General Company for Phosphate and Mines

Introduction:

The General Company of Phosphate and Mines made a lot of informing projects which longs for developing the informing work and holding typically step in its administrative regime method of work. In other words, the company performed primary analyzing study of the work statue in the general administration of the company.
In the light of our experience and our interacting with other experiences in the field of informing development, we took into consideration in the company's Informing plan to determine a scientific course of informing development.

In this course, the company aims to reach the gradual and consisted automation Of all branches of the company throughout building consisted informing system And connect between branches to achieve consisted informatics system to connect the distributed branches with the general administration in Homs gradually to be able to interact with the local and international net in future to start executing the plan, the company bought many personal computers with their accessories for directorates of central administration as a first stage. These computers can be connected with the net later to start training in forming field.

Then the company rehearsed group of workers in this field through submitting them to course in different levels to be the central base of informing development .later on after that, as a first step the company executed a connecting consisted net which was one of the pioneer nets in the public section in the governorate. The connecting consisted net connected between all departments of the general administration according to the approved plan and the available sum of money, the company started to execute in formic acid connecting net and consisted programming system which covers all work points in the directorate of Alsharqiah mines.

In the following years and according to the approved plans, the automation procedures shall be continued in the rest directorates and general administration according to the approved sums.

Soon and in the next years, all these directorates shall be connected; the administration shall be aquatinted to all works in the directorates and it shall have direct and instant observation on work. This will affect the work qualification and enable the administration to get the most accurate information in the suitable time to make decisions upon actual information. A big economical support shall be achieved if the informing techniques are applied in the perfect form and if we decrease the wastes.

Operations:

The Company invests in raw materials of Phosphate, Salt & Quartz Sand.

The raw materials of phosphate are mined from 2 major sites: Khnaifees and Alsharqia with a medial percentage of phosphoric dioxide 24 - 28%. Starting from 1980s to the present day , the productive density of the two mines is /2650000/ tons, /800000/ of which from Khnaifees mine and the rest /185000/ tons from Alsharqia two mines (A) and (B) while the discovered reserve exceeds /2/ billion tons. Alsharqia phosphate reserve is considered the most important. The company is willing soon to produce additional amount of the washed phosphate so the general annual production becomes /3.8/ million tons i.e. The productive density of phosphate becomes 3.85 MT since 2005.

Most of the produced qualities, 80% of the general production, are for export. The rest 20% is locally used in making phosphoric acid and phosphate fertilizer in Homs Fertilizer. Later, the phosphate and especially the raw materials are being transported by railway to Tortuous' port 265 km away from mines. The ordinary phosphate (P2 O5) is transported in a percentage of /29.75- 30.25%/ to Homs fertilizer and Tartous' port while washed - dried phosphate of / 30.75 - 31.5 % / is transported to city of Tartous.

Rock Salt is invested from under-surface mine from a depth of /150m/ of sea level. Approximately, the annual production is 75 t. Also, salt is mined from salinities and marshes with an average of 50 -100 T per annum.

Quartz Sand: this raw material is found in many areas in country; most important are Altadmouria Mountain Series, Al-Bishri Mountain and Alforatia Benches. These raw materials are mined from Alramlia and Aldaana mines (near Alqritain city) with annual quantity of /850/ tons. And equal quantity is mined by the private sector in different sites in Reif Demashk. The company exports most of phosphate production to external markets while quartz sand and salt are locally distributed.

Syrian Phosphate Production:

Annually, (600-700) thousand tons of phosphate are used locally in fertilizer in Homs, Syria for farming the phosphor acid, the triple fertilizer and locally used Super phosphate, but the remaining produced amounts about 3.2 million tons are exported outside(to the previous mentioned countries).

The exported amounts are used externally in making the alimentary, unnatural and yellow phosphor and all kinds of simple and double phosphate fertilizers, and also in making the compound fertilizers which contain the elements of phosphor for the nourishment of agricultural lands.

The Syrian phosphate is also used for making the forage (De-calcium phosphate).

The company with the ordered authorities, in collaboration with Ministry of Industry and Syrian private sector in addition to international organizations, are studying the development of production of Syrian phosphate and exceeding the productive amount for a developed industry of phosphor acid and different fertilizer with cooperation with the private sector in Syria and with international institutions expert in the construction of such projects according to the investment law, number / 10 /.

Development of Syria Phosphate Mines:

Due to the huge amounts of raw materials of Phosphate in Alsharqia mines, it is possible to increase production and to improve quality by wet concentration method / washing and floating/. An integrated plant is found to produce washed-dried phosphate with a capacity of /1.2/ million tons a year, so the total production of phosphate becomes /3.85/ million tons. The general company of phosphate and mines is supplied with water from Alsawana Hydro-geological Basin.

Development of Phosphate Loading and Storing

The general company of phosphate and mines purchased new loading tower to be installed shipping pavement /19/ instead of the old one in order to increase loading capacity and to reduce ascending dust while loading on ships. The general company of phosphate and mines purchased new telescope pipe with high specification so it reduces ascending dust while loading phosphate to be installed on loading tower on pavement /18/. The general company of phosphate and mines established a central lab and a semi-industrial experiment unit in headquarters to make all necessary researches on phosphate.

Development of Rock Salt:

An integrated plant to produce rock salt is under foundation with a productive capacity of /70000/ tons as a substitute to the existing one, which was assembled 30 years ago. The general company of phosphate and mines seeks to develop mining methods in mines and to move from manual mining to the mechanical one in mines tunnels.

Developing Quartz Sand production:

Due to the huge amounts of pure Quartz Sand which can be used in making high quality glass and pottery, it is possible to establish sand washing and classing plants to be used in different aspects of industry to provide the needs of the local market and the neighboring ones, this plan has its own rail way beside an asphalted road leading to it.

General Company for Phosphate and Mines

EASTERN B

Chemical Analysis of Concentrated Syrian Phosphate

1- Phosphate Pent Oxide	P_2O_5	29 – 30%
2- Calcium Oxide	CaO	48 – 52%
3- Silicon Dioxide	SiO_2	4 – 8%
4- Iron Oxide	Fe_2O_3	0.2 – 0.50%
5- Aluminum Oxide	Al_2O_3	0.20 – 0.50%
6- Magnesium Oxide	MgO	0.40 – 0.70%
7- Fluorine	F	2 – 4%
8- Chlorine	Cl_2	0.05 – 0.15%
9- Carbon Oxide	CO_2	5 – 7%
10- Losses of Ignition	L.O.I	7 – 9%
11- Humidity	H_2O	5 – 8%

"Assay of Trace Elements"

Cu	**3 – 5**	ppm	**Zn**	**120 – 160**	ppm
U	**40 – 60**	ppm	**Hg**	**< 0.1**	ppm
Cd	**3 – 5**	ppm	**V**	**70 – 150**	ppm
As	**< 2**	ppm	**Ni**	**8 – 12**	ppm
Pb	**3 – 6**	ppm	**Bi**	**0.01 – 0.03**	ppm

P_2O_5 Solubility in Citric Acid 2%	**35 – 40%**
P_2O_5 Solubility in Formic Acid 2%	**60 – 65%**

B. Typical Screen Analysis:

ASTM Mesh No.	mm	Percent %
+10	+2	5 – 8
+35	+0.5	15 – 25
+230	+0.053	60 – 70
-230	-0.053	4 – 6

General Company for Phosphate and Mines

EASTERN B+ KHNEIFISS LOW CHLORINE WITH OUTDUST

Chemical Analysis of Concentrated Syrian Phosphate

1- Phosphate Pent Oxide	P_2O_5	30– 30.50%
2- Calcium Oxide	CaO	48 – 52%
3- Silicon Dioxide	SiO_2	4 – 8%
4- Iron Oxide	Fe_2O_3	0.2 – 0.35%
5- Aluminum Oxide	Al_2O_3	0.2 – 0.50%
6- Magnesium Oxide	MgO	0.4 – 0.7%
7- Fluorine	F	2 – 4%
8- Chlorine	Cl_2	0.05 – 0.7%
9- Carbon Oxide	CO_2	5 – 7%
10- Losses of Ignition	L.O.I	7 – 11%
11- Humidity	H_2O	3 Max

"Assay of Trace Elements"

Cu	10 – 15	ppm	Zn	130 – 160	ppm
U	50 – 100	ppm	Hg	< 0.1	ppm
Cd	5 – 8	ppm	V	70 – 150	ppm
As	< 2.0	ppm	Ni	10 – 15	ppm
Pb	2 – 5	ppm	Bi	0.01 – 0.05	ppm

P_2O_5 Solubility in Citric Acid 2%	**35 – 40%**
P_2O_5 Solubility in Formic Acid 2%	**60 – 65%**

B. Typical Screen Analysis:

ASTM Mesh No.	mm	Percent %
+10	+2	5 – 8
+35	+0.5	15 – 25
+230	+0.053	60 – 70
-230	-0.053	3 – 5

General Company for Phosphate and Mines

LOW CHALORINE EASTERN B

Chemical Analysis of Concentrated Syrian Phosphate

1- Phosphate Pent Oxide	P_2O_5	29 - 30 %
2- Calcium Oxide	CaO	48 – 52 %
3- Silicon Dioxide	SiO_2	4 – 8 %
4- Iron Oxide	Fe_2O_3	0.2 – 0.35 %
5- Aluminum Oxide	Al_2O_3	0.20 – 0.50%
6- Magnesium Oxide	MgO	0.40 – 0.70%
7- Fluorine	F	2 – 4%
8- Chlorine	Cl_2	0.05 – 0.07%
9- Carbon Oxide	CO_2	5 – 7%
10- Losses of Ignition	L.O.I	7 – 11%
11- Humidity	H_2O	5 – 8%

"Assay of Trace Elements"

- Uranium	**U**	50 – 100 ppm
- Cadmium	**Cd**	3 – 6 ppm
- Vanadium	**V**	70 – 150 ppm
- Arsenic	**As**	< 2.0 ppm
- Organic Carbon	**C**	0.12 – 0.20ppm

P_2O_5 Solubility in Citric Acid 2%	35 – 40 %
P_2O_5 Solubility in Formic Acid 2%	60 – 65 %

B. Typical Screen Analysis :

ASTM Mesh No.	mm	percent %
+10	+2	5 – 8
+35	+0.5	15 – 25
+230	+0.053	60 – 70
-230	-0.053	4 – 6

***Remark*: each degree of P_2O_5 = 2.185 degree of BPL.**

Syrian Washed Phosphate on Dry Basis

A. Chemical Analysis of Concentrated Syrian Washed Phosphate on Dry Basis

1- Phosphate Pent Oxide	**P_2O_5**	30.75 – 31. 25	Percent %
2- Calcium Oxide	**CaO**	48 – 50	Percent
3- Silicon Dioxide	**SiO_2**	7.5 – 9	Percent
4- Iron Oxide	**Fe_2O_3**	0.10 – 0.15	Percent
5- Aluminum Oxide	**Al_2O_3**	0.10 – 0.15	Percent
6- Magnesium Oxide	**MgO**	0.40 – 0.7	Percent
7- Fluorine	**F**	2 – 4	Percent
8- Chlorine	**Cl_2**	<0.03	Percent
9- Carbon Oxide	**CO_2**	5 – 7	Percent
10- Losses of Ignition	**L.O.I**	6 – 8	Percent
11- Humidity	**H2O**	3 Max	Percent

"Assay of Trace Elements "

Cu	10 – 15 ppm	**Zn**	130 – 160	ppm
U	40 – 70 ppm	**Hg**	< 0.1	ppm
Cd	6 Max ppm	**V**	70 – 150	ppm
As	1 – 2 ppm	**Ni**	10 – 15	ppm
Pb	2 – 4 ppm	**Bi**	0.01 – 0.05	ppm
P_2O_5 Solubility in Citric Acid 2%		30 – 40		ppm
P_2O_5 Solubility in Formic Acid 2%		60 – 65		ppm

B. Typical Screen Analysis:

ASTM Mesh No.	mm	Percent %
+10	+1	0.5 – 1
+35	+0.5	5 – 10
+230	+0.053	70 – 80
-230	-0.053	1 – 2