

Kansas Geological Survey 1930 Constant Avenue, Campus West The University of Kansas Lawrence, Kansas 66046		1- PROJECT CHEROKEE CO	SHEET 1 OF 8
DRILLING LOG		2- LOCATION (Coordinates or Station) SE, SE, NE, Sec 29, T33S, R23E	3- DRILLING AGENCY
4- HOLE NO. (As shown on drawing title and file No.) CCK-2-89		5- NAME OF DRILLER Anderson / Kleinschmidt	
6- DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		7- THICKNESS OF OVERBURDEN 8'	8- DEPTH DRILLED INTO ROCK 79
10- SIZE AND TYPE OF BIT NX Core		11- DATUM FOR ELEVATION SHOWN (TBM or MSL)	12- MANUFACTURER'S DESIGNATION OF DRILL Farling 1250
13- TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED UNDISTURBED		14- TOTAL NO. CORE BOXES 7	15- ELEV. GROUND WATER
17- ELEV. TOP OF HOLE 880		18- TOTAL CORE RECOVERY FOR BORING (%)	16- DATE HOLE STARTED 6/15/89 COMPLETED 6/16/89
		19- SIGNATURE OF INSPECTOR L. Brody	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (drilling time, water loss, depth of weathering, etc., if significant)
			Brown clay 2'-4' Sand & some gravel 4'-6' Brown clay 6'-8' Weathered shale, gray/brown 8'-13'			Hole - 125' west of E of county road and 50' north of fence at the creek. Fishtailed to 13 Set casing at 13
12						
13			Shale, badly weathered grayish brown. Weathered zone represents the loss area			JA JA RUN 1 Ran 4.2 Rec 2.2 Loss 1.9
14						
15			Top of core 14.9		BOX 1	
16			Shale, badly fractured weathered in top, with clay			
17			0.4 loss			17.2
18						RUN 2 Ran 8.5 Rec 8.1 Loss 0.4
19			Coal, banded, fracturing, black. 19.0 Weir-Pittsburg coal			
20			Sandstone, fine grained burrows, bedding to about 21'. greenish gray			

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	2- LOCATION (Coordinates or Station)	
	3- DRILLING AGENCY	

4- HOLE NO. (As shown on drawing title and file No.) CCK-2-89	5- NAME OF DRILLER
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6- DIRECTION OF HOLE			7- THICKNESS OF OVERBURDEN	8- DEPTH DRILLED INTO ROCK	9- TOTAL DEPTH OF HOLE
<input type="checkbox"/> VERTICAL	<input type="checkbox"/> INCLINED	DEGREES WITH VERTICAL			

10- SIZE AND TYPE OF BIT	11- DATUM FOR ELEVATION SHOW (TBM or MSL)	12- MANUFACTURER'S DESIGNATION OF DRILL
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13- TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14- TOTAL NO. CORE BOXES	15- ELEV. GROUND WATER	16- DATE HOLE	
DISTURBED	UNDISTURBED			STARTED	COMPLETED

17- ELEV. TOP OF HOLE	18- TOTAL CORE RECOVERY FOR BORING (%)	19- SIGNATURE OF INSPECTOR
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ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
			Sandstone (cont)		BOX 1	
21			Sandstone, w/ lenticular bed of clay, fine to v. fine grained sand, fine to coarse, occasional pyrite grains, greenish-gray			
22						
23						
24						
25			Sandstone 24.8 becoming more wavy bedded.	24.6	BOX 2	
26			v. calcareous or a coreless conglomerate			25.7
27						RUN 3 Run 9.2 217 Rec 8.8 <hr/> Loss 0.4
28			Shale, soft fractured zones with other hard areas, has zones of lenticular bed (w/ siltstone) v dk gray			
29			Calcareous siltstone partings (lenticular bedding)			
30						

Kansas Geological Survey 1930 Constant Avenue, Campus West The University of Kansas Lawrence, Kansas 66046		1. PROJECT		SHEET <u>3</u> OF <u>8</u>	
		2. LOCATION (Coordinates or Station)			
DRILLING LOG		3. DRILLING AGENCY			
4. HOLE NO. (As shown on drawing title and file No.) <u>CCK-2-89</u>		5. NAME OF DRILLER			
6. DIRECTION OF HOLE		7. THICKNESS OF OVER-BURDEN		8. DEPTH DRILLED INTO ROCK	
<input type="checkbox"/> VERTICAL	<input type="checkbox"/> INCLINED	DEGREES WITH VERTICAL		9. TOTAL DEPTH OF HOLE	
10. SIZE AND TYPE OF BIT		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		12. MANUFACTURER'S DESIGNATION OF DRILL	
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES		15. ELEV. GROUND WATER	
DISTURBED		UNDISTURBED		16. DATE HOLE	
				STARTED	
				COMPLETED	
17. ELEV. TOP OF HOLE		18. TOTAL CORE RECOVERY FOR BORING (%)		19. SIGNATURE OF INSPECTOR	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
			Shale, v. dark gray (cont.)		BOX 2	
	31		Zones of badly fractured shale that fell apart on removal from core barrel			
	32					
	33					
	34					
	35				34.5 BOX 3	34.9
	36		60 core loss			RUN 4 65 min. Run 9.3 Rec 7.2 Loss 2.1
	37					
	38		1/2 core loss Core badly broken soft			
	39					
	40					

Kansas Geological Survey 1930 Constant Avenue, Campus West The University of Kansas Lawrence, Kansas 66046				1. PROJECT		SHEET 4 OF 8	
				2. LOCATION (Coordinates or Station)			
3. DRILLING AGENCY							
4. HOLE NO. (As shown on drawing title and file No.) CCK-2-89				5. NAME OF DRILLER			
6. DIRECTION OF HOLE			7. THICKNESS OF OVERBURDEN		8. DEPTH DRILLED INTO ROCK		9. TOTAL DEPTH OF HOLE
<input type="checkbox"/> VERTICAL	<input type="checkbox"/> INCLINED	DEGREES WITH VERTICAL					
10. SIZE AND TYPE OF BIT			11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		12. MANUFACTURER'S DESIGNATION OF DRILL		
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		UNDISTURBED	14. TOTAL NO. CORE BOXES	15. ELEV. GROUND WATER	16. DATE HOLE		
DISTURBED					STARTED	COMPLETED	
17. ELEV. TOP OF HOLE		18. TOTAL CORE RECOVERY FOR BORING (%)		19. SIGNATURE OF INSPECTOR			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)		% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	41		Shale, v. dk gray (cont.)			BOX 3	
	42						
	43						
	44		limestone, v. shaly				
			Coal, banded, fractured, blue				44.2
			Bluejacket A coal				
			0.8 core loss				
	45		Siltstone, to v. fine grained sandstone, burrowed, soft "sandtrails" greenish-gray				RUN 5 Ran 9.2 Rec 8.4 Loss 0.8
	46		46.A			46.2	Loss probably does not include coal. Some underlay was left in hole from Run 4.
	47		Sandstone, v. fine grained, lacks bedding burrowed, lt. greenish-gray			BOX 4	
	48		"Upper" Bluejacket sandstone				
	49						
	50		calcareous cement				

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6. DIRECTION OF HOLE <input type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED DEGREES WITH VERTICAL			7. THICKNESS OF OVER-BURDEN		8. DEPTH DRILLED INTO ROCK	9. TOTAL DEPTH OF HOLE
10. SIZE AND TYPE OF BIT		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		12. MANUFACTURER'S DESIGNATION OF DRILL		
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED		UNDISTURBED	14. TOTAL NO. CORE BOXES	15. ELEV. GROUND WATER	16. DATE HOLE STARTED	COMPLETED
17. ELEV. TOP OF HOLE		18. TOTAL CORE RECOVERY FOR BORING (%)		19. SIGNATURE OF INSPECTOR		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (drilling time, water loss, depth of weathering, etc., if significant)
	51		Sandstone (con 4)		BOX 6	
			51.2			
	52		Sandstone, v. fine grained, w/siltstone laminae, ripple bdd, with large disturbed bdd in upper 0.4 ft. greenish-gray			
			52.2			
	53		Siltstone, with clay laminae toward bottom, gray w/lt. gray laminae			
			53.9			6/16/8189 JA
	54		Loss 1.0			RUN 6
			54.6			Rec 9.3
	55		Shale, w/siltstone laminae, dark gray. w/gray laminae. Zones break easily			Rec 7.4
			55.6			Loss 1.9
	56					
	57					
	58				BOX 5	
	59		hard siltstone beds			
	60					

Kansas Geological Survey 1930 Constant Avenue, Campus West The University of Kansas Lawrence, Kansas 66046				1. PROJECT <i>CHEROKEE CO.</i>		SHEET <i>6</i> OF			
				2. LOCATION (coordinates or Station)					
DRILLING LOG						3. DRILLING AGENCY			
4. HOLE NO. (As shown on drawing title and file No.) <i>CCK-2-89</i>				5. NAME OF DRILLER					
6. DIRECTION OF HOLE <input type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			DEGREES WITH VERTICAL		7. THICKNESS OF OVERBURDEN		8. DEPTH DRILLED INTO ROCK		
10. SIZE AND TYPE OF BIT			11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		12. MANUFACTURER'S DESIGNATION OF DRILL				
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		UNDISTURBED		14. TOTAL NO. CORE BOXES		15. ELEV. GROUND WATER		16. DATE HOLE	
DISTURBED						STARTED		COMPLETED	
17. ELEV. TOP OF HOLE		18. TOTAL CORE RECOVERY FOR BORING (%)		19. SIGNATURE OF INSPECTOR					
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)		% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)		
	61		Shale, gray (conit) hard siltstone bed.			BOX 5			
	62		Siltstone, wavy bedded w/shale, occasional thin laminae of v. fine grained sandstone gray and dk gray laminae.				62.7		
	63						JA		
	64						RUN 7 57 8.00 Ran 8.3 Rec 7.4 Loss 0.9		
	65		Shale, lenticular bedded, with siltstone. gradational contact above. This zone where shale breaks very easily						
	66		Dk gray w/ lt gray siltstone						
	67								
	68					Box 6			
	69								
	70		See next page				69.5		

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6. DIRECTION OF HOLE <input type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED DEGREES WITH VERTICAL		7. THICKNESS OF OVERBURDEN	8. DEPTH DRILLED INTO ROCK	9. TOTAL DEPTH OF HOLE
10. SIZE AND TYPE OF BIT	11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	12. MANUFACTURER'S DESIGNATION OF DRILL		
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED	14. TOTAL NO. CORE BOXES	15. ELEV. GROUND WATER	16. DATE HOLE STARTED COMPLETED	
17. ELEV. TOP OF HOLE	18. TOTAL CORE RECOVERY FOR BORING (%)	19. SIGNATURE OF INSPECTOR		

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
71			Shale, slightly silty, dark gray.			71.0
72			coal (2 in place) fractured, banded, black (unnamed) hard siltstone			J.A. RUN 8 1550 1205 85min Run 6.6 Rec 6.0 Loss 0.6
73			Shale slightly silty, better structure in lower part			
74			0.3 core loss Mudstone, soft, structureless, highly organic, v. dark gray			
75			Coal, banded, black Bluejacket "C" coal Siltstone, "underclay", brownish greenish gray 74.8			
76			0.3 core loss Mudstone, silty, worked "Underclay"			
77			77.0 Siltstone, w/shale partings gray to dk gray			
78			77.6 78.4	77.6	Box 7	M.K. RUN 9 125 370 155min Run 9.7 Rec 8.2 Loss 1.5
79			Shale, w/siltstone parting in upper 1". Has zones that fracture easily v. dark gray			
80						

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3. DRILLING AGENCY				5. NAME OF DRILLER	
4. HOLE NO. (As shown on drawing title and file No.) <u>CCK-2-89</u>				6. DIRECTION OF HOLE	
<input type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEGREES WITH VERTICAL		7. THICKNESS OF OVERBURDEN	8. DEPTH DRILLED INTO ROCK
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13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES		15. ELEV. GROUND WATER	
DISTURBED		UNDISTURBED		16. DATE HOLE	
				STARTED	
				COMPLETED	
17. ELEV. TOP OF HOLE		18. TOTAL CORE RECOVERY FOR BORING (%) <u>86.0%</u>		19. SIGNATURE OF INSPECTOR	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
			Shale, dk gray (cont'd)		Box 7	
	81		0.8 core loss			
	82					
	83					
	84		abundant fossils, brachs.			
	85		Limestone, v. shaly, v. fossiliferous gray to dk gray			
	86		Coal, banded, black Bluejacket "D"			
	86		Mudstone, v. silty, "Underclay" gray.			Hole filled w/ volcanic clay grout
	87		Siltstone		87.3	87.3
	88					Cored 72.9 loss 10.5 % recovery 86%
	89					
	90					

DRILLING TIME REPORT

Trilog 114"
4'1"

COMPANY: KSCOO
LEASE: Dr T. ...
NO: OCK-2-89

DATE: 6/15/84 A.M. OR P.M.
COUNTY: Cherokee OK 237
TWP. SEC. RANGE
TYPE OF RIG: Fuller
MUD WEIGHT: 11.5 lb/gal
MUD VISCOSITY: 210 cp
CONTRACTOR: Brady

TYPE OF INDICATOR
WEIGHT ON DRILL PIPE
R.P.M. ROTARY TABLE

DEPTH		ACTUAL DRILLING TIME		MINUTES PER	REMARKS	BIT NO.
FROM	TO	BEGAN	ENDED			
July 14						
30"	17'2"	12:50	12:55	5	Drilled down to 12'6" Sit pipe	
17'2"	25'9"	12:55	12:35	40	Broken shale - worked clay shale	
25'9"	34'11"	14:17	13:04	47	20% of Seams 95% Recovery	
34'11"	44'3"	15:57	16:05	11	100% Recovery	
44'3"	53'5"	16:32	17:32	60	80% Recovery B. deep very soft Co. salt & bitumens	
June 15						
3'5"	62'4"	5:40	7:40	120	Stuck down to kick face of site at	
62'4"	71'0"	8:30	10:02	72	Check over log & fix rod clamp & C.B. Winch	
71'0"	77'7"	10:55	12:20	85	Stuck blocked w/ BDL Grade BDL & fractals	
77'7"	87'4"	13:27	15:22	115	Build pressure - pull over pipe Stuck core hydraulic recovery w/ bleed system P.I.P.H. 5% 86% Recovery	

ACTUAL DRILLING TIME IS TIME SPENT IN DRILLING THE DEPTH. SHUT DOWN TIME IS SENT SHUT DOWN FOR REPAIRS, ROUND TRIPS, ETC. SHOW WHEN BIT IS CHANGED AND KIND OF NEW BIT. MENTION ROUND TRIPS IN REMARKS COLUMN. FILL OUT THIS FORM UP TO BOTTOM OF HOLE.