

W. H. C. M.

2

Return to

State Geological Survey
Tallahassee, Fla.

note book

2

Foundry - Foot

Oak St

Mutual Ben Works

1
August 15, 1927

Alapaha River - between Graham
and Jennings

Live Oak

Said for local use of animal
charcoal south of town

stump X Tolworth's sand deposit at
Jennings - Frank Brown
about 1/2 mile north can tell

There is a sand deposit at
Mays Junction, northern
part of Lafayette County

Location of Helix in a sand
deposit - Helix is going on
Helix in a sand deposit
and Helix in a sand deposit - two miles west

S.W. corner section 34, T4

R. 14

30 feet hole at N.E. 4 T5

R. 14

Three specimens of
Helix in a sand deposit
from this hole. It cannot
tell order in which they
came or from what depth

2
227 H.M. Strickland and Live Oak
He showed me a small spec.
of gravelly sand on a specimen
in a hole. When east side
Savannah River area Ellaville
Alapaha River - at crossing
of highway No. 2. between
Jennings and Jennings.

sample
129

= 5129

Sand used for bricklaying mortar
etc. locally, could be
found in trucks from bed of river
which is usually dry. This sand
down to the bottom for trucks
to run on.

Sand is variable in texture
crack holes etc. Some layers
of leaves. The worst of the
organic material was avoided
in sampling. In the upper
parts a few clay lumps, fossils
and concretions. All these washed
out of older formations. Dig to
depth of 4 feet. Total depth
not known.

Width of stream bed
from 60 to 120 feet average
about 100 ft. All of it sand.

Alluvial sands above bed of
creek but in the sand ripples
seem to have considerable thickness
in places. Some might do for
molding sand but does not
appear to have sufficient
uniformity.

3
Live Oak Aug 15

Philadelphian Church

Two miles from Live Oak
on Kilmory highway

Green Road. Tolson
supposed to be getting gold
from top of limestone

Digging on one spot for about
a year and a half.

Live Oak
J. H. Blackwell near Forest Hill
Bank. Building earth. ~~XX~~
Sugar Creek - 2 or 3 miles

Aug 16.
Harvey Halt - Highway Lab,
Organic matter (Oxygen Consumed).

R. C. Shiffin.

Technical methods of
Analysis (see saw bill)
page 684

Sand.
Project 6570 Road 27
Dade County
Δ 1676

Bottom of Tammam Canal

Keuka between Edgar and
Interlachen - coarse sand.

Kingsley Lake. sand east of
Storke

Look in store room for
samples 88 to 93

4

Aug 17, 1927

Brick Plant, Campville,
between Hancock and Waldo.

sample 130 Sand, - Edgar
Tailings from United Clay Mines
Mine no. 4, (McMeekin) ~~Two miles~~
west of Edgar. ~~three~~

The sample is from about
half way down the side of the
conical pile and is from a
vertical cut extending to a depth
of three feet.

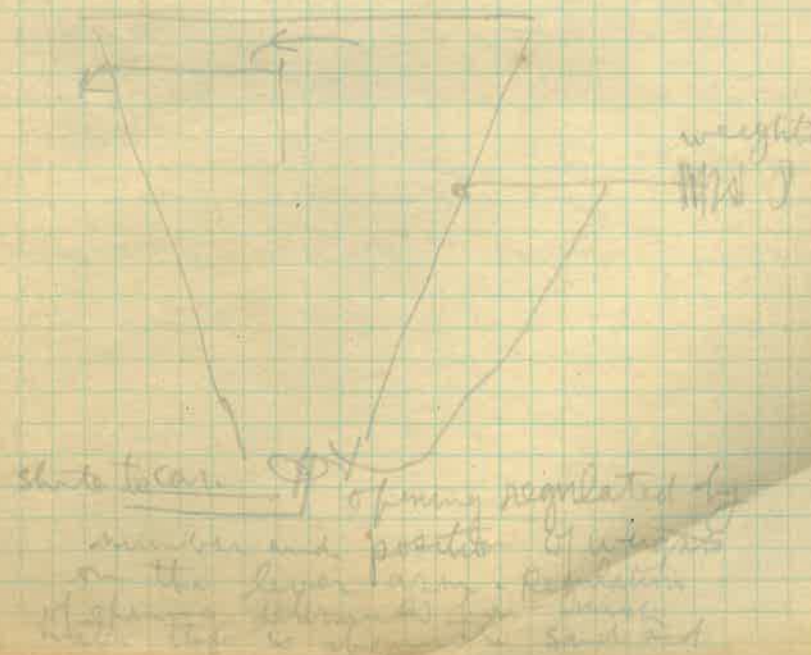
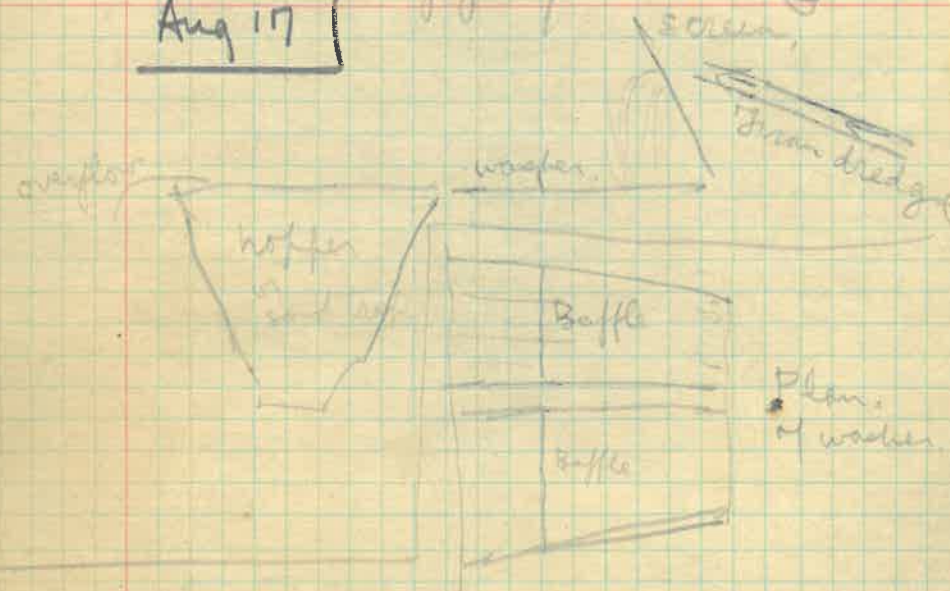
Thin streaks of cream colored
clay included in the sample.
Also some small concentrations of
heavy minerals - rutile minerals
sorted out by the running water.

Leesburg Sand and Supply Co. Edgar
Mr. Cox says the method
of production and grades of
sand are the same as at
time of Messon's visit.
When samples were taken
few white quartz pebbles,
all of them flat.
Sample of pebbles.

5

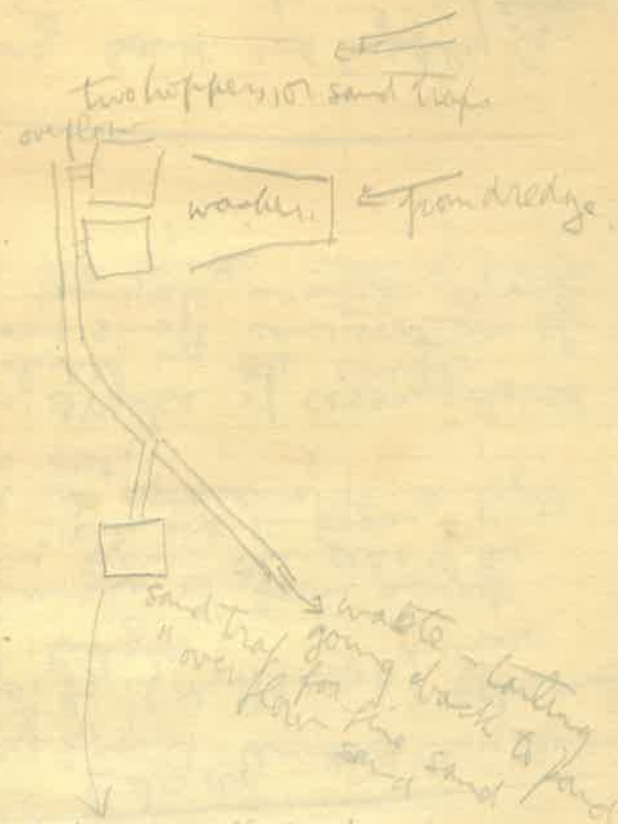
Leesburg Sand and
Supply Co. Edgar

Aug 17



6

Leesburg Sand and Gravel
Co. Edgar



not used all the time, only
when fine sand is wanted
By passing sand to the overflow to
pond most of the time

August 17

7

Diamond Sand Co. Kenka

7ft Top - loose sand ^{to yellow}
 4ft - gravel clay-sand mixture
 4½ ft - gravelly sand ^{reddish} and less clayey than above
 10 ft - basalt sand (hard)

Whole is mined from top to bottom

Surface of these beds in places conforms to topography

When pump is shut down water stands about 18 feet below surface & in the pump. centrifugal

This is a generalized section giving approximate thickness. One side of the bank is higher and the contact between the loose sand on top and the clayey sand below follows the topography in general way. The third layer from the top is not everywhere well defined and separated from the second and the combined thickness of the two is in some places less than shown above. The separation from the basalt sand below is fairly distinct

Diamond Sand Co. Kenka 8

=7131

131

from car

132

=7132

from car

Masonry sand top loose sand washer in mining this the nozzle is directed to wash down only the upper part of the bank. Concrete sand - whole bank washed

W.W. Woodfolk, Supt.
 Diamond Sand Co.
 Kenka.
 Send copy of report on sand, send soil map and geological map

507 Cars taken out.
 about 26,000 tons

(800,000 tons developed by prospecting - 38,000 tons per acre

send analyses of each car on 20 and 50 mesh series

133

=7133

Fine gravel -

No attempt has been made to save all the gravel and market it because the percentage is very small. This is from a stock pile which has accumulated from material retained on screen (over)

Diamond Sand Co. 9

Washer (Don Co)

This one will handle 2½ cars and have sand screened out before washing, 2½ cars per min.



Sand is washed twice. After going through Don Washer it is washed with a jet of water directed against an inclined surface down which the water containing the sand is flowing. Sand settles in hopper and clay and some fine sand is carried off with the overflow water.

92.0 Interlachen Sand and Gravel
Co. Interlachen
Ralph J. Sellers Supt.

134

Best concrete sand.

=7134

Dredged and washed. This includes only the lighter colored material from the lower part of the bank.

135

Concrete sand

=7135

Dredged and washed. Part of this is from the upper part of the bank, which is brown stained. Therefore not washed quite so clean as 134.

Mr. Sellers says that this sand (No. 135) is produced to meet competition and sells at a slightly lower price than the best graded. Says it will not meet state road specifications.

Ralph J. Sellers Supt.

Interlachen Sand and Gravel Company

About $\frac{1}{2}$ mile northward of Interlachen station

The bank on the north side is at the highest elevation, and there above the "clay" as referred to by Morrison there is a loose, very light gray sand, not to 6 feet thick. It is very plain that this is unconformable on the orange clayey sand below. This clayey sand is much more sand than clay although it is called clay. The upper contact of it is wavy and very sharp. Lower contact is less distinct.

Bank sand for western part of property

This was not sampled but is evidently what Morrison refers to as "dry sand" it is still being worked at the same general locality.

The clayey sand is still being used for roads.

Interlachen Sand and Gravel Company.

Generalized section
This is as given by Mr. Sellers and agrees with what I saw.

- ① sandy loam
- ② 1 ft soil removed by scrapers.
- ③ 5-10 ft bank sand. [lighter sand, lighter sand, asphalt sand]
- ④ 4-8 ft. (clayey sand) road material more in some places.
- ⑤ 25-30 ft. coarse concrete sand, bank dredged and washed, contains some kaolin and iron glaze. 10 feet or so of this bed is below water.

- ⑥ Total bank dredged 40 to 45 ft.
- ⑦ Kaolin, Mr. S. says they try not to dredge into the sand with much kaolin since they think they may mine it later. Most of the bank sand sold for asphalt than for anything else.

worked for 15 or 18 years or all.

The "coarse concrete sand" is horizontally streaked with orange or red at top & grading into the sand clay road material. Below it is whiter and stained here and there with yellow.

Foundry Palatka

Uses red Alabama sand.
Rather fine strong bond.

Have tried some gray very clayey sand from east bank of St. Johns River but do not like it. Too clayey and too short life.

Penny's Farm - Long Branch.

near Doctors Lake.
Clay found in will.

Clay near Middleburg - old plant not worked.

Sample taken in Bell's report

was from other side of railroad and included only the upper weathered reddish clay and not the underlying blue clay.

Bank worked to about 14 foot depth. This does not go through the clay. On account of water in sand below it they do not break through the clay.

Chamber Bros Phila

Grills and other machinery

Costing \$2,000 daily

Gamble and Stockton
Dumas

5 days frost stage
then into tunnels.
About 11 days in all to dry

Upper 2 or 3 ft of bank
very sandy clay.

This is mixed separately and made up into balls which are dried and ground. Then mixed with the underlying blue clay to help drying and reduce shrinkage. The general color of this upper sand & clay is reddish when wet but in bank it is mottled red, yellow and gray.

In a few spots in the bank the upper sandy clay thins out and is absent or nearly so. At the east end of the lot there is two feet of sand of lower fine sand the first thing below the surface.

The plant as yet are between the railroad and the river (Doctors Lake)

Mr. Herbert Stanley,



8 x 10 or 9 x 12 ft space.

with three walls.

artificial drying
Turn left from Bay Street
Riverside Viaduct - Two or three blocks
on river.

Mr. Taylor

Lake George ~~Shell Co.~~

About 2/3 of way from north end of Lake George on west side Silver Glen Creek.

Myer's Hunting Club own part of the land.

Responsible Shell - mostly

Another kind of gastropod with thin shell also found. Near the bottom state of a sort of unworked shell.

Ellworth L. Hulby
Jacksonville
Fla State Board of Health
Julia St - next one west
of Hogan || to it
out this to park, in building
on left hand side, near park,

* 1904 Enterprise St
Duro Sand and Rock Company
Go out Bay St west to
myrtle avenue then follow
myrtle to Enterprise St which
is parallel to Bay supposed to have
been pumping sand at San Marcos S. J. J. J.
H. R. Albram - Graham Building

Arnold Stone Co. - out Davies
St and Saw Turner Road to
graveyards

J. A. Gess myrtle Co. A. Sealise
Mc Huff and Southern R.R.
out State St and Kings Road

* 1904 Sand Co. 30 Riverside Ave.

Shell mound.
Road material

nearly all has fragments of pottery.
Dug in places to 6 feet below
water.

Some bituminous roads:

Channel had to be dredged $\frac{1}{2}$ mile
to reach deposit.

All types of detrituous surface.

Also much used in Volusia
Lake Counties without any other
surface.

Lake Co. - Astor $\frac{1}{2}$ way to
Umatilla.

[Ten or twelve miles from Astor,

one of the four mounds about exhausted,

Send copy of sand report to
Lake George Shell Corporation

Mr. Miller (sand report)
Duo Sand and Rock Co.

sand for plaster, ^{brick laying,} concrete etc.
dredged out of St. Johns River,
Dredged at South Jacksonville,

Looks to be rather fine.
Contains a few shells and fragments
of vegetable material.

They are mainly dealers rather
than producers.

Test by Southern Testing Laboratories
Jacksonville, Fla.

Duo Sand and Rock Co. Sand.

Specific gravity 2.65

wt per cu ft 110.0

Organic matter Plate 2.

Tensile str. (lb./sq in) 1.3 miles

Ottawa sand. This sand.

7 day 28 day 7 day 28 day

206 331 198 307

220 343 172 324

211 323 195 315

Ave 212 332 190 315

Str. Ratio 89.6

94.8

Sieve Test.

Passing 200	0.1
" 100	13.2
" 80	12.3
" 50	10.1
" 40	7.9
" 30	17.9
" 20	22.7
" 10	12.4
" 4	2.9

Percent of original sample on $\frac{1}{4}$ 0.3

Percent silt and clay 0.5

Percent woods 33.4

Foot of Pine St. S. Jacksonville.

Jacksonville Sand Co.

Mr. Segate

mostly dealer rather than
producer.

Sells some sand pumped out
of St. Johns river by government
dredges. He ~~was~~ owns the

property. Mostly fine sand - used for
plaster and etc.

About 16 to 18 miles down
river from Jacksonville.
He is about to discontinue this.

18

Oyster shell south about to clearwater -
 bogged,
 Oyster shell has no possibilities

from

Sarasota - clam ^{coquina} shell dredged
 concrete paving St. Armands Key
 dredged at
 Will give practically any desired
 strength
 none.

Brewster gravel - phosphate
 does not
 Mud balls -

$\frac{1}{4}$ to $\frac{5}{8}$ inch best phosphate

19

Phillips W. M.
 3638 Riverside Ave. 7-5988

near West Palm Beach

Florida glass manufacturing Co.
 white glass bottles

Can not tell from where he
 got the sand. Only general locality
 Says it is a washed lake sand
 or at least some kind of fresh water

Has not made any chemical
 analyses

name of producer is Radol or
 Randolph.

Aug 19, 1927

20

Duo Sand Co

Foot of Pine Street.
 San Marco Suburb.
 South Jacksonville

This sand dredged for filling
 and has been marshaled for
 some extent by the Duo Sand
 Co. company
 sample of this taken from
 cut but not deep near the middle
 of the fill.

136

=8136

Beach 2 miles south of
 Jacksonville Beach (Coco Marina etc.)

90.9 All along the part of the beach
 the maximum concentration of heavier
 is at the top of the beach
 just at the foot of the dunes,
 which are machine

photo

no. 4 rolls 2. View north
 along foot of dunes.

no. 5 vertical section of
 sand at foot of dunes, height
 about 1 foot.

on top a very thin layer
 of sand not by depth - 1 to 2 inches
 then 2 to 3 inches of
 heavy concentrated, nearly pure
 alternating thin layers of shells

minerals with somewhat thicker
layers of quartz.

8034 Spec. of upper thickest layer of
boabies - as pure as possible

8035 Spec. of whole upper 15 inches
including everything

Picture no. 2 roll 2

4 miles S. Jacksonville Gulf Valley
Back side of mine showing
heavy concretion on surface

Buckman and Pritchard Inc.
Wet mill running two or three

150 h.p. engine

Dim bags

from dry by conveyor to dust
fine cloth

magnet.

double bag magnet
with all things

1st mag. 5 amper
2nd " 25 amper
magnet. 5 amper
magnet. 25 amper
magnet. 5 amper
magnet. 25 amper

tools from last
all types of electrostatic
machines - mostly rubber and zinc
Huff patent electrostatic machine
rubber rollers

6 electrostatic separator
3 batteries 1000

zinc is shipped probably
6000

Minerals concentrated, fourth
year spec. weighed down by
last table. Classified.

Separates into monazite-green
open gypsum.

Separates at head of table
immediately.

rutile mill further separation
electrostatic

This separates the rutile from
most of the zircon.

Then further separation of zirconite
by shaking magnets.

Final washing of rutile

on Deister Concentrator No. 2.

It takes out a little zircon
and monazite things up
to shipping grade about

92% or more to 100.

Then drop in stove

Zircon from second electrostatic
separation first on magnet which
takes out mostly monazite.
This zircon is not pure enough
to ship and has to be put back
through mill.

Loaded into tank cars zircon
concentrate.

Rutile in bags.

2 carloads concentrate monazite.

Pictures

View of mill.

Tailings heap and wet mill. This is the
tailings from the original wet
concentration of beach sand.

Tailings of heavy wetted containing
rutile, zirconite etc.

4 Beach 1/2 mile S Mineral City.

5 Shell above quartz sand 5 or 6 miles
S of Mineral City.

6 Heavy concentrate - the strip along
the side of a little high tide
lagoon with connection with sea on
north end.

Owned by National Lead Company
Buchanan and Bitchard, Inc.
Mineral City, Florida.

They are now operating on the
tailings pile which, according to
reports there, was no demand for rutile.

At present the value of the tailings have
too large stocks on hand and
do not return the beach sand. The tailings
are for zirconite mining so most of
that is removed.

From the old tailings pile the
good goes to the mill where it is
put into the balls from an overhead
trough.

Trough
to the mill

to the mill

to the mill

17 Deister concentration table
independent of each other and to one
in fed from the overhead trough down

X Differences in treatment when
board land is used instead of tailings

Voltage on electrostatic separator
out of gear or left after first separation

occurrence of shakable sand

output

percent of different minerals in
sand and fines

In tailings, long feed

and in tailings mill product
for wet mill

Specimen of mill feed

small tailing

kind of water used

How many separators in second
electrostatic treatment

While the sandwater flows by gravity the last of the 18th table which therefore has the feed from the lower end of the trough is a Deister Photo-norming table which does a more delicate separation than the other tables. This last mill is run only long enough to supply the rest of the mill with rough concentrate.

From the lower end of the trough the heads or concentrates are picked off by a conveyor (made)

consisting of little blocks of wood on a chain which pass by and are dumped into a bin.

This can be made to discharge directly into another conveyor of the same type which takes the concentrates to the dryer but since the wet mill has a more space a collecting queue than the rest of the plant the head is usually picked to one side by a screw conveyor into a storage

heap and then loaded by hand on the conveyor to the dryer (the rest of the concentrates by direct gravity).

Rotary cylindrical drier or a shaking machine.

Small conveyor at end of drier takes up flakes of dust the whole lot got in.

What is used for draft?

Upon the drums the sand goes through magnetic concentrators. These tables are used on a rotary magnet with flutes to sand off the belt and is then passed off. The other under the wheel table where the magnets & alternates concentrate sand right on a travelling belt.

The first

The first material taken out by the magnets for example of marketable grade contains a little monazite etc. They then through magnets take out still more monazite and most of the staurolite and monazite etc. which is further separated into clinacite and "green spar" (see above).

The tailings from the magnets are mostly rutile and zircon.

more details about electrostatic separation.

The first electrostatic treatment involves two successive separations. The zircon concentrates from this is marketable and is prepared (not here) further by the water bath process in which the rutile is dissolved.

The rutile still contains zircon and clinacite. It goes to the next mill which is nearly operated for clinacite.

The next step is taking out the remaining clinacite by another series of magnets. The clinacite is some monazite but is nearly all clinacite.

The tailings from this last magnetic separation go through another series of magnets and electrostatic separators (shown on page 30).

The zircon concentrates from this are not sufficiently pure to go to the next mill, so they go through a washing process, a Disth concentrate No. 4. Tailings from this go to the next mill which is a large monazite mill. It is getting out to be a piece of the rutile. The marketable grade is getting in preparation of rutile is drying.

446



Ilmenite	55	Concentrate from beach sand
Zircon	20	
Rutile	6	
Monazite	14	
	2	
	97	
Quartz	3	

About 20% mineral in sand
4% loss based on whole
About 16% recovered

Loss of rutile by going into zircon
Small loss on wet table in separating
monazite from ilmenite after
second magnetic concentration.
Monazite not marketed x

The ilmenite - green spar mixture -
killed out by the strong magnet
is washed to separate it further
into the two fractions.

This done wet by a
Deister Concentrator No. 4

(Deister Concentrator Co.)

At Wayne Indiana
giving a marketable ilmenite
and a green spar.

This is not treated with sodium
but only as sufficient material
accumulates

Butter

most of ^{the} ~~the~~ goes into
 Tlaxcala Paint.
 Smaller paint - Polystyrene
 plate glass Co.

Rutile - General Electric Co.
 Rutile light carbon.
 Titanium alloy - titanium
 gamma phase.

Richard Jones.
 24 to 30 inches thick
 and 25 to 35 ft wide mostly
 pure. 60 of material.

Mooring area - 20 ft.
 Digging and best part of dunes
 as shells are concentrated near a
 beach.

Wet tables on beach to
 thin water from plant to save
 having sand.

Strip 9 to 10 miles wide
 and 100 to 200 years.

Concentration takes place
 during storms.

Beach builds up when
 water is quiet and moving.

sample
 in
 small
 bags
 8037

3.1 miles S. of Mineral City.
 Sample of beach sand from
 upper 4 inches on top of beach
 ridge about 140 ft out in
 front of dunes and 1 1/2 ft above
 the highest tide reached this day.
 This has less shell in it than most
 other parts of the beach.

The amount of shell on the beach
 is increasing as we go south from
 Mineral City.

8038

Another sample from same locality
 of dune sand from bank on
 one of dunes grown over with
 Palmettos, which has been cut into
 by the waves.

Coming south from Mineral City
 the richness as well as the extent
 of the concentrations seems to
 become less but all the
 way to St Augustine dark streaks
 of heavier are easily seen and
 the greatest concentrations still
 appear to be at the back of
 of beach. As St Augustine
 inlet is approached the light
 of the finer sand in back of
 the beach become less until
 it finally lays at entirely
 leaving a beach of white
 width of the peninsula.
 Some of the best concentrations
 are along the Pablo beach where
 it is used for bathing and swimming.

operations are not allowed

August 21, 1927
 St. Augustine Enterprises Inc.
 161 St. George St.
 Coquina and Building Sand.

Coquina

On Anastasia Island, about
 2 miles south of Anastasia
 Post Office rather extensive excavations
 for Coquina have been made along
 the highway, mostly on the west side.
 It is the unconsolidated shell which
 is sought for. The greater part of
 the deposit is either entirely
 unconsolidated or so loosely coherent
 that it easily falls apart. Some
 hard portions are left in the quarry.

Excavations usually about 5 to
 7 ft. Dig by hand and hauled in
 trucks to St. Augustine.
 Also some used on the spot
 in concrete blocks of various shapes
 and sizes.

137

owner Kenne th McCloud
 Sample of Coquina from this
 locality in two bags
 larger one for Hall and smaller
 one for survey collections

The sand which this sample contains
 occurs mostly in the layers between the

Amastasia Island

South Beach,
Artesian Well.

One block west and one block south of where the main highway reached the beach there is a flowing well where the water is running out of a pipe about 2 feet above the level of the ground.

The water tastes strongly of ^{hydrogen sulphide} sulphure and is depositing a white coating of powdery sulphur where it runs out.

Titanium Minerals

Near the light house on the north end of the island the beach is narrow because of the Coquina coming out to sea near the water. Concentrations heavier therefore scarce. Rather more at South Beach or St. Augustine Beach which is wider and without the Coquina.

33
Aug 22 1927

Kenneth McClond Anastasia Island

J. E. Reyes North City State
Island - has quarry on
office - San Marcos Ave.

C. N. Calhoun Jefferson Taylor Bldg.
Sd

Coquina.

In St. Augustine coquina has
been widely used as concrete
aggregate.

Sidewalks - fenceposts -
building blocks walls for fences,
walls of buildings, steps, stucco
furnish etc.

Coquina has also been used in
deteriorated road surfaces.

Anastasia Island, near light house

7 spec. of coquina rock collected
from along the shore not labelled

34
Mr. Kenneth McClond

Sand shell goes down 18 ft below
bottom of pit. 1-2-4 mixture

At many places in the bottom of the
quarry at hard layer of consolidated
coquina is struck at about water
level. Mr. McClond says that below
this there is good coquina to additional
depth of 18 feet.

138
= 8/38

Sand Mr. Kenneth McClond owner.
about 2 miles South of Anastasia
post office. The same locality as the
coquina pits. On the west side
of the area excavated the coquina
thins out and below about 3 to 5 feet
of it there is a fine sand which
is dug and used for plaster, mortar
and concrete. Contains a very few shells
and some parts fragments of roots.

Sample represents about 2 1/2 foot
depth of bank.

2 hand spec. of consolidated coquina
from the same locality.

Mr. McClond says the sand and
shell are used in making a 1-2-4
concrete mixture by volume and give
very satisfactory results.

He also reports finding in places
a layer of black sand (ilmenite)
with maximum thickness of 2 feet.
I could only find some very small
streaks of concentrate.

35

6. (Oyster shell mound on highway
about 3 miles S. of Matanzas
River Bridge at S. end of Anastasia
Island)

10.0 (Two pictures of Coquina along
shore 4 miles S. of Matanzas
River Toll Bridge)

14.4 8 miles S. of Matanzas Inlet
A long narrow quarry in
Coquina worked down to a little
below water level. Work appears to have
been discontinued very recently.
Crusher Perhaps this is merely
a canal excavation where a small
amount of the material from the
spoil banks has been used. It looks
very like this from the size of
the banks relative to the size of
hole.

11 miles S. of Matanzas Inlet
concrete blocks being made out
of coquina and local sand.

Flagler Beach -

Local sand and unconsolidated
coquina used to some extent
in concrete, stucco etc.

Coguma Rock Quarries.

mt Ararat sand and supply
Co. Builders Exchange
326 S. Beach St
Mr. Wm. Wamaza. Hooklat
Dredging at Hooklat.

Halifax Rock Co Nat. Gardens.
Volusia Rock Quarry Nat.

J. F. Smith
Lindhurst Hotel 2nd Ave.

O. G. Posey - 116 Fairview Ave
Geo. Moody - Flagler Beach
Solent Bros Inc 309 Main Ave.
J. F.

Daytona Highlands - dredged sea.

Dr. C. W. Fain, dentist over Halifax Dry Store

Out Deland Road, mygr. quarrying
on each side road on east side of
mygr. quarrying - 3/4 mile.

5 blocks down to standard oil filling
station.

Ormond - Dixie Highway
First Road to left after
crossing bridge at sunset
past. Then first quarrying
right.

National Gardens

Mr. J. M. Clark

Volusia ^{Coguma} Rock Quarry.

8 to 10 cars - day.

J. F. Smith (he thinks about 100,000 tons
out but in 1926. transfer of
management to J. F. Smith and Co. Bookkeeper)
Concrete - around main
sea walls. jetty rock.

100 tons per

Coguma.
Volusia Rock Company
56,000 yards. 1926 production.
\$120,000 gross selling price.
used largely (50%) for
jetty work.
50% public roads.

Please send copy of 1925 report
to Volusia Rock Company.
Send copy of map also when
published.

This material has just been
developed recently as good material
for salt water jetty work.

large blocks up to 5 tons.
Fort Pierce - North Jetty

64,2 quarry
at Sunset park

This coguma at National
Gardens is being mined by
the Halifax Rock Co. (F. F. Smith)
and the Volusia Coguma Rock Co.
(John M. Clark) is much
harder and more cemented than
the majority of the Anastasia
Island coguma.

There are pot holes in this
coguma like those on the present
sea coast. I think of the same
origin. The coguma is rather
yellow, not white like the loose
coguma on Anastasia Island.

Spec One large specimen of Coguma
from each of the quarries
at National Gardens.

Flagler County

At Flagler beach and at
other localities on or near the
east coast in Flagler County
ordinary fine local sand and
shell of the coguma sort
is used for building purposes -
concrete for stucco etc.

No special locality or
producers investigated.

Daytona Heights

The highest part of Daytona Heights is at the back side and is distinct north-south ridge - probably the dunes in back of the old beach.

To the west of the ridge is a low swampy area through which a dredge is digging a canal or drainage ditch and using the excavated material to fill in the low places. Beneath a thin covering of muck there is fine white sand with numerous shell fragments.

Top hill on block left to Catholic Church. Sandy with much barometer Ave. Mt.

At the Catholic Church which is under construction in Daytona local sand similar to that from O.G. Posey is used for bricklaying mortar.

Daytona Beach - August 23,

2 miles S. of the foot of main St

8040

8041

① Sample from back side of beach near foot of dunes. - to 6 inch depth

② Sample from 120 feet in front of back of dunes to 4 inch depth. This is just above ordinary high tide level and from the top of a very indistinct beach ridge.

Mr. Posey

Sand \$ 3.00 per yard.

Mr. Alarot

O.G. Posey sand pits Daytona.

3 miles S by road northwest of central part of town (intersection of Main St. or Jacksonville Ave) and Beach St. On top of Mt. Alarot (the sandy ridge which forms the highest part of Daytona Heights) and from which other parties obtain sand farther to the south.

The main sand pit is on top of the ridge. East of this is a shell pit in which the sand is covered to depth of 3 to 5 feet by sand mostly brown to orange, some white at the top. Still farther to the east and a little way down the east slope of the ridge a new sand pit is being opened. Very small so far. The roots are screened out by hand and then it is shoveled by hand into barrels so all has to be handled twice. Looks like

a very fine sand but still not so fine as most of that seen elsewhere in this region.

Mr. Posey says this sand and the shell which is also gets out here is as good as if not better than any of the coarse sand which is shipped in. It is rather sore at the engineers and architects who are specifying sand from elsewhere.

Worked only to depth of 1 1/2 to 3 feet when yellow sand or sometimes coquina is encountered. This small depth makes it very impossible to work although the areal extent is large.

139

=8139

Sample from O.G. Posey pit. 3 miles N.W. of Daytona.

2 miles from Daytona on the Deland road, the same ridge mentioned as occurring at Daytona Heights is crossed. There is a cemetery on each side of the road. Near here sand has been dug to depth of probably 10 feet to use in fill. The thin layer (1 foot or so) of which is better than yellow sand. Dr. Frank has had some sand dug near here for building purposes.

About a mile out of Daytona on the same Deland road is a small coquina quarry but apparently nothing about there now. (other side)

Between Daytona and
New Smyrna are many shell
mounds of Indian origin. Picked
up some pieces of pottery from
one just north of Rose Bay
crossing.

They contain a large
proportion of both clam and oyster
shells. Have been used some
in road construction for fill
and protection of earth fill as
well as surfacing.

Filamings water Co New Smyrna

Could not see Mr Fawcett
nor get any information about
total production but man at
office says about 225 gal.
per day are used locally

↑ Aug 23
see above

43

Lake Helen

Bond Sandstone Brick Co.

Ocala lime - 2 cars per week full capacity
or about 60 tons.

Although they use 2 cars of lime
per week when running full capacity
that is no measure of the amount
of either sand or lime used in
a year since they have been
shut down most of the time lately.

140
= 7140

Sand used by Bond Sandstone
Brick Co. in sand lime brick.
This is immediately adjacent to
the plant and the railroad. This
is a light yellow sand, fine
textured, small amount of clay.
Some charcoal in upper part.
No overburden except top soil and
no great care is used in removing
this. More of a grey color
at the top. Thickness as worked
4 to 7 or 8 ft. Below a hard
clayed sand which has been left
in digging sand for sand lime
bricks.

141
= 7141

Molding sand

Clayey sand below sample
no. 140. Represents 2 1/2 foot
bank. This has been dug
to small extent for tennis
courts and for improvement of
local sand roads. but not
used for molding sand.

Aug 23

44

Irregularly mottled with gray and
yellow and bond not very uniform
but no lumps or concretions and
differences small enough so that
sand would become well mixed in
handling. The overburden
of loose sand has been practically
all removed over an area of
perhaps 5 acres but for clean
working scraping off a layer of
probably 6 inches would be
necessary.

New Smyrna.

Some fine sand of local origin
is used here just about like that from
the Posey pit in Daytona. Sand and
gravel for more important concrete
work shipped in.

Along the road from New Smyrna
to De Land the land is practically
all swamp to within 5 miles of
De Land - only a few ridges of
fine white sand reach a few
feet above the general level of the
country.

Within 5 miles of De Land
the country rises considerably so that
so of it is well drained.

Aug 23.

45

Between Lake Helen and
Orange City on unpaved road
probably passing to the
south of the paved road
are some road material pits
which show material similar
to molding sand sample no. 141
under a small cover of loose sand.

Between Orange City and the
St. John River Bridge on
road to Sanford much of the
land is gently rolling and
white sand shows frequently
along the road side. Always
rather fine. In places
yellow sand with slight clay
bond in sight below it.

Aug 24
Altamont Springs
Frank Hyres and Sons

46

142
=7142

sand 12 ft deep - chocolate hard pan below

Sand Frank Hyres and Sons

owner and operator
S.E. corner of corporate limits
of Altamont Springs. Bank Sample

This sand represents a considerable area of white sand scrub which is partly within the limits of Altamont Springs and extends for some distance to the south.

Over burden - none except thin layer of top soil.
thickness 12 ft with chocolate hardpan below on account of water it is sometimes not dug more than four feet deep. Probably about 10 feet in dry times.
Texture moderately fine and fairly uniform, white except for roots and other organic matter which make it dirty. The more so near the top.

Used for concrete block and roofing tile.

They have shipped some, but not in recent years.

M. J. Moss.

clay - Lake Co.
Coheman Grove - Mont Verde
Development Co.

4 to 40 ft thickness
10 to 15 feet depth

East of Little Lake Home
short distance out of Ash + atula

X North on Orange Ave turn left on
Princeton - Dodge Ave - two miles
Princeton - short to left to
end of street (end of block 1 1/2 miles)

X Orlanada - Florida Homes
on Coast St - Church St.

X Mr. King - O.B. and T.
Orange Ave ten story.

5 miles out Winter Garden Road
fast sand deposit on opposite side
of street from Lake Susan
and club house

Central Ave. - Signal tower
west
out to end. Then S turn
straight on truck

47

Orlanada - Blue Stucco house
orange in yellow house
next to brown house.

Depuey

on town of Orlanada
Florida Homes Development Co.
Inc.

andrew

Orlando Pottery

clay used mostly from Tennessee.
None from Florida.

Very sticky red clay to be tested
sent in from Tallahassee addressed
to Col. Franklin A. King.

Fowemay says clay from Milton
could be used for either brick or
tiles.

48

Kingsley }
Jones }Manager leases
land

D. L. Dewey.

113 max block

Orlovista

Probably same
as one of middens

143

White, scrub sand.

in town of Orlo Vista - west
of Orlando

= 7143

owners Kingsley and Jones.

Leased and operated by D. L. Dewey
Orlo Vista.Sand is exposed to depth of 12 feet
sand to have been proven to depth of
20 ft. in all. Dug over two boxesor so. Used in practically all
building in Orlo Vista. Plastering,
bricklaying, concrete block and
other concrete work. Some used in
Orlando.Over burden removed 1. or 2 feet
of sandy soil with organic matter
topper part of bank has to be
screened to get out roots. Lower
part used for plastering, no screening
necessary. There is no real
difference between the parts of the
bank, except for roots.Contains enough dark heavy minerals
so that they are plainly visible especially
where washing and sliding of the
sand down the bank has resulted in
their concentration in streaks.A four inch well 150 ft deep
has been drilled to drain the lower
part of the pit, the water stands in itabout 15 ft below the original ground
surface.He sells sand at \$.50 per cu. yd.
at the pit - "shipped" sand about
\$.3.75 per ton delivered.At a lower elevation than the sand
pit and a little nearer to Orlandothere is a sand-clay pit on the
north side of the road in the
western part of Orlo Vista. About
8 foot thickness in sight - said to
have been dug considerably deeper and
exposed a coarser sand below it.The sand in the sand clay is very
fine - probably much of it really of
silt size - gray color. Has been used
in Orlo Vista for claying roads but does
not appear to be very good.Mr. Dewey talks of a sandy clay pit
at Gotha where a "red" material
is obtained in considerable quantity.
Said to be 10 or 12 feet thick.
was not visited.

32.3

39.0

Aug 24

Out from Orlando on Cheney
Highway to EastAs far as Batho much of the land
is moderately well drained and there
are some patches of scrub show white
sand in cuts. This soil fine.From Batho west mostly poorly
drained flat woods with small swamps
until within a mile or so (perhaps more)
of the St. Johns River.This broad stretch of grassy
prairie without trees except scattered
clumps of palmettos and very rare
pines.

77.0 to

77.8

going up onto a low ridge (3 mi W. of
Orlando) show fine white sand and at
77.8 2 miles W. of Indian River. Well
consolidated coping to depths of
three feet in places. The common
stones in the surface. Elsewhere
covered by sand.

79.0

Going up hill slowly since last note.
Highest part of the ridge is about here.
Medium fine sand.
Much yellow - some white.

80.1

S.R.R. crossing at Indian River Village.
For about the last mile going S.E.
keeping somewhat near the maximum
elevation along sand ridge. Both
white and yellow sand.

90.5

96.5

Coppens
Principal street intersection a cut 17' (Coca)

From Indian River City to Cocoa there is a practically continuous low ridge, distinctly above the general level. The top of it is from a few hundred feet to about $\frac{1}{2}$ mile back from Indian River.

Most of the cuts into the ridge show sand. This is white on the surface except for very short distances where it is yellow. In many places the white sand is only 1 to 2 feet thick with yellow sand with rather weak band below it. In places more of the white sand is shown - perhaps 6 or 7 feet.

Cogvina outcrops (in cut) on roadside 6 miles N. of Cocoa.

At Cocoa much of the sand used is obtained locally and no doubt is similar to that to the north and south.

August 25

(see above)

Within the city limits of Eau Gallie but about $1\frac{1}{2}$ miles north of where the village really is, examined heavy sand concentrates along the west shore of Indian River.

The beach is narrow - 20 to 30 ft down to practically nothing. Frequently outcrops of cogvina at or near water edge frequently forming a distinct bank.

Heavy concentrate often almost pure for depth of 2 or 3 inches and width of 6 or 8 ft.

As usual alternating layers of heavy mineral with coarser white sand between. At the present instant concentration at water's edge by gentle ripples can be plainly seen. In the shallow water near shore there are also heavy concentrates on top of the sand. Ripples marks show more heaves on crests than in troughs.

Specimens

8042 ① Large bag - nearly pure heavier than those from beach on surface.

8043 ② White quartz with very little heavier.

8044 ③ Sand rich in garnet at water's edge.

8045 ④ Sand rich in ilmenite - top of small beach ridge.

22.4

Eau Gallie

37.1

Heavy concentrates & beach

Heavy concentrates were noticed again along the shore 13.8 miles S. of Eau Gallie but not investigated in detail.

Roll 4 pictures 5 and 6 are of heavy concentrates referred to on preceding page. Tide is probably coming in but exact amount water is below high tide is not known.

Roll 5 Pictures 1 and 2 show rounded masses of "worm rock" growing on cogvina.

purest limestone
water edge
marked with distinct
showing of fossil
supplemark

Eau Gallie Beach, 56

Palmetto Scrub. South bank about 7 feet.
Blocks of *Coquina* known at low water.
Water.
Coquina.

At Eau Gallie the bottom slopes off much more steeply than at Daytona Beach and the beach is narrower (120 feet at 10:15 A.M., Aug 25.)

There is no beach ridge. At the back side of the beach there is a bank 6 to 8 ft high and west of that palmetto scrub.

At and just below water level ledges of *coquina* can be plainly seen. These have rounded bulges or growths on them apparently formed by some wormlike animal making tubes out of particles of shell.

8046 Sample of sand from the upper side of beach - Contains many shell fragments.

Coquina - with recrystallized calcite.

Worm rock - formed as rounded masses on *coquina* -

Aug 25, 1927 57 Vero Beach - Gifford.

Redstone Lumber Co. - Gifford - 1 1/2 miles north of Vero Beach.
Bartlett Lumber Co. - owner of the sand pile.
Morgan - Robertson - store east of packing house.

Kersey - owner of another one just west of packing house.

On W side of Acme Fruit Co. Packing House at Gifford.
It is a white sand and 5 ft.

How much of this is made of shell?

144 White scrub sand - Gifford 8144 about 1 1/2 miles N. of Vero Beach.

At Gifford on the West side of the Acme Fruit Company's Packing house there are a number of small pits in this white scrub sand. All working by hand and hauling mainly to Vero Beach. Principal owners are Redstone Lumber Co. a white man named Kersey (Vero Beach, he keeps filling station).

Vero Beach, Aug 25, 1927 58

and a nigger named Robertson (Keeps store at Gifford).
Cannot say exactly which of them owns the spot where the sample was taken - but probably Kersey's. It being worked to 5 ft depth not counting small soil overburden. In some places nearly yellow sand comes near the surface. Only a few hundred feet wide at best and sweet but defect is rather long north and south.
The sand is being used in a fair sized job of asphalt paving in N.E. part of Vero Beach, as well as for plaster etc. stores (see additional note above).

Fort Pierce

A fine white sand obtained locally is used together with a shopped aggregate consisting of a coarse sand of fine gravel being the base material for concrete.

Every and fragment of everything in concrete.

A short distance west of the Dixie Highway through St. Lucie and Fort Pierce (the only highway goes along it for miles in this northward part of Fort Pierce) is a sand ridge which is the highest land in the part of the county covered by white sand. Just a few miles from Vero Beach, it is one of the most beautiful places in the state for a beach.

About a mile north of
Oslo small pit where white
scrub sand has been dug. Not
worked at present.

Drainage ditches show depth
of white sand in many places.

Areas of St. Lucie sand on
soil map are most likely to
furnish clean sand for
building purposes.

Yellow sand examined only
in few places but seems to have
much too little bond for
molding sand.

Ernest
Bennett

Roll 5
next no. 145. Aug 26 59
Fort Pierce

145 Sand (white)
=8145 Adjacent to the plant of
Evan and Brunen
"Everything in concrete"
North Seventh Street
Fort Pierce.

This is from a little to the west
of the sand ridge previously
referred to, which runs north
and south through Fort Pierce.
6 ft thickness is exposed and
sand is said to have been dug
to depth of 9 feet to water.
Sand is not turning to the bottom
of the white sand. In many
places a fine region without
sand is found at a much less
depth. So far as can be learned,
there is no better sand anywhere
around here, although there is much
more that is similar.

Used in making portland cement
mortar, brick, etc. Various
sizes and shapes of tile and building
block. In most of them they use
of coarse sand and fine gravel from
Chattahoochee.

This sand is used in making
concrete, mortar, etc. and is
said to be of good quality and suitable
for all purposes.

Heading 20 ft through white sand in
ditch.

Roll 5 picture no. 3

Aug 26 60

South from Ft. Pierce to
Jensen on road following closely
along west side of Indian
River. Where the actual shore
was seen there is no sand beach
since vegetation extends all the way
down into the water. To the
west the sand ridge could be
seen occasionally. The road
crosses it between Jensen and
Stuart. There are some small
pits in white sand (St. Lucie Sand)
about like that at Ft. Pierce.

Beach dunes are mostly
low, S. of Jensen, they are
this has the steepest slope
of any sand beach that I have
seen in Florida. There
are pits of shell fragments
in sand. No heavy concretions
could be found.
Beach dunes are distant
and spaced about 80 to 100 feet.
Spots of sand from beach at
about high tide level.

8047

435 Roll 5 no. 4

Photo of hard coquina outcrop
on shore.

1 1/2 mi S. of Jensen turned east to beach
(Olympia Beach). Then as far as
Jupiter on road close to shore.
From Jupiter to Kelsey City mostly
flat woods.

Kelsey Aug 26 61

Palm Beach Brick and Supply Co.
has gone out of business about two
years ago.

Another cement block plant, west
to it has also ceased operation.

The clay products company
is not doing anything at present.
No one at office or plant.

146 Kelscite Stone Products Company
=8146 At Kelsey City

They also are not operating at present.
They made all sorts of ornamental
concrete, building tile, roofing tile.

Used @ Jrs Rock Screening mostly
but local sand to some extent.

146 The sample is of white sand
the first four feet below the
top soil which was not included.
Taken from small pit along side
of the Kelscite Stone Products
Company's plant at Kelsey City.

Some places nearby cuts show
depth of 6 ft. of similar white
sand. Exposed in drainage ditches
for probably half mile.

Some places white sand is only
a foot or two thick and yellow sand
shows below it. In other places where
it is thicker the drainage ditches
seem to have cut into it and gone
below.

Aug 26 . 62

This white sand has an extent of several hundred acres in the vicinity of Kelsey City.

Used for some of the lighter concrete work such as concrete "bricks". Probably also for other purposes.

Small spec bag 203
yellow sand (3 ft bank)
below 1 foot of white sand

Along the railroad between Kelsey City and Rivera there is white sand scrub all the way.

Rivera

Outer beach sand is light yellow with large proportion of shell mostly broken up. Sand which has been used extensively for fill is gray (very light) has also some shell about more than the outer beach.

Beach ridges well developed. (Landside low cut in way back behind it). Beach cusps frequent but not very regular in spacing.

Aug 26,

Port of Palm Beach. 63

Large amount of sand has been dredged out in improving the harbor. In places this is at least 10 feet thick and covers an area of

35 ft long with clear shell lumps and boulders in places. Some small pieces of shell are also seen. White Sand Co. but looks standard.

Apparently not being used as a beach. Some of the fresh sand shell and a few pieces of the old.

147
=8147

Port of Palm Beach.

Small amount of fine sand in upper part of beach. Duo Sand and Rock Co. is hauling the sand. It is being used for asphalt mixed with local sand (thinner).

and Tamarind
Duo Sand Co. 15th St. 9511

(Atlantic Sand Co. 409 1st St.
put out on Parker St. 4th)

Naranja Rock Co. Citrus Bldg.
1 block each

Mark Ojeda Rock Co. - Ojus, Fla.
321 1/2 S. Tamarind

13th St.

Aug 26. 64

Duo Sand and Rock Co.
75 ft yard at port.

concrete
plant - bricklaying.

Dug with cranes.
At about 12 ft depth hits black soil.

148
=8148
Copy of test by H. C. Nutting Co.
Cummatta Ohio - Tampa Fla.
white concrete sand.
Sieve analysis.

Passing 100 mesh sieve	3.1%
" 50	29.1
20	67.2
10	80.3

100%
Columbian test satisfactory

Elutriation test 0.6 ft.

Texas Corp with 80 mesh
Ojeda Sand 1.3 mesh

Duo sand 7 day	Ojeda
255	255
275	255
265	270
265	260
370	345
360	350
350	345
360	348

Strength Ratio
7 day 100% 28 day 103.4

Aug 27 65

148

This sand has been used in most of the street paving in the city. Used in nearly all building in the city.
Working pit here since June 1925

148

White sand - from pit adjacent to office 15 st ad Parker Ave. on west side of a long sand ridge. On east side the S. P. C. & R. Road. Large amount of sand which has been used for fill. Mr. Parker says the yellow sand is exactly as good as the white but is not used on account of color.

bank sample - about 6 ft high

Atlantic Sand Co.
(Captain Forbes Manager)

West Palm Beach

66

City has sand pit

Atlantic Sand Company, Pit.
Southern Parker Ave. Below
Bunker Road - West

Used in building
concrete etc.

on N. side of 15th St. west of the Florida East Coast Railway
Freight depot the railway has dug a large amount of sand on its own property. Operations now discontinued. On the east side of the ridge already referred to is being worked by the Dig Sand Co.

Here in the R.R. pit (really a bank) there is four or five feet of the white sand on top with 6 or 7 feet of yellow sand below. Some loose blocks of coquina up to 2 ft or so in diameter dug out of yellow sand.

Said to have been used mostly for fill but there was screen there so some may have been used for other purposes. Later learned from Capt. Forbes that he dug out a large part of this sand to level the land for the railroad. Used for concrete etc - see next page.

offices in

67

Nanaya Rock Co.

329,759 tons shipped
\$429,234 gross value.

(The Ojus Rock Company
did nothing at all in 1926
Saw Mr. Greyhound in office at
West Palm Beach.

Bunker
3 ft

Horace Powell of 506 Hiberna St.
is managing some sand pits at
Parker Ave and Southern Boulevard.

This white sand is used for
building purposes, plaster, concrete etc.

White sand - about 25 yards a day.

Overburden of top soil removed.

Thickness of white sand varies from
2 or 3 feet up to at least 6 ft
which was the deepest bank seen there.

Some old excavations up to 12 feet
deep are mostly in yellow sand with
2 or 3 feet white on top. The yellow
is used for fill and grading.

Very little has been used in concrete.
Belvedere - B.S.

Atlantic Sands Co. Capt Forbes.

Concrete
Asphalt.
Plaster
Cement block.

Pt at Corner of Hunt and Park Ave

Yellow sand near T.E.C. R.R.
freight station was used in concrete
pavements. Discontinued for street
pavements. Still used for sidewalks,
concrete blocks etc.

Vineyard

North of Lake Wales.
Mrs. Patterson.

Ft. Lauderdale - Fair grounds.

Lot of coarse sand near Deerfield - Lake
Duo and Atlantic Sand Co.

This ridge plays out about Deerfield.
Capt. Forbes.

Capt Forbes is trying to get
contract for supplying sand for
Cuba national highway
from Vineyard
3,000,000 cu yds.

Palm Beach 13.0

7 miles S. of Palm Beach.
as at Palm Beach the beach is
narrow and steeply sloping.
Contains large proportion of shell
fragments. A little below water level
are ledges of Coquina with rounded
masses of the "worm rock" on them.

Knuth and Miller - Boynton
not in sand business any longer

Must Fort Lauderdale

Westwood Heights 4th st
toward golf links
puts on left.

~~Lanark~~ Boulevard to beach.

Aug 29, 1927

At Ft. Lauderdale about the last
white "scrub sand" was seen.
This of the St. Lucie series is
classified in the soil survey work
and is the St. Lucie fine sand.
Even the people who are interested
in landscaping admit that it is not
very good, and requires a large
amount of cement. At Fort Lauderdale
some said dredged out of the harbor
has also been used (Coquina mixed
with shell). Also some beach
sand. This is considered to be the
best in the vicinity but has to be
taken from a very long beach of the
beach rather than from the
beach itself.
None of the St. Lucie sand around
Ft. Lauderdale is high enough to
form a really distinct ridge.

About the last outcrop of the
St. Lucie sand for miles on the other
shore were said to have been found.
Some of the sand there is better than any
found that I have seen at Palm
Beach. From there to Ft.
Lauderdale these sands become
less conspicuous until they play
out entirely.

Aug 29, 1927

71

(Meteor Transportation and Trading Co.)
They did not really get started
producing until this year.
Plaster sand only one produced.
This is used also in concrete to some
extent.

Formerly produced a coarser
sand which contained many shells
and limestone fragments among the
coarser material.
Dredging along causeway.

(S. E. Shilling - gray sand -
main office northeast sixth st.
between 1st and second Ave.
just at Miami Ave and River -

Dredge. put on causeway by hurricane

Limestone in small pieces also
comes up in dredge and is one of
the main things produced.

Proportion of limestone and sand -

The limestone is largely oolitic
but has also many fossiliferous and
coarsely crystalline masses of calcite.
Sand tends to stick to the stone
which has a very rough surface and
many cavities.

Effect of salt - 0.009%

The amount of salt
is claimed to be very small and
its effects not injurious.

Material is screened -

Dorr Washer

Three principal grades produced.
They are designated as

149 ① Pebbles - this contains considerable
sand, 1/16 to 1/8 sand
Meteor Trans and Trading Co.

150 ② Rock - the main grade of rock
produced now is a well graded
material with fragments from
1 inch down to very small size.
Meteor

151 ③ Sand - Plaster sand - coarser
fragments are shell and limestone.
Meteor

= 8151

They used to produce a rock
that was nearly all coarse - around
1 or 2 inches.

Dredge (ladder type) is operating
along channel south of causeway of
Miami Beach two features of it

72

Seminole Plant

"Seminole Plant and Land Co."
City National Bank Bldg
Seminole Plant - on block
west of 2

(Shilling yard

- 1) Meteor - salt water
- 2) Gray - dull
- 3) Lake Water
- 4) Semiblack.

(S. E. Shilling Co. 125 N. E. 6th
dredge
Gray Sand - at edge of ocean
Plaster concrete
Bear Channel pass
Lighthouse road.

Some sand occurs in pockets
in the limestone - (I did not see this)
Seminole sand - is really
screening rather than sand.
Water on material dredged out of canals
which is mostly limestone
(Indiana Sand and Rock Co.)
#2 st are said to produce
some white sand

73

Results of sieve tests by one of
competent block manufacturers using
pebbles ~~as~~ as produced at present

By volume { $\frac{37}{72}$ by vol. on $\frac{1}{4}$ " screen.
 $\frac{28}{72}$ pass $\frac{1}{4}$ " and retained $\frac{1}{8}$ "
 $\frac{8}{72}$ passing $\frac{1}{8}$ " sand

All passes $\frac{5}{8}$ " screen.

At Lake Okechobee just west of
Palm Beach

152

Sample of Gray shell sand.
Dredged from the company
"Bear Pass" - Miami

152

Sample screenings - Seminole
Land Co. Export
Company of this is not known
but was said to be screenings
from the dredging of the
rock dredged out of some of
the canals

omit - This sample discarded.

Both of these taken from
D.C. Shilling's yard.

August 29

Visited pit of H. L. Loring Sand
Co. at Winkler St and
Palm Beach. From the southwestern
part of West Palm Beach.
Pit has been opened recently
and is very small. 5 to 6 ft. of
white sand with yellow sand
below. Looks like the sand
is 2 ft.

Just north of the river crossing
between Dade and Broward
counties, a small sand mound
about 100 ft. in diameter, 10 ft.
high. It is a very old mound.

10/5 Oak Bog

152

is taken from along a highway
cut or where it is being removed
in grading

18 ft. Beach sand, Okechobee
25 miles from Okechobee

Sample was cut of West Palm
Beach along the canal, after
the sand ridge in the city is
left. Behind the ridge is a
small sand ridge. The ridge of the
canal and small beach ridge
principally long and narrow
until the beginning of
Commons Highway. Beyond
the ridge is a small sand
ridge. The canal along
Commons Highway is very small
ridge, a flat down to water.
Both but some sand has
been taken out in the beach.

From the east side of
Lake Okechobee from Canal
Point there is a low ridge
about 2 ft. high. A few hundred
feet back from that lake
there is a small sand ridge and other
small ridges. The sand ridge
is up of fine sand like
that on the present day beach of
the lake. The beach sands
on the lake are very fine
and much of the way there
is no beach. The vegetation
extending down to the water's edge
is all small.

151

Aug 30

727

From Okechobee straight
west on highway to Childs
with no 4 miles East of Childs
The country is all flat with very
poor natural drainage. Top soil
loose fine sand and partly
mud or silt. There is sand
to be not sand around Okechobee
except the fine sand such as is
seen in ditches along the lake
shore and the fine loamy sand
soil.

Four miles East of Childs
the road comes up on the low
flat country into an area of higher
elevation with sandy soil
and first a rolling palmetto
scrub and then alternating scrub
and flatwoods. Some of the sand
is white and coarse enough to
be used for plaster etc.

Sand probably at least two or
three feet deep continues for
about miles or so south of Childs.
From there on the country is lower
than that. There is no more sand
between there and Childs but
top soil is sandy most of the
way and sand often shows in
ditches.

From Childs followed the
most direct road to La Belle
from La Belle some sand of
local origin it used. It is taken
out of the "sloughs" or ditches
or sandy areas more or less washed
naturally.

About a mile North of
Venus there is a mound of

77

the east side of the road which has an artificial appearance, it is about 8 feet high.

going out from Habelle toward Fort Myers rather fine white sand shows frequently in ditches etc. but deeper vents show limestone and small below it.

About 20 to 21 miles east of Fort Myers area of white sand scrub white seems a little higher than the surrounding country and may be a thicker deposit of sand.

On land of C. F. Opitz there is a mound about 1 1/2 ft high and 100 ft in diameter of white sand. Some sand has been dug out of it. This has an artificial appearance, probably of Indian origin but did not see any relics. Pipe, then approx. 150 years old has been cut recently from top of it.

78

Lofton Construction Co.
Collins Dock. Foot of Carson St.

City has been drilling some wells has also be road building
City manager, Mr. C. P. Staley
S. W. Richardson drills wells East of Fort Myers
Tel. 377 J - 733 J

1131 West 1st St. office 7 Mr. Richardson.

State Road Department has made boring at frequent intervals across river at Fort Myers.

Mr. Colquitt - mail for tooth paste.
Main street

Selected sand, said to be as good as Lake Wales sand.

Sand dredged out of river about 4 miles from Fort Myers.

Not very plentiful

Estimated at 200,000 yards

Used for concrete

Other very small beach deposits, more shelliness to beach.

Centrifugal pump.

Best sand said to be in Old Channel

At Arcadia (just west of town) I saw some small sand bars along river supposed to be of local origin some phosphate

The city of Fort Myers is planning to drill some wells for additional water supply.
City manager Mr. C. P. Staley

From Fort Myers to Punta Gorda there are flat woods and swamp all the way. In interior shows some of the ditches.

At Punta Gorda some fine sand has been dredged out of Peace Creek and used for fills. As far as known no sand around here likely to have any commercial possibilities.

From Punta Gorda to Arcadia it is probably all flatwoods. The flat woods probably into Arcadia is a little higher and better drained. In between is a large amount of organic material from the soil and layers rather fine in little possibility of sand deposits.

From Arcadia north to Zolfo Springs mainly flatwoods and very gently rolling land. Some under cultivation. In places the highest areas show fine white sand but not fine and too dirty to do anything with. After crossing Peace River between Zolfo Springs

and Wanchula the country become higher and more rolling. Roadside cuts show fine yellow sand. From Wanchula to Ft. Mead saw no sand except real fine along the road, mostly dirty also.

(Amalgamated Phosphate Co.)
Amalgamated Co.
Brewster

Sand is obtained in large quantities as a by-product in the mill treatment of the phosphate. The phosphate is in coarser particles than the quartz sand so the process of enrichment consists mainly in taking out some of the fines.

The lowest grade of phosphate rock marketable is 66% P₂O₅. The sand produced in the treatment of the phosphate all contains some phosphate the coarsest 63% with only 1% rather small proportion of quartz grains. They are selling 15¢ per ton for month of this for fertilizer factory in Tampa. Some of the fine for fertilizer filler. Some of the finer grades of sand if clean to around 15% phosphate are also used as fertilizer filler.

They claim that when this phosphatic sand is used in concrete it has no injurious effect.

Amalgamated Co. Brewster
For more sand is mined with the phosphate than there is any market for. Therefore about heaps of tailings have accumulated.

(Instead of sand going to waste mill it goes to hydraulic classifiers. Sand, washed only from phosphate matrix. None fine overburden.)

(Can not sell nearly all the sand taken out in mining so sand plant works only intermittently.)

35¢ per ton F.O.B. Plant
45¢ per ton consumer, average for 1/2¢
about excess capacity of plant.

Laboratory screen analysis of sand every car shipped.

- | | |
|-------------------------|---|
| ① Extra coarse concrete | } special sand produced for each of these uses. |
| ② ordinary concrete | |
| ③ Brick mortar | |
| ④ Plaster | |
| ⑤ Concrete block | |
| ⑥ Asphalt sand | |

"One way asphalt sand" produced at plant.

Amalgamated Co. Brewster

⑦ special sand for concrete sewer pipe (contains minus 100 mesh sand to fill up voids)

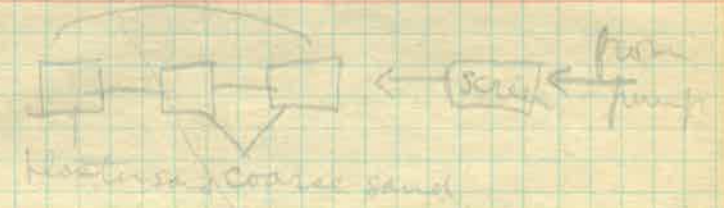
⑧ Gravel.
Special sands shipped to proper customers.
Plaster sand or plasterers etc.

Around Vanic and Sarasota have used sand 50 to 60 up through 80 mesh.

30 ft overburden thrown away and then between this and bed rock.

→ log washer → hydraulic cone classifier with flash water →

Three hydraulic core classifiers



Just the classifiers produce coarse sand. But the water from bottom of first classifier goes to second and is recycled.

Total Capacity about 50 cgs per day. Of this about 45 cgs would be concrete sand and 2 cgs plaster sand.

Sample 153 "Brewster gravel" Phosphate gravel coarse. Sand that marketed for phosphate. The coarsest and finer portions are too fine for use as concrete sand. American Cyanamid Co. Brewster, Maine.

Sept 1, 1927
Consolidated Products Co.
Marble Machine

Lakeland Brick and Tile

Kathleen, wife of
Arthur Zilander, Inc. - North St.
- Kathlin, head of one of
works in Lakeland.
Saw 12 ft. - Lakeland
Enough to last 15 years.

Lakeland S. J. & Co. Brick Company
formerly Lakeland Brick and Tile Company
Plant at Lakeland
- Gateway to N.W.
- Lakeland
- Thunder shut down at present.
Business is so poor that they have
shut down completely.

They use a white sand which is obtained on the spot. There is an area of sand of a few acres by one side in Lakeland by the sand. White sand is about 12 feet deep. Hardpan below it. There is estimated to be 15 years supply of sand left. This is a white fine sand. It is ~~not~~ screened and washed in a home-made washer to remove small bits of which there are many. Practically no clay to be washed out.

Sample no. 154 from stock pile of washed sand.

They use 10% of lime in the mixture.

Desert City Sand and Gravel Co.
Reno, Nev.

155

Lakeland Sand Co.

J. B. Gordon, manager
J. B. Gordon, Jr.
Packaging - mostly
with bags and in barrels.

On east outskirts of Lakeland. White sand is pumped out through washed and screened out. 6 mil centrifugal pump - second grade. 30 ft. sand, most above water. Sand is level - has no sand so must be pumped. It is used in the spot for all kinds of light concrete articles - such as building tile, drain tile, ornamental vases, building blocks, septic tanks.

Was formerly used almost entirely for concrete work in Lakeland but is not so well known at present. Mostly for plastering.

Not in operation at present.
Picture of pond.

Small preparation of thick mineral ground.

155

White sand from small stock pile of Lakeland. Septic Tank and Sand Company Lakeland, on Bushy road S.

Sandwich Island Road
East of Island Avenue

Washed
Does not grow any
100 ft

86

Material Foundry - Lakeland

Duke City, Md. Sand
light - about as fine as
foundry in Lakeland - but sand
from Alabama

Yellow sand on South Florida Ave.
left hand side

They tried some sand from Lakeland
but found it was not strong enough for
the heavy work they are doing.
Say it was about the same kind of
sand as that from Duke City but
by foundry in Tampa

On South Florida Avenue in the
southern suburbs of Lakeland is an
old pit for concrete sand. The sand
is a natural white sand about 6 ft. thick
above the surface and is washed
down into the pit. At the bottom
of the pit is a layer of the sand
which is the same as the sand
found in the pit. The sand is washed
down into the pit and is the same
as the sand found in the pit. The sand
is washed down into the pit and is the
same as the sand found in the pit.

June Aug. -
Sand pit at South Pierce
P. D. Feltz, Capt.
Phosphate Mining

87

3 1/2 miles W of Bartow on
Mulberry road
White sand has been dug from
banks on both sides of the road.
Maximum depth which was found
8 ft. in many places only 6 feet
thick. Sand is below it.
The sand forms a low ridge
apparently extending NW and SE.
High parts 1 mi. to the
Scrub vegetation. A layer of
water is below the bottom
of the sand at this season.
There is very little top soil but
for a large tract of land of
this would be necessary.

Width - 7000 sq feet
Length

This sand is a little coarser
than either of those sampled
near Lakeland.

156 Sample from upper replicating
about eight feet thick.
White scrub sand 3 1/2
= 7156 miles W of Bartow on
Mulberry Road.
about a mile farther west
some similar sand has also been
dug.

88

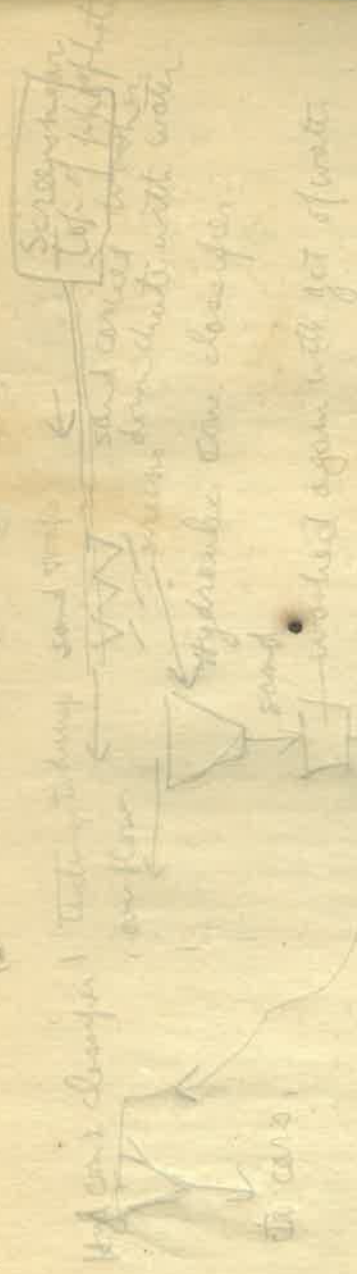
Sept 2

157

Sand produced by Phosphate
Mining Company at mile
42 about 2 miles S of
Mulberry. (Phosphate of
Nickel). This sand is from
what had spilled into the
ground from the water tank.
So may not be representative.

The material is mixed with
fine clay to give it weight.
It is the same as the sand
found in the pit.

Here the phosphate is washed
in a series of circles of
wet sand. No log wash
as at Lake, Lymington Co.



The washing of sand after leaving the screens was found to be insufficient.



Sept 2.

89

American Agricultural
Chemical Company
Office at Pierce.

Mr. McCrae Supt.

He says they are not recovering
any of the sand at present nor
have they made any definite
provision for it. He says that
at their mines at South Island,
which is south of Brewster,
there is more sand than there
is around Haines and Pierce.
During the boom they marketed
some of the coarse, coarse
phosphate as gypsum. He says
that one making it into the
pulver phosphate is a good product
that can be used as phosphate.

75.4

Cal Young Bonds Building
(South of City Hall)

Sept 2

90

on Hays
J. T. McCrae about 3 miles
Miller - Ch. Haines - Junction

Davenport - asphalt
just to the side of Davenport
at 8 miles water on left
hand side of road.

158 Sand Bank sample from

=7158

small flat pit in field about
5 miles S.E. of Haines City
owner J. T. Miller of Haines City
total depth of hole 7 feet
upper 7 ft of soil excluded from
sample which therefore represents
7 feet of bank. At bottom of hole
a redish sand with water
and gravel that looked an iron
pit at first and was something about
thickness of this - might be only an
inch or two.

The deposit forms a flat
topped ridge running approximately
north and south on the east side
of a valley containing some
small ponds. Attention was
attracted by coarse sand and small
grains pebbles in the soil. Pebbles
up to 1/2 inch diameter - largest
one 1 1/2 in. Sand is gray black
the top grading into light yellow
with depth as the organic matter
has less effect.

Sept 2 - Haines City

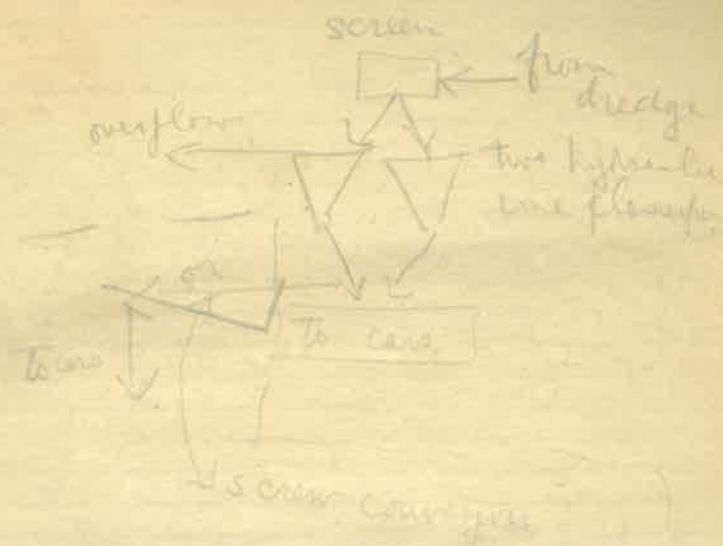
91

158
=7158

Over an area of 50 acres
which was examined the similar
soil and topography indicate a
continuation of this sand. It
may be much larger.
Supports more vegetation than
the lake faces white sand.
Part of it is an orange color.
Some open pine woods and some
cut over pine woods with
scrubby oak trees.

46.0

Out of water Haines City
Haines City Road - asphalt
making plant which had been
used to make asphalt. It is
a fine light gray sand which was obtained
from a pit in the field. It is
a fine light gray sand which was obtained
from a pit in the field. It is
a fine light gray sand which was obtained
from a pit in the field. It is



fine sand washed off
to cars
screen conveyor
for giving other material to
produce coarse concrete sand

Sept 3
Diamond Sand Co
Lake Wales ~~Sand Co.~~ 92

Plaster sand (regular size)

Concrete sand (coarse)

Pond where sand has been dredged
is 50 to 65 feet deep in some
places - 10 or 11 acres

Depth of 10 feet along water
margin. Bottom of pond is
sandstone & limestone.

Thin sand and broken shells
bottom

Small amount of fine gravel
fine gravel - not sorted.

Pumped from dredge - 10 inch pipe
10 inch pump so deep into pond
3 cups for each cup of
55 lbs. each.

159

=7159

Sand

Diamond Sand Co. Lake Wales
Regular run from car

Dredge floating in pond
Sandstone concretions

Sept 3 Lake Wales 93

Concrete Sand Co.
Plant 4 miles E of Lake Wales
Two are one each side plant
lined 25 to 30 ft deep.

Throughly two layers of sand.
upper part more yellow - that
rather grainy in places.

Sandstone layers can be found
in some places - up to 6 or 8 inches
thick.

Pit worked dry - that is sand
washed down into spring like
Diamond Sand Co. pit at Kenner
then dredged up to plant
water impounded at the plant.

(First 8 to 12 ft ordinary sand
12 to 15 ft concrete)
All mixed in many.

Sift from pump discharged into
screen - then into two hydraulic
cone classifiers which sort
sifted into cars.

Only one grade of sand produced

160

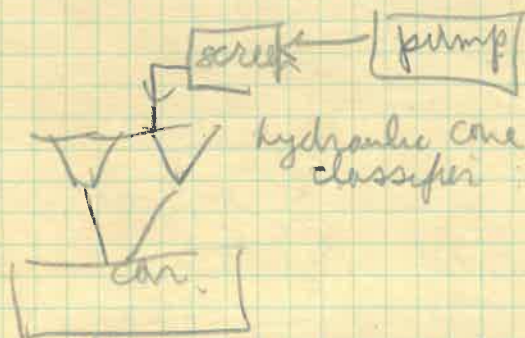
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Washed concrete sand from
Lake Wales
State of Concrete Sand
Co. 4 miles W of Lake
Wales

A few quartz pebbles - mostly
fine. No sandstone concretions.
Extent of deposit easily seen
character of surface soil.

Sept 3 Lake Wales 94
Hesperides Sand Co, 94

Sand dredged from pond (formed by
removal of sand) by centrifugal
pump at edge. About 8 feet
yellow sand on top then white



Very small amount of quartz
pebbles. Some sandstone concretions
and roots removed by screen.

161

=7161

Sand, washed - from car.
Hesperides Sand Co.
Regular product.

The sand examined yesterday
S.E. of Haines City (Sample 158)
seems to be the same kind of
a deposit as that which is worked
to the east of Lake Wales.

Lake Wales
Herbicides
Diamond
Concrete
Sand Co.



95

20 miles S. of Lake Wales
after going down a hill to considerably
lower elevation passed by an
area of medium textured white
scrub sand. Not coarse enough
for good concrete sand. Usual
organic impurities. Cuts show

Total 29.8 miles Lake Water to
Iron Park. During the last five or
six miles into Iron Park mostly
the yellow loamy sand, but
several strips or patches of nearly
white sand also along the road.
Not coarse enough for concrete

96

Well 30 ft deep does not reach bottom

162

$$= 7162$$

Sept 3 DeSoto City. 97

163

Sand Clay Road Master's at
Put De Soto City, located
about $\frac{1}{2}$ mile west of the
post office, De Soto City.

Later learned that true depth of overburden is 6 ft and some of the apparent depth is due to piling up of material removed. This is almost two miles from the station.

Ch. 
G.O. 

 County

De Soto City 98

(Black clay with sand for it)
(Tachina -) quarry
(Corymb -) to 2 ft off
the soil (C)

Continuation from previous page

Continuation from preceding page
This jet is no longer worked
because of overburden and
to be used by a syndicate of
which the promoters do not live
around here.

Sept 4,

Heard of a deposit of black
clay with no sand in it
supposed to be on a farm
4 miles S. of De Soto City
owner named Thurlen either
can not or will not tell anything
about it

Sand similar to sample 162
has a wide distribution
around De Soto City.

Fernandina	Maryport	Palm Valley
St. Mary's Jackson V. 11c.	Combos	8130 Oranges Park
Hilliard	MacBlum	Middle burg.
	Lantern	

Palakka.	
Guter kathu	
$\frac{82}{8 \pm 15}$	Citra
Dymonville mudankot	william
	Pondalan
	Pong seper
	Taka Mopra

Sake Hamlin Road

10th St. turn left then south
from 10th St. go past road to left
around road until you see a road
that is 500 or 600 feet

Toward 7th St. 5.
then south - then south
then east to end of road
then south around 10th St.

10th St.	10th St.	10th St.
10th St.	10th St.	10th St.
10th St.	10th St.	10th St.

Harriet Putnam
802 Main Street
Jellison Earth

Daytona Beach Aug 23,
sent samples no. 130
to 138 inclusive to
Harvey Hall

10th St.	10th St.
10th St.	10th St.
10th St.	10th St.

