy St and Hop Clover St.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1348	Waterline Trench Backfill: Valve Box. 25' N of Shasta Daisy St and Hop Clover St.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000102
12/11/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
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7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1349		12/11/19	4	698A	CL	16.0	109.0	17.1	106.9	8	98	95	0 / 4	A
1350		12/11/19	4	698A	CL	16.0	109.0	18.2	105.8	8	97	95	0 / 4	A
1351		12/11/19	4	698A	CL	16.0	109.0	18.4	105.7	8	97	95	0 / 4	A
1352		12/11/19	4	698A	CL	16.0	109.0	18.2	106.6	8	98	95	0 / 4	A
1353		12/11/19	4	698A	CL	16.0	109.0	18.4	106.1	8	97	95	0 / 4	A
1354		12/11/19	4	698A	CL	16.0	109.0	17.6	107.0	8	98	95	0 / 4	A
1355		12/11/19	4	698A	CL	16.0	109.0	18.1	106.2	8	97	95	0 / 4	A
1356		12/11/19	4	698A	CL	16.0	109.0	17.4	106.8	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1349	Waterline Trench Backfill: Valve Box. 25' N of Shasta Daisy St and Hop Clover St.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1350	Waterline Trench Backfill: Valve Box. 25' N of Shasta Daisy St and Hop Clover St.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1351	Waterline Trench Backfill: Valve Box. 25' N of Shasta Daisy St and Hop Clover St.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1352	Waterline Trench Backfill: Valve Box. 25' N of Shasta Daisy St and Hop Clover St.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1353	Waterline Trench Backfill: Valve Box. 25' N of Shasta Daisy St and Hop Clover St.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1354	Waterline Trench Backfill: Valve Box. 25' N of Shasta Daisy St and Hop Clover St.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1355	Waterline Trench Backfill: Valve Box. S side. 15' N of Shasta Daisy St and Hop Clover St.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1356	Waterline Trench Backfill: Valve Box. S side. 15' N of Shasta Daisy St and Hop Clover St.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000102
12/11/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
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Project:
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Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1357		12/11/19	4	698A	CL	16.0	109.0	17.4	107.2	8	98	95	0 / 4	A
1358		12/11/19	4	698A	CL	16.0	109.0	18.0	106.1	8	97	95	0 / 4	A
1359		12/11/19	4	698A	CL	16.0	109.0	17.6	106.6	8	98	95	0 / 4	A
1360		12/11/19	4	698A	CL	16.0	109.0	17.8	106.5	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1357	Waterline Trench Backfill: Valve Box. S side. 15' N of Shasta Daisy St and Hop Clover St.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1358	Waterline Trench Backfill: Valve Box. 15' E of Shasta Daisy St and Hop Clover St.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1359	Waterline Trench Backfill: Valve Box. 15' E of Shasta Daisy St and Hop Clover St.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1360	Waterline Trench Backfill: Valve Box. 15' E of Shasta Daisy St and Hop Clover St.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1360:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000103
12/12/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1361		12/12/19	4	698A	CL	16.0	109.0	17.4	107.1	8	98	95	0 / 4	A
1362		12/12/19	4	698A	CL	16.0	109.0	17.9	106.3	8	98	95	0 / 4	A
1363		12/12/19	4	698A	CL	16.0	109.0	17.3	107.4	8	99	95	0 / 4	A
1364		12/12/19	4	698A	CL	16.0	109.0	18.0	106.9	8	98	95	0 / 4	A
1365		12/12/19	5	698A	SC	13.5	114.5	13.7	114.2	8	100	100	-2 / 2	A
1366		12/12/19	5	698A	SC	13.5	114.5	13.8	114.4	8	100	100	-2 / 2	A
1367		12/12/19	5	698A	SC	13.5	114.5	13.8	114.4	8	100	100	-2 / 2	A
1368		12/12/19	5	698A	SC	13.5	114.5	13.7	114.5	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1361	Waterline Trench Backfill: Valve Box. 15' E of Shasta Daisy St and Hop Clover St.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1362	Waterline Trench Backfill: Valve Box. 15' E of Shasta Daisy St and Hop Clover St.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1363	Waterline Trench Backfill: Valve Box. 15' E of Shasta Daisy St and Hop Clover St.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1364	Waterline Trench Backfill: Valve Box. 15' E of Shasta Daisy St and Hop Clover St.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1365	Waterline Trench Backfill: Valve Box. 15' S of Shasta Daisy St and Hop Clover St.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1366	Waterline Trench Backfill: Valve Box. 15' S of Shasta Daisy St and Hop Clover St.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1367	Waterline Trench Backfill: Valve Box. 15' S of Shasta Daisy St and Hop Clover St.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1368	Waterline Trench Backfill: Valve Box. 15' S of Shasta Daisy St and Hop Clover St.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000103
12/12/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1369		12/12/19	5	698A	SC	13.5	114.5	13.6	114.6	8	100	100	-2 / 2	A
1370		12/12/19	5	698A	SC	13.5	114.5	13.3	114.6	8	100	100	-2 / 2	A
1371		12/12/19	5	698A	SC	13.5	114.5	14.0	114.1	8	100	100	-2 / 2	A
1372		12/12/19	5	698A	SC	13.5	114.5	13.8	114.4	8	100	100	-2 / 2	A
1373		12/12/19	5	698A	SC	13.5	114.5	13.5	114.4	8	100	100	-2 / 2	A
1374		12/12/19	5	698A	SC	13.5	114.5	13.4	114.8	8	100	100	-2 / 2	A
1375		12/12/19	4	698A	CL	16.0	109.0	17.7	106.0	8	97	95	0 / 4	A
1376		12/12/19	4	698A	CL	16.0	109.0	17.6	106.2	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1369	Waterline Trench Backfill: Irrigation Sleeve#14. N. Pinery Pkwy and Rose Mallow Ave.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1370	Waterline Trench Backfill: Irrigation Sleeve#14. N. Pinery Pkwy and Rose Mallow Ave.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1371	Waterline Trench Backfill: Irrigation Sleeve#14. N. Pinery Pkwy and Rose Mallow Ave.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1372	Waterline Trench Backfill: Irrigation Sleeve#15. N. Pinery Pkwy and Rose Mallow Ave.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1373	Waterline Trench Backfill: Irrigation Sleeve#15. N. Pinery Pkwy and Rose Mallow Ave.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1374	Waterline Trench Backfill: Irrigation Sleeve#15. N. Pinery Pkwy and Rose Mallow Ave.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1375	Waterline Trench Backfill: Mainline. Shasta Daisy St. 150' E of Hop Clover St.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1376	Waterline Trench Backfill: Mainline. Shasta Daisy St. 150' E of Hop Clover St.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000103
12/12/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1377		12/12/19	4	698A	CL	16.0	109.0	17.2	107.6	8	99	95	0 / 4	A
1378		12/12/19	4	698A	CL	16.0	109.0	17.9	106.7	8	98	95	0 / 4	A
1379		12/12/19	4	698A	CL	16.0	109.0	18.0	106.6	8	98	95	0 / 4	A
1380		12/12/19	4	698A	CL	16.0	109.0	17.7	106.5	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1377	Waterline Trench Backfill: Mainline. Shasta Daisy St. 150' E of Hop Clover St.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1378	Waterline Trench Backfill: Mainline. Shasta Daisy St and Shasta Daisy Ln.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1379	Waterline Trench Backfill: Mainline. Shasta Daisy St and Shasta Daisy Ln.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1380	Waterline Trench Backfill: Mainline. Shasta Daisy St and Shasta Daisy Ln.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1380:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test waterline and irrigation trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000104
12/05/2019
Report Date: 1/2/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1304		12/5/19	4	698A	CL	16.0	109.0	17.5	107.4	8	99	95	NA	E

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1304	Cancelled on Site: Waterline trench backfill			XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
E: Test number for data entry purposes only.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1304:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test waterline trench backfill. Testing was cancelled on site.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000105
12/13/2019
Report Date: 1/2/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1381		12/13/19	4	698A	CL	16.0	109.0	17.8	106.2	8	97	95	0 / 4	A
1382		12/13/19	4	698A	CL	16.0	109.0	17.9	106.4	8	98	95	0 / 4	A
1383		12/13/19	4	698A	CL	16.0	109.0	18.7	105.8	8	97	95	0 / 4	A
1384		12/13/19	4	698A	CL	16.0	109.0	18.0	106.1	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1381	Waterline Trench Backfill: Mainline. Shasta Daisy St and Shasta Daisy Ln.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1382	Waterline Trench Backfill: Mainline. Shasta Daisy St and Shasta Daisy Ln.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1383	Waterline Trench Backfill: Mainline. Shasta Daisy St and Shasta Daisy Ln. 50' E of intersection.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1384	Waterline Trench Backfill: Mainline. Shasta Daisy St and Shasta Daisy Ln. 50' E of intersection.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1384:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000106
12/14/2019
Report Date: 1/2/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1385		12/14/19	9	698A	CL	20.5	103.5	22.3	100.5	8	97	95	0 / 4	A
1386		12/14/19	9	698A	CL	20.5	103.5	21.1	101.1	8	98	95	0 / 4	A
1387		12/14/19	5	698A	SC	13.5	114.5	13.6	114.8	8	100	100	-2 / 2	A
1388		12/14/19	5	698A	SC	13.5	114.5	13.8	114.4	8	100	100	-2 / 2	A
1389		12/14/19	4	698A	CL	16.0	109.0	16.9	108.1	8	99	95	0 / 4	A
1390		12/14/19	4	698A	CL	16.0	109.0	17.2	107.7	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1385	Waterline Trench Backfill: Mainline. Shasta Daisy St and Bird's Foot Ave. 140' N of intersection.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1386	Waterline Trench Backfill: Mainline. Shasta Daisy St and Bird's Foot Ave. 140' N of intersection.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1387	Waterline Trench Backfill: Mainline. Shasta Daisy St and Bird's Foot Ave. 120' N of intersection.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1388	Waterline Trench Backfill: Mainline. Shasta Daisy St and Bird's Foot Ave. 120' N of intersection.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1389	Waterline Trench Backfill: Mainline. Shasta Daisy St and Bird's Foot Ave. 80' N of intersection.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1390	Waterline Trench Backfill: Mainline. Shasta Daisy St and Bird's Foot Ave. 80' N of intersection.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1390:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000107
12/17/2019
Report Date: 1/2/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1391		12/17/19	6	698A	SC	11.0	120.5	11.9	119.9	8	100	100	-2 / 2	A
1392		12/17/19	6	698A	SC	11.0	120.5	11.5	120.2	8	100	100	-2 / 2	A
1393		12/17/19	6	698A	SC	11.0	120.5	11.4	120.2	8	100	100	-2 / 2	A
1394		12/17/19	6	698A	SC	11.0	120.5	11.6	120.2	8	100	100	-2 / 2	A
1395		12/17/19	4	698A	CL	16.0	109.0	17.1	107.3	8	98	95	0 / 4	A
1396		12/17/19	4	698A	CL	16.0	109.0	17.5	107.3	8	98	95	0 / 4	A
1397		12/17/19	6	698A	SC	11.0	120.5	11.2	120.1	8	100	100	-2 / 2	A
1398		12/17/19	6	698A	SC	11.0	120.5	11.6	120.3	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1391	Waterline Trench Backfill: IRR sleeve # 13. 50' N of N. Pinery Pkwy. & Alpine Phlox St.	4.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1392	Waterline Trench Backfill: IRR sleeve # 13. 50' N of N. Pinery Pkwy. & Alpine Phlox St.	3.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1393	Waterline Trench Backfill: IRR sleeve # 13. 50' N of N. Pinery Pkwy. & Alpine Phlox St.	2.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1394	Waterline Trench Backfill: IRR sleeve # 13. 50' N of N. Pinery Pkwy. & Alpine Phlox St.	1.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1395	Waterline Trench Backfill: IRR sleeve # 6. Alpine Phlox ST. 30' NE of N. Pinery Pkwy. & Alpine Phlox St.	2.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1396	Waterline Trench Backfill: IRR sleeve # 6. Alpine Phlox ST. 30' NE of N. Pinery Pkwy. & Alpine Phlox St.	1.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1397	Waterline Trench Backfill: IRR sleeve # 5. Alpine Phlox ST.	2.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1398	Waterline Trench Backfill: IRR sleeve # 5. Alpine Phlox ST.	1.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000107
12/17/2019
Report Date: 1/2/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1399		12/17/19	6	698A	SC	11.0	120.5	9.9	121.2	8	101	100	-2 / 2	A
1400		12/17/19	6	698A	SC	11.0	120.5	11.4	120.2	8	100	100	-2 / 2	A
1401		12/17/19	6	698A	SC	11.0	120.5	11.6	120.2	8	100	100	-2 / 2	A
1402		12/17/19	6	698A	SC	11.0	120.5	11.3	120.1	8	100	100	-2 / 2	A
1403		12/17/19	4	698A	CL	16.0	109.0	17.8	105.9	8	97	95	0 / 4	A
1404		12/17/19	4	698A	CL	16.0	109.0	18.2	105.8	8	97	95	0 / 4	A
1405		12/17/19	4	698A	CL	16.0	109.0	17.9	105.8	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1399	Waterline Trench Backfill: IRR sleeve # 4. Alpine Phlox ST.	1.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1400	Waterline Trench Backfill: IRR sleeve # 4. Alpine Phlox ST.	2.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1401	Waterline Trench Backfill: IRR sleeve #2. Alpine Phlox ST & Scarlet Sage Ave.	2.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1402	Waterline Trench Backfill: IRR sleeve #2. Alpine Phlox ST & Scarlet Sage Ave.	1.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1403	Waterline Trench Backfill: Valve Box. 20' SE of SW corner of Shasta Daisy St. & Hop Clover Ave.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1404	Waterline Trench Backfill: Valve Box. 20' SE of SW corner of Shasta Daisy St. & Hop Clover Ave.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1405	Waterline Trench Backfill: Valve Box. 20' SE of SW corner of Shasta Daisy St. & Hop Clover Ave.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1405:** As requested by Rick with Kelley Trucking, site visits were made to observe and test irrigation and waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
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Compaction Test Report

Report #: SNG-000108
12/18/2019
Report Date: 1/2/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1406		12/18/19	6	698A	SC	11.0	120.5	11.4	120.1	8	100	100	-2 / 2	A
1407		12/18/19	6	698A	SC	11.0	120.5	11.6	120.2	8	100	100	-2 / 2	A
1408		12/18/19	6	698A	SC	11.0	120.5	11.3	120.3	8	100	100	-2 / 2	A
1409		12/18/19	6	698A	SC	11.0	120.5	11.4	120.4	8	100	100	-2 / 2	A
1410		12/18/19	9	698A	CL	20.5	103.5	21.2	102.6	8	99	95	0 / 4	A
1411		12/18/19	9	698A	CL	20.5	103.5	21.8	102.0	8	99	95	0 / 4	A
1412		12/18/19	9	698A	CL	20.5	103.5	20.6	102.8	8	99	95	0 / 4	A
1413		12/18/19	5	698A	SC	13.5	114.5	13.1	114.8	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1406	Waterline Trench Backfill: Irrigation Sleeve #38. NE corner of Bayou Gulch Rd and N. Pinery Pkwy.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1407	Waterline Trench Backfill: Irrigation Sleeve #38. NE corner of Bayou Gulch Rd and N. Pinery Pkwy.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1408	Waterline Trench Backfill: Irrigation Sleeve #38. NE corner of Bayou Gulch Rd and N. Pinery Pkwy.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1409	Waterline Trench Backfill: Irrigation Sleeve #38. NE corner of Bayou Gulch Rd and N. Pinery Pkwy.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1410	Waterline Trench Backfill: Valve box. 30' SE of the SW corner. Shasta Daisy St. & Hop Clover Ave.	3.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1411	Waterline Trench Backfill: Valve box. 30' SE of the SW corner. Shasta Daisy St. & Hop Clover Ave.	2.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1412	Waterline Trench Backfill: Valve box. 30' SE of the SW corner. Shasta Daisy St. & Hop Clover Ave.	1.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1413	Waterline Trench Backfill: Irrigation sleeve #10. Scarlet Sage Ave. & Scarlet Sage Ln. NE corner of intersection.	3.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Compaction Test Report

Report #: SNG-000108
12/18/2019
Report Date: 1/2/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1414		12/18/19	5	698A	SC	13.5	114.5	11.8	115.8	8	101	100	-2 / 2	A
1415		12/18/19	5	698A	SC	13.5	114.5	12.7	115.1	8	101	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1414	Waterline Trench Backfill: Irrigation sleeve #10. Scarlet Sage Ave. & Scarlet Sage Ln. NE corner of intersection.	2.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1415	Waterline Trench Backfill: Irrigation sleeve #10. Scarlet Sage Ave. & Scarlet Sage Ln. NE corner of intersection.	1.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1415:** As requested by Rick with Kelley Trucking, site visits were made to observe and test irrigation and waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000109
12/19/2019
Report Date: 1/2/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1416		12/19/19	9	698A	CL	20.5	103.5	21.2	99.8	8	96	95	0 / 4	A
1417		12/19/19	9	698A	CL	20.5	103.5	21.1	100.4	8	97	95	0 / 4	A
1418		12/19/19	9	698A	CL	20.5	103.5	22.6	100.2	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1416	Waterline Trench Backfill: Valve box. 15 N of Shasta Daisy St. & Shasta Daisy Pt. - intersection.	6.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1417	Waterline Trench Backfill: Valve box. 15 N of Shasta Daisy St. & Shasta Daisy Pt. - intersection.	5.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1418	Waterline Trench Backfill: Valve box. 15 N of Shasta Daisy St. & Shasta Daisy Pt. - intersection.	4.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1418:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000110
12/20/2019
Report Date: 1/2/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1419		12/20/19	2	698A	CL	15.0	112.0	16.5	109.3	8	98	95	0 / 4	A
1420		12/20/19	2	698A	CL	15.0	112.0	16.2	109.8	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1419	Waterline Trench Backfill: Irrigation Sleeve #37. Shasta Daisy St and Hop Clover Trl.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1420	Waterline Trench Backfill: Irrigation Sleeve #37. Shasta Daisy St and Hop Clover Trl.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1420:** As requested by Alejo with Kelley Trucking, site visits were made to observe and test irrigation sleeve backfill. The backfill was prepared prior to our arrival.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000111
12/21/2019
Report Date: 1/2/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1421		12/21/19	4	698A	CL	16.0	109.0	18.1	105.9	8	97	95	0 / 4	E

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1421	Cancelled on Site: Waterline trench backfill			XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
E: Test number for data entry purposes only.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1421:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test waterline trench backfill. Testing was cancelled on site.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000112
12/23/2019
Report Date: 1/2/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1422		12/23/19	9	698A	CL	20.5	103.5	20.5	105.0	8	101	95	0 / 4	A
1423		12/23/19	9	698A	CL	20.5	103.5	20.5	105.6	8	102	95	0 / 4	A
1424		12/23/19	9	698A	CL	20.5	103.5	20.9	104.6	8	101	95	0 / 4	A
1425		12/23/19	9	698A	CL	20.5	103.5	22.5	98.9	8	96	95	0 / 4	A
1426		12/23/19	9	698A	CL	20.5	103.5	22.3	99.6	8	96	95	0 / 4	A
1427		12/23/19	9	698A	CL	20.5	103.5	22.2	99.4	8	96	95	0 / 4	A
1428		12/23/19	9	698A	CL	20.5	103.5	21.2	100.9	8	97	95	0 / 4	A
1429		12/23/19	9	698A	CL	20.5	103.5	23.1	99.4	8	96	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1422	Waterline Trench Backfill: Water valve. FH. 20' S of Shasta Daisy St. Shasta Daisy Ln. Intersection.	6.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1423	Waterline Trench Backfill: Water valve. FH. 20' S of Shasta Daisy St. Shasta Daisy Ln. Intersection.	5.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1424	Waterline Trench Backfill: Water valve. FH. 20' S of Shasta Daisy St. Shasta Daisy Ln. Intersection.	4.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1425	Waterline Trench Backfill: Water valve. 15' SW of Shasta Daisy St. Shasta Daisy Ln. Intersection.	6.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1426	Waterline Trench Backfill: Water valve. 15' SW of Shasta Daisy St. Shasta Daisy Ln. Intersection.	5.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1427	Waterline Trench Backfill: Water valve. 15' SW of Shasta Daisy St. Shasta Daisy Ln. Intersection.	4.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1428	Waterline Trench Backfill: Water valve. 20' S of Shasta Daisy St. Shasta Daisy Ln. Intersection.	6.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1429	Waterline Trench Backfill: Water valve. 20' S of Shasta Daisy St. Shasta Daisy Ln. Intersection.	5.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000112
12/23/2019
Report Date: 1/2/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1430		12/23/19	9	698A	CL	20.5	103.5	22.5	100.0	8	97	95	0 / 4	A
1431		12/23/19	9	698A	CL	20.5	103.5	21.6	100.9	8	97	95	0 / 4	A
1432		12/23/19	9	698A	CL	20.5	103.5	23.2	99.2	8	96	95	0 / 4	A
1433		12/23/19	9	698A	CL	20.5	103.5	22.8	99.8	8	96	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1430	Waterline Trench Backfill: Water valve. 20' S of Shasta Daisy St. Shasta Daisy Ln. Intersection.	4.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1431	Waterline Trench Backfill: Water valve. 10' S of Shasta Daisy St. Shasta Daisy Ln. Intersection.	6.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1432	Waterline Trench Backfill: Water valve. 10' S of Shasta Daisy St. Shasta Daisy Ln. Intersection.	5.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1433	Waterline Trench Backfill: Water valve. 10' S of Shasta Daisy St. Shasta Daisy Ln. Intersection.	4.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000113
12/24/2019
Report Date: 1/2/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1434		12/24/19	4	698A	CL	16.0	109.0	17.2	108.4	8	99	95	0 / 4	A
1435		12/24/19	4	698A	CL	16.0	109.0	17.7	108.7	8	100	95	0 / 4	A
1436		12/24/19	4	698A	CL	16.0	109.0	17.0	109.6	8	101	95	0 / 4	A
1437		12/24/19	4	698A	CL	16.0	109.0	17.5	108.3	8	99	95	0 / 4	A
1438		12/24/19	4	698A	CL	16.0	109.0	17.6	107.3	8	98	95	0 / 4	A
1439		12/24/19	4	698A	CL	16.0	109.0	16.6	108.2	8	99	95	0 / 4	A
1440		12/24/19	4	698A	CL	16.0	109.0	18.0	108.6	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1434	Waterline Trench Backfill: WL main. 30'SE of intersection of Hop Clover Ave. & Shasta Daisy St.	3.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1435	Waterline Trench Backfill: WL main. 30'SE of intersection of Hop Clover Ave. & Shasta Daisy St.	2.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1436	Waterline Trench Backfill: WL main. 30'SE of intersection of Hop Clover Ave. & Shasta Daisy St.	1.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1437	Waterline Trench Backfill: WL main. 20' SE of SW intersection of Hop Clover Ave. & Shasta Daisy St. 20' N of Lot: center 14,Blk:6 Fil:5	4.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1438	Waterline Trench Backfill: WL main. 20' SE of SW intersection of Hop Clover Ave. & Shasta Daisy St. 20' N of Lot: center 14,Blk:6 Fil:5	3.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1439	Waterline Trench Backfill: WL main. 20' SE of SW intersection of Hop Clover Ave. & Shasta Daisy St. 20' N of Lot: center 14,Blk:6 Fil:5	2.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1440	Waterline Trench Backfill: WL main. 20' SE of SW intersection of Hop Clover Ave. & Shasta Daisy St. 20' N of Lot: center 14,Blk:6 Fil:5	1.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1440:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000114
12/26/2019
Report Date: 1/2/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1441		12/26/19	9	698A	CL	20.5	103.5	20.5	102.9	8	99	95	0 / 4	A
1442		12/26/19	9	698A	CL	20.5	103.5	21.5	102.5	8	99	95	0 / 4	A
1443		12/26/19	9	698A	CL	20.5	103.5	21.5	101.9	8	98	95	0 / 4	A
1444		12/26/19	9	698A	CL	20.5	103.5	20.9	102.4	8	99	95	0 / 4	A
1445		12/26/19	10	698A	CL	19.0	106.0	19.7	106.0	8	100	95	0 / 4	A
1446		12/26/19	10	698A	CL	19.0	106.0	20.7	104.4	8	98	95	0 / 4	A
1447		12/26/19	10	698A	CL	19.0	106.0	20.3	106.1	8	100	95	0 / 4	A
1448		12/26/19	10	698A	CL	19.0	106.0	20.3	106.1	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1441	Waterline Trench Backfill: Mainline waterline. 60' SW of SDMH #113	4.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1442	Waterline Trench Backfill: Mainline waterline. 60' SW of SDMH #113	3.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1443	Waterline Trench Backfill: Mainline waterline. 60' SW of SDMH #113	2.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1444	Waterline Trench Backfill: Mainline waterline. 60' SW of SDMH #113	1.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1445	Waterline Trench Backfill: Mainline waterline. 20' S of Dry sleeve inlet valve #12 on N. Pinery Pkwy.	6.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1446	Waterline Trench Backfill: Mainline waterline. 20' S of Dry sleeve inlet valve #12 on N. Pinery Pkwy.	5.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1447	Waterline Trench Backfill: Mainline waterline. 20' S of Dry sleeve inlet valve #12 on N. Pinery Pkwy.	4.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1448	Waterline Trench Backfill: Mainline waterline. 20' S of Dry sleeve inlet valve #12 on N. Pinery Pkwy.	3.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000114
12/26/2019
Report Date: 1/2/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1449		12/26/19	10	698A	CL	19.0	106.0	20.5	105.6	8	100	95	0 / 4	A
1450		12/26/19	10	698A	CL	19.0	106.0	19.4	107.1	8	101	95	0 / 4	A
1451		12/26/19	10	698A	CL	19.0	106.0	19.8	103.8	8	98	95	0 / 4	A
1452		12/26/19	10	698A	CL	19.0	106.0	21.6	102.2	8	96	95	0 / 4	A
1453		12/26/19	10	698A	CL	19.0	106.0	21.3	102.1	8	96	95	0 / 4	A
1454		12/26/19	10	698A	CL	19.0	106.0	19.5	104.3	8	98	95	0 / 4	A
1455		12/26/19	10	698A	CL	19.0	106.0	20.0	104.1	8	98	95	0 / 4	A
1456		12/26/19	10	698A	CL	19.0	106.0	21.5	102.2	8	96	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1449	Waterline Trench Backfill: Mainline waterline. 20' S of Dry sleeve inlet valve #12 on N. Pinery Pkwy.	2.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1450	Waterline Trench Backfill: Mainline waterline. 20' S of Dry sleeve inlet valve #12 on N. Pinery Pkwy.	1.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1451	Waterline Trench Backfill: Mainline waterline. 15' SE of SDMH # 114	5.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1452	Waterline Trench Backfill: Mainline waterline. 15' SE of SDMH # 114	4.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1453	Waterline Trench Backfill: Mainline waterline. 15' SE of SDMH # 114	3.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1454	Waterline Trench Backfill: Mainline waterline. 15' SE of SDMH # 114	3.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1455	Waterline Trench Backfill: Mainline waterline. 15' SE of SDMH # 114	2.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1456	Waterline Trench Backfill: Mainline waterline. 15' SE of SDMH # 114	1.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1456:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000115
12/27/2019
Report Date: 1/2/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1457		12/27/19	8	698A	CL	18.0	109.0	21.1	105.5	8	97	95	0 / 4	A
1458		12/27/19	8	698A	CL	18.0	109.0	19.5	107.2	8	98	95	0 / 4	A
1459		12/27/19	8	698A	CL	18.0	109.0	20.7	105.9	8	97	95	0 / 4	A
1460		12/27/19	8	698A	CL	18.0	109.0	21.0	105.8	8	97	95	0 / 4	A
1461		12/27/19	8	698A	CL	18.0	109.0	19.7	105.9	8	97	95	0 / 4	A
1462		12/27/19	8	698A	CL	18.0	109.0	20.4	105.8	8	97	95	0 / 4	A
1463		12/27/19	8	698A	CL	18.0	109.0	21.2	105.8	8	97	95	0 / 4	A
1464		12/27/19	8	698A	CL	18.0	109.0	20.3	106.3	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1457	Waterline Trench Backfill: Mainline. Shasta Daisy St and Bird's Foot Trl intersection.	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1458	Waterline Trench Backfill: Mainline. Shasta Daisy St and Bird's Foot Trl intersection.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1459	Waterline Trench Backfill: Mainline. Shasta Daisy St and Bird's Foot Trl intersection.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1460	Waterline Trench Backfill: Mainline. Shasta Daisy St and Bird's Foot Trl intersection.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1461	Waterline Trench Backfill: Valve Box. 25' S of Shasta Daisy St and Bird's Foot Trl intersection.	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1462	Waterline Trench Backfill: Valve Box. 25' S of Shasta Daisy St and Bird's Foot Trl intersection.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1463	Waterline Trench Backfill: Valve Box. 25' S of Shasta Daisy St and Bird's Foot Trl intersection.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1464	Waterline Trench Backfill: Valve Box. 25' S of Shasta Daisy St and Bird's Foot Trl intersection.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000115
12/27/2019
Report Date: 1/2/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1465		12/27/19	8	698A	CL	18.0	109.0	19.7	106.7	8	98	95	0 / 4	A
1466		12/27/19	8	698A	CL	18.0	109.0	19.4	103.1	8	95	95	0 / 4	A
1467		12/27/19	8	698A	CL	18.0	109.0	19.9	106.4	8	98	95	0 / 4	A
1468		12/27/19	8	698A	CL	18.0	109.0	19.1	107.1	8	98	95	0 / 4	A
1469		12/27/19	8	698A	CL	18.0	109.0	20.0	104.9	8	96	95	0 / 4	A
1470		12/27/19	8	698A	CL	18.0	109.0	20.8	103.8	8	95	95	0 / 4	A
1471		12/27/19	8	698A	CL	18.0	109.0	21.2	104.2	8	96	95	0 / 4	A
1472		12/27/19	8	698A	CL	18.0	109.0	21.6	104.2	8	96	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1465	Waterline Trench Backfill: Water Valve. 25' S. of intersection of Shasta Daisy St. & Birds Foot Trl.	4.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1466	Waterline Trench Backfill: Water Valve. 25' S. of intersection of Shasta Daisy St. & Birds Foot Trl.	3.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1467	Waterline Trench Backfill: Water Valve. 25' S. of intersection of Shasta Daisy St. & Birds Foot Trl.	2.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1468	Waterline Trench Backfill: Water Valve. 25' S. of intersection of Shasta Daisy St. & Birds Foot Trl.	1.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1469	Waterline Trench Backfill: Mainline. 25' N of intersection of Shasta Daisy St. & Birds Foot Ave.	4.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1470	Waterline Trench Backfill: Mainline. 25' N of intersection of Shasta Daisy St. & Birds Foot Ave.	3.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1471	Waterline Trench Backfill: Mainline. 25' N of intersection of Shasta Daisy St. & Birds Foot Ave.	2.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
1472	Waterline Trench Backfill: Mainline. 25' N of intersection of Shasta Daisy St. & Birds Foot Ave.	1.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1472:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000116
12/31/2019
Report Date: 1/3/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1473		12/31/19	9	698A	CL	20.5	103.5	20.5	103.4	8	100	95	0 / 4	A
1474		12/31/19	9	698A	CL	20.5	103.5	21.9	101.8	8	98	95	0 / 4	A
1475		12/31/19	9	698A	CL	20.5	103.5	21.1	102.2	8	99	95	0 / 4	A
1476		12/31/19	9	698A	CL	20.5	103.5	20.9	101.2	8	98	95	0 / 4	A
1477		12/31/19	9	698A	CL	20.5	103.5	21.3	100.6	8	97	95	0 / 4	A
1478		12/31/19	9	698A	CL	20.5	103.5	22.3	100.4	8	97	95	0 / 4	A
1479		12/31/19	9	698A	CL	20.5	103.5	21.6	101.6	8	98	95	0 / 4	A
1480		12/31/19	9	698A	CL	20.5	103.5	22.7	100.3	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1473	Waterline Trench Backfill: Mainline. Shasta Daisy St. 75' N of Bird's Foot Ave intersection.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1474	Waterline Trench Backfill: Mainline. Shasta Daisy St. 75' N of Bird's Foot Ave intersection.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1475	Waterline Trench Backfill: Mainline. Shasta Daisy St. 75' N of Bird's Foot Ave intersection.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1476	Waterline Trench Backfill: Valve Box. Shasta Daisy St. 8' N of Bird's Foot Ave intersection.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1477	Waterline Trench Backfill: Valve Box. Shasta Daisy St. 8' N of Bird's Foot Ave intersection.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1478	Waterline Trench Backfill: Valve Box. Shasta Daisy St. 8' N of Bird's Foot Ave intersection.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1479	Waterline Trench Backfill: Valve Box. Shasta Daisy St. 8' N of Bird's Foot Ave intersection.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1480	Waterline Trench Backfill: Valve Box. Shasta Daisy St. 8' N of Bird's Foot Ave intersection.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000116
12/31/2019
Report Date: 1/3/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1480:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline and valve box. We observed the contractor process/place fill with the excavator and loader, add moisture with the water truck, and apply compactive effort with the sheepsfoot roller.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

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Compaction Test Report

Report #: SNG-000117
01/02/2020
Report Date: 1/20/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1481		1/2/20	4	698A	CL	16.0	109.0	18.1	105.8	8	97	95	0 / 4	A
1482		1/2/20	4	698A	CL	16.0	109.0	19.3	104.6	8	96	95	0 / 4	A
1483		1/2/20	4	698A	CL	16.0	109.0	19.3	104.6	8	96	95	0 / 4	A
1484		1/2/20	4	698A	CL	16.0	109.0	20.0	104.5	8	96	95	0 / 4	A
1485		1/2/20	4	698A	CL	16.0	109.0	17.9	106.1	8	97	95	0 / 4	A
1486		1/2/20	4	698A	CL	16.0	109.0	16.7	107.6	8	99	95	0 / 4	A
1487		1/2/20	4	698A	CL	16.0	109.0	18.7	106.5	8	98	95	0 / 4	A
1488		1/2/20	4	698A	CL	16.0	109.0	19.2	105.1	8	96	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1481	Waterline Trench Backfill: Valve box, 5' SW of intersection of Shasta Daisy and Birdsfoot Avenue	8.0	BG	XPLORER / 3500 / 1611 / 7/18/2019	Wrolson, Micky
1482	Waterline Trench Backfill: Valve box, 20' SW of intersection of Shasta Daisy and Birdsfoot Avenue	8.0	BG	XPLORER / 3500 / 1611 / 7/18/2019	Wrolson, Micky
1483	Waterline Trench Backfill: Valve box, 20' SW of intersection of Shasta Daisy and Birdsfoot Avenue	7.0	BG	XPLORER / 3500 / 1611 / 7/18/2019	Wrolson, Micky
1484	Waterline Trench Backfill: Valve box, 20' SW of intersection of Shasta Daisy and Birdsfoot Avenue	6.0	BG	XPLORER / 3500 / 1611 / 7/18/2019	Wrolson, Micky
1485	Waterline Trench Backfill: Valve box, 20' SW of intersection of Shasta Daisy and Birdsfoot Avenue	5.0	BG	XPLORER / 3500 / 1611 / 7/18/2019	Wrolson, Micky
1486	Waterline Trench Backfill: Valve box, 20' SW of intersection of Shasta Daisy and Birdsfoot Avenue	4.0	BG	XPLORER / 3500 / 1611 / 7/18/2019	Wrolson, Micky
1487	Waterline Trench Backfill: Valve box, 5' SW of intersection of Shasta Daisy and Birdsfoot Avenue	3.0	BG	XPLORER / 3500 / 1611 / 7/18/2019	Wrolson, Micky
1488	Waterline Trench Backfill: Valve box, 5' SW of intersection of Shasta Daisy and Birdsfoot Avenue	2.0	BG	XPLORER / 3500 / 1611 / 7/18/2019	Wrolson, Micky

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CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000117
01/02/2020
Report Date: 1/20/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1488:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline valvw backfill. We observed the contractor place fill with the excavator and loader, add moisture with the water truck, and apply compactive effort with the rex and sheepsfoot roller.

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Compaction Test Report

Report #: SNG-000117
01/02/2020
Report Date: 1/20/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1489		1/2/20	4	698A	CL	16.0	109.0	17.4	107.2	8	98	95	0 / 4	A
1490		1/2/20	4	698A	CL	16.0	109.0	17.9	106.9	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1489	Waterline Trench Backfill: Valve Box. Bird's Foot Ave. 25' W of Shasta Daisy St and Bird's Foot Ave.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1490	Waterline Trench Backfill: Valve Box. Bird's Foot Ave. 25' W of Shasta Daisy St and Bird's Foot Ave.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Denver
1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000118
01/03/2020
Report Date: 1/20/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1491		1/3/20	4	698A	CL	16.0	109.0	17.8	106.9	8	98	95	0 / 4	A
1492		1/3/20	4	698A	CL	16.0	109.0	17.9	107.0	8	98	95	0 / 4	A
1493		1/3/20	4	698A	CL	16.0	109.0	17.6	106.6	8	98	95	0 / 4	A
1494		1/3/20	4	698A	CL	16.0	109.0	18.1	106.8	8	98	95	0 / 4	A
1495		1/3/20	4	698A	CL	16.0	109.0	17.5	106.9	8	98	95	0 / 4	A
1496		1/3/20	4	698A	CL	16.0	109.0	17.5	107.4	8	99	95	0 / 4	A
1497		1/3/20	4	698A	CL	16.0	109.0	17.5	106.9	8	98	95	0 / 4	A
1498		1/3/20	4	698A	CL	16.0	109.0	17.2	107.6	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1491	Waterline Trench Backfill: Valve Box. Bird's Foot Ave. 15' E of Shasta Daisy St and Bird's Foot Ave.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1492	Waterline Trench Backfill: Valve Box. Bird's Foot Ave. 15' E of Shasta Daisy St and Bird's Foot Ave.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1493	Waterline Trench Backfill: Valve Box. Bird's Foot Ave. 15' E of Shasta Daisy St and Bird's Foot Ave.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1494	Waterline Trench Backfill: Valve Box. Bird's Foot Ave. 15' E of Shasta Daisy St and Bird's Foot Ave.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1495	Waterline Trench Backfill: Valve Box. Bird's Foot Ave. 15' E of Shasta Daisy St and Bird's Foot Ave.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1496	Waterline Trench Backfill: Valve Box. Bird's Foot Ave. 15' E of Shasta Daisy St and Bird's Foot Ave.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1497	Waterline Trench Backfill: Valve Box. Bird's Foot Ave. 10' W of Shasta Daisy St and Bird's Foot Ave.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1498	Waterline Trench Backfill: Valve Box. Bird's Foot Ave. 10' W of Shasta Daisy St and Bird's Foot Ave.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
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Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000118
01/03/2020
Report Date: 1/20/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1499		1/3/20	4	698A	CL	16.0	109.0	17.8	106.8	8	98	95	0 / 4	A
1500		1/3/20	4	698A	CL	16.0	109.0	18.1	107.6	8	99	95	0 / 4	A
1501		1/3/20	4	698A	CL	16.0	109.0	18.0	106.4	8	98	95	0 / 4	A
1502		1/3/20	4	698A	CL	16.0	109.0	17.7	107.0	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1499	Waterline Trench Backfill: Valve Box. Bird's Foot Ave. 10' W of Shasta Daisy St and Bird's Foot Ave.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1500	Waterline Trench Backfill: Valve Box. Shasta Daisy Pt. 15' SW of Shasta Daisy St and Shasta Daisy Pt.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1501	Waterline Trench Backfill: Valve Box. Shasta Daisy Pt. 15' SW of Shasta Daisy St and Shasta Daisy Pt.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1502	Waterline Trench Backfill: Valve Box. Shasta Daisy Pt. 15' SW of Shasta Daisy St and Shasta Daisy Pt.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Denver
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Compaction Test Report

Report #: SNG-000119
01/04/2020
Report Date: 1/20/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1503		1/4/20	4	698A	CL	16.0	109.0	17.4	106.8	8	98	95	0 / 4	E

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1503	Cancelled on Site: Waterline Trench backfill.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
E: Test number for data entry purposes only.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000120
01/06/2020
Report Date: 1/20/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1504		1/6/20	4	698A	CL	16.0	109.0	17.6	107.4	8	99	95	0 / 4	A
1505		1/6/20	4	698A	CL	16.0	109.0	17.5	107.1	8	98	95	0 / 4	A
1506		1/6/20	4	698A	CL	16.0	109.0	18.2	106.8	8	98	95	0 / 4	A
1507		1/6/20	4	698A	CL	16.0	109.0	17.4	108.1	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1504	Waterline Trench Backfill: Valve Box. Shasta Daisy St and Shasta Daisy PT.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1505	Waterline Trench Backfill: Valve Box. Shasta Daisy St and Shasta Daisy PT.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1506	Waterline Trench Backfill: Valve Box. Shasta Daisy St and Shasta Daisy PT.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1507	Waterline Trench Backfill: Valve Box. Shasta Daisy St and Shasta Daisy PT.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Denver
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Compaction Test Report

Report #: SNG-000121
01/07/2020
Report Date: 1/20/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1508		1/7/20	4	698A	CL	16.0	109.0	18.2	106.0	8	97	95	0 / 4	A
1509		1/7/20	4	698A	CL	16.0	109.0	17.5	107.4	8	99	95	0 / 4	A
1510		1/7/20	4	698A	CL	16.0	109.0	17.9	106.4	8	98	95	0 / 4	A
1511		1/7/20	4	698A	CL	16.0	109.0	18.2	107.5	8	99	95	0 / 4	A
1512		1/7/20	4	698A	CL	16.0	109.0	17.6	107.6	8	99	95	0 / 4	A
1513		1/7/20	4	698A	CL	16.0	109.0	17.9	107.1	8	98	95	0 / 4	A
1514		1/7/20	4	698A	CL	16.0	109.0	17.4	107.2	8	98	95	0 / 4	A
1515		1/7/20	4	698A	CL	16.0	109.0	17.8	107.3	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1508	Waterline Trench Backfill: Valve Box. Bird's Foot Trl. 5' W of Shasta Daisy St and Bird's Foot Trl.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1509	Waterline Trench Backfill: Valve Box. Bird's Foot Trl. 5' W of Shasta Daisy St and Bird's Foot Trl.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1510	Waterline Trench Backfill: Valve Box. Bird's Foot Trl. 5' W of Shasta Daisy St and Bird's Foot Trl.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1511	Waterline Trench Backfill: Valve Box. Bird's Foot Trl. 5' W of Shasta Daisy St and Bird's Foot Trl.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1512	Waterline Trench Backfill: Valve Box. Bird's Foot Trl. 5' W of Shasta Daisy St and Bird's Foot Trl.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1513	Waterline Trench Backfill: Valve Box. Bird's Foot Trl. 5' W of Shasta Daisy St and Bird's Foot Trl.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1514	Waterline Trench Backfill: Valve Box. Bird's Foot Trl. 5' W of Shasta Daisy St and Bird's Foot Trl.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1515	Waterline Trench Backfill: Valve Box. Bird's Foot Trl. 5' E of Shasta Daisy St and Bird's Foot Trl.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000122
01/07/2020
Report Date: 1/27/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1516		1/7/20	4	698A	CL	16.0	109.0	18.0	107.8	8	99	95	0 / 4	A
1517		1/7/20	4	698A	CL	16.0	109.0	18.0	107.5	8	99	95	0 / 4	A
1518		1/7/20	4	698A	CL	16.0	109.0	18.8	105.8	8	97	95	0 / 4	A
1519		1/7/20	4	698A	CL	16.0	109.0	18.2	107.3	8	98	95	0 / 4	A
1520		1/7/20	4	698A	CL	16.0	109.0	18.2	107.5	8	99	95	0 / 4	A
1521		1/7/20	4	698A	CL	16.0	109.0	17.6	107.8	8	99	95	0 / 4	A
1522		1/7/20	3	698A	CL	16.0	111.0	17.6	108.7	8	98	95	0 / 4	A
1523		1/7/20	3	698A	CL	16.0	111.0	18.1	108.5	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1516	Waterline Trench Backfill: Valve Box. Bird's Foot Trl. 5' E of Shasta Daisy St and Bird's Foot Trl.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1517	Waterline Trench Backfill: Valve Box. Bird's Foot Trl. 5' E of Shasta Daisy St and Bird's Foot Trl.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1518	Waterline Trench Backfill: Valve Box. Bird's Foot Trl. 5' E of Shasta Daisy St and Bird's Foot Trl.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1519	Waterline Trench Backfill: Valve Box. Bird's Foot Trl. 5' E of Shasta Daisy St and Bird's Foot Trl.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1520	Waterline Trench Backfill: Valve Box. Bird's Foot Trl. 5' E of Shasta Daisy St and Bird's Foot Trl.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1521	Waterline Trench Backfill: Valve Box. Bird's Foot Trl. 5' E of Shasta Daisy St and Bird's Foot Trl.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1522	Waterline Trench Backfill: Fire Hydrant. Hop Clover Ave. 20' E of Rose Mallow Ave intersection.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1523	Waterline Trench Backfill: Fire Hydrant. Hop Clover Ave. 20' E of Rose Mallow Ave intersection.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000122
01/07/2020
Report Date: 1/27/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1524		1/7/20	3	698A	CL	16.0	111.0	18.2	108.1	8	97	95	0 / 4	A
1525		1/7/20	3	698A	CL	16.0	111.0	18.4	108.4	8	98	95	0 / 4	A
1526		1/7/20	3	698A	CL	16.0	111.0	18.5	108.3	8	98	95	0 / 4	A
1527		1/7/20	3	698A	CL	16.0	111.0	18.1	108.5	8	98	95	0 / 4	A
1528		1/7/20	3	698A	CL	16.0	111.0	18.3	107.9	8	97	95	0 / 4	A
1529		1/7/20	3	698A	CL	16.0	111.0	18.2	107.9	8	97	95	0 / 4	A
1530		1/7/20	3	698A	CL	16.0	111.0	18.8	107.9	8	97	95	0 / 4	A
1531		1/7/20	3	698A	CL	16.0	111.0	17.8	108.3	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1524	Waterline Trench Backfill: Fire Hydrant. Hop Clover Ave. 20' E of Rose Mallow Ave intersection.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1525	Waterline Trench Backfill: Fire Hydrant. Hop Clover Ave. 20' E of Rose Mallow Ave intersection.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1526	Waterline Trench Backfill: Fire Hydrant. Hop Clover Ave. 20' E of Rose Mallow Ave intersection.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1527	Waterline Trench Backfill: Valve Box. Adjacent to Fire Hydrant. Hop Clover Ave. 20' E of Rose Mallow Ave intersection.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1528	Waterline Trench Backfill: Valve Box. Adjacent to Fire Hydrant. Hop Clover Ave. 20' E of Rose Mallow Ave intersection.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1529	Waterline Trench Backfill: Valve Box. Adjacent to Fire Hydrant. Hop Clover Ave. 20' E of Rose Mallow Ave intersection.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1530	Waterline Trench Backfill: Valve Box. Adjacent to Fire Hydrant. Hop Clover Ave. 20' E of Rose Mallow Ave intersection.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1531	Waterline Trench Backfill: Valve Box. Adjacent to Fire Hydrant. Hop Clover Ave. 20' E of Rose Mallow Ave intersection.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

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CTL | THOMPSON INCORPORATED

Denver
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Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000122
01/07/2020
Report Date: 1/27/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1531:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline valve box and fire hydrant backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

CTL | THOMPSON INCORPORATED

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Compaction Test Report

Report #: SNG-000123
01/09/2020
Report Date: 1/27/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1532		1/9/20	5	698A	SC	13.5	114.5	13.9	114.6	8	100	100	-2 / 2	A
1533		1/9/20	5	698A	SC	13.5	114.5	13.6	114.3	8	100	100	-2 / 2	A
1534		1/9/20	4	698A	CL	16.0	109.0	18.0	107.7	8	99	95	0 / 4	A
1535		1/9/20	4	698A	CL	16.0	109.0	17.3	108.6	8	100	95	0 / 4	A
1536		1/9/20	9	698A	CL	20.5	103.5	23.1	100.5	8	97	95	0 / 4	A
1537		1/9/20	9	698A	CL	20.5	103.5	23.2	100.8	8	97	95	0 / 4	A
1538		1/9/20	9	698A	CL	20.5	103.5	24.0	100.1	8	97	95	0 / 4	A
1539		1/9/20	9	698A	CL	20.5	103.5	22.7	100.8	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1532	Utility Sleeve Backfill: Irrigation Sleeve #35. Hop Clover Trl. 5' E of Shasta Daisy St and Hop Clover Trl.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1533	Utility Sleeve Backfill: Irrigation Sleeve #35. Hop Clover Trl. 5' W of Shasta Daisy St and Hop Clover Trl.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1534	Utility Sleeve Backfill: Irrigation Sleeve #29. Landscape area. Between L1 B1 F7 and L16 B3 F5.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1535	Utility Sleeve Backfill: Irrigation Sleeve #29. Landscape area. Between L2 B1 F7 and L14 B3 F5.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1536	Waterline Trench Backfill: Valve Box. Bird's Foot Ave. 15' E of intersection with Rose Mallow Ave.	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1537	Waterline Trench Backfill: Valve Box. Bird's Foot Ave. 15' E of intersection with Rose Mallow Ave.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1538	Waterline Trench Backfill: Valve Box. Bird's Foot Ave. 15' E of intersection with Rose Mallow Ave.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1539	Waterline Trench Backfill: Valve Box. Bird's Foot Ave. 15' E of intersection with Rose Mallow Ave.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000123
01/09/2020
Report Date: 1/27/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1540		1/9/20	9	698A	CL	20.5	103.5	23.4	100.1	8	97	95	0 / 4	A
1541		1/9/20	9	698A	CL	20.5	103.5	22.5	101.3	8	98	95	0 / 4	A
1542		1/9/20	9	698A	CL	20.5	103.5	23.7	100.4	8	97	95	0 / 4	A
1543		1/9/20	9	698A	CL	20.5	103.5	23.1	100.9	8	97	95	0 / 4	A
1544		1/9/20	9	698A	CL	20.5	103.5	22.6	101.4	8	98	95	0 / 4	A
1545		1/9/20	9	698A	CL	20.5	103.5	23.6	100.2	8	97	95	0 / 4	A
1546		1/9/20	9	698A	CL	20.5	103.5	22.9	100.7	8	97	95	0 / 4	A
1547		1/9/20	9	698A	CL	20.5	103.5	22.9	100.7	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1540	Waterline Trench Backfill: Fire Hydrant. Bird's Foot Ave. 30' E of intersection with Rose Mallow Ave.	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1541	Waterline Trench Backfill: Fire Hydrant. Bird's Foot Ave. 30' E of intersection with Rose Mallow Ave.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1542	Waterline Trench Backfill: Fire Hydrant. Bird's Foot Ave. 30' E of intersection with Rose Mallow Ave.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1543	Waterline Trench Backfill: Fire Hydrant. Bird's Foot Ave. 30' E of intersection with Rose Mallow Ave.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1544	Waterline Trench Backfill: Valve Box. Bird's Foot Ave. Adjacent to Fire Hydrant. 30' E of intersection with Rose Mallow Ave.	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1545	Waterline Trench Backfill: Valve Box. Bird's Foot Ave. Adjacent to Fire Hydrant. 30' E of intersection with Rose Mallow Ave.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1546	Waterline Trench Backfill: Valve Box. Bird's Foot Ave. Adjacent to Fire Hydrant. 30' E of intersection with Rose Mallow Ave.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1547	Waterline Trench Backfill: Valve Box. Bird's Foot Ave. Adjacent to Fire Hydrant. 30' E of intersection with Rose Mallow Ave.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000123
01/09/2020
Report Date: 1/27/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1547:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline valve box, fire hydrant, and irrigation utility sleeve backfill. We observed the contractor process/place fill with the excavator, add moisture with the water truck, and apply compactive effort with the sheepsfoot roller. The irrigation utility sleeve backfill was prepared prior to our arrival.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000124
01/15/2020
Report Date: 2/5/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1548		1/15/20	5	698A	SC	13.5	114.5	13.7	114.2	8	100	100	-2 / 2	A
1549		1/15/20	5	698A	SC	13.5	114.5	13.7	114.5	8	100	100	-2 / 2	A
1550		1/15/20	5	698A	SC	13.5	114.5	13.8	114.8	8	100	100	-2 / 2	A
1551		1/15/20	5	698A	SC	13.5	114.5	13.5	114.4	8	100	100	-2 / 2	A
1552		1/15/20	5	698A	SC	13.5	114.5	13.2	115.0	8	100	100	-2 / 2	A
1553		1/15/20	5	698A	SC	13.5	114.5	13.4	114.9	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1548	Various: Irrigation Sleeve #33. Shasta Daisy St. 25' W of Shasta Daisy St and Shasta Daisy Ln intersection.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1549	Various: Irrigation Sleeve #33. Shasta Daisy St. 25' W of Shasta Daisy St and Shasta Daisy Ln intersection.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1550	Various: Irrigation Sleeve #32. Shasta Daisy St and Shasta Daisy Ln intersection. S side of Intersection.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1551	Various: Irrigation Sleeve #32. Shasta Daisy St and Shasta Daisy Ln intersection. S side of Intersection.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1552	Various: Irrigation Sleeve #31. Shasta Daisy St and Shasta Daisy Ln intersection. N side of Intersection.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1553	Various: Irrigation Sleeve #31. Shasta Daisy St and Shasta Daisy Ln intersection. N side of Intersection.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1553:** As requested by Alejo with Environmental, a site visit was made to observe and test irrigation sleeve backfill. The backfill was prepared prior to our arrival.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000125
01/17/2020
Report Date: 2/5/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1554		1/17/20	5	698A	SC	13.5	114.5	13.8	114.9	8	100	100	-2 / 2	A
1555		1/17/20	5	698A	SC	13.5	114.5	13.5	115.1	8	101	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1554	Various: Irrigation Sleeve #22. Shasta Daisy St and N. Pinery Pkwy intersection. W side of Intersection.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1555	Various: Irrigation Sleeve #23. Shasta Daisy St and N. Pinery Pkwy intersection. E side of Intersection.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1555:** As requested by Alejo with Environmental, a site visit was made to observe and test irrigation sleeve backfill. The backfill was prepared prior to our arrival.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000126
01/20/2020
Report Date: 2/5/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1556		1/20/20	9	698A	CL	20.5	103.5	21.5	101.9	8	98	95	0 / 4	A
1557		1/20/20	9	698A	CL	20.5	103.5	23.0	100.1	8	97	95	0 / 4	A
1558		1/20/20	9	698A	CL	20.5	103.5	22.2	101.6	8	98	95	0 / 4	A
1559		1/20/20	9	698A	CL	20.5	103.5	22.4	100.8	8	97	95	0 / 4	A
1560		1/20/20	9	698A	CL	20.5	103.5	22.4	101.5	8	98	95	0 / 4	A
1561		1/20/20	9	698A	CL	20.5	103.5	22.4	102.1	8	99	95	0 / 4	A
1562		1/20/20	9	698A	CL	20.5	103.5	22.5	101.3	8	98	95	0 / 4	A
1563		1/20/20	9	698A	CL	20.5	103.5	22.9	101.4	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1556	Waterline Trench Backfill: Valve Box. Shasta Daisy St and Bird's Foot Trl intersection. W side Valve Box.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1557	Waterline Trench Backfill: Valve Box. Shasta Daisy St and Bird's Foot Trl intersection. W side Valve Box.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1558	Waterline Trench Backfill: Valve Box. Shasta Daisy St and Bird's Foot Trl intersection. W side Valve Box.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1559	Waterline Trench Backfill: Valve Box. Shasta Daisy St and Bird's Foot Trl intersection. W side Valve Box.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1560	Waterline Trench Backfill: Valve Box. Shasta Daisy St and Bird's Foot Trl intersection. W side Valve Box.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1561	Waterline Trench Backfill: Valve Box. Shasta Daisy St and Bird's Foot Trl intersection. W side Valve Box.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1562	Waterline Trench Backfill: Valve Box. Shasta Daisy St and Bird's Foot Trl intersection. E side Valve Box.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1563	Waterline Trench Backfill: Valve Box. Shasta Daisy St and Bird's Foot Trl intersection. E side Valve Box.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000126
01/20/2020
Report Date: 2/5/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1564		1/20/20	9	698A	CL	20.5	103.5	22.9	101.3	8	98	95	0 / 4	A
1565		1/20/20	9	698A	CL	20.5	103.5	23.8	99.8	8	96	95	0 / 4	A
1566		1/20/20	9	698A	CL	20.5	103.5	22.3	101.8	8	98	95	0 / 4	A
1567		1/20/20	9	698A	CL	20.5	103.5	23.2	101.7	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1564	Waterline Trench Backfill: Valve Box. Shasta Daisy St and Bird's Foot Trl intersection. E side Valve Box.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1565	Waterline Trench Backfill: Valve Box. Shasta Daisy St and Bird's Foot Trl intersection. E side Valve Box.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1566	Waterline Trench Backfill: Valve Box. Shasta Daisy St and Bird's Foot Trl intersection. E side Valve Box.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1567	Waterline Trench Backfill: Valve Box. Shasta Daisy St and Bird's Foot Trl intersection. E side Valve Box.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1567:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline valve box backfill. We observed the contractor process/place fill with the excavator, add moisture with the water truck, and apply compactive effort with the sheepsfoot roller.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000127
01/23/2020
Report Date: 2/5/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1568		1/23/20	9	698A	CL	20.5	103.5	21.2	103.7	8	100	95	0 / 4	A
1569		1/23/20	9	698A	CL	20.5	103.5	22.3	102.4	8	99	95	0 / 4	A
1570		1/23/20	9	698A	CL	20.5	103.5	22.9	100.7	8	97	95	0 / 4	A
1571		1/23/20	9	698A	CL	20.5	103.5	22.5	101.6	8	98	95	0 / 4	A
1572		1/23/20	9	698A	CL	20.5	103.5	22.8	101.4	8	98	95	0 / 4	A
1573		1/23/20	9	698A	CL	20.5	103.5	23.1	101.7	8	98	95	0 / 4	A
1574		1/23/20	9	698A	CL	20.5	103.5	21.5	102.0	8	99	95	0 / 4	A
1575		1/23/20	9	698A	CL	20.5	103.5	22.4	101.8	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1568	Waterline Trench Backfill: Valve Box. Shasta Daisy St and Hop Clover Ave intersection. 15' E of E side of intersection.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1569	Waterline Trench Backfill: Valve Box. Shasta Daisy St and Hop Clover Ave intersection. 15' E of E side of intersection.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1570	Waterline Trench Backfill: Valve Box. Shasta Daisy St and Hop Clover Ave intersection. 15' E of E side of intersection.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1571	Waterline Trench Backfill: Valve Box. Shasta Daisy St and Hop Clover Ave intersection. 15' E of E side of intersection.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1572	Waterline Trench Backfill: Valve Box. Shasta Daisy St and Hop Clover Ave intersection. 15' E of E side of intersection.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1573	Waterline Trench Backfill: Valve Box. Shasta Daisy St and Hop Clover Ave intersection. 15' E of E side of intersection.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1574	Waterline Trench Backfill: Valve Box. Hop Clover Ave. 75' W of intersection with Shasta Daisy St.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1575	Waterline Trench Backfill: Valve Box. Hop Clover Ave. 75' W of intersection with Shasta Daisy St.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000127
01/23/2020
Report Date: 2/5/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1576		1/23/20	9	698A	CL	20.5	103.5	22.4	101.1	8	98	95	0 / 4	A
1577		1/23/20	9	698A	CL	20.5	103.5	23.1	101.6	8	98	95	0 / 4	A
1578		1/23/20	9	698A	CL	20.5	103.5	22.5	101.5	8	98	95	0 / 4	A
1579		1/23/20	9	698A	CL	20.5	103.5	23.3	101.3	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1576	Waterline Trench Backfill: Valve Box. Hop Clover Ave. 75' W of intersection with Shasta Daisy St.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1577	Waterline Trench Backfill: Valve Box. Hop Clover Ave. 75' W of intersection with Shasta Daisy St.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1578	Waterline Trench Backfill: Valve Box. Hop Clover Ave. 75' W of intersection with Shasta Daisy St.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1579	Waterline Trench Backfill: Valve Box. Hop Clover Ave. 75' W of intersection with Shasta Daisy St.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1579:** As requested by Rick with Kelley Trucking, site visits were made to observe and test waterline valve box backfill. We observed the contractor process/place fill with the excavator and loader, add moisture with the water truck, and apply compactive effort with the sheepsfoot roller.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000128
01/28/2020
Report Date: 2/10/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1580		1/28/20	2	698A	CL	15.0	112.0	15.2	113.1	8	101	95	0 / 4	A
1581		1/28/20	2	698A	CL	15.0	112.0	15.1	112.2	8	100	95	0 / 4	A
1582		1/28/20	2	698A	CL	15.0	112.0	15.4	112.4	8	100	95	0 / 4	A
1583		1/28/20	2	698A	CL	15.0	112.0	15.6	113.1	8	101	95	0 / 4	A
1584		1/28/20	2	698A	CL	15.0	112.0	16.8	111.3	8	99	95	0 / 4	A
1585		1/28/20	2	698A	CL	15.0	112.0	15.5	113.3	8	101	95	0 / 4	A
1586		1/28/20	2	698A	CL	15.0	112.0	16.1	110.7	8	99	95	0 / 4	A
1587		1/28/20	2	698A	CL	15.0	112.0	15.8	111.1	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1580	Utility Trench Backfill: Irrigation Trench. Copper pipe. N. Pinery Pkwy. STA 19+87.	6.0	BG	XPLORER / 3500 / 1996 / 9/25/2019	Holiga, Tayler
1581	Utility Trench Backfill: Irrigation Trench. Copper pipe. N. Pinery Pkwy. STA 19+87.	5.0	BG	XPLORER / 3500 / 1996 / 9/25/2019	Holiga, Tayler
1582	Utility Trench Backfill: Irrigation Trench. Copper pipe. N. Pinery Pkwy. STA 19+87.	4.0	BG	XPLORER / 3500 / 1996 / 9/25/2019	Holiga, Tayler
1583	Utility Trench Backfill: Irrigation Trench. Copper pipe. N. Pinery Pkwy. STA 19+87.	3.0	BG	XPLORER / 3500 / 1996 / 9/25/2019	Holiga, Tayler
1584	Utility Trench Backfill: Irrigation Trench. Copper pipe. N. Pinery Pkwy. STA 19+87.	2.0	BG	XPLORER / 3500 / 1996 / 9/25/2019	Holiga, Tayler
1585	Utility Trench Backfill: Irrigation Trench. Copper pipe. N. Pinery Pkwy. STA 19+87.	1.0	BG	XPLORER / 3500 / 1996 / 9/25/2019	Holiga, Tayler
1586	Manhole: Water meter Manhole. N. Pinery Pkwy. STA 19+87. 25' N of N side curb. 1' W of W side.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1587	Manhole: Water meter Manhole. N. Pinery Pkwy. STA 19+87. 25' N of N side curb. 1' E of E side.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1585:** As requested by Rick with E5X management a site visit was made to observe and test Irrigation Trench backfill. We observed material placed, processed, and compacted by 1x Excavator with sheep's foot roller, and moisture treatment provided by 1x water wagon. Our office will be contacted when further testing is requested.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000128
01/28/2020
Report Date: 2/10/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1588		1/28/20	2	698A	CL	15.0	112.0	16.5	110.0	8	98	95	0 / 4	A
1589		1/28/20	2	698A	CL	15.0	112.0	16.7	109.6	8	98	95	0 / 4	A
1590		1/28/20	2	698A	CL	15.0	112.0	17.5	109.8	8	98	95	0 / 4	A
1591		1/28/20	2	698A	CL	15.0	112.0	16.9	109.9	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1588	Manhole: Water meter Manhole. N. Pinery Pkwy. STA 19+87. 25' N of N side curb. 1' E of E side.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1589	Manhole: Water meter Manhole. N. Pinery Pkwy. STA 19+87. 25' N of N side curb. 1' N of N side.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1590	Manhole: Water meter Manhole. N. Pinery Pkwy. STA 19+87. 25' N of N side curb. 1' S of S side.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1591	Manhole: Water meter Manhole. N. Pinery Pkwy. STA 19+87. 25' N of N side curb. 1' W of W side.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1591:** As requested by Rick with E5X management a site visit was made to observe and test Water Meter Manhole. We observed material placed, processed, and compacted by 1x Excavator with sheep's foot roller, and moisture treatment provided by 1x Water Wagon. This manhole was essentially improvised to cover the meter assembly for the irrigation line pipe. Manhole consisted of a spare manhole section routed out to accommodate the pipe. Our office will be contacted when further testing is requested

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000129
01/30/2020
Report Date: 2/10/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-320
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
1592		1/30/20	3	698A	CL	16.0	111.0	17.1	108.7	8	98	95	0 / 4	A
1593		1/30/20	3	698A	CL	16.0	111.0	17.4	109.3	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
1592	Utility Sleeve Backfill: Irrigation Sleeve #28. Rose Mallow Ave. On Rose Mallow Ave along boundary of Filing 4 and Filing 8. 25' S of SE corner L10 B4 F4. 5' N of S side of trench.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
1593	Utility Sleeve Backfill: Irrigation Sleeve #28. Rose Mallow Ave. On Rose Mallow Ave along boundary of Filing 4 and Filing 8. 25' S of SE corner L10 B4 F4. 5' S of N side of trench.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **1593:** As requested by Alejo with Environmental/E5X management a site visit was made to observe and test Irrigation Sleeve backfill. We observed material placed by a Skid Steer, and compactive effort applied by a jumping jack. Suitable moisture was found in material. No additional moisture treatment was required or provided.

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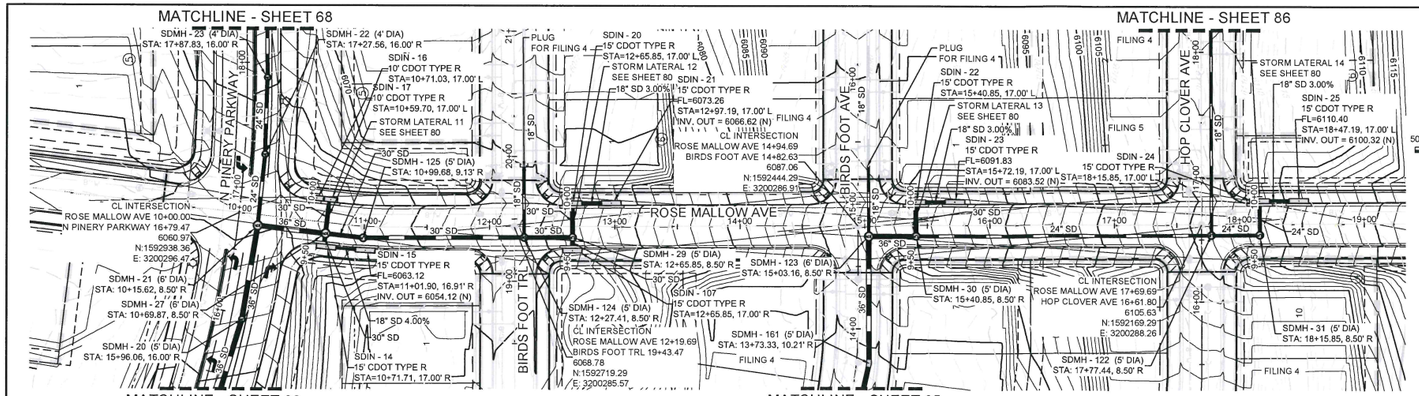
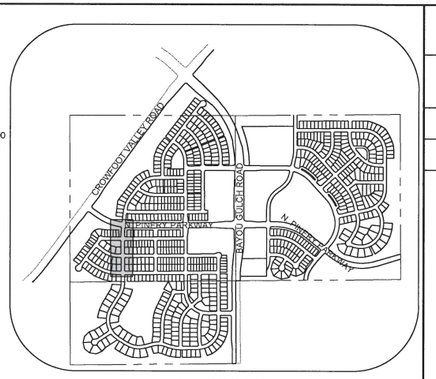




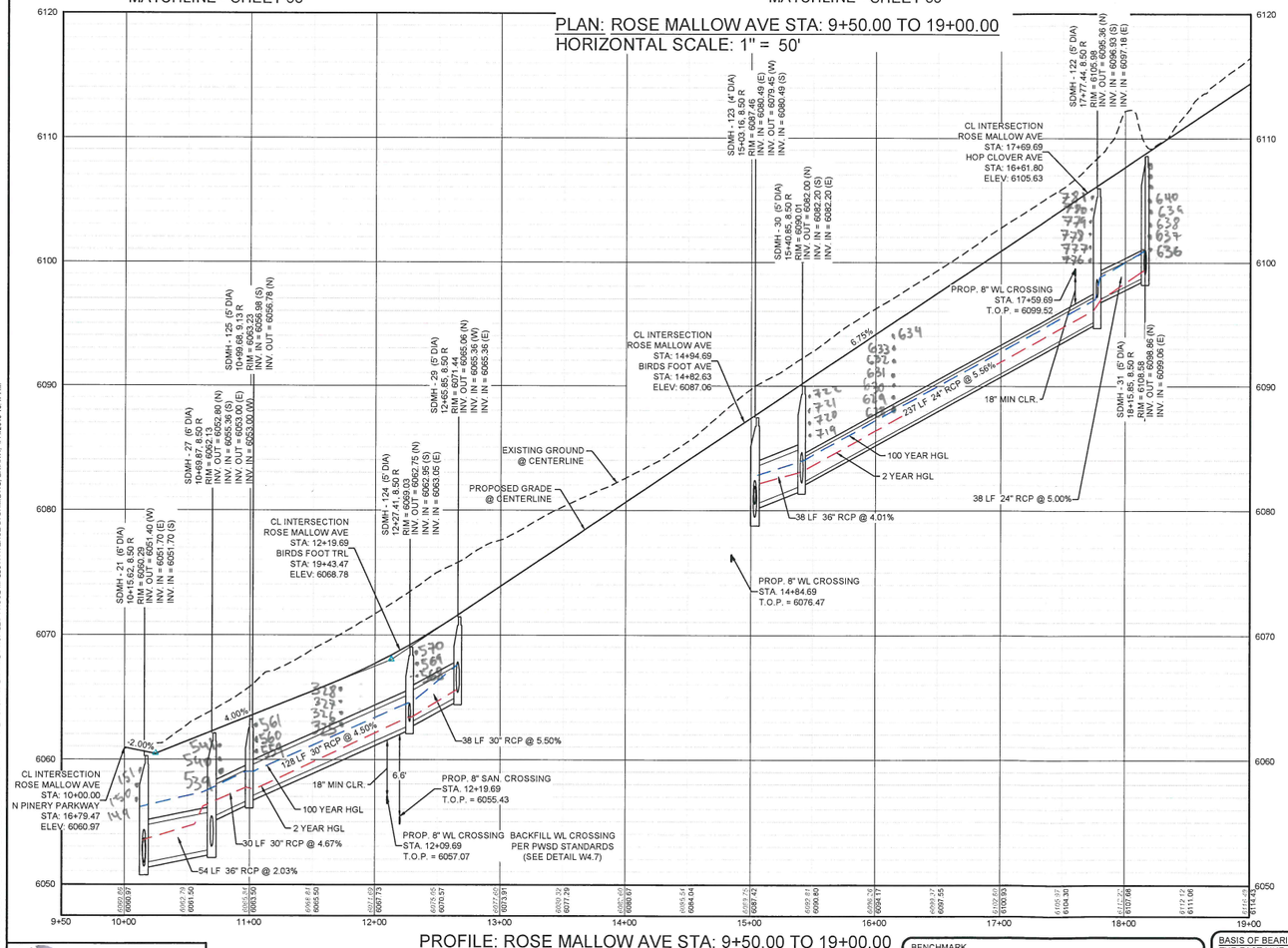
KEYMAP
N.T.S.

LEGEND

BLOCK NUMBER	PROPOSED RANGE POINT
LOT TYPE	CENTERLINE
LOT NUMBER	RIGHT-OF-WAY
PROPOSED BUTTERFLY VALVE	PROPERTY LINE
PROPOSED CAP WITH END OF LINE BLOWOFF	EDGE OF PAVEMENT
PROPOSED REDUCER	PROPOSED DIRECTION OF FLOW
PROPOSED VALVE	PROPOSED SLOPE & DIRECTION
PROPOSED FIRE HYDRANT	EXISTING 5' CONTOUR
PROPOSED WL FITTING WITH THRUST BLOCK	EXISTING 1' CONTOUR
PROPOSED FLARED END SECTION	PROPOSED 5' CONTOUR
PROPOSED LOW POINT BLOW-OFF	PROPOSED 1' CONTOUR
PROPOSED AIR VALVE	PROPOSED STORM DRAIN
FUTURE PHASE VALVE	PROPOSED SEWER LINE WITH MANHOLE
FUTURE FIRE HYDRANT	PROPOSED SEWER LATERAL
PROPOSED LIGHT POLE	PROPOSED WATER LINE
PROPOSED SIDEWALK	PROPOSED WATER LATERAL W/ METER
PROPOSED SIDEWALK RAMP	SECTION LINE
EXISTING ELEVATION	FILING BOUNDARY
PROPOSED DESIGN ELEVATION	EXISTING FIBER OPTIC LINE
PROPOSED STORM DRAIN INLET	EXISTING OVERHEAD POWER
PROPOSED STORM DRAIN MANHOLE	EXISTING TELEPHONE LINE

ABBREVIATIONS

AD	ANGLE DIFFERENCE	MH	MANHOLE
AV	AIR VAC RELEASE VALVE	N.T.S.	NOT TO SCALE
BVC	BEGIN VERTICAL CURVE	PVC	POLYVINYL CHLORIDE
BVP	BEGIN VERTICAL PROFILE	PVI	PT. OF VERTICAL INTERSECTION
CBO	CAP WITH BLOW OFF	PVT	POINT OF VERTICAL TANGENT
CRR	CURB RETURN RADIUS	RCBC	REINFORCED CONCRETE BOX CULVERT
EL	ELEVATION	RCP	REINFORCED CONCRETE PIPE
EP	EDGE OF PAVEMENT	ROW	RIGHT OF WAY
EVC	END VERTICAL CURVE	SC	SANITARY CAP
EVP	END VERTICAL PROFILE	SD	STORM DRAIN
FG	FINISHED GROUND	SL	SECTION LINE
FH	FIRE HYDRANT	SS	SANITARY SEWER
FL	FLOW LINE	STA	STATION
GV	GATE VALVE	T.O.P.	TOP OF PIPE
HCR	HANDICAP CURB RAMP	UE	UTILITY EASEMENT
HP	HIGH POINT	VC	VERTICAL CURVE
INV	INVERT	WL	WATER LINE
K	CURVATURE COEFFICIENT	WLC	WATER LINE CONNECTION
LF	LINEAR FEET	WSE	WATER SURFACE ELEVATION



STORM DRAINAGE INFRASTRUCTURE NOTES:

1. PROFILED STORM DRAINAGE INFRASTRUCTURE INCLUDES THE 2-YEAR AND 100-YEAR HGL FOR INFRASTRUCTURE DESIGNED FOR THE 100-YEAR STORM. INFRASTRUCTURE DESIGNED ONLY FOR THE 2-YEAR STORM WILL ONLY SHOW A 2-YEAR HGL.

CALL 811
TWO WORKING DAYS
BEFORE YOU DIG
UNCC 1-800-922-1987
UTILITY NOTIFICATION CENTER OF COLORADO

BENCHMARK
DOUGLAS COUNTY CONTROL POINT KNOWN AS 1.060032, BEING A 3-1/4" ALUMINUM CAP, BEING LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 6 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, HAVING A PUBLISHED ELEVATION OF 1799.2870 METERS (5903.13 FEET) NAVD '88 DATUM.

BASIS OF BEARINGS:
THE EAST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 9 BEING MONUMENTED AT THE NORTHEAST CORNER OF SAID SECTION 9 BY A 3-1/4" ALUMINUM CAP STAMPED LS 23053 AND AT THE EAST QUARTER CORNER OF SAID SECTION 9 BY A 2-1/2" ALUMINUM CAP STAMPED LS 6935 BEING CONSIDERED TO BEAR SOUTH 00°15'06" EAST, 2648.70 FEET.

PREPARED UNDER THE SUPERVISION OF
COLORADO LICENSED BRIAN P. WILSON 50067 PROFESSIONAL ENGINEER
BRIAN P. WILSON
COLORADO P.E. 0050067

The Town of Parker review constitutes general compliance with the Town's Standards and approved variances, subject to these plans being stamped, signed, and dated by the professional engineer of record. Review by the Town does not constitute approval of the plan design or accuracy and correctness of engineering calculations. Errors in the design or calculations remain the responsibility of the registered professional engineer whose stamp and signature are affixed to this document.

This review does not constitute approval of any private on-site improvements which may be shown. Construction cannot commence until all required drainage/traffic report(s), final development plan(s), special review(s), grading permit, and/or other permits are complete, approved and on file with the Town of Parker.

12/03/2018
Town of Parker, Director of Engineering — Date

No.	Revisions	Date	Init.	Appr.	Date

10333 E. Dry Creek Rd.
Suite 240
Englewood, CO 80112
Tel: (720) 482-9526
Fax: (720) 482-9546
CVL CONSULTANTS

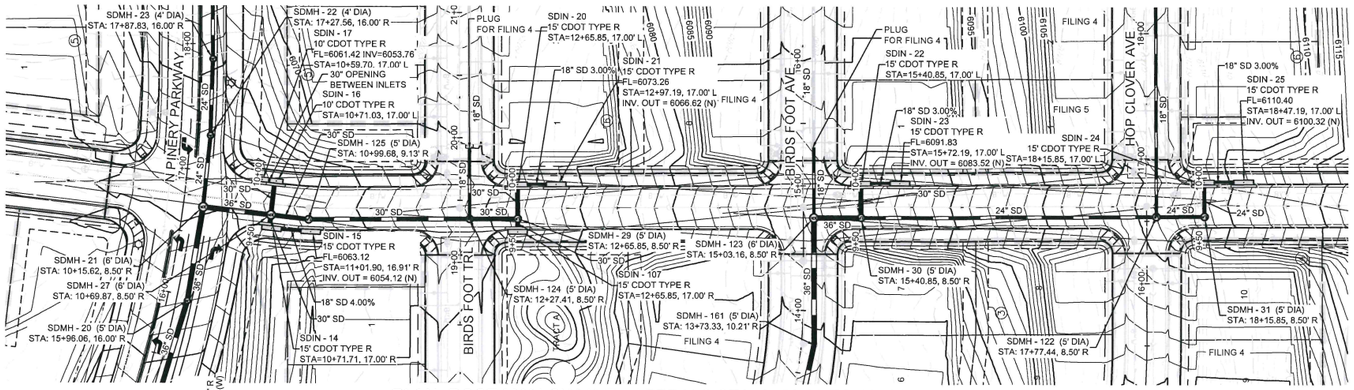
HR 935 LLC
7355 E. Orchard Rd. #100
CENTENNIAL, CO 80112

TRAILS AT CROWFOOT
FILING 1 CONSTRUCTION DRAWINGS
STORM PLAN & PROFILE
ROSE MALLOW AVENUE

SCALE:	AS SHOWN	FILE NO:	81302283701
DRAWN BY:	KJD	CHECKED BY:	JJJ
DATE:	APRIL 2017		

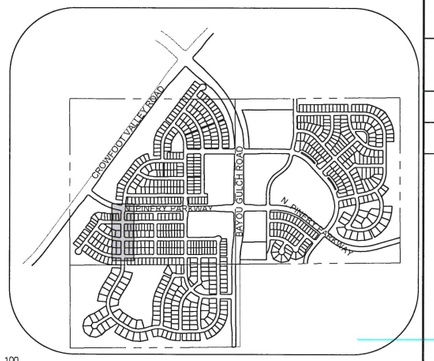
SHEET NUMBER 79

N:\PROJECTS\HESS RANCH\CAD\ENGINEERING\SHEET SETS\CD7.29\F1\10\WM OF PARKER\STORM PLAN AND PROFILE\F1 ROSE MALLOW AVENUE STORM.DWG, BRIAN.W, 4/11/2018 10:47 AM



PLAN: ROSE MALLOW AVE LATERALS STA: 9+50.00 TO 19+00.00
HORIZONTAL SCALE: 1" = 50'

SCALE: 1" = 50'



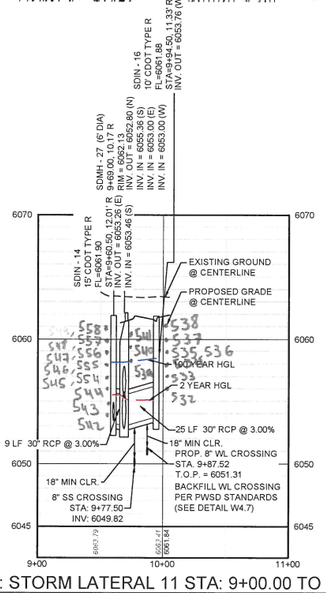
KEYMAP
N.T.S.

LEGEND

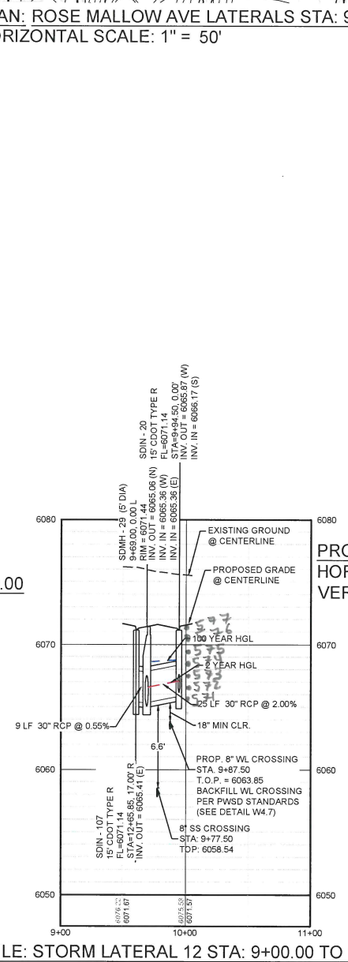
BLOCK NUMBER	PROPOSED RANGE POINT
LOT TYPE	CENTERLINE
LOT NUMBER	RIGHT-OF-WAY
PROPOSED BUTTERFLY VALVE	PROPERTY LINE
PROPOSED CAP WITH END OF LINE BLOWOFF	EDGE OF PAVEMENT
PROPOSED REDUCER	PROPOSED DIRECTION OF FLOW
PROPOSED VALVE	PROPOSED SLOPE & DIRECTION
PROPOSED FIRE HYDRANT	EXISTING 5' CONTOUR
PROPOSED WL FITTING WITH THRUST BLOCK	EXISTING 1' CONTOUR
PROPOSED FLARED END SECTION	PROPOSED 5' CONTOUR
PROPOSED LOW POINT BLOW-OFF	PROPOSED 1' CONTOUR
PROPOSED AIR VALVE	PROPOSED STORM DRAIN
FUTURE PHASE VALVE	PROPOSED SEWER LINE WITH MANHOLE
FUTURE FIRE HYDRANT	PROPOSED SEWER LATERAL
PROPOSED LIGHT POLE	PROPOSED WATER LINE
PROPOSED SIDEWALK	PROPOSED WATER LATERAL W/ METER
PROPOSED SIDEWALK RAMP	SECTION LINE
EXISTING ELEVATION	FILING BOUNDARY
PROPOSED DESIGN ELEVATION	EXISTING FIBER OPTIC LINE
PROPOSED STORM DRAIN INLET	EXISTING OVERHEAD POWER
PROPOSED STORM DRAIN MANHOLE	EXISTING TELEPHONE LINE

ABBREVIATIONS

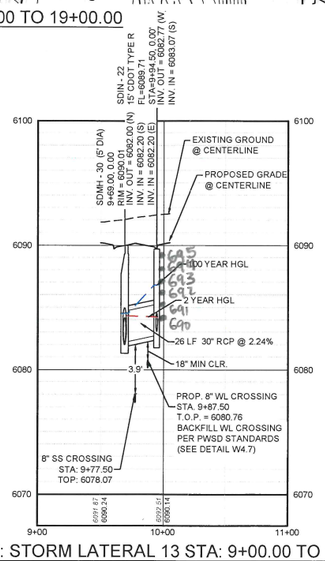
AD	ANGLE DIFFERENCE	MH	MANHOLE
AV	AIR VAC RELEASE VALVE	N.T.S	NOT TO SCALE
BVC	BEGIN VERTICAL CURVE	PVC	POLYVINYL CHLORIDE
BVP	BEGIN VERTICAL PROFILE	PVI	PT. OF VERTICAL INTERSECTION
CBO	CAP WITH BLOW OFF	PVT	POINT OF VERTICAL TANGENT
CRR	CURB RETURN RADIUS	RCBC	REINFORCED CONCRETE BOX CULVERT
EL	ELEVATION	RCP	REINFORCED CONCRETE PIPE
EP	EDGE OF PAVEMENT	ROW	RIGHT OF WAY
EVC	END VERTICAL CURVE	SC	SANITARY CAP
EVP	END VERTICAL PROFILE	SD	STORM DRAIN
FG	FINISHED GROUND	SL	SECTION LINE
FH	FIRE HYDRANT	SS	SANITARY SEWER
FL	FLOW LINE	STA	STATION
GV	GATE VALVE	T.O.P.	TOP OF PIPE
HCR	HANDICAP CURB RAMP	UE	UTILITY EASEMENT
HP	HIGH POINT	VC	VERTICAL CURVE
INV	INVERT	WL	WATER LINE
K	CURVATURE COEFFICIENT	WLC	WATER LINE CONNECTION
LF	LINEAR FEET	WSE	WATER SURFACE ELEVATION



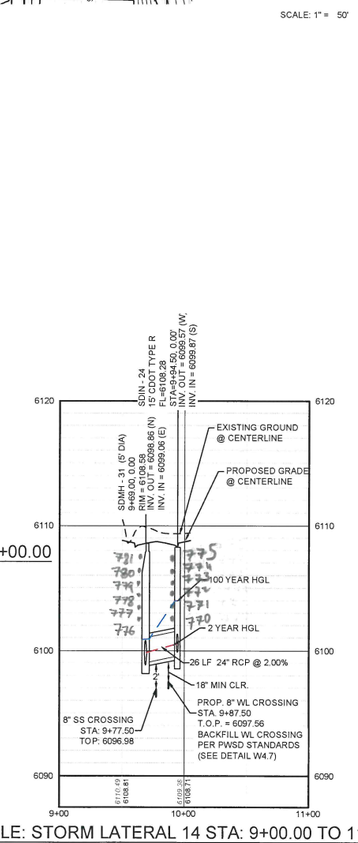
PROFILE: STORM LATERAL 11 STA: 9+00.00 TO 11+00.00
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'



PROFILE: STORM LATERAL 12 STA: 9+00.00 TO 11+00.00
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'



PROFILE: STORM LATERAL 13 STA: 9+00.00 TO 11+00.00
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'



PROFILE: STORM LATERAL 14 STA: 9+00.00 TO 11+00.00
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

STORM DRAINAGE INFRASTRUCTURE NOTES:

1. PROFILED STORM DRAINAGE INFRASTRUCTURE INCLUDES THE 2-YEAR AND 100-YEAR HGL FOR INFRASTRUCTURE DESIGNED FOR THE 100-YEAR STORM. INFRASTRUCTURE DESIGNED ONLY FOR THE 2-YEAR STORM WILL ONLY SHOW A 2-YEAR HGL.

CALL 811
TWO WORKING DAYS
BEFORE YOU DIG
UNCC UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987

BENCHMARK
DOUGLAS COUNTY CONTROL POINT KNOWN AS 1.060032, BEING A 3-1/4" ALUMINUM CAP, BEING LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 6 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, HAVING A PUBLISHED ELEVATION OF 1799.2870 METERS (5903.13 FEET) NAVD '88 DATUM.

BASIS OF BEARINGS:
THE EAST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 9 BEING MONUMENTED AT THE NORTHEAST CORNER OF SAID SECTION 9 BY A 3-1/4" ALUMINUM CAP STAMPED LS 23053 AND AT THE EAST QUARTER CORNER OF SAID SECTION 9 BY A 2-1/2" ALUMINUM CAP STAMPED LS 6935 BEING CONSIDERED TO BEAR SOUTH 00°15'06" EAST, 2646.70 FEET.

PREPARED UNDER THE SUPERVISION OF
COLORADO LICENSED PROFESSIONAL ENGINEER
No. 0050067
6-24-19
BRIAN P. WILSON
COLORADO P.E. 0050067

THE TOWN OF PARKER REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE TOWN'S STANDARDS AND APPROVED VARIANCES, SUBJECT TO THESE PLANS BEING STAMPED, SIGN, AND DATED BY THE PROFESSIONAL ENGINEER OF RECORD. REVIEW BY THE TOWN DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN OR ACCURACY AND CORRECTNESS OF ENGINEERING CALCULATIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE REGISTERED PROFESSIONAL ENGINEER WHOSE STAMP AND SIGNATURE ARE AFFIXED TO THIS DOCUMENT.

THIS REVIEW DOES NOT CONSTITUTE APPROVAL OF ANY PRIVATE ON-SITE IMPROVEMENTS WHICH MAY BE SHOWN. CONSTRUCTION CANNOT COMMENCE UNTIL ALL REQUIRED DRAINAGE/TRAFFIC REPORT(S), FINAL DEVELOPMENT PLAN(S), SPECIAL REVIEW(S), GRADING PERMIT, AND/OR OTHER PERMITS ARE COMPLETE, APPROVED AND ON FILE WITH THE TOWN OF PARKER.

TOWN OF PARKER, DIRECTOR OF ENGINEERING — DATE

RFI 042 Response 2019.06.24

No.	Revisions	Date	Int.	Appr.	Date

10333 E. Dry Creek Rd.
Suite 240
Englewood, CO 80112
Tel: (720) 482-9526
Fax: (720) 482-9546
CVL CONSULTANTS

HR 935 LLC
7353 South Alton Way
CENTENNIAL, CO 80112

TRAILS AT CROWFOOT
FILING 1 CONSTRUCTION DRAWINGS
STORM PLAN & PROFILE
ROSE MALLOW AVENUE

SCALE:	AS SHOWN	FILE NO:	8130283701
DRAWN BY:	KJB	DATE:	APRIL 2017
CHECKED BY:	JJJ		

SHEET NUMBER 80

N:\PROJECTS\WEST RANCH\CAD\ENGINEERING\SHEET SETS\CD'S\F1\TOWN OF PARKER\STORM PLAN AND PROFILE\F1 ROSE MALLOW AVENUE STORM.DWG, BRHANN, 6/24/2019 5:37 PM

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000019
08/20/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
141		8/20/19	5	698A	SC	13.5	114.5	14.1	114.5	8	100	100	-2 / 2	A
142		8/20/19	5	698A	SC	13.5	114.5	13.7	115.0	8	100	100	-2 / 2	A
143		8/20/19	5	698A	SC	13.5	114.5	13.7	114.9	8	100	100	-2 / 2	A
144		8/20/19	5	698A	SC	13.5	114.5	14.1	114.8	8	100	100	-2 / 2	A
145		8/20/19	5	698A	SC	13.5	114.5	13.8	114.8	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
141	Storm Manhole Backfill: STM MH#19. N. Pinery Pkwy and Bayou Gulch Rd. 1' W of W side.	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
142	Storm Manhole Backfill: STM MH#19. N. Pinery Pkwy and Bayou Gulch Rd. 1' E of E side.	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
143	Storm Manhole Backfill: STM MH#19. N. Pinery Pkwy and Bayou Gulch Rd. 1' S of S side.	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
144	Storm Manhole Backfill: STM MH#19. N. Pinery Pkwy and Bayou Gulch Rd. 1' N of N side.	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
145	Storm Manhole Backfill: STM MH19, N Pinery Pkwy and Bayou Gulch Road, 1' N of N side	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **145:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer manhole backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000020
08/24/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
146		8/24/19	5	698A	SC	13.5	114.5	13.6	114.6	8	100	100	-2 / 2	A
147		8/24/19	6	698A	SC	11.0	120.5	11.3	120.5	8	100	100	-2 / 2	A
148		8/24/19	6	698A	SC	11.0	120.5	11.6	119.9	8	100	100	-2 / 2	A
149		8/24/19	6	698A	SC	11.0	120.5	11.3	120.1	8	100	100	-2 / 2	A
150		8/24/19	6	698A	SC	11.0	120.5	11.6	120.2	8	100	100	-2 / 2	A
151		8/24/19	6	698A	SC	11.0	120.5	11.3	120.2	8	100	100	-2 / 2	A
152		8/24/19	6	698A	SC	11.0	120.5	11.6	120.2	8	100	100	-2 / 2	A
153		8/24/19	6	698A	SC	11.0	120.5	11.7	119.9	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
146	Storm Manhole Backfill: STM MH#20. N. Pinery Pkwy . 1' N of N side.	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
147	Storm Manhole Backfill: STM MH#20. N. Pinery Pkwy . 1' N of N side.	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
148	Storm Manhole Backfill: STM MH#20. N. Pinery Pkwy . 1' N of N side.	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
149	Storm Manhole Backfill: STM MH#21. N. Pinery Pkwy . 1' S of S side.	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
150	Storm Manhole Backfill: STM MH#21. N. Pinery Pkwy . 1' S of S side.	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
151	Storm Manhole Backfill: STM MH#21. N. Pinery Pkwy . 1' S of S side.	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
152	Storm Manhole Backfill: STM MH#22. N. Pinery Pkwy . 1' E of E side.	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
153	Storm Manhole Backfill: STM MH#22. N. Pinery Pkwy . 1' E of E side.	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000020
08/24/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
154		8/24/19	6	698A	SC	11.0	120.5	11.2	120.2	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
154	Storm Manhole Backfill: STM MH 22, N Pinery Pkwy, 1' S of S side	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **154:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer manhole backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader. The contractor was informed of the failing test results.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000021
08/26/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
155		8/26/19	14	ASTM D698A	SC	11.0	120.5	11.6	119.9	8	100	100	-2 / 2	A
156		8/26/19	14	ASTM D698A	SC	11.0	120.5	11.6	120.3	8	100	100	-2 / 2	A
157		8/26/19	14	ASTM D698A	SC	11.0	120.5	11.5	120.1	8	100	100	-2 / 2	A
158		8/26/19	5	698A	SC	13.5	114.5	13.6	114.8	8	100	100	-2 / 2	A
159		8/26/19	5	698A	SC	13.5	114.5	13.4	114.5	8	100	100	-2 / 2	A
160		8/26/19	5	698A	SC	13.5	114.5	13.4	114.8	8	100	100	-2 / 2	A
161		8/26/19	5	698A	SC	13.5	114.5	13.6	114.8	8	100	100	-2 / 2	A
162		8/26/19	5	698A	SC	13.5	114.5	13.8	114.4	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
155	Storm Manhole Backfill: STM MH#23. N. Pinery Pkwy . 1' S of S side.	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
156	Storm Manhole Backfill: STM MH#23. N. Pinery Pkwy . 1' S of S side.	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
157	Storm Manhole Backfill: STM MH#23. N. Pinery Pkwy . 1' S of S side.	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
158	Storm Sewer Trench Backfill: Mainline. N. Pinery Pkwy. 40' E of STM MH#22.	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
159	Storm Sewer Trench Backfill: Mainline. N. Pinery Pkwy. 40' E of STM MH#22.	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
160	Storm Sewer Trench Backfill: Mainline. N. Pinery Pkwy. 40' E of STM MH#22.	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
161	Storm Sewer Trench Backfill: Mainline. N. Pinery Pkwy. 15' E of STM MH#23.	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
162	Storm Sewer Trench Backfill: Mainline. N. Pinery Pkwy. 15' E of STM MH#23.	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000021
08/26/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
163		8/26/19	5	698A	SC	13.5	114.5	13.6	114.3	8	100	100	-2 / 2	A
164		8/26/19	5	698A	SC	13.5	114.5	13.6	114.9	8	100	100	-2 / 2	A
165		8/26/19	5	698A	SC	13.5	114.5	14.1	114.5	8	100	100	-2 / 2	A
166		8/26/19	5	698A	SC	13.5	114.5	14.1	114.5	8	100	100	-2 / 2	A
167		8/26/19	4	698A	CL	16.0	109.0	17.1	108.8	8	100	95	0 / 4	A
168		8/26/19	4	698A	CL	16.0	109.0	17.6	107.5	8	99	95	0 / 4	A
169		8/26/19	4	698A	CL	16.0	109.0	17.0	108.6	8	100	95	0 / 4	A
170		8/26/19	5	698A	SC	13.5	114.5	13.5	114.7	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
163	Storm Sewer Trench Backfill: Mainline. N. Pinery Pkwy. 15' E of STM MH#23.	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
164	Storm Sewer Trench Backfill: Mainline. N. Pinery Pkwy. 175' E of STM MH#23.	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
165	Storm Sewer Trench Backfill: Mainline. N. Pinery Pkwy. 175' E of STM MH#23.	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
166	Storm Sewer Trench Backfill: Mainline. N. Pinery Pkwy. 175' E of STM MH#23.	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
167	Storm Manhole Backfill: STM MH#24. N. Pinery Pkwy and Shasta Daisy St. 1' N of N side.	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
168	Storm Manhole Backfill: STM MH#24. N. Pinery Pkwy and Shasta Daisy St. 1' S of S side.	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
169	Storm Manhole Backfill: STM MH#24. N. Pinery Pkwy and Shasta Daisy St. 1' W of W side.	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
170	Storm Manhole Backfill: STM MH#24. N. Pinery Pkwy and Shasta Daisy St. 1' N of N side.	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000021
08/26/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
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Project:
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Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
171		8/26/19	5	698A	SC	13.5	114.5	13.8	114.1	8	100	100	-2 / 2	A
172		8/26/19	5	698A	SC	13.5	114.5	14.0	114.4	8	100	100	-2 / 2	A
173		8/26/19	4	698A	CL	16.0	109.0	17.2	107.2	8	98	95	0 / 4	A
174		8/26/19	4	698A	CL	16.0	109.0	17.3	107.5	8	99	95	0 / 4	A
175		8/26/19	4	698A	CL	16.0	109.0	17.5	107.7	8	99	95	0 / 4	A
176		8/26/19	5	698A	SC	13.5	114.5	13.5	114.8	8	100	100	-2 / 2	A
177		8/26/19	5	698A	SC	13.5	114.5	13.6	114.5	8	100	100	-2 / 2	A
178		8/26/19	5	698A	SC	13.5	114.5	13.6	114.5	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
171	Storm Manhole Backfill: STM MH#24. N. Pinery Pkwy and Shasta Daisy St. 1' S of S side.	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
172	Storm Manhole Backfill: STM MH#24. N. Pinery Pkwy and Shasta Daisy St. 1' E of E side.	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
173	Storm Manhole Backfill: STM MH#25. N. Pinery Pkwy. 1' S of S side.	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
174	Storm Manhole Backfill: STM MH#25. N. Pinery Pkwy. 1' N of N side.	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
175	Storm Manhole Backfill: STM MH#25. N. Pinery Pkwy. 1' W of W side.	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
176	Storm Manhole Backfill: STM MH#25. N. Pinery Pkwy. 1' E of E side.	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
177	Storm Manhole Backfill: STM MH#25. N. Pinery Pkwy. 1' S of S side.	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
178	Storm Manhole Backfill: STM MH#25. N. Pinery Pkwy. 1' N of N side.	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000021
08/26/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
179		8/26/19	6	698A	SC	11.0	120.5	10.8	120.7	8	100	100	-2 / 2	A
180		8/26/19	6	698A	SC	11.0	120.5	11.0	120.8	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
179	Storm Sewer Trench Backfill: Mainline. W side Bayou Gulch Rd. 220' S of N. Pinery Pkwy.	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
180	Storm Sewer Trench Backfill: Mainline, W side Bayou Gulch Road, 220' S of N Pinery Pkwy	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **180:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer trench/manhole backfill. We observed the contractor process/place fill with the scrapers and loader, add moisture with the water wagon, and apply compactive effort with the loader and equipment traffic.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000022
08/27/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
181		8/27/19	2	698A	CL	15.0	112.0	15.8	111.5	8	100	95	0 / 4	A
182		8/27/19	2	698A	CL	15.0	112.0	15.9	111.6	8	100	95	0 / 4	A
183		8/27/19	2	698A	CL	15.0	112.0	16.2	112.0	8	100	95	0 / 4	A
184		8/27/19	2	698A	CL	15.0	112.0	16.6	111.1	8	99	95	0 / 4	A
185		8/27/19	2	698A	CL	15.0	112.0	16.4	111.5	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
181	Storm Sewer Trench Backfill: Mainline. NW of N. Pinery Pkwy. 220' NW of Inlet #12	13.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
182	Storm Sewer Trench Backfill: Mainline. NW of N. Pinery Pkwy. 220' NW of Inlet #12	12.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
183	Storm Sewer Trench Backfill: Mainline. NW of N. Pinery Pkwy. 220' NW of Inlet #12	11.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
184	Storm Sewer Trench Backfill: Mainline. NW of N. Pinery Pkwy. 220' NW of Inlet #12	10.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
185	Storm Sewer Trench Backfill: Mainline, NW of N Pinery Pkwy, 220' NW of inlet 12	9.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **185:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000023
08/29/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
186		8/29/19	4	698A	CL	16.0	109.0	16.5	106.4	8	98	95	0 / 4	A
187		8/29/19	4	698A	CL	16.0	109.0	16.6	107.3	8	98	95	0 / 4	A
188		8/29/19	4	698A	CL	16.0	109.0	16.9	107.1	8	98	95	0 / 4	A
189		8/29/19	6	698A	SC	11.0	120.5	10.6	120.8	8	100	100	-2 / 2	A
190		8/29/19	6	698A	SC	11.0	120.5	10.8	121.0	8	100	100	-2 / 2	A
191		8/29/19	6	698A	SC	11.0	120.5	11.5	120.0	8	100	100	-2 / 2	A
192		8/29/19	6	698A	SC	11.0	120.5	11.6	120.2	8	100	100	-2 / 2	A
193		8/29/19	6	698A	SC	11.0	120.5	11.4	120.2	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
186	Storm Inlet Backfill: Inlet #13. Far North side of N. Pinery Pkwy. W side of inlet	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
187	Storm Inlet Backfill: Inlet #13. Far North side of N. Pinery Pkwy. W side of inlet	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
188	Storm Inlet Backfill: Inlet #13. Far North side of N. Pinery Pkwy. W side of inlet	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
189	Storm Inlet Backfill: Inlet #66. Alpine Phlox St. S side of inlet	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
190	Storm Inlet Backfill: Inlet #66. Alpine Phlox St. S side of inlet	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
191	Storm Inlet Backfill: Inlet #12. Far North end of N. Pinery Pkwy. E side of inlet.	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
192	Storm Inlet Backfill: Inlet #12. Far North end of N. Pinery Pkwy. E side of inlet.	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
193	Storm Inlet Backfill: Inlet #12. Far North end of N. Pinery Pkwy. E side of inlet.	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Compaction Test Report

Report #: SNG-000023
08/29/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
194		8/29/19	6	698A	SC	11.0	120.5	11.7	120.2	8	100	100	-2 / 2	A
195		8/29/19	9	698A	CL	20.5	103.5	21.8	101.4	8	98	95	0 / 4	A
196		8/29/19	9	698A	CL	20.5	103.5	21.7	102.0	8	99	95	0 / 4	A
197		8/29/19	9	698A	CL	20.5	103.5	22.3	101.5	8	98	95	0 / 4	A
198		8/29/19	9	698A	CL	20.5	103.5	21.6	101.8	8	98	95	0 / 4	A
199		8/29/19	9	698A	CL	20.5	103.5	22.8	101.9	8	98	95	0 / 4	A
200		8/29/19	9	698A	CL	20.5	103.5	21.7	102.4	8	99	95	0 / 4	A
201		8/29/19	9	698A	CL	20.5	103.5	22.8	101.2	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
194	Storm Inlet Backfill: Inlet #12. Far North end of N. Pinery Pkwy. E side of inlet.	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
195	Storm Inlet Backfill: Inlet #12. Far North end of N. Pinery Pkwy. W side of inlet.	7.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
196	Storm Inlet Backfill: Inlet #12. Far North end of N. Pinery Pkwy. W side of inlet.	6.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
197	Storm Inlet Backfill: Inlet #12. Far North end of N. Pinery Pkwy. W side of inlet.	5.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
198	Storm Inlet Backfill: Inlet #12. Far North end of N. Pinery Pkwy. W side of inlet.	4.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
199	Storm Inlet Backfill: Inlet #12. Far North end of N. Pinery Pkwy. W side of inlet.	3.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
200	Storm Inlet Backfill: Inlet #12. Far North end of N. Pinery Pkwy. W side of inlet.	2.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake
201	Storm Inlet Backfill: Inlet #12. Far North end of N. Pinery Pkwy. W side of inlet.	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000023
08/29/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
202		8/29/19	9	698A	CL	20.5	103.5	22.8	101.2	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
202	Storm Inlet Backfill: Inlet #12. Far North end of N. Pinery Pkwy. W side of inlet.	1.0	BG	XPLORER / 3500 / 1988 / 9/4/2018	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000024
09/04/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
203		9/4/19	9	698A	CL	20.5	103.5	22.4	101.9	8	98	95	0 / 4	A
204		9/4/19	9	698A	CL	20.5	103.5	22.7	101.2	8	98	95	0 / 4	A
205		9/4/19	9	698A	CL	20.5	103.5	22.7	101.1	8	98	95	0 / 4	A
206		9/4/19	9	698A	CL	20.5	103.5	22.8	101.9	8	98	95	0 / 4	A
207		9/4/19	9	698A	CL	20.5	103.5	22.5	101.9	8	98	95	0 / 4	A
208		9/4/19	9	698A	CL	20.5	103.5	22.5	101.5	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
203	Storm Sewer Trench Backfill: Mainline. 250' W of N end of N. Pinery Pkwy.	8.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
204	Storm Sewer Trench Backfill: Mainline. 250' W of N end of N. Pinery Pkwy.	7.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
205	Storm Sewer Trench Backfill: Mainline. 250' W of N end of N. Pinery Pkwy.	6.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
206	Storm Sewer Trench Backfill: Mainline. 250' W of N end of N. Pinery Pkwy.	5.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
207	Storm Sewer Trench Backfill: Mainline. 250' W of N end of N. Pinery Pkwy.	4.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake
208	Storm Sewer Trench Backfill: Mainline. 250' W of N end of N. Pinery Pkwy.	3.0	BG	XPLORER / 3500 / 3394 / 2/21/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Compaction Test Report

Report #: SNG-000025
09/05/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
209		9/5/19	8	698A	CL	18.0	109.0	19.5	107.8	8	99	95	0 / 4	A
210		9/5/19	8	698A	CL	18.0	109.0	19.0	108.3	8	99	95	0 / 4	A
211		9/5/19	8	698A	CL	18.0	109.0	19.9	106.2	8	97	95	0 / 4	A
212		9/5/19	8	698A	CL	18.0	109.0	19.7	107.3	8	98	95	0 / 4	A
213		9/5/19	8	698A	CL	18.0	109.0	19.3	106.3	8	98	95	0 / 4	A
214		9/5/19	8	698A	CL	18.0	109.0	18.3	108.4	8	99	95	0 / 4	A
215		9/5/19	8	698A	CL	18.0	109.0	19.1	106.6	8	98	95	0 / 4	A
216		9/5/19	8	698A	CL	18.0	109.0	20.0	107.2	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
209	Storm Manhole Backfill: Manhole. Storm Sewer MH #39	14.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
210	Storm Manhole Backfill: Manhole. Storm Sewer MH #39. S side	13.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
211	Storm Manhole Backfill: Manhole. Storm Sewer MH #39. W side	12.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
212	Storm Manhole Backfill: Manhole. Storm Sewer MH #39	11.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
213	Storm Manhole Backfill: Manhole. Storm Sewer MH #39 N Side	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
214	Storm Manhole Backfill: Manhole. Storm Sewer MH #39 N Side	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
215	Storm Manhole Backfill: Manhole. Storm Sewer MH #39 S Side	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
216	Storm Manhole Backfill: Manhole. Storm Sewer MH #39 S Side	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Compaction Test Report

Report #: SNG-000025
09/05/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
217		9/5/19	8	698A	CL	18.0	109.0	19.0	107.8	8	99	95	0 / 4	A
218		9/5/19	8	698A	CL	18.0	109.0	20.1	107.3	8	98	95	0 / 4	A
219		9/5/19	3	698A	CL	16.0	111.0	17.1	107.9	8	97	95	0 / 4	A
220		9/5/19	3	698A	CL	16.0	111.0	17.2	107.2	8	97	95	0 / 4	A
221		9/5/19	3	698A	CL	16.0	111.0	17.4	107.2	8	97	95	0 / 4	A
222		9/5/19	3	698A	CL	16.0	111.0	17.6	107.2	8	97	95	0 / 4	A
223		9/5/19	3	698A	CL	16.0	111.0	17.1	107.9	8	97	95	0 / 4	A
224		9/5/19	3	698A	CL	16.0	111.0	17.4	107.2	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
217	Storm Manhole Backfill: Manhole. Storm Sewer MH #39 S Side	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
218	Storm Manhole Backfill: Manhole. Storm Sewer MH #39 E Side	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
219	Storm Inlet Backfill: Inlet 15' SW of Utility Sleeve #16. SW corner of Bayou Gulch Rd and N. Pinery Pkwy intersection.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
220	Storm Inlet Backfill: Inlet 15' SW of Utility Sleeve #16. SW corner of Bayou Gulch Rd and N. Pinery Pkwy intersection.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
221	Storm Inlet Backfill: Inlet 15' SW of Utility Sleeve #16. SW corner of Bayou Gulch Rd and N. Pinery Pkwy intersection.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
222	Storm Inlet Backfill: Inlet 15' SW of Utility Sleeve #16. SW corner of Bayou Gulch Rd and N. Pinery Pkwy intersection.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
223	Storm Inlet Backfill: Inlet 15' SW of Utility Sleeve #16. SW corner of Bayou Gulch Rd and N. Pinery Pkwy intersection.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
224	Storm Sewer Trench Backfill: Mainline. 10' S of Utility Sleeve #16. SW corner of Bayou Gulch Rd and N. Pinery Pkwy.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000025
09/05/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
225		9/5/19	3	698A	CL	16.0	111.0	17.4	107.2	8	97	95	0 / 4	A
226		9/5/19	3	698A	CL	16.0	111.0	17.7	107.2	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
225	Storm Sewer Trench Backfill: Mainline. 10' S of Utility Sleeve #16. SW corner of Bayou Gulch Rd and N. Pinery Pkwy.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
226	Storm Sewer Trench Backfill: Mainline. 10' S of Utility Sleeve #16. SW corner of Bayou Gulch Rd and N. Pinery Pkwy.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Compaction Test Report

Report #: SNG-000026
09/06/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
227		9/6/19	5	698A	SC	13.5	114.5	13.5	114.4	8	100	100	-2 / 2	A
228		9/6/19	5	698A	SC	13.5	114.5	13.5	114.6	8	100	100	-2 / 2	A
229		9/6/19	5	698A	SC	13.5	114.5	13.8	114.6	8	100	100	-2 / 2	A
230		9/6/19	5	698A	SC	13.5	114.5	13.6	114.7	8	100	100	-2 / 2	A
231		9/6/19	5	698A	SC	13.5	114.5	13.9	114.8	8	100	100	-2 / 2	A
232		9/6/19	5	698A	SC	13.5	114.5	13.6	114.6	8	100	100	-2 / 2	A
233		9/6/19	5	698A	SC	13.5	114.5	13.7	114.8	8	100	100	-2 / 2	A
234		9/6/19	5	698A	SC	13.5	114.5	13.4	114.5	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
227	Storm Inlet Backfill: Inlet #8. Scarlet Sage Ave and Scarlet Sage St.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
228	Storm Inlet Backfill: Inlet #8. Scarlet Sage Ave and Scarlet Sage St.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
229	Storm Manhole Backfill: SDMH#50. Scarlet Sage Ave and Scarlet Sage St.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
230	Storm Manhole Backfill: SDMH#50. Scarlet Sage Ave and Scarlet Sage St.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
231	Storm Sewer Trench Backfill: Mainline. Scarlet Sage Ave. STA 12+00	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
232	Storm Sewer Trench Backfill: Mainline. Scarlet Sage Ave. STA 12+00	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
233	Storm Manhole Backfill: SDMH#141. Scarlet Sage Ave and Shasta Daisy St.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
234	Storm Manhole Backfill: SDMH#141. Scarlet Sage Ave and Shasta Daisy St.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Compaction Test Report

Report #: SNG-000026
09/06/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
235		9/6/19	5	698A	SC	13.5	114.5	13.8	114.6	8	100	100	-2 / 2	A
236		9/6/19	5	698A	SC	13.5	114.5	13.6	114.3	8	100	100	-2 / 2	A
237		9/6/19	5	698A	SC	13.5	114.5	13.5	114.7	8	100	100	-2 / 2	A
238		9/6/19	5	698A	SC	13.5	114.5	13.3	114.8	8	100	100	-2 / 2	A
239		9/6/19	5	698A	SC	13.5	114.5	13.7	114.7	8	100	100	-2 / 2	A
240		9/6/19	5	698A	SC	13.5	114.5	13.6	114.9	8	100	100	-2 / 2	A
241		9/6/19	5	698A	SC	13.5	114.5	13.4	114.7	8	100	100	-2 / 2	A
242		9/6/19	5	698A	SC	13.5	114.5	13.3	114.6	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
235	Storm Sewer Trench Backfill: Mainline. Scarlet Sage Ave and Shasta Daisy St. STA 10+25	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
236	Storm Sewer Trench Backfill: Mainline. Scarlet Sage Ave and Shasta Daisy St. STA 10+25	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
237	Storm Manhole Backfill: SDMH#9. Scarlet Sage Ave and Shasta Daisy St.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
238	Storm Manhole Backfill: SDMH#9. Scarlet Sage Ave and Shasta Daisy St.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
239	Storm Manhole Backfill: Mainline. Shasta Daisy St. STA 15+50.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
240	Storm Manhole Backfill: Mainline. Shasta Daisy St. STA 15+50.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
241	Storm Inlet Backfill: Inlet #71. Scarlet Sage Ave and Shasta Daisy St.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
242	Storm Inlet Backfill: Inlet #71. Scarlet Sage Ave and Shasta Daisy St.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000026
09/06/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
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Project:
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Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
243		9/6/19	8	698A	CL	18.0	109.0	20.3	107.1	8	98	95	0 / 4	A
244		9/6/19	8	698A	CL	18.0	109.0	19.1	106.1	8	97	95	0 / 4	A
245		9/6/19	8	698A	CL	18.0	109.0	18.0	104.9	8	96	95	0 / 4	A
246		9/6/19	8	698A	CL	18.0	109.0	18.9	107.7	8	99	95	0 / 4	A
247		9/6/19	5	698A	SC	13.5	114.5	13.6	114.6	8	100	100	-2 / 2	A
248		9/6/19	5	698A	SC	13.5	114.5	13.8	114.1	8	100	100	-2 / 2	A
249		9/6/19	5	698A	SC	13.5	114.5	13.8	114.3	8	100	100	-2 / 2	A
250		9/6/19	3	698A	CL	16.0	111.0	17.4	107.4	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
243	Storm Manhole Backfill: Manhole. Storm Sewer MH #39.	4.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
244	Storm Manhole Backfill: Manhole. Storm Sewer MH #39.	3.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
245	Storm Manhole Backfill: Manhole. Storm Sewer MH #39.	2.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
246	Storm Manhole Backfill: Manhole. Storm Sewer MH #39.	1.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
247	Storm Sewer Trench Backfill: Mainline. Bayou Gulch Rd and N. Pinery Pkwy. STA 10+25.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
248	Storm Sewer Trench Backfill: Mainline. Bayou Gulch Rd and N. Pinery Pkwy. STA 10+25.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
249	Storm Sewer Trench Backfill: Mainline. Bayou Gulch Rd and N. Pinery Pkwy. STA 10+25.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
250	Storm Inlet Backfill: SD inlet #92. Bayou Gulch Rd and N. Pinery Pkwy. W side of inlet.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Denver
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Compaction Test Report

Report #: SNG-000026
09/06/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
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Project:
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Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
251		9/6/19	3	698A	CL	16.0	111.0	16.2	108.6	8	98	95	0 / 4	A
252		9/6/19	3	698A	CL	16.0	111.0	17.3	108.4	8	98	95	0 / 4	A
253		9/6/19	5	698A	SC	13.5	114.5	13.9	114.5	8	100	100	-2 / 2	A
254		9/6/19	5	698A	SC	13.5	114.5	13.5	114.6	8	100	100	-2 / 2	A
255		9/6/19	5	698A	SC	13.5	114.5	13.4	114.5	8	100	100	-2 / 2	A
256		9/6/19	6	698A	SC	11.0	120.5	11.5	120.3	8	100	100	-2 / 2	A
257		9/6/19	6	698A	SC	11.0	120.5	11.6	120.2	8	100	100	-2 / 2	A
258		9/6/19	4	698A	CL	16.0	109.0	17.2	106.9	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
251	Storm Inlet Backfill: SD inlet #92. Bayou Gulch Rd and N. Pinery Pkwy. N side of inlet.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
252	Storm Inlet Backfill: SD inlet #92. Bayou Gulch Rd and N. Pinery Pkwy. E side of inlet.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
253	Storm Inlet Backfill: SD Inlet #90. Bayou Gulch Rd and N. Pinery Pkwy.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
254	Storm Inlet Backfill: SD Inlet #90. Bayou Gulch Rd and N. Pinery Pkwy. E side.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
255	Storm Inlet Backfill: SD Inlet #90. Bayou Gulch Rd and N. Pinery Pkwy. W side.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
256	Storm Manhole Backfill: STM MH#168. Bayou Gulch Rd and N. Pinery Pkwy. 1' S of S end.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
257	Storm Manhole Backfill: STM MH#168. Bayou Gulch Rd and N. Pinery Pkwy. 1' S of S end.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
258	Storm Inlet Backfill: SD Inlet# 48. Bayou Gulch Rd and N. Pinery Pkwy.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Compaction Test Report

Report #: SNG-000026
09/06/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
259		9/6/19	4	698A	CL	16.0	109.0	17.3	107.1	8	98	95	0 / 4	A
260		9/6/19	4	698A	CL	16.0	109.0	17.9	107.0	8	98	95	0 / 4	A
261		9/6/19	4	698A	CL	16.0	109.0	18.2	106.8	8	98	95	0 / 4	A
262		9/6/19	4	698A	CL	16.0	109.0	17.7	106.9	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
259	Storm Inlet Backfill: SD Inlet# 48. Bayou Gulch Rd and N. Pinery Pkwy. W side of inlet	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
260	Storm Inlet Backfill: SD Inlet# 48. Bayou Gulch Rd and N. Pinery Pkwy. E side of inlet	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
261	Storm Inlet Backfill: SD Inlet# 48. Bayou Gulch Rd and N. Pinery Pkwy. N side of inlet	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
262	Storm Inlet Backfill: SD inlet 48, Bayou Gulch Road and N Pinery Pkwy, S side of inlet	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **262:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer trench/manhole backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader. The contractor was informed of the failing test results.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000027
09/09/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
263		9/9/19	3	698A	CL	16.0	111.0	16.6	111.0	8	100	95	0 / 4	A
264		9/9/19	3	698A	CL	16.0	111.0	17.0	110.9	8	100	95	0 / 4	A
265		9/9/19	7	698A	CL	16.5	107.5	18.9	105.6	8	98	95	0 / 4	A
266		9/9/19	7	698A	CL	16.5	107.5	17.6	105.3	8	98	95	0 / 4	A
267		9/9/19	7	698A	CL	16.5	107.5	17.5	105.6	8	98	95	0 / 4	A
268		9/9/19	7	698A	CL	16.5	107.5	15.1	110.2	8	103	95	0 / 4	B
269		9/9/19	7	698A	CL	16.5	107.5	15.5	107.9	8	100	95	0 / 4	B
270		9/9/19	7	698A	CL	16.5	107.5	17.1	106.4	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
263	Storm Manhole Backfill: SDMH#104. Bayou Gulch and N. Pinery Pkwy. 60' S of South Side of intersection.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
264	Storm Manhole Backfill: SDMH#104. Bayou Gulch and N. Pinery Pkwy. 60' S of South Side of intersection.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
265	Storm Manhole Backfill: SDMH#104. Bayou Gulch and N. Pinery Pkwy. 60' S of South Side of intersection.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
266	Storm Manhole Backfill: SDMH#104. Bayou Gulch and N. Pinery Pkwy. 60' S of South Side of intersection.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
267	Storm Manhole Backfill: SDMH#104. Bayou Gulch and N. Pinery Pkwy. 60' S of South Side of intersection.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
268	Storm Manhole Backfill: SDMH#169. Bayou Gulch and N. Pinery Pkwy. 100' S of South Side of intersection.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
269	Storm Manhole Backfill: SDMH#169. Bayou Gulch and N. Pinery Pkwy. 100' S of South Side of intersection.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
270	Storm Sewer Trench Backfill: Mainline. 15' SW of SDMH#169. Bayou Gulch and N. Pinery Pkwy. 120' S of South Side of intersection.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications. **B:** Test results do not comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000027
09/09/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
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Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
271		9/9/19	7	698A	CL	16.5	107.5	16.5	107.6	8	100	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
271	Storm Sewer Trench Backfill: Mainline, 15' SW of SDMH 169, Bayou Gulch and N Pinery Pkwy, 120' S of S side of intersection	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **271:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer trench/manhole backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader. The contractor was informed of the failing test results.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000028
09/10/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
284	268	9/10/19	7	698A	CL	16.5	107.5	17.7	106.0	8	99	95	0 / 4	A
285	269	9/10/19	7	698A	CL	16.5	107.5	17.5	105.6	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
284	Storm Manhole Backfill: SDMH#169. Bayou Gulch and N. Pinery Pkwy. 100' S of South Side of intersection.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
285	Storm Manhole Backfill: SDMH#169. Bayou Gulch and N. Pinery Pkwy. 100' S of South Side of intersection.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000029
09/12/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
272		9/12/19	6	698A	SC	11.0	120.5	11.6	120.2	8	100	100	-2 / 2	A
273		9/12/19	6	698A	SC	11.0	120.5	11.5	120.1	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
272	Storm Manhole Backfill: SDMH 18, N side of N Pinery Pkwy, 250' S of intersection with Crowfoot Valley Road	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
273	Storm Manhole Backfill: SDMH 18, N side of N Pinery Pkwy, 250' S of intersection with Crowfoot Valley Road	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **273:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test storm sewer manhole backfill. The backfill was prepared prior to our arrival.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000030
09/13/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
274		9/13/19	6	698A	SC	11.0	120.5	10.9	120.4	8	100	100	-2 / 2	A
275		9/13/19	6	698A	SC	11.0	120.5	10.2	120.8	8	100	100	-2 / 2	A
276		9/13/19	6	698A	SC	11.0	120.5	10.1	120.6	8	100	100	-2 / 2	A
277		9/13/19	6	698A	SC	11.0	120.5	10.3	120.3	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
274	Storm Inlet Backfill: Alpine Phlox Street, storm inlet 110, S side of inlet	3.0	BG	XPLORER / 3500 / 1994 / 5/30/2019	Flynn, Christopher
275	Storm Inlet Backfill: Alpine Phlox Street, storm inlet 110, S side of inlet	2.0	BG	XPLORER / 3500 / 1994 / 5/30/2019	Flynn, Christopher
276	Storm Inlet Backfill: Alpine Phlox Street, storm inlet 110, N side of inlet	1.0	BG	XPLORER / 3500 / 1994 / 5/30/2019	Flynn, Christopher
277	Storm Inlet Backfill: Alpine Phlox Street, storm inlet 110, W side of inlet	1.0	BG	XPLORER / 3500 / 1994 / 5/30/2019	Flynn, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **277:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer manhole backfill. We observed the contractor place and compact the fill with the excavator.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000031
09/14/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
278		9/14/19	4	698A	CL	16.0	109.0	19.0	106.3	8	98	95	0 / 4	A
279		9/14/19	4	698A	CL	16.0	109.0	17.2	105.9	8	97	95	0 / 4	A
280		9/14/19	4	698A	CL	16.0	109.0	18.6	105.2	8	97	95	0 / 4	A
281		9/14/19	4	698A	CL	16.0	109.0	17.2	105.2	8	97	95	0 / 4	A
282		9/14/19	4	698A	CL	16.0	109.0	17.6	105.2	8	97	95	0 / 4	A
283		9/14/19	4	698A	CL	16.0	109.0	18.2	104.6	8	96	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
278	Storm Manhole Backfill: STM MH 65	10.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
279	Storm Manhole Backfill: STM MH 65	9.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
280	Storm Manhole Backfill: STM MH 65	8.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
281	Storm Manhole Backfill: STM MH 65	7.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
282	Storm Manhole Backfill: STM MH 65	6.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher
283	Storm Manhole Backfill: STM MH 65	5.0	BG	XPLORER / 3500 / 3404 / 2/7/2019	Sidney, Christopher

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **283:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer manhole backfill. We observed the contractor process/place fill with the excavator and loader, add moisture with the water truck, and apply compactive effort with the sheepsfoot roller.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000032
09/16/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
286		9/16/19	6	698A	SC	11.0	120.5	11.1	120.4	8	100	100	-2 / 2	A
287		9/16/19	6	698A	SC	11.0	120.5	11.7	120.1	8	100	100	-2 / 2	A
288		9/16/19	6	698A	SC	11.0	120.5	11.1	120.5	8	100	100	-2 / 2	A
289		9/16/19	6	698A	SC	11.0	120.5	11.3	120.2	8	100	100	-2 / 2	A
290		9/16/19	6	698A	SC	11.0	120.5	11.6	120.2	8	100	100	-2 / 2	A
291		9/16/19	6	698A	SC	11.0	120.5	11.2	120.2	8	100	100	-2 / 2	A
292		9/16/19	5	698A	SC	13.5	114.5	13.6	114.6	8	100	100	-2 / 2	A
293		9/16/19	5	698A	SC	13.5	114.5	13.5	114.4	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
286	Storm Inlet Backfill: SD Inlet #105. Alpine Phlox St. STA 20+42.25.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
287	Storm Inlet Backfill: SD Inlet #105. Alpine Phlox St. STA 20+42.25.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
288	Storm Inlet Backfill: SD Inlet #105. Alpine Phlox St. STA 20+42.25.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
289	Storm Manhole Backfill: SDMH #145. Alpine Phlox St. STA 20+42.25. 1' E of E side	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
290	Storm Manhole Backfill: SDMH #145. Alpine Phlox St. STA 20+42.25. 1' W of W side	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
291	Storm Manhole Backfill: SDMH #145. Alpine Phlox St. STA 20+42.25. 1' S of S side	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
292	Storm Inlet Backfill: SD Inlet#72. Scarlet Sage Ave and Shasta Daisy St. STA 10+17.00.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
293	Storm Inlet Backfill: SD Inlet#72. Scarlet Sage Ave and Shasta Daisy St. STA 10+17.00.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000032
09/16/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
294		9/16/19	5	698A	SC	13.5	114.5	13.4	114.8	8	100	100	-2 / 2	A
295		9/16/19	6	698A	SC	11.0	120.5	11.7	120.2	8	100	100	-2 / 2	A
296		9/16/19	6	698A	SC	11.0	120.5	11.5	120.1	8	100	100	-2 / 2	A
297		9/16/19	6	698A	SC	11.0	120.5	11.2	120.4	8	100	100	-2 / 2	A
298		9/16/19	6	698A	SC	11.0	120.5	11.5	120.3	8	100	100	-2 / 2	A
299		9/16/19	6	698A	SC	11.0	120.5	11.4	120.1	8	100	100	-2 / 2	A
300		9/16/19	6	698A	SC	11.0	120.5	11.6	120.2	8	100	100	-2 / 2	A
301		9/16/19	6	698A	SC	11.0	120.5	11.1	120.5	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
294	Storm Inlet Backfill: SD Inlet#72. Scarlet Sage Ave and Shasta Daisy St. STA 10+17.00.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
295	Storm Inlet Backfill: SD Inlet#47. Alpine Phlox St. STA 21+61.42.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
296	Storm Inlet Backfill: SD Inlet#47. Alpine Phlox St. STA 21+61.42.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
297	Storm Inlet Backfill: SD Inlet#47. Alpine Phlox St. STA 21+61.42.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
298	Storm Inlet Backfill: SD Inlet#46. Alpine Phlox St. STA 21+63.87.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
299	Storm Inlet Backfill: SD Inlet#46. Alpine Phlox St. STA 21+63.87.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
300	Storm Inlet Backfill: SD Inlet#46. Alpine Phlox St. STA 21+63.87.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
301	Storm Manhole Backfill: SDMH #144 Alpine Phlox St. STA 21+12.14. 1' N of N side.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000032
09/16/2019
Report Date: 9/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
302		9/16/19	6	698A	SC	11.0	120.5	11.5	120.3	8	100	100	-2 / 2	A
303		9/16/19	6	698A	SC	11.0	120.5	11.4	120.4	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
302	Storm Manhole Backfill: SDMH #144 Alpine Phlox St. STA 21+12.14. 1' W of W side.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
303	Storm Manhole Backfill: SDMH #144 Alpine Phlox St. STA 21+12.14. 1' S of S side.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000033
09/27/2019
Report Date: 10/14/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
304		9/27/19	8	698A	CL	18.0	109.0	20.6	106.3	8	98	95	0 / 4	A
305		9/27/19	8	698A	CL	18.0	109.0	19.3	107.0	8	98	95	0 / 4	A
306		9/27/19	8	698A	CL	18.0	109.0	19.5	107.2	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
304	Storm Sewer Trench Backfill: Mainline, 120' E of MH 170, SW of N edge of N Pinery Pkwy	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
305	Storm Sewer Trench Backfill: Mainline, 120' E of MH 170, SW of N edge of N Pinery Pkwy	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
306	Storm Sewer Trench Backfill: Mainline, 120' E of MH 170, SW of N edge of N Pinery Pkwy	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **306:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test storm sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000034
09/30/2019
Report Date: 10/14/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
307		9/30/19	8	698A	CL	18.0	109.0	19.5	105.8	8	97	95	0 / 4	A
308		9/30/19	8	698A	CL	18.0	109.0	18.7	106.6	8	98	95	0 / 4	A
309		9/30/19	8	698A	CL	18.0	109.0	19.0	106.8	8	98	95	0 / 4	A
310		9/30/19	8	698A	CL	18.0	109.0	19.2	106.4	8	98	95	0 / 4	A
311		9/30/19	4	698A	CL	16.0	109.0	17.3	108.7	8	100	95	0 / 4	A
312		9/30/19	4	698A	CL	16.0	109.0	17.1	108.8	8	100	95	0 / 4	A
313		9/30/19	4	698A	CL	16.0	109.0	17.6	107.2	8	98	95	0 / 4	A
314		9/30/19	4	698A	CL	16.0	109.0	17.3	107.6	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
307	Storm Sewer Trench Backfill: Mainline, 125' NW of SDMH 37	12.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
308	Storm Sewer Trench Backfill: Mainline, 125' NW of SDMH 37	11.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
309	Storm Sewer Trench Backfill: Mainline, 125' NW of SDMH 37	10.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
310	Storm Sewer Trench Backfill: Mainline, 125' NW of SDMH 37	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
311	Storm Manhole Backfill: SDMH 37, Hop Clover Trail, 1' W of W side	13.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
312	Storm Manhole Backfill: SDMH 37, Hop Clover Trail, 1' W of W side	12.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
313	Storm Manhole Backfill: SDMH 37, Hop Clover Trail, 1' E of E side	11.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
314	Storm Manhole Backfill: SDMH 37, Hop Clover Trail, 1' E of E side	10.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000034
09/30/2019
Report Date: 10/14/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
315		9/30/19	4	698A	CL	16.0	109.0	17.8	107.3	8	98	95	0 / 4	A
316		9/30/19	4	698A	CL	16.0	109.0	18.0	107.5	8	99	95	0 / 4	A
317		9/30/19	4	698A	CL	16.0	109.0	17.7	107.1	8	98	95	0 / 4	A
318		9/30/19	4	698A	CL	16.0	109.0	18.0	107.5	8	99	95	0 / 4	A
319		9/30/19	4	698A	CL	16.0	109.0	17.5	107.5	8	99	95	0 / 4	A
320		9/30/19	4	698A	CL	16.0	109.0	17.4	107.2	8	98	95	0 / 4	A
321		9/30/19	4	698A	CL	16.0	109.0	17.4	107.0	8	98	95	0 / 4	A
322		9/30/19	4	698A	CL	16.0	109.0	17.1	107.8	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
315	Storm Manhole Backfill: SDMH 37, Hop Clover Trail, 1' N of N side	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
316	Storm Manhole Backfill: SDMH 37, Hop Clover Trail, 1' N of N side	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
317	Storm Manhole Backfill: SDMH 37, Hop Clover Trail, 1' S of S side	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
318	Storm Manhole Backfill: SDMH 38, Hop Clover Trail, 1' E of E side	13.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
319	Storm Manhole Backfill: SDMH 38, Hop Clover Trail, 1' E of E side	12.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
320	Storm Manhole Backfill: SDMH 38, Hop Clover Trail, 1' N of N side	11.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
321	Storm Manhole Backfill: SDMH 38, Hop Clover Trail, 1' N of N side	10.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
322	Storm Manhole Backfill: SDMH 38, Hop Clover Trail, 1' E of E side	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
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Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000034
09/30/2019
Report Date: 10/14/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
323		9/30/19	4	698A	CL	16.0	109.0	17.6	107.5	8	99	95	0 / 4	A
324		9/30/19	4	698A	CL	16.0	109.0	17.3	107.8	8	99	95	0 / 4	A
325		9/30/19	2	698A	CL	15.0	112.0	15.8	111.5	8	100	95	0 / 4	A
326		9/30/19	2	698A	CL	15.0	112.0	16.2	110.2	8	98	95	0 / 4	A
327		9/30/19	2	698A	CL	15.0	112.0	16.6	109.4	8	98	95	0 / 4	A
328		9/30/19	2	698A	CL	15.0	112.0	16.0	109.8	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
323	Storm Manhole Backfill: SDMH 38, Hop Clover Trail, 1' E of E side	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
324	Storm Manhole Backfill: SDMH 38, Hop Clover Trail, 1' S of S side	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
325	Storm Sewer Trench Backfill: Mainline, Rose Mallow Avenue, SW of N Pinery Pkwy, 60' NE of SDMH 124	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
326	Storm Sewer Trench Backfill: Mainline, Rose Mallow Avenue, SW of N Pinery Pkwy, 60' NE of SDMH 124	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
327	Storm Sewer Trench Backfill: Mainline, Rose Mallow Avenue, SW of N Pinery Pkwy, 60' NE of SDMH 124	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
328	Storm Sewer Trench Backfill: Mainline, Rose Mallow Avenue, SW of N Pinery Pkwy, 60' NE of SDMH 124	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **328:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the sheepsfoot roller.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000035
10/01/2019
Report Date: 10/14/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
329		10/1/19	8	698A	CL	18.0	109.0	18.6	105.9	8	97	95	0 / 4	A
330		10/1/19	8	698A	CL	18.0	109.0	18.2	106.7	8	98	95	0 / 4	A
331		10/1/19	8	698A	CL	18.0	109.0	18.1	106.5	8	98	95	0 / 4	A
332		10/1/19	8	698A	CL	18.0	109.0	18.4	106.7	8	98	95	0 / 4	A
333		10/1/19	8	698A	CL	18.0	109.0	18.5	107.1	8	98	95	0 / 4	A
334		10/1/19	8	698A	CL	18.0	109.0	18.6	106.9	8	98	95	0 / 4	A
335		10/1/19	3	698A	CL	16.0	111.0	17.0	109.5	8	99	95	0 / 4	A
336		10/1/19	3	698A	CL	16.0	111.0	17.7	108.4	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
329	Storm Manhole Backfill: SDMH 37, Hop Clover Trail, 1' E of E side	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
330	Storm Manhole Backfill: SDMH 37, Hop Clover Trail, 1' E of E side	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
331	Storm Manhole Backfill: SDMH 37, Hop Clover Trail, 1' E of E side	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
332	Storm Manhole Backfill: SDMH 37, Hop Clover Trail, 1' N of N side	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
333	Storm Manhole Backfill: SDMH 37, Hop Clover Trail, 1' N of N side	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
334	Storm Manhole Backfill: SDMH 37, Hop Clover Trail, 1' N of N side	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
335	Storm Manhole Backfill: SDMH 36, Hop Clover Trail, 1' W of W side	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
336	Storm Manhole Backfill: SDMH 36, Hop Clover Trail, 1' E of E side	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Denver
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Compaction Test Report

Report #: SNG-000035
10/01/2019
Report Date: 10/14/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
337		10/1/19	3	698A	CL	16.0	111.0	17.9	108.1	8	97	95	0 / 4	A
338		10/1/19	3	698A	CL	16.0	111.0	18.0	107.9	8	97	95	0 / 4	A
339		10/1/19	4	698A	CL	16.0	109.0	17.6	107.1	8	98	95	0 / 4	A
340		10/1/19	4	698A	CL	16.0	109.0	17.7	106.7	8	98	95	0 / 4	A
341		10/1/19	4	698A	CL	16.0	109.0	18.0	106.9	8	98	95	0 / 4	A
342		10/1/19	4	698A	CL	16.0	109.0	18.0	107.1	8	98	95	0 / 4	A
343		10/1/19	4	698A	CL	16.0	109.0	18.4	107.4	8	99	95	0 / 4	A
344		10/1/19	4	698A	CL	16.0	109.0	18.3	106.3	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
337	Storm Manhole Backfill: SDMH 36, Hop Clover Trail, 1' N of N side	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
338	Storm Manhole Backfill: SDMH 36, Hop Clover Trail, 1' S of S side	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
339	Storm Sewer Trench Backfill: Mainline, 65' E of SDMH 170, SW of N end, N Pinery Pkwy	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
340	Storm Sewer Trench Backfill: Mainline, 65' E of SDMH 170, SW of N end, N Pinery Pkwy	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
341	Storm Sewer Trench Backfill: Mainline, 65' E of SDMH 170, SW of N end, N Pinery Pkwy	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
342	Storm Sewer Trench Backfill: Mainline, 75' E of SDMH 170, SW of N end, N Pinery Pkwy	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
343	Storm Sewer Trench Backfill: Mainline, 75' E of SDMH 170, SW of N end, N Pinery Pkwy	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
344	Storm Sewer Trench Backfill: Mainline, 75' E of SDMH 170, SW of N end, N Pinery Pkwy	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Compaction Test Report

Report #: SNG-000035
10/01/2019
Report Date: 10/14/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
345		10/1/19	4	698A	CL	16.0	109.0	17.5	107.8	8	99	95	0 / 4	A
346		10/1/19	4	698A	CL	16.0	109.0	17.6	107.8	8	99	95	0 / 4	A
347		10/1/19	4	698A	CL	16.0	109.0	17.5	107.5	8	99	95	0 / 4	A
348		10/1/19	4	698A	CL	16.0	109.0	18.2	107.5	8	99	95	0 / 4	A
349		10/1/19	4	698A	CL	16.0	109.0	18.0	107.8	8	99	95	0 / 4	A
350		10/1/19	4	698A	CL	16.0	109.0	17.5	107.8	8	99	95	0 / 4	A
351		10/1/19	4	698A	CL	16.0	109.0	17.2	107.9	8	99	95	0 / 4	A
352		10/1/19	4	698A	CL	16.0	109.0	17.3	107.9	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
345	Storm Sewer Trench Backfill: Mainline, 75' E of SDMH 170, SW of N end, N Pinery Pkwy	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
346	Storm Sewer Trench Backfill: Mainline, 75' E of SDMH 170, SW of N end, N Pinery Pkwy	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
347	Storm Sewer Trench Backfill: Mainline, 75' E of SDMH 170, SW of N end, N Pinery Pkwy	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
348	Storm Sewer Trench Backfill: Mainline between SDMH 36 and 37, Hop Clover Trail	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
349	Storm Sewer Trench Backfill: Mainline between SDMH 36 and 37, Hop Clover Trail	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
350	Storm Sewer Trench Backfill: Mainline between SDMH 36 and 37, Hop Clover Trail	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
351	Storm Sewer Trench Backfill: Mainline between SDMH 36 and 37, Hop Clover Trail	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
352	Storm Sewer Trench Backfill: Mainline between SDMH 36 and 37, Hop Clover Trail	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000035
10/01/2019
Report Date: 10/14/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
353		10/1/19	7	698A	CL	16.5	107.5	17.6	105.7	8	98	95	0 / 4	A
354		10/1/19	7	698A	CL	16.5	107.5	17.8	104.9	8	98	95	0 / 4	A
355		10/1/19	7	698A	CL	16.5	107.5	18.3	105.1	8	98	95	0 / 4	A
356		10/1/19	7	698A	CL	16.5	107.5	17.7	104.9	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
353	Storm Inlet Backfill: Inlet, W side of Bayou Gulch Road, 300' S of intersection with N Pinery Pkwy, W side of inlet	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
354	Storm Inlet Backfill: Inlet, W side of Bayou Gulch Road, 300' S of intersection with N Pinery Pkwy, W side of inlet	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
355	Storm Inlet Backfill: Inlet, W side of Bayou Gulch Road, 300' S of intersection with N Pinery Pkwy, W side of inlet	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
356	Storm Inlet Backfill: Inlet, W side of Bayou Gulch Road, 300' S of intersection with N Pinery Pkwy, W side of inlet	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **356:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the sheepsfoot roller.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000036
10/02/2019
Report Date: 10/14/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
357		10/2/19	8	698A	CL	18.0	109.0	19.1	106.7	8	98	95	0 / 4	A
358		10/2/19	8	698A	CL	18.0	109.0	19.2	106.4	8	98	95	0 / 4	A
359		10/2/19	8	698A	CL	18.0	109.0	19.7	105.7	8	97	95	0 / 4	A
360		10/2/19	8	698A	CL	18.0	109.0	19.4	106.4	8	98	95	0 / 4	A
361		10/2/19	8	698A	CL	18.0	109.0	19.3	106.4	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
357	Storm Manhole Backfill: SDMH 35, Hop Clover Trail, 1' N of N side	12.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
358	Storm Manhole Backfill: SDMH 35, Hop Clover Trail, 1' N of N side	11.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
359	Storm Manhole Backfill: SDMH 35, Hop Clover Trail, 1' S of S side	10.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
360	Storm Manhole Backfill: SDMH 35, Hop Clover Trail, 1' E of E side	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
361	Storm Manhole Backfill: SDMH 35, Hop Clover Trail, 1' E of E side	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **361:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000037
10/03/2019
Report Date: 10/14/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
362		10/3/19	9	698A	CL	20.5	103.5	22.5	100.9	8	97	95	0 / 4	A
363		10/3/19	9	698A	CL	20.5	103.5	22.5	100.9	8	97	95	0 / 4	A
364		10/3/19	9	698A	CL	20.5	103.5	22.7	101.2	8	98	95	0 / 4	A
365		10/3/19	9	698A	CL	20.5	103.5	22.5	101.4	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
362	Storm Sewer Trench Backfill: Mainline, Hop Clover Trail, STA 1+50	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Daves, Carlin
363	Storm Sewer Trench Backfill: Mainline, Hop Clover Trail, STA 1+50	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
364	Storm Sewer Trench Backfill: Mainline, Hop Clover Trail, STA 1+50	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
365	Storm Sewer Trench Backfill: Mainline, Hop Clover Trail, STA 1+50	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **365:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000052
11/08/2019
Report Date: 12/3/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
519		11/8/19	3	698A	CL	16.0	111.0	17.3	107.6	8	97	95	0 / 4	A
520		11/8/19	3	698A	CL	16.0	111.0	17.2	107.3	8	97	95	0 / 4	A
521		11/8/19	3	698A	CL	16.0	111.0	17.9	107.3	8	97	95	0 / 4	A
522		11/8/19	3	698A	CL	16.0	111.0	17.5	107.8	8	97	95	0 / 4	A
523		11/8/19	3	698A	CL	16.0	111.0	17.5	107.9	8	97	95	0 / 4	A
524		11/8/19	3	698A	CL	16.0	111.0	18.0	107.8	8	97	95	0 / 4	A
525		11/8/19	3	698A	CL	16.0	111.0	17.3	108.2	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
519	Storm Manhole Backfill: SDMH-170, 150' SW of Block 1 Filing 4	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
520	Storm Manhole Backfill: SDMH-170, 150' SW of Block 1 Filing 4	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
521	Storm Manhole Backfill: SDMH-170, 150' SW of Block 1 Filing 4	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
522	Storm Manhole Backfill: SDMH-170, 150' SW of Block 1 Filing 4	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
523	Storm Manhole Backfill: SDMH-170, 150' SW of Block 1 Filing 4	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
524	Storm Manhole Backfill: SDMH-170, 150' SW of Block 1 Filing 4	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
525	Storm Manhole Backfill: SDMH-170, 150' SW of Block 1 Filing 4	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **525:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer manhole backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000053
11/09/2019
Report Date: 12/3/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
526		11/9/19	2	698A	CL	15.0	112.0	17.1	109.6	8	98	95	0 / 4	A
527		11/9/19	2	698A	CL	15.0	112.0	16.7	109.6	8	98	95	0 / 4	A
528		11/9/19	2	698A	CL	15.0	112.0	16.9	109.6	8	98	95	0 / 4	A
529		11/9/19	2	698A	CL	15.0	112.0	16.8	109.4	8	98	95	0 / 4	A
530		11/9/19	2	698A	CL	15.0	112.0	17.7	109.1	8	97	95	0 / 4	A
531		11/9/19	2	698A	CL	15.0	112.0	16.6	109.4	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
526	Wingwall Backfill: Storm sewer structure, 75' S of N Pinery Pkwy and Crowfoot Valley Rd, 20' SE of E side inlet, 30' SE of NW corner	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
527	Wingwall Backfill: Storm sewer structure, 75' S of N Pinery Pkwy and Crowfoot Valley Rd, 20' SE of E side inlet, 30' SE of NW corner	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
528	Wingwall Backfill: Storm sewer structure, 75' S of N Pinery Pkwy and Crowfoot Valley Rd, 20' SE of E side inlet, 30' SE of NW corner	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
529	Wingwall Backfill: Storm sewer structure, 75' S of N Pinery Pkwy and Crowfoot Valley Rd, 20' SE of E side inlet, 30' SE of NW corner	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
530	Wingwall Backfill: Storm sewer structure, 75' S of N Pinery Pkwy and Crowfoot Valley Rd, 20' SE of E side inlet, 30' SE of NW corner	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
531	Wingwall Backfill: Storm sewer structure, 75' S of N Pinery Pkwy and Crowfoot Valley Rd, 20' SE of E side inlet, 30' SE of NW corner	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **531:** As requested by Rick with Kelley Trucking, site visits were made to observe and test wingwall backfill. The backfill was prepared prior to our arrival.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000054
11/14/2019
Report Date: 12/3/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
532		11/14/19	5	698A	SC	13.5	114.5	13.6	114.6	8	100	100	-2 / 2	A
533		11/14/19	5	698A	SC	13.5	114.5	13.2	114.8	8	100	100	-2 / 2	A
534		11/14/19	5	698A	SC	13.5	114.5	13.8	114.6	8	100	100	-2 / 2	A
535		11/14/19	5	698A	SC	13.5	114.5	12.9	115.2	8	101	100	-2 / 2	A
536		11/14/19	5	698A	SC	13.5	114.5	13.0	114.9	8	100	100	-2 / 2	A
537		11/14/19	5	698A	SC	13.5	114.5	13.4	114.9	8	100	100	-2 / 2	A
538		11/14/19	5	698A	SC	13.5	114.5	13.6	114.8	8	100	100	-2 / 2	A
539		11/14/19	5	698A	SC	13.5	114.5	13.9	114.6	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
532	Storm Inlet Backfill: SDIN-16, Rose Mallow Ave and N Pinery Pkwy	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
533	Storm Inlet Backfill: SDIN-16, Rose Mallow Ave and N Pinery Pkwy	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
534	Storm Inlet Backfill: SDIN-16, Rose Mallow Ave and N Pinery Pkwy	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
535	Storm Inlet Backfill: SDIN-16, Rose Mallow Ave and N Pinery Pkwy	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
536	Storm Inlet Backfill: SDIN-16, Rose Mallow Ave and N Pinery Pkwy	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
537	Storm Inlet Backfill: SDIN-16, Rose Mallow Ave and N Pinery Pkwy	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
538	Storm Inlet Backfill: SDIN-16, Rose Mallow Ave and N Pinery Pkwy	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
539	Storm Inlet Backfill: SDMH-27, Rose Mallow Ave and N Pinery Pkwy, 1' E of E side	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Compaction Test Report

Report #: SNG-000054
11/14/2019
Report Date: 12/3/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
540		11/14/19	5	698A	SC	13.5	114.5	13.8	114.6	8	100	100	-2 / 2	A
541		11/14/19	5	698A	SC	13.5	114.5	13.7	114.4	8	100	100	-2 / 2	A
542		11/14/19	5	698A	SC	13.5	114.5	12.6	114.1	8	100	100	-2 / 2	A
543		11/14/19	5	698A	SC	13.5	114.5	13.9	114.0	8	100	100	-2 / 2	A
544		11/14/19	5	698A	SC	13.5	114.5	13.0	114.9	8	100	100	-2 / 2	A
545		11/14/19	5	698A	SC	13.5	114.5	13.8	114.4	8	100	100	-2 / 2	A
546		11/14/19	5	698A	SC	13.5	114.5	13.4	115.0	8	100	100	-2 / 2	A
547		11/14/19	5	698A	SC	13.5	114.5	13.5	114.4	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
540	Storm Inlet Backfill: SDMH-27, Rose Mallow Ave and N Pinery Pkwy, 1' W of W side	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
541	Storm Inlet Backfill: SDMH-27, Rose Mallow Ave and N Pinery Pkwy, 1' SE of SE side	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
542	Storm Inlet Backfill: SDIN-14, Rose Mallow Ave and N Pinery Pkwy	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
543	Storm Inlet Backfill: SDIN-14, Rose Mallow Ave and N Pinery Pkwy	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
544	Storm Inlet Backfill: SDIN-14, Rose Mallow Ave and N Pinery Pkwy	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
545	Storm Inlet Backfill: SDIN-14, Rose Mallow Ave and N Pinery Pkwy	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
546	Storm Inlet Backfill: SDIN-14, Rose Mallow Ave and N Pinery Pkwy	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
547	Storm Inlet Backfill: SDIN-14, Rose Mallow Ave and N Pinery Pkwy	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000054
11/14/2019
Report Date: 12/3/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
548		11/14/19	5	698A	SC	13.5	114.5	13.9	114.3	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
548	Storm Inlet Backfill: SDIN-14, Rose Mallow Ave and N Pinery Pkwy	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **548:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer manhole backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000055
11/16/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
549		11/16/19	2	698A	CL	15.0	112.0	15.7	111.4	8	99	95	0 / 4	A
550		11/16/19	2	698A	CL	15.0	112.0	16.5	110.2	8	98	95	0 / 4	A
551		11/16/19	2	698A	CL	15.0	112.0	16.7	110.3	8	98	95	0 / 4	A
552		11/16/19	2	698A	CL	15.0	112.0	17.2	109.6	8	98	95	0 / 4	A
553		11/16/19	2	698A	CL	15.0	112.0	16.8	110.1	8	98	95	0 / 4	A
554		11/16/19	2	698A	CL	15.0	112.0	17.0	110.2	8	98	95	0 / 4	A
555		11/16/19	2	698A	CL	15.0	112.0	16.9	110.2	8	98	95	0 / 4	A
556		11/16/19	2	698A	CL	15.0	112.0	17.6	109.8	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
549	Storm Inlet Backfill: SDIN-15. Bird's Foot Trl and Rose Mallow Ave. N side of inlet.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
550	Storm Inlet Backfill: SDIN-15. Bird's Foot Trl and Rose Mallow Ave. N side of inlet.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
551	Storm Inlet Backfill: SDIN-15. Bird's Foot Trl and Rose Mallow Ave. S side of inlet.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
552	Storm Inlet Backfill: SDIN-15. Bird's Foot Trl and Rose Mallow Ave. S side of inlet.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
553	Storm Inlet Backfill: SDIN-15. Bird's Foot Trl and Rose Mallow Ave. S side of inlet.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
554	Storm Inlet Backfill: SDIN-14. Bird's Foot Trl and Rose Mallow Ave. N side of inlet.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
555	Storm Inlet Backfill: SDIN-14. Bird's Foot Trl and Rose Mallow Ave. N side of inlet.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
556	Storm Inlet Backfill: SDIN-14. Bird's Foot Trl and Rose Mallow Ave. S side of inlet.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000055
11/16/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
557		11/16/19	2	698A	CL	15.0	112.0	17.4	109.8	8	98	95	0 / 4	A
558		11/16/19	2	698A	CL	15.0	112.0	17.7	109.7	8	98	95	0 / 4	A
559		11/16/19	2	698A	CL	15.0	112.0	17.7	109.7	8	98	95	0 / 4	A
560		11/16/19	2	698A	CL	15.0	112.0	17.5	109.9	8	98	95	0 / 4	A
561		11/16/19	2	698A	CL	15.0	112.0	17.1	110.2	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
557	Storm Inlet Backfill: SDIN-14. Bird's Foot Trl and Rose Mallow Ave. S side of inlet.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
558	Storm Inlet Backfill: SDIN-14. Bird's Foot Trl and Rose Mallow Ave. N side of inlet.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
559	Storm Manhole Backfill: SDMH- 125. Rose Mallow Ave. 1' E of E side.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
560	Storm Manhole Backfill: SDMH- 125. Rose Mallow Ave. 1' E of E side.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
561	Storm Manhole Backfill: SDMH- 125. Rose Mallow Ave. 1' W of W side.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **561:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer manhole and inlet backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000056
11/19/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
562		11/19/19	4	698A	CL	16.0	109.0	17.5	108.0	8	99	95	0 / 4	A
563		11/19/19	4	698A	CL	16.0	109.0	17.3	107.8	8	99	95	0 / 4	A
564		11/19/19	4	698A	CL	16.0	109.0	17.9	107.0	8	98	95	0 / 4	A
565		11/19/19	4	698A	CL	16.0	109.0	18.0	106.8	8	98	95	0 / 4	A
566		11/19/19	4	698A	CL	16.0	109.0	17.9	107.7	8	99	95	0 / 4	A
567		11/19/19	4	698A	CL	16.0	109.0	17.1	107.7	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
562	Storm Sewer Trench Backfill: Mainline. Bird's Foot Ave. 85' E of SDMH-164.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
563	Storm Sewer Trench Backfill: Mainline. Bird's Foot Ave. 85' E of SDMH-164.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
564	Storm Sewer Trench Backfill: Mainline. Bird's Foot Ave. 100' E of SDMH-164.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
565	Storm Sewer Trench Backfill: Mainline. Bird's Foot Ave. 50' E of SDMH-164.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
566	Storm Sewer Trench Backfill: Mainline. Bird's Foot Ave. 50' E of SDMH-164.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
567	Storm Sewer Trench Backfill: Mainline. Bird's Foot Ave. 50' E of SDMH-164.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **567:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer manhole and inlet backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Compaction Test Report

Report #: SNG-000057
11/20/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
568		11/20/19	2	698A	CL	15.0	112.0	17.7	109.7	8	98	95	0 / 4	A
569		11/20/19	2	698A	CL	15.0	112.0	17.1	110.1	8	98	95	0 / 4	A
570		11/20/19	2	698A	CL	15.0	112.0	17.1	109.5	8	98	95	0 / 4	A
571		11/20/19	2	698A	CL	15.0	112.0	17.6	109.9	8	98	95	0 / 4	A
572		11/20/19	2	698A	CL	15.0	112.0	17.6	109.4	8	98	95	0 / 4	A
573		11/20/19	2	698A	CL	15.0	112.0	17.7	109.8	8	98	95	0 / 4	A
574		11/20/19	2	698A	CL	15.0	112.0	16.8	110.4	8	99	95	0 / 4	A
575		11/20/19	2	698A	CL	15.0	112.0	17.5	110.0	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
568	Storm Inlet Backfill: SDMH-124. Bird's Foot Trl and Rose Mallow Ave. 1' N of N side.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
569	Storm Inlet Backfill: SDMH-124. Bird's Foot Trl and Rose Mallow Ave. 1' E of E side.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
570	Storm Inlet Backfill: SDMH-124. Bird's Foot Trl and Rose Mallow Ave. 1' W of W side.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
571	Storm Inlet Backfill: SDIN-20. Bird's Foot Trl and Rose Mallow Ave. 1' W of W side.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
572	Storm Inlet Backfill: SDIN-20. Bird's Foot Trl and Rose Mallow Ave. S side of Inlet.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
573	Storm Inlet Backfill: SDIN-20. Bird's Foot Trl and Rose Mallow Ave. N side of Inlet.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
574	Storm Inlet Backfill: SDIN-20. Bird's Foot Trl and Rose Mallow Ave. E side of Inlet.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
575	Storm Inlet Backfill: SDIN-20. Bird's Foot Trl and Rose Mallow Ave. W side of Inlet.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Compaction Test Report

Report #: SNG-000057
11/20/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
576		11/20/19	2	698A	CL	15.0	112.0	17.5	109.6	8	98	95	0 / 4	A
577		11/20/19	2	698A	CL	15.0	112.0	17.1	110.3	8	98	95	0 / 4	A
578		11/20/19	2	698A	CL	15.0	112.0	17.8	109.6	8	98	95	0 / 4	A
579		11/20/19	2	698A	CL	15.0	112.0	17.5	109.6	8	98	95	0 / 4	A
580		11/20/19	2	698A	CL	15.0	112.0	17.8	109.7	8	98	95	0 / 4	A
581		11/20/19	2	698A	CL	15.0	112.0	17.1	109.9	8	98	95	0 / 4	A
582		11/20/19	2	698A	CL	15.0	112.0	17.2	110.0	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
576	Storm Inlet Backfill: SDIN-20. Bird's Foot Trl and Rose Mallow Ave. N side of Inlet.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
577	Storm Inlet Backfill: SDIN-20. Bird's Foot Trl and Rose Mallow Ave. N side of Inlet.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
578	Storm Sewer Trench Backfill: Mainline. Bird's Foot Trl. 40' SE of SDMH-163.	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
579	Storm Sewer Trench Backfill: Mainline. Bird's Foot Trl. 40' SE of SDMH-163.	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
580	Storm Sewer Trench Backfill: Mainline. Bird's Foot Trl. 60' SE of SDMH-163.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
581	Storm Sewer Trench Backfill: Mainline. Bird's Foot Trl. 60' SE of SDMH-163.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
582	Storm Sewer Trench Backfill: Mainline. Bird's Foot Trl. 35' SE of SDMH-163.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **582:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer manhole and inlet backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000058
11/25/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
583		11/25/19	8	698A	CL	18.0	109.0	19.4	106.1	8	97	95	0 / 4	A
584		11/25/19	8	698A	CL	18.0	109.0	19.7	105.6	8	97	95	0 / 4	A
585		11/25/19	8	698A	CL	18.0	109.0	20.0	105.9	8	97	95	0 / 4	A
586		11/25/19	8	698A	CL	18.0	109.0	18.8	105.9	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
583	Storm Sewer Trench Backfill: Mainline. Bird's Foot Trl. 60' E of SDMH-162.	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
584	Storm Sewer Trench Backfill: Mainline. Bird's Foot Trl. 60' E of SDMH-162.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
585	Storm Sewer Trench Backfill: Mainline. Bird's Foot Trl. 45' E of SDMH-162.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
586	Storm Sewer Trench Backfill: Mainline. Bird's Foot Trl. 45' E of SDMH-162.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **586:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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1971 West 12th Avenue
Denver, CO 80204
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Compaction Test Report

Report #: SNG-000059
12/06/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
587		12/6/19	2	698A	CL	15.0	112.0	17.7	110.3	8	98	95	0 / 4	A
588		12/6/19	2	698A	CL	15.0	112.0	17.6	110.0	8	98	95	0 / 4	A
589		12/6/19	2	698A	CL	15.0	112.0	17.4	109.8	8	98	95	0 / 4	A
590		12/6/19	2	698A	CL	15.0	112.0	16.9	110.1	8	98	95	0 / 4	A
591		12/6/19	2	698A	CL	15.0	112.0	17.0	110.3	8	98	95	0 / 4	A
592		12/6/19	2	698A	CL	15.0	112.0	17.7	109.8	8	98	95	0 / 4	A
593		12/6/19	2	698A	CL	15.0	112.0	16.9	110.3	8	98	95	0 / 4	A
594		12/6/19	2	698A	CL	15.0	112.0	18.1	109.3	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
587	Storm Manhole Backfill: SDMH-163. Bird's Foot Ave. 1' N of N side.	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
588	Storm Manhole Backfill: SDMH-163. Bird's Foot Ave. 1' S of S side.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
589	Storm Manhole Backfill: SDMH-163. Bird's Foot Ave. 1' E of E side.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
590	Storm Manhole Backfill: SDMH-163. Bird's Foot Ave. 1' W of W side.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
591	Storm Manhole Backfill: SDMH-163. Bird's Foot Ave. 1' N of N side.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
592	Storm Manhole Backfill: SDMH-163. Bird's Foot Ave. 1' S of S side.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
593	Storm Manhole Backfill: SDMH-164. Bird's Foot Ave. 1' W of W side.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
594	Storm Manhole Backfill: SDMH-164. Bird's Foot Ave. 1' E of E side.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000059
12/06/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
595		12/6/19	2	698A	CL	15.0	112.0	17.0	110.4	8	99	95	0 / 4	A
596		12/6/19	2	698A	CL	15.0	112.0	16.8	110.2	8	98	95	0 / 4	A
597		12/6/19	2	698A	CL	15.0	112.0	17.9	109.6	8	98	95	0 / 4	A
598		12/6/19	2	698A	CL	15.0	112.0	16.8	109.9	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
595	Storm Manhole Backfill: SDMH-164. Bird's Foot Ave. 1' S of S side.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
596	Storm Manhole Backfill: SDMH-164. Bird's Foot Ave. 1' E of E side.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
597	Storm Manhole Backfill: SDMH-164. Bird's Foot Ave. 1' N of N side.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
598	Storm Manhole Backfill: SDMH-164. Bird's Foot Ave. 1' W of W side.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **598:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer trench backfill. We observed the contractor process/place fill with the excavator and apply compactive effort with the sheepsfoot roller. Application of moisture was not required.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000060
12/07/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
599		12/7/19	2	698A	CL	15.0	112.0	17.4	109.6	8	98	95	NA	E

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
599	Cancelled on Site: Storm sewer trench backfill			XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
E: Test number for data entry purposes only.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **599:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer trench backfill. Testing was cancelled on site.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000061
12/09/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
600		12/9/19	5	698A	SC	13.5	114.5	13.8	114.6	8	100	100	-2 / 2	A
601		12/9/19	5	698A	SC	13.5	114.5	13.5	114.4	8	100	100	-2 / 2	A
602		12/9/19	5	698A	SC	13.5	114.5	13.6	114.3	8	100	100	-2 / 2	A
603		12/9/19	5	698A	SC	13.5	114.5	13.6	114.6	8	100	100	-2 / 2	A
604		12/9/19	5	698A	SC	13.5	114.5	13.2	114.6	8	100	100	-2 / 2	A
605		12/9/19	5	698A	SC	13.5	114.5	13.1	114.6	8	100	100	-2 / 2	A
606		12/9/19	5	698A	SC	13.5	114.5	13.4	114.8	8	100	100	-2 / 2	A
607		12/9/19	5	698A	SC	13.5	114.5	13.0	114.9	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
600	Storm Manhole Backfill: SDMH-118. Shasta Daisy St and Bird's Foot Trl. 1' S of S side.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
601	Storm Manhole Backfill: SDMH-118. Shasta Daisy St and Bird's Foot Trl. 1' N of N side.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
602	Storm Manhole Backfill: SDMH-118. Shasta Daisy St and Bird's Foot Trl. 1' E of E side.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
603	Storm Sewer Trench Backfill: Mainline. 30' E of SDMH-118. Shasta Daisy St and Bird's Foot Trl.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
604	Storm Sewer Trench Backfill: Mainline. 30' E of SDMH-118. Shasta Daisy St and Bird's Foot Trl.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
605	Storm Sewer Trench Backfill: Mainline. 30' E of SDMH-118. Shasta Daisy St and Bird's Foot Trl.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
606	Storm Manhole Backfill: SDMH-117. Shasta Daisy St and Bird's Foot Trl. 1' W of W side.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
607	Storm Manhole Backfill: SDMH-117. Shasta Daisy St and Bird's Foot Trl. 1' E of E side.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000061
12/09/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
608		12/9/19	5	698A	SC	13.5	114.5	13.2	114.8	8	100	100	-2 / 2	A
609		12/9/19	5	698A	SC	13.5	114.5	12.8	114.3	8	100	100	-2 / 2	A
610		12/9/19	5	698A	SC	13.5	114.5	13.1	114.9	8	100	100	-2 / 2	A
611		12/9/19	5	698A	SC	13.5	114.5	13.5	114.6	8	100	100	-2 / 2	A
612		12/9/19	5	698A	SC	13.5	114.5	13.6	114.6	8	100	100	-2 / 2	A
613		12/9/19	5	698A	SC	13.5	114.5	13.1	114.9	8	100	100	-2 / 2	A
614		12/9/19	2	698A	CL	15.0	112.0	17.5	109.4	8	98	95	0 / 4	A
615		12/9/19	2	698A	CL	15.0	112.0	17.6	109.4	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
608	Storm Manhole Backfill: SDMH-117. Shasta Daisy St and Bird's Foot Trl. 1' S of S side.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
609	Storm Manhole Backfill: SDMH-116. Shasta Daisy St and Bird's Foot Trl. 1' N of N side.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
610	Storm Manhole Backfill: SDMH-116. Shasta Daisy St and Bird's Foot Trl. 1' E of E side.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
611	Storm Manhole Backfill: SDMH-116. Shasta Daisy St and Bird's Foot Trl. 1' N of N side.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
612	Storm Sewer Trench Backfill: Mainline. 50' W of SDMH-116. Shasta Daisy St and Bird's Foot Trl.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
613	Storm Sewer Trench Backfill: Mainline. 50' W of SDMH-116. Shasta Daisy St and Bird's Foot Trl.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
614	Storm Manhole Backfill: SDMH-162. Bird's Foot Ave W of Rose Mallow Ave. 1' N of N side.	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
615	Storm Manhole Backfill: SDMH-162. Bird's Foot Ave W of Rose Mallow Ave. 1' S of S side.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000061
12/09/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
616		12/9/19	2	698A	CL	15.0	112.0	17.9	109.6	8	98	95	0 / 4	A
617		12/9/19	2	698A	CL	15.0	112.0	17.2	109.4	8	98	95	0 / 4	A
618		12/9/19	2	698A	CL	15.0	112.0	16.9	109.9	8	98	95	0 / 4	A
619		12/9/19	2	698A	CL	15.0	112.0	18.0	109.4	8	98	95	0 / 4	A
620		12/9/19	2	698A	CL	15.0	112.0	16.9	110.0	8	98	95	0 / 4	A
621		12/9/19	2	698A	CL	15.0	112.0	17.3	110.1	8	98	95	0 / 4	A
622		12/9/19	2	698A	CL	15.0	112.0	17.0	109.8	8	98	95	0 / 4	A
623		12/9/19	2	698A	CL	15.0	112.0	17.7	109.8	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
616	Storm Manhole Backfill: SDMH-162. Bird's Foot Ave W of Rose Mallow Ave. 1' E of E side.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
617	Storm Manhole Backfill: SDMH-162. Bird's Foot Ave W of Rose Mallow Ave. 1' W of W side.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
618	Storm Manhole Backfill: SDMH-162. Bird's Foot Ave W of Rose Mallow Ave. 1' N of N side.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
619	Storm Manhole Backfill: SDMH-162. Bird's Foot Ave W of Rose Mallow Ave. 1' S of S side.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
620	Storm Manhole Backfill: SDMH-162. Bird's Foot Ave W of Rose Mallow Ave. 1' E of E side.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
621	Storm Manhole Backfill: SDMH-162. Bird's Foot Ave W of Rose Mallow Ave. 1' W of W side.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
622	Storm Sewer Trench Backfill: Mainline. 50' NW of SDMH-163. Bird's Foot Ave W of Rose Mallow Ave.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
623	Storm Sewer Trench Backfill: Mainline. 50' NW of SDMH-163. Bird's Foot Ave W of Rose Mallow Ave.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000061
12/09/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
624		12/9/19	2	698A	CL	15.0	112.0	16.9	109.8	8	98	95	0 / 4	A
625		12/9/19	2	698A	CL	15.0	112.0	16.6	110.1	8	98	95	0 / 4	A
626		12/9/19	2	698A	CL	15.0	112.0	17.0	109.1	8	97	95	0 / 4	A
627		12/9/19	2	698A	CL	15.0	112.0	17.1	109.8	8	98	95	0 / 4	A
628		12/9/19	8	698A	CL	18.0	109.0	18.3	107.7	8	99	95	0 / 4	A
629		12/9/19	8	698A	CL	18.0	109.0	18.2	107.4	8	99	95	0 / 4	A
630		12/9/19	8	698A	CL	18.0	109.0	19.2	106.4	8	98	95	0 / 4	A
631		12/9/19	8	698A	CL	18.0	109.0	19.3	106.4	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
624	Storm Sewer Trench Backfill: Mainline. 50' NW of SDMH-163. Bird's Foot Ave W of Rose Mallow Ave.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
625	Storm Sewer Trench Backfill: Mainline. 50' NW of SDMH-163. Bird's Foot Ave W of Rose Mallow Ave.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
626	Storm Sewer Trench Backfill: Mainline. 50' NW of SDMH-163. Bird's Foot Ave W of Rose Mallow Ave.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
627	Storm Sewer Trench Backfill: Mainline. 50' NW of SDMH-163. Bird's Foot Ave W of Rose Mallow Ave.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
628	Storm Sewer Trench Backfill: Mainline. 50' S of SDMH-30. Bird's Foot Ave W of Rose Mallow Ave.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
629	Storm Sewer Trench Backfill: Mainline. 50' S of SDMH-30. Bird's Foot Ave W of Rose Mallow Ave.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
630	Storm Sewer Trench Backfill: Mainline. 50' S of SDMH-30. Bird's Foot Ave W of Rose Mallow Ave.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
631	Storm Sewer Trench Backfill: Mainline. 60' S of SDMH-30. Bird's Foot Ave W of Rose Mallow Ave.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000061
12/09/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
632		12/9/19	8	698A	CL	18.0	109.0	19.5	106.6	8	98	95	0 / 4	A
633		12/9/19	8	698A	CL	18.0	109.0	19.8	105.6	8	97	95	0 / 4	A
634		12/9/19	8	698A	CL	18.0	109.0	19.0	106.9	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
632	Storm Sewer Trench Backfill: Mainline. 60' S of SDMH-30. Bird's Foot Ave W of Rose Mallow Ave.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
633	Storm Sewer Trench Backfill: Mainline. 60' S of SDMH-30. Bird's Foot Ave W of Rose Mallow Ave.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
634	Storm Sewer Trench Backfill: Mainline. 60' S of SDMH-30. Bird's Foot Ave W of Rose Mallow Ave.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **634:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader and rex compactor.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
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Compaction Test Report

Report #: SNG-000062
12/10/2019
Report Date: 12/23/2019
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
635		12/10/19	8	698A	CL	18.0	109.0	19.1	107.1	8	98	95	0 / 4	A
636		12/10/19	8	698A	CL	18.0	109.0	19.3	106.7	8	98	95	0 / 4	A
637		12/10/19	8	698A	CL	18.0	109.0	19.4	106.2	8	97	95	0 / 4	A
638		12/10/19	8	698A	CL	18.0	109.0	19.2	107.1	8	98	95	0 / 4	A
639		12/10/19	8	698A	CL	18.0	109.0	19.5	106.0	8	97	95	0 / 4	A
640		12/10/19	8	698A	CL	18.0	109.0	19.8	106.9	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
635	Storm Sewer Trench Backfill: Mainline. Rose Mallow Ave. 65' E of Hop Clover Ave	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
636	Storm Sewer Trench Backfill: Mainline. Rose Mallow Ave. 65' E of Hop Clover Ave	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
637	Storm Sewer Trench Backfill: Mainline. Rose Mallow Ave. 65' E of Hop Clover Ave	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
638	Storm Sewer Trench Backfill: Mainline. Rose Mallow Ave. 65' E of Hop Clover Ave	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
639	Storm Sewer Trench Backfill: Mainline. Rose Mallow Ave. 65' E of Hop Clover Ave	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
640	Storm Sewer Trench Backfill: Mainline. Rose Mallow Ave. 65' E of Hop Clover Ave	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **640:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer trench backfill. We observed the contractor process/place and compact the fill with the loader. Application of moisture was not required.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000063
12/13/2019
Report Date: 1/3/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
641		12/13/19	5	698A	SC	13.5	114.5	14.0	114.3	8	100	100	-2 / 2	A
642		12/13/19	5	698A	SC	13.5	114.5	13.8	114.1	8	100	100	-2 / 2	A
643		12/13/19	5	698A	SC	13.5	114.5	13.6	114.4	8	100	100	-2 / 2	A
644		12/13/19	2	698A	CL	15.0	112.0	17.4	108.6	8	97	95	0 / 4	A
645		12/13/19	2	698A	CL	15.0	112.0	17.4	109.2	8	98	95	0 / 4	A
646		12/13/19	2	698A	CL	15.0	112.0	17.8	109.1	8	97	95	0 / 4	A
647		12/13/19	2	698A	CL	15.0	112.0	17.2	108.7	8	97	95	0 / 4	A
648		12/13/19	2	698A	CL	15.0	112.0	17.3	109.2	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
641	Storm Inlet Backfill: SDIN-27. S side Shasta Daisy St. & Hop Clover Trl.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
642	Storm Inlet Backfill: SDIN-27. S side Shasta Daisy St. & Hop Clover Trl.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
643	Storm Inlet Backfill: SDIN-27. S side Shasta Daisy St. & Hop Clover Trl.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
644	Storm Manhole Backfill: SDMH-165. Bird's Foot Trl. & Hop Clover Ave. 1' N of N side.	10.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
645	Storm Manhole Backfill: SDMH-165. Bird's Foot Trl. & Hop Clover Ave. 1' S of S side.	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
646	Storm Manhole Backfill: SDMH-165. Bird's Foot Trl. & Hop Clover Ave. 1' E of E side.	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
647	Storm Manhole Backfill: SDMH-165. Bird's Foot Trl. & Hop Clover Ave. 1' W of W side.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
648	Storm Manhole Backfill: SDMH-165. Bird's Foot Trl. & Hop Clover Ave. 1' N of N side.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000063
12/13/2019
Report Date: 1/3/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
649		12/13/19	2	698A	CL	15.0	112.0	17.3	109.1	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
649	Storm Manhole Backfill: SDMH-165. Bird's Foot Trl. & Hop Clover Ave. 1' S of S side.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **649:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm drain/manhole backfill. We observed the contractor process/place fill with the loaders, add moisture with the water truck, and apply compactive effort with the loader and rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000064
12/16/2019
Report Date: 1/3/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
650		12/16/19	2	698A	CL	15.0	112.0	17.1	109.1	8	97	95	0 / 4	A
651		12/16/19	2	698A	CL	15.0	112.0	18.0	108.6	8	97	95	0 / 4	A
652		12/16/19	2	698A	CL	15.0	112.0	17.0	109.3	8	98	95	0 / 4	A
653		12/16/19	2	698A	CL	15.0	112.0	16.9	109.1	8	97	95	0 / 4	A
654		12/16/19	2	698A	CL	15.0	112.0	17.5	109.1	8	97	95	0 / 4	A
655		12/16/19	2	698A	CL	15.0	112.0	18.3	108.3	8	97	95	0 / 4	A
656		12/16/19	2	698A	CL	15.0	112.0	17.2	108.9	8	97	95	0 / 4	A
657		12/16/19	2	698A	CL	15.0	112.0	17.7	109.2	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
650	Storm Inlet Backfill: SDIN -27. S side Shasta Daisy St & Hop Clover Trl.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
651	Storm Inlet Backfill: SDIN -27. S side Shasta Daisy St & Hop Clover Trl.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
652	Storm Inlet Backfill: SDIN -28. S side Shasta Daisy St & Hop Clover Trl.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
653	Storm Inlet Backfill: SDIN -28. S side Shasta Daisy St & Hop Clover Trl.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
654	Storm Inlet Backfill: SDIN -28. S side Shasta Daisy St & Hop Clover Trl.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
655	Storm Inlet Backfill: SDIN -28. S side Shasta Daisy St & Hop Clover Trl.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
656	Storm Inlet Backfill: SDIN -28. S side Shasta Daisy St & Hop Clover Trl.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
657	Storm Manhole Backfill: SDMH -32. S side Shasta Daisy St & Hop Clover Trl.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **657:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm drain manhole and inlet backfill. We observed the contractor process/place fill with the loaders, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000065
12/18/2019
Report Date: 1/3/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
658		12/18/19	9	698A	CL	20.5	103.5	22.0	101.9	8	98	95	0 / 4	A
659		12/18/19	9	698A	CL	20.5	103.5	21.6	101.9	8	98	95	0 / 4	A
660		12/18/19	9	698A	CL	20.5	103.5	22.4	101.3	8	98	95	0 / 4	A
661		12/18/19	9	698A	CL	20.5	103.5	22.7	101.3	8	98	95	0 / 4	A
662		12/18/19	9	698A	CL	20.5	103.5	22.1	101.7	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
658	Storm Manhole Backfill: SDMH-165. Bird's Foot Trl and Hop Clover Ave. 1' E of E side.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
659	Storm Manhole Backfill: SDMH-165. Bird's Foot Trl and Hop Clover Ave. 1' W of W side.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
660	Storm Manhole Backfill: SDMH-165. Bird's Foot Trl and Hop Clover Ave. 1' N of N side.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
661	Storm Manhole Backfill: SDMH-165. Bird's Foot Trl and Hop Clover Ave. 1' S of S side.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
662	Storm Manhole Backfill: SDMH-165. Bird's Foot Trl and Hop Clover Ave. 1' W of W side.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **662:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm manhole backfill. We observed the contractor process/place fill with the loaders, add moisture with the water truck, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Compaction Test Report

Report #: SNG-000066
12/24/2019
Report Date: 1/3/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
663		12/24/19	8	698A	CL	18.0	109.0	18.3	106.2	8	97	95	0 / 3	A
664		12/24/19	8	698A	CL	18.0	109.0	18.4	106.0	8	97	95	0 / 4	A
665		12/24/19	8	698A	CL	18.0	109.0	18.3	106.5	8	98	95	0 / 4	A
666		12/24/19	8	698A	CL	18.0	109.0	18.5	106.5	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
663	Storm Manhole Backfill: SDMH:#113. W of SE corner of intersection Birds Foot Ln. & Hop Clover Ave.	4.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
664	Storm Manhole Backfill: SDMH:#113. W of SE corner of intersection Birds Foot Ln. & Hop Clover Ave.	3.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
665	Storm Manhole Backfill: SDMH:#113. W of SE corner of intersection Birds Foot Ln. & Hop Clover Ave.	2.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
666	Storm Manhole Backfill: SDMH:#113. W of SE corner of intersection Birds Foot Ln. & Hop Clover Ave.	1.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **666:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test storm sewer manhole backfill. We observed the contractor process/place fill with the loader and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Compaction Test Report

Report #: SNG-000067
12/26/2019
Report Date: 1/3/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
667		12/26/19	10	698A	CL	19.0	106.0	19.8	104.8	8	99	95	0 / 4	A
668		12/26/19	10	698A	CL	19.0	106.0	19.3	105.2	8	99	95	0 / 4	A
669		12/26/19	10	698A	CL	19.0	106.0	20.6	104.9	8	99	95	0 / 4	A
670		12/26/19	10	698A	CL	19.0	106.0	20.6	104.9	8	99	95	0 / 4	A
671		12/26/19	10	698A	CL	19.0	106.0	19.4	105.3	8	99	95	0 / 4	A
672		12/26/19	10	698A	CL	19.0	106.0	21.0	104.3	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
667	Storm Manhole Backfill: Storm sewer. SDMH#:114 - 15 ' SE of intersection of Hop Clover Ave. & Shasta Faisy St.	6.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
668	Storm Manhole Backfill: Storm sewer. SDMH#:114 -15 ' SE of intersection of Hop Clover Ave. & Shasta Daisy St.	5.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
669	Storm Manhole Backfill: Storm sewer. SDMH#:114 - 15' SE of intersection of Hop Clover Ave. & Shasta Daisy St.	4.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
670	Storm Manhole Backfill: Storm sewer. SDMH#:114 - 15' SE of intersection of Hop Clover Ave. & Shasta Daisy St.	3.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
671	Storm Manhole Backfill: Storm sewer. SDMH#:114 -15' SE of intersection of Hop Clover Ave. & Shasta Daisy St.	2.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean
672	Storm Manhole Backfill: Storm sewer. SDMH#:114 - 15' SE of intersection of Hop Clover Ave. & Shasta Daisy St.	1.0	BG	XPLORER / 3500 / 2415 / 9/17/2019	Smith, Sean

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **672:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test storm sewer manhole backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Compaction Test Report

Report #: SNG-000068
01/02/2020
Report Date: 1/27/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
673		1/2/20	4	698A	CL	16.0	109.0	17.6	107.7	8	99	95	0 / 4	A
674		1/2/20	4	698A	CL	16.0	109.0	18.0	107.7	8	99	95	0 / 4	A
675		1/2/20	4	698A	CL	16.0	109.0	18.3	106.6	8	98	95	0 / 4	A
676		1/2/20	4	698A	CL	16.0	109.0	18.4	106.3	8	98	95	0 / 4	A
677		1/2/20	4	698A	CL	16.0	109.0	18.1	106.9	8	98	95	0 / 4	A
678		1/2/20	4	698A	CL	16.0	109.0	18.0	106.5	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
673	Storm Sewer Trench Backfill: Mainline. Hop Clover Ave. 120' E of Rose Mallow Ave.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
674	Storm Sewer Trench Backfill: Mainline. Hop Clover Ave. 120' E of Rose Mallow Ave.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
675	Storm Sewer Trench Backfill: Mainline. Hop Clover Ave. 100' E of Rose Mallow Ave.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
676	Storm Sewer Trench Backfill: Mainline. Hop Clover Ave. 100' E of Rose Mallow Ave.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
677	Storm Sewer Trench Backfill: Mainline. Hop Clover Ave. 130' E of Rose Mallow Ave.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
678	Storm Sewer Trench Backfill: Mainline. Hop Clover Ave. 130' E of Rose Mallow Ave.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **678:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort to the fill with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000069
01/06/2020
Report Date: 1/27/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
679		1/6/20	9	698A	CL	20.5	103.5	21.7	101.7	8	98	95	0 / 4	A
680		1/6/20	9	698A	CL	20.5	103.5	21.7	101.5	8	98	95	0 / 4	A
681		1/6/20	9	698A	CL	20.5	103.5	22.2	101.5	8	98	95	0 / 4	A
682		1/6/20	9	698A	CL	20.5	103.5	21.4	101.8	8	98	95	0 / 4	A
683		1/6/20	9	698A	CL	20.5	103.5	22.2	101.1	8	98	95	0 / 4	A
684		1/6/20	4	698A	CL	16.0	109.0	17.8	107.1	8	98	95	0 / 4	A
685		1/6/20	4	698A	CL	16.0	109.0	17.8	107.0	8	98	95	0 / 4	A
686		1/6/20	4	698A	CL	16.0	109.0	18.3	106.3	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
679	Storm Inlet Backfill: SDIN-18. Shasta Daisy St and N. Pinery Pkwy. W side of Inlet.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
680	Storm Inlet Backfill: SDIN-18. Shasta Daisy St and N. Pinery Pkwy. W side of Inlet.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
681	Storm Inlet Backfill: SDIN-18. Shasta Daisy St and N. Pinery Pkwy. W side of Inlet.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
682	Storm Inlet Backfill: SDIN-18. Shasta Daisy St and N. Pinery Pkwy. W side of Inlet.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
683	Storm Inlet Backfill: SDIN-18. Shasta Daisy St and N. Pinery Pkwy. W side of Inlet.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
684	Storm Inlet Backfill: SDIN-23. Rose Mallow Ave and Bird's Foot Ave. W side of Inlet.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
685	Storm Inlet Backfill: SDIN-23. Rose Mallow Ave and Bird's Foot Ave. W side of Inlet.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
686	Storm Inlet Backfill: SDIN-23. Rose Mallow Ave and Bird's Foot Ave. W side of Inlet.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000069
01/06/2020
Report Date: 1/27/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
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Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
687		1/6/20	4	698A	CL	16.0	109.0	18.3	106.8	8	98	95	0 / 4	A
688		1/6/20	4	698A	CL	16.0	109.0	17.5	107.6	8	99	95	0 / 4	A
689		1/6/20	4	698A	CL	16.0	109.0	17.7	106.8	8	98	95	0 / 4	A
690		1/6/20	4	698A	CL	16.0	109.0	17.5	107.5	8	99	95	0 / 4	A
691		1/6/20	4	698A	CL	16.0	109.0	17.3	107.6	8	99	95	0 / 4	A
692		1/6/20	4	698A	CL	16.0	109.0	18.1	107.4	8	99	95	0 / 4	A
693		1/6/20	4	698A	CL	16.0	109.0	18.0	106.9	8	98	95	0 / 4	A
694		1/6/20	4	698A	CL	16.0	109.0	17.4	106.8	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
687	Storm Inlet Backfill: SDIN-23. Rose Mallow Ave and Bird's Foot Ave. W side of Inlet.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
688	Storm Inlet Backfill: SDIN-23. Rose Mallow Ave and Bird's Foot Ave. W side of Inlet.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
689	Storm Inlet Backfill: SDIN-23. Rose Mallow Ave and Bird's Foot Ave. W side of Inlet.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
690	Storm Inlet Backfill: SDIN-22. Rose Mallow Ave and Bird's Foot Ave. W side of Inlet.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
691	Storm Inlet Backfill: SDIN-22. Rose Mallow Ave and Bird's Foot Ave. W side of Inlet.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
692	Storm Inlet Backfill: SDIN-22. Rose Mallow Ave and Bird's Foot Ave. W side of Inlet.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
693	Storm Inlet Backfill: SDIN-22. Rose Mallow Ave and Bird's Foot Ave. W side of Inlet.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
694	Storm Inlet Backfill: SDIN-22. Rose Mallow Ave and Bird's Foot Ave. W side of Inlet.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000069
01/06/2020
Report Date: 1/27/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
695		1/6/20	4	698A	CL	16.0	109.0	18.2	106.1	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
695	Storm Inlet Backfill: SDIN-22. Rose Mallow Ave and Bird's Foot Ave. W side of Inlet.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **695:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer inlet backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort to the fill with the sheepsfoot roller.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000070
01/08/2020
Report Date: 1/27/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
696		1/8/20	9	698A	CL	20.5	103.5	21.5	101.8	8	98	95	0 / 4	A
697		1/8/20	9	698A	CL	20.5	103.5	21.7	101.5	8	98	95	0 / 4	A
698		1/8/20	9	698A	CL	20.5	103.5	21.3	102.2	8	99	95	0 / 4	A
699		1/8/20	9	698A	CL	20.5	103.5	21.9	101.4	8	98	95	0 / 4	A
700		1/8/20	9	698A	CL	20.5	103.5	22.1	101.4	8	98	95	0 / 4	A
701		1/8/20	9	698A	CL	20.5	103.5	22.7	101.2	8	98	95	0 / 4	A
702		1/8/20	8	698A	CL	18.0	109.0	19.1	106.7	8	98	95	0 / 4	A
703		1/8/20	8	698A	CL	18.0	109.0	19.5	105.9	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
696	Storm Manhole Backfill: SDMH-161. Bird's Foot Ave and Rose Mallow Ave. 1' E of E side.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
697	Storm Manhole Backfill: SDMH-161. Bird's Foot Ave and Rose Mallow Ave. 1' W of W side.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
698	Storm Manhole Backfill: SDMH-161. Bird's Foot Ave and Rose Mallow Ave. 1' S of S side.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
699	Storm Manhole Backfill: SDMH-161. Bird's Foot Ave and Rose Mallow Ave. 1' N of N side.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
700	Storm Manhole Backfill: SDMH-161. Bird's Foot Ave and Rose Mallow Ave. 1' W of W side.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
701	Storm Manhole Backfill: SDMH-161. Bird's Foot Ave and Rose Mallow Ave. 1' E of E side.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
702	Storm Manhole Backfill: SDMH-114. Hop Clover Ave. Between Rose Mallow Ave and Bird's Foot Ln. 1' S of S side.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
703	Storm Manhole Backfill: SDMH-114. Hop Clover Ave. Between Rose Mallow Ave and Bird's Foot Ln. 1' N of N side.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000070
01/08/2020
Report Date: 1/27/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
704		1/8/20	8	698A	CL	18.0	109.0	18.7	106.3	8	98	95	0 / 4	A
705		1/8/20	8	698A	CL	18.0	109.0	19.3	106.3	8	98	95	0 / 4	A
706		1/8/20	8	698A	CL	18.0	109.0	19.7	106.4	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
704	Storm Manhole Backfill: SDMH-114. Hop Clover Ave. Between Rose Mallow Ave and Bird's Foot Ln. 1' E of E side.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
705	Storm Manhole Backfill: SDMH-114. Hop Clover Ave. Between Rose Mallow Ave and Bird's Foot Ln. 1' E of E side.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
706	Storm Manhole Backfill: SDMH-114. Hop Clover Ave. Between Rose Mallow Ave and Bird's Foot Ln. 1' W of W side.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **706:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer manhole backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort to the fill with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000071
01/10/2020
Report Date: 1/27/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
707		1/10/20	8	698A	CL	18.0	109.0	18.9	106.5	8	98	95	0 / 4	A
708		1/10/20	8	698A	CL	18.0	109.0	19.4	106.2	8	97	95	0 / 4	A
709		1/10/20	8	698A	CL	18.0	109.0	20.0	105.9	8	97	95	0 / 4	A
710		1/10/20	8	698A	CL	18.0	109.0	19.7	105.7	8	97	95	0 / 4	A
711		1/10/20	8	698A	CL	18.0	109.0	19.6	105.2	8	97	95	0 / 4	A
712		1/10/20	8	698A	CL	18.0	109.0	19.8	105.8	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
707	Storm Manhole Backfill: SDMH-122. Rose Mallow Ave and Hop Clover Ave. 1' W of W side.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
708	Storm Manhole Backfill: SDMH-122. Rose Mallow Ave and Hop Clover Ave. 1' E of E side.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
709	Storm Manhole Backfill: SDMH-122. Rose Mallow Ave and Hop Clover Ave. 1' N of N side.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
710	Storm Manhole Backfill: SDMH-122. Rose Mallow Ave and Hop Clover Ave. 1' S of S side.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
711	Storm Manhole Backfill: SDMH-122. Rose Mallow Ave and Hop Clover Ave. 1' E of E side.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
712	Storm Manhole Backfill: SDMH-122. Rose Mallow Ave and Hop Clover Ave. 1' W of W side.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000072
01/14/2020
Report Date: 1/27/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
713		1/14/20	4	698A	CL	16.0	109.0	17.8	104.6	10	96	95	0 / 4	A
714		1/14/20	5	698A	SC	13.5	114.5	13.0	114.8	8	100	100	-2 / 2	A
715		1/14/20	5	698A	SC	13.5	114.5	12.8	115.4	8	101	100	-2 / 2	A
716		1/14/20	8	698A	CL	18.0	109.0	19.7	105.7	8	97	95	0 / 4	A
717		1/14/20	8	698A	CL	18.0	109.0	19.9	105.9	8	97	95	0 / 4	A
718		1/14/20	8	698A	CL	18.0	109.0	19.5	105.8	8	97	95	0 / 4	A
719		1/14/20	8	698A	CL	18.0	109.0	19.0	106.9	8	98	95	0 / 4	A
720		1/14/20	8	698A	CL	18.0	109.0	19.5	105.8	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
713	Storm Sewer Trench Backfill: Mainline. North Pinery PKWY. STA 1+75, N of Pond D.	1.0	BG	XPLORER / 3500 / 1611 / 7/18/2019	Cazares, Angel
714	Storm Sewer Trench Backfill: Mainline. Far E end of N. Pinery Pkwy. 30' W of SDMH-83.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
715	Storm Sewer Trench Backfill: Mainline. Far E end of N. Pinery Pkwy. 30' W of SDMH-83.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
716	Storm Manhole Backfill: SDMH-78. Rose Mallow Ave and Bird's Foot Ave. 1' S of S end.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
717	Storm Manhole Backfill: SDMH-78. Rose Mallow Ave and Bird's Foot Ave. 1' N of N end.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
718	Storm Manhole Backfill: SDMH-78. Rose Mallow Ave and Bird's Foot Ave. 1' W of W end.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
719	Storm Manhole Backfill: SDMH-30. Rose Mallow Ave. 25' S of Rose Mallow Ave and Bird's Foot Ave. 1' E of E side.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
720	Storm Manhole Backfill: SDMH-30. Rose Mallow Ave. 25' S of Rose Mallow Ave and Bird's Foot Ave. 1' W of W side.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
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Compaction Test Report

Report #: SNG-000072
01/14/2020
Report Date: 1/27/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
721		1/14/20	8	698A	CL	18.0	109.0	19.0	105.8	8	97	95	0 / 4	A
722		1/14/20	8	698A	CL	18.0	109.0	19.6	105.6	8	97	95	0 / 4	A
723		1/14/20	3	698A	CL	16.0	111.0	17.2	109.4	8	99	95	0 / 4	A
724		1/14/20	3	698A	CL	16.0	111.0	17.8	108.2	8	97	95	0 / 4	A
725		1/14/20	3	698A	CL	16.0	111.0	18.1	108.4	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
721	Storm Manhole Backfill: SDMH-30. Rose Mallow Ave. 25' S of Rose Mallow Ave and Bird's Foot Ave. 1' N of N side.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
722	Storm Manhole Backfill: SDMH-30. Rose Mallow Ave. 25' S of Rose Mallow Ave and Bird's Foot Ave. 1' S of S side.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
723	Storm Manhole Backfill: SDMH-113. Hop Clover Ave. 120' W of Shasta Daisy St. 1' E of E side.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
724	Storm Manhole Backfill: SDMH-113. Hop Clover Ave. 120' W of Shasta Daisy St. 1' W of W side.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
725	Storm Manhole Backfill: SDMH-113. Hop Clover Ave. 120' W of Shasta Daisy St. 1' S of S side.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **725:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer trench/manhole backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort to the fill with the loader and rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

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Denver, CO 80204
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Compaction Test Report

Report #: SNG-000073
01/15/2020
Report Date: 1/27/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
726		1/15/20	4	698A	CL	16.0	109.0	19.1	105.0	10	96	95	0 / 4	A
727		1/15/20	4	698A	CL	16.0	109.0	19.0	104.6	10	96	95	0 / 4	A
728		1/15/20	4	698A	CL	16.0	109.0	18.3	104.1	10	96	95	0 / 4	A
729		1/15/20	4	698A	CL	16.0	109.0	19.1	104.2	10	96	95	0 / 4	A
730		1/15/20	4	698A	CL	16.0	109.0	16.5	105.7	10	97	95	0 / 4	A
731		1/15/20	4	698A	CL	16.0	109.0	16.0	106.3	10	98	95	0 / 4	A
732		1/15/20	4	698A	CL	16.0	109.0	16.1	106.5	10	98	95	0 / 4	A
733		1/15/20	4	698A	CL	16.0	109.0	17.2	105.1	10	96	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
726	Storm Sewer Trench Backfill: Mainline. North Pinery PKWY. 150' W of Manhole #83.	7.0	BG	XPLORER / 3500 / 1611 / 7/18/2019	Cazares, Angel
727	Storm Sewer Trench Backfill: Mainline. North Pinery PKWY. 150' W of Manhole #83.	6.0	BG	XPLORER / 3500 / 1611 / 7/18/2019	Cazares, Angel
728	Storm Sewer Trench Backfill: Mainline. North Pinery PKWY. 125' W of Manhole #83.	5.0	BG	XPLORER / 3500 / 1611 / 7/18/2019	Cazares, Angel
729	Storm Sewer Trench Backfill: Mainline. North Pinery PKWY. 125' W of Manhole #83.	4.0	BG	XPLORER / 3500 / 1611 / 7/18/2019	Cazares, Angel
730	Storm Sewer Trench Backfill: Mainline. North Pinery PKWY. 50' W of Manhole #83.	3.0	BG	XPLORER / 3500 / 1611 / 7/18/2019	Cazares, Angel
731	Storm Sewer Trench Backfill: Mainline. North Pinery PKWY. 50' W of Manhole #83.	2.0	BG	XPLORER / 3500 / 1611 / 7/18/2019	Cazares, Angel
732	Storm Sewer Trench Backfill: Mainline. North Pinery PKWY. 50' W of Manhole #83.	1.0	BG	XPLORER / 3500 / 1611 / 7/18/2019	Cazares, Angel
733	Storm Manhole Backfill: N of Storm Manhole #83. North Pinery PKWY. STA 1+82.8 W of Storm Manhole #84.	5.0	BG	XPLORER / 3500 / 1611 / 7/18/2019	Cazares, Angel

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000073
01/15/2020
Report Date: 1/27/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
734		1/15/20	4	698A	CL	16.0	109.0	16.1	105.0	10	96	95	0 / 4	A
735		1/15/20	4	698A	CL	16.0	109.0	17.2	105.5	10	97	95	0 / 4	A
736		1/15/20	4	698A	CL	16.0	109.0	17.6	104.8	10	96	95	0 / 4	A
737		1/15/20	4	698A	CL	16.0	109.0	16.6	106.0	10	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
734	Storm Manhole Backfill: S side of Storm Manhole #83. North Pinery PKWY. STA 1+82.8 W of Storm Manhole #84.	4.0	BG	XPLORER / 3500 / 1611 / 7/18/2019	Cazares, Angel
735	Storm Manhole Backfill: E side of Storm Manhole #83. North Pinery PKWY. STA 1+82.8 W of Storm Manhole #84.	3.0	BG	XPLORER / 3500 / 1611 / 7/18/2019	Cazares, Angel
736	Storm Manhole Backfill: W side of Storm Manhole #83. North Pinery PKWY. STA 1+82.8 W of Storm Manhole #84.	2.0	BG	XPLORER / 3500 / 1611 / 7/18/2019	Cazares, Angel
737	Storm Manhole Backfill: S side of Storm Manhole #83. North Pinery PKWY. STA 1+82.8 W of Storm Manhole #84.	1.0	BG	XPLORER / 3500 / 1611 / 7/18/2019	Cazares, Angel

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **737:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer trench/manhole backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort to the fill with the loader and rex.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000074
01/15/2020
Report Date: 2/5/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
738		1/15/20	7	698A	CL	16.5	107.5	18.1	104.6	8	97	95	0 / 4	A
739		1/15/20	7	698A	CL	16.5	107.5	18.2	104.9	8	98	95	0 / 4	A
740		1/15/20	7	698A	CL	16.5	107.5	18.1	105.2	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
738	Storm Manhole Backfill: SDMH-112. Shasta Daisy St and Hop Clover Ave. 1' W of W side.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
739	Storm Manhole Backfill: SDMH-112. Shasta Daisy St and Hop Clover Ave. 1' N of N side.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
740	Storm Manhole Backfill: SDMH-112. Shasta Daisy St and Hop Clover Ave. 1' S of S side.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **740:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer manhole backfill. The backfill was prepared prior to our arrival.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
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Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000075
01/16/2020
Report Date: 2/5/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
741		1/16/20	9	698A	CL	20.5	103.5	22.1	101.8	8	98	95	0 / 4	A
742		1/16/20	9	698A	CL	20.5	103.5	22.4	101.0	8	98	95	0 / 4	A
743		1/16/20	4	698A	CL	16.0	109.0	17.5	107.3	8	98	95	0 / 4	A
744		1/16/20	4	698A	CL	16.0	109.0	17.4	107.1	8	98	95	0 / 4	A
745		1/16/20	4	698A	CL	16.0	109.0	18.3	105.2	8	97	95	0 / 4	A
746		1/16/20	4	698A	CL	16.0	109.0	17.7	106.7	8	98	95	0 / 4	A
747		1/16/20	4	698A	CL	16.0	109.0	17.7	107.2	8	98	95	0 / 4	A
748		1/16/20	4	698A	CL	16.0	109.0	18.0	107.1	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
741	Storm Sewer Trench Backfill: Mainline. E end N. Pinery Pkwy. 50' NW of SDMH-82.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
742	Storm Sewer Trench Backfill: Mainline. E end N. Pinery Pkwy. 40' NW of SDMH-82.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
743	Storm Sewer Trench Backfill: Mainline. E end N. Pinery Pkwy. 70' SE of SDMH-112.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
744	Storm Sewer Trench Backfill: Mainline. E end N. Pinery Pkwy. 80' SE of SDMH-112.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
745	Storm Sewer Trench Backfill: Mainline. E end N. Pinery Pkwy. 55' SE of SDMH-112.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
746	Storm Sewer Trench Backfill: Mainline. Shasta Daisy St. 55' S of Shasta Daisy St and Shasta Daisy Or intersection.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
747	Storm Sewer Trench Backfill: Mainline. Shasta Daisy St. 45' S of Shasta Daisy St and Shasta Daisy Or intersection.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
748	Storm Sewer Trench Backfill: Mainline. Shasta Daisy St. 25' S of Shasta Daisy St and Shasta Daisy Or intersection.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **748:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000076
01/17/2020
Report Date: 2/5/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
749		1/17/20	4	698A	CL	16.0	109.0	18.4	106.7	8	98	95	0 / 4	A
750		1/17/20	4	698A	CL	16.0	109.0	17.2	107.3	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
749	Storm Sewer Trench Backfill: Mainline. E end N. Pinery Pkwy. 50' SE of SDMH-102. 1' S of S side.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
750	Storm Sewer Trench Backfill: Mainline. E end N. Pinery Pkwy. 50' SE of SDMH-102. 1' N of N side.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **750:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

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Compaction Test Report

Report #: SNG-000077
01/20/2020
Report Date: 2/5/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
751		1/20/20	4	698A	CL	16.0	109.0	18.0	107.8	8	99	95	0 / 4	A
752		1/20/20	4	698A	CL	16.0	109.0	17.3	107.8	8	99	95	0 / 4	A
753		1/20/20	9	698A	CL	20.5	103.5	22.5	101.0	8	98	95	0 / 4	A
754		1/20/20	9	698A	CL	20.5	103.5	21.8	102.3	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
751	Storm Inlet Backfill: SDIN-82. 50' S of Shasta Daisy St and Bird's Foot Trl. E side of Shasta Daisy St. W side of inlet.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
752	Storm Inlet Backfill: SDIN-82. 50' S of Shasta Daisy St and Bird's Foot Trl. E side of Shasta Daisy St. W side of inlet.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
753	Storm Inlet Backfill: SDIN-81. 50' S of Shasta Daisy St and Bird's Foot Ave. E side of Shasta Daisy St. W side of inlet.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
754	Storm Inlet Backfill: SDIN-81. 50' S of Shasta Daisy St and Bird's Foot Ave. E side of Shasta Daisy St. W side of inlet.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **754:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer inlet backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000078
01/21/2020
Report Date: 2/5/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
755		1/21/20	7	698A	CL	16.5	107.5	17.6	104.4	8	97	95	0 / 4	A
756		1/21/20	7	698A	CL	16.5	107.5	18.3	104.8	8	97	95	0 / 4	A
757		1/21/20	7	698A	CL	16.5	107.5	17.6	105.3	8	98	95	0 / 4	A
758		1/21/20	7	698A	CL	16.5	107.5	18.9	103.6	8	96	95	0 / 4	A
759		1/21/20	7	698A	CL	16.5	107.5	17.9	105.2	8	98	95	0 / 4	A
760		1/21/20	7	698A	CL	16.5	107.5	17.7	104.8	8	97	95	0 / 4	A
761		1/21/20	7	698A	CL	16.5	107.5	18.0	105.3	8	98	95	0 / 4	A
762		1/21/20	7	698A	CL	16.5	107.5	18.5	104.7	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
755	Storm Inlet Backfill: SDIN Type D-1. 75' SW of SDIN-13. N. Pinery Pkwy and Crowfoot Valley Rd. STA 19+05.74. 1' E of E side.	12.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
756	Storm Inlet Backfill: SDIN Type D-1. 75' SW of SDIN-13. N. Pinery Pkwy and Crowfoot Valley Rd. STA 19+05.74. 1' W of W side.	11.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
757	Storm Inlet Backfill: SDIN Type D-1. 75' SW of SDIN-13. N. Pinery Pkwy and Crowfoot Valley Rd. STA 19+05.74. 1' S of S side.	10.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
758	Storm Inlet Backfill: SDIN Type D-1. 75' SW of SDIN-13. N. Pinery Pkwy and Crowfoot Valley Rd. STA 19+05.74. 1' N of N side.	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
759	Storm Inlet Backfill: SDIN Type D-1. 75' SW of SDIN-13. N. Pinery Pkwy and Crowfoot Valley Rd. STA 19+05.74. 1' W of W side.	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
760	Storm Inlet Backfill: SDIN Type D-1. 75' SW of SDIN-13. N. Pinery Pkwy and Crowfoot Valley Rd. STA 19+05.74. 1' E of E side.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
761	Storm Inlet Backfill: SDIN Type D-1. 75' SW of SDIN-13. N. Pinery Pkwy and Crowfoot Valley Rd. STA 19+05.74. 1' N of N side.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
762	Storm Inlet Backfill: SDIN Type D-1. 75' SW of SDIN-13. N. Pinery Pkwy and Crowfoot Valley Rd. STA 19+05.74. 1' S of S side.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000078
01/21/2020
Report Date: 2/5/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
763		1/21/20	7	698A	CL	16.5	107.5	18.7	105.5	8	98	95	0 / 4	A
764		1/21/20	7	698A	CL	16.5	107.5	18.2	105.2	8	98	95	0 / 4	A
765		1/21/20	7	698A	CL	16.5	107.5	18.0	104.6	8	97	95	0 / 4	A
766		1/21/20	7	698A	CL	16.5	107.5	17.6	105.5	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
763	Storm Inlet Backfill: SDIN Type D-1. 75' SW of SDIN-13. N. Pinery Pkwy and Crowfoot Valley Rd. STA 19+05.74. 1' W of W side.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
764	Storm Inlet Backfill: SDIN Type D-1. 75' SW of SDIN-13. N. Pinery Pkwy and Crowfoot Valley Rd. STA 19+05.74. 1' E of E side.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
765	Storm Inlet Backfill: SDIN Type D-1. 75' SW of SDIN-13. N. Pinery Pkwy and Crowfoot Valley Rd. STA 19+05.74. 1' S of S side.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
766	Storm Inlet Backfill: SDIN Type D-1. 75' SW of SDIN-13. N. Pinery Pkwy and Crowfoot Valley Rd. STA 19+05.74. 1' N of N side.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **766:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer inlet backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the sheepsfoot roller.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000079
01/22/2020
Report Date: 2/5/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
767		1/22/20	4	698A	CL	16.0	109.0	18.5	106.0	8	97	95	0 / 4	A
768		1/22/20	4	698A	CL	16.0	109.0	17.5	107.7	8	99	95	0 / 4	A
769		1/22/20	4	698A	CL	16.0	109.0	17.9	107.2	8	98	95	0 / 4	A
770		1/22/20	4	698A	CL	16.0	109.0	18.3	106.3	8	98	95	0 / 4	A
771		1/22/20	4	698A	CL	16.0	109.0	17.4	107.5	8	99	95	0 / 4	A
772		1/22/20	4	698A	CL	16.0	109.0	18.3	106.3	8	98	95	0 / 4	A
773		1/22/20	4	698A	CL	16.0	109.0	19.1	105.9	8	97	95	0 / 4	A
774		1/22/20	4	698A	CL	16.0	109.0	18.9	105.5	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
767	Storm Inlet Backfill: SDIN-24. Rose Mallow Ave. 35' S of Hop Clover Ave intersection. W side of Inlet.	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
768	Storm Inlet Backfill: SDIN-24. Rose Mallow Ave. 35' S of Hop Clover Ave intersection. W side of Inlet.	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
769	Storm Inlet Backfill: SDIN-24. Rose Mallow Ave. 35' S of Hop Clover Ave intersection. W side of Inlet.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
770	Storm Inlet Backfill: SDIN-24. Rose Mallow Ave. 35' S of Hop Clover Ave intersection. W side of Inlet.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
771	Storm Inlet Backfill: SDIN-24. Rose Mallow Ave. 35' S of Hop Clover Ave intersection. W side of Inlet.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
772	Storm Inlet Backfill: SDIN-24. Rose Mallow Ave. 35' S of Hop Clover Ave intersection. W side of Inlet.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
773	Storm Inlet Backfill: SDIN-24. Rose Mallow Ave. 35' S of Hop Clover Ave intersection. W side of Inlet.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
774	Storm Inlet Backfill: SDIN-24. Rose Mallow Ave. 35' S of Hop Clover Ave intersection. W side of Inlet.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000079
01/22/2020
Report Date: 2/5/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
775		1/22/20	4	698A	CL	16.0	109.0	17.5	107.6	8	99	95	0 / 4	A
776		1/22/20	4	698A	CL	16.0	109.0	18.9	105.9	8	97	95	0 / 4	A
777		1/22/20	4	698A	CL	16.0	109.0	18.5	106.8	8	98	95	0 / 4	A
778		1/22/20	4	698A	CL	16.0	109.0	17.4	107.2	8	98	95	0 / 4	A
779		1/22/20	4	698A	CL	16.0	109.0	17.8	107.6	8	99	95	0 / 4	A
780		1/22/20	4	698A	CL	16.0	109.0	18.0	106.4	8	98	95	0 / 4	A
781		1/22/20	4	698A	CL	16.0	109.0	18.1	107.8	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
775	Storm Inlet Backfill: SDIN-24. Rose Mallow Ave. 35' S of Hop Clover Ave intersection. W side of Inlet.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
776	Storm Manhole Backfill: SDMH-31. Rose Mallow Ave. 35' S of Hop Clover Ave intersection. 1' S of S side.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
777	Storm Manhole Backfill: SDMH-31. Rose Mallow Ave. 35' S of Hop Clover Ave intersection. 1' N of N side.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
778	Storm Manhole Backfill: SDMH-31. Rose Mallow Ave. 35' S of Hop Clover Ave intersection. 1' W of W side.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
779	Storm Manhole Backfill: SDMH-31. Rose Mallow Ave. 35' S of Hop Clover Ave intersection. 1' E of E side.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
780	Storm Manhole Backfill: SDMH-31. Rose Mallow Ave. 35' S of Hop Clover Ave intersection. 1' S of S side.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
781	Storm Manhole Backfill: SDMH-31. Rose Mallow Ave. 35' S of Hop Clover Ave intersection. 1' N of N side.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **781:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer manhole/inlet backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the sheepsfoot roller.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000080
01/23/2020
Report Date: 2/5/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
782		1/23/20	9	698A	CL	20.5	103.5	21.6	101.6	8	98	95	0 / 4	A
783		1/23/20	9	698A	CL	20.5	103.5	22.2	101.6	8	98	95	0 / 4	A
784		1/23/20	9	698A	CL	20.5	103.5	22.9	100.7	8	97	95	0 / 4	A
785		1/23/20	9	698A	CL	20.5	103.5	22.4	101.7	8	98	95	0 / 4	A
786		1/23/20	9	698A	CL	20.5	103.5	21.2	102.6	8	99	95	0 / 4	A
787		1/23/20	9	698A	CL	20.5	103.5	21.4	102.6	8	99	95	0 / 4	A
788		1/23/20	9	698A	CL	20.5	103.5	23.0	101.8	8	98	95	0 / 4	A
789		1/23/20	9	698A	CL	20.5	103.5	22.1	101.7	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
782	Storm Inlet Backfill: SDIN-25. Rose Mallow Ave. Intersection of Rose Mallow Ave and Hop Clover Ave. W side of Inlet.	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
783	Storm Inlet Backfill: SDIN-25. Rose Mallow Ave. Intersection of Rose Mallow Ave and Hop Clover Ave. W side of Inlet.	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
784	Storm Inlet Backfill: SDIN-25. Rose Mallow Ave. Intersection of Rose Mallow Ave and Hop Clover Ave. W side of Inlet.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
785	Storm Inlet Backfill: SDIN-25. Rose Mallow Ave. Intersection of Rose Mallow Ave and Hop Clover Ave. W side of Inlet.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
786	Storm Inlet Backfill: SDIN-25. Rose Mallow Ave. Intersection of Rose Mallow Ave and Hop Clover Ave. W side of Inlet.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
787	Storm Inlet Backfill: SDIN-25. Rose Mallow Ave. Intersection of Rose Mallow Ave and Hop Clover Ave. W side of Inlet.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
788	Storm Inlet Backfill: SDIN-25. Rose Mallow Ave. Intersection of Rose Mallow Ave and Hop Clover Ave. W side of Inlet.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
789	Storm Inlet Backfill: SDIN-25. Rose Mallow Ave. Intersection of Rose Mallow Ave and Hop Clover Ave. W side of Inlet.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
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Compaction Test Report

Report #: SNG-000080
01/23/2020
Report Date: 2/5/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
790		1/23/20	9	698A	CL	20.5	103.5	22.1	101.2	8	98	95	0 / 4	A
791		1/23/20	9	698A	CL	20.5	103.5	22.5	101.4	8	98	95	0 / 4	A
792		1/23/20	9	698A	CL	20.5	103.5	22.9	100.9	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
790	Storm Sewer Trench Backfill: Mainline. 50' E of SE corner of Pond B. 50' W of SDMH-107.	7.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
791	Storm Sewer Trench Backfill: Mainline. 50' E of SE corner of Pond B. 40' W of SDMH-107.	6.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
792	Storm Sewer Trench Backfill: Mainline. 50' E of SE corner of Pond B. 40' W of SDMH-107.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **792:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer inlet/trench backfill. We observed the contractor process/place fill with the excavator and loader, add moisture with the water truck, and apply compactive effort with the sheepsfoot roller and loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
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Compaction Test Report

Report #: SNG-000081
01/24/2020
Report Date: 2/5/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
793		1/24/20	9	698A	CL	20.5	103.5	22.9	101.3	8	98	95	0 / 4	A
794		1/24/20	9	698A	CL	20.5	103.5	22.3	101.2	8	98	95	0 / 4	A
795		1/24/20	9	698A	CL	20.5	103.5	22.3	101.3	8	98	95	0 / 4	A
796		1/24/20	9	698A	CL	20.5	103.5	23.3	100.7	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
793	Storm Sewer Trench Backfill: Mainline. 50' E of SE corner of Pond B. 30' W of SDMH-107.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
794	Storm Sewer Trench Backfill: Mainline. 50' E of SE corner of Pond B. 25' W of SDMH-107.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
795	Storm Sewer Trench Backfill: Mainline. 50' E of SE corner of Pond B. 20' W of SDMH-107.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
796	Storm Sewer Trench Backfill: Mainline. 50' E of SE corner of Pond B. 15' W of SDMH-107.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **796:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water wagon, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000082
01/27/2020
Report Date: 2/5/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
797		1/27/20	2	698A	CL	15.0	112.0	16.1	110.4	8	99	95	0 / 4	A
798		1/27/20	2	698A	CL	15.0	112.0	17.2	109.7	8	98	95	0 / 4	A
799		1/27/20	2	698A	CL	15.0	112.0	16.8	110.6	8	99	95	0 / 4	A
800		1/27/20	2	698A	CL	15.0	112.0	16.8	110.4	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
797	Storm Sewer Trench Backfill: Mainline. E. N. Pinery Pkwy. 125' E of SDMH-76.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
798	Storm Sewer Trench Backfill: Mainline. E. N. Pinery Pkwy. 125' E of SDMH-76.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
799	Storm Sewer Trench Backfill: Mainline. E. N. Pinery Pkwy. 50' W of SDMH-76.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
800	Storm Sewer Trench Backfill: Mainline. E. N. Pinery Pkwy. 50' W of SDMH-76.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **800:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer trench backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the loader.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000083
01/28/2020
Report Date: 2/10/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
801		1/28/20	4	698A	CL	16.0	109.0	16.8	106.5	8	98	95	0 / 4	A
802		1/28/20	4	698A	CL	16.0	109.0	16.8	106.5	8	98	95	0 / 4	A
803		1/28/20	4	698A	CL	16.0	109.0	17.3	105.9	8	97	95	0 / 4	A
804		1/28/20	4	698A	CL	16.0	109.0	17.3	105.9	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
801	Storm Sewer Trench Backfill: Mainline. E. N. Pinery Pkwy. 75' E of SDMH-75.	2.0	BG	XPLORER / 3500 / 1996 / 9/25/2019	Tomich, Jake
802	Storm Sewer Trench Backfill: Mainline. E. N. Pinery Pkwy. 75' E of SDMH-75.	2.0	BG	XPLORER / 3500 / 1996 / 9/25/2019	Holiga, Tayler
803	Storm Sewer Trench Backfill: Mainline. E. N. Pinery Pkwy. 75' E of SDMH-75.	1.0	BG	XPLORER / 3500 / 1996 / 9/25/2019	Holiga, Tayler
804	Storm Sewer Trench Backfill: Mainline. E. N. Pinery Pkwy. 75' E of SDMH-75.	1.0	BG	XPLORER / 3500 / 1996 / 9/25/2019	Holiga, Tayler

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **804:** As requested by Rick with E5X management a site visit was made to observe and test Storm Sewer Trench backfill. We observed material placed by 1x Loader, moisture treatment provided by 1x Water Truck, and material processing/compactive effort applied by 1x Loader. Our office will be contacted when further testing is requested.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

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Compaction Test Report

Report #: SNG-000084
01/29/2020
Report Date: 2/10/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
805		1/29/20	4	698A	CL	16.0	109.0	19.1	104.3	8	96	95	0 / 4	A
806		1/29/20	4	698A	CL	16.0	109.0	17.4	105.6	8	97	95	0 / 4	A
807		1/29/20	4	698A	CL	16.0	109.0	18.8	104.0	8	95	95	0 / 4	A
808		1/29/20	4	698A	CL	16.0	109.0	18.2	104.7	8	96	95	0 / 4	A
809		1/29/20	4	698A	CL	16.0	109.0	16.9	105.4	8	97	95	0 / 4	A
810		1/29/20	4	698A	CL	16.0	109.0	16.1	105.9	8	97	95	0 / 4	A
811		1/29/20	4	698A	CL	16.0	109.0	17.1	105.8	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
805	Storm Manhole Backfill: SDMH-82 E. end N. Pinery Pkwy. 1' N of N side.	6.0	BG	XPLORER / 3500 / 1996 / 9/25/2019	Holiga, Tayler
806	Storm Manhole Backfill: SDMH-82 E. end N. Pinery Pkwy. 1' S of S side.	5.0	BG	XPLORER / 3500 / 1996 / 9/25/2019	Holiga, Tayler
807	Storm Manhole Backfill: SDMH-82 E. end N. Pinery Pkwy. 1' S of S side.	4.0	BG	XPLORER / 3500 / 1996 / 9/25/2019	Holiga, Tayler
808	Storm Manhole Backfill: SDMH-82 E. end N. Pinery Pkwy. 1' S of S side.	3.0	BG	XPLORER / 3500 / 1996 / 9/25/2019	Holiga, Tayler
809	Storm Manhole Backfill: SDMH-82 E. end N. Pinery Pkwy. 1' N of N side.	2.0	BG	XPLORER / 3500 / 1996 / 9/25/2019	Holiga, Tayler
810	Storm Manhole Backfill: SDMH-82 E end N Pinery Pkwy. 1' N of N side.	1.0	BG	XPLORER / 3500 / 1996 / 9/25/2019	Holiga, Tayler
811	Storm Manhole Backfill: SDMH-102 E N Pinery Pkwy. 1' N of N side.	4.0	BG	XPLORER / 3500 / 1996 / 9/25/2019	Holiga, Tayler

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **811:** As requested by Rick with E5X Management site visits were made to observe and test Storm Sewer Backfill. We observed material placed/compactive effort by the loader and moisture treatment by the water truck.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000085
01/30/2020
Report Date: 2/10/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
812		1/30/20	4	698A	CL	16.0	109.0	16.6	104.2	8	96	95	0 / 4	A
813		1/30/20	4	698A	CL	16.0	109.0	18.0	103.3	8	95	95	0 / 4	A
814		1/30/20	4	698A	CL	16.0	109.0	16.3	104.9	8	96	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
812	Storm Manhole Backfill: SDMH-102 E N Pinery Pkwy. 1' S of S side.	3.0	BG	XPLORER / 3500 / 1996 / 9/25/2019	Holiga, Tayler
813	Storm Manhole Backfill: SDMH-102 E N Pinery Pkwy. 1' S of S side.	2.0	BG	XPLORER / 3500 / 1996 / 9/25/2019	Holiga, Tayler
814	Storm Manhole Backfill: SDMH-102 E N Pinery Pkwy. 1' E of E side.	1.0	BG	XPLORER / 3500 / 1996 / 9/25/2019	Holiga, Tayler

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000086
01/31/2020
Report Date: 2/10/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
815		1/31/20	4	698A	CL	16.0	109.0	17.5	105.4	8	97	95	0 / 4	A
816		1/31/20	5	698A	SC	13.5	114.5	13.7	114.7	8	100	100	-2 / 2	A
817		1/31/20	5	698A	SC	13.5	114.5	13.2	114.6	8	100	100	-2 / 2	A
818		1/31/20	5	698A	SC	13.5	114.5	14.0	114.2	8	100	100	-2 / 2	A
819		1/31/20	5	698A	SC	13.5	114.5	13.8	114.7	8	100	100	-2 / 2	A
820		1/31/20	5	698A	SC	13.5	114.5	14.2	114.7	8	100	100	-2 / 2	A
821		1/31/20	5	698A	SC	13.5	114.5	13.8	114.9	8	100	100	-2 / 2	A
822		1/31/20	5	698A	SC	13.5	114.5	13.0	114.9	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
815	Storm Sewer Trench Backfill: Mainline. E N Pinery Pkwy. 80' W of SDMH-75	5.0	BG	XPLORER / 3500 / 1996 / 9/25/2019	Holiga, Tayler
816	Storm Inlet Backfill: SDIN-83. Shasta Daisy St. 40' S of Shasta Daisy St and Shasta Daisy Pt intersection. 1' W of W side.	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
817	Storm Inlet Backfill: SDIN-83. Shasta Daisy St. 40' S of Shasta Daisy St and Shasta Daisy Pt intersection. 1' E of E side.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
818	Storm Inlet Backfill: SDIN-83. Shasta Daisy St. 40' S of Shasta Daisy St and Shasta Daisy Pt intersection. 1' N of N side.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
819	Storm Inlet Backfill: SDIN-83. Shasta Daisy St. 40' S of Shasta Daisy St and Shasta Daisy Pt intersection. 1' S of S side.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
820	Storm Inlet Backfill: SDIN-83. Shasta Daisy St. 40' S of Shasta Daisy St and Shasta Daisy Pt intersection. 1' W of W side.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
821	Storm Manhole Backfill: SDMH-110. Shasta Daisy St. 40' S of Shasta Daisy St and Shasta Daisy Pt intersection. 1' W of W side.	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
822	Storm Manhole Backfill: SDMH-110. Shasta Daisy St. 40' S of Shasta Daisy St and Shasta Daisy Pt intersection. 1' E of E side.	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **815:** As requested by Rick with E5X Management site visits were made to observe and test Storm Trench Backfill. We observed material placed/processed/compacted by the loader and moisture treatment by the water truck.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

CTL | THOMPSON INCORPORATED

Denver
1971 West 12th Avenue
Denver, CO 80204
Phone: 303-825-0777 | Fax: 303-825-4252

Compaction Test Report

Report #: SNG-000086
01/31/2020
Report Date: 2/10/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
823		1/31/20	5	698A	SC	13.5	114.5	14.0	115.1	8	101	100	-2 / 2	A
824		1/31/20	5	698A	SC	13.5	114.5	13.6	114.8	8	100	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
823	Storm Manhole Backfill: SDMH-110. Shasta Daisy St. 40' S of Shasta Daisy St and Shasta Daisy Pt intersection. 1' N of N side.	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
824	Storm Manhole Backfill: SDMH-110. Shasta Daisy St. 40' S of Shasta Daisy St and Shasta Daisy Pt intersection. 1' S of S side.	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **824:** As requested by Rick with E5X management a site visit was made to observe and test Storm Sewer Manhole and Inlet backfill. We observed material placed by a loader, moisture treatment provided by a water wagon, and material processing/compactive effort applied by an excavator with sheep's foot roller.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000087
02/03/2020
Report Date: 2/10/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
825		2/3/20	4	698A	CL	16.0	109.0	17.8	107.4	8	99	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
825	Cancelled on Site: Storm Sewer Inlet backfill	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **825:** As requested by Rick with E5X management a site visit was made to observe and test Storm Sewer Inlet backfill. After spending a few hours getting prepared for backfill, contractor ultimately cancelled due to incliment weather.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000088
02/05/2020
Report Date: 2/10/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
826		2/5/20	8	698A	CL	18.0	109.0	19.2	105.4	8	97	95	0 / 4	A
827		2/5/20	8	698A	CL	18.0	109.0	19.6	105.5	8	97	95	0 / 4	A
828		2/5/20	8	698A	CL	18.0	109.0	19.9	106.1	8	97	95	0 / 4	A
829		2/5/20	8	698A	CL	18.0	109.0	19.8	105.5	8	97	95	0 / 4	A
830		2/5/20	8	698A	CL	18.0	109.0	18.6	106.9	8	98	95	0 / 4	A
831		2/5/20	8	698A	CL	18.0	109.0	19.3	106.9	8	98	95	0 / 4	A
832		2/5/20	8	698A	CL	18.0	109.0	20.1	106.1	8	97	95	0 / 4	A
833		2/5/20	8	698A	CL	18.0	109.0	19.6	106.1	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
826	Storm Inlet Backfill: SDIN-96. Hop Clover Trl. STA 28+83.32. N side of inlet.	15.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
827	Storm Inlet Backfill: SDIN-96. Hop Clover Trl. STA 28+83.32. N side of inlet.	14.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
828	Storm Inlet Backfill: SDIN-96. Hop Clover Trl. STA 28+83.32. N side of inlet.	13.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
829	Storm Inlet Backfill: SDIN-96. Hop Clover Trl. STA 28+83.32. N side of inlet.	12.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
830	Storm Inlet Backfill: SDIN-29 Hop Clover Trl. STA 28+83.32. N side of inlet.	15.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
831	Storm Inlet Backfill: SDIN-29 Hop Clover Trl. STA 28+83.32. N side of inlet.	14.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
832	Storm Inlet Backfill: SDIN-29 Hop Clover Trl. STA 28+83.32. N side of inlet.	13.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
833	Storm Inlet Backfill: SDIN-29 Hop Clover Trl. STA 28+83.32. N side of inlet.	12.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **833:** As requested by Rick with E5X management a site visit was made to observe and test Storm Sewer Inlet backfill. We observed material placed by an Excavator and a Loader, moisture treatment provided by a water truck, and material processing/compactive effort applied by an excavator with sheep's foot roller.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000089
02/06/2020
Report Date: 2/12/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
834		2/6/20	8	698A	CL	18.0	109.0	18.7	106.4	8	98	95	0 / 4	A
835		2/6/20	8	698A	CL	18.0	109.0	19.4	105.4	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
834	Storm Sewer Trench Backfill: Mainline. N Pinery Pkwy. 40ft E of SDMH #74	3.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly
835	Storm Sewer Trench Backfill: Mainline. N Pinery Pkwy. 45' E of SDMH #74.	2.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **835:** As requested by Rick with E5X management site visits were made to observe and test storm sewer trench backfill. We observed the contractor place fill with the loader, add moisture by a water truck, and process/apply compactive effort with equipment. Due to equipment failure, only a minor amount of fill was placed.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000090
02/11/2020
Report Date: 2/17/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
836		2/11/20	4	698A	CL	16.0	109.0	17.4	108.0	8	99	95	NA	E

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
836	Cancelled on Site: Storm sewer trench backfill			XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
E: Test number for data entry purposes only.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **836:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test storm sewer trench backfill. Testing was cancelled on site due to inclement weather.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000091
02/12/2020
Report Date: 2/17/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
837		2/12/20	8	698A	CL	18.0	109.0	18.4	106.3	8	98	95	0 / 4	A
838		2/12/20	8	698A	CL	18.0	109.0	19.3	105.7	8	97	95	0 / 4	A
839		2/12/20	8	698A	CL	18.0	109.0	19.7	105.6	8	97	95	0 / 4	A
840		2/12/20	8	698A	CL	18.0	109.0	19.7	105.7	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
837	Storm Inlet Backfill: SDIN-29, Hop Clover Trail, STA 28+71.39, W side of inlet	11.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
838	Storm Inlet Backfill: SDIN-29, Hop Clover Trail, STA 28+71.39, W side of inlet	10.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
839	Storm Inlet Backfill: SDIN-29, Hop Clover Trail, STA 28+71.39, S side of inlet	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
840	Storm Inlet Backfill: SDIN-29, Hop Clover Trail, STA 28+71.39, S side of inlet	8.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **840:** As requested by Rick with Kelley Trucking, a site visit was made to observe and test storm sewer inlet backfill. We observed the contractor place fill with the excavator and loader, add moisture with the water truck, and process the fill with the sheepsfoot roller.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000092
02/13/2020
Report Date: 2/17/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
841		2/13/20	8	698A	CL	18.0	109.0	19.6	105.2	8	97	95	0 / 4	A
842		2/13/20	8	698A	CL	18.0	109.0	21.1	103.1	8	95	95	0 / 4	A
843		2/13/20	8	698A	CL	18.0	109.0	19.5	105.1	8	96	95	0 / 4	A
844		2/13/20	8	698A	CL	18.0	109.0	18.0	106.0	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
841	Storm Sewer Trench Backfill: S of SDI 29, S side of Hop Clover Trail, STA 28+83.32	8.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly
842	Storm Sewer Trench Backfill: S of SDI 29, S side of Hop Clover Trail, STA 28+83.32	7.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly
843	Storm Inlet Backfill: S of SDI 29, S side of Hop Clover Trail, STA 28+83.32	6.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly
844	Storm Inlet Backfill: S of SDI 29, S side of Hop Clover Trail, STA 28+83.32	5.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000093
02/13/2020
Report Date: 3/2/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
845		2/13/20	8	698A	CL	18.0	109.0	18.1	106.0	8	97	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
845	Storm Sewer Trench Backfill: E of storm sewer 39, S of Hop Clover Trail, STA 28+83.32	6.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **845:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer trench backfill. We observed the contractor process/place fill with the excavator and loader, add moisture with the water truck, and apply compactive effort with the sheepsfoot roller attachment.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000094
02/14/2020
Report Date: 3/2/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
846		2/14/20	8	698A	CL	18.0	109.0	20.4	105.3	8	97	95	0 / 4	A
847		2/14/20	8	698A	CL	18.0	109.0	21.0	104.5	8	96	95	0 / 4	A
848		2/14/20	8	698A	CL	18.0	109.0	19.7	106.2	8	97	95	0 / 4	A
849		2/14/20	8	698A	CL	18.0	109.0	18.5	105.2	8	97	95	0 / 4	A
850		2/14/20	8	698A	CL	18.0	109.0	19.2	103.1	8	95	95	0 / 4	A
851		2/14/20	8	698A	CL	18.0	109.0	18.0	105.1	8	96	95	0 / 4	A
852		2/14/20	8	698A	CL	18.0	109.0	20.6	103.1	8	95	95	0 / 4	A
853		2/14/20	8	698A	CL	18.0	109.0	19.4	103.7	8	95	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
846	Storm Inlet Backfill: SDIN-96, Hop Clover Trail, STA 28+83.32, N side of inlet	11.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
847	Storm Inlet Backfill: SDIN-96, Hop Clover Trail, STA 28+83.32, N side of inlet	10.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
848	Storm Inlet Backfill: SDIN-96, Hop Clover Trail, STA 28+83.32, N side of inlet	9.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
849	Storm Inlet Backfill: N of SDIN 96, S of Hop Clover Trail, STA 28+83.32	8.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly
850	Storm Inlet Backfill: N of SDIN 96, S of Hop Clover Trail, STA 28+83.32	7.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly
851	Storm Inlet Backfill: N of SDIN 96, S of Hop Clover Trail, STA 28+83.32	6.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly
852	Storm Inlet Backfill: N of SDIN 96, S of Hop Clover Trail, STA 28+83.32	6.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly
853	Storm Sewer Trench Backfill: E of storm sewer 39, S of Hop Clover Trail, STA 28+83.32	6.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000094
02/14/2020
Report Date: 3/2/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
854		2/14/20	8	698A	CL	18.0	109.0	21.5	103.1	8	95	95	0 / 4	A
855		2/14/20	8	698A	CL	18.0	109.0	20.0	104.4	8	96	95	0 / 4	A
856		2/14/20	8	698A	CL	18.0	109.0	18.2	107.4	8	99	95	0 / 4	A
857		2/14/20	8	698A	CL	18.0	109.0	20.1	104.8	8	96	95	0 / 4	A
858		2/14/20	8	698A	CL	18.0	109.0	19.8	103.2	8	95	95	0 / 4	A
859		2/14/20	8	698A	CL	18.0	109.0	21.5	103.1	8	95	95	0 / 4	A
860		2/14/20	8	698A	CL	18.0	109.0	18.6	103.5	8	95	95	0 / 4	A
861		2/14/20	8	698A	CL	18.0	109.0	19.7	103.1	8	95	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
854	Storm Sewer Trench Backfill: S of Storm Sewer 39. S of Hop Clover Trail. STA 28+83.32.	5.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly
855	Storm Sewer Trench Backfill: N of storm sewer 39, S of Hop Clover Trail, STA 28+83.32	4.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly
856	Storm Sewer Trench Backfill: N of storm sewer 39, S of Hop Clover Trail, STA 28+83.32	3.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly
857	Storm Sewer Trench Backfill: E of storm sewer 39, S of Hop Clover Trail, STA 28+83.32	2.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly
858	Storm Inlet Backfill: S of SDIN 29, S of Hop Clover Trail, STA 28+83.32	5.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly
859	Storm Inlet Backfill: S of SDIN 29, S of Hop Clover Trail, STA 28+83.32	4.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly
860	Storm Inlet Backfill: N of SDIN 96, S of Hop Clover Trail, STA 28+83.32	3.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly
861	Storm Inlet Backfill: N of SDIN 96, S of Hop Clover Trail, STA 28+83.32	2.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **861:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer inlet/manhole backfill. We observed the contractor process/place fill with the excavator and loader, add moisture with the water truck, and apply compactive effort with the bucket on the excavator and the sheepsfoot roller attachment.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Denver
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Compaction Test Report

Report #: SNG-000095
02/15/2020
Report Date: 3/2/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
862		2/15/20	8	698A	CL	18.0	109.0	21.4	103.1	8	95	95	0 / 4	A
863		2/15/20	8	698A	CL	18.0	109.0	20.3	103.1	8	95	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
862	Storm Manhole Backfill: SDMH 38, Hop Clover Trail, STA 44+20.21, 1' N of MH	4.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly
863	Storm Manhole Backfill: SDMH 38, Hop Clover Trail, STA 44+20.21, 1' E of MH	5.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **863:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer manhole backfill. We observed the contractor process/place fill with the loader, add moisture with the water truck, and apply compactive effort with the bucket on the excavator and the sheepsfoot roller attachment.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.

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Compaction Test Report

Report #: SNG-000096
02/17/2020
Report Date: 3/2/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
864		2/17/20	6	698A	SC	11.0	120.5	12.5	120.1	8	100	100	-2 / 2	A
865		2/17/20	6	698A	SC	11.0	120.5	12.5	120.4	8	100	100	-2 / 2	A
866		2/17/20	6	698A	SC	11.0	120.5	12.2	120.0	8	100	100	-2 / 2	A
867		2/17/20	6	698A	SC	11.0	120.5	11.3	120.0	8	100	100	-2 / 2	A
868		2/17/20	6	698A	SC	11.0	120.5	11.5	120.8	8	100	100	-2 / 2	A
869		2/17/20	6	698A	SC	11.0	120.5	12.8	119.9	8	100	100	-2 / 2	A
870		2/17/20	6	698A	SC	11.0	120.5	12.3	119.9	8	100	100	-2 / 2	A
871		2/17/20	6	698A	SC	11.0	120.5	11.4	121.5	8	101	100	-2 / 2	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
864	Storm Manhole Backfill: SDMH 66, Alpine Phlox Street, STA 23+39.42, 1' E of MH	7.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly
865	Storm Manhole Backfill: SDMH 66, Alpine Phlox Street, STA 23+39.42, 1' S of MH	6.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly
866	Storm Manhole Backfill: SDMH 66, Alpine Phlox Street, STA 23+39.42, 1' N of MH	5.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly
867	Storm Manhole Backfill: SDMH 66, Alpine Phlox Street, STA 23+39.42, 1' W of MH	4.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly
868	Storm Manhole Backfill: SDMH 66, Alpine Phlox Street, STA 23+39.42, 1' W of MH	3.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly
869	Storm Manhole Backfill: SDMH 66, Alpine Phlox Street, STA 23+39.42, 1' W of MH	2.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly
870	Storm Manhole Backfill: SDMH 66, Alpine Phlox Street, STA 23+39.42, 1' S of MH	1.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly
871	Storm Sewer Trench Backfill: Mainline for SDMH 66, Alpine Phlox Street, STA 23+39.42, 25' SE of MH	7.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.

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Compaction Test Report

Report #: SNG-000096
02/17/2020
Report Date: 3/2/2020
Test Method: ASTM D 6938

Client:
E5X Management
7353 South Alton Way Suite A-100
Englewood, CO 80112

Project:
DN48372.000F-325
Trails at Crowfoot, Filings 1 and 9
NE of Pradera Parkway & North Crowfoot Valley...
Douglas County, CO

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Optimum Moisture Tolerance (%)	Remark
872		2/17/20	6	698A	SC	11.0	120.5	11.1	121.1	8	100	100	-2 / 2	A
873		2/17/20	3	698A	CL	16.0	111.0	17.9	108.2	8	97	95	0 / 4	A
874		2/17/20	3	698A	CL	16.0	111.0	18.5	108.1	8	97	95	0 / 4	A
875		2/17/20	3	698A	CL	16.0	111.0	17.4	108.6	8	98	95	0 / 4	A
876		2/17/20	3	698A	CL	16.0	111.0	16.9	109.8	8	99	95	0 / 4	A
877		2/17/20	3	698A	CL	16.0	111.0	18.0	108.9	8	98	95	0 / 4	A

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN / Calibrated	Field Technician
872	Storm Sewer Trench Backfill: Mainline for SDMH 66, Alpine Phlox Street, STA 23+39.42, 25' NW of MH	6.0	BG	XPLORER / 3500 / 3404 / 1/19/2020	Talbert, Kimberly
873	Storm Manhole Backfill: SDMH-74, N Pinery Pkwy, STA 42+22.94, 1' N of N side	5.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
874	Storm Manhole Backfill: SDMH-74, N Pinery Pkwy, STA 42+22.94, 1' S of S side	4.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
875	Storm Manhole Backfill: SDMH-74, N Pinery Pkwy, STA 42+22.94, 1' E of E side	3.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
876	Storm Manhole Backfill: SDMH-74, N Pinery Pkwy, STA 42+22.94, 1' W of W side	2.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake
877	Storm Manhole Backfill: SDMH-74, N Pinery Pkwy, STA 42+22.94, 1' N of N side	1.0	BG	XPLORER / 3500 / 1988 / 8/30/2019	Tomich, Jake

Remarks	Comments
A: Test results comply with specifications.	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency. **877:** As requested by Rick with Kelley Trucking, site visits were made to observe and test storm sewer trench/manhole backfill. We observed the contractor place fill with the excavator, add moisture with the water truck, and apply compactive effort with the sheepsfoot roller on the excavator.

This report presents opinions formed as a result of our observations of fill placement and the test results shown above. Test data are not the sole basis for opinions whether the fill meets project specifications. The contractor is responsible to apply necessary compaction effort and moisture to comply with project specifications . Our test results, observations and opinions do not constitute acceptance of the work.