CRA, INC.

Woodward CH-3

Dipmeter Report

SCHLUMBERGER WELL SURVEYING CORPORATION

HOUSTON, TEXAS

November 26, 1965

PLEASE REPLY TO:
SUITE 1120 WICHITA PLAZA BLDG.
WICHITA, KANSAS 67202

CRA, Inc.
Box 445
Wellington, Kansas

Gentlemen:

This report is intended to summarize our interpretation of the Continuous Dipmeter Survey ran on your Woodward CH-3, Bourbon County, Kansas. Included in this report is the graphic presentation of dip calculations, the tabular presentation of dip calculations and a series of dip frequency polar diagrams the interpretation of which is discussed below.

The Bartlesville sand interval, 616-658, is a bar sand striking N10W - S10E with thicker sand being N80E of this well.

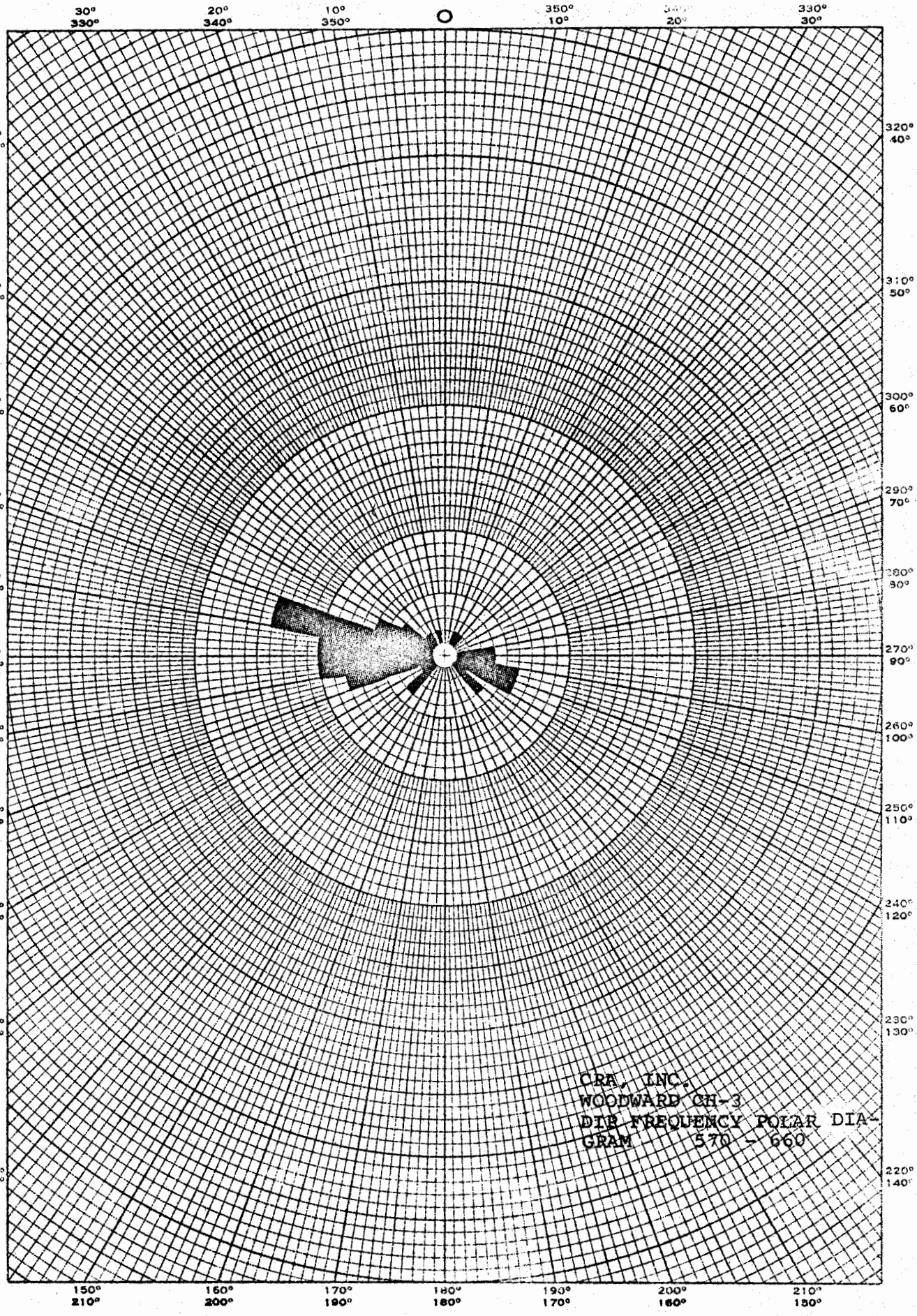
The lower Bartlesville sand interval, 774-778, is a bar sand with a strike of N80E - S80W and is thicker to the S10E. A location approximately at the center of Section 13 should find both sands in more favorable position, provided they are of sufficient width not to cross both systems.

The above interpretations represent our best judgement, and we are happy to give them to you. Nevertheless, since all interpretations are based on inferences from electrical and other measurements, we cannot and do not guarantee their accuracy or correctness, and we shall not be liable or responsible, except in the case of willful negligence on our part, for any loss, costs, damages or expenses that may be incurred or sustained from such interpretations.

Thank you for calling Schlumberger on this well. If we can be of further assistance, please feel free to call on us at any time.

Sam Fain

Sam Fain



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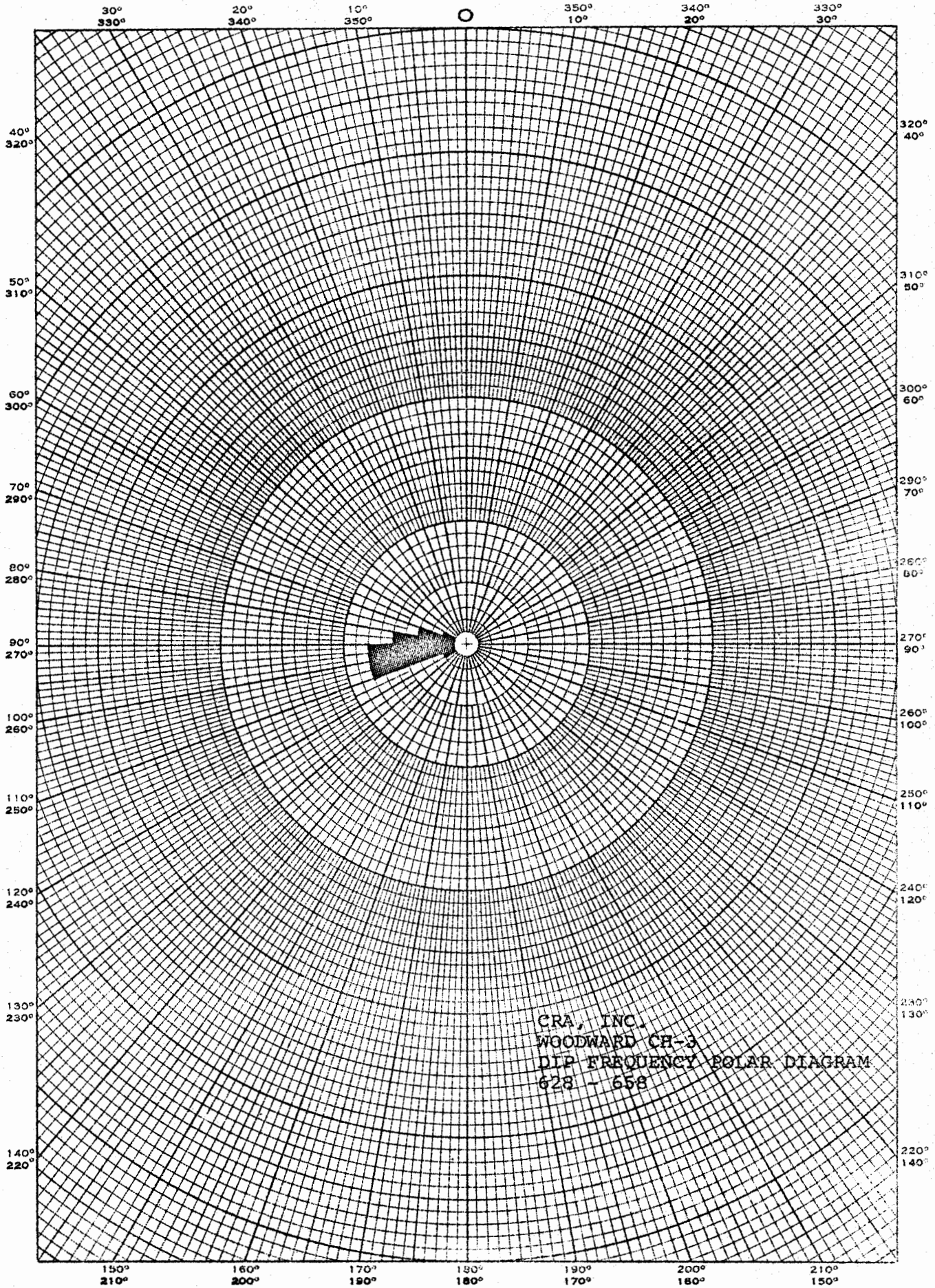

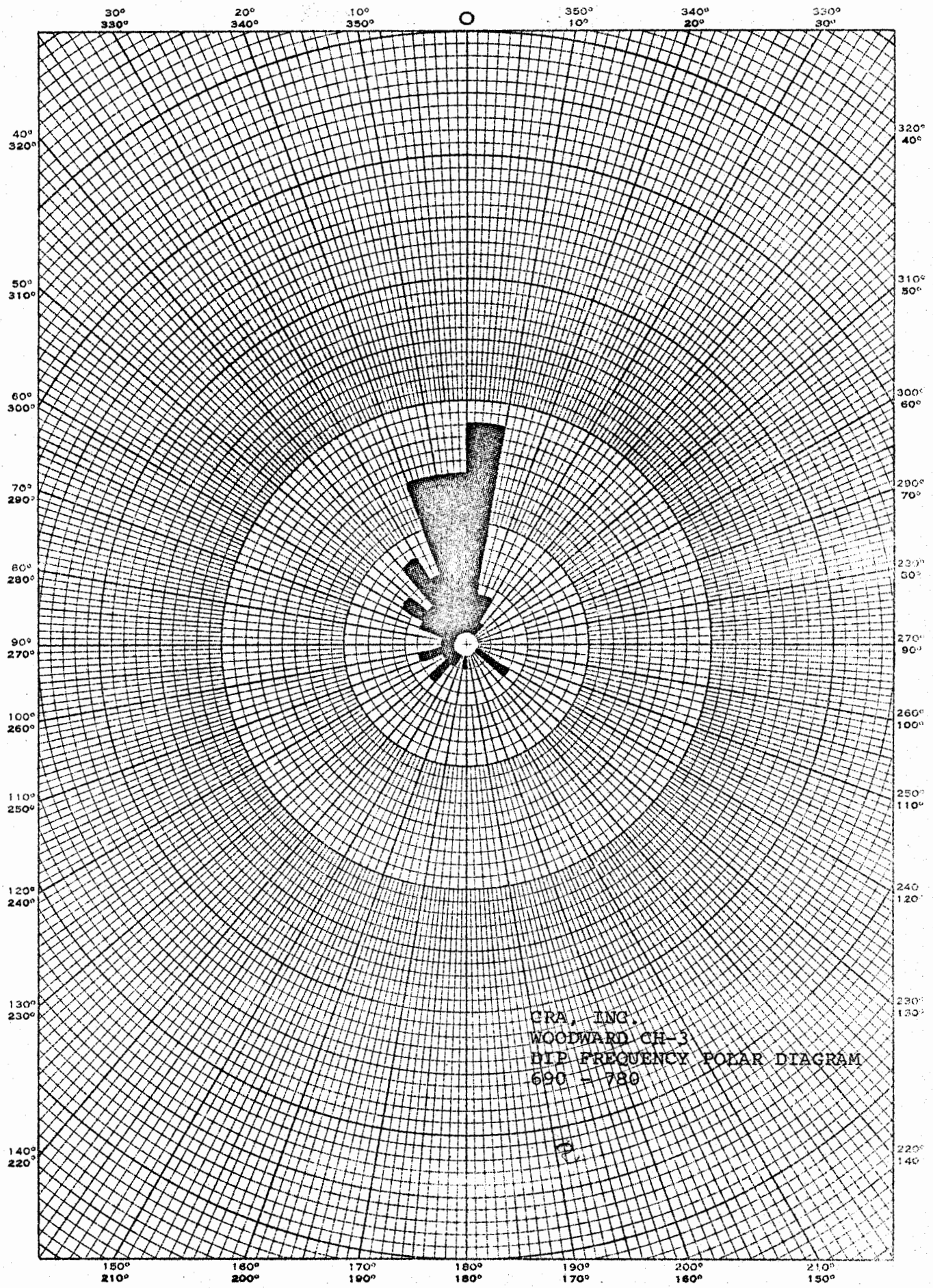

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SCHLUMBERGER WELL SURVEYING CORPORATION
CONTINUOUS DIPMETER CALCULATIONS

C. R. A., INCORPORATED
WOODWARD CORE HOLE NO. 3
BRONSON AREA FIELD
SEC. 13 - 25S - 21E
BOURBON COUNTY, KANSAS

DEPTH	DIP	DIP AZM	DIP BRG		DEV	DEV AZM
499.	2.9	338	N	22 W	0	0.0	319
501.	2.2	19	N	19 E	0	0.0	319
503.	1.9	349	N	11 W	0	0.0	319
505.	1.9	344	N	16 W	0	0.0	314
507.	1.9	344	N	16 W	0	0.0	314
509.	2.2	304	N	56 W	0	0.0	304
511.	1.9	329	N	31 W	0	0.0	299
513.	1.9	329	N	31 W	0	0.0	299
515.	1.9	324	N	36 W	0	0.0	294
517.	1.9	319	N	41 W	0	0.0	289
519.	2.2	349	N	11 W	0	0.0	289
521.	2.2	344	N	16 W	0	0.0	284
522.	2.2	344	N	16 W	0	0.0	284
523.	2.2	344	N	16 W	0	0.0	284
525.	2.2	339	N	21 W	0	0.0	279
527.	2.2	339	N	21 W	0	0.0	279
529.	2.2	334	N	26 W	0	0.0	274
531.	2.2	329	N	31 W	0	0.0	269
533.	1.1	324	N	36 W	0	0.0	264
535.	10.5	64	N	64 E	0	0.0	259
536.	25.7	13	N	13 E	0	0.0	259
541.	2.2	314	N	46 W	0	0.0	254
542.	2.2	9	N	9 E	0	0.0	249
543.	5.8	268	S	88 W	0	0.0	249
544.	1.9	334	N	26 W	0	0.0	244
545.	3.5	24	N	24 E	0	0.0	234
547.	12.7	309	N	51 W	0	0.0	224
551.	3.3	339	N	21 W	0	0.0	219
553.	2.2	329	N	31 W	0	0.0	209
555.	2.2	264	S	84 W	0	0.0	204
557.	2.9	305	N	55 W	0	0.0	204
559.	2.9	305	N	55 W	0	0.0	204
561.	2.2	319	N	41 W	0	0.0	199
563.	1.9	284	N	76 W	0	0.0	194
565.	2.2	254	S	74 W	0	0.0	194
566.	2.2	254	S	74 W	0	0.0	194
567.	2.2	254	S	74 W	0	0.0	194
568.	2.2	249	S	69 W	0	0.0	189
569.	2.2	244	S	66 W	0	0.0	184

570.	4.8	281	N	79	W	0	0.0	184
571.	2.1	304	N	56	W	0	0.0	184
572.	2.6	290	N	70	W	0	0.0	189
576.	5.4	89	N	89	E	0	0.0	179
577.	8.2	93	S	87	E	0	0.0	179
578.	13.0	135	S	45	E	0	0.0	179
579.	13.4	135	S	45	E	0	0.0	179
581.	18.3	107	S	73	E	0	0.0	179
583.	18.0	113	S	67	E	0	0.0	179
584.	34.8	122	S	58	E	0	0.0	179
585.	4.9	108	S	72	E	0	0.0	179
587.	21.1	104	S	76	E	0	0.0	174
589.	28.1	114	S	66	E	0	0.0	174
591.	10.9	114	S	66	E	0	0.0	184
593.	7.5	94	S	86	E	0	0.0	184
595.	5.7	83	N	83	E	0	0.0	184
597.	3.8	34	N	34	E	0	0.0	184
599.	15.9	21	N	21	E	0	0.0	184
601.	8.6	280	N	80	W	0	0.0	179
603.	7.5	269	S	89	W	0	0.0	179
605.	3.9	308	N	52	W	0	0.0	174
607.	2.9	313	N	47	W	0	0.0	174
609.	1.9	324	N	36	W	0	0.0	174
611.	2.2	229	S	49	W	0	0.0	169
613.	4.4	224	S	44	W	0	0.0	164
615.	3.9	238	S	58	W	0	0.0	164
617.	9.9	273	N	87	W	0	0.0	164
619.	7.6	284	N	76	W	0	0.0	164
621.	1.1	284	N	76	W	0	0.0	164
623.	4.4	284	N	76	W	0	0.0	164
625.	4.4	279	N	81	W	0	0.0	159
627.	4.4	279	N	81	W	0	0.0	159
629.	2.9	255	S	75	W	0	0.0	154
631.	2.9	250	S	70	W	0	0.0	149
633.	2.9	245	S	65	W	0	0.0	144
635.	2.9	250	S	70	W	0	0.0	149
637.	2.2	269	S	89	W	0	0.0	149
639.	5.1	258	S	78	W	0	0.0	149
641.	2.2	264	S	84	W	0	0.0	144
643.	4.3	269	S	89	W	0	0.0	149
645.	5.4	274	N	86	W	0	0.0	154
647.	5.4	274	N	86	W	0	0.0	154
649.	4.3	269	S	89	W	0	0.0	149
651.	3.9	288	N	72	W	0	0.0	154
653.	1.9	294	N	66	W	0	0.0	144
655.	2.9	283	N	77	W	0	0.0	144
657.	1.9	294	N	66	W	0	0.0	144
659.	1.9	349	N	11	W	0	0.0	139
661.	4.7	356	N	4	W	0	0.0	139
663.	11.6	5	N	5	E	0	0.0	139
665.	3.8	349	N	11	W	0	0.0	139
667.	6.1	10	N	10	E	0	0.0	139
669.	3.8	49	N	49	E	0	0.0	139
671.	4.0	33	N	33	E	0	0.0	139
673.	3.8	49	N	49	E	0	0.0	139
675.	3.8	44	N	44	E	0	0.0	134
677.	3.8	39	N	39	E	0	0.0	129

679.	3.8	39	N	39	E	0	0.0	129
681.	3.8	34	N	34	E	0	0.0	124
683.	3.8	29	N	29	E	0	0.0	119
685.	3.8	29	N	29	E	0	0.0	119
687.	3.8	24	N	24	E	0	0.0	114
689.	3.9	13	N	13	E	0	0.0	114
691.	3.9	353	N	7	W	0	0.0	99
693.	3.9	325	N	35	W	0	0.0	99
695.	3.9	320	N	40	W	0	0.0	94
697.	3.8	304	N	56	W	0	0.0	94
699.	5.8	310	N	50	W	0	0.0	89
701.	3.8	354	N	6	W	0	0.0	84
703.	3.8	354	N	6	W	0	0.0	84
705.	3.9	5	N	5	E	0	0.0	79
707.	3.9	5	N	5	E	0	0.0	79
709.	4.4	14	N	14	E	0	0.0	74
711.	5.0	3	N	3	E	0	0.0	74
713.	4.4	9	N	9	E	0	0.0	69
715.	3.8	29	N	29	E	0	0.0	59
717.	4.7	22	N	22	E	0	0.0	59
719.	5.0	5	N	5	E	0	0.0	54
721.	3.9	8	N	8	E	0	0.0	54
723.	3.9	3	N	3	E	0	0.0	49
725.	4.4	344	N	16	W	0	0.0	44
727.	5.7	14	N	14	E	0	0.0	44
729.	9.6	356	N	4	W	0	0.0	39
731.	10.4	355	N	5	W	0	0.0	34
733.	9.4	357	N	3	W	0	0.0	34
735.	7.8	343	N	17	W	0	0.0	29
737.	7.6	346	N	14	W	0	0.0	24
739.	6.6	349	N	11	W	0	0.0	24
740.	5.8	5	N	5	E	0	0.0	24
741.	3.8	354	N	6	W	0	0.0	24
742.	3.3	264	S	84	W	0	0.0	24
743.	17.3	187	S	7	W	0	0.0	19
744.	9.4	349	N	11	W	0	0.0	19
745.	11.4	338	N	22	W	0	0.0	19
747.	13.9	347	N	13	W	0	0.0	19
748.	15.0	339	N	21	W	0	0.0	9
749.	12.2	347	N	13	W	0	0.0	9
750.	13.0	329	N	31	W	0	0.0	4
751.	10.6	319	N	41	W	0	0.0	4
752.	11.2	334	N	26	W	0	0.0	4
753.	6.8	320	N	40	W	0	0.0	4
754.	6.5	304	N	56	W	0	0.0	4
755.	5.4	304	N	56	W	0	0.0	4
757.	11.4	258	S	78	W	0	0.0	359
758.	6.8	283	N	77	W	0	0.0	359
759.	6.8	223	S	43	W	0	0.0	359
761.	5.8	258	S	78	W	0	0.0	359
763.	8.7	234	S	54	W	0	0.0	354
765.	9.8	210	S	30	W	0	0.0	349
767.	6.5	224	S	44	W	0	0.0	344
769.	5.8	243	S	63	W	0	0.0	344
771.	11.6	293	N	67	W	0	0.0	339
772.	5.0	290	N	70	W	0	0.0	339
773.	4.8	2	N	2	E	0	0.0	99

775.	4.4	39	N	39 E	0	0.0	99
777.	13.6	120	S	60 E	0	0.0	104
779.	27.2	129	S	51 E	0	0.0	104
781.	31.1	121	S	59 E	0	0.0	94
783.	18.5	111	S	69 E	0	0.0	94
785.	21.1	134	S	46 E	0	0.0	94
789.	27.3	155	S	25 E	0	0.0	84
791.	29.0	154	S	26 E	0	0.0	79
793.	30.0	165	S	15 E	0	0.0	79
795.	28.6	171	S	9 E	0	0.0	79
798.	24.9	164	S	16 E	0	0.0	79
801.	16.0	182	S	2 W	0	0.0	69
802.	19.2	164	S	16 E	0	0.0	69
803.	14.0	152	S	28 E	0	0.0	69
805.	14.8	154	S	26 E	0	0.0	64
807.	18.3	154	S	26 E	0	0.0	64
809.	12.1	152	S	28 E	0	0.0	59
811.	20.2	169	S	11 E	0	0.0	59
813.	20.3	161	S	19 E	0	0.0	59
815.	21.2	164	S	16 E	0	0.0	59
817.	10.2	266	S	86 W	0	0.0	59
824.	9.9	288	N	72 W	0	0.0	59
827.	13.8	182	S	2 W	0	0.0	54
829.	16.0	181	S	1 W	0	0.0	54
833.	30.4	182	S	2 W	0	0.0	49
835.	28.1	147	S	33 E	0	0.0	49
839.	44.0	163	S	17 E	0	0.0	49
841.	22.0	179	S	1 E	0	0.0	49
845.	27.9	156	S	24 E	0	0.0	44