

Update on the Application of UNFC–2009 to Mineral Resources in Thailand

By

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Department of Mineral Resources

Ministry of Natural Resources and Environment





Outlines

1. Introduction to Department of Mineral Resources (DMR), Thailand
2. Progress on the application of UNFC-2009 to mineral resources
3. Future Work plans



1. Introduction to DMR

(Department of Mineral Resources, Thailand)

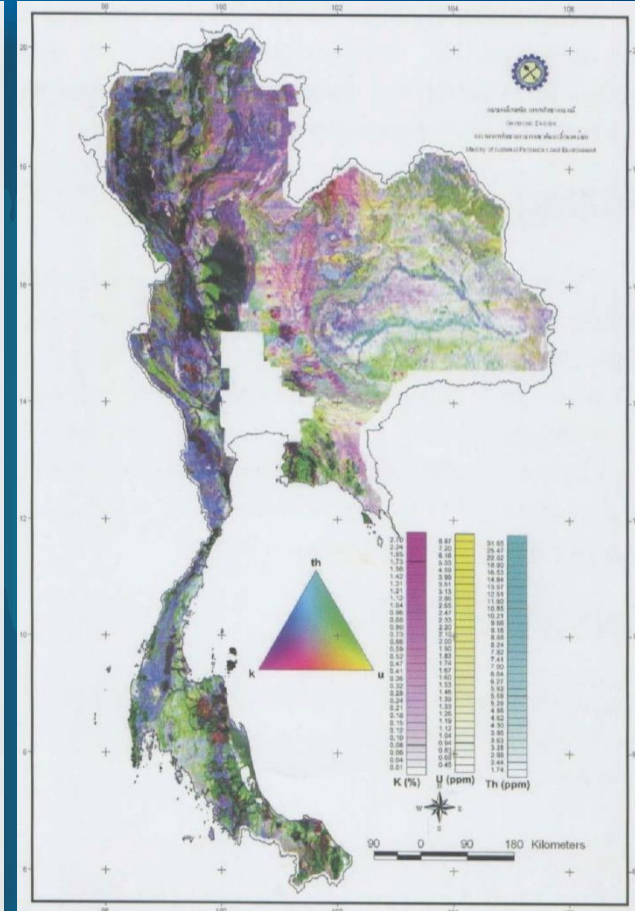
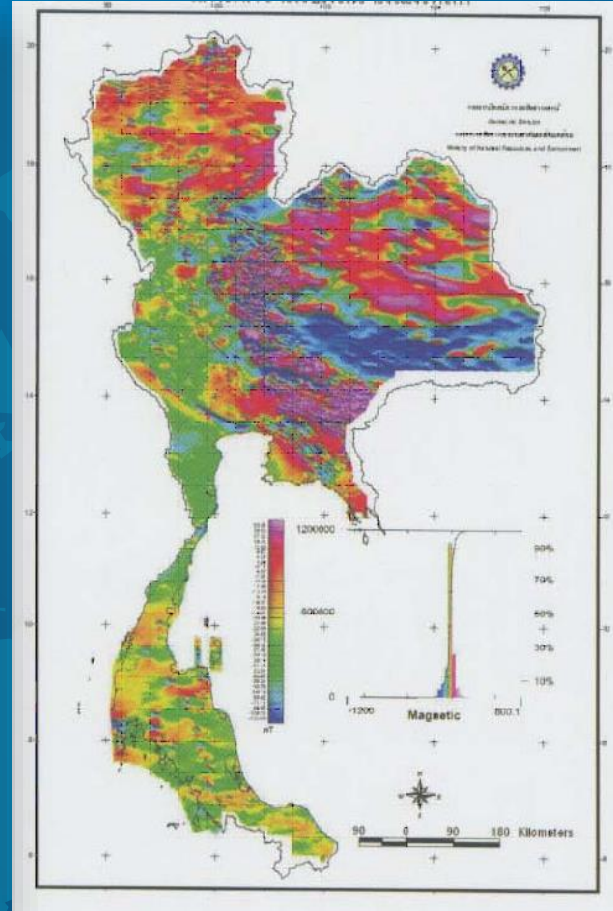
Who we are

- As a government organization we are responsible for advising the Thai government on all aspects of geosciences as well as providing advice to the public
- Secretariat of the National Mineral Policy and Management Committee

What we do

- Mineral Exploration (solid minerals)
- Geological Mapping
- Geotechnical Services
- Geohazard Assessment
- Mineral Resources Information Center

Data for Mineral Prospecting / Mineral Exploration



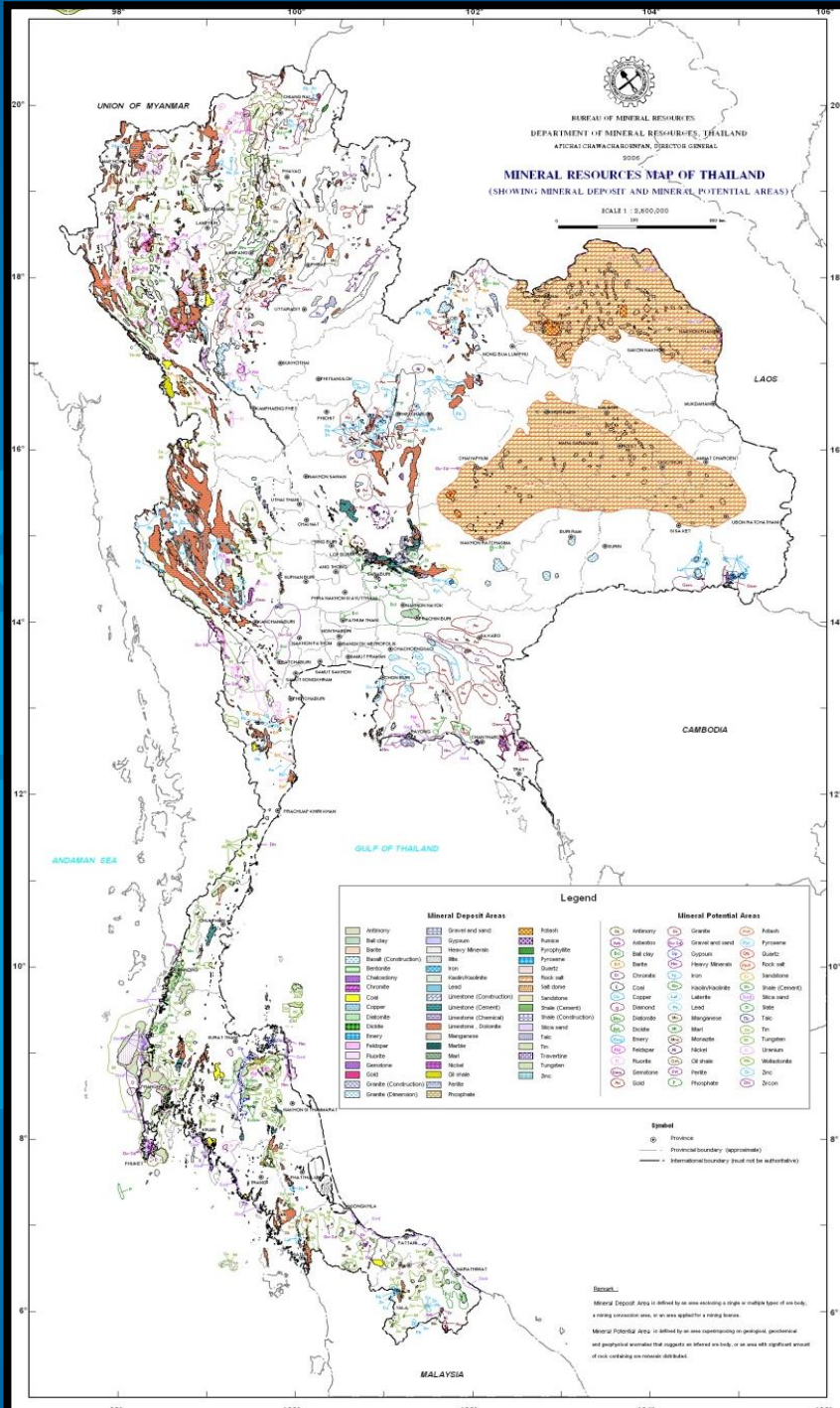
Geological map

Magnetic map

Ternary map

Mineral Potential Map of Thailand

- Areas ~ 518,000 km²
- Potential mineral area ~ 99,670 km² (19 %)
- > 40 mineral types



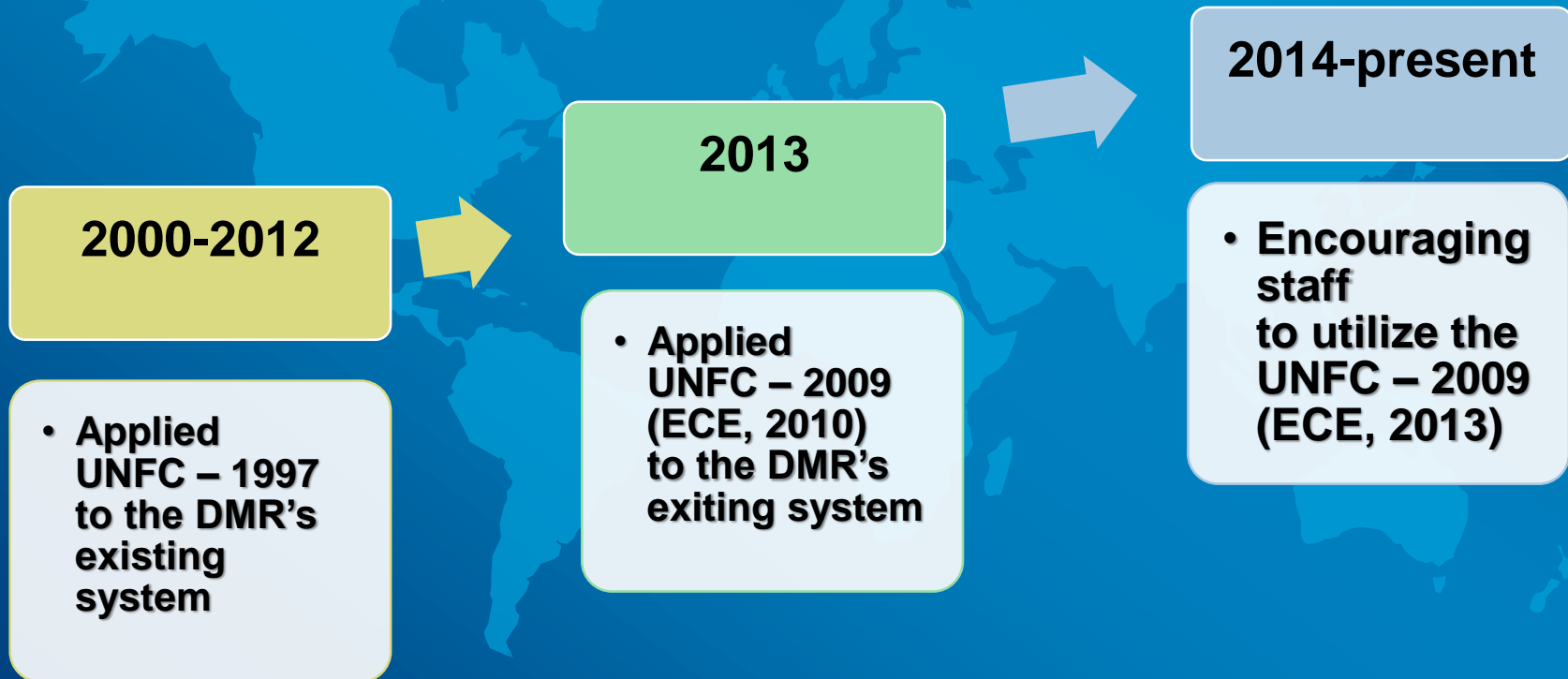


Outlines

1. Introduction to Department of Mineral Resources of Thailand (DMR)
2. Progress on the application of UNFC-2009 to mineral resources
3. Future Work plans

2. Progress on the application of UNFC-2009 to mineral resources

Background : Applied UNFC to mineral classification





2. Progress on the application of UNFC-2009 to mineral resource

Activities 2016-2017

2.1 DMR's Working Group

2.2 Implementing the UNFC-2009

2.3 Encouraging collaboration

2.4 Promoting UNFC-2009

2.1 DMR's Working Group writing a “Guidelines on the application of UNFC-2009 (in Thai) for DMR's mineral exploration projects”.



2.2 Implementing the UNFC-2009 to ongoing DMR's mineral exploration projects continuously

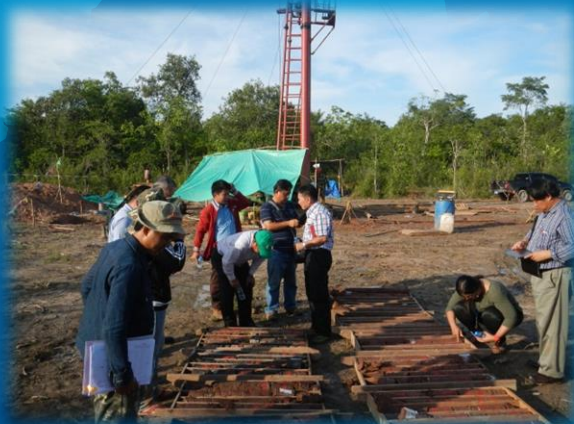
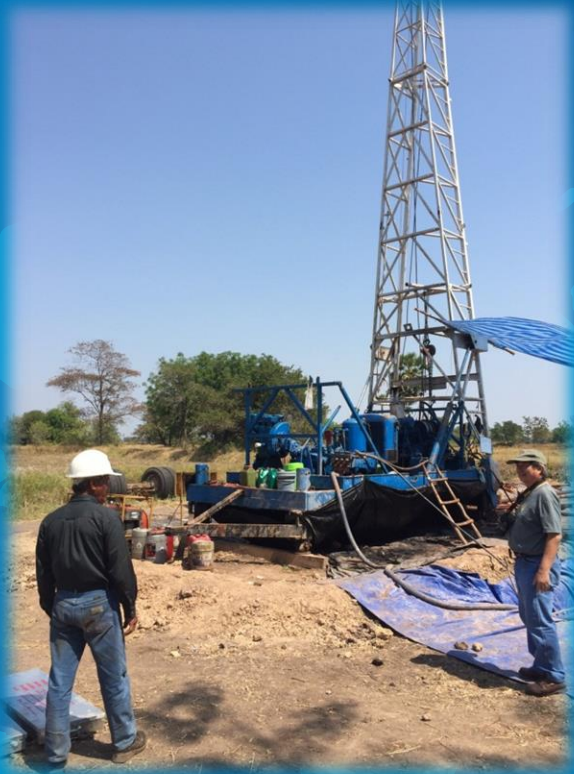
Applying UNFC-2009
to all Mineral
Exploration Projects

Establish
Guideline
(applied from
UNFC)

Apply to DMR
mineral
exploration
project

Publications
on exploration
results

Implementing the UNFC-2009 to ongoing DMR's mineral exploration projects

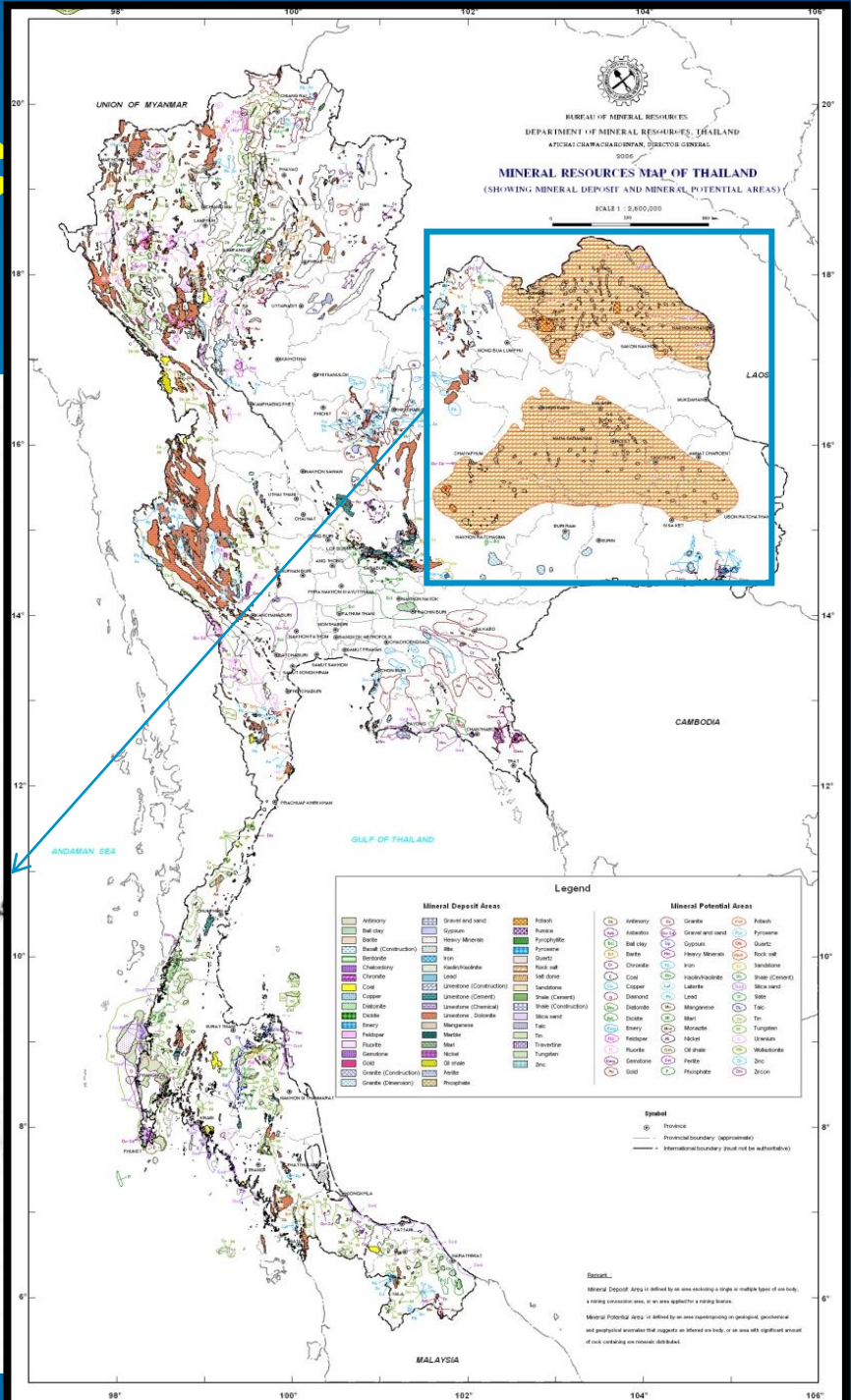




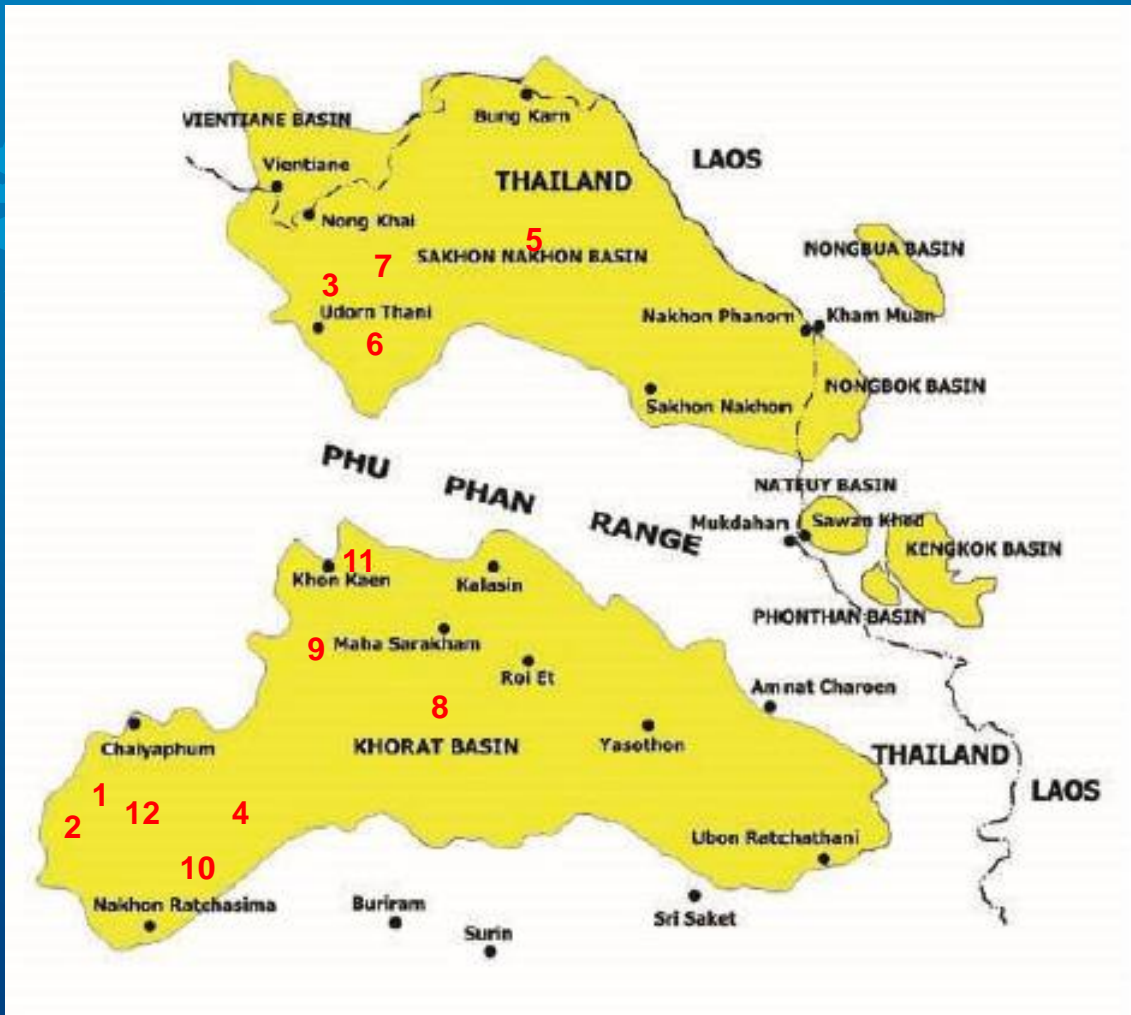
Case studies:

1. Implementing the UNFC-2009 to Evaluation of Potash and Rocksalt Project
2. Implementing the UNFC-2009 to Evaluation of Construction raw materials Project

Potash and Roc



Potash and Rocksalt Project



List of Poject /Min Area

1. Potash ASEAN Co., Ltd.
2. Thai Kali Co., Ltd.
3. APPC Co., Ltd.
4. Jakarach
5. Vanonnivas
6. South Udon
7. North Udon
8. Na Chuek
9. Ban Toom
10. Ban Pra Kham
11. Khon Kan
12. Dan Khun Tod

Potash and Rocksalt of Thailand classified according to UNFC-2009

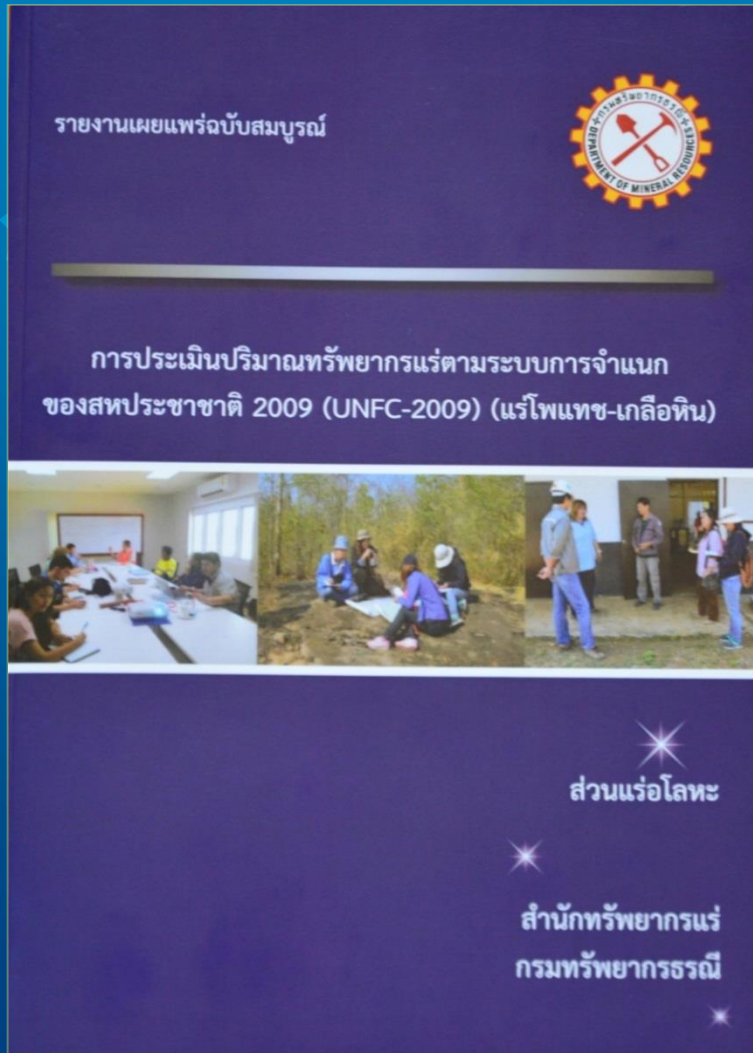


Table 1 Potash and Rocksalt of Thailand classified according to UNFC-2009

(Effective date 30 August 2016)

<i>Project/Min Area</i>	<i>UNFC-2009 Class</i>	<i>UNFC-2009 Category</i>	<i>Resources/Reserves</i>
1. Potash ASEAN Co., Ltd.	Commercial Project	E1.1, F1.2, G1	Camalite 857 mt. Sylvite 3 mt. Rocksalt 8,700 mt.
2. Thai Kali Co., Ltd.	Commercial Project	E1.1, F1.2, G2	Not Available
3. APPC Co., Ltd.	Potentially Commercial Project	E1.1, F2.1, G2	Not Available
4. <u>Jakarach</u>	Exploration Project	E2, F3.2, G2	Not Available
5. <u>Vanomnivas</u>	Exploration Project	E2, F3.2, G3	Not Available
6. <u>South Udon</u>	Exploration Project	E2, F3.2, G3	Not Available
7. <u>North Udon</u>	Exploration Project	E2, F3.2, G3	Not Available
8. <u>Na Chuek</u>	Exploration Project	E2, F3.2, G2	Not Available
9. <u>Ban Toom</u>	Exploration Project	E2, F3.2, G2	Not Available
10. <u>Ban Pra Kham</u>	Exploration Project	E2, F3.2, G3	Not Available
11. <u>Khon Kan</u>	Exploration Project	E3.3, F3.2, G2	Not Available
12. <u>Dan Khun Tod</u>	Exploration Project	E3.3, F3.3, G3	Not Available

Implementing the UNFC-2009 to Evaluation of Potash and Rocksalt



- ❖ Finishing a publication
“Evaluation of Potash and
Rocksalt base on UNFC-
2009” (in Thai)

Construction Raw Materials Project

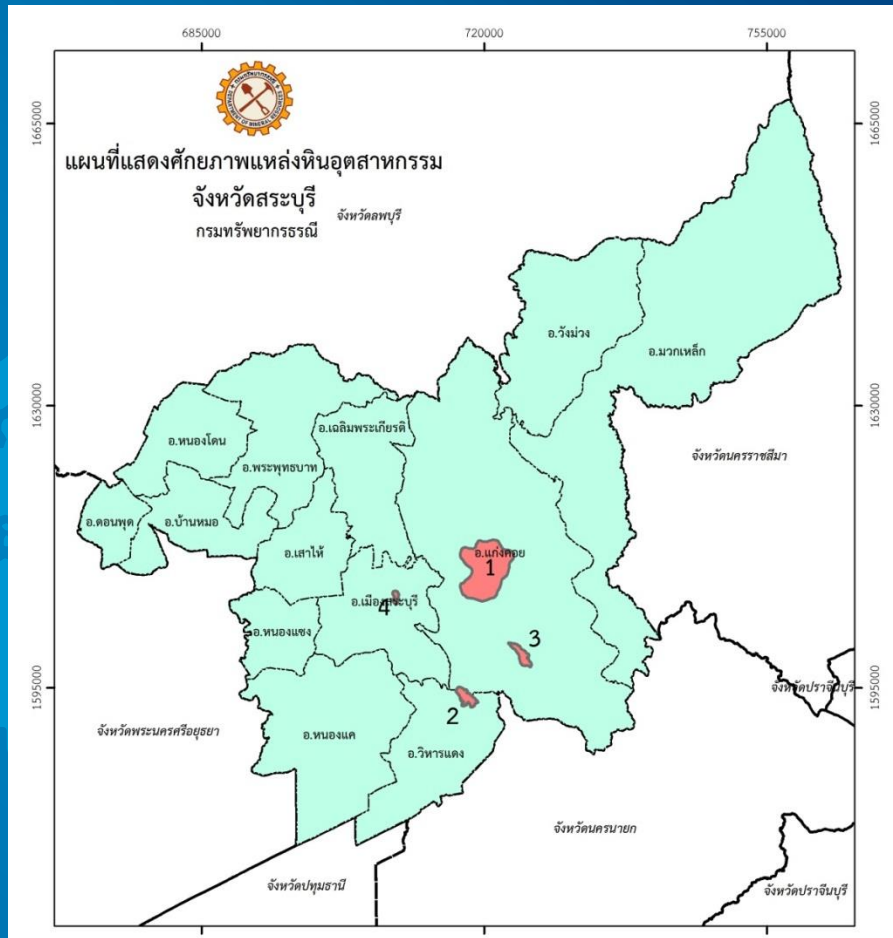
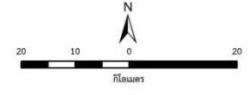


สัญลักษณ์

- ขอบเขตอำเภอ
- ขอบเขตจังหวัด
- พื้นที่ศักยภาพแหล่งหินอุตสาหกรรม ชนิดหินปะซอลต์
- พื้นที่ศักยภาพแหล่งหินอุตสาหกรรม ชนิดหินโรโอไลต์

คำอธิบาย

- 1 พื้นที่ศักยภาพแหล่งหินเขาขาด
- 2 พื้นที่ศักยภาพแหล่งหินเขานม
- 3 พื้นที่ศักยภาพแหล่งหินเขาโป่งตอง
- 4 พื้นที่ศักยภาพแหล่งหินเขากระโดง

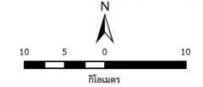


สัญลักษณ์

- ขอบเขตอำเภอ
- ขอบเขตจังหวัด
- พื้นที่ศักยภาพแหล่งหินอุตสาหกรรม จังหวัดสระบุรี

คำอธิบาย

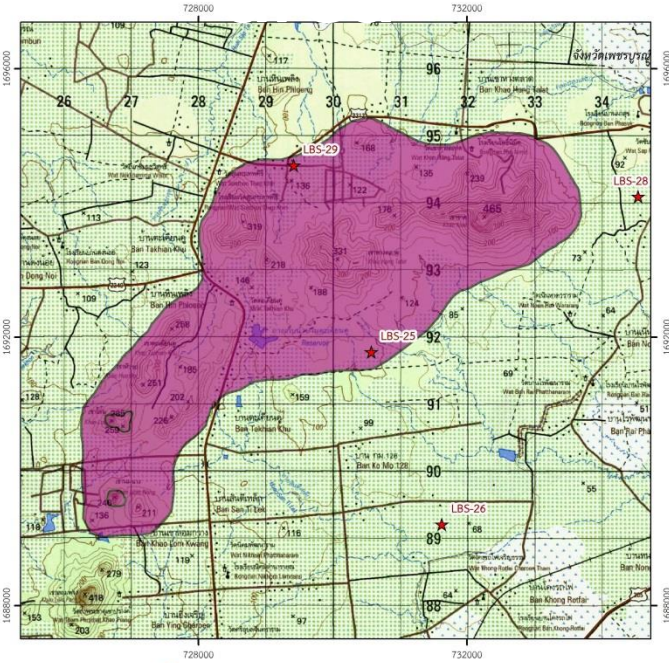
- 1 พื้นที่ศักยภาพแหล่งหินเขาพระ
- 2 พื้นที่ศักยภาพแหล่งหินเขาน้อยจอมสวรรค์
- 3 พื้นที่ศักยภาพแหล่งหินเขาโป่งมงคล
- 4 พื้นที่ศักยภาพแหล่งหินเขาตะกร้า



Implementing the UNFC-2009 to Construction raw materials

1. Khao Kad

area



แผนที่แสดงศักยภาพแหล่งหินอุตสาหกรรม
จังหวัดลพบุรี

สัญลักษณ์

- เส้นทางคมนาคม
- ★ ตำแหน่งกับตัวอย่างหินเพื่อทดสอบสมบัติทางศาสตร์
- พื้นที่แหล่งหินเขาคาด



Mineral areas	Areas (square km.)	Reserves (million tons)	UNFC-2009 (EFG)
1. Khao Kad	20	1,368	332

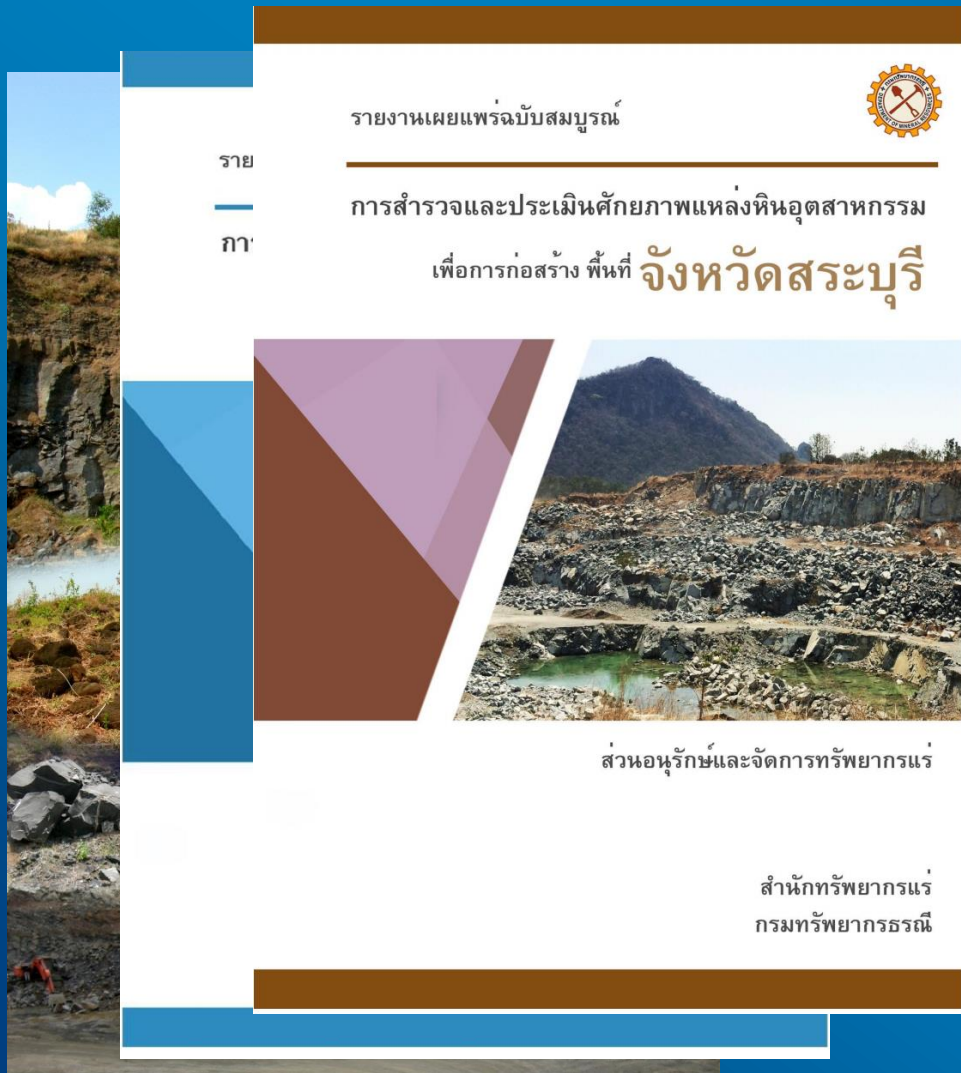
**Mineral resources
(Quantity/Quality)
E3-F3-G2**

Construction raw materials classified according to UNFC-2009

Table 2 Construction raw materials in Lopburi and Saraburi Province, Thailand classified according to UNFC-2009 (Effective date 15 May 2016)

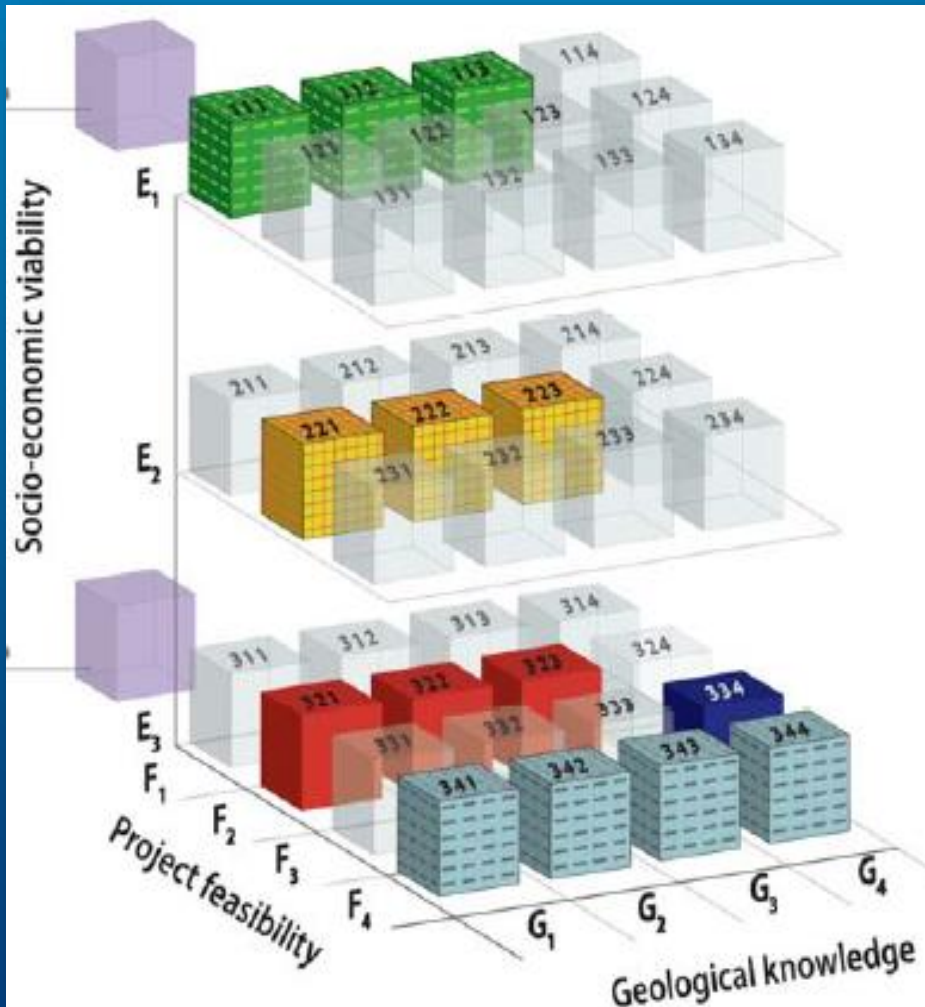
<i>Project/Min Area</i>	<i>UNFC-2009 Class</i>	<i>UNFC-2009 Category</i>	<i>Resources/Reserves</i>
1. <u>Khao Kad</u>	Exploration Project	E3, F3, G2	1,368 mt.
2. <u>Khao Nom</u>	Exploration Project	E3, F3, G2	225 mt.
3. <u>Khao Pong Tong</u>	Exploration Project	E3, F3, G2	969 mt.
4. <u>Khao Kradong</u>	Exploration Project	E3, F3, G2	133 mt.
5. <u>Khao Pra</u>	Exploration Project	E3, F3, G2	1,152 mt.
6. <u>Khao Noi Chom Sawan</u>	Exploration Project	E3, F3, G2	2.04 mt.
7. <u>Khao Pong Mongkon</u>	Exploration Project	E3, F3, G2	1.86 mt.
8. <u>Khao Trakla</u>	Exploration Project	E3, F3, G2	0.54 mt.

Implementing the UNFC-2009 to Construction raw materials Project



❖ Finishing a publication
“Evaluation of Construction
raw materials Project base
on UNFC-2009” (in Thai)

2.3 Encouraging collaboration with relevant government offices and stakeholders to implement the mineral resource classification system



E and F :

Collaboration with relevant government offices and stakeholders

- ❖ Department of Primary Industries and Mines (DPIM)
- ❖ Mining Industry Council
- ❖ Department of National Parks, Wildlife and Plant Conservation (DNP)
- ❖ Department of Environmental Quality Promotion (DEQP)
- ❖ Pollution Control Department (PCD)

G - Geological knowledge

- ❖ DMR Exploration Results

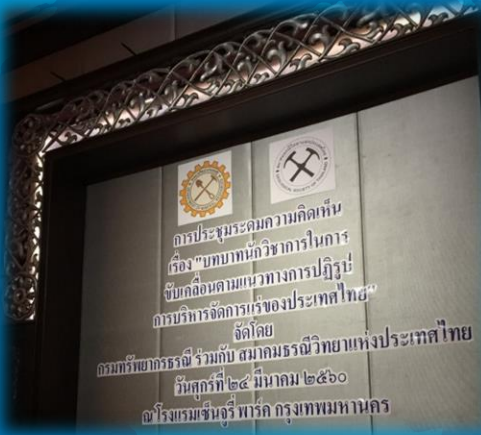
2.4 Promoting UNFC-2009 through Workshops / Seminars / Conferences / Publications



In “Mineral Standard Conference”
on July 7, 2016



In “Brainstorming Conference on Mineral Resource Management” on March 24, 2017






Outline

1. Introduction to Department of Mineral Resources of Thailand (DMR)
2. Progress on the application of UNFC to mineral resources
3. Future Work plans



3. Future Work Plans

 Keeping on applying the UNFC-2009 to DMR's mineral exploration projects and extend to others

 Continuing education and promoting UNFC-2009 through Workshops/Seminars/Conferences/Publications

The Bangkok: through the lens

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Thank you for your attention