بسم الله الرحمن الرحيم

{هوَ الَّذي جعلَ لكم الأَرضَ ذَلُولاً فامشوا في مناكِبِها وكُلُوا من رِزْقِهِ وإليه النشور}

{صدق الله العظيم }

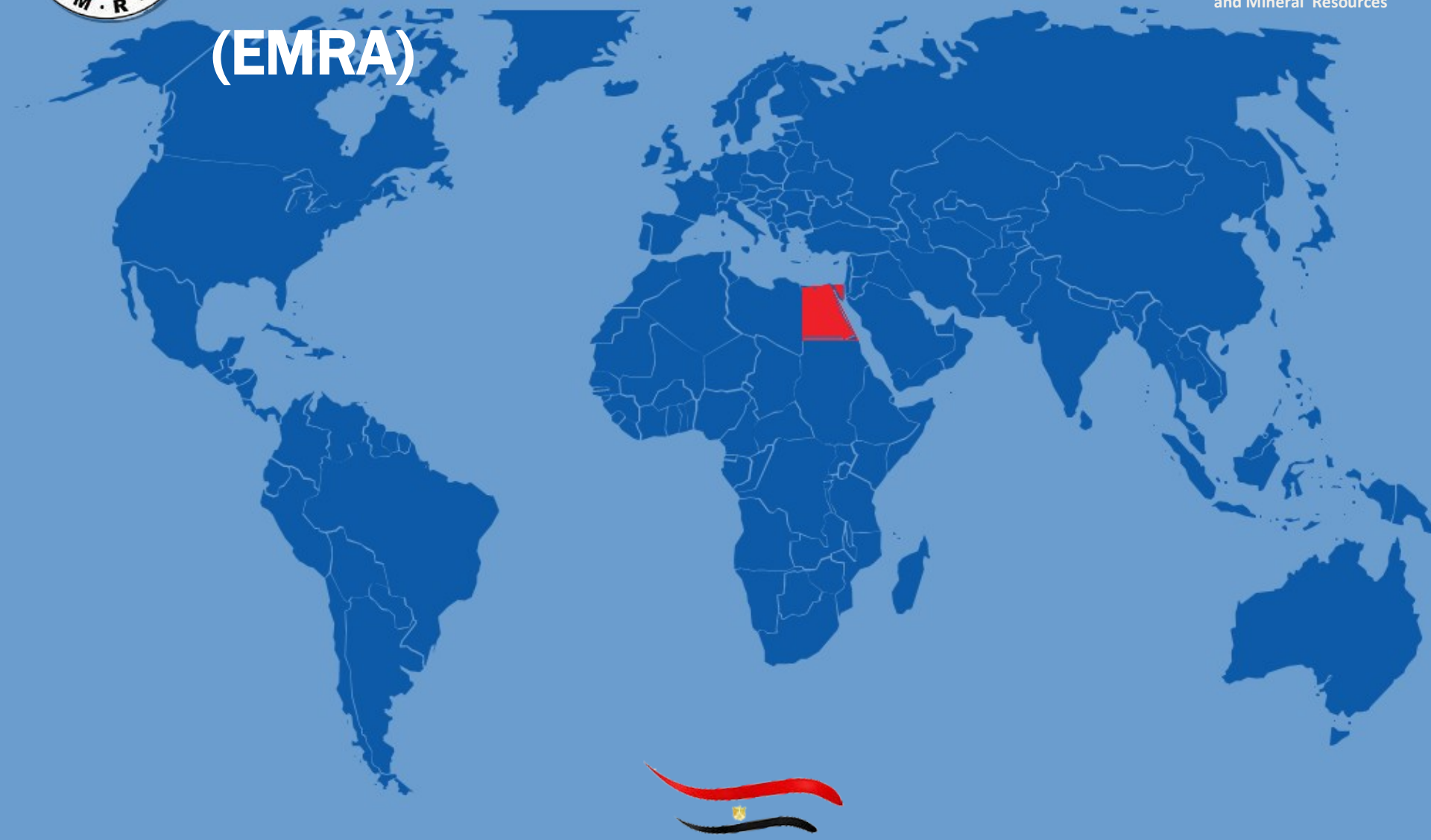
سورة الملك (67)

Mining Sector In Egypt

By
Dr. Sayed Ahmed Ali

EGYPTIAN MINERAL RESOURCES AUTHORITY (EMRA)

Ministry Of petroleum and Mineral Resources



EMRA

- **The Egyptian Mineral Resources (EMRA)** was established in 1896 and was entrusted by Egypt for preparing geological mapping for desert regions in Egypt and for searching, exploring and evaluating its mineral resources.

The authority provides technical consultations to many of government agencies, mining companies, housing and construction projects, and land reclamation. As well as, it helps agencies concerned with water and energy affairs.

EMRA SERVICES

Geological mapping

- The authority provides its services in preparing geological and structural maps of different scales.

Mineral Exploration

Preparing detailed studies and geological and geochemical exploration, researches for basement rocks, sedimentary rocks and different mineralization halos (occurrences).

EMRA SERVICES

Geophysical Studies

Doing aero magnetic, electromagnetic, radiometric geophysical survey, Self Potential(SP) and Induced Polarization (IP)

Well logging with Gamma-ray measurement, Measure the density, Measurement of the neutron, Thermometry, Measure the diameter of the well, Measuring a inclination of well angel, Self-electric voltage measurement, Measurement of electrical resistance

Making seismic studies, geotechnical studies and ground water researches using Ground-penetrating radar (GPR).

EMRA SERVICES

Evaluation of the Ores

- Estimating the certain geological reserve of discovered ores , preparing reports and detailed maps.

Drilling

- Drilling inclined and vertical wells with different diameters and depths for the purpose of mineral exploration and ground water researches

EMRA SERVICES

The Geological Information Center

Egyptian Mineral Resources Authority Prepares publications of maps and information packages about different ores, and offering them for sale, and providing the service of information searching as well as The Geological Library that available for every one

In addition to preparing digital geological maps of different regions either by field studies or from satellite images by the Geographic Information systems (GIS) unit.

EMRA SERVICES

The environmental Department

•Preparing geo-environmental reports and studying the locations of natural hazards.

The Geological Museum

Carrying out advanced scientific studies of all vertebrate and invertebrate fossils, minerals, rocks, Chondrite , Gem stones and showing large number of rare samples that represent these types.

EMRA SERVICES

The General Administration of Labs

Mineral and geochemical studies

preparing and study thin and polished sections by polarized and electronic microscope.

Making qualitative analysis using X-Rey Differential (XRD) for rocks and quantitative analysis using X-Rey Fluorescence (XRF).for minerals and rocks

And Inductively coupled plasma / optical emission spectrometry (ICP/OES).

Carrying out atomic adsorption and fire assay for Gold, and making analysis of rock samples, ores, water and air samples using different measuring devices

Licensing and exploitation contracts

Examining and granting mining ores, exploration and Exploitation licenses requests according to the governing laws and rules.

MINING THE

Mining is pick up any rocks or extraction the minerals or any natural materials from ore body, which takes a variety of bodies as a veins, blocks or layers , they are present on the surface of the earth or subsurface.

Open mine

MINING INDUSTRY IN EGYPT

Mining industry in Egypt Characterized by like all other industries periods but continued as an unknown soldier behind the success of many of the industrial, agricultural, and other activities, which helped push the country's economic development wheel.

Egypt is rich by mineral resources which economically -quality raw materials that reach back over one of seventy minerals, including gold, iron, phosphate and ilmenite and white sand, black sand, gypsum, kaolin and ornamental stones, coal, manganese, sulfur, niobium, tantalum and other large economic raw materials, which is characterized by some scarcity at the level of the world.

mineral resources in Egypt and the world is divided into three main components:

A - solid energy raw materials include: -

Carbon raw materials such as coal and oil shale.

Radioactive materials such as uranium and thorium. (Nuclear Materials Authority)

B- metallic materials include: -

- Iron ore: ilmenite chromite, manganese - - -
- Non-ferrous materials: Copper, Lead, Zinc, Nickel, Cobalt - - vanadium .... etc.
- Precious metals: Gold , Silver,, Platinum - -

C - Non metallic ores to include: -

The chemical industry and fertilizer raw materials such as potassium phosphate evaporite - - sulfur limestone Talc - -

Refractory and ceramic raw materials such as feldspar choline girls Sand Glass - zircon quartz bentonite

Construction materials such as limestone- sandstone basalt sand - gravel dolomite.

ACHIEVEMENTS OF EMRA

The previous field works and expeditions led to discovery of many ores of high economic value, which is utilized some of them now, such as: -

Iron ore (Bahariya oasis), Maghara Coal mine, North Sinai

Phosphate ore (Nile Valley, the Red Sea, Abu Tartour),

Ilmenite ore in Abu Ghalga - Abu Ghosoun),

Kaolin ore zone (Kalabsha - Aswan and east of the city of Abu Zenima),

White sand (sand glass) Kinds (Wadi Qena and North and South Sinai), limestone ore and dolomite zones (Bani Khalid in Samalout and North Sinai and Abu Rawash), and other raw materials utilized currently, such as: -

Gold, areas (Alsokari- Hamesh) in addition to other research areas such as gold (Valley Alaqa- or Alfoackher- Wadi Cream.. etc.) and most of them are concentrated in the southern and central eastern Desert,

There are also some metals and other raw materials in the process of exploitation, such as niobium and tantalum ores , tin, quartz and feldspar zone (Abu Dabab).

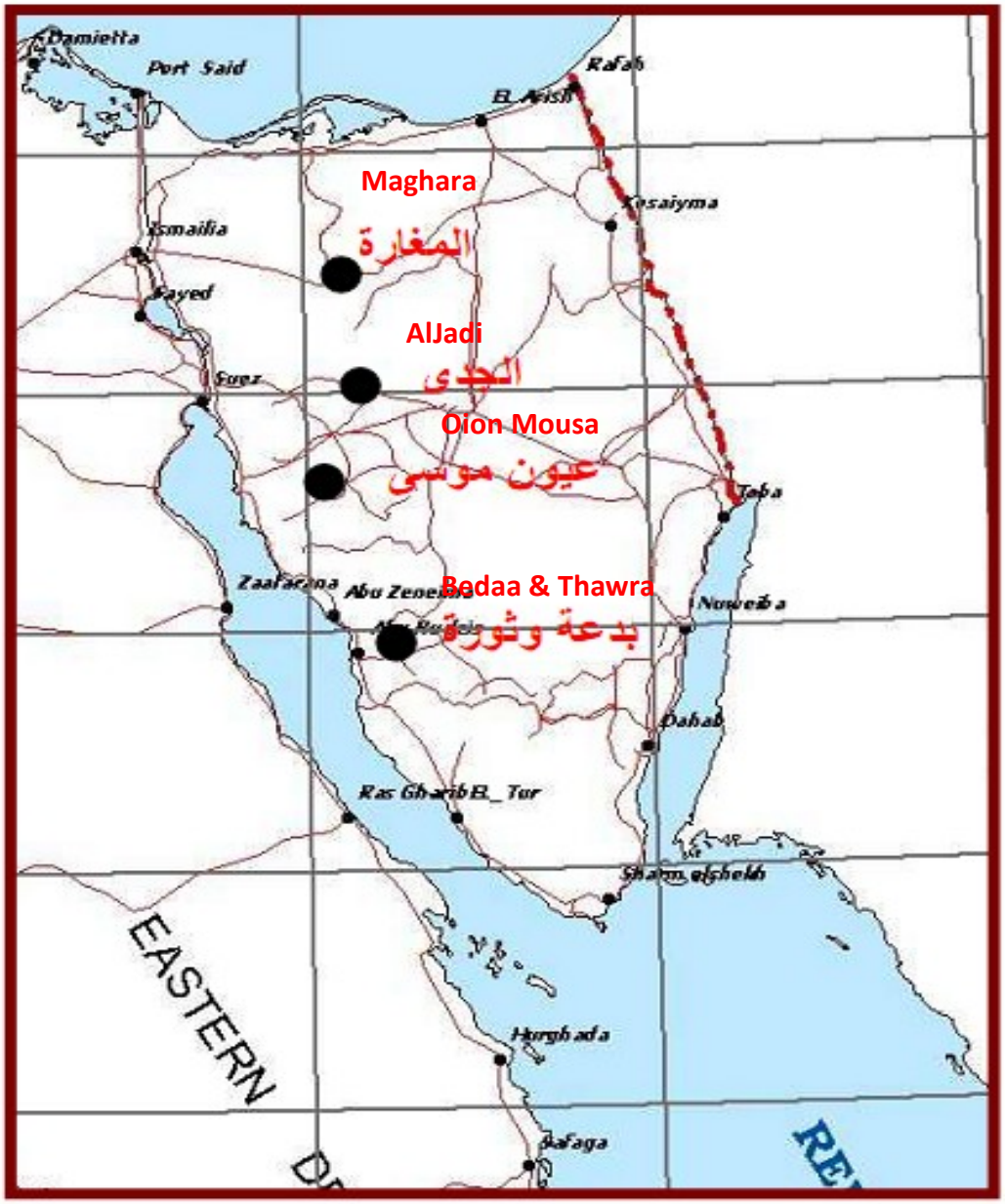
A - SOLID ENERGY RAW MATERIALS INCLUDE: -

CARBON RAW MATERIALS SUCH AS COAL

النوع	C	H	N	O
مادة خشبية (Wood)	49.7	6..2	0.9	43.2
البيت (Peat)	56.6	4.8	1.7	36.9
اليجنايت (Lignite)	65.2	3.5	1.2	30.1
البتيومين (Bituminous Coal)	84.5	4.6	1.5	9.4
الأنثراسيت (Anthracite)	93.6	2.3	1.1	3.0

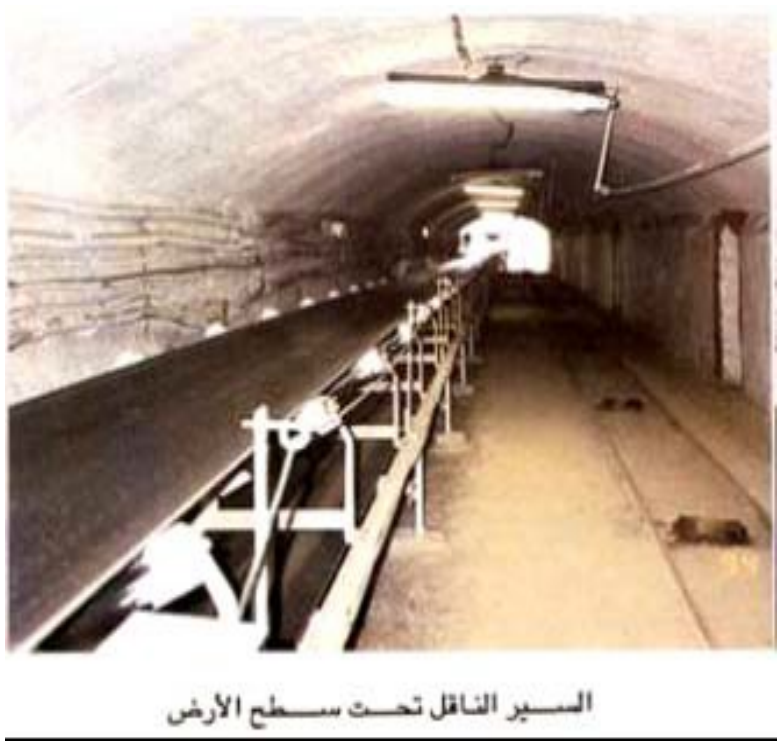
There are four types of Coal according to Chemical composition

Maghara Coal mine, North Sinai is bituminous Coal



MAP SHOWS THE OCCURRENCES OF THE COAL IN EGYPT

SOME INSTRUMENTS IN MAGHARA MINE (BEFORE IT CLOSED)

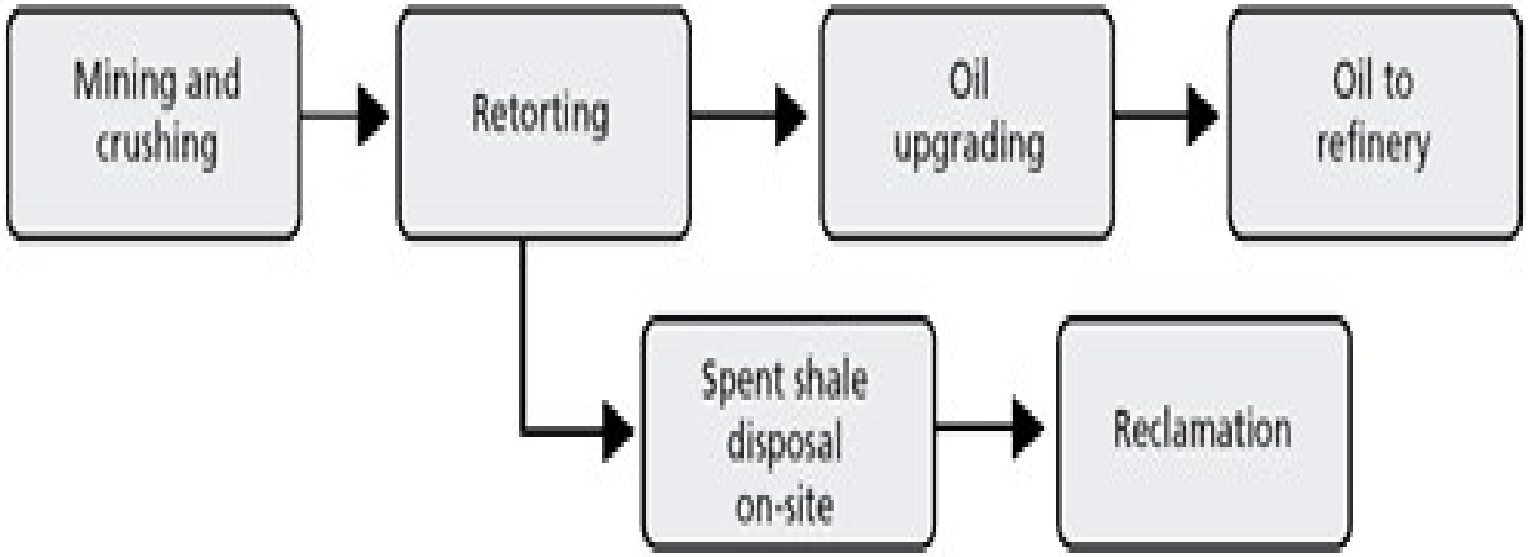


السـير الناقل تحـت سـطح الأرض

Maghara Coal mine, North Sinai, subsurface working

OIL SHALE

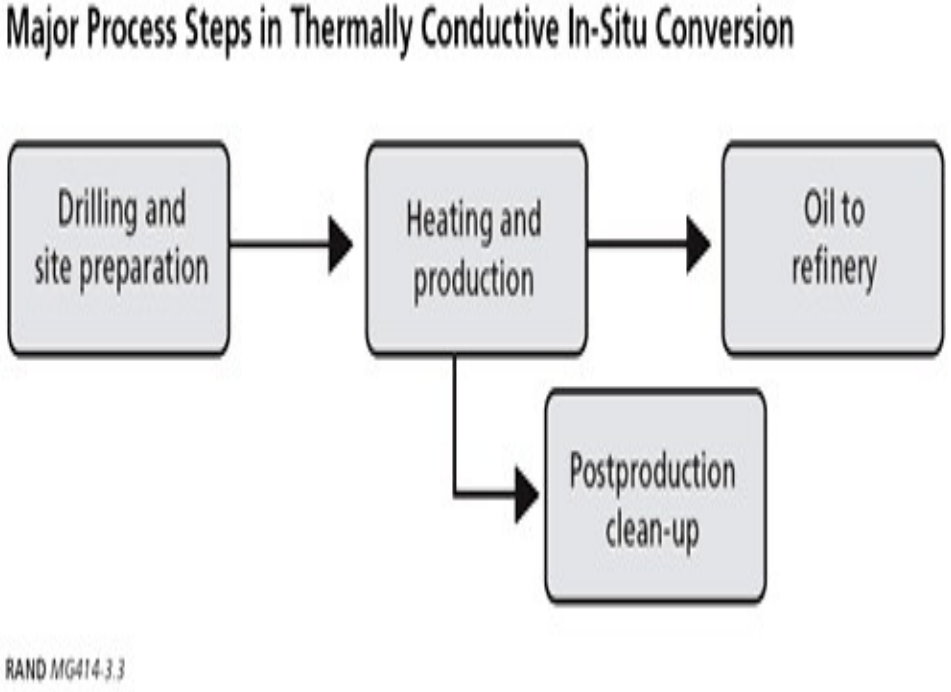
Major Process Steps in Mining and Surface Retorting

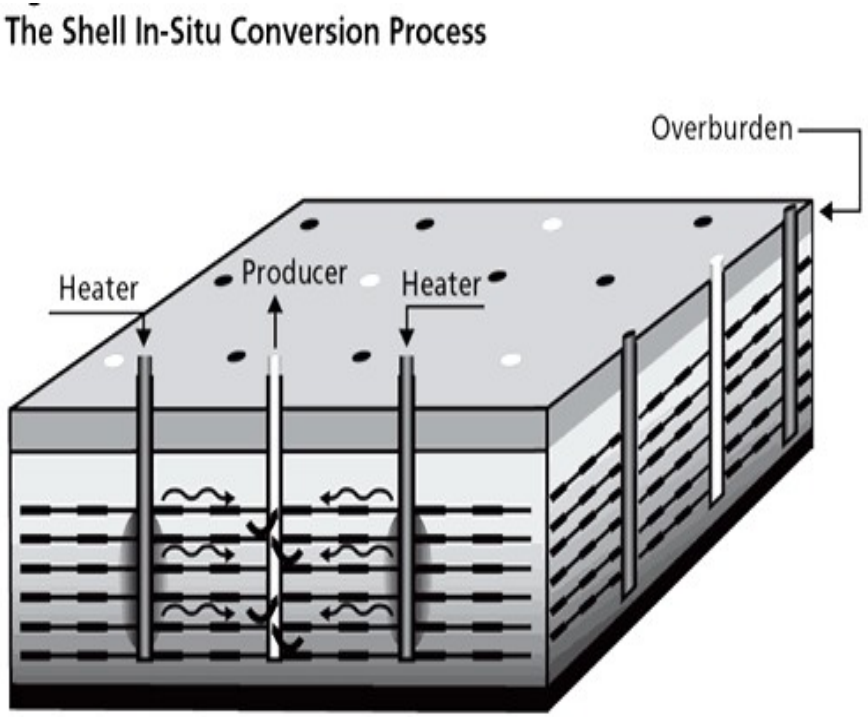


RAND MG414-3.1

Oil shale sample

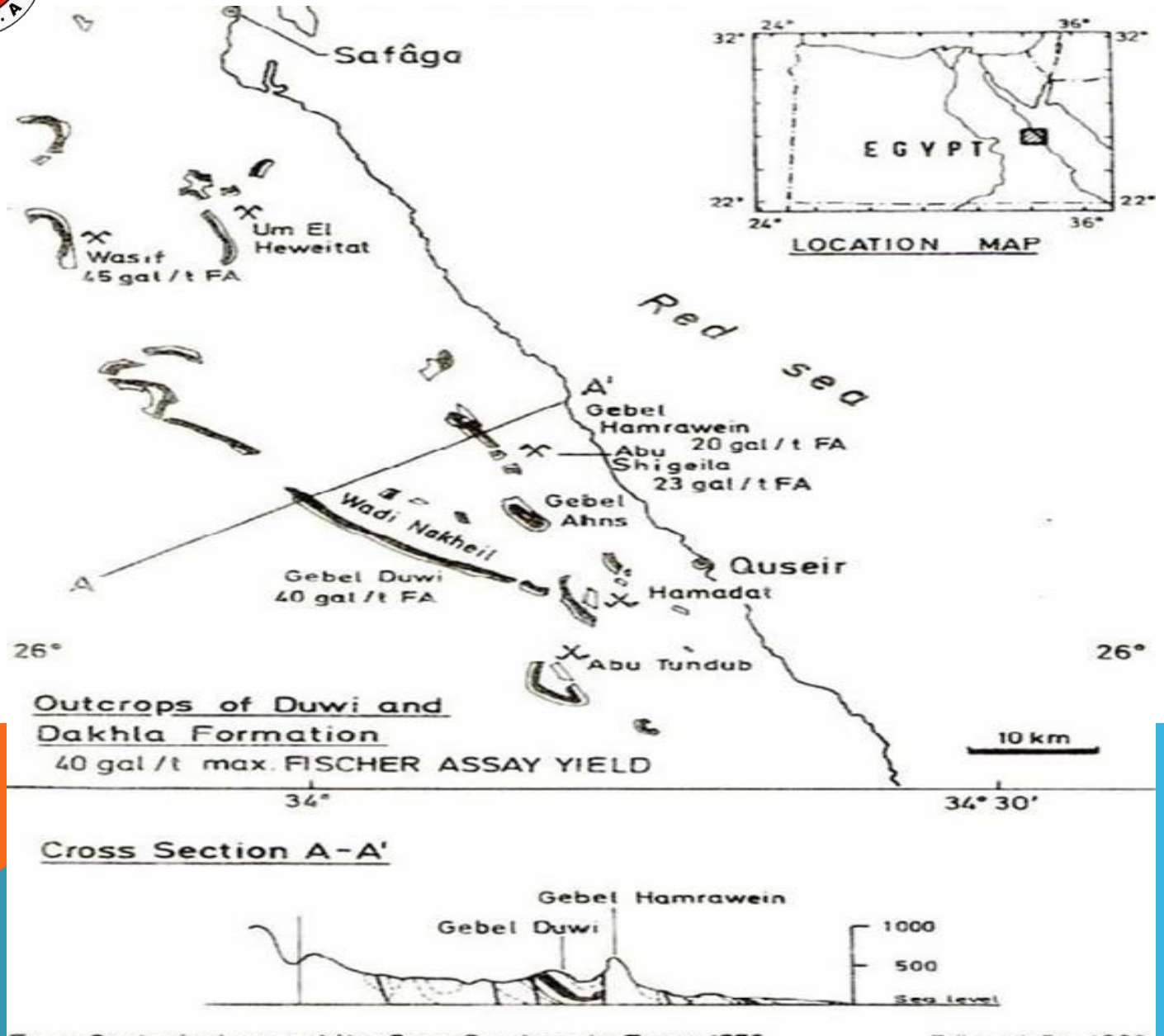
SUBSURFACE MINING TO OIL SHALE





Oil shale

OIL SHALE OCCURRENCES IN EGYPT



SHALE OCCURRENCES IN EGYPT (CENTRAL EASTERN DESERT)

wassif area (40 gallon / ton) – 1

Hamrawein area (20 gallon / ton) – 2

Dawi area (40 gallon / ton –3(

4 – Abu Shgeila area)gallon / ton 23(

5 –Al Atshan area (not known)

6 – Abu Tundub area (not known)

7 - Um El Heweitat

8 - . Al Beida

9 - Al Nekheail

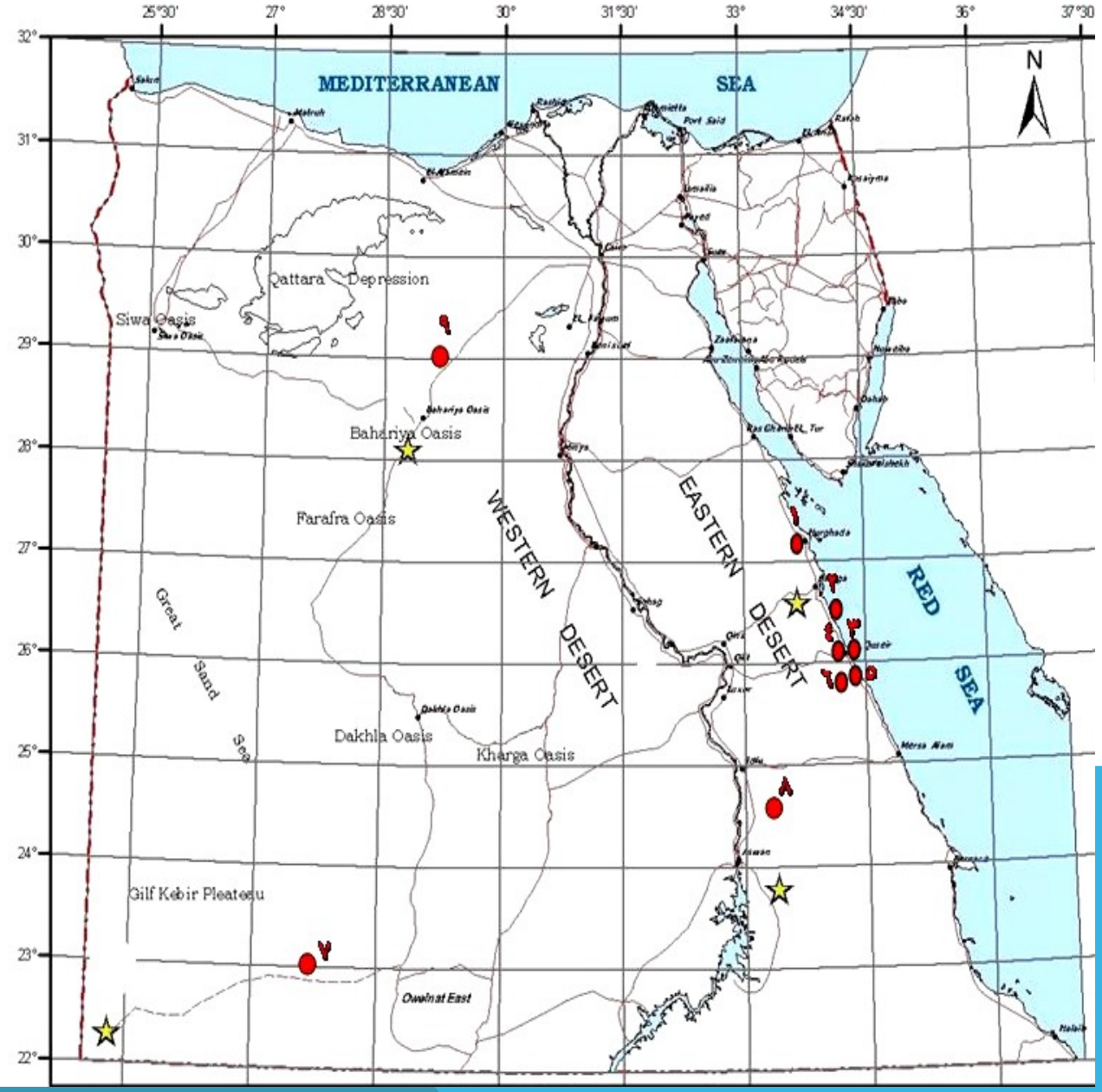
10 – Naser

11 - Ali Zean

12 - Younes

13 - Mohammed Rabah-

location map to Iron ore in Egypt, There are nine occurrences



IRON ORE IN EGYPT

area 1 - Abu Marwat

area 2 - Wadi Karim

area 3 - Wadi El Dabbah

area 4 - Umm Ghamis El Zarga

area 5 - Gabal El Hadid

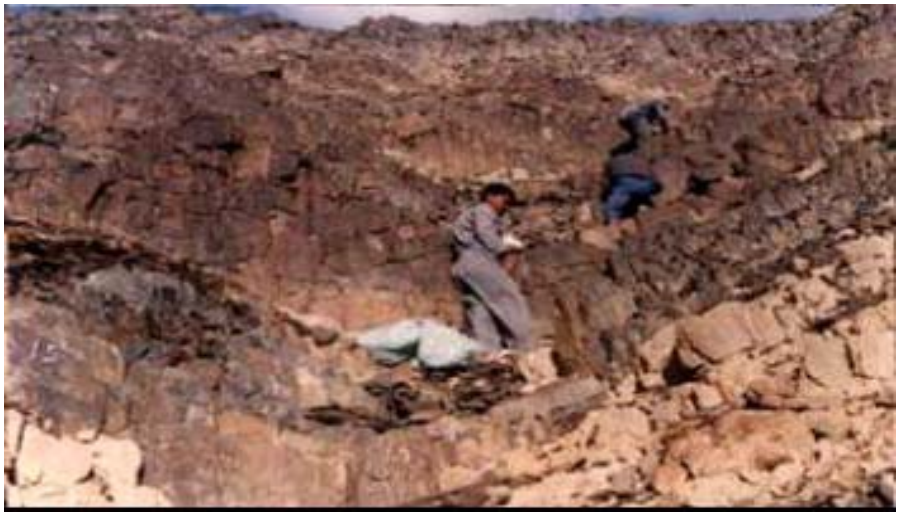
area 6- Um Nar

area 7 - El Ewinat

Aswan area –8

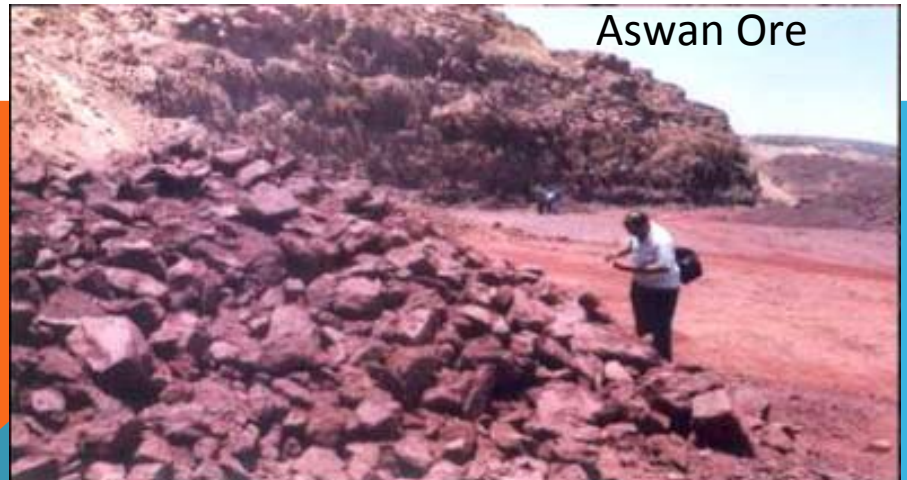
Bahariya area – 9

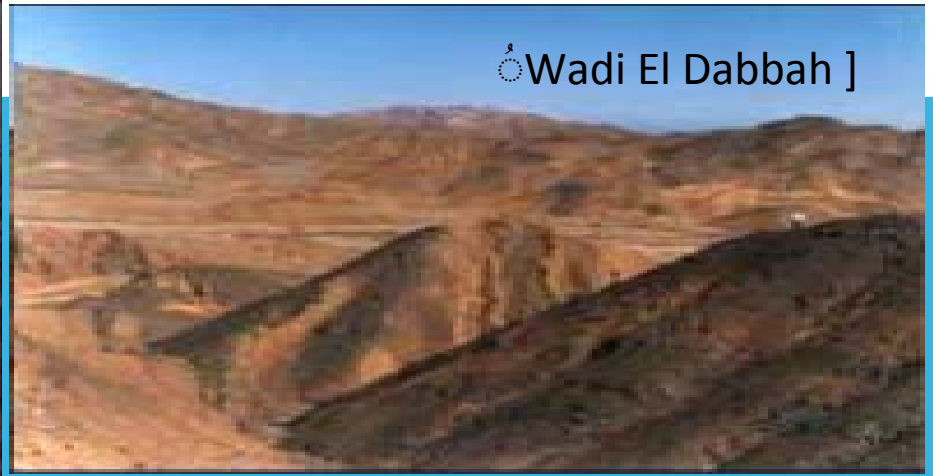
G. El Hadid



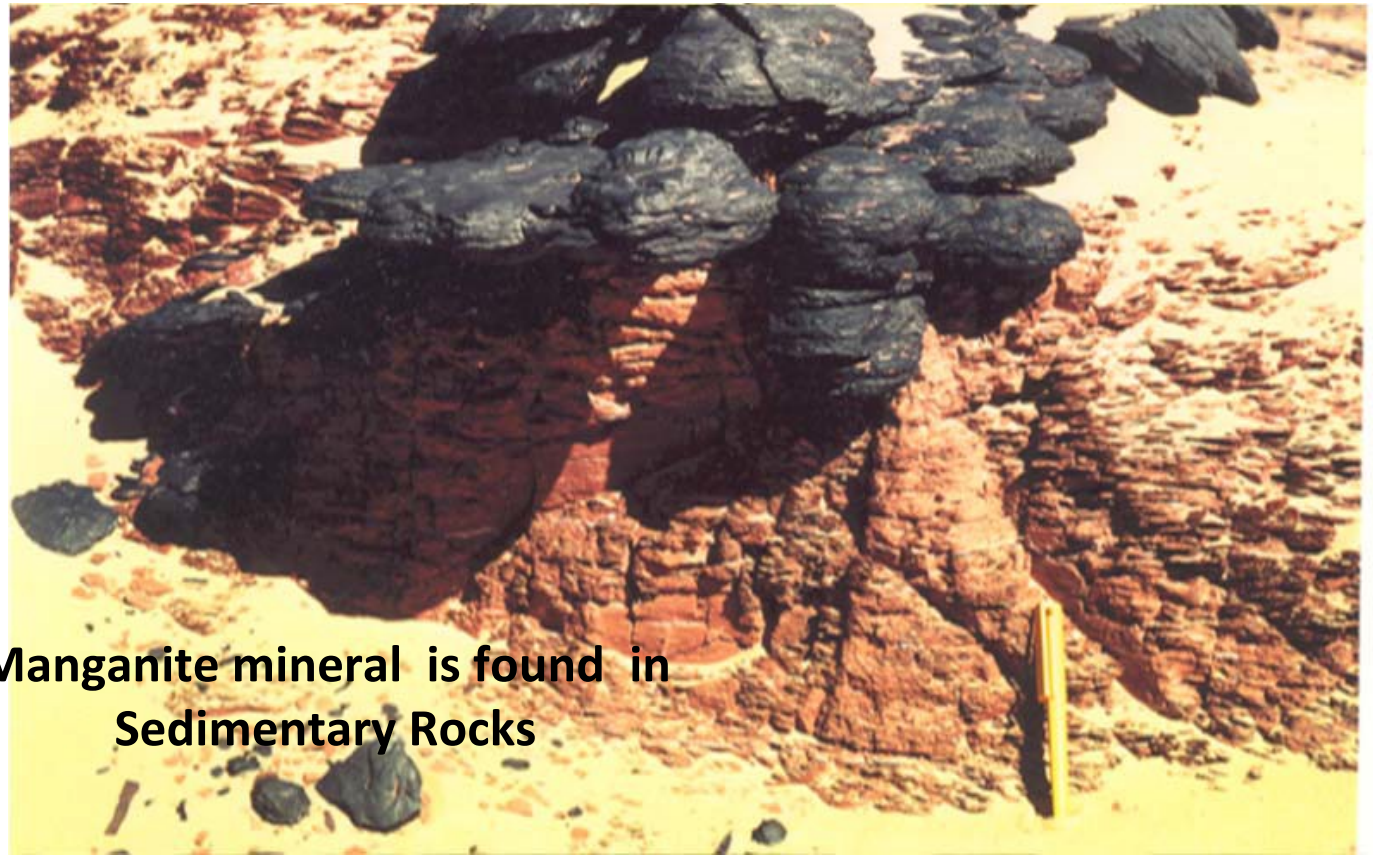
The Iron ore ranges between 38 % to 55 % of iron oxide and It becomes economic.

Iron is used in Ferrous Alloys and steel industries





Location map to manganese Ore in Egypt

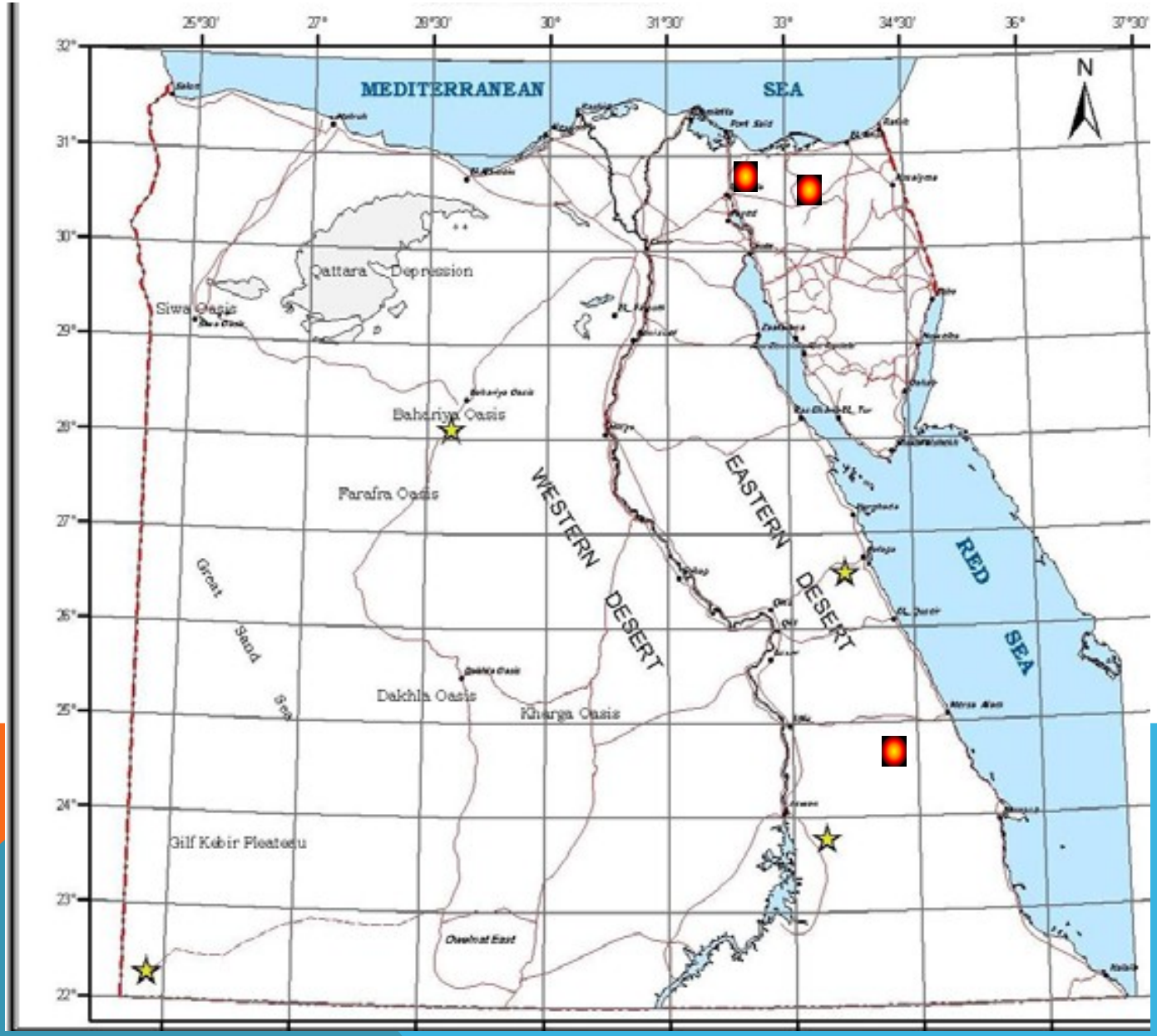


Manganite mineral is found in Sedimentary Rocks

Manganese is used in Ferrous alloys, , non ferrous alloys and steel industries

Pyrolusite mineral

ILMENITE ORE IN EGYPT



.Ilmenite is the source of Titanium element

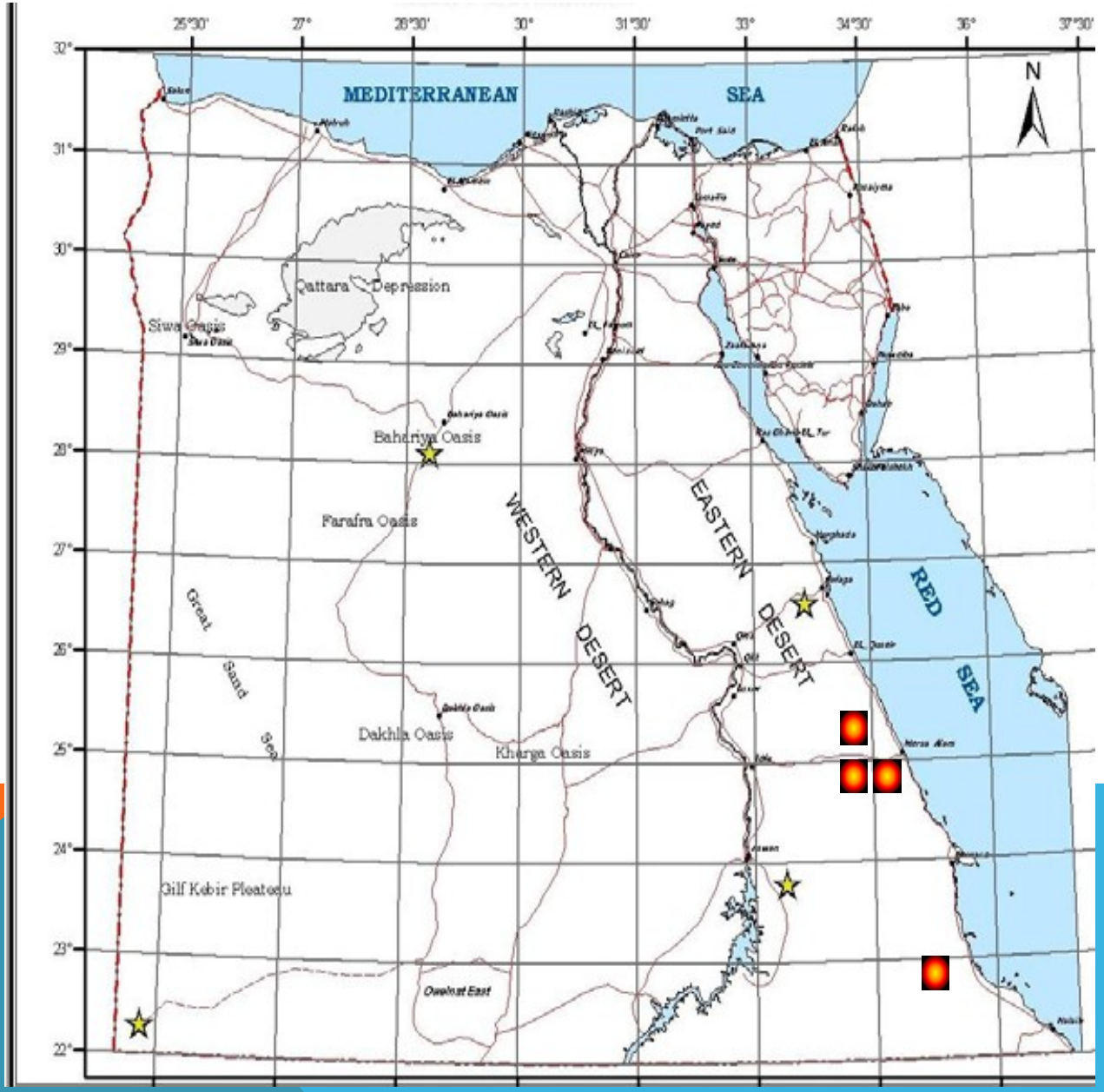
Ilmenite in Egypt is found in:

.Abu Ghalaga area, South Eastern Desert – 1

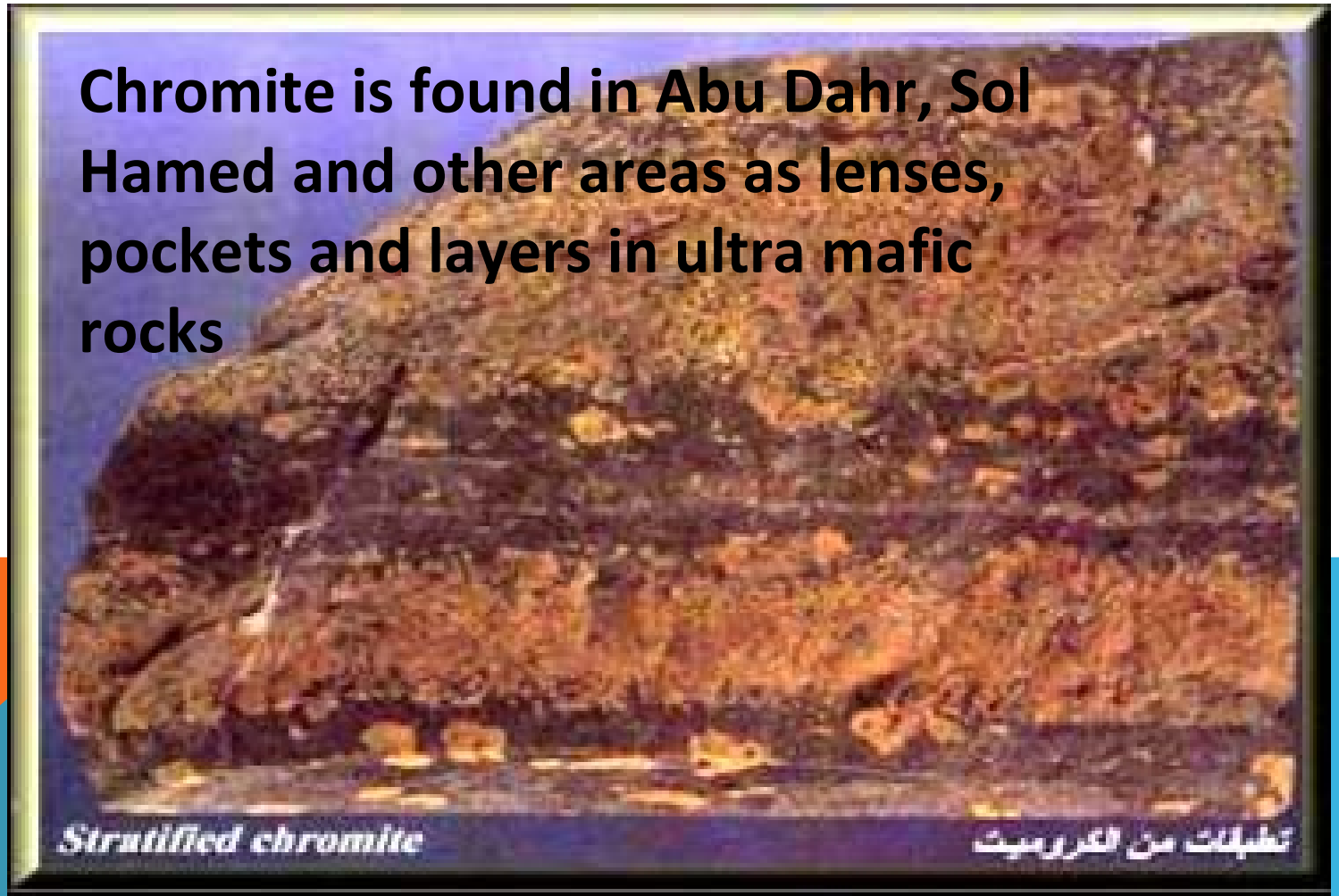
.Area between Al Aresh and Rosetta –2

North Sinai – 3

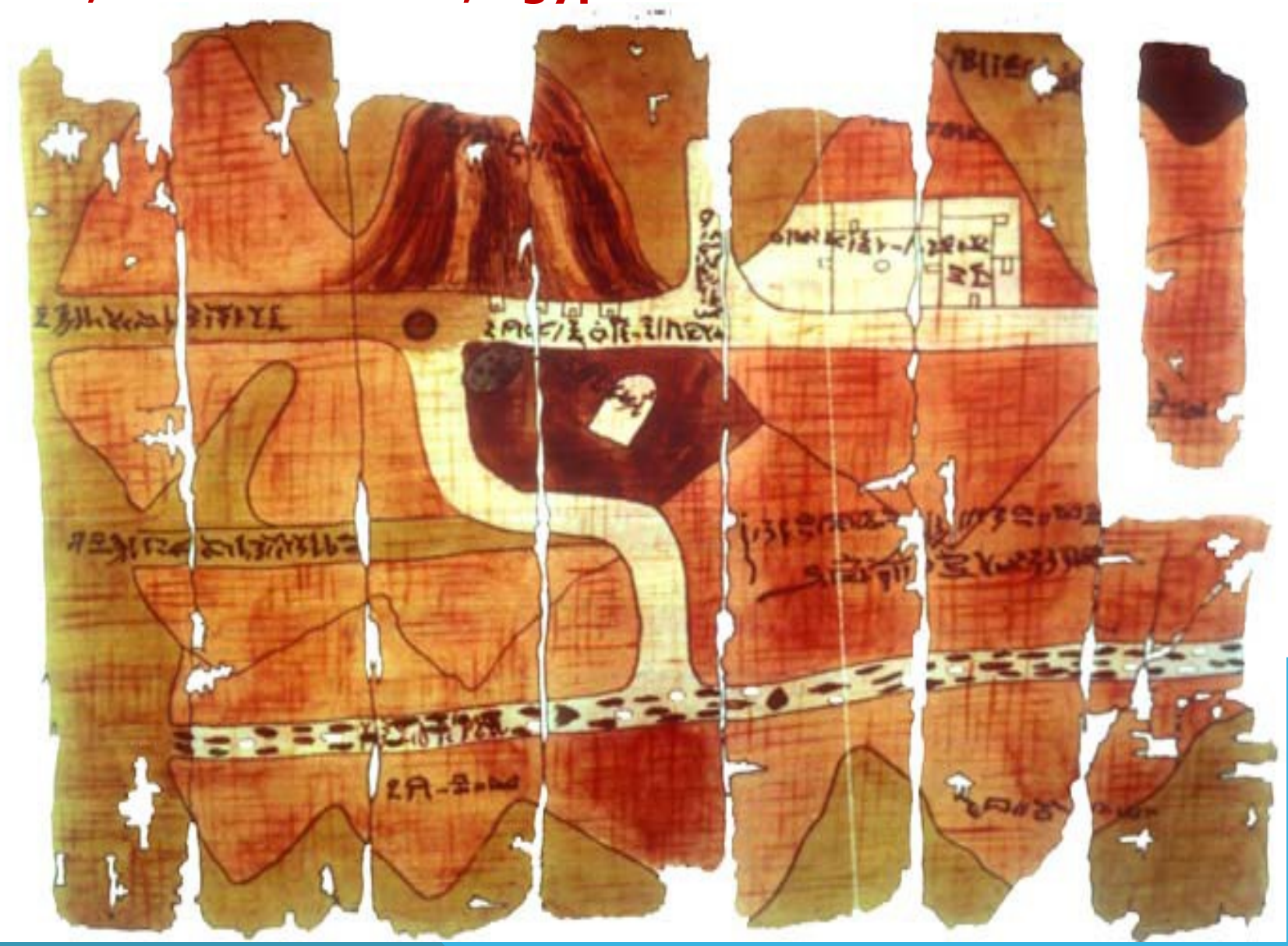
GHROMITE ORE IN EGYPT



Chromite is the source of Chromium element end chromium oxide and used in alloys



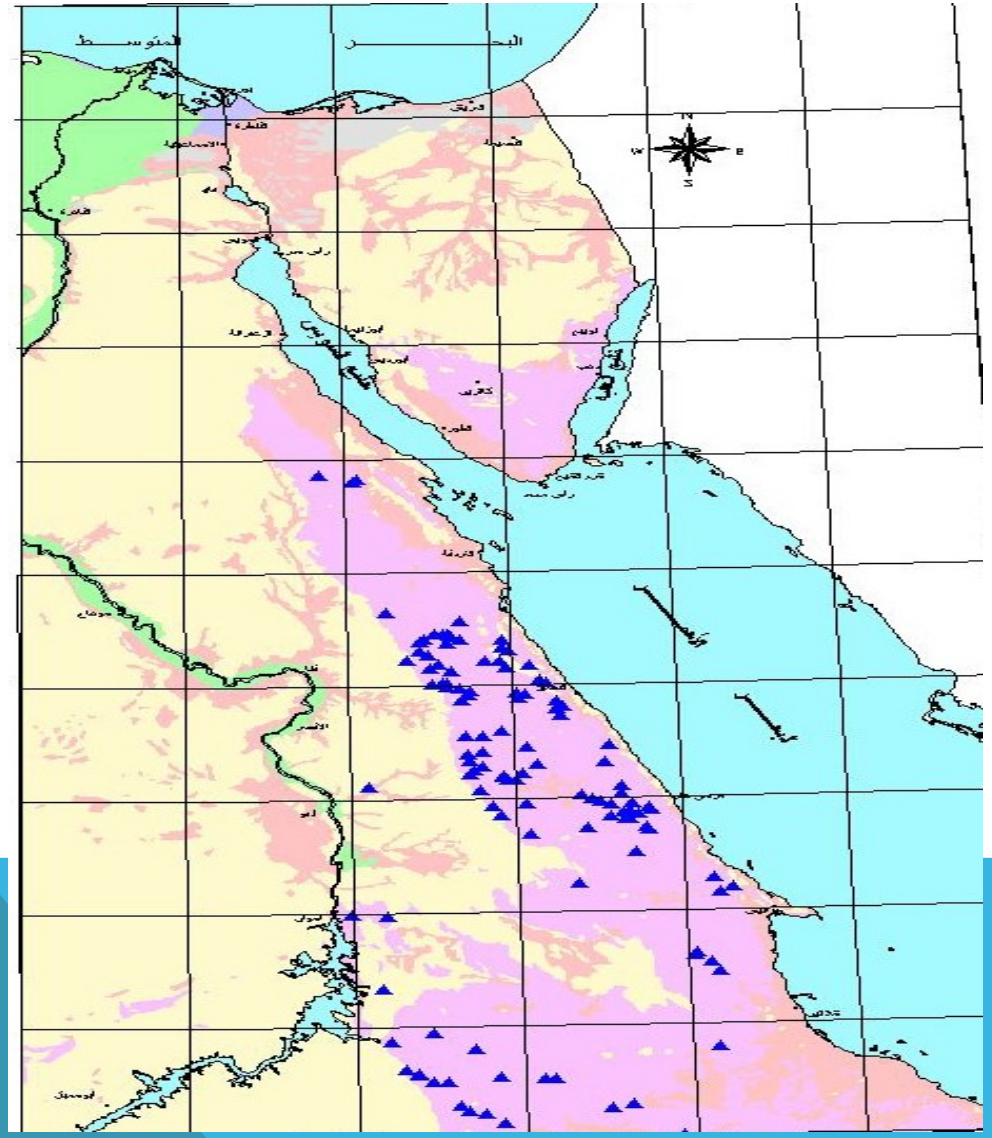
The oldest gold mine map in the world in fawkhair area , Eastern Desert, Egypt



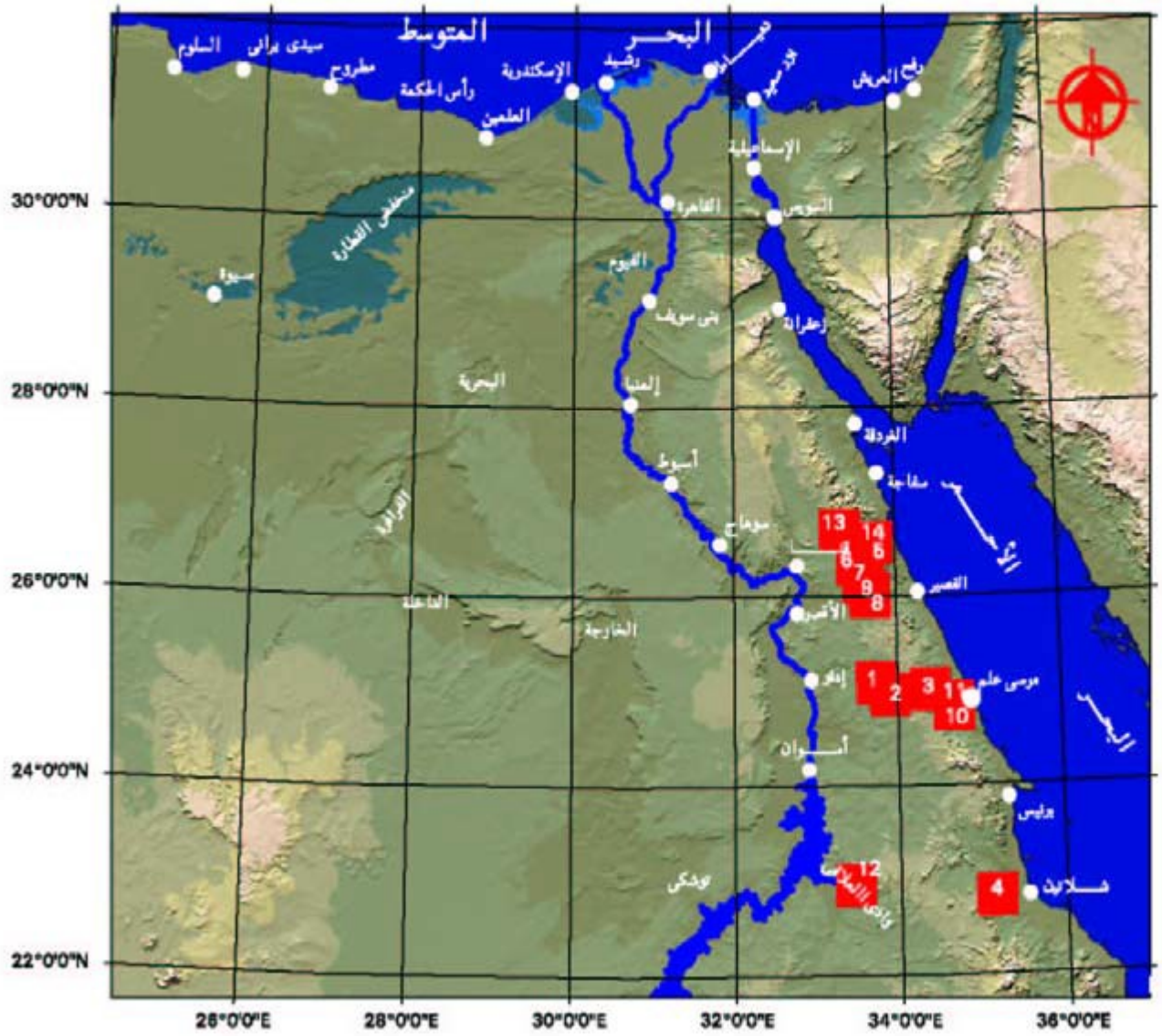
Sukari Gold Mine

Atallah Gold mine, Roman building

The essential old mines in Eastern Desert (more than 100 old mines are concentrated in the Eastern Desert



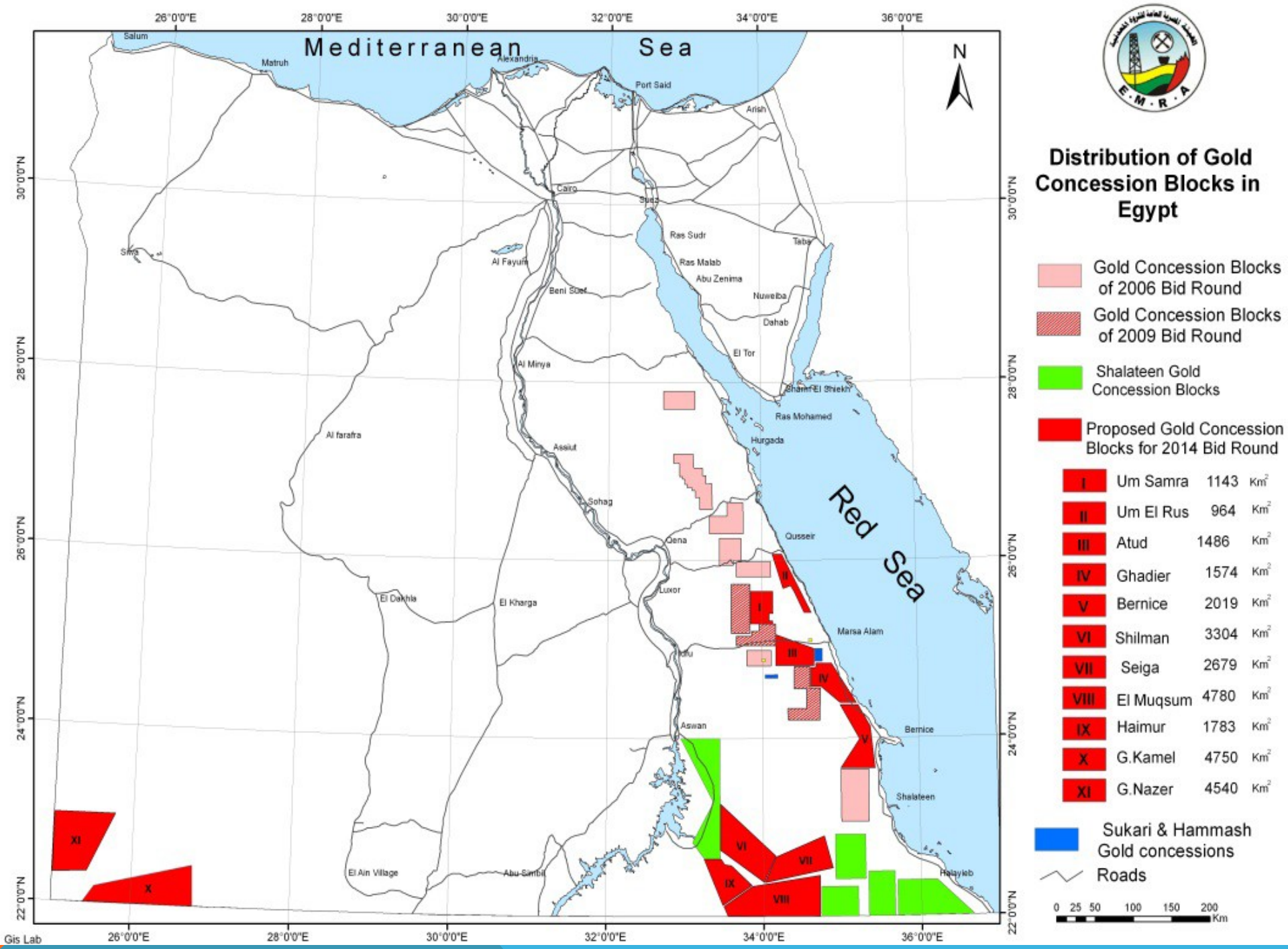
Gold Tailing Sites in Egypt
مواقع نفايـــــات الذهب فى مصـــــر



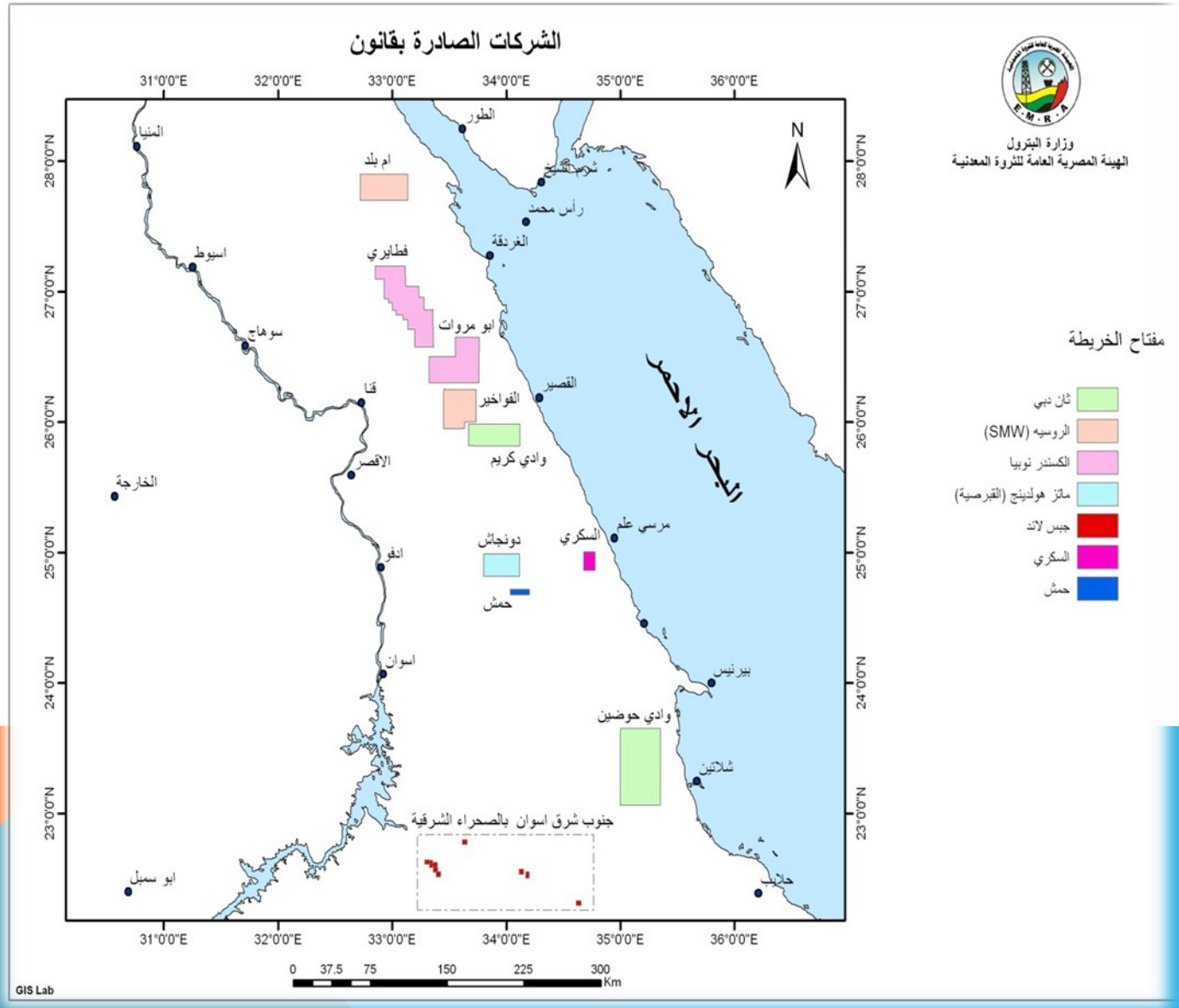
Tailing Sites	مواقع النفايات
1- Barramiya	١ – البرامية
2- Dungash	٢ – دنقاش
3- Atud	٣ – عتود
4-Hutelt	٤ – حوتيت
5- Semna	٥ – سمنة
6- Aradyia	٦ – عرضيه
7- Atallah	٧ – عطالله
8- El Sidd	٨– السد
9- Fawakhir	٩ – الفواخير
10- Umm Oud	١٠ – أم عود
11- Kurdman	١١ – كردمان
12- Hariery	١٢ – حراىرى
13- Fatiry	١٣ – فطيرى
14- Abu Marawat	١٤ – أبو مروات

Scale

200 0 Kilometers


Mediterranean Sea
Red Sea
N
Salum
Matruh
Alexandria
Port Said
Arish
Cairo
Suez
Siwa
Al Fayum
Ras Sudr
Taba
Ras Malab
Abu Zenima
Beni Suef
Nuweiba
Dahab
El Tor
Al Minya
Sharm El Shiekh
Ras Mohamed
Hurgada
Al farafra
Assiut
Sohag
Qena
Qusseir
Luxor
El Dakhla
El Kharga
Marsa Alam
Idfu
Aswan
Bernice
Shalateen
El Ain Village
Abu Simbil
Halayieb
I
II
III
IV
V
VI
VII
VIII
IX
X
XI
26°0'0"E
28°0'0"E
30°0'0"E
32°0'0"E
34°0'0"E
36°0'0"E
30°0'0"N
28°0'0"N
26°0'0"N
24°0'0"N
22°0'0"N
Distribution of Gold Concession Blocks in Egypt
Gold Concession Blocks of 2006 Bid Round
Gold Concession Blocks of 2009 Bid Round
Shalateen Gold Concession Blocks
Proposed Gold Concession Blocks for 2014 Bid Round
I Um Samra 1143 Km²
II Um El Rus 964 Km²
III Atud 1486 Km²
IV Ghadier 1574 Km²
V Bernice 2019 Km²
VI Shilman 3304 Km²
VII Seiga 2679 Km²
VIII El Muqsum 4780 Km²
IX Haimur 1783 Km²
X G.Kamel 4750 Km²
XI G.Nazer 4540 Km²
Sukari & Hammash Gold concessions
Roads
0 25 50 100 150 200 Km
Gis Lab

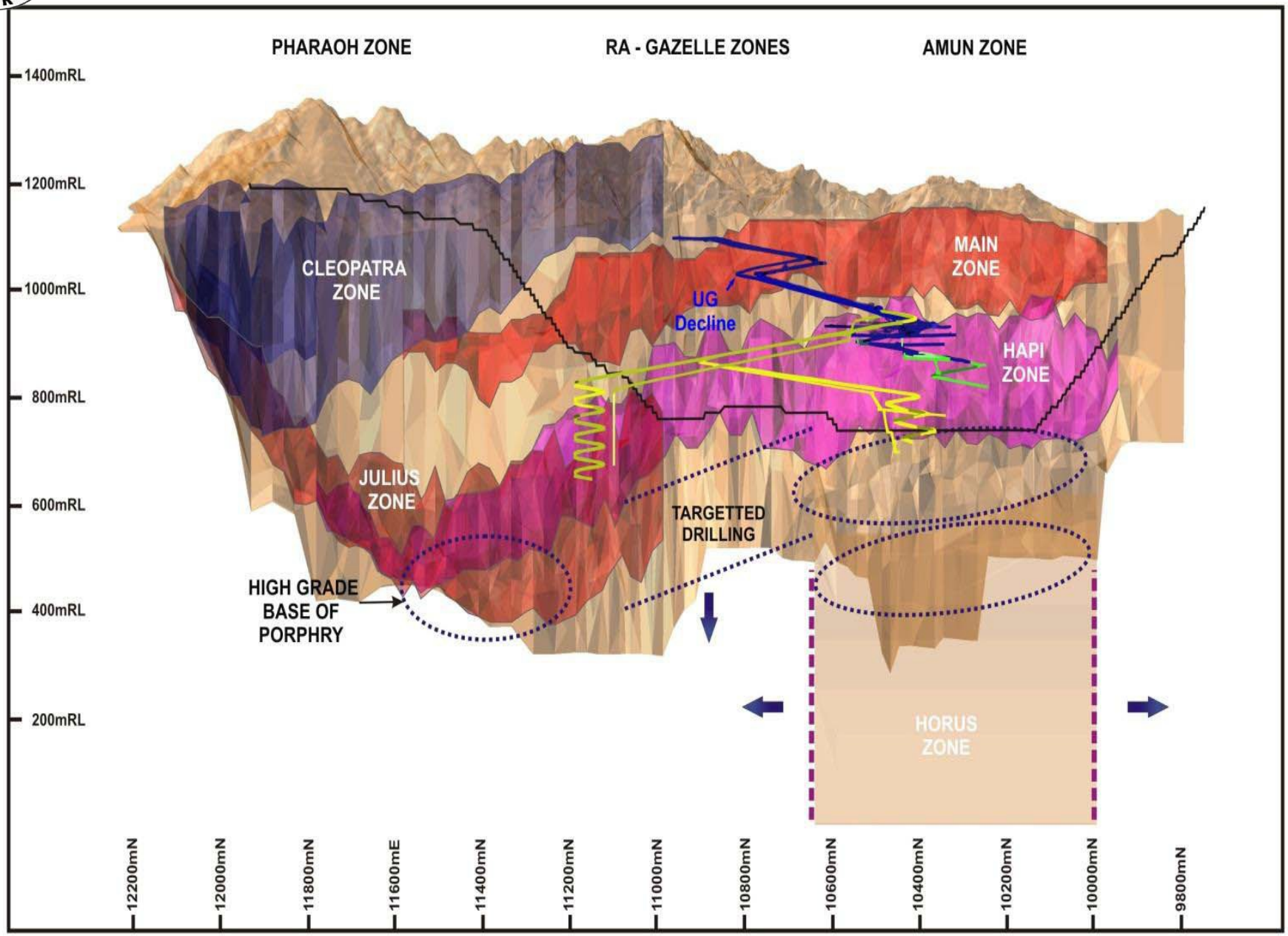
GOLD Companies in Egypt



Ministry Of petroleum

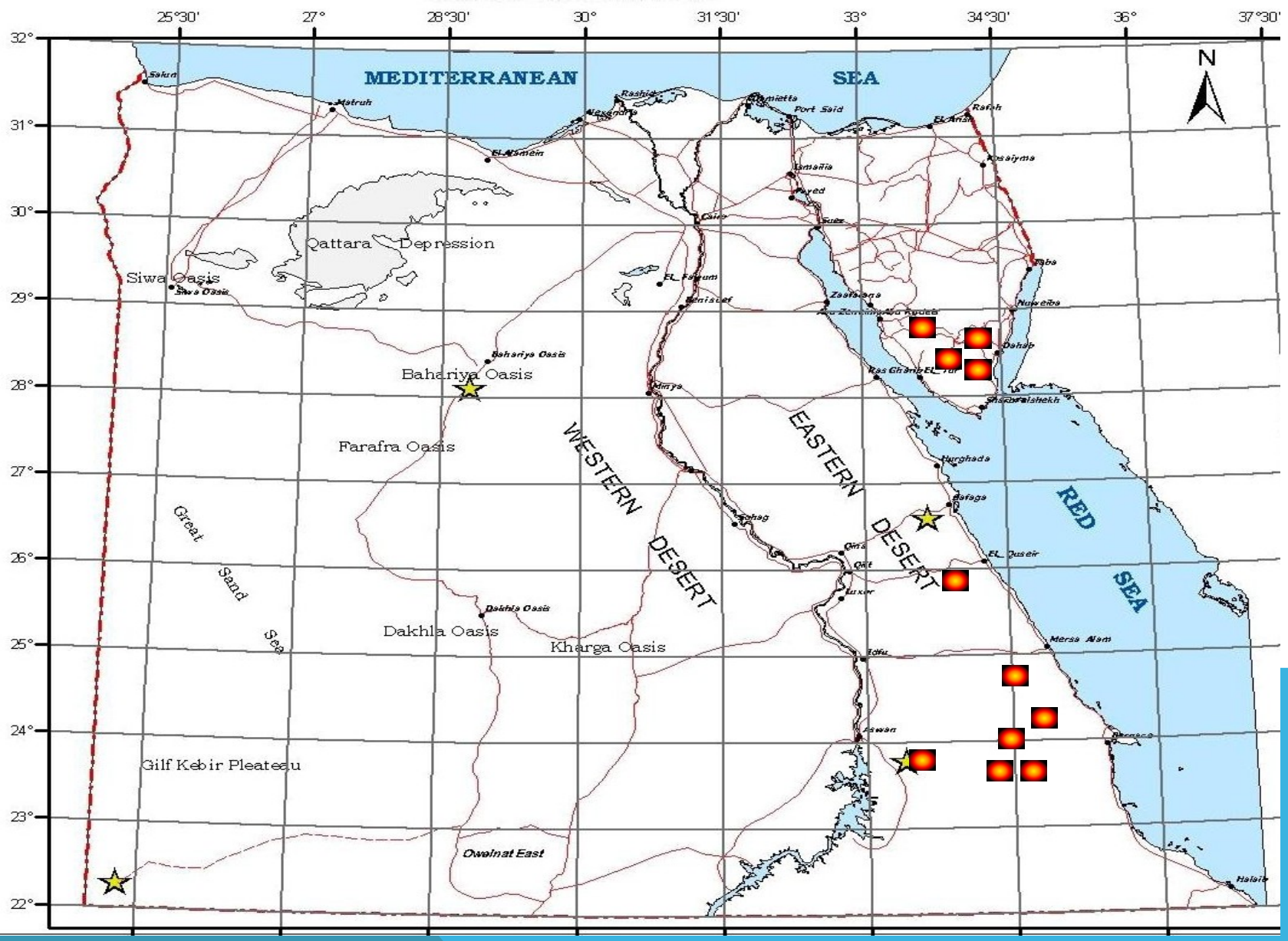
Sukari Gold Factory

PRODUCTION AREAS IN SUKARI GOLD MINE

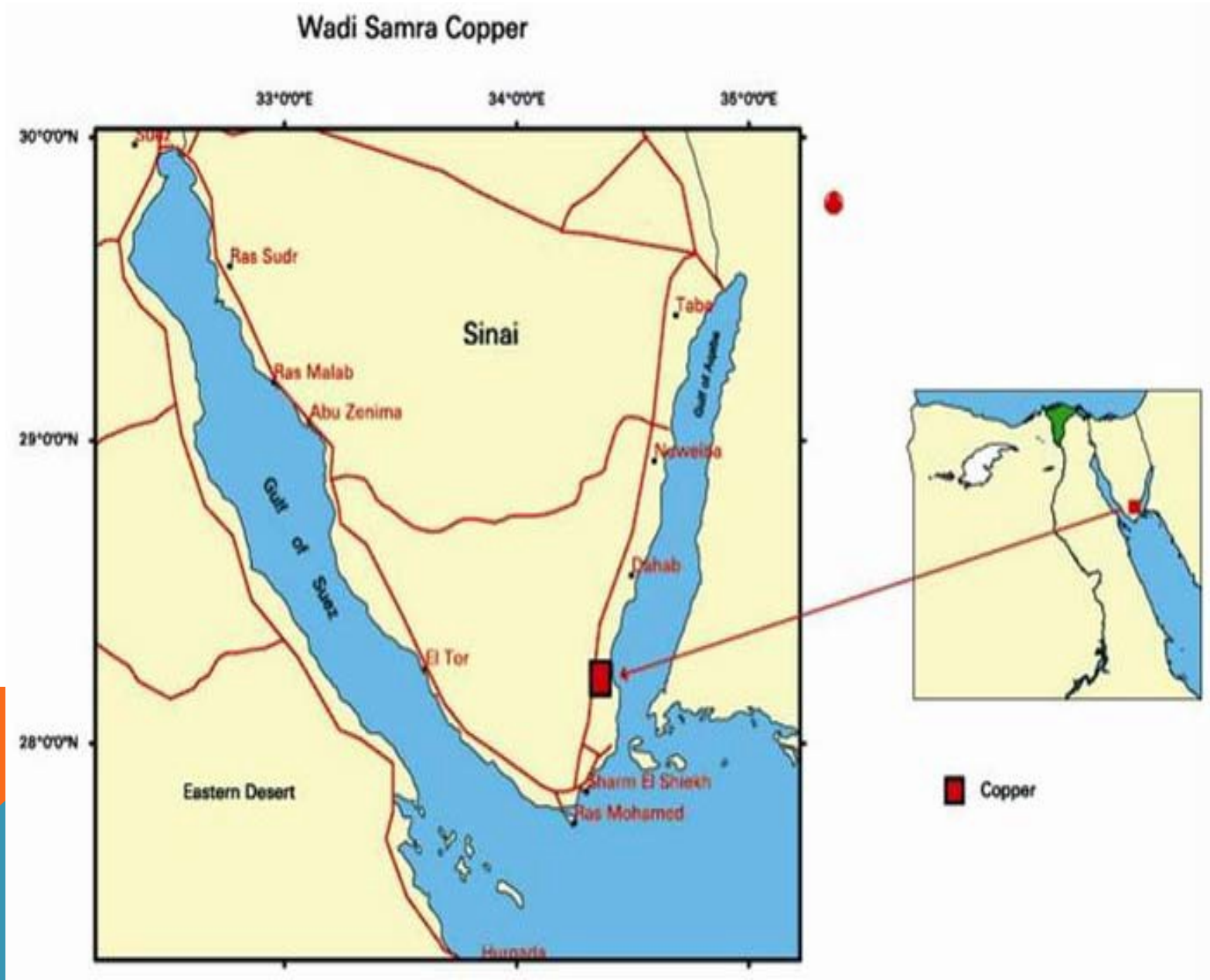


THE FIRST GOLD ALLOYS (HAMASH EGYPT COMPANY , 2007)

COPPER ORE (OCCURRENCES) IN EGYPT



COPPER ORE IN SOUTH SINAI



Feldspar ores (occurrences) in Egypt

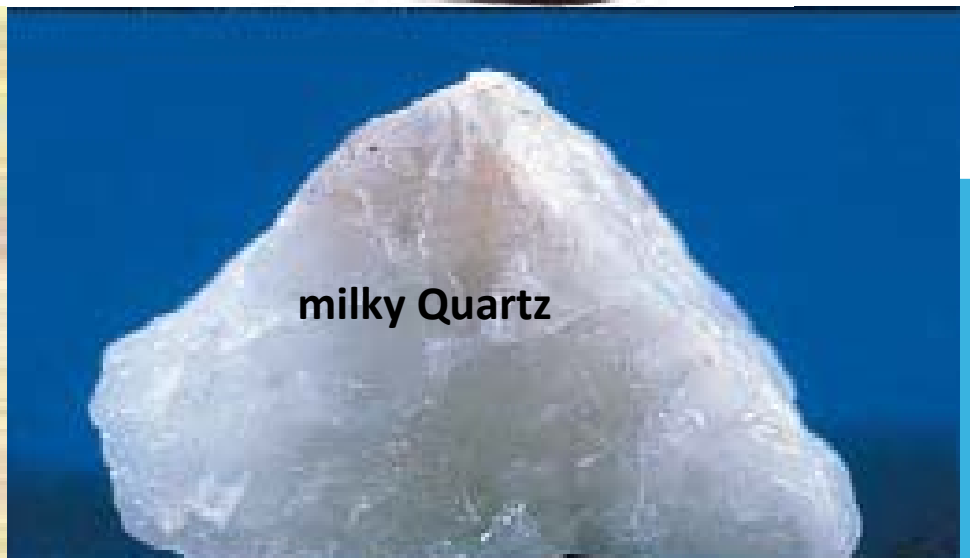
FELDSPAR VEINS IN EASTERN DESERT IN EGYPT

1. Rod Ashab
2. Marwat Seweigat
3. Wadi EL Gemal
4. Wadi EL Gendi
5. Umm Rashid
6. Abu Khrug
7. Umm Ghayam
8. Rod EL Laqah
9. Abu Hargal
10. Bir Abraq

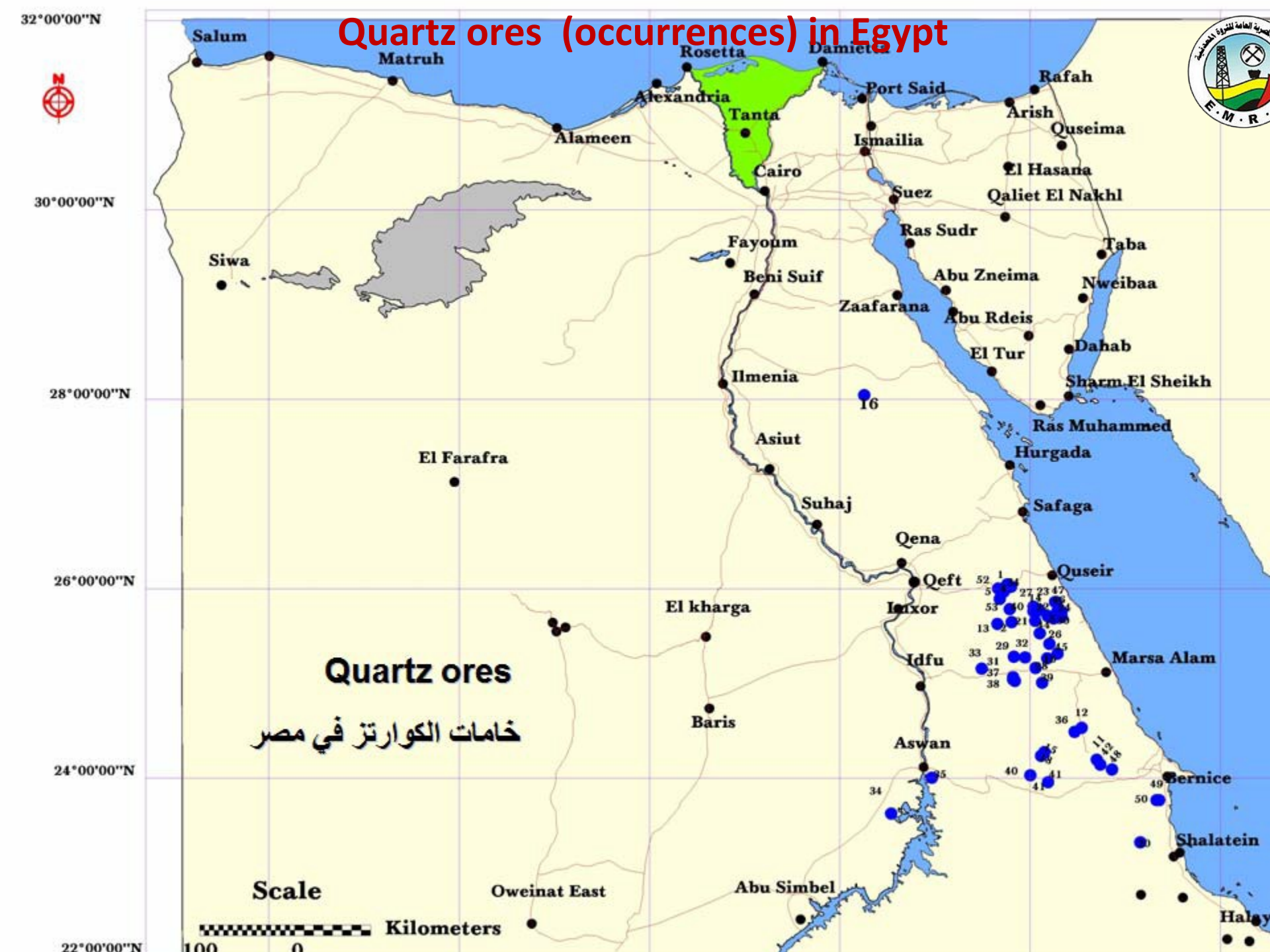
FRIABLE FELDSPAR IN SOUTH SINAI

QUARTZ ORES IN EGYPT

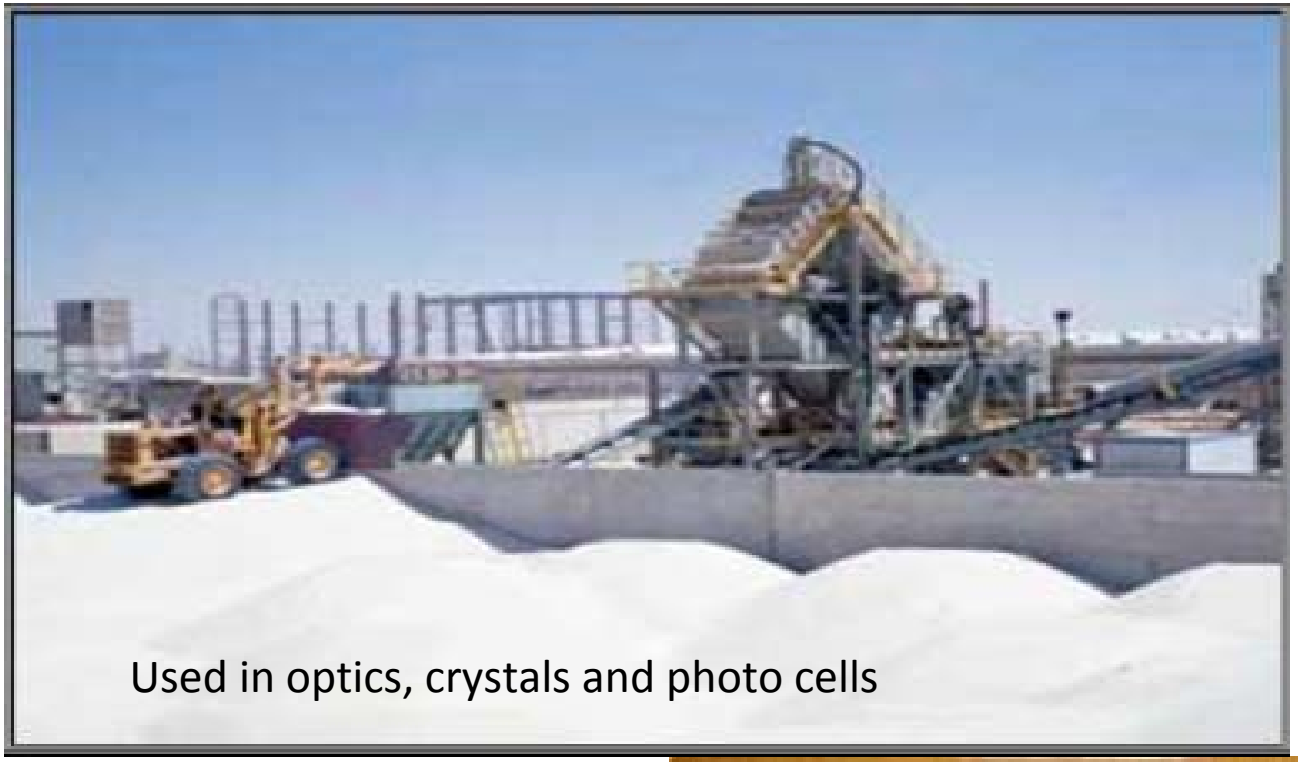
Veins, blocks , pockets and layers



Quartz ores (occurrences) in Egypt

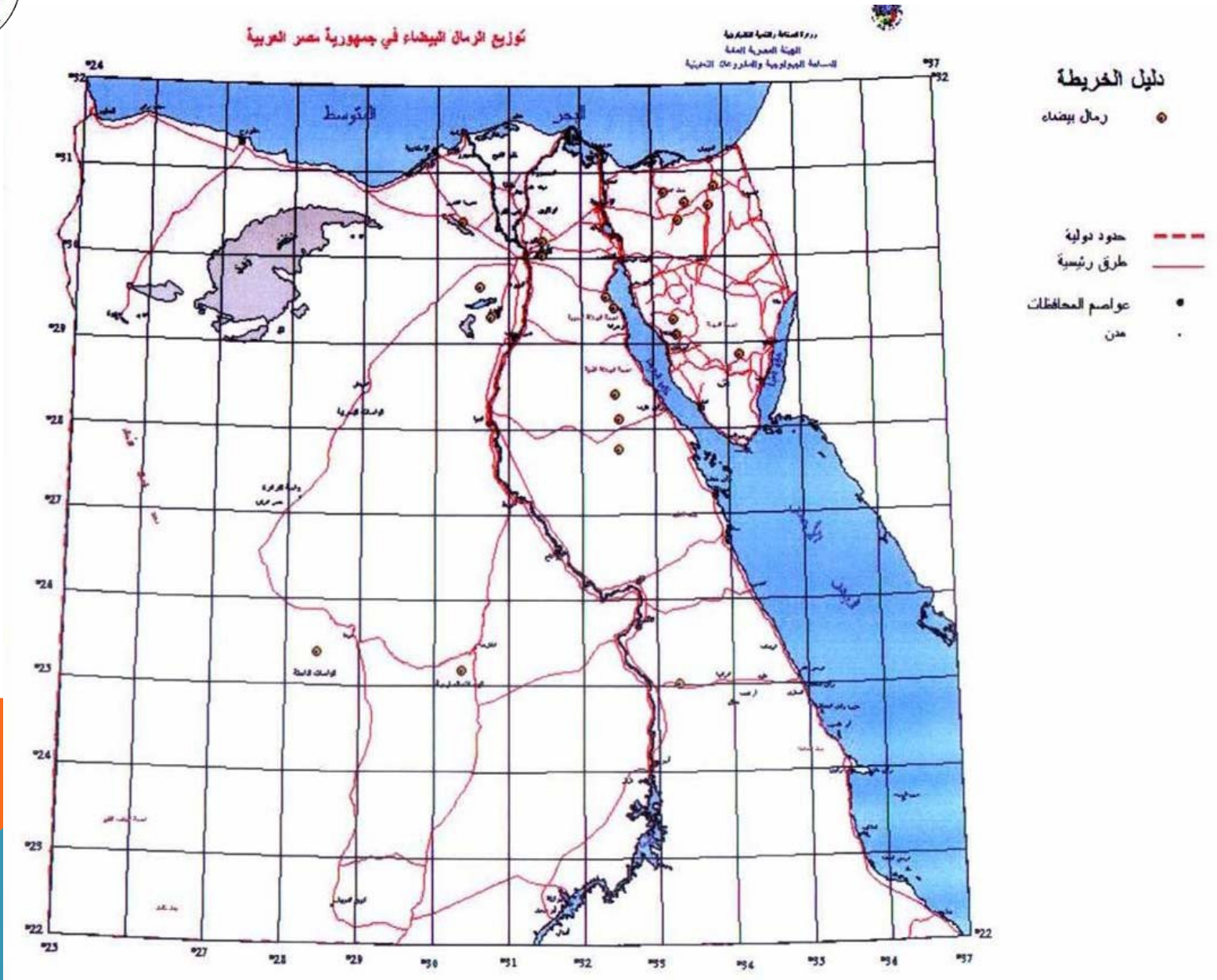


WHITE SANDS PRODUCTION IN EGYPT

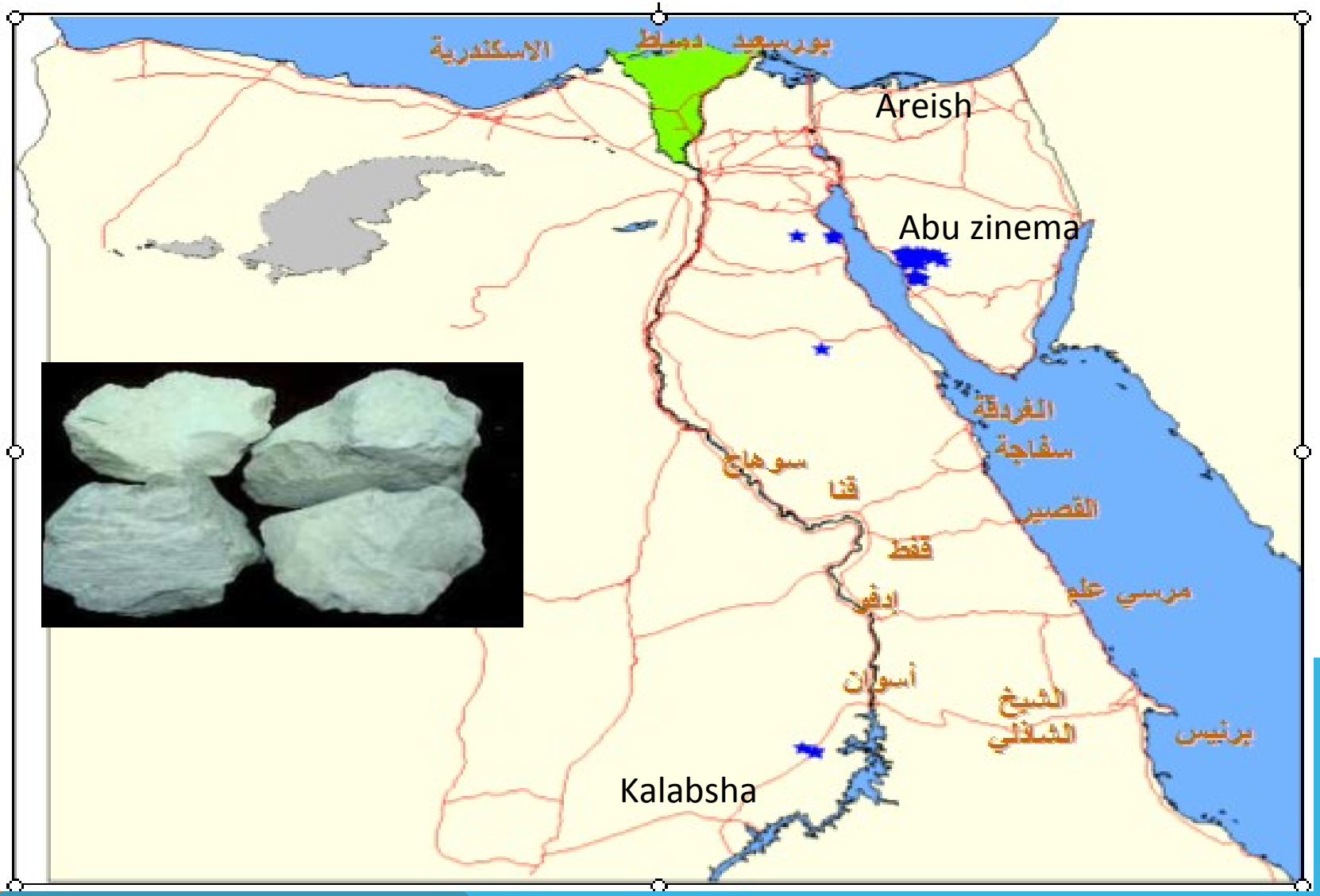


Used in optics, crystals and photo cells

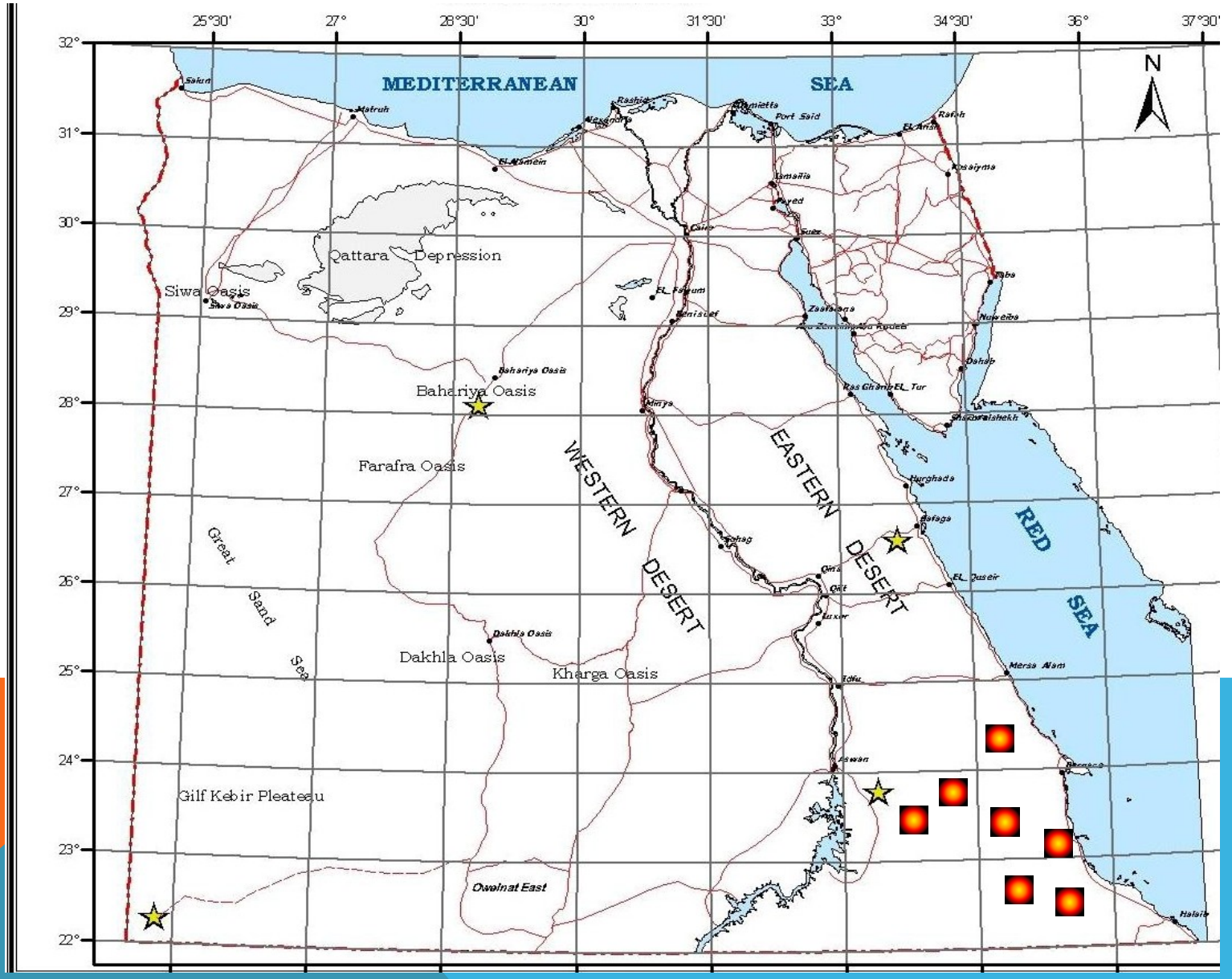
White sands location map in Egypt



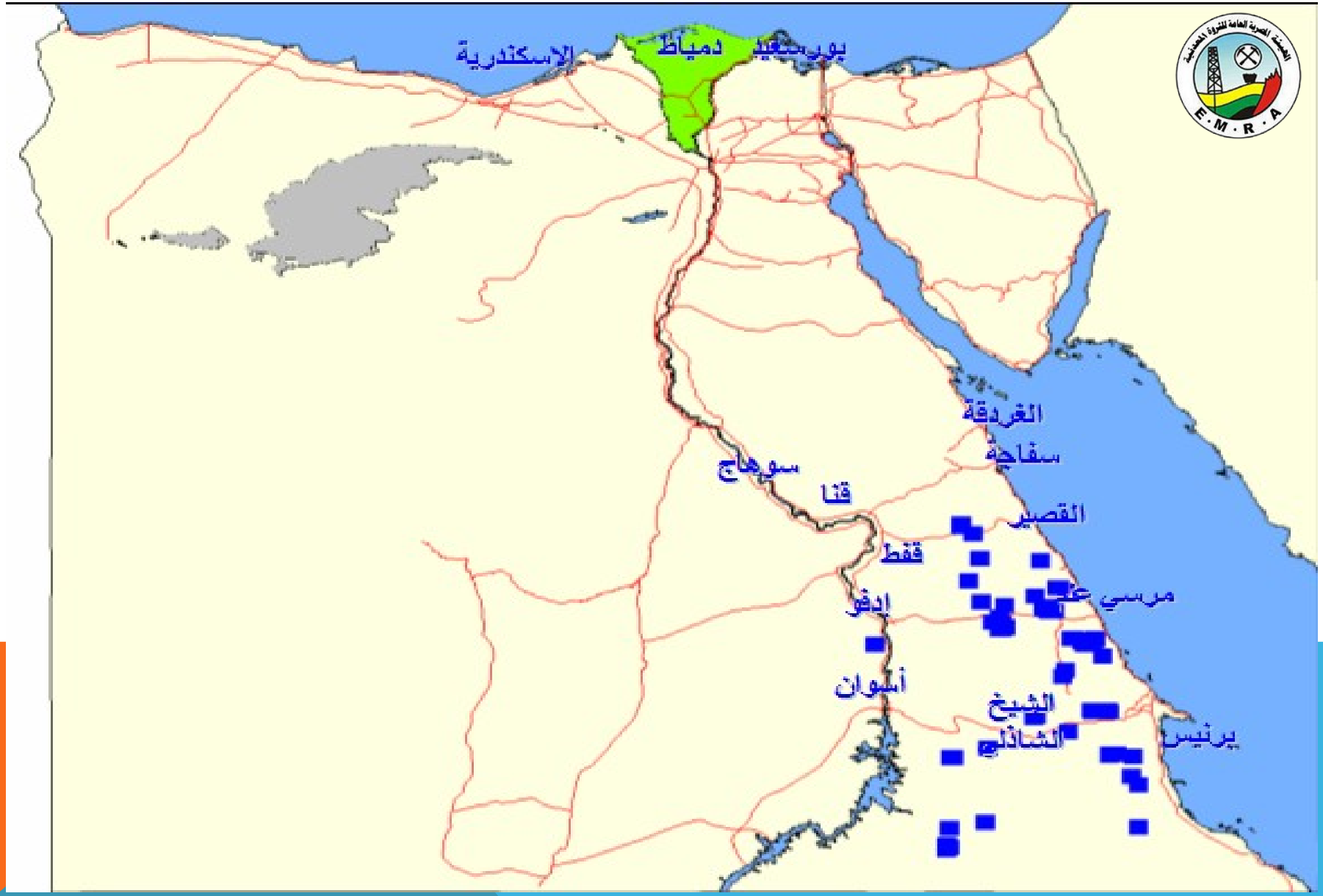
KAOLIN LOCATION MAP IN EGYPT



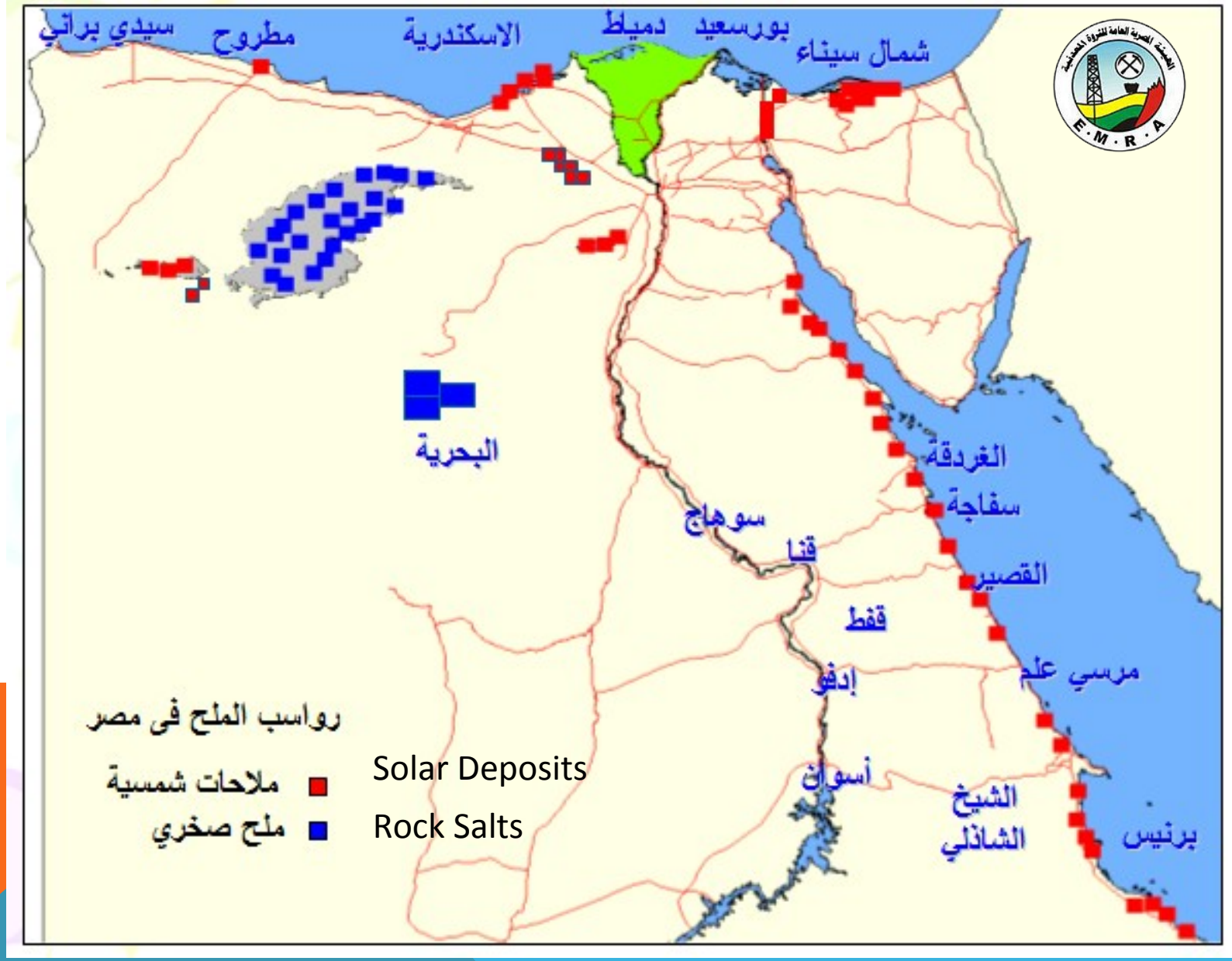
LOCATION MAP FOR MAGNESITE ORE IN EGYPT



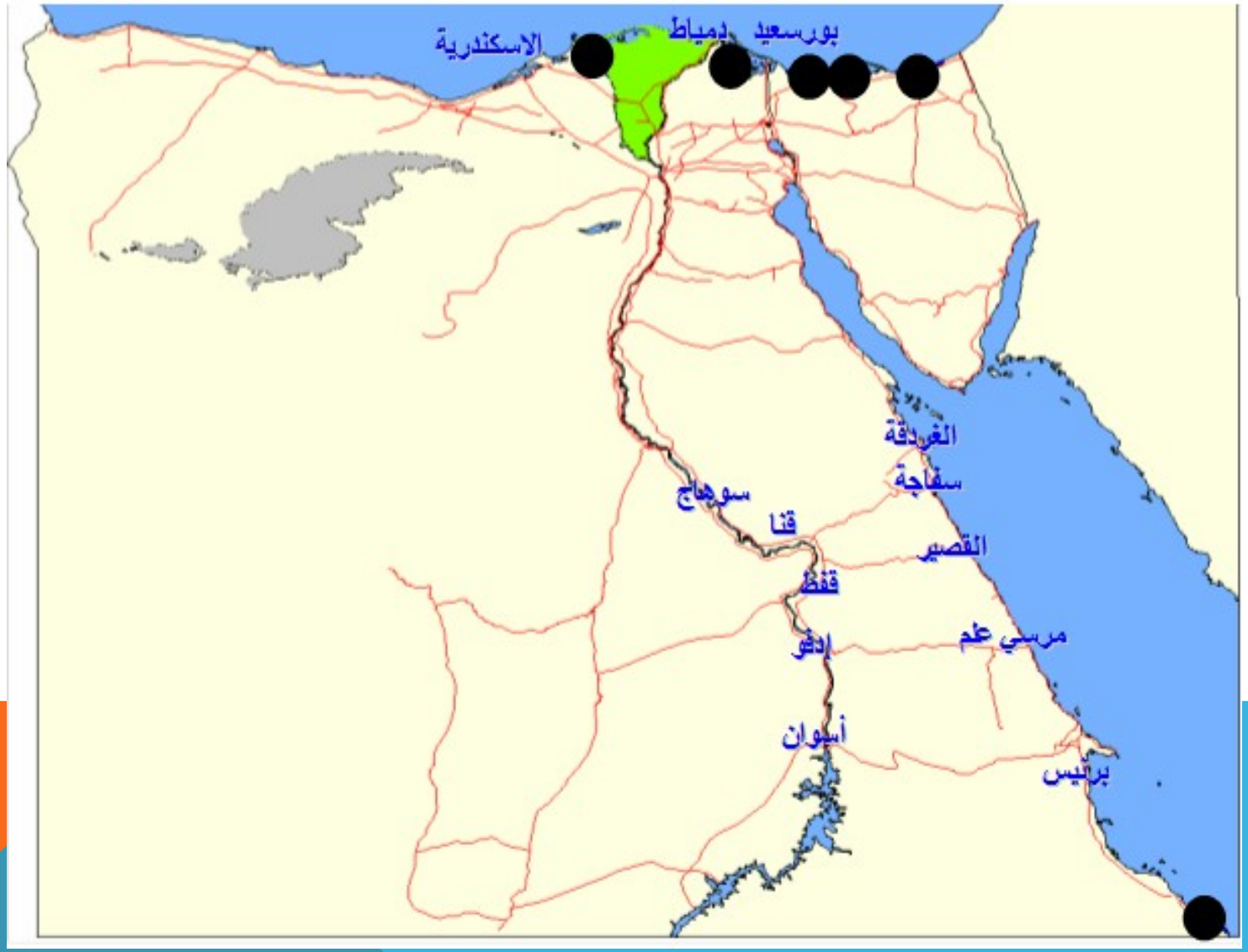
TALC LOCATION MAP IN EGYPT



SALT DEPOSITS LOCATION MAP IN EGYPT



BLACK SANDS LOCATION MAP IN EGYPT



BLACK SANDS ARE MANY MINERALS WHICH ARE CHARACTERIZED BY HIGH SPECIFIC GRAVITY

Gold, platinum, chromite, magnetite, zircon, monazite, rutile,shene, garnet, topaz, corundum, imenite and others. They are formed from placer deposits by water and waves

Cement Industry

- The Egyptian cement industry consists of twelve players.

- In 2002, Egypt ranked 13th among the major cement producing countries.

- The major export markets for Egyptian cement are Mediterranean countries in Europe, Arabian Gulf countries, and north and east Africa. Smaller quantities are exported to the east coast of the USA.

- As a result of low raw material costs and reliable, competitively priced energy, Egypt has significant cost advantages over other cement producing countries.

Chemical Components

C	Calcium 64%	CaO	Calcium Oxide
S	Silica22%	SiO_2	Silicon
A	Alumina 6%	Al_2O_3	Aluminum
F	3%	Fe_2O_3	IronIron Oxide

And minor other oxides like MgO, K2O, Na2O and P2O5

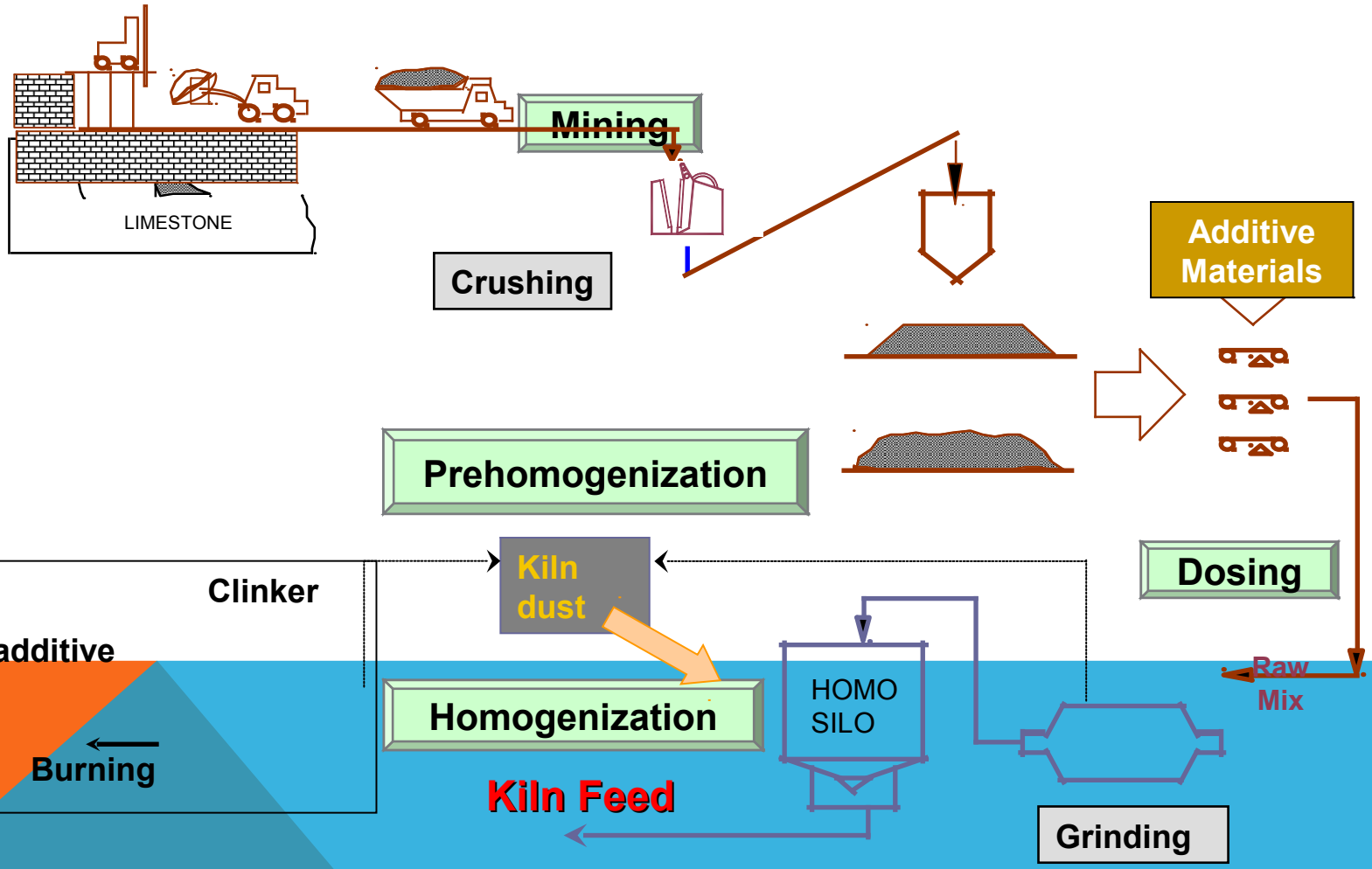
SOURCES OF MAJOR OXIDES

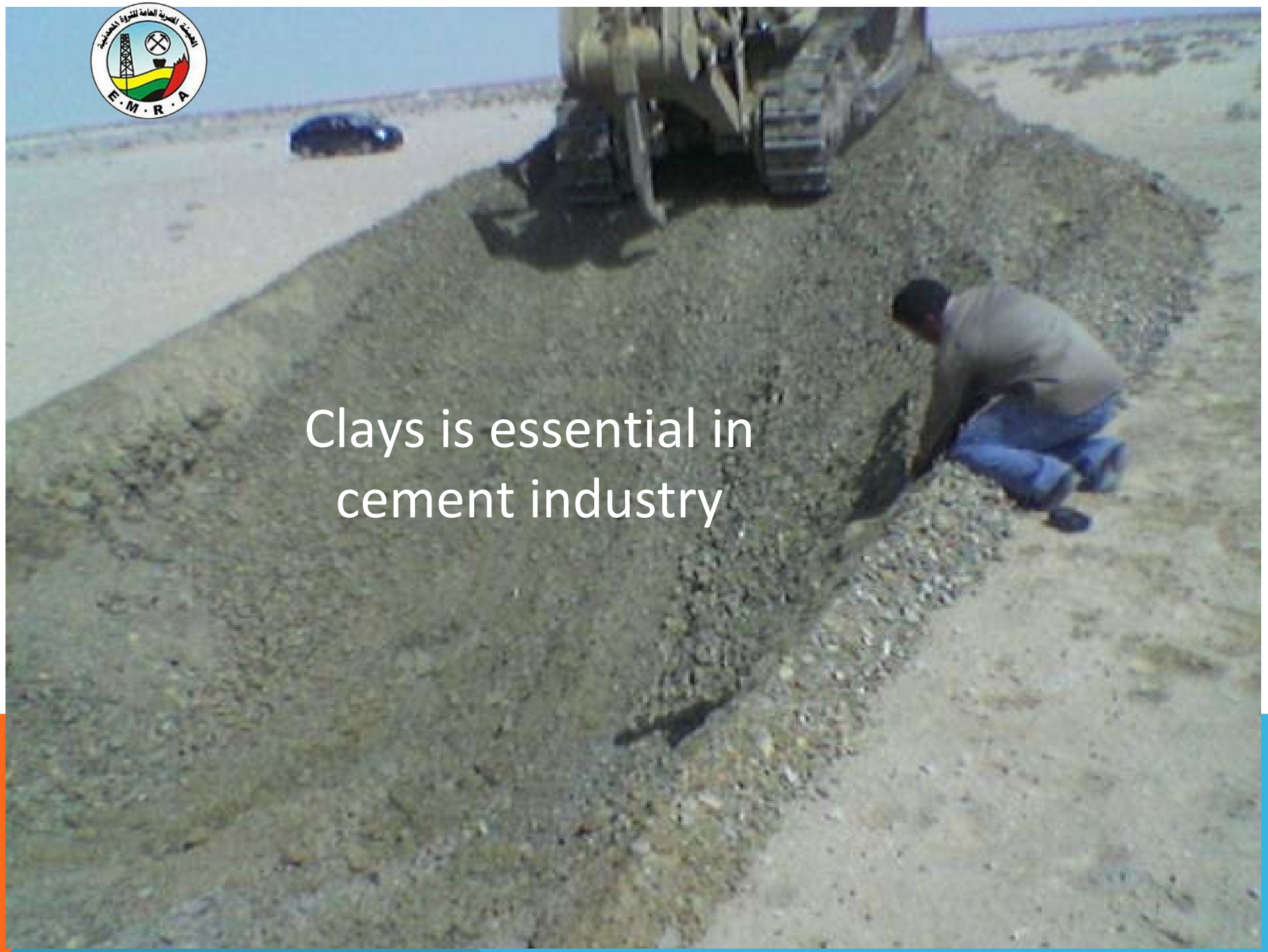
Oxides	Major Sources
Lime	Limestone, Chalk, Marl
Silica	Sand, Clay, Shale, Slag, High-silica limestone
Alumina	Shale, Clay, Sand, Bauxite, Alumina ore refuse, Fly ash
Iron Oxide	Mill scale, Iron ore, Clay, Ore washings, Pyrite cinders

Effects of Minor Oxides on Process and Products

Oxide	Effect	Typical Limits
MgO	Concrete expansion	< 4 to 5% in clinker
K_2O & Na_2O	Concrete cracking Kiln instability	1 % depending on SO3, 0.6 for low-alkali cement
SO_3	Kiln rings, instability, stack emissions	1 to 2% depending on process and alkalis
TiO_2	Low impact	1%
P_2O_5	Negative impact on concrete strength	0.5%
Cl^-	Kiln instability, stack emissions	0.02% raw mix, less depending on process

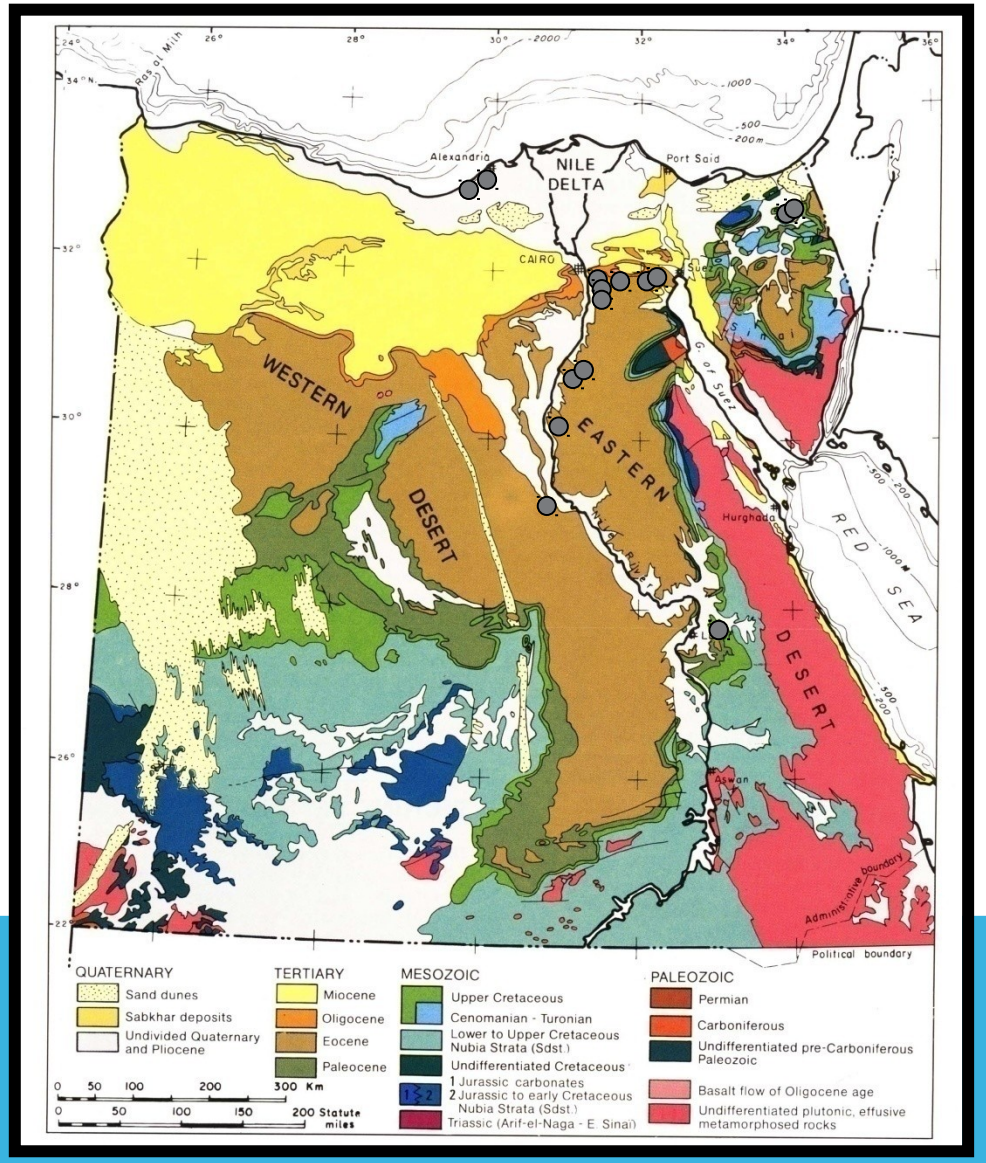
RAW MATERIALS EXTRACTION AND MIX PREPARATION




Clays is essential in
cement industry

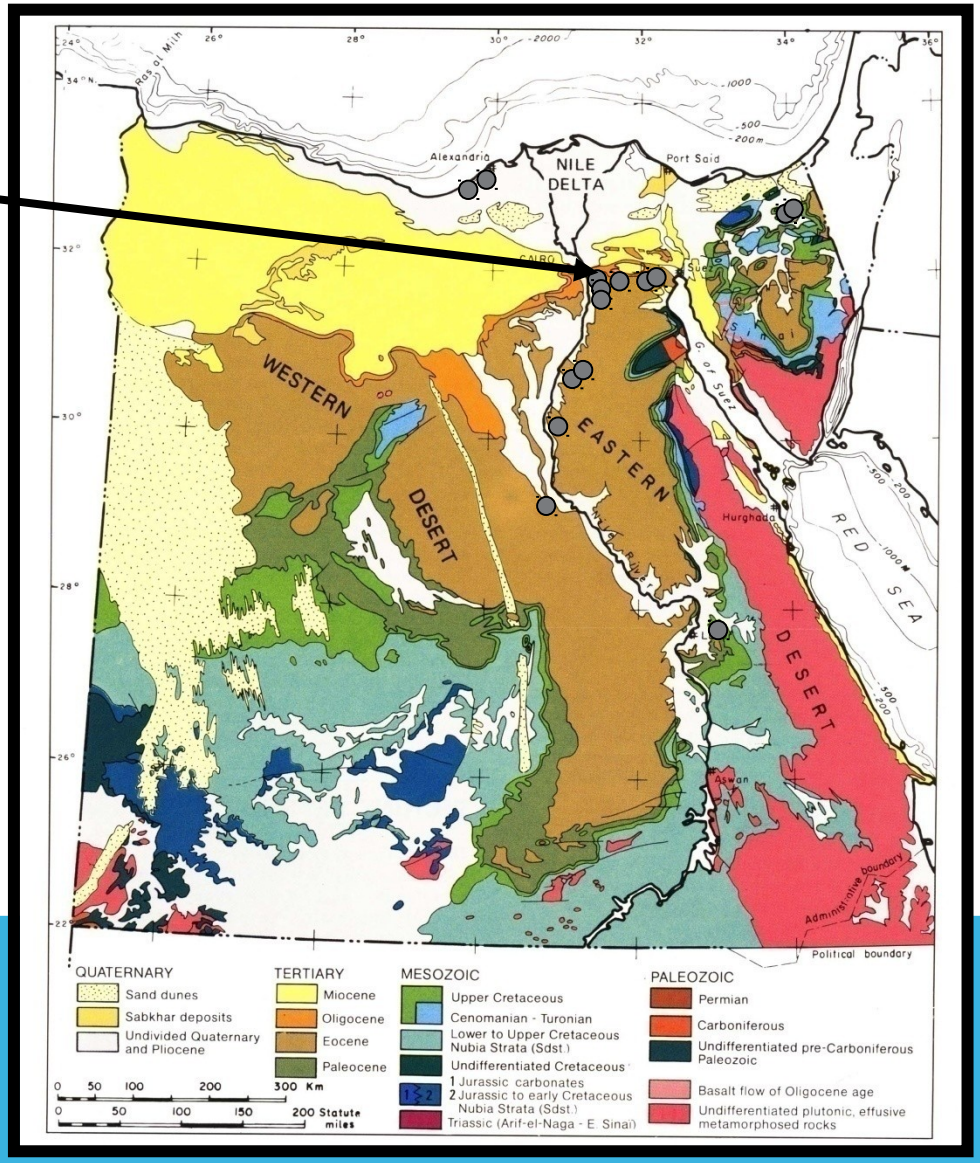

Drilling is the tool
to known the ore
such as clays and
limestone

Cement Plants in EGYPT



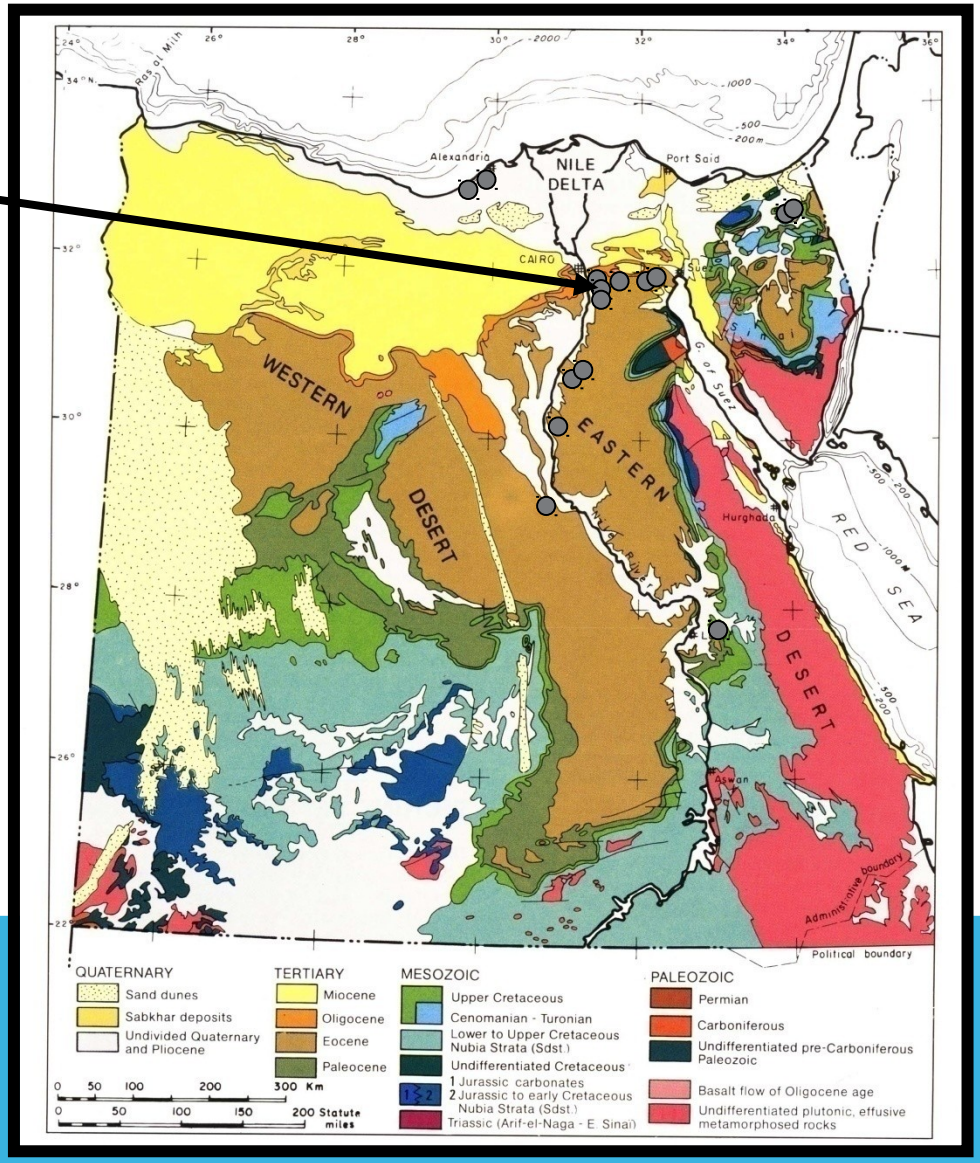
TOURAH CEMENT COMPANY

Production Million Tons	4
NO. of Lines	4
Middle Eocene **Limestone**	•Blast vibration claims with military •Presence of complicated structures
Pliocene **Clay**	•Low reserves



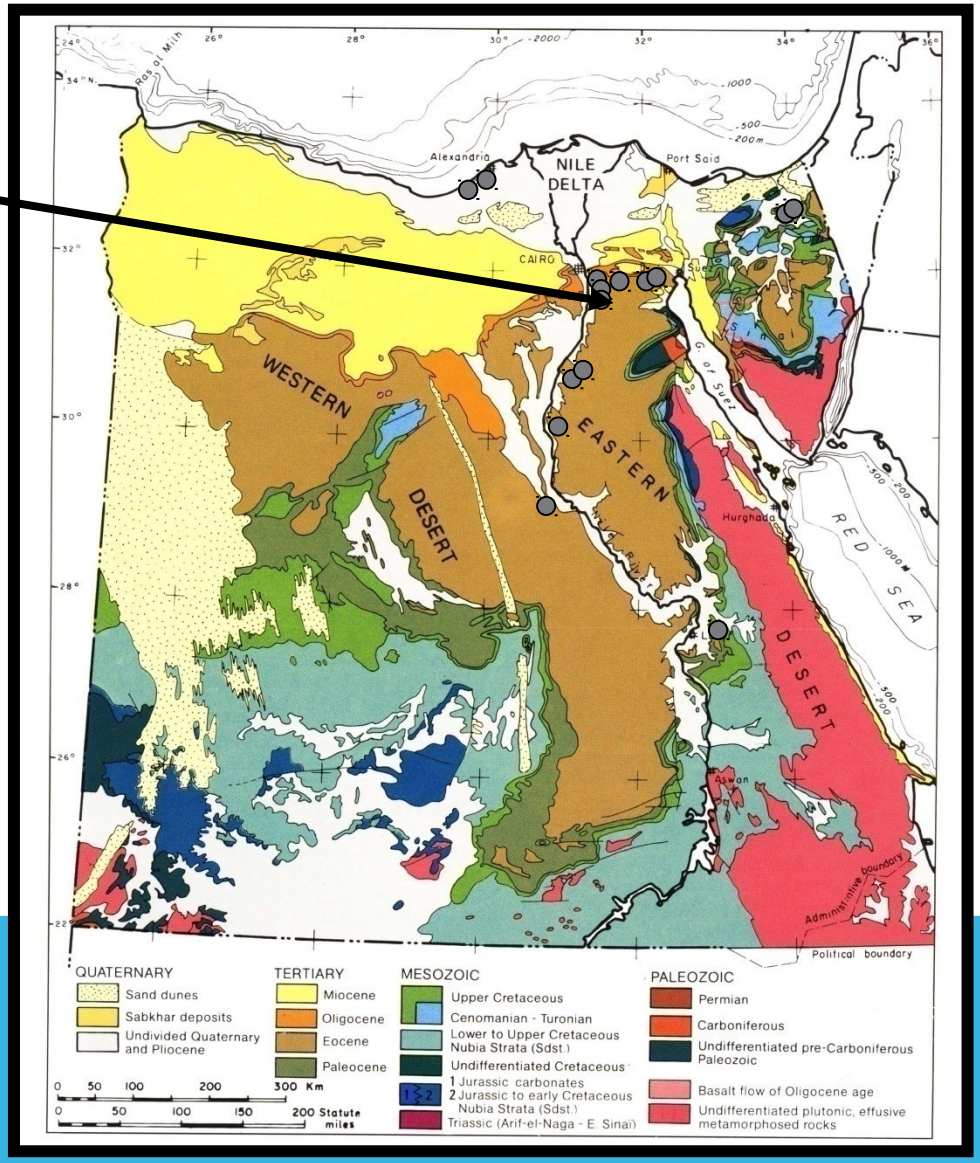
HELWAN CEMENT COMPANY

Production Million Tons	3.5
NO. of Lines	2
Middle Eocene **Limestone**	•Blast vibration claims with 15th May town •Presence of complicated structures •Dolomite bands •High SO_3 in the upper layers
Pliocene **Clay**	•Low reserves



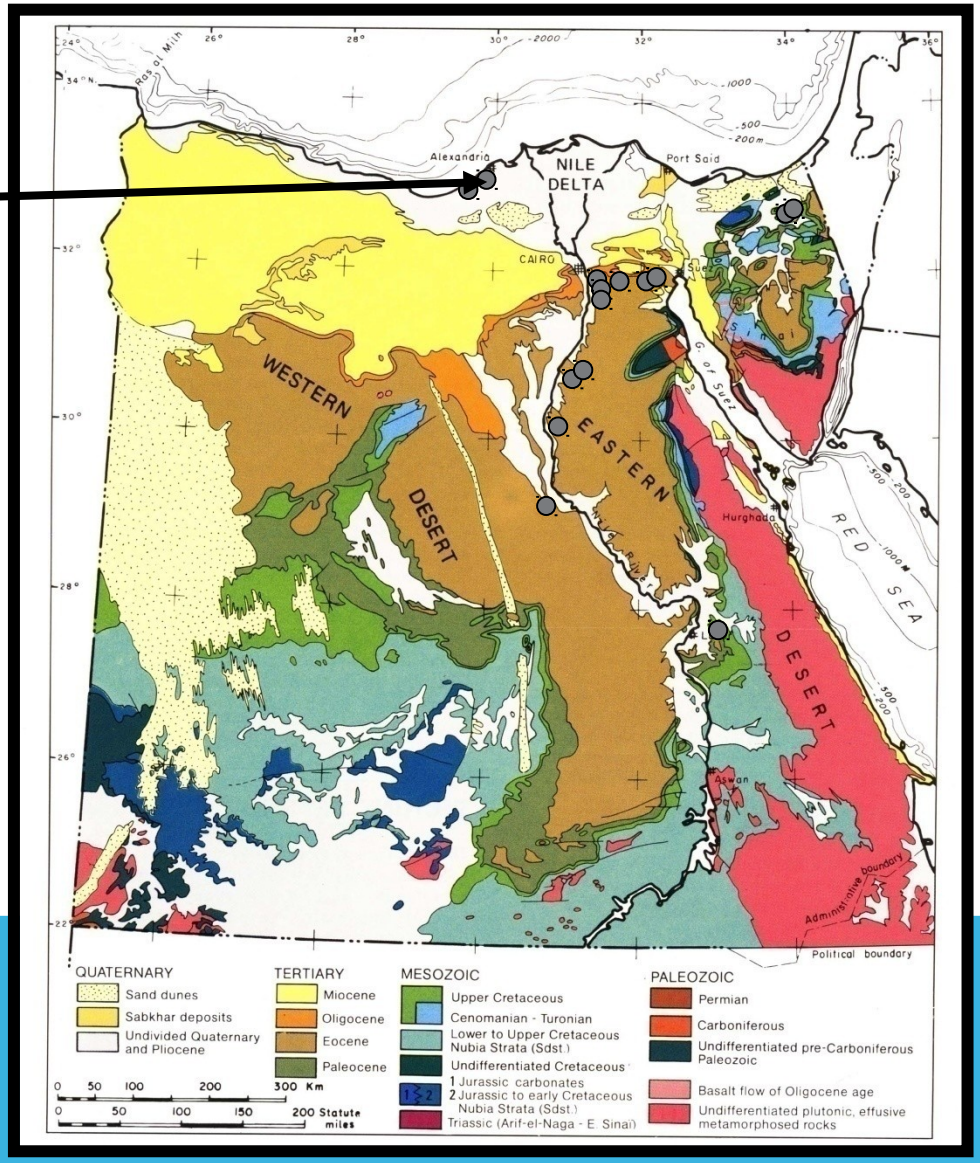
NATIONAL CEMENT COMPANY

Production Million Tons	2
NO. of Lines	2
Middle Eocene **Limestone**	•High SO_3 in the upper layers
Pliocene **Clay**	•Low reserves



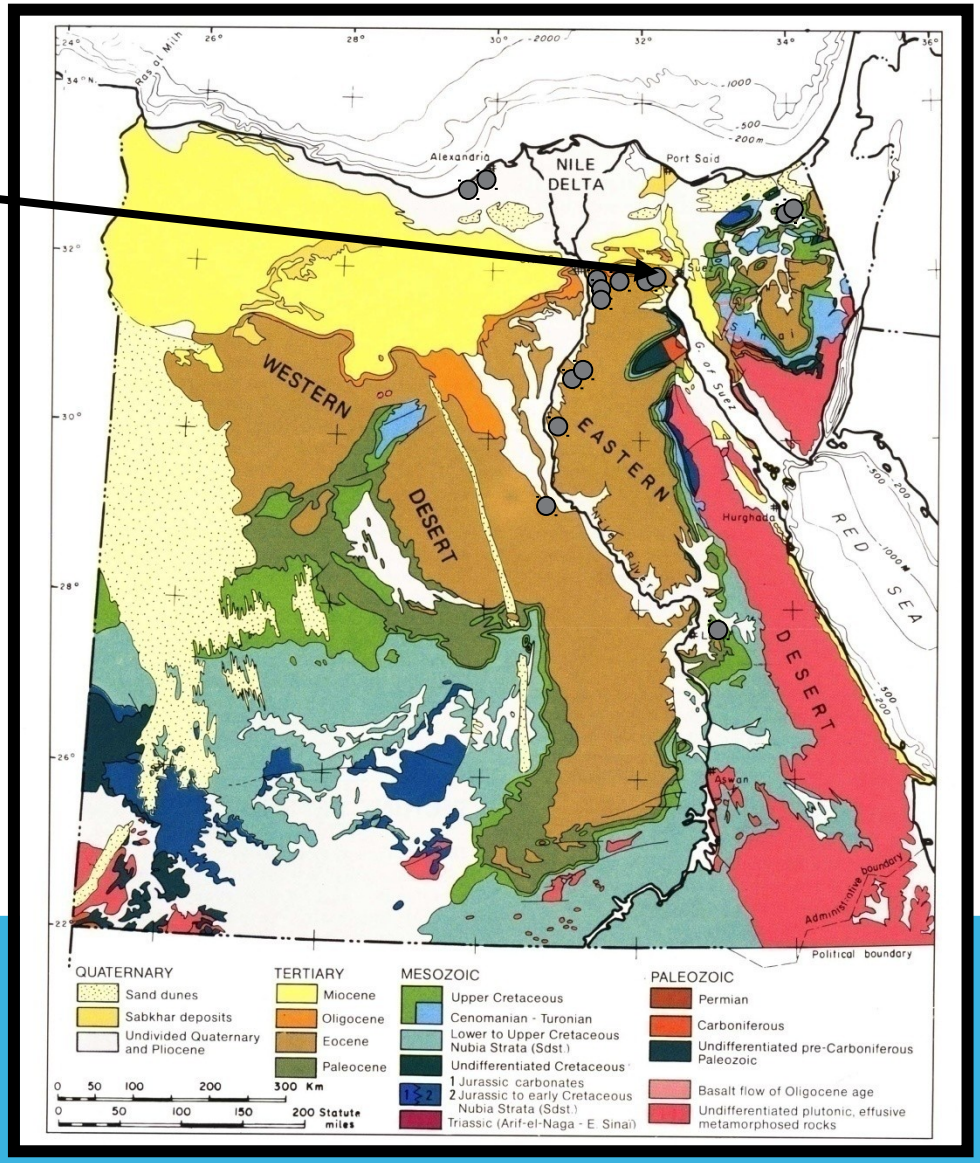
ALEX. CEMENT COMPANY

Production Million Tons	1.75
NO. of Lines	1
Pleistocene **Limestone**	•Problems of Bedewing squatters •Different material handling •Purchased limestone •Variation in quality
Miocene clay Recent marl **Clay**	•No clay quarries •Purchased clay •Variation in quality



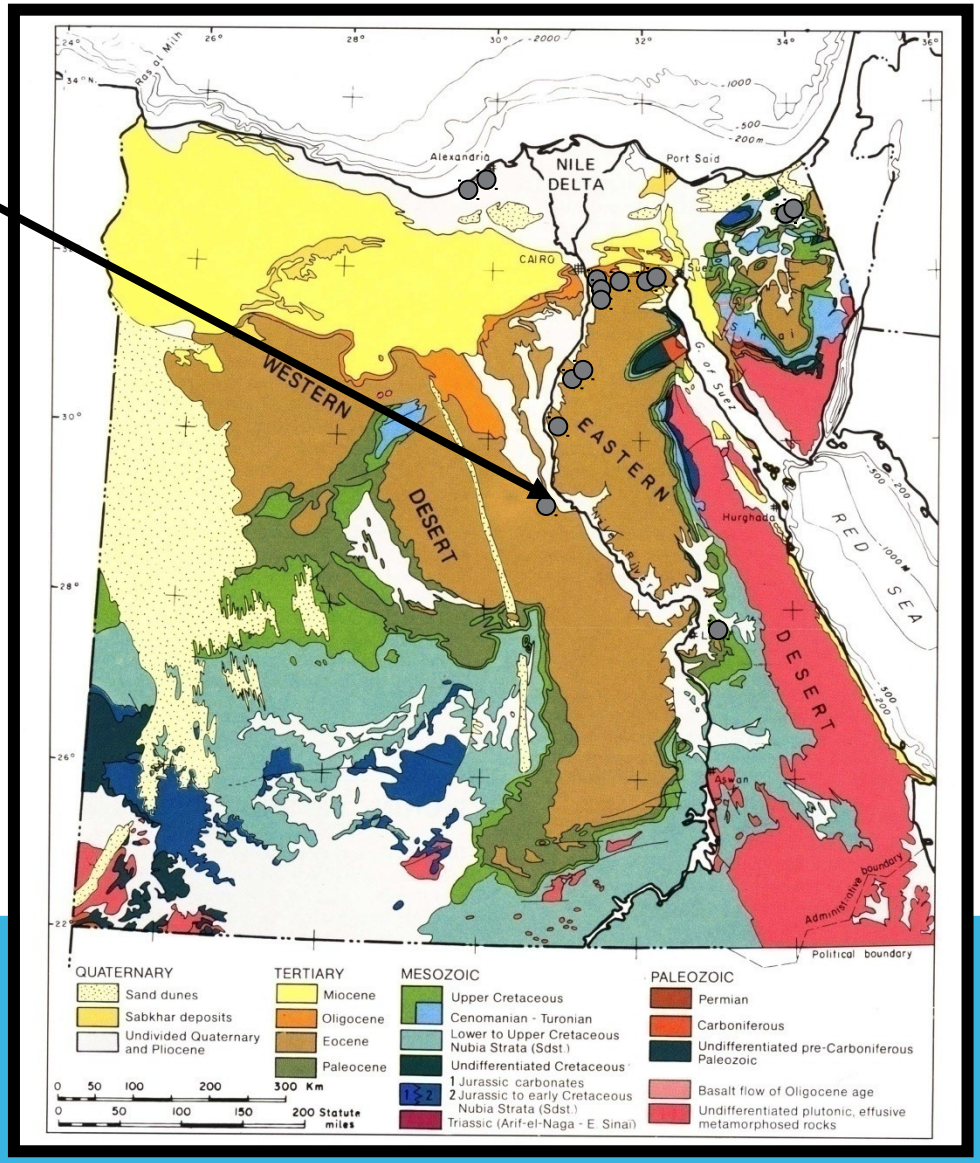
SUEZ CEMENT COMPANY

Production Million Tons	4
NO. of Lines	3
Middle Eocene **Limestone**	•Dolomitic limestone in the lower section
Miocene (Suez) Upper Eocene (Qattamia) **Clay**	•Low reserves •Interburden layer



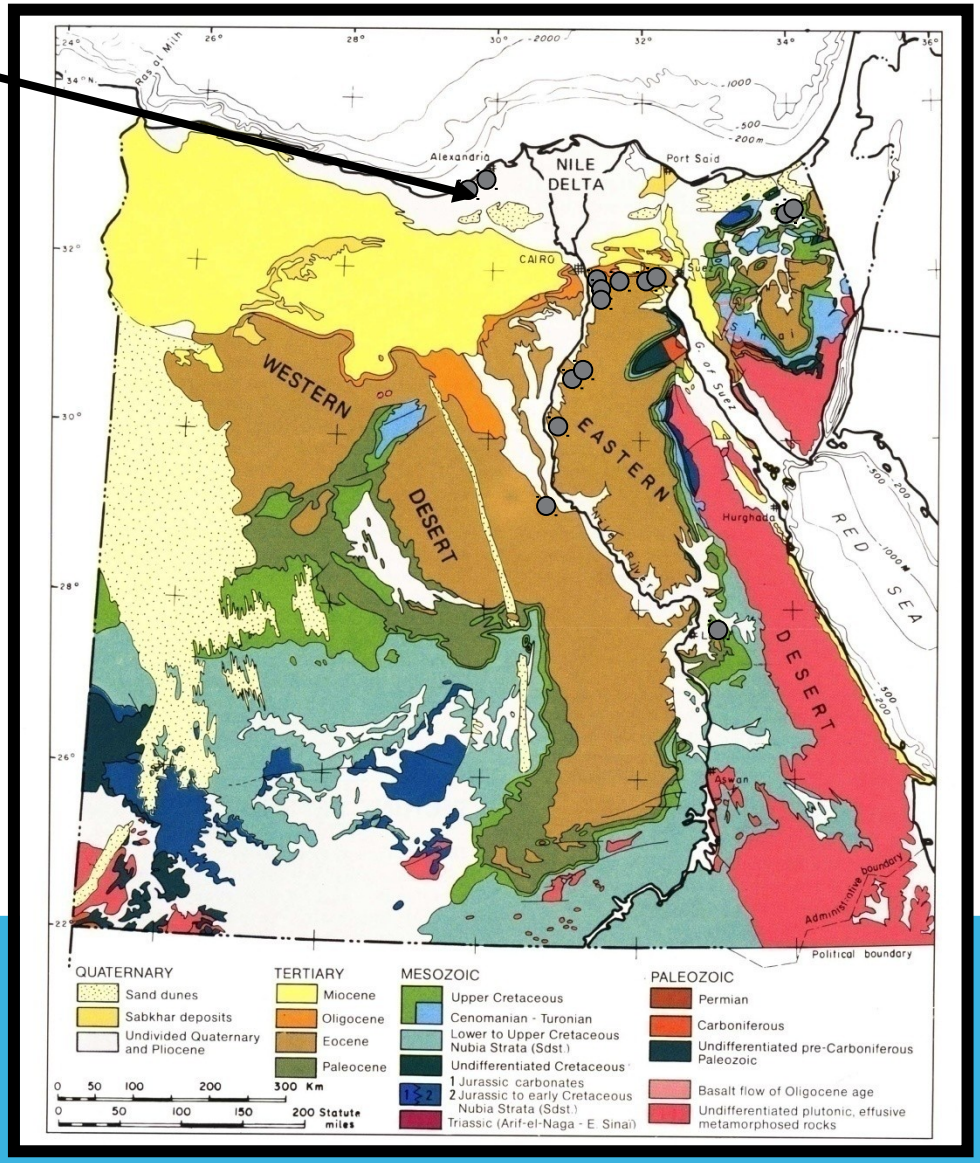
ASSIUT CEMENT COMPANY

Production Million Tons	5
NO. of Lines	3
Lower Eocene **Limestone**	•Presence of chert •Many cavities filled with deleterious materials
Pliocene **Clay**	•Low Al_2O_3 content •Slightly high Fe_2O_3



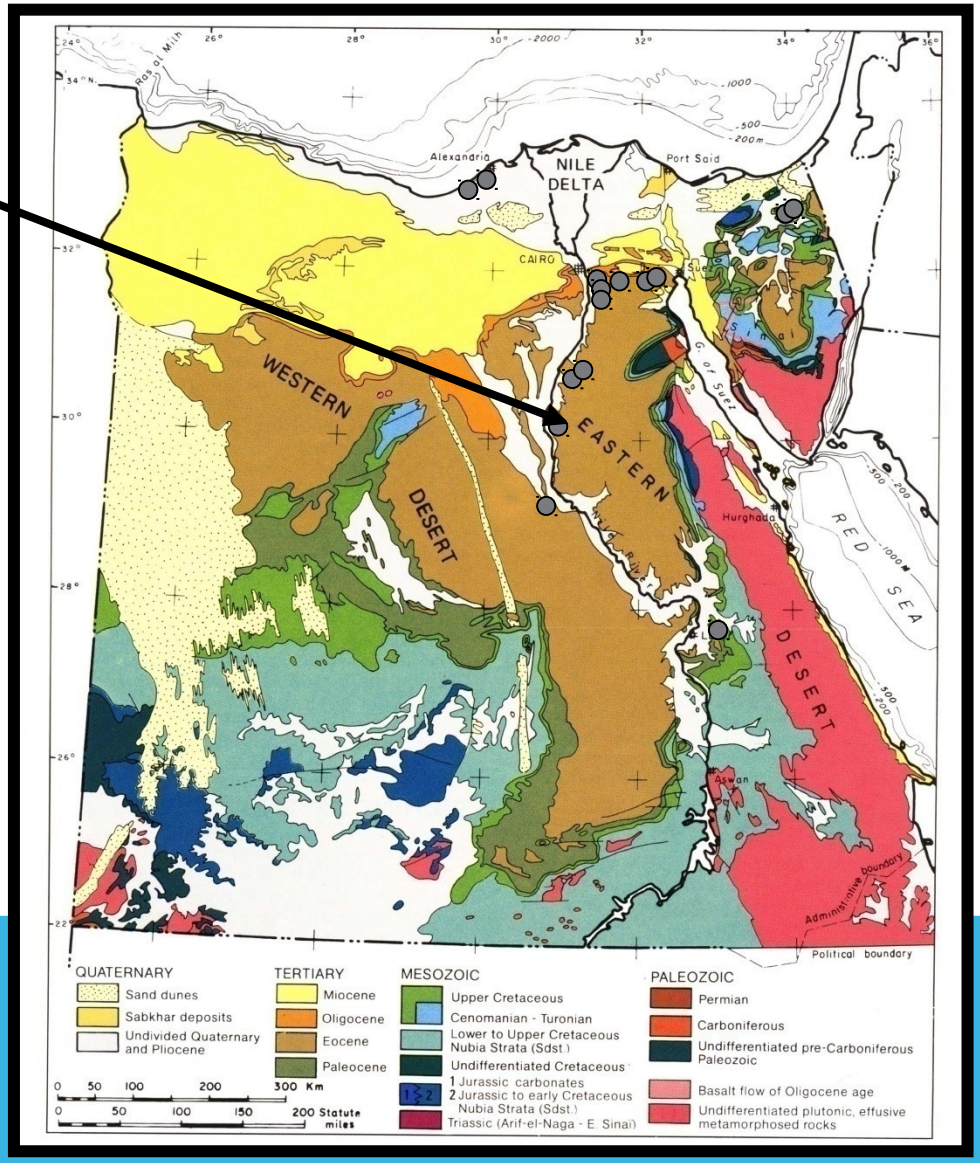
AMERYAH CEMENT COMPANY

Production Million Tons	3.5
NO. of Lines	3
Pleistocene **Limestone**	•Problems of Bedewing squatters •Different material handling •Purchased limestone •Variation in quality •Dolomitic limestone of El- Hammam ridge
Miocene clay Recent marl **Clay**	•No clay quarries •Purchased clay •Variation in quality



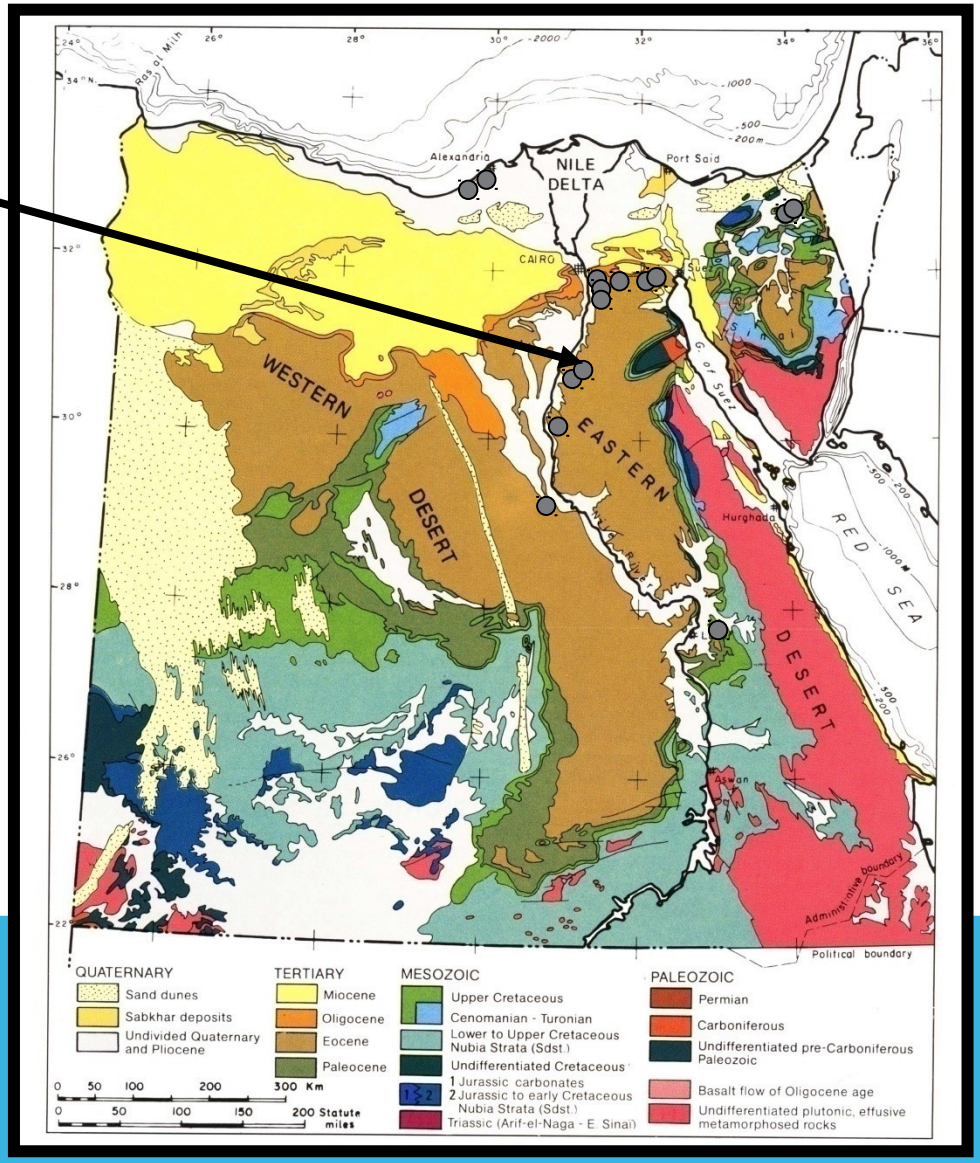
ELMINYA CEMENT PLANT

Production Million Tons	0.2 White Cement
NO. of Lines	1
Middle Eocene **Limestone**	
Cretaceous **Kaolin**	



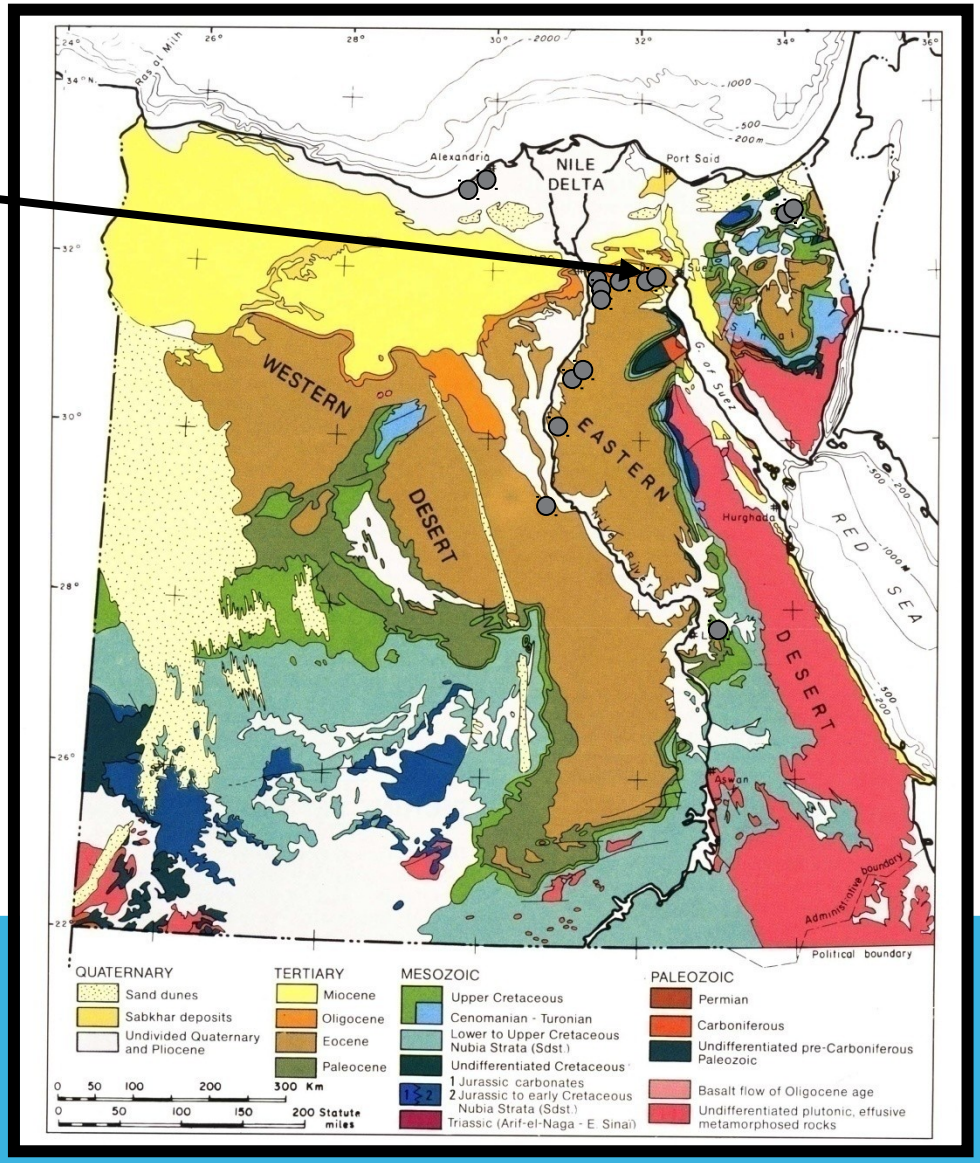
BENI SUEF CEMENT COMPANY

Production Million Tons	1.4
NO. of Lines	1
Upper Middle Eocene **Limestone**	•Presence of high SO_3 in the upper layers
Upper Eocene **Clay**	•Presence of high SO_3 in the upper layers



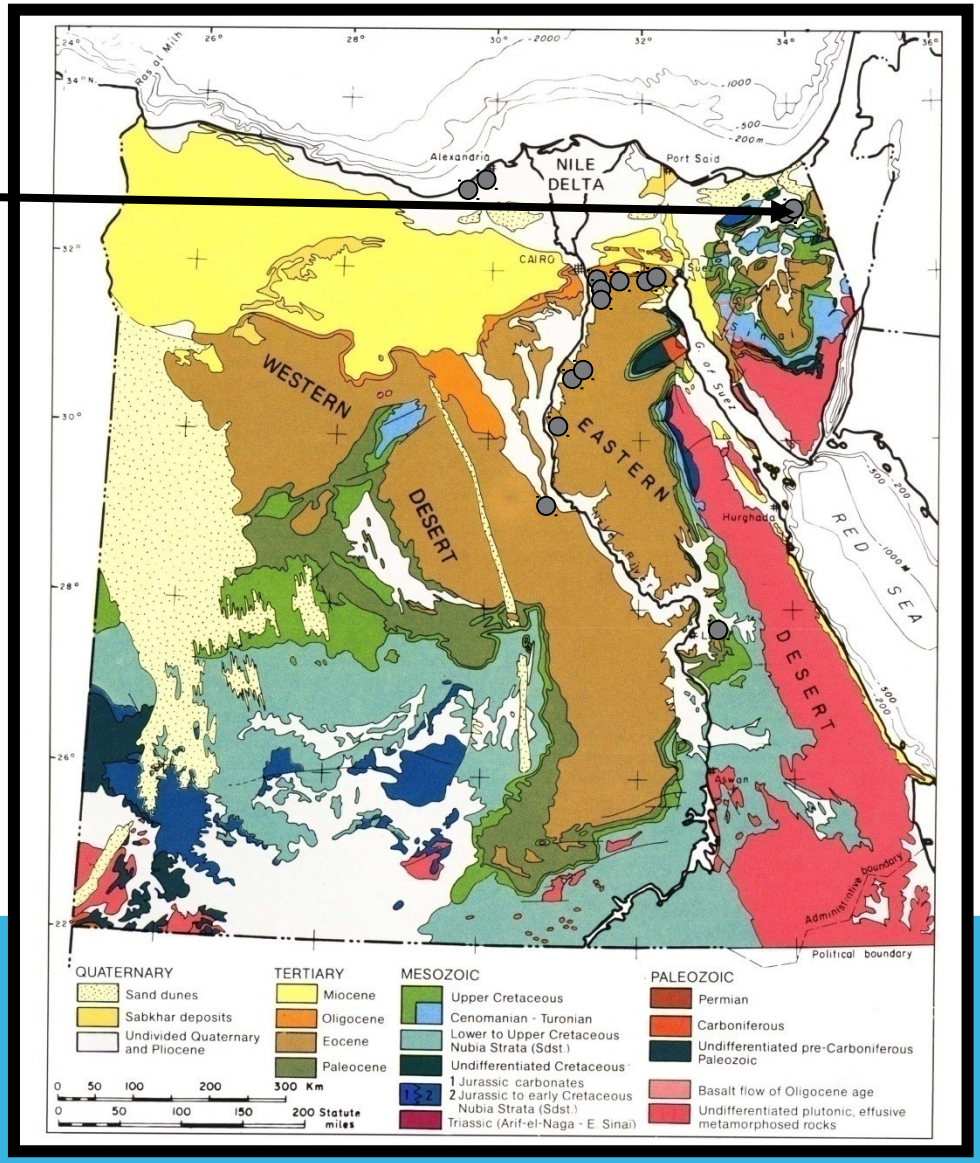
EGYPTIAN CEMENT COMPANY

Production Million Tons	6
NO. of Lines	4
Middle Eocene **Limestone**	•Presence of high SO_3 in the upper layer
Recent Silt **Clay**	



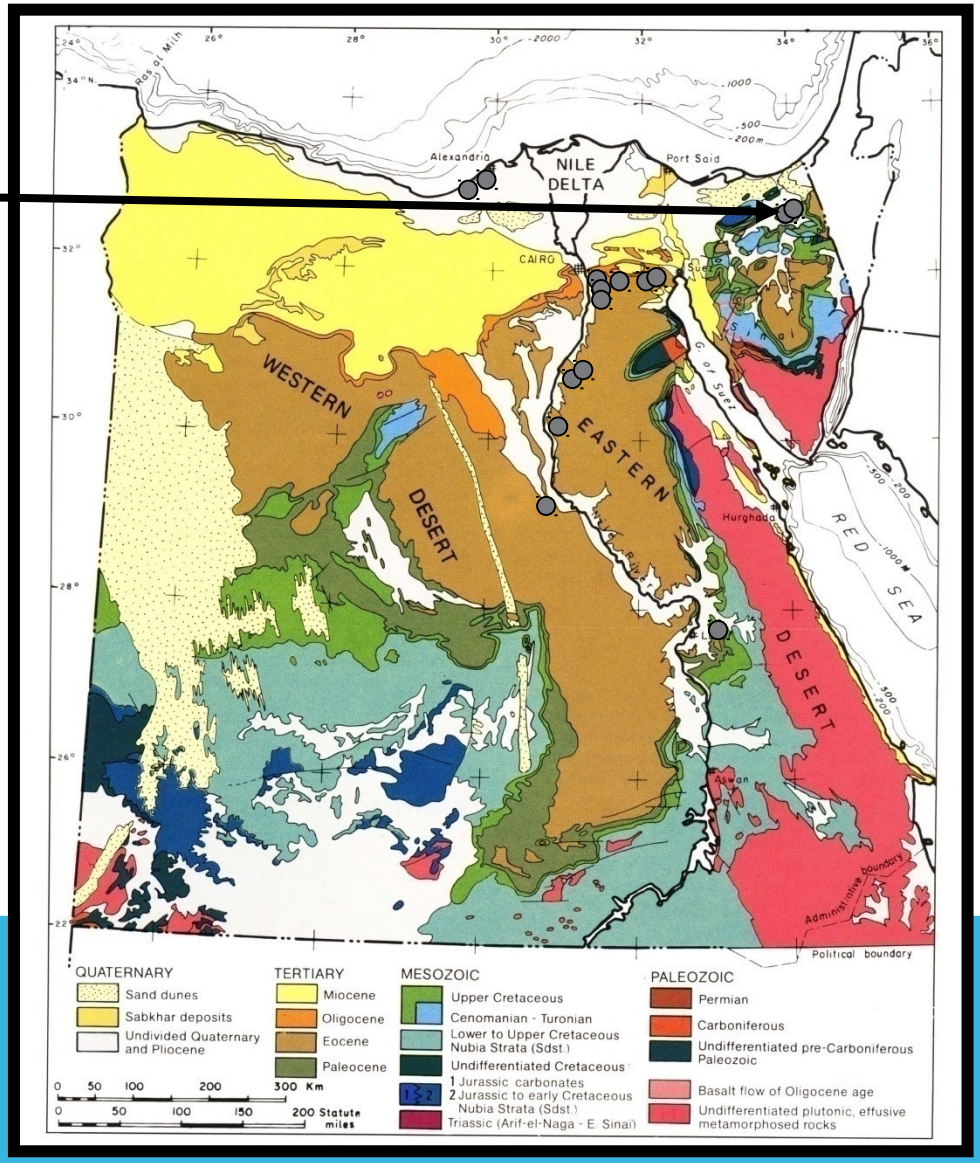
SINAI CEMENT COMPANY

Production Million Tons	1.5
NO. of Lines	1
Cretaceous Senonian **Limestone**	
Middle Eocene **Clay**	



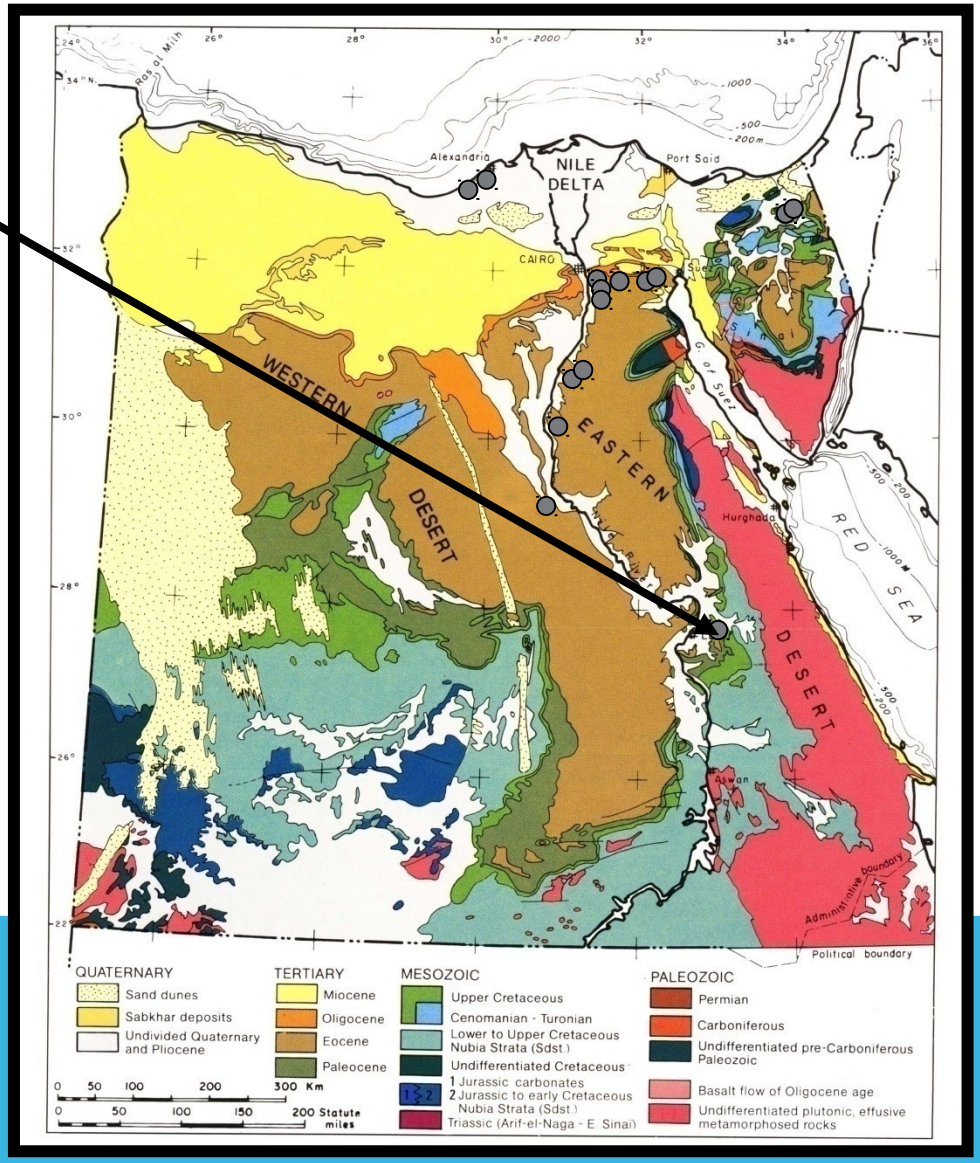
SINAI WHITE CEMENT COMPANY

Production Million Tons	0.4
NO. of Lines	1
Cretaceous Senonian **Limestone**	
Cretaceous **Kaolin**	



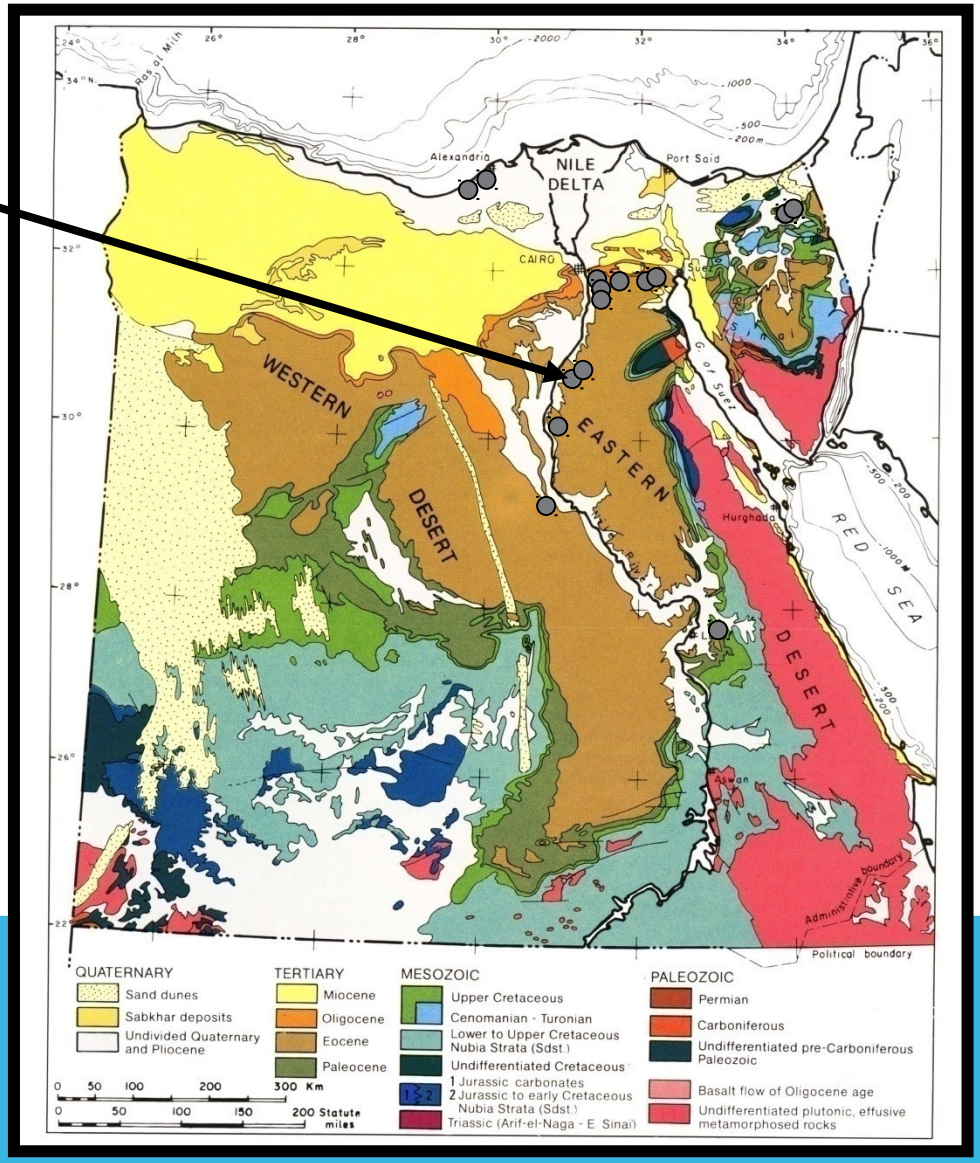
MISR CEMENT COMPANY (QENA)

Production Million Tons	1.5
NO. of Lines	1
Upper Cretaceous **Limestone**	•Presence of high SO_3
Plio- Pleistocene **Clayey Sand**	•Free SiO_2 in the clayey sand



MISR BENI SUEF CEMENT COMPANY

Production Million Tons	1.4
NO. of Lines	1
Upper Middle Eocene **Limestone**	•Presence of high SO_3 in the upper layers
Upper Eocene **Clay**	•Presence of high SO_3 •Presence of high Cl •Variation in quality



Raw Material Situation

Plant	Limestone	Clay
Tourah	Blast vibration claims with military Presence of complicated structures	Low reserves
Helwan	Blast vibration claims with 15th May town Presence of complicated structures Dolomite bands High SO_3 in the upper layers	Low reserves
National	High SO_3 in the upper layers	Low reserves
Alexandria	Problems of Bedewing squatters Different material handling Purchased limestone Variation in quality	No clay quarries Purchased clay Variation in quality
Suez	Dolomitic limestone in the lower section	Low reserves Interburden layer
Assiut	Presence of chert Many cavities filled with deleterious materials	Low Al_2O_3 content Slightly high Fe_2O_3
Ameryah	Problems of Bedewing squatters Different material handling Purchased limestone Variation in quality Dolomitic limestone of El-Hammam ridge	No clay quarries Purchased clay Variation in quality

Raw Material Situation

Plant	Limestone	Clay
Elminya	Presence of some increase in Cl	
Beni Suef	Presence of high SO_3 in the upper layers	Presence of high SO_3 in the upper layers
Egyptian	Presence of high SO_3 in the upper layer	Clay is delivered from far distances
Sinai		Presence of high SO_3 in the upper layers
Sinai White		
Misr (Qena)	Presence of high SO_3	Free SiO_2 in the clayey sand
Misr Beni Suef	Presence of high SO_3 in the upper layers	Presence of high SO_3 Presence of high Cl

As a result of :

1)low raw material costs

2)Relative low energy price,

3) Transportation Infrastructure.

4) Climatic Conditions

5) Deposits morphology

Egypt has significant cost advantages over other cement producing countries.

Cost of cement is:

29% energy,

27% raw materials,

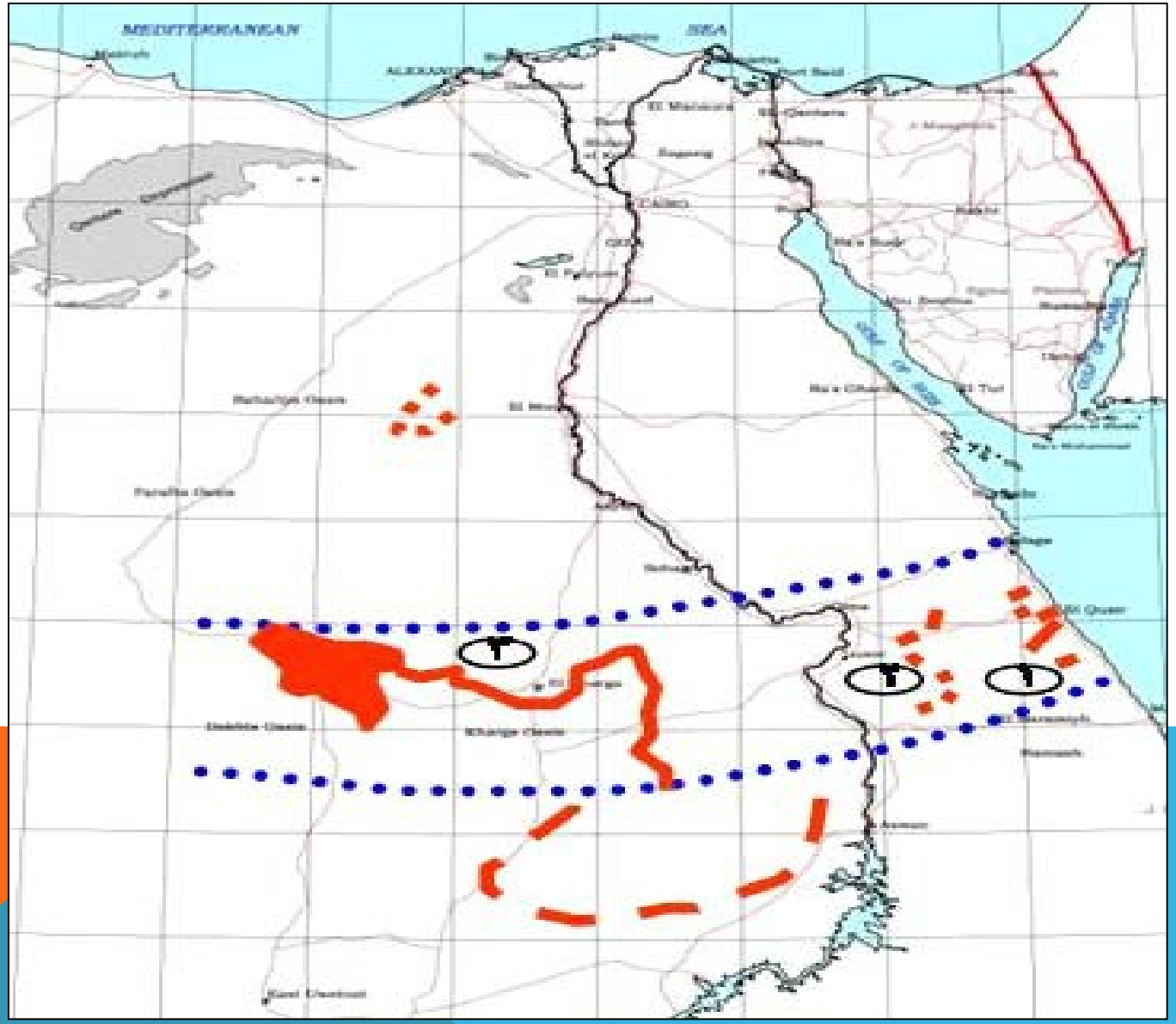
32% labor

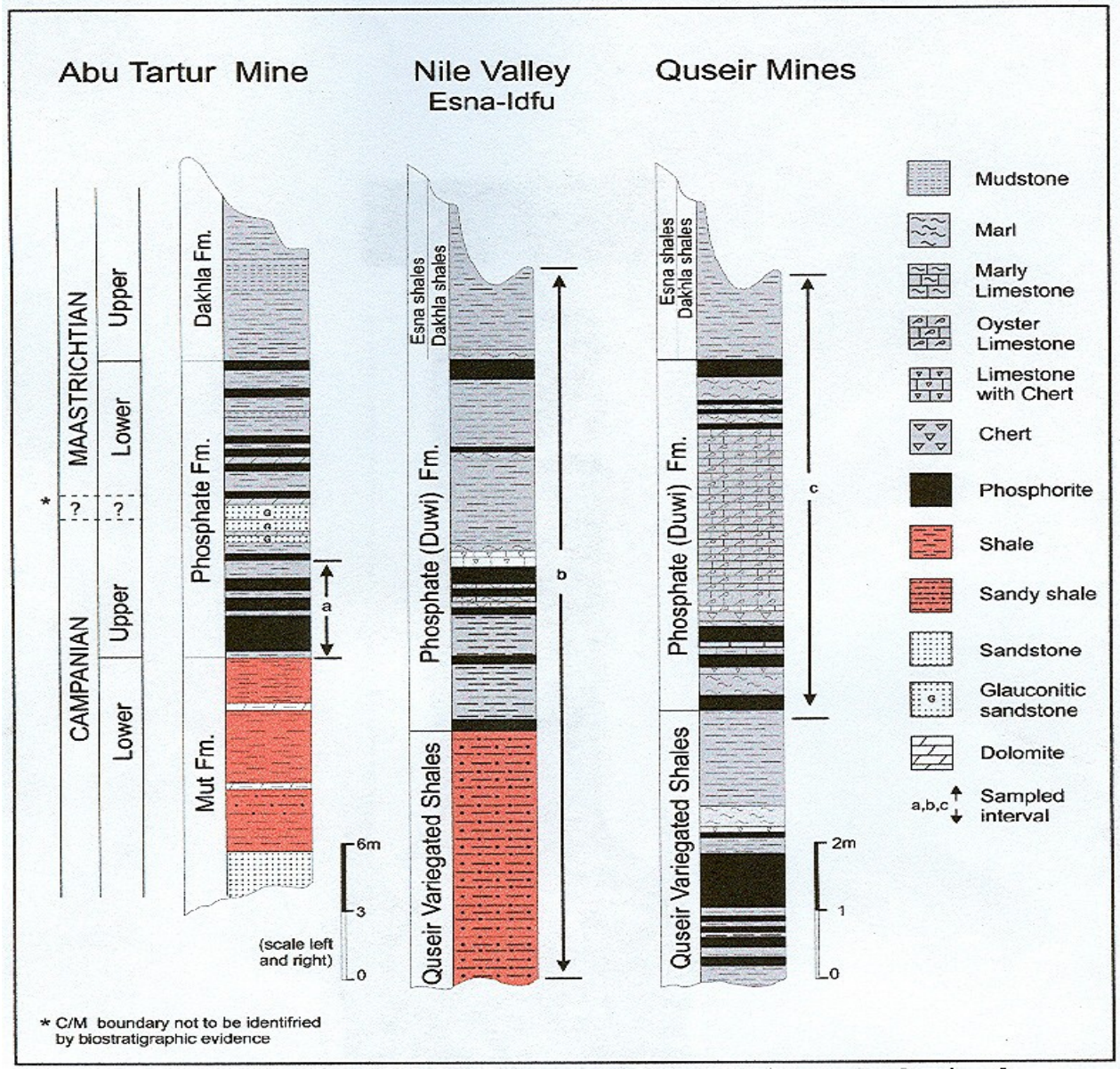
12% depreciation

PHOSHATE IN EGYPT

1) Late Cretaceous phosphates in Egypt form a part of the extensive Middle East-North Africa phosphogenic province.
2) North Africa phosphogenic province of late Cretaceous to Paleogene age contains the greatest amount of phosphates in the geological history.
3) Duwi Formation forms a part of this province and its phosphate resources exceed 3 billion metric tons.
4) The Phosphate bearing rocks are found in three main locations, Red Sea coast (Quseir-Safaga district), Nile Valley and abu Tartur.

PHOSPHATE ZONE IN EGYPT





Sequences of Upper Cretaceous-Lower Tertiary Phosphate Rocks in the Three Locations of Egypt

	ABU TARTUR	NILE VALLEY	RED SEA
P_2O_5 Of The Economic Beds	26	20-26	23-29
Thickness Of Productive Beds	1.3-6	0.5-1.0	0.5-1.0
Reserves (Million Ton)	990	70	80
Structure	Very Broad Folding, Minor Faulting	Gentle Folding (Flanks 2-5°) Faulting	Faulted Syncline (Flanks 5-30°)
Mining Method	Underground (Long Wall Face)	Open Cast Underground (Room & Pillar)	Underground (Room & Pillar, Long Wall Face)
Cement/Matrix	Dolomitic, Clayey (Phosphatic)	Calcitic, Siliceous, Dolomitic, Phosphatic)	Calcitic, Dolomitic, Siliceous. (Phosphatic , Pyritic)
Host Rocks	Shale, Glauconite, Silt-Sandstone	Bioclastic Limestone, Chert, Dolostone	Oyster Limestone, Dolostone, Bituminous Shale, Chert

Serial No.	Area	No. of Boreholes
1	El-Gadida Quarry	675
2	Badr Quarry	542
3	Fath Quarry	393
4	Um Higara Quarry	551
5	Um Tundoba Quarry	208
6	El-Amal Quarry	402
7	Um-Salama	93
Total No. of boreholes		2864

The thickness of the overburden in the different mines is:

1.The minimum & maximum of overburden thickness in

El-Gadida mines range between **0.3 and 43.6m** respectively;

El- Amal mines range between **0.8 and 19m** respectively;

Badr mines range between **1.2 and 50.1m** respectively;

Fath mines range between **23 and 58.5m** respectively;

Um Higara mines range between **2.9 and 50.1m** respectively;

Um Tundoba mines range between **2 and 32.3m** respectively;

Um Salama mines range between **3 and 46.5m** respectively;

The thickness of the phosphate ore in the different mines is:

El-Gadida mines range between **0.2 and 4.6m**

respectively;

El- Amal mines range between **0.1 and 3.8m** respectively;

Badr mines range between **0.2 and 3.8m** respectively;

Fath mines range between **1.0 and 3.0m** respectively;

Um Higara mines range between **0.1 and 2.2m** respectively;

Um Tundoba mines range between **0.1 and 3.4m** respectively;

Um Salama mines range between **0.2 and 3.0m** respectively;

The minimum & maximum P2O5% in

El-Gadida mines range between **11% and 37.5%** respectively;

El-Amal mines range between **10.6% and 30%** respectively;

Badr mines range between **12.6% and 37%** respectively;

Fath mines range between **18% and 32%** respectively;

Um Higara mines range between **10% and 32.5%** respectively;

Um Tundoba mines range between **10.9% and 32.3%** respectively;

Um Salama mines range between **20.1% and 33.4%** respectively;

El-Nasr Company Phosphate Concessions around El-Seibaiya


Sohag
Sohag
Gerga
Qena
Farshut
Qina
Luxor
Luxor
Phosphate Abu Tartur
Al Kharga
Phosphate Mines
Nagaa El-Shaikh
El-Bahr El-Ahmar
Al Madiq
Abu Tartur
Plateau
94 km
© 2012 ORION-ME
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
© 2012 Cnes/Spot Image
© 2012 Google
©2010 Google
Imagery Date: 11/22/2005
25°35'59.36" N 31°53'27.98" E elev 389 m
Eye alt 399.56 km

Phosphate Egypt Company

Entrance of Abu Tartur Phosphate Subsurface Mine

Surface Geological Reserve of Phosphate Ore In Abu Tartour area

رقم القطاع	طول القطاع كم	متوسط السمك متر	نسبة P_2O_5 %	كمية الفوسفات المتوقعة تحت غطاء صخري (مليون طن)		
				حتى 35 م	حتى 50 م	حتى 60 م
1	1.5	4.35	25	2230000	0.0	0.0
2	2.25	3.78	26	2920000	10748110	12455316
3	2.30	3.64	24.6	2380000	9550122	11511640
4	0.99	5.43	24.6	1720000	0.0	0.0
5	1.90	5.05	26	3330000	12636526	15211572
6	1.15	2.50	23.7	750000	3140658	3700751
7	0.99	7.30	25.5	1880000	11759392	13652172
8	1.75	4.25	25	4150000	5891447	6508794
9	2.85	4.40	25	1950000	13630550	16598285
الإجمالي	15.3			21310000	67356805	79638530

جدول يبين احتياطات خام الفوسفات السطحي في القطاعات من 1 إلي 9

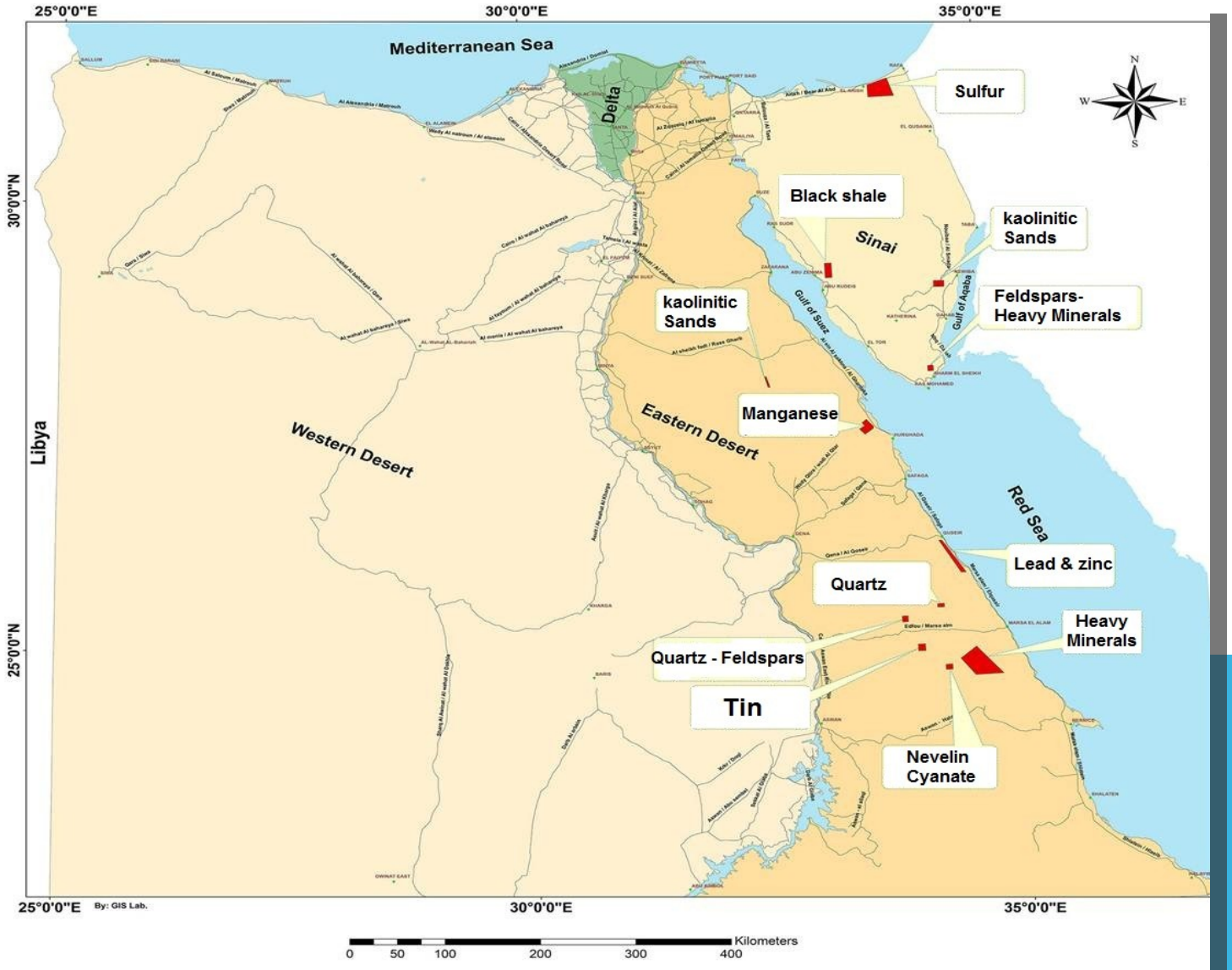
THE MINERAL RESOURCES LAW (198 / 2014)

- The maximize of the added value .
- Increase the financial returns of the national income of mineral resources, by adjusting rents fees and royalties for ore mining law that applicable since 1956, which has not undergone any change in accordance with the prices of ores to global markets.
- Working to activate and attract investment in this promising sector,
  providing the needs of the country's mineral ores.

THE MINERAL RESOURCES LAW (198 / 2014)

- Establishment of industrial projects on mineral ores available, to optimize the economic exploitation of these resources, with the establishment of industrial zones projects list them.
- Increase employment opportunities for young people.
- Increase the chances of attracting Arab and foreign and domestic investment.
- Increase in Egyptian income from foreign and local currencies.

Mining Investment Opportunities in Egypt in 2015



Ministry Of petroleum


Thank You