

IMPERADOR GEMS, LTD.

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Abstract:

Petroco Inc. is trimming its conglomerate by selling two subsidiaries: Beryline Mining Group and Beryline Laboratories. Of the two Beryline industries, the Beryline Mining Group (see table 1.1) is the safest investment because it possesses some of the most productive emerald mines in the world.

Table 1.1 *Beryline Mining Group, Beryl Sources and Emerald Production 1983-1985*

| location | mine / site | emerald production (Carats) (U.S.) | value x1000 | remarks |
|-------------------------|--|---|-----------------------|---|
| <i>Lofetton, Norway</i> | <i>Shadow Mine Sites A-J</i> | <i>4,101,660</i> | <i>\$2,500</i> | <i>No major crystal deposits. Good source of ore.</i> |
| <i>Rio Fora, Brazil</i> | <i>Whispering Grotto Sites A-C</i> | <i>13,655,900</i> | <i>14,480</i> | <i>Splendid crystals, many gem quality.</i> |
| <i>Poonag, India</i> | <i>People's Mine Sites 1-9 Junior Mine Sites 1-4</i> | <i>10,270,360</i> | <i>6,395</i> | <i>Fine aquamarine crystals.</i> |
| <i>Comocut, India</i> | <i>Lost Cavern Sites 1-6</i> | <i>7,599,000</i> | <i>6,000</i> | <i>Classic emerald deposit.</i> |

*quantitative
symbols*

*The Beryline
Laboratories
would likely not
offer any return
on an
investment.*

*Since its
foundation, the
Beryline
Laboratories,
whose primary
task is to
produce
artificial
emeralds, has
failed to
introduce a
viable product.*

*Imperador
Gems, Ltd.
could become
the world's
leading supplier
of emeralds by
acquiring the
Beryline Mining
Group and
could expect to
capture 21% of
the emerald
market.*

*Imperador
Gems, Ltd. has
no use for
Beryline
Laboratories.
Beryline
Laboratories'
latest failure is
an apparatus
called the
"beryl box".*

*Current
empirical
testing on the
recently
revealed "beryl
box" failed to
substantiate
Beryline
Laboratories'
claims that the
aparatus was
capable of
accelerating the
growth rate of
synthetic
emeralds.*

*Beryline
Laboratories,
anxious to
capture a
portion of the
created
emeralds'
market,
unveiled the
"beryl box" as
a breakthrough
in emerald
synthesis
because of its
ability to
arrange the
nuclei in
synthetic
emeralds more
rapidly than
conventional
processes.*

*However, the
application of
the nucleation-
rate equation
(A) during the
crystallization
process in the
"beryl box"*

*showed no
increase in the
activation rate
of nucleation.*

*Because of
inaccuracies
which often
occur when
measuring the
crystallization
interval of
synthetic
emeralds, the
emerald's
growth rate (B)
was also
studied. From
the point after
which
nucleation
ceases, the
"beryl box"
emerald
matured after
an estimated 10
to 12 months,
the average
incubation
period for
synthetic
emeralds.*

*definition
other
symbols*

definition

K

N

N_v

R_i

V_i^{dpl}

Constant growth
rate for flux-fusion

synthetic
growth
Number of crystals
Density of crystal
Radius of i th
crystal
Volume of the
accumulation area
surrounding
the i th crystal
Volume of spatial
effect

D

F

E
Degree of
saturation relating
to flux
Germination factor
of
nucleation Time