

Table II-3-1 Quantity of Drilling Works, Core Recovery and Efficiency of Drilling in the Kokpetinskaya Area(1)

Hole No.	Drilling length (m)	Legth of casing pipes (m)	Core recovery (%)	Efficiency		Ratio of drilling work (%)						
				m/shift	m/hr	Drilling	Outdrilling	Recovery from accident	Preparation	Dismount/Mobilization	Transportation of water	Others
MJBK-38	64.00	5.80 10.00	100.0	5.33	0.67	53.0	18.2	-	12.1	3.0	13.6	-
MJBK-39	36.00	7.00 9.00	100.0	3.27	0.41	35.8	29.7	-	15.8	5.9	12.9	-
MJBK-40	64.50	8.00 7.00	100.0	8.08	1.01	43.1	29.2	-	11.1	5.6	11.1	-
MJBK-41	40.00	7.00 10.00	100.0	4.00	0.50	34.0	29.8	-	17.0	4.3	14.9	-
MJBK-42	44.00	7.00 10.00	100.0	3.67	0.46	52.8	25.0	-	7.4	3.7	11.1	-
MJBK-43	50.00	8.00 11.80	100.0	6.25	0.78	44.4	30.6	-	11.1	2.8	11.1	-
MJBK-44	60.00	8.00 10.00	100.0	6.00	0.75	36.5	30.2	-	8.3	8.3	18.7	-
MJBK-45	61.00	5.80 10.00	100.0	5.55	0.69	50.0	18.0	-	16.0	4.0	12.0	-
MJBK-46	28.00	8.00 10.00	100.0	3.11	0.39	32.5	42.5	-	5.0	10.0	10.0	-
MJBK-47	36.00	5.00 10.00	100.0	2.57	0.32	16.4	39.3	26.2	3.3	6.6	8.2	-
MJBK-48	51.00	8.00 10.00	100.0	6.38	0.80	43.4	26.3	-	5.3	9.2	15.8	-
MJBK-49	54.00	7.00 10.00	100.0	3.18	0.40	36.4	21.6	12.5	4.5	6.8	18.2	-
MJBK-50	59.00	7.00 10.00	100.0	2.81	0.35	13.0	29.2	27.1	16.7	1.6	12.5	-
MJBK-51	55.00	5.00 8.00	100.0	6.11	0.76	28.2	28.2	19.0	9.5	4.8	14.3	-
MJBK-52	55.00	7.00 9.00	100.0	6.11	0.76	47.7	22.7	-	9.1	2.3	18.2	-
MJBK-53	65.00	7.00 10.00	100.0	5.42	0.68	49.1	18.8	-	14.3	3.8	14.3	-
MJBK-54	60.00	6.00 9.00	100.0	7.50	0.94	48.3	17.2	-	13.8	6.9	13.8	-
MJBK-55	58.00	5.00 7.00	100.0	9.67	1.21	42.6	24.1	-	14.8	7.4	11.1	-
MJBKS-26	31.00	11.00	100.0	7.75	0.97	20.0	37.5	-	12.5	10.0	20.0	-
MJBKS-27	30.00	11.00	100.0	15.00	1.88	45.0	15.0	-	10.0	10.0	20.0	-
MJBKS-28	33.50	9.00	100.0	5.58	0.70	37.9	31.0	-	6.9	6.9	17.2	-
MJBKS-29	40.00	13.00	100.0	3.64	0.45	13.8	11.7	51.1	11.7	5.3	6.4	-
MJBKS-30	40.00	11.00	100.0	20.00	2.50	50.0	15.0	-	5.0	10.0	20.0	-
MJBKS-31	41.00	11.00	100.0	20.50	2.56	47.6	14.3	-	4.8	14.3	19.0	-
MJBKS-32	40.00	11.00	100.0	20.00	2.50	45.0	15.0	-	10.0	10.0	20.0	-
MJBKS-33	35.00	11.00	100.0	17.50	2.19	45.0	15.0	-	10.0	10.0	20.0	-

Table II -3-1 Quantity of Drilling Works, Core Recovery and Efficiency of Drilling in the Kokpetinskaya Area(2)

Hole No.	Drilling length (m)	Legth of casing pipes (m)	Core recovery (%)	Efficiency		Ratio of drilling work (%)						
				m/shift	m/hr	Drilling	Outdrilling	Recovery from accident	Preparation	Dismount/Mobilization	Transportation of water	Others
MJBKE-1	45.00		100.0	22.50	2.81	25.0	10.0	-	40.0	5.0	20.0	-
MJBKE-2	50.00		100.0	25.00	3.13	22.7	9.1	-	36.4	4.5	27.3	-
MJBKE-3	41.00		100.0	41.00	5.13	41.7	16.7	-	4.2	4.2	33.3	-
MJBKE-4	17.00		100.0	17.00	2.13	50.0	20.0	-	5.0	5.0	20.0	-
MJBKE-5	18.00		100.0	18.00	2.25	50.0	20.0	-	5.0	5.0	20.0	-
MJBKE-6	22.00		100.0	22.00	2.75	50.0	20.0	-	5.0	5.0	20.0	-
MJBKE-7	44.00		100.0	44.00	5.50	40.0	30.0	-	5.0	5.0	20.0	-
MJBKE-8	59.50		100.0	29.75	3.72	40.0	20.0	-	10.0	10.0	20.0	-
MJBKE-9	55.50		100.0	18.50	2.31	40.0	20.0	-	10.0	10.0	20.0	-
MJBKE-10	22.00	13.00	100.0	1.83	0.23	8.0	11.0	44.0	32.0	1.0	4.0	-
MJBKE-11	12.00	3.00	100.0	3.00	0.38	25.0	15.0	-	20.0	20.0	20.0	-
MJBKE-12	29.00		100.0	29.00	3.63	41.7	16.7	-	4.2	4.2	33.3	-
MJBKE-13	42.00	9.00	100.0	10.50	1.31	26.3	36.8	-	10.5	10.5	15.8	-
MJBKE-14	48.00		100.0	48.00	6.00	33.3	16.7	-	8.3	8.3	33.3	-
MJBKE-15	45.00		100.0	45.00	5.63	33.3	16.7	-	8.3	8.3	33.3	-
MJBKE-16	29.00		100.0	58.00	7.25	33.3	16.7	-	8.3	8.3	33.3	-
MJBKE-17	25.00		100.0	50.00	6.25	33.3	16.7	-	8.3	8.3	33.3	-
MJBKE-18	17.00		100.0	34.00	4.25	33.3	16.7	-	8.3	8.3	33.3	-
MJBKE-19	19.00		100.0	38.00	4.75	33.3	16.7	-	8.3	8.3	33.3	-
MJBKE-20	12.00		100.0	12.00	1.50	50.0	20.0	-	5.0	5.0	20.0	-
MJBKE-21	18.00		100.0	18.00	2.25	50.0	20.0	-	5.0	5.0	20.0	-
MJBKE-22	8.00		100.0	12.80	1.60	42.9	14.3	-	7.1	7.1	28.6	-
MJBKE-23	15.00		100.0	20.00	2.50	50.0	12.5	-	6.3	6.3	25.0	-
MJBKE-24	12.00		100.0	24.00	3.00	42.9	14.3	-	7.1	7.1	28.6	-
MJBKE-25	29.00		100.0	29.00	3.63	41.7	16.7	-	4.2	4.2	33.3	-
MJBKE-26	27.00		100.0	27.00	3.38	50.0	20.0	-	5.0	5.0	20.0	-
MJBKE-27	8.00		100.0	6.00	0.75	50.0	20.0	-	5.0	5.0	20.0	-
MJBKE-28	15.00		100.0	15.00	1.88	50.0	20.0	-	5.0	5.0	20.0	-
MJBKE-29	20.00		100.0	20.00	2.50	50.0	20.0	-	5.0	5.0	20.0	-
MJBKE-30	19.00		100.0	19.00	2.38	50.0	20.0	-	5.0	5.0	20.0	-
MJBKE-31	19.00		100.0	9.50	1.19	36.4	18.2	-	9.1	9.1	27.3	-
MJBKE-32	15.00		100.0	7.50	0.94	40.0	20.0	-	10.0	10.0	20.0	-
MJBKE-33	22.00		100.0	22.00	2.75	41.7	16.7	-	4.2	4.2	33.3	-
MJBKE-34	34.00		100.0	34.00	4.25	35.7	14.3	-	3.6	3.6	42.9	-
MJBKE-35	16.00		100.0	16.00	2.00	41.7	16.7	-	4.2	4.2	33.3	-
MJBKE-36	20.00		100.0	20.00	2.50	50.0	20.0	-	5.0	5.0	20.0	-
MJBKE-37	21.00		100.0	21.00	2.63	41.7	16.7	-	4.2	4.2	33.3	-
MJBKE-38	21.00	11.00	100.0	14.00	1.75	33.3	27.8	-	2.8	2.8	33.3	-
MJBKE-39	15.00	12.00	100.0	6.00	0.75	42.9	19.6	-	7.1	1.8	28.6	-
MJBKE-40	14.50	11.00	100.0	9.67	1.21	42.9	19.6	-	7.1	1.8	28.6	-
MJBKE-41	18.00	10.00	100.0	12.00	1.50	33.3	27.8	-	2.8	2.8	33.3	-
Total	2267.50	157.00	5.000	1134.50	141.81	2636.6	1393.3	179.9	623.0	421.6	1445.5	-
Average by each hole	33.84	2.34	74.6	16.93	2.12	39.4	20.8	2.7	9.3	6.3	21.6	-

Table II-3-2 Results of Drilling Survey by Each Hole in the Kokpetinskaya Area(1)

Hole No.	Period of Drilling	Drilling length m	Quantity of working shift	Total workers				Contents of work										Consumable materials										Total amount of water m ³	Non-core m	Core m	Casing m
				Engineer		Worker Assistant/driver		Drilling hr	Prepara- tion hr	Disarm- ment hr	Out- drilling hr	Recovery from accident hr	Transporta- tion of water hr	Other hr	Total hr	Bit			Shoe				Diesel oil l	Gasoline l	Lubri- cating oil l	Grease kg	Bent- onite bag				
				Japanese	Operator	Geologist	Assistant/driver									4" T.B. pc	92 mm pc	180 mm pc	400 mm pc	270 mm pc	200 mm pc	133 mm pc									
MJBK 38	2002.8.7 2002.8.12	64.00	12	6	12	6.0	60	70.0	16.0	4.0	24.0		16.0		132.0		3		1		400	250	25	20		27	8.5	55.5	10.0		
MJBK 39	2002.8.1 2002.8.6	36.00	11	5	10	5.0	55	36.0	16.0	6.0	30.0		13.0		101.0		3		2		480	120	15	17		19.5	7.0	29.0	8.0		
MJBK 40	2002.7.28 2002.8.1	64.50	8	4	8	4.0	40	31.0	8.0	4.0	21.0		8.0		72.0		1		1		300	30	10	8		12	7.0	57.5	7.0		
MJBK 41	2002.8.19 2002.8.23	40.00	10	5	10	5.0	50	32.0	16.0	4.0	28.0		14.0		94.0		1		1		350	150	15	10		21	10.0	30.0	7.0		
MJBK 42	2002.8.1 2002.8.6	44.00	12	6	12	6.0	60	57.0	8.0	4.0	27.0		12.0		108.0		3		1		400	25	25	20		18	10.0	34.0	7.0		
MJBK 43	2002.7.31 2002.7.23	50.00	8	3	6	3.0	40	32.0	8.0	2.0	22.0		8.0		72.0		1		1		350	150	15	10		12	10.5	38.5	11.6		
MJBK 44	2002.7.28 2002.8.7	60.00	10	4.5	9	4.5	50	35.0	8.0	8.0	29.0		16.0		96.0		2		2		620	120	30	15		24	7.0	53.0	10.0		
MJBK 45	2002.8.12 2002.7.23	61.00	11	3.5	7	3.5	55	50.0	16.0	4.0	18.0		12.0		100.0		1		1		200	20	5	5		18	9.0	52.0	10.0		
MJBK 46	2002.7.27 2002.7.16	28.00	9	3.75	7.5	3.8	45	26.0	4.0	8.0	34.0		8.0		80.0		4		3		500	80	10	15		12	8.0	20.0	10.0		
MJBK 47	2002.7.23 2002.7.12	36.00	14	6.125	12.25	6.1	70	20.0	4.0	8.0	48.0	32.0	10.0	122.0		2		1		460	160	20	20		15	8.0	28.0	10.0			
MJBK 48	2002.7.16 2002.7.4	51.00	8	3.75	7.5	3.8	40	33.0	4.0	7.0	20.0		12.0		76.0		4		3		850	280	15	15		18	8.0	43.0	10.0		
MJBK 49	2002.7.12 2002.7.4	54.00	17	7.625	15.25	7.6	85	32.0	4.0	6.0	19.0	11.0	16.0	88.0		4		3		890	250	20	15		24	8.0	44.1	10.0			
MJBK 50	2002.7.14 2002.7.14	59.00	21	9.375	18.75	9.4	105	25.0	32.0	3.0	56.0	52.0	24.0	192.0		3		3		860	170	20	19		36	7.0	46.6	10.0			
MJBK 51	2002.7.18 2002.7.19	55.00	9	3.75	7.5	3.8	45	22.0	8.0	4.0	22.0	16.0	12.0	84.0		1		1		430	80	15	12		18	7.0	48.0	8.0			
MJBK 52	2002.7.23 2002.8.13	55.00	9	4.125	8.25	4.1	45	42.0	8.0	2.0	20.0		16.0		88.0		2		2		530	200	20	15		24	8.0	47.0	9.0		
MJBK 53	2002.8.18 2002.8.12	65.00	12	6.25	12.5	6.3	60	56.0	16.0	4.0	21.0		16.0		112.0		3		1		330	200	30	20		24	8.5	56.5	10.0		
MJBK 54	2002.8.16 2002.8.16	60.00	8	4	8	4.0	40	28.0	8.0	4.0	10.0		8.0		58.0		2		1		350	120	10	8		12	8.0	52.0	9.0		
MJBK 55	2002.8.19 2002.7.20	58.00	6	3	6	3.0	30	23.0	8.0	4.0	13.0		6.0		54.0		2		1		380	160	15	13		9	7.0	51.0	7.0		
MJBKS 26	2002.7.21 2002.7.22	31.00	4	2	4	2.0	20	8.0	5.0	4.0	15.0		8.0		40.0	1		2		1	220	45	10	6	30	12	11.0	20.0	11.0		
MJBKS 27	2002.7.22 2002.7.17	30.00	2	1	2	1.0	10	9.0	2.0	2.0	3.0		4.0		20.0	1		1			120	30	5	3	30	6	10.0	20.0	11.0		
MJBKS 28	2002.7.19 2002.7.16	33.50	6	3	6	3.0	30	22.0	4.0	4.0	18.0		10.0		56.0	1		3		1	340	100	15	5	20	15	9.5	24.0	9.0		
MJBKS 29	2002.7.26 2002.7.26	40.00	11	5.25	10.5	5.3	48	13.0	11.0	5.0	11.0	48.0	8.0	94.0	3		1		1	250	80	15	5	30	9	9.0	31.0	13.0			
MJBKS 30	2002.7.25 2002.7.25	40.00	2	1	2	1.0	10	10.0	1.0	2.0	3.0		4.0		20.0	1		1		1	125	40	10	8		6	8.7	31.3	11.0		
MJBKS 31	2002.7.24 2002.7.24	41.00	2	1	2	1.0	10	10.0	1.0	3.0	3.0		4.0		21.0	1		1		1	130	40	10	10		6	9.0	32.0	11.0		
MJBKS 32	2002.7.23 2002.7.23	40.00	2	1	2	1.0	10	9.0	2.0	2.0	3.0		4.0		20.0	1		1		1	130	35	5	6		6	9.0	31.0	11.0		
MJBKS 33	2002.7.23	35.00	2	1	2	1.0	10	9.0	2.0	2.0	3.0		4.0		20.0	1		1		1	120	30	5	3		6	9.0	28.0	11.0		

Table II-3-2 Results of Drilling Survey by Each Hole in the Kokpetinskaya Area(2)

Hole No.	Period of Drilling	Drilling length m	Quantity of working shift	Total workers				Contents of work							Consumable materials															
				Engineer			Worker Assistant/driver	Drilling hr	Preparation hr	Diam-out hr	Out-drilling hr	Recovery from accident hr	Transportation of water hr	Other hr	Total hr	Bit					Shoe					Total amount of water m³	Non-core m	Core m	Casing m	
				Japanese	Operator	Geologist										4"TB pc	mm 190 pc	mm 92 pc	mm 400 pc	mm 270 pc	mm 200 pc	mm 135 pc	Deisel oil l	Gasoline l	Lubri-cating oil l					Grease kg
MJBKE 2002.8.2	1	45.00	2	1.25	2.5	1.3	10	5.0	8.0	1.0	2.0			4.0	20.0										6	8.0	37.0			
MJBKE 2002.8.3	2	50.00	2	1	2	1.0	10	5.0	8.0	1.0	2.0			6.0	22.0										9	12.0	38.0			
MJBKE 2002.8.4	3	41.00	1	0.5	1	0.5	5	5.0	0.5	0.5	2.0			4.0	12.0										6	7.0	34.0			
MJBKE 2002.8.9	4	17.00	1	0.5	1	0.5	5	5.0	0.5	0.5	2.0			2.0	10.0										3	2.0	14.0			
MJBKE 2002.8.9	5	18.00	1	0.5	1	0.5	5	5.0	0.5	0.5	2.0			2.0	10.0										3	5.0	13.0			
MJBKE 2002.8.10	6	22.00	1	0.5	1	0.5	5	5.0	0.5	0.5	2.0			2.0	10.0										3	3.0	19.0			
MJBKE 2002.7.29	7	44.00	1	0.75	1.5	0.8	5	4.0	0.5	0.5	3.0			2.0	10.0	1	1	1	120	50	10	5			3	7.0	37.0			
MJBKE 2002.7.29	8	59.50	2	1	2	1.0	10	8.0	2.0	2.0	4.0			4.0	20.0			1	120	50	10	5			6	7.0	52.5			
MJBKE 2002.7.30	9	55.50	3	1.5	3	1.5	15	8.0	2.0	2.0	4.0			4.0	20.0			1	140	60	20	5			6	8.0	47.5			
MJBKE 2002.7.10	10	22.00	12	6	12	6.0	60	8.0	32.0	1.0	11.0	44.0		4.0	100.0	2	1	1	370	140	25	8	30		6	8.0	14.0	13.0		
MJBKE 2002.7.10	11	12.00	4	1	2	1.0	10	5.0	4.0	4.0	3.0			4.0	20.0				120	60	10	2			6	8.8	8.0	3.0		
MJBKE 2002.8.12	12	29.00	1	0.5	1	0.5	5	5.0	0.5	0.5	2.0			4.0	12.0				120	70	20	5			6	6.0	23.0			
MJBKE 2002.7.27	13	42.00	4	2	4	2.0	20	10.0	4.0	4.0	14.0			6.0	38.0	1	1		320	130	25	25	30		9	8.0	34.0	9.0		
MJBKE 2002.7.31	14	48.00	1	0.5	1	0.5	5	4.0	1.0	1.0	2.0			4.0	12.0				100	40	20	5			6	8.0	40.0			
MJBKE 2002.8.1	15	45.00	1	0.5	1	0.5	5	4.0	1.0	1.0	2.0			4.0	12.0				120	40	20	5			6	8.0	37.0			
MJBKE 2002.8.14	16	29.00	0.5	0.25	0.5	0.3	2.5	2.0	0.5	0.5	1.0			2.0	8.0				100	70	20	5			3	5.0	24.0			
MJBKE 2002.8.14	17	25.00	0.5	0.25	0.5	0.3	2.5	2.0	0.5	0.5	1.0			2.0	8.0				100	70	20	5			3	3.0	22.0			
MJBKE 2002.8.14	18	17.00	0.5	0.25	0.5	0.3	2.5	2.0	0.5	0.5	1.0			2.0	6.0				100	70	20	5			3	4.0	13.0			
MJBKE 2002.8.14	19	19.00	0.5	0.25	0.5	0.3	2.5	2.0	0.5	0.5	1.0			2.0	6.0				100	60	20	5			3	1.0	18.0			
MJBKE 2002.8.7	20	12.00	1	0.5	1	0.5	5	5.0	0.5	0.5	2.0			2.0	10.0				100	80	20	5			3	8.0	4.0			
MJBKE 2002.8.7	21	18.00	1	0.5	1	0.5	5	5.0	0.5	0.5	2.0			2.0	10.0				140	70	20	5			3	5.0	13.0			
MJBKE 2002.8.8	22	8.00	0.625	0.3125	0.625	0.3	3.125	3.0	0.5	0.5	1.0			2.0	7.0				120	80	20	5			3	7.5	3.0			
MJBKE 2002.8.8	23	15.00	0.75	0.375	0.75	0.4	3.75	4.0	0.5	0.5	1.0			2.0	8.0				150	80	10	5			3	5.0	8.0			
MJBKE 2002.8.8	24	12.00	0.5	0.25	0.5	0.3	2.5	3.0	0.5	0.5	1.0			2.0	7.0				100	80	20	5			3	10.0	2.0			
MJBKE 2002.8.13	25	29.00	1	0.5	1	0.5	5	5.0	0.5	0.5	2.0			4.0	12.0				140	70	20	5			6	2.0	27.0			
MJBKE 2002.8.13	26	27.00	1	0.5	1	0.5	5	5.0	0.5	0.5	2.0			2.0	10.0				140	70	20	5			3	4.0	23.0			
MJBKE 2002.8.22	27	6.00	1	0.5	1	0.5	5	5.0	0.5	0.5	2.0			2.0	10.0				40	20	10	5			3	5.0	1.0			
MJBKE 2002.8.16	28	15.00	1	0.5	1	0.5	5	5.0	0.5	0.5	2.0			2.0	10.0				120	70	20	5			2	10.0	5.0			
MJBKE 2002.8.17	29	20.00	1	0.5	1	0.5	5	5.0	0.5	0.5	2.0			2.0	10.0				200	80	15	5	30		3	10.0	11.0			
MJBKE 2002.8.18	30	19.00	1	0.5	1	0.5	5	5.0	0.5	0.5	2.0			2.0	10.0				100	60	20	5			3	9.0	19.0			
MJBKE 2002.8.18	31	19.00	2	1	2	1.0	10	8.0	2.0	2.0	4.0			6.0	22.0				100	60	20	5			9	9.5	9.5			
MJBKE 2002.8.19	32	15.00	2	1	2	1.0	10	8.0	2.0	2.0	4.0			4.0	20.0				120	50	10	5			6	8.0	7.0			
MJBKE 2002.8.21	33	22.00	1	0.5	1	0.5	5	5.0	0.5	0.5	2.0			4.0	12.0				100	45	10	5			6	8.4	13.6			
MJBKE 2002.8.15	34	34.00	1	0.5	1	0.5	5	5.0	0.5	0.5	2.0			6.0	14.0				120	70	20	5			9	10.0	24.0			
MJBKE 2002.8.20	35	16.00	1	0.5	1	0.5	5	5.0	0.5	0.5	2.0			4.0	12.0				80	30	10	5			6	9.0	7.0			
MJBKE 2002.8.22	36	20.00	1	0.5	1	0.5	5	5.0	0.5	0.5	2.0			2.0	10.0				100	40	10	5			3	4.0	16.0			
MJBKE 2002.8.21	37	21.00	1	0.5	1	0.5	5	5.0	0.5	0.5	2.0			4.0	12.0				80	50	10	5			6	2.0	19.0			
MJBKE 2002.8.26	38	21.00	1.5	0.75	1.5	0.8	7.5	6.0	0.5	0.5	5.0			6.0	18.0	1	1	1	120	60	20	10	20		9	11.0	10.0	12.0		
MJBKE 2002.8.24	39	15.00	2.5	1.25	2.5	1.3	12.5	12.0	2.0	0.5	5.5			8.0	28.0	1	1	1	160	80	15	15	20		12	12.0	3.0			
MJBKE 2002.8.25	40	14.50	1.5	0.75	1.5	0.8	7.5	12.0	2.0	0.5	5.5			8.0	28.0	1	1	1	100	50	10	10	20		12	11.0	3.5	11.0		
MJBKE 2002.8.26	41	18.00	1.5	0.75	1.5	0.8	7.5	6.0	0.5	0.5	5.0			6.0	18.0	1	1	1	140	80	20	10	20		9	12.0	9.0	10.0		
Total	2002.7.4 2002.8.27	2267.50	291	136	272	135.9	1322	960.0	304.0	146.0	640.0	203.0	419.0	2672.0	16	42	53	0	29	0	16	15.415	5710	1110	558	310	629	512.9	1764.6	444.8

Table II-3-3 Results of Drilling Survey by Each Machine in the Kokpetinskaya Area

Content of work		Quantity of working shift	Total workers				Contents of work							Consumable materials				
			Engineer			worker	Transport	Carrying	Preparation	Waiting for material	Recovery from accident	Dismount	Other	Total	Gasoline	Diesel oil	Lubricating oil	Grease
			Japnaese	Operator	Geologist	Locals												
Detailed survey (No.1 machine)							hr	hr	hr	hr	hr	hr	hr	l	l	l	kg	
Travel	Tokyo-Almaty-Samarskaya		3										0.0					
Preparation	2002. 7. 1~2002. 7. 4	7	2	7	2	21	8.0	6.0	42.0				56.0	40	200	20	10	
Holiday													0.0					
Dismount	2002. 8. 20~2002. 8. 21	4	2	4		16						32.0	32.0	10	300	15	10	
Travel	(2002. 7. 30~2000. 8. 3)		4										0.0					
Total	2002. 7. 1~2002. 8. 21	11.00	11.0	11.0	2.0	37.0	8.0	6.0	42.0	0.0	82.0	32.0	88.0	50	500	35	20	
Detailed survey (No.2 machine)																		
Travel	Tokyo-Almaty-Samarskaya												0.0					
Preparation	2002. 7. 1~2002. 7. 4	6	2	7	2	21	8.0	8.0	32.0				48.0	30	180	10	15	
Holiday													0.0					
Dismount	2002. 8. 23~2002. 8. 27	8	1	4		24						64.0	64.0	20	250	15	8	
Travel													0.0					
Total	2002. 7. 1~2002. 8. 27	14.00	3.0	11.0	2.0	45.0	8.0	8.0	32.0	0.0	141.0	64.0	112.0	50	430	25	23	
General survey (No. 3 machine)																		
Travel	Tokyo-Almaty-Samarskaya		3										0.0					
Preparation	2002. 7. 1~2002. 7. 4	8	2	7	2	21	6.0	6.0	52.0				64.0	15	250	20	10	
Holiday													0.0					
Dismount	2002. 8. 28~2002. 8. 30	7	1	3	1	20						60.0	60.0	40	320	25	20	
Travel	2002. 8. 31~2000. 9. 6		7										0.0					
Total	2002. 7. 1~2002. 9. 6	15.00	13.0	10.0	3.0	41.0	6.0	6.0	52.0	0.0	0.0	60.0	124.0	55	570	45	30	
Total		40.00	27.0	32.0	7.0	123.0	22.0	20.0	126.0	0.0	223.0	156.0	324.0	155	1,500	105	73	

Table II-3-4 General Results of the Drilling Works in the Kokpetinskaya Area

Drilling machine		NO.1 machine	NO.2 machine	NO.3 machine			Total	Description	
District		South of Placer No.1	South of Placer No.1	East of Bektemir	South of Placer No.3	East of Bektemir			
Number of holes		9	9	2	8	39	67		
Length of drilling (m)		508.50	432.00	34.00	290.50	1002.50	2267.50		
Ave. length of drillholes (m)		56.50	48.00	17.00	36.31	25.71	33.84		
Survey days	Period	2002.7.4	2002.7.4	2002.7.4	2002.7.16	2002.7.27	2002.7.4		
		2002.8.19	2002.8.23	2002.7.10	2002.7.26	2002.8.27	2002.8.27		
	Drilling days	36.2	40.188	4.44	12.31	19.563	112.688		
	Other days	9	7.938	2.563	3.3	4.938	28.125	Travel, transport, preparation and dismount	
	Holidays	—	—	—	—	—	—		
	Total days	45.6	48.1	7.000	15.563	25	140.81		
Workers	Local staff	Engineer	83	95	14	30.5	50	271.875	
		Worker	350	510	70	148.0	244	1322.375	
		Geologist	41	48	7	15.3	25	135.9375	
		Total	474	653	91	193.75	319	1730.19	
	Japanese staff	41	48	7	15.3	25	136		
Efficiency of drilling days (m/day·machine)		14.05	10.75	7.66	23.59	51.25	20.12		
Efficiency of survey days (m/day·machine)		11.15	8.98	4.86	18.67	40.92	16.10		

Table II -3-5 Consumable Drilling Articles in the Kokpetinskaya Area

Item	Unit	Quantity	Average		Note
Tricone bit (4")	pcs	18	7.75 m/pc	1.40 pcs/hole	
Metal bit (φ 92mm)	pcs	53	18.45 m/pc	1.08 pcs/hole	
Metal bit (φ 190mm)	pcs	42	22.39 m/pc	2.33 pcs/hole	
Shoe(φ 270mm)	pcs	29	12.34 m/pc	1.04 pcs/hole	
Shoe(φ 133mm)	pcs	16	4.31 m/pc	1.07 pcs/hole	
Deisel oil	liters	15,415	6.80 l/m	230.07 l/hole	
Gasoline	liters	5,710	2.52 l/m	85.22 l/hole	
Lubricating oil	liters	1,110	0.49 l/m	16.57 l/hole	
Grease	kg	558	0.25 l/m	8.33 l/hole	
Bentonite	bags*	310	0.14 bags/m	4.63 bags/hole	
Total amount of water	m ³	629	0.28 m ³ /m	9.4 m ³ /hole	

*1bag=25kg

Table II -3-6 Major Mineralization Zones Revealed by Drillings on the Southern flank of Placer No.1

Hole No.	Depth (m)	Width (m)	Ilmenite content (kg/m ³)	Zircon content (kg/m ³)	Remarks
MJBK-38	59.00~62.00	3.00	126.83	2.43	
MJBK-39	-	-	-	-	
MJBK-40	46.00~48.00	2.00	104.88	1.91	
MJBK-41	-	-	-	-	
MJBK-42	-	-	-	-	
MJBK-43	41.00~43.70	2.70	109.78	1.31	
MJBK-44	48.30~50.40 50.40~51.60	2.10 1.20	78.30 119.57	1.46 2.89	
MJBK-45	53.00~54.90	1.90	63.59	1.14	
MJBK-46	-	-	-	-	
MJBK-47	-	-	-	-	
MJBK-48	48.60~49.50	0.90	61.60	1.03	
MJBK-49	39.00~41.60 41.60~51.00 51.00~52.40	2.60 9.40 1.40	133.96 61.17 101.93	2.52 1.30 1.58	
MJBK-50	38.00~45.10 45.10~53.00 53.00~57.20	7.10 7.90 4.20	103.21 62.47 117.90	1.75 1.25 1.57	
MJBK-51	50.00~51.40	1.40	36.50	0.72	
MJBK-52	39.30~44.80 44.80~46.40	5.50 1.60	34.42 133.49	0.67 2.12	
MJBK-53	56.00~57.10	1.10	158.32	3.28	
MJBK-54	54.30~58.50	4.20	115.04	2.33	
MJBK-55	48.00~57.00	9.00	7.16	0.26	

Table II -3-7 Major Mineralization Zones Revealed by Drillings on the Southern flank of Placer No.3

Hole No.	Depth (m)	Width (m)	Ilmenite content (kg/m ³)	Zircon content (kg/m ³)	Remarks
MJBKS-26	-	-	-	-	
MJBKS-27	20.00~23.00	3.00	16.67	0.61	
MJBKS-28	25.00~31.00	6.00	13.03	0.42	
MJBKS-29	27.80~32.00	4.20	53.01	1.75	
	32.00~36.00	4.00	110.57	2.81	
MJBKS-30	30.30~34.00	3.70	35.31	1.05	
	34.00~34.50	0.50	134.53	2.75	
	34.50~35.50	1.00	49.95	0.85	
MJBKS-31	31.00~32.00	1.00	25.53	0.67	
	32.00~35.50	3.50	128.63	3.05	
MJBKS-32	29.50~32.20	2.70	17.69	0.66	
	32.20~36.00	3.80	117.35	2.46	
MJBKS-33	27.00~29.00	2.00	44.54	1.24	

Table II -3-8 Major Mineralization Zones Revealed by Drillings on the East Bektimir

Hole No.	Depth (m)	Width (m)	Ilmenite content (kg/m ³)	Zircon content (kg/m ³)	Remarks
MJBKE-16	24.00~27.80	3.80	25.50	0.41	
MJBKE-25	22.00~26.50	4.50	27.80	1.36	
MJBKE-29	12.00~14.00	2.00	21.90	0.42	
MJBKE-33	9.30~13.70	4.40	31.86	1.73	
MJBKE-35	10.80~11.50	0.70	21.20	1.33	
MJBKE-36	17.00~17.80	0.80	31.97	1.13	
MJBKE-39	13.20~14.80	1.60	32.19	1.43	
MJBKS-40	12.80~13.80	1.00	33.52	1.53	
MJBKS-41	13.00~15.00	2.00	61.50	1.72	

**Table II-3-9 Ilmenite content, Ore Sands and Overburden Thickness
at the Southern Flank of Placer No1 in block V –C₂**

No.	Profiles No.	Hole No.	Thickness m.		Average ilmenite content, kg/m ³	Thickness x ilmenite, 4x6
			Ore sands	Overburden		
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>
1	26	MJBK-38	3.0	59.0	126.83	380.49
2	26	MJBK-40	2.0	46.0	104.88	209.76
3	22	MJBK-43	2.7	41.0	109.78	296.41
4	18	MJBK-49	2.6	39.0	133.96	348.30
5	18	MJBK-50	7.1	38.0	103.21	732.79
6	22	MJBK-54	4.2	54.3	115.04	483.17
Total:			21.6	277.3		2450.91
Average:			3.6	46.2	113.47	

**Table II-3-10 Ilmenite content, Ore Sands and Overburden Thickness
at the Southern Flank of Placer No3 in block II –C₂**

No.	Profiles No.	Hole No.	Thickness m.		Average ilmenite content, kg/m ³	Thickness x ilmenite, 4x6
			Ore sands	Overburden		
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>
1	3G	MJBKS-16	3.6	29.5	180.70	650.52
2	3G	MJBKS-29	4.0	32.0	110.57	442.28
3	3A	MJBKS-31	3.5	32.0	128.63	450.21
4	3A	MJBKS-32	3.8	32.2	117.35	445.93
Total:			14.9	125.7		1988.94
Average:			3.7	31.4	133.49	

**Table II-3-11 Ilmenite content, Ore Sands on the blocks of
Estimated reseves of the East Bektimir**

No.	Profiles No.	Section Area (m²)	Average ilmenite content, kg/m³	Average Zircon content, kg/m³	Block Volume (10³ X m³)
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>7</i>
1	IX	380	25.5	0.4	
2	IV	450	27.8	1.4	
3	X	80	32.0	1.1	
4	XI	583	27.6	1.6	
5	XII	740	44.4	1.6	
Total:					1,050.08
Average:			30.92	1.31	