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INFORMATION ON THE HISTORY OF DIAMOND MINING AT ELIZABETH BAY, POMONA AND BOGENFELS

by

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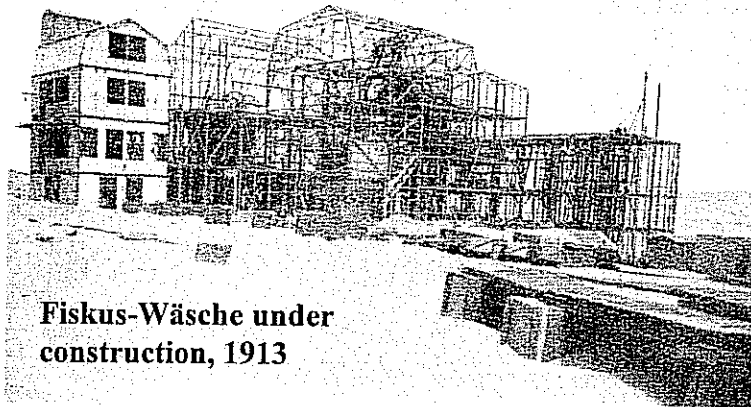
FISKUS-WÄSCHE

Following the discovery of diamonds, Stauch had founded a syndicate, together with his former employer, the *Deutsche Kolonial-Eisenbahn-Bau und Betriebsgesellschaft*, Berlin, Germany, the chief engineer for the building of the railway line between Keetmanshoop and Lüderitzbucht, Sönke Nissen, and the director of this railway line, Max Weidtmann. The *Deutsche Kolonial-Eisenbahnbau- und Betriebsgesellschaft* was a daughter company of the *Aktiengesellschaft für Verkehrswesen* in Berlin, of which the *Berliner Handelsgesellschaft*, through its participation in the *Allgemeine Lokalbahn*, which held 25% of the *Aktiengesellschaft für Verkehrswesen*, and the *Darmstädter Bank* were shareholders. Both, the *Berliner Handelsgesellschaft*, and the *Darmstädter Bank* made funding available.

Initially, the *Koloniale Bergbau-Gesellschaft* operated the so-called *Nordblock* and the *Südblock*, covering 2081 ha and 5224 ha, respectively in an area between Kolmanskuppe and Elisabethbucht. From the beginning, diamonds from Elisabethbucht were slightly bigger than those from the other fields, and as early as 1909 achieved prices of 39 *Reichsmark* a carat. The largest stone found during exploration weighed 2 carats.

On the 29th of September 1909, the company entered into an agreement with the *Diamanten-Pacht-Gesellschaft* of Berlin. The latter had rented the mineral rights of the *Fiskus* as from the 14th of July 1909, covering the so-called *Fiskus Block I*, as well

as the claims pegged by Dr Range and the police on behalf of the *Fiskus*, namely *Rangefeld*, *Bismarkfeld*, *Grosser Kurfürst*, *Friedlicher Nachbar*, *Feindlicher Nachbar*, *Feld Nr 757*, *Eschental Nord*, *Eschental Süd*, and *Olaugfeld*. Between March and August, 1909, the *Fiskus* had operated these fields for the account of the colonial administration in Lüderitzbucht, but it turned out to be more practical to outsource the task.

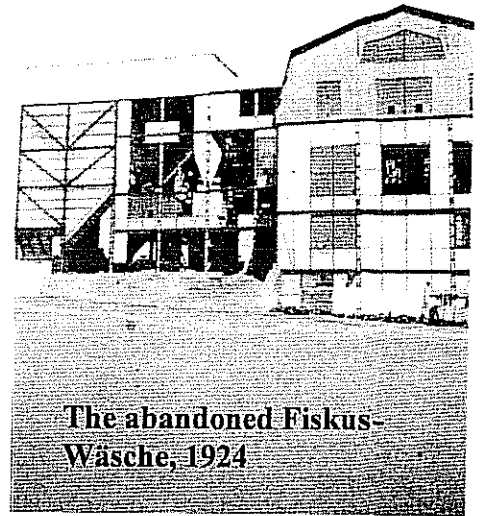


Fiskus-Wäsche under construction, 1913

With effect of the 1st of September, 1909, *Stauch's Koloniale Bergbau-Gesellschaft* and its partner therefore operated the *Nordblock*, the *Südblock*, the *Fiskus Block I* and the claims mentioned above.

In contrast to the other diamond companies, which mostly classified the diamond-bearing sediments in the field, and transported the concentrate only to their plants, the *Koloniale Bergbau-Gesellschaft* moved all the ore to their plants. Taking into consideration, that the ratio between sediment and concentrate was about 6:1, enormous amounts of sand and gravel had to be moved. By 1912 tests conducted had been successful enough to order two larger plants. A large plant with a capacity of 1 500 m³ of sand per 18 hour working day was therefore ordered from the company of Friedrich Krupp in Magdeburg-Buckau, Germany, and erected on the *Nordblock*. The ore was mixed with water in scrubbers, pumped through a 30 km long pipeline from

the sea. The wet pulp was then passed through a number of classifiers, and the slimes were allowed to settle in a large pond, from where they were loaded into trolleys by an excavator, and transported onto a dump. Initially, clogging of the wet material presented a number of difficulties for the new plant. The gravel was further treated in separators, and it is again noteworthy, that the *Koloniale Bergbau-Gesellschaft* did not use *Schiechel-Separators*, but rather the so-called *Stauch-Separator*, incidentally not named after August Stauch, but rather after the movement of its sieve compressing water in a container and thereby forcing it upwards through the sieve. Unfortunately, this plant did not reach its full capacity, and up to 1920 handled only some 500 m³ per day. The final concentrate was then hand-sorted, and the diamonds were taken on a daily basis in sealed tins to the office in Kolmanskuppe, where they were cleaned, weighed and registered, before being taken to Lüderitzbucht for shipment to the *Diamantenregie* in Berlin.

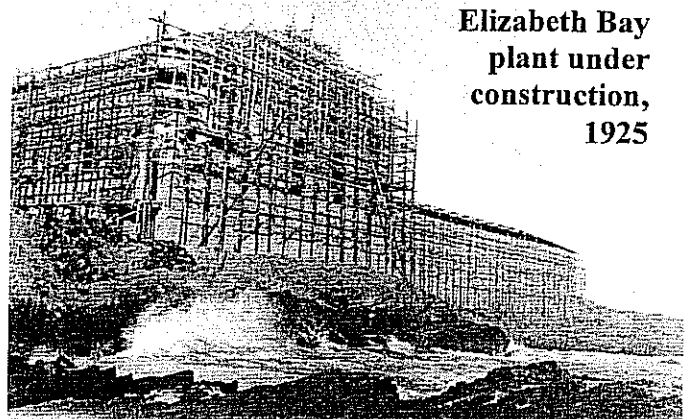


The abandoned Fiskus-Wäsche, 1924

For the construction of a similar plant, with a planned capacity to wash 750 m³ of sand per day, the *Maschinenbau-Anstalt Humboldt* in Köln-Kalk, Germany, was appointed. This plant was subsequently erected on the *Fiskus Block I*, both plants were commissioned in 1914. However, the *Fiskus* plant was commissioned extremely shortly before the break-out of World War I, and never ever became really operational.

ELIZABETH BAY

The *Koloniale Bergbaugesellschaft* was the first company to mine in the Elizabeth Bay area from as early as 1909, albeit on a very small scale. Following the formation of CDM, the new company continued to mine the deposit, which comprised of 1 to 4 m unconsolidated diamond-bearing sands and gravels, underlain by some 2 m of cemented diamond-bearing conglomerates, and was covered by some 2 to 3 m of aeolian sand. With an average grade of 0.2 carats per m³, and 5 stones to the carat, one m³ of sediment basically contained only one diamond, which made Elizabeth Bay a very low-grade deposit. However, since the rich deposits were mined out in the early days, this grade represented the average grade of all the known deposits north of Bogenfels in the 1920s (Bürg, 1942). It soon became clear that because of this low grade, a profitable diamond mining operation would have to mine huge amounts of sediments in a large open pit using heavy mining equipment, and that these huge amounts of sediment had to be treated in a large central plant. Mining would have to be conducted on three levels, namely the hanging wall comprising of the aeolian sands covering the deposit, the unconsolidated diamond-bearing sands and gravels, and the cemented diamond-bearing conglomerates.

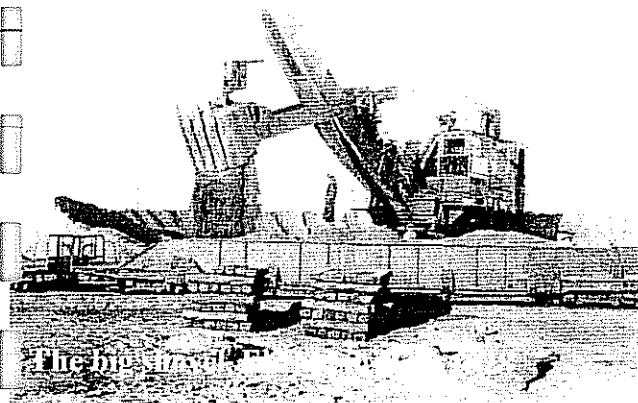


Elizabeth Bay plant under construction, 1925

But as the consequences of the 1920/21 depression were still looming on the horizon, it took General Manager Hörlein until 1923, before he received permission and funds to go ahead with the construction of such a new mine and central plant. He immediately undertook a study trip to the United States of America, where he looked at a number of large mining operations, and the ground breaking ceremony for the new Elizabeth Bay plant took place in February, 1924. As the development of the new mine between 1924 and 1927 coincided with a period of flourishing diamond markets, and mining in the other areas had to continue with some 8000 workers stationed on the various diamond fields, this put extreme pressure and high demands on management.

Hörlein recruited engineers, technicians and hundreds of artisans from Germany to build the new plant. All the material and every piece of equipment had to be transported by the state railways from Lüderitz to the magazine in Kolmanskuppe, from where it was sent by the company railways to Elizabeth Bay, all in all a distance of 44 km. The railways therefore had to be in excellent condition. To avoid disruptions of the normal daily business of the operating diamond fields, a second railway line was laid for the supply of the Elizabeth Bay building operations. Smaller pieces of equipment were transported in a 3 t and a 7 t motor trolley, both were built in the workshop at Kolmanskuppe, and new carriages with a capacity of 12 t, as well as water tank carriages with a capacity of 10 t were bought. Abnormally heavy loads were transported on a 24 t low bed carriage.

Unfortunately, the gravel in the area of Elizabeth Bay contained a lot of mica, and was therefore not suitable for the preparation of cement. Suitable gravel therefore had to be transported to the building site from a 10 km distant pit. As major parts of the plant were built on the solid rocks that comprise the spit at Elizabeth Bay, a large amount of blasting had to be done for the foundations.



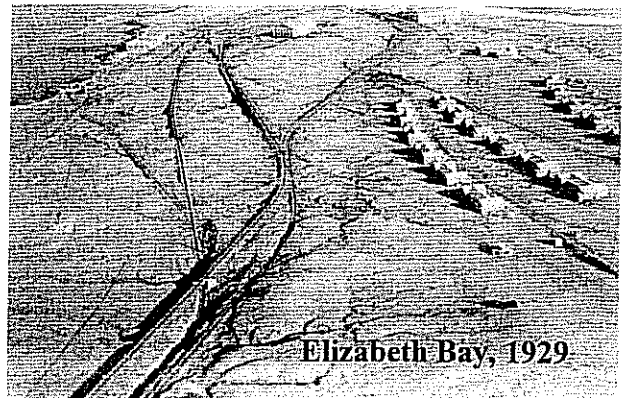
Due to Hörlein's perseverance, supplies and equipment were also almost exclusively ordered from companies in Germany, such as Goerlitz, Gruson, Krupp, Menck & Hambrock, Hanomag, MAN, SSW, AEG, Excelsior and many more. This was not fully supported by CDM's mother company in Johannesburg, as the Anglo American Corporation naturally preferred British and American equipment, but Hörlein got his way! Compressors and drills were the only exceptions, as they were ordered from Ingersoll Rand.

For the mining of the aeolian overburden and the unconsolidated diamond-bearing sands and gravels, four 3 m³ electric shovels made by Menck & Hambrock were commissioned. The shovels moved on crawler tracks and received their power via transmission lines. At a later stage the shovels also mined conglomerates, after they had been broken up through blasting with dynamite. The Menck & Hambrock shovels were later complimented by a 2 m³ Bühner shovel as well as two bucket wheel excavators built by Humboldt ATG for the mining of the overburden. The railway lines were designed in a way that the shovel could fill the material directly into the

carriages, and that the various shovels could be served by various trains independently. The trains would proceed to the plant one behind the other, at first under their own power to the main line, where they picked up a 400 Volt current from overhead wires by means of pantographs.

In 1923, Hörlein approached *Hannover Maschinenwerke* in Germany, known as *Hanomag*, with the idea of a high-capacity gas-electric locomotive which could be used on live rail with overhead wires and also self-contained on non-electrified tracks. This latter ability was considered necessary so that the locomotive could operate in the immediate area where shovels were being used and where live overhead wires would therefore have presented too great a hazard. Such a locomotive was to be similar to the "11", but heavier, and to those found in Germany's many open pit lignite mines. In time, Hörlein and *Hanomag* designed a unique locomotive, which would give excellent performance. Ten copies were built by *Hanomag* and fitted with electrical equipment, giving the locomotives 850 horsepower, built by the Siemens-Schuckert works of Berlin. Benz of Mannheim manufactured the main drive 220 horsepower benzene engines and all the directly related auxiliaries. The 10 t locomotives were numbered "31" to "40" and commissioned around Elisabeth Bay. They had a 13.5 t tractive power, and pulled 16 cars with a capacity of 25 m³ or 40 t, which weighed 21 t, giving it a total capacity of 1000t. The cars had brakes manufactured by Kuntze Knorr. Two additional 75-ton electric/diesel-electric locomotives numbered "21" and "22", and again built by *Hanomag*, Siemens-Schuckert and Benz, also arrived in 1926. However, they were not exactly satisfactory, and were sold to a mining concern in Johannesburg after only one year of service (Moir & Crittenden, 1982).

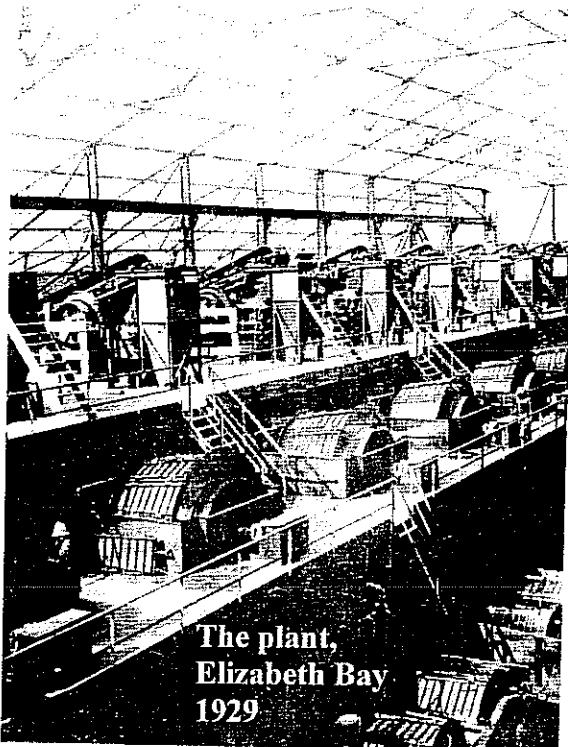
1926 also saw the relocation of the main CDM railway line, so that it passed through Elisabeth Bay. The railway line was built with 33 kg rails, 12 m long and put on wooden railway sleepers. The nature of the operations naturally required a constant shifting of the railways serving the various areas that were being mined, but the main line usually remained where it was for quite some time. The railway line had the form of an "8", with the ore storage bunker of the plant on the one end and the mining face on the other. As the mining face progressed from west to east, the railway line was moved with the aid of 2 *Demag* cranes on crawler tracks as well. The shape of the railway line had the advantage, that trains only had to move into one direction, and would not meet, which was important in an area with regular fogs and hence limited visibility. At the plant itself, the main line was separated into two tracks and three colour light signals directed the trains onto the offloading areas. Trains with consolidated material dropped their load via bunkers into the mills, while trains carrying unconsolidated material fed their load via conveyor belts directly to the sieves.



A large locomotive shed was erected at the southern end of the railway line, and a small petrol depot for the refuelling of the locomotives was built close by. A small

station building, hardly larger than an ordinary house, was erected between the petrol depot and the residential area.

There were four motor trolleys used on the railway line. The smallest was a one man inspection trolley, powered by a DKW two stroke engine, it was open to the elements, and nicknamed the *Nuckelpinne*. The drivers of this piece of equipment had to wear wind breakers and safety goggles, as they were exposed to the ever howling south-westerly winds. No 1 was used for regular passenger transport between Kolmansuppe and Elizabeth Bay on Tuesdays and Fridays. No 2, a little larger, was used for passengers and express goods and No 3, the biggest, had an enclosed cabin, and could carry passengers and express goods up to two tons in weight (Skillian, 1992).



The plant,
Elizabeth Bay
1929

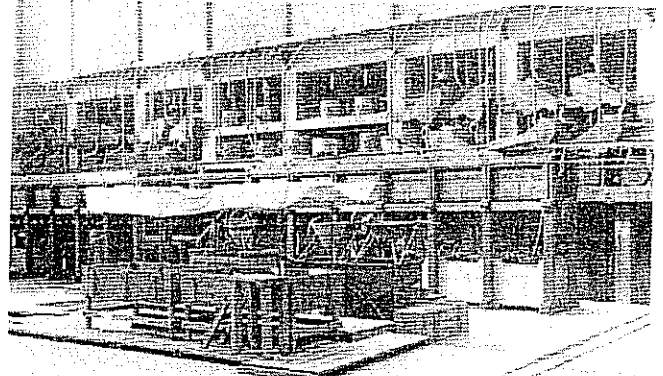
The plant itself was carefully planned by Hörlein. Again, almost all equipment, with the exception of conveyor belts and some electrical appliances was sourced from Germany. In order to avoid large waste and tailings dams, the plant was erected directly next to the beach, but high enough, so that the material would move through the plant by gravity, and the barren tailings were disposed directly into the ocean. In contrast to Kolmansuppe, where treatment was mostly dry, due to the high cost for water, ore treatment at Elisabeth Bay was wet, which did not present a problem, as the sea was close. The storage bunker, which received the ore from the mine, had a capacity of 6000 m³, and occupied a cavity which was excavated from the country rocks in massive blasting operations. The plant

itself was fully mechanised, which reduced theft, and designed for a head feed grade of 15 carats per hundred tons. It received its light through roofs made of Georgian wired glass. Consolidated material was treated in rod mills, before the ore was classified into 3 fractions, namely +5.5 mm, 5.5-1.3mm and -1.3mm, using mechanised trommel sieves. Unconsolidated material was fed via conveyor belts directly into the trommel sieve section of the plant. The three fractions were treated separately in 240 two stage Schiechel separators, followed by a second treatment in 80 three stage Schiechel separators. The resulting concentrates were treated in 8 Stauch jigs and then hand sorted, the tailings from the hand sorting were then put into a magnetic separator, the magnetic fraction discarded into the sea, and the remaining material reintroduced into the circuit. The plant treated 10 000 m³ per day, and discarded some 3 000 m³ of overburden sand per day into the sea. Upon arrival at the plant, this overburden was sent into a tunnel running underneath the plant, where it was mixed with waste water and transported by means of a screw feeder into the sea. Concentrates sent to the first set of Schiechel separators amounted to some 1 300 m³, while some 400 m³ reached the second set. Some 400 m³ were sent to the Stauch jigs, which produced some 10 m³ of final concentrate. 12 systems were running in parallel, and groups of 3 systems shared one crusher for the cemented material.

By the end of 1925, work had progressed so far that a portion of the plant was to reach the producing stage during the first half of 1926. Full production was achieved before the end of 1926, and on the 1st of October, 1926, CDM commissioned a large and modern plant at Elisabeth Bay. At the time, it was the most modern diamond recovery plant in the World. *Baumeister Hörlein* had been the driving force in all stages of planning, design, and construction, utilising all the experiences he had collected in the past 15 years of alluvial diamond mining. Production started 2.5 years after the groundbreaking ceremony, and building was completed after 4 years, a great achievement indeed! Nevertheless, mining problems, posed by the heavy dune sand overburden and the erratic occurrence of the diamonds still had to be overcome, and it would take until 1930, before a completely satisfactory mining process was in place.

Electricity for the plant was sourced from the Lüderitzbucht power station and transformed in the so-called *Unterstation* at Elizabeth Bay. The *Unterstation* comprised of 4 transformers, made by AEG, and an aggregate made by Oerlikon. 30 kV current received from Lüderitz was transformed into 3 kV for the shovels, and into 500 V for the plant. The *Unterstation* also supplied the railways and the blasting operations with power.

Water consumption of the plant was substantial, and 4 centrifugal pumps with a capacity of 27 m³ per minute, also housed in the *Unterstation*, pumped water into an elevated canal, which supplied the trommel sieves, rod mills and separators with water. A jetty was built far enough into the sea, to avoid the pumping of suspended fines. The *Unterstation* was furthermore responsible for the pumps that supplied the *Centralwäsche*, for which water was pumped into a small settling pond, and from there onwards to this plant. A small workshop provided the necessary services for the plant.



Final Recovery, Elisabeth Bay, 1929

But freshwater for the community had to be supplied by rail from Garub via Kolmansuppe, and therefore represented a scarce and expensive commodity. Much to the relief of everybody, in 1927, the work of geologist Dr Beetz established suitable boreholes at Grillental, some 25 km east of Elisabeth Bay. As this water is high in calcium, it had to be mixed with the water from Garub, to make it fit for human consumption. Nevertheless, taking into consideration that a liter of water from Garub, some 86 km east of Elisabeth Bay, did cost 10 Shillings, while the 60 m deep

boreholes at Grillental provided water at a cost of 2 Shillings 6 Pence per liter, this was major improvement for the water supply of Elisabeth Bay.

Elisabeth Bay developed into a small village, representing the second largest diamond mining settlement in



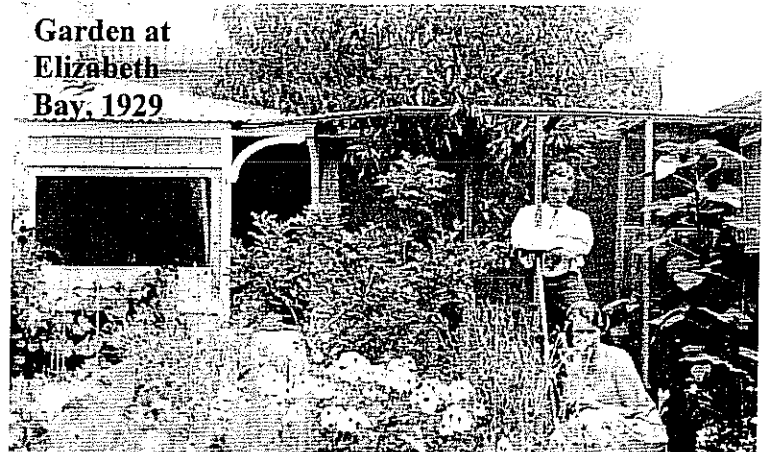
Typical home at Elisabeth Bay, 1929

the *Sperrgebiet*. Together with the plant, 18 massive residential houses were built in three rows of six each. These houses had 12 rooms arranged in a fashion that provided dwellings for families. A fourth row with 7 family units consisting of a bedroom, lounge, bathroom and kitchen, was added in 1926. They were surrounded by high walls for privacy, and had primitive outdoor toilet facilities. Further south in the same row were 7 houses with single quarters, consisting of two separate sections of two rooms each. There were two more such units to the west, and three to the east. Between the rows of houses there were railway tracks, and mule drawn carriages provided the means of transport and sewerage removal. Inside one of the single quarter buildings, a wall was decorated with an elaborate painting of a tropical island scene complete with palm trees. Legend has it, that men had their photograph taken in front of this painting, pretending that this was the true Elizabeth Bay environment, in order to entice their wives back in Germany to come and join them. The painting remains to this very day.

The *Casino*, a recreation club, was built at the southern end of the settlement. Steps led into a huge hall occupying the central section of the building. To the rear of the hall was the bar, and above it, the gallery. Two doors provided access to the kitchen in the back, and to the left and right, wooden sliding doors led into the two wings, housing dining rooms, lounges and restrooms. Taking customs of the day into consideration, it is not surprising, that one wing of the building was used by white collar workers, while the other one was patronised by the artisans. The front of the building had large windows providing light for the hall. At a later stage, the gallery was moved to the front of the hall and above the entrance, and utilised as a film projection room. Two rooms were built directly underneath the gallery, and the bar was shifted to the right wing of the building. The hall displayed beautiful wall decorations (Skillian, 1992).

The house of the mine manager, built in 1926, was a double storey dwelling with an open balcony on its upper floor and a large bay window just below it. Inside, it had colourful walls and wooden floors. The lounge, equipped with a fireplace, and the kitchen were situated downstairs, while the bedrooms and a bathroom were upstairs. The offices of CDM were established in the same year opposite the *Casino*.

The compound for the workers comprised of nine buildings, housing the sleeping quarters, and three of them had double storeys. One of these was actually used a sick bay. When the buildings were no longer sufficient due to increasing numbers of workers, A-frame huts were built as additional accommodation. As the workers at Elizabeth Bay were without exception migrant workers, they did not live with their families, and accommodation was therefore restricted to single quarters. But none of these buildings showed the least bit of the comfort so lavishly afforded to the inhabitants of the other houses. The sleeping quarters were crowded, and facilities were more than basic, with small individual compartments made of brickwork providing the only means of privacy. A large elongated building housed a steam



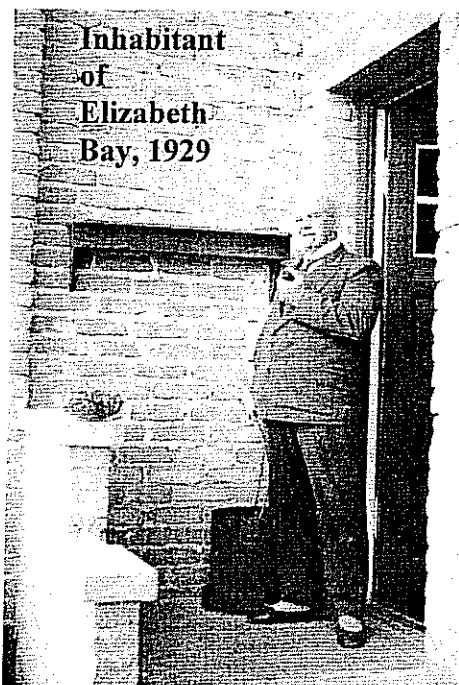
kitchen and a mess catering for the workers. Today, the remnants of the compound serve as a reminder of the harsh and unfair conditions that workers had to endure during these days.

Next to the compound were the stable, a tennis court, a rugby field, and a bit further away a soccer field. Located between the individual houses and the compound were the transformer building, the store, with its nice colonnaded veranda, and the police station. From 1927 onwards, the store also housed a post office in its southern section.

The houses in Elizabeth Bay were all built with cement bricks manufactured at *Centralwäsche*, using the tailings of that plant. While some buildings, like for example the mine manager's house and the station, were plastered and painted, the majority did not receive a coat of plaster. In time, after the settlement at Elizabeth Bay was abandoned, this would result in the so-called "lace curtain effect", with erosion by the harsh winds eating away the softer bricks and leaving the harder mortar behind. The lack of plaster work was a clear indication that CDM did not plan for an extended life of mine at Elizabeth Bay, but it is nevertheless almost certain that the company on the other hand did not anticipate the extreme short period that the mine would actually be in operation, as determined by the worldwide economic conditions that would throw the entire World into turmoil during the late 1920ies.

There was no hospital at Elizabeth Bay, and patients had to be taken to Kolmanskuppe. In 1925, however, a medical orderly, Fritz Jonat, took up his work, and was joined by Dr Ernst Wohlgemuth a year later. By 1930, the two were replaced by Dr Otto Mehl and orderly Gregor Gaugler. In the early days of Elizabeth Bay, children had to attend school at Pomona. However, after the closure of the school at Pomona, the *Deutsche Privatschule Elisabethbucht* opened its doors in one of the rooms of the *Casino* on the 2nd of August, 1927. A former teacher at Pomona, *Freifrau* Helene von Falkenhausen, taught here until Easter of 1928, when she was succeeded by *Fräulein* Auguste Bauchsieb. The school was attended by up to 26 pupils. But the *Casino* was also used as a church, when Missionary K Sckär of the *Rheinische Missionsgesellschaft* in Lüderitzbucht, who served as a pastor in the *Sperrgebiet*, held church services here every three months.

Gustav Gräff was the first manager at the new Elizabeth Bay mine, and had been



involved extensively with the erection of the new plant. When he died in April, 1928, after having been involved with the diamond industry since the very first days, he was succeeded by Dr W Nel, whose successor was LL Kette. Surveying work was done by land surveyor Dr Wilhelm Mehl. People living at the Elizabeth Bay settlement were without exception in one or the other way involved in the mining operations, and professions included mine and plant overseers, fitters, turners, carpenters, joiners, pit foremen, masons, excavator operators, engineers, engine drivers, electricians and diamond sorters. There were, of course, also clerks, storekeepers, a compound manager and a cook.

Despite the desolate surroundings, the white collar workers and artisans of Elizabeth Bay knew how to entertain themselves. The bar at the *Casino* did a flourishing trade, and the community boasted a *Männerchor* with 24 members. Soccer and tennis were the favourite sports, and many competitions took place between Elizabeth Bay and Kolmanskuppe. Swimming was also rather popular, as the abundant stretches of beach close by were rather inviting on a sunny day. The jetty of the pump station was also utilised to catch crayfish. In typical German fashion, gymnastics were supported enthusiastically, and the *Turnverein* had many members, who utilised the many pieces of gym equipment in the *Casino*. But the absolute highlights were the skittle evenings. As only Bogenfels, Pomona and Kolmanskuppe had skittle alleys, the people from Elizabeth Bay had to be shuttled by railcar to these events, and it is said that the competition with the neighbouring settlements was very tough!

As the community of Elizabeth Bay was a segregated one, less entertainment was provided for the majority of the workers. Without access to the *Casino*, they spent their free time at the mess or on the sports fields, many of them eagerly awaiting the end of their contract to be able to return home.

At peak production, Elizabeth Bay provided work for some 1200 workers and 200 artisans and officials. But too soon, tragedy was rife for this young mine, developed with such an ingenious spirit and in record time, as another economic depression – this time worse than ever – was looming on the horizon. By the 31st of December, 1927, quotas imposed on the diamond production resulted in a situation, where CDM could only operate the large plants at Kolmanskuppe and Elizabeth Bay, as well as a small sieving and jigging plant at Jammerbucht. But from the 1st of October, 1930, production at Elizabeth Bay was also curtailed, and eventually ceased completely with effect of the 31st of March, 1931, because of the worldwide depression. At this stage, some 1.25 million carats of diamonds had been produced from the deposit.

Employees were retrenched or moved to Kolmanskuppe, including their families, as well as teacher Bauchsieb and her pupils. Until 1940, the plant and the houses were kept in a stage of preservation, as everybody hoped for the resumption of mining operations. Even the electricity and the water supply were kept intact. Mr Rudolf Kober was the caretaker and carried out regular maintenance work at the plant. But when the Second World War diminished any hope of an improvement on the gem diamond market, CDM had to take the decision to concentrate on the rich deposits at the mouth of the Orange River that had been found in the meantime. The buildings at Elizabeth Bay were systematically stripped, and windows, doors, rafters, ceilings, roofs and floors were removed to build new houses at Oranjemund. The 18 larger houses and the *Casino* were partly demolished in the process, however the other buildings were virtually left intact (Skillian, 1992). But the brickwork began to weather quickly, because the houses had not been plastered. The locomotive shed and the *Unterstation* were taken apart by removing the masonry, before the steel beams were sandblasted and painted in the workshop at Kolmanskuppe and moved to Oranjemund to be re-assembled there. Part of the plant were also taken to Oranjemund, and one of the large sheds would later – in 1943 – be sold to the South African Director –General of War Supplies, and re-erected at Crown Mines in Johannesburg. One of the large excavators was simply left to rust where it had last operated.

Fifteen years after it was abandoned in 1931, a mining team once again moved to Elizabeth Bay in December 1945, in order to replace production from Bogenfels, where the overburden was increasing rapidly, and the known deposits were almost exhausted. Although production increased from 818 carats in 1945 to 13 680 carats in 1946, it was described as "limited and the yield disappointing". In 1947 the production fell drastically to 8 303 carats and by mid November Elizabeth Bay had been turned into a prospecting area. Even so, the production figures reached an all

time low of 296 carats and prospecting was stopped on 31 October 1948 (Skillian, 1992). In the meantime, further deposits had been discovered at Bogenfels in 1946, and the workforce was sent back there.



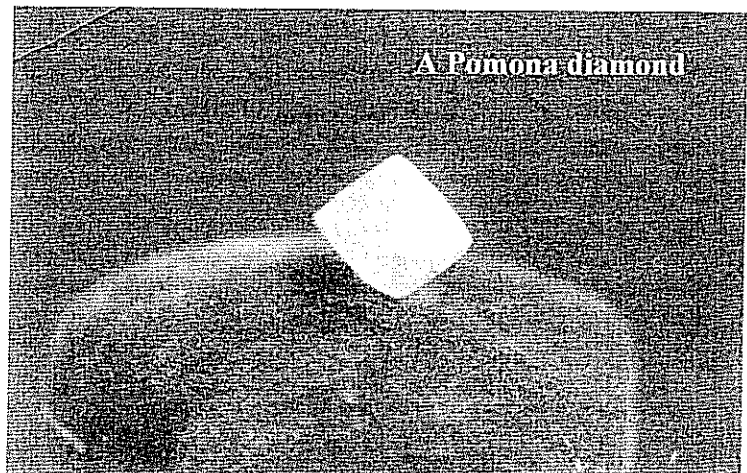
Elizabeth Bay,
ca. 1942

What remained behind was left to the natural forces, which have since shaped an Elizabeth Bay quite different from the ideas of its creators in the 1920ies, but representing a great industrial monument and a reminder of what determination can achieve. But as technology continued to improve over time, geological mapping and drilling would once again start at Elizabeth

Bay in 1957 and in 1980, and a sampling plant was established in 1986. The results of the evaluation programme were so encouraging that it would eventually lead to the re-opening of the mine in 1991.

POMONA

The history of the famous Pomona diamonds started soon after the first diamonds had been found at Grasplatz in 1908. A German geologist, Prof Scheibe, had been in the country for some time, and was looking at the kimberlite occurrences of the Gibeon and Berseba areas. Having been quite unsuccessful here, he moved to Lüderitzbucht in December, 1908, where he immediately sought the acquaintance of August Stauch. Having discussed Stauch's findings, they decided to prospect in a southward direction from the first finds. Taking the difficult desert conditions into consideration, this was a complicated and dangerous undertaking, and the first few attempts ended in failure. In the early days of January, 1909, however, they were successful, and, after a three day's march, reached the area opposite the desolate Pomona Island, ironically named after the Roman goddess of fruit trees, gardens and orchards. It is not clear how the island received such a name, but as there are other islands named "Roastbeef" and "Plumpudding", it is suspected that the crews of the first English vessels exploring the coast and naming the islands, for a lack of better ideas used either the menu of the day, or their favourite dish, thus naming Pomona after a serving of food



A Pomona diamond

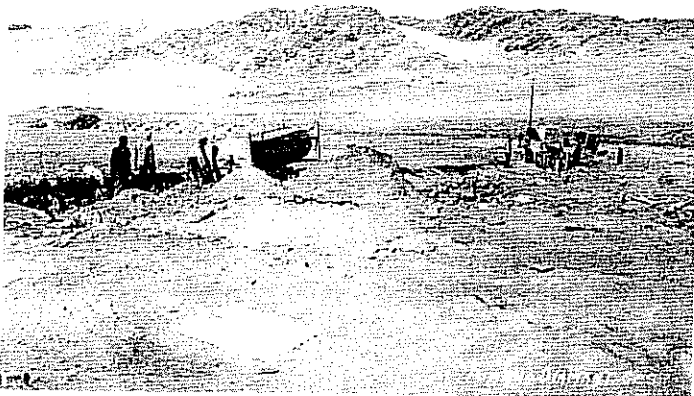
canned by Pomona Fruit Canneries Ltd of London. Here they found a north-south running valley, which they named *Idatal* in honour of Stauch's wife Ida. They decided to use the valley for their camp, and pitched a few tents to have some shelter from the regular sand storms and the coastal fog coming inland every night. Scheibe immediately started to look for diamonds in the sand on the floor of the valley, and a Herero-speaking assistant, unfortunately only known as Jakob, was tasked to set up camp, while Stauch investigated the surroundings on horseback. It was a difficult task, as he was in possession of nautical maps only, and did not find any landmark that would be present on the maps for orientation.

When Stauch returned, Scheibe told him that he had already found some diamonds. Moments later, Stauch was still mounted, Jakob went past him with some firewood he had painstakingly collected in the barren surroundings. Jakob had lived with Stauch on the diamond fields, and was very well versed in the tracing of the precious stones. Stauch therefore told him to leave the wood and rather look for diamonds. Jakob went down on his knees and within minutes shouted repeatedly and in utter excitement the Herero word to express utmost incredulity and wonder: "atatita, atatita!", throwing his arms with wild gestures into the air. When Stauch went down on his knees next to Jakob, the former had already filled his left hand with gems, and was busy placing more stones in his mouth, to keep his right hand free to pick up more! They called Scheibe, who was so overwhelmed that he exclaimed over and over again: "A fairy tale, a fairy tale,!". The diamonds were virtually as abundant as plums underneath a plum tree!

But soon, the night settled in. Jakob, Scheibe and Stauch rested, and had a good meal. Thereafter, the full moon rose over the horizon, and cast his silvery light onto the valley, by now re-named *Märchentäl* (fairy tale valley). Surprisingly, there was none of the usual sandstorms or fog, and a deeply peaceful atmosphere covered the area. Having finished their meal, the three could not withstand the temptation to use the full moon's light to look for more diamonds – and indeed, the diamonds were sparkling to such an extent in the moon's light that they could easily be picked up (Bredow et al., 1914)!

When reports of the fantastic discovery were received in Lüderitzbucht, prospectors packed rations, tools, claim boards and poles, mounted wagons, horses and camels, and were on their way to Pomona. Many came back within days with pockets full of diamonds. It is said that one person picked up diamonds weighing some 2550 carats in one day. Another rich diamond occurrence was soon found some 64 kilometers

Early workings at Pomona



south of Pomona at Angras Juntas. For many years to come, the famous *Idatal* would hold the distinction of being the World's richest accumulation of diamond-bearing ground. The Lüderitzbuchter *Börsenverein* went almost crazy, and large sums changed hands for pieces of ground, often without any proof of the presence of diamonds. Consequently, fortunes were made and lost within days (Levinson, 1983)!

After Scheibe and Stauch had made the phantastic diamond finds at Pomona, they immediately pegged 234 claims in *Ida- or Märchentäl*, in an area exceptionally rich in diamonds named Hexenkessel, and in another valley named after Scheibe. In addition, on 3rd of March, 1909, a certain Ludwig Scholz, on behalf of Scheibe's *Gibeon Schürf- und Handelsgesellschaft*, Stauch's *Koloniale Bergbau-Gesellschaft* and on his own behalf entered into an agreement with Daniel de Pass, the son of Aaron de Pass, who had through his partner John Spence bought mineral rights in the area from Chief David Christiaan in 1863. This agreement secured the rights to mine diamonds in the area until the 1st of March, 1910. Subsequently, all claims and rights owned by Scheibe, Stauch and Scholz were entered into the *Pomona Minen-Gesellschaft m.b.H.*, which had been founded in Berlin on the 17th of March, 1909 with a capital of 100 000 *Reichsmark*. Johannes Ganger was appointed as manager. In the first 20 months some one million carats of diamonds were recovered from the claims, the two largest of which came from Idatal and weighed 43 and 52 carats respectively.

However, no sooner that the enormous riches of the Pomona area became apparent, a complicated legal battle ensued. As already mentioned, the British captains Benjamin Sinclair and John Spence, both involved in guano mining on Pomona Island, on 21 September 1863 had entered into a contract with Chief David Christiaan, which gave the company of de Pass, Spence & Co vast mining rights on the mainland opposite Pomona Island. In 1893, De Pass, Spence & Co submitted a map of the Pomona area, on which circular areas of 2 English miles were drawn around various copper workings, to the *Deutsche Kolonialgesellschaft für Südwest-Afrika*, and requested approval of this document and thereby recognition of their rights. As Berlin, in 1893, considered this land completely worthless, approval was given. However, the *Deutsche Kolonialgesellschaft für Südwest-Afrika* did later not honour these rights, as it was felt that they were superseded by the contracts that Adolf Lüderitz had signed with Chief Joseph Frederik on the 1st of May and the 25th of August, 1883. Tension had been brewing for quite some time between Great Britain and imperial Germany, as the annexation of the mainland left a lot of questions concerning the guano islands open for interpretation. De Pass, Spence & Co had protested immediately after the German flag was raised at Angra Pequena, which added to the tension, and in the end the dispute involved prominent people like Sir Hercules Robinson, the Governor of the Cape Colony, the British Prime Minister Sir William Gladstone, the British Foreign Secretary Lord Granville, the German Chancellor Fürst Bismark and the German Emperor Wilhelm II.

Eventually, a joint commission was appointed to solve the problem. The British were represented by Sydney Godolphin Shippard, judge in the Cape Colony, while the Germans appointed Dr Ernst Bieber, who served as consul in Cape Town. The commission submitted its report on 28th July, 1885, but the report was not conclusive, as the gentleman had failed to come to an agreement. The only issue, they agreed on, was the fact that the mine of de Pass, Spence & Co at Pomona, including the workings itself and an area of 2 miles surrounding the mine, belonged to that company. It was for that reason, that on the 3rd of February, 1886, The British Colonial Secretary Stanley suggested a second commission to Prime Minister Lord Salisbury. However, government changed shortly thereafter, and it was only on the 5th of June, that the new Foreign Secretary, Lord Granville, invited such a second commission. This commission, comprising the secretary of the British embassy in Berlin, a Mr Charles

S Scott, and Dr Krauel on the German side, met in Berlin, and concluded on 15th of July, 1886 that indeed de Pass, Spence and Co only owned the mine workings including an area of 2 miles surrounding them, and not the vast areas granted to Sinclair and Spence by Chief David Christiaan in 1863. To add injury to insult, John Spence had to declare bankruptcy on the 27th of July, 1886.

His partner, Daniel de Pass, now embarked upon a tedious process of getting the title to the part of the company that had belonged to Spence, since the latter had signed an agreement with de Pass' father Aaron to that effect, in case one of them would go into liquidation, when they founded the company. But endless petitions to the British government, the last one in 1895, remained unsuccessful. For the British Government the danger of causing problems in their relation with Imperial Germany was too big.

This did, however, not deter de Pass later from entering into the agreement concerning the Pomona diamonds with Ludwig Scholz. To complicate matters further, some individuals, amongst them Albert Voigts, Dr Alexander Merensky, a brother of geologist Dr Hans Merensky, and Carl Weiss, had pegged claims at Pomona at the same time, when Scheibe, Stauch and Scholz were securing the rights for the *Pomona Minen-Gesellschaft m.b.H.* While the latter were of the opinion, that Daniel de Pass was the sole owner of the mining rights in the Pomona area, and in accordance with an agreement with de Pass of 3rd March, 1909, they therefore now owned all rights, the former maintained that de Pass only owned rights in the immediate surroundings of the old mine workings. To make things worse, certain individuals from Cape Town, who owned shares of the old copper-silver mine at Pomona in the past, were trying to make claims, and the *Deutsche Diamanten-Gesellschaft*, who had received rights over all unclaimed areas in the Sperrgebiet from the *Deutsche Kolonial-Gesellschaft für Südwestafrika* also wanted its share. The Imperial Mining Commission had no option but to withdraw the entire area from pegging of claims on the 18th March, 1909.

Claims pegged before that date could, however, not be cancelled before the courts had taken a decision. Owners were therefore allowed to guard their claims, but it was strictly forbidden to pick up any diamonds. It was for that reason that prospectors Ebert, Güttker and Hasse from Lüderitzbucht, decided to stay on their claims south of *Pomonapforte*. But as the court cases dragged on, their stay was extended again and again, and they could not really resist the temptation to do a little prospecting. Soon they had collected a wealth of diamonds, which they had to carefully hide from the regular police patrols. But they remained hopeful that they would receive their mining rights after the conclusion of the court cases, and would thereafter be allowed to deliver them to the *Regie* for sale. Their hopes were shattered when the court eventually decided in favour of the larger companies and against the small prospectors. But Ebert, Güttker and Hasse had definitely no intention to part with their diamonds so that somebody else could make a fortune, they were rather prepared to throw them into the sea! Various plans were contemplated, but Güttker had what they considered the best idea. He developed his plan based on the geological theory that the diamonds came from the sea, and convinced his fellows to invest in a small fishing boat, equip it with a grab and a jig, and to pretend that they were mining diamonds from the bottom of the sea between Pomona Island and the mainland. They applied for a license in this marine area, and luckily the mining commissioner must have forgotten about the Imperial Decree, issued on the 18th of October, 1910, which

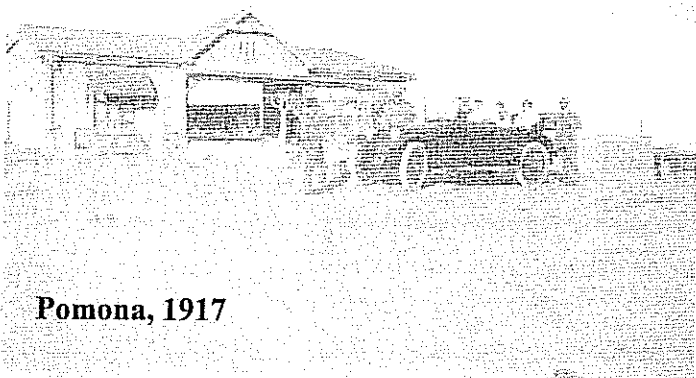
granted all rights to mine diamonds from the floor of the sea to the *Fiskus*, as the right was granted. The boat belonging to fisher Syvortsen was hired and duly put to work, and during a number of sojourns from Lüderitzbucht to Pomona Island, their diamonds, hidden amongst the rocks on the mainland, were all collected and disposed of at the *Regie*. To make the operation look real, they lifted sediment from the sea floor onto the boat, and Güttler was so skillful when placing the diamonds between the sediments, that the workers operating the jig were convinced that they were mining diamonds from the seabed! Once they had collected all their diamonds, all three went to Cape Town never to be seen again in Lüderitzbucht. Syvortsen undertook another trip to the area, but when he returned without a single diamond, it eventually dawned on the mining commissioner and the people of Lüderitzbucht, who forthwith spoke with proud of the *Pomona-Diamanten-Fischerei*, as they considered the whole coup a little revanche against Dernburg and his *Sperrgebiet* proclamation, which left no room for the small prospector!

Stauch also maintained a presence in the area, and stationed an employee by the name of Freiberg at Pomona for security reasons. When Ludwig Scholz was keen to pay a visit, Freiberg was instructed to accommodate him and show him around. As accommodation was scarce, Scholz had to share a tent with Freiberg. Inside the tent, Scholz found a large cigar box, which attracted his attention. When he opened it, he could hardly believe his eyes, as it was filled with diamonds! Since the area had been withdrawn from pegging, the collection of diamonds was obviously illegal, and Scholz immediately confronted Freiberg. But Freiberg, knowing that the police presence in the area was virtually non-existent, was not worried and explained that the workers, who bring the water and the fodder for the animals, always pick up some stones on their way, and give them to him. So he simply collected them in the cigar box. But Scholz, as a law-abiding citizen, could not find peace in his teutonic mind, until he came up with a plan: The contents of the cigar box went into two bags, and Freiberg and Scholz mounted their horses to ride to Idatal. Here, they scattered the diamonds as if they were sowing seeds, ready to be collected again, once the restrictions were lifted. For Scholz, it was a great relief: The problem was solved, and perfectly within the law (Levinson, 1983).

Meanwhile, the court in Lüderitzbucht became very busy dealing with the various cases, as the *Pomona Minen-Gesellschaft m.b.H.*, the *Deutsche Diamanten-Gesellschaft*, the *Deutsche Kolonial-Gesellschaft für Südwestafrika*, Voigts, Merensky and Weiss were all fighting against each other. The legal battles lasted until June 1911, when the Mining Commission also prepared to lift the withdrawal, and thereby opened the road for the development of the diamond deposits at Pomona. There was, however, a difference of opinion as to who should make the new

arrangements public, and whether it was the right of Chancellor Bismarck to make an announcement. Eventually, the German Emperor Wilhelm I himself signed the agreement on 18th May, 1912, in Bad Homburg, Germany.

It then took almost another year before the *Pomona Diamanten-Gesellschaft D.K.G.* was founded on 30th May, 1912, in Berlin, Germany. This new company



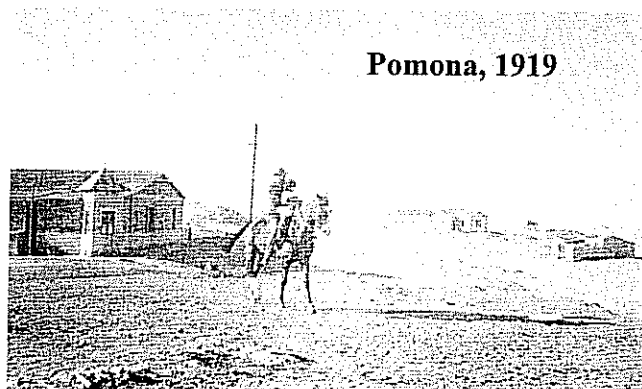
Pomona, 1917

amalgamated the rights of the previously opposed parties, and had a total capital of 3 Million *Reichsmark*. The *Pomona Minen-Gesellschaft m.b.H* received 73.33% of the shares, 10% went to the *Deutsche Diamanten-Gesellschaft*, and Voigts, Merensky and Weiss got 16,66%. Daniel de Pass was given the right to 8% of the sales value of the diamonds, and he satisfied the claimants from Cape Town by giving them 1.5% of that. Nevertheless, more than 3 years had been wasted with legal issues, and little did the proud owners of the *Pomona Diamanten-Gesellschaft D.K.G.* know about the fact, that they had only 2 years left before the First World War would break out!

The *Koloniale Bergbau-Gesellschaft m.b.H.*, now holding 36.67% of the *Pomona Minen-Gesellschaft m.b.H.*, registered a new company in Berlin, Germany, the *Gesellschaft für Kolonialwerte m.b.H.*, for the purpose of holding the shares of the *Pomona Minen-Gesellschaft m.b.H.*. The *Aktiengesellschaft für Verkehrswesen*, owning 31% of the shares of the *Koloniale Bergbau-Gesellschaft m.b.H.*, also owned 31% of the shares of this new company, and it later turned out that this would be the second best venture ever for the *Aktiengesellschaft für Verkehrswesen* after their participation in the *Koloniale Bergbau-Gesellschaft m.b.H.*.

Development of the mine began immediately after the company was founded under the leadership of *Diplom-Ingenieur* Heinrich Dausch, and was so quick, that operations started on 30th August, 1912. Until the end of November, 1912, diamonds lying at the surface were collected by hand by some 35 workers. Thereafter, the use of hand driven sieves was introduced, the number of workers doubled, and the gravels underlying the surface accumulations were treated. Grades of up to 200 carats per m³ were realized! After a period of 4 month only, the company had produced 124 412.5 carats of diamonds, which were sold for 5 251 749.30 *Reichsmark*, and paid a dividend of 40% for the year 1912! The average carat price of 42.21 *Reichsmark* represented an absolute record high, which can be attributed to the extraordinary size and quality of the stones from Pomona. In contrast to the other areas, stones were larger, on average between 3.5 and 4 stones to a carat. The largest stones found at Pomona had a size of 42, 37 and 34.75 carats. In contrast to the good price, mining costs were only about 4 *Reichsmark* per carat, resulting in the fantastic profits achieved.

In wise recognition of the situation at Pomona, the head office of the *Pomona Diamanten-Gesellschaft* in Berlin issued a directive not to high-grade the deposits, but exploit them in a systematic way. The beginning of 1913 therefore saw the introduction of 11 manual jigs, and later in the year two Schiechel plants with 26 and 8 separators respectively, as well as 2 crushers, which were ordered from the *Metallbank und Metallurgische Gesellschaft AG*, in Frankfurt, Germany. The larger plant was erected at Kaukausibtal and was fully automated, delivering the diamond-bearing fraction of the sediment via screw feeders to the Schiechel separators. The smaller plant was built at *Stauchslager*, treating the sediments from *Idatal* and *Hexenkessel*, a valley to the east of *Idatal* and so named (wiches cauldron) because of the fierce and sand-laden winds that were particularly strong here. The required water was pumped from boreholes until a pipeline from Jammerbucht was put in

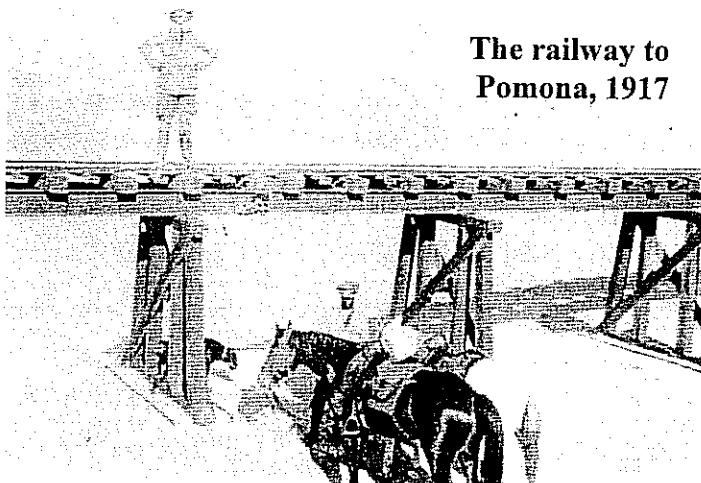


place. The desalination plant at Jammerbucht was commissioned in November, 1913. This highly modern plant, under the leadership of *Marine-Ingenieur* Hansen, was fired with the best English coal, and the cost to produce one liter of drinking water was 10 *Pfennig*. In time, the *Pomona Minen-Gesellschaft m.b.H* developed into the most profitable colonial company in South West Africa. The year 1913 saw a record production of more than 600 000 carats worth more than 278 million *Reichsmark*, an amount unequalled by any of the other producers, and also never reached again by the *Pomona Minen-Gesellschaft m.b.H.* in later years.

At the time, *Landmesser* Werbter and his assistants Büchel and Caccia were tasked to calculate the reserves of the *Pomona Diamanten-Gesellschaft*. They did so by laying a grid over the entire concession area, covering some 3 200 hectares, and digging prospecting trenches with a distance of 100 meters from each other. The carats recovered from one m³ of sand were multiplied by the estimated amount of sand present, and the result was an incredible 54 million carats of diamonds! One can easily imagine that this result was one of the best guarded secret at the time! However, when a delegation of DeBeers visited Pomona in 1914, management forgot to remove the map depicting the prospecting results from the office wall, and the gentlemen noted the figures with the greatest interest. Diamonds were sent twice a month by horse to the *Regie* in Lüderitzbucht, a job carried out by Sanitaeter Muhlack, accompanied by two policemen. The value of each transport was about 2 million *Reichsmark*. When they reached the police station at Elisabethbucht, where they usually stayed for the night, the saddlebag containing the diamonds was thrown into a corner, and the three would indulge in a game of *Skat*. However, this negligent behaviour never resulted in the loss of a single diamond (Baericke, 2001).

In 1913, a decision was taken to connect the southern diamond fields to the railway line of the *Koloniale Bergbau-Gesellschaft* and for that purpose a railway company, the *Grubenbahn Pomona mbH*, was founded. Building of the railway was undertaken jointly with the *Deutsche Diamanten-Gesellschaft*, which already in 1912 had started to build a railway line from Prinzenbucht to Bogenfels, and the *Koloniale Bergbau-Gesellschaft*. Interestingly, this venture caused the resignation of the managing director of the *Pomona Diamanten-Gesellschaft*, the erstwhile *Schutztruppen-Hauptmann* von Zülow. Von Zülow had been asked to include the building costs of the railway in the running costs of the *Pomona Diamanten-Gesellschaft*, despite the fact that the *Grubenbahn Pomona mbH* was an independent entity. He could not agree with this fraudulent request and rather resigned (Baericke, 2001).

The railway to Pomona, 1917



The railway line was laid with 24-pound rails clipped to iron sleepers. There were enormous difficulties because of the shifting dunes in the area of the first 11 km of the railway line, and an attempt was made to lay the track on an embankment so high that only the tops of the dunes, as they moved before the constant, string, southerly winds, would affect the traffic. But the dunes made up for their lack of height by the speed with

which they traveled. The 30 km section from Elisabethbucht to Prinzenbucht was completed during 1913, and therefore a good connection between Pomona and Lüderitzbucht existed. Connecting of the two railway lines eventually provided an uninterrupted link between Kolmanskuppe and Bogenfels, over a distance of some 118 kilometers. Before, goods had to be transported by ship to Prinzenbucht, which posed tremendous problems, as the landing in Prinzenbucht was more than difficult. During construction, even the heavy equipment had to be landed in Prinzenbucht, which posed great problems. To alleviate the problems, a small jetty was built. A 3.5 km long railway line was also built to connect the desalination plant at Jammerbucht, it branched off the main *Pomona Grubenbahn* some 10 km south of Prinzenbucht. A desalination plant was established at Prinzenbucht to provide water for the workers and the steam locomotives, and were also connected to the railway line, it was later moved to Bogenfels.

Because of the scarcity of water required by the steam locomotives, a decision to electrify the railway line was taken as early as 1913. The Maffei-Schartzkopff works in Berlin were commissioned to construct a locomotive similar to the "10" in use by the *Koloniale Bergbau-Gesellschaft*, but with a combination benzol-electric and straight electric drive, and capable of higher speeds. This time Maffei-Schwartzkopff used a small diesel engine to drive the main generator and wired the drive motors so that they would operate on 200 volts when the locomotive was running as a diesel-electric, but on 500 volts when current was being taken from an overhead wire. When delivered, the unit was naturally named "11". In addition, four Maffei-Schwartzkopff centre-cab locomotives were ordered, and numbered 1 though 4 when they arrived. However, when only a few poles had been erected, and the centre-cab locomotives were still in the process of being assembled in the workshop in Kolmanskuppe, the outbreak of the First World War in 1914 brought things to a grinding halt, and plans had to be shelved for the time being (Moir & Crittenden, 1982).

The little settlement at Pomona also grew quickly. At the end of 1913 a number of solid buildings, housing offices, a clinic and living quarters were completed. A canteen for officers and workers existed and a workshop included fine facilities for locksmith, blacksmith and joinery works, sporting excellent machines driven by a benzole engine (Bredow et al., 1914, Philips, 1986). Water was still supplied from the desalination plant at *Jammerbucht*. However, pastime activities were rather limited, and mainly consisted of playing cards and drinking imported *Pilsener Urquell* or whiskey and soda. The only change was provided by small hunting expeditions organized by the *Schützenverein*. A curiosity was a draisine, built at the workshop in Pomona, and utilising an old car engine, which transported people as from 1914 onwards in 2.5 hours to km 20 of the railway, from where they were transported by car, the first one on the diamond fields, to Lüderitzbucht, without having to stop over at Kolmanskuppe. Locally, a steam locomotive complimented the mule-drawn railway carts.

The ore was treated in 2 Schiechel plants, one at Stauchslager in Idatal, and one in Kaukausibtal. Both plants had fairly large crushers attached. The conventional Schiechel separators were further developed, and the introduction



Final recovery, Stauchslager

of the so-called *Differential-Flachsieb* with continuous removal of the concentrate increased efficiency. However, recruitment of workers proved to be problematic. At the end of 1913, the *Pomona Diamanten-Gesellschaft* employed some 333 people. This figure represents a severe shortage of workers, and the development of new workings had to be suspended at times for lack of manpower.

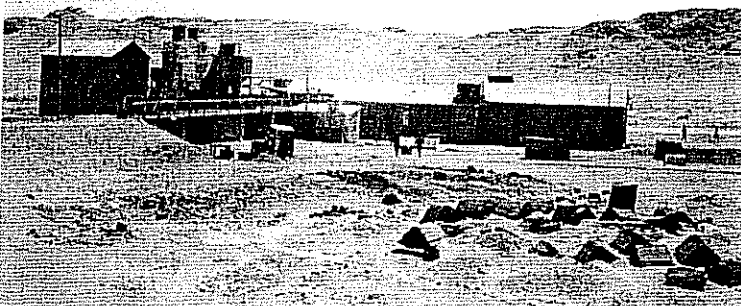
But when the owners of the *Pomona Diamanten-Gesellschaft* were still rejoicing in the fact that 1913 saw a dividend of 175%, the outbreak of the First World War brought everything to a standstill also here. When work re-commenced on the diamond fields in October, 1915, it soon became apparent that with the prevailing financial constraints, production on the lower-grade fields would not be economic. The *Pomona Diamanten-Gesellschaft* therefore took over the quotas of most of the other companies, and paid their employees in return. From 1916 onwards, the other companies gradually took over their own production again. In 1917, the geological studies of Kaiser and Beetz located potable water in the Pomona area in depths of up to 60 m. Boreholes were drilled and pumps installed, which reduced the dependence on the desalination plant, with its high cost of 80 *Reichsmark* per m³.

From 1912 to 1919, the *Pomona Diamanten-Gesellschaft* produced almost 1.3 million carats of diamonds. 1913 was the absolute record year, but only the First World War stopped the company, which might have otherwise improved on the 1913 production. Over the years, the production was follows:

1912	124413
1913	618329
1914	----
1915	13346
1916	57706
1917	144182
1918	136065
1919	190674

The Pomona area had been phenomenally rich on surface, and at some stage constituted the richest secondary diamond deposit in the World, when the highly concentrated detritus yielded up to 60 carats per m³. But the Pomona deposits were also very thin, and they were quickly depleted. When the *Pomona Diamanten Gesellschaft* was incorporated into CDM in 1920, the remaining reserves were estimated at approximately 3 250 300 carats, however, contained in sediments that required systematic mining, in contrast to the simple picking up that was done in the early days at Pomona.

The Kaukausibtal plant, 1924



Under CDM management, the semi-mechanised plants, built in 1913 at Kaukausibtal and Stauchslager in the Idatal, continued to treat ore from Kaukausibtal and Annatal. The gravels were sieved by trommel sieves at the point of mining, and the relevant fraction was transported to the small two stage Schiechel plants, where it

was subsequently treated by jigs and magnetic separator. The plants were powered by 45 PS diesel engines built by *Mannheimer Maschinen Fabrik*, and had 12 Schiechel separators each. They treated between 180 and 200 m³ per day, which corresponded to a mining and sieving of 800 to 1 000 m³ of sediment per day. In 1924, a stone of 52 carats was recovered from the Kaukausibtal mining operations.

At Jammerbucht near Pomona, the morphology of the area allowed the movement of cocopans by gravity from the mining area to a small plant near the beach, where a small battery of trommel sieves was powered by Elmo-engines. From there the concentrate was sent to jigs and then hand-sorted. Tailings were disposed off in the sea.

The little settlement which was established before the First World War provided housing for the people of Pomona. There were solid dwellings, offices, a compound for the workers, a clinic, stables, workshops, even a guest house, and, of course, a skittle alley. Separate messes existed for the officials, for the artisans and for the workers, even here, in the middle of the desert, people were very class conscious. One dwelling served as a school, where teacher *Freifrau* Helene von Falkenhausen reigned over a hand full of children. To the west of Pomona, a small cemetery developed. But in contrast to Kolmanskuppe and Elizabeth Bay, there were no streetlights in Pomona.

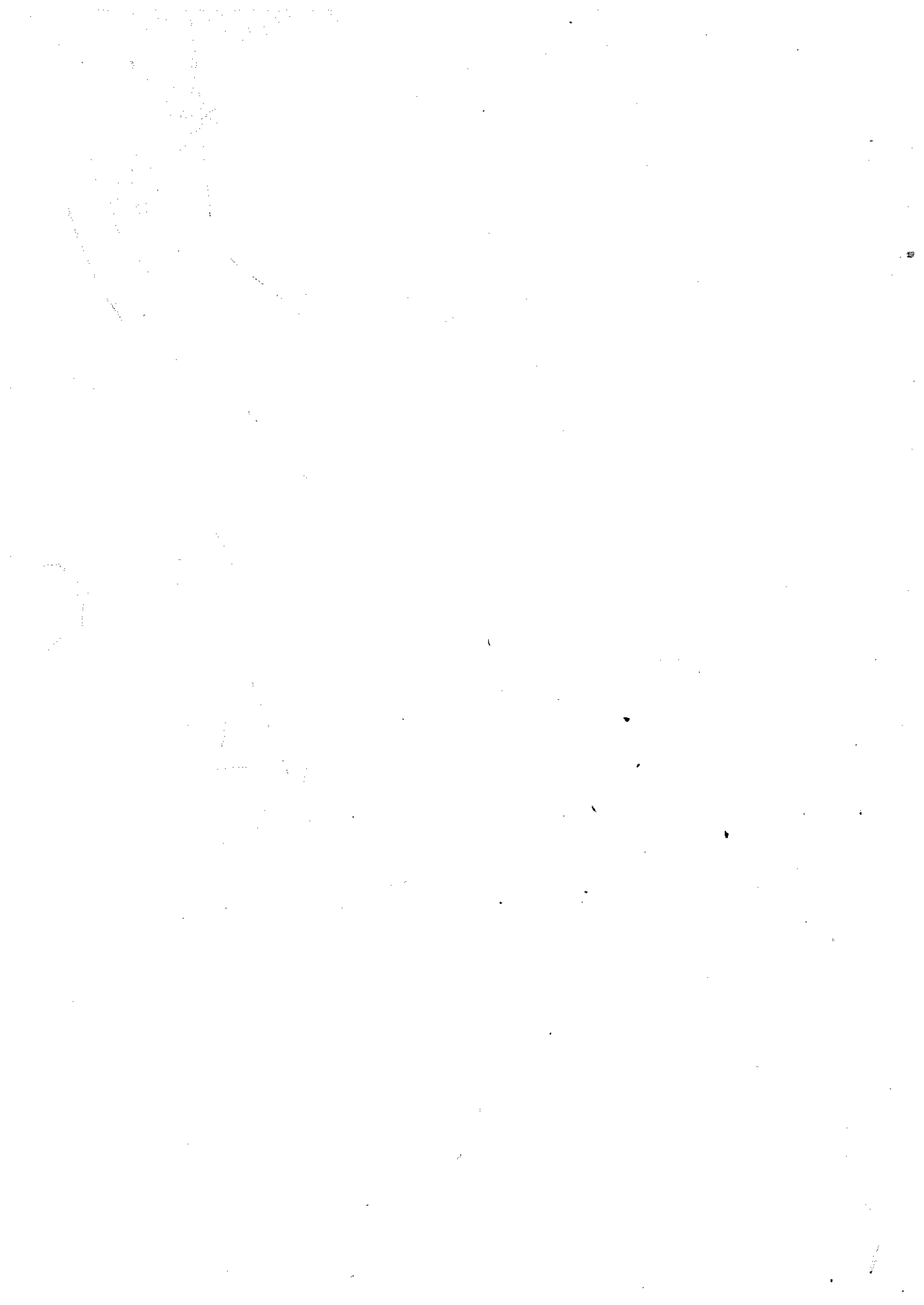
Water was provided by a series of boreholes, located in 1917 by Kaiser and Beetz. But water occurred only at considerable depths, on average at 60 m. In addition, water had to be brought in by rail from the wells at Grillental. While this was a tedious exercise, it was still cheaper than the water from the condenser at Jammerbucht. Water used at the plants was re-cycled.

The most serious thirst tragedy ever recorded in the *Sperrgebiet* occurred in 1925, when some 167 workers deserted from Pomona and went on foot southwards along the coast in an attempt to reach South Africa. This meant to cover more than 200 km to the Orange River, before they could refill the water bottles they were carrying. There were only 88 survivors when the police eventually found them (Green, 1946).

But developments in the diamond market forced CDM to reduce their operations to Kolmanskuppe and Elizabeth Bay, the plants near Pomona were closed down in 1927. Pomona was reduced to a transit station on the way to Oranjemund, but a fair number of artisans, serving the railways and later as mechanics for the vehicles remained behind, to keep the settlement alive. A visitor in 1930 reported of lively parties in the mess with good food and ample drinks, followed by sports competitions in the skittle alley, accompanied by chanting and more drinks. Employees from CDM's Claratal and Namaqua Diamond's Pusztatal working nearby joined the people from Pomona on such festive occasions, which apparently happened regularly. However, the school in Pomona closed in July, 1927, and



**Oranjemund transport
in Pomona, ca. 1938**



Freifrau von Falkenhausen and her children were re-located to Elizabeth Bay.

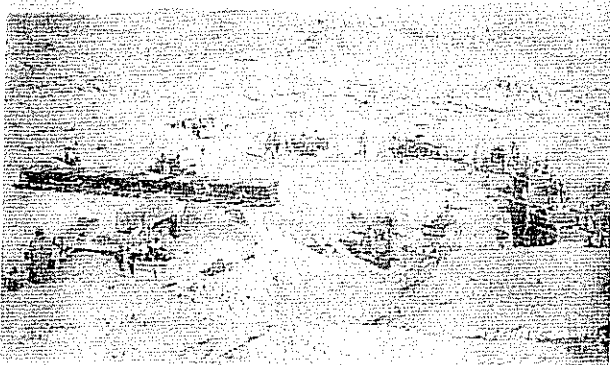
In 1936, an X-ray machine for the detection of stolen diamonds carried by employees was installed at Pomona, and used for the first time in October, 1937. When workers and artisans from Oranjemund wanted to visit their families in Kolmanskuppe, or leave for the north, they were transported by truck to Pomona, underwent X-ray examinations, and thereafter the journey continued by train. Not long after the installation, just before the end of 1937, the first employee was caught re-handed, carrying a parcel of diamonds weighing just over 100 carats and valued by the Diamond Detective Department at £ 1 300. The expense of commissioning the machine had paid off extremely quickly!

With the commissioning of the Oppenheimer Bridge in 1951, the route from Oranjemund via Pomona to Kolmanskuppe and Lüderitz became obsolete, and the inhabitants left, creating yet another ghost town in the *Sperrgebiet*. Many of the massive houses built before the First World War with teutonic efficiency and meant to last forever, as people believed in a prosperous future at Pomona and its rich alluvial diamond occurrence, withstood the elements for a long time, and even emerged again from shifting sand dunes. This way they remain as a memorial of the industrious endeavours which took place in the area in the early days of the last century. But the story of Pomona's diamonds would not end there, as reserves left behind became the basis for future operations at a later stage. In 1955, prospecting re-commenced at *Prinzenbucht*, and in 1956 in *Jammerbucht*. In 1957, special attention was once again given to the northern areas, and prospecting was carried out at Pomona and on the Lüderitzfelder, however, results would only come to fruition much later.

BOGENFELS

In October, 1909, Georg Klinghardt, a prospector previously working for the *Deutsche Kolonialgesellschaft für Südwestafrika*, but now employed by the *Deutsche Diamanten-Gesellschaft*, found diamonds at Bogenfels. Klinghardt often disappeared for months into the desert and painstakingly mapped all his routes. He always had an indigenous employee named Hossob with him, who acted as an intermediary to the few San people living in that desolate area. They allowed Klinghardt to use their scarce water holes, in return for knives and tobacco, which he gave to them. Other unwary prospectors in that area would sometimes find their camels dying from poisoned water, as apparently the San people poisoned water holes to protect their scarce water resources from foreign intruders (Schneider, 1993).

Early workings at Bogenfels



Within a year, 4893 claims of 8 ha each were pegged and surveyed. They were subsequently converted into 565 fields with a total area of 35 694 ha and registered with the mining commission in Lüderitzbucht in 1912. Cartographic work undertaken by Sprigade and Lotz and complimented by the work of Klinghardt, led to the publication of the map of the *Sperrgebiet* at a scale of 1:100 000 and in 10 sheets in 1909 by the

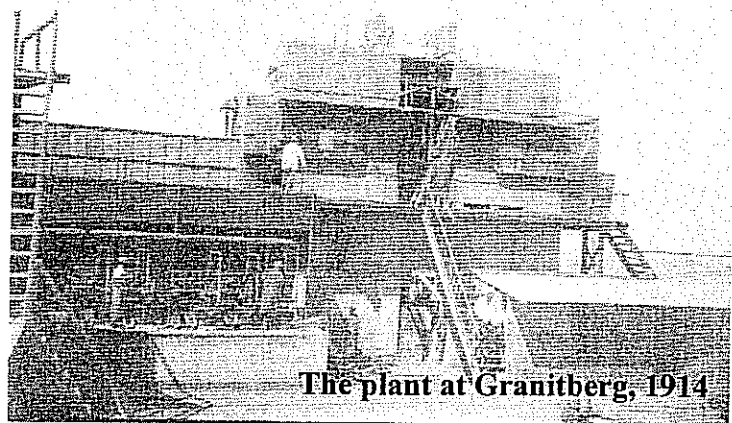
publishing house of D Reimer in Berlin, Germany. This map would make a lasting contribution to research in the *Sperrgebiet*, indeed much longer than the *Deutsche Diamanten-Gesellschaft* would last.

The detailed geological research and exploration work soon bore fruit. Near Buntfeldschuh, Reuning discovered a wind-swept valley, which he named *Elsetal*, and which was rich in diamonds with an average size of 1 carat. In the west of the Bogenfels fields, diamonds were occurring directly on the underlying bedrock, dispersed only with little gravel, so that already during the pegging of claims, many diamonds were recovered. At Bogenfels, for example, some 1 800 carats were picked up by the workers within 7 days, including stones as large as 8 carats. An exceptional stone of 17 carats was also recovered here. Large areas had been systematically trenched, and their diamond content calculated. Thereafter, fields with an established economic potential were worked. However, all in all, the deposits were not as massive as the ones closer to Lüderitzbucht., and measured some 20 to 30 centimeters in thickness only. They consisted of sandstone, grit and calcareous gravels, the latter being extremely hard, so that crushing was required to retrieve the diamonds. Partly, the deposits were overlain by dune sands, which had to be removed by excavator. Methods employed were similar to the ones used elsewhere. At spots with rich accumulations, the diamonds were collected by hand. Thereafter, the sediment was washed with hand sieves, and later with babies and Plietz-Jigs.

However, as early as 1909, the *Deutsche Diamanten-Gesellschaft* had sent a large sample of diamondiferous gravel to Germany, to allow for tests that would lead to the development of a mechanized separating device, the Schiechel separator. As a consequence, the *Deutsche Diamanten-Gesellschaft* operated the very first Schiechel plant, consisting of 3 separators only, at Bogenfels 11, also called *Sternsfelder*, as early as June, 1910. In 1912, a plant with 12 separators was erected at Bogenfels 1, and by 1914, the *Deutsche Diamanten-Gesellschaft* operated 3 large and 2 smaller Schiechel plants, the smaller ones at fields Hamburg and Lübeck close to Lüderitzbucht, a plant with two stages of separators and a crusher north of Bogenfels Station, one on field *Frohe*

Hoffnung, and a large, two-stage plant at Granitberg. Water for the southern plants was supplied from boreholes, the northern plants were connected to the pipeline of the *Koloniale Bergbau-Gesellschaft*. In addition, the company had a small crusher for cemented gravel, and operated an electro-magnetic Wetherill separator in Lüderitzbucht for the re-treatment of previously screened gravel. This separator

could also be used by the other companies, but was later re-located to Bogenfels. In addition, numerous Plietz jigs were in operation on fields *Weissfeld V und I*, *Dresden* and *Danzig*. With this equipment in place, areas previously mined were looked at again, and some with substantial success. Gravels from Buntfeldschuh, for example, were carried by mule to the Bogenfels plant and treated, and it did not take long, before a 2.5 carat stone was recovered (Lotz et al., 1913).



The plant at Granitberg, 1914

The completion of the railway line all the way down to Bogenfels marked the end of the steamer service to Prinzenbucht, and Bogenfels developed into the centre of the south. Massive buildings were erected and served as private dwellings, offices and a clinic. A modern workshop was powered by either petrol engine or wind engine, interchangeable according to demand. A large storage facility catered for the supplies. There was a bakery and an abbatoir, and in 1912, the company spent some 73 365 *Reichmark* for the purchase of slaughtering oxen, as all employees had to be supplied with food under the remote conditions they were working in. Also in 1912, the Imperial Post Office extended the telephone line all the way to Angras Juntas (farm Marmora), but the *Deutsche Diamanten-Gesellschaft* had to pay for it. The desalination plant was relocated from Prinzenbucht to Bogenfels. It complemented the water supplied from the water hole at Buntfeldschuh, some 10 km inland from the coast, which had been shown to Klinghardt and Reuning on one of their expeditions by the indigenous people. This way there was enough fresh water to supply not only the southern workings of the *Deutsche Diamanten-Gesellschaft*, but also the police post at Angras Juntas. Camels and slaughtering oxen were also stationed at Buntfeldschuh, because there was some grazing available in the area.

The war destroyed the operations at Bogenfels and Granitberg, and production could only resume in 1916. The advance, made available by the National Bank of South Africa, was not sufficient, the company had to take out a loan. The *Deutsche Diamanten-Gesellschaft* did not return to its plants at Lübeck, Hamburg, and other operations in the north, but concentrated on the Bogenfels-Granitberg area in the south. However, for future operations, they built a Schiechel plant from the scrap of the plants at Lübeck and Hamburg, at the Dresden field. The main production occurred at Granitberg, where a new Schiechel plant, considerably large than the one destroyed by the South Africans during the War, and also equipped with a large crusher, was built. At Bogenfels itself, Glockemeier had developed a construction which utilised the sieve of the Schiechel separator in hand-operated jigs. Batteries of these jigs operated in the place of the old Schiechel plant, which had also been destroyed by the South Africans during the War. Concentrates from both, the plant at Granitberg, and the jigs at Bogenfels, were treated in a magnetic separator at Bogenfels, before hand sorting took place. Geological mapping continued under Erich Kaiser und Werner Beetz, who later joined the company of DeBeers in Johannesburg. Substantial new diamond finds were made at Bogenfels (Lagunenfelder), Daheimtal and Granitberg, partly in areas where the diamond-bearing gravels were overlain by barren sands. Glockemeier undertook a number of test studies for the implementation of excavators similar to the one at Charlottental, as well as for the use of *Windsichter* in the place of trommel sieves.

Over the years, the *Deutsche Diamanten-Gesellschaft* produced the following amounts of diamonds:

1909	69 207
1910	135 038
1911	130 291
1912	158 158
1913	172 710
1914	87 553

1915	---
1916	23 685
1917	59 198
1918	63 945
1919	11 750

After the formation of CDM in 1920, mining continued and ore was treated in the plants at Bogenfels and Granitberg, which had been improved after the destruction during the First World War under the able leadership of *Ingenieur* Glockemeier. The little settlement with private houses, offices, a clinic, workshops, a post office, stores and the inevitable skittle alley remained the home of an active community. But the economic constraints of the late 1920ies also brought this mining operation to a grinding halt. In 1927 all operations in this area, which once used to be the "centre of the south" stopped, and many buildings became dilapidated rather quickly, especially the wooden structures. The pumpstation for the condenser was dismantled and taken to Elisabeth Bay, where it was used in the construction of the new mine. A visitor in 1930, only four years after the closure, remarked that Bogenfels once consisted of beautiful houses, but all were in a severe state of disrepair now, and that on the southern side of the dwellings the sand moving through the broken windows represented a very sad view indeed. The prediction of Prof Kaiser was fulfilled very quickly!

However, in August, 1935, with improved market conditions, a new recovery plant was installed. It had a milling section to process conglomerate, and trammel sieves were an integral part of the plant, as they proved to give the best classification efficiency for the milled conglomerate material. Production recommenced and immediately accounted for some 20% of CDM's total production in 1935. The Bogenfels diamonds were of excellent quality, but substantially smaller than the ones from Oranjemund. Mining ceased again at the outbreak of the Second World War in 1939, but resumed in 1943, when some 86 000 carats were produced there monthly. The stones were again of good quality, but small, some 7 or 8 stones to the carat. But overburden increased rapidly, and by 1945, the known deposits were almost exhausted. Luckily, in 1946 new deposits were found, and opened up, as CDM needed to raise production rapidly owing to increased demand. But by 1949, deposits were once again depleted, and production ceased.

In 1957, more prospecting was done, and sample pits were excavated. In 1963, 80 m³ of material from the old mine dumps were re-treated recovering 273 diamonds with a weight of 52 carats. The next year, 1964, saw the arrival of the large-diameter Benoto drill taking samples of marine gravel at 2 km intervals along the beach. The presence of diamonds in these gravels was proven, but as the deposits were quite low grade compared to the raised terraces at Oranjemund, the area fell into a slumber for the next 15 years. But unlike some other deposits, it would not be forever, as advances in technology would once again allow prospecting work, and a drilling programme was carried out between 1979 and 1981. In 1989, a small mobile dense media separation treatment plant was once again installed at Bogenfels, and deflation gravels were sampled with a view to determine the remaining ore reserves in the area. This would eventually lead to new developments following Namibian Independence.

