KANSAS CORPORATION COMMISSION
ONE POINT STABLIZED OPEN FLOW OR DELIVERABILITY TEST

FORM G-2
(Rev.8/98)

TYPE TEST:
☒ Open Flow
☐ Deliverability

TEST DATE: 11/20/01 API No. 15-071-20700

Company	Lease	Well Number
Midcontinent Resources	Angell	2

County	Location	Section	TWP	RNG(E/W)	Acres Attributed
Greeley	c NW	5	20s		640

Field	Reservoir	Gas Gathering Connection
Bradshaw	Winfield	Duke Energy

Completion Date	Plug Back Total Depth	Packer Set at
	2880	

Casing Size	Weight	Internal Diameter	Set at	Perforations	To
4.500	10.500	4.052		2811	2824

Tubing Size	Weight	Internal Diameter	Set at	Perforations	To
2.375	4.700	1.995	2834		

Type Completion (Describe)	Type Fluid Production	Pump Unit or Traveling Plunger?
natural	water	pumping unit

Producing Thru(Annulus/Tubing)	% Carbon Dioxide	% Nitrogen	Gas Gravity- Gg
annulus	.023	25.574	.838

Vertical Depth (H)	Pressure Taps	Meter Run Size
2820	flange	2.067

Pressure Buildup: Shut in	2001/11/16 @ 1300	TAKEN	2001/11/19 @ 1020
Well on Line: Started	2001/11/19 @ 1020	TAKEN	2001/11/20 @ 1245

OBSERVED SURFACE DATA

Static/ Dynamic Property	Orifice Size in.	Meter Pressure psig	Pressure Diff. In. H_2O	Flowing Temp. t.	WellHead Temp. t.	Casing WellHead Press. (P_w) (P_t) (P_c) psig	Casing WellHead Press. psia	Tubing WellHead Press. (P_w) (P_t) (P_c) psig	Tubing WellHead Press. psia	Duration (Hours)	Liquid Prod. Barrels
Shut-in						150	164				
Flow	1.000	106.0	15.00	56		106	120				

FLOW STREAM ATTRIBUTES

COEFFICIENT (F_b) Mcfd	(METER) PRESSURE psia	EXTENSION $\sqrt{P_m \times H_w}$	GRAVITY FACTOR Fg	FLOWING TEMP FACTOR Ft	DEVIATION FACTOR Fpv	RATE OF FLOW R Mcfd	GOR	G_m
5.070	120.4	42.50	1.0924	1.0039	1.0128	239	3510	1.701

(OPEN FLOW)(DELIVERABILITY) CALCULATIONS

$(Pc)^2$ = 27.0 $(Pw)^2$ = 14.7 Pd = % (Pc - 14.4) + 14.4 = $(Pa)^2$ = 0.207 $(Pd)^2$ =

$(P_c)^2 - (P_a)^2$	$(P_c)^2 - (P_w)^2$	$\frac{(P_c)^2 - (P_a)^2}{(P_c)^2 - (P_w)^2}$ or $\frac{(P_c)^2 - (P_d)^2}{(P_c)^2 - (P_w)^2}$	LOG [ ]	Backpressure Curve Slope"n" ---- or ---- Assigned Standard Slope	n x LOG [ ]	Antilog	Open Flow Deliverability = R x Antilog Mcfd
26.82	12.31	2.179	.3383	.848	.2869	1.936	463

OPEN FLOW 463 Mcfd @ 14.65 psia DELIVERABILITY Mcfd @ 14.65 psia

The undersigned authority, on behaf of the Company, states that he is duly authorized to make the above report and that he has knowledge of the facts stated herein and that said report is true and correct. Executed this the _____ day of _____, 20 _____

Witness (if any)

For Company

For Commission

Checked by

KANSAS CORPORATION COMMISSION
MULTIPOINT BACK PRESSURE TEST

FORM G-1
8-7-58

TYPE TEST:	☒ Initial	☐ Annual	☐ Special	TEST DATE: 11/19/2001

COMPANY	LEASE	WELL NO.
Bartling Oil Company	Angell	2

COUNTY	LOCATION	SECTION	TWP	RNG	ACRES
Greeley	c NW	5	20s		640

FIELD	RESERVOIR	PIPELINE CONNECTION
Bradshaw	Winfield	Duke Energy

COMPLETION DATE	PLUG BACK DEPTH / TOTAL DEPTH	PACKER SET AT
	2880	

CASING SIZE	WT.	ID	SET AT	PERF.	TO
4.500	10.500	4.052	2811		2824

TUBING SIZE	WT.	ID	SET AT	PERF.	TO
2.375	4.700	1.995	2834		

TYPE COMPLETION (Describe)	TYPE FLUID PRODUCTION
natural	water

PRODUCING THRU (Annulus/Tubing)	RESERVOIR TEMPERATURE F	BAR PRESS - Pa
annulus	90	14.4 psia

GAS GRAVITY - Gg	% CARBON DIOXIDE	% NITROGEN	API GRAVITY OF LIQUID
.838	.023	25.574	

VERTICAL DEPTH (H)	TYPE METER CONN.	METER RUN SIZE
2820	flange	2.067

REMARKS

OBSERVED SURFACE DATA

RATE NO.	ORIFICE SIZE in.	(METER) PRESSURE psig	DIFF. (h_w) (h_t)	FLOWING TEMP. t.	WELLHEAD TEMP. t.	CASING WELLHEAD PRESS. psig	CASING WELLHEAD PRESS. $(P_w)(P_t)(P_c)$ psia	TUBING WELLHEAD PRESS. psig	TUBING WELLHEAD PRESS. $(P_w)(P_t)(F_c)$ psia	DURATION HOURS	LIQUID PROD. Bbls.
SHUT-IN						150	164				
1.	1.000	141.00	5.00	54		141	155			.50	
2.	1.000	134.00	15.00	58		134	148			.50	.1
3.	1.000	125.00	27.00	60		125	139			.50	.6
4.	1.000	118.00	33.00	61		118	132			.50	.6

FLOW STREAM ATTRIBUTES

RATE NO.	COEFFICIENT (F_b) Mcfd	(METER) PRESSURE psia	EXTENSION $\sqrt{P_m \times H_w}$	GRAVITY FACTOR Fg	FLOWING TEMP FACTOR Ft	DEVIATION FACTOR Fpv	RATE OF FLOW Q Mcfd	GOR	G_m
1.	5.070	155.4	27.87	1.0924	1.0058	1.0169	157		.838
2.	5.070	148.4	47.18	1.0924	1.0019	1.0157	265	42613.9	.929
3.	5.070	139.4	61.35	1.0924	1.0000	1.0145	344	13057.1	1.120
4.	5.070	132.4	66.10	1.0924	.9990	1.0137	370	14043.0	1.102

PRESSURE CALCULATION

RATE NO.	Pt psia	Pc psia	Pw psia	$(Pc)^2$ Thousands	$(Pw)^2$ Thousands	PLOTTING POINTS $(P_c)^2 - (P_w)^2$ Thousands	PLOTTING POINTS Q Mcfd	% SHUT-IN $100\left[\frac{Pw - Pa}{Pc - Pa}\right]$
1.	155.4	164.4	155.6	27.0	24.2	2.8	157.9	94.1
2.	148.4	164.4	149.1	27.0	22.2	4.8	265.9	89.8
3.	139.4	164.4	140.8	27.0	19.8	7.2	344.7	84.3
4.	132.4	164.4	134.1	27.0	18.0	9.0	370.7	79.8

INDICATED WELLHEAD OPEN FLOW 1086 Mcfd @ 14.65 psia "n" = .849

The undersigned authority, on behaf of the Company, states that he is duly authorized to make the above report and that he has knowledge of the facts stated herein and that said report is true and correct. Executed this the _____ day of _____, 20 _____

Witness (if any)

For Company

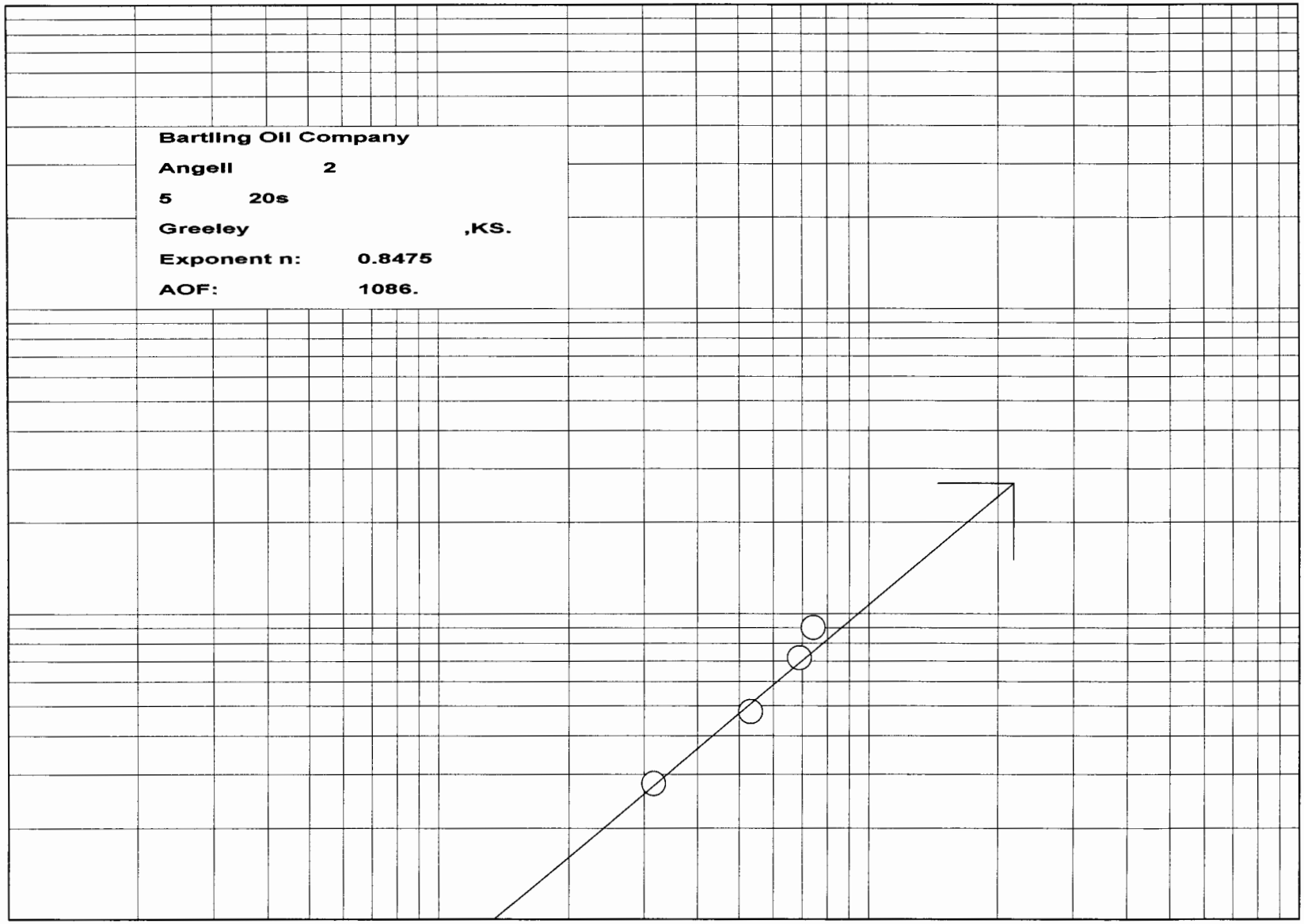
For Commission

Checked by

GAS WELL BACK PRESSURE CURVE

WELL TESTER: Trilobite Testing

TEST DATE: 11/19/2001



Company: Bartling Oil Company

Address:

Wellname: Angell #2 SI 1300

Legal: Sec: 5 Twp: 20s Rge: 39w

Formation: Winfield | Field/Pool: Bradshaw | County: Greeley St: Ks

Casing size:	Feet of:	Wt:	Meter run size: 2067	SI: 150
Tubing Size:	Feet of:	Wt:	Orif (in): .500	95% 142
TD:	Pluged back depth:		Packer depth:	90% 135
Type Test:	Tap Type:		Gravity:	85% 128
Type Completion:			Producing through: annulus	80% 120

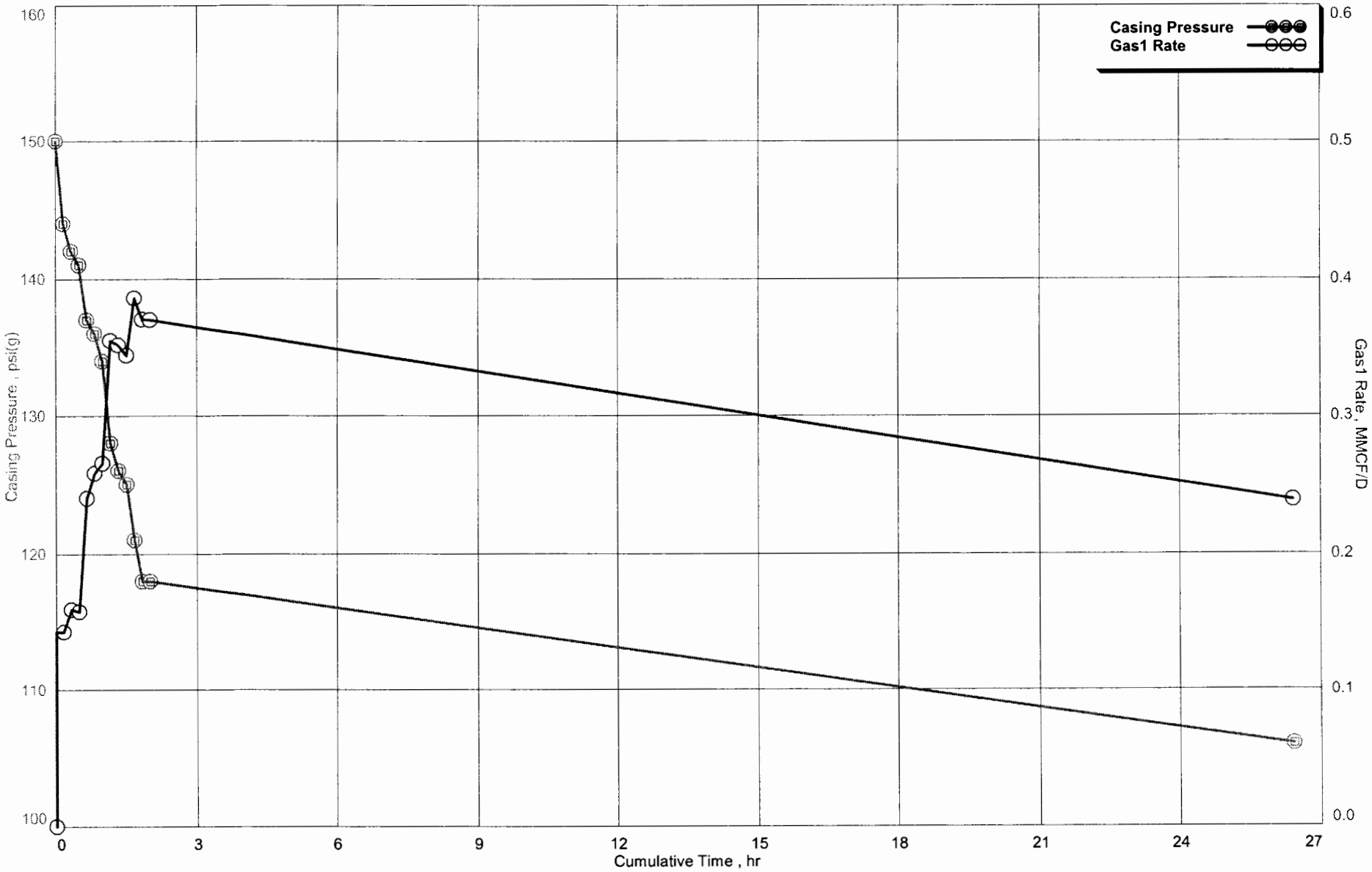
Date	Clk Tim	Tbg Pres	Csg Pres	Diff	Temp	Static/Prover	Wat Vol1	Oil Vol	Comment
mm/dd	clock	psi	psi	in of H20	F	PSI	inch	inch	
	1020		150				70568		SI
	1030		144	4"	53	144	68.13		
	1040		142	5	54	142			
	1050		141	5	54	141	68.13		1st pt
	1100		137	12	57	—			
	1110		136	14	58	—			
	1120		135	15	58		68.26		2nd pt
	1130		128	25	58		68.44		
	1140		126	28	60		8.65		
	1150		125	27	60		8.81		3rd pt
	1200		121	35	60		569		
	1210		118	33	60		9.16		
	1220		118	33	61		9.36		4th pt

Date	Miles	Name	Date	Miles	Name	Date	Miles	Name
	50 miles							

Bartling Oil Company
C NW 5 20s 39w Greeley KS
Start Test Date: 2001/11/19

Angell #2

Plot



Bartling Oil Company
C NW 5 20s 39w Greeley KS
Start Test Date: 2001/11/19

FieldNotes
Field Measurements

Angell #2

	Date	Clock Time	Comment	Casing Pres	Static1 Pres	Diff1 Pres	Orifice1	Calc Inc Wat1 Gain	Meter1 Temp	Gas1 Rate	Measured Wat1 Vol	Water1 Rate
	yyyy/mm/d	hh:mm:ss		psi(g)	psi(g)	in of H2O	in	bbl	°F	MMCF/D	bbl	bbl/d
1	2001/11/19	10:20:00	shutin									
2		10:20:00		150.00	0.00	0.00	1.000	0.000	0.00	0.000	568.130	
3		10:30:00		144.00	144.00	4.00			53.00	0.143		
4		10:40:00		142.00	144.00	5.00			54.00	0.159		
5		10:50:00	1st pt									
6		10:50:00		141.00	141.00	5.00			54.00	0.158		
7		11:00:00		137.00	137.00	12.00			57.00	0.240		
8		11:10:00		136.00	136.00	14.00			58.00	0.258		
9		11:20:00	2nd pt									
10		11:20:00		134.00	134.00	15.00		0.130	58.00	0.265	568.260	3.120
11		11:30:00		128.00	128.00	28.00		0.180	58.00	0.355	568.440	25.920
12		11:40:00		126.00	126.00	28.00		0.210	60.00	0.352	568.650	30.240
13		11:50:00	3rd pt									
14		11:50:00		125.00	125.00	27.00		0.160	60.00	0.344	568.810	23.040
15		12:00:00		121.00	121.00	35.00		0.190	60.00	0.386	569.000	27.360
16		12:10:00		118.00	118.00	33.00		0.160	60.00	0.371	569.160	23.040
17		12:20:00	4th pt									
18		12:20:00		118.00	118.00	33.00		0.200	61.00	0.370	569.360	28.800
19	2001/11/20	12:45:00	1pt									
20		12:45:00		106.00	106.00	15.00		74.900	56.00	0.239	644.260	73.622

GENERAL INFORMATION

Client Information:

Company: Bartling Oil Company

Contact:

Phone: Fax: e-mail:

Site Information:

Contact: Warren Ochner

Phone: Fax: e-mail:

Well Information:

Name: Angell #2

Operator: Bartling

Location-Downhole: C NW 5 20s 39w Greeley KS

Location-Surface:

Test Information:

Company: Trilobite Testing Inc.

Representative:

Supervisor: Paul simpson

Test Type: Initial 4 pt Job Number:

Test Unit:

Start Date: 2001/11/19 Start Time: 10:20:00

End Date: End Time:

Report Date: Prepared By:

Remarks: Qualified By:

50 from Scott City

1pt.

1 pt 115
pt - 295
60
85.00
11-19
85.00
11-20