

URVEY NOTES-HIGH RESOLUTION DATA

GEO-445




Geosource Inc. Client- COCORP

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE					
3/30/81		G. Cotcamp		T. Grady		6834		B.L.		5	1 of 39					
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER						
Arkansas		Center Point NE		Arkansas	Pike					L. Davis						
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS
												LAT.	DEP.	Y	X	
										630.0				556,320	1,452,250	
	411		207°36'-180°	+6.9°	+8.6	-		+8.6	638.6		BS	+339-1	+233+1			Y-intersect. EL. 630.0
	411				+6.5	BH	+2.1	+8.6			BS					
X	0				5.4	-		-5.4	633.2	633.2	X	0	0	556,658	1,452,484	
TP	170		353°43'	+6.9°	8.5	-		-8.5	630.1	630.1	TP	+170-1	+2+1	556,827	1,452,487	
TP	170				9.3	TH	+0.9	-8.4			TP					
	198		138°37'+180°	+6.9°	+0.4	88°50'	-4.0	-3.6			BS	+163-1	-112+1			
	198				+2.1	88°20'	-5.8	-3.7	626.4		BS					
X	0				5.4	-		-5.4	621.0	621.0	X	0	0	556,989	1,452,376	
TP	327		285°59'	+6.9°	1.8	89°-	+5.7	+3.9	630.3	630.3	TP	+127-1	+301+1	557,115	1,452,076	
TP	327				0.7	89°12'	+4.6	+3.9			TP					
	232		127°47'+180°	+6.9°	+6.6	-		+6.6	636.9		BS	+163-1	-165+1			
	232				+7.8	TH	-1.2	+6.6			BS					
X	0				5.4	-		-5.4	631.5	631.5	X	0	0	557,277	1,451,912	
TP	380		349°0'	+6.9°	3.7	88°-	+13.3	+9.6	646.5	646.5	TP	+379-1	-27+1	557,655	1,451,886	
TP	380				1.9	88°16'	+11.5	+9.6			TP					
	280		194°12'-180°	+6.9°	+1.3	-		+1.3	647.8	647.8	BS	+261-1	+101+1			
	280				+2.7	TH	-1.4	+1.3			BS					
X	0				5.4	-		-5.4	642.4	642.4	X	0	0	557,915	1,451,988	
TP	360		44°45'	+6.9°	3.8	89°-	+6.3	+2.5	650.3	650.3	TP	+223-1	+282+1	558,137	1,452,271	
TP	360				2.7	89°10'	+5.2	+2.5			TP					

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Geosource Inc.

DATE 3/30/81		INSTRUMENT MAN G. Cotcamp		ROD MAN T. Grady		PARTY NUMBER 6834		NOTES CHECKED BY B.C.		LINE NO. 5	PAGE 2					
AREA Arkansas		TOPO MAP Center Point NE		STATE Arkansas	COUNTY Pike		TWP	RANGE	PPM	PARTY MANAGER L. Davis						
STATION NO.	 SLOPE DISTANCE	 PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	 VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH+ SOUTH - LAT.	EAST+ WEST - DEP.	COORDINATES Y X		REMARKS
TP										650.3						
	570		227°27'-180°	+6.9°	+11.3	-	+11.3	+11.3	661.6		BS	+332-1	+463+1			
	570				+14.2	TH	-2.9	+11.3			BS					
X	0				5.4	-		-5.4		656.2	X	0	0	558,968	1,452,735	
TP	465		24°28'	+6.9°	1.8	TH	+2.3	+0.5		662.1	TP	+397-1	+242+1	558,869	1,452,978	
TP	465				2.2	89°40'	+2.7	+0.5			TP					
	315	314.8	177°28'+180°	+6.9°	+14.6	92°	+11.0	+25.6	687.7		BS	+314-1	+24+1			
	315				+12.8	92°20'	+12.8	+25.6			BS					
X	0				5.4	-		-5.4		682.3	X	0	0	559,177	1,453,003	
TP	463	461.9	15°54'	+6.9°	3.6	86°	+32.2	+28.6		716.3	TP	+426-1	+179+1	559,602	1,453,183	
TP	463				2.2	86°10'	+30.9	+28.7			TP					
	264		230°39'-180°	+6.9°	+14.0	91°	+4.6	+18.6	734.9		BS	+142-1	+223+1			
	264				+11.7	91°30'	+6.9	+18.6			BS					
X	0				5.4	-		-5.4		729.5	X	0	0	559,793	1,453,407	
TP	500		51°28'	+6.9°	4.3	TH	+2.5	-1.8		733.1	TP	+262-1	+426+1	560,009	1,453,834	
TP	500				4.7	89°40'	+2.9	-1.8			TP					
	249		235°55'-180°	+6.9°	+10.3	89°	-4.3	+6.0			BS	+117-1	+221+1			
	249				+8.8	89°20'	-2.9	+5.9	739.0		BS					
X	0				5.4	-		-5.4		733.6	X	0	0	560,117	1,454,056	
1	263		4°36'	+6.9°	9.1	88°40'	+6.1	-3.0		736.0	TP	+258-1	+52+1	560,379	1,454,109	sta. 1 line #5
1	263				10.6	88°20'	+7.6	-3.0			TP					

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DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE						
3/30/81		G. Cotcamp		T. Grady		6834		B.C.		5	4						
AREA		TOPO MAP		STATE	COUNTY	TWP	RANGE	PPM	PARTY MANAGER								
Arkansas		Center Point NE		Arkansas	Pike				L. Davis								
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS	
												LAT.	DEP.	Y	X		
									683.5								
13	330	329.2	311°55'	+6.9°	0.5	86°-	+23.0	+22.5		706.0	TP	+246	-219.1	559,947	1,450,403		
13	330				24	85°40'	+24.9	+22.5			TP						
	327		112°09'+180°	+6.9°	+14.0	92°-	+11.4	+25.4	731.4		BS	+156	-287.1				
	327				+12.1	92°20'	+13.3	+25.4			BS						
14	0				54	-		-5.4		726.0	X	0	0	560,100	1,450,117		
15	330		264°05'	+6.9°	8.8	92°-	-11.5	-20.3		711.1		+3	-330	560,103	1,449,787		
16	660		261°40'	+6.9°	9.1	-		-9.1		722.3		-22	-660	560,078	1,449,457		
17	981		258°54'	+6.9°	0.9	89°-	+17.1	+16.2		747.6	TP	-80	-978.1	560,020	1,449,140		
17	981				6.6	88°40'	+22.8	+16.2			TP						
	280		49°46'+180°	+6.9°	+13.6	92°-	+9.8	+23.4	771.0		BS	-156	-232.1				
	280				+12.8	92°10'	+10.6	+23.4			BS						
X	0				54	-		-5.4		765.6	X	0	0	559,869	1,448,909		
18	50		242°0'	+6.9°	8.4	-		-8.4		762.6		-18	-46	559,896	1,448,863		
19	380		232°42'	+6.9°	9.2	92°-	-13.3	-22.5		748.5		-195	-326	559,669	1,448,583		
20	710		235°42'	+6.9°	6.0	-		-6.0		765.0	TP	-332	-627.1	559,532	1,448,283		
20	710				9.6	TH	+3.6	-6.0			TP						
	327		68°15'+180°	+6.9°	+14.2	89°22'	-3.6	+10.6			BS	-87	-315.1				
	327				+14.7	89°16'	-4.2	+10.5	775.5		BS						
21	0				5.4	-		-5.4		770.1	X	0	0	559,495	1,447,969		
22	330		238°0'	+6.9°	12.5	94°-	-23.0	-35.5		740.0		-143	-298	559,302	1,447,671		

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DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE			
3/30/81		G. Cotcamp		T. Grady		6834		MGW TG		5	5			
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER				
Arkansas		Center Point NE		Arkansas						L. Davis				
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									775.5					
23	660		236° 10'	+6.9°	22.9	95° 30'	-63.0	-85.9		689.6		-304	-586	558,141 1,447,383
24	990	986.	236° 10' 20"	+6.9°	14.3	95° 3'	-88.2	-102.5		673.0	TP	-454	-875.1	558,991 1,447,095
24	990				12.0	95° 16'	-90.5	-102.5			TP			
	990	989.6	55° 09' 24" +180°	+6.9°	+14.1	88° 20'	-28.8	-14.7	658.3		BS	-471	-870.1	
	990				+12.4	88° 26'	-27.1	-14.7			BS			
25	660		55° 09'	+6.9°	13.5	88° -	+23.0	+9.5		667.8		+314	+580	558,827 1,446,806
26	330		" "	"	4.3	88° -	+11.5	+7.2		665.5		+157	+290	558,677 1,446,516
27	0				5.4	-		-5.4		652.9	X	0	0	558,520 1,446,226
28	330		236° 49'	+6.9°	5.9	-		-5.9		652.4		-199	-295	558,371 1,445,931
29	660		" "	"	3.9	-		-3.9		654.4		-297	-589	558,223 1,445,637
30	985		235° 38' 38"	+6.9°	5.6	-		-5.8			TP	-462	-870.1	558,058 1,445,357
30	985				10.8	TH	+4.9	-5.9		652.4	TP			
	308	307.5	88° 13' +180°	+6.9°	+9.9	86° 40'	-17.9	-8.0	644.4		BS	+25	-306	
	308				+10.8	86° 30'	-18.8	-8.0			BS			
31	37		130° 41'	+6.9°	5.3	-		-5.3		639.1		-27	+25	558,056 1,445,076 creek + culvert
31	0				5.4	-		-5.4		639.0	X	0	0	558,083 1,445,051
TP	209		285° 0'	+6.9°	0.2	TH	+1.0	+0.8		645.2	TP	+76	-195	558,159 1,444,856
TP	209				2.8	89° -	+3.6	+0.8			TP			
	448		79° 17' +180°	+6.9°	+4.3	-		+4.3			BS	-34	-447	
	448				+2.0	8H	+2.2	+4.2	649.4		BS			

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DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE			
3/30/81		G. Cotcamp		B. Cotcamp		6834		rdw TG		5	6			
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER				
Arkansas		Center Point NE		Arkansas	Howard					L. Davis				
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH+ SOUTH - LAT.	EAST+ WEST - DEP.	
									649.4					
32	330		79°17'	+6.9°	6.0	-		-6.0		643.4		+25	+329	558,150 1,444,758
33	0				5.4	-		-5.4		644.0	X	0	0	558,125 1,444,409
34	330		293°10'	+6.9°	11.9	92°-	-11.5	-23.4		626.0		+153	-287	558,288 1,444,122
TP	400	399.8	290°11'	+6.9°	9.5	92°-	-14.0	-23.5		625.9	TP	+179	-358	558,309 1,444,051
TP	400				14.2	91°20'	-9.3	-23.5			TP			
	495		53°23'+180°	+6.9°	+6.1	88°30'	-13.0	-6.9	619.0		BS	-299	-428	
	495				+7.5	88°20'	-14.4	-6.9			BS			
35	232		51°31'	+6.9°	3.9	88°-	+8.1	+4.2		623.2		+123	+197	558,178 1,443,820
X	0				5.4	-		-5.4		613.6	X	0	0	558,055 1,443,623
36	110		270°32'	+6.9°	9.9	-		-9.9		609.1	TP	+13	-109	558,068 1,443,514
36	110				10.4	TH	+0.6	-9.8			TP			
	501		120°50'+180°	+6.9°	+9.8	-		+9.8			BS	+303	-399	
	501				+7.2	BH	+2.5	+9.7	618.8		BS			
37	171		115°23'	+6.9°	6.7	-		-6.7		612.1		-90	+145	558,281 1,443,260
X	0				5.4	-		-5.4		613.4	X	0	0	558,371 1,443,115
38	150		238°10'	+6.9°	7.2	-		-7.2		611.6		-69	-135	558,367 1,442,980
39	480		231°37'	+6.9°	1.8	88°-	+16.7	+14.9		633.7		-254	-407	558,117 1,442,708
40	810	809.2	231°37'	+6.9°	1.2	87°30'	+35.3	+34.1		652.9	TP	-429	-686	557,992 1,442,429
40	810				5.9	87°10'	+40.0	+34.1			TP			

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DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE			
3/31/81		G. Cotcamp		T. Grady		6834		B.C.		5	8			
AREA		TOPO MAP		STATE	COUNTY	TWP	RANGE	PPM	PARTY MANAGER					
Arkansas		Center Point NE		Arkansas	Howard				L. Davis					
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
∞										657.7				
	298		51°30' + 180°	+6.6°	+4.7	88°-	-10.4	-5.7	652.0		BS	-157+1	-253-1	
	298				+4.0	88°8'	-9.7	-5.7			BS			
50	120		57°22'	+6.6°	7.0	-	-7.0		645.0			+53	+108	556,932 1,439,434
π	0				5.4	-	-5.4		646.6		π	0	0	556,879 1,439,376
51	215		263°04'	+6.6°	6.6	-	-6.6		645.4			-1	-215	556,878 1,439,111
52	545		263°04'	+6.6°	13.4	-	-13.4		638.6		TP	-3+1	-545-1	556,877 1,438,780
52	545				10.6	04	-2.7	-13.3			TP			
	330		76°02' + 180°	+6.6°	+0.5	-	+0.5		639.1		BS	-42+1	-327-1	
	330				+2.2	TH	-1.7	+0.5			BS			
53	0				5.4	-	-5.4		633.7		π	0	0	556,836 1,438,454
54	330		243°12'	+6.6°	10.7	-	-10.7		628.4			-114	-310	556,722 1,438,142
TP	510		244°21'	+6.6°	10.9	-	-10.9		628.2		TP	-166+1	-482-1	556,671 1,437,969
TP	510				13.5	TH	+2.6	+10.9			TP			
	470		100°09' + 180°	+6.6°	+6.1	-	+6.1		634.3		BS	+135+1	-450-1	
	470				+8.5	TH	-2.4	+6.1			BS			
55	330		97°29'	+6.6°	5.9	-	-5.9		628.4			-80	+320	556,727 1,437,838
56	0				5.4	-	-5.4		628.9		π	0	0	556,807 1,437,518
57	330		265°04'	+6.6°	9.5	-	-9.5		624.8			+10	-330	556,817 1,437,188
58	660		" "	" "	12.8	-	-12.8		621.5			+19	-660	556,826 1,436,858

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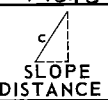


Geosource Inc.

DATE 3/31/81		INSTRUMENT MAN G. Cotcamp		ROD MAN T. Grady		PARTY NUMBER 6834		NOTES CHECKED BY B.C.		LINE NO. 5		PAGE 9		
AREA Arkansas		TOPO MAP Center Point NE		STATE Arkansas		COUNTY Howard		RANGE		PPM		PARTY MANAGER L. Davis		
STATION NO.	SLOPE DISTANCE	PLOTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH+ SOUTH - LAT.	EAST+ WEST - DEP.	
									634.3					
59	990		263°35'	+6.6°	13.2	BH	-5.0	-18.2		616.1	TP	+3+1	-990+1	556,811 1,436,527
59	990				14.6	90°12'	-3.5	-18.1			TP			
	655	654.1	65°26'+180°	+6.6°	+7.1	87°-	-34.2	-27.1			BS	-202+1	-622+1	
	655				+3.2	87°20'	-30.4	-27.2	588.9		BS			
60	330		60°08'	+6.6°	4.3	-		-4.3		584.6		+130	+303	556,740 1,436,207
61	0				5.4	-		-5.4		583.5	X	0	0	556,610 1,435,904
62	327		291°54'	+6.6°	13.3	88°30'	+8.6	-4.7		584.2	TP	-120+1	-304+1	556,491 1,435,599
62	327				11.9	88°44'	+7.2	-4.7			TP			
	815		83°40'+180°	+6.6°	+5.0	-		+5.0	589.2		BS	+4+1	-815+1	
	815				+9.1	TH	-4.1	+5.0			BS			
63	485		83°40'	+6.6°	6.3	-		-6.3		582.9		-2	+485	556,494 1,435,268
64	155		" "	"	6.2	-		-6.2		583.0		-1	+155	556,495 1,434,938
X	0				5.4	-		-5.4		583.8	X	0	0	556,496 1,434,783
65	175		240°12'	+6.6°	7.9	-		-7.9		581.3		-69	-161	556,427 1,434,622
66	500		239°06'	+6.6°	13.9	91°-	-8.7	-22.6		566.6	TP	-206+1	-456+1	556,291 1,434,326
66	500				10.9	91°20'	-11.6	-22.5			TP			
	513		66°0'+180°	+6.6°	+12.4	-		+12.4	579.0		BS	-153+1	-490+1	
	513				+9.8	BH	+2.6	+12.4			BS			
X	400		65°06'	+6.6°	13.4	-		-13.4		565.6		+126	+380	556,265 1,434,216 T-rd.(s.e.)
67	183		65°06'	+6.6°	10.2	-		-10.2		568.8		+57	+174	556,196 1,434,069

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Geosource Inc.

DATE 3/31/81		INSTRUMENT MAN G. Cotcamp		ROD MAN T. Grady		PARTY NUMBER 6834		NOTES CHECKED BY B.L.		LINE NO. 5		PAGE 10			
AREA Arkansas		TOPO MAP Center Point NE/Newhope		STATE Arkansas		COUNTY Howard		RANGE		PPM		PARTY MANAGER L. Davis			
STATION NO.	 SLOPE DISTANCE	 PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	 VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS TP	NORTH + SOUTH - LAT.	EAST + WEST - DEP.	COORDINATES Y X	REMARKS
									579.0						
π	0				5.9	-		-5.4		573.6	π	0	0	556,139 1,433,835	
68	147		274° 0'	+6.6°	3.9	-		-3.9		575.1		+27	-144	556,166 1,433,691	
69	477		" "	"	4.3	89° -	+8.3	+4.0		583.0		+88	-469	556,227 1,433,366	↑
70	803		272° 12'	+6.6°	4.7	89° -	+14.0	+9.3		588.3	TP	+123 +1	-793 -1	556,263 1,433,091	Center Point NE quad
70	803				1.9	89° 12'	+11.2	+9.3			TP				
	658		73° 25' +180°	+6.6°	+13.1	91° 40'	+19.1	+32.2	620.5		BS	-114 +1	-698 -1		
	658				+14.6	91° 32'	+17.6	+32.2			BS				
71	330		69° 32'	+6.6°	10.1	91° -	-5.8	-15.9		604.6		+79	+320	556,229 1,432,712	Newhope Quad.
72	0				5.4	-		-5.4		615.1	π	0	0	556,150 1,432,392	↓
73	330		249° 36'	+6.6°	4.3	-		-4.3		616.2		-79	-320	556,071 1,432,072	
74	660		252° 38'	+6.6°	2.1	-		-2.1		618.4	TP	-123 +1	-698 -1	556,028 1,431,743	
74	660				5.4	TH	+3.3	-2.1			TP				
	990	989.9	87° 0' +180°	+6.6°	+13.0	88° -	-34.5	-21.5			BS	+62 +1	-987 -1		
	990				+11.8	88° 4'	-33.4	-21.6	596.8		BS				
75	660		85° 50'	+6.6°	3.3	88° -	+23.0	+19.7		616.5		-28	+659	556,063 1,431,914	
76	330		" "	"	1.2	88° -	+11.5	+10.3		607.1		-14	+330	556,077 1,431,085	
77	0				5.4	-		-5.4		591.4	π	0	0	556,091 1,430,756	
78	330		271° 08'	+6.6°	10.9	91° -	-5.8	-16.7		580.1		+44	-327	556,135 1,430,928	
79	660		" "	"	11.2	-		-11.2		585.6		+89	-654	556,180 1,430,101	
80	990		" "	"	2.8	89° -	+17.3	+14.5		611.3		+133	-981	556,224 1,429,774	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445




Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE			
3/31/81		G. Cotcamp		B. Cotcamp		6834		B.C		5		11			
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER	
Arkansas		Newhope		Arkansas		Howard								L. Davis	
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
									596.8						
81	1310	1309.6	267°47'38"	+6.6°	5.4	88°34'	+32.8	+27.4		624.2	TP	+100+	-1306	556,192	1,429,448
81	1310				6.9	88°30'	+34.3	+27.4			TP				
	790		78°46'+180°	+6.6°	+10.8	-		+10.8			BS	-69+	-787-		
	790				+19.7	TH	-4.0	+10.7	634.9		BS				
82	460		73°42'	+6.6°	10.3	92°-	-16.0	-26.3		608.6		+78	+453	556,207	1,429,113
83	130		64°0'	+6.6°	13.0	-		-13.0		621.9		+43	+123	556,172	1,428,783
X	0				5.4	-		-5.4		629.5	X	0	0	556,129	1,428,660
84	200		231°0'	+6.6°	11.1	93°-	-10.5	-21.6		613.3		-107	-169	556,022	1,428,491
TP	414	413.2	232°44'	+6.6°	13.8	93°30'	-25.2	-39.0			TP	-211+	-355-	555,919	1,428,304
TP	414				12.7	93°40'	-26.4	-39.1		595.8	TP				
	760*		95°25'+180°	+6.6°	+7.9	-		+7.9	603.7		BS	+158+	-743-		
	760				+4.1	BH	+3.8	+7.9			BS				
85	660		95°25'	+6.6°	9.1	-		-9.1		594.6		-137	+696	555,941	1,428,206
86	330		92°0'	+6.6°	6.8	-		-6.8		596.9		-49	+326	556,089	1,427,886
87	0				5.4	-		-5.4		598.3	X	0	0	556,078	1,427,560
88	330		284°26'	+6.6°	1.2	TH	+1.7	+0.5		604.2	TP	+118+	-308-	556,197	1,427,257
88	330				2.4	89°30'	+2.9	+0.5			TP				
	430	429.7	5°56'+180°	+6.6°	+13.1	92°-	+15.0	+28.1	632.3		BS	-420+	-93		horiz. traverse to T-id south
	430				+10.6	92°20'	+17.5	+28.1			BS				
X	0				5.4	-		-5.4		626.9	X	0	0	555,778	1,427,158

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 3/01/81		INSTRUMENT MAN G. Cotcamp		ROD MAN B. Cotcamp		PARTY NUMBER 6834		NOTES CHECKED BY B.C.		LINE NO. 5	PAGE 12					
AREA Arkansas		TOPO MAP Newhope		STATE Arkansas		COUNTY Howard		TWP	RANGE	PPM	PARTY MANAGER L. Davis					
STATION NO.	 SLOPE DISTANCE	 PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	 VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH+ SOUTH - LAT.	EAST+ WEST - DEP.	COORDINATES Y X		REMARKS
87	590		177°35'	+6.6°	3.1	89°	+10.3	+7.2		639.5		-588	-43	555,196	1,427,115	555,190+1,427,115 T-rd (west) (42.0)
87	590				1.4	89°10'	+8.6	+7.2								horiz. correct. y=+2) x=-20
88										604.2				556,197	1,427,251	
	324		105°26'+180°	+6.6°	+4.0	TH	-1.6	+2.4	606.6		BS	+122	-300+2			
	324				+2.4	-		+2.4			BS					
88	277		102°49'	+6.6°	1.8	-		-1.8	604.8			-92	+261	556,227	1,427,219	4-way Rt 369
89	0				5.4	-		-5.4	601.2		X	0	0	556,319	1,426,953	
90	330		246°29'	+6.6°	3.7	89°	+5.8	+2.1		608.7	TP	-96	-316+2	556,223	1,426,639	
90	330				2.7	89°10'	+4.8	+2.1			TP					
	660		76°56'+180°	+6.6°	+2.4	-		+2.4	611.1		BS	-74	-656+2			
	660				+5.7	TH	-3.3	+2.4			BS					
91	330		76°56'	+6.6°	1.2	-		-1.2	609.9			+37	+328	556,186	1,426,313	
92	0				5.4	-		-5.4	605.7		X	0	0	556,199	1,425,985	
93	331		258°22'	+6.6°	0.6	-		-0.6		610.5	TP	-29	-330+2	556,120	1,425,657	
93	331				2.3	TH	+1.7	-0.6			TP					T.R. opposite sta.
	331		92°43'+180°	+6.6°	+5.7	-		+5.7	616.2		BS	+54	-327+2			
	331				+7.4	TH	-1.7	+5.7			BS					
94	0				5.4	-		-5.4		610.8	X	0	0	556,174	1,425,332	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE				
3/31/81		G. Cotcamp		B. Cotcamp		6839		B.C.		5	13				
AREA		TOPO MAP		STATE		COUNTY		RANGE		PARTY MANAGER					
Arkansas		Newhope 1/2'		Arkansas		Howard				L. Davis					
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
									616.2						
95	330		257° 0'	+6.6°	0.4	-		-0.4		615.8		-37	-328	556,137	1,425,004
96	662		254° 46'	+6.6°	10.3	89° 20'	+7.7	-2.6		613.6	TP	-99	-654 ₊₂	556,075	1,424,680
96	662				6.5	89° 40'	+3.9	-2.6			TP				
	338		121° 06' +180°	+6.6°	+8.1	-		+8.1	621.7		BS	+207	-267 ₊₂		
	338				+9.8	TH	-1.7	+8.1			BS				
97	0				5.4	-		-5.4		616.3	X	0	0	556,282	1,424,415
98	330		317° 07'	+6.6°	0.7	TH	+1.7	+1.0		622.7	TP	+266	-195 ₊₂	556,598	1,424,222
98	330				1.9	89° 30'	+2.9	+1.0			TP				
	331		119° 29' +180°	+6.6°	+12.1	-		+12.1	634.8		BS	+195	-268 ₊₂		
	331				+10.5	BH	+1.7	+12.2			BS				
99	0				5.4	-		-5.4		629.4	X	0	0	556,743	1,423,956
100	330		275° 51'	+6.6°	6.5	-		-6.5		628.3		+71	-322	556,814	1,423,634
101	660		275° 51'	+6.6°	8.2	-		-8.2		626.6	TP	+142	-644 ₊₂	556,885	1,423,314
101	660				4.9	BH	-3.3	-8.2			TP				
	222		112° 30' +180°	+6.6°	+4.5	-		+4.5	631.1		BS	+108	-194 ₊₂		
	222				+5.6	TH	-1.1	+4.5			BS				
X	0				5.4	-		-5.4		625.7	X	0	0	556,993	1,423,122
102	108		308° 43'	+6.6°	4.9	-		-4.9		626.2		+77	-76	557,070	1,423,046
103	441		308° 43'	+6.6°	2.6	-		-2.6		628.5	TP	+314	-310 ₊₂	557,307	1,422,814
103	441				0.4	BH	-2.2	-2.6			TP				

T.P. opposite sta.

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE			
4/1/81		G. Catcamp		T. GRADY		6834		B.C.		5	14			
AREA		TOPO MAP		STATE		COUNTY		RANGE		PARTY MANAGER				
Arkansas		Newhope		Arkansas		Howard				L. Davis				
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH+ SOUTH - LAT.	EAST+ WEST - DEP.	
103										628.5				
	659		114° 10' +180°	+6.6°	+12.1	-		+12.1	640.6		BS	+337	-566.2	
	659				+8.8	BH	+3.3	+12.1			BS			
104	330		114° 10'	+6.6°	8.9	-		-8.9		631.7		-169	+284	557,975 1,422,534
105	0				5.4	-		-5.4		635.2	X	0	0	557,677 1,422,250
106	330		297° 01'	+6.6°	8.5	88°	+11.5	+3.0		643.6	TP	+183	-275.2	557,827 1,421,977
106	330				11.3	87° 30'	+14.4	+3.1			TP			
	330		107° 38' +180°	+6.6°	+7.0	-		+7.0	650.6		BS	+135	-301.2	
	330				+8.6	TH	-1.7	+6.9			BS			
107	0				5.4	-		-5.4		645.2	X	0	0	557,962 1,421,678
108	327		278° 18'	+6.6°	2.0	89°	+5.7	+3.7		654.3	TP	+84	-316.2	558,096 1,421,364
108	327				4.9	88° 30'	+8.6	+3.7			TP			
	208		67° 50' +180°	+6.6°	+14.9	-		+14.9			BS	-56	-200.2	
	208				+13.8	BH	+1.0	+14.8	669.1		BS			
X	0				5.4	-		-5.4		663.7	X	0	0	557,990 1,421,166
109	122		198° 15'	+6.6°	3.3	91°	-2.1	-5.4		663.7		-111	-51	557,879 1,421,115
110	452		198° 15'	+6.6°	9.7	89°	+7.9	-1.8		667.3	TP	-410	-190.2	557,580 1,420,978
110	452				5.7	89° 30'	+3.9	-1.8			TP			
	641		44° 05' +180°	+6.6°	+9.5	-		+9.5	676.8		BS	-406	-496.2	
	641				+6.3	BH	+3.2	+9.5			BS			
111	311		44° 05'	+6.6°	9.5	-		-9.5		667.3		+197	+291	557,371 1,420,725

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE				
4/1/81		B. Cotcamp		T. GRADY		6837		B.C.		5	15				
AREA		TOPO MAP		STATE		COUNTY		RANGE		PPM	PARTY MANAGER				
Arkansas		Newhope		Arkansas		Howard					L. Davis				
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
									676.8						
π	0				5.4	-		-5.4		671.4	π	0	0	557,174	1,420,487
112	19		261° 30'	+6.6°	4.5	-		-4.5		672.3		-1	-19	557,173	1,420,465
113	349		" "	"	2.8	-		-2.8		674.0		-12	-349	557,162	1,420,135
114	689		261° 30'	+6.6°	8.0	89° -	+12.0	+4.0			TP	-23	-689.2	557,151	1,419,797
114	689				12.1	88° 40'	+16.0	+3.9		686.7	TP				
	328		69° 41' +180°	+6.6°	+13.4	-		+13.4	694.1		BS	-78	-319.1		
	328				+11.8	BH	+1.6	+13.4			BS				
115	0				5.4	-		-5.4		688.7	π	0	0	557,073	1,419,979
TP	276		242° 44'	+6.6°	4.1	-		-4.1		690.0	TP	-97	-258	556,976	1,419,221
TP	276				5.5	TH	+1.4	-4.1			TP				
	715		87° 46' +180°	+6.6°	+4.1	91°	+12.5	+16.6	706.6		BS	+54	-713		
	715				+10.4	96° 30'	+6.2	+16.6			BS				
116	660		87° 46'	+6.6°	3.4	91° -	-11.5	-14.9		691.7		-50	+658	556,980	1,419,166
117	330		" "	"	4.4	91° -	-5.8	-10.2		696.4		-25	+329	557,005	1,418,837
118	0				5.4	-		-5.4		701.2	π	0	0	557,030	1,418,508
119	330		265° 02'	+6.6°	10.8	87° 38'	+14.4	+3.6			TP	+9	-330	557,039	1,418,178
119	330				13.7	87° -	+17.2	+3.5		710.1	TP				
	328		81° 08' +180°	+6.6°	+11.5	-		+11.5	721.6		BS	-13	-328		
	328				+9.9	BH	+1.6	+11.5			BS				
120	0				5.4	-		-5.4		716.2	π	0	0	557,026	1,417,850

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE						
4/1/81		B. Cotcamp		T. Grady		6834		B.C.		5	16						
AREA		TOPO MAP		STATE		COUNTY		TWP	RANGE	PPM	PARTY MANAGER						
Arkansas		Newhope		Arkansas		Howard					L. Davis						
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH+ SOUTH-	EAST+ WEST-	COORDINATES		REMARKS	
														LAT.	DEP.		Y
									721.6								
#121	328		234° 40'	+6.6°	3.8	87°	+17.1	+13.3		734.9	TP	-157	-287	556,869	1,417,563		
121	328				6.6	86°30'	+20.0	+13.4			TP						
	990		54° 48' 40" +180°	+6.6°	+14.7	91°	+17.3	+32.0	766.9		BS	-474	-869				
	990				+9.0	91°20'	+23.0	+32.0			BS						
122	660		54° 48'	+6.6°	10.0	91°	-11.5	-21.5		745.4		+316	+579	556,711	1,417,273		
123	330		" "	"	9.5	91°	-5.8	-15.3		751.6		+158	+290	556,553	1,416,984		
124	0				5.4	-		-5.4		761.5	X	0	0	556,395	1,416,694		
TP	152		220° 46'	+6.6°	11.0	-		-11.0		755.9	TP	-103	-112	556,292	1,416,582		
TP	152				10.2	B4	-0.8	-11.6			TP						
	488	487.3	21° 01' +180°	+6.6°	+7.1	87°	-25.5	-18.4	737.5		BS	-432	-226				
	488				+9.9	86°40'	-28.3	-18.4			BS						
125	330		21° 01'	+6.6°	7.6	87°	+17.2	+9.6		747.1		+292	+153	556,152	1,416,509		
126	0				5.4	-		-5.4		732.1	X	0	0	555,860	1,416,356	X STATION	
127	330		212° 09'	+6.6°	6.0	94°	-23.0	-29.0		708.5		-257	-207	555,603	1,416,199		
128	660		212° 09'	+6.6°	9.3	92°	-23.0	-32.3		705.2	TP	-515	-413	555,345	1,415,943		
128 TP	721	720.6	212° 09' 40"	+6.6°	7.1	92°	-25.1	-32.2	-32.1	705.1	TP	-562	-451	555,298	1,415,905		
TP	721				11.5	91°40'	-21.0	-32.5			TP						
	349		10' 33' +180°	+6.6°	+4.5	88°	-12.2	-7.7	697.4		BS	-333	-103				
	349				+10.5	87°	-18.2	-7.7			BS						
129	99		16' 33'	+6.6°	7.9	87°	+5.2	-2.7		694.7		+95	+29	555,060	1,415,831		

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE			
4/1/81		B. Cotcamp				6834		JLW TG		5		17			
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER	
Arkansas		Newhope		Arkansas		Howard								L. Davis	
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
									697.4						
TK	0				5.4	-		-5.4		692.0	TK	0	0	554,965	1,415,802
130	249		231° 49'	+6.6°	7.1	-		-7.1		690.3	TP	-130	-212	554,835	1,415,590
130	249				8.3	TH	+1.2	-7.1			TP				
	661		73° 38' 20" +180°	+6.6°	+10.8	89°-	-11.5	-0.7			BS	-112+	-651		
	661				+4.9	89°30'	-5.8	-0.8	689.5		BS				
131	330		73° 38'	+6.6°	5.6	89°-	+5.8	+0.2		689.7		+56	+325	554,780	1,415,264
132	0				5.4	-		-5.4		684.1	TK	0	0	554,724	1,414,939 x
133	329		259° 40'	+6.6°	8.2	-		-8.2		681.3	TP	-21+	-328	554,704	1,414,611
133	329				6.6	TH	-1.6	-8.2			TP				
	321		70° 38' +180°	+6.6°	+7.1	89°-	-5.6	+1.5	682.8		BS	-71+	-313		
	321				+4.3	89°30'	-2.8	+1.5			BS				
134	0				5.4	-		-5.4		677.4	TK	0	0	554,634	1,414,298
135	330		243° 03'	+6.6°	4.9	91°-	-5.8	-10.7		672.1	TP	-115+	-309	554,520	1,413,989
135	330				3.9	91°10'	-6.7	-10.6			TP				
	660		75° 10' 40" +180°	+6.6°	+4.6	89°-	-11.5	-6.9	665.2		BS	-94+	-653		
	660				+6.6	88°50'	-13.4	-6.8			BS				
136	330		75° 10'	+6.6°	7.8	89°-	+5.8	-2.0		663.2		+47	+327	554,474	1,413,663
137	0				5.4	-		-5.4		659.8	TK	0	0	554,427	1,413,336 x
138	330		270° 46'	+6.6°	8.6	89°-	+5.8	-2.8		662.4		+42	-327	554,469	1,413,009

SURVEY NOTES-HIGH RESOLUTION DATA

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Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY			LINE NO.	PAGE		
4/1/81		B. Cotcamp		G. Cotcamp		6834		wds TG			5	18		
AREA		TOPO MAP		STATE		COUNTY		TWP	RANGE	PPM	PARTY MANAGER			
Arkansas		Newhope		Arkansas		Howard					L. Davis			
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH+ SOUTH - LAT.	EAST+ WEST - DEP.	
									665.2					
139	660		272° 50'	+6.6°	9.9	89° -	+11.5	+1.6		666.8		+108	-651	554,535 1,412,685
140	972		270° 46' 30"	+6.6°	6.8	89° -	+17.0	+10.2		675.4	TP	+125+1	-969	554,553 1,412,372
140	972				12.4	88° 40'	+22.6	+10.2			TP			
	660		68° 35' +180°	+6.6°	+12.3	-		+12.3	687.7		BS	-169+1	-638	
	660				+9.0	BH	+3.3	+12.3			BS			
141	330		68° 35'	+6.6°	10.7	-		-10.7		677.0		+84	+319	554,469 1,412,053
142	0				5.4	-		-5.4		682.3	T	0	0	554,385 1,411,734
143	330		249° 37'	+6.6°	4.9	89° -	+5.8	+0.9		688.6		-79	-321	554,306 1,411,413
144	660		249° 37'	+6.6°	7.8	89° -	+11.5	+3.7		691.4	TP	-157+1	-641	554,229 1,411,093
144	660				11.7	88° 40'	+15.4	+3.7			TP			
	660		68° 18' +180°	+6.6°	+9.4	-		+9.4	700.8		BS	-172+1	-637	
	660				+6.3	BH	+3.3	+9.6			BS			
145	330		50° 36'	+6.6°	6.0	-		-6.0		694.8		+179	+277	554,237 1,410,733
sta. 1097	311		33° 13'	+6.6°	3.6	-		-3.6		697.2		+239	+199	554,297 1,410,655 1097 line tie el. 675.0
146	310				5.4	-		-5.4		695.4	T	0	0	554,058 1,410,456 page 129 Line #3
147	331		250° 06'	+6.4°	3.5	-		-3.5		697.3	TP	-77+1	-322+1	553,980 1,410,135
147	331				5.2	TH	+1.7	-3.5			TP			
	330		83° 30' +180°	+6.4°	+11.0	-		+11.0	708.3		BS	-1-1	-330+1	
	330				+12.7	TH	-1.7	+11.0			BS			
148	0				5.4	-		-5.4		702.9	T	0	0	553,978 1,409,806

SURVEY NOTES-HIGH RESOLUTION DATA
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DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE			
4/2/81		G. Cotcamp		T. Grady		6839		rdw B.C.		5		19			
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER	
Arkansas		Newhope		Arkansas		Howard								L. Davis	
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
									708.3						
149	330		251°53'	+6.9°	1.6	TH	+1.7	+0.1		708.4		-67	-323	553,911	1,409,483
150	660		" "	"	7.9		89°-	+11.5	+3.6			-134	-646	553,899	1,409,160
151	990		251°53'	+6.9°	2.1		89°-	+17.3	+15.2		TP	-201-	-969+	553,776	1,408,838
151	990				5.0		88°50'	+20.2	+15.2		TP				
	990		72°22'42"+180°	+6.9°	+11.4		90°40'	+11.5	+22.9	746.4		BS	-193-	-971+	
	990				+14.3		90°30'	+8.6	+22.9			BS			
152	660		72°23'	+6.9°	11.7		90°30'	-5.8	-17.5			+128	+647	553,710	1,408,515
153	330		" "	"	12.3		-		-12.3			+64	+324	553,696	1,408,192
154	0				5.4		-		-5.4			0	0	553,582	1,407,868
155	330		241°55'	+6.9°	5.2		-		-5.2		TP	-122-	-307+	553,959	1,407,562
155	330				6.9	TH	+1.7	-5.2			TP				
	8660		85°16'+180°	+6.9°	+12.2		88°-	-23.0	-10.8			BS	+19-	-659+	
	660		87°41'		+11.0		88°6'	-21.9	-10.9	730.3		BS			
156	330		87°41'	+6.9°	2.9		89°-	+5.8	+2.9			-24	+329	553,953	1,407,233
157	0				5.4		-		-5.4			0	0	553,977	1,406,904
158	330		248°49'	+6.9°	10.7		91°-	-5.8	-16.5			-84	-319	553,393	1,406,585
159	652		248°20'	+6.9°	5.7		91°-	-11.4	-17.1		TP	-172-	-629+	553,304	1,406,276
159	652				11.4		90°30'	-5.7	-17.1		TP				
	329		84°25'+180°	+6.9°	+3.3		-		+3.3	716.5		BS	+5-	-329+	
	329				+4.9	TH	-1.6	+3.3				BS			

SURVEY NOTES-HIGH RESOLUTION DATA

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Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE		
4/2/81		G. Cotcamp		T. Grady		6834		B.C.		5		20		
AREA		TOPO MAP		STATE		COUNTY		RANGE		PPM		PARTY MANAGER		
Arkansas		Newhope		Arkansas		Howard						L. Davis		
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									716.5					
160	0				54	-		-5.4		711.1	π	0	0	553,308 1,405,948
161	330		253°25'	+6.9°	9.4	-		-9.4		707.1		-58	-325	553,250 1,405,623
162	660		" "	"	11.7	BH	-3.3	-15.0		701.5		-117	-650	553,191 1,405,298
163	990		253°25'	+6.9°	14.3	BH	-5.0	-19.3		697.2	TP	-175-1	-974-1	553,132 1,404,975
163	990				14.6	90°16'	-4.6	-19.2			TP			
	660		59°29'+180°	+6.9°	+6.0	89°-	-11.5	-5.5	691.7		BS	-270-1	-602-1	
	660				+3.3	89°14'	-8.8	-5.5			BS			
164	330		59°29'	+6.9°	0.8	TH	+1.7	+0.9		692.6		+135	+301	552,996 1,404,675
165	0				5.9	-		-5.4		686.3	π	0	0	552,861 1,404,374
166	330		258°44'	+6.9°	11.4	-		-11.4		680.3		-28	-329	552,833 1,404,045
167	660		258°44'	+6.9°	10.9	91°-	-11.5	-22.4			TP	-56-1	-658-1	552,809 1,403,717
167	660				14.8	90°40'	-7.7	-22.5		669.2	TP			
	660		87°03'+180°	+6.9°	+6.1	-		+6.1	675.3		BS	+40-1	-659-1	
	660				+9.4	TH	-3.3	+6.1			BS			
168	330		87°03'	+6.9°	6.7	-		-6.7		668.6		-20	+329	552,823 1,403,388
169	0				5.4	-		-5.4		669.9	π	0	0	552,893 1,403,059
170	330		258°37'40"	+6.9°	4.1	-		-4.1		671.2		-29	-329	552,814 1,402,730
171	660		" "	"	9.3	-		-9.3		666.0		-57	-658	552,786 1,402,401
172	990		258°37'40"	+6.9°	10.8	BH	-5.0	-15.8		659.5	TP	-86-1	-986-1	552,756 1,402,074
172	990				12.9	90°10'	-2.9	-15.8			TP			

SURVEY NOTES-HIGH RESOLUTION DATA




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Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE			
4/2/81		G. Cotcamp		T. Grady		6834		B.C.		5	21			
AREA		TOPO MAP		STATE		COUNTY		TWP	RANGE	PPM	PARTY MANAGER			
Arkansas		Newhope		Arkansas		Howard					L. Davis			
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
172										659.5				
	660		75°58' +180°	+6.9°	+7.7	89°-	-11.5	-3.8	655.7		BS	-88 -1	-654.1	
	660				+4.7	89°16'	-8.4	-3.7			BS			
173	330		75°58'	+6.9°	4.7	-		-4.7		651.0		+44	+327	552,711 1,401,748
174	0				5.4	-		-5.4		650.3	π	0	0	552,667 1,401,421
175	330		250°17'	+6.9°	8.7	92°-	-11.5	-20.2		635.5		-76	-321	552,591 1,401,100
176	660		250°17'	+6.9°	8.0	91°-	-11.5	-19.5		636.2	TP	-152 -1	-642.1	552,514 1,400,780
176	660				13.7	90°30'	-5.8	-19.5			TP			
	330		61°13' +180°	+6.9°	+1.7	TH	-1.7	±0.0	636.2		BS	-126 -1	-305.1	
	330				+2.9	89°30'	-2.9	±0.0			BS			
177	0				5.4	-		-5.4		630.8	π	0	0	552,387 1,400,476
177	306		227°42'	+6.9°	14.5	-		-14.5		621.7		-179	-248	552,208 1,400,228 T-intersect.
178	329		224°57'	+6.9°	14.9	BH	-1.6	-16.5		619.7	TP	-205	-257.1	552,182 1,400,221
178	329				14.6	90°20'	-1.9	-16.5			TP			
	330		337°35' +180°	+6.9°	+3.9	88°-	-11.5	-7.6	612.1		BS	-317	+91.2	
	330				+2.0	88°20'	-9.6	-7.6			BS			
179	0				5.4	-		-5.4		606.7	π	0	0	551,865 1,400,314
180	334		134°46'	+6.9°	11.8	-		-11.8		600.3	TP	-260	+209.1	551,605 1,400,525 T.P. opposite sta.
180	334				10.1	BH	-1.7	-11.8			TP			
	335		7°33' +180°	+6.9°	+11.5	91°30'	+8.8	+20.3			BS	-325	-81.2	
	335				+14.4	91°-	+5.8	+20.2	620.5		BS			

SURVEY NOTES-HIGH RESOLUTION DATA
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Geosource Inc.

DATE 4/2/81		INSTRUMENT MAN G. Cotcamp		ROD MAN B. Cotcamp		PARTY NUMBER 6834		NOTES CHECKED BY J.D.W. B.C.		LINE NO. 5		PAGE 22				
AREA Arkansas		TOPO MAP Newhope		STATE Arkansas		COUNTY Howard		TWP		RANGE		PPM		PARTY MANAGER L. Davis		
STATION NO.	 SLOPE DISTANCE	 PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	 VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH+ SOUTH - LAT.	EAST+ WEST - DEP.	COORDINATES Y X		REMARKS
									620.5							
181	0				5.4	-		-5.4		615.1	X	0	0	551,280	1,400,446	
182	330		178°35'	+6.9°	8.4	-		-8.4		612.1		-330	+17	550,950	1,400,463	
183	660		167°08'	+6.9°	10.8	BH	-3.3	-14.1		606.4		-656	+74	550,624	1,400,520	
184	990		167°08'	+6.9°	11.5	BH	-5.0	-16.5		604.0	TP	-984	+112+2	550,296	1,400,560	T.P. opposite sta.
184	990				13.6	96°10'	-2.9	-16.5			TP					
	332		10°02'+180°	+6.9°	+1.2	-		+1.2	605.2		BS	-318	-94+1			
	332				+2.9	TH	-1.7	+1.2			BS					
185	0				5.4	-		-5.4		599.8	X	0	0	549,978	1,400,467	
186	330		201°24'	+6.9°	12.1	BH	-1.7	-13.8		591.4		-292	-154	549,686	1,400,313	horiz. correct, y=-16 x=+27
187	660		" "	"	11.3	91°-	-11.5	-22.8		582.4		-584	-308	549,394	1,400,159	
± ±	793		201°09'20"	+6.9°	2.8	91°-	-13.8	-16.6		588.6	TP	-703	-367	549,275	1,400,100	549,275+1,400,100 4-way Intersect
± ±	793				12.6	BH	-4.0	-16.6			TP					
	240		131°30'+180°	+6.7°	+5.7	-		+5.7	594.3		BS	+179+1	-160+2			
	240				+6.9	TH	-1.2	+5.7			BS					
X	0				5.4	-		-5.4		588.9	X	0	0	549,455	1,399,942	
188	50		283°20'	+6.7°	9.1	-		-9.1		585.2		+17	-47	549,472	1,399,895	
X	330		259°37'	+6.7°	14.4	93°30'	-20.1	-34.5		559.8		-21	-329	549,934	1,399,613	bridge el. 557.0
189	373	372.	266°45'	+6.7°	6.6	94°-	-26.0	-32.6			TP	-17+1	-372+2	549,439	1,399,572	
189	373				13.2	93°-	-19.5	-32.7		561.6	TP					

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Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE				
4/2/81		G. Cotcamp		T. Grady		6839		B.C.		5		23				
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER		
Arkansas		Newhope		Arkansas		Howard								L. Davis		
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH - LAT.	EAST + WEST - DEP.	COORDINATES		REMARKS
														Y	X	
189										561.6						
	437	435.3	79°09' +180°	+6.7°	+19.2	95°-	+37.9	+52.17	613.7		BS	-32 +1	-434 +2			
	437				+12.9	95°0'	+39.2	+52.18			BS					
190	107		79°09'	+6.7°	11.8	71°-	-1.9	-13.7	600.0			+8	+107	599,416	1,399,247	
π	0				5.4	-		-5.4	608.3		π	0	0	599,409	1,399,140	
191	222		245°09'	+6.7°	11.2	92°-	-7.7	-18.97			TP	-69 +1	-211 +2	599,340	1,398,931	
191	222				12.5	91°40'	-6.5	-19.05	594.7		TP					
	500	499.4	79°45' +180°	+6.7°	+4.9	87°16'	-23.8	-18.97	575.8		BS	-31 +1	-498 +2			
	500				+5.8	87°10'	-24.7	-18.95			BS					
192	179		87°15'	+6.7°	5.1	-		-5.1	570.7			-12	+179	599,298	1,398,614	
π	0				5.4	-		-5.4	570.4		π	0	0	599,310	1,398,435	
193	151		242°19'	+6.7°	4.0	-		-4.07	571.8		TP	-54 +1	-141 +2	599,257	1,398,296	
193	151				3.2	BH	-0.8	-4.05			TP					
	330		76°46' +180°	+6.7°	+10.6	-		+10.67	582.4		BS	-38 +1	-328 +2			
	330				+8.9	BH	+1.7	+10.65			BS					
194	0				5.4	-		-5.4	577.0		π	0	0	599,220	1,397,970	
195	330		252°23'	+6.7°	2.1	88°30'	+8.6	+6.57	588.9		TP	-62 +1	-324 +2	599,159	1,397,648	
195	330				0.2	88°50'	+6.7	+6.55			TP					
	244		76°03' +180°	+6.7°	+10.0	-		+10.07	598.9		BS	-31 +1	-292 +2			
	244				+11.2	TH	-1.2	+10.05			BS					
π	0				5.4	-		-5.4	593.5		π	0	0	599,129	1,397,408	

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DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE			
4/3/81		G. Cotcamp		T. Grady		6839		B.C.		5		24			
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER	
Arkansas		New Hope/Dierks Dam		Arkansas		Howard								L. Davis	
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
									598.9						
196	86		250°11'	+6.7°	4.1	-	-4.1		594.8			-20	-84	549,109	1,397,324
197	419		245°44'	+6.7°	1.0	89°-	+7.3	+6.3	605.2		TP	-126+1	-399.2	549,009	1,397,011
197	419				0.3	89°6'	+6.6	+6.3							
	282		88°45'+180°	+6.7°	+12.4	91°-	+4.9	+17.3	622.5		BS	+27+1	-281+2		
	282				+10.7	91°20'	+6.6	+17.3			BS				
π	0				5.4	-	-5.4		617.1		π	0	0	549,032	1,396,732
198	48		247°0'	+6.7°	5.1	-	-5.1		617.4			-13	-46	549,019	1,396,686
199	378		239°27'	+6.7°	5.1	-	-5.1		617.4		TP	-153+1	-346+2	548,880	1,396,388
199	378				7.0	TH	+1.9	-5.1							
	330		53°23'+180°	+6.7°	+12.1	-	+12.1		629.5		BS	-165	-286+2		
	330				+13.8	TH	-1.7	+12.1			BS				
200	0				5.4	-	-5.4		624.1		π	0	0	548,715	1,396,104
201	330		240°24'	+6.7°	3.1	89°-	+5.8	+2.7	632.2			-128	-307	548,587	1,395,800
202	660		" "	"	1.8	89°-	+11.5	+9.7	639.2			-257	-608	548,958	1,395,496
203	990		240°24'	+6.7°	5.4	88°30'	+25.9	+20.5	649.9		TP	-385	-912.2	548,330	1,395,194
203	990				2.6	88°40'	+23.0	+20.4							
	330		61°38'+180°	+6.7°	+14.3	BH	+1.7	+16.6	665.8		BS	-122	-307.2		
	330				+14.0	90°20'	+1.9	+15.9			BS				
204	0				5.4	-	-5.4		660.4		π	0	0	548,208	1,394,889

Newhope Quad.

Dierks Dam Quad.

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE				
4/3/81		G. Cotcamp		T. Grady		6834		wsw B.C.		5	25				
AREA		TOPO MAP		STATE		COUNTY		TWP	RANGE	PPM	PARTY MANAGER				
Arkansas		Dierks Dam		Arkansas		Howard					L. Davis				
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS	
												NORTH+ SOUTH - LAT.	EAST+ WEST - DEP.		Y
									665.8						
205	330		241°21'	+6.7°	12.1	-		-12.1		653.7	TP	-123	-306+2	548,085	1,394,585
205	330				13.8	TH	+1.7	-12.1			TP				
	990		72°04' +180°	+6.7°	+10.6	BH	+5.0	+15.6			BS	-193	-971+2		
	990				+13.7	90°6'	+1.7	+15.4	669.1		BS				
206	660		72°04'	+6.7°	4.9	92°-	-23.0	-27.9		641.2		+129	+697	548,021	1,394,263
IF	501		73°38'	+6.7°	14.6	92°30'	-21.8	-36.4		632.7		+84	+493	547,976	1,394,109 4-way Intersect.
207	330		72°04'	+6.7°	8.3	95°-	-28.7	-37.0		632.1		+64	+324	547,956	1,393,940
208	0				5.4	-		-5.4		663.7	π	0	0	547,892	1,393,616
209	330		259°47'	+6.7°	1.5	87°40'	+13.4	+11.9		681.0	TP	-20	-329	547,872	1,393,287
209	330				3.4	87°20'	+15.3	+11.9			TP				
	330		85°40' +180°	+6.7°	+14.0	91°-	+5.8	+19.8	700.8		BS	+14	-330		
	330				+12.1	91°20'	+7.7	+19.8			BS				
210	0				5.4	-		-5.4		695.4	π	0	0	547,886	1,393,957
211	326		233°19'	+6.7°	3.9	-		-3.9		696.9	TP	-163	-282	547,723	1,392,675
211	326				5.5	TH	+1.6	-3.9			TP				
	323		22°32' +180°	+6.7°	+6.2	-		+6.2	703.1		BS	-282	-158		
	323				+7.8	TH	-1.6	+6.2			BS				
IF	60		1°10'	+6.7°	4.2	-		-4.2		698.9		+59	+8	547,500	1,392,525 547,500 + 1,392,525 T-intersect. (At # 70) EL. 696.0
212	0				5.4	-		-5.4		697.7	π	0	0	547,441	1,392,517
213	328		166°46'	+6.7°	1.1	89°-	+5.7	+4.6		707.7		-326	+37	547,115	1,392,554

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE				
4/3/81		G. Cotcamp		T. Grady		6839		rdw TG		5	26				
AREA		TOPO MAP		STATE	COUNTY	TWP	RANGE	PPM	PARTY MANAGER						
Arkansas		Dierks Dam		Arkansas	Howard				L. Davis						
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
									703.1						
214	655		163°12'	+6.7°	13.9	88°30'	+17.1	+3.7		706.8		-645	+115	546,796	1,392,632
215	975	974.6	167°39'	+6.7°	12.3	88°20'	+28.3	+16.0		719.1	TP	-970	+97	546,471	1,392,614
215	975				14.5	88°12'	+30.6	+16.1			TP				
	660		38°07'+180°	+6.7°	+4.4	TH	-3.3	+1.1	720.2		BS	-468	-465		
	660				+5.0	89°40'	-3.8	+1.2			BS				
216	330		37°33'	+6.7°	2.9	-		-2.9		717.3		+236	+230	546,239	1,392,379
217	0				5.4	-		-5.4		714.8	π	0	0	546,003	1,392,149
218	327		239°0'	+6.7°	12.3	BH	-1.6	-13.9		706.3		-135	-298	545,868	1,391,851
219	650		247°0'	+6.7°	6.3	91°-	-11.3	-17.6		708.6		-182	-629	545,821	1,391,525
220	971		250°28'	+6.7°	3.1	91°-	-16.9	-20.0			TP	-216	-997	545,787	1,391,202
220	971				14.4	90°20'	-5.7	-20.1		700.1	TP				
	642		57°52'+180°	+6.7°	+11.9	89°-	-11.2	+0.7	700.8		BS	-276	-580		
	642				+9.3	89°14'	-8.6	+0.7			BS				
221	321		55°03'	+6.7°	4.7	-		-4.7		696.1		+152	+283	545,663	1,390,925
222	0				5.4	-		-5.4		695.4	π	0	0	545,511	1,390,622
TP	211		225°16'	+6.7°	3.1	-		-3.1		697.7	TP	-130	-166	545,381	1,390,456
TP	211				4.2	TH	+1.1	-3.1			TP				
	438		70°17'+180°	+6.7°	+6.0	TH	-2.2	+3.8	701.5		BS	-99	-427		
	438				+5.7	89°46'	-1.8	+3.9			BS				
228	325		70°0'	+6.7°	4.5	-		-4.5		697.0		+75	+316	545,357	1,390,345

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE			
4/3/81		G. Cotcamp		B. Cotcamp		6834		sidew TG		5		27			
AREA		TOPO MAP		STATE		COUNTY		RANGE		PPM		PARTY MANAGER			
Arkansas		Dierks Dam		Arkansas		Howard						L. Davis			
STATION NO.	SLOPE DISTANCE	PLOTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
									701.5						
224	0				54	-		-5.4		696.1	π	0	0	545,282 1,390,029	
225	318	317.7	234°53'	+6.7°	144	87°36'	+13.3	-1.0	}	700.5	TP	-151	-279	545,131 1,389,750	
225	318				149	87°30'	+13.9	-1.0		TP					
	331		70°01'+180°	+6.7°	+9.3	-		+9.3		709.8	BS	-76	-322		
	331				+11.0	TH	-1.7	+9.3	}		BS				
226	0				54	-		-5.4		704.4	π	0	0	545,055 1,389,428	
227	330		184°02'	+6.7°	147	84°	-1.7	-16.4	}	693.4	TP	-324	-61	544,731 1,389,367	
227	330				134	90°30'	-2.9	-16.3		TP					
	219	218.2	14°36'+180°	+6.7°	+4.0	85°	-19.0	-15.0	}	678.4	BS	-203	-79		
	219				+2.1	85°30'	-17.1	-15.0		BS					
π	0				54	-		-5.4		673.0	π	0	0	544,528 1,389,288	
228	111		222°38'	+6.7°	10.6	93°	-5.8	-16.4		662.0		-72	-84	544,456 1,389,204	
229	435		206°55'	+6.7°	21.6	94°20'	-32.8	-54.4		624.0		-362	-241	544,166 1,389,047	
230	760	759.	210°05'	+6.7°	13.5	93°	-39.7	-53.2	}	625.2	TP	-608	-454	543,920 1,388,834	
230	760				11.3	93°10'	-41.9	-53.2		TP					
	330	329.8	27°12'+180°	+6.7°	+14.8	87°50'	-12.5	+2.3	}	627.5	BS	-274	-184		
	330				+13.8	88°	-11.5	+2.3		BS					
231	0				54	-		-5.4		622.1	π	0	0	543,646 1,388,650	
TP	195		230°28'	+6.7°	11.3	-		-11.3	}	616.2	TP	-106	-164	543,540 388,486	
TP	195				12.3	TH	+1.0	-11.3		TP					

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE					
4/6/81		G. Cotcamp		T. Grady		6839		JMS TGS		5	28					
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER						
Arkansas		Dierks Dam		Arkansas	Howard					L. Davis						
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS
												LAT.	DEP.	Y	X	
231 1/2										616.2						
	293	291.3	62°05' +180°	+6.7°	+7.1	83°46'	-31.6	-24.5			BS	-105	-272			
	293				+8.4	83°30'	-33.0	-24.6	591.6		BS					
232	158		53°41'	+6.7°	2.8	85°-	+13.7	+10.9		602.5		+78	+137	543,513	1,387,351	
π	0				5.4	-		-5.4		586.2	π	0	0	543,435	1,388,214	
233	163	161.3	178°52'	+6.7°	3.9	98°20'	-23.4	-27.3		564.3	TP	-161	-16	543,274	1,388,198	
233	163				4.6	98°06'	-22.7	-27.3			TP					
	971		88°40'40" +180°	+6.7°	+5.0	89°22'	-10.7	-5.7	558.6		BS	+91	-967			
	971				+11.3	89°-	-16.9	-5.6			BS					
234	660		85°06'	+6.7°	9.4	-		-9.4		549.2		-21	+660	543,344	1,387,891	
235	330		" "	"	11.8	91°-	-5.8	-17.6		541.0		-10	+330	543,355	1,387,541	
236	0				5.4	-		-5.4		553.2	π	0	0	543,365	1,387,231	
237	330		265°58'	+6.7°	11.2	91°30'	-8.6	-19.8		538.8		+15	-330	543,380	1,386,901	
238	660		" "	"	9.2	91°30'	-17.3	-26.5		532.1		+31	-659	543,396	1,386,572	
239	990	989.7	264°41'20"	+6.7°	6.8	91°30'	-25.9	-32.7		525.9	TP	+24	-989	543,389	1,386,242	
239	990				14.2	91°4'	-18.4	-32.6			TP					
	325		49°58' +180°	+6.7°	+3.8	88°-	-11.3	-7.5	518.4		BS	-178	-271			
	325				+1.9	88°20'	-9.4	-7.5			BS					
240	0				5.4	-		-5.4		513.0	π	0	0	543,211	1,385,971	
241	339		208°07'	+6.7°	14.2	90°40'	-3.9	-18.1		500.3	TP	-278	-194	542,933	1,385,777	T.P. opposite sta.
241	339				12.2	91°-	-5.9	-18.1			TP					

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE					
4/6/81		G. Cotcamp		T. Grady		6834		B.C.		5	29					
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER						
Arkansas		Diecks Dam		Arkansas	Howard					L. Davis						
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS
												LAT.	DEP.	Y	X	
241										500.3						
	665		61°46' +180°	+6.7°	+1.1	89°	-11.6	-10.5	489.8		BS	-244	-618			
	665				+5.0	88°40'	-15.5	-10.5			BS					
242	330		61°46'	+6.7°	1.6	-		-1.6		488.2		+121	+307	542,810	1,385,466	
243	0				54	-		-5.4		484.4	π	0	0	542,689	1,385,159	on bridge
244	327		212°0'	+6.7°	9.4	-		-9.4		480.4		-255	-204	542,434	1,384,955	
245	650		209°27'	+6.7°	10.4	BH	-3.3	-13.7		476.1	TP	-525	-383	542,164	1,384,976	
245	650				11.0	90°14'	-2.6	-13.6			TP					
	660		37°31' +180°	+6.7°	+9.5	89°	-11.5	-2.0			BS	-473	-460			
	660				+13.3	88°40'	-15.4	-2.1	474.0		BS					
246	330		40°34'	+6.7°	3.2	-		-3.2		470.8		+224	+242	541,915	1,384,558	
247	0				54	-		-5.4		468.6	π	0	0	541,691	1,384,316	π opposite sta.
248	332		254°25'	+6.7°	3.3	TH	+1.7	-1.6			TP	-51	-328	541,610	1,383,988	
248	332				7.5	89°	+5.8	-1.7		472.3	TP					
	323		51°30' +180°	+6.7°	+11.9	-		+11.9	484.2		BS	-170	-275			
	323				+13.5	TH	-1.6	+11.9			BS					
249	0				54	-		-5.4		478.8	π	0	0	541,470	1,383,713	
250	331		210°23'	+6.7°	8.0	-		-8.0		476.2	TP	-264	-200	541,206	1,383,513	
250	331				9.7	TH	+1.7	-8.0			TP					
	335		50°37' +180°	+6.7°	+9.4	-		+9.4	485.6		BS	-181	-282			
	335				+11.1	TH	-1.7	+9.4			BS					

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE				
4/6/81		G. Cotcamp		T. Grady		6839		B.C.		5	30				
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER					
Arkansas		Dierks Dam		Arkansas	Howard					L. Davis					
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
2									485.6						
251	0				54	-		-5.4		480.2	TP	0	0	541,025	1,383,231
252	320		255°44'	+6.7°	9.7	88°30'	+8.4	-1.3		484.3	TP	-42	-317	540,983	1,382,914
252	320				10.6	88°20'	+9.3	-1.3			TP				
	537		98°41'+180°	+6.7°	+2.3	-		+2.3	486.6		BS	+142+1	-518		
	537				+5.0	TH	-2.7	+2.3			BS				
253	207		89°0'	+6.7°	12.1	-		-12.1		474.5		-21	+206	541,105	1,382,602
	0				5.4	-		-5.4		481.2	TP	0	0	541,126	1,382,396
254	122		263°23'	+6.7°	8.0	-		-8.0		478.6		0	-122	541,126	1,382,274
255	445		261°13'	+6.7°	12.8	-		-12.8		473.8	TP	-16+1	-445	541,112	1,381,951
255	445				15.0	TH	+2.2	-12.8			TP				
	653		87°37'+180°	+6.7°	+4.5	90°40'	+7.6	+12.1			BS	+49+2	-651		
	653				+3.3	90°46'	+8.7	+12.0	485.8		BS				
256	330		82°46'	+6.7°	7.8	-		-7.8		478.0		+3	+330	541,166	1,381,630
257	0				54	-		-5.4		480.4	TP	0	0	541,163	1,381,300
258	330		258°29'	+6.7°	2.1	89°-	+5.8	+3.7		489.5		-28	-329	541,135	1,380,971
259	659	658.4	255°58'	+6.7°	2.9	87°30'	+28.7	+25.8		511.6	TP	-84+2	-653	541,081	1,380,647
259	659				4.8	87°20'	+30.6	+25.8			TP				
	660	659.6	78°17'+180°	+6.7°	+14.7	88°-	-23.0	-8.3	503.3		BS	-58+2	-657+3		
	660				+5.9	88°46'	-14.2	-8.3			BS				
260	330		78°17'	+6.7°	3.9	89°-	+5.8	+1.9		505.2		+29	+329	541,054	1,380,382

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE			
4/16/81		G. Cotcamp		B. Cotcamp		6834		B.C.		5	31			
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER				
Arkansas		Dierks Dam		Arkansas	Howard					L. Davis				
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									503.3					
261	0				54	-		-5.4		497.9	π	0	0	541,025 1,379,993
262	330		267°37'	+6.7°	13.3	-		-13.3		490.0		+25	-329	541,050 1,379,664
263	660		263°22'	+6.7°	11.2	-		-11.2		492.1		+1	-660	541,026 1,379,333
264	986		260°34'	+6.7°	4.1	89°30'	+8.6	+4.5		507.8	TP	-47 ₊₂	-985 ₊₃	540,980 1,379,011
264	986				9.8	89°10'	+14.3	+4.5			TP			
	1320		74°14' +180°	+6.7°	+5.9	91°-	+23.0	+28.9	536.7		BS	-208 ₊₂	-1303 ₊₃	
	1320				+13.6	90°40'	+15.4	+29.0			BS			
265	990		74°14'	+6.7°	10.3	90°30'	-8.6	-18.9		517.8		+156	+978	540,930 1,378,689
266	660		" "	"	9.0	91°-	-11.5	-20.5		516.2		+104	+652	540,878 1,378,363
267	330		" "	"	10.6	91°-	-5.8	-16.4		520.3		+52	+326	540,826 1,378,037
268	0				54	-		-5.4		531.3	π	0	0	540,774 1,377,711
269	331		248°06'	+6.7°	3.1	-		-3.1		533.6	TP	-87 ₊₂	-319 ₊₃	540,689 1,377,395
269	331				4.8	TH	+1.7	-3.1			TP			
	331		93°25' +180°	+6.7°	+6.7	88°20'	-9.6	-2.9	530.7		BS	+58 ₊₂	-326 ₊₃	
	331				+8.6	88°-	-11.5	-2.9			BS			
270	0				54	-		-5.4		525.3	π	0	0	540,749 1,377,072
271	330		283°0'	+6.7°	4.1	-		-4.1		526.6		+111	-311	540,860 1,376,761
272	658		280°44'	+6.7°	3.2	89°-	+11.5	+8.3			TP	+197 ₊₂	-628 ₊₃	540,948 1,376,447
272	658				5.2	88°50'	+13.4	+8.2		538.9	TP			

SURVEY NOTES-HIGH RESOLUTION DATA
GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE					
4/6/81		G. Cotcamp		B. Cotcamp		6834		JLW TG		5	32					
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER						
Arkansas		Diecks Dam		Arkansas	Howard					L. Davis						
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH+ SOUTH - LAT.	EAST+ WEST - DEP.	COORDINATES Y X		REMARKS
272										538.9						
	987		58°44'40" +180°	+6.7°	+6.8	89°-	-17.2	-10.4			BS	-410	-898.3			
	987				+3.9	89°16'	-14.4	-10.5	528.4		BS					
273	660		57°24'	+6.7°	10.8	TH	+3.3	-7.5		520.9		+288	+594	540,826	1,376,146	
274	330		" "	"	13.0	91°-	-5.8	-18.8		509.6		+144	+297	540,682	1,375,849	
275	0				5.4	-		-5.4		523.0	X	0	0	540,538	1,375,552	
275	98		230°22'	+6.7°	6.2	-		-6.2		522.2		-53	-82	540,485	1,375,470	4-way Intersect
276	330		242°19'	+6.7°	12.1	BH	-1.7	-13.8		514.6		-118	-308	540,420	1,375,244	
277	658		249°23'	+6.7°	11.9	91°-	-11.5	-23.4		505.0		-158	-639	540,380	1,374,913	
278	980		254°16'	+6.7°	14.5	90°22'	-6.3	-20.8		507.6	TP	-154	-968.3	540,384	1,374,587	
278	980				12.2	90°30'	-8.6	-20.8			TP					
	660		67°50' +180°	+6.7°	+11.9	88°-	-23.0	-11.1	496.5		BS	-176	-636.3			
	660				+10.0	88°0'	-21.1	-11.1			BS					
279	330		67°50'	+6.7°	4.7	88°-	+11.5	+6.8		503.3		+88	+318	540,296	1,374,272	
280	0				5.4	-		-5.4		491.1	X	0	0	540,208	1,373,954	
281	330		253°0'	+6.7°	9.2	-		-9.2		487.3		-59	-325	540,149	1,373,629	
282	653		246°45'	+6.7°	2.0	TH	+3.3	+1.3			TP	-186	-626.2	540,022	1,373,380	
282	653				4.5	89°30'	+5.7	+1.2		497.7	TP					
	990		66°07'40" +180°	+6.7°	+9.4	-		+9.4	507.1		BS	-292	-946.2			
	990				+14.4	TH	-5.0	+9.4			BS					
283	660		66°08'	+6.7°	8.1	-		-8.1		499.0		+195	+631	539,925	1,373,017	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 4/6/81		INSTRUMENT MAN G. Cotcamp		ROD MAN B. Cotcamp		PARTY NUMBER 6837		NOTES CHECKED BY B.C.		LINE NO. 5		PAGE 33		
AREA Arkansas		TOPO MAP Dieks Dam		STATE Arkansas		COUNTY Howard		RANGE		PPM		PARTY MANAGER L. Davis		
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH+ SOUTH - LAT.	EAST+ WEST - DEP.	
									507.1					
284	8330		66°0'	+6.7°	11.3	-		-11.3		495.8		+98	+315	539,828 1,372,701
285	0				5.4	-		-5.4		501.7	X	0	0	539,730 1,372,386
286	330		245°59'	+6.7°	14.0	BH	-1.7	-15.7		491.4	TP	-98	-315+2	539,632 1,372,073
286	330				14.1	90°16'	-1.5	-15.6			TP			
	330		76°02'+180°	+6.7°	+0.2	88°-	-11.5	-11.3	480.1		BS	-42	-327+2	
	330				+3.1	87°30'	-14.4	-11.3			BS			
287	0				5.4	-		-5.4		474.7	X	0	0	539,590 1,371,798
288	330		264°45'	+6.7°	10.0	91°-	-5.8	-15.8		464.3		+8	-330	539,598 1,371,418
289	660		" "	"	9.7	91°30'	-17.3	-27.0		453.1		+17	-660	539,609 1,371,088
290	990		263°42'38"	+6.7°	10.1	91°-	-17.3	-27.4		452.7	TP	+7	-990+2	539,597 1,370,760
290	990				14.2	90°46'	-13.2	-27.4			TP			
	660		78°51'+180°	+6.7°	+6.6	89°-	-11.5	-4.9			BS	-51	-658+2	
	660				+10.4	88°40'	-15.4	-5.0	447.7		BS			
291	330		78°51'	+6.7°	6.7	89°-	+5.8	-0.9		446.8		+26	+329	539,572 1,370,433
292	0				5.4	-		-5.4		442.3	X	0	0	539,596 1,370,104
293	330		256°55'	+6.7°	8.2	-		-8.2		439.5	TP	-37	-328+2	539,509 1,369,778
293	330				9.9	TH	+1.7	-8.2			TP			
	490		41°11'+180°	+6.7°	+3.2	89°30'	-4.3	-1.1	438.4		BS	-329	-363+2	
	490				+6.0	89°10'	-7.1	-1.1			BS			
294	160		34°19'	+6.7°	1.4	-		-1.4		437.0		+121	+105	539,301 1,369,522

SURVEY NOTES-HIGH RESOLUTION DATA
GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE					
4/6/81		G. Cotcamp		B. Cotcamp		6834		B.C.		5	39					
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER						
Arkansas		Dierks Dam		Arkansas	Howard/Sevier					L. Davis						
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS
												LAT.	DEP.	Y	X	
									438.4							
π	0	#0	1		5.4	-		-5.4		433.0	π	0	0	539,180	1,369,417	
295	170		197°0'	+6.7°	7.9	-		-7.9		430.5		-156	-68	539,024	1,369,349	
296	493		189°42'	+6.7°	14.8	90°20'	-2.9	-17.7		420.7	TP	-473.	-139+2	538,707	1,369,280	
296	493				13.4	90°30'	-4.3	-17.7			TP					
	329		346°50' +180°	+6.7°	+2.5	89°-	-5.7	-3.2	417.5		BS	-327.	+37+2			
	329				+1.0	89°16'	-4.2	-3.2			BS					
297	0				5.4	-		-5.4		412.1	π	0	0	538,380	1,369,319	
298	317		133°52'	+6.7°	6.4	-		-6.4		411.1	TP	-245.	+201+2	538,135	1,369,528	
298	317				8.0	TH	+1.6	-6.4			TP					
	^{vs} 480470		324°52' +180°	+6.7°	+9.9	89°-	-8.2	+1.7	412.8		BS	-413.	+224+2			↑
	480470				+13.5	88°34'	-11.8	+1.7			BS					Howard Co.
299	170		349°46'	+6.7°	8.8	-		-8.8		404.0		+170	-10	537,892	1,369,738	bridge
π	0				5.4	-		-5.4		407.4	π	0	0	537,722	1,369,748	
300	173		217°14'	+6.7°	3.5	-		-3.5		409.3		-125	-120	537,597	1,369,628	Sevier County
301	500		225°20'	+6.7°	9.0	89°-	+8.7	-0.3		412.5	TP	-308	-394+2	537,414	1,369,356	↓
301	500				6.9	89°14'	+6.7	-0.2			TP					
	660		87°39' +180°	+6.7°	+4.7	-		+4.7	417.2		BS	+50.	-658+2			
	660				+8.0	TH	-3.3	+4.7			BS					
302	330		87°39'	+6.7°	4.9	-		-4.9		412.3		-25	+32.9	537,439	1,369,089	
303	0				5.4	-		-5.4		411.8	π	0	0	537,461	1,368,700	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE			
4/6/81		G. Cotcamp		B. Cotcamp		6834		B.C.		5		35			
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER	
Arkansas		Dierks Dam		Arkansas		Sevier								2-Davis	
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
									417.2						
304	330		262°35'	+6.7°	1.7	-	-1.7			415.5		-4	-330	537,462	1,368,370
305	659		255°55'	+6.7°	3.7	88°30'	+17.2	+13.5		430.7	TP	-85	-653.2	537,379	1,368,049
305	659				7.5	88°10'	+21.1	+13.6			TP				
	333		87°58'+180°	+6.7°	+14.6	BH	+1.7	+16.3	447.0		BS	+27	-332.2		
	333				+14.4	90°20'	+1.9	+16.3			BS				
306	0				5.4	-		-5.4		441.6	X	0	0	537,406	1,367,719 opposite sta.
307	330		289°27'	+6.7°	2.4	89°-	+5.8	+3.4		450.4		+119	-308	537,525	1,367,411
308	660	659.1	289°27'	+6.7°	4.3	87°-	+34.5	+30.2		477.2	TP	+238	-615	537,644	1,367,104
308	660				1.5	87°14'	+31.8	+30.3			TP				
	660	659.6	119°25'+180°	+6.7°	+14.3	92°4'	+23.8	+38.1			BS	+389	-533.2		
	660				+12.3	92°14'	+25.7	+38.0	515.2		BS				
309	330		115°31'	+6.7°	12.2	91°-	-5.8	-18.0		497.2		-176	+279	537,857	1,366,852
310	0				5.4	-		-5.4		509.8	X	0	0	538,033	1,366,573
311	300		286°28'	+6.7°	0.1	85°-	+26.0	+25.9		541.1		+118	-276	538,151	1,366,297
TP	420	418.0	281°51'	+6.7°	3.1	84°30'	+40.1	+37.0		552.2	TP	+133	-396.2	538,166	1,366,179
TP	420				2.1	84°38'	+39.1	+37.0			TP				
	233		84°32'+180°	+6.7°	+6.0	-		+6.0	558.2		BS	+5	-233.2		
	233				+7.2	TH	-1.2	+6.0			BS				
312	0				5.4	-		-5.4		552.8	X	0	0	538,171	1,365,948
313	330		291°20'	+6.7°	11.8	BH	-1.7	-13.5		544.7		+155	-291	538,326	1,365,657

SURVEY NOTES-HIGH RESOLUTION DATA

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Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE					
4/6/81		G. Cotcamp		B. Cotcamp		6834		Jdu TG		5	36					
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER						
Arkansas		Dierks Dam		Arkansas	Sevier					L. Davis						
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS
												LAT.	DEP.	Y	X	
									558.2							
314	648	647.9	284°11'	+6.7°	5.1	88°50'	+13.2	+8.1		566.3	TP	+231	-605+2	538,402	1,365,345	
314	648				8.8	88°30'	+17.0	+8.2			TP					
	1320		79°23'40"+180°	+6.7°	+5.4	89°30'	-11.5	-6.1	560.1		BS	-90	-1317+2			
	1320				9.1	89°20'	-15.4	-6.3	-6.2		BS					
315	990		77°43'	+6.7°	1.0	-	-	-1.0		559.1		+96	+985	538,408	1,365,615	
316	660		" "	"	6.2	-	-	-6.2		553.9		+64	+657	538,876	1,364,687	
317	330		" "	"	12.2	-	-	-12.2		547.9		+32	+328	538,344	1,364,358	
318	0				5.4	-	-	-5.4		554.7	π	0	0	538,312	1,364,030	
319	330		256°0'	+6.7°	10.9	91°-	-5.8	-16.7		543.4		-42	-327	538,276	1,363,703	
320	660	659.6	253°24'	+6.7°	9.9	92°-	-23.0	-32.9			TP	-113	-650+2	538,199	1,363,382	
320	660				13.8	91°40'	-19.2	-33.0		527.1	TP					
	646		71°0'+180°	+6.7°	+10.2	89°-	-11.3	-1.1	526.0		BS	-138	-631+2			
	646				+4.6	89°30'	-5.6	-1.0			BS					
321	330		81°16'	+6.7°	10.1	-	-	-10.1		515.9		+12	+330	538,073	1,363,083	
322	0				5.4	-	-	-5.4		520.6	π	0	0	538,061	1,362,753	
323	330	328.2	284°45'	+6.7°	3.5	84°-	+34.3	+30.8		556.8	TP	+120	-305+2	538,181	1,362,450	
323	330				1.2	84°24'	+32.1	+30.9			TP					
	660	656.9	116°29'+180°	+6.7°	+11.7	95°30'	+63.0	+74.7	631.5		BS	+360	-550+2			
	660				+13.6	95°20'	+61.1	+74.7			BS					
324	380		116°29'	+6.7°	10.3	95°-	-28.7	-39.0		592.5		-181	+276	538,360	1,362,178	

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Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE			
4/7/81		Gary Cotcamp		B. Cotcamp		6839		B.C.		5		37			
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER	
Arkansas		Dierks Dam		Arkansas		Sevier								L. Davis	
STATION NO.	SLOPE DISTANCE	PLOTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
									631.5						
325	0				54	-		-5.4		626.1	X	0	0	538,541	1,361,902
326	330	329.0	294°01'	+6.7°	5.0	85°30'	+25.8	+20.87		652.3	TP	+168	-283+2	538,709	1,361,621
326	330				3.6	85°44'	+24.5	+20.9			TP				
	660		107°09' +180°	+6.7°	+6.8	-		+6.87	659.1		BS	+267	-604+2		
	660				+3.5	BH	+3.3	+6.8			BS				
327	330		107°09'	+6.7°	12.4	-		-12.4		646.7		-133	+302	538,843	1,361,321
<u>327</u>	48		111°15'	+6.7°	5.4	-		-5.4		653.7		-23	+42	538,953	1,361,061 T-rod (north)
328	0				5.4	-		-5.4		653.7	X	0	0	538,976	1,361,019
329	330		273°49'	+6.7°	9.1	-		-9.1		650.0		+60	-324	539,036	1,360,695
330	660		" "		3.5	-		-3.5		655.6		+120	-649	539,096	1,360,370
331	990		273°49'	+6.7°	5.3	89°30'	+8.6	+3.37		662.4	TP	+181	-973+2	539,157	1,360,048
331	990				11.0	89°10'	+14.4	+3.4			TP				
	330		100°17' +180°	+6.7°	+12.1	-		+12.17	674.5		BS	+96	-316+2		
	330				+13.8	TH	-1.7	+12.1			BS				
332	0				54	-		-5.4		669.1	X	0	0	539,253	1,359,734
333	330		270°47'	+6.7°	2.9	-		-2.9		671.6		+43	-327	539,296	1,359,407
334	660		267°33'	+6.7°	2.8	-		-2.8		671.7		+49	-658	539,302	1,359,076
335	987		266°45'	+6.7°	3.8	TH	+4.9	+1.17			TP	+59	-985+2	539,312	1,358,751
335	987				4.7	89°40'	+5.7	+1.0		675.5	TP				

SURVEY NOTES-HIGH RESOLUTION DATA

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Geosource Inc.

DATE 4/7/81		INSTRUMENT MAN G. Cotcamp		ROD MAN T. Grady		PARTY NUMBER 6834		NOTES CHECKED BY rdw B.C.		LINE NO. 5		PAGE 38		
AREA Arkansas		TOPO MAP Dierks Dam		STATE Arkansas		COUNTY Sevier		RANGE		PPM		PARTY MANAGER L. Davis		
STATION NO.	SLOPE DISTANCE	PLOT DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
335										675.5				
	330		78°28' +180°	+6.7°	+5.9	-		+5.9	681.4		BS	-28	-329+2	
	330				+7.6	TH	-1.7	+5.9			BS			
336	0				5.4	-		-5.4		676.0	X	0	0	539,284 1,358,424
337	328	327.8	274°29'	+6.7°	11.2	92°-	-11.4	-22.6			TP	+64	-322+2	539,348 1,358,104
337	328				13.2	91°40'	-9.5	-22.7		658.7	TP			
	425		147°0' +180°	+6.7°	+14.4	92°20'	+17.3	+31.7	690.4		BS	+381	-188+2	
	425				+13.2	92°30'	+18.5	+31.7			BS			
338	95		156°0'	+6.7°	9.9	92°-	-3.3	-13.2		677.2		-91	+28	539,638 1,357,996
	0				5.4	-		-5.4		685.0	X	0	0	539,729 1,357,918
339	224		332°32'	+6.7°	4.6	88°-	+7.8	+3.2		693.6		+209	-79	539,938 1,357,839
340	554		329°15'	+6.7°	6.5	88°-	+19.3	+12.8		703.2	TP	+506	-226+2	540,235 1,357,699 E.O.L.#5
340	554				1.7	88°30'	+14.5	+12.8			TP			
	83		140°55' +180°	+6.7°	+7.0	-		+7.0	710.2		BS	+70	-44+2	
	83				+7.4	TH	-0.4	+7.0			BS			horiz. correct, y=+19', x=+97
	0				5.9	-		-5.4		704.8	X	0	0	540,305 1,357,652
	370		206°22'	+6.7°	14.2	88°	-1.9	-16.1		694.1	TP	-310	-202	539,995 1,357,450 Intersect. (pred)
	704		97°28' +180°		+6.1	-		+6.1	700.2		BS			
	704				+9.6	TH	-3.5	+6.1			BS			
	0				5.9	-		-5.4		694.8	X			

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 4/8/81	INSTRUMENT MAN G. Cotcamp	ROD MAN B. Cotcamp	PARTY NUMBER 6839	NOTES CHECKED BY rlw B.C.	LINE NO. 5	PAGE 39 of 39
AREA Arkansas	TOPO MAP Dierks Dam	STATE Arkansas	COUNTY Sevier	TWP	RANGE	PPM
				PARTY MANAGER L. Davis		

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
									700.2						
TP	608		290°10'		6.7	92°	-21.2	-27.9	}	672.3	TP				
TP	608				12.0	91°30'	-15.9	-27.9		TP					
	885		139°04'+180°		+13.0	91°10'	+18.0	+31.0	}	703.3	BS				
	885				+7.7	91°30'	+23.2	+31.1		BS					
X	0				5.4	-		-5.4		697.9	X				
TP	496		281°44'		13.3	92°30'	-21.6	-34.9	}	668.4	TP				
TP	496				9.0	93°	-25.9	-34.9		TP					
	253		86°23'+180°		+2.1	86°	-17.6	-15.5	}	652.9	BS				
	253				+0.6	86°20'	-16.1	-15.5		BS					
X	0				5.4	-		-5.4		647.5	X				
BM	54		353°01'		3.5	-		-3.5	}	649.4					el. 648. U.S.G.S TT 10 1938
BM	54				3.2	04	-0.3	-3.5							