

CRA, INC.

Woodward CH-5

Dipmeter Report

Computer Inventoried

SCHLUMBERGER WELL SURVEYING CORPORATION

HOUSTON, TEXAS

November 27, 1965

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

CRA, Inc.
Box 445
Wellington, Kansas

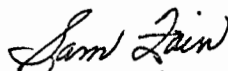
Gentlemen:

This report is intended to summarize our interpretation of the Continuous Dipmeter Survey ran on your Woodward CH-5, 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 plots the interpretation of which is discussed below.

The Bartlesville Sand interval, 654-699, has the appearance of a bar-type deposit which strikes N10W-S10E and the sand lies N80E of this well. It is apparent from the four previous wells that the strike of the bar is changing. Bold stepouts as we have taken are ineffective as we cannot extrapolate the strike data over so long an interval. This might lead us to believe that the bar is narrow. A recommended location would be along strike from the Woodward CH-4 trending perpendicular to the axis toward thicker sand. The width of the bar cannot be determined until a well is drilled on the east or southeast side of the system.

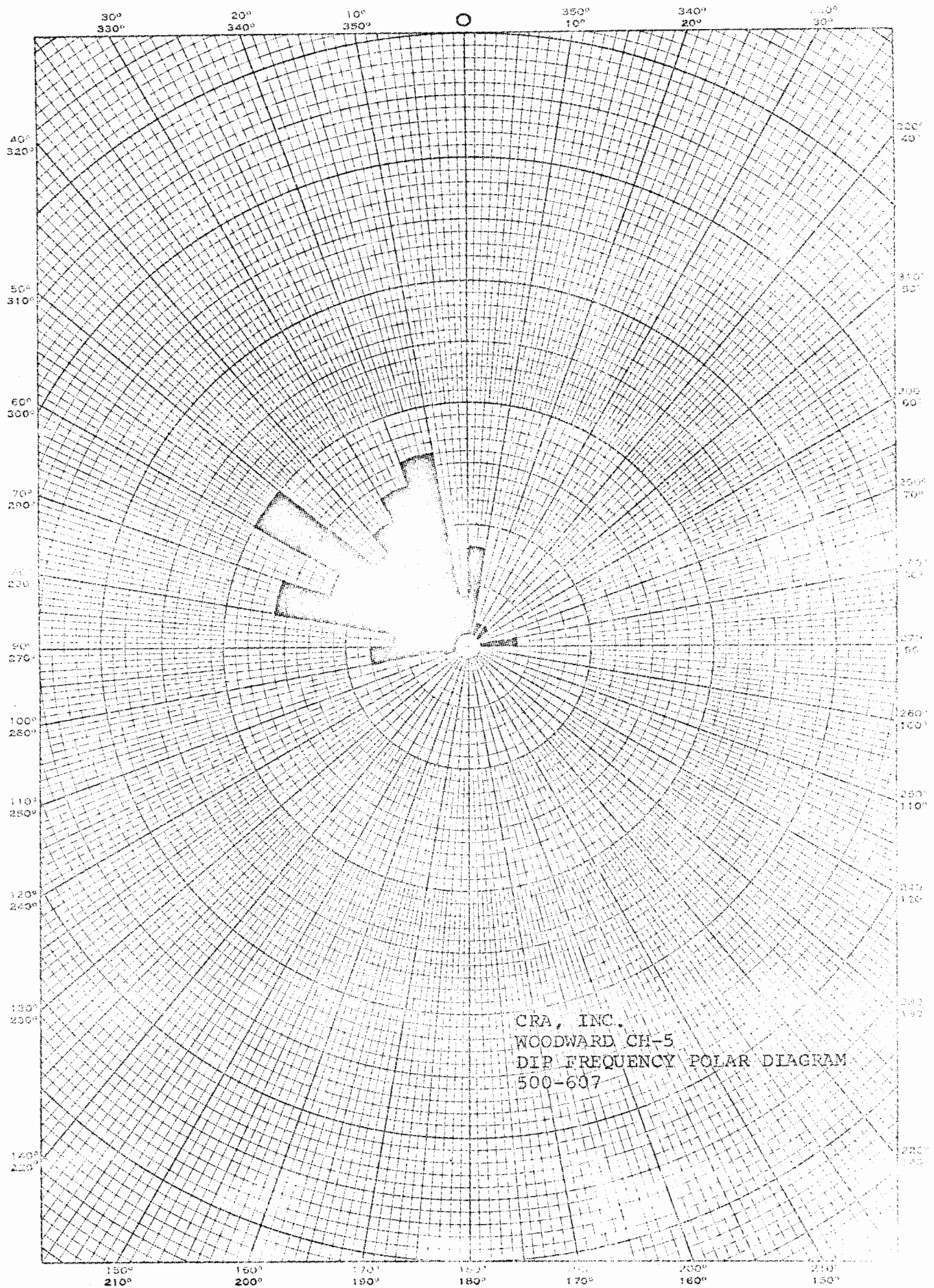
The above interpretation represents our best judgement, and we are happy to give them to you. Nevertheless, since all interpretations are based on inferences from electrical and other measurements, we cannot and do not guarantee their accuracy or correctness, and we shall not be liable or responsible, 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

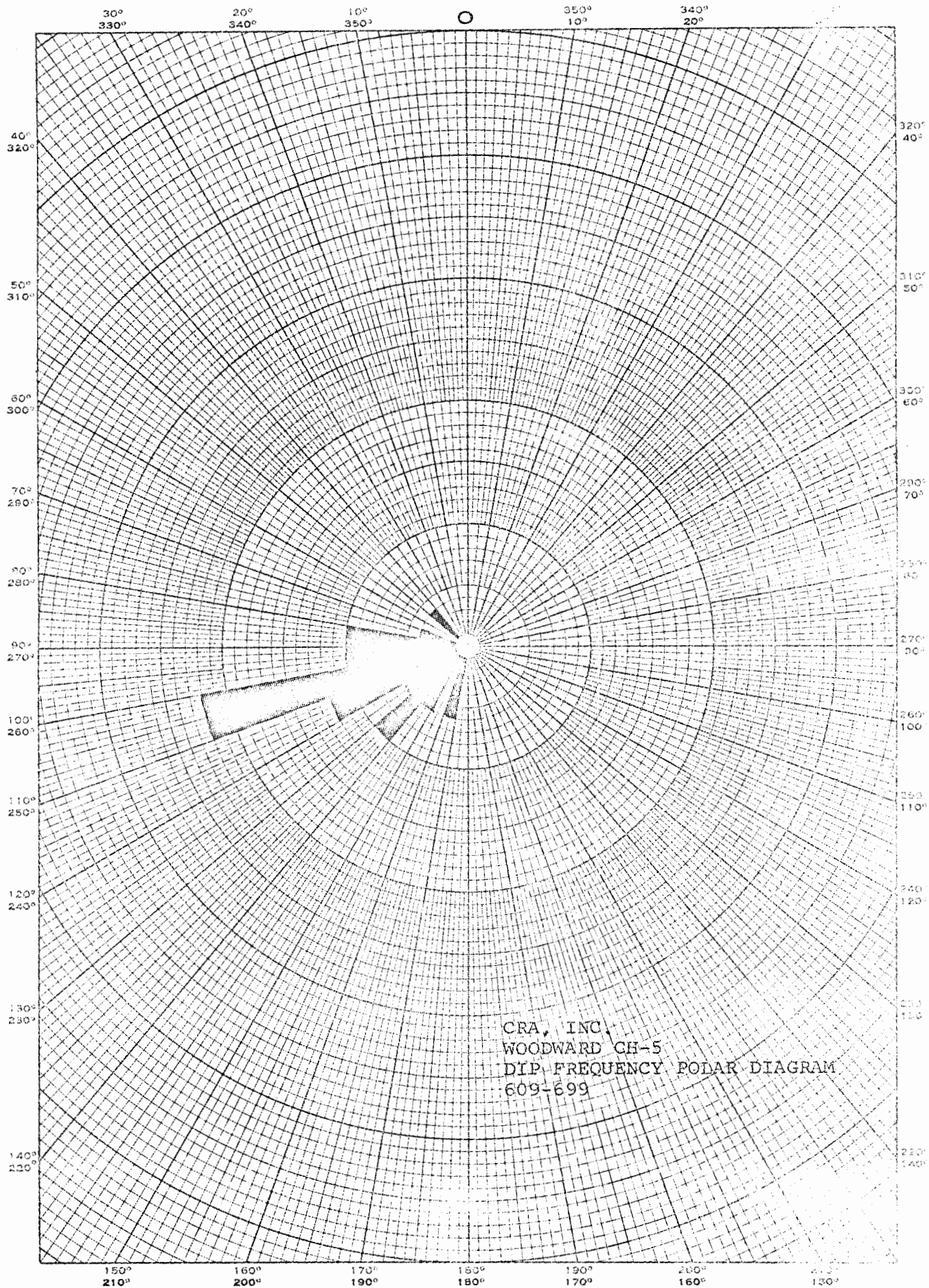
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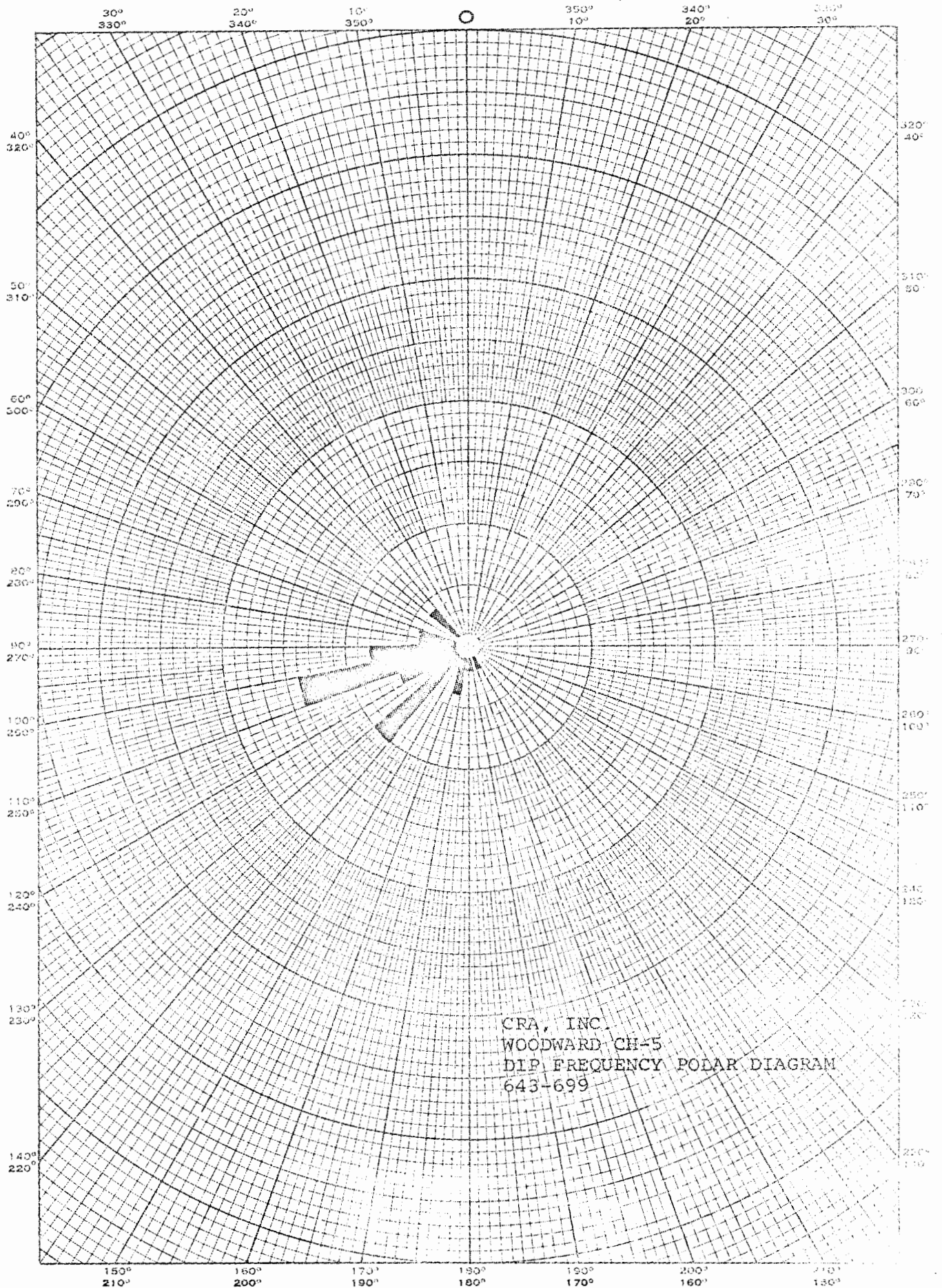
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CRA, INC.
WOODWARD CH-5
DIP-FREQUENCY POLAR DIAGRAM
609-699

EURASIA, FIFTY-FIVE CO.
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JOB NO. 433

SCHLUMBERGER WELL SURVEYING CORPORATION
CONTINUOUS DIPMETER CALCULATIONS

C. R. A., INC.
WOODWARD CH NO. 5
BOURBON COUNTY, KANSAS

DEPTH	DIP	DIP AZM	DIP BRG	DEV	DEV AZM
501	2.0	322	N 38 W	0.6	253
502	2.4	268	S 88 W	0.6	263
505	3.0	0	N	0.6	258
506	3.0	317	N 43 W	0.6	258
507	4.1	2	N 2 E	0.6	253
509	3.2	360	N	0.6	248
511	3.9	347	N 13 W	0.6	248
513	2.0	354	N 6 W	0.6	251
514	3.9	345	N 15 W	0.6	251
517	3.8	342	N 18 W	0.6	253
518	2.8	333	N 27 W	0.6	258
519	1.9	351	N 9 W	0.6	258
521	1.9	316	N 44 W	0.6	258
523	1.4	29	N 29 E	0.6	263
525	2.9	306	N 54 W	0.6	258
527	1.8	346	N 14 W	0.6	263
529	4.8	342	N 18 W	0.6	258
530	3.7	336	N 24 W	0.6	263
531	6.5	326	N 34 W	0.6	266
533	5.8	306	N 54 W	0.6	263
535	2.8	345	N 15 W	0.6	263
537	3.6	326	N 34 W	0.6	258
538	2.6	316	N 44 W	0.6	263
539	2.6	311	N 49 W	0.6	258
540	3.6	303	N 57 W	0.6	258
541	3.9	332	N 28 W	0.6	253
543	2.8	330	N 30 W	0.6	253
545	2.8	330	N 30 W	0.6	255
547	1.7	325	N 35 W	0.6	253
549	3.1	8	N 8 E	0.6	258
551	0.6	293	N 67 W	0.6	253
552	2.5	301	N 59 W	0.6	253
553	3.5	308	N 52 W	0.6	251
555	2.7	323	N 37 W	0.6	251
557	3.3	338	N 22 W	0.6	248
558	1.7	274	N 86 W	0.6	250
559	2.2	344	N 16 W	0.6	250
561	3.2	338	N 22 W	0.6	253
562	2.4	294	N 66 W	0.6	258
563	2.5	295	N 65 W	0.6	253
565	3.4	304	N 56 W	0.6	258

566	3.4	305	N 55 W	0.6	253
567	1.6	314	N 46 W	0.6	253
569	3.0	359	N 1 W	0.6	258
571	4.5	41	N 41 E	0.6	253
573	9.4	85	N 85 E	0.5	256
575	2.7	84	N 84 E	0.5	256
577	1.6	304	N 56 W	0.5	258
579	2.2	323	N 37 W	0.0	323
580	3.9	293	N 67 W	0.0	323
583	4.0	282	N 78 W	0.0	328
585	6.7	293	N 67 W	0.0	328
587	4.8	289	N 71 W	0.0	326
589	2.9	282	N 78 W	0.0	323
591	3.0	267	S 87 W	0.0	308
592	3.0	267	S 87 W	0.0	308
593	3.0	289	N 71 W	0.0	308
594	3.9	278	N 82 W	0.0	308
596	2.2	308	N 52 W	0.0	308
597	3.0	289	N 71 W	0.0	308
599	2.2	308	N 52 W	0.0	308
601	4.0	294	N 66 W	0.0	308
602	3.0	289	N 71 W	0.0	308
603	3.0	289	N 71 W	0.0	308
604	3.0	267	S 87 W	0.0	308
605	3.9	278	N 82 W	0.0	308
606	5.1	297	N 63 W	0.0	308
607	4.2	258	S 78 W	0.0	318
609	1.9	218	S 38 W	0.0	308
611	3.0	164	S 16 E	0.0	303
613	4.5	178	S 2 E	0.0	298
615	11.7	178	S 2 E	0.0	293
617	9.5	167	S 13 E	0.0	293
619	2.2	171	S 9 E	0.0	291
621	4.0	214	S 34 W	0.0	288
623	5.9	247	S 67 W	0.0	288
625	10.2	239	S 59 W	0.0	288
628	8.7	254	S 74 W	0.0	288
629	9.9	271	N 89 W	0.0	288
631	6.8	263	S 83 W	0.0	288
633	3.0	247	S 67 W	0.0	288
635	5.8	258	S 78 W	0.0	288
637	4.0	274	N 86 W	0.0	288
638	3.9	258	S 78 W	0.0	288
639	4.0	242	S 62 W	0.0	288
640	4.0	274	N 86 W	0.0	288
643	11.2	198	S 18 W	0.0	288
645	7.8	266	S 86 W	0.0	288
647	4.5	288	N 72 W	0.0	288
649	5.8	258	S 78 W	0.0	288
650	4.0	277	N 83 W	0.0	291
651	4.9	251	S 71 W	0.0	288
653	3.9	258	S 78 W	0.0	288
654	1.1	228	S 48 W	0.0	288
655	1.9	258	S 78 W	0.0	288
656	1.9	258	S 78 W	0.0	288
657	3.4	228	S 48 W	0.0	288
659	3.0	247	S 67 W	0.0	288

660	1.9	258	S 78 W	0.0	288
661	1.9	318	N 42 W	0.0	288
662	3.0	269	S 89 W	0.0	288
663	3.9	258	S 78 W	0.0	288
664	3.0	207	S 27 W	0.0	286
665	1.1	286	N 74 W	0.0	286
667	4.0	272	N 88 W	0.0	286
668	4.0	269	S 89 W	0.0	283
669	4.0	269	S 89 W	0.0	283
671	1.9	313	N 47 W	0.0	283
672	1.9	248	S 68 W	0.0	278
673	1.9	248	S 68 W	0.0	278
677	8.5	192	S 12 W	0.0	278
679	10.8	158	S 22 E	0.0	253
684	9.9	172	S 8 E	0.0	243
686	22.5	222	S 42 W	0.8	243
689	11.5	233	S 53 W	0.8	243
690	0.5			0.8	263
691	1.5	233	S 53 W	0.8	248
693	9.5	225	S 45 W	0.8	253
695	4.3	195	S 15 W	0.8	238
697	4.4	225	S 45 W	0.8	238
699	4.6	216	S 36 W	0.8	263
701	3.5	205	S 25 W	0.8	258
702	3.6	187	S 7 W	0.8	258
703	5.5	191	S 11 W	0.8	258
705	5.5	189	S 9 W	0.8	256
707	2.7	215	S 35 W	0.8	253
708	3.5	195	S 15 W	0.8	248
709	3.8	212	S 32 W	0.8	248
710	3.5	195	S 15 W	0.8	248
711	4.1	238	S 58 W	0.8	258
712	0.7	168	S 12 E	0.8	253
713	3.1	240	S 60 W	0.8	253
714	4.6	181	S 1 W	0.8	253
715	5.6	187	S 7 W	0.8	253
717	4.6	179	S 1 E	0.8	251
719	3.6	184	S 4 W	0.8	248
721	3.3	287	N 73 W	0.8	258
725	7.8	91	S 89 E	0.9	248
726	3.9	171	S 9 E	0.9	258
729	25.5	103	S 77 E	0.9	258
731	2.5	258	S 78 W	0.9	258
732	5.2	189	S 9 W	0.9	258
733	9.1	175	S 5 E	0.9	263
734	8.6	27	N 27 E	0.9	258
735	6.8	51	N 51 E	0.9	248
737	7.8	351	N 9 W	0.9	261
739	3.5	300	N 60 W	0.9	243
740	2.0	359	N 1 W	0.9	253
743	2.3	206	S 26 W	0.9	253
744	2.5	181	S 1 W	0.9	248
745	3.3	158	S 22 E	0.9	253
746	1.3	131	S 49 E	0.9	253
747	1.4	221	S 41 W	0.9	253
749	1.3	128	S 52 E	0.9	251
750	2.3	145	S 35 E	0.9	248

752	1.4	216	S	36	W	0.9	248
753	1.4	216	S	36	W	0.9	248
755	2.1	237	S	57	W	0.9	253
757	4.1	99	S	81	E	0.9	251
759	6.5	116	S	64	E	0.9	253
761	1.7	160	S	20	E	0.9	253
765	4.9	211	S	31	W	0.9	258
767	2.7	171	S	9	E	0.9	253
768	1.7	176	S	4	E	0.9	243
769	1.1	216	S	36	W	0.9	243
770	2.9	184	S	4	W	0.9	248
771	3.8	166	S	14	E	0.9	248
773	4.9	83	N	83	E	0.9	243
775	5.1	183	S	3	W	0.9	241
779	0.2					0.9	248
781	4.2	202	S	22	W	0.9	246
783	3.3	3	N	3	E	0.9	246
785	2.0	326	N	34	W	0.9	243
786	2.1	268	S	88	W	0.9	248
787	3.2	259	S	79	W	0.9	248
788	0.9	350	N	10	W	0.9	248
789	0.9	68	N	68	E	0.9	248
790	2.7	35	N	35	E	0.9	243
791	0.3					0.9	236
792	2.0	334	N	26	W	0.9	228
793	1.8	335	N	25	W	0.9	238
794	2.5	309	N	51	W	0.9	238
795	2.9	331	N	29	W	0.9	238
797	1.7	326	N	34	W	0.9	238
800	3.2	217	S	37	W	0.9	238
801	1.8	150	S	30	E	0.9	243
803	1.6	185	S	5	W	1.0	248
804	2.3	353	N	7	W	1.0	248
805	24.5	209	S	29	W	1.0	246
807	16.1	145	S	35	E	1.0	238
809	0.8	128	S	52	E	1.0	233
811	3.0	201	S	21	W	1.0	228
812	3.1	140	S	40	E	1.0	248