

Appendix I-7 Interim Workshop

(1) Interim Workshop Program

INTERIM WORKSHOP

The Master Plan Study for Promotion of the Mining Industry in the Kingdom of Cambodia



09:00-18:20, on 4th June, 2010
at the MIME Conference Room



AGENDA

Registration		8:45 – 9:00
1. Opening Address	<i>H.E. Mr. Tam Kim Vinn, Secretary of State, MIME</i>	9:00 – 9:10
2. Overview of the Progress of the JICA – GDMR Project	<i>Mr. Masaharu Marutani, Team Leader, JICA Study Team</i>	9:10 – 9:40
3. Institutional Reform of the Mining Sector	<i>Mr. Kenichi Kumagai, JICA Study Team</i>	9:40– 10:20
	<u>(Coffee Break 10:20 – 10:40)</u>	
4. Results of the Field Geological Survey	<i>Mr. Haruo Harada, JICA Study Team</i>	10:40 – 11:05
5. Ground Truth of Satellite Image Analysis	<i>Mr. Hidehiro Ishikawa, JICA Study Team</i>	11:05 – 11:25
	<u>(Lunch Break 11:25 – 14:30)</u>	
6. Opening of the GDMR Website	<i>Dr. Kazushige Wada, JICA Study Team</i>	14:30 – 14:50
7. Proposed Action Plans for Institutional Reform of Mining Administration and Capacity Building	<i>Mr. Naoya Takebe, JICA Study Team</i>	14:50 – 15:20
8. Action Plan for Mine Safety and Environmental Management	<i>Mr. Kazuki Shingu, JICA Study Team</i>	15:20 – 15:45
	<u>(Coffee Break 15:45 – 16:10)</u>	
9. - Discussion-		16:10 – 18:20
10. Closing Address	<i>H.E. Mr. Tam Kim Vinn, Secretary of State, MIME</i>	18:20 – 18:25

(2) The List of Participants

The List of Participants on the Interim Workshop on 4th June, 2010

No.	Name	Title	Organization
1	H.E Mr. TAN KIM VINN	Secretary of State, MIME	MIME
2	H.E. Mr. SOK LENG	Director General	MIME/GDMR
3	Mr. PENG NAVUTH	Deputy Director General, General Department of Mineral Resources	MIME/GDMR
4	Mr. UCH BORA	Deputy Director General, General Department of Mineral Resources	MIME/GDMR
5	Mr. CHOU CHETH TYVOIN	Deputy Director General, General Department of Mineral Resources	MIME/GDMR
6	Mr. SIENG SOTHAM	Director, Department of Geology	MIME/GDMR
7	Mr. SIM SISOKHALY	Director, Department of Mineral Resources Development	MIME/GDMR
8	Mr. MAK SOPHEAKTRA	Director, Department of Construction Material Resources	MIME/GDMR
9	Mr. CHREA VICHETT	Deputy Director, Department of Mineral Resources Development	MIME/GDMR
10	Mr. HING TUN	Deputy Director, Department of Mineral Resources	MIME/GDMR
11	Mr. KONG MAKARA	Office Chief , Mineral Resources Development	MIME/GDMR
12	Mr. TOUCH MENG LAY	Chief Office, of Data Management, DMRD	MIME/GDMR
13	Mr. Takanobu Shinoda	Represent Officer	JICA
14	Mr. Shinya Sueoka	JICA Expert	JICA
15	Mr. Sok Chhay	Program officer, Infrastructure division	JICA
16	Mr. Masaharu Marutani	Team Leader	JICA Study Team
17	Mr. Kenichi Kumagai	Senior Mining Expert	JICA Study Team
18	Mr. Naoya Takebe	Senior Organization Expert	JICA Study Team
19	Mr. Kazuki Shingu	Senior Mining Expert	JICA Study Team
20	Mr. Kazushige Wada	GIS Expert	JICA Study Team
21	Mr. Hidehiro Ishikawa	Senior Satellite Image Analyst	JICA Study Team
22	Mr. Haruo Harada	Senior Geologist	JICA Study Team
23	Mr. Ryuta Shukuwa	Coordinator	JICA Study Team
24	Mr. Sei ha	Interpreter (Khmer-Japanese)	JICA Study Team
25	Mr. Reaksa Rous	Interpreter (English-Khmer)	JICA Study Team
26	Mr. Randy Vang	Interpreter (Khmer - English)	JICA Study Team

(3) Report of the Interim Workshop

1. Interim Workshop Overview

This workshop was held to review the contents of the revised Interim Report as part of the Master Plan Study for Promotion of the Mining Industry in Cambodia. This workshop featured reports by the members of the JICA study team, the Ministry of Industry, Mines and Energy (MIME) and the General Department of Mineral Resources (GDMR). After the presentation, a Q&A session was held. Opinions were exchanged on each presentation, MIME / GDMR requested new support from JICA, and there were robust discussions among MIME / GDMR, JICA and members of the study team.

- Date Friday, June 4, 2010
 - Time 9:00-18:20
 - Location Cambodia MIME, 1flr conference room
 - Attendees:
 - Cambodia MIME / GDMR : 12 people
 - JICA Cambodia Office : 3 people
 - Study Team : 11 people (including 3 interpreters)
- Total attendees: 26 (refer to the list of participants)

2. Opening Address

H.E. Mr. Tan Kim Vinn , Secretary of State of MIME welcomed everyone and expressed his thanks to JICA and the study team for their work on the Study on the Master Plan to Promote the Cambodian Mining Industry, which began in 2008. He added some comments and expressed his appreciation to the study team for their work on the publication of the revised Interim Report with the GDMR's comments.

3. Workshop Presentations

The team members spoke about their survey work and results.

4. Question & Answer Session

After the presentations, there were questions and discussions, mainly about the action plan for investment promotion. The MIME / GDMR asked for additional support with more detailed scientific studies about geochemical surveys. The Q&A session went on longer than expected, for two hours.

5. JICA Remarks

After the Q&A, Mr. Shinoda, of the JICA Cambodia office expressed his thanks to the MIME and GDMR for their enthusiastic participation in this seminar.

6. Closing Address

H.E. Mr. Tan Kim Vinn, Secretary of State of MIME gave the closing remarks and expressed his thanks to all the participants for the cordial atmosphere of this day-long event. He also thanked the study team for their presentation of ideas and measures to promote the Cambodian mining industry.

(4) Photos of the Interim Workshop



Scene of the Interim workshop (interior)



The opening address was given by H.E. Mr. Tan Kim Vinn, Secretary of State of MIME



Team Leader Mr. Marutani gave an overview of the survey



Team Member Mr. Kumagai explained about the action plan for investment promotion



Team Member Mr. Harada explained about the field survey results



Team Member Mr. Ishikawa explained about the results of satellite image analysis



Team Member Mr. Wada explained about web site development



Team Member Mr. Takebe explained about human resources and restructuring



Team Member Mr. Shingu explained about the action plan for mine safety and environmental protection



After the presentations, there was a 2-hour discussion between the team and the GDMR



Team Leader Mr. Marutani responds to a question from the GDMR



JICA representative Mr. Shinoda responds to a question from the GDMR

Appendix I-8 Final Seminar

(1) Final Seminar Program

FINAL SEMINAR

The Master Plan Study for Promotion of the Mining Industry in the Kingdom of Cambodia



08:30-16:20, on Thursday 29h July, 2010
at Sunway Hotel, Phnom Penh



AGENDA

Registration		8:30 – 9:00
1. Welcome Address	<i>Mr. Hitoshi Hirata, Senior Representative, JICA Cambodia Office</i>	9:00 – 9:10
2. Opening Address	<i>H.E. Mr. SUY SEM, Minister of Industry, Mines and Energy</i>	9:10 – 9:20
	<u>(Coffee Break 9:20 – 9:40)</u>	
3. Summary of the Project	<i>Mr. Masaharu Marutani, Team Leader, JICA Study Team</i>	9:40 – 10:10
4. Action Plans for Institutional Reform of the Mining Sector	<i>Mr. Kenichi Kumagai, JICA Study Team</i>	10:10 – 11:00
5. Action Plans for Mine Safety and Environmental Management	<i>Mr. Kazuki Shingu, JICA Study Team</i>	11:00 – 11:30
6. Action Plans for Institutional Reform of Mining Administration and Capacity Building	<i>Mr. Naoya Takebe, JICA Study Team</i>	11:30 – 12:00
	<u>(Lunch at Sunway Hotel 12:00 – 13:30)</u>	
7. Ground Truth of Satellite Image Analysis	<i>Mr. Hidehiro Ishikawa, JICA Study Team</i>	13:30 – 14:00
8. Results of the Field Geological Survey	<i>Mr. Haruo Harada, JICA Study Team</i>	14:00 – 14:30
9. Opening of the GDMR Website	<i>Dr. Kazushige Wada, JICA Study Team</i>	14:30 – 15:00
	<u>(Coffee Break 15:00 – 15:30)</u>	
10. – Q & A –		15:30 – 16:00
11. Summary Remark	<i>H.E. Mr. Sok Leng, Director General, GDMR</i>	16:00 – 16:10
12. Closing Address	<i>H.E. Mr. Tan Kim Vinn, Secretary of State, MIME</i>	16:10 – 16:20

(2) The List of Participants

N°	Participant Names	Position / Organization
Leader of Ministry of Industry Mines and Energy		
1	H.E. Mr. Suy Sem	Minister
2	H.E. Mr. Tan Kim Vinn	Secretary of State
3	H.E. Mr. Ke Ky	Under Secretary of State
General Department of Mineral Resources		
4	H.E. Mr. Sok Leng	Director General
5	Mr. Peng Navuth	Deputy Director General
6	Mr. Uch Bora	Deputy Director General
7	Mr. Chour Chethyvorn	Deputy Director General
Department of Mineral Resources Development		
8	Mr. Sim Sisokhaly	Director
9	Mr. Chrea Vichett	Deputy Director
10	Mr. Phay Chantrasith	Deputy Director
11	Mr. Kong Makara	Chief of Mineral Resources Development Office
12	Mr. Touch Menglay	Chief of Data Management Office
13	Mr. Sok Rithy	Chief of Revenue Office
14	Mr. Long Sobunrithy	Vice Chief of Cooperation Office
15	Mr. Ou Narath	Staff, DMRD
16	Mrs. Sem Sok Kim	Staff, DMRD
17	Miss. Heng Tola	Staff, DMRD
Department of Mineral Resources		
18	Mr. Yos Mony Rath	Director
19	Mr. Nuon Norin	Deputy Director
20	Mr. Seng Laing	Chief of Metallic Mineral Office
21	Mr. Phok Salorn	Chief of Gem and Coal Mineral Office
22	Mr. Van Socheat	Chief of Non Metallic Mineral Office
23	Mr. Yin Rotha	Chief of Mining Inspection Office
24	Mr. Leoung Vanmony Rak	Staff, Department of Mineral Resources

N°	Participant Names	Position / Organization
Department of Geology		
25	Mr. Sieng Sotham	Director
26	Mr. Nuon Chanan	Deputy Director
27	Ms. Mak Boly	Deputy Director
28	Mr. Eam Seakbo	Chief of Laboratory Office
29	Mr. Ben Bunnarin	Chief of Research Geology Office
30	Mr. Choup Sokuntheara	Chief of Geology Environment Office
31	Mr. Yos Samuth	Chief of Mapping Office
32	Mr. Sok Sophorn	Staff, Mapping Office
Department of Construction Material Resources		
33	Mr. Hing Tun	Deputy Director
34	Mr. Sok Kiroath	Deputy Director
35	Mr. Mak Sochetra	Vice Chief of Administration Office
36	Mr. Sok Sokha	Staff, Department of Construction Material Resources
EMBASSY OF JAPAN		
37	Mr. Hiroyuki Yokoyama	First Secretary
JICA		
38	Mr. Hitoshi Hirata	Senior Representative JICA Cambodia Office
39	Mr. Takanobu Shinoda	Representative JICA Cambodia office
40	Mr. Yoshiki Ehara	Assistant Director of Energy and Mining Division, Natural Resources and Energy Group Industrial Development Department and Energy, JICA
41	Mr. Shinya Sueoka	JICA Expert to GDMR
42	Mr. Yethny Phearun	Program Officer, JICA Cambodia office

N°	Participant Names	Position / Organization
Others		
43	Mr. Pav Sophal	Ministry of Economy and Finance
44	Mr. Vann Vark	Ministry of Land Management, Urban Planning and Construction
45	Mr. Dwong Samreat	Ministry of Environment
46	Mr. Khorn Saret	Ministry of Agriculture, Forestry and Fisheries
47	Mr Vong Pieith	Ministry of Public Works and Transport
48	Mr. Koeui Path Vorun	Ministry of Water Resources and Meteorology
49	Mr. Ham Komchheus	Council for Development of Cambodia
50	Mrs. Khorn Dinravy	Senior National Project Manager, UNDP
51	Ms. Mong Sochenda	UNDP
52	Mr. Shingo Fukuda	The Japan Chamber of Commerce and Industry in Cambodia
53	Mr. Hitomitsu Iwatate	The Japan Chamber of Commerce and Industry in Cambodia
54	Mr. Tomoo Kawata	The Japan Chamber of Commerce and Industry in Cambodia
55	Mr. Ong Kimleng	The Japan Chamber of Commerce and Industry in Cambodia
56	Mr. Kiyotaka Doho	The Japan Chamber of Commerce and Industry in Cambodia
JICA Study Team		
57	Mr. Masaharu Marutani	Team Leader
58	Mr. Kenichi Kumagai	Senior Mining Investment Expert
59	Mr. Naoya Takebe	Senior Organization Expert
60	Mr. Kazuki Shingu	Senior Mining Expert
61	Mr. Hidehiro Ishikawa	Senior Satellite Image Analyst
62	Mr. Haruo Harada	Senior Geologist
63	Dr. Kazushige Wada	Senior GIS Expert
64	Mr. Ryuta Shukuwa	Coordinator
65	Mr. Sei Ha	Interpreter (Khmer to Japanese)
66	Mr. Reaksa Rouis	Interpreter (Khmer to English)
67	Mr. Randy Vang	Interpreter (Khmer to English)

(3) Welcome Address

Greeting at the Final Seminar on the Master Plan Study for
Promotion of the Mining Industry of Cambodia

Senior Representative
JICA Cambodia Office

His Excellency Mr. Suy Sem, Minister of Industry Mines and Energy
H.E. Mr. Tan Kim Vinn, Secretary of State, Ministry of Industry Mines and Energy
H.E. Mr. Ke Ky, Under Secretary of State, Ministry of Industry Mines and Energy
H.E. Mr. Sok Leng, Director of General, General Department of Mineral Resources
Excellencies,
Ladies and Gentlemen,

On behalf of the Japan International Cooperation Agency, JICA, it is my great pleasure to make a brief remark at this Final Seminar on the Master Plan Study for Promotion of the Mining Industry of Cambodia, hosted by H.E. Mr. Suy Sem, the Minister of Industry Mines and Energy.

The mining sector in Cambodia has a great potential. Many countries and a lot of companies are attracted and some have started their own researches.

However, for the sustainable development of this country, for the welfare of the Cambodian people, the comprehensive study is necessary to make the only potential into the real prosperity of Cambodia.

I am very pleased to say that this master plan study is the first comprehensive research project conducted in the mining sector of Cambodia.

This study has started since August 2008.

The purpose of this study is to promote the Cambodian mining industry, with emphasis on the following points: (1) to compile information on Cambodian geology and mineral resources, and to share with stakeholders in and outside of this country, (2) to create an “action plan for investment promotion,” (3) to draft an “action plan for reforming organizations and institutions, nurturing human resources, and improving environmental management, supervision and inspection of mines” as medium/long term tasks, (4) to improve the capacity of the General Department of Mineral Resources, GDMR at the MIME, which has the central role in the development of mineral resources.

I would like to express my deep appreciation to our colleagues at the GDMR for their cooperation provided to the project during the implementation.

The Draft Final Report of this master plan was just submitted to the MIME in early July 2010.

I am very proud of the fact that this report is truly the product of collaborative efforts between JICA and the MIME officers, who are working very hard for sustainable development of the mining sector in this country.

This master plan proposes comprehensive programs to jump up the mining sector’s GDP share from 0.4% to 10% within the next ten years. It is not easy to accomplish this target, but it worth to challenge it.

This study is the first endeavor which shall be followed by much more concrete studies to attract more investment in the mining sector. Japan Oil Gas and Metals National Corporation, JOGMEC is now starting discussions with MIME to conduct a follow up study. I do hope Japanese cooperation will help your country to make the real prosperity in Cambodia.

Finally, I hope that this will be a productive and informative seminar for the sustainable development of the mining sector in Cambodia.

Thank you.

(End)

(4) Opening Address

Speech of H.E Suy Sem, Minister of Industry, Mine and Energy
at the Opening Ceremony of the Final Seminar

on

the Master Plan Study for Promotion of Mining Industry in the Kingdom of Cambodia

Dated 29th July, 2010 at Sunway Hotel, Phnom Penh, Cambodia

Respected:

- **H.E.**, the Secretary of State, Under Secretary of State, General Director, Representative of Inter-ministries of the Royal Government of Cambodia!
- Mr. **Hitoshi Hirata**, the senior representative of the Japanese International Cooperation Agency (JICA) to Cambodia and your colleagues!
- Mr. **Masaharu Marutani**, team leader of JICA Master Plan Study and colleagues!
- His Excellencies, Chum Teav, national and international distinguished guests, ladies and gentlemen!

Today, I have great pleasure to be here, presiding over at the Opening Ceremony of the Final Seminar on **the Master Plan Study for Promotion of Mining Industry in the Kingdom of Cambodia** with His Excellencies, Chum Teav, national and international distinguished guests, and with all participants!

On behalf of the Royal Government of Cambodia and myself, I would like to express my deep thank to the Japanese Government, the Japanese people and particularly to JICA for provision of grant to allow the study of Master Plan for Promotion of Mining Industry in the Kingdom of Cambodia to be happened. I would also sincerely express my appreciation to the Project Study Expert Team led by **Mr. Masaharu Marutani** for the dedicated effort in achieving the remarkable result at this particular moment. Thanks to the presence of His Excellencies, Chum Teav, national and international distinguished guests as well as ladies and gentlemen for attending at this seminar.

His Excellencies, Chum Teav, ladies and gentlemen!

Peace and political stability is the indispensable factor in national economic development as well as the improvement of the confidence in attracting both domestic and foreign investors to invest in all sectors in Cambodia. In fact, the slow development of mining sector in Cambodia is due to the insecurity along the mountainous areas where minerals are deposited. It is just the time when the country has gained a completed peace in **1998** through the Win-Win Policy and with the wisdom of **Samdach Akak Mohasena Padei Techhou Hun Sen**, prime minister of the Kingdom of Cambodia, the country then has many domestic and foreign investors come to invest, to research and to evaluate the mineral potential for the exploitation.

Along with the peace and political stability, we have to enable the favorable investment climate by formulating laws, regulations; legal instruments, master plan as well as action plan for the effective development of various sectors. In fact, the process of supporting to the mining development in Cambodia, the Royal Government has established various laws such as: Law on Investment of the Kingdom of Cambodia, Law on Mineral Management and Exploitation, Law on Environment and Natural Resource Management, Fiscal Law, Land Law, Sub-decree on Environmental Contamination Control, Law on Environmental and Social Impact Assessment etc. In addition to this, the Royal Government tried to cooperate with advanced countries as well as the financing institutions in sharing of experiences and understanding to the Cambodia mining officials on technical, laws, legal instruments which are implemented by those countries in mining sector through training, information exchange and various projects implementation. Recently, the Ministry of Industry, Mine and Energy has collaborated with the United Nations Development Program to Cambodia in organizing the International Conference on Mining Exploitation under the theme “Chance for Cambodia” participated by the experts who

have high knowledge and experiences in mining sector to do presentation and discussion to the Cambodian officials in charge of mining sector and all stakeholders to understand the context of mining management and development as well as the mining cooperation from the preliminary study phase to the final phase aims for Cambodian officials to exchange practical experiences and to select the model best practice. The preparation of Master Plan for Promotion of Mining Industry in Cambodia at this particular moment is another additional effort of the Royal Government aiming to accelerate and manage the mining development toward prosperity with sustainability, transparency and high responsibility.

His Excellencies, Chum Teav, ladies and gentlemen!

The “**Master Plan Study Project for Promotion of Mining Industry in the Kingdom of Cambodia**” was started to implement in **August, 2008** and planned to complete in **August of this 2010**. For the last **23** months that the Master Plan Study Team of JICA led by **Mr. Masaharu Marutani** has conducted the study and explored the investment climate in mineral exploration in Cambodia, the laws and relevant legal instruments which Cambodia has, the management structure of General Department of Mineral Resource, Human Resource and to collect the mineral related geological data in order to prepare and formulate as the **5 and 10 years Action Plan** to promote mineral industry in the Kingdom of Cambodia to be prosperous in the future. Based on the results obtained from this research study for the period of the last **23** months, the General Department of Mineral Resource and the JICA Master Plan Study Team have already collaborated in organizing two seminars, examining and discussing the action plan which has to be determined in this Master Plan as follow:

- 1- Institutional Reform for Mining Sector*
- 2- Action Plan for Mine Safety and Environmental Management*
- 3- Action Plan for Mining Management Institution and Human Resource Training*
- 4- Satellite Image Analysis*
- 5- Results of Field Geological Survey*
- 6- Hosting of New Website of GDMR*

His Excellencies, Chum Teav, ladies and gentlemen!

The presentations on Final Report of the Master Plan Study for Promotion of Mining Industry in Cambodia which are going to start for a bit while will present to His Excellencies, Chhum teav, Ladies and Gentlemen of what contained in this Master Plan and what the concerned intuitions/ministries have to contribute with the Ministry of Industry, Mine and Energy in implementing various action plans in order to promote the mining investment and management to realize success and can contribute to the poverty reduction in Cambodia.

I have a firm expectation that through the study and discussion in the last two seminars, together with this final seminar will make this Report on Master Plan Study to become an effective road map for formulating the strategic management policy and mineral resource development to be prosperous in the future. I encourage all speakers and participants to kindly contribute your active comments so that this Master Plan Report will be in a comprehensive and improved manner.

Finally, I would like to wish His Excellencies, Chhum teav, ladies and gentlemen as well the seminar body to have a fruitful result and to be blessed with four Buddha’s blessing: Longevity, Good Complexion, Peace and Strength for ever.

I would now declare the opening of the seminar on Final Draft Report of the Master Plan Study for Promotion of Mining Industry in the Kingdom of Cambodia from this particular hour onwards.

Thank you!

(5) Summary Remark

Wrap Up Report of H.E Sok Leng, General Director of GDMR of MIME

at the Closing Ceremony of the Final Seminar

on

the Master Plan Study for Promotion of Mining Industry in the Kingdom of Cambodia

Dated 29th July, 2010 at Sunway Hotel, Phnom Penh, Cambodia

Respected:

- H.E **Tan Kim Vinn**, the Secretary of State of MIME
- H.E **Ke Ky**, Under Secretary of State of MIME
- Mr. **Hitoshi Hirata**, the senior representative of the Japanese International Cooperation Agency (JICA) to Cambodia and your colleagues
- Mr. **Masaharu Marutani**, team leader of JICA Master Plan Study and colleagues
- Deputy director generals, Department directors, deputy directors, representatives of various concerned institutions/ministries
- Officials of GDMR
- Ladies and gentlemen!

First of all, I would like to express my thank to His Excellencies, national and international distinguished guests, ladies and gentlemen for sparing your busy schedule to attend today **seminar on Final Draft Report of the Master Plan Study for Promotion of Mining Industry in the Kingdom of Cambodia**.

Allow me now to present the wrap up report of various presentations in the seminar conducted for the whole day as follow:

The seminar body has attentively listened to the deep, meaningful opening speech and the precious recommendations of H.E **Suy Sem**, minister of Industry, Mine and Energy in which H.E, the Minister has highly valued the results of this Draft Master Plan and Action Plans which the General Department of Mineral Resource has to examine and to implement in order to strengthen the mining management and development as well as the promotion of mining sector investment in Cambodia to be prosperous in the future.

The seminar body has received the warmest welcome speech of Mr. **Hitoshi Hirata**, representative of the Japanese International Cooperation Agency (JICA) to Cambodia.

The seminar body has listened and discussed on the 7 presentations, presented by the JICA Master Plan Study Team as follow:

- 1- Overview of Master Plan Study Project for Promotion of Mining Industry in Cambodia**
- 2- Action Plan for Institutional Reform**
- 3- Action Plan for Mine Safety and Environmental Management**
- 4- Action Plan for Management Reform and Officials Capacity Building**
- 5- Satellite Image Analysis**

6- Result of Geological Survey in a number of areas of the Kingdom of Cambodia and the creation of Geological and Mineral Resource Map, scale of 1:200.000 and 1: 1.000.000

7- Hosting of New Website of General Department of Mineral Resource (GDMR)

The General Department of Mineral Resource considered this Master Plan as the effective road map for the GDMR to examine and implement three main action plans, including:

- 1- Action Plan for Reform of Mining Institution
- 2- Action Plan for Mine Safety and Environmental Management
- 3- Action Plan for Management Reform and Officials Capacity Building, aiming at promoting mining investment in Cambodia and enhancing the management and mineral resource development to be prosperous in the future. But the GDMR has a number of common challenges such as:
 - Strengthening environmental protection and solution method
 - Social problems within the artisanal mining communities and management approach of our mining industry
 - Human resource training on specialized courses on Mineral Geology, Mineral Exploration and Exploitation techniques, administration, laws etc. to continue resume the leadership, management and development of mining sector in Cambodia in the future.

Based on various action plans that have to be implemented according to the time frame specified in the Master Plan, the GDMR expects that every challenge will be solved as planned.

On behalf of the GDMR, I would like to take this opportunity to express my deep thank to the Japanese government and Japanese people for providing the grant both technical and financial to create this Master Plan for Promotion of Mining Industry in Cambodia to be prosperous in the future.

I would like to express my deep thank to the JICA Master Plan Study Team for organizing this crucial seminar today and I would like to sincerely appreciate all members of the JICA Master Plan Study Team for the effort in making this Master Plan to be in a completed manner and to be implemented effectively.

Allow me now to end up my wrap up report of the one day seminar at this moment.

Thank you

(6) Closing Address

Speech of H.E Tan Kim Vinn, Secretary of State of Industry, Mine and Energy
at the Closing Ceremony of the Final Seminar

on

the Master Plan Study for Promotion of Mining Industry in the Kingdom of Cambodia

Dated 29th July, 2010 at Sunway Hotel, Phnom Penh, Cambodia

Respected:

- Mr. **Hitoshi Hirata**, the senior representative of the Japanese International Cooperation Agency (JICA) to Cambodia and your colleagues!
- Mr. **Masaharu Marutani**, team leader of JICA Master Plan Study and colleagues!
- H.E, the Under Secretary of State of MIME
- H.E, the General Director, Deputy General Director of GDMR
- Representatives of concerned ministries/institutions
- Ladies and gentlemen!

Today, I have great pleasure to be here, attending with His Excellencies, ladies and gentlemen at the Closing Ceremony of the crucial Final Seminar on **the Master Plan Study for Promotion of Mining Industry in the Kingdom of Cambodia** for strengthening the leadership capacity, mineral resource development and mineral exploitation as well as for attracting the foreign companies to come to invest, to conduct the exploration and the mineral resource exploitation in Cambodia.

For the whole day, His Excellencies, ladies and gentlemen have paid your attention in observing and listening to the six presentations of the JICA Study Team members which are imperative topics quoted from the Final Draft Report of Master Plan, including:

7- Institutional Reform for Mining Sector with 10 points action plan

8- Action Plan for Mine Safety and Mining Environment Management with 9 points action plan

9- Action Plan for the Reform of Organizational Structure, including the additional establishment of a number of specialized departments and offices to ensure the effective management of mineral resource exploitation.

10- Satellite Geological Image Analysis

11- Results of Field Geological Survey and

12- the Hosting of New Website of GDMR

I would like the seminar body to be informed that, besides the contents of the above topics in the Draft Master Plan, there are a lot of other works to be described that the Study Team has already prepared which are the usual tools for mining management and promotion of investment of mining industry in Cambodia such as: Specific Geological Data Information System, Geological Map and Mineral Resource Map, scale of 1/200.000 and 1/1.000.000, the Guidebook also shows the mineral potential in Cambodia and the new GDMR website etc. In

the process of surveying to create the above tools, the Study Team has conducted the Skill Training Course to the officials of GDMR to know how to store, utilize and to update the information very well.

I would like to highly evaluate for the study results of the JICA expert team led by Mr. **Masaharu Marutani** and would like to appreciate for the effort of all study team members which subsequently achieved the study results with a clear content and in a complete international standard according to their respective works as planned in the Inception Report. The Final Report or the End Report of this Study is also planned to complete in the coming month of August according to the programs set forth.

Respected the seminar body!

Questions, clarification of the report content and the contribution of comments from His Excellencies, ladies and gentlemen in each topic; and the explanation of the members of study team today are, in fact, crucially contributed in the creation of the Master Plan and can also be considered as the common knowledge provided for today seminar. The Ministry of Industry, Mine and energy and the Master Plan Study Team will accept the good comments of the seminar today to review, study and to integrate into the Master Plan or to revise some points if necessary.

In this coming October, the Ministry of Industry, Mine and Energy will be receiving the Book of Master Plan which we considered as the Guide to show the way/road map for GDMR to formulate the strategy and tactics in order to translate various contents into valuable legal instruments for highly effective implementation. I think that, organizing various contexts on institutional reform of mining sector, mine safety and environmental management in mining etc. legal norms/instruments having value/degree similar to laws or wide scope regulations which have to accommodate their meanings with various laws and legal instruments of various specializations that are already promulgated; and shall have a value/degree similar to the international standard in order to gain the confidence from the domestic and foreign mining companies. This is a great and difficult task, as the seminar has already presented, it demands for the assistance from necessary financial institutions or international cooperation agencies both technical expertise and finance.

I would like to take this opportunity to inform the seminar body to be aware that the United Nations Development Program (UNDP) to Cambodia has found that it is necessary to get ourselves well prepared to receive the blessing from mineral resource we are having, to contribute to the national economic development and as a part of national budget revenue. The **International Conference on Mining Exploitation** organized under the support of UNDP with the theme “**Chance for Cambodia**” brought the Ministry of Industry, Mine and Energy and various companies operating the mineral exploration in Cambodia as well as the conference members, coming from the ministries/institutions of the Royal Government and a number of national/international organizations with knowledge and experiences on management of mining exploitation in various countries and will be shown that we are necessary have to have legal instruments and further experiences to ensure the mining management in Cambodia to be better operated and to be blessed by the our existing mineral resource.

This has been clearly shown that the Master Plan for Promotion of Mining Industry in Cambodia is imperatively advantageous.

On behalf of the Royal Government of Cambodia, Ministry of Industry and Energy and myself, I would like to once again express my deep thank to the Japanese government and the Japanese people for providing the unconditional grant both technical and financial to make the Master Plan Study for Promotion of Mining Industry in Cambodia to be materialized.

Finally, on behalf of the Ministry of Industry and Energy and myself, I would like to express my sincere thank to His Excellencies, ladies and gentlemen the members of the entire seminar body to be blessed with good health and realizing further successes in your respective business.

I now declare the closing of the seminar on Final Draft Report of the Master Plan Study for Promotion of Mining Industry in the Kingdom of Cambodia!

Thank you

(7) Photos of the Final Seminar



Scene of the Final Seminar (interior)



The Welcome Address was given by Mr. Hirata, Representative of JICA Cambodia Office



The Opening Address was given by H.E. Mr. Suy Sem, Minister of MIME



Team Leader Mr. Marutani gave a summary of the survey



Team Member Mr. Kumagai explained about the action plan for investment promotion



Team Member Mr. Takebe explained about institutional reform of mining administration and capacity building.



Team Member Mr. Shingu explained about the action plan for mine safety and environmental protection



Team Member Mr. Ishikawa explained about the results of satellite image analysis



Team Member Mr. Harada explained about the field survey results



Team Member Mr. Wada explained about web site development



After the presentations, there was a discussion between the GDMR/JICA/Study Team and participants



The Closing Address was given by H.E. Mr. Tam Kim Vin, Secretary of MIME

Appendix I-9 Seminar on Information Technology for Minerals and the Mining Sector



Seminar, Part I: Backdrop and Applications of GIS

Seminar Participants (Part I, on 16th September)

Name	Department	Position	Name	Department	Position
Sieng Sotham	DoG	Director	Hong Bona	DMR	Chief Officer
Touch Menglay	DMRD	Chief Officer	Eam Seakbo	DoG	Chief Officer
Huon Rasy	DMRD	Officer	Sok Sophon	DoG	Officer
Ou Narath	DMRD	Officer	Bin Thet	DoG	Officer
Loeung Vanmonyrak	DMRD	Officer	Shigeki Miyake	DMR	Officer



Seminar, Part II: GIS and GPS

Seminar Participants (Part II, on 25th November)

Name	Department	Position	Name	Department	Position
Peng Navuth	GDMR	Deputy Director General	Huon Rasy	DMRD	Officer
Sieng Sotham	DoG	Director	Hong Bona	DMR	Chief Officer
Touch Menglay	DMRD	Chief Officer	Loeung Vanmonyrak		Officer
Keo Munyratana		Officer	Keo Sopharith		Officer
Long Sobonrithy		Officer	Sok Sokha	Officer	
Cheng Ngak		Officer	Eam Seakbo	DoG	Chief Officer
Ou Narath	Officer	Sok Sophon	Officer		
			Bin Thet		Officer

Appendix I-8 Satellite Image Analysis Training

(1) Training Program

Satellite Image Analysis Training Course (TNTmips)

Place: Department of Geology GDMR

Period: 2008/10/13 ~ 10/15

Instructor: Mr.Hidehiro ISHIKAWA Senior Satellite Images analyst of JICA study team

Participants: Mr. Sien SOTHAM Director of Department of Geology

Mr. Sok SOPHORN Officer of Department of Geology

Mr. Eam SEAKBO Officer of Department of Geology

Session :

Schedule	Contents
2008/10/13 10:00 ~17:00	1_Navigating
	2_Geospatial Data
	3_Acquiring Geodata
	4_Importing Geodata
	5_Georeferencing
	6_Practice of Raster data processing
2008/10/14 10:00 ~17:00	7_Sharing Geodata with Other Popular Products
	8_Practice of DEM data processing
2008/10/15 10:00 ~17:00	9_Introduction to Remote Sensing of Environment
	10_Practice of Satellite image processing

Text :

- 1) TNTmips manual
- 2) Overview of ASTER

Training data:

Cambodia geological map (Raster image data)

DEM data (TNTmips sample data set)

ASTER data (4 seines around Tlesap Lake)

Satellite Image Analysis Training Course (TNTmips)

Place: Department of Geology GDMR

Period: 2008/10/27

Instructor: Mr.Hidehiro ISHIKAWA Senior Satellite Images analyst of JICA study team

Participants: Mr. Sien SOTHAM Director of Department of Geology

Mr. Sok SOPHORN Officer of Department of Geology

Mr. Eam SEAKBO Officer of Department of Geology

Session :

Schedule	Contents
2008/10/27 10:00 ~17:00	1 The purpose of satellite image analysis
	2 Overview of satellite image data
	3 Interpretation of images
	4 Spectral analysis

Text :

- 1) TNTmips manual
- 2) Satellite Image Analysis , Interpretation

Training data:

ASTER data (Imported data sets)

(2) Photos of the Trainings

Satellite Image Analysis Training No.1



Training at DoG

List of Participants

Name	Department	Position
Sieng SOTHAM	Department of Geology	Director
Eam SEAKBO	Department of Geology	Officer
Sok SOPHORN	Department of Geology	Officer

DoG Director's room

Satellite Image Analysis Training No.2



List of Participants

Name	Department	Position
Sieng SOTHAM	Department of Geology	Director
Eam SEAKBO	Department of Geology	Officer
Sok SOPHORN	Department of Geology	Officer

DoG Director's room and DoG Mapping Office

Appendix I-11 Mining Investment Promotion Seminar

Mining Investment Promotion System in Argentina

The list of Participants

No.	Name	Position	Organization	Remark
1	H.E. Mr. Sok Leng	Director General, GDMR	MIME	
2	Mr. Sim Sisokhaly	Director, DMRD	MIME	
3	Mr. Yos Monyrath	Director, DMR	MIME	
4	Mr. Peng Navuth	Deputy Director General, GDMR	MIME	
5	Mr. Chrea Vichett	Deputy Director, DMRD	MIME	
6	Mr. Mean Thay	DMR	MIME	
7	Mr. Mak Sopheaktra	Deputy Director, DMR	MIME	
8	Mr. Sieng Sotham	Director, DoG	MIME	
9	Mr. Kong Makara	Chief, DMR	MIME	



Photo of the Investment Seminar

Appendix I-12 Safety Management Seminar



The List of Participants

No.	Full Name	Organization	Position
2	Mr. PENG NAVUTH	GDMR	Deputy Director General
3	Mr. YOS MONY RATH	DMR	Director
4	Mr. SIENG SOTHAM	DoG	Director
5	Mr. MAK SOPHEAKTRA	DCMR	Director
12	Ms. MAK BOLY	DoG	Depty Dierector
7	Mr. Seng Laing	DMR	Chief Officer
8	Mr. Hing Savoeun	DMR	Chief Officer
11	Mr. Van Soheat	DMR	Chief Officer
13	Mr.Hong Bona	DCMR	Chief Officer
20	Mr. Kong Makara	DMRD	Chief Officer
23	Mr. Touch Menglay	DMRD	Chief Officer
24	Mr. Seng Laing	DMR	Chief Officer
14	Mr.Suon Bunse	DCMR	Vice Chife
10	Mr. Sok Vun	DMR	Deputy Officer
6	Mr. Ou Narath	DMRD	Officer
9	Mr. Bin Khoeun	DMRD	Officer
12	Mr. Loeung Vanmonyrak	DMR	Officer
15	Mr. Lim Chumneanh	DCMR	Officer
16	Mr. Bin Thet	DoG	Officer
17	Mr. Suong Ky	DoG	Officer
18	Mr. Phok Sothea	DoG	Officer
19	Mr.Cheng Ngak	DoG	Officer
21	Mr. Hok Bunny	DoG	Officer
22	Mr. Pov Benleng	DoG	Officer
25	Mr. Kazuki Shingu	JICA Studty Team	Expert
26	Mr. Vang Randy	JICA Studty Team	Interpriter

Appendix I-13 EITI Seminar

EITI Seminar



Facilitator Mr. Richard Thompson



Senior officers of MIME and GDMR

The List of Participants on the EITI Seminar on 11 th June, 2009			
No.	Name	Title	Organization
1	H.E Mr. TAN KIM VINN	Secretary of State, MIME	MIME
2	H.E Mr. UNG PONNARA	Under secretary of state, MIME	MIME
3	Mr. PENG NAVUTH	Deputy Director General, General Department of Mineral Resources	MIME
4	Mr. UCH BORA	Deputy Director General, General Department of Mineral Resources	MIME
5	Mr. YOS MONY RATH	Director, Department of Mineral Resources	MIME
6	Mr. SIENG SOTHAM	Director, Department of Geology	MIME
7	Mr. SIM SISOKHALY	Director, Department of Mineral Resources Development	MIME
8	Mr. MAK SOPHEAKTRA	Director, Department of Construction Material Resources	MIME
9	Mr. CHREA VICHETT	Deputy Director, Department of Mineral Resources Development	MIME
10	Mr. KONG MAKARA	Office Chief , Mineral Resources Development	MIME
11	Mr. Loeung Vanmonyrak	Officer, DMR	MIME
12	Mr. BEN BUNNARIN	Office Chief, Department of Geology	MIME
13	Mr. Masaharu Marutani	Team Leader	JICA Study Team
14	Mr. Richard T. Thompson	Senior Mining Expert, Facilitator	JICA Study Team
15	Mr. Reaksa Rous	Interpreter (English-Khmer from comp.)	JICA Study Team
16	Mr. Randy Vang	Interpreter (Khmer - English)	JICA Study Team
17	Ms. Mou Som Vina	Typist	JICA Study Team

Appendix I-14 Mining Methods Seminar



The List of Participants

06th November, 2009, Conference room in MIME

No.	Name	Organization	Position
1	Peng Navuth	GDMR	Deputy Director General
2	Mak Sochettra	DCMR	Officer
3	Phok Saloan	DMR	Chief officer
4	Nuon Norin	DMR	Deputy Director of Department
5	Ben Bunnarin	DoG	Chief officer
6	Cheng Ngak	DoG	Chief officer
7	Seng Laing	DMR	Chief officer
8	Suon Bunse	DCMR	Chief officer
9	Yin Rotha	DMR	Chief officer
10	Bin Thet	DoG	Staff
11	Long Sobonrithy	DMRD	Vice Chief officer
12	Touch Bunly	DCMR	Office
13	Sok Kiriroath	DCMR	Office
14	Ou Chak	DMRD	Vice Chief
15	Ben Savuth	DMRD	Chief
16	Keo Mony Ratana	DMRD	Vice Chief officer
17	Phok Sothae	DoG	Chief officer

Appendix I-15 New Website Seminar



The List of Participants

10th November, 2009, Conference room in MIME

No.	Name	Organization	Position
1	Uch Bra	GDMR	Deputy Director General
2	Sieng Sotham	DoG	Director
3	Kong Makara	DMRD	Chief officer
4	Phok Salorn	DMR	Chief officer
5	Nuon Norin	DMR	Deputy Director of Department
6	Chrea Vichett	DMR	Deputy Director of Department
7	Sim Sisokhaly	DMRD	Director
8	Mak Sopheaktra	DCMR	Director
9	Bou Vannarit	DCMR	Officer
10	Sok Ly	DCMR	Officer
11	Sok Sokha	DCMR	Officer
12	Loeung Vanmonyarak	DMR	Officer

Appendix I-16 Seminar on Action Plan for Institutional Reform



The List of Participants

11th November, 2009, Conference room in MIME

No.	Name	Organization	Position
1	H.E. Mr. Tan Kim Vinn	MIME	Secretary of State
2	H.E. Mr. Sok Leng	MIME	General Director
3	Mr. Peng Navuth	MIME	Deputy Director General
4	Mr. Uch Bora	MIME	Deputy Director General
5	Mr. Sieng Sotham	DoG	Director
6	Mr. Mak Sopheaktra	DCMR	Director
7	Mr. Sim Sisokhaly	DMRD	Director
8	Mr. Nuon Norin	DMR	Deputy Director
9	Mr. Chrea Vichett	DMRD	Deputy Director

Appendix I-17 Seminar on Mine Accidents and Countermeasures



The List of Participants

11th November, 2009, Conference room in MIME

No.	Name	Organization	Position
1	Peng Navuth	MIME	Deputy Director General
2	Cheng Ngak	DoG	Staff
3	Ben Bunnarin	DoG	Chief Officer
4	Phok Sothae	DoG	Staff
5	Phok Salorn	DMR	Chief Officer
6	Mak Sochettra	DCMR	Officer
7	Seng Laing	DMR	Chief Officer
8	Suon Bunse	DCMR	Chief Officer
9	Touch Bunly	DCMR	Officer
10	Ou Chak	DMRD	Vice Chief
11	Ben Savuth	DMRD	Officer
12	Keo Muny Ratha	DMRD	Vice Chief Officer
13	Sok Kiriroath	DCMR	Staff
14	Yin Rotha	DMR	Chief Officer
15	Bou Vannarit	DCMR	Staff
16	Long Sobonrithy	DMRD	Vice Chief Officer

Appendix I-18 Seminar on Mine Pollutions and Countermeasures



List of participants

10th February, 2010, Conference room in MIME

No.	Name	Organization	Position
1	Chrea Vichett	DMRD	Deputy Director
2	Yen Rotha	DMR	Chief Officer
3	Seng Laing	DMR	Chief Officer
4	Long Sobonrithy	DMRD	Vice Chief Officer
5	Uon Ieng	DMRD	Officer
6	Vann Socheat	DMRD	Officer
7	Bon Vannarith	DMRD	Officer
8	Loeung Vanmonyath	DMR	Officer
9	Pov Bunleng	DMRD	Staff
10	Ben Khoeun	DMRD	Staff
11	Suong Ky	DoG	Staff
12	Phok Sothea	DoG	Staff
13	Khem Borin	DoG	Staff

Appendix I-19 Mine Management in Private Company

Mine Management in Private companies

Kazuki Shingu
JICA Mining Expert

June 1, 2010

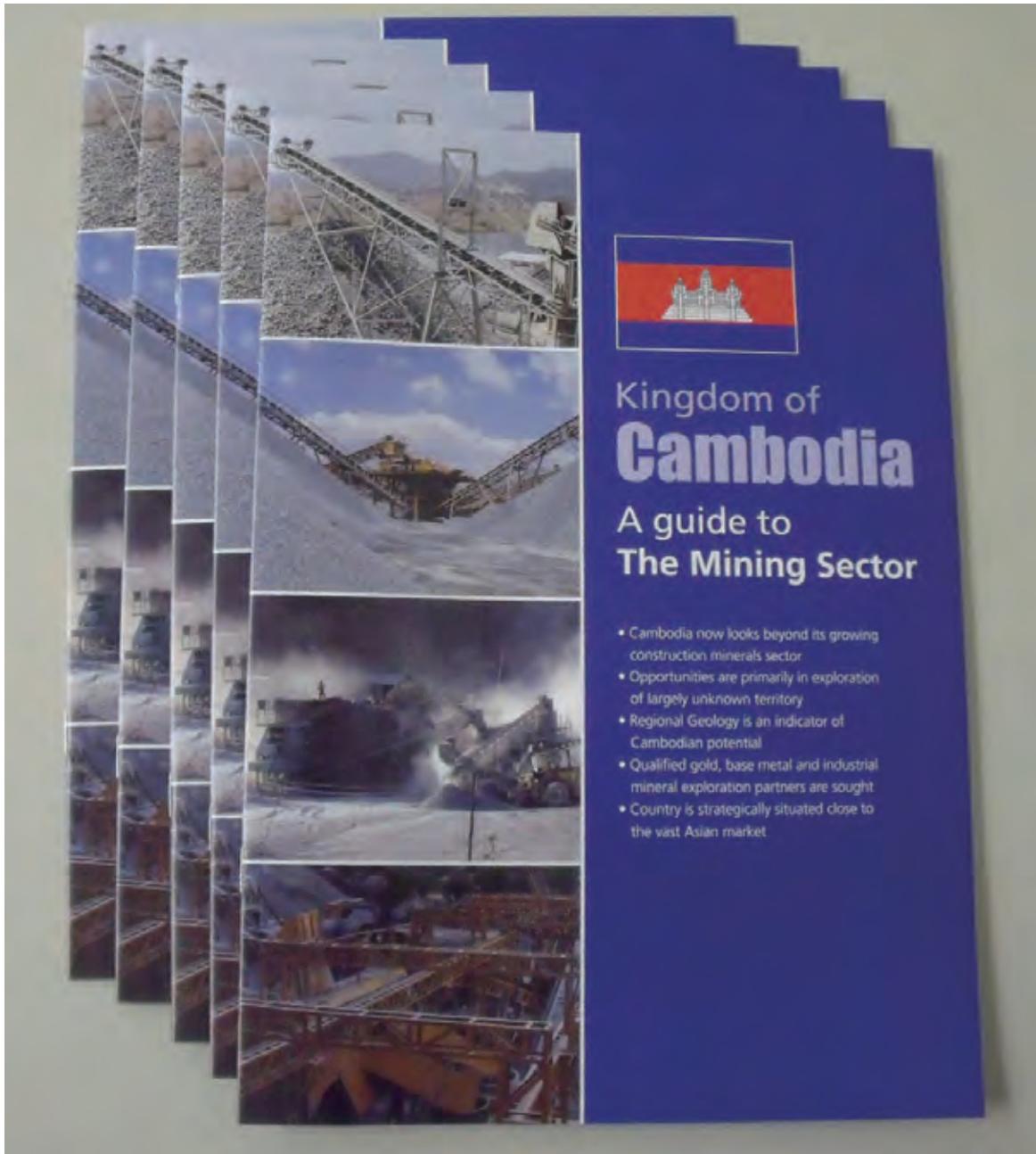


The List of Participants

1st June 2010, Conference Room of MIME

No.	Name	Organization	Position
1	Chrea Vichett	GDMR	Deputy Director
2	Nuon Cha Nam	GDMR	Deputy Director
3	Nuon Noren	DMR	Deputy Director
4	Som Chamroeun	GDMR	Chief of Metallic Office
5	Phok Salorn	DoG	Chief of Coal and Gemstone Office
6	Kong Makara	DMRD	Office Chief
7	Yin Rotha	DMR	Chief of Officer
8	Van Socheat	DMR	Chief of Officer
9	Keo Muny Ratana	DMRD	Deputy Chief Officer
10	Sou Phea	GDMR	Officer
11	Cheng Ngak	DoG	Officer
12	Binn Thet	DoG	Officer
13	Uon Ieng	DMRD	Officer
14	Bin Khoeun	DMRD	Officer
15	Ou Narath	DMRD	Officer
16	Chey Polack	DMRD	Officer
17	Huon Rasy	DMRD	Officer
18	Sok Sokha	DCMR	Officer
19	Lim Chumneanh	DCMR	Officer
20	Khun Samnang	DCMR	Officer
21	Kao Channdara	DCMR	Officer
22	Sok Kiriroath	DCMR	Vice Officer
23	Phok Sothea	DoG	Stuff

Appendix I-20 Guidbook



Appendix I-21 Cambodian Mining Industry Seminar in Tokyo



【Cambodian Mining Industry Seminar】

Providing Information on the Cambodia's Mining Industry and Mineral Resources Potential

To promote investment in the mining industry in the Kingdom of Cambodia, The Japan International Cooperation Agency (JICA) has created a “Master Plan to Promote the Cambodian Mining Industry” which contains detailed recommendations for the creation of an action plan that encompasses issues such as provision of information on Cambodian geology and mineral resources potential, investment promotion, systematic and organizational reforms, and development of human resources.

Deputy Director General, General Department of Mineral Resources, and Director of Department of Geology, General Department of Mineral Resources of Ministry of Industry Mines & Energy (MIME), who graciously joined this seminar in Japan to speak about the Cambodian mining industry and mineral resources potential, as well as explaining about the study underway.

Cambodia is believed to be rich with mineral resources potential. The Cambodian government recognizes mining as a key to the country's economic growth, and looks forward to future development in this industry. This seminar gave us an opportunity to speak about the latest developments in Cambodian mining.

We welcomed a large turnout for this event.

Date:

January 22nd (Fri) 2010, 14:00-16:30

Location:

JICA Headquarters, Conference room 113, Nibancho Center Building 5-25, Niban-cho, Chiyoda-ku, Tokyo 102-8102, Japan

Program:

- | | |
|-------------|--|
| 13:30~ | Doors open |
| 14:00~14:10 | Opening address by Mr. Toshinobu Kato
(Deputy Director General, and Group Director for Natural Resources and Energy Industrial Development Department, JICA) |
| 14:10~14:50 | “The Cambodian Mining Sector” by Mr. Peng Navuth (Deputy Director General, General Department of Mineral Resources, Ministry of Industry, Mines and Energy) |
| 14:50~15:30 | “Cambodia's Mineral Resources Potential” by Mr. Sieng Sotham (Director of Department of Geology General Department of Mineral Resources, Ministry of Industry, Mines and Energy) |

- 15:30~16:00 “The Master Plan for Promotion of the Cambodian Mining Industry” by Mr. Masaharu Marutani (JICA “Master Plan to Promote the Cambodian Mining Industry” Team Leader)
- 16:10~16:25 Questions & answer session
- 16:25~16:30 Closing address

Note: Presentations from the Cambodian participants were given in English with simultaneous Japanese interpretation.

Sponsored by: The Japan International Cooperation Agency (JICA)

List of Participants on the Seminar

	所属	部署名	氏名
1	ARUN,LLC.	代表取締役	功能 聡子
2	ARUN,LLC.	ディレクター	伴場 賢一
3	JACSTEEL INC.	鉱物資源開発部	福田 日出男
4	JACSTEEL INC.	鉱物資源開発部	秀島 義信
5	飛鳥コンサルティング株式会社	代表取締役	畔上 尚也
6	アセットデザイン株式会社	代表取締役	篠原 洋一
7	アセットデザイン株式会社	企画部 管理部マネージャー	杉本 宏
8	アドバンストマテリアルジャパン株式会社	営業企画部長	倉片 正
9	出光興産株式会社	資源部事業推進課	山本 典保
10	岩井証券株式会社	国際部 主任	河内 直樹
11	岩井証券株式会社	国際部	田中 利昭
12	エフエーストック株式会社	取締役	植田 学
13	エフエーストック株式会社		広瀬 圭子
14	株式会社 アイレット	営業課長	松岡 健一
15	株式会社 いいビジネス創造	代表取締役	簡 亮博
16	株式会社 重化学工業通信社	編集部記者	藤田 真吾
17	株式会社 フォーバル	コンサル	須藤 理夫
18	株式会社 三菱東京UFJ銀行	CIB審査部	広田 泰行
19	株式会社 三菱東京UFJ銀行	CIB審査部 審査第3グループ 調査役	谷村 仁康
20	株式会社 大和総研	アジア事業調査室 主任研究員・次長	中村 昌宏
21	株式会社 大和総研	アジア事業調査室	中川 葉子
22	グローバルエデュケーション	代表取締役	高橋 守
23	国際航業株式会社	海外事業企画室	関林 亨平
24	国際投信投資顧問株式会社	株式運用部	石井 宏
25	財団法人 国際開発センター	調査部	建部 直也
26	財団法人 国際鉱物資源開発協力協会(JMEC)	上級参事	横山 勝雄
27	財団法人 国際鉱物資源開発協力協会(JMEC)	調査員	田中 隆之
28	深海資源開発株式会社(秋田大学)	資源調査部長(客員教授)	細井 義孝
29	住友商事株式会社	無機原料部 硫黄硫酸チーム主任	笹野 晶裕
30	住友商事株式会社	建設機械第一部建機アジア事業チーム部長付	川田 知生
31	住友商事株式会社	建設機械第一部建機アジア事業チーム チーム長代理	美坂 眞
32	住友商事株式会社	サンクリストバル・プロジェクト部部長代理	上崎 雅也
33	東京外国語大学	カンボジア語専攻	中島 亮
34	東京大学	工学系研究科	村松 正彦
35	独立行政法人 石油天然ガス・金属鉱物資源機構	理事・金属資源開発本部長	森脇 久光
36	独立行政法人 石油天然ガス・金属鉱物資源機構	希少金属備蓄部 企画課長	北 良行
37	独立行政法人 石油天然ガス・金属鉱物資源機構	資源探査部探査第2課 課長	久保田 博志
38	独立行政法人 石油天然ガス・金属鉱物資源機構	資源探査部探査第2課 課長代理	石川 信明
39	独立行政法人 石油天然ガス・金属鉱物資源機構	鉱害防止支援部 部長	納 篤
40	豊田通商株式会社	海外事業企画部豪亜グループ	君島 徹
41	豊田通商株式会社	金属資源部レアアースグループ所属 業務委託コンサルタント	中島 清治
42	日揮株式会社	国内エネルギー・非鉄営業部	若林 浩毅
43	日鉄鉱業株式会社	執行役員・資源開発部長	松永 潤
44	日鉄鉱業株式会社	資源開発部資源開発課	酒井 敏光
45	日鉄鉱コンサルタント株式会社	地質部	高橋 修
46	日本空港コンサルタンツ	顧問	松屋 隆
47	日本鉱業協会	理事 企画調査部長	増田 勝彦
48	日本貿易振興機構(ジェトロ) アジア経済研究所	地域研究センター東南アジアII研究グループ研究員	初鹿野 直美
49	日本ポリグル株式会社	カンボジア総代理店代表	加納 銃一
50	古河メタルリース株式会社	原料部	大谷 友也
51	三井物産株式会社	非鉄原料第二部	立石 昭久
52	三井物産株式会社	非鉄原料第二部	須田 健介
53	三菱商事株式会社	非鉄金属本部ベースメタル事業ユニット	中山 浩
54	三菱商事株式会社	非鉄金属本部ベースメタル事業ユニット	大西 太郎
55	三菱マテリアル株式会社 銅事業カンパニー	海外鉱山プロジェクト部技術室 室長補佐	加藤 久遠
56	三菱マテリアルテクノ株式会社	資源・エネルギー事業部 資源調査部	根岸 義光
57	木材開発株式会社	東京営業所 取締役	谷 賢太
58	有限会社 ヴォーグ		木村 良明
59	有限会社 インターナショナル・コンサルティング・サービス	代表取締役	熊谷 研一
60	(個人)		中橋 碧
61	三井金属資源開発株式会社	資源事業部 資源調査部 環境事業部 環境調査部 部	原田 陽夫
62	三井金属資源開発株式会社		宮内 啓
63	松永ジオサーベイ株式会社	取締役	和田 一成

Photos of the Seminar



Opening of the Seminar



Mr. Toshinobu Kato
Deputy Director General, JICA



Mr. Peng Navuth
Deputy Director General of
General Department of Mineral Resources



Mr. Sieng Sotham
Director of Department of Geology



Mr. Masaharu Marutani
JICA Team Leader



Questions & Answers

Appendix I-22 PDAC2010

1. PDAC 2010

Dates: March 7th – 10th 2010

Location: Metro Toronto Convention Centre, Toronto Canada

2. About PDAC 2010

With a history of over 70 years, the Prospectors & Developers Association of Canada (PDAC) is an annual international mining exhibition held in early March in Toronto, Canada. More than 20,000 people from over 100 countries attend during the four days.

The event space is primarily divided into a trade show section and an investor exchange section.

In the trade show section, mining-related governmental organizations from around the world present information on their mining industries, investment climates, and active mining projects. Mining-related companies display their products for geological and satellite surveys, boring, and analysis software.

In the investor exchange section, both major (for example, Tech, Rio Tinto) and “junior” mining companies present the results of their most recent exploration and development, and seek investors. “Junior” mining companies means concession-holders that seek investment for mining operations through listings on stock exchanges (for example in Canada or Australia).

Over 300 other businesses vigorously exchange industry-related information through lectures and workshops, and project overviews by small mining businesses (Core Shack and 59 others).

These exhibitions are visited by a huge number of general investors, mining companies, trading companies, banks, and investment consultants looking for promising development prospects.

The JICA Cambodian Mining booth was located in the trade show section. This year there were 354 exhibitors in the trade show section and 583 exhibitors in the investor exchange section.

3. Cambodian Mining Booth

3.1 Participants

- 1) Penh Navuth (Deputy Director General, General Department of Mineral Resources)
- 2) Chrea Vichett (Deputy Director, Department of Mineral Resources Development)
- 3) Masaharu Marutani (JICA Team Leader)
- 4) Haruo Harada (Senior Geologist, JICA Team)

3.2 Displays & Distributed Materials

(1) Displays

Location Map of Cambodia and Trade Routes

Map of Cambodian Electrical and Transportation Infrastructure

Geological Map of Cambodia

Map of Mineral Deposits and Occurrences in Cambodia

Table of Cambodian Stratigraphy & List of Major Metallogenic Epochs

Diagram of Latest Results of Exploration & Photographs Showing Mineral Prospects

Flow Chart for Mineral License Acquisition & List of Mineral License Categories

(2) Distributed Materials

Kingdom of Cambodia: A Guide to the Mining Sector (guidebook)

The Mining Sector in Cambodia (Print-out of Tokyo seminar presentation)

The Mineral Potential of Cambodia (Print-out of Tokyo seminar presentation)

Invest in Cambodia (Print-out of Web Site)

Report on the Participation in PDAC, Toronto, Canada

7 – 10 March 2010

It is a great opportunity for us representing the General Department of Mineral Resources of the Ministry of Industry, Mines and Energy of the Kingdom of Cambodia to attend the Mining Conference of the Prospectors and Developers Association of Canada (PDAC) which is held from 7 – 10 March 2010 in Toronto, Canada. This is the first time for Cambodia to present by ourselves to promote our young mining sector in the great international event.

During the three days and a half, many international investors, visitors, service providers and mining companies came to visit our booth, and we were asked about what kind of mineral potential exist, the current mining activities, legislations, laws and regulations related to mineral investment, the process to obtain mineral licenses, and tax regime etc.... The Guide book which is one of the outcomes of JICA project on the Master Plan for Promotion the Mining Industry in Cambodia was distributed. So participants are able to get more information about Cambodia geology, situation of mineral exploration, process and documents to apply for mineral license and some key terms of mineral agreement. We also confirmed them that foreign investors have the right to invest 100% ownership and all investments are protected by the Law on Investment of Cambodia.

We also informed visitors about the new website of the General Department of Mineral Resources (GDMR) developed by JICA Master Plan Study Team. We plan to launch it in April 2010 after updating the existing information. So visitors can access to this new website to get general information about Cambodia' s mining sector and if they want to get more information about any interested concession area where they want to invest, they are required to register. It is a good way that we can screen the potential guest before we allow them to download any needed information.

As the questions from visitors we acknowledge that our information is very limited. We need to improve our geological/mineral deposit information and release this information to the potential investors. The registration system should be improved that allow investors to download

application form from the website and can apply for the mineral license through the internet. Tax policy is the key point for Cambodia that we should have a special tax regime for mining industry. As well as tax is the main revenue to our national budget but reasonable tax rate is also the main factor to attract direct foreign investment.

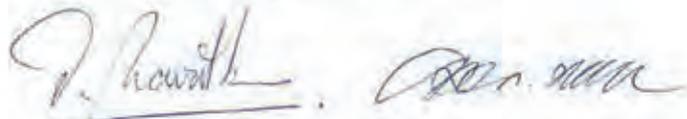
We noticed that our royalty rate makes investors satisfied. As in other countries, royalty rates vary from year to year that it is the cause making investors hesitate to place investment. Cambodia's royalty rates are fixed since investors signed an agreement with the Ministry.

In conclusion, PDAC 2010 in Toronto is very useful for us to introduce our mining sector to the world. We do hope that all activities we have done in the Mining Conference, with the strong support of Mr. Masaharu Marutani and his colleague Mr. Harada, will attract mining investors to get nearer to Cambodia and their decision to invest in this sector will be made.

Taking this opportunity, we would like to express our sincere thanks to JICA for providing its technical assistance to MIME as well as GDMR to develop the Master Plan for Promoting the Mining Industry in Cambodia and providing us a good opportunity to participate in this important Mining Conference, PDAC 2010.

We also would like to thank JICA Master Plan Study Team led by Mr. Masaharu Marutani for their effort and cooperation with GDMR to set up this Master Plan.

Toronto, 10 March 2010



Peng Navuth

Deputy Director General

Chrea Vichett

Deputy Director



Metro Toronto Convention Centre



Displays at the Cambodian Mining Booth



Materials for distribution



Canadian Cable TV Network BNN broadcasting from the PDAC venue.



Four staffers at the Cambodian Mining Booth
Mr. Harada, Mr. Chrea, Mr. Peng, and Mr. Marutani
(from left to right)



Materials from other booths
The PDAC program is on the right.



Mr. Penh Navuth explaining to an investment consultant



Mr. Penh Navuth explaining to an exploration company



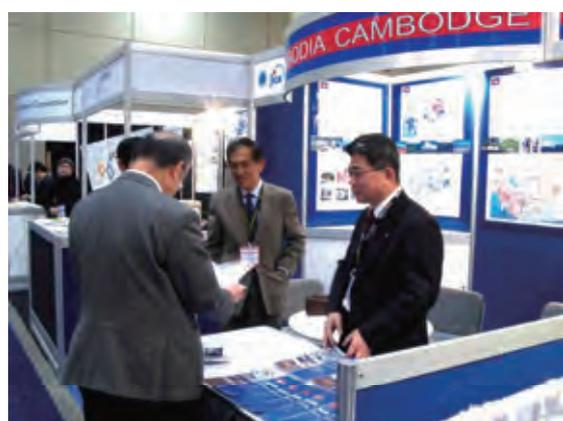
Mr. Penh Navuth explaining to a major Japanese company



Mr. Chrea Vichett explaining to an exploration company



Mr. Chrea Vichett explaining to a mining company



Mr. Masaharu Marutani explaining to an investment consultant

Appendix II-1 Sub-degrees and Prakas related to the Mining Sector

No.2

KINGDOM OF CAMBODIA
Nation Religion King

ROYAL GOVERNMENT OF CAMBODIA

Sub-Decree
on
the Principles for Investment in Mineral Resources

The Royal Government of Cambodia
Decides

Article 1-

All application for mineral exploration and exploitation shall be submitted to the one stop service of the Council for the Development of Cambodia after the recommendation made by the Ministry of Industry, Mines and Energy.

Article 2-

All kind of mineral types are not permitted for export and shall be retained to supply local industries to manufacture final products. Only the final products are allowed for export.

Art. 3-

Any decision contrary to the provisions of the Sub-degree shall be null and void.

Art.4-

Co-Chairmen of Council for the Development of Cambodia, Minister in charge of the Council of Ministers, Co-Ministers of Interior, Minister of Economic and Finance, Minister of Industry, Mines and Energy, Ministers, Governors of Provinces/ Municipalities and Directors of Concerned Institutions shall effectively implement this Sub-degree after the date of signature.

Phnom Penh, January 31, 2005
Prime Minister
HUN SEN

Informed
Prime Minister
Senior Minister, Minister of Commerce
Vice-Chairman of the Council for the Development of Cambodia

CHAM PRASETH

KINGDOM OF CAMBODIA

Nation Religion King

ROYAL GOVERNMENT OF CAMBODIA

Ref. No 113

**Sub-decree on
the Amendment of Article 1 of the Sub-degree Ref. No 08 Dated January 31, 2005 on the
Determination of Principles for Investment in Mineral Resources**

The Royal Government of Cambodia

Decides

Article1-

The article 1 of Sub-degree Ref. No 08 dated January 31, 2005 on the Determination of Principles for Investment in Mineral Resources is amended as follows:

Article1 (new):

Any application for preliminary survey (pre-survey) of any scale shall be applied under the provisions of the Law on Mineral Management and Exploitation. For application for mineral exploitation, except for construction materials (such as stone, gravel, sand, laterite, soil, etc.) shall be submitted to the one stop service of the Council for the Development of Cambodia after the completion of preliminary survey (pre-survey) and mineral exploration with the recommendation from the Ministry of Industry, Mines and Energy.

After the application for mineral exploitation is principally approved by the Council for the Development of Cambodia, the Ministry of Industry, Mines and Energy shall issue industrial mining license in accordance with the Law on Management and Exploitation of Mineral Resources

Article 2:

Any provision contrary to the provisions of this Sub-degree shall be null and void.

Article 3:

The Minister in charge of the Council of Ministers, Co-Chairmen of the Council for the Development of Cambodia, Co-Ministers of Interior, Minister of Economic and Finance, Minister of Industry, Mines and Energy, Minister of Commerce, Minister of Environment, Minister of Agriculture, Forestry and Fishery, Secretary of State of all ministries, Institutions, Provincial/ Municipal Governors concerned shall implement this Sub-degree effectively after the date of signature of this Sub-decree.

Phnom Penh, September 29, 2005

Prime Minister

HUN SEN

KINGDOM OF CAMBODIA

Nation Religion King

ROYAL GOVERNMENT OF CAMBODIA

Ref. No 20

**Decision
on
the Establishment of a Sand Management Committee**

The Royal Government of Cambodia
Decides

Article 1:

The Commission of Sand Resource Management is established with the following composition:

- | | |
|---|---------------|
| 1. Representative of Ministry of Water Resource and Meteorology | Chairman |
| 2. Representative of Ministry of Public Work and Transport | Vice-Chairman |
| 3. Representative of Ministry of Industry, Mines and Energy, | Member |
| 4. Representative of Ministry of Environment | Member |
| 5. Representative of Ministry of Land Management, Urbanization and Construction | Member |

Article 2:

The Commission of Sand Resource Management shall have the following duties:

- Control and Monitor the pumping of sand for export and for local demand;
- Study and determine (sand) areas to be licensed to (companies) to pumps and in order to facilitate the navigation routes and ensure the current of the river not to be affected, causing the falling down of the river bank;
- Study the feasibility of pumping mud sand from Mekong River land to fill the lakes for Phnom Penh Development permitted by the Royal Government to facilitate the process of pumping mud sand operated under a common aspect;
- Control and propose recommendation to the Head of the Royal Government to nullify business license hold by companies who violate (fail to implement) the decision of Commission of Sand Resource;
- Report on the outcomes of work done (by the Commission of Sand Resource Management) to the Head of the Royal Government (for review and approval).

Article 3:

The Commission of Sand Resource Management shall be convened by the Chairman.

Article 4:

The Commission of Sand Resource Management has its own Secretariat as Assistance at the Ministry of Water Resource and Meteorology and has the rights to use the stamp of Ministry of Water Resource and Meteorology.

Article 5:

Minister in charge of the Council of Ministers, Minister of Water Resource and Meteorology, Minister of Public Work and Transportation, Minister of Industry, Mines and Energy, Minister of Environment, Minister of Land Management, Urbanization and Construction, Secretary of States of all Ministries-Institutions concerned, and the representatives from the Ministries s as stated in Article 1 shall implement the Decision after the date of signing.

Phnom Penh, May 23, 2006

Prime Minister
HUN SEN

KINGDOM OF CAMBODIA
NATION RELIGION KING
ROYAL GOVERNMENT OF CAMBODIA

**Decision on
the Establishment of an Inter-Ministerial Commission to Control and
Solve the Soil Excavating Issues around the Areas of Phnom Penh City**

The Royal Government of Cambodia
Decides

Article 1:

The Inter-Ministerial Commission is established to control and solve the excavation of the ground around the areas of Phnom Penh city, and the composition of which is as follow:

1. Ministry of Industry Mine and Energy	Chairman
2. The Governor of Phnom Penh	Vice Chairman
3. Representative of Ministry of Interior	Member
4. Representative of Council of Ministers	Member
5. Representative of Ministry of Defense	Member
6. Representative of Ministry of Land Management, Urban Planning and Construction	Member
7. Representative of Ministry of Economic and Finance	Member
8. General Director of General Department of Mineral Resources	Permanent Member
9. Governor of Dangkor district	Member
10. Governor of Russey Keo district	Member
11. Governor of Meanchey district	Member
12. Director of Municipal Department of Industry Mines and Energy	Permanent Secretary

All of the members shall be convened for meeting by Chairman and in the case of the absence of the Chairman it is convened by Vice-Chairman.

Article 2:

The Inter-Ministerial Commission to control and solve the excavation of the ground around the areas of Phnom Penh City shall hold the following duties:

- Inspect soil pits (shut down) in order to study and set up measures to be taken effectively in accordance with the Notification Letter Ref. No 964, dated June 21 2005, issued by the Council of Ministers;
- Inform all concerned companies about the Notification Letter Ref. No 964, date June 21 2005 issued by the Council of Ministers;
- Invite land owners or concerned companies excavating the ground in excess of technical limitation to restore and refill their soil pits in order to protect the environmental impact and ensure the safety for people living and traveling in the areas;

- Determine new ground areas for excavation to be replaced with the old soil pits that shall be refilled up (with the soil) or confiscated as the State Property in accordance with the prevailing laws and regulations;
- Set the schedule for soil transportation out of the excavated sites for social safety;
- The land owners and concerned companies doing the business of excavating the ground are required to pay the soil royalty to the Government in compliance with the prevailing laws and regulations;
- Report the Royal Government the result of inspection and solutions to restore all soil pits located in each district of Phnom Penh City.

Article 3-

The Inter-Ministerial Commission to inspect and solve the soil pits (shut down) around the areas of Phnom Penh City shall have the rights to ask for the intervention from the Armed Forces in case of necessary.

Article 4-

The Inter-ministerial Commission to control and solve the excavation of the ground in the areas around Phnom Penh City shall have its Secretariat permanent in the General Department of Mineral Resources and the right to use the official stamp of the Ministry of Industry, Mines, and Energy.

Article 5-

The Minister in charge of Council Minister, Minister of Industry, Mines, and Energy, Minister of Interior Ministry, Minister of Land Management, Urban Planning and Construction, Minister of Economic and Finance, Ministers, Secretary of State of all concerned Ministries-Institutions, Governor of Phnom Penh, Governors of Districts concerned and Officials as stipulated in the Article 1 shall implement this Decision from the date of signing of the Decision.

Phnom Penh, February 27, 2007

Prime Minister

HUN SEN

KINGDOM OF CAMBODIA

Nation Religion King

ROYAL GOVERNMENT OF CAMBODIA

Ref No 43

**Decision
on
the Establishment of an Inter- Ministerial Inspection to Inspect Results of Mineral
Exploration done by Companies Approved by the Concerned Ministries-Competent
Institutions**

The Royal Government of Cambodia
Decides

Article 1.-

The Inter-Ministerial Inspection Group is established to control the results of mineral exploration done by companies licensed by the concerned ministries-institutions, and the composition of which is as follows:

1. H.E Mr. Prak Ham	Secretary of State of Ministry of National Assembly and Senate Relation and Inspection	Chairman
2. H.E Mr. Chea Sieng Hong	Secretary of State of Ministry of Industry, Mines and Energy	Vice-Chairman
3. H.E Mr.Suon Sithy	Secretary General of the Cambodian Investment Committee	Member
4. H.E Mr. Ngean Leng	Under Secretary of State of the Ministry of Finance and Economic	Member
5. H.E Mr. Tea Choup	Under Secretary of State of the Ministry of Environment	
6. H.E Mr. Hing Thoraksy	Representative of the Council of Ministers	Member
7. H.E Mr. Muong Sao Khan	Under Secretary of State of Ministry of Water Resource and Meteorology	Member
8. H.E Mr. Ith Nody	Under Secretary of State of Ministry of Agriculture, Forestry and Fishery	Member
9. H.E Mr. Kruoch Bunly	Director General of Ministry of National Assembly and Senate Relations and Inspection	Member
10. H.E Mr. Sok Leng	Director General of Mineral Resources, Ministry of Industry, Mines and Energy	Member
11. H.E Governors of concerned provinces/municipalities		Member
12. Mr. Yun Heng,	Deputy Director of Project Analysis and Promotion Department of the Council for the Development of Cambodia	Member
13. Mr. Seng SoChenda	Deputy Director of Investment Project Verification and Monitoring of Council Development for Cambodia/ Cambodian Investment Committee	Member

All members of the Inspection Group shall be convened by the Chairman or Deputy Chairman in case the Chairman is absent.

Article 2

The Inter-Ministerial Inspection Group has the following duties:

- Go to visit the sites (concession areas) to understand the mineral exploration activities done by all companies obtaining the principle from (licensed by) the concerned Ministries-Institutions by starting (to control) the companies holding mineral concession areas in Rovieng District, Preah Vihear Province.
- Find out the causes of delaying in retuning concession areas where no mineral exploration activities or less activities to Cambodia Iron and Steel Mining Industry Group Company according to the previous decision made by Samdech Co-Chairmen of the Council for the Development of Cambodia to take measures to enhance the implementation (this decision) in order to facilitate the company to promote its package investment (steel smelting factory, electric plant, rail way construction, port construction, etc...).
- Report (and submit) the results of actual inspections done in the mineral concession areas (held by) of each company to the one-stop-service of CDC for review and comments to the Royal Government for decision.

Article 3

During the mission, all of the members of the Inter-Ministerial Inspection Group are entitled to be accompanied with their own technical officials holding only a mission letter issued by their respective ministries.

Article 4

The Inter-Ministerial Inspection Group has the rights to use the stamp and the budget package of the Council for Development of Cambodia to fulfill the assignments.

Article 5

Minister in charge of the Council of Ministers, Co-Ministers of Interior, Minister of Economic and Finance, Minister of National Assembly and Senate Relations and Inspection, Minister of Environment, Minister of Water Resource and Meteorology, Minister of Agriculture, Forestry and Fishery, Co-chairmen of CDC, all ministers- all directors of institutions, all provincial-municipal governors, and members whose names are as stated in Article 1, shall carry out their duties in compliance with the Decision after the date of signing.

Phnom Penh, October 24, 2005
Prime Minister
HUN SEN

KINGDOM OF CAMBODIA
Nation Religion and King

ROYAL GOVERNMENT OF CAMBODIA
Ref No 01

Order on
the Prevention and Elimination of Forestry Cutting
and Illegal Occupation of the Forested Land

Forest is natural asset invaluable for human being and creature living on the Earth. By seeing the advantage of the forest, the Royal Government of Cambodia have paid more attentions to conserving and managing the forest with sustainability in order to serve the social, economic, and environmental benefits for the current generation as well as for the next one (generation).

Starting from the point of view above, the Royal Government of Cambodia has imposed the Order No. 02 dated January 6, 1999, Prakas No. 01 dated January 25, 1999 and Prakas No. 06 dated September 27, 1999 to manage and eliminate illegal activities in forestry sector and land occupation and implemented the comprehensive forestry reform with effective way and got successive successes, highly appreciation and strongly support from the national and international communities. At the same time, the activities of clearing (reclaiming), burning, bulldozing, occupying forested land, forest- planted land and natural protected areas for own properties happened in the past are successively increased in almost all provinces/municipalities. These are criminal against the Law on Forestry and other regulations (legal documents), which is the activity leading into the disaster, forest destruction and lost of the State-own-forest property, and can cause the sustainable forestry management goal to be failure if the measures of protection and suppression (of clearing [reclaiming], burning, bulldozing, occupying forested land) have not been taken strictly and effectively on time.

In order to prevent, suppress and eliminate the clearing, burning and occupying the forested land, the Royal Government has set out the urgent orders as follows:

- 1- Nullify all land occupying permits and land title deeds, which are obtained with reclaiming the forest land and tree-planted land in the past as well as in the present, in accordance with the Law on Forestry and the Land Law. The Ministry of Land Management, Urbanization and Construction shall advise (instruct) its departments to stop issuing immediately all occupying permits and land title deeds, the sources of which are from reclaiming the forested land and the State-own-tree planted land. All the issuances of permits and land title deeds involved in the forested land boundaries shall be approved by the competence of local forestry administration.
- 2- The Ministry of National Defense and the Headquarter of the Royal Cambodian Armed Forces shall set a plan to locate the permanent military bases by avoiding the impact on the forested areas. In case that the permanent military bases affected (invaded into) the forested areas boundaries, (The Ministry of National Defense and the Headquarter of the Royal Cambodian Armed Forces) shall consult with and get the approval from the Ministry of Agriculture, Forestry and Fishery;
- 3- Absolutely prohibit new settlements a long public roads or paths in the permanently preserved forest land unless the Ministry of Agriculture, Forestry and Fishery approve and the Royal Government of Cambodia give a permit in advance. Local authorities at all levels shall well administer the statistic of their

local population and shall cooperate with the (local) forestry administration to take measures on time to prevent from and suppress people traveling (to go in the forest) to reclaim, burn, bulldoze and occupy the forested land in order to settle their dwellings in the boundaries of the permanent preserved forest under the forms of farm (forest) travelers or other purposes;

- 4- Bulldozing the forested land to build public road construction in the permanent preserved forestry land shall be decided by the Royal Government of Cambodia at the request of the Ministry of Public Work and Transport or other competent institutions with the consultation with and the approval from the Ministry of Agriculture, Forestry and Fishery.
- 5- The farm (forest) travelers shall be prohibited from the jungle and semi-jungle in the boundaries of the permanent preserved forest. The farm (forest) travelers are allowed only for the original ethnic people living in the communities under the control and approval from the local competent authorities.
- 6- Quarrying stone, soil, sand, minerals and other natural resources in the boundaries of the permanent preserved forest shall be evaluated by the Ministry of Agriculture, Forestry and Fishery and permitted by the Royal Government of Cambodia;
- 7- No individual, legal entity, association, organization or authority have any rights to permit even directly or indirectly to reclaim, burn, bulldoze and occupy the forested land in the boundaries of permanent preserved forest and State-own tree planted areas absolutely;
- 8- All of the forested areas confiscated in compliance with the Law on Forestry shall be kept as the State property, and the Forestry Administration shall plant more trees to be recreated as the forest as it was before.
- 9- Import of all kinds of chainsaws can only be allowed by the Forestry Administration. The Forestry Administration shall arrest and seize all kinds of chainsaws, that are not permitted to use at any time and any place. The seized chainsaws shall be destroyed under a ceremony as the same as the case of destroying illegal fishing tools done.
- 10- All issuances of land occupying permits or land title deeds, the reclaiming, burning, bulldozing and occupying of the forested land, the military base, the bulldozing of the forest for public road construction, new settlement along the public road, the farm (forest) travelers, the quarrying of stone, soil, sand, minerals and other natural resource involved in the natural protected areas shall be consulted with and approved by the Ministry of Environment in advance.
- 11- Local authorities at all levels, the Royal Cambodian Armed Forces, the National Police, the Royal Military Armed Force and other relevant authorities shall facilitate and provide their respective forces to cooperate with the Forestry Administration upon its request to take measures to prevent and suppress all kinds of reclaiming, burning, bulldozing and occupying the forested land.
- 12- Any person violate this Order shall be punished as stipulated in the Law on Forestry and other prevailing Laws.

Receiving this Order, all ministries, relevant institutions, Forestry Administration, General Headquarter of Royal Cambodian Armed Forces, General Commission of National Police, Headquarter of Military Armed Forces over the Country, and local authorities at all levels shall widely disseminate and implement this Order high effectively

Phnom Penh, 09 June 2004
Prime Minister
HUN SEN

KINGDOM OF CAMBODIA
Nation Religion and King

ROYAL GOVERNMENT OF CAMBODIA
Ref No

Sub- Decree (Draft)
on
the Suspension and Revocation of Mineral Resource Licenses

The Royal Government
Decides

Article 1

All kind of mineral resources licenses under the Law on Management and Exploitation of Mineral Resources can be suspended or revoked, if any concessionaire offenses against (violates) the provisions of the Law on Management and Exploitation of Mineral Resources.

Article 2

The mineral resource license shall be suspended or revoked with the level of offence [violation] (against the Law) done by the concessionaire holding the mineral resources license. The level of offence [violation] (against the Law) done by the concessionaire shall be divided and determined as follows:

- (1) Explore and mine (for) minerals in the private-owned land without any written agreement with the land owner;
- (2) Explore and mine (for) minerals the State-owned land without any written permission from the competent authorities or inter-ministries whose duties is to administer the areas;
- (3) Prospect, explore and mine (for) minerals in the State-owned land determined as cultural site, historical site, and patrimonial site;
- (4) Deposit, transfer the right of or inherit the mineral licenses without written approval from the Minister of Industry, Mines and Energy;
- (5) Not keep the recording books , accounting books and related documents and not provide reports or books related to the information to Minister of Industry, Mines and Energy in due course;
- (6) Not conduct the exploration and exploitation of mineral resources properly and technically as detailed in the work programmes and budget for exploration and exploitation of mineral resources;
- (7) Not take suitable measures to protect the environment, restore the shut down mines sites, protect health and safety for workers and people living around the mines sites;
- (8) Not compensate the land owners for their land damage caused by the mineral operations (conducted by the concessionaire);
- (9) Not pay royalty for minerals mined (in their concession areas), annual land rental, profit tax, other relevant taxes and other financial obligations.
- (10) Not allow the competent authorities to inspect all his/her work and activities in their mineral operation sites or mineral resources license areas.

Article 3

The period of the suspension of mineral resources license shall not be over six (6) months.

Article 4

According to the level of offence (violation) (against the Law) done by the concessionaire as stated in Article 2 above, the Ministry of Industry, Mines and Energy shall issue a letter of advice or specific orders which require the concerned concessionaire to abide by the letter of advice or specific orders within thirty (30) days after the concessionaire received the letter of advice or specific orders from the Ministry of Industry, Mines and Energy.

Article 5

When the period of thirty (30) days is expired, if the concessionaire failed to do anything as stated in the letter of advice or specific orders, the Ministry of Industry, Mines and Energy shall issue a Prakas to suspend the mineral resources license from the concessionaire and temporary stop all his/her work and activities of mineral exploration and/or exploitation or mineral processing.

(Note: Mr. Peng Navuth added a clause concerning the power of provincial departments, local authorities and institutions concerned and the administrative procedure for sending the letter of advice and specific orders on fault correction.)

Article 6

During the mineral resources license is suspended, the concessionaire shall be given a last opportunity to abide by the letter of advice or orders issued by the Ministry of Industry, Mines and Energy or to correct his/her faults.

After correcting his/her faults as advised by the Ministry of Industry, Mines and Energy, the concessionaire can submit his/her request to lift the suspended mineral resources license and a report on his/her implementation of advice or orders with evidence showing his/her fault correction to the Ministry of Industry, Mines and Energy for review and approval prior to thirty (30) days before the deadline of suspension of mineral resources license is expired as stated in Article 3 above.

Article 7

The Ministry of Industry, Mines and Energy shall respond in written its approval or disapproval on the request for lifting the suspended mineral resources license within thirty (30) days from the receipt of his/her request for lifting the suspended mineral resources license and report on fault correction.

Article 8

If the concessionaire obtains the approval from the Minister of Industry, Mines and Energy and the valid mineral resources license under the suspension period is nearly expired or expired, the concessionaire can apply for the extension to the validity of the mineral resources license in compliance with the regulations issued by the Ministry of Industry, Mines and Energy.

Article 9

When the period of suspension of mineral resources license is over and the concessionaire has still failed to fulfill the requirements as stated in the Article 6 above, the Ministry of Industry, Mines and Energy shall issue a Prakas to revoke the mineral resources license from the concessionaire, and send it to the concerned provincial/ municipal authorities, where the mineral resources license is located, to take measures to revoke the mineral resources license from the concessionaire and stop permanently all his/her work and activities of mineral exploration and/ or mining or mineral processing.

Article 10

All relevant provincial/municipal authorities shall report to the Ministry of Industry, Mines and Energy the result of taking measures to revoke the mineral resources license. In

case of necessary, the Ministry of Industry, Mines and Energy shall establish a commission to suspend or revoke mineral resources license from the concessionaire and also temporary stop all work and activities of the mineral explorations and/or mining or mineral processing.

Article 11

(Mr. Peng Navuth is requested to revise this article.)

In case of the revocation of the mineral resources license from the concessionaire [who is] under the mineral agreement, additional to the mineral resources license, with the Ministry of Industry, Mines and Energy, such the mineral agreement shall be terminated (accordingly) automatically.

Article 12

Concessionaire, whose mineral resources license is suspended or revoked, even under or not under the mineral agreement, additional to the mineral resources license, with the Ministry of Industry, Mines and Energy, shall be responsible for paying the debt to the Government, including payment of tax, annual land rental, profit tax, relevant taxes, and other debt outstanding and also for restoring the shut down mines sites and environment inside the areas of mineral resources license reasonably.

If the concessionaire failed to do it within a timeframe limited, the Ministry of Industry, Mines and Energy shall take suitable measures by preparing the papers concerned to the concessionaire to be sent to the Court to take legal action.

Article 13

(Mr. Peng Navuth is requested to revise this article.)

The provisions of the suspension or revocation of the mineral resources licenses, stipulated in the agreements of mineral exploration and/or exploitation between the Ministry of Industry, Mines and Energy and mining companies (concessionaires), contrary to the Sub-degree shall be null and void.

Article 14

The procedure of suspension or revocation of the mineral resources license as stated in the Sub-degree is not included the fine and penalty that the concessionaire shall be under.

Article 15

The Minister in charge of Council of Ministers, Minister of Industry, Mines and Energy, involved ministries/institutions, provincial/ municipal Governors and involved concessionaire shall implement the Sub-degree with high effectively after the date of signature.

Phnom Penh, Date-Month-Year

Prime Minister
Samdech Akak Moha Seina Padei Techo HUN SEN

Have informed
Samdech Akak Moha Seina Padei Techo HUN SEN
Prime Minister of the Kingdom of Cambodia

Minister of Industry, Mines and Energy
SUY SEM

KINGDOM OF CAMBODIA
Nation Religion King

Royal Government of Cambodia
N⁰

Sub Degree (Draft)
on
the Power and Roles of Officials Appointed to Control, to Inspect and Report
Activities of Mineral Exploration, Mining

The Royal Government of Cambodia
Decides

Article 1:

Minister of Industry, Mines and Energy shall appoint Officials of the General Department of Mineral Resource to control, inspect and report the activities of mineral explorations, mining, researches, and analysis concerned related to (mining) management with high effectiveness.

Article 2:

Officials of the General Department of Mineral Resources shall be appointed as Mining Inspector.

Article 3:

The assigned Officials of the General Department of Mineral Resources shall have the following duties:

1. Be responsible to the Minister in charge of mineral sector for the management (of mineral resources) under the provisions of the Law on Management and Exploitation of Mineral Resources;
2. Prepare annual reports on activities of mineral exploration and mining to be submitted to the Minister in charge of Mineral Sector (for review and approval);
3. Collect information and file all reports on the operations of mineral exploration, mining, transportation, processing, marketing, and export of mineral products;
4. Follow up and control the implementation of all provisions of the Law;
5. Control of the implementation of orders (regulations) on the health and safety of workers and people and environmental protection;
6. Hold other duties determined by the Minister in charge of mine.

Article 4:

The Power the assigned officials of the General Department of Mineral Resources shall be determined as follows:

- Have the rights to inspect at any time all activities of mineral exploration and/or mining or mineral processing in areas under and not under the mineral licenses;
- Have the rights to bring equipment and technical tools necessary to inspect activities of mineral operation in areas under or not under the mineral licenses;
- Have the rights to check reports or results related to the operations of mineral exploration and/or mining or mineral processing, restoration of mines sites, environmental protection, evaluation of mined mineral product quantity, and royalty and concerned taxes payments;
- Control and investigate all violation activities against the Law on Management and Exploitation of Mineral Resources.

Article 5:

The assigned Officials of the General Department of Mineral Resources shall report (and submit) all activities of mineral explorations, mining, researches and analysis concerned to (mining) management to the Minister of Industry, Mines and Energy for review and approval within fifteen (15) days after the inspection is completed each time.

Article 6:

Under the duties time, the assigned officials of the General Department of Mineral Resources GDMR shall wear the uniform to be known as mining inspector, and the uniform of the assigned officials is attached herewith as annex to the Sub-Decree.

Article 7:

When fulfilling their duties at the sites of mineral exploration and/or mining, the assigned officials of the General Department of Mineral Resources shall hold their identification cards and mission letter issued by the Ministry of Industry, Mines and Energy.

Article 8:

Minister in charge of the Council of Ministers, Minister of Industry, Mines and Energy, Ministries/Institutions concerned and Provincial/ Municipal Governors, shall effectively implement this Sub-degree after the day of signing.

Phnom Penh, Date-Month-Year

Prime Minister

Samdach Akak Moha Seina Padei Techo HUN SEN

Have informed

Samdach Akak Moha Seina Padei Techo HUN SEN

Prime Minister of the Kingdom of Cambodia

Minister of Industry, Mines and Energy

SUY SEM

KINGDOM OF CAMBODIA
Nation Religion King

Royal Government of Cambodia
Ref. No.

Sub-decree (Draft)
on
the Determination of Mineral Resources Areas

The Royal Government of Cambodia
Decides

Article 1:

Mineral resources areas are mineral deposits or occurrences where were discovered or areas where geological structures shown the possibility of present of mineral resources.

Mineral resources areas shall be determined for protection and preservation for mineral resources operations as indicated in a map attached herewith the Sub-Decree.

Article 2:

Protected [mineral resources] areas are mineral occurrences where were discovered or areas where geological structures shown the possibility of present of mineral resources.

Preserved [mineral resources] areas are mineral deposits where were discovered and the geological information and data are shown the potential of mineral resources.

Article 3:

All proposal projects for development and construction of historical and patrimonial properties, cemetery sites or for other constructions in the protected [mineral resources] areas shall be submitted to the Ministry of Industry, Mines and Energy for approval in advance. The Ministry of Industry, Mines and Energy shall study and evaluate the areas as requested above, and shall respond in written the approval or disapproval of the development project proposal with reasonable reason within at least forty five (45) days from the date of submission of the sufficient application form.

Article 4:

The development and construction of historical and patrimonial properties, cemetery sites or other constructions in the preserved [mineral resources] areas shall be absolutely prohibited.

Preserved [mineral resources] areas shall be for the purpose of mineral exploration or mining only.

Article 5:

No individual or legal entity can occupy the mineral resources areas, which are the State public land other than the [mineral] concession areas under the [mineral] agreement signed by the Ministry of Industry, Mines and Energy [and concessionaire] or under mineral resources licenses, to conduct mineral exploration and /or mining.

Article 6:

Mineral resources areas can be added in or removed from the map annexed to the Sub-Degree in the case of the discovery of new mineral occurrences or deposits or the previous discovery of mineral occurrences or deposits shown no economic value, respectively.

Article 7:

If mineral resources were found in new areas which are not indicated in the map annexed to the Sub-Degree, and which are legal private land properties, the Minister of Industry, Mines and Energy shall negotiate with the land owners by providing them with reasonable and fair compensation. The compensation shall be born by the operators who are conducting the mineral operations in those areas.

In case that the new mineral resource areas were discovered in the forest areas, forest concession areas, forest for communities, religious believed forest, social concession land, land for development, natural resources protected area and other areas protected by the laws of the Kingdom of Cambodia, the Minister of Industry, Mines and Energy shall coordinate with related institutions in advance before declaring the mineral resources areas protected or preserved.

In case of disapproval from the related institutions, the Minister of Industry, Mines and Energy shall submit its request to the Royal Government for review and decision.

Article 8:

Any provision contrary to the Sub-Degree shall be considered as void and null.

Article 9:

Minister in charge of Council of Ministers, Minister of Industry, Mines and Energy, related Ministries/Institutions and Provincial/ Municipal Governors shall implement this Sub-Degree effectively after the date of signature.

Phnom Penh, Date – Month- Year
Prime Minister

Samdech Akka Moha Sena Padei Techo HUN SEN

KINGDOM OF CAMBODIA
Nation Religion King

Royal Government of Cambodia
Ref. No.

Draft of Sub-Decree (Draft)
on
Conditions for Issuing and Extending Mining Licenses and Transferring Mining License Rights

The Royal Government of Cambodia
Decides

Article 1:

The industrial mining license shall be issued to only the concessionaire holding [mineral] exploration license in order to explore and mine for minerals found in commercial deposits located within the boundaries of the area of land granted under the [mineral] exploration license.

Article 2:

Concessionaire holding [mineral] exploration license may apply for the industrial mining license at any time during the validity of [mineral] exploration license to the Ministry of Industry, Mines and Energy as follows:

- | | |
|--|-------|
| 1. Application for industrial mining license (with stamp 2,000 Riel) | 1 set |
| 2. Map and location of mining area to be applied for | 1 set |
| 3. Work programme and budget for the mining period; in which the concessionaire is required to submit the following plans and reports for review and approval: | 1 set |
| a. Mining plan and techniques, mines design and processing plan | |
| b. Mining machinery and equipments | |
| c. Report on environmental impact assessment and environmental protection; | |
| d. Restoration plan for mined sites and reserved fund for mined sites restoration; | |
| e. Plan for marketing mineral products | |
| f. Report on financial analysis, mining cost, and mineral sale prices; | |
| g. Program for recruitment, education and training of Cambodian citizens; | |
| h. Program for the commitment of procurement of goods and services obtainable within the Kingdom of Cambodia. | |

Article 3:

The industrial mining license issued each time to the concessionaire shall be valid for five years.

Article 4:

Concessionaire holding the industrial mining license may apply for the extension of [the validity of] industrial mining license until the mineral deposit is no longer economic to the Ministry of Industry, Mines and Energy to review and approval at least ninety (90) days prior to the expiry date of the industrial mining license, attached with the following required reports:

1. Application form for extension of [validity of] industrial mining license 1 set
2. Reports on mining output, mines restoration, payment of royalties, annual land rental, profit tax and other taxes concerned, attached with original invoices; 1 set
3. [Annual] Financial statements and restoration fund statements 1 set
4. Reports on Training programmes carried out during the previous mining period; 1 set
5. Mining plan and techniques, mineral production, restoration plan for mined sites, attached with detailed reports for the next mining period; 1 set
6. Program for education and training of Cambodian citizens and commitment of procurement of goods and services obtainable within the Kingdom of Cambodia for the next mining period; 1 set

Article 5

Concessionaire holding industrial mining license, willing to transfer its all right and obligations under industrial mining license to other party shall submit the application for right transfer to the Ministry of Industry, Mines and Energy for review and approval with the attachment of the following required documents/papers:

1. Application for right transfer of industrial mining license with indication of reasons submitted by the transferor [concessionaire] 1 set
2. Request Letter of acceptance of all rights, obligations and responsibilities from the transferee 1 set
3. Reports of clearing debts involved, royalties, annual land rental, profit tax and other taxes, attached with original invoices 1 set
4. Copy of Registration Certification for transferee issued by the General Department of Mineral Resources 1 set
5. Report on financial capability or annual financial statements for the last 3 year period of the transferee, certified by a financial institution or an auditing firm recognized in the Kingdom of Cambodia 1 set
6. Work experience of transferee in the mining or industrial sector 1 set
7. Work programme and budget for the mining period; in which the transferee is required to submit the following plans and reports for review and approval:
 - a. Mining plan and techniques, mines design and processing plan
 - b. Mining machinery and equipments
 - c. Report on environmental impact assessment and environmental protection;
 - d. Restoration plan for mined sites and reserved fund for mined sites restoration;
 - e. Plan for marketing mineral products
 - f. Report on financial analysis, mining cost, and minerals sale prices;
 - g. Program for recruitment, education and training of Cambodian

- citizens;
- h. Program for the commitment of procurement of goods and services obtainable within the Kingdom of Cambodia.

Article 6:

The conditions of issuance, extension, and right transfer of industrial mining license previously determined under the [existing] agreement on mineral exploration and exploitation between the Ministry of Industry, Mines and Energy and companies, contrary to this sub-decree shall be null and void.

Article 7:

Minister in charge of the Council of Ministers, Minister of Industry, Mines and Energy, involved Ministries/ Institutions, and Provincial/ Municipal Governors shall implement the Sub-degree effectively after the date of signature.

Phnom Penh, Date- Month- Year
Prime Minister
Samdech Akka Moha Sena Padei Techo HUN SEN

KINGDOM OF CAMBODIA

Nation Religion King

MINISTRY OF ECONOMY AND FINANCE

MINISTRY OF INDUSTRY, MINES AND ENERGY

Ref. No. 172

No. 291

Phnom Penh, 27 March, 2009

Inter-Ministrial Prakas

on

Fees for Registration, Issuance, Renewal and Right Transfer of Mineral Licenses, Annual Land Rental for Concession for Mineral Exploration and/or Mining and Royalty Rates of Mineral Resources

Deputy Prime Minister, Minister of Economy and Finance and
Minister of Industry, Mines and Energy

- Considering the Constitution of the Kingdom of Cambodia;
- Considering the Royal Decree NS/RKT/ 0704/001 dated 13 July 2004 promulgating the supplemented Constitution to ensure the normal functioning of national institutions;
- Considering the Royal Decree NS/RKT/ 0908/055 dated 25 July 2004 on the Nomination of the Royal Government of Cambodia;
- Considering the Royal Kram 02/NS/94 dated 20 July 1994 promulgating the Law on the Organization and the Functioning of the Council of Ministers;
- Considering the Royal Kram NS/RKT/0196/18 dated 24 January 1996 promulgating the Law on the Establishment of Ministry of Economy and Finance;
- Considering the Royal Kram NS/RKT/0196/05 dated 24 January 1996 promulgating the Law on the Establishment of Ministry of Industry, Mines and Energy;
- Considering the Royal Kram NS/RKT/0701/09 dated 13 July 2001 promulgating the Law on the Management and Exploitation of Mineral Resources;

Unofficial Translation

- Considering the Sub-Decree 04.ANKBK dated 20 January 2000 on the Organization and the Functioning of the Ministry of Economy and Finance;
- Considering the Sub-Decree 35.ANKBK dated 26 April 1999 on the Organization and the Functioning of the Ministry of Industry, Mines and Energy;
- Considering the Sub-Decree 78 ANK.BK dated 18 November 2004 on the Supplementing and Reforming of a number of departments under the Ministry of Economy and Finance;

Decides

Article 1

Individual or legal entity who has applied for mineral license or concessionaire holding mineral license shall pay the State for the following fees:

1.- Fees for Registration

1. Artisanal Mining License	40,000 riel
2. Pits and Quarries Mining License	
a. For construction sand, laterite and clay	400,000 riel
b. For crushed stone, block stone, gravel, and other stone used for the same purposes	800,000 riel
3. Gem Mining License	2,000,000 riel
4. Mineral (Gemstone) Cutting License	400,000 riel
5. Mineral Exploration License	800,000 riel
6. Industrial Mining License	1,200,000 riel

2.- Fees for Mineral licenses

1. Artisanal Mining License	50,000 riel
2. Pits and Quarries Mining License	
a. For construction sand, laterite and clay	600,000 riel
b. For Crushed stone, block stone, gravel, and other stone used for the same purpose	1,600,000 riel
3. Gem Mining License	8,000,000 riel
4. Mineral (Gemstone) Cutting License	
a. With Labor less than 7 people	800,000 riel
b. With Labor from 7-14 people	1,600,000 riel
c. With Labor over 14 people	3,200,000 riel
5. Mineral Exploration License	6,000,000 riel
6. Industrial Mining License	12,000,000 riel

3.- Fees for Renewal [Extension] of Mineral License

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1. Pits and Quarries Mining License	
a. For construction sand, laterite and clay	420,000 riel
b. For Crushed stone, block stone, gravel, and other stone used for the same purpose	1,120,000 riel
2. Gem Mining License	5,600,000 riel
3. Mineral (Gemstone) Cutting License	
a. With Labor less than 7 people	560,000 riel
b. With Labor from 7-14 people	1,120,000 riel
c. With Labor over 14 people	2,240,000 riel
4. Mineral Exploration License	4,200,000 riel
5. Industrial Mining License	8,400,000 riel

4.- Fees for Rights Transfer of Mineral Licenses

1. Pits and Quarries Mining License	
a. For construction sand, laterite and clay	2,000,000 riel
b. For Crushed stone, block stone, gravel, and other stone used for the same purpose	8,000,000 riel
2. Gem Mining License	16,000,000 riel
3. Mineral (Gemstone) Cutting License	
a. With Labor less than 7 people	2,000,000 riel
b. With Labor from 7-14 people	4,000,000 riel
c. With Labor over 14 people	6,000,000 riel
4. Mineral Exploration License	20,000,000 riel
5. Industrial Mining License	24,000,000 riel

5.- Rates of annual land rental of concession areas for mineral exploring and/or mining:

Type of Mineral Licenses	Annual Land Rental
1- Artisanal Mining License	
- Type A (sand, gravel, laterite)	10 (ten) USD/ha/year
- Type B (alluvial gold ores)	15 (fifteen) USD/ha/year
- Type C (precious and semi-precious gemstone)	30 (thirty) USD/ha/year
2- Pits and quarries mining license	
- Type A (cutting stone and crushed stone)	40 (forty) USD/ha/year
- Type B (sand, gravel, laterite)	20 (twenty) USD/ha/year
- Type C (limestone)	10 (ten) USD/ha/year
3- Gemstone Mining License	
- Type A (precious and semi precious gemstone)	12 (twelve) USD/ha/year
- Type B (decorated stone)	40 (forty) USD/ha/year
4- Mineral [Gemstone] cutting license	Annual land or store rental shall be determined under the law on taxation.
5- Mineral Exploration License	
- Year 1 – Year 2	0.15 (fifteen cent) USD/ha/year
- Year 3 – Year 4	0.30 (thirty cent) USD/ha/year
- Year 5 and Over	0.50 (fifty cent) USD/ha/year
6- Industrial Mining License	
- Year 1 – Year 3	4 (four) USD/ha/year

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- Year 4 – Year 5	8 (eight) USD/ha/year
- Year 6 and Over	10 (ten) USD/ha/year

6.- Royalty Rates of Mineral Resources:

1.	Metallic Minerals	Royalty Rates	
		For supplying industries [refineries], whose industries [refineries] are managed by the concessionaires holding mineral licenses	For trading purpose only
	Sb	2.5%-3.5% of sale price based on the international markets' prices.	4%-5%
	Cr		
	Fe		
	Mn		
	Mo		
	W		
	Al		
	Cu	2.5%-3.5% of sale price based on the international markets' prices.	4%-5%
	Zn		
	Sn		
	Pb		
	Au		
	Pt		
	Ag		
	Ti		
	And other metallic minerals which are in the same characteristics		
2	Non-Metallic (Industrial) minerals		
	Clay for cement	0.10 USD/ton of cement produced	0.10 USD/ton
	Kaolin	1.20 USD/ton of final product	1.20 USD/ton
	Limestone	0.20 USD/ ton of produced cement	1.50 USD/ton
	Phosphate	1.20 USD/ton of phosphate fertilizer produced	1.20 USD/ton
	Silica Sand	1.50 USD/ton of sand	1.50 USD/ton
	Salt	0.50 USD/ton of salt	0.50 USD/ton
3	Precious and Semi-precious gemstone and decorated stone		
A.	Precious stone	15% of sale price of gem product at the international markets	
	- Diamond		
	- Garnet		
	- Sapphire		
	- Emerald		
	- And other precious gems which are similar quality.		
B.	Semi-precious gemstone	15% of sale price of gem product at the international	
	- Zircon		

Unofficial Translation

	- Amethyst - Topas	markets	
	- And other gems which have the similar quality.		
C.	Decorative Stone		
	Jet, Pagodite, Chalcedony, Azurite, Normal Opal, Granite, Opal, Agate, Malachite, Silicified Wood and other stones which are similar quality	15% of sale price of the product at the international markets.	
4.	Solid fuel minerals		
	Coal	7% of sale price of solid fuel products at the international markets.	
	Lignite		

Article 2

General Departments and Departments under Ministry of Economy and Finance and under Ministry of Industry, Mines and Energy and involved natural person legal entity or concessionaires as stated in Article 1 holding mineral resource licenses shall be in charge of implementing this Prakas.

Article 3

The Prakas comes into effect after the date of signatures.

Deputy Prime Minister
Minister of Economy and Finance
KEAT CHHUN

Minister of Industry, Mines and Energy
SUY SEM

KINGDOM OF CAMBODIA
Nation Religion King

MINISTRY OF ECONOMY AND FINANCE
MINISTRY OF INDUSTRY, MINES AND ENERGY
Ref. No. 006

Phnom Penh, January 04, 2001

Prakas
on
Royalties for Construction Materials

Minister of Economy and Finance and Minister of Industry, Mines and Energy
Decide

Article 1:

For all exploitation of construction materials concessionaires shall pay the State for the royalties of raw construction materials including crashed stone, gravel, [construction] sand, soil, red soil [laterite] and clay.

Article 2:

All concessionaires exploiting construction materials shall be responsible for paying the royalties of raw construction materials mined [in concessionaire areas] or traded.

Article 3:

The royalty rates of construction materials shall be determined as follows:

- 1.- 0.6 USD/m³ - For all kinds of crashed stones with 1cm x 2 cm or over;
- 2.- 0.4 USD m³ - For gravel;
- 3.- 0.2 USD m³ - For all kinds of crashed stones less than 1cm x 2cm, construction sand and red soil [laterite];
- 4.- 0.1 USD/m³ - For all finished products made of clay, such as brick, roof tile and other clay products except porcelain products;
- 5.- 0.1 USD/m³ - For soil excavated for trade purpose other than for manufacturing as stated in point 4 of Article 3 above.

Article 4:

The revenue from royalty payment of construction materials shall be allocated and paid 80% [of the total State revenue] to the State budget account, 20% to provinces/municipalities account, and 10% [of 80% budget revenue] to the account of Ministry of Industry, Mines and Energy to expend on geological and mineral surveys.

Article 5:

Concessionaire shall pay royalties of construction materials to the provincial/ municipal treasury where his/her sites is located and operated, based on the revenue advice issued by Provincial/Municipal Department of Industry, Mines and Energy.

Article 6:

At each annual budget hearing session, Ministry of Industry, Mines and Energy in cooperating with the Ministry of Economy and Finance shall determine [the next] annual revenue by recoding as follows:

- 80% of total [state] revenue from royalty payment of construction materials shall be recorded in the revenue account of the Ministry of Industry, Mines and Energy for provincial/municipal level (state budget) in chapter 20, article 4, paragraph 2 (mineral concessions) and the revenue account shall be detailed in the budget book of each Provincial/Municipal Department of Industry, Mines and Energy;
- 10% of the [80%] state revenue shall be recorded in the budget expense account for projects of the Ministry of Industry, Mines and Energy, central level, in chapter 11, article 1, paragraph 12, sentence 1 (study and analysis);
- 20% of the total [state] revenue from royalty payment of construction materials shall be recorded in the budget revenue account of provinces/municipalities (provincial/municipal budget) in chapter 11, article 1, paragraph 2 (mineral concessions), and the budget revenue account shall be detailed in the budget book of each province/municipality;

Article 7:

Based on the revenue plan recorded in the budget book of Provincial Departments of Industry, Mines and Energy, the Joint-Commission consisting of a representative from the Ministry of Industry, Mines and Energy as Chairman, and a representative from the Ministry of Economy and Finance as member shall go to inspect the activities of construction materials exploitation in each mining site to calculate the amount of royalties to be paid by concessionaires.

Article 8:

Within the first week of the following month, Provincial/Municipal Departments of Industry, Mines and Energy, based on the actual revenue to be paid [by concessionaires], shall issue 2 copies of revenue advices to concessionaires, one copy recorded 80% [of total actual revenue] to be paid to the State budget account and another one recorded 20% [of total actual revenue] to be paid to provincial/municipal budget account.

Article 9:

Provincial departments of Industry, Mines and Energy shall make a monthly report on royalty revenue of construction materials to be submitted to Ministry of Industry, Mines and Energy and Ministry of Economy and Finance (State Properties Department), enclosed with copies of credit advices.

Article 10:

Ministry of Industry, Mines and Energy shall make mandates to cash money for the expense of geological and mineral survey equal to the total credit advices declared by the Provincial/Municipal Departments of Industry, Mines and Energy, and the credit advices shall be attached with the relevant papers [documents in proof] when visaed by financial inspectors.

Article 11:

Concessionaires obligated to pay the State for the royalty of construction materials shall pay other taxes under the prevailing Law on Taxation.

Article 12:

The [financial] obligations determined in the agreement on exploitation of construction materials signed by and between the Ministry of Industry, Mines and Energy and concessionaires, which are contrary to this Prakas shall be null and void.

Article 13:

General Departments and Departments under Ministry of Economy and Finance and under Ministry of Industry, Mines and Energy and involved concessionaires holding mineral resource licenses shall be in charge of implementing this Prakas.

Article 14:

The Prakas comes into effect after the date of signatures.

Senior Minister
Minister of Economy and Finance
KEAT CHHUN

Minister of Industry, Mines and Energy
SUY SEM

KINGDOM OF CAMBODIA
Nation Religion King

MINISTRY OF INDUSTRY, MINES AND ENERGY
N^o 340

Phnom Penh, May 25, 2004

Prakas
on
Registration and Conditions for Issuing, Renew and Extending Mineral Licenses
and Transferring Mineral License Rights

Minister of Industry, Mines and Energy
Decides

Article 1:

Cambodian citizen or individual or legal entity, who is willing to apply for mineral licenses including:

- 1- Artisanal mining license;
- 2- Pits and quarries mining license;
- 3- Gem mining license;
- 4- Mineral[Gemstone] cutting license;
- 5- Mineral exploration; and
- 6- Industrial mining license.

to explore for and/or exploitation of mineral resources or cut minerals or be transferred by concessionaire holding mineral license, shall register at the following offices:

- a. For artisanal mining license – [concessionaire] shall register at Provincial/Municipal Department of Industry, Mines and Energy where the concession area for mineral exploration and exploitation is located, except for registration to apply for artisanal mining license determined in Prakas on Delegating Power of Works of Industry, Mines and Energy to a number of districts of some provinces issued by Ministry of Industry, Mines and Energy.
- b. For other mineral licenses – [concessionaire] shall register at the General Department of Mineral Resources, Ministry of Industry, Mines and Energy.

The General Department of Mineral Resources and Provincial/Municipal Department of Industry, Mines and Energy shall issue a certification of registration within seven (7) days of working day after the receipt of complete application for registration as stated in this Prakas.

Article 2:

Application for registration to apply for mineral licenses shall be determined as follows:

- 2.1- For artisanal mining license and mineral cutting license – Documents to be submitted for registration shall include:

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1. Application for registration with a stamp of 1,000 riel 1 set
2. Curriculum Vitae of applicant with a photo (4cm X 6cm) certified by commune where he/she is living 1 set
3. A Copy of Identification Card/ Family Record certified by provincial/municipal authority 1 set

2.2- For other mineral licenses - Documents to be submitted for registration of a mining company include:

1. Application for Registration with a stamp of 1,000 riel 1 set
2. Curriculum Vitae of applicant (director) with a photo (4cm X 6cm) of director certified by commune where he/she is living 1 set
3. A Copy of Identification Card/ Valid passport certified 1 set
4. Letter certifying the company's current address issued by a commune where it is located 1 set
5. A copy of Memorandum and Articles of Association 1 set
6. A copy of Business Registration Certification issued by the Ministry of Commerce 1 set

Article 3:

Cambodian citizen or individual or legal entity, which was registered, is eligible to apply for mineral licenses at the following offices:

- a. For artisanal mining license – [concessionaire] shall submit application for artisanal mining license to Provincial/Municipal Department of Industry, Mines and Energy where the concession area for mineral exploration and exploitation is located, except for application for artisanal mining license determined in Prakas on Delegating Power of Works of Industry, Mines and Energy to a number of districts of some provinces issued by Ministry of Industry, Mines and Energy.
- c. For other mineral licenses – [concessionaire] shall submit application for other mineral licenses to the General Department of Mineral Resources, Ministry of Industry, Mines and Energy.

After the receipt of complete application for mineral licenses, General Department of Mineral Resources and Provincial/Municipal Department of Industry, Mines and Energy shall submit the application proposals to Minister of Industry, Mines and Energy for review and approval.

Article 4:

Documents for application of mineral licenses shall be determined as follows:

4.1- Documents to be submitted for application for artisanal mining license and mineral cutting license shall include:

- a. Application for artisanal mining license or mineral cutting license with a stamp of 1,000 riel 1 set
- b. Copy of Registration Certificate issued by Provincial/Municipal Department of Industry, Mines and Energy or by General Department of Mineral Resources 1 set

- c. A proposed area(s) and location to be applied for 1 set
- d. Report on financial capability (for mineral cutting license) 1 set
- e. Report on labors and equipment 1 set

4.2- Documents to be submitted for application for other mineral licenses shall include:

- a. Application for exploration license with a stamp of 1,000 riel 1 set
- b. Copy of Registration Certificate issued by Ministry of Industry, Mines and Energy; 1 set
- c. A proposed area(s) and location to be applied for; 1 set
- d. Report on financial capability or annual financial statement for the last 3 years, certified by an auditor firm recognized by the Royal Government of Cambodia; 1 set
- e. Plans for mineral exploration and/or mining and budget during mineral operations; 1 set
- f. Documents of evidences showing company's technical experience, in mining or involved industrial sector; 1 set
- g. Reports on environmental impact assessment, restoration plan for mined sites and management; and 1 set
- h. Plan for recruitment of Cambodians and programme for education and training; 1 set

Article 5:

The valid of each category of mineral license shall be determined as follows:

- | | | |
|--------------------------------------|---|----------------|
| 1- Artisanal mining license | - | One (01) year |
| 2- Pits and quarries mining license | - | One (01) year |
| 3- Gem mining license | - | One (01) year |
| 4- Mineral[Gemstone] cutting license | - | One (01) year |
| 5- Mineral exploration | - | Two (02) years |

Article 6:

Conditions to renew mineral licenses shall be determined as follows:

- 6.1 Concessionaire holding artisanal mining license can re-apply for artisanal mining license, until mineral deposit is exhausted economically, to Ministry of Industry, Mines and Energy for review and approval through Provincial/Municipal Department of Industry, Mines and Energy at least thirty (30) day prior to expiry of artisanal mining license under the paragraph 4.1 of article 4 above.
- 6.2 Concessionaire holding mineral cutting mining license can apply for renewal of mineral cutting license to Ministry of Industry, Mines and Energy for review and approval at least thirty (30) day prior to expiry of mineral cutting license under the paragraph 4.1 of article 4 above.
- 6.3 Concessionaire holding pits and quarries mining license or gem mining license can apply for renewal of the said two license, until mineral deposit is exhausted economically, to Ministry of Industry, Mines and Energy for review and approval at least thirty (30) day prior to expiry date of the current pits and quarries mining license or gem mining license by submitting the following papers:
 - a. Request letter for renewal of pits and quarries mining license 1 set

- or gem mining license;
- b. Reports of the results of mineral exploration and exploitation carried out during the period of previous license; 1 set
- c. Reports on environmental protection and restoration during the period of previous license certified by provincial department of environment; 1 set
- d. Balance of Restoration Fund and Training budget statements 1 set
- e. Financial reports on payment of royalty, land rental and other taxes, attached with copies of receipts; 1 set
- f. Plan for mineral exploration and exploitation, mines restoration, recruitment, training, and procurement of goods to be carried out for the next period of license. 1 set

6.4 Concessionaire holding mineral exploration license can apply for renewal of mineral exploration license up to twice with a period of 2 years each time. Concessionaire shall submit the application for renewal of mineral exploration license to the Ministry of Industry, Mines and Energy for review and approval at least ninety (90) days prior to the expiry date of the current valid exploration license by submitting the following documents:

- a. Application for renewal of exploration license; 1 set
- b. Reports of the results of mineral exploration done during the previous period of mineral exploration license; 1 set
- c. Reports on environmental protection and restoration during the such period 1 set
- d. Financial Statements (payment of annual land rental and other tax payments attached with the copies of invoices; 1 set
- e. Plan for mineral exploration and training programmes to be carried out for the next period. 1 set

At the end of the sixth year of the exploration period, the Ministry of Industry, Mines and Energy may approve an extension of such license for an additional limited period where he/she need it to study economic feasibilities of this mineral deposit or to proceed to apply for industrial mining license.

Article 7:

When mineral licenses is expired and if any concessionaire failed to apply for artisanal mining license or other mineral licenses as determined in Article 6 above, the Ministry of Industry, Mines and Energy shall take back the whole concession areas [from the said concessionaire] [terminate the agreement of mineral exploration and exploitation]. In this case the concessionaire shall be responsible for clearing all debts involved, including the payment of royalties, land rental, profit tax and other taxes and duties, and restoration fund, outstanding prior to the expiry date of the said mineral licenses and shall be responsible for restoring mined areas under the said mineral licenses.

Article 8:

In the case of [temporary] absence of sub-decree on conditions to issue industrial mining license, concessionaire holding mineral exploration license can apply for industrial mining license or for renewal under the conditions of agreement on mineral exploration

and exploitation signed by and between the Ministry of Industry, Mines and Energy and concessionaire.

Article 9:

Except artisanal mining license, concessionaire holding other mineral license and willing to transfer all rights [and obligations] under mineral license to other [third] party, shall submit a request letter for its whole right transfer, attached with the following papers, to the Ministry of Industry, Mines and Energy for review and approval.

- | | |
|--|-------|
| a. Request letter for whole right transfer [and obligations] under mineral license made by transferor [concessionaire] with clear reasons; | 1 set |
| b. Request letter for taking over whole rights [and obligations] under mineral license made by transferee [third party] with clear reasons; | |
| c. Financial reports on the clearing of debt: payment of royalty, land rental and other taxes, attached with copies of invoices; | 1 set |
| d. A copy of registration made by transferee at the General Department of Mineral Resources; | 1 set |
| e. Report on financial capability or financial statements for the last three years made by transferee [third party], certified by a financial institution or auditing firm recognized by the Royal Government of Cambodia; | 1 set |
| f. Transferee's [third [arty] experience in mining or involved industrial sector; | 1 set |
| g. Work programmes for mineral exploration and/or mining and budget proposed by transferee [third [party] to be carried out during the period of mineral operations; | 1 set |
| h. Report on Environmental Impact Assessment, management and mined areas restoration plan and restoration fund made [and proposed] by transferee. | 1 set |
| i. Plan for recruitment and training of Cambodians to be committed by transferee [third party] | 1 set |

Article 10:

In the case of mineral license suspended or revoked, concessionaire holding mineral exploration license shall be responsible for clearing all debts involved, including royalties, land rental, profit tax and other taxes or duties, and restoration fund, outstanding the prior the suspension and revocation of mineral license, and shall be responsible for restoring mined areas under mineral license.

Article 11:

General Departments and Departments and Provincial/Municipal Departments of Industry, Mines and Energy involved shall be in charge of implementing this Prakas.

Article 12:

The Prakas comes into effect after the date of signature.

Minister of Industry, Mines and Energy
SUY SEM

KINGDOM OF CAMBODIA
Nation Religion King

MINISTRY OF INDUSTRY, MINES AND ENERGY
Ref. No. 942

Phnom Penh, December 13, 2005

Prakas
on
Uniforms for Officials of General Department of Mineral Resources and
Provincial/Municipal Department of Industry, Mines and Energy

Minister of Industry, Mines and Energy
Decides

Article 1:

The uniform and logo for officials General Department of Mineral Resources and Provincial/Municipal Department of Industry, Mines and Energy are designed and determined for officials to use when they perform their work in offices and inspect the implementation of the Law on Management and Exploitation of Mineral Resources and in mining sites.

Article 2:

Uniform for officials of the General Department of Mineral Resources and Provincial/Municipal Department of Industry, Mines and Energy are determined as follows:

A. Male Uniform:

- Shirt: short sleeve, one seam and color, dark yellow, front button which is similar color of the shirt, . This shirt has two breast pockets with Por leaf pockets cover having similar color of the shirt and having 3 Cm layer in the middle of pocket.
- Trouser: long sleeve with dark blue color, seam, continue waist ban, ? have three pockets, back pocket and have Por leaf pockets, one buttonhole and two sides pocket.
- Shoe: leather oxfords or loafers, black.
- Belt made of leather

B. Female Uniform:

- Shirt: short sleeve, normal seam and opened collar, dark yellow, front button which is similar color with the shirt color, ? . This shirt has two breast pockets and two waist pockets, Por leaf cover pockets and button color_ the same color of the shirt and having 3 cm layer in the middle of the pocket.
- Skirt: short skirt over knee, dark blue color.
- Shoe: dark leather low heels

Article 3:

Logo and Identification Card of mineral resource official and DIME official shall be determined as follows:

- A. Logo and Identification Card of GDMR official
- logo on right hand side of the sleeve:

The logo on the right hand side of the sleeve is a logo of Ministry of Industry, Mines and Energy made of silk fabric, round shape with a diameter of 8.00 cm and dark blue background. In the top of logo the white background of logo has blue Khmer characters written following the round shape meaning that "KINGDOM OF CAMBODIA" and below it written in English characters smaller than the Khmer one with the same meaning. Below the logo is written in blue Khmer and English (smaller than the Khmer) meaning that "Ministry of Industry, Mines and Energy" in the round shape. On the mid-logo, there is another round shape, dark blue color with a diameter of 6.00 cm and a picture of industry colored grey and black, black lamp pole, yellow and black mineral tool and yellow toothed wheel.

- Logo on the collar:
This logo has one hammer and shovel cross on each other form a multiply sign and has gold color.
- Identification Card:
The Identification Card on the right side of pocket is rectangular with 9.50 cm by 2.00 cm, made of copper, gold color and covered by transparent plastic, dark blue color, and surrounded by gold color with a line of 0.15 cm. On the right side of Identification Card, there is a logo representing Provincial/Municipal Department of Industry, Mines and Energy which has 1.7 Cm diameter. On the left side of Provincial/Municipal Department of Industry, Mines and Energy, there are two capital letter lines, one indicating the name of official and the other one showing Identification Card number of the official.

Article 4:

General Department of Mineral Resources and Provincial/Municipal Department of Industry, Mines and Energy are provided with two sets of clothes a year to use during their performance both in offices and inspection of the implementation of Law on Management and Exploitation of Mineral Resources and in mining sites.

Article 5:

Any person who falsifies the uniform and logo of officials of General Department of Mineral Resources and Provincial/Municipal Department of Industry, Mines and Energy as stated in Article 2 and Article 3 above shall be punished by the prevailing laws.

Article 6:

General Director of Mineral Resources, Director of Accounting and Finance and Provincial/Municipal Directors of Industry, Mines and Energy shall implement this Prakas effectively after the date of signature.

Minister of Industry, Mines and Energy
SUY SEM

KINGDOM OF CAMBODIA
Nation Religion King

MINISTRY OF INDUSTRY, MINES AND ENERGY

Ref. No. 011

Phnom Penh, October 25, 2005

Prakas
on
Gemstone Management Mechanism

According to the Law on Management and Exploitation of Mineral Resources and in order to manage precious stone exploitation with high economic effectiveness, aiming at ensuring maximum revenue collected and properly [transparency] from precious stone exploitation, the Ministry of Industry, Mines and Energy has set up the guideline to manage precious stone exploitation as follows:

- I. The management of precious stone products (raw precious stone unprocessed) mined from concession areas:
 - o Precious stone products mined [from concession areas] shall be kept in the safe gem box under the supervision by a joint working group, consisting of the following representatives:

- A representative from Ministry of Industry, Mines and Energy	Chairman
- A representative from concessionaire holding gem mining license	member
- A representative from Ministry of Economy and Finance	member
- Representatives from concerned provincial/ municipal local authorities	member
- Representative from Provincial/Municipal Department of Industry, Mines and Energy	member
 - o The members of joint working group shall close the safe gem box by a signed seal after opening the safe gem box each time. The safe gem box shall be locked by two (2) locks, one is held by the representative of Ministry of Industry, Mines and Energy and the other one by the representative of concessionaire holding gem mining license.
 - o The opening of safe gem box shall be made before the presence of the members of joint working group assigned by the Ministry of Industry, Mines and Energy to inspect the safe gem box.
 - o The place used to open the safe gem box shall be agreed by all members of the joint working group and shall be located in the Kingdom of Cambodia, ensured the security of both transportation and opening of the safe gem box. In case the security conditions not ensured, the members of joint working group can determine another place to open the safe gem box with the approval from the Minister of Industry, Mines and Energy.
- II. Setting [sale] prices of mined precious stone products

The [sale] prices of mined precious stone products shall be set and agreed by the Ministry of Industry, Mines and Energy and concessionaire holding gem mining license, based on the international market price (or on market price in Bangkok). In case the [sale] price set by the Ministry of Industry, Mines and Energy is higher than one set by the concessionaire holding gem mining license disagree to buy those mined gem stone, the Ministry of Industry, Mines and Energy shall declare for bid within thirty (30) days the latest after the evaluation of mined gem stone. The base [sale] price for bid shall be higher than one proposed by the concessionaire [holding gem license] and lower than one set by the Ministry of Industry, Mines and Energy during the evaluation of mined gem stone.

III. Financial obligations

In compliance with Law on Management and Exploitation of Mineral Resources, the concessionaire holding gem mining license shall pay the Government for annual land rental, royalty of precious stone mined, annual mining fee, and other relevant taxes under the agreement [on gem exploitation] signed with the Ministry of Industry, Mines and Energy and under other related prevailing laws of the Kingdom of Cambodia (as detailed in the agreement [on gem exploitation]).

IV. Environmental restoration

Concessionaire holding gem mining license shall restore mined sites based on the environmental restoration plan approved by the Ministry of Industry, Mines and Energy. The deposit of environmental restoration fund shall be made under the conditions of the agreement [on gem exploitation] signed with the Ministry of Industry, Mines and Energy (as detailed in the agreement [on gem exploitation]).

V. Sale or exporting precious stone products

Concessionaire [holding gem mining license] shall apply for other concerned licenses to relevant competent institutions of the Royal Government of Cambodia to sell or export all precious stone products or partial of the products mined from concession areas according to the prevailing laws of the Kingdom of Cambodia (as detailed in the agreement [on gem exploitation]).

Concessionaire holding gem mining license shall implement this guideline after the date of signature.

Minister of Industry, Mines and Energy
SUY SEM

KINGDOM OF CAMBODIA
Nation Religion King

MINISTRY OF INDUSTRY, MINES AND ENERGY
Ref, No 893

Phnom Penh, November 30, 2004

Prakas
on
the Establishment of Competent Officials to Enforce the Mining Law

Minister of Industry, Mines and Energy
Decides

Article 1-

The competent official team of the General Department of Mineral and Resources is established to have a mission to do the tasks in provinces/municipalities of Kingdom of Cambodia in order to inspect the effectiveness of the enforcement of the Law on Management and Exploitation of Mineral Resources.

Article 2-

The composition of competent official team is as follows:

- | | |
|--------------------------|--|
| 1.- Mr. Chuor Chettivoin | Deputy Director General, General Department of Mineral and Resources |
| 2.- Mr. Nuon Chanan | Deputy Director, Department of Mineral and Resources |
| 3.- Mr. Hing Saveurn | Deputy Chief of Non-Metallic Minerals Office |
| 4.- Mr. Som Sivanna | Deputy Chief of Mineral Development Office |
| 5.- Mr. Ben Thet | Official, Department of Geology |

Article 3-

During the mission, all the competent official team shall wear the uniform presenting the competent officials from the General Department of Mineral Resources and from Provincial/Municipal Departments of Industry, Mines, and Energy, and shall hold the mission letter issued by the Ministry of Industry, Mines and Energy.

Article 4-

The competent official team shall have the following duties:

- Control and give technical skills on the management of mineral operations, aiming at enhancing technical operations, economic, labor safety and environmental protection to be more effective;
- Control the implementation of agreements, including financial and work obligations to be fulfilled by the companies or concessionaires who have been conducting their mineral operations in the Kingdom of Cambodia;

- Accelerate the payment of debt to be made companies or concessionaires who have failed to pay the debt to the Government under their mineral operation. In case they have still failed to pay the debt, the legal actions shall be taken;
- Solve all disputes occurred eventually in mineral operations;
- Propose other measures to be taken for both administrative and technical measures to be submitted to the Ministry of Industry, Mines and Energy for review and approval in compliance with the Chapter 8 on Penalties of Law on Management and Exploitation of Mineral Resources in order to protect from the violation of the Law and abnormal activities in the conducting and managing of mineral operations;
- Collect data and information and make monthly, semester and annual reports on the outcome of mission and submit it to the Minister of Industry, Mines and Energy for review and recommendations.

Article 5.-

The Prakas comes into effect from the date of signature.

SUY SEM

KINGDOM OF CAMBODIA
Nation Religion King

MINISTRY OF INDUSTRY, MINES AND ENERGY
Ref. No 002

Phnom Penh, May 25, 2004

Circular
on
Prevention of Illegal Mining Activities
in Provinces in the Kingdom of Cambodia

Recently, the Ministry of Industry, Mines and Energy have seen that in some provinces/ municipalities, illegal mining activities have occurred, causing serious destruction of natural resources, which the Constitutional Law stipulated as the State Property, and it is a factor causing the great loses of State income and bad impact on the natural environment. The using of explosives and chemical substances without permission has caused serious impact on safety and human and animal health living in and surrounding the areas.

Therefore, in order to stop all illegal mining activities occurred in some provinces/municipalities, the Ministry of Industry, Mines and Energy advise Provincial/ Municipal Departments of Industry, Mines and Energy to take the following actions:

I- For Illegal Mining Activities:

- 1- Inspect and locate illegal mining sites in their own provinces/municipalities by cooperating with the local authorities to take strict measures to stop (eliminate) all illegal mining activities effectively;
- 2- Cooperate with local authorities to inspect the illegal mining activities as follows:
 - Prevent explosive and chemical substance prohibited by the Law from transporting, used for illegal mining activities;
 - Administer and prevent new coming people from doing illegal mining activities in their areas.
 - Administer enterprises repairing heavy machinery used for illegal mining.
 - Control enterprises manufacturing equipments (iron tools, baskets) used for illegal mining;
 - Prevent mineral exploration or mining from using powerful men backing their illegal actions in local areas without mineral exploration or mining licenses issued by the Ministry of Industry, Mines and Energy;
 - Report to Ministry of Industry, Mines and Energy on the result of inspection and shutdown of illegal mining areas and environmental impact assessment and set up necessary measures to be submitted to the Ministry of Industry, Mines and Energy for review and approval.

II- For Companies holding mineral licensed issued by the Ministry of Industry, Mine and Energy:

- Control concessionaires holding mineral licenses issued by the Ministry of Industry, Mines and Energy to explore for and exploitation of mineral resources in their contract areas and follow up all their activities of mineral operations under the term and conditions of mineral licenses issued by the Ministry of Industry, Mines Energy and under the valid agreements.

After acknowledging the Circular, Directors of Provincial/Municipal Department of Industry, Mines and Energy shall implement it effectively.

SUY SEM

KINGDOM OF CAMBODIA
Nation Religion King

MINISTRY OF INDUSTRY, MINES AND ENERGY
Ref. No. 001

Phnom Penh, 25 May, 2004

**Circulation
on
the Suspension and Revocation of Mineral Licenses**

According to the Law on Management and Exploitation of Mineral Resources, the Ministry of Industry, Mines and Energy would like to advice companies, who are holding mineral licenses issued under the conditions of agreement on mineral exploration and/or exploitation in the Kingdom of Cambodia, to be known that their mineral licenses shall be suspended or revoked in the following violation cases:

I. Mineral Licenses

Six categories of mineral license [as shown below] to be issued [under the Law on Management and Exploitation of Mineral Resources] is to effectively administer the activities of mineral exploration and mining in the Kingdom of Cambodia.

- a. Artisanal mining license
- b. Pits and quarries mining license
- c. Gem mining license
- d. Mineral (gemstone) cutting license
- e. Mineral Exploration license
- f. Industrial mining license

According to the Law on Management and Exploitation of Mineral Resource, the mineral license is a written permit issued by the Ministry of Industry, Mines and Energy to give a concessionaire the right to conduct mineral exploration and mining. The Ministry of Industry, Mines and Energy shall appoint its officials to inspect the work [exploration and mining] performance done companies holding mineral licenses or agreements issued by [signed with] the Ministry of Industry, Mines and Energy, based on [following] each category of the mineral license.

II. Suspension or Revocation of Mineral License

Mineral licenses under the Law on Management and Exploitation of Mineral Resource can be suspended to any company who has violated the provisions of the Law on Management and Exploitation of Mineral Resource.

The suspension of mineral license shall be made under the violation levels done by a company holding such mineral license. The cases [levels] of violation made by a company holding mineral license, which caused his/her mineral license to be suspended or revoked, shall be determined as follows:

- 1- Not commence his/her mineral operations within six (6) months after the date of issuance of mineral license comes into effect;

- 2- Conduct his/her mining activities in different location (not under the approved coordinates [set by General Department of Mineral Resources]) not determined under the mineral license;
- 3- Conduct mineral exploration or mining in private owned land without written agreement with the land owner;
- 4- Conduct mineral exploration or mining in the State owned land without written permit from competent authorities or inter-ministerial institutions administering those areas;
- 5- Conduct mineral prospecting, exploration or mining in the State owed land determined as cultural, historical, and patrimonial sites;
- 6- Conduct mineral exploration or mining not under technical and financial [requirement] as detailed in the work programmes of mineral exploration and mining;
- 7- Conduct mineral exploration or mining without contacting with competent provincial/municipal departments and authorities, where his/her concession areas are located;
- 8- Not cooperate or provide [submit] reports (work program of mineral exploration and mining) to the Ministry of Industry, Mines and Energy [for review and approval] regularly for quarter, semester and yearly;
- 9- Not conduct [mineral exploration and mining] following techniques requirement, spilling chemical substances not prohibited by the Royal Government [the laws], which caused the impact on [natural] environment (petroleum etc.);
- 10- Company [concessionaire] obtaining mineral exploration license from the Ministry of Industry, Mines and Energy has mined for minerals under the camouflage of mineral exploration license;
- 11- Use chemical substances prohibited by the Royal Government [the laws];
- 12- Not permit the use of explosives, except the approval from the Ministry of Industry, Mines and Energy [concessionaire used explosives without the permit/ approval from the Ministry of Industry, Mines and Energy];
- 13- Not reported other mineral types found during the exploration or mining other than minerals determined in the agreement [on mineral exploration and mining];
- 14- Not take appropriate measurements to protect the environment (the wrong use of cyanide , mercury, all kinds of acid, boric powder, etc.), polluting the environment on land surface, underground and water;
- 15- Not allow the competent authorities to inspect all works and activities in his/her mineral operation sites or mineral license areas;
- 16- Not keep recording and accounting books and other related documents and not submit reports or other documents related to the information to the Minister of Industry, Mines and Energy [for review and approval];
- 17- No fulfill financial obligations, including payment of mineral royalties, annual land rental, profit tax and related taxes and other financial obligations;
- 18- Conduct mineral exploitation with the invalid mineral license;
- 19- Not compensate land owners for both inside and outside license area for damages resulting from his/her mineral exploration and exploitation;
- 20- Mortgage or transfer or inherit his/her mineral license [to the third party] without a written approval from the Minister of Industry, Mines and Energy;
- 21- Not prevent health and safety for workers and people living around mining sites, not restore mined sites or disturb people living around the mining sites.

III. The period of suspension and revocation of mineral licenses

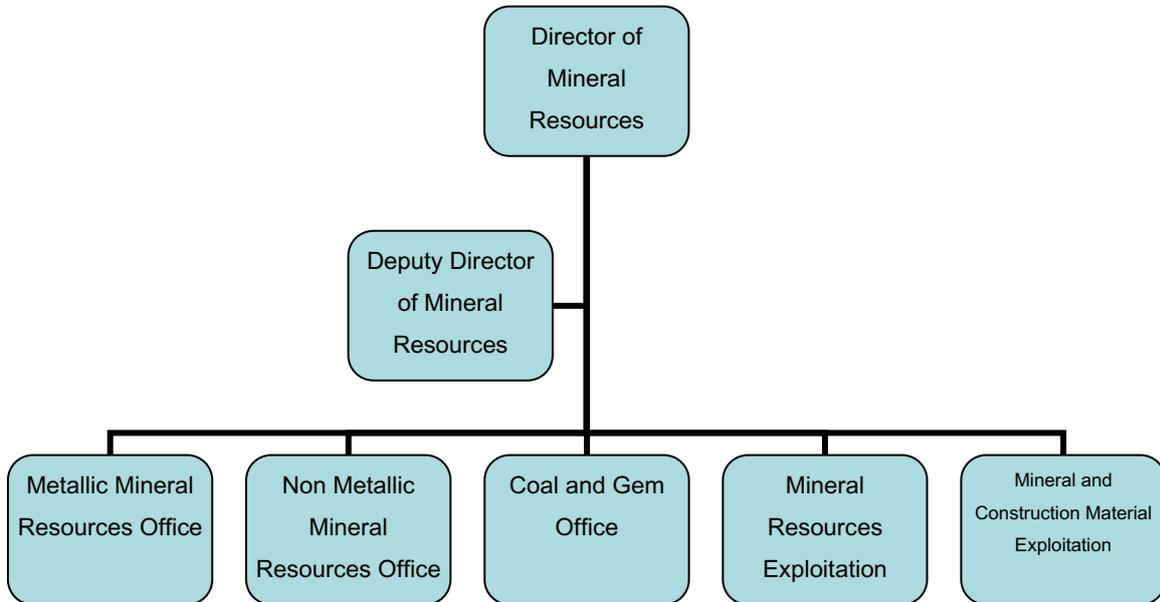
- 1- The period of suspension of mineral license shall not be over (6) months.
- 2- Company or concessionaire did not implement the guidelines or orders as stated in the point II above, the Ministry of Industry, Mines and Energy shall issue a Prakas on suspension of mineral license from the company or concessionaire and send it to the concerned provincial/municipal authorities, where the mining areas are located, to suspend the mineral license or stop temporarily all works and activities of mineral exploration and/or mining in order for them to correct his/her faults as advised by the Ministry of Industry, Mines and Energy.
- 3- Company or concessionaire can submit his/her request for the release of suspended mineral license, enclosed with reports on completed work requirement correcting his/her faults as advised by the Ministry or other evidences (if any) to the Minister of Industry, Mines and Energy for review and approval prior to thirty 30 days before the expiry period of suspension of mineral license.
- 4- When the period of suspension of mineral license is expired and the company or concessionaire has still not implemented the conditions as stated in the point 2 and 3 above, the Ministry of Industry, Mines and Energy shall issue a Prakas on revocation of the mineral license and send it to provincial/ municipal authorities, where the mineral license areas are located, to take measures revoking the mineral license and stop permanently all [works and] activities of mineral exploration and exploitation.
- 5- In case that the mineral license under the agreement [on mineral exploration and exploitation] between the Ministry of Industry, Mines and Energy and company or concessionaire is revoked, the said agreement shall be terminated automatically.
- 6- Company or concessionaire, whose mineral license was revoked, shall pay off the debts to the Royal Government, including royalties, annual land rental, profit tax and other related taxes and other outstanding debts, and shall be responsible for restoration and environment in the mined areas. In case the company or concessionaire did not implemented within a limited period, the Ministry of Industry, Mines and Energy will take measures and submit documents related to the company or concessionaire to the Court for legal resolution;
- 7- Any provision on the suspension or revocation of mineral license, determined in the agreement on mineral exploration and exploitation or on construction material exploitation between the Ministry of Industry, Mines and Energy and company or concessionaire before [the effective date of Circulation] and contrary to the Circulation, shall be null and void.
- 8- Company or concessionaire conducting mineral exploration and/or exploitation, whose mineral license was expired, shall be fined in compliance with the Chapter 8 of the Law on Management and Exploitation of Mineral Resources;

Having received the Circulation, the Provincial/Municipal Departments of Industry, Mines and Energy and companies/concessionaire shall effectively implement this Circulation

Minister
SUY SEM

Annex to the Prakas Ref. No 836 dated August 03, 2006

Organizational Chart for General Department of Mineral Resources



Have Seen and Approved

Phnom Penh, August 01, 2006
Minister of Industry, Mines and Energy

SUY SEM

Have Seen and Reviewed

Phnom Penh, June 28, 2006
Director General of Mineral Resources

SOK LENG

Phnom Penh, June 22, 2006
Director of Mineral Resources

YOS MONY RATH

KINGDOM OF CAMBODIA
Nation Religion King

MINISTRY OF INDUSTRY, MINES AND ENERGY
Ref. No. 354

Phnom Penh, May 05, 2000

Prakas
on
the Function of
the Department of Mineral Resources

Minister of Industry, Mines and Energy
Decides

Article 1:

Department of Mineral Resources is under the supervision and management of General Department of Mineral Resources and has its roles and duties as follows:

- Control and manage mineral exploration and evaluation, mining, processing, finery, marketing of mineral resources, gravel, sand and construction materials with effectiveness both technique, economic, safety for workers and environmental protection;
- Implement laws, sub-decrees, regulations and other legal framework related to mineral exploration and evaluation and exploitation of mineral resources, gravel, sand and construction materials;
- Set up projects and conduct mineral exploration and evaluation to determine the quantity, quality of mineral resources, gravel, sand and construction materials;
- Inventory mineral resources and construction materials;
- Make statistics of exploitation and production of mineral resources and construction materials;
- Study and make comments on technical exploitation or mining for investment projects in the exploration and exploitation of mineral resources, gravel, sand, and construction materials;
- Manage, instruct, control and inspect the implementation of laws, sub-decrees, regulations, legal framework and agreements on investment in mineral resources and construction materials.

Article 2:

Department of Mineral Resources is directed by a Director accompanied by a number of Deputy Directors as assistants.

Article 3:

Department of Mineral Resources has its organizational structure is as follows:

1. Metallic Minerals Office
2. None-Metallic Minerals Office
3. Coal and Gemstone Office
4. Mining and Construction Material Office.

Each office is led by an Office Chief accompanied by a number of Deputy Office Chiefs as assistants.

Article 4:

Roles and duties of each [specializing] office:

1. Metallic Minerals Office:

○ Role:

Metallic Minerals Office is an assistant of leader of the Department [of Mineral Resources] to metallic mineral exploration and evaluation

○ Duties:

- Study, analyze and interpret metallic mineral occurrences based on the data obtained from Department of Geology;
- Evaluate mineral potential and calculate the quantity and quality of metallic mineral resources at mineral deposits in order to exploit those metallic mineral resources
- Cooperate with Department of Geology and Department of Mineral Resources Development to prepare documents and evaluated data to operate metallic mineral exploitation;
- Make detailed reports on metallic mineral deposits and evaluate its economic effectiveness and feasibility study to be forwarded to Mining [and Construction Materials] Office to further study and implement it;
- Cooperate with involved departments to study the environmental impact when mining is stated;
- Prepare and compile documents for metallic mineral samples by putting their coordinate in the [mineral resources] map.

2. Non-Metallic Minerals Office:

○ Role:

None-Metallic Minerals Office is an assistant to the leader of the Department [of Mineral Resources] to non-metallic mineral resources exploration and evaluation.

○ Duties:

- Study, analyze and interpret non-metallic mineral occurrences based on the data obtained from Department of Geology;
- Evaluate mineral potential and calculate the quantity and quality of non-metallic mineral resources at mineral deposits in order to exploit those non-metallic mineral resources
- Cooperate with Department of Geology and Department of Mineral Resources Development to prepare documents and evaluated data to operate non-metallic mineral exploitation;
- Make detailed reports on non-metallic mineral deposits and evaluate its economic effectiveness and feasibility study to be forwarded to Mining [and Construction Material] Office to further study and implement it;
- Cooperate with involved departments to study the environmental impact when mining is stated;
- Prepare and compile documents for non-metallic mineral samples by putting their coordinate in the [mineral resources] map.

3. Coal and Gem Stone Office:

○ Role:

Coal and Gemstone Office is an assistant to leader of the Department [of Mineral Resources] to coal and gemstone exploration and evaluation.

○ Duties:

- Study, analyze and interpret coal and gemstone occurrences based on the data obtained from Department of Geology;
- Evaluate mineral potential and calculate the quantity and quality of coal and gemstone resources at mineral deposits in order to exploit those coal and gemstone resources
- Cooperate with Department of Geology and Department of Mineral Resources Development to prepare documents and evaluated data to operate coal and gemstone exploitation;
- Make detailed reports on coal and gemstone deposits and evaluate its economic effectiveness and feasibility study to be forwarded to Mining [and Construction Material] Office to further study and implement it;
- Cooperate with involved departments to study the environmental impact when mining is stated;
- Prepare and compile documents for coal and gem samples by putting their coordinate in the [mineral resources] map.

4- Mining and Construction Material Office:

- Role:

Mining and Construction Material Office is an assistant to leader of the Department [of Mineral Resources] to exploitation and evaluation of construction material.

- Duties:

- Study and analyze a master plan to operate the exploitation of mineral resources and construction materials;
- Re-study the evaluation, quantity and quality of mineral resources deposits evaluated by the offices of Department of Mineral Resources as mineral deposits with economic effectiveness to ensure the operation of exploitation of mineral resources and construction materials;
- Make detailed reports on exploitation of mineral resources and evaluate their economic effectiveness and feasibility of the mineral resources deposits;
- Examine construction development plan for mining [exploitation of mineral resources], machinery, explosives, storage and disposal sites and road for transportation, etc.;
- Cooperate with involved departments to study the environmental impact [when mining is stated];
- Prepare statistics of exploitation of mineral resources and construction materials;
- Prepare and compile documents for mineral samples by putting their coordinate in the [mineral resources] map.
- Identify each type of construction materials for suitable technical use;
- Follow up and inspect mining, processing, refinery and marketing of mineral resources, gravel, sand, and construction materials.
- Cooperate with relevant departments to follow up the implementation of the signed agreements or mineral resource licenses;
- Cooperate with Department of Mineral Resources Development to inspect and control [mineral] permits and instruct people to apply for permit to exploit mineral resources and construction material;
- Cooperate in resolving and reconciling all disputes related to exploitation of mineral resources and construction materials;
- Manage administrative and personnel affairs and tangible and intangible assets of the Department of Mineral Resources

Article 5:

Any provision and decision contrary to this Prakas shall be null and void.

Article 6:

Director General of Mineral Resources, Director General of Inspection, Director of Minister's Chief, Director of Personnel Department, Director of Mineral Resources Department, shall have their respective duties and capacities to fulfill their tasks in compliance with this Prakas.

Article 7:

This Prakas is effective and shall be implemented after the date of signature.

Minister of Industry, Mines and Energy
SUY SEM

KINGDOM OF CAMBODIA
NATION RELIGION KING

MINISTRY OF INDUSTRY, MINES AND ENERGY

Ref. No. 355

Phnom Penh, May 05, 2000

Prakas
on
the Function of Department of Geology

Minister of Industry, Mines and Energy
Decides

Article 1:

Department of Geology is under the supervision and management of General Department of Mineral Resources and has its roles and duties as follows:

- Propose projects and cooperate with other national and international institutions in geological field;
- Cooperate in compiling and implementing laws, sub-decrees, orders and legal frameworks related to geological and mineral researches;
- Conduct geological research by using geophysics, geochemistry and satellite image interpretation methods;
- Conduct preliminary exploration for mineral resources and develop geosciences and mineral resources maps;
- Collect, compile and maintain, manage, utilize, exchange and sale document data and geological books
- Synthesize geological data based on the areas of Cambodia and appropriate mineral potentials to meet benefits of tourist and urbanization and construction sectors;
- Disseminate and uphold the use of geological data for the social-economic development, environmental protection and natural hazard;
- Manage and provide services for geological and mineral sector;
- Arrange and manage transportation means, equipments and machinery used for geological research and mineral exploration conducted by concerned departments under the General Department of Mineral Resources;
- Cooperate in reviewing and evaluating investment proposal for mineral exploration and exploitation of mineral resources.

Article 2:

Department of Geology is directed by a Director accompanied by a number of Deputy Directors as assistants.

Article 3:

The structure of Department of Geology is as follows:

1. Mapping Office
2. Geological Research Office
3. Geo-Environment Office
4. Laboratory Office.

Each office is led by an Office Chief accompanied by a number of Deputy Office Chiefs as assistants.

Article 4:

Roles and duties of each [specializing] office:

1. Mapping Office:

○ Roles:

Mapping Office is an assistant to the leaders of Department [of Geology] to collect geological-mineral resources data and develop geosciences and mineral resources maps.

○ Duties:

- Collect, compile, manage and develop geosciences and mineral resources maps;
- Collect, compile, develop and manage geological and mineral resources base data;
- Utilize the geographic information system to analyze and compile other maps to meet the need [demands] of offices, departments and other institutions;
- Collect, compile and manage all kind of satellite image data and documents;
- Manage and compile the inventory of mineral resources.

2. Geological Research Office:

○ Roles:

Geological Research Office is an assistant to the leader of the Department [of Geology] to conduct geological research and preliminary mineral exploration.

○ Duties:

- Cooperate in geological field with national and international institutions;
- Conduct geological research by using methods for onshore and offshore, aiming at understanding geological structure, tectonic and lithology to determine the geological evolution in and outside the country and areas with mineral resources potential;
- Study current geological status to foresee and evaluate natural calamities, caused by geological phenomena actions onshore and offshore [sea bed] to determine their impacts on economic-social life, aiming at protecting and reducing natural disaster effectively;
- Promote the use of geological information to contribute to the management of land use and urbanization, environmental conservation, archaeology and other economic-social activities;
- Study the impact on the activities of land use and land development to contribute to setting up land use policies;
- Determine [Locate] priority areas for mineral exploration based on data acquired from geological study and other resources and mineral economic data and national policy.
- Use data acquired from geological study and other resources to explore for other new mineral occurrences.
- Conduct preliminary explorations to find other mineral occurrences and overview mineral form and occurrences and ore quality and quantity, aiming at determining preliminary economic effectiveness of mineral occurrences to be used for next mineral exploration and setting up policies on mineral management and mineral utilization.

3. Geo-Environment Office:

○ Roles:

Geological Research Office is an assistant to the leader of the Department [of Geology] to conduct geo-environment works.

○ Duties:

- Study and evaluate hydro-geological conditions to be used for mineral development and environmental protection;
- Cooperate with other institutions to set up policies on groundwater management and utilization to ensure sustainable groundwater use, protect water resource pollution or deformation of layer [strata] and groundwater system;
- Study environmental impact assessment caused by the activities of mineral development;
- Study and evaluate geological conditions to be used for urbanization development.

4. Laboratory Office:

○ Roles:

Laboratory Office is an assistant to the leader of the Department [of Geology] to manage administration, laboratory and machinery equipment.

○ Duties:

- Manage laboratory works;
- Provide services for geological and mineral resources researches, environmental conservation and land use;
- Manage and maintain documents, samples of rock, mineral, fossils or other geological evidences, used for better understanding natural resources and history and evolution of geology;
- Operate administration works, personnel [staff] and manage all tangible and intangible assets of the Department [of Geology];
- Arrange and manage transportation means and machinery equipment used for geological study and mineral exploration of other Departments under the General Department of Mineral Resources.

Article 5:

Any provision and decision contrary to this Prakas shall be null and void.

Article 6:

Director General of Mineral Resources, Director General of Inspection, Director of Minister's Cabinet and Director of Geology shall have their respective duties and capacities to fulfill their tasks in compliance with this Prakas.

Article 7:

This Prakas is effective and shall be implemented after the date of signature.

Minister of Industry, Mines and Energy
SUY SEM

KINGDOM OF CAMBODIA
Nation Religion King

MINISTRY OF INDUSTRY, MINES AND ENERGY
Ref. No 354

Phnom Penh, May 5, 2000

Prakas
on
the Function of
Department of Mineral Resources Development

Minister of Industry, Mines and Energy
Decides

Article 1:

Department of Mineral Resources Development is under the direct supervision and management of the General Department of Mineral Resources and shall be in charges of following duties:

- Prepare [draft] strategy and plans for developing mineral resources and geology throughout the country;
- Draft laws, sub-decrees, orders, regulations and [mineral] investment agreements related to geological research and exploration, evaluation and exploitation of mineral resources, gravel, sand and construction materials throughout the country;
- Set up projects of cooperation with international organizations, institutions and communities on field of mineral resources and facilitate cooperation work between Departments under the supervision of the General Department of Mineral Resources and other institutions;
- Cooperate with involved departments to organize training programs for human resource on the skills necessary for serving the work of geology and mineral resources.

Article 2:

Department of Mineral Resources Development is led by a Director and accompanied a number of Deputy Directors as an assistant [to the Director]

Article 3:

Department of Mineral Resources Development has its organizational structure as follows:

- Office of Mineral Resources Development
- Office of Cooperation
- Office of Data Management

Each office is led by an office chief and accompanied by a number of deputy-office chiefs as an assistant [to the office chief]

Article 4:

Role and duties of each [specializing] office are determined as follows:

1. Office of Mineral Resources Development
 - o Role:

Office of Mineral Resources Development is an assistant to the leader of the Department of Mineral Resources Development for geological and mineral resources developments.

○ Duties:

- a. Prepare [set up] policy, strategy and plans for developing mineral resources throughout the country:
 - Prepare [set up] plans for geological and mineral resources researches;
 - Prepare documents and determine locations for mineral concessions to be invested by companies by cooperating with Department of Mineral Resources and Department of Geology;
 - Prepare, compile and disseminate information on mineral resources to attract investors by cooperating with Department of Mineral Resources and Department of Geology;
 - Receive document requests for investment in mineral resource to submit to the relevant Departments [for review and consideration].
 - Cooperate with relevant Departments to inspect the implementation of agreements or mineral licenses;
 - Give comments on proposal projects on mineral exploration and geological research to Director General;
- b. Prepare and draft legal framework, agreements and [mineral] licenses related to development of mineral resources and geology.

2. Office of Cooperation

○ Role:

Officer of Cooperation is an assistant to the leader of the Department of Mineral Resources Development for the work of cooperation related to development of mineral resources and geology.

○ Duties:

- Cooperate with relevant Departments to set up training program for human resources for the skills necessary to serve the work of mineral resources and geology;
- Set up projects to cooperate with international organizations, institutions and other communities on mineral resources development and facilitate the cooperation with the Departments under the supervision of the General Department of Mineral Resources and other institutions,

3. Office of Data Management

○ Role:

Office of Data Management is an assistant to the leader of the Department of Mineral Resources Development for data management of mineral resources and geology.

○ Duties:

- Study, make data entry and manage data, technical books, documents involved in staff information and work and financial obligations to be fulfilled [by concessionaires under the agreements [on mineral exploration and exploitation]
- Compile geological and mineral resources data by cooperating with other Departments of the General Department of Mineral Resources;

- Manage and control the tangible and intangible inventory [in the Department of Mineral Resources Development]
- Perform administrative and personnel affairs for the Department [of Mineral Resources Development] and General Department [of Mineral Resources].

Article 5:

Any provision and other decision contrary to this Prakas shall be as null and void.

Article 6:

Director General of Mineral Resources, Director General of Inspection, Director of Minister's Cabinet, Director of Personnel and Director of Mineral Resources Development have its duties in their competencies to implement this Prakas.

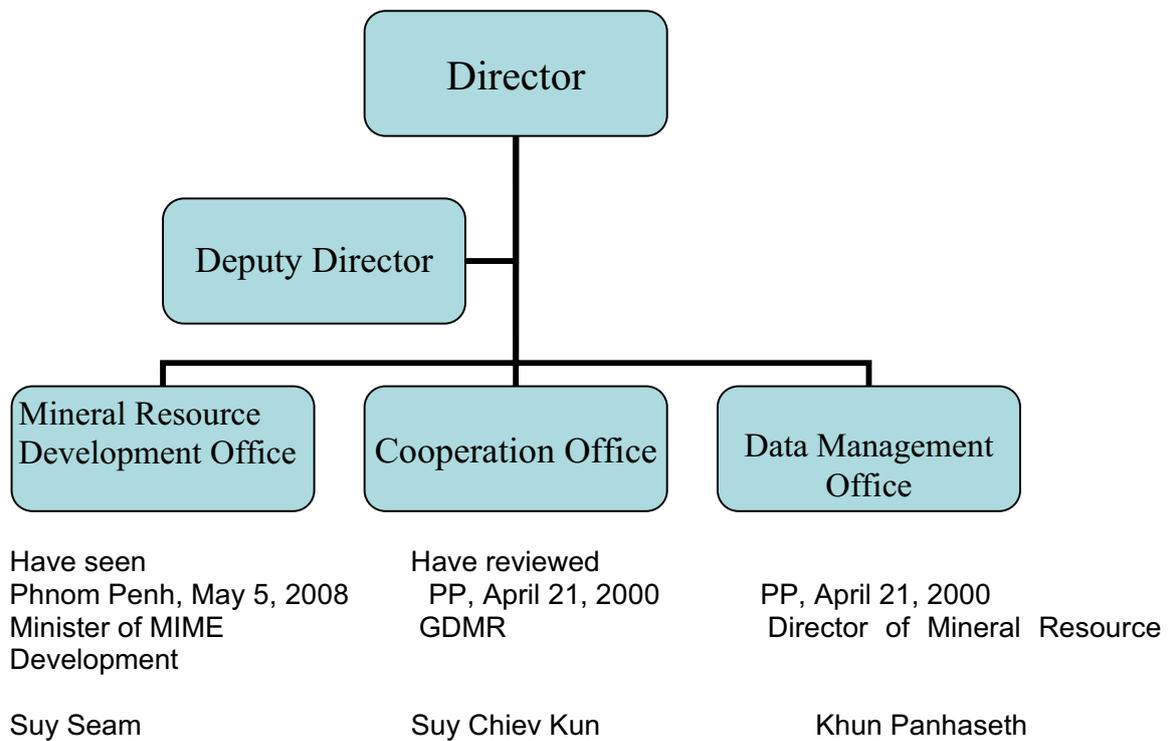
Article 7:

This Prakas is come into effective after the date of signature.

Minister of Industry, Mines and Energy
SUY SEM

Annex 1
Prakas N 354
Date: May 5, 2000

Organization Chart of Mineral Resource Development Department



KINGDOM OF CAMBODIA
Nation Religion King

Ministry of Industry, Mines and Energy

Ref. No

Prakas
on
the Establishment of an Inspection Office under the DMR

The Minister of Industry, Mines and Energy
Decides

Article 1:

The Mining Inspection Office shall be under the Department of Mineral Resources established by the Prakas Ref. No 353 dated May 05, 2000 and holds the following duties and responsibilities:

Duties:

The Mining Inspection Office shall assist the Director of Mineral Resources to inspect all activities of mining operations and illegal mining.

The Mining Inspection Office shall have the following responsibilities:

1. Study and analyze master plan for all process of mineral operations;
2. Environmental impact assessment on all kinds of mineral operations;
3. Inspect mining sites, mineral development plan, type of machinery and explosive devices, waste disposal sites and roads for transportation...etc;
4. Cooperate with the involved departments to study the environmental impact assessment;
5. Study and reevaluate quantity and quality of mineral deposits (reserves), and also evaluate the economic effectiveness of the mineral deposits (reserves) to ensure the mineral operations;
6. Cooperate with the related departments to inspect and check mineral licenses and instruct the concessionaires to ask permission to set up mineral resources exploitation;
7. Cooperate with the related departments and local competent authorities to suppress (crack down) all kinds of illegal mining.

Article 2:

Any provision and decision contrary to the Prakas shall be void and null.

Article 3:

Director General of Mineral Resources, Director of Minister's Cabinet, Director of Administrative Department, Directors of Personnel Department, Accounting and Finance Department; the Mineral Resources Department shall fulfill its duties with its competency in accordance with the Prakas.

Article 4:

The Prakas is come into effect from the date of signing of this Prakas.

Phnom Penh, August 01, 2006
Minister
SUY SEM

KINGDOM OF CAMBODIA
Nation Religion King

MINISTRY OF INDUSTRY, MINES AND ENERGY
Ref. No. 359

Prakas
on
the Establishment of a Revenue Office Under the DMRD

Minister of Industry, Mines and Energy
Decides

Article 1:

Mineral Revenue Office is established to supplement to the structure of Department of Mineral Resource Development established by the Prakas, Ref. No. 354, dated May 5, 2000, and has its roles and duties as follows:

- Roles:
Mineral Revenue Office is an assistant to leader of the Department [of Mineral Resources Development] to manage all revenue from mineral resources [exploration and exploitation].
- Duties:
 - Collect and manage mineral revenue, including the payment of mineral royalties, land rental, fees for registration, mineral license, renewal of mineral license and right transfer of mineral license, and fine [penalty] money under the Law on Management and Exploitation of Mineral Resources;
 - Make [Write] letters for debts, including mineral royalties, annual land rental and other debts owed by concessionaires holding mineral licenses under the conditions of agreements on mineral exploration and exploitation and other permits;
 - Manage data [payments] of mineral royalties, land rental and other relevant revenues under the conditions of agreement on mineral exploration and exploitation;
 - Manage bank guarantees for performance security and other permits for mineral exploration [provided by concessionaires under the conditions of agreement on mineral exploration and exploitation] and withdraw the amounts approved by the leader of Ministry [of Industry, Mines and Energy] from the bank guarantees for performance security;
 - Make quarterly reports on mineral revenue to be submitted to the leader of Ministry [of Industry, Mines and Energy] for review and approval;
 - Study and analyze the collected mineral revenue [from concessionaires] to propose necessary measures to be taken to the leader of Ministry [of Industry, Mines and energy] for review and approval in order to strengthen the mineral revenue effectively;

Article 2:

Any provision and decision contrary to this Prakas shall be null and void.

Article 3:

Director General of Inspection, Director General of Mineral Resources, Director of Minister's Cabinet, Director of Administration, Director of Personnel, Director of Accounting and Finance and Director of Mineral Resource Development have its respective duties and capacities to implement this Prakas.

Article 4:

The Prakas is come into effective from the date of signature.

Phnom Penh, April 29, 2008
Minister of Industry, Mines and Energy
SUY SEM

Appendix III-1 Results of Company Interview

Questionnaire to company

1. Name of the company
2. Main content of the company's business
3. Nationality of the company
4. Capital of the company
5. How many concessions do you have?
6. Location of each concession
7. Access to each concession (how many hours is necessary to access to each concession from the nearest town by car?)
8. Areas of each concession (are these concessions held fully by the company, or held by JV? What company of JV, and how much % of concessions the interviewee hold?)
9. What kind of permission for each concession do you have?
10. Current state of each concession
11. What are kind of minerals, ore reserve and grade of ore which are identified currently?
12. How much was ore output and ore grade produced in the last year in each concession?
13. What is the mining method adopted in each concession?
14. How meter deep are the underground working places from the surface?
15. What are main mining machines?
16. What is the processing method adopted? Do you use mercury or cyanide?
17. What are main processing machines and facilities?
18. How much was sales amount in the last year?
19. How much was the total production cost in the last year?
20. How much was the profit in the last year?
21. Organization chart in your company
22. How many workers do you employ now?
23. How much is their average salary?
24. What kind of training system do you have for new workers in your company?
25. Do you permit artisanal miners to mine ore in your concession areas, receiving some fee? How many artisanal miners are working in your concessions, if you permit them?
26. How many accidents did you have last year and what kind of accidents were they?
27. Do you have any environmental issues caused by your operation?
28. In your operation, what kind of measures are you currently taking for safety and environment?
29. If you are currently implementing exploration, how many years later and in which production scale do you intend to exploit it?
30. What are major issues in the current mining (or exploring) management, if you have?
31. What are requests for the government (or GDMR), if you have?
32. Other relevant questions

1. Angkor Wath Cement

Interviewee: President

Interviewer: K. Shingu, an official of DMR, Samphor (Interpreter)

Date: 14:00 to 15:30 in Sep. 23 (Tue.), 2008

Place: President's office in Angkor Wath Cement

1. Angkor Wath Cement Ltd.
2. gold mining
3. nationality: Thailand (80%), Cambodia (20%)
4. capital: US\$ 1million
5. holding concession: 1
6. location of the concession: Banteay Ampil District, Oddar Mean Chey Province
7. Srisorphon City → mine site (2.5h)
8. concession area: 32km² (exploration license), 2km² (exploitation license)
9. type of license: exploration and exploitation
10. current state of the concession: drilling (total length:300m)
11. estimated reserve: 2 to 3 million tons with average grade of Au2.5g/t
12. last production: none
13. mining method: underground
14. underground structure: 3 horizontal levels with depth of 20m to 50m from the surface
15. mining machines: 6 jack-drills, 4 mine-cars (1.5t), 1 hoisting machine (1.5t)
16. processing method: gravity method and cyanide process
17. processing machines: jaw crusher, cone crusher, vibrating screen, ball mill, leaching tank and zinc precipitation plant
18. last sale: none
19. last production cost: no data
20. last profit: none
21. organization: Dept. of administration (accounting, purchasing, personnel, financial) and production (analyzing, mining, processing plant, construction, depository, guards)
22. current workers: 80
23. average salary: 7,000 Thai Baht(US\$ 200) /month
24. training system: OJT
25. no illegal artisanal miner
26. last accident: none
27. current environmental issue: none
28. special consideration for environment and safety: systematic analyses of tailings and no accident
29. production schedule: to open the mine in Nov. 29, 2008 with production of 2,000 to 3,000t/m
30. current issue: none
31. request for GDMR: troublesome in monthly report and official training
32. others: clearance of UXBs is being done by CMAC, but it demands a lot of money.

2. Angkor Wat Minerals

Interviewees: Barry Lucas (Director of Elray Resources), Cham Borey, Director

Interviewer: K. Shingu, Kong Bun Huk (Translator), an official of DMR

Date & Time: 9:30 to 10:30 in Oct. 30, 2008

Place: Reception room of Angkor Wat Minerals

1. Ankor Wat Minerals Ltd. (a subsidiary company of Elray Resources Inc. which is an Australian Junior Company registered in USA)
2. exploration
3. nationality: Australia
4. capital: US\$ 10 million
5. holding concession: 1
6. as shown in table
7. Phnom Penh → (2.5h) Kampong Thom → (3h) Tbaeng Meanch
8. concession area: 90km²
9. type of license: another company attained MOU from GDMR, and then Ankor Wat Minerals attained exploration license (Jan., 2007).
10. current state of the concession: surface survey by 4 geologists (2 Cambodians and 2 Kiwis). Survey is conducted during 5 months (Dec. to Apr.). During rainy season, survey cannot be conducted due to many flood and malaria. From Dec., 2008, full geological survey will be began by joining of an Australian geologist.
11. target metal: gold and nonferrous metal
12. last production: none
13. mining method: not studied yet
14. exploitation depth: unknown
15. mining machines: not studied yet
16. processing method: not studied yet
17. processing machines: not studied yet
18. last sales: none
19. last production cost: no data
20. last profit: none
21. organization: none
22. working staff: 2 directors, 4 geologists, other 4 staff (accountant, driver, guards, cook)
23. average monthly salary: Cambodian geologist: US\$1,000, accountant: US\$300, driver:US\$150, guard: US\$120
24. training system: none
25. mining activities by illegal miners: none
26. existence of illegal miners: none
27. accidents of last year: none
28. current environmental issues: none
29. special measures for environment: none because exploration has not began yet.
30. production schedule: perspective will be determined within 2 years.
31. current problems: there are many issues such as insufficient geological infrastructure, etc. (ex. Indonesia gives necessary geological data.) information given by GDMR is inaccurate. The investment climate is insufficient.
32. Request for GDMR: to improve the current state.

3. BHP Billiton

Interviewee: Dave McCracken (Project Manager), Leonard Kaminski (ERW manager)

Interviewer: K. Shingu, K. Kumagai

Date: 9:00 to 10:15 in Nov. 1st, 2008

Place: Work office in BHP

1. BHP Billiton which is directly managed by Australian head office, and is not registered in Cambodia
2. mining
3. nationality: Australia
4. capital: Australian capital in head office
5. holding concession: 1 (BHP holds an oil concession in the offshore.)
6. as shown in Table
7. Phnom Penh → (6h) Snoul → (4h) Sen Monoron
8. concession area: 996km²
9. type of license: exploration license given by the government after mineral agreement. This area has bauxite mineralization found in 1950s, and afterwards Russian and French teams used to conduct exploration activities.
10. current state of concession: exploration began since last year, conducting surface survey, sampling and drilling (500m). Works are done during only dry season (Dec. to May). In the rainy season, preparation for exploration is done.
11. target: bauxite
12. last production: none
13. mining method: not studied yet
14. development depth: unknown
15. mining machines: not studied yet
16. processing method: not studied yet
17. processing machines: not studied yet
18. last sale: none
19. last production cost: no data
20. last profit: none
21. organization: A geological team conducting exploration works. Total employees are 126 including geologists from 7 countries. The company has a contract with CMAC which dispatches workers.
22. current workers: 126
23. average salary of workers: Salary is paid by CMAC.
24. training system: Training for sampling, drilling, etc. is conducted for 3 months during the dry season. Workers' levels are satisfactory.
25. exploitation by illegal miners: none
26. last accident: none
27. current environmental issue: none
28. special consideration for environment: EIA was submitted before exploration.
29. production schedule: not studied yet
30. current problem: none
31. request for GDMR: specially none. They satisfied with the agreement. They had 4 trainees from GDMR last year, 2 trainees in this year.

4. Cambo Cana Kiri Development

Interviewee: Sor Hak, Representativ

Interviewer: K. Shingu, Randy (interpreter)

Date: 15:00 to 16:00 in June 3 (Wed.), 2009

Place: A meeting room in Cambo Cana Kiri Development

1. Cambo Cana Kiri Development Co., Ltd.
2. exploration of iron (in Rottanakiri) and gold (in Mondulkiri)
3. Cambodia
4. US\$1 million
5. 2 concessions (in provinces of Rottanakiri (R) and Mondulkiri (M))
6. location: Ta Lav district Andoung Meas, Rottanakiri province and Phnom Gnot, Pichreda, Mondulkiri province
7. Phom Penh → Stung Treng (5h by Route No.7) → Ban Lung (2h by Route 78) → 5h (by walk to Rottanakiri)
8. (R)230km² and (M)160km²
9. exploration license was attained in Nov. 2007
10. (R) Site operation is possible during Jan. to May. Contracted with 2 Vietnamese geologists for geological survey. Survey of about 30% of the concession was completed. Some outcrops were discovered. Currently 17 trenches (2mL×1mW×1mD) are excavated. (M) Geological survey of about 30% of the concession was completed. Currently 13 trenches are excavated. Vietnamese geologists stay about 2 weeks at the sites every visit, and they visit 4 times a year.
11. ore reserve: unknown
12. last production: none
13. mining method: unknown
14. development depth: unknown
15. mining machines: unknown
16. processing method: unknown
17. processing machines: unknown
18. last sales: none
19. last cost: none
20. last profit: none
21. organization: president, deputy presidents, 8 staff for administration, accounting, engineering, advisor, drivers. 10 employees in (R) and 13 employees in (M).
22. current employees: 31
23. average salary: US\$600/month for Vietnamese, US\$250 for people in Phnom Penh, and US\$100 for minority people in the sites
24. training system for new comers: under consideration
25. illegal miners: (R) none, (M) neighboring villagers are mining, but it is not serious.
26. accidents in the last year: none
27. current environmental issues: none
28. some consideration for safety and environment: none
29. production scale: no idea
30. current issues: bad access to the sites and malaria
31. request to GDMR: none

5. Cambodia Hai Lan Mineral

Interviewees: Xing Wan Yi (President), Luo Hong Ming (Geologist), other 5 persons

Interviewer: K. Shingu, Samphors (interpreter), an official of DMR

Date: 9:30 to 11:30 in Oct. 22 (Tue.), 2008

Place: President's office in Cambodia Hai Lan Mineral

1. Cambodia Hai Lan Mineral Co. Ltd. (subsidiary of a mining company)
2. exploration including mineral analyses
3. nationality: China
4. capital: US\$ 8million
5. holding concession: 1
6. as shown in Table
7. Phnom Penh → 400km (10h) Kaev Seima → 6km(2h by walk) exploration site
8. concession area: 80km²
9. type of license: exploration
10. current state of the concession: 40 shafts(4m x 4m, 8-10m deep) were driven, 12 trenches (8-12m long x 2m deep x 1.5m wide) were driven.
11. target: gold, ore reserve is unknown, but average grade is 8.5g/t.
12. last production: none
13. mining method: not studied yet
14. development depth: unknown
15. mining machines: Current tools are hand-picks. Electrical pumps are used to dewater the underground, using a generator.
16. processing method & machines: not studied yet
17. last sale: none
18. last production cost: no data
19. last profit: none
20. organization: 4 departments (engineering, finance, transportation, administration) under the president
21. current workers: 27 (11 Chinese and 16 Cambodians)
22. average monthly salary: Chinese (US\$500-800) and Cambodian (US\$100-150)
23. training system: desk training for 2days, and OJT in the field. Few employees leave the company.
24. exploitation by illegal artisanal miners: currently none (but about 20 miners before acquired the concession).
25. last accidents: none
26. current environmental issue: none
27. special consideration for safety: wearing protective equipment
28. production schedule: exploration will be continued by 2010.
29. current issue: very hard to access the site due to bad road condition.
30. request for GDMR: even if they say something, it is impossible to realize it.

6. Cambodian International Mining Group

Interviewee: Li Paul (President), his wife, Ly Tong Heng (Adviser), and an interpreter (Chinese-Cambodian)

Interviewer: K. Shingu, Kong Bun Huk (interpreter)

Date: 9:30 to 11:30 in Oct. 27, 2008

Place: Cafeteria in the Phnom Penh Hotel

1. Cambodian International Mining Group
2. exploration
3. nationality: France (president is Chinese French.)
4. capital: US\$5million
5. holding concession: 1
6. as shown in Table
7. Phnom Penh → (5h) Kratie → (0.5h) Sambor → boating in the Mekong (3h) Kampong Damrei → (1h walking) site
8. concession area: 133km²
9. type of license: MOU → exploration license (attained in Feb. 2008)
10. current state of the concession: surface survey was done in April to July in 2008, and collected 1,000 samples. 86% of samples were sent to China, but the rest cannot be sent due to no permission of analyses.
11. targets: Au(0.38-0.8g/t), Cu, Pb, Zn
12. last production: none
13. mining method: not studied yet
14. development depth: unknown
15. mining machines: not studied yet
16. processing method: not studied yet
17. processing machines: not studied yet
18. last sale: none
19. last production cost: none
20. last profit: none
21. organization: none
22. current employees: 18 including 3 Chinese engineers.
23. average monthly salary: US\$2,000 for Chinese who are fired in the rainy season, and rehired in the dry season. US\$ 200 for Cambodians who come from the nearest village.
24. training system: Chinese instruct Cambodians how to sample.
25. illegal artisanal miners: There used to 2,000 miners 20 years ago. But they ran out under pressure of the local soldiers. Currently no miner.
26. last accident: none
27. current environmental issue: none
28. special consideration for environment: none
29. production schedule: within 3 to 4 years.
30. current issue: GDMR is asking money to permit samples analyses.
31. request for GDMR: They do not want to pay any permission fee for analyses.

7. Cambodia Metal Work

Interviewee: Ry Bunheng Director, Director's assistant

Interviewer: K. Shingu, Kong Bun Huk (Interpreter)

Date: 14:30 to 15:30 IN Oct. 30(Thu.), 2008

Place: Reception room in Cambodia Metal Work

1. Cambodia Metal Work Co. Ltd. (Interviewee was a same person of Angkor Wath Cement, but it's another company.)
2. Exploration
3. Nationality: Joint venture with Cambodia and a JV (Thailand/China)
4. Capital: US\$ 1 million (Cambodia owns 20%, foreign investor owns 80%)
5. Holding concession: 1
6. As shown in Table.
7. Phnom Penh → (4h) Battambang → (2h) Pailin
8. Concession area: 196km²
9. type of license: MOU→Exploration (March 2008)
10. current state of the concession: Site operation is possible all the year. Surface survey, sampling and trenching are conducted. 2 drilling machines were purchased to start drilling survey in November 2008.
11. target: iron, analyzed result is 58 to 63% Fe.
12. last production: none
13. mining method: not studied yet
14. development depth: unknown
15. mining machines: not studied yet
16. processing method: not studied yet
17. processing machines: not studied yet
18. last sales: none
19. last production cost: none
20. last profit: none
21. organization: three departments (administration, accounting, geology) under the directors.
22. employees: 22 (permanent) and 6 (subcontractors) breakdown: 3 directors (2 Thai and 1 Cambodian), administration (1 Thai) , accounting (1 Thai and 1 Chinese), geology (16 Cambodian workers). Exploration survey is conducted by 6 expert contractors (2 Chinese and 4 Thai). 16 Cambodian workers consist of 1 driver, 2 guards, 1 electric technician, clearing UXBs (3 CIMAC people) and 8 exploration workers.
23. average monthly salary: administration/accounting (Thai and Chinese) US\$300, 6 geological subcontractors US\$ 500 to 1,500, driver US\$120, guard US\$ 100, electrician US\$120, clearing UXBs US\$150 and workers US\$120.
24. training system: OJT (by geological subcontractors)
25. illegal miners: none
26. existence of illegal miners: none
27. last accidents: none
28. current environmental issues: none
29. special consideration for environment and safety: none
30. production schedule: Exploration will be expected to be completed within 2 years.
31. current problem: Neighboring farmers cultivate crops within the concession.
32. request for GDMR: to solve above problem.

8. Cambodia Tonle Sap International

Interviewee: H.E.Chea Thory Advisor (no company persons because they returned to China.)

Interviewer: K. Shingu, Randy (interpreter)

Date: 15:30 to 16:30 in June 1 (Mon.), 2009

Place: A meeting room in Cambodia Tonle Sap International

1. Cambodia Tonle Sap International Co., Ltd.
2. exploration of gold
3. China
4. capital: unknown
5. holding concession: 1
6. Kangchase, Changpleas commune, Keo Seima county, Mondliri province
7. Phom Penh → Kangpong Cham → Snoul → inter to the bad road 24km before Kratie
8. 208km²
9. exploration license was attained in June 2008.
10. Site operation is possible during Dec, to Apr. Impossible to access to the site during May to Nov.
Constructed 2 building for office and lodgment. Improved the road to the site, but not surveyed yet.
11. ore reserve: unknown
12. last production: none
13. mining method: unknown
14. development depth: unknown
15. mining machine: unknown
16. processing method: unknown
17. processing machine: unknown
18. last sale: none
19. last production cost: none
20. last profit: none
21. organization: unknown, but 9 employees in the site
22. current employees: 14 for 2 staff, 7 workers and 5 guards (province soldiers)
23. average salary: unknown
24. training system: unknown
25. illegal miners: 1,000 miners working in the dry season around the concession.
26. last accident: none
27. current environmental issues: none
28. consideration for safety and environment: none
29. production scale: no idea
30. current issues: the concession is partially overlapped with the agriculture concession, and there is some inconvenience for exploration.
31. request to GDMR: to help above-mentioned issue

9. Future Environment

Interviewee: Taing Theng Sea (President)

Interviewer: K. Shingu, Kong Bun Huk (interpreter), an official of DMRD

Date: 14:30 to 16:00 in Oct. 27 (Tue.), 2008

Place: President's office

1. Future Environment American Group
2. exploration, manufacturing bricks, show business (JV)
3. nationality: Cambodia
4. capital: US\$ 1.5 million
5. holding concession: 1
6. as shown as Table.
7. access to the concession: Phnom Penh → (1h) Kanpong Speu → (4h) Phum Samraong
8. concession area: 262km²
9. type of license: MOU → exploration
10. current state of the concession: 3 years past after exploration started. Currently drilling (30 to 60m long) is being conducted after surface survey (no data on number and total length).
Operation is done for 6 months during the dry season.
11. target: analyzed results of sample: Au(0.04-1.3g/t), Cu(0.1%), Pb(2-14%), Ag(45-329g/t) and Zn(3-14%)
12. last production: none
13. mining method: shallow part by open pit and deep part by underground method
14. development depth: unknown
15. mining machines: not studied yet (using 3 leased Chinese drilling machines for exploration)
16. processing method: not studied yet
17. processing method: not studied yet
18. last sales: none
19. past operation cost: totally A\$200,000
20. last profit: none
21. organization: 2 departments (engineering and office work) under the president
22. current employees: 30 including 10 Chinese geological engineers and 4 employees for office work jointly for brocks and show business. Geological survey is conducted by Chinese who submits sometimes geological report.
23. monthly salary: US\$ 300 for Chinese and US\$ 70 to 100 for Cambodians.
24. training for employees: by OJT for sampling and geological survey by Chinese.
25. exploitation by illegal miners: none (historically no illegal miners)
26. last accidents: none
27. current environmental issues: none
28. special consideration for environment: already submitted EIA to MOE
29. production schedule: It is expected to start within 2 years.
30. current issues: the remote place, and 5km far from the nearest village. It takes time for analyzing samples (7 to 10 days are necessary for analysis in Vietnam). Hard financially.
31. request for GDMR: They need a laboratory in Cambodia to save time and money. GDMR must help to construct a national laboratory.

10. Gold Metal Group

Interviewee: Jean Fellipe (President)

Interviewer: K. Shingu, Samphors (interpreter), two officials of DMRD

Date: 14:30 to 16:00 in Oct. 23 (Thu.), 2008

Place: President's office in GMG

1. Gold Metal Group Co. Ltd.
2. exploration
3. nationality: Cambodia
4. capital: US\$ 5 million
5. holding concessions: 2
6. as shown in Table
7. Phnom Penh → Kanpong Chang → Snoul → (3h) sites
8. Concession areas: 158km² and 204km²
9. type of license: MOU → exploration
10. current state of the concession: Currently exploration is conducted in 2 concessions jointly with Bateman, Australian company. Both companies paid US\$ 5 million for exploration. Surface surveys in both concessions were begun in 2006, and drilling was started in 2008 (plan: 300 holes and 200 holes completed). Exploration is conducted during the dry season (Dec. to May) due to malaria in the rainy season.
11. target: gold (analyzed grade: 15 to 20g/tAu)
12. last production: none
13. mining method: not studied yet
14. development depth: unknown
15. mining machines: not studied yet
16. processing method: not studied yet
17. processing machines: not studied yet
18. last sales: none
19. last production cost: none
20. last profit: none
21. organization: department (office work and engineering) under the president, and supporting staff of Bateman helps them.
22. current employees: 7 (5 Cambodians and 2 Vietnamese). 10 to 30 temporary employees (Cambodians and Vietnamese) in engineering dept. Full time staff are only 5 Cambodians. Vietnamese are employed only in the dry season.
23. average salary: US\$ 200/month for Vietnamese, and US\$10/day for Cambodians.
24. training system: none
25. illegal miners: about 400 in #28 before license, no miners in #27 by control of MOE.
26. last accidents: none
27. current environmental issues and special consideration to environment: none
28. production schedule: not studied yet, and it is consulted with Bateman after exploration.
29. current problem: transportation
30. request for GDMR: speedy procedures, because each procedure takes a lot of time.

11. Indochine Resources

Interviewee: David Evans Managing, Director and Jeremy Snaith, Executive Director

Interviewer: K. Shingu and K. Kumagai

Date: 14:30 to 15:40 in Oct. 24 (Fri.), 2008

Place: Reception room in Indochine Resources

1. Indochine Resources (Cambodia) Ltd. (a 100% subsidiary of Indochine Resources, Australian junior company)
2. exploration
3. nationality: Australia
4. capital: US\$50,000
5. holding concession: 14
6. as shown in Fig. (Exploration offices are located in Phnom Penh, Kratie and Bang Lung.)
7. access to the concession: Phnom Penh → (4h) Kratie → (4h) Bang Lung → sites
8. concession area: each concession have 200km².
9. type of license: MOU → exploration
10. current state of the concession: first stage geological survey to make geological maps. Samples were collected more than 10,000. Two to three drilling machines are purchased in the near future to start drilling surveys.
11. targets: gold and base metals. Analyzed sample are Au50g/t, Cu10%, Pb20%, Zn7% and Fe65%.
12. last production: none
13. mining method: maybe by open pit in shallow part and by underground in deep part
14. development depth: unknown
15. mining machines: not studied yet
16. processing method: not studied yet
17. processing machines: not studied yet
18. last sales: none
19. last production cost: none
20. last profit: none
21. organization data: not given
22. current employees data: not given
23. average salary data: not given
24. training: 1 day training in the office and then OJT at the fields
25. exploitation by illegal miners: none in the northern areas, but about 50 illegal miners are exploiting gold and gems in Kampong Thom and Kratie provinces.
26. last accidents: none
27. current environmental issues: Inspection by MOE is very severe because it is located in the national park. 70 guardians of the protected area work always in the site. Operation is conducted by indication of MOE. Salaries of guardians are paid by the company.
28. special consideration to safety: implemented by Australian safety regulation.
29. production schedule: Production is expected to start within 2 years.
30. current issues: There is technical problems in sampling.
31. request for GDMR: Custom clearance procedure for importing exploration machines takes a lot of time. They hope GDMR to help speedy clearance.

12. Kenertec

Interviewee: Choi Jeoung Ho, Director, Kang In-Wook, Advisor, Choup Sokuntheara, Manager of geology, and Choi Go Ho, Engineer

Interviewer: K. Shingu, an official of DOG (Choup Sokuntheare)

Date: 14:30 to 15:30 in Sep. 19 (Fri.), 2008

Place: President office in Kenertec Resources

1. Kenertec Resources Co., Ltd.
2. mineral exploration, mining, biomass, generator
3. Nationality: Korea
4. capital: US\$3million
5. holding concession: 8 and 4 under application
6. Thalabairivat District in Stung Treng Province, Chhaeb District in Preah Vihear Province, and others
7. Kampong Thom City → Phnum Deik → Rovieng Cheung
8. concession areas: 55km², 160km², 214m², 93km², 168km², 212km², 96km² and 398km²
9. type of license: exploration and exploitation
10. current state of the concessions: A, C and E (reconnaissance), B, D, E, F and G(nothing)
11. target: iron, copper, gold (as by-product)
12. last production: none
13. mining method: open pit
14. development depth: 40m to 50m beneath the surface
15. mining machines: they bought used Chinese generator, dump-trucks (10t), drill machines
16. processing methods: not studied yet
17. processing machines: not studied yet
18. last sales: invested US\$ 1mln. in biomass and generator
19. last cost: US\$ 100,000
20. none
21. organization: mineral development, biomass and generator
22. current employees: 129 (5 Koreans and 120 Cambodians), but only 4 geologists and 16 workers in mineral development, and others in biomass and other.
23. average monthly salary: US\$100
24. training system: they have 3 month training system.
25. there is no illegal miner.
26. last accident: none
27. current environmental issues: none
28. special consideration to safety: provision of protective equipment
29. production schedule: within 5 years
30. current issues: no experienced mining engineers, workers, no road, UXBs and landmines
31. request for GDMR: construction of roads, clearance of UXBs and landmines

13. Kingdom Resources

Interviewee: Stephen J. Brideges, President

Interviewer: K. Shingu, Kong Bun Huk (interpreter)

Date: 14:30 to 15:30 in Nov. 5 (Wed.) in 2008

Place: President's office in Kingdom Resources

1. Kingdom Resources Co. Ltd. (a subsidiary of Singaporean junior, QRP' JV, they have a coal company called Kingdom Mining)
2. exploration
3. nationality: Singapore (English company 50% and Australian company 50%)
4. capital: US\$ 500,000 (invested by Singapore 60% and Cambodia 40%)
5. holding concession: 2 (1 attained in Mar, 2008, and another in stage of MOU)
6. location: EL as shown in Table, MOU is located in its north
7. access: Phnom Penh → (3.5h) Kampong Tong → (4h) site
8. concession area: 200km², 200km²
9. type of license: MOU → exploration, another is under MOU.
10. current state of the concession: surface survey, 1,000 samples, 15m² trenches, 10 pits (6m)
11. target: iron (40%Fe), copper (0.5%Cu) and bauxite (25%)
12. last production: none
13. mining method: not studied yet
14. development depth: unknown
15. mining machines: not studied yet
16. processing method: not studied yet
17. processing machines: not studied yet
18. last sales: none
19. past cost: no answer
20. last profit: none
21. organization: 3 directors under a president, a Cambodian manager under director, and workers. 7 managers' assisting subcontractors (geologist, mining engineer, mine accountant, etc.)
22. current employee: 7 (1 Englishman and 6 Cambodians), subcontractors (4 Filipinos, 1 English, 1 American, 1 Australian)
23. average monthly salary: US\$ 900 for manager, and US\$ 350 for local staff
24. training system: OJT (trained by subcontracted engineers)
25. illegal miners: none
26. last accident: none
27. current environment: none
28. special consideration: relationship with neighbors of the concession providing food, fuel, medicines, water, and houses.
29. production schedule: within 2 to 3 years
30. current issue: none except cash management
31. request for GDMR: 1) speedy procedures for permission, MOU, etc. 2) no transparency in agreement

14. Liang Heng Investment

Interviewee: Theang Chhoeung Deputy President, Saphun Sothea Administration Manager

Interviewer: K. Shingu, Randy (interpreter)

Date: 15:00 to 16:30 in June 2 (Wed.), 2009

Place: Meeting room in Liang Heng Investment

1. Liang Heng Investment Co., Ltd.
2. exploration of iron ore and also managing exporting seafood and property companies.
3. Cambodia
4. US\$ 1 million
5. 1 concession
6. Lum Chor area Borkeo and Oyada county Rottanakiri province
7. Phom Penh → Stung Treng (5h by Route 7) → Ban Lung (2h by Route 78) → 4km (by walk)
8. 154km²
9. attained license of exploration in 2008 June.
10. The Vietnamese survey company implemented reconnaissance and geophysical exploration for a week in 2008 August under cooperation with the Vietnamese steel company, Ha Tinh to estimate potential ore reserve and ore grade for pre-feasibility study. Site operation is possible during Nov. to March. Hard to access to the site during Apr. to Oct. Constructed a cottage for site operation.
11. potential ore reserve (main mineral: magnetite): 1,430,000 t (probable grade: 60%Fe)
12. last production: none
13. mining method: open pit
14. development depth: unknown
15. mining machines: 14 dump trucks, 4 excavators, 4 tyre-loaders, 5 cars, 5 vibrators, 2 pumps and 3 generators
16. processing method: magnetic separation
17. processing machines: crushers, ball mills, magnetic separators, hydro-extractors
18. last sale: none
19. last cost: none
20. last profit: none
21. organization: currently managed only by the deputy president. 10 supporting staff in the site.
22. number of employees: 11
23. average salary of employees: monthly US\$ 100 for Cambodian employees, and paid by contract to the Vietnamese survey company
24. training system for the new employees: none
25. illegal miners: 10 to 20 miners in the rainy season and 2 to 3 miners in the dry season for gem around the concession
26. last accident: none
27. current environmental issues: none
28. consideration to safety and environment: none
29. probable production scale: yearly 500,000 t
30. current issues: The company prepared a pre-feasibility study with the Vietnamese steel company to export the intermediate product of Fe₂O₃ (possibly magnetite concentrates), but the GDMR didn't permit it due to the exploration agreement. Therefore, the project is pending.
31. request to GDMR: The company asks the GDMR to permit to export the intermediate product.

15. Liberty Mining International

Interviewee: Richard Stanger (President) and Lim Sokharasmey (Manager)

Interviewer: K. Shingu, K. Kumagai, an official of DMR

Date: 14:30 to 16:00 in Oct. 21 (Tue.), 2008

Place: President's office in Liberty Mining

1. Liberty Mining International Pty (a subsidiary of Australian junior, Transol Corporation)
2. exploration
3. nationality: Australia
4. capital: A\$ 5 million
5. holding concession: 7 (18 & 20 were attained in 2004, 52 in 2007 and 83, 84, 89, 90 in 2008)
6. as shown in Table
7. 20: Ban Lung → site (10h from Phnom Penh)
84, 83 and 90: Phnom Penh → (2h) Kongpong Thom → (5h) Chhaeb → (0.5h by bike) site
18 & 86: Ban Lung → (0.5h) site (7h from Phnom Penh)
89: 1.5h by helicopter
52: Phnom Penh → (7h) Oddar Mean Chey → (1h) site
8. Concessions area: 300km², 215km², 240m², 364km², 227m², 328m², 62m², 210m²
9. type of license: MOU → exploration
10. current state of the concession: 20: air-bone, soil and rock sampling, trenching, auger drilling (6m deep), diamond drilling (150m deep). 83, 84 and 90: surface survey, sampling. 18 and 86: same as 20. 89: geological mapping. 52: satellite analyses, soil/soil sampling, trenching and auger drilling
11. target: 20: mainly gold and Cu, Zn and Pb as by products. 83, 84 and 90: Mn, Fe and Cu. 18 & 86: mainly gold and Cu and Zn as by products. 89: gold. 52: mainly gold with Cu
12. last production, sale & profit: none
13. mining & processing method: not studies yet
14. development depth: unknown
15. mining \$ processing machines: not studied yet
16. total cost for last 3.5 years: A\$ 5 million
17. organization: departments of geology and operation (transportation and office)
18. current employees: 30 (4 Australians and 26 Cambodians) and also 15 full-timers, 15 temporary workers. Additionally subcontracted with geographical exploration, drilling and clearance of UXBs and landmines with large variety of salaries
19. training system: they have special training for sampling and geological survey.
20. illegal miners: 20: more than 1,000 (10 guardians). 82: unknown (20 guardians). 52: more than 1,000. 18 & 86: more than 1,000.
21. last accident: none for 3.5 years
22. current environmental issue: none
23. special consideration to environment: avoiding cutting large trees for geological survey.
24. production schedule: within 3 to 5 years
25. current issues and request for GDMR: nothing special

16. Maxum Metals

Interviewee: Richard Stanger (President), Lim Sokharasmey (Manager)

Interviewer: K. Shingu, K. Kumagai, an official of DMR

Date: 14:30 to 16:00 in Oct. 21 (Tue.), 2008

Pace: President office in Liberty Mining

1. Maxum Metals Pty Ltd. (a subsidiary of Australian junior, Transol Corporation. Same as Liberty Mining)
2. exploration
3. nationality: Australia
4. capital: A\$ 200,000
5. holding concession: 3 (attained in 2008)
6. same as Table
7. Phnom Penh → (10h) Mondulkiri → (1h) site
8. Concession area: 295km², 253km², 275m²
9. type of license: MOU → exploration
10. current state of the concession: satellite images analysis and basic geological survey
11. target: bauxite
12. last production: none
13. mining method: not studied yet
14. development depth: unknown
15. mining machines: not studied yet
16. processing method: not studied yet
17. processing machine: not studied yet
18. last sale: none
19. last cost: A\$ 200,000
20. last profit: none
21. organization: same stuff (geology and operation) as the Liberty Mining
22. current employee: 30 (same as Liberty Mining)
23. average salary: large varieties
24. training system: same as Liberty Mining
25. illegal miners: none
26. last accident: none
27. current environmental issues: none
28. special consideration for environment: none special
29. production schedule: not studied yet
30. current issues: none except financial problems
31. request for GDMR: none special

17. OZ Minerals (former Oxiana)

Interviewee: Mick Sharry geological manager, Graham Moir transportation manager

Interviewer: K. Shingu, an official of DMR (Sam Sidara)

Date: 9:30 to 11:00 in Sep. 22 (Mon.), 2008

Place: Office in ZO Minerals

1. OZ Minerals Ltd.
2. exploration
3. nationality: Australia
4. capital: A\$ 5,000, and OZ 80% and Shin Ha 20% for JV of OZ and Shin Ha
5. holding concession: 4
6. as shown in picture
7. Snuol City → site (4 to 12 h in the dry season because there is no road.)
8. concession area: 55km², 55km², 55m², 55km²
9. type of license: MOU → exploration
10. current state of the concession: A, C and E: reconnaissance. B, D, E, F and G: none
11. target: mainly gold with Cu
12. last production: none
13. mining method: not studied yet
14. development depth: 15m to 20m beneath the surface
15. mining machine: not studied yet
16. processing method: not studied yet
17. processing machine: not studied yet
18. last sale: none
19. total cost for past 2.5 years: A\$ 6 million
20. none
21. organization: geology, administration and transportation
22. employee: 36 (4 Australians, 26 Cambodians, a Indonesian, 4 Laotians, 2 Thais) additionally 25 fulltime employees at site, and 10 to 40 temporary employees.
23. monthly average salary: A\$ 100 to 1,000(2 人) for Cambodian
24. training system: they have 2 to 3 days training system according to necessity.
25. illegal miner: none
26. last accidents: 1 man sick leave
27. current environmental issue: none
28. special consideration to safety and environment: they are taught in training.
29. production schedule: not studied yet
30. current issue: 1) no geological data, 2) bad access to the sites, 3) expensive for clearance of UXBs (more than A\$ 100,000), 4) health problem (malaria in the rainy season), 5) easy thinking on mines
31. request for GDMR: they need some assistances for problem mentioned above. They need some investor's incentives. Exploration contract is not global standard. There id no security for concession tenure.

18. Ratanak Kenertec

Interviewee: Choi Jeoung Ho (Director), Kang In-Wook (Adviser), Choup Sokuntheara (Geological manager), Choi Go Ho (Engineer)

Interviewer: K. Shingu, an official of DOG (Choup Sokuntheare)

Date: 14:30 to 15:30 in Sep. 19 (Thu.), 2008

Place: President's office of Kenertec Resources

1. Ratanak Kenertec Resources Co., Ltd.
2. mineral exploration, mining, biomass, generator
3. nationality: Korea (85%) and Cambodia (15%)
4. capital: US\$200,000
5. holding concession: 1 (2 different concessions)
6. Thmar District, Preah Vihear Province
7. Kampong Thom City → Phnum Deik → Rovieng Cheung
8. concession area: 34km²
9. type of license: exploration and exploitation
10. current state of the concession: total length of drilling is 1,700m.
11. target: iron (70%Fe)
12. none
13. mining method: open pit
14. development depth: 40m to 50m beneath the surface
15. mining machine: none
16. processing method: not studied yet
17. processing machine: not studied yet
18. last sale: none
19. cost in the last year: IS\$ 200,000
20. none
21. organization: exploration for iron mine
22. current employee: 20 (Cambodians)
23. average monthly salary: US\$ 100
24. training system: they have a 3 month training course.
25. illegal miners: none
26. last accident: none
27. current environmental issues: none
28. special consideration for safety: provision with protection equipment
29. production schedule: within 5 years
30. current issues: experienced mining engineers, workers, no road, many UXBs/landmines
31. request for GDMR: construction of roads, clearance of UXBs/landmines

19. Sinh Yi

Interviewee: H.E.Chea Thory Advisor (The team couldn't meet the key person of the company because he went to China.)

Interviewer: K. Shingu, Randy (interpreter)

Date: 15:30 to 16:30 in June 1 (Mon.) 2009

Place: A meeting room in Cambodia Tonle Sap International

1. Sinh Yi Co., Ltd.
2. exploration of gold ore
3. Cambodia, but currently under negotiation with the Cambodia Tonle Sap (China) on its transfer
4. capital: unknown
5. 1 concession
6. Tangyou area in Chung Plas commune, Keo Seima county, Mondliri province
7. Phom Penh → Kangpong Cham → Snoul → enter into the bad road 24km before Kratie
8. 56.53km²
9. attained license of exploration in 2008 March
10. The site operation is possible during Dec. to Apr. No exploration activity yet owing to transfer negotiation with Cambodia Tonle Sap
11. ore reserve: unknown
12. last production: none
13. mining method: unknown
14. development depth: unknown
15. mining machines: unknown
16. processing method: unknown
17. processing machines: unknown
18. last sale: none
19. last cost: none
20. last profit: none
21. organization: unknown
22. No. of employees: 2 staff and 7 workers belonged to Cambodia Tonle Sap and 5 guards (province soldiers)
23. average salary: unknown
24. training system: unknown
25. illegal miners: max. 1,000 miners working around the concession in the dry season.
26. last accident: none
27. current environmental issues: none
28. consideration to safety and environment: none
29. probable production scale: unknown
30. current issue: the concession is partially overlapped with the agricultural concession of other company.
31. request to GDMR: they want GDMR to help to solve the above-mentioned problem.

20. Sino Sun

Interviewee: San A. Ourum deputy president, Zhang Yong local representative assistant

Interviewer: K. Shingu, Samphors (interpreter), an official of DOG

Date: 14:00 to 15:20 in Sep.18 (Thu.), 2008

Place: Reception room in Sino Sun

1. Sino Sun Mineral Resources Co., Ltd.
2. natural mineral resources, including gold, silver and copper in particular.
3. nationality: China (75%), Cambodia (25%)
4. capital: US\$ 2million
5. holding concession: 1
6. Memot District, Kampong Cham Province
7. 0.5h from Kampong Cham City (3.5h from Phnom Penh)
8. concession area: 112km²
9. type of license: After procedures was finished in 2007 July, they have license of exploitation.
10. current state of the concession: Development work has been in progress, but stopped in the rainy season.
11. ore reserve: 12 million tons with average grade of 15g/t Au
12. Production: They produced 30 to 50,000t during preparation work, and stored them.
13. mining method: 3 open pits and 2 underground mines (inclines drifts with rails to transport mined ore).
14. development depth: 65m to 200m beneath the surface
15. mining machines: bulldozers, dump trucks, hand drills for open pit, unknown for U/G
16. processing method: magnetic cyclone method (gravity separation?)
17. processing machines: They do not use mercury nor cyan. They will buy a crusher next year.
18. last sale: US\$ 40 million in China
19. total cost for development: US\$10million including the last year and this year
20. none
21. organization: Wei Changhui president, Sam A. Ourm deputy president, Yong D. Wethington (Korean American: former Sun Trading president)
22. current employee: 130 (110 Chinese, 20 Cambodians) Cambodian workers will be increased in the future if they have skills. 13 technicians. No subcontractor except preparation of FS.
23. average monthly salary: US\$ 1,000 to 2,000 for Chinese, US\$100 to 250 for Cambodians
24. training system: currently no, but they will prepare it.
25. illegal miners: none
26. last accident: none
27. current environmental issue: none
28. special consideration to safety: provision of protective equipment
29. production scale: 300t/day → 500t/day in the future
30. current issue: none
31. request for GDMR: none
32. others: no problem for site visiting

21. Sophorn Theary Peanich

Interviewee: Siek Sopheak, President

Interviewer: K. Shingu, Kong Bun Hak (interpreter)

Date: 9:30 to 10:15 in Oct. 27 (Mon.), 2008

Palace: JICA team office in GDMR

1. Sophorn Theary Peanich
2. rubber, exploration
3. nationality: Cambodia
4. capital: US\$ 2 million
5. holding concession: 1
6. as shown in Table
7. access to the concession
8. Phnom Penh → (3.5h) Dam Daek → (1.5h) Svay Leu → site
9. concession area: 57km²
10. type of license: the company has agreement with GDMR to have exploration right.
11. current state of the concession: They conducted 7 drilling holes (70m long) based on an Australian geologist. Currently, they stop operation owing to international conflict with Thailand for the World Heritage Issue.
12. target: gold, they found gold with grade of 13g/t by drilling.
13. last production: none
14. mining method: not studied yet
15. development depth: unknown
16. mining machine: not studied yet
17. processing method: not studied yet
18. processing machine: not studied yet
19. last sale: none
20. total past cost: A\$200,000
21. last profit: none
22. organization of the company: 2 departments (rubber and mine)
23. current employees: 30 employees who work for rubber production. They have a subcontractor (5 workers) for drilling.
24. average salary for mining workers: unknown because they are subcontractors.
25. training system: unknown because they are subcontractors.
26. illegal miners: none
27. last accident: none
28. current environmental issues: none
29. special consideration to safety and environment: none
30. production schedule: they start production within this year if they grasp ore deposit.
31. current issue: they don't have no mining expert
32. request for GDMR: none

22. Sorn Vatanak

Interviewee: Lim Tang, President and his secretary

Interviewer: K. Shingu, Kong Bun Huk (interpreter)

Date: 14:30 to 15:30 in Nov. 7 (Fri.), 2008

Place: Office in Sorn Vatanak

1. Sorn Vatanak Co. Ltd.
2. exploration
3. nationality: Australia and Cambodia
4. capital: US\$ 1 million (share: Australia 80% and Cambodia 20%)
5. holding concession: 1
6. as shown in Table
7. Phnom Penh → (5h) Siem Reap → (3h) Anlong Veang → (1h) site
8. concession area: 164km²
9. type of license: They attained exploration directly after agreement in June, 2008.
10. current state of the concession: There is no exploration activities yet. 2 Australian geologists will come to Cambodia in the dry season. Currently, they prepare it. Their budget for exploration is US\$ 2 million for 2 years.
11. targets: Fe and Pb according to analyses of samples.
12. last sale: none
13. mining method: not studied yet
14. development depth: unknown
15. mining machine: not studied yet
16. processing method: not studied yet
17. processing machine: not studied yet
18. last sale: none
19. past cost: none
20. last profit: none
21. organization: none except a president and a secretary. They employ 5 villagers for mowing grass. If they found some potential after first exploration, they make an organization.
22. employee: 2 (president and secretary)
23. average wage: US\$10/ day for mowing grass
24. training system: none
25. illegal miner: none
26. last accident: none
27. current environmental issue: none
28. special consideration to safety and environment: none
29. production schedule: they determine to continue exploration or not within 2 years.
30. current issue: none
31. request for GDMR: none

23. Southern Gold (Cambodia)

Interviewee: Brendan Rasmussen president

Interviewer: K. Shingu, an official of DMR (Chhuon Sambo)

Date: 14:30 to 16:15 in Sep. 22 (Mon.月), 2008

Place: president's office in Southern Gold (Cambodia)

1. Southern Gold (Cambodia) Ltd.
2. mineral exploration and exploitation
3. nationality: Australia (100%), but 3 concessions are supported financially by JOGMEC (Japanese governmental organization).
4. capital: 4 million Cambodian Riel (US\$ 1 million)
5. holding concession: 7
6. location of concessions: 2 (in Mondulakiri), 4 (in Kratie) and 1 (in Rottanakiri)
7. access to the concession: 4: 45 minutes to 4 hours from Snoul, 3: 1 to 8 hours from Kratie
8. total area: 1,638km²
9. type of license: 4 licenses for exploration, 3 licenses for exploration and exploitation
10. current state of the concessions: under exploration, budget for 1st year: US\$ 2.3 million, 2nd year: US\$ 2.8 million. content : surface survey → trenching → drilling
11. target: Au and nonferrous metals
12. production: none
13. mining method: not studied yet
14. development depth: unknown
15. mining machines: not studied yet
16. processing method: not studied yet
17. processing machines: not studied yet
18. last sale: none
19. past cost for exploration: US\$ 2.284 million for 1st year and US\$ 2.8 million for 2nd year
20. profit: none
21. organization: 2 departments (exploration and administration)
22. employees: (exploration) 2 Australians, 2 Filipinos, 1 English and 1 Canadian (administration) 1 Australian and 9 Cambodians
temporary employees 27 to 30 geological assistants (in the dry season), 40 employees for this year
23. average salary: US\$ 200 to 3,500 for Cambodians, US\$ 5 to 15/d for temporary employees
24. training system: first aid training for local staff, basic exploration training for temporary employees
25. illegal miners: There are 10 miners in the concessions. They are allowed to exploit without permission fees.
26. last accident: 1 accident 1 year ago
27. current environmental issue: none
28. special consideration to safety and environment; (safety) All workers are insured. They are provided by safety tools according to necessity. They use helicopter for emergency. (environment) They use rails when possible. They don't cut large trees. They move bulldozers lifting bladders.
29. production schedule: within 5 to 10 years.
30. current issues: 1) potential danger of UXBs and landmines, 2) no standard price table for foreigners, 3) no mining engineers, experienced workers, qualified persons, trading staff, and low rate of literacy in temporary employees, 4) no road to the concession, 5) no drilling subcontractors, 6) it needs much time to explain the operation to central, provincial, district, commune and villages, 7) no mutual coordination between MIME, MOE, MAFF and Custom, 8) it takes much time to clear custom, 9) complicate

procedures for concession application, 10) not clear in holding period of the concession, 11) limited cost for tax, 12) no exact procedures for license of exploration and exploitation from MOU, 13) shortage of mining experience in MIME staff who support minister, management and exploration companies, and 14) overlapped mineral concession with other concessions.

31. request for GDMR: They should realize that exploration is a driver of mining activities.
32. recommend: The company hope GDMR to study examples of other developing countries which succeeded in promoting mining.

24. Southern Mining

Interviewee: Tran Van Thanh director, Ouk Hoeun Pisey director and other 3 persons

Interviewer: K. Shingu, Kong Bun Huk (interpreter), an official of GMRD

Date: 14:30 to 16:00 in Oct. 28 (Tue.), 2008

Place: Reception office in Southern Mining

1. Southern Mining Co.
2. exploration
3. nationality: Vietnam and Cambodia
4. capital: US\$ 4 million (share V: 72.8% and C: 27.2%), A Vietnamese mother company has a mine which produces annually 200,000t with 40%Cr in Vietnam.
5. holding concession: 1
6. as shown in Table
7. Phnom Penh → (2h) Pursat → (2.5h) site
8. area: 100km²
9. type of license: MOU → exploration (2008 Feb.)
10. current state of the concession: The Cambodian company attained exploration license in 2006, and they made JV with the Vietnamese company in 2007. They started the surface survey and sampling from this year. They didn't receive analyses results of samples. Exploration work will be conducted in the dry season only (Nov. to June).
11. target: chromite (only one Cr mine in Cambodia).
12. last production: none
13. mining method: not studied yet
14. development depth: unknown
15. mining machine: not studied yet
16. processing method: not studied yet
17. processing machine: not studied yet
18. last sale: none
19. past cost: none
20. past profit: none
21. organization: 4 departments (administration, accounting & finance, engineering and mechanic) under 3 directors.
22. employees: 13 (10 Vietnamese, 3 Cambodians) and 17 Vietnamese subcontractors for surface survey
23. average salary: US\$500 for Vietnamese, US\$200 for Cambodians
24. training system: they don't need training, because they employ Vietnamese subcontractors.
25. illegal miners: none
26. last accident: none
27. current environmental issues: none
28. special consideration to safety and environment: none
29. production schedule: They intend to start produce in 2009 Dec.
30. current issue: finance, but they don't have debt.
31. request for GDMR: slow procedures for office routine.

25. Steung Treng Mineral

Interviewee: Vu Minh Thanh, President and an interpreter

Interviewer: K. Shingu, Samphors (interpreter), an official of DMRD (Sobonrithy)

Date: 9:30 to 11:00 in Oct. 23 (Thu.), 2008

Place: President's office in Steung Treng Mineral

1. Steung Treng Mineral Joint Venture Co. Ltd. (JV of Vietnamese coal company (Vinacomin): 70% and 2 Cambodian companies: 30%)
2. exploration: (they intend to exploit and process in the future)
3. nationality: Vietnam
4. capital: US\$ 5 million
5. holding concessions: 2 (in 3 locations)
6. code 618 : Anlong Chrey, Thalaborivatt District, Stung Treng Province
code 619 : Anlong Sei, Thalaborivatt District, Stung Treng Province
7. Phnom Penh → (2h) Kanpoing Cham → (3h) Kratie → (1.5h) Stung Treng → (0.5h) by Boat → (5h) by bike to the site
8. area: 90km² plus 42km² (619), and 18km² (618)
9. type of concession: MOU → exploration
10. current state of the concession: 100 trenches (5-7m long, 0.8-1.0m wide, 6-8m deep) and they will buy 10 to 15 drilling machines to start drilling in 1 month later.
11. target: Fe
12. last production: none
13. mining method: not studied yet
14. development depth: unknown
15. mining machine: they use easy hand tools for trenching.
16. processing method: not studied yet
17. processing machine: not studied yet
18. last sale: none
19. last production cost: none
20. last profit: none
21. organization: 5 Vietnamese directors, and 3 departments (administration, finance and engineering) under them.
22. current employees: 19 (13 Vietnamese and 6 Cambodians), and 30 to 300 Vietnamese workers in an exploration subcontractor beneath the engineering department
23. average monthly salary: US\$ 120 for Cambodians
24. training system: They instruct office and safety regulations. They give some instruction for exploration employees, but Vietnamese are experienced workers.
25. illegal miners: none
26. last accident: none
27. current environmental issues: none
28. special consideration to safety: they adopt Vietnamese safety regulation for Vietnamese workers.
29. production schedule: it depends on exploration results, and they will comply with the Cambodian permission.
30. current issue: none
31. request to GDMR: slow procedures such as changing company name

26. Summer Gold

Interviewee: Jonathan Remta, President, and Chea Chenda, Secretary

Interviewer: K. Shingu, Kong Bun Huk (interpreter)

Date: 14:30 to 15:30 in Nov. 4 (Tue.), 2008

Place: President's office in Summer Gold

1. Summer Gold Investment Private Co.
2. exploration for gold and nonferrous metals
3. nationality: Australia
4. capital: US\$ 1 million
5. holding concession: 2
6. location: one as shown in Table, and another is located in Kang Rolang, Bor Koe District, Monduliri province
7. access: Phnom Penh → (7h) Ou Pont Noan → (1.5h) Ban Lung → (1.5h) site
Phnom Penh → (5h) Kratie → (2h) site
8. area: 133km²
9. type of license: MOU → exploration (Nov. 2006), another exploration license was attained in Mar. 2008
10. current state of the concession: one: rock and soil sampling, 25 trenches (1,500m) and physical exploration will be done in end of 2008. another: surface survey will be done from end of 2008, and in next year trenching and drilling will be done.
11. target: gold (soil: 0.1-0.7g/t and rock: 9g/t to 38g/t)
12. last production: none
13. mining (processing) method & machine : not studied yet
14. development depth: unknown
15. last sale: none
16. past cost: no data
17. last profit: none
18. organization: 2 departments (administration and geology) under 2 directors. Dep. of Geology employs 2 geologists, 2 mining engineers and 12 to 14 temporary workers, as well as an Australian consultant.
19. current employees: 9 full-timers (4 Australians) and 12 to 14 temporary workers
20. average monthly salary: US\$150 to 1,200 for Cambodians (more expensive in dry season).
21. training system: They have a 3-month training course (for GPS, PC, sampling, mapping, trenching, gridlines).
22. illegal miners: About 250 miners used to exploit and process ore with cyanidation and mercury before attaining license. Currently number decreased to 80 to 120, operating without dangerous materials. Another: 10 to 20 miners in the rainy season, but it may increase to 50 miners in the dry season.
23. last accident: none
24. current environmental issues: none
25. special consideration to environment: none
26. production schedule: one: within 2 years, another: within 3 to 4 years.
27. current issues: currently none, but they had problem of qualified workers.
28. request to GDMR: late procedures in agreement and license. Corruptions are sometimes demanded. There are no qualified workers in Cambodia. There are sometimes misunderstands caused by difference of culture and language.

27. Sun International Investment

Interviewee: Zhang Ling Feng president and interpreter (Chinese to Cambodian)

Interviewer: K. Shingu, Randy (Cambodian to English)

Date: 15:00 to 17:00 in May 21 (Thu.) 2009

Place: A meeting room in Sun International Investment

1. Sun International Investment Co., Ltd.
2. gold exploration
3. China
4. US\$ 2 million
5. 3 concessions (A, B and C)
6. Prek Kaeng and Antrang areas, Pechtr county, Mondulkiri province
7. Phom Penh → Kratie (5h) → site by no road (8h, but full day when lost way in the dry season, 2 to 3 days in the rainy season)
8. areas: 146km²(A), 58.5km²(B), 11km²(C)
9. attained exploration license in 2008 Feb.
10. A: excavated 1 exploration well (1.2mφ, 6m deep) and discovered 1 vein with of less than 2g/t, B: excavated 32 wells (1.2-1.5mφ, max. depth 12m), discovered 3 veins with 1.5 to 50 g/t and analyzed 58 samples in China, C: not explored yet. Exploration work implementing during Jan. to Mar.
11. ore reserve: unknown
12. last production: none
13. mining method: unknown
14. development depth: less than 12m in A and 6m in B from the surface due to ground water.
15. mining machine: unknown
16. processing method: unknown
17. processing machines: unknown
18. last sale: none
19. last cost: none
20. last profit: none
21. organization: president, deputy president, accounting and administration mangers in Phnom Penh, and 6 Chinese geologists (stayed for 2 weeks) and 50 Chinese workers in exploration period (Jan to Mar.).
22. No. of employees: 4 staff (all the year) and max. 60 people in the exploration period.
23. average salary: US\$ 500 to 800 for Chinese geologists
24. training system for new comers: none
25. illegal miners: some illegal miners are working all the year with gun around the concession.
26. last accident: none
27. current environmental issues: none
28. consideration to safety and environment: none
29. probable production scale: unknown
30. current issues: a) Chinese geologists' salary is very high, but they are old. b) there is no road to transport machines and materials, c) procedures to import machines are complicated and take much time. d) procedures to send samples to China are complicated.
31. request to GDMR: none especially

28. Titan Mineral Group

Interviewee: Khoun Phala Representative

Interviewer: K. Shingu, Randy (interpreter)

Date: 17:00 to 17:30 in June 3 (Wed.) 2009

Place: A meeting room in Cambo Cana Kiri Development

1. Titan Mineral Group Co., Ltd.
2. exploration of iron and copper ore
3. Cambodia
4. US\$ 12,500
5. 1 concession
6. Anlung Phe area, Thalabarivat county, Stung Treng province
7. Phom Penh → Stung Treng(8h by Route 47) → Anlung Chrey(1h by provincial road) → 2h by motorbike
8. 204km²
9. attained exploration license in 2008 August
10. Site operation is possible during Jan. to May. Contracted with 2 Vietnamese geologists who visit the site 3 times a year and stay 10 days per visit. They completed geological survey about 20% of the concession. Currently excavated 11 trenches (2mL×1mW×1mD).
11. ore reserve: unknown
12. last production: none
13. mining method: unknown
14. development depth: unknown
15. mining machines: unknown
16. processing method: unknown
17. processing machines: unknown
18. last sale: none
19. last cost: none
20. last profit: none
21. organization: president, deputy president and 8 staff for administration, accounting, engineering, advisors, drivers. And also 12 employees in the site.
22. current no. of employees: 20
23. average monthly salary of employees: US\$ 600 for Vietnamese geologists, US\$250 for Cambodians in Phnom Penh and US\$100 for Cambodians in the site.
24. training system for freshmen: none
25. illegal miners: none
26. last accident: none
27. current environmental issues: none
28. consideration to safety and environment: none
29. production scale: unknown
30. current issues: malaria (so far 4 patients)
31. request to GDMR: none

29. Transol Mining

Interviewee: Richard Stanger, President, and Lim Sokharasmey, Operation manager

Interviewer: K. Shingu, K. Kumagai, an official of DMR

Data: 14:30 to 16:00 in Oct. 21 (Tue.), 2008

Place: president's office in Liberty Mining

1. Transol Mining and Exploration Co. Pty Ltd. (a 100% subsidiary of Australian junior, Transol Corporation, and it's a same company as Liberty Mining)
2. exploration
3. nationality: Australia
4. capital: A\$ 200,000
5. holding concession: 2 (66 was attained in 2006, and 86 was attained in 2008.)
6. as shown in Table
7. Phnom Penh → (7h) Ban Lung → (3h) site
8. area: 208km², 247km²
9. type of license: MOU → exploration
10. current state of the concession: 66: airborne, IP exploration, sampling, geological mapping,
85: geological mapping, geological survey
11. target: gold
12. last production: none
13. mining method: not studied yet
14. development depth: unknown
15. mining machine: not studied yet
16. processing method: not studied yet
17. processing machine: not studied yet
18. last sale: none
19. past cost: A\$ 200,000
20. last profit: none
21. organization: 2 department (geology and operation) with same staff as Liberty Mining.
22. current employee: 30 (4 Australians and 26 Cambodians). They employ 15 full-timer, and 15 temporary workers in the site. Also, they employ subcontractors for physical exploration, drilling and clearing UXBs which are same as Liberty Mining.
23. average salary: large deviation
24. training system: training for sampling and basic geological survey
25. illegal miner: none
26. last accident: none
27. current environmental issue: none
28. special environmental consideration: no cutting large trees during the geological survey.
29. production schedule: not studied yet
30. current issue: no problem except financial issues
31. request for GDMR: none

30. TSSM Group

Interviewee: Dach Chani Representative

Interviewer: K. Shingu, Randy (interpreter)

Date: 16:00 to 17:00 in June 3 (Wed.) 2009

Place: A meeting room in Cambo Cana Kiri Development

1. TSSM Group Co., Ltd.
2. exploration of lead ore
3. Cambodia
4. US\$ 5,000
5. 1 concession
6. Prek Kring and Antrong areas, Pechreada county, Mondulkiri province
7. Phnom Penh → Kampong Speu(1.5h by Route 47) → Phnom Bangkieb(1.5h by Route 44)
8. 252km²
9. attained exploration license in 2008 August.
10. Operation is possible during Jan. to May. Constructed a exploration cottage in the site. Contracted 3 Vietnamese geologists who visit the site 5 times a year, and stay a week a visit. Completed geological survey about 15% of the concession. Currently excavated 8 trenches (2mL×1mW×1mD).
11. ore reserve: unknown
12. last production: none
13. mining method: unknown
14. development depth: unknown
15. mining machines: unknown
16. processing method: unknown
17. processing machines: unknown
18. last sale: none
19. last cost: none
20. last profit: none
21. organization: president, deputy president and 8 staff for administration, accounting, engineering, advisors and drivers. And also 12 employees in the site.
22. total no. employees: 20
23. average monthly salary of employees: US\$ 600 for Vietnamese geologists, US\$ 250 for Cambodians in Phnom Penh and US\$ 100 for Cambodians in the site
24. training system: none
25. illegal miners: none
26. last accident: none
27. current environmental issues: none
28. consideration to safety and environment: none
29. probable production scale: unknown
30. current issues: none
31. request to GDMR: none

31. Xing Yuan Kanng Yeak

Interviewee: Ungkungkea Deputy President

Interviewer: K. Shingu, Randy (interpreter)

Date: 9:00 to 10:30 in May 23 (Sat.) 2009

Place: JICA office in GDMR

1. Xing Yuan Kanng Yeak Co., Ltd.
2. exploration of gold ore
3. China
4. US\$ 1.9 million
5. 1 concession
6. Ou Klea Khlok area, SamborOu Klea county, Kratie province
7. Phnom Penh → Kratie (5h) → vehicle road (1h) → bad road (1.5h by motorbike)
8. 28km²
9. attained exploration license in 2008 August
10. Site operation is possible during Dec. to Apr. impossible to access to the site during May to Nov.
Constructed 2 cottages for exploration, but not explored yet.
11. ore reserve: unknown
12. last production: none
13. mining method: unknown
14. development depth: unknown
15. mining machines: unknown
16. processing method: unknown
17. processing machines: unknown
18. last sale: none
19. last cost: none
20. last profit: none
21. organization: CEO, president, 2 deputy presidents, 4 supporting staff, driver and interpreter
22. current no. employees: 10 (7 Chinese and 3 Cambodians for deputy president, driver and interpreter)
23. average monthly salary of employee: US\$ 300 to 500 for Chinese, US\$ 50 to 150 for Cambodians
24. training system: by OJT
25. illegal miners: 90 illegal miners used to work around the concession before, but currently only 10 illegal miners remain after forced exclusion of the government.
26. last accident: none
27. current environmental issues: none. Illegal miners used to use toxic materials which damaged the environment in the past. However, there is no problem now.
28. consideration to safety and environment: none
29. probable production scale: unknown
30. current issues: a) the company must pass the ELC of the Green Island (Honk Kong), and they asked the expensive toll. Currently the company submitted application to construct the new road to the local government. b) there are still operating illegal miners.
31. request to GDMR: the company asked GDMR to solve the above-mentioned problems.

32. Zhongxin Industrial Investment

Interviewee: Guo Haifeng deputy president, an interpreter

Interviewer: K. Shingu, Samphors (interpreter), an official of DOG

Date: 14:30 to 15:45 in Oct. 22 (Wed.), 2008

Place: a meeting room in Zhongxin Industrial Investment

1. Zhongxin Industrial Investment (Cambodia) (a subsidiary of a Chinese mining company)
2. exploration
3. nationality: China (JV by 4 Chinese companies)
4. capital: US\$ 10 million
5. holding concession: 1
6. as shown in Table
7. Phnom Penh → 260km (4h) Snoul → 120km (4h) Monduliri → 45km (8h by auto-bike) site
8. concession area: 20km²
9. type of license: exploration
10. current state of the concession: 2 large shafts (180m deep with face of 2.5m x 2.5m) were driven, and a horizontal drift (500m) was driven to connect them.
11. target: gold (average grade: 5 to 7g/t, width of veins: 10 to 50cm)
12. last production: none
13. mining method: not studied yet
14. development depth: unknown
15. mining machine: they use blasting for shafts and drift, using small machines.
16. processing method: not studied yet
17. processing machine: not studied yet
18. last sale: none
19. past cost: no data
20. last profit: none
21. organization:
22. current employee: 40 (28 Chinese and 12 Cambodians)
23. average monthly salary: US\$500 for Chinese and US\$100 for Cambodians
24. training system: by OJT
25. illegal miner: currently none, but there used to be 4,000 miners before attaining license.
26. last accident: A Chinese worker fall down in the shaft and was sent to the a Chinese hospital.
27. current environmental issue: none
28. special consideration for safety: none, but they don't use dangerous chemical materials.
29. production schedule: more than 2 years
30. current issue: very hard to access to the site, and expensive fuel
31. request to GDMR: help to solve the current issue mentioned above.

Appendix III-2 Principles of EITI

The Principles of EITI

The EITI Principles, agreed at the Lancaster House Conference in June 2003, provide the cornerstone of the initiative. They are:

1. We share a belief that the prudent use of natural resource wealth should be an important engine for sustainable economic growth that contributes to sustainable development and poverty reduction, but if not managed properly, can create negative economic and social impacts.
2. We affirm that management of natural resource wealth for the benefit of a country's citizens is in the domain of sovereign governments to be exercised in the interests of their national development.
3. We recognise that the benefits of resource extraction occur as revenue streams over many years and can be highly price dependent.
4. We recognise that a public understanding of government revenues and expenditure over time could help public debate and inform choice of appropriate and realistic options for sustainable development.
5. We underline the importance of transparency by governments and companies in the extractive industries and the need to enhance public financial management and accountability.
6. We recognise that achievement of greater transparency must be set in the context of respect for contracts and laws.
7. We recognise the enhanced environment for domestic and foreign direct investment that financial transparency may bring.
8. We believe in the principle and practice of accountability by government to all citizens for the stewardship of revenue streams and public expenditure.
9. We are committed to encouraging high standards of transparency and accountability in public life, government operations and in business,
10. We believe that a broadly consistent and workable approach to the disclosure of payments and revenues is required, which is simple to undertake and to use.
11. We believe that payments' disclosure in a given country should involve all extractive industry companies operating in that country.
12. In seeking solutions, we believe that all stakeholders have important and relevant contributions to make – including governments and their agencies, extractive industry companies, service companies, multilateral organisations, financial organisations, investors, and non-governmental organisations.

Appendix V-1

Summary of Mineral Deposits/ Occurrences in Cambodia

1- Metallic Minerals							
Primary Minerals	Deposit Name	Deposit No.	UNIFC	Province	Longitude	Latitude	
1-1 Iron and Ferro-Alloy Metals - 26 deposits							
Antimony (Sb)	Sre Peang	D-002	334	Pursat	E103 15	N12 21	
Chromium (Cr)	Sre Peang	D-001	334	Pursat	E103 14	N12 22	
Iron (Fe)	Phnom Penh	D-019	334	Battambang	E102 52	N12 46	
	Tani	D-025	334	Kampot	E104 40	N10 44	
	Chhep-1	D-027	334	Preah Vihear	E105 23	N13 33	
	Chhep-2	D-028	334	Preah Vihear	E105 22	N13 47	
	Phnom Prolean	D-029	334	Preah Vihear	E105 03	N13 19	
	Koh Keo	D-030	334	Preah Vihear	E105 11	N13 28	
	Authmor Sreal	D-031	334	Preah Vihear	E105 03	N13 23	
	Phnom Kbol	D-032	334	Preah Vihear	E105 14	N13 35	
	Phnom Deck-1	D-033	333	Preah Vihear	E105 03	N13 14	
	Phnom Deck-2	D-034	334	Preah Vihear	E105 03	N13 19	
	Phnom Rumdek	D-020	334	Odar Mean Chey	E103 50	N14 05	
	Phnom Kbal Stung	D-021	334	Siem Reap	E104 19	N13 35	
	Phnom Pours	D-116	334	Siem Reap	E104 36	N13 30	
	Stung Treng	D-022	334	Stung Treng	E105 54	N13 31	
	Anlong Chey	D-023	334	Stung Treng	E105 40	N13 38	
	Sam Ang	D-024	334	Stung Treng	E105 53	N13 38	
	Chrang	D-026	334	Stung Treng	E105 49	N13 43	
	Manganese (Mn)	Chhep-1	D-035	333	Preah Vihear	E105 21	N13 46
		Chhep-2	D-036	334	Preah Vihear	E105 28	N13 47
		Chhep-3	D-037	334	Preah Vihear	E105 22	N13 45
Molybdenum (Mo)	Phnom Basset	D-038	334	Kandal	E104 45	N11 41	
	Phnom Thong	D-039	334	Preah Vihear	E105 00	N13 20	
	Phnom Den	D-040	334	Takeo	E104 53	N10 36	
Tungsten (W)	Khong Ay	D-005	334	Kompong Speu	E104 06	N11 35	
1-2 Base Metals- 16 deposits							
Bauxite (Al)	Battambang	D-052	333	Battambang	E103 02	N13 04	
	Haut Chhlong	D-053	334	Mondulkiri	E107 12	N12 23	
Copper (Cu)	Kroch Chhmar	D-047	334	Kratie	E105 46	N12 31	
	Phnom Sekahom	D-042	334	Preah Vihear	E105 22	N13 44	
	Phnom Pel	D-046	334	Preah Vihear	E104 42	N13 26	
	Phnom Ke	D-050	334	Preah Vihear	E105 10	N13 20	
	Lomphat	D-048	334	Rattanakiri	E106 58	N13 34	
	Chamkar Keu	D-045	334	Stung Treng	E105 49	N13 32	
	Saom	138	334	Takeo	E104 50	N10 33	
Cooper-Lead-Zinc	Sam Rong	D-003	334	Kompong Speu	E103 55	N11 50	
	Khong Ay	D-049	334	Kompong Speu	E104 05	N11 30	
	O Chhung	D-043	334	Mondulkiri	E106 36	N12 42	
	Phum Pring	D-044	334	Preah Vihear	E105 04	N13 24	
	Ban Chai	D-041	334	Rattanakiri	E107 15	N14 09	
Tin (Sn)	Khong Ay	D-004	334	Kompong Speu	E104 07	N11 33	
	Angkor Borei	D-051	334	Kompong Speu	E14 58	N10 57	

Appendix V-1

Primary Minerals	Deposit Name	Deposit No.	UNIFC	Province	Longitude	Latitude
1-3 Precious Metals 24 deposits						
Native Gold (Au)	Pailin	D-058	334	Battambang	E102 35	N12 52
	Phnom Thmar Meas	D-059	334	Battambang	E102 21	N13 18
	Romchek (Memut)	D-055	333	Kompong Cham	E106 11	N11 54
	Phnom Chi	D-057	334	Kompong Thom	E105 39	N12 45
	Krava	D-111	334	Kompong Thom	E105 16	N12 28
	Phnom Lok	D-117	334	Kampot	E104 25	N10 27
	Kep	D-118	334	Kampot	E104 23	N10 28
	Memung	D-056	334	Mondulkiri	E106 55	N12 35
	PuChu Leu	D109	334	Mondulkiri	E106 52	N13 06
	Phnom Deck	D-062	334	Preah Vihear	E105 01	N13 19
	Rom Dey	D-063	333	Preah Vihear	E104 59	N13 21
	Phnom Lung	D-064	334	Preah Vihear	E104 57	N13 22
	Bokham	D-060	334	Rattanakiri	E107 21	N13 51
	Oyadav	D-061	334	Rattanakiri	E107 27.38	N13 45.92
	Oyadav Leu	D-107	334	Rattanakiri	E107 27.25	N13 45.90
	Oyadav Krom	D-108	334	Rattanakiri	E107 27.39	N13 45.88
	Banlung	D-110	334	Rattanakiri	E106 58.93	N13 37.85
	O Kanchanh	D-132	334	Rattanakiri	E107 01	N13 37.65
	Phnom Kambor	D-065	334	Odar Mean Chey	E103 45	N14 04
	Bo Sup Trup	D-066	333	Odar Mean Chey	E103 06	N14 04
	Phum Kampin	D-133	334	Stung Treng	E106 45	N14 05
	Bu Chri	135	334	Mondulkiri	E107 11	N12 54
	Romtomb	136	334	Preah Vihear	E104 59	N13 20
	Phnom Kong	137	334	Kampot	E104 40	N10 46

Appendix V-1

2- Non Metallic Minerals							
Primary Minerals	Deposit Name	Deposit No.	UNIFC	Province	Longitude	Latitude	
Industrial Minerals - 51 deposits							
Clay minerals	Prek Kak	D-102	334	Kompong Cham	E105 32	N12 15	
	Phnom Traok	D-100	334	Kompong chhnang	E104 39	N12 13	
	An Dong Srey	D-103	334	Kompong chhnang	E104 39	N12 09	
	Phnom Sar	D-099	111	Kampot	E104 16	N10 39	
	Phnom Krom	D-054	334	Siem Reap	E103 49	N13 17	
Dolomite	Chvang	D-089	334	Stung Treng	E105 46	N13 44	
Fluorite	Ba Phnom	D-086	334	Prey Veng	E105 22	N11 14	
Graphite	Koahsla	D-087	334	Kampot	E104 15	N10 54	
	Phnom Chak Khley	D-088	334	Kampot	E104 30	N10 40	
Limestone	Sisophon	D-134	334	Banteay MeanChey	E102 50	N13 45	
	Battambang	D-092	334	Battambang	E103 00	N13 00	
	Bos Dambang	D-090	111	Kampot	E104 16	N10 39	
	Phnom Loang	D-104	211	Kampot	E104 32	N10 40	
	Tuk Meas - East	D-113	211	Kampot	E104 33	N11 40	
	Tuk Meas - West	D-114	211	Kampot	E104 31	N11 38	
	Kompong Trach	D-115	211	Kampot	E104 29	N11 35	
	Stung Treng	D-091	334	Stung Treng	E105 58	N13 44	
	Phosphate minerals	Phnom Toch	D-076	333	Banteay MeanChey	E103 01	N13 24
		Ph. Thom-Prasat	D-077	333	Banteay MeanChey	E103 01	N13 28
Ph. Banteay Neang		D-078	333	Banteay MeanChey	E103 01	N13 30	
Ph. Bak-ChungChaing		D-080	333	Banteay MeanChey	E102 57	N13 35	
Phnom Tean		D-127	333	Banteay MeanChey	E102 57	N13 35	
Phnom Kangva		D-128	333	Banteay MeanChey	E102 57	N13 38	
Phnom Dong Preah		D-129	333	Banteay MeanChey	E102 57	N13 36	
Phnom Sampeou		D-079	333	Battambang	E103 02	N13 04	
Phnom Khong		D-081	334	Battambang	E102 51	N12 56	
Phnom Krapeu		D-082	333	Battambang	E103 05	N13 01	
Phnom Banan		D-083	333	Battambang	E103 08	N12 57	
Phnom Kdaong		D-084	333	Battambang	E103 06	N13 01	
Phnom Banteay		D-085	334	Battambang	E102 59	N13 03	
Phnom Toch		D-124	333	Battambang	E103 08	N13 01	
Phnom Takream		D-125	333	Battambang	N103 03	N13 04	
Phnom Theapadey		D-126	333	Battambang	E103 15	N12 51	
Phnom Totung		D-074	211	Kampot	E104 32	N10 41	
Phnom Kanlang		D-075	332	Kampot	E104 34	N10 38	
Phnom Cheam		D-073	334	Kampong Speu	E103 54	N11 41	
Silica sands		O Chrous	D-094	333	Koh Kong	N/A	N/A
		Phum Sralau	D-095	333	Koh Kong	E103 42	N11 05
		Tuk Sap	D-097	333	Koh Kong	N/A	N/A
	Phum Nesath	D-098	333	Koh Kong	E103 40	N11 00	
	Taman-Peam Raing	D-105	211	Koh Kong	E103 00	N11 37	
	Keo Phos	D-106	211	Koh Kong	E103 43	N10 51	
	Prek Krapeu	D-122	333	Koh Kong	E103 42	N10 56	
	Stoeung Thma	D-130	333	Koh Kong	E103 43	N10 53	
	Thma Rong	D-131	333	Koh Kong	N/A	N/A	
	O Chheteal-O Tres	D-093	333	Kompong Som	E103 37	N10 32	
	Tumnop Rolok	D-119	333	Kompong Som	E103 39	N10 44	
	Poy Rong Raing	D-120	333	Kompong Som	E103 40	N10 44	
	Aye San	D-121	333	Kompong Som	E103 42	N10 44	
	Tram Khnar	D-096	333	Takeo	E104 45	N11 17	
Zirconia	Bokeo	D-123	334	Rattanakiri	E107 10	N13 40	

Appendix V-1

3- Gemstones and Ornamental Stones						
Primary Minerals	Deposit Name	Deposit No.	UNIFC	Province	Longitude	Latitude
Gemstones and Ornamental Stones 14 deposits						
1- Sapphire-ruby-zircon-spinel associations						
Ruby	Samlot	D-017	111	Battambang	E102 41	N12 40
Supphire	Chamnop	D-006	333	Koh Kong	E103 51	N11 50
	Phnom Thmei	D-014	334	Preah Vihear	E105 15	N13 39
Sapphire, Ruby	Pailin	D-013	111	Battambang	E102 36	N12 50
Zircon gems	Phnom Chhnoun	D-015	334	Preah Vihear	E105 15	N13 26
	Bokeo	D-016	334	Rattanakiri	E107 10	N13 40
2- Quartz-amethyst-associations						
Amethyst	Phnom Chi	D-018	334	Kompong Thom	E105 39	N12 54
	Khone	D-012	334	Stung Treng	E105 57	N13 56
3- Ornamental stones						
Jet	Kompong Smach	D-010	334	Koh Kong	E102 58	N11 41
	Don Ton	D-011	334	Preah Vihear	E105 17	N14 02
Marble	Phnom Cheam	D-007	334	Kompong Speu	E103 54	N11 41
	Stung Kleach	D-008	334	Kompong Speu	E104 05	N11 36
	Chvang-2 site	D-009	334	Stung Treng	E105 45	N13 43
Pagodite	Trasey	D-101	334	Pursat	E103 45	N12 00

Appendix V-1

4- Solid Fuel Minerals

Primary Minerals	Deposit Name	Deposit No.	UNIFC	Province	Longitude	Latitude
Solid Fuel Minerals- 6 deposits						
Coal	Phum Talat	D-067	333	Stung Treng	E106 36	N13 47
	Voeune Nhung	D-068	334	Stung Treng	E106 18	N13 54
Lignite	Kompong Som	D-069	334	Kompong Som	E103 34	N10 34
	Tuk Meas	D-070	334	Kampot	E104 30	N10 40
	Phnom Puck	D-071	334	Kratie	E106 16	N12 12
	Rovieng	D-072	334	Preah Vihear	E105 10	N13 20

The United Nations International Framework Classification Reserves/ Resources (UNIFC):

(111) Proved Mineral Reserves	4 deposits
(211) Feasibility Mineral Resource	7 deposits
(332) Indicated Mineral Resource	1 deposits
(333) Inferred Mineral Resource	52 deposits
(334) Reconnaissance Mineral Resources	69 deposits

5- Construction Materials

Primary Minerals	Deposit Name	Deposit No.	UNIFC	Province	Longitude	Latitude
a) Crushed stone						
Basalt		Kompong Cham and Rattanakiri				
Granites		Kandal, Kompong Chhnang, Prey Veng and Takeo				
Jaspers	Tram Khnar	Takeo				
Laterite	Kirivong	Takeo				
Limestone (Used as ballast)		Banteay MeanChey, Battambang and Kampot				
Quartzite	Kep	Kampot				
Rhyolites	Choeung Chhnok	Kompong Cham				
Sandstone		Koh Kong and Kompong Speu				
b) Sand, gravel and clay for brick and tile manufacturing						
Gravel		Kompong Cham, Kratie and Stung Treng				
Sand		Kandal, Kompong Chhnang				
Clay for brick and tile manufacturing		Everywhere in Cambodia				

Appendix V-2
List of ASTER Images of Cambodia

No	Granul ID	Upper Left		Upper Right		Lower Right		Lower Left		Remark (band)
		Lat.	Lon.	Lat.	Lon.	Lat.	Lon.	Lat.	Lon.	
1	ASTL1A 0701100330530701130197	13.30110	105.38424	13.21933	105.96281	12.66119	105.84147	12.74287	105.26417	V,S,T and DEM
2	ASTL1A 0701100330440701130196	13.83604	105.49953	13.75418	106.07938	13.19608	105.95775	13.27784	105.37923	V,S,T and DEM
3	ASTL1A 0701100330360701130195	14.37096	105.61506	14.28900	106.19626	13.73092	106.07431	13.81277	105.49451	V,S,T and DEM
4	ASTL1A 0803170330510803200068	12.61028	106.36313	12.52872	106.92479	11.97080	106.80183	12.05218	106.24132	V,S,T and DEM
5	ASTL1A 0803170330420803200067	13.14521	106.48023	13.06349	107.04305	12.50561	106.91969	12.58715	106.35808	V,S,T and DEM
6	ASTL1A 0803170330330803200066	13.67997	106.59761	13.59808	107.16165	13.04024	107.03790	13.12195	106.47514	V,S,T and DEM
7	ASTL1A 0803170330240803200065	14.21468	106.71533	14.13260	107.28064	13.57483	107.15648	13.65671	106.59250	V,S,T and DEM
8	ASTL1A 0803170330150803200064	14.74936	106.83341	14.66709	107.40003	14.10935	107.27545	14.19143	106.71021	V,S,T and DEM
9	ASTL1A 0802207032450802110307	12.67000	107.49349	12.58898	108.05675	12.30088	107.93447	12.11176	107.37237	V,S,T and DEM
10	ASTL1A 0802207032450802110306	13.20492	107.60984	13.12376	108.17427	12.56572	108.05165	12.64673	107.48844	V,S,T and DEM
11	ASTL1A 080129033110802010481	12.67148	105.93791	12.59047	106.50118	12.03238	106.37893	12.11326	105.81683	V,S,T and DEM
12	ASTL1A 0801290331020802010480	13.20642	106.05426	13.12527	106.61871	12.56721	106.49608	12.64822	105.93286	V,S,T and DEM
13	ASTL1A 0801290330530802010479	13.74119	106.17087	13.65989	106.73654	13.10188	106.61356	13.18303	106.04917	V,S,T and DEM
14	ASTL1A 0801290330440802010478	14.27605	106.28781	14.19460	106.85477	13.63663	106.73141	13.71793	106.16579	V,S,T and DEM
15	ASTL1A 0801290330360802010477	14.81087	106.40508	14.72925	106.97338	14.17134	106.84962	14.25279	106.28272	V,S,T and DEM
16	ASTL1A 0701240343160701270073	13.79214	102.72249	13.71077	103.29356	13.15272	103.17121	13.23398	102.60145	V,S,T and DEM
17	ASTL1A 07012403430701270072	14.32704	102.83877	14.24553	103.41115	13.68751	103.28845	13.76888	102.71744	V,S,T and DEM
18	ASTL1A 0701240342580701270071	14.86176	102.95531	14.78011	103.52905	14.22214	103.40600	14.30364	102.83368	V,S,T and DEM
19	ASTL1A 070120337270707160509	12.67567	104.36297	12.59469	104.92633	12.03661	104.80409	12.11745	104.24190	V,S,T and DEM
20	ASTL1A 070120337180707160508	13.21059	104.47927	13.12947	105.04381	12.57143	104.92123	12.65241	104.35792	V,S,T and DEM
21	ASTL1A 0703220337360703260115	12.63178	104.66983	12.55030	105.23142	11.99234	105.10850	12.07365	104.54805	V,S,T and DEM
22	ASTL1A 0703220337270703260114	13.16661	104.78683	13.08497	105.34959	12.52705	105.22629	12.60852	104.66474	V,S,T and DEM
23	ASTL1A 0703220337180703260116	13.70141	104.90413	13.61959	105.46811	13.06171	105.34444	13.14335	104.78174	V,S,T and DEM
24	ASTL1A 0703220337090703260112	14.23615	105.02180	14.15415	105.58704	13.59634	105.46294	13.67815	104.89902	V,S,T and DEM
25	ASTL1A 0703220337010703260111	14.77085	105.13985	14.68866	105.70642	14.13090	105.58186	14.21290	105.01667	V,S,T and DEM
26	ASTL1A 0702270331420703030356	11.60876	105.65621	11.52795	106.21731	10.96978	106.09562	11.05046	105.53558	V,S,T and DEM
27	ASTL1A 0702270331330703030355	12.14375	105.77204	12.06283	106.33420	11.50469	106.21223	11.58549	105.65118	V,S,T and DEM
28	ASTL1A 0403290337440404120772	10.98144	104.63498	10.90004	105.19390	10.34198	105.07173	10.42322	104.51379	V,S,T and DEM
29	ASTL1A 0403290337350404120771	11.51638	104.75141	11.43481	105.31133	10.87679	105.18880	10.95818	104.62993	V,S,T and DEM
30	ASTL1A 0403290337260404120770	12.05127	104.86814	11.96953	105.42910	11.41155	105.30621	11.49311	104.74634	V,S,T and DEM
31	ASTL1A 0402170343480403060905	13.65953	103.64932	13.57674	104.21483	13.01901	104.09043	13.10159	103.52619	V,S,T and DEM
32	ASTL1A 0402170343390403060904	14.19417	103.76770	14.11116	104.33448	13.55349	104.20963	13.63627	103.64418	V,S,T and DEM
33	ASTL1A 0402170343300403060903	14.72875	103.88647	14.64551	104.45456	14.08792	104.32926	14.17091	103.76255	V,S,T and DEM
34	ASTL1A 0401180332240403250026	11.13048	105.14190	11.04970	105.70696	10.49143	105.58613	10.57213	105.02209	V,S,T and DEM

Appendix V-2
List of ASTER Images of Cambodia

No	Granul ID	Upper Left		Upper Right		Lower Right		Lower Left		Remark (band)
		Lat.	Lon.	Lat.	Lon.	Lat.	Lon.	Lat.	Lon.	
35	ASTL1A 0401180332150403250025	11.66553	105.25692	11.58466	105.82302	11.02643	105.70191	11.10720	105.13689	V,S,T and DEM
36	ASTL1A 0311150331370311260897	12.54592	106.80802	12.46196	107.37611	11.90432	107.25173	11.98804	106.68479	V,S,T and DEM
37	ASTL1A 0311150331280311260896	13.08051	106.92646	12.99632	107.49571	12.43872	107.37092	12.52267	106.80288	V,S,T and DEM
38	ASTL1A 0311150331200311260895	13.61505	107.04529	13.53062	107.61575	12.97308	107.49050	13.05726	106.92130	V,S,T and DEM
39	ASTL1A 031115033110311260894	14.14954	107.16451	14.06486	107.73624	13.50738	107.61052	13.59181	107.04011	V,S,T and DEM
40	ASTL1A 0302090326000303060290	12.72341	107.11721	12.64245	107.68583	12.08428	107.56430	12.16514	106.99687	V,S,T and DEM
41	ASTL1A 0302090325510303060289	13.25838	107.23277	13.17730	107.80259	12.61918	107.68076	12.70015	107.11219	V,S,T and DEM
42	ASTL1A 0302090325420303060288	13.79331	107.34859	13.71212	107.91966	13.15404	107.79750	13.23512	107.22774	V,S,T and DEM
43	ASTL1A 0301290344420302130967	12.14052	102.70356	12.05967	103.28590	11.50157	103.14401	11.58229	102.58278	V,S,T and DEM
44	ASTL1A 0301290344330302130966	12.67545	102.81958	12.59446	103.38304	12.03641	103.26082	12.11726	102.69853	V,S,T and DEM
45	ASTL1A 0301290344240302130965	13.21034	102.93587	13.12921	103.50050	12.57120	103.37794	12.65218	102.81453	V,S,T and DEM
46	ASTL1A 0301290344150302130964	13.74521	103.05245	13.66393	103.61831	13.10596	103.49539	13.18708	102.93080	V,S,T and DEM
47	ASTL1A 0301290344070302130963	14.28001	103.16933	14.19859	103.73648	13.64067	103.61318	13.72195	103.04737	V,S,T and DEM
48	ASTL1A 0301290343580302130962	14.81481	103.28654	14.73321	103.85504	14.17534	103.73134	14.25676	103.16424	V,S,T and DEM
49	ASTL1A 0503070342340503120477	13.05876	103.98371	12.97466	104.55275	12.41701	104.42803	12.50088	103.86020	V,S,T and DEM
50	ASTL1A 0503070342250503120476	13.59332	104.10246	13.50897	104.67270	12.95142	104.54754	13.03550	103.97856	V,S,T and DEM
51	ASTL1A 0503070342160503120475	14.12783	104.22162	14.04324	104.79312	13.48574	104.66748	13.57007	104.09729	V,S,T and DEM
52	ASTL1A 0503070342070503120474	14.66216	104.34116	14.57732	104.91399	14.01988	104.78785	14.10445	104.21640	V,S,T and DEM
53	ASTL1A 0602060342280602090024	11.44988	103.66258	11.36632	104.22831	10.80859	104.10475	10.89192	103.54006	V,S,T and DEM
54	ASTL1A 0602060342190602090023	11.98454	103.78031	11.90077	104.34708	11.34308	104.22315	11.42662	103.65747	V,S,T and DEM
55	ASTL1A 0602060342100602090022	12.51928	103.89845	12.43530	104.46632	11.87767	104.34195	11.96143	103.77522	V,S,T and DEM
56	ASTL1A 0602060342020602090021	13.05382	104.01689	12.96960	104.58592	12.41206	104.46113	12.49603	103.89330	V,S,T and DEM
57	ASTL1A 0601140335270601190473	13.77374	104.39706	13.69222	104.98829	13.13426	104.84588	13.21565	104.27595	V,S,T and DEM
58	ASTL1A 0601140335180601190472	14.30854	104.51340	14.22690	105.08594	13.66897	104.96318	13.75048	104.39201	V,S,T and DEM
59	ASTL1A 0612250330570612290306	12.04085	106.48517	11.95845	107.04730	11.40063	106.92396	11.48283	106.36292	V,S,T and DEM
60	ASTL1A 0612250330480612290305	12.57571	106.60269	12.49313	107.16591	11.93534	107.04218	12.01773	106.48010	V,S,T and DEM
61	ASTL1A 0612250330390612290304	13.11040	106.72051	13.02762	107.28489	12.46988	107.16075	12.55246	106.59757	V,S,T and DEM
62	ASTL1A 0612250330210612290302	14.17963	106.95723	14.09642	107.52409	13.53880	107.39907	13.62178	106.83353	V,S,T and DEM
63	ASTL1A 0612250330130612290301	14.71417	107.07616	14.63074	107.64434	14.07319	107.51887	14.15638	106.95206	V,S,T and DEM
64	ASTL1A 0611300336400612040107	12.57222	105.08171	12.48966	105.64465	11.93184	105.52089	12.01420	104.95909	V,S,T and DEM
65	ASTL1A 0611300336310612040106	13.10694	105.19955	13.02419	105.76365	12.46641	105.63948	12.54897	105.07659	V,S,T and DEM
66	ASTL1A 0611230330040611260575	14.13140	107.28789	14.04668	107.85923	13.48919	107.73342	13.57364	107.16340	V,S,T and DEM
67	ASTL1A 0608100336250608130078	14.81194	104.85158	14.73029	105.42001	14.17243	105.29628	14.25389	104.72925	V,S,T and DEM
68	ASTL1A 0412170342280412290364	12.76368	102.19671	12.68196	102.77410	12.12378	102.65301	12.20542	102.07684	V,S,T and DEM

Appendix V-2
List of ASTER Images of Cambodia

No	Granul ID	Upper Left		Upper Right		Lower Right		Lower Left		Remark (band)
		Lat.	Lon.	Lat.	Lon.	Lat.	Lon.	Lat.	Lon.	
69	ASTL1A 0412170342200412290363	13.29862	102.31180	13.21683	102.89042	12.65869	102.76904	12.74040	102.19170	V,S,T and DEM
70	ASTL1A 0412170342110412290362	13.83353	102.42715	13.75166	103.00705	13.19356	102.88535	13.27536	102.30679	V,S,T and DEM
71	ASTL1A 0310280343420311120379	11.55172	102.96325	11.47046	103.52250	10.91240	103.40015	10.99351	102.84195	V,S,T and DEM
72	ASTL1A 0310280343330311120378	12.08664	103.07978	12.00524	103.64008	11.44721	103.51739	11.52846	102.95819	V,S,T and DEM
73	ASTL1A 0310280343240311120377	12.62139	103.19657	12.53982	103.75797	11.98185	103.63493	12.06325	103.07468	V,S,T and DEM
74	ASTL1A 0310280343150311120376	13.15623	103.31370	13.07450	103.87626	12.51657	103.75284	12.59812	103.19149	V,S,T and DEM
75	ASTL1A 0310280343060311120375	13.69103	103.43115	13.60912	103.99493	13.05124	103.87111	13.13297	103.30860	V,S,T and DEM
76	ASTL1A 0310280342580311120374	14.22579	103.54894	14.14369	104.11398	13.58587	103.98976	13.66778	103.42603	V,S,T and DEM
77	ASTL1A 0310280342490311120373	14.76038	103.66705	14.67809	104.23343	14.12031	104.10877	14.20240	103.54378	V,S,T and DEM
78	ASTL1A 0503090330230503150769	12.71132	105.65761	12.63023	106.22625	12.07210	106.10461	12.15308	105.53716	V,S,T and DEM
79	ASTL1A 0503090330140503150768	13.24627	105.77329	13.16507	106.34312	12.60697	106.22117	12.68806	105.65258	V,S,T and DEM
80	ASTL1A 0503070343090503120481	10.91987	103.51232	10.83664	104.07707	10.27879	103.95405	10.36181	103.39028	V,S,T and DEM
81	ASTL1A 0402170343570403060906	13.12484	103.53131	13.04226	104.09560	12.48448	103.97163	12.56686	103.40854	V,S,T and DEM
82	ASTL1A 0301130344470301280545	10.96954	103.17219	10.88771	103.73221	10.32973	103.60979	10.41139	103.05075	V,S,T and DEM
83	ASTL1A 0301130344380301280544	11.50439	103.28886	11.42239	103.84988	10.86445	103.72710	10.94628	103.16712	V,S,T and DEM
84	ASTL1A 0301130344290301280543	12.03920	103.40584	11.95701	103.96790	11.39914	103.84475	11.48113	103.28378	V,S,T and DEM
85	ASTL1A 0301130344200301280542	12.57412	103.52317	12.49174	104.08633	11.93389	103.96279	12.01608	103.40077	V,S,T and DEM
86	ASTL1A 0702270331510703030357	11.07373	105.54060	10.99305	106.10068	10.43484	105.97929	10.51541	105.42021	V,S,T and DEM
87	ASTL1A 0703220338030703260118	11.02707	104.32058	10.94606	104.87902	10.38796	104.75712	10.46883	104.19967	V,S,T and DEM
88	ASTL1A 0803170331170803200071	11.00553	106.01371	10.92444	106.57221	10.36637	106.45026	10.44733	105.89274	V,S,T and DEM
89	ASTL1A 0803170331080803200070	11.54056	106.12993	11.45933	106.68943	10.90131	106.56715	10.98240	106.00869	V,S,T and DEM
90	ASTL1A 0803170331000803200069	12.07544	106.24639	11.99406	106.80694	11.43607	106.68432	11.51730	106.12487	V,T and DEM
91	ASTL1A 0901220337590901250102	13.11623	105.13538	13.03358	105.69936	12.47575	105.57528	12.55819	105.01250	V,T and DEM
92	ASTL1A 0901220337500901250101	13.65095	105.25349	13.56810	105.81868	13.01033	105.69418	13.09297	105.13025	V,T and DEM
93	ASTL1A 0901220337410901250100	14.18551	105.37195	14.10243	105.93840	13.54472	105.81345	13.62756	105.24832	V,T and DEM
94	ASTL1A 0901200350290901230095	12.48775	102.56807	12.40194	103.14389	11.84437	103.01892	11.92991	102.44425	V,T and DEM
95	ASTL1A 0901200350200901230094	13.02217	102.68711	12.93611	103.26409	12.37857	103.13864	12.46437	102.56287	V,T and DEM
96	ASTL1A 0901200350110901230093	13.55665	102.80660	13.47031	103.38479	12.91286	103.25885	12.99892	102.68193	V,T and DEM
97	ASTL1A 0901150332130901180075	11.65070	105.36110	11.56981	105.92720	11.01153	105.80608	11.09232	105.24105	V,T and DEM
98	ASTL1A 0901150332040901180074	12.18573	105.47636	12.10476	106.04355	11.54654	105.92215	11.62742	105.35609	V,T and DEM
99	ASTL1A 0901150331470901180072	13.25565	105.70756	13.17446	106.27708	12.61630	106.15507	12.69739	105.58679	V,T and DEM
100	ASTL1A 0901150331380901180071	13.79063	105.82355	13.70931	106.39432	13.15120	106.27199	13.23239	105.70252	V,T and DEM
101	ASTL1A 0901150331290901180070	14.32545	105.93979	14.24400	106.51187	13.68592	106.38919	13.76723	105.81847	V,T and DEM
102	ASTL1A 0901060338210901090765	11.55771	104.46658	11.47648	105.02572	10.91839	104.90338	10.99946	104.34528	V,T and DEM

Appendix V-2
List of ASTER Images of Cambodia

No	Granul ID	Upper Left		Upper Right		Lower Right		Lower Left		Remark (band)
		Lat.	Lon.	Lat.	Lon.	Lat.	Lon.	Lat.	Lon.	
103	ASTL1A 0901060338120901090764	12.09265	104.58310	12.01127	105.14330	11.45322	105.02062	11.53444	104.46152	V,T and DEM
104	ASTL1A 0901060337280901090759	14.76650	105.17033	14.68424	105.73661	14.12645	105.61197	14.20851	105.04707	V,T and DEM
105	ASTL1A 0812140331510812170133	12.22953	105.16566	12.14794	105.74172	11.58970	105.62092	11.67122	105.04601	V,T and DEM
106	ASTL1A 0812120344290812150066	10.88049	103.78117	10.79531	104.35409	10.23764	104.23037	10.32256	103.65843	V,T and DEM
107	ASTL1A 0812120344200812150065	11.41513	103.89915	11.32973	104.47307	10.77207	104.34892	10.85723	103.77605	V,T and DEM
108	ASTL1A 0812120344110812150064	11.94970	104.01750	11.86404	104.59246	11.30649	104.46788	11.39189	103.89401	V,T and DEM
109	ASTL1A 0812120344020812150063	12.48425	104.13623	12.39833	104.71230	11.84080	104.58726	11.92645	104.01234	V,T and DEM

Appendix V-3
List of ALOS PALSAR Images of Cambodia

No	Granul ID	Upper Left		Upper Right		Lower Right		Lower Left		Polarized wave	Resolution (m)
		Lat.	Lon.	Lat.	Lon.	Lat.	Lon.	Lat.	Lon.		
1	ALPSRP123853370	12.66422	103.46861	12.54166	104.10078	12.02061	103.99559	12.14305	103.36468	HH/HV	12.5
2	ALPSRP123853380	12.17021	103.37010	12.04737	104.00099	11.52636	103.89577	11.64910	103.26608	HH/HV	12.5
3	ALPSRP123853390	11.67683	103.27162	11.55369	103.90130	11.03273	103.79603	11.15578	103.16751	HH/HV	12.5
4	ALPSRP123853400	11.18008	103.17012	11.05666	103.79862	10.53574	103.69331	10.65910	103.06591	HH/HV	12.5
5	ALPSRP123853410	10.67797	103.06968	10.55425	103.69704	10.03339	103.59166	10.15707	102.96536	HH/HV	12.5
6	ALPSRP124583340	14.15718	102.15391	14.03568	102.78972	13.51488	102.68464	13.63635	102.05030	HH/HV	12.5
7	ALPSRP124583350	13.66179	102.05536	13.54001	102.68971	13.01926	102.58464	13.14103	101.95170	HH/HV	12.5
8	ALPSRP124583360	12.17021	103.37010	11.67683	103.27162	11.18008	103.17012	10.67797	103.06968	HH/HV	12.5
9	ALPSRP124873330	14.65497	106.54676	14.53349	107.18425	14.01261	107.07920	14.13365	106.44305	HH/HV	12.5
10	ALPSRP124873340	14.15641	106.44758	14.03464	107.08364	13.51375	106.97858	13.63511	106.34382	HH/HV	12.5
11	ALPSRP124873350	13.65865	106.34851	13.53658	106.98319	13.01569	106.87812	13.13735	106.24468	HH/HV	12.5
12	ALPSRP124873360	13.16363	106.24992	13.04127	106.88328	12.52037	106.77819	12.64235	106.14603	HH/HV	12.5
13	ALPSRP124873370	12.66838	106.15122	12.54571	106.78330	12.02482	106.67818	12.14711	106.04724	HH/HV	12.5
14	ALPSRP124873380	12.17261	106.05233	12.04965	106.68319	11.52876	106.57802	11.65137	105.94826	HH/HV	12.5
15	ALPSRP124873390	14.65497	106.54676	14.15641	106.44758	13.65865	106.34851	13.16363	106.24992	HH/HV	12.5
16	ALPSRP124873400	11.18005	105.85182	11.05649	106.48038	10.53560	106.37510	10.65885	105.74754	HH/HV	12.5
17	ALPSRP126333370	12.66519	102.93671	12.54270	103.56873	12.02175	103.46357	12.14417	102.83281	HH/HV	12.5
18	ALPSRP126333380	12.17310	102.83859	12.05033	103.46935	11.52943	103.36415	11.65215	102.73462	HH/HV	12.5
19	ALPSRP126333390	11.69054	102.74234	11.56748	103.37189	11.04663	103.26665	11.16965	102.63828	HH/HV	12.5
20	ALPSRP126333400	11.19260	102.64061	11.06925	103.26897	10.54846	103.16368	10.67179	102.53645	HH/HV	12.5
21	ALPSRS140773300	17.70903	105.57477	17.65547	109.62455	13.60021	109.53421	13.64094	105.56349	HH	100
22	ALPSRS140773350	15.22135	105.08074	15.18432	109.08090	11.12536	109.01417	11.15220	105.07942	HH	100
23	ALPSRS141503300	17.69228	103.94556	17.67224	107.99895	13.60942	107.94028	13.62466	103.96622	HH	100
24	ALPSRS141503350	15.20709	103.45488	15.19897	107.45757	11.13352	107.41733	11.13940	103.48020	HH	100
25	ALPSRS141503400	12.71169	102.95888	12.71261	106.91892	8.64500	106.89355	8.64438	102.98587	HH	100
26	ALPSRS142233300	17.67781	102.32188	17.69123	106.37564	13.62409	106.34869	13.61388	102.37429	HH	100
27	ALPSRS142233350	15.18894	101.78472	15.21020	105.87967	11.14152	105.86525	11.12612	101.83732	HH	100
28	ALPSRS142233400	12.70271	101.29369	12.72840	105.34410	8.65861	105.33954	8.64128	101.34265	HH	100

Appendix V-4 Photos of Geological Survey

Photo 1 (Map 1)



Silicified andesite or shale with sporadic metallic minerals occurs on this hill.

Photo 2 (Map 2)



White altered rock with limonite gossan. The site is a working quarry.

Photo 3 (Map 2)



Silicification and argillization occur along fissures with limonite gossan.

Photo 4 (Map 7)



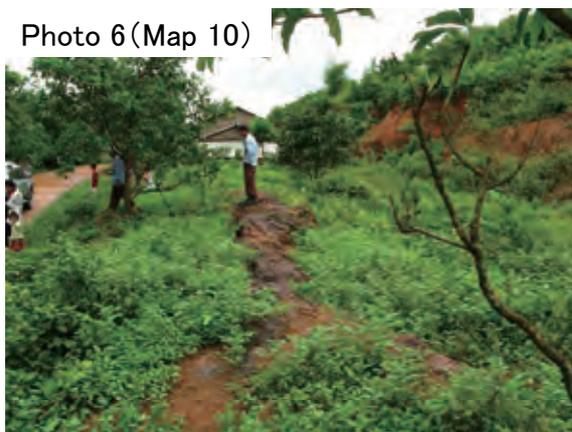
Limonite gossan and white argillization occur in a pit beside a road.

Photo 5 (Map 9)



Quartz-limonite parallel veinlets occur in conglomerate. Granites and rhyolites occur nearby.

Photo 6 (Map 10)



Fe-Mn rich vein accompanied by quartz, 0.5m in width x 15m in length, filled a fissure in shale.

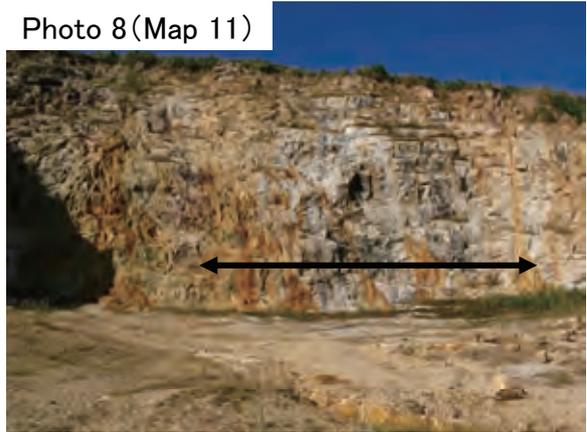
Appendix V-4 Photos of Geological Survey

Photo 7 (Map 10)



Fe-Mn rich nodules. The black cores are heavier than the brown rims.

Photo 8 (Map 11)



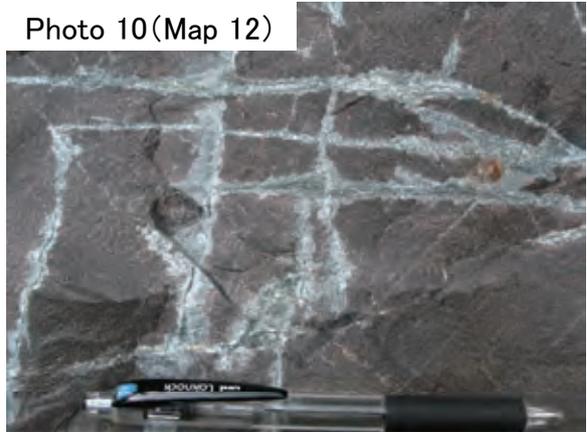
Molybdenite disseminated granite. Black bar shows the disseminated area.

Photo 9 (Map 12)



Hornfels of shale at the contact with granite batholith. Skarnized veinlets with arsenopyrite occur.

Photo 10 (Map 12)



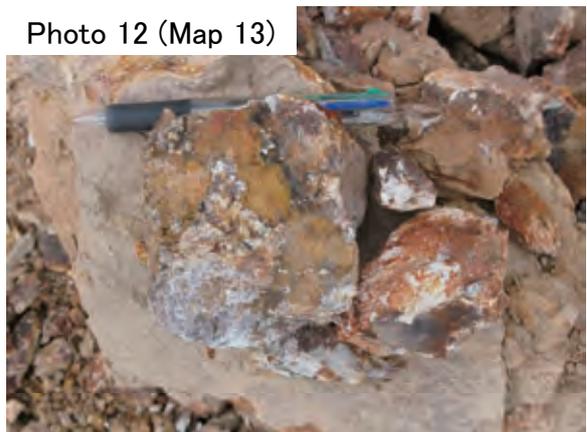
Yellow white skarn nets with amphibole needles and arsenopyrite at the center.

Photo 11 (Map 13)



This hill of quartz porphyry is a gold occurrence. There is a similar gold occurrence 6.5 km away to the east.

Photo 12 (Map 13)



Limonite nets in quartz porphyry.

Appendix V-5

SAMPLE LIST OF LABOATORY TESTS FOR ROCKS

Nos.	Sample ID	Rock Name	T	PT	XRD	WRC	MMC	Latitude N	Longitude E	Elev.	Province
1	9060403	Grey argillized shale					●	11 06.015	104 13.835	99 m	KS
2	9060404	White argillized porphyry					●	11 06.021	104 13.831	99 m	KS
3	9060405	Grey argillized sandstone					●	11 06.024	104 13.830	99 m	KS
4	9060501	Brown conglomerate with QV					●	10 38.913	104 16.514	32 m	Kam
5	9060502	Grey conglomerate with QV					●	10 38.913	104 16.514	32 m	Kam
6	9060506	White argillized porphyry					●	10 27.774	104 23.407	12 m	Keb
7	9060507	Red argillized porphyry along fault					●	10 27.697	104 23.204	16 m	Keb
8	9060508	White argillized porphyry with QV					●	10 27.697	104 23.204	16 m	Keb
9	9060509	Rhyolite	●			●		10 27.229	104 23.290	7 m	Keb
10	9060802	Granite	●			●		12 02.760	104 19.185	103 m	KChhn
11	9060905	Serpentinite	●		●			12 21.618	103 12.743	223 m	Pur
12	9060909	Red shale with limestone lens					●	10 27.229	104 23.290	7 m	Pur
13	9061002	Carbonate rock	●		●		●	13 24.510	103 00.798	41 m	BMC
14	9061101	Basic hornfels (or green schist)	●					13 49.789	103 08.921	27 m	BMC
15	9061204A	Granule conglomerate	●				●	14 08.371	103 55.963	41 m	OMC
16	9061204B	Rhyolite		●			●	14 08.371	103 55.963	41 m	OMC
17	9061204C	Hematite ore (taken by local people)			●			14 08.371	103 55.963	41 m	OMC
18	9061405	Dacite	●			●		13 25.364	104 31.273	45 m	SR
19	9061406	Silicified rock (volcanoclastic)		●			●	13 34.032	104 19.412	72 m	SR
20	9061407	Augite-hypersthene andesite	●			●		13 38.174	104 26.729	82 m	PV
21	9061408	Picritic basalt	●			●		13 40.336	104 31.212	129 m	PV
22	9061503	Silicified tuff	●				●	12 39.572	105 27.854	92 m	KT
23	9061507	Reddish brown silicified rock					●	12 40.341	105 30.315	104 m	KT
24	9061702A	Granite	●			●		10 35.952	104 52.398	21 m	Tak
25	9061702B	Black hornfels (shale)					●	10 35.952	104 52.398	21 m	Tak
26	9061703	Vein quartz with black shale					●	10 35.952	104 52.398	21 m	Tak
27	9061704	Granite (or granite porphyry)	●			●		10 36.025	104 54.323	28 m	Tak
28	9061705A	Mineralized granite		●		●	●	10 35.999	104 54.297	51 m	Tak
29	9061705B	Granitic cataclasite		●	●		●	10 35.999	104 54.297	51 m	Tak
30	9061706	Silicic vein in hornfels		●	●		●	10 34.976	104 52.648	11 m	Tak
31	9061709	Weathered shale along fault					●	10 37.171	104 45.621	18 m	Tak
32	9061710	Iron ore vein in sandstone		●	●		●	10 37.473	104 43.758	15 m	Tak

Appendix V-5

SAMPLE LIST OF LABOATORY TESTS FOR ROCKS

Nos.	Sample ID	Rock Name	T	PT	XRD	WRC	MMC	Latitude N	Longitude E	Elev.	Province
33	9080703	Granite	●			●		13 32.297	106 41.052	118 m	RK
34	9080704	Granite porphyry	●			●		13 33.708	106 42.864	131 m	RK
35	9080705	Granite porphyry	●			●		13 33.989	106 43.145	131 m	RK
36	9080706	Granite (adamellite)	●			●		13 36.465	106 50.872	154 m	RK
37	9080707	Basalt dyke	●			●		13 39.384	106 56.176	185 m	RK
38	9080801	Welded tuff	●			●		13 53.070	106 54.149	118 m	RK
39	9081002	Sheared sandstone with QV					●	12 53.672	107 10.536	270 m	MK
40	9081003	Silicified sandstone					●	12 54.234	107 10.552	270 m	MK
41	9081006	Porphyrite	●			●		13 01.782	107 03.276	146 m	MK
42	9081008	Red sandy shale					●	13 04.257	107 01.174	170 m	MK
43	9081104	Grey hornfels (sandstone)					●	12 17.778	106 24.095	100 m	Kra
44	9081201	Skarnized fine-grained sandstone		●			●	13 19.657	104 59.350	99 m	PV
45	9082201	Brown altered shale with QV					●	10 26.890	104 26.705	27 m	Kam
46	9082202	Limonitized porphyry along fault			●		●	10 46.339	104 39.504	29 m	Kam
47	9082203	Limonite ore with quartz					●	10 34.842	104 45.746	9 m	Tak
48	9082204	Limonite ore with quartz					●	10 34.538	104 46.318	11 m	Tak
49	9082302A	Pink granite with QV (adamellite)	●			●		10 57.837	104 59.025	17 m	Tak
50	9082302B	Vein quartz in granite					●	10 57.837	104 59.025	17 m	Tak
51	9111301	Basalt	●			●		13 29.238	104 59.529	92 m	PV
52	9111501	Coarse-grained silicified tuff		●			●	13 34.107	104 19.376	60 m	SR
53	9111502	Altered rock (red, fine grain)					●	13 34.107	104 19.376	60 m	SR
54	9111503	Altered rock (white)					●	13 34.107	104 19.376	60 m	SR
55	9111504	Altered rock (brown, limonite)					●	13 34.107	104 19.376	60 m	SR
56	9111505	Altered rock (grey, white dots)					●	13 34.107	104 19.376	60 m	SR
57	9111601	Silicified tuff	●					13 17.166	103 49.121	36 m	SR
58	9111602	Dark grey rhyolite					●	13 50.167	103 11.061	28 m	BMC
59	9111603	Dark grey rhyolite					●	13 50.231	103 10.606	30 m	BMC
60	9111604	Lapilli tuff		●			●	13 49.461	103 08.623	24 m	BMC
61	9111701	Welded tuff	●			●		12 19.200	104 42.162	30 m	KChhn
62	9111702	Andesite	●			●		12 19.195	104 42.082	18 m	KChhn
63	9111703	Granodiorite	●			●		12 15.908	104 44.783	9 m	KChhn
64	9111801	Grey quartz rock (sedimentary?)					●	11 06.019	104 13.834	95 m	KS

Appendix V-5

SAMPLE LIST OF LABORATORY TESTS FOR ROCKS

Nos.	Sample ID	Rock Name	T	PT	XRD	WRC	MMC	Latitude N	Longitude E	Elev.	Province
65	9111802	White argillized rock			●		●	11 06.022	104 13.831	96 m	KS
66	9111803	Grey argillized rock			●		●	11 06.022	104 13.830	96 m	KS
67	9111804	Reddish brown vein in porphyry					●	10 27.779	104 23.396	7 m	Keb
68	9111901	Quartz porphyry (brecciated)		●			●	10 26.876	104 26.712	34 m	Kam
69	9111902	Quartz porphyry	●				●	10 26.878	104 26.722	35 m	Kam
70	9111903	Black Fe-Mn rock in coluvial					●	10 40.830	104 42.117	24 m	Tak
71	9111904	Brecciated brown and white rock					●	10 42.040	104 43.180	60 m	Tak
72	9111905	Fe-Mn nodule		●			●	10 36.720	104 45.013	14 m	Tak
73	9111906	Quartz-Hematite vein along nodule		●			●	10 36.720	104 45.013	14 m	Tak
74	9112001	Fine-grained skarnized sandstone		●			●	10 32.965	104 49.972	14 m	Tak

LEGEND

T: Thin section PT: Polished thin section XRD: X-ray diffraction analysis WRC: Whole rock chemical analysis
 MMC: Multi-metal-elements chemical analysis

QV: Quartz vein

KS: Kampon Speu Kam: Kampot Keb: Keb Pur: Pursat KChhn: Kampong Chhnang

BMC: Banteay Mean Chey OMC: Odar Mean Chey SR: Siem Reap PV: Preah Vihear

KT: Kampong Thom Tak: Takeo RK: Rattanakiri MK: Modulkiri Kra: Kratie

Appendix V-6 Results of X-ray Diffraction Analysis

	Sample ID	Qz	Pl	Kf	Am	Cpx	Cal	Hm	Op	Chr	Liz	Mc	Chl	Dra	Mc	Kao	Hal
No.1	9060905 Serpentinite									○	○						
No.2	9061002 Altered limestone	+					⊙										
No.3	9061204C Hematite ore	⊙						○									
No.4	9061705B Silicified vein in granite	⊙		+					+			△					
No.5	9061706 Silicified vein in shale hornfels	⊙			-	+						△	-				
No.6	9061710 Silicified vein in sandstone	⊙		+	+		+					-	-				
No.7	9082202 Limonitized porphyry	⊙												○	+		
No.8	9111802 White argillized rock	⊙													△	△	
No.9	9111803 Grey argillized rock	⊙													△		+

Legend

⊙: very abundant ○: abundant △: moderate +: little -: rare

Qz: quartz Pl: plagioclase Kf: potassium feldspar Am: amphibole Cpx: clinopyroxene Cal: calcite
Hm: hematite Op: opal Chr: chrysotile Liz: lizardite Mc: mica Chl: chlorite
Dra: dravite Kao: kaolinite Hal: halloysite

Appendix V-7 Results of Whole Rock Chemical Analysis

Sample ID	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9	No. 10	No. 11	No. 12	No. 13	No. 14	No. 15	No. 16	No. 17	No. 18	No. 19	No. 20
Rock name	Rhyolite	Granite	Dacite	Augite-hyperssthene andesite	Picritic basalt	Granite	Granite (or granite porphyry)	Mineralized granite	Granite	Granite porphyry	Granite porphyry	Granite (adamellite)	Basalt dyke	Welded tuff	Porphyry	Pink granite with QV (adamellite)	Basalt	Welded tuff	Andesite	Granodiorite
SiO ₂	71.55	73.69	74.31	61.27	46.07	75.16	74.05	73.44	60.82	57.61	60.81	57.54	54.57	73.03	46.76	77.21	49.39	70.56	60.71	65.31
TiO ₂	0.26	0.13	0.54	0.44	1.84	0.01	0.13	0.07	0.59	0.85	0.75	1.07	1.04	0.35	1.34	0.02	1.23	0.24	0.72	0.60
Al ₂ O ₃	13.74	13.64	13.09	17.31	14.53	13.34	13.81	13.29	17.83	17.63	18.00	17.17	17.63	15.42	15.94	12.80	15.61	14.25	18.14	14.90
Fe ₂ O ₃ **	3.03	2.11	5.11	5.41	12.35	1.16	1.87	3.50	3.43	6.05	4.06	6.50	8.13	1.72	11.26	0.70	8.93	2.43	4.58	5.00
MnO	0.15	0.04	0.02	0.10	0.17	0.01	0.06	0.03	0.15	0.24	0.22	0.13	0.17	0.00	0.18	0.03	0.16	0.10	0.09	0.09
MgO	0.77	0.27	0.29	1.69	7.07	0.16	0.21	0.19	0.51	1.70	0.80	2.17	3.43	0.34	6.52	0.01	7.41	0.47	1.41	1.18
CaO	0.67	1.22	0.22	4.90	8.35	0.53	0.68	0.11	1.91	4.06	2.14	4.85	4.78	0.02	10.59	0.46	9.94	1.69	5.83	4.24
Na ₂ O	5.22	3.45	0.14	3.75	2.57	4.48	3.87	3.64	4.51	4.64	5.20	3.92	5.07	0.15	3.13	3.96	4.24	3.90	3.48	2.89
K ₂ O	2.41	4.36	0.16	0.42	1.82	4.27	4.37	3.18	8.12	5.26	6.06	5.10	1.56	6.63	1.40	4.63	0.38	4.48	2.81	4.17
P ₂ O ₅	0.073	0.041	0.152	0.154	0.674	0.033	0.043	0.041	0.22	0.36	0.22	0.38	0.49	0.07	0.31	—	0.17	0.05	0.22	0.13
LOI	1.30	0.35	5.29	3.99	3.57	0.44	0.50	2.20	1.89	0.75	0.68	0.15	3.39	2.74	2.35	0.54	2.38	1.05	1.65	0.78
Total	99.17	99.30	99.32	99.43	99.01	99.59	99.59	99.69	99.98	99.15	98.94	99.00	100.26	100.48	99.79	100.35	99.85	99.22	99.74	99.29

SrO	0.02	0.01	0.02	0.06	0.09	0.01	0.02	0.01	0.09	0.01	0.01	0.02	0.01	0.02	0.01	0.01	0.02	0.01	0.02	0.01
BaO	0.09	0.02	0.02	0.02	0.02	0.02	0.05	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Cr ₂ O ₃	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

** : total Fe as Fe₂O₃ LOI: loss on ignition at 1,000 degree Celsius
analysis by X-ray fluorescence analyser

Appendix V-8 Results of Multi-Metal-Elements Analysis for Rock Samples

	SAMPLE ID	Rock name	Province	GPS			Legend of Area
				Latitude N	Longitude E	Elev.	
1	9060403	Grey argillized shale	KS	11 06.015	104 13.835	99 m	KS
2	9060404	White argillized porphyry	KS	11 06.021	104 13.831	99 m	Kampon Speu
3	9060405	Grey argillized sandstone	KS	11 06.024	104 13.830	99 m	
4	9060501	Brown conglomerate with QV	Kam	10 38.913	104 16.514	32 m	Kam
5	9060502	Grey conglomerate with QV	Kam	10 38.913	104 16.514	32 m	Kampot
6	9060506	White argillized porphyry	Keb	10 27.774	104 23.407	12 m	
7	9060507	Red argillized porphyry along fault	Keb	10 27.697	104 23.204	16 m	Pur
8	9060508	White argillized porphyry with QV	Keb	10 27.697	104 23.204	16 m	Pursat
9	9060909	Red shale with limestone lenses	Pur	10 27.229	104 23.290	7 m	
10	9061002	Carbonate rock	BMC	12 02.760	104 19.185	103 m	BMC
11	9061204A	Granule conglomerate	OMC	14 08.371	103 55.963	41 m	Banteay Mean Chey
12	9061204B	Rhyolite	OMC	14 08.371	103 55.963	41 m	
13	9061406	Silicified rock (volcanoclastic)	SR	13 34.032	104 19.412	72 m	OMC
14	9061503	Silicified tuff	KT	12 39.572	105 27.854	92 m	Odor Mean Chey
15	9061507	Reddish brown silicified rock	KT	12 40.341	105 30.315	104 m	
16	9061702B	Black hornfels (shale)	Tak	10 35.952	104 52.398	21 m	SR
17	9061703	Vein quartz with black shale	Tak	10 35.952	104 52.398	21 m	Siem Reap
18	9061705A	Mineralized granite	Tak	10 35.999	104 54.297	51 m	
19	9061705B	Granitic cataclasite	Tak	10 35.999	104 54.297	51 m	KT
20	9061706	Silicic vein in hornfels	Tak	10 34.976	104 52.648	11 m	Kampong Thon
21	9061709	Weathered shale along fault	Tak	10 37.171	104 45.621	18 m	
22	9061710	Iron ore vein in sandstone	Tak	10 37.473	104 43.758	15 m	Tak
23	9081002	Sheared sandstone with QV	MK	12 53.672	107 10.536	270 m	Takeo
24	9081003	Silicified sandstone	MK	12 54.234	107 10.552	270 m	
25	9081008	Red sandy shale	MK	13 04.257	107 01.174	170 m	MK
26	9081104	Grey hornfels (sandstone)	Kra	12 17.778	106 24.095	100 m	Mondulkiri
27	9081201	Skarnized fine-grained sandstone	PV	13 19.657	104 59.350	99 m	
28	9082201	Brown altered shale with QV	Kam	10 26.890	104 26.705	27 m	Kra
29	9082202	Limonitized porphyry along fault	Kam	10 46.339	104 39.504	29 m	Kratie
30	9082203	Limonite ore with quartz	Tak	10 34.842	104 45.746	9 m	
31	9082204	Limonite ore with quartz	Tak	10 34.538	104 46.318	11 m	PV
32	9082302B	Vein quartz in granite	Tak	10 57.837	104 59.025	17 m	Preah Vihear
33	9111501	Coarse-grained silicified tuff	SR	13 34.107	104 19.376	60 m	
34	9111502	Altered rock (red, fine grain)	SR	13 34.107	104 19.376	60 m	
35	9111503	Altered rock (white)	SR	13 34.107	104 19.376	60 m	
36	9111504	Altered rock (brown, limonite)	SR	13 34.107	104 19.376	60 m	
37	9111505	Altered rock (grey, white dots)	SR	13 34.107	104 19.376	60 m	
38	9111602	Dark grey rhyolite	BMC	13 50.167	103 11.061	28 m	
39	9111603	Dark grey rhyolite	BMC	13 50.231	103 10.606	30 m	
40	9111604	Lapilli tuff	BMC	13 49.461	103 08.623	24 m	
41	9111801	Grey quartz rock (sedimentary?)	KS	11 06.019	104 13.834	95 m	
42	9111802	White argillized rock	KS	11 06.022	104 13.831	96 m	
43	9111803	Grey argillized rock	KS	11 06.022	104 13.830	96 m	
44	9111804	Reddish brown vein in porphyry	Keb	10 27.779	104 23.396	7 m	
45	9111901	Quartz porphyry (brecciated)	Kam	10 26.876	104 26.712	34 m	
46	9111902	Quartz porphyry	Kam	10 26.878	104 26.722	35 m	
47	9111903	Black Fe-Mn rock in coluvia	Tak	10 40.830	104 42.117	24 m	
48	9111904	Brecciated brown and white rock	Tak	10 42.040	104 43.180	60 m	
49	9111905	Fe-Mn nodule	Tak	10 36.720	104 45.013	14 m	
50	9111906	Quartz-Hematite vein along	Tak	10 36.720	104 45.013	14 m	
51	9112001	Fine-grained skarnized sandstone	Tak	10 32.965	104 49.972	14 m	

QV=quartz vein

Appendix V-8 Results of Multi-Metal-Elements Analysis for Rock Samples

	SAMPLE ID	Au ppm	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm
1	9060403	0.022	<0.2	1.66	170	<10	10	2.5	<2	0.02	<0.5	5	161
2	9060404	0.014	<0.2	0.71	20	<10	50	0.5	<2	0.05	<0.5	2	23
3	9060405	0.009	<0.2	1.03	119	<10	50	1.4	<2	0.07	<0.5	3	24
4	9060501	0.001	<0.2	0.31	18	<10	40	<0.5	<2	0.02	<0.5	1	5
5	9060502	0.022	0.3	0.27	241	<10	50	0.5	4	0.03	<0.5	7	2
6	9060506	0.025	<0.2	0.35	108	<10	20	<0.5	<2	0.01	<0.5	<1	3
7	9060507	0.005	0.2	0.52	517	<10	40	<0.5	<2	0.01	<0.5	<1	<1
8	9060508	0.003	<0.2	0.38	223	<10	40	<0.5	<2	<0.01	<0.5	<1	1
9	9060909	0.003	0.3	0.75	40	<10	130	<0.5	<2	0.21	<0.5	3	11
10	9061002	0.003	0.2	0.49	43	<10	30	<0.5	<2	>25.0	2.2	4	62
11	9061204A	<0.001	<0.2	1.29	6	<10	240	<0.5	<2	1.85	<0.5	4	14
12	9061204B	0.001	<0.2	0.71	6	<10	110	<0.5	<2	0.2	<0.5	2	17
13	9061406	0.038	<0.2	0.64	3	<10	10	<0.5	<2	0.02	<0.5	<1	6
14	9061503	<0.001	<0.2	0.1	2	<10	10	<0.5	<2	0.01	<0.5	<1	24
15	9061507	<0.001	<0.2	0.08	6	<10	<10	<0.5	<2	0.01	<0.5	2	78
16	9061702B	0.002	<0.2	2.42	15	<10	100	0.5	<2	1.68	<0.5	2	16
17	9061703	0.002	0.4	1.05	22	<10	140	0.7	<2	1.23	<0.5	2	10
18	9061705A	0.004	8.6	0.31	289	<10	20	<0.5	30	0.06	1.2	1	3
19	9061705B	0.011	2.2	0.25	50	<10	10	1	16	0.07	<0.5	<1	2
20	9061706	0.002	<0.2	3.4	27	<10	80	0.5	<2	1.05	<0.5	11	43
21	9061709	<0.001	<0.2	0.37	10	<10	30	0.5	<2	0.01	<0.5	<1	7
22	9061710	0.015	0.9	0.77	274	<10	1070	5.3	4	0.02	1.7	85	3
23	9081002	0.314	0.3	0.44	149	<10	220	0.5	<2	0.11	<0.5	15	7
24	9081003	0.003	<0.2	0.25	5	<10	200	<0.5	<2	<0.01	<0.5	1	6
25	9081008	0.028	<0.2	1.43	5	<10	80	2.1	<2	0.02	<0.5	41	19
26	9081104	<0.001	<0.2	0.27	2	<10	20	<0.5	<2	0.01	<0.5	<1	4
27	9081201	0.277	0.5	2.26	20	<10	20	<0.5	<2	1.11	<0.5	238	30
28	9082201	0.004	<0.2	0.45	338	<10	20	0.6	<2	0.01	<0.5	5	11
29	9082202	0.196	0.2	0.23	18	30	320	<0.5	26	0.03	<0.5	1	2
30	9082203	0.007	<0.2	0.66	73	<10	420	1.9	<2	0.01	<0.5	38	7
31	9082204	0.07	<0.2	0.97	39	<10	3210	2.4	<2	<0.01	0.7	81	35
32	9082302B	0.004	1.5	0.12	3	<10	20	1	4	0.04	1	1	8
33	9111501	0.048	<0.2	0.45	4	<10	10	<0.5	<2	<0.01	<0.5	<1	6
34	9111502	0.009	<0.2	0.43	6	<10	10	<0.5	<2	0.01	<0.5	<1	6
35	9111503	0.04	<0.2	0.33	6	<10	<10	<0.5	<2	<0.01	<0.5	<1	9
36	9111504	0.013	<0.2	0.21	11	<10	10	<0.5	<2	0.01	<0.5	<1	10
37	9111505	0.009	<0.2	0.52	6	<10	10	<0.5	<2	0.02	<0.5	<1	7
38	9111602	0.007	<0.2	6.5	3	<10	50	<0.5	<2	3.57	<0.5	22	54
39	9111603	0.059	<0.2	8.95	<2	<10	10	<0.5	<2	5.84	<0.5	11	16
40	9111604	0.01	<0.2	5.84	2	<10	20	<0.5	<2	3.44	<0.5	8	40
41	9111801	0.058	<0.2	0.23	42	<10	20	<0.5	<2	0.03	<0.5	1	12
42	9111802	0.027	<0.2	0.53	42	<10	30	0.6	<2	0.04	<0.5	2	26
43	9111803	0.028	<0.2	0.56	58	<10	50	0.7	<2	0.06	<0.5	2	23
44	9111804	0.053	0.3	0.25	51	<10	30	<0.5	<2	<0.01	<0.5	<1	6
45	9111901	0.008	0.3	0.75	104	<10	40	1	<2	0.01	<0.5	2	2
46	9111902	0.017	<0.2	0.62	35	<10	50	0.6	<2	<0.01	<0.5	1	2
47	9111903	0.006	<0.2	0.98	146	<10	560	4	3	0.03	0.5	98	9
48	9111904	0.01	<0.2	0.93	57	<10	560	0.9	<2	<0.01	<0.5	24	51
49	9111905	<0.001	2	1.76	28	<10	1450	0.9	5	0.02	1.4	335	114
50	9111906	0.009	5.4	0.64	22	<10	710	0.9	3	0.01	0.8	364	49
51	9112001	0.032	0.2	4.12	2,780	<10	20	6.9	28	2.98	<0.5	16	44

Appendix V-8 Results of Multi-Metal-Elements Analysis for Rock Samples

	SAMPLE ID	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm
1	9060403	71	13.4	10	<1	0.03	30	0.02	165	8	0.01	38	360
2	9060404	22	1.32	<10	<1	0.18	20	0.03	26	<1	0.01	7	30
3	9060405	383	7.04	10	<1	0.08	20	0.02	160	2	0.01	17	150
4	9060501	8	0.88	<10	<1	0.13	10	0.02	137	1	<0.01	2	50
5	9060502	22	4.16	<10	<1	0.12	10	0.03	497	1	0.01	4	110
6	9060506	4	2.97	<10	<1	0.13	10	0.01	13	5	0.01	<1	240
7	9060507	3	6.07	<10	<1	0.19	<10	0.01	11	8	0.01	<1	460
8	9060508	4	3.44	<10	<1	0.19	<10	0.01	15	3	0.01	<1	260
9	9060909	14	2.05	<10	<1	0.03	<10	0.45	440	1	0.11	4	260
10	9061002	19	0.91	<10	<1	0.01	<10	0.08	404	1	0.01	30	1,200
11	9061204A	11	2.42	10	<1	0.04	<10	0.94	724	<1	0.05	5	370
12	9061204B	4	1.66	<10	<1	0.05	<10	0.43	426	1	0.07	3	160
13	9061406	2	0.99	<10	<1	0.1	<10	<0.01	12	2	0.07	1	30
14	9061503	6	0.84	<10	<1	0.01	<10	<0.01	67	1	0.01	3	40
15	9061507	8	0.79	<10	<1	<0.01	<10	<0.01	59	1	<0.01	6	20
16	9061702B	19	0.69	<10	<1	0.05	20	0.11	138	<1	0.38	6	570
17	9061703	5	1.41	<10	<1	0.15	<10	0.1	92	1	0.04	3	50
18	9061705A	4	1.55	<10	<1	0.21	10	0.01	155	1,410	0.04	1	100
19	9061705B	2	0.88	<10	<1	0.22	20	0.01	37	412	0.01	1	260
20	9061706	26	3.42	10	<1	1.39	10	1.2	438	2	0.27	17	620
21	9061709	51	3.58	<10	<1	0.13	<10	0.02	60	3	0.01	3	240
22	9061710	350	21.4	20	1	0.25	<10	<0.01	35,700	27	0.02	40	4,360
23	9081002	80	2.31	<10	<1	0.11	20	0.05	1,090	<1	0.03	15	60
24	9081003	2	0.82	<10	<1	0.08	10	0.01	111	<1	0.02	<1	40
25	9081008	16	5.86	<10	<1	0.2	30	0.12	737	<1	0.02	19	390
26	9081104	2	0.46	<10	<1	0.15	20	0.01	25	<1	0.01	<1	20
27	9081201	633	6.5	10	<1	0.08	10	0.53	527	<1	0.21	58	640
28	9082201	11	3.52	<10	<1	0.09	<10	<0.01	41	1	0.02	12	240
29	9082202	42	0.93	<10	<1	0.11	10	0.01	25	2	0.02	<1	480
30	9082203	103	17.7	<10	<1	0.11	<10	<0.01	8,220	1	0.02	38	4,660
31	9082204	268	10.8	10	<1	0.12	10	<0.01	21,500	3	0.04	46	1,980
32	9082302B	137	0.7	<10	<1	0.09	<10	0.01	177	6	0.01	<1	30
33	9111501	9	0.52	<10	<1	0.08	<10	<0.01	34	<1	0.06	<1	30
34	9111502	3	1.71	<10	<1	0.03	<10	<0.01	25	3	0.05	<1	40
35	9111503	7	0.95	<10	<1	0.04	<10	<0.01	18	<1	0.04	<1	40
36	9111504	6	1.48	<10	<1	0.01	<10	<0.01	24	1	0.01	<1	80
37	9111505	7	5.78	<10	<1	<0.01	<10	<0.01	30	1	0.01	<1	60
38	9111602	57	2.91	10	1	0.24	<10	0.69	148	<1	0.89	38	270
39	9111603	41	1.4	20	1	0.02	<10	0.14	89	<1	0.57	26	280
40	9111604	80	1.02	10	1	0.04	<10	0.27	104	<1	0.82	12	290
41	9111801	18	0.83	<10	<1	0.12	10	0.01	54	<1	0.01	2	40
42	9111802	87	2.51	<10	<1	0.08	20	0.02	92	1	0.01	7	60
43	9111803	79	2.35	<10	<1	0.2	30	0.02	43	1	0.01	6	70
44	9111804	11	1.73	<10	<1	0.11	<10	0.01	18	7	0.01	<1	100
45	9111901	6	8.38	<10	<1	0.17	10	0.01	72	3	0.03	<1	490
46	9111902	8	3.4	<10	<1	0.26	20	0.01	41	1	0.03	<1	170
47	9111903	130	25.6	10	<1	0.37	<10	<0.01	46,400	1	0.03	67	6,760
48	9111904	126	9.54	10	<1	0.16	10	0.01	4,630	1	0.02	12	320
49	9111905	115	28.4	<10	5	0.88	<10	0.01	>50,000	2	0.1	117	940
50	9111906	138	5.33	<10	3	0.86	<10	0.01	>50,000	<1	0.05	104	560
51	9112001	412	4.07	10	1	0.09	10	0.55	1,385	<1	0.45	23	510

Appendix V-8 Results of Multi-Metal-Elements Analysis for Rock Samples

	SAMPLE ID	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Th ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
1	9060403	63	0.01	4	13	2	<20	0.04	<10	10	212	<10	120
2	9060404	12	0.01	2	4	4	<20	0.01	<10	<10	35	<10	15
3	9060405	18	<0.01	3	16	4	20	0.02	<10	10	86	<10	23
4	9060501	15	<0.01	2	1	2	<20	<0.01	<10	<10	3	<10	11
5	9060502	29	0.01	5	2	7	<20	<0.01	<10	<10	3	<10	57
6	9060506	2	0.01	7	1	3	<20	<0.01	<10	<10	3	<10	<2
7	9060507	2	0.04	7	1	9	<20	<0.01	<10	<10	5	<10	6
8	9060508	2	0.02	4	1	4	<20	<0.01	<10	<10	3	<10	9
9	9060909	10	0.5	2	4	19	<20	0.09	<10	<10	16	<10	34
10	9061002	5	<0.01	2	4	124	<20	<0.01	<10	<10	39	<10	45
11	9061204A	3	0.05	2	5	42	<20	0.13	<10	<10	22	<10	62
12	9061204B	3	0.14	2	3	22	<20	0.09	<10	<10	9	<10	31
13	9061406	5	0.36	4	<1	48	<20	<0.01	<10	<10	14	<10	<2
14	9061503	4	0.01	3	1	9	<20	<0.01	<10	<10	15	<10	<2
15	9061507	<2	<0.01	2	1	2	<20	<0.01	<10	<10	8	<10	3
16	9061702B	5	0.04	3	1	128	<20	0.1	<10	<10	13	<10	19
17	9061703	6	0.26	2	1	60	<20	0.03	<10	<10	11	<10	13
18	9061705A	79	1.35	<2	<1	4	<20	<0.01	<10	<10	1	<10	282
19	9061705B	74	0.75	2	<1	5	<20	<0.01	<10	<10	1	<10	95
20	9061706	5	0.13	3	11	111	<20	0.24	<10	<10	88	<10	79
21	9061709	5	0.01	5	2	5	<20	<0.01	<10	<10	7	<10	17
22	9061710	23	0.03	2	12	159	<20	<0.01	<10	<10	35	<10	251
23	9081002	23	<0.01	<2	4	8	<20	<0.01	<10	<10	7	<10	21
24	9081003	16	0.01	<2	<1	7	<20	<0.01	<10	<10	2	<10	<2
25	9081008	19	<0.01	<2	3	12	<20	0.01	<10	<10	26	<10	36
26	9081104	4	<0.01	<2	<1	2	<20	<0.01	<10	<10	2	<10	<2
27	9081201	16	2.83	<2	7	70	<20	0.14	<10	<10	64	<10	68
28	9082201	11	0.01	3	2	9	<20	<0.01	<10	<10	12	<10	38
29	9082202	158	0.06	18	<1	36	<20	<0.01	<10	<10	11	<10	6
30	9082203	7	0.01	<2	2	15	<20	0.01	<10	<10	10	<10	181
31	9082204	15	0.02	<2	8	13	<20	<0.01	10	10	43	<10	199
32	9082302B	117	0.04	<2	<1	3	<20	<0.01	<10	<10	1	<10	67
33	9111501	4	0.31	<2	<1	40	<20	<0.01	<10	<10	12	<10	<2
34	9111502	5	0.17	3	1	42	<20	0.01	<10	<10	25	<10	<2
35	9111503	7	0.15	4	<1	42	<20	<0.01	<10	<10	24	<10	<2
36	9111504	6	0.05	<2	1	48	<20	<0.01	<10	<10	27	<10	<2
37	9111505	19	0.01	4	6	7	<20	0.05	<10	<10	87	<10	4
38	9111602	3	1.2	<2	3	279	<20	0.1	<10	<10	93	<10	24
39	9111603	2	0.64	<2	1	192	<20	0.15	<10	<10	20	<10	4
40	9111604	<2	0.13	<2	3	106	<20	0.09	<10	<10	46	<10	11
41	9111801	32	0.01	<2	1	3	<20	<0.01	<10	<10	8	<10	30
42	9111802	19	0.01	<2	5	4	20	0.01	<10	<10	48	<10	22
43	9111803	30	0.01	<2	6	9	20	0.01	<10	<10	44	<10	20
44	9111804	4	0.01	2	<1	5	<20	<0.01	<10	<10	3	<10	<2
45	9111901	12	0.03	<2	3	4	<20	<0.01	<10	<10	13	<10	42
46	9111902	9	0.01	<2	4	3	<20	<0.01	<10	<10	7	<10	33
47	9111903	9	0.01	<2	3	195	<20	<0.01	20	<10	15	<10	385
48	9111904	12	0.01	<2	4	9	<20	<0.01	<10	<10	71	<10	28
49	9111905	27	0.03	<2	20	197	<20	0.05	<10	<10	99	<10	362
50	9111906	21	0.02	<2	5	81	<20	<0.01	50	20	42	<10	406
51	9112001	10	1.35	<2	4	109	<20	0.13	<10	<10	45	130	68

Appendix V-9 Sample List of Geochemical Analysis

Sample ID	Province	Latitude N	Longitude E	Elev.	Sand properties	Description
9060401	KS	11 12.869	104 14.416	83 m	br-yl fng S	l;sand & mud, 2;10m, 3;10m, 4;slow, 5;RB, 6;flat, far
9060402	KS	11 11.646	104 14.38	87 m	rd-br md-csg S	l;sand & mud, 2;10m, 3;4m, 4;slow, 5;LB, 6;flat, mod
9060406	Kam	11 2.178	104 14.8	59 m	br mdg S	l;sand, mud & soil, 2;12m, 3;12m, 4;slow, 5;LB, 6;flat, mod
9060407	Kam	10 51.452	104 14.175	17 m	br fng S	l;sand & mud, 2;20m, 3;20m, 4;slow, 5;LB, 6;flat, mod
9060408	Kam	10 52.902	104 9.237	41 m	br csg S & G	l;basement rock (silicic and gr csg St), 2;30m, 3;30m, 4.rapid, 5;holm near LB 6;mod, close
9060409	Kam	10 55.868	104 25.618	48 m	l-rd-br fng S	l;sand, 2;15m, 3;2m, 4;mod, 5;LB, 6;flat, very far
9060410	Kam	11 0.668	104 27.363	57 m	rd-br csg S	l;sand, 2;20m, 3;5m, 4;mod, 5;LB, 6;flat, very far
9060503	Kam	10 42.783	104 10.58	8 m	br-yl v-fng S	l;fng sand & mud, 2;50m, 3;50m, 4;slow, 5;LB, 6;flat, far
9060504	Keb	10 33.928	104 16.339	3 m	l-br-gy v-fng S	l;v-fng sand & blk organic mud, 2;5m, 3;3m, 4;stagnant, 5;RB, 6;flat, far
9060505	Keb	10 30.223	104 17.268	1 m	d-br-gy mdg S	l;mdg sand & pebble, 2;3m, 5;water's edge, 6;mod, near
9060510	Keb	10 27.397	104 23.222	5 m	l-gy mdg S	l;mdg sand, 2;10m, 5;water's edge, 6;mod, 200m
9060801	KChhn	12 2.726	104 19.052	104 m	l-br csg S	l;Csg sand, 2;20m, 3;20m, 4;mod, 5;flow centre, 6;Flat-mod, near
9060803	KChhn	12 3.695	104 20.554	91 m	gy fng & wt csg S	l;fng-csg sand, 2;22m, 3;4m, 4;mod, 5;LB, 6;mod, near
9060804	KChhn	12 3.5	104 22.146	84 m	p-br-wt csg S	l;csg sand, 2;7m, 3;5m, 4;mod, 5;holm, 6;mod, near
9060805	KChhn	12 3.502	104 22.17	82 m	brn csg S	l;csg sand, 2;5-20m, 3;2-5m, 4;mod, 5;RB, 6;mod, near
9060806	KChhn	12 14.154	104 16.948	54 m	p-br csg S & G	l;sand, 2;20m, 3;6m, 4;mod, 5;RB, 6;mod, mod
9060807	Pur	12 18.151	104 10.675	61 m	br csg S	l;fng-csg sand, 2;15m, 3;8m, 4;slow, 5;LB, 6;flat, far
9060808	Pur	12 18.884	104 10.625	58 m	br fng-csg S	l;fng-csg sand, 2;12-30m, 3;12-30m, 4;mod, 5;flow centre, 6;flat, far
9060901	Pur	12 18.376	103 33.757	37 m	br-gy fng S	l;fng sand, 2;35m, 3;18m, 4;fast, 5;LB, 6;mod, near
9060902	Pur	12 19.444	103 30.638	49 m	br fng-mdg S	l;sandstone, 2;15m, 3;2m, 4;rapid, 5;flow centre, 6;mod, on the outcrop
9060904	Pur	12 19.083	103 30.318	46 m	gy muddy fng S	l;fng sand & mud, 2;51m, 3;51m, 4;slow, 5;LB, 6;flat, close
9060906	Pur	12 19.662	103 8.8	206 m	br csg S & G	l;csg sand-boulder, 2;10m, 3;10m, 4;fast, 5;RB, 6;mod, close
9060907	Pur	12 18.512	103 6.601	214 m	br-gy mdg-csg S	l;mdg sand-granule, 2;10m, 3;10m, 4;mod, 5;LB, 6;mod, close
9060908	Pur	12 17.582	103 4.513	226 m	br-gy mdg-csg S	l;csg sand-pebble & basement rock, 2;8m, 3;5m, 4;fast, 5;LB, 6;steep, on the outcrop
9061003	BMC	13 35.425	103 24.222	11 m	l-gy fng S	l;fng sand, 2;46m, 3;38m, 4;slow, 5;RB, 6;flat, far
9061004	BMC	13 36.378	103 18.899	11 m	l-gy fng S	l;fng sand-mud, 2;51m, 3;51m, 4;stag, 5;LB, 6;flat, far
9061102	SR	13 51.261	103 48.016	38 m	l-br sandy Mud	l;mud, 2;30m, 3;10m, 4;slow, 5;LB, 6;flat, far
9061103	SR	13 50.895	103 49.213	42 m	l-br muddy v-fng S	l;v-fng sand & mud, 2;8m, 3;8m, 4;slow, 5;RB, 6;flat, mod

Appendix V-9 Sample List of Geochemical Analysis

Sample ID	Province	Latitude N	Longitude E	Elev.	Sand properties	Description
9061104	SR	13 50.427	103 54.387	49 m	l-br fng S	l;fng sand & mud, 2;11m, 3;11m, 4;stagnant, 5;LB, 6;flat, mod
9061105	SR	13 47.889	104 0.513	59 m	rd-br v-fng S	l;fng sand, 2;110m, 3;2m, 4;no water, 5;RB, 6;mod, near
9061203	OMC	14 8.368	103 55.964	41 m	br rhyolite S	l;Ry Br brechhvfng sand & mud, 2;8m, 3;8m, 4;slow, 5;RB, 6;flat, mod
9061205	OMC	14 10.735	103 58.672	39 m	l-br fng S	l;sand & gravel, 2;10m, 3;4m, 4;pool, 5;LB, 6;mod, near
9061401	SR	13 25.295	104 24.41	33 m	l-gy fng-mdg S	l;fng sand & mud, 2;20.5m, 3;20.5m, 4;mod, 5;LB, 6;flat, far
9061402	SR	13 25.193	104 29.115	44 m	gy fng S & sdy Mud	l;fng sand, mud & leterite pebble, 2;7m, 3;7m, 4;slow, 5;LB, 6;flat, far
9061403	SR	13 25.314	104 30.504	44 m	gy muddy fng S	l;mud & v-fng sand, 2;10m, 3;10m, 4;stagnant, 5;LB, 6;flat, far
9061404	SR	13 25.376	104 31.276	44 m	rd-br fng S	l;angular gravel,mud & sand, 2;7m, 3;0-7m, 4;pool, 5;LB, 6;mod, mod
9061501	KT	12 32.142	105 17.51	20 m	yl-bn fng S	l;sand & mud, 2;50m, 3;50m, 4;slow, 5;RB, 6;flat, mod
9061502	KT	12 36.928	105 28.138	46 m	gy v-fng S	l;sand & mud, 2;7m, 3;7m, 4;mod, 5;LB, 6;mod, near
9061504	KT	12 39.752	105 27.447	70 m	p-rd-bn-wt fng S	l;sand, 2;1m, 3;dry, 4;-; 5;centre, 6;mod, close
9061505	KT	12 39.904	105 27.049	55 m	p-bn-wt fng-mod S	l;sand, 2;8m, 3;8m, 4;mod, 5;RB, 6;mod, close
9061506	KT	12 39.091	105 28.611	50 m	p-bn-wt csg S	l;gravel & sand, 2;8m, 3;2m, 4;flat, 5;LB, 6;mod, near
9061508	KT	12 40.521	105 30.757	97 m	gy mdg S w/breccia	soil on a trail
9061601	KS	11 43.024	103 52.171	132 m	br csg S	l;gravel & sand, 2;7m, 3;3m, 4;mod, 5;RB, 6;mod, close
9061602	KS	11 42.721	103 53.938	129 m	br mdg S	l;gravel, 2;10m, 3;5m, 4;mod, 5;centre, 6;mod, close, sample sieved 1.15mm
9061603	KS	11 42.505	103 54.874	124 m	br fng S	l;gravel & sand, 2;15m, 3;10m, 4;mod, 5;centre, 6;mod, close
9061604	KS	11 42.173	103 56.592	115 m	br csg S	l;boulder & sand, 2;8m, 3;8m, 4;stagnant, 5;centre, 6;mod, close
9061605	KS	11 43.196	104 0.038	95 m	br-l-gy csg S	l;gravel & sand, 2;10m, 3;10m, 4;slow, 5;centre, 6;mod, close
9061606	KS	11 42.466	104 5.912	74 m	br-wt csg S	l;granule & sand, 2;20m, 3;5m, 4;mod, 5;centre, 6;mod, near
9061607	KS	11 41.266	104 7.96	76 m	yl-br-wt csg S & G	l;granule & sand, 2;30m, 3;10m, 4;mod, 5;RB, 6;mod, near
9061608	KS	11 38.95	104 11.798	71 m	br S	l;gravel & sand, 2;14.5m, 3;2m, 4;slow, 5;centre, 6;mod, near, sample sieved 1.15mm
9061609	KS	11 37.597	104 14.847	92 m	br S	l;gravel & sand, 2;7m, 3;0.5m, 4;slow, 5;LB, 6;mod, near, sample sieved 1.15mm
9061701	Tak	10 39.385	104 52.113	3 m	l-br fng S	lake sediment, l;sandy mud, 5;lake side, 6;flat, near
9061707	Tak	10 33.934	104 51.151	12 m	l-gy mdg-csg S	l;granule & csg sand, 2;6m, 3;6m, 4;mod, 5;RB, 6;mod, close
9061708	Tak	10 34.643	104 47.967	6 m	l-br-wt fng S	l;fng-csg sand, 2;6m, 3;6m, 4;slow, 5;centre, 6;mod, near
9080601	Kra	13 2.426	106 10.919	43 m	br fng S	l;fng sand, 2;71.5m, 3;71.5m, 4;slow, 5;RB, 6;flat, far
9080602	Kra	13 9.08	106 8.765	45 m	l-br fng S	l;fng sand, 2;54m, 3;52m, 4;mod, 5;LB, 6;flat, far

Appendix V-9 Sample List of Geochemical Analysis

Sample ID	Province	Latitude N	Longitude E	Elev.	Sand properties	Description
9080701	ST	13 30.05	106 21.177	60 m	br fng S	1;fng sand, 2;227m, 3;227m, 4;fast, 5;LB, 6;flat, far
9080702	RK	13 27.75	106 38.566	81 m	br v-fng S	1;v-fng sand, 2;281m, 3;281m, 4;mod, 5;LB, 6;flat, far
9080708	RK	13 28.508	106 59.798	97 m	bn-gy v-fng S	1;v-fng sand, 2;236m, 3;236m, 4;mod, 5;RB, 6;flat, far
9080802	RK	13 58.447	106 48.883	92 m	br fng S	1;fng-csg sand, 2;340m, 3;340m, 4;mod, 5;LB, 6;flat, far
9080804	RK	13 35.47	106 48.506	124 m	bn csg S & G	1;pebble & csg sand, 2;4m, 3;4m, 4;fast, 5;LB, 6;mod, near
9080901	Kra	12 27.211	106 10.588	23 m	l-br fng S	1;fng sand & mud, 2;7m, 3;7m, 4;slow, 5;RB, 6;flat, far
9080902	Kra	12 28.516	106 12.954	27 m	l-br fng S	1;fng sand, 2;5m, 3;5m, 4;slow, 5;LB, 6;flat, far
9080903	Kra	12 30.208	106 15.527	39 m	l-gy fng-mdg S	1;fng sand & pebble, 2;8m, 3;4m, 4;mod, 5;RB, 6;flat, far
9080904	Kra	12 24.847	106 13.824	28 m	br mdg S	1;mdg sand & boulder, 2;10m, 3;9m, 4;slow, 5;LB, 6;flat, far
9080905	Kra	12 23.597	106 14.434	27 m	br fng S	1;sand & gravel, 2;65m, 3;64m, 4;fast, 5;LB, 6;flat, far
9081004	MK	12 59.994	107 8.031	165 m	br fng S	1;fng sand, 2;15m, 3;15m, 4;mod, 5;LB, 6;mod, mod
9081005	MK	13 1.76	107 3.261	141 m	br fng S	1;sand, 2;20m, 3;20m, 4;fast, 5;LB, 6;mod, close
9081007	MK	13 3.679	107 2.606	138 m	br fng S	1;sand, 2;41m, 3;41m, 4;fast, 5;LB, 6;mod, close
9081102	Kra	12 24.699	106 16.955	36 m	br S	1;sand & boulder, 2;5m, 3;3m, 4;fast, 5;LB, 6;mod, close, sample sieved 0.6mm at the site
9081103	Kra	12 24.697	106 16.959	37 m	br S	1;sand & boulder, 2;7m, 3;7m, 4;fast, 5;centre, 6;mod, close, sample sieved 0.6mm at the site
9081301	PV	13 50.333	104 41.735	43 m	l-br fng S	1;fng sand, 2;5m, 3;5m, 4;mod, 5;LB, 6;flat, far
9081302	PV	13 45.779	104 44.283	57 m	l-br fng S	1;fng sand, 2;20m, 3;20m, 4;mod, 5;LB, 6;flat, near
9081303	PV	13 46.697	104 39.298	61 m	l-br fng S	1;fng sand, 2;5m, 3;4m, 4;slow, 5;LB, 6;flat, mod
9081304	PV	13 45.611	104 37.778	64 m	l-br fng S	1;fng sand, 2;5m, 3;4m, 4;mod, 5;RB, 6;mod, close
9081701	SR	13 53.912	103 32.158	16 m	l-br fng S	1;sand, 2;36m, 3;36m, 4;mod, 5;LB, 6;flat, far
9081702	OMC	14 10.406	103 29.267	41 m	br mdg S	1;laterite gravel & sand, 2;4mx2, 3;4mx2, 4;slow, 5;centre, 6;flat, far, sample sieved 0.6mm at the site
9081703	OMC	14 10.519	103 24.012	39 m	br fng S	1;fng sand & mud, 2;5m, 3;5m, 4;slow, 5;LB, 6;flat, far
9081704	OMC	14 9.814	103 16.017	46 m	br fng S	1;fng sand & mud, 2;5m, 3;5m, 4;stagnant, 5;RB, 6;flat, far
9081705	BMC	13 57.071	103 2.912	43 m	br mdg S	1;fng sand, mud & laterite gravel, 2;5m, 3;5m, 4;stagnant, 5;RB, 6;flat, far
9081801	Bat	12 49.723	102 54.628	38 m	br v-fng S	1;sand, mud & gravel, 2;50m, 3;50m, 4;mod, 5;LB, 6;mod, near
9081802	Bat	12 42.752	102 57.428	58 m	br mdg-fng S	1;mud & sand, 2;44m, 3;44m, 4;slow, 5;RB, 6;mod, close
9081803	Bat	12 43.355	102 48.54	84 m	g-gy csg S	1;sand & boulder, 2;10m, 3;10m, 4;mod, 5;LB, 6;mod, near

Appendix V-9 Sample List of Geochemical Analysis

Sample ID	Province	Latitude N	Longitude E	Elev.	Sand properties	Description
9081804	Bat	12 42.945	102 46.177	101 m	br-gy csg S	l;sand & boulder, 2;30m, 3;30m, 4;mod-fast, 5;RB, 6;mod, close
9081805	Pai	12 52.606	102 36.179	150 m	br fng S	l;sand & gravel, 2;8m, 3;4m, 4;fast, 5;RB, 6;mod, on the outcrop
9081806	Pai	12 53.279	102 35.41	145 m	l-br fng S	l;sand & gravel, 2;25m, 3;25m, 4;fast, 5;RB, 6;mod, close
9081807	Pai	13 1.282	102 35.106	68 m	l-br v-fng S	l;mud & boulder, 2;32m, 3;32m, 4;rapid, 5;RB, 6;mod, near
9082001	KK	11 8.311	103 46.257	2 m	wt v-fng S	l;mud, 2;274m, 3;274m, 4;stagnant, 5;RB, 6;flat, close
9082002	KK	11 23.023	103 15.375	6 m	wt csg S	l;snd & mud, 2;185m, 3;185m, 4;stagnant, 5;LB, 6;flat, near
9082003	KK	11 33.91	103 7.672	18 m	wt csg S & G	l;snd, 2;210m, 3;210m, 4;slow, 5;centre, 6;mod, near, sample sieved 0.6mm at the site
9082004	KK	11 41.249	103 25.653	390 m	br-wt mdg S	l;gravel & boulder, 2;40m, 3;40m, 4;fast, 5;LB, 6;mod, close
9082101	KK	11 43.894	103 4.618	0 m	l-br fng S	l;sand & mud, 2;171m, 3;171m, 4;slow, 5;LB, 6;flat, on the outcrop
9082102	KK	11 43.21	103 0.121	0 m	wt mdg S	l;sand, 2;1km, 3;1km, 4;slow, 5;left centre, 6;flat, close
9082103	KK	11 42.898	102 58.115	2 m	wt mdg S	l;sand, 2;600m, 3;600m, 4;stagnant, 5;holm, 6;flat, close
9082301	Tak	10 59.628	104 58.606	5 m	l-br fng S	l;sand & mud, 2;89m, 3;89m, 4;slow, 5;RB, 6;flat, far
9111101	ST	13 36.096	105 55.247	46 m	br csg S	l;laterite gravel, 2;10m, 3;8m, 4;mod, 5;RB, 6;mod, far
9111102	ST	13 37.946	105 45.256	75 m	l-br fng S	l;sand & gravel, 2;8m, 3;4m, 4;mod, 5;LB, 6;mod, far
9111103	ST	13 38.368	105 42.685	93 m	br csg S	l;sand & gravel, 2;10m, 3;6m, 4;mod, 5;RB, 6;mod, far
9111104	ST	13 37.095	105 50.283	68 m	gy-br mdg S	l;sand & mud, 2;15m, 3;15m, 4;slow, 5;centre, 6;flat, far

1; river/beach bed material, 2; width of river bed/beach, 3; width of river flow, 4; flow speed, 5; sample point, 6; slope of the river/beach, distance to an outcrop in upper reaches

Abbreviations

color	d: dark	size	fng: fine grain	geology	S: sand	others	RB: right bank	province	KS: Kampong Speu	RK: Rattanakiri
	l: light		csg: coarse grain		G: granule		LB: left bank		Kam: Kampot	MK: Modulkiri
	p: pale		mdg: medium grain		M: mud		w: width		Keb: Keb	PV: Preah Vihear
	gr: green		sd: sandy		R: rock		mod: moderate		KChhn: Kampong Chhnang	Bat: Battambang
	gy: gray				Gv: gravel		av: average		Pur: Pursat	Pai: Pailin
	bk: black				Cg: conglomerate				BMC: Banteay Mean Chey	KK: Koh Kong
	wt: white				Qz: quartz				SR: Siem Reap	
	rd: red								OMC: Odar Mean Chey	
	br: brown								KT: Kampong Thom	
	pk: pink								Tak: Takeo	

Appendix V-9 Sample List of Geochemical Analysis

Sample ID	Province	Latitude N	Longitude E	Elev.	Sand properties	Description
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pp: purple
 yl: yellow

Kra: Kratie
 ST: Stung Treng

Appendix V-10 Results of Geochemical Analysis

	SAMPLE ID	Province	GPS			Legend of Area
			Latitude N	Longitude E	Elev.	
1	9060401	KS	11 12.869	104 14.416	83 m	KS
2	9060402	KS	11 11.646	104 14.38	87 m	Kampon Speu
3	9060406	Kam	11 2.178	104 14.8	59 m	
4	9060407	Kam	10 51.452	104 14.175	17 m	Kam
5	09060408A	Kam	10 52.902	104 9.237	41 m	Kampot
6	09060408B					
7	9060409	Kam	10 55.868	104 25.618	48 m	Keb
8	9060410	Kam	11 0.668	104 27.363	57 m	Keb
9	9060503	Kam	10 42.783	104 10.58	8 m	
10	9060504	Keb	10 33.928	104 16.339	3 m	KChhn
11	9060505	Keb	10 30.223	104 17.268	1 m	Kampong Chhnang
12	9060510	Keb	10 27.397	104 23.222	5 m	
13	9060801	KChhn	12 2.726	104 19.052	104 m	Pur
14	9060803	KChhn	12 3.695	104 20.554	91 m	Pursat
15	9060804	KChhn	12 3.5	104 22.146	84 m	
16	9060805	KChhn	12 3.502	104 22.17	82 m	BMC
17	9060806	KChhn	12 14.154	104 16.948	54 m	Banteay Mean Chey
18	09060807A	Pur	12 18.151	104 10.675	61 m	
19	09060807B					SR
20	9060808	Pur	12 18.884	104 10.625	58 m	Siem Reap
21	9060901	Pur	12 18.376	103 33.757	37 m	
22	9060902	Pur	12 19.444	103 30.638	49 m	OMC
23	9060904	Pur	12 19.083	103 30.318	46 m	Odar Mean Chey
24	9060906	Pur	12 19.662	103 8.8	206 m	
25	9060907	Pur	12 18.512	103 6.601	214 m	KT
26	09060908A	Pur	12 17.582	103 4.513	226 m	Kampong Thom
27	09060908B					
28	9061003	BMC	13 35.425	103 24.222	11 m	Tak
29	9061004	BMC	13 36.378	103 18.899	11 m	Takeo
30	9061102	SR	13 51.261	103 48.016	38 m	
31	9061103	SR	13 50.895	103 49.213	42 m	Kra
32	9061104	SR	13 50.427	103 54.387	49 m	Kratie
33	9061105	SR	13 47.889	104 0.513	59 m	
34	9061203	OMC	14 8.368	103 55.964	41 m	ST
35	9061205	OMC	14 10.735	103 58.672	39 m	Stung Treng
36	9061401	SR	13 25.295	104 24.41	33 m	
37	9061402	SR	13 25.193	104 29.115	44 m	RK
38	9061403	SR	13 25.314	104 30.504	44 m	Rattanakiri
39	9061404	SR	13 25.376	104 31.276	44 m	
40	9061501	KT	12 32.142	105 17.51	20 m	MK
41	9061502	KT	12 36.928	105 28.138	46 m	Mondulkiri
42	9061504	KT	12 39.752	105 27.447	70 m	
43	9061505	KT	12 39.904	105 27.049	55 m	PV
44	9061506	KT	12 39.091	105 28.611	50 m	Preah Vihear
45	9061508	KT	12 40.521	105 30.757	97 m	
46	9061601	KS	11 43.024	103 52.171	132 m	
47	9061602	KS	11 42.721	103 53.938	129 m	
48	9061603	KS	11 42.505	103 54.874	124 m	
49	9061604	KS	11 42.173	103 56.592	115 m	
50	9061605	KS	11 43.196	104 0.038	95 m	
51	9061606	KS	11 42.466	104 5.912	74 m	

Appendix V-10 Results of Geochemical Analysis

		Au	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr
	SAMPLE ID	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
1	9060401	<0.001	0.2	0.23	<2	<10	40	<0.5	<2	0.05	<0.5	2	6
2	9060402	0.001	<0.2	0.2	17	<10	40	<0.5	<2	0.08	<0.5	1	7
3	9060406	0.001	<0.2	0.56	21	<10	60	<0.5	3	0.06	<0.5	3	11
4	9060407	<0.001	<0.2	0.4	<2	<10	40	<0.5	<2	0.04	<0.5	3	8
5	09060408A	<0.001	<0.2	1.83	<2	<10	70	<0.5	<2	0.55	<0.5	19	87
6	09060408B	<0.001	<0.2	2.1	14	<10	90	0.7	<2	0.56	<0.5	31	138
7	9060409	<0.001	<0.2	0.1	<2	<10	40	<0.5	<2	0.01	<0.5	1	2
8	9060410	<0.001	<0.2	0.15	2	<10	40	<0.5	<2	0.03	<0.5	1	6
9	9060503	<0.001	<0.2	0.33	<2	<10	40	<0.5	<2	0.05	<0.5	3	11
10	9060504	<0.001	<0.2	0.28	<2	<10	20	<0.5	<2	0.03	<0.5	<1	7
11	9060505	<0.001	0.2	1.12	50	60	10	1.7	<2	0.13	<0.5	15	30
12	9060510	<0.001	0.2	0.07	<2	<10	20	<0.5	<2	0.03	<0.5	1	5
13	9060801	<0.001	<0.2	0.52	<2	<10	30	<0.5	2	0.06	<0.5	1	2
14	9060803	<0.001	<0.2	0.36	<2	<10	20	<0.5	<2	0.05	<0.5	1	4
15	9060804	<0.001	<0.2	0.24	<2	<10	10	<0.5	<2	0.01	<0.5	<1	3
16	9060805	<0.001	<0.2	0.24	<2	<10	20	<0.5	<2	0.02	<0.5	1	3
17	9060806	<0.001	<0.2	0.2	<2	<10	20	<0.5	<2	0.11	<0.5	1	2
18	09060807A	<0.001	<0.2	0.82	<2	<10	30	0.5	<2	0.29	<0.5	2	7
19	09060807B	0.001	<0.2	0.27	<2	<10	20	<0.5	<2	0.03	<0.5	1	2
20	9060808	<0.001	<0.2	0.3	<2	<10	20	<0.5	2	0.03	<0.5	1	3
21	9060901	<0.001	<0.2	0.51	<2	<10	30	<0.5	<2	0.08	<0.5	4	28
22	9060902	<0.001	<0.2	0.12	<2	<10	20	<0.5	<2	0.01	<0.5	1	8
23	9060904	<0.001	<0.2	1.01	<2	<10	60	<0.5	<2	0.18	<0.5	9	50
24	9060906	<0.001	<0.2	1.45	6	<10	60	0.6	<2	0.28	<0.5	10	45
25	9060907	<0.001	<0.2	2.5	7	<10	110	0.7	2	0.58	<0.5	21	45
26	09060908A	<0.001	<0.2	3.4	5	<10	60	0.7	<2	2.85	<0.5	64	485
27	09060908B	<0.001	<0.2	3.44	<2	<10	80	0.7	<2	2.57	<0.5	71	486
28	9061003	<0.001	<0.2	0.14	<2	<10	40	<0.5	<2	0.03	<0.5	2	10
29	9061004	0.001	0.2	0.49	<2	<10	30	<0.5	<2	0.03	<0.5	2	9
30	9061102	<0.001	<0.2	1.15	<2	<10	70	0.6	<2	0.07	<0.5	14	18
31	9061103	<0.001	<0.2	0.56	2	<10	80	<0.5	<2	0.04	<0.5	13	26
32	9061104	<0.001	<0.2	0.17	<2	<10	30	<0.5	<2	0.01	<0.5	2	10
33	9061105	<0.001	<0.2	1.64	<2	<10	1200	1.8	<2	0.57	<0.5	16	24
34	9061203	<0.001	<0.2	0.7	<2	<10	70	<0.5	2	0.23	<0.5	10	101
35	9061205	0.002	<0.2	0.22	<2	<10	710	<0.5	<2	0.02	<0.5	1	11
36	9061401	<0.001	<0.2	0.61	<2	<10	40	<0.5	<2	0.06	<0.5	3	15
37	9061402	<0.001	<0.2	1.08	<2	<10	70	<0.5	<2	0.14	<0.5	14	29
38	9061403	0.001	<0.2	0.74	3	<10	50	<0.5	<2	0.09	<0.5	6	12
39	9061404	<0.001	<0.2	0.58	2	<10	40	<0.5	<2	0.11	<0.5	8	36
40	9061501	<0.001	<0.2	0.48	<2	<10	50	<0.5	<2	0.01	<0.5	2	16
41	9061502	<0.001	<0.2	0.48	<2	<10	40	<0.5	<2	0.01	<0.5	1	9
42	9061504	<0.001	<0.2	0.12	<2	<10	40	<0.5	<2	<0.01	<0.5	<1	16
43	9061505	<0.001	<0.2	0.11	<2	<10	50	<0.5	<2	0.01	<0.5	<1	4
44	9061506	<0.001	<0.2	0.3	<2	<10	50	<0.5	<2	0.01	<0.5	<1	9
45	9061508	<0.001	0.2	1.07	<2	<10	10	<0.5	<2	<0.01	<0.5	<1	40
46	9061601	<0.001	0.2	0.58	3	<10	50	<0.5	<2	0.06	<0.5	3	9
47	9061602	<0.001	<0.2	0.46	<2	<10	30	<0.5	2	0.05	<0.5	3	11
48	9061603	<0.001	<0.2	0.55	9	<10	50	<0.5	<2	0.14	<0.5	6	19
49	9061604	<0.001	<0.2	0.55	3	<10	50	<0.5	<2	0.13	<0.5	4	12
50	9061605	<0.001	0.2	0.35	<2	<10	30	<0.5	<2	0.05	<0.5	3	12
51	9061606	<0.001	<0.2	0.27	<2	<10	30	<0.5	<2	0.05	<0.5	2	7

Appendix V-10 Results of Geochemical Analysis

		Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P
	SAMPLE ID	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	%	ppm	ppm
1	9060401	3	0.82	<10	<1	0.03	10	0.03	174	<1	0.01	2	50
2	9060402	3	0.91	<10	<1	0.04	<10	0.03	164	<1	0.01	1	30
3	9060406	5	1.34	<10	<1	0.12	20	0.04	232	<1	0.02	3	90
4	9060407	3	0.87	<10	<1	0.05	10	0.04	77	<1	0.01	2	60
5	09060408A	20	3.87	10	<1	0.09	10	0.49	585	1	0.04	19	150
6	09060408B	31	7.19	10	<1	0.1	10	0.63	830	1	0.04	28	210
7	9060409	1	0.53	<10	<1	0.04	<10	<0.01	96	<1	0.01	<1	20
8	9060410	1	0.56	<10	<1	0.04	10	0.02	137	<1	0.01	<1	20
9	9060503	3	1	<10	<1	0.04	10	0.04	126	<1	0.01	2	50
10	9060504	5	0.51	<10	<1	0.03	<10	0.03	41	<1	0.11	1	30
11	9060505	4	8.86	<10	<1	0.93	20	0.94	408	1	0.2	9	410
12	9060510	7	0.66	<10	<1	0.04	<10	0.04	72	<1	0.18	<1	40
13	9060801	1	0.84	<10	<1	0.14	<10	0.05	225	<1	0.05	<1	60
14	9060803	1	0.62	<10	<1	0.13	10	0.02	81	<1	0.03	1	40
15	9060804	1	0.47	<10	<1	0.14	<10	<0.01	47	<1	0.02	<1	20
16	9060805	1	0.54	<10	<1	0.14	<10	0.01	248	<1	0.03	<1	20
17	9060806	<1	0.45	<10	<1	0.08	<10	0.02	155	<1	0.02	<1	30
18	09060807A	5	1.16	<10	<1	0.22	10	0.07	255	<1	0.06	2	60
19	09060807B	1	0.71	<10	<1	0.14	<10	0.01	141	<1	0.03	<1	30
20	9060808	2	0.54	<10	<1	0.14	<10	0.01	206	<1	0.03	<1	30
21	9060901	5	1.2	<10	<1	0.05	10	0.11	153	<1	0.02	15	100
22	9060902	1	0.67	<10	<1	0.02	10	0.01	118	<1	0.01	2	60
23	9060904	11	2.04	<10	<1	0.08	10	0.29	279	<1	0.02	36	220
24	9060906	12	2.84	10	<1	0.13	10	0.46	332	<1	0.04	32	240
25	9060907	36	5.29	10	<1	0.22	10	0.86	784	1	0.03	41	340
26	09060908A	74	6.8	10	1	0.05	10	4.24	902	1	0.04	409	490
27	09060908B	78	7.32	10	<1	0.06	10	4.55	1,120	1	0.04	439	550
28	9061003	2	0.65	<10	<1	0.01	<10	0.02	68	<1	0.01	5	40
29	9061004	4	0.72	<10	<1	0.02	10	0.02	73	<1	0.01	1	80
30	9061102	8	2.17	<10	<1	0.05	10	0.07	1,110	<1	0.02	6	70
31	9061103	12	1.99	<10	<1	0.03	10	0.04	394	<1	0.01	8	50
32	9061104	2	0.68	<10	<1	0.02	<10	0.02	73	<1	0.01	2	40
33	9061105	9	2.49	<10	<1	0.33	30	0.5	649	<1	0.03	33	460
34	9061203	13	2.61	<10	<1	0.03	<10	0.14	618	<1	0.02	11	80
35	9061205	2	0.69	<10	<1	0.02	<10	0.02	124	<1	0.01	1	40
36	9061401	8	1.08	<10	<1	0.04	10	0.05	115	<1	0.02	5	100
37	9061402	18	2.42	<10	<1	0.03	10	0.09	645	<1	0.02	11	230
38	9061403	18	1.53	<10	<1	0.03	10	0.04	229	<1	0.01	7	200
39	9061404	12	2.46	<10	<1	0.03	<10	0.05	313	<1	0.02	6	180
40	9061501	4	0.85	<10	<1	0.01	10	0.02	60	<1	0.01	4	70
41	9061502	3	0.45	<10	<1	0.01	<10	0.01	33	<1	0.01	1	30
42	9061504	1	0.51	<10	<1	<0.01	<10	<0.01	40	<1	0.01	<1	10
43	9061505	1	0.46	<10	<1	<0.01	<10	<0.01	45	<1	0.01	<1	20
44	9061506	5	0.98	<10	<1	<0.01	<10	<0.01	69	<1	0.01	1	30
45	9061508	15	1.01	10	<1	0.01	<10	0.01	38	<1	0.01	1	140
46	9061601	4	1.29	<10	<1	0.14	10	0.06	209	<1	0.02	2	70
47	9061602	4	1.36	<10	<1	0.09	<10	0.08	213	<1	0.02	3	80
48	9061603	8	1.91	<10	<1	0.13	10	0.13	438	<1	0.03	8	160
49	9061604	4	1.51	<10	<1	0.09	10	0.11	219	<1	0.02	4	90
50	9061605	3	1.23	<10	<1	0.07	<10	0.06	175	<1	0.02	3	70
51	9061606	1	0.87	<10	<1	0.1	<10	0.03	197	<1	0.02	1	40

Appendix V-10 Results of Geochemical Analysis

		Pb	S	Sb	Sc	Sr	Th	Ti	Tl	U	V	W	Zn
	SAMPLE ID	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
1	9060401	6	0.01	<2	1	3	<20	<0.01	<10	<10	11	<10	14
2	9060402	7	<0.01	<2	<1	3	<20	<0.01	<10	<10	11	<10	11
3	9060406	8	<0.01	3	1	7	<20	0.01	<10	<10	13	<10	20
4	9060407	5	<0.01	<2	1	3	<20	0.01	<10	<10	13	<10	9
5	09060408A	8	0.01	<2	8	28	<20	0.06	<10	<10	120	<10	29
6	09060408B	11	0.01	<2	9	30	<20	0.09	<10	<10	225	<10	36
7	9060409	<2	<0.01	2	<1	3	<20	<0.01	<10	<10	5	<10	<2
8	9060410	6	<0.01	<2	<1	2	<20	<0.01	<10	<10	14	<10	4
9	9060503	5	<0.01	<2	1	4	<20	0.01	<10	<10	18	<10	7
10	9060504	9	0.06	<2	2	4	<20	<0.01	<10	10	5	<10	3
11	9060505	21	0.02	<2	5	19	<20	0.01	<10	<10	56	<10	39
12	9060510	2	0.04	<2	<1	4	<20	0.01	<10	<10	4	<10	4
13	9060801	4	0.01	<2	1	6	<20	0.02	<10	<10	5	<10	9
14	9060803	4	0.01	<2	1	5	20	0.01	<10	<10	4	<10	4
15	9060804	6	<0.01	<2	<1	1	<20	<0.01	<10	<10	2	<10	<2
16	9060805	2	<0.01	<2	<1	3	<20	<0.01	<10	<10	4	<10	2
17	9060806	5	<0.01	<2	<1	2	<20	0.01	<10	<10	3	<10	3
18	09060807A	9	0.01	<2	1	11	<20	0.02	<10	<10	8	<10	10
19	09060807B	4	<0.01	<2	<1	4	<20	0.01	<10	<10	3	<10	2
20	9060808	5	<0.01	2	<1	4	<20	0.01	<10	<10	4	<10	3
21	9060901	2	0.01	<2	2	7	<20	0.02	<10	<10	20	<10	11
22	9060902	<2	<0.01	<2	<1	2	<20	<0.01	<10	<10	6	<10	3
23	9060904	7	0.01	<2	3	13	<20	0.03	<10	<10	36	<10	24
24	9060906	9	0.01	<2	4	17	<20	0.09	<10	<10	51	<10	60
25	9060907	17	0.01	<2	7	46	<20	0.04	<10	<10	89	<10	74
26	09060908A	8	0.01	<2	17	52	<20	0.56	<10	<10	187	<10	75
27	09060908B	8	0.01	<2	17	50	<20	0.58	<10	<10	182	<10	65
28	9061003	2	<0.01	<2	1	3	<20	0.01	<10	<10	10	<10	2
29	9061004	6	0.01	<2	2	3	<20	<0.01	<10	<10	18	<10	5
30	9061102	15	<0.01	<2	4	8	<20	<0.01	<10	<10	53	<10	13
31	9061103	8	<0.01	<2	3	5	<20	0.01	<10	<10	47	<10	10
32	9061104	4	<0.01	<2	<1	3	<20	<0.01	<10	<10	10	<10	4
33	9061105	16	0.03	<2	4	44	<20	0.01	<10	<10	36	<10	43
34	9061203	5	0.01	<2	3	14	<20	0.02	<10	<10	74	<10	10
35	9061205	2	0.02	<2	1	5	<20	0.01	<10	<10	17	<10	2
36	9061401	4	0.01	<2	2	7	<20	0.01	<10	<10	26	<10	8
37	9061402	8	0.01	<2	3	19	<20	0.03	<10	<10	68	<10	16
38	9061403	7	0.01	<2	3	16	<20	<0.01	<10	<10	37	<10	11
39	9061404	6	<0.01	<2	2	15	<20	0.02	<10	<10	73	<10	10
40	9061501	5	<0.01	<2	2	3	<20	0.03	<10	<10	17	<10	7
41	9061502	7	<0.01	<2	1	3	<20	<0.01	<10	<10	16	<10	2
42	9061504	2	<0.01	2	<1	2	<20	<0.01	<10	<10	19	<10	<2
43	9061505	4	<0.01	<2	<1	3	<20	<0.01	<10	<10	7	<10	<2
44	9061506	5	<0.01	<2	1	3	<20	<0.01	<10	<10	16	<10	<2
45	9061508	5	0.01	<2	5	1	<20	0.01	<10	<10	47	<10	2
46	9061601	14	<0.01	<2	1	6	<20	0.02	<10	<10	18	<10	23
47	9061602	12	<0.01	<2	1	6	<20	0.02	<10	<10	20	<10	19
48	9061603	6	<0.01	<2	1	14	<20	0.02	<10	<10	22	<10	15
49	9061604	8	<0.01	<2	1	9	<20	0.03	<10	<10	22	<10	15
50	9061605	6	<0.01	<2	1	6	<20	0.06	<10	<10	18	<10	10
51	9061606	7	<0.01	<2	1	5	<20	0.05	<10	<10	11	<10	7

Appendix V-10 Results of Geochemical Analysis

	SAMPLE ID	Province	GPS			Legend of Area
			Latitude N	Longitude E	Elev.	
52	9061607	KS	11 41.266	104 7.96	76 m	
53	9061608	KS	11 38.95	104 11.798	71 m	Bat
54	9061609	KS	11 37.597	104 14.847	92 m	Batangban
55	9061701	Tak	10 39.385	104 52.113	3 m	
56	9061707	Tak	10 33.934	104 51.151	12 m	Pai
57	9061708	Tak	10 34.643	104 47.967	6 m	Pailin
58	9080601	Kra	13 2.426	106 10.919	43 m	
59	9080602	Kra	13 9.08	106 8.765	45 m	KK
60	9080701	ST	13 30.05	106 21.177	60 m	Koh Kong
61	9080702	RK	13 27.75	106 38.566	81 m	
62	9080708	RK	13 28.508	106 59.798	97 m	
63	9080802	RK	13 58.447	106 48.883	92 m	
64	9080804	RK	13 35.47	106 48.506	124 m	
65	9080901	Kra	12 27.211	106 10.588	23 m	
66	9080902	Kra	12 28.516	106 12.954	27 m	
67	9080903	Kra	12 30.208	106 15.527	39 m	
68	9080904	Kra	12 24.847	106 13.824	28 m	
69	9080905	Kra	12 23.597	106 14.434	27 m	
70	9081004	MK	12 59.994	107 8.031	165 m	
71	9081005	MK	13 1.76	107 3.261	141 m	
72	9081007	MK	13 3.679	107 2.606	138 m	
73	9081102	Kra	12 24.699	106 16.955	36 m	
74	9081103	Kra	12 24.697	106 16.959	37 m	
75	9081301	PV	13 50.333	104 41.735	43 m	
76	9081302	PV	13 45.779	104 44.283	57 m	
77	9081303	PV	13 46.697	104 39.298	61 m	
78	9081304	PV	13 45.611	104 37.778	64 m	
79	9081701	SR	13 53.912	103 32.158	16 m	
80	9081702	OMC	14 10.406	103 29.267	41 m	
81	9081703	OMC	14 10.519	103 24.012	39 m	
82	9081704	OMC	14 9.814	103 16.017	46 m	
83	9081705	BMC	13 57.071	103 2.912	43 m	
84	9081801	Bat	12 49.723	102 54.628	38 m	
85	9081802	Bat	12 42.752	102 57.428	58 m	
86	9081803	Bat	12 43.355	102 48.54	84 m	
87	9081804	Bat	12 42.945	102 46.177	101 m	
88	9081805	Pai	12 52.606	102 36.179	150 m	
89	9081806	Pai	12 53.279	102 35.41	145 m	
90	9081807	Pai	13 1.282	102 35.106	68 m	
91	9082001	KK	11 8.311	103 46.257	2 m	
92	9082002	KK	11 23.023	103 15.375	6 m	
93	9082003	KK	11 33.91	103 7.672	18 m	
94	9082004	KK	11 41.249	103 25.653	390 m	
95	9082101	KK	11 43.894	103 4.618	0 m	
96	9082102	KK	11 43.21	103 0.121	0 m	
97	9082103	KK	11 42.898	102 58.115	2 m	
98	9082301	Tak	10 59.628	104 58.606	5 m	
99	9111101	ST	13 36.096	105 55.247	46 m	
100	9111102	ST	13 37.946	105 45.256	75 m	
101	9111103	ST	13 38.368	105 42.685	93 m	
102	9111104	ST	13 37.095	105 50.283	68 m	

Appendix V-10 Results of Geochemical Analysis

		Au	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr
	SAMPLE ID	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
52	9061607	<0.001	<0.2	0.31	<2	<10	20	<0.5	<2	0.04	<0.5	1	6
53	9061608	<0.001	<0.2	0.63	<2	<10	50	<0.5	<2	0.09	<0.5	3	7
54	9061609	0.003	<0.2	1.03	16	<10	40	<0.5	2	0.26	<0.5	8	24
55	9061701	<0.001	0.2	0.33	<2	<10	50	<0.5	<2	0.02	<0.5	1	8
56	9061707	0.001	<0.2	0.4	<2	<10	20	<0.5	2	0.01	<0.5	1	4
57	9061708	<0.001	<0.2	0.2	<2	<10	20	<0.5	<2	0.01	<0.5	<1	2
58	9080601	0.001	<0.2	0.24	2	<10	30	<0.5	<2	0.06	<0.5	2	8
59	9080602	0.001	<0.2	0.24	2	<10	30	<0.5	<2	0.06	<0.5	2	7
60	9080701	0.001	<0.2	0.51	5	<10	40	0.5	<2	0.06	<0.5	9	57
61	9080702	0.001	<0.2	0.37	3	<10	30	<0.5	<2	0.05	<0.5	5	27
62	9080708	<0.001	<0.2	0.35	<2	<10	30	<0.5	<2	0.05	<0.5	5	26
63	9080802	0.001	<0.2	0.88	<2	<10	60	0.6	<2	0.07	<0.5	8	28
64	9080804	0.001	<0.2	1.01	3	<10	190	1.7	<2	0.02	<0.5	31	102
65	9080901	0.001	<0.2	0.18	<2	<10	20	<0.5	<2	0.04	<0.5	3	6
66	9080902	0.001	<0.2	0.22	<2	<10	20	<0.5	<2	0.05	<0.5	5	7
67	9080903	<0.001	<0.2	0.24	2	<10	30	<0.5	<2	0.08	<0.5	4	6
68	9080904	0.003	<0.2	1.27	7	<10	100	0.8	<2	0.32	<0.5	33	31
69	9080905	0.004	<0.2	0.41	16	<10	20	<0.5	<2	0.08	<0.5	6	23
70	9081004	0.015	<0.2	0.44	2	<10	30	<0.5	<2	0.1	<0.5	5	19
71	9081005	0.001	<0.2	0.33	3	<10	20	<0.5	<2	0.05	<0.5	4	14
72	9081007	0.001	<0.2	0.8	2	<10	50	<0.5	<2	0.17	<0.5	13	39
73	9081102	0.003	<0.2	1.35	10	<10	90	0.8	<2	0.25	<0.5	20	52
74	9081103	0.001	<0.2	0.42	<2	<10	40	<0.5	<2	0.1	<0.5	6	17
75	9081301	<0.001	<0.2	0.1	<2	<10	10	<0.5	<2	0.01	<0.5	2	13
76	9081302	0.001	<0.2	0.18	<2	<10	30	<0.5	<2	0.03	<0.5	2	5
77	9081303	0.001	<0.2	0.31	<2	<10	40	<0.5	<2	0.05	<0.5	6	25
78	9081304	0.001	<0.2	0.35	<2	<10	70	<0.5	<2	0.06	<0.5	5	9
79	9081701	0.001	<0.2	0.06	<2	<10	10	<0.5	<2	0.01	<0.5	1	5
80	9081702	0.001	<0.2	0.24	7	<10	160	<0.5	<2	0.12	<0.5	11	38
81	9081703	0.001	<0.2	0.11	<2	<10	10	<0.5	<2	0.01	<0.5	2	14
82	9081704	0.001	<0.2	0.11	2	<10	20	<0.5	<2	0.03	<0.5	3	28
83	9081705	0.001	<0.2	0.51	6	<10	120	0.6	<2	0.11	<0.5	18	40
84	9081801	0.002	<0.2	1.09	2	<10	20	<0.5	<2	0.36	<0.5	9	29
85	9081802	0.001	<0.2	0.46	3	<10	40	<0.5	<2	0.18	<0.5	8	17
86	9081803	0.009	<0.2	1.78	<2	<10	60	<0.5	<2	1.63	<0.5	32	84
87	9081804	0.003	<0.2	1.87	3	<10	150	1	<2	0.18	<0.5	33	74
88	9081805	0.002	<0.2	1.16	2	<10	70	0.5	<2	0.37	<0.5	19	36
89	9081806	0.002	<0.2	0.96	6	<10	60	<0.5	<2	0.22	<0.5	20	46
90	9081807	0.002	<0.2	1.28	6	<10	70	0.6	<2	0.23	<0.5	16	36
91	9082001	<0.001	<0.2	0.12	<2	<10	10	<0.5	<2	0.01	<0.5	1	3
92	9082002	0.003	<0.2	0.31	<2	<10	10	<0.5	<2	0.01	<0.5	2	21
93	9082003	0.001	<0.2	0.36	<2	<10	10	<0.5	<2	0.01	<0.5	2	13
94	9082004	0.002	0.3	0.26	<2	<10	10	<0.5	<2	0.01	<0.5	1	8
95	9082101	0.001	<0.2	0.25	<2	<10	10	<0.5	<2	0.01	<0.5	1	5
96	9082102	<0.001	<0.2	0.21	2	<10	10	<0.5	<2	0.01	<0.5	1	6
97	9082103	0.001	<0.2	0.15	<2	<10	20	<0.5	<2	0.01	<0.5	<1	2
98	9082301	0.064	<0.2	0.16	2	<10	20	<0.5	<2	0.06	<0.5	1	4
99	9111101	0.001	<0.2	0.45	4	<10	50	<0.5	<2	0.09	<0.5	15	25
100	9111102	0.001	<0.2	0.36	4	<10	60	<0.5	<2	0.1	<0.5	7	9
101	9111103	0.002	<0.2	0.43	2	<10	70	<0.5	<2	0.11	<0.5	7	13
102	9111104	0.002	<0.2	0.54	<2	<10	70	<0.5	<2	0.17	<0.5	11	26

Appendix V-10 Results of Geochemical Analysis

		Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P
	SAMPLE ID	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	%	ppm	ppm
52	9061607	1	0.63	<10	<1	0.13	<10	0.02	121	<1	0.04	1	40
53	9061608	4	1.21	<10	<1	0.13	10	0.06	249	<1	0.02	2	80
54	9061609	11	2.62	<10	<1	0.1	10	0.26	241	<1	0.02	10	160
55	9061701	4	1.42	<10	<1	0.03	<10	0.01	63	<1	0.01	1	50
56	9061707	1	0.55	<10	<1	0.18	10	0.01	211	<1	0.02	1	40
57	9061708	1	0.41	<10	<1	0.1	10	<0.01	86	<1	0.02	<1	50
58	9080601	2	0.85	<10	<1	0.02	10	0.06	129	<1	<0.01	3	80
59	9080602	2	0.85	<10	<1	0.02	10	0.06	129	<1	<0.01	3	80
60	9080701	8	2.7	<10	<1	0.03	10	0.08	205	1	0.01	18	310
61	9080702	4	1.25	<10	1	0.02	10	0.07	145	1	<0.01	8	140
62	9080708	3	1.16	<10	<1	0.02	10	0.06	135	<1	<0.01	8	140
63	9080802	18	1.79	<10	1	0.1	20	0.2	269	1	<0.01	10	270
64	9080804	40	7.04	10	1	0.02	10	0.02	1,235	5	0.01	5	420
65	9080901	2	0.5	<10	<1	0.01	<10	0.05	110	<1	<0.01	1	50
66	9080902	2	0.69	<10	1	0.01	<10	0.06	265	<1	<0.01	2	70
67	9080903	2	0.53	<10	1	0.02	<10	0.07	257	<1	0.01	2	80
68	9080904	19	3.95	10	1	0.09	10	0.55	864	<1	0.01	17	350
69	9080905	5	1.2	<10	1	0.02	<10	0.1	142	<1	0.01	8	130
70	9081004	5	1.4	<10	1	0.03	10	0.11	172	<1	0.01	6	130
71	9081005	3	1.11	<10	1	0.02	10	0.08	143	<1	0.01	5	100
72	9081007	9	2.37	<10	1	0.02	10	0.26	256	<1	0.01	23	230
73	9081102	19	4.6	<10	1	0.08	10	0.53	752	<1	0.01	17	290
74	9081103	5	1.27	<10	<1	0.03	10	0.15	262	<1	0.01	4	100
75	9081301	<1	0.38	<10	1	0.01	<10	0.01	125	<1	<0.01	<1	50
76	9081302	1	0.56	<10	1	0.02	<10	0.03	122	<1	<0.01	2	80
77	9081303	2	1	<10	1	0.02	10	0.05	348	<1	<0.01	4	120
78	9081304	3	0.87	<10	1	0.03	10	0.07	307	<1	<0.01	4	90
79	9081701	108	0.25	<10	1	0.01	<10	<0.01	48	<1	<0.01	<1	30
80	9081702	8	2.31	<10	<1	0.01	10	0.02	1,005	1	0.01	2	40
81	9081703	1	0.57	<10	<1	<0.01	<10	0.01	64	<1	<0.01	<1	20
82	9081704	2	0.67	<10	1	<0.01	<10	0.01	154	1	<0.01	<1	40
83	9081705	7	2.8	<10	<1	0.02	10	0.03	1,135	1	0.01	3	80
84	9081801	19	2.34	<10	<1	0.03	10	0.33	140	<1	0.01	18	140
85	9081802	6	1.25	<10	1	0.02	<10	0.14	338	<1	0.01	6	110
86	9081803	32	4.25	10	<1	0.03	10	0.78	855	<1	0.02	56	160
87	9081804	26	4.81	10	1	0.03	10	0.46	898	1	0.01	51	690
88	9081805	19	2.86	10	<1	0.03	10	0.36	739	<1	0.01	22	310
89	9081806	17	2.7	<10	1	0.03	10	0.31	536	<1	0.01	23	300
90	9081807	19	3.01	<10	1	0.05	10	0.36	579	<1	0.01	22	330
91	9082001	<1	0.26	<10	1	0.02	<10	0.02	22	<1	0.01	1	30
92	9082002	2	0.69	<10	<1	0.01	<10	0.01	49	<1	0.01	7	60
93	9082003	1	0.71	<10	<1	0.02	<10	0.03	18	2	0.01	5	70
94	9082004	<1	0.36	<10	1	0.01	<10	0.01	21	<1	<0.01	2	60
95	9082101	<1	0.47	<10	1	0.02	<10	0.03	18	<1	0.01	1	40
96	9082102	29	0.24	<10	<1	0.02	<10	0.03	9	1	0.03	32	30
97	9082103	2	0.17	<10	<1	0.01	<10	0.03	10	<1	0.03	3	20
98	9082301	4	0.35	<10	<1	0.03	<10	0.03	40	<1	0.01	2	210
99	9111101	8	2.68	<10	<1	0.01	<10	0.07	809	<1	0.01	6	150
100	9111102	16	2.01	<10	<1	0.01	<10	0.06	685	<1	0.01	2	160
101	9111103	14	1.66	<10	<1	0.01	<10	0.1	400	<1	0.01	3	170
102	9111104	12	1.64	<10	<1	0.01	<10	0.21	427	<1	0.01	10	130

Appendix V-10 Results of Geochemical Analysis

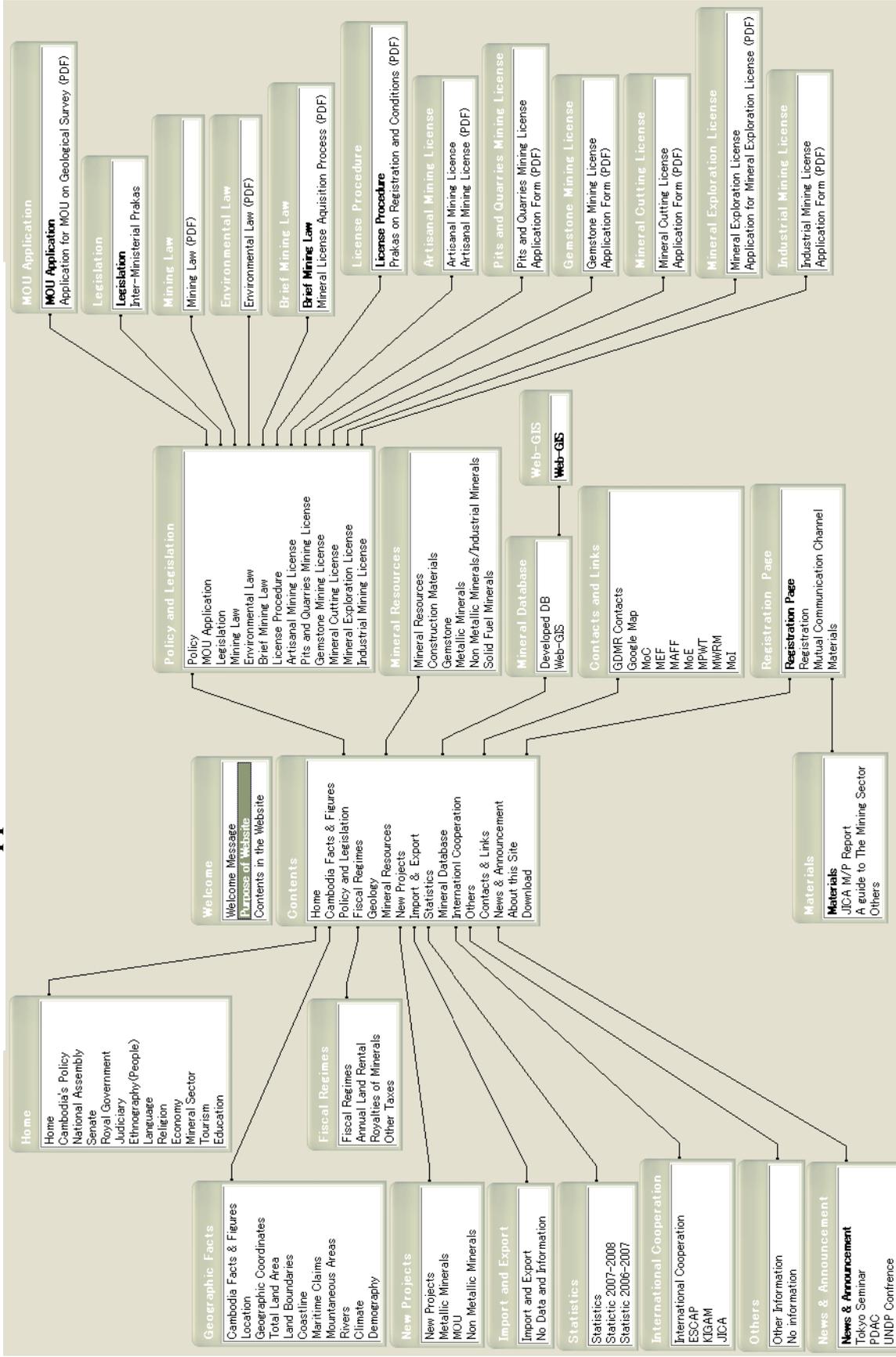
		Pb	S	Sb	Sc	Sr	Th	Ti	Tl	U	V	W	Zn
	SAMPLE ID	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
52	9061607	3	<0.01	<2	<1	5	<20	0.01	<10	<10	4	<10	4
53	9061608	15	<0.01	<2	1	8	<20	0.02	<10	<10	15	<10	25
54	9061609	10	<0.01	<2	2	24	<20	0.01	<10	<10	26	<10	26
55	9061701	6	<0.01	<2	1	4	<20	<0.01	<10	<10	15	<10	4
56	9061707	6	<0.01	<2	<1	2	<20	<0.01	<10	<10	2	<10	3
57	9061708	3	<0.01	<2	<1	2	<20	<0.01	<10	<10	2	<10	3
58	9080601	5	<0.01	<2	1	7	<20	0.01	<10	<10	14	<10	10
59	9080602	4	<0.01	<2	1	6	<20	0.01	<10	<10	13	<10	10
60	9080701	7	<0.01	<2	2	7	20	0.03	<10	<10	39	<10	26
61	9080702	3	<0.01	<2	1	7	<20	0.03	<10	<10	20	<10	14
62	9080708	2	<0.01	<2	1	7	<20	0.03	<10	<10	18	<10	12
63	9080802	9	0.01	<2	3	7	20	0.05	<10	<10	32	<10	24
64	9080804	31	0.01	<2	6	4	30	0.04	<10	10	183	<10	19
65	9080901	2	<0.01	<2	1	4	<20	0.01	<10	<10	11	<10	5
66	9080902	3	<0.01	<2	1	4	<20	0.01	<10	<10	13	<10	7
67	9080903	2	<0.01	<2	1	8	<20	0.01	<10	<10	12	<10	7
68	9080904	21	<0.01	2	4	20	<20	0.08	<10	<10	74	<10	46
69	9080905	2	0.01	<2	1	8	<20	0.02	<10	<10	21	<10	12
70	9081004	5	0.01	<2	1	9	<20	0.01	<10	<10	25	<10	17
71	9081005	5	<0.01	<2	1	5	<20	0.01	<10	<10	12	<10	12
72	9081007	5	0.01	<2	3	19	<20	0.04	<10	<10	32	<10	27
73	9081102	20	0.01	2	3	22	<20	0.03	<10	<10	65	<10	50
74	9081103	5	<0.01	<2	1	9	<20	0.01	<10	<10	19	<10	14
75	9081301	<2	<0.01	<2	<1	3	<20	<0.01	<10	<10	10	<10	<2
76	9081302	3	<0.01	<2	<1	4	<20	<0.01	<10	<10	8	<10	6
77	9081303	3	<0.01	<2	1	13	<20	0.01	<10	<10	21	<10	7
78	9081304	7	<0.01	<2	1	7	<20	<0.01	<10	<10	14	<10	11
79	9081701	14	<0.01	<2	<1	1	<20	<0.01	<10	<10	7	<10	81
80	9081702	8	<0.01	<2	2	8	<20	0.01	<10	<10	73	<10	7
81	9081703	4	<0.01	<2	1	1	<20	<0.01	<10	<10	22	<10	<2
82	9081704	3	<0.01	<2	1	2	<20	<0.01	<10	<10	31	<10	2
83	9081705	29	<0.01	<2	3	12	<20	<0.01	<10	<10	69	<10	8
84	9081801	4	<0.01	<2	5	31	<20	0.02	<10	<10	54	<10	32
85	9081802	3	<0.01	<2	2	17	<20	0.02	<10	<10	24	<10	19
86	9081803	5	0.01	<2	8	42	<20	0.09	<10	<10	119	<10	44
87	9081804	7	0.01	<2	8	36	<20	0.19	<10	<10	81	<10	56
88	9081805	4	<0.01	<2	6	32	<20	0.08	<10	<10	60	<10	37
89	9081806	4	0.01	<2	4	26	<20	0.09	<10	<10	57	<10	35
90	9081807	7	0.01	2	5	23	<20	0.04	<10	<10	52	<10	45
91	9082001	2	0.03	<2	<1	2	<20	<0.01	<10	<10	4	<10	3
92	9082002	6	0.54	<2	1	2	<20	0.04	<10	<10	7	<10	9
93	9082003	6	0.06	<2	1	3	<20	0.01	<10	<10	10	<10	12
94	9082004	4	0.01	<2	1	1	<20	0.01	<10	<10	6	<10	5
95	9082101	4	0.04	<2	<1	2	<20	<0.01	<10	<10	7	<10	4
96	9082102	16	0.02	<2	<1	3	<20	0.01	<10	<10	4	<10	27
97	9082103	5	0.01	<2	<1	4	<20	<0.01	<10	<10	2	<10	6
98	9082301	8	<0.01	<2	<1	4	<20	<0.01	<10	<10	5	<10	20
99	9111101	5	<0.01	<2	3	6	<20	0.01	<10	<10	69	<10	18
100	9111102	14	<0.01	<2	2	5	<20	0.01	<10	<10	34	<10	42
101	9111103	6	0.01	<2	2	8	<20	0.01	<10	<10	35	<10	36
102	9111104	6	0.01	<2	3	11	<20	0.01	<10	<10	38	<10	34

Appendix VI-1 Governmental Web Sites in Cambodia

Governmental Web Sites in Cambodia

Name	URL	English web
Office of the Council of Ministers	www.cambodia.gov.kh/unisql1/egov/english/home.view.html	Yes
Royal Government of Cambodia (e-Gov of Cambodia)	www.cambodia.gov.kh/krt	Yes
Ministry of Commerce	www.moc.gov.kh	Yes
Ministry of Economy and Finance (MEF)	www.mef.gov.kh	Yes
Ministry of Foreign Affairs & International Cooperation (MFAIC)	www.mfaic.gov.kh/e-visa/index.aspx	Yes
Ministry of Agriculture, Forestry and Fisheries (MAFF)	www.maff.gov.kh/en	Yes
Ministry of Environment (MOE)	www.camnet.com.kh/moe/	Yes
Ministry of Planning (MOP)	www.mop.gov.kh/	Yes
Ministry of Interior (MOI)	www.interior.gov.kh/	Yes
Ministry of Health (MOH)	www.moh.gov.kh/	Yes
Ministry of Posts and Telecommunications (MPTC)	www.mptc.gov.kh/	Yes
Ministry of Public Works and Transport (MPWT)	www.mpwt.gov.kh/	Yes
Ministry of Education, Youth & Sport (MOEYS)	www.moeys.gov.kh/	Yes
Ministry of Tourism (MOT)	www.mot.gov.kh/default.php	Yes
Ministry of Industry Mines and Energy (MIME)	www.mime.gov.kh/english/index.php	Yes
General Department of Mineral Resources (GDMR)	www.gdmr.gov.kh	Yes
Ministry of Information	www.information.gov.kh	UC
Ministry of Justice	www.moj.gov.kh	UC
Ministry of Labor and Vocational Training	www.mlv.gov.kh	UC
Ministry of Land Management, Urban Planning & Construction	www.mlmupc.gov.kh	NA
Ministry of National Defense	www.mond.gov.kh	Yes
Ministry of Parliamentary Affairs and Inspection	www.mnasrl.gov.kh	UC
Ministry of Religions and Cults	www.morac.gov.kh	UC
Ministry of Rural Development	www.mrd.gov.kh	Yes
Ministry of Social Affairs Veteran and Youth Rehabilitation	www.mosalvy.gov.kh	NA
Ministry of Water Resources and Meteorology	www.mowram.gov.kh	NA
Ministry of Women Affairs	www.mwva.gov.kh	NA
Ministry of Culture and Fine Arts	www.mcfa.gov.kh	UC
Municipality of Phnom Penh	www.phnompenh.gov.kh	Yes
Secretariat of Public Service	www.sspf.gov.kh	UC
Secretariat of Civil Aviation	www.civilaviation.gov.kh	UC
Department of Energy Technique (DET) within the MIME	www.recambodia.org	Yes
Council of Ministers (OCM)	www.pressocm.gov.kh	No
Council for Administrative Reform	www.car.gov.kh	Yes
Council for the Development of Cambodia (CDC), Cambodia Investment Board (CIB)	www.cdc-crdb.gov.kh	Yes
Constitutional Council of Cambodia	www.ccc.gov.kh/english/index.php	Yes
Cambodia Customs & Excise Department	www.customs.gov.kh	Yes
Cambodian Mine Action Centre (CMAC)	www.cmac.org.kh/index.asp	Yes
Cambodian Rehabilitation and Development Board (CRDB)	www.cdc-crdb.gov.kh	Yes
Cambodia Development Resource Institute (CDRI)	www.cdri.org.kh	Yes
Special Economic Zone Board	www.combodiasez.gov.kh	Yes
Cambodian Information Directory (KHMERNET)	www.khmernet.com	Yes
National Information Communications Technology Development Authority	www.nida.gov.kh	Yes
Electricity Authority of Cambodia (EAC)	www.eac.gov.kh	Yes
National Institute of Statistics (NIS)	www.nis.gov.kh	Yes
Mekong River Committee (MRC)	www.camnet.com.kh/cnmcs	NA
Khmersenate.org	khmersenate.org	
Cambodia Parliament	cambodian-parliament.org	NA

Appendix VI-2 Web Site Structure



Appendix VI-3 GDMR Administration Training

Title	The GDMR administration training
Date	On 27th and 28th October
Venue	Office of MANICH Enterprises
Trainees	<ul style="list-style-type: none"> • Mr. Kong Makara, Chief of Mineral Resources Development Office, Department of Mineral Resources Department • Mr. Yos Samoth, Chief of Mapping Office Department of Geology • Mr. Sok Sokha, Office of Department of Construction Material Resources • Mr. Sok Ly, Office of Department of Construction Material Resources • Mr. Leoung Vanmonirak, Office of Department of Mineral Resources • Mr. Vanna Rith, Office of Department of Construction Material Resources
Trainers	<p>Mr. Sann Sophar, production manager, MANICH Enterprises</p> <p>Mr. Tim Francis, content manager, MANICH Enterprises</p> <p>Dr. Kazushige Wada, JICA Study Team, Observer</p>
Material	The GDMR web and web-GIS user handbooks



**Appendix VI-4 GDMR Admin Guide (left)
and WebGIS User Handbook (right)**



**Appendix VI-5 Certification of Maintenance Training
for the GDMR Website**



Appendix VII-1

Main Points of the Mineral Policy for the Government of Cambodia

- The signpost that shows the way from promising mineral country
 - to mining country –

The Royal Government of Cambodia is working to promote mineral resources development that will contribute to the growth of the national economy. In 2001, the Government promulgated the ‘Law on Management and Exploitation of Mineral Resources’, which clarifies the framework for mineral development.

Mineral development involves efforts to both attract mining investment and promote sustainable mining that takes the environment into consideration. To undertake these activities, the Government should work with existing and potential stakeholders to recommend and introduce practical techniques and technologies that are suited to the features of mineral resources in Cambodia, and aim for management that enhances transparency, fairness and accountability.

In this report, the Cambodian Government explains about its Mineral Policy.

1. Promoting Economic Growth and Local Development

By promoting the development of the rich mineral resources that exist in Cambodia as a means of making a significant contribution to the national economy, the government is working to reduce poverty in the country. Most of the country’s mineral resources exist in remote areas where there is relatively little industrial development. Mining in those areas will stimulate local economic development and create employment not only in mining itself, but also in related industries. For this purpose, the Government must enhance its international competitiveness for promoting the mining sector.

2. Establishing a Transparent, Effective and Efficient Mining Administration based on Good Governance

The success of Cambodia’s nascent mining sector will largely depend on how mining administration handles investment, development, operations, health and safety of miners and residents of affected areas and environmental protection. For this purpose, the Government will establish mining administration based on science and technology, international market economics and democracy, with the cooperation and assistance of miners, mining experts (including foreigners), and residents of mining areas.

3. Establishing Sustainable Mineral Development with Environmental Considerations

Cambodia's mineral resources are a natural endowment. The Government should utilize these finite resources for constructing a society in which the people are able to enjoy everlasting prosperity.

In some cases, mining activities have caused severe pollution, accidents resulting in injury or death, and conflict with local communities and neighboring countries. To prevent these problems, the Government should establish practical measures to prevent mining pollution and accidents, protect the environment, encourage cooperation between miners and local communities, and with neighboring countries, and to maximize mineral recovery.

The following 9 guidelines have been established in order to materialize the above 3 principles of mining policy,

1. The Role of the Government in Mine Development

The Government has administered the mining sector according to laws and regulations that have been implemented based on this Mineral Policy. Furthermore, the Government should encourage and facilitate mineral development in line with the Mining Development Plan and Action Plan that have been formulated with a science and technology foundation.

In addition, the Government should facilitate and regulate investment, exploration, construction and operations of private sector companies related to mining, and provide support for developing infrastructure. It should also collect the taxes and related fees that are generated by mineral development.

2. The Establishment of Laws and Regulations Related to Mining

The Government has been promulgating decrees and prakas that correspond to mining-law enforcement regulations since the implementation of the Law on Management and Exploitation of Mineral Resources.

The most urgent issues of mineral development in today's Cambodia are to find ways to sustain and expand mining investment. In fact, these are urgent issues for most countries that have rich mineral resources. Today, more than ever, they must have international competitiveness in order to attract mining investment.

To strengthen the international competitiveness of Cambodia's mining sector, the Government should improve laws and regulations related to mining investment, including mining procedures, security of tenure and rights, incentives and taxation, deregulation that promotes the market economy, etc., while paying attention to trends in mining countries around the world.

In addition, to prepare for the start of full-scale mining operations, the Government should formulate laws and regulations related to health and safety, and environmental protection,

as soon as possible.

3. Strengthening Management and Good Governance

The Government will strengthen the systems for managing and supervising the mining sector in accordance with the Law on Management and Exploitation of Mineral Resources and laws and regulations that may be implemented in future.

Specifically, this will involve the following:

Promoting the simplification and streamlining of mining-related procedures.

Cracking down on and eventually eliminating illegal mining by assigning mining inspectors to regional offices.

Minimizing mining accidents and pollution through guidance and control provided by mining inspectors,

Promoting rational mining activities based on state-of-art science and technology; and

Strengthening the system for collecting taxes and fees related to mining, in order to enable the Cambodian people to properly benefit from these activities.

At the same time, good governance, which is the centerpiece of Cambodia's basic national strategy, the 'Rectangular Strategy', will be instilled in the people who are involved with mining administration. By strengthening the monitoring system of the good governance while increasing officials' awareness of its importance, the Government is aiming to improve the transparency, fairness and accountability of mining administration.

4. Increasing and Disclosing Basic Information

In order to promote investment in the mining sector, it will be necessary to attract the interest of international mining investors in the mineral resources of Cambodia through the disclosure of information on the country's geology, mineral resources, concession cadastre, legal and tax systems of the mining sector, current mining conditions, mining administration, etc., as well as general information about the social, political and economic conditions in Cambodia.

As the first step, the Government should update geological maps and provide high-quality services and information related to mineral resources and geology. In addition, the Government has the responsibility to improve and update mining statistics.

This added and improved information is being published and distributed through the Website, and at the office of General Department of Mineral Resources, Ministry of Industry, Mines and Energy.

5. Strengthening Partnerships

Cooperative relationships - Partnerships - among the Government, mining investors, prospectors, mine operators, experts, service industries related to mining, local governments and residents of local communities are essential for successful mining promotion.

When formulating key measures, the Government should improve the competitiveness of investment in and productivity of mining, reflecting the sound opinions expressed by the

partners.

In addition, a cooperative system is being constructed that will increase the opportunities for the Government, prospectors and mine operators to report and discuss their plans and current mining activities with the local communities, as well as to promote sound mining practices and development, in order to enhance local economic development through mining.

Moreover, the Government will construct a foundation with its neighbors - namely, Laos, Vietnam and Thailand- for integrated regional mining development of the resources located in border areas, in order to increase the efficiency and international competitiveness of mining in the region.

6. Training Human Resources

The training of human resources for exploration, mining, mineral processing, metallurgy, health and safety, environmental management, marketing, and business management, as well as government administration, is one of the most critical issues for mining promotion.

With respect to the introduction of adequate technology and management into private mining operations, the Government will ease restrictions on the employment of foreigners, the importation of exploration and production equipment, etc., to encourage foreigners who have advanced skills, technologies and/or know-how to train Cambodian employees.

For their part, government officials will be taught state-of-the-art exploration and mining techniques that include considerations for environmental protection, as they work with international organizations, exploration and mining companies possessing highly advanced mining and environmental technologies, etc.

Moreover, the Government will encourage private citizens and government officials to receive education and training for mining at educational and research institutes in advanced mining countries, and work with other countries to support this training.

In the future, the Government will establish a training and educational institute in collaboration with the Ministry of Education Youth and Sports, and domestic educational organizations, to ensure the manpower that will be required under the Mining Development Plan.

7. Development of Mining Infrastructure

Most of Cambodia's mineral resources exist in remote areas where infrastructure, such as transportation and energy, is not well developed. Furthermore, it is known that the conditions of mining infrastructure have a major effect on mining viability. It is estimated that most metal ore deposits in Cambodia are small or medium size compared to similar deposits in other parts of the world; therefore, it would impose a very heavy financial burden on a mining company to try to develop the necessary infrastructure on its own. The promotion of exploration by private sector companies, and the construction of infrastructure for mine development should be able to produce multiplier effects for local socio-economic development.

Since the development of mining infrastructure can stimulate the socio-economic development of remote areas, the Government will construct the infrastructure for mining and local community development in remote areas, based on the following principle.

The Government will construct mining infrastructure gradually in the areas where mining development is expected to have the greatest benefit for socio-economic development. The costs borne by the Government will be collected through the beneficiary pays principle based on public-private-partnership. These funds will be used to finance the next mining infrastructure project.

8. Fostering Artisanal, and Small- and Medium-size Mining Operations, and Supporting Improved Environmental Protection

Illegal mines have been operating in some areas of Cambodia. These operations not only infringe on the rights of legitimate concessioners and governmental management, but also are a source of environmental pollution, accidents, and health problems. The Government has been cracking down hard on illegal mining in order to eliminate it.

At the same time, the Law on Management and Exploitation of Mineral Resources has established the Artisanal Mining License that provides the opportunity for local miners who have little capital to engage in mining activities. Together with large-scale mining activities, artisanal mining is a key element of poverty reduction. The Government should provide support to help artisanal miners grow into stable domestic companies.

The Government will provide instruction in mining and environmental management technologies, and business management for local people who intend to become artisanal miners.

Government officials are providing technical and educational guidance in mining and environmental preservation to local residents who are engaged in artisanal mining. Furthermore, the Government will establish a cooperative system for artisanal, small- and medium-size mining operations to help support and strengthen their marketing capacity.

In the future, the Government, with the cooperation of international organizations, is planning to establish a loan system for artisanal, small- and medium-size mining operations.

9. Increasing the Amount of Value-Added Mineral Products

The Cambodian Government has been helping mining companies to freely earn the maximum profit in the market through on-going efforts to ease regulations and improve mining-related systems. At the same time, the Government has encouraged related industries to increase the amount of value-added mineral products made in Cambodia. The purpose is not only to increase national revenue, but also to increase employment of Cambodians.

The Government will construct public infrastructure in mining and industrial areas to help increase the production of value-added mineral products. In addition, it will set royalties based on the level of processing. The Government is also providing tax incentives for companies that introduce high-level processing equipment.

Appendix VII-2 Operation Manuals

An example from the operation manual- 1-: Registration of a mining company at DMRD

1. Procedure

- (1) DMRD sends the necessary documents for registration to an investor.
↓
- (2) The documents are prepared by the investor and submitted to DMRD, which acknowledges their receipt.
↓
- (3) Formal check of the submitted documents by DMRD
↓
- (4) The documents are transferred to the Dept. of Administration at MIME.
↓
- (5) The appropriateness of the application is checked by the Dept. of Administration at MIME.
↓
- (6) The documents are transferred to DGMR at GDMR.
↓
- (7) The documents are transferred to the Minister of MIME who makes a decision on Registration and informs DGMR of the result.
↓
- (8) DGMR instructs DMRD to issue a Registration Certificate.
↓
- (9) Details of the documents submitted by the investor are checked.
↓
- (10) DMRD checks the details by visiting the investor's office.
↓
- (11) DMRD prepares the Registration certificate.
↓
- (12) The Registration Certificate is transferred to DGMR.
↓
- (13) The Registration certificate is transferred to the Under Secretary of the State of MIME.
↓
- (14) The Registration certificate is transferred to the Secretary of the State of MIME.
↓
- (15) The Registration certificate is transferred to the Minister.
↓
- (16) The Registration certificate is delivered to the investor, who pays an issuing fee.
↓
- (17) The issuing fee is submitted to the Revenue Office at DMRD.
↓
- (18) All documents are filed and stored.
↓
- (19) Compilation of management documents

2. Procedure for each task

- (1) Distribution of documents necessary for registration to an investor by DMRD
 - Documents necessary for application
 - ✓ Application form : Name, Nationality, Passport No. or ID number, Investor's address, Fax No, Telephone No.
 - ✓ Application letter : Submit with attached documents
 - ✓ Attached documents : Application letter, ID or Passport copy, copy of commercial registration, registration memorandum and articles of association, Organization chart, map of office location
 - Distributor: Chief Officer at DMRD
- (2) Investor prepares the documents and submits them to DMRD
 - Receiver: Chief Officer at DMRD
- (3) Formal check of the submitted documents by DMRD
 - Check: Chief officer at DMRD
 - Items for checking: Omissions in documents and description
- (4) The documents are transferred to the Dept. of Administration at MIME
- (5) The Dept. of Administration at MIME checks the appropriateness of the application
- (6) The documents are transferred to DGMR at GDMR
- (7) The documents are transferred to the Minister of MIME who makes a decision on Registration and informs DGMR of the result
- (8) DGMR instructs DMRD to issue Registration Certificate
- (9) Details of the documents submitted by the investor are checked
 - Check: Chief Officer at DMRD
 - Contents: Investor's business, office location, representative, communication media
- (10) DMRD checks the details by visiting the investor's office
 - Check: Officer at DMRD
 - Contents: Investor's business, office location, representative, correspondent, current business, changes in contents of submitted documents
 - : Meeting with the investor is to verify the contents of the documents
 - : Check in 1-2 days
 - Number of staff to be dispatched: Preferably two
- (11) Preparation of the Registration Certificate by DMRD
 - Information includes: Date of issue, Type of license, Applicant's name, Occupation, Date of birth, Place of birth, Name of company, Address of Cambodian office, Telephone number, ID number or passport number, Certificate number, Corporate number in Commercial Registration. Purpose of investment (exploration or mining)
 - Preparation: Chief Officer at DMRD
- (12) The Registration Certificate is transferred to DGMR.
 - Check at DGMR: Formal
- (13) The Registration Certificate is transferred to the Undersecretary at MIME.
- (14) The Registration Certificate is transferred to the Secretary at MIME.

- (15) The Registration Certificate is transferred to the Minister.
- (16) The Registration certificate is delivered to the investor, who pays an issuing fee.
- Investor is informed that the certificate is ready to pick up by the Chief Officer at DMRD.
- (17) The issuing fee is submitted to the Revenue office at DMRD.
- The Chief officer at DMRD receives the fee and sends it to the Revenue Office:

= Fees for Registration=

1. Artisanal Mining License	50,000 riel
2. Pit / Quarry Mining License	
a. For construction sand, laterite and clay	400,000 riel
b. For crushed stone, block stone, gravel, and other stones used for similar purposes	800,000 riel
3. Gem Mining License	2,000,000 riel
4. Mineral (Gemstone) Cutting License	400,000 riel
5. Mineral Exploration License	800,000 riel
6. Industrial Mining License	1,200,000 riel

- (18) Filing of all documents and preservation
- Preparation of data files and management: Chief Officer at DMRD
- (19) Compilation of management documents
- Management: Chief Officer at DMRD

3. Preservation of documents : preservation year and person in charge

- (1) Application form and attached materials: Chief officer at DMRD, for ten years
- (2) Copy of the certificate: Chief officer at DMRD, for perpetual
- (3) Computer software for preparation of the certificate: Chief officer at DMRD, for five years
- (4) Related management documents and materials: Chief officer at DMRD, for perpetual

4. Miscellaneous

Attachments of related documents

- Laws and regulations related to the Registration
- Blank application form
- Blank form of documents produced

Example from the operation manual-- 2: Issue of Construction materials mining license at DCMR

1. Procedure

- (1) Distribution of application form for license of construction mineral mining to investor
↓
- (2) Preparation of necessary documents by investor and submit to Secretary of DGMR
↓
- (3) Check of the documents by Secretary of DGMR and transfer to the Minister at MIME
↓
- (4) Check of the application documents by the Minister and return to DGMR
↓
- (5) Transfer of the application documents to DCMR by DGMR
↓
- (6) Check the contents of the application documents by DCMR
↓
- (7) Location investigation by a site survey team organized by DCMR
↓
- (8) Preparation of report on the location investigation
↓
- (9) Preparation of draft Agreement on issuance of license at DCMR
↓
- (10) Transfer of the draft to DGMR for his check
↓
- (11) Conclusion of the Agreement on issuance of license with investor and payment of fee by investor
↓
- (12) Custody of the application documents and Agreement
↓
- (13) Preparation of data base on the contents of Agreement
↓
- (14) Compilation of internal materials for management

2. Procedure for each work

- (1) Distribution of application forms for license of construction mineral mining licenses to investors
 - Documents necessary for application
 - ✓ Application form: Cover letter by Provincial Director, and Application form and related documents, Name, Nationality, Passport No. or ID number, Investor's address, Fax No, Telephone No.
 - ✓ Cover letter from the Provincial Director
 - ✓ Application form: Name, Nationality, Address, Passport No. or ID number
 - ✓ Attached documents: CV, Company's inventory report, Map of concession with signature of local

- authority, Technical report of professional staff, Company license
- ✓ Company share, License of registration with DGMR
 - Distributor: Secretary of DGMR
- (2) Investor prepares necessary documents and submits them to the Secretary of DGMR
 - (3) The Secretary of DGMR checks the documents and transfers them to the Minister of MIM
 - (4) The Minister checks the application documents and returns them to DGMR
 - The Minister instructs DGMR to proceed with the license issuing process
 - (5) DGMR transfers the application documents to DCMR
 - (6) DCMR checks the contents of the application documents
 - Officer in charge: Deputy director in charge of the respective office for sand, rock and laterite
 - Details of the documents are cross-checked
 - (7) Location investigation by a site survey team organized by DCMR
 - Purpose: Confirmation of site, geology and types of minerals, deposit size and consideration of environmental issues
 - Preparation: Map, GPS, Camera, Hammer and Bags for carrying samples
 - Members: DCMR officers (1-2), Provincial government officer and investor
 - Payment of costs: 100% of costs paid by investor (including transportation, accommodation and daily allowance)
 - (8) Preparation of report on the site study
 - Prepared by chief of site study team
 - Contents of the report: Site, types of minerals and reserve condition, geological map, topographic map
 - Preparation within one week
 - (9) Preparation of a draft agreement on the issuance of a license
 - Prepared by the Chief Officer at DCMR
 - Contents: Location, type of agreement, space, time, license conditions, working conditions, rental and others and fee charged (royalties, surface rentals, etc.), funds for reconstruction (investment)
 - (10) Transfer of the draft to DGMR for checking
 - (11) Conclusion of the agreement on the issuance of license with the investor and payment of fee by the investor
 - After the investor signs the documents, they are transferred to the Minister by the Chief Officer through the Director of DCMR, DGMR, Under Secretary of the State and Secretary of the State.
 - Surface rental fee: For Sand and gravel: US\$20 per year per hectare
For Rock US\$40 per year per hectare
For Laterite and land US\$20 per year per hectare
 - The surface rental fee and license fee are paid to the Revenue Office at DMRD, while royalties are paid to the Provincial Treasury
 - (12) Custody of the application documents and Agreement
 - They are kept in the Chief Officer's cabinet
 - (13) Preparation of a database of the contents of the Agreement
 - Data and information includes: Name of company, the company's detailed information such as financial data and site for mining, quantity of construction materials

- Person in charge: Chief Officer
- (14) Preparation of internal materials for management
- Chief Officer prepares them when necessary

3. Preservation of documents: Person in charge and storage period

- (1) Applications for licenses and related documents submitted by investors: Chief Officer at DCMR: Ten or more years
- (2) Licenses: Chief Officer at DCMR: Permanent
- (3) Agreement on license between GDMR and investor: Chief Officer at DCMR: Permanent)
- (4) Computer software of the above documents: Chief Officer at DCMR: Five years
- (5) Management data and information: Chief Officer at DCMR: Permanent

4. Other

Attachments of related documents

- Laws and regulations related to the Registration
- Blank application forms
- Blank forms of documents produced

