

Asphalt Concrete Material Analysis



CLIENT

TOLL BROTHERS, INC.
10 INVERNESS DRIVE EAST
SUITE 125
ENGLEWOOD CO 80112

DATE

04/10/15

JOB NO

FC06547.001

Phase

355

REPORT NO

17

SUBJECT

KECHTER FARM FILING 1
ZIEGLER AND KECHTER
FT COLLINS, CO

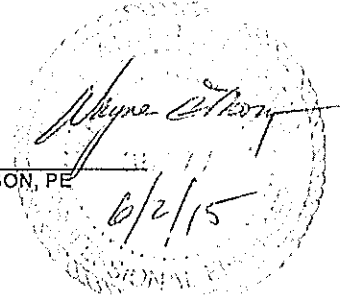
SIEVE SIZE	SUPPLIER: MARTIN MARIETTA 2015 #5493 - S 75			PERCENT PASSING	
	TRUCK NO: RMTMST06 TICKET NO: 138104				
	MIX DESIGN	PROJECT TOLERANCE	MASTER RANGE	SAMPLE: 1	
2 INCH				DATE: 4/10/2015	
1 1/2 INCH				PLANT: MARTIN	
1 INCH		100	100		
3/4 INCH	100	90-100	90-100		
1/2 INCH	87	81-93			
3/8 INCH	79	73-85			
NO. 4	64	59-69			
NO. 8	43	38-48	23-49		
NO. 16	30				
NO. 30	21	17-25			
NO. 50	13				
NO. 100	9				
NO. 200	6	4-8	2-8		
ASPHALT CONTENT	5.3	5-5.6			
RICE UNIT WEIGHT	153.3				
MARSHALL UNIT WEIGHT					
AIR VOIDS %		3.5 - 4.5			
VMA %					

L: LESS THAN TOLERANCE.
G: GREATER THAN TOLERANCE.

ADAM ENGLAND
FIELD REPRESENTATIVE

CTL|THOMPSON, INC

APPROVED BY WAYNE THOMPSON, PE



Asphalt Concrete Material Analysis



CLIENT

TOLL BROTHERS, INC.
10 INVERNESS DRIVE EAST
SUITE 125
ENGLEWOOD CO 80112

DATE

04/29/15

JOB NO

FC06547.001

Phase

355

REPORT NO

22

SUBJECT

KECHTER FARM FILING 1
ZIEGLER AND KECHTER
FT COLLINS, CO

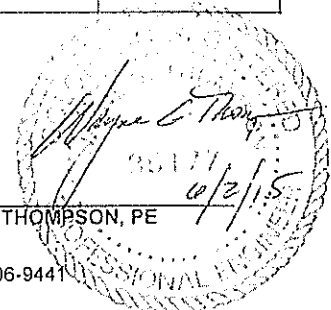
SIEVE SIZE	SUPPLIER: MARTIN MARIETTA 2015 #5493 - S 75			PERCENT PASSING	
	MIX DESIGN	PROJECT TOLERANCE	MASTER RANGE	SAMPLE: 1	
	TRUCK NO: RM205 TICKET NO: 138787			DATE: 4/29/2015	
				PLANT: MARTIN	
2 INCH					
1 1/2 INCH					
1 INCH			100		
3/4 INCH	100	90-100	90-100	100	
1/2 INCH	87	81-93		84	
3/8 INCH	79	73-85		74	
NO. 4	64	59-69		59	
NO. 8	43	38-48	23-49	40	
NO. 16	30			29	
NO. 30	21	17-25		20	
NO. 50	13			14	
NO. 100	9			8	
NO. 200	6	4-8	2-8	5.8	
ASPHALT CONTENT	5.3	5-5.6		5.1	
RICE UNIT WEIGHT	153.3			153.9	
MARSHALL UNIT WEIGHT					
AIR VOIDS %		3.5 - 4.5			
VMA %					

L: LESS THAN TOLERANCE.
G: GREATER THAN TOLERANCE.

LEE GIFFIN
FIELD REPRESENTATIVE

CTL|THOMPSON, INC.

APPROVED BY WAYNE THOMPSON, PE



Asphalt Concrete Material Analysis



CLIENT:

TOLL BROTHERS, INC.
10 INVERNESS DRIVE EAST
SUITE 125
ENGLEWOOD CO 80112

DATE

04/09/15

JOB NO

FC06547.001

Phase

355

REPORT NO.

16

SUBJECT

KECHTER FARM FILING 1
ZIEGLER AND KECHTER
FT COLLINS, CO

SIEVE SIZE	SUPPLIER: MARTIN MARIETTA 2015 #5493 - S 75			PERCENT PASSING	
	TRUCK NO: JRT012		TICKET NO: 138052		
	MIX DESIGN	PROJECT TOLERANCE	MASTER RANGE	SAMPLE: 1	
2 INCH				DATE: 4/9/2015	
1 1/2 INCH				PLANT: MARTIN	
1 INCH		100	100		
3/4 INCH	100	90-100	90-100		
1/2 INCH	87	81-93			
3/8 INCH	79	73-85			
NO. 4	64	59-69			
NO. 8	43	38-48	23-49		
NO. 16	30				
NO. 30	21	17-25			
NO. 50	13				
NO. 100	9				
NO. 200	6	4-8	2-8		
ASPHALT CONTENT	5.3	5-5.6			
RICE UNIT WEIGHT	153.3				
MARSHALL UNIT WEIGHT					
AIR VOIDS %		3.5 - 4.5			
VMA %					

L: LESS THAN TOLERANCE.

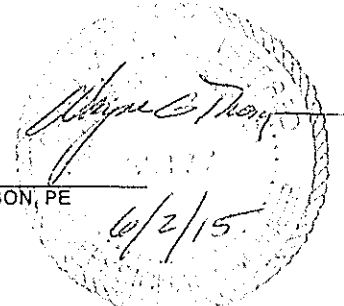
G: GREATER THAN TOLERANCE.

CTL|THOMPSON, INC.

JACK PAPPERT

FIELD REPRESENTATIVE

APPROVED BY WAYNE THOMPSON, PE



Asphalt Concrete Material Analysis



CLIENT
TOLL BROTHERS, INC.
10 INVERNESS DRIVE EAST
SUITE 125
ENGLEWOOD CO 80112

DATE 04/28/15 JOB NO FC06547.001
Phase 355 REPORT NO 21
SUBJECT KECHTER FARM FILING 1
ZIEGLER AND KECHTER
FT COLLINS, CO

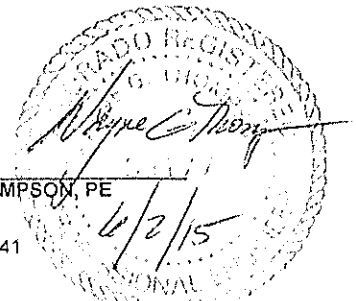
SIEVE SIZE	SUPPLIER: MARTIN MARIETTA 2015 #5493 - S 75			PERCENT PASSING	
	TRUCK NO: VINEY54		TICKET NO: 138737		
	MIX DESIGN	PROJECT TOLERANCE	MASTER RANGE	SAMPLE: 1	
2 INCH				DATE: 4/28/2015	
1 1/2 INCH				PLANT: MARTIN	
1 INCH			100		
3/4 INCH	100	90-100	90-100	100	
1/2 INCH	87	81-93		88	
3/8 INCH	79	73-85		80	
NO. 4	64	59-69		66	
NO. 8	43	38-48	23-49	44	
NO. 16	30			31	
NO. 30	21	17-25		22	
NO. 50	13			14	
NO. 100	9			9	
NO. 200	6	4-8	2-8	6.2	
ASPHALT CONTENT	5.3	5-5.6		5.3	
RICE UNIT WEIGHT	153.3			154.2	
MARSHALL UNIT WEIGHT					
AIR VOIDS %		3.5 - 4.5			
VMA %					

L: LESS THAN TOLERANCE.
G: GREATER THAN TOLERANCE.

LEE GIFFIN
FIELD REPRESENTATIVE

CTL|THOMPSON, INC.

APPROVED BY WAYNE THOMPSON, PE



Asphalt Compaction Test Report



CLIENT:

TOLL BROTHERS, INC.
10 INVERNESS DRIVE EAST
SUITE 125
ENGLEWOOD CO 80112

DATE: 04/28/15 JOB NO: FC06547.001
Phase No: 355 REPORT NO: 21 SHEET: 1 OF 2

SUBJECT: **KECHTER FARM FILING 1
ZIEGLER AND KECHTER
FT COLLINS, CO**

ASPHALT PAVING ZEPHYR RD

TEST NO	LOCATION	BELOW FINISH GRADE INCHES	LIFT THICKNESS INCHES	MAX DENSITY PCF	FIELD DENSITY	COMPACTION %	TIME	MIX TEMP F	AIR TEMP F
167	EASTBOUND OUTSIDE LANE OF ZEPHYR RD 40' WEST OF EAGLE ROOST DR	0.0	2.5	154.2	142.0	92	1530	290	54
168	EASTBOUND OUTSIDE LANE OF ZEPHYR RD 240' WEST OF EAGLE ROOST DR	0.0	2.5	154.2	142.0	92			
169	EASTBOUND OUTSIDE LANE OF ZEPHYR RD 440' WEST OF EAGLE ROOST DR	0.0	2.5	154.2	143.0	93			
170	EASTBOUND OUTSIDE LANE OF ZEPHYR RD 640' WEST OF EAGLE ROOST DR	0.0	2.5	154.2	143.0	93			
171	EASTBOUND OUTSIDE LANE OF ZEPHYR RD 840' WEST OF EAGLE ROOST DR	0.0	2.5	154.2	143.0	93			
172	EASTBOUND OUTSIDE LANE OF ZEPHYR RD 1040' WEST OF EAGLE ROOST DR	0.0	2.5	154.2	142.0	92			
173	EASTBOUND OUTSIDE LANE OF ZEPHYR RD 1240' WEST OF EAGLE ROOST DR	0.0	2.5	154.2	143.0	93			
174	EASTBOUND INSIDE LANE OF ZEPHYR RD 60' WEST OF EAGLE ROOST DR	0.0	2.5	154.2	142.0	92			
175	EASTBOUND INSIDE LANE OF ZEPHYR RD 260' WEST OF EAGLE ROOST DR	0.0	2.5	154.2	144.0	93			
176	EASTBOUND INSIDE LANE OF ZEPHYR RD 460' WEST OF EAGLE ROOST DR	0.0	2.5	154.2	145.0	94			
177	EASTBOUND INSIDE LANE OF ZEPHYR RD 660' WEST OF EAGLE ROOST DR	0.0	2.5	154.2	144.0	93			
178	EASTBOUND INSIDE LANE OF ZEPHYR RD 860' WEST OF EAGLE ROOST DR	0.0	2.5	154.2	143.0	93			
179	EASTBOUND INSIDE LANE OF ZEPHYR RD 1060' WEST OF EAGLE ROOST DR	0.0	2.5	154.2	143.0	93			
180	EASTBOUND INSIDE LANE OF ZEPHYR RD 1260' WEST OF EAGLE ROOST DR	0.0	2.5	154.2	144.0	93			

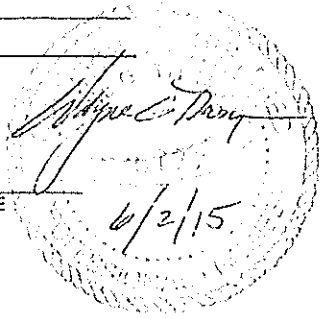
MIX TYPE: S 75 WIND: AM _____ PM _____
SPECIFICATIONS: 92 - 96 % OF MAXIMUM RICE
TYPE OF EQUIPMENT AND NUMBER OF UNITS: CAT 534
AND 334 SMOOTH DRUM ROLLERS; SAKAI
RUBBER TIRE ROLLER; CAT FINISH ROLLER

THIS REPORT PRESENTS OPINIONS FORMED AS A RESULT OF OUR OBSERVATION OF ASPHALT PLACEMENT, AS WELL AS THE TESTS SHOWN ABOVE. WE HAVE RELIED UPON THE CONTRACTOR TO APPLY THE NECESSARY COMPACTIVE EFFORT TO ACHIEVE SPECIFIED COMPACTION DURING TIMES WHEN OUR OBSERVER WAS NOT PRESENT, AND AT LOCATIONS OTHER THAN THOSE TESTED. TEST DATA ARE NOT THE SOLE BASIS FOR OPINIONS ON WHETHER THE ASPHALT MEETS SPECIFICATIONS.

IN OUR OPINION COMPACTION MEETS SPECIFICATIONS AS INDICATED BY OUR OBSERVATIONS AND TEST NO (S) 167-180
 IN OUR OPINION COMPACTION DOES NOT MEET SPECIFICATIONS AS INDICATED BY OUR OBSERVATIONS AND TEST NO (S) _____
 CONTRACTOR'S/CLIENT'S REPRESENTATIVE ADVISED: MARTIN MARIETTA
SCOPE OF OBSERVATION: FULL TIME PERIODIC, ON CALL

LEE GIFFIN
FIELD REPRESENTATIVE

CTL|THOMPSON, INC.
APPROVED BY WAYNE THOMPSON, PE



Asphalt Compaction Test Report



CLIENT
TOLL BROTHERS, INC.
10 INVERNESS DRIVE EAST
SUITE 125
ENGLEWOOD CO 80112

DATE 04/28/15 JCB NO FC06547.001
Phase No 355 REPORT NO 21 SHEET 2 OF 2
SUBJECT KECHTER FARM FILING 1
ZIEGLER AND KECHTER
FT COLLINS, CO

ASPHALT PAVING ZEPHYR RD

TEST NO	LOCATION	BELOW FINISH GRADE INCHES	LIFT THICKNESS INCHES	MAX DENSITY PCF	FIELD DENSITY	COMPACTION %	TIME	MIX TEMP F	AIR TEMP F

PROGRESS REPORT: (Continued from Sheet 1 of Report 21)

AS REQUESTED BY MARTIN MARIETTA, WE MADE SITE VISITS ON 4/28/15 TO OBSERVE AND TEST ASPHALT PAVING ON ZEPHYR ROAD AT THE KECHTER FARM SUBDIVISION. WE OBSERVED MARTIN MARIETTA PLACE A 2.5-INCH THICK TOP LIFT OF S 75 PG 64-22 ASPHALT USING A PAVER AND APPLY COMPACTIVE EFFORT WITH ROLLERS. WE SELECTED LOCATIONS FOR DENSITY TESTING. TEST RESULTS WERE WITHIN SPECIFIED LIMITS. WE COLLECTED ONE SAMPLE OF S 75 PG 64-22 ASPHALT FOR LABORATORY TESTING. SAMPLE NO. 1 WAS COLLECTED FROM THE EASTBOUND LANE OF ZEPHYR ROAD, APPROXIMATELY 250 FEET EAST OF THE WEST EDGE OF SUBDIVISION, AT 37 TONS. SAMPLE NO. 1 WAS WITHIN SPECIFIED LIMITS FOR PERCENT ASPHALT CONTENT AND GRADATION. TEST RESULTS FOR PERCENT ASPHALT CONTENT, THEORETICAL MAXIMUM DENSITY, AND GRADATION ARE ATTACHED. OUR OFFICE WILL BE CONTACTED WHEN ADDITIONAL TESTING IS REQUESTED.

MIX TYPE: S 75 WIND: AM PM
SPECIFICATIONS 92 - 96 % OF MAXIMUM RICE
TYPE OF EQUIPMENT AND NUMBER OF UNITS: CAT 534
AND 334 SMOOTH DRUM ROLLERS; SAKAI
RUBBER TIRE ROLLER; CAT FINISH ROLLER

THIS REPORT PRESENTS OPINIONS FORMED AS A RESULT OF OUR OBSERVATION OF ASPHALT PLACEMENT, AS WELL AS THE TESTS SHOWN ABOVE. WE HAVE RELIED UPON THE CONTRACTOR TO APPLY THE NECESSARY COMPACTIVE EFFORT TO ACHIEVE SPECIFIED COMPACTION DURING TIMES WHEN OUR OBSERVER WAS NOT PRESENT, AND AT LOCATIONS OTHER THAN THOSE TESTED. TEST DATA ARE NOT THE SOLE BASIS FOR OPINIONS ON WHETHER THE ASPHALT MEETS SPECIFICATIONS

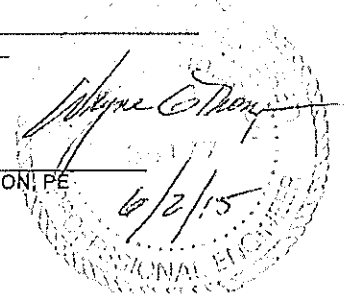
167-180

- IN OUR OPINION COMPACTION MEETS SPECIFICATIONS AS INDICATED BY OUR OBSERVATIONS AND TEST NO (S)
 IN OUR OPINION COMPACTION DOES NOT MEET SPECIFICATIONS AS INDICATED BY OUR OBSERVATIONS AND TEST NO (S)
 CONTRACTOR'S/CLIENT'S REPRESENTATIVE ADVISED MARTIN MARIETTA
SCOPE OF OBSERVATION: FULL TIME PERIODIC, ON CALL

LEE GIFFIN
FIELD REPRESENTATIVE

CTL|THOMPSON, INC.

APPROVED BY WAYNE THOMPSON, PE



Asphalt Concrete Material Analysis



CLIENT:

TOLL BROTHERS, INC.
10 INVERNESS DRIVE EAST
SUITE 125
ENGLEWOOD CO 80112

DATE:

04/21/15

JOB NO.

FC06547.001

Phase

355

REPORT NO.

18

SUBJECT:

KECHTER FARM FILING 1
ZIEGLER AND KECHTER
FT COLLINS, CO

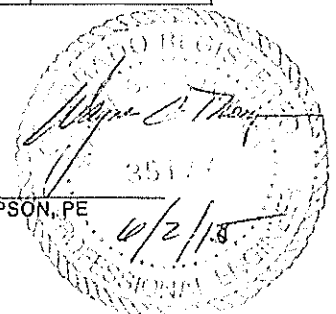
SIEVE SIZE	SUPPLIER: MARTIN MARIETTA 2015 #5493 - S 75			PERCENT PASSING	
	TRUCK NO: LBT034		TICKET NO: 138290		
	MIX DESIGN	PROJECT TOLERANCE	MASTER RANGE	SAMPLE: 1	
2 INCH				DATE: 4/21/2015	
1 1/2 INCH				PLANT: MARTIN	
1 INCH			100		
3/4 INCH	100	9C-100	90-100	100	
1/2 INCH	87	81-93		87	
3/8 INCH	79	73-85		78	
NO. 4	64	59-69		64	
NO. 8	43	38-48	23-49	42	
NO. 16	30			39	
NO. 30	21	17-25		22	
NO. 50	13			14	
NO. 100	9			9	
NO. 200	6	4-8	2-8	6.3	
ASPHALT CONTENT	5.3	5-5.6		5	
RICE UNIT WEIGHT	153.3			154.1	
MARSHALL UNIT WEIGHT					
AIR VOIDS %		3.5 - 4.5			
VMA %					

L: LESS THAN TOLERANCE.
G: GREATER THAN TOLERANCE.

JACK PAPPERT
FIELD REPRESENTATIVE

CTL|THOMPSON, INC.

APPROVED BY WAYNE THOMPSON, PE



Asphalt Concrete Material Analysis



CLIENT:

TOLL BROTHERS, INC.
10 INVERNESS DRIVE EAST
SUITE 125
ENGLEWOOD CO 80112

DATE:

04/21/15

JOB NO.

FC06547.001

Phase

355

REPORT NO

18

SUBJECT

KECHTER FARM FILING 1
ZIEGLER AND KECHTER
FT COLLINS, CO

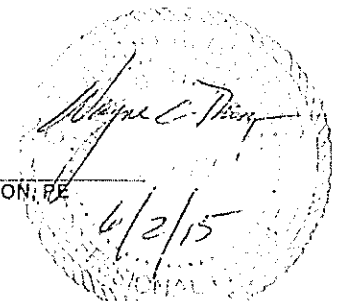
SIEVE SIZE	SUPPLIER: MARTIN MARIETTA 2015 #5493 - S 75			PERCENT PASSING	
	MIX DESIGN	PROJECT TOLERANCE	MASTER RANGE	SAMPLE: 2	DATE: 4/21/2015
2 INCH				PLANT: MARTIN	
1 1/2 INCH					
1 INCH			100		
3/4 INCH	100	90-100	90-100	100	
1/2 INCH	87	81-93		85	
3/8 INCH	79	73-85		76	
NO. 4	64	59-69		62	
NO. 8	43	38-48	23-49	41	
NO. 16	30			29	
NO. 30	21	17-25		20	
NO. 50	13			13	
NO. 100	9			8	
NO. 200	6	4-8	2-8	6.2	
ASPHALT CONTENT	5.3	5-5.6		5.1	
RICE UNIT WEIGHT	153.3			153.7	
MARSHALL UNIT WEIGHT					
AIR VOIDS %		3.5 - 4.5			
VMA %					

L: LESS THAN TOLERANCE.
G: GREATER THAN TOLERANCE.

JACK PAPPERT
FIELD REPRESENTATIVE

CTL|THOMPSON, INC.

APPROVED BY WAYNE THOMPSON, PE



Asphalt Concrete Material Analysis



CLIENT:

TOLL BROTHERS, INC.
10 INVERNESS DRIVE EAST
SUITE 125
ENGLEWOOD CO 80112

DATE: 04/08/15 JOB NO: FC06547.001
Phase: 355 REPORT NO: 15
SUBJECT: KECHTER FARM FILING 1
ZIEGLER AND KECHTER
FT COLLINS, CO

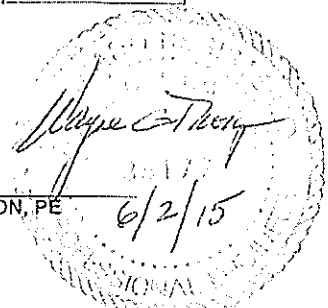
SIEVE SIZE	SUPPLIER: MARTIN MARIETTA 2015 #5493 - S 75			PERCENT PASSING	
	TRUCK NO: JRT 012		TICKET NO: 138052		
	MIX DESIGN	PROJECT TOLERANCE	MASTER RANGE	SAMPLE: 1	
2 INCH				DATE: 4/8/2015	
1 1/2 INCH				PLANT: MARTIN	
1 INCH		100	100		
3/4 INCH	100	90-100	90-100		
1/2 INCH	87	81-93			
3/8 INCH	79	73-85			
NO. 4	64	59-69			
NO. 8	43	38-48	23-49		
NO. 16	30				
NO. 30	21	17-25			
NO. 50	13				
NO. 100	9				
NO. 200	6	4-8	2-8		
ASPHALT CONTENT	5.3	5-5.6			
RICE UNIT WEIGHT	153.3				
MARSHALL UNIT WEIGHT					
AIR VOIDS %		3.5 - 4.5			
VMA %					

L: LESS THAN TOLERANCE.
G: GREATER THAN TOLERANCE.

ADAM ENGLAND
FIELD REPRESENTATIVE

CTL|THOMPSON, INC.

APPROVED BY WAYNE THOMPSON, PE



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CLIENT

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10 INVERNESS DRIVE EAST
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DATE

04/08/15

JOB NO

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Phase

355

REPORT NO

15

SUBJECT

KECHTER FARM FILING 1
ZIEGLER AND KECHTER
FT COLLINS, CO

SIEVE SIZE	SUPPLIER: MARTIN MARIETTA 2015 #5493 - S 75			PERCENT PASSING	
	TRUCK NO: RMTDVT		TICKET NO: 1380012		
	MIX DESIGN	PROJECT TOLERANCE	MASTER RANGE	SAMPLE: 2	
2 INCH				DATE: 4/8/2015	
1 1/2 INCH				PLANT: MARTIN	
1 INCH			100		
3/4 INCH	100	90-100	90-100	100	
1/2 INCH	87	81-93		83	
3/8 INCH	79	73-85		74	
NO. 4	64	59-69		60	
NO. 8	43	38-48	23-49	40	
NO. 16	30			29	
NO. 30	21	17-25		21	
NO. 50	13			14	
NO. 100	9			9	
NO. 200	6	4-8	2-8	5.8	
ASPHALT CONTENT	5.3	5-5.6		5.0	
RICE UNIT WEIGHT	153.3			154.2	
MARSHALL UNIT WEIGHT					
AIR VOIDS %		3.5 - 4.5			
VMA %					

L: LESS THAN TOLERANCE.
G: GREATER THAN TOLERANCE.

CTL|THOMPSON, INC.

ADAM ENGLAND

FIELD REPRESENTATIVE

APPROVED BY WAYNE THOMPSON, PE

