

## **KILGOUR SEISMIC SURVEY**

### **EP-25, MCARTHUR BASIN, NORTHERN TERRITORY**

**23 JULY - 19 AUGUST 1992**

#### **CLIENT REPRESENTATIVE REPORT**

Following a survey briefing at MIM Petroleum Exploration's Windsor office on 21 July, personnel assembled at Brisbane airport, together with in-field data processing hardware, and then to Mt Isa.

Here a Toyota 4 x 4 Landcruiser was hired and the journey to Camooweal made where the night was spent. The following day the party travelled via Barkly Homestead to Cape Crawford where all members of the seismic crew were centralised, including the surveyors, at the Heartbreak Hotel.

The computer hardware which was needed to; play back monitor records with filtering, generate SEG-Y tapes and carry out data processing was installed here.

Seismic operations commenced the next day, 23 July. Line - 7 in the Kilgour North Prospect was laid out in readiness for testing.

All seismic work was located within the McArthur River Station. The objective of the survey was to delineate, using seismic, the surface anticlines at north and south Kilgour involving Proterozoic sediments.

On line - 7 experimental work assessed the following recording options:

- 10 Hz and 30 Hz geophones
- Offend, split shooting
- Number of wacks/sp (mp to 1000)
- Various wacker arrays compared to a wacker point source

Recording parameters for the survey were:

- Minisose source
- Sarcel 338 recording system
- 48 channel
- 10 Hz geophones
- 12 geophones/group (central on peg - array length 25m)
- 2 millisecc sample rate
- 25m peg/group interval
- 210 sec record length
- split spread
- 1000 wacks/sp (centred between pegs - array length 25m)
- SP interval: 25m
- 24 fold

Production commenced on the Kilgour North Prospect, in line clearing having been carried out. Line - 7 was processed in the field. Use was made of the geosystems crew located towards Daly Waters where some F-K processing was carried out with encouraging results. The in-field processing had no elevation or static corrections. Production was slow in the early stages at less than 1km/day. Due to cramped conditions and meal scheduling problems, on 25 July field headquarters were shifted to the HYC mine further northeast along the Carpentaria Highway.

Although this added to the travel time to the prospect there were significant advantages in being based at HYC. The crew enjoyed full messing here, diesel supply, good communications and a mechanical workshop with other facilities. Due to the rough driving conditions it was decided to leave the recording truck in the field overnight. This followed with computer circuit board and monitor malfunction due to severe vibration.

Steep sided hills associated with the flanks of the North Kilgour Anticline were negotiated with cables and geophones carried over difficult country. there was sporadic puncturing of tyres due to the rocky ground, anticlines and sharp stakes. The surveyors located the two wells drilled in the North Kilgour Prospect:

BMR Bauhinia Downs - 4 and Amoco 82-7

The survey proceeded in the North Kilgour Prospect with data quality affected by the variable ground conditions. This included traversing hard pavements with loose seals which was a noisy seismic environment. The wind was also a significant source of noise. Due to the thick vegetation, the wacker source sensor cable became tangled repeatedly.

This was overcome by connecting this sensor cable into the main recording cable by using spare conductors. Some electrical modifications were necessary to ensure that the wacker base plate signal was not excessive where it could cross feed onto recording channels. This had to be continually monitored as ground conditions and the strength of the wacker signal varied.

As the recording track was unable to produce a hard copy of the field monitors, these records were generated in the camp for each days production.

Brute stacks were produced including line-6 which showed encouraging data quality.

The North Kilgour Prospect was completed on 8 August after 16 days recording giving 17.9km with an average production rate of 1.1km/day.

Whereas travel time to the North Kilgour Prospect varied from 210 - 2.5 hours, at the South Kilgour Prospect travel time averaged 310 hours, there being a distance of 65km from the base camp at HYC to the centre of the prospect. Each consecutive Sunday was taken as a maintenance day where staff serviced and repaired equipment and when seismic data playback was carried out together with processing. Data in the South Kilgour Prospect appeared slightly better on the monitor records, possibly due to better coupling and less rocky ground.

Surveying for both prospects depended on the use of the GPS instrument (satellite positioning). However this does not give elevation control which was obtained approximately using government maps and contours.

Washouts were more severe in the South Kilgour Prospect associated with active wet season watercourses channelling through gaps in the hilly terrain.

The South Kilgour Prospect was completed on 15 August giving a total of 9.9km acquired in 6 days, an average of 1.65km/day.

An inspection of the Kilgour North and south prospects was made with the local aboriginal tribal elders on 18 August. This followed a visit well before the survey commenced in the planning stages.

The tribal elders were taken throughout both prospects and were shown the low impact nature of the seismic line was shortened. The elders expressed their appreciation for the efforts made and commented that we should have graded the station access track as it was too bumpy for them. On 17 August seismic operations shifted to the HYC area where a detailed seismic line was required to assist mapping associated with the Emn fault. Parameters here were the same as for the Kilgour Prospects except that a 1.5sec record length was utilised.

The HYC seismic was completed in 3 days giving 5.35km of data at an average production rate of 1.78km/day. All seismic tapes were sent to Digicon in Brisbane for processing together with support data.

M McNicol  
14 September 1992

ATTN: ROBERT de LASTIC

## EP25: KILGOUR SEISMIC SURVEY DAILY REPORT

FAX (07) 857 7089

DATE	LINE NO.	S.P. RANGE	K.M.	CUM KM	DAILY COST \$	REC. TIME HOURS	DOWN TIME HOURS	CLIENT DOWN TIME/COST	TOT. COST \$	SURVEY (KM)	GRADING (HRS) Δ	WEATHER CONDITIONS	DATA QUALITY	COMMENTS	#	*
1 23-7-92	92-7	100-121	0.525		4,988	7.5	3	-		92-7 0.8	-	FINE	FAIR	TESTING PRIOR	2.0	9.5
THUR				0.525					4,988	92-4 2.8	3.6			TO 15.00 HRS		
2 24-7-92	92-7	121-157	0.9		3,780	8.5	1	-		92-4 0.8	-	FINE	FAIR	RECORDING ON	2.0	10.5
FRI				1.425					8,768	92-11 1.8	6.2			KILGOUR NTH PROSPECT		
3 25-7-92	92-7	157-196	0.975		3,240	6.0	0	-		92-4 1.7	-	FINE	FAIR	NEGOTIATE STEEP	3.0	9.0
SAT				2.400					12,008		7.9			SIDED HILL		
4 26-7-92	92-4	100-139	0.975		2,520	4.0	0	-		92-6 1.2	-	FINE	FAIR	SUNDAY	3.0	7.0
SUN				3.375					14,528		9.1			½ DAY BREAK		
5 27-7-92	92-4	140-179	1.0		3,420	6.5	1.25	-		92-1 1.3	-	FINE	FAIR	COMPUTER CIRCUIT	3.0	9.5
MON				4.375					17,948	92-6 4.15	14.55			BOARD & MONITOR MALFUNCTION		
6 28-7-92	92-4	180-219	1.0		3,240	6.0	2.0	-		92-6 0.25	-	FINE/WINDY	FAIR	2 LINE TRUCKS:	3.0	9.0
TUES				5.375					21,188	92-9 2.2	17.0			6 STAKED TYRES/ROUGH LINE		
7 29-7-92	92-4	220-258	0.975		2,880	5.0	3.75	-		92-5 2.45	-	FINE	FAIR <sup>†</sup>	SLIGHT IMPROVEMENT	3.0	8.0
WED				6.35					24,068		19.45			IN DATA QUALITY		
8 30-7-92	92-4	259-278	0.5		3,240	6.0	1.25	-		92-15 1.75		FINE	FAIR	TRAVERSING HARD	3.0	9.0
THUR	92-1	100-110	0.225	7.075					27,308		21.2			'PAVEMENT' WITH LOOSE SLABS		

\* CHARGEABLE HOURS.

# TRAVEL TIME.

Δ SURVEYED LINE: CUM. KM.

M. McNicol  
 McArthur River Mine, NT  
 Fax: (089) 754 907

ATTN: ROBERT de LASTIC

EP25: KILGOUR SEISMIC SURVEY DAILY REPORT

FAX (07) 857 7089

DATE	LINE NO.	S.P. RANGE	K.M.	CUM KM	DAILY COST \$	REC. TIME Hours	DOWN TIME Hours	CLIENT DOWN TIME/COST	TOT. COST \$	SURVEY (KM) Δ	GRADING (HRS)	WEATHER CONDITIONS	DATA QUALITY	COMMENTS	#	*	
9	31-7-92	91-1	111-156	1.150		3,420	7.0	1	-		92-15 0.25	-	FINE	FAIR	RECORD WITH SOURCE	2.5	9.5
	FRI				8.225				30,728	92-8 4.4	25.85				SENSOR THROUGH CABLE		
10	1-8-92	92-1	157-199	1.075		3,600	7.5	-	-		INSTALL 20	-	FINE	FAIR	HAND CARRY	2.5	10.0
	SAT	92-6	264-264	0.050	9.35				34,328	PERM. MKS.	25.85				CABLES: 276 - 267		
11	2-8-92	-	-	-	-	-	-	-	-		92-11 0.45	-	FINE	Max 30.6° Min 10.2°	NO RECORDING	-	-
	SUN				9.35				34,328	92-13 1.6	27.90				- MAINTENANCE DAY		
12	3-8-92	92-6	264-197	1.675		3,960	8.5	-	-		BALANCE 0.80	-	FINE	FAIR	INCREASED PRODUCTION	2.5	11.0
	MON				11.025				38,288	SURVEYING COMPLETE	28.70				- CLEARER LINE & NO HILLS		
13	4-8-92	92-6	196-133	1.575		3,870	7.75	-	-		-	-	FINE	FAIR-GOOD	SOME MONITORS	2.5	10.75
	TUES				12.60				42,158						SHOW GOOD REFLECTORS		
14	5-8-92	92-6	132-101	0.8		3,600	7.5	0.5	-		-	-	FINE BUT CLOUDY & WINDY	FAIR	HAND CARRY CABLES OVER	2.5	10.0
	WED	92-9	183-171	0.3	13.70				45,758						HILL: BOGGING IN DRY CREEK BED		
15	6-8-92	92-9	171-100	1.775		3,870	8.25	-	-		-	-	FINE	FAIR	BRUTE STACK	2.5	10.75
	THUR				15.475				49,628						PRODUCED FOR 92-6		
16	7-8-92	92-5	193-138	1.375		3,870	8.25	-	-		-	-	FINE	FAIR	SKIPPED SP168-153	2.5	10.75
	FRI				16.85				53,498						& HAND CARRY CABLES: HILL		

\* CHARGEABLE Hours.

# TRAVEL TIME

Δ SURVEYED LINE: CUM. km.

M. McNicol

McArthur River Mine, NT.

Fax: (089) 759.907

ATTN: ROBERT de Lastic

## EP25: KILGOUR SEISMIC SURVEY DAILY REPORT

FAX (07) 857 7089

DATE	LINE NO.	S.P. RANGE	K.M.	CUM KM	DAILY COST \$	REC. TIME HOURS	DOWN TIME HOURS	CLIENT DOWN TIME/COST	TOT. COST \$	SURVEY (KM)	GRADING (HRS)	WEATHER CONDITIONS	DATA QUALITY	COMMENTS	#	*
17 8-8-92	92-5	138-97	1.025		3,960	8.5	-	-		-	-	FINE GUSTY WINDS; WILLYWINKYS	FAIR	RELOCATE TO KILGOUR	2.5	11
SAT	92-11	191-176	0.375	18.25					57,458					STH. PROSPECT; LONG LME MOVE		
18 9-8-92	-	-	-		-	-	-	-		-	-	FINE	-	MAINTENANCE DAY	-	-
SUN				18.25					57,458					REPAIR 2 <sup>ND</sup> WACKER		
9 10-8-92	92-11	176-115	1.525		3,960	8.0	-	-		-	-	FINE LIGHT BREEZE	FAIR	INCREASED TRAVEL TIME	3.0	11.0
MON				19.775					61,418					GENTLE HILL IN CORE OF ANTICLINE		
0 11-8-92	92-8	284-235	1.225		3,960	8.5	-	-		-	-	FINE	LINE-8 FAIR-GOOD	SOME MONITOR RECORDS	2.5	11.0
TUES	92-11	115-103	0.3	21.3					65,378				LINE-11 FAIR	SHOW DISTINCT REFLECTIONS		
1 12-8-92	92-8	235-172	1.575		3,510	6.75	-	-		-	-	FINE	FAIR	BRUTE STACK	3.0	9.75
WED				22.875					68,888					PRODUCED FOR 92-11		
2 13-8-92	92-8	172-102	1.750		3,960	8.0	-	-		-	-	FINE GUSTY WINDS	FAIR	WACKER OMITTED	3.0	11.0
THUR	92-15	108-116	0.2	24.825					72,848					SP 100-107 (92-15): HILL		
3 14-8-92	92-15	116-178	1.55		3,960	8.0	-	-		-	-	FINE GUSTY WINDS	FAIR	CLEARER LINES &	3.0	11.0
FRI	92-13	106-112	0.15	26.525					76,808					BETTER ACCESS		
4 15-8-92	92-13	112-163	1.275		2,160	6.0	-	-		-	-	FINE	FAIR		3.0	9.0
SAT				27.8					78,968					COMPLETE KILGOUR PROSPECT		

\* CHARGEABLE HOURS

# TRAVEL TIME

M. McNicol

McArthur River Mine, N.T.

Fax: (089) 759-907

ATTN: ROBERT de LASTIC

EP25: KILGOUR SEISMIC SURVEY DAILY REPORT

FAX (07) 857 7089

	DATE	LINE NO.	S.P. RANGE	K.M.	CUM KM	DAILY COST	REC. TIME	DOWN TIME	CLIENT DOWN TIME/COST	TOT. COST	SURVEY (KM)	GRADING (HRS)	WEATHER CONDITIONS	DATA QUALITY	COMMENTS	# *	
						\$	HOURS	HOURS		\$							
25	16-8-92	-	-	-	-	-	-	-	-	-	-	-	FINE	-	MAINTENANCE DAY	-	-
	SUN									78,968					DATA PLAYBACK, SEG Y TAPES		
26	17-8-92	MYC-92-1	100-165	1.625	1.625	3,600	10.0	-	-		-	-	FINE LIGHT BREEZE	GOOD	START MYC LINE	0.5	10.5
	MON									3,600					PARAMETER SELECTION		
27	18-8-92	MYC-92-1	165-259	2.35	3.976	3,960	10.25	-	-		-	-	FINE	GOOD	CLEARED LINE	0.75	11.0
	TUES									7,560					TRIP TO KILGOUR WITH TRIBAL ELDERS		
28	19-8-92	MYC-92-1	259-314	1.375	5.35	3,060	7.5	-	-		-	-	FINE	GOOD		1.0	8.5
	WED									10,620					COMPLETE PROJECT		

\* CHARGEABLE HOURS

# TRAVEL TIME

M. McNicol  
 McArthur River Mine, N.T.  
 Fax: (089) 759-907