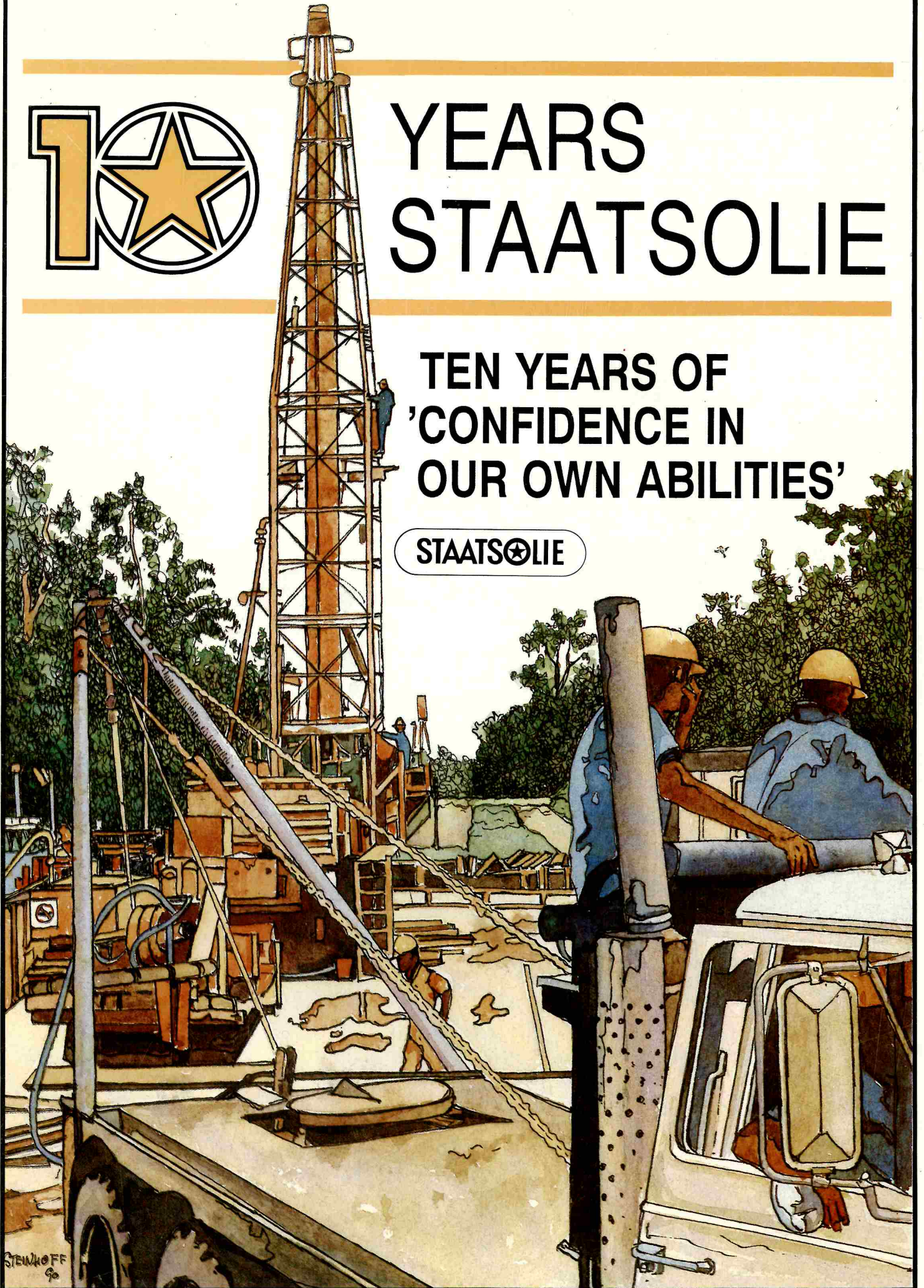




YEARS STAATSOLIE

TEN YEARS OF
'CONFIDENCE IN
OUR OWN ABILITIES'

STAATSOLIE



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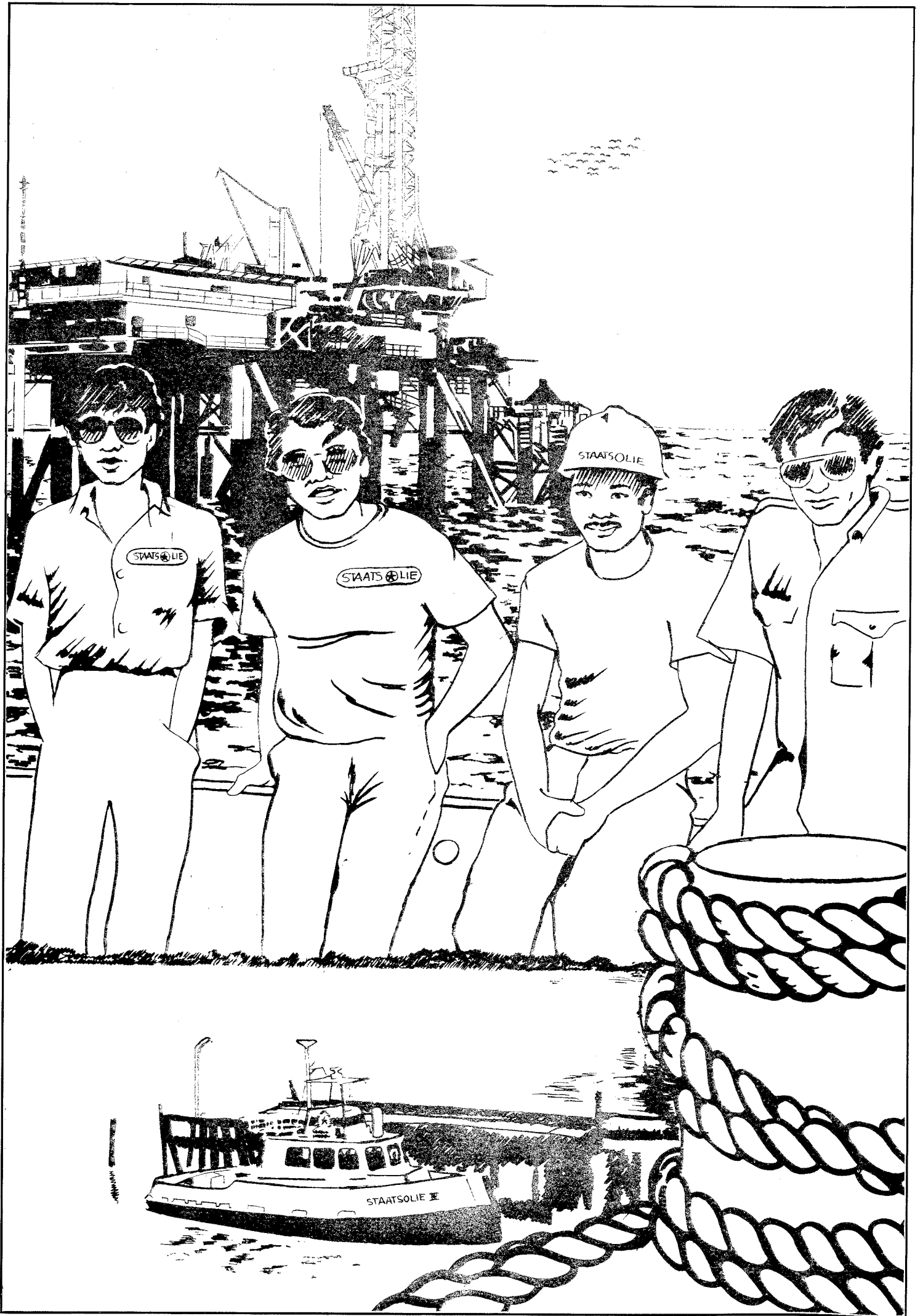
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**YEARS
STAATSOLIE**

1980 - 1990

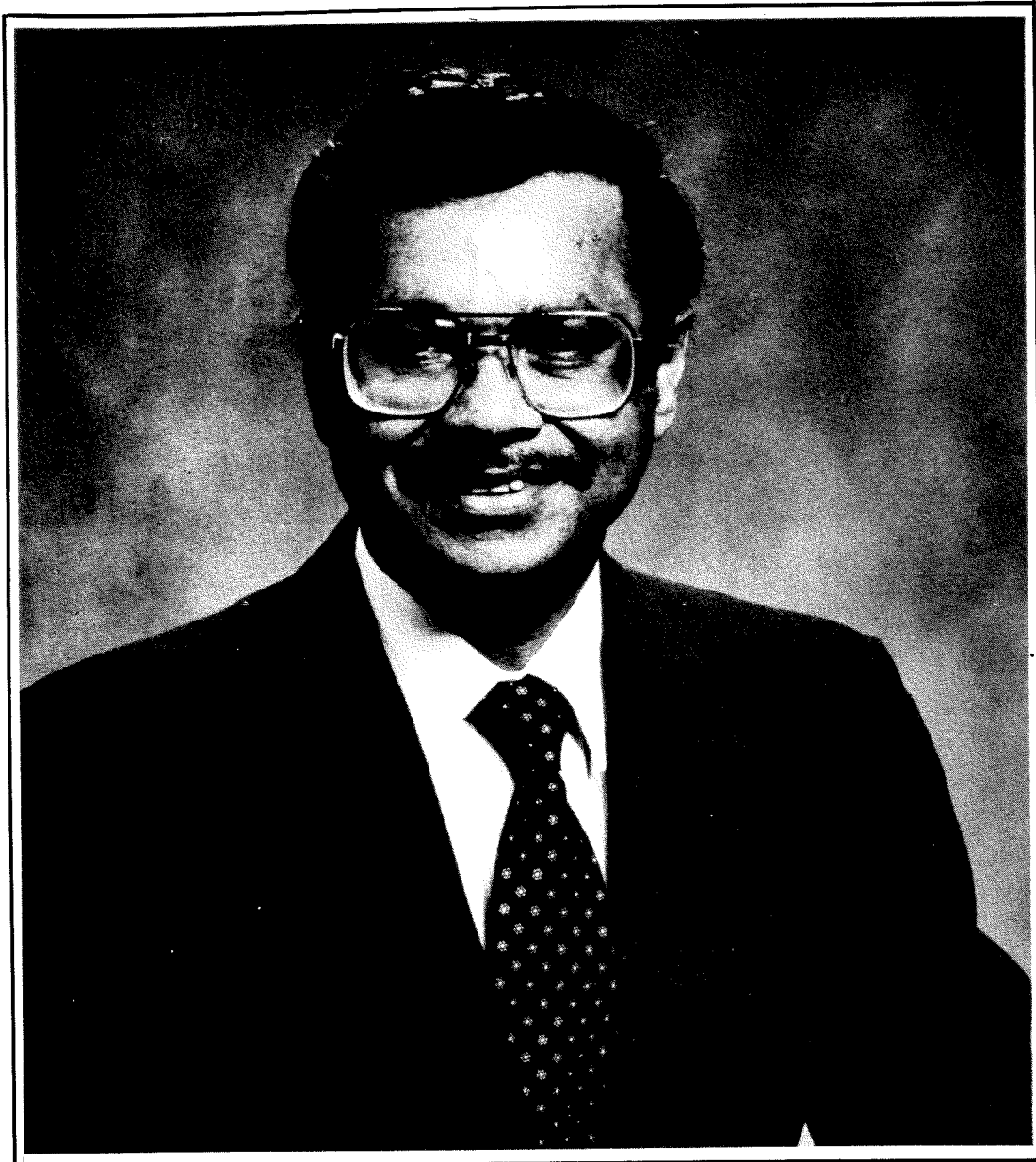
**TEN YEARS OF
'CONFIDENCE IN
OUR OWN ABILITIES'**



We dedicate this book to the new generation of Surinamese entrepreneurs.

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Sirahmpersad Eddy Jharap (Managing Director)

Born: June 24, 1944

**1964 - 1970 : Master of Science (Drs.) in Geology at the
University of Leiden, Holland**

**1970 - 1980 : Field geologist at the Geological and Mining Service
of Suriname**

1980 : Appointed as Chairman of the Oil Commission

**1980 : Appointed as Director of the Mining Service of
Suriname**

December 13,

1980 - now : Managing Director of the State Oil Company Suriname.

PREFACE BY THE MANAGING DIRECTOR

Oh, how time flies!! On December 13, 1990 it will be ten years that Staatsolie has been engaged in the development of petroleum industry within Suriname. During this period the fledgling company has enjoyed much sympathy and encouragement from many people and institutions from Suriname as well as from abroad; therefore, we have decided to publish on this occasion this jubilee booklet to share our experiences and the results with all our good friends.

Staatsolie is not merely an inventory of drilling rigs, pumping units and tankers, but most of all it is an organization created by our own people with inspiration and driven by belief in their own capabilities. Persons who in despite of the differences in ethnic nature, culture and education have found themselves working for a national goal.

Also in this booklet some staff members and dear friends tell about their own experiences and impressions from the early years of Staatsolie. One person, I would also like to see in this group is Lesley Goede (a renowned financial expert in Suriname). Lesley was our financial advisor at the beginning of Staatsolie. He was also one of the first persons who had faith in Staatsolie and due to his commitment to our cause he was very much instrumental in making Staatsolie accessible to the commercial capital in Suriname. 'If Lesley backed a project, it must be good', people would say. Unfortunately, due to his sudden death he could not see the first oil production of Suriname, but I am proud that we didn't disgrace his belief and confidence in Staatsolie.

Staatsolie began so: during the military coup of February 1980 I was running for a seat in the parliament for the VOLKSPARTY, and our campaign was going

very well. The general elections were scheduled for March of the same year. At first I thought that the military insurrection would subside after a few days and we would be back to business as usual, and proceed with the elections. Anyway, the story is known to you. No elections. Back to office-work I was just fed up. After ten years working for Geological Mining Service (GMD) I had no challenges anymore in that Service: we explored for minerals but nothing was done with the results. Outside the Service we were not taken seriously. For all our hard jungle-work we were considered to be crazy. The GMD was even called 'Gekke Mans Dienst' (Crazy Peoples' Service in Dutch). After the coup a new government and a new Minister of Development were installed who asked for more patience. 'The revolution would need everybody', they said. After a month or so, in April 1980, the Minister called: 'A couple of oil companies want to explore for petroleum in our coastal areas. Do you want to participate in an oil commission to negotiate with these companies? With your leftist ideas you can be useful'. I said: 'Good, Minister'. A week later he phoned again: 'Do you want to be Deputy Chairman of the Oil Commission?' I said: 'Fine, Minister'. A few days later he called again: 'I cannot find an acceptable candidate for the Chairmanship. Do you want to be Chairman?' I said: 'Good, Minister'. And so finally I got an opportunity and I started with petroleum.

The Oil Commission introduced a new petroleum legislation in Suriname, whereby the founding of a state enterprise, Staatsolie, was essential. At first Staatsolie was intended to be more a company on paper, which would sign the petroleum contract with the foreign company on behalf of the State and represent the

Government in various committees. In those days changes took place very rapidly. I was promoted in the meantime and became Director of the Mining Service. When Staatsolie was founded it was assumed that as former chairman of the Oil Commission I could also combine the function of Managing Director of Staatsolie.

A petroleum production sharing contract was signed with Gulf Oil in December 1980 for the offshore area. In that contract, we had established an active role for Staatsolie in the decision making process. Already during the committee meeting I had to decide on matters which were quite new to me. During the negotiations I was pretty tough in defending the interest of the State, and now we had to put contract language into practice, I thought. In order to exercise effective control we needed a cadre of knowledgeable and experienced people who could represent the State's interest on the various committees. The only way we could meet these requirements was to become

a real oil company and explore and produce petroleum by ourselves. So I left the Mining Service and besides the Gulf Oil contract I asked the government for a license on behalf of Staatsolie to produce onshore oil in the district of Saramacca. This way we could kill two birds with one stone: on the one hand making money in order to pay our personnel and on the other hand, to obtain the necessary technical, financial and organizational expertise of the petroleum industry. With this strategy we developed the Tambaredjo oil field in the district Saramacca and are working towards our goal step by step. As an introduction to this jubilee booklet here are some stories and anecdotes from the first years. Staatsolie had planned an evaluation workprogramme with three wells for 1981. There was however no oildrilling equipment available in Suriname and we were also very short in funds. So we leased an aged waterdrilling rig with crews from the government and as payment we would refurbish the 15 year old rig. The total

In 1982 a multi-well pilot production project was carried out to prove commercial production in the Tambaredjo field



expenses were estimated at US\$ 100,000. Drilling was to be started in September. For that purpose spare parts, instruments and specialized technicians had been mobilized from abroad, to work on the drilling rig in August. But we still could not obtain the rig to start with the repairs. Requests and pleas to the authorities were in vain. It turned out that the rig was stuck in a waterwell across the river at Meerzorg. The crews tried unsuccessfully for almost 3 weeks to circulate the drill pipes loose. Nobody wanted to acknowledge a loss and abandon the well. If we did not repair that rig in time, all our efforts and expenses would have been wasted and our project would fail before we even had drilled a single hole. Finally, at wit's end, I went to the drillsite and freed the rig from its

Staatsolie pioneers working for national objectives



Staatsolie pioneers working for national objectives



pipes with a blow torch and took possession of the rig. In retrospect, this act may not have been quite nice perhaps, but we had no other choice. Anyway, subsequently we completed the drilling programme successfully. An oil field was found, the drilling rig had been repaired and the loss of the waterwell was compensated. Years later we gave the government, a complete drilling rig as a good gesture. During the completion of the first testwell we had complications. A high pressure pump was urgently needed. Such a pump however, was not available in Suriname, neither could the completion be stopped for too long. A service company in the USA had a portable pump in stock and an employee who happened to have his passport with him. The fastest way to get the pump,

was to have that employee handcarry it to Suriname on the next available flight. Surinam Airways (SLM) was willing to delay the departure of its flight from Miami a few hours, to take man and pump on board. I went to our international airport, dropped the man at the Torarica Hotel to relax and wait for the return flight and left with the pump for the drillsite in Sara-

macca. In the meantime it had become midnight and the curfew had commenced. According to instructions of the military authorities I could get a permit from the military duty officer. So I went to the military station, explained the situation and asked for a pass. 'No, that is impossible. Just sit there on the bench and wait for daylight', I was told. But I

Staatsolie pioneers working for national objectives



was not discouraged, and threatened: 'Sir, if this equipment doesn't arrive in time at the drillsite, accidents with possible death casualties may happen at the rig and you will be held responsible for that. Please contact your superiors'. No reaction. After some time his colleague said: 'Why don't you let the man go?' At last I could leave without a pass with the remark: 'You can go. If you are arrested on your way or shot by commandoes, that is your business'. As I walked to the car a military policeman said: 'Sir, don't bother; just switch on your flashing lights, don't stop and keep driving fast'. Of course I was afraid, but fortunately I had no problems and arrived in time with the pump at the drillsite and the job was done successfully.

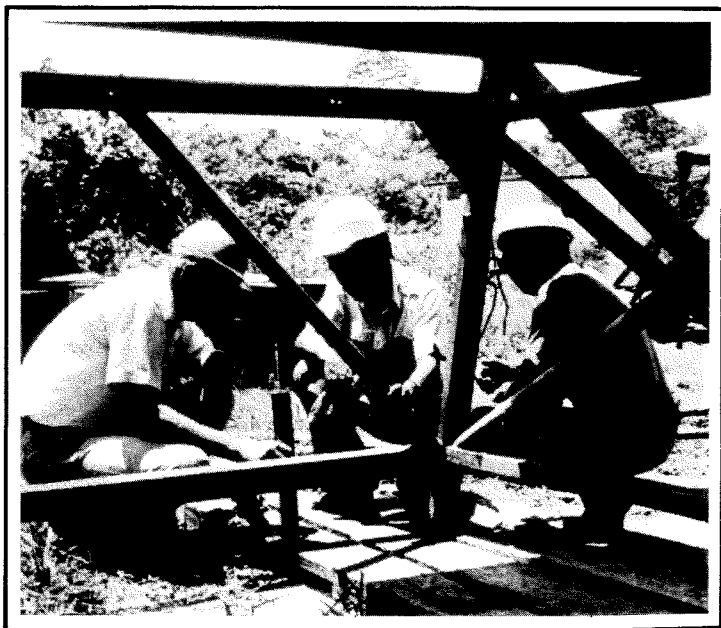
Our task was not only to control the foreign oil company but also to assist in obtaining necessary licences and permits, so activities could be carried out smoothly. Gulf Oil had to bring an expensive and modern drilling platform. As this type of equipment was not exempted yet from certain import fees, the amount of

tax to be paid might become very high. We asked the government for a special tariff on drilling platforms, which was not granted. They said: 'No, now we are going to make money; we have the multinational by the balls'. I disagreed with the governments decision. We should make money during the production period and not during exploration. Therefore I wrote a letter to the Commander of the Army and Leader of the Government for an opportunity to present the case again so that the request might be reconsidered. The Commander organized a meeting with the President, some Ministers and advisors and I was allowed to present my arguments. My point was understood, the exempt was granted and the drilling activities could be started.

In the beginning everything was of course different and complicated. We made long working-hours. Sometimes, after office work in town, I would go to the field and spent the whole night at the drilling rig. I had not heard of stress before, but gradually it came over me. I swallowed aspirins to relieve all kinds of undefined aches and pains. I became short-tempered and irritated. People did not seem to understand me. Once after a fury, my secretary said to me: 'Why can't you be like a banker. They are always so kind to their staff'. After that I started studying about management and looked at examples of other successful entrepreneurs. I tried to understand stress and to control it. Now I seldom burst out, but I don't have oil under my nails anymore, and in the meantime I have turned grey and am I ornamented with a belly. Perhaps I am now beginning to look like our Joseph, the banker.

In the beginning I knew very few people from our business community. The local manager of Gulf Oil often organized parties and invited various people. In no time he knew everybody who was important in Suriname. He advised me to do the same. It would be good for my posi-

Staatsolie pioneers working for national objectives



tion. At one of those parties, I was introduced to a person unknown to me as: 'This is our oil sheik', and the man answered: 'Oh, how nice to meet you. And how many coconuts did you cook today?' It was not always so nice.

Besides being manager I also had other duties such as production engineer, service mechanic, driver, etc. I almost forgot my role as a father. Often I would come home late and tired and didn't communicate much. The oil production had just started and one of our better wells developed problems. After a full day in the field I went home with a pile of books and spread those out on the bed.

My daughter, who by then was 4 years, entered the room and asked with a smart smile: 'So Mr. Jharap, are your wells dried up, perhaps?' I had no answer back.

The basis of our technical expertise has been laid by Jack Bradford, a retired drilling and production engineer from Gulf Oil. I spent a lot of time with him. I was his boss as well as his driver. He was

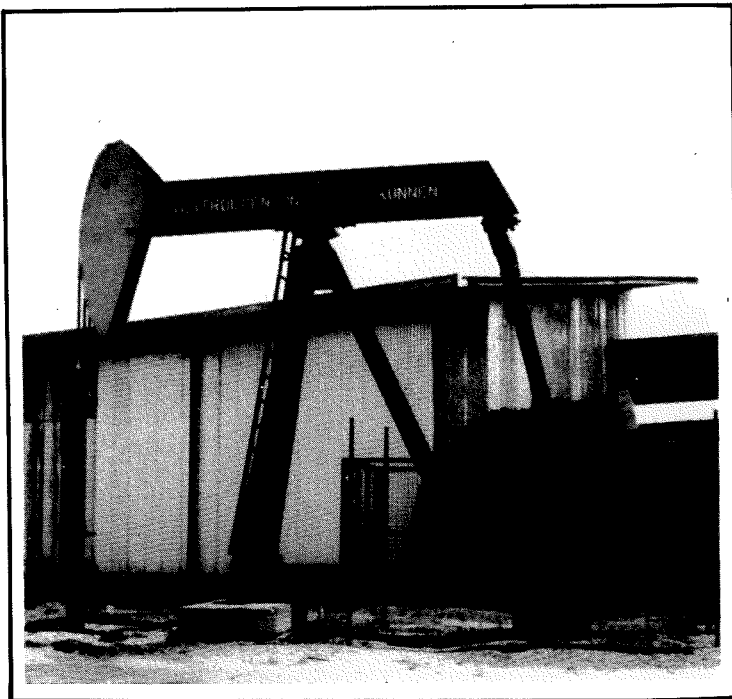
very intelligent, creative and dedicated. If we didn't have some special tool on hand, he would design it by himself. He spent many evenings in the forgery of Beekhuizen or at Holly's machine shop. Before coming to Suriname he had a heart surgery. I was worried about his health. On a hot day in October I saw Jack working alone in the piercing hot sun. Our employees had already retreated under the shades of the trees. I asked: 'Jack, why must you necessarily work in this heat?' Jack said: 'Eddy, these measurements can't be postponed. The data is important for the success of this project. This project is of great importance to your country, and I have seen the risks you have taken personally. Apart from that I also have developed a fatherly interest in this project now, and I want to complete my career with a tangible contribution to a developing country'. When I am tired or frustrated I recall those words.

The first wells were just put into production, November 25, 1982, when Jack had to return to the States. I was uncertain: 'Jack, we have no experience with oil production at all. What shall I do if problems occur and you're not here'. Jack: 'Eddy, I have been with you long enough to know that you are intelligent and capable people. You will see how quickly your people will be able to master the petroleum techniques and solve the problems themselves, and if you still need me, you can always call me'. With such a positive encouragement Jack strengthened my confidence.

I would like to thank everybody, who during the past ten years made his or her contribution, direct or indirect, large or small to the successful development of Staatsolie. Let us continue with this work as we started, and have confidence in the future.

Paramaribo, September 20, 1990
Drs. S.E. Jharap.

Staatsolie's slogan "Confidence in our own Abilities" everywhere in the oilfield (in Dutch)



INTRODUCTION

The first step to our national petroleum industry was made with the establishment of the Staatsolie Maatschappij Suriname N.V. on December 13, 1980. The company, now celebrating its 10th anniversary, has been developed into a multi-million dollar company which has an important role in our national economy. Staatsolie performs by itself and for its own account petroleum tasks such as: exploration, production, transport- and sales as an independent operator. We

now supply various big and small local industries with fuel oil, better known as the Saramacca fuel oil replacing import products and also are exporting part of the crude. The pioneers' work of a small group of Surinamers ten years ago, their perseverance and conviction in their capabilities, resulted in a company, STAATSOLIE, of which our country and people can be proud of today. What looked like a dream in those days, has now become reality. Words have turned into deeds and reality.

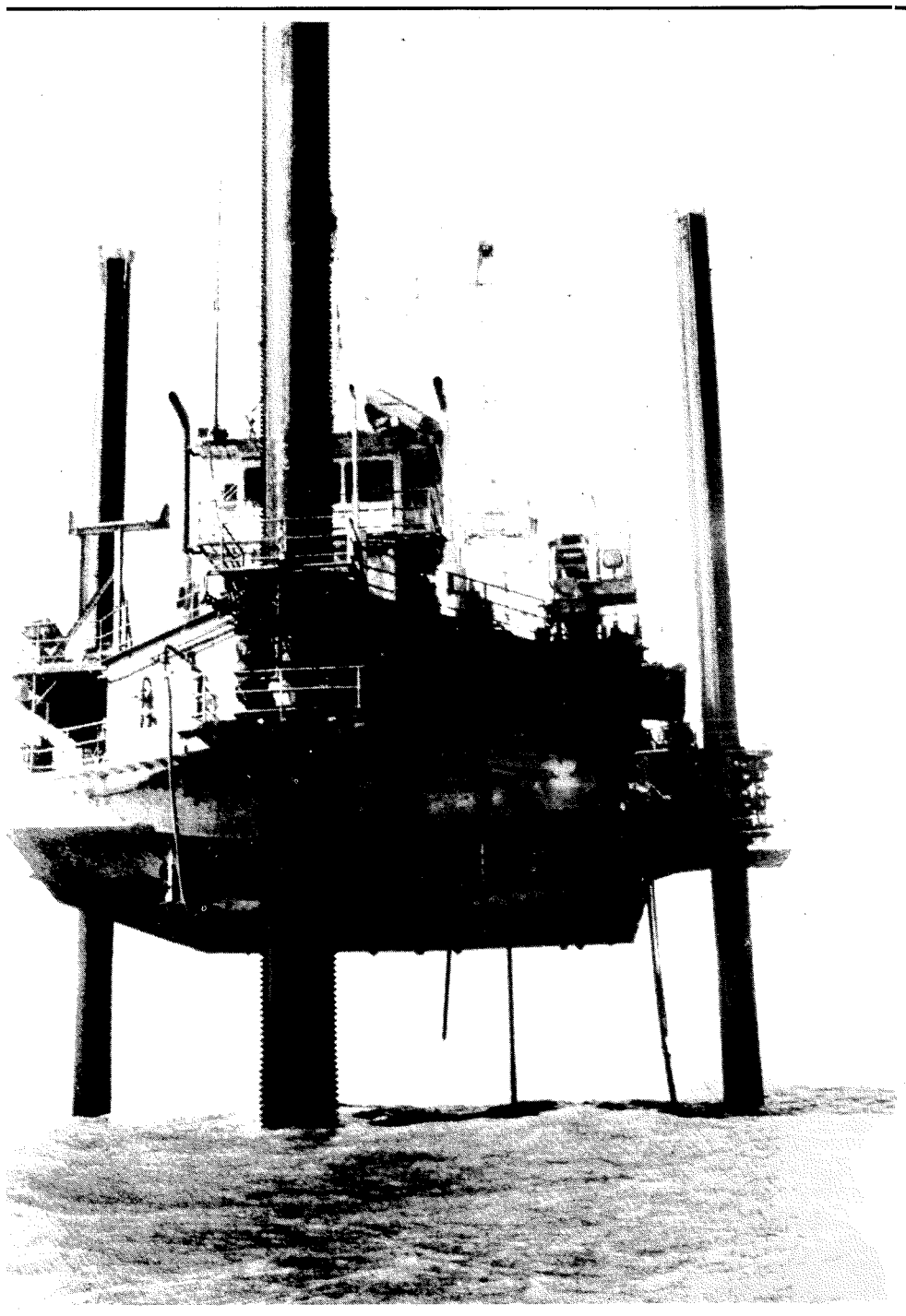
Our first motortanker built in Suriname



PETROLEUM IN THE WORLD

The first oil well in the USA was drilled in 1859 by Edwin L. Drake in Titusville, Pennsylvania. He found oil approximately 21 meters under the surface. Since then petroleum activities have developed into the largest industry in the world. Petroleum is a mixture of different chemical compounds which are hydrocarbons, because they main-

ly consist of carbon and hydrogen atoms. These substances vary from volatile gases such as methane (Marsh gas) to almost solid materials such as asphalt. The color can be yellow, but it can also be green, red, brown or black as well. Petroleum originates from decay, under special circumstances, of unicellular organisms (plants and animals), which



lived and died, and were buried in the sea. As they decayed, they formed pores in the rocks, and they were trapped. This is how oil is found. It is found in many places, but it is most abundant in the Middle East. This is why it is so important. It is used for many things, such as fuel for cars and planes, and for making plastics and other products. It is also used for electricity. Without oil, our modern world would not exist.

lived millions of years ago, and after they died, were buried at the bottom of the sea. As petroleum droplets were formed, they often moved in the soil through the pores of the rocks to higher levels until they couldn't go any further and became trapped and formed a pool. So crude is found at depths varying from 20 meters to more than 7600 meters. It does not occur like underground lakes or rivers of oil. The oil is found in the pores of rocks, thus in apertures which exist between the sandgrains, like water in the little holes of a sponge. The most familiar word for oil is PETROLEUM. This word has been derived from the Greek word 'Petra' (=rock) and the Latin word 'Oleum' (=oil). Petroleum means then 'oil from rocks'.

The porous rock layers, which contain petroleum, are also called reservoir rocks. The oil remains captive if the rock layers are sealed off from the top as well as at the bottom with an impermeable rock layer such as clay. The reservoir rocks were deposited initially horizontal, but due to landslides, subsidence in the earth and other natural phenomena, these rock layers were lifted, bent, folded and shifted over one another. Due to folding of the earth layers originated anticlines and synclines. Oil gathered in the highest part of the anticlines, because its specific gravity is lower than that of water: it always floats until it cannot go further.

In the beginning petroleum was only drilled in places where oil already seeped to the earth surface. Now, with the introduction of new and more advanced exploration techniques the search has been expanded to other areas of interest as well. By distillation crude oil is refined into many products such as petrol or motor gasoline, fuel oil, diesel oil, naphtha jet-fuel, kerosene for aircrafts, lube-oils, etc. Next, petroleum products find their way to all places in the world where energy

must be generated. Petroleum has become the indispensable and vital source for energy in domestic sector, as well as the industrial, the transport, electrical power stations, and in the commercial sectors. Also, petroleum is the most important raw material for the production of plastics, resins, synthetic rubber, artificial tissues, solvents and about half of the world's synthetic soaps. We even find petroleum in perfumes and medicines. A list of products in which petroleum has been processed would take many pages of text! Everyone daily comes in contact with some kind of petroleum products.

Crude oil supplies in the world however, are not unlimited. Estimates of the total world oil reserve in 1989 indicated that there is approx. 900 billion barrels oil (1989 Energy Statistics Source Books: Penwell books). More than half of this is stored in the countries of the Middle East. The rest is spread over the other continents in the world. The production of petroleum is influenced by economics as well as politics. Depending on these factors the demand of petroleum can exceed the supply, causing oil prices to rise quickly. High oil prices make drilling and producing crude become more attractive which increases the supply, causing oil prices to all again. Many efforts have been made by oil producers to control prices, with mixed results however!

About half of the energy demand in the world is now supplied by petroleum. Only a few percent of the world's oil production is used as feedstock for other industries and more than 95% as a source for energy.

PETROLEUM ACTIVITIES IN SURINAME

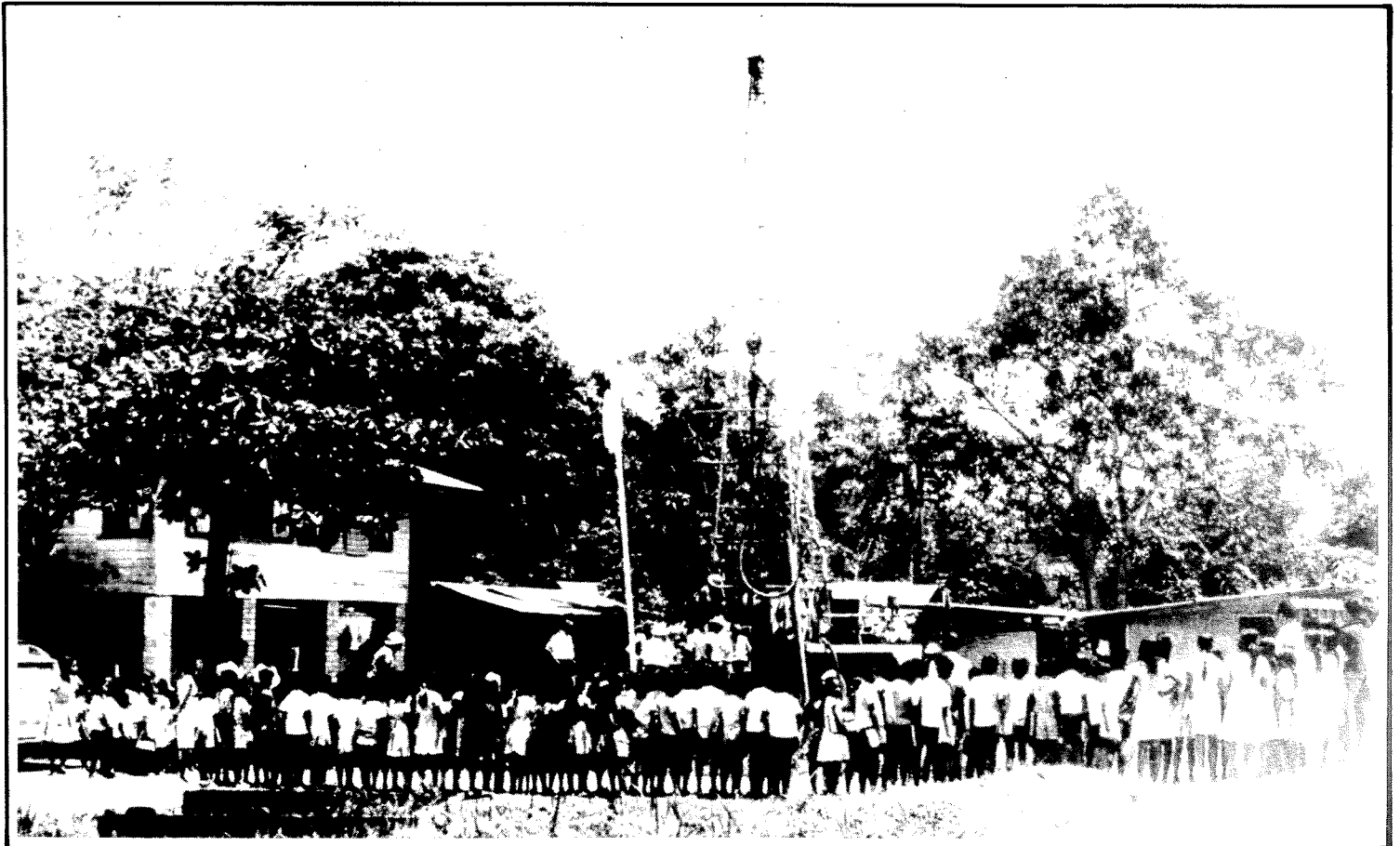
Petroleum shows in Suriname have been reported since 1930. Systematic search for petroleum however, started only after 1960. Since then a number of international oil companies have carried out exploration activities, both onshore and offshore. Petroleum of interest however, was accidentally discovered by the Geological and Mining Service (GMD), while drilling for potable-water in 1965 at Calcutta, a village in District Saramacca about 70 kilometers West of Paramaribo. A year later, in the same district, oil was detected again at the village of Tambaredjo. In 1967 oil was discovered again at Weg-naar-Zee near Paramaribo. During 1969 to 1970 this exploration campaign peaked as Shell Oil International drilled 20 exploration wells on various locations in our onshore coastal area. Petroleum

occurrences were confirmed, but none of these finds were considered commercially profitable for big Shell at that time, and the activities were halted.

In the seventies world market price for petroleum increased considerably. This odorous, brownish and greenish shining liquid, became more and more precious. Serious evaluation of possibilities to produce oil in Suriname, became attractive again. Petroleum had become the liquid gold for any form of industrial development. This liquid gold could also trigger a young generation of Surinamers. Searching for oil had become a national obligation. Our country spent yearly more than a third of its foreign currency for petroleum imports. The domestic production of our oil could provide an important saving in foreign currency.

First oil discovery in Suriname.

Petroleum was accidentally discovered in 1965 by the Geological and Mining Service while drilling for potable-water on a schoolyard at Calcutta, district Saramacca



The Oil Commission

In May 1980 an Oil Commission was appointed by the government to formulate policies for petroleum exploration and production, and to negotiate petroleum contracts with foreign oil companies. The Oil Commission formulated the strategic goal in the preamble of Decree 8 as follows:

...that the State wants to encourage the exploration and production of its mineral resources ...'

...that the State wishes to carry these activities for the maximum possible social and economical benefits for the whole nation while preserving the national sovereignty over the mineral resources at any time...'

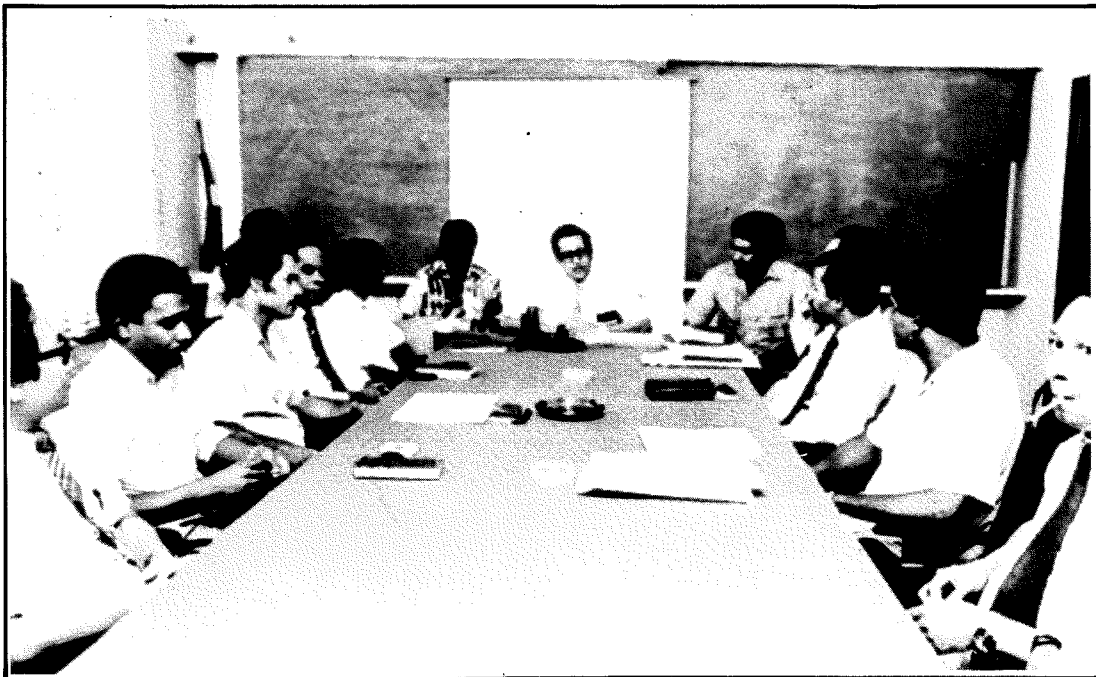
...that the State has therefore founded a State Company, which with due regard to the wishes of the State, will

start activities related to the exploration and production of petroleum, alone as well as with the participation of third parties...'

...that for the execution of the activities referred to, a license shall be granted to the State Company for the exploration and a concession for the production of petroleum in the area and under the conditions as stated in this agreement...'

The Oil Commission also drafted the articles of association for the State Company, prepared a draft concession agreement to obtain petroleum rights and a model petroleum service contract for the participation of foreign oil companies. And so the instruments had been provided in order to realize the strategic objectives.

Installation of the Oil Commission by the Minister of Development, April 1980



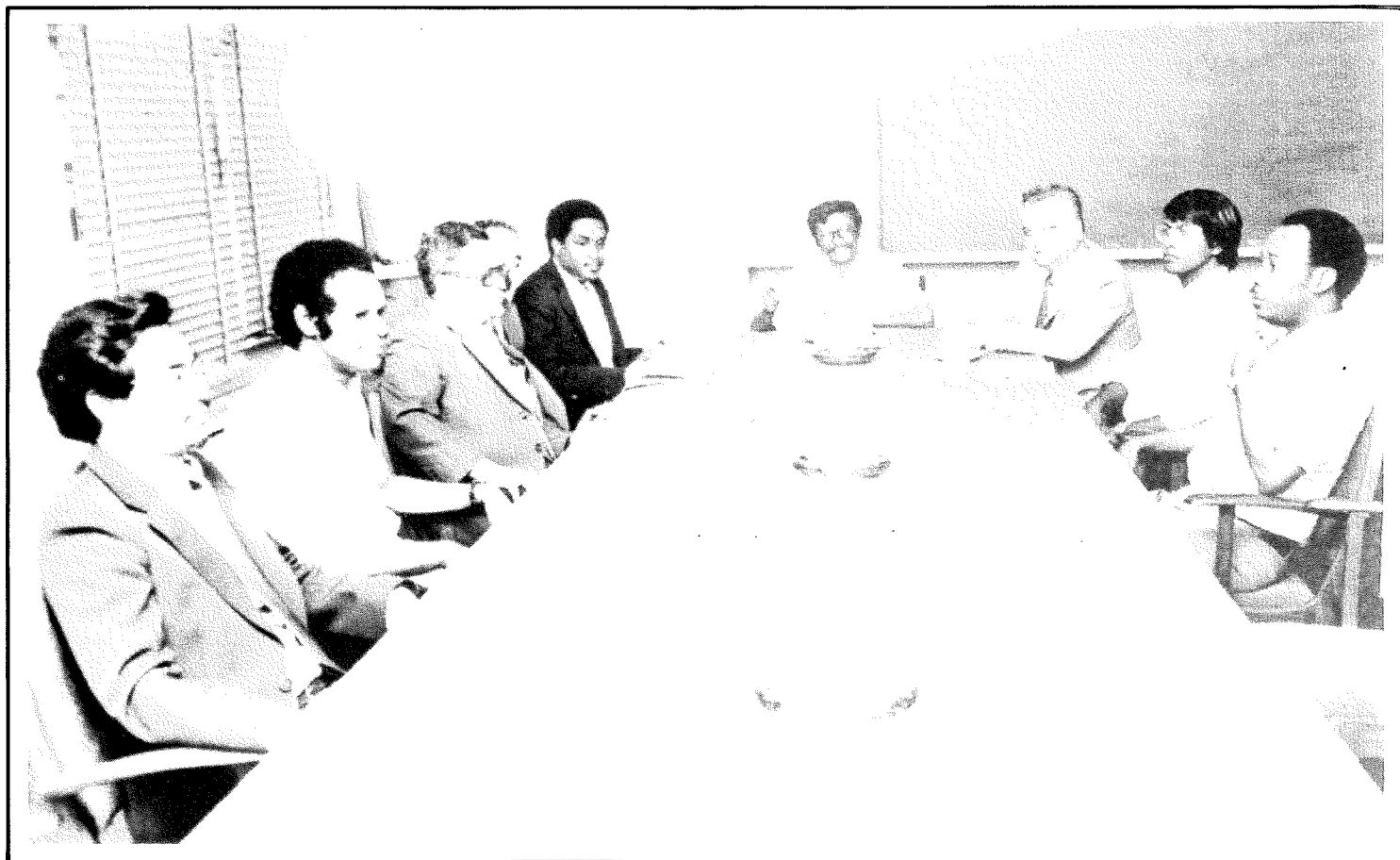
Staatsolie Maatschappij Suriname N.V. (Staatsolie) State Oil Company Suriname

After intensive preparations by the Oil Commission, the Staatsolie Maatschappij Suriname N.V., STAATSOLIE, was officially founded on December 13, 1980, as a company of limited liability based on the commercial laws of the country. All shares are held by the Republic of Suriname and these are not transferable. By special decrees STAATSOLIE has been designated as the government agent for the exploration, and production of petroleum in Suriname. STAATSOLIE may operate by itself or perform the activities

with the participation of third parties or contractors, based on service contracts or production sharing contracts.

At the foundation of Staatsolie a production-sharing based risk Service Contract for the exploration and production of petroleum in part of the offshore basin was negotiated and signed with Gulf Oil Company. As for activities in the onshore area, Staatsolie decided to explore that area by itself at its own risk, obtaining technical assistance from Gulf Oil.

Installation of the first Board of Commissioners for the State Oil Company Suriname N.V., January 1981

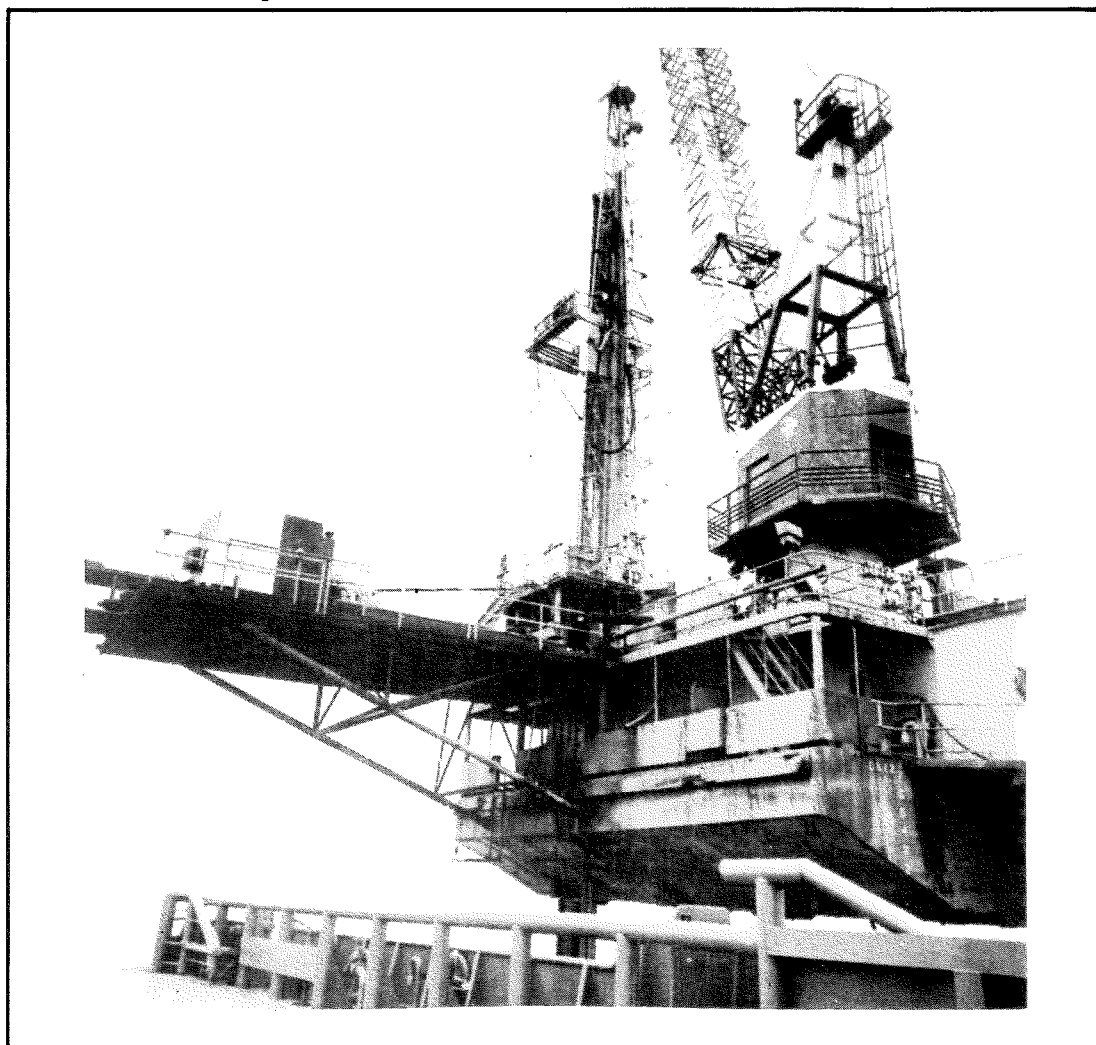


A dream comes true

Armed with the concession rights and the petroleum contracts, Staatsolie made the first steps into an unknown and difficult area for the development of the national petroleum industry. For the offshore contract with Gulf Oil STAATSOLIE participated in joint commissions to share decision-making power and to approve work programmes, budgets etc. Gulf Oil started fieldwork in 1981 with an intensive campaign in the offshore basin, and drilled a total of 9 wells. Oil was found in 3 boreholes in the nearshore part of the basin at a depth of 600 to 700 meters. However, these finds did not meet their minimum requirements and the area was relinquished. Gulf left in 1984. The offshore exploration activities however were continued in the same area in 1985. Staatsolie had signed an agreement with a consortium of foreign and local com-

panies, the Energy World Trade Group. The Gulf finds were confirmed, but no commercial discovery could be established at that time. Due to the strong decline in oil prices of 1986, the activities based under this contract were stopped again in 1986. After a short period of stagnation, negotiations with foreign oil companies started again in 1989 for offshore exploration. At the same time Staatsolie prepared a new draft for a petroleum law on behalf of the government. The proposed law was discussed and accepted by our National Assembly (Parliament) at the end of 1990. Based on the progress made with the negotiations and the establishment of the new petroleum law, Staatsolie hopes to sign a new production sharing contract in 1991 for the offshore area.

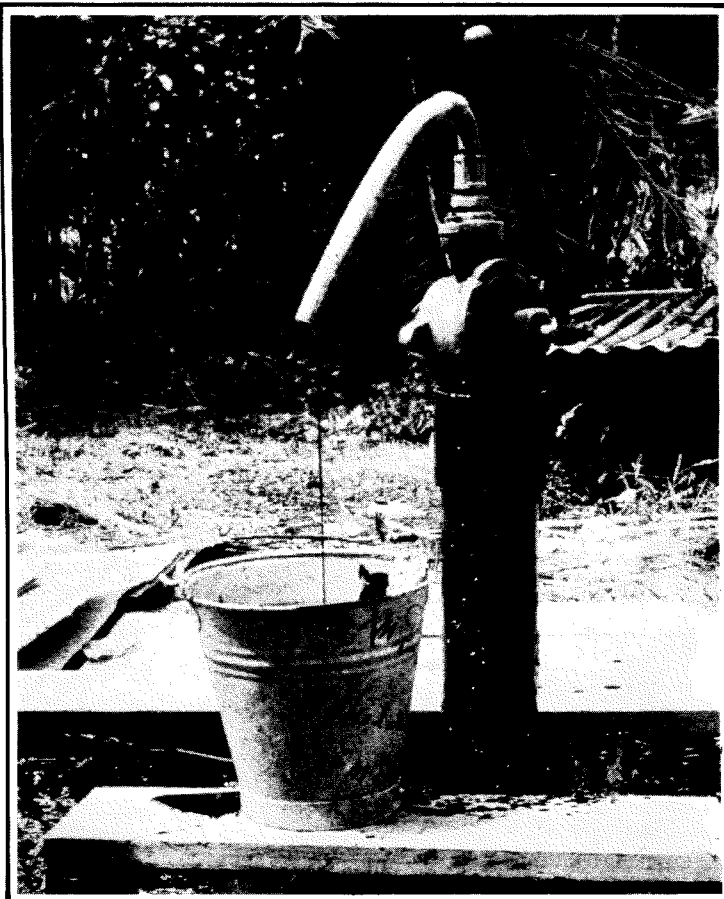
Staatsolie drilling offshore Suriname



Production in the Tambaredjo field

The onshore development had a more positive course. Here, right from the beginning Staatsolie took charge of all petroleum activities. In order to develop a cadre of knowledgeable and experienced people who could represent the State's interest in petroleum matters, Staatsolie decided to explore and produce oil by itself for its own account. With technical support from Gulf Oil and with funds from the Surinamese Government, Staatsolie started with its first evaluation programme in 1981. This programme consisted of the drilling and logging of three wells on the North bank of the Saramacca river near the plantation La Prevoyance: the TA-5, TA-6 and TA-7. Oil was found in TA-5 at a depth of 312 meters. After completion of this historical well, 160 barrels of crude was swabbed in 70 hours. Two more wells, TA-6 and TA-7 were drilled and logged.

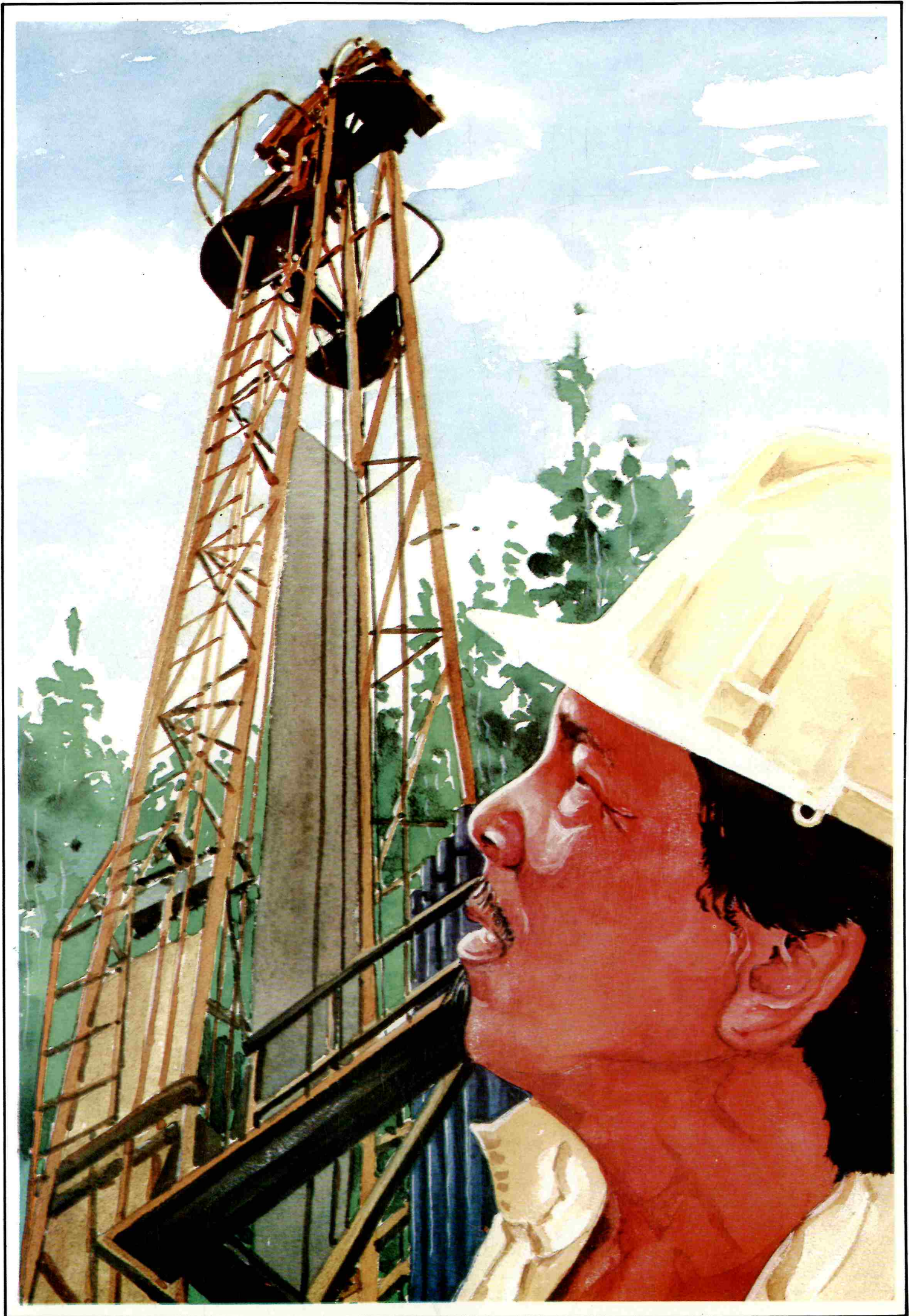
This is how we began oil production in 1981



The results were evaluated by Gulf Oil and a small development programme for testing purposes was recommended. Staatsolie obtained a loan from a Consortium of local bankers, and in 1982 a small production project consisting of 5 wells was installed on the South bank of the Saramacca river (updip) near the village of Tambaredjo.

A marshy land with wild vegetation and mosquitos soon changed into an oil producing field. Staatsolie bought a second hand drilling rig (a Failing 2500) of its own, and started with recruitment and training of own personnel. In September 1982 the first production well was drilled by Staatsolie personnel with supervision of Gulf Oil engineers. The average depth of the wells was 300 meters. On November 25, 1982, the date of Independence of the Republic of Suriname, production of national crude oil was started officially. Since then, Staatsolie has systematically expanded the production facilities in the Tambaredjo field with generated cash flow and several more commercial and government loans. The continued development resulted in a daily production of 4200 barrels from 150 wells in June 1990.

As of 1990, ten years after its foundation, Staatsolie has grown into an almost fully integrated company, managed by Surinamers who obtained their skills in the field of exploration, drilling and well completion, oil production and treatment, transportation and marketing by hard work and practical experience. Promising words have been turned into promising results within ten years, and into hard currency which saved our country millions of dollars. This way Staatsolie contributes building blocks for the development of a sound and strong national economy.



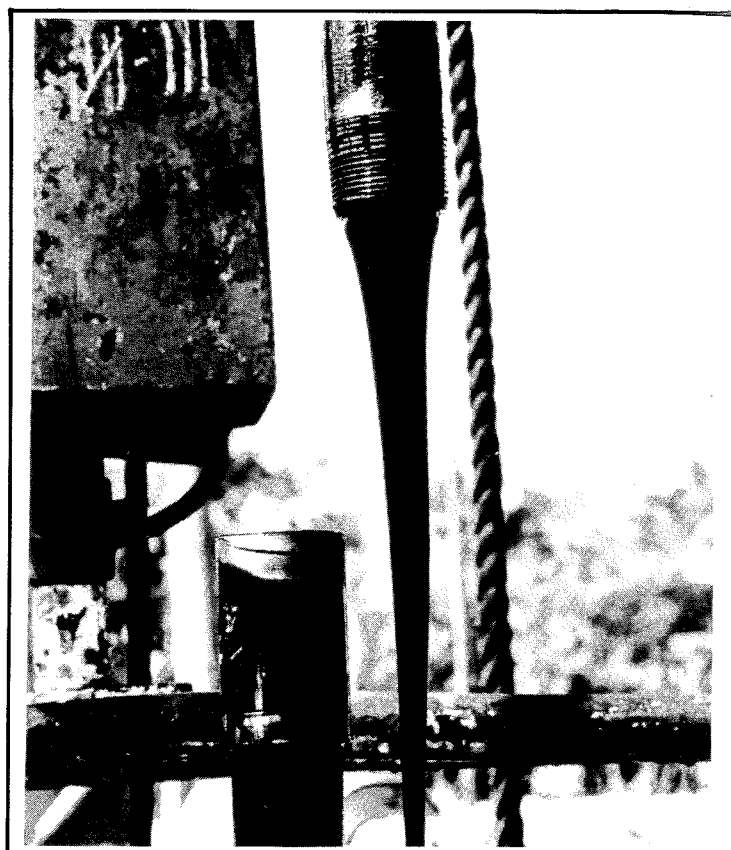
PETROLEUM RESERVES IN SURINAME

Proven petroleum reserves are to date only known from the Tambaredjo field in the onshore area. As of the end of 1990 the Tambaredjo reservoir covers an area of 63.7 square kilometers (15,744 acres) of the Saramacca District. The oil is trapped in unconsolidated sand bodies - the T-Sands - at about 300 meters beneath the surface. The proven original oil in place (OOIP) in the Tambaredjo field is calculated at 320 million barrels. Only a part of the original oil in the ground can be produced economically. That amount is calculated with the so-called recovery factor of the reservoir. Since the very beginning of oil production in the Tambaredjo field, several reservoir studies have been carried out to determine the main production driving force of this reservoir. In 1989 at last, 'reservoir compaction' could be determined as the main production mechanism in the Tambaredjo field. As oil is pumped out of the sand reservoir, the oil bearing sand bodies seems to shrink slowly, causing the oil in the reservoir to remain under pressure. Accurate field testing has yet to be done in order to determine the magnitude of this compaction. Only then, we will be able to obtain a reliable estimate for the recovery factor.

Based on production- and other reservoir data obtained so far a primary recovery of 12.5 percent is assumed for the Tambaredjo reservoir. The proven oil reserves with this assumed recovery factor is calculated at 43.6 million barrels, of which 6 million barrels have already been

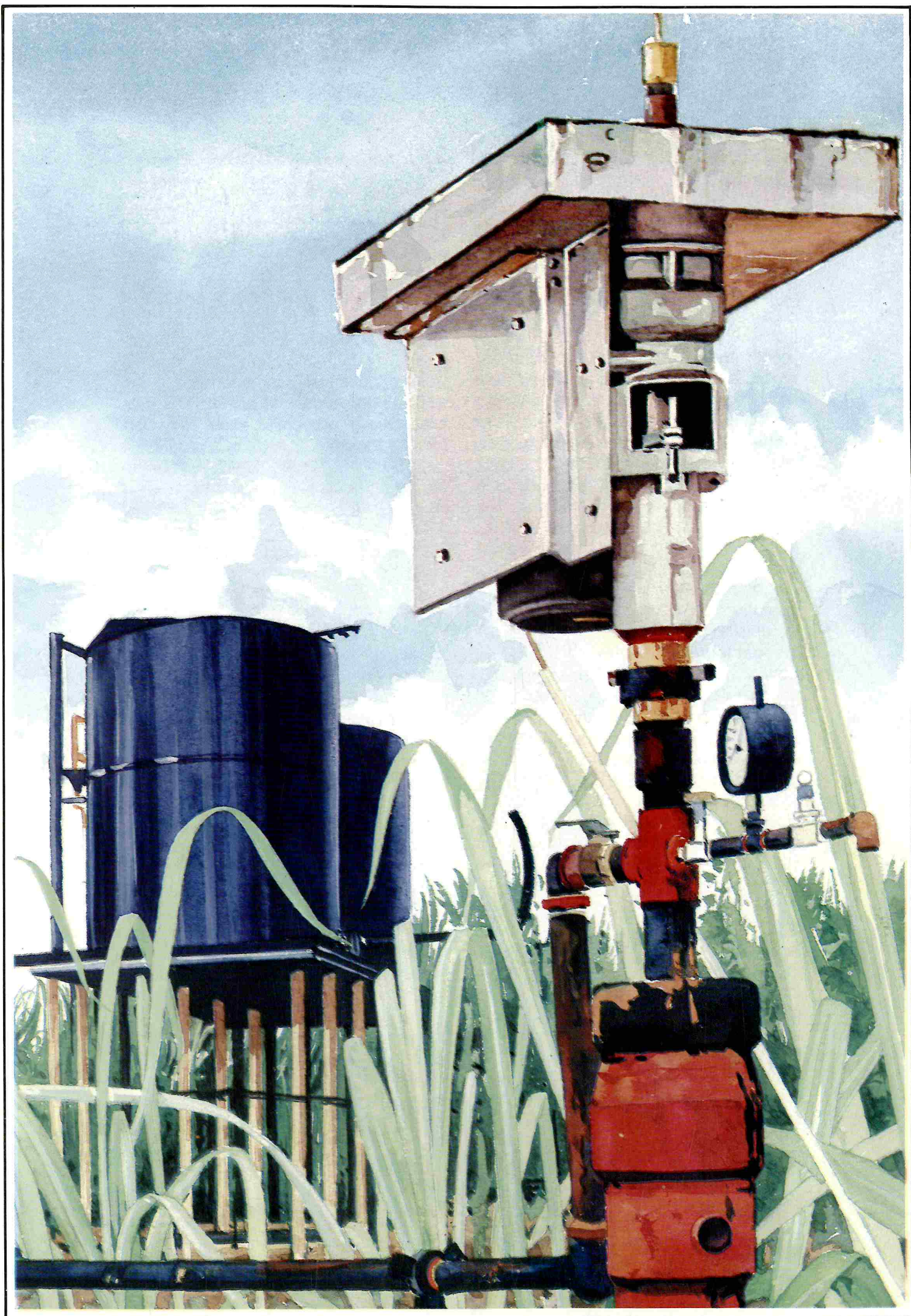
produced. At this time (1990) however, the total extent of this field is not known yet. Exploration and evaluation work are still being carried out in this area, which annually increase the proven reserves. Additional quantity of oil may be recovered at a later stage by steam-injection. A pilot steam injection test operation has been carried out.

Petroleum occurrences have also been found in various other parts of the onshore basin. Most of these finds are still in the evaluation stage so that for the time-being they are called 'probable reserves'. As of the end of 1990 the total probable reserves under evaluation by Staatsolie in the onshore area Suriname, is estimated at 40.3 million barrels.



PROBABLE RESERVES ONSHORE SURINAME

AREA/FIELD	Probable Reserves in MM Barrels
Tambaredjo Area North	12.0
Tambaredjo Field (steam injection)	7.0
Calcutta Area	12.5
Borneo Field	3.8
Weg naar Zee Area	5.0
Total Probable Reserves	
40.3	



HOW WE PRODUCE OUR CRUDE OIL

Production of crude oil is a complex operation, also in Suriname. The Saracca crude is a heavy oil of 15.5° API trapped at some 300 meters under the earth's surface. The productive area is difficult to reach, and Staatsolie has to construct costly access roads for every location where it wants to drill and produce crude oil. Most of the productive areas are marshy and covered with heavy vegetation. The area has plenty of rainfall during long rainy seasons. Prior to the drilling of a well much preparatory work has to be done, such as deforestation, road and site construction, and drainage construction complete with canals, dikes, and sluices. Most of the petroleum related activities are carried out by Staatsolie's personnel. The planning, the development and the production operations are responsibilities of the Production Division, which is organized in four departments: Operations, Technical Services, Utilities and Transport. All wells are drilled by our own Drilling Department which is part of the Exploration Division. When a drillsite is ready and the drilling objective has been determined, the drilling and completion of a new well can be started. The drilling is done round the clock in three shifts of eight hours each. It takes about eight days to drill and complete a new well. After the rig and equipment have been moved in on the location, drilling mud is prepared, the bit is screwed on the first drill pipe, and the new well can be spudded in. With rotating movements the bit cuts its way down into the soil, while the mud is circulated through the drillstring to remove cuttings from the hole. At a depth of 80 meters the drillstring is pulled out and the hole is run with surface casings which are cemented in the soil to prevent communication of the different layers and from col-

lapsing of the hole. Drilling then continues inside the surface casing with a smaller bit, until the oil bearing sand is penetrated. During the drilling process, soil samples are continuously analyzed on site. After total depth has been reached, the drill string is pulled out and the hole is logged (measured) with various electrical tools. From these logs the wellsite geologist can determine if the well will be productive or not. The success ratio at present is about sixty percent for this field. In case of a productive well casings are run again and cemented. After cleaning of the oil bearing sand layer with a reamer and water, a metal mesh screen is installed at the bottom of the well and is packed with special gravel for sand control. Next the production tubing with the downhole pump is installed, and the well is ready to be pumped. The production activities depend very much on electricity. The crude is lifted with electric motor driven rotary (Moyno) pumps or pump jacks and sent through a network of pipelines to the treatment and storage facilities. Staatsolie has its own power plant and electricity distribution network in the field. Power generation and supply is done by our Utilities department which also takes care of water production and supply, communications, safety and security. The Production Operations department takes care of the oil pumping, gathering and metering, reservoir-engineering and reservoir geology, planning and execution of the production expansion programme. The daily production operation involves the periodically testing of all wells for functioning of the downhole- and surface pump installations, the production from each well, oil-water ratios, visual control for leakages etc. So pump efficiencies, hardware conditions, reservoir- and production perfor-

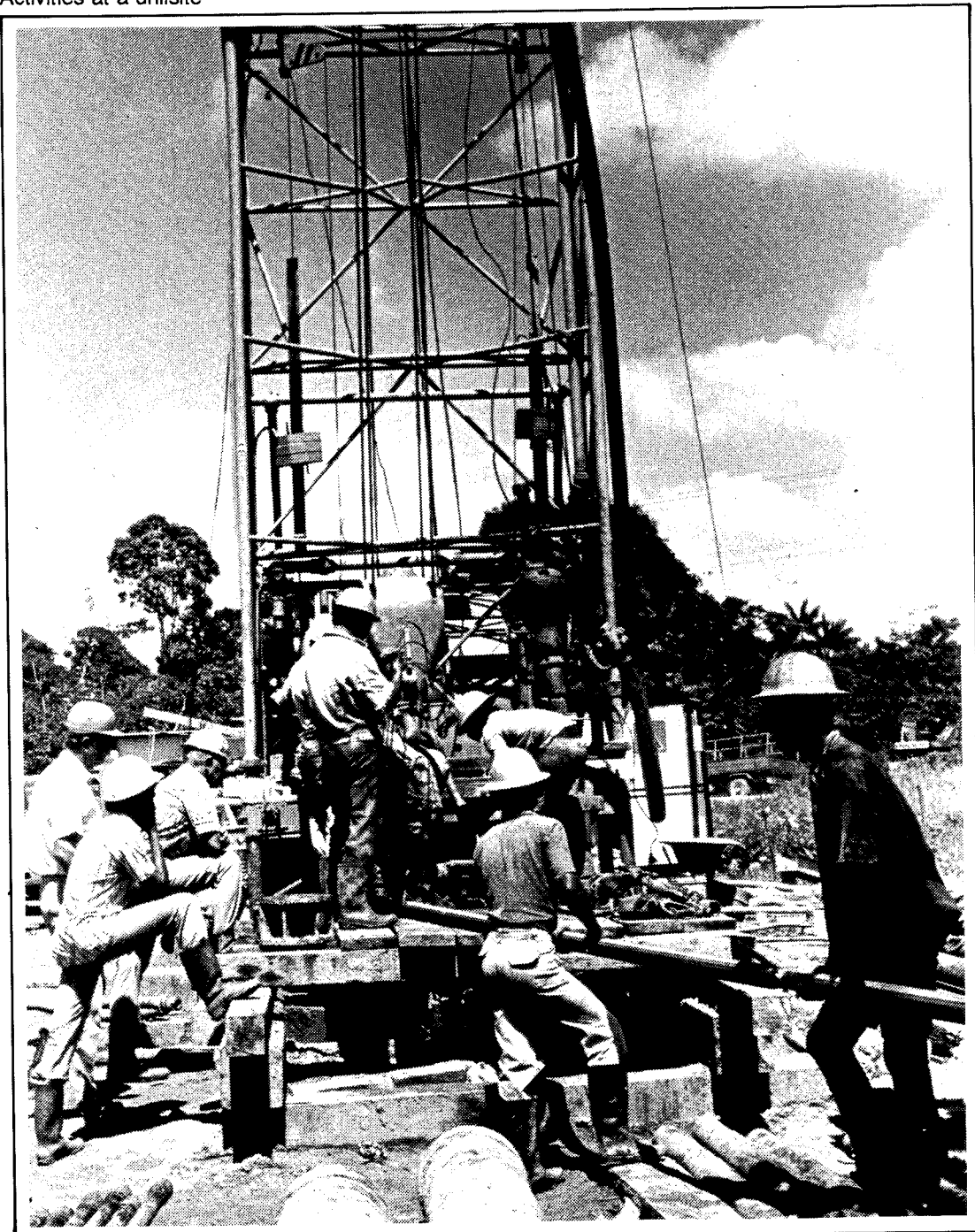
mances are monitored on a routine basis.

The oil is produced with an average of 50 percent water. The oil-water emulsion is heated in vessels and the separation from water and sediments takes place in wash tanks by gravity. The clean and dry oil is stored in tanks, ready to be transported to customers with our own tankers. The Technical Service department is responsible for the treatment of the oil-water emulsion, storage and loading of the crude, waste water treatment and

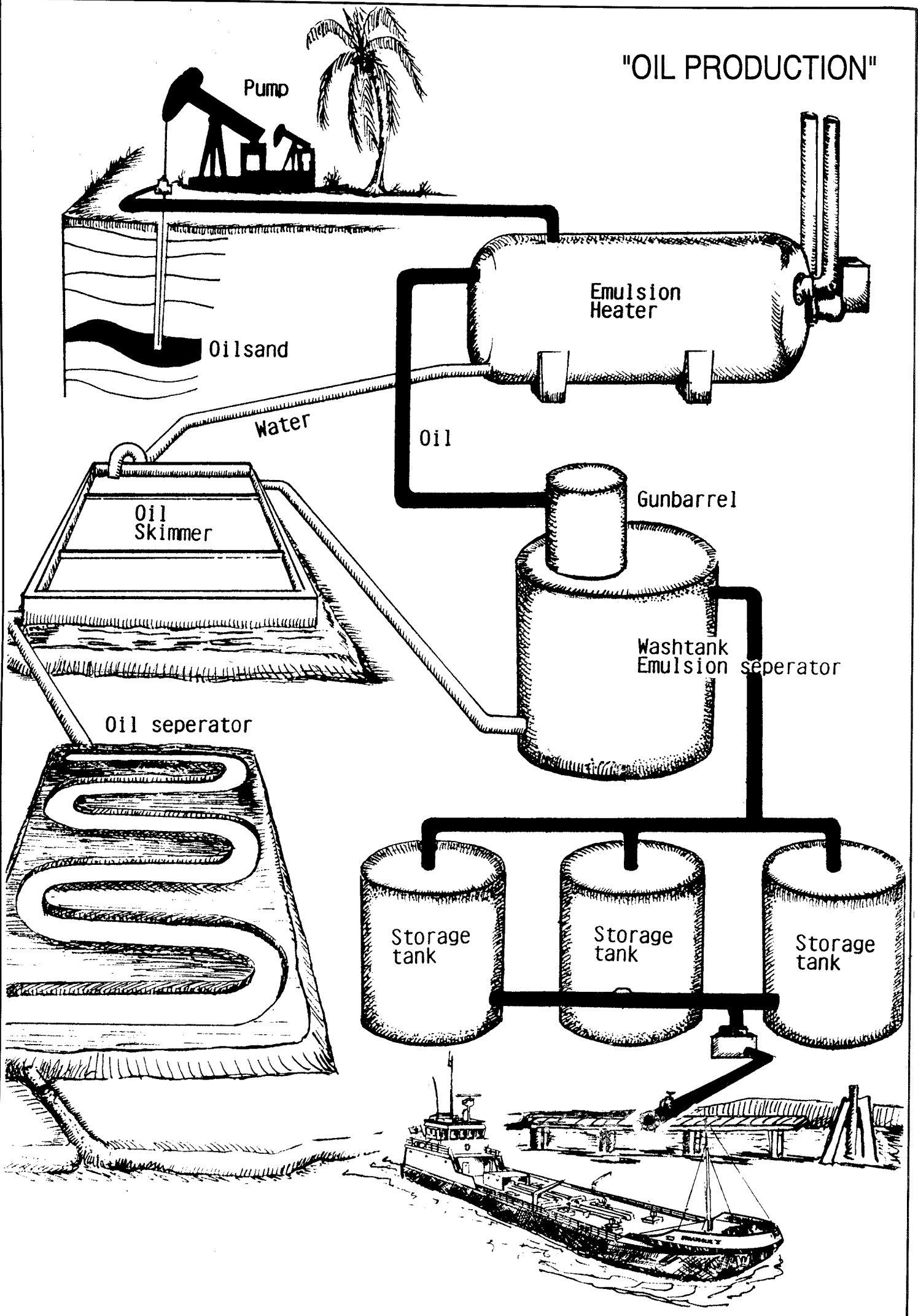
disposal, and for the maintenance of all production equipment and installations such as pumps, pipelines, treating and storage facilities and vehicles.

The Transport department operates the Staatsolie tankers. Two coastal tankers and two inland water tankers maintain the crude transport from the production field along the Saramacca river to the customers in Paranam and Nickerie, and to our export terminal near the harbor of Paramaribo.

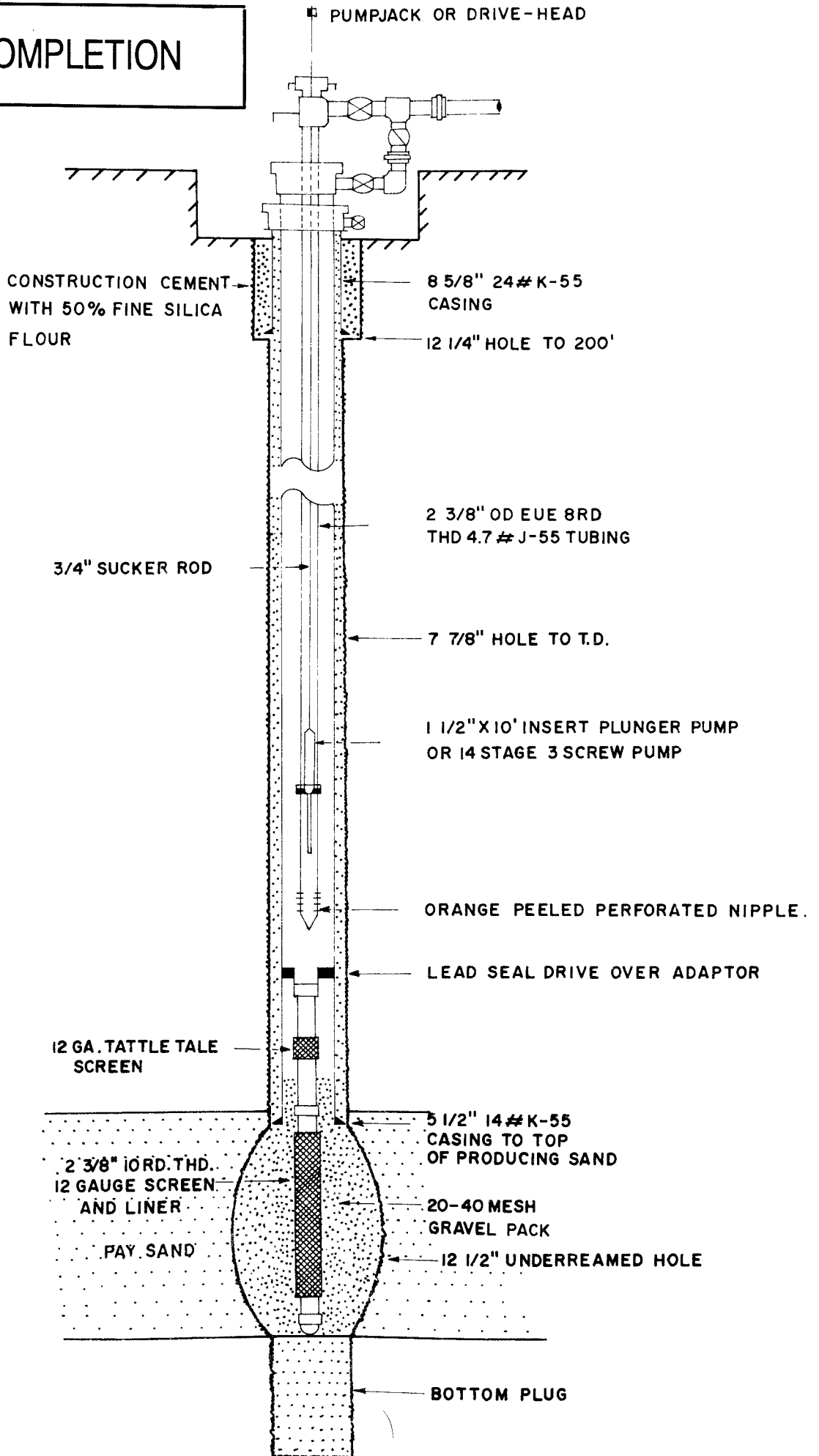
Activities at a drillsite



"OIL PRODUCTION"



WELL COMPLETION



ENERGY CONSUMPTION IN SURINAME

For our energy consumption we depend to a large extent on the import of petroleum products. During the last few years the import of petroleum products has cost our country around one hundred million dollars per year. Consumption of energy in Suriname has remained practically the same during the last five years: around 650,000 T.O.E. (Tonnes of Oil Equivalent, one ton of oil is approx. 7 barrels oil)¹.

The national energy production however, has been almost doubled during the same period. In 1988 we supplied about 47 percent of our total energy demand from local sources. The increase of the local energy production can almost totally

be attributed to the production of our crude oil. In 1988 the local oil production amounted to about 30 percent of the total energy consumption in Suriname. During the last couple of years the consumption of petroleum products in Suriname has been around 3.5 million barrels per year. From this amount, 2.5 million barrels were imported at a value of approx. US\$ 100 million in 1988. In the same year we produced one million barrels of Saramacca crude of which 0.3 million barrels were exported. About 82 percent of our total energy demand is based on petroleum products.

The bauxite industry alone consumes 60 percent of all petroleum or 2 million barrels per year. The Rest of Suriname

DEMAND AND SUPPLY OF ENERGY IN SURINAME 1983 - 1988 VOLUMES IN : 100 X T.O.E.

YEAR	1983	1984	1985	1986	1987	1988
Supply:						
Hydro-energy	670	570	682	701	356	472
Petroleum import	5,309	4,538	4,461	4,259	4,034	4,000
Staatsolie prod.	189	388	660	1,077	1,265	2,019
Bio-energy	481	542	617	630	693	762
Total supply	6,649	6,034	6,420	6,667	6,348	7,253
Consumption:						
Bauxite industry	4,407	3,515	3,802	4,025	3,607	4,145
Rest of Suriname	2,242	2,523	2,618	2,642	2,618	2,688
Total consumption	6,649	6,034	6,420	6,667	6,225	6,833
Staatsolie export	0	0	0	0	123	420
Total application	6,649	6,034	6,420	6,667	6,348	7,253

Sources: Staatsolie, Ministry of Natural Resources, Customs, Statistics Office, Suralco

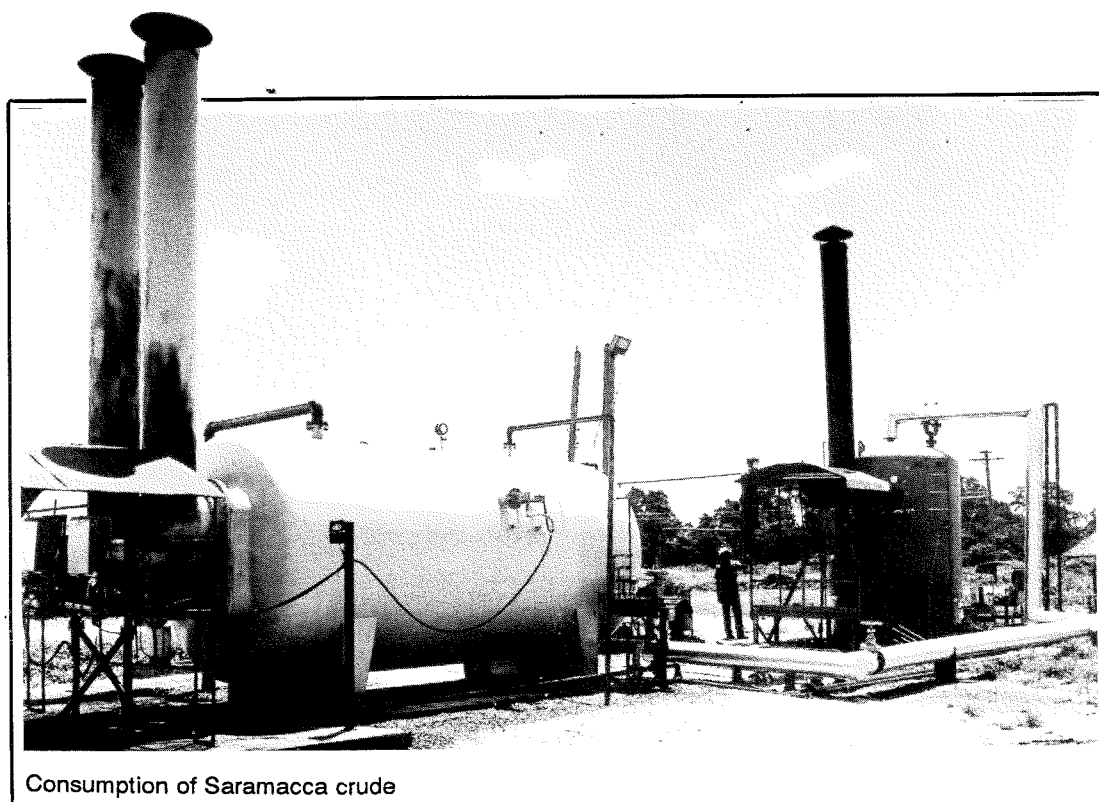
¹ All energy sources are converted in tonnes of oil equivalent, whereby the chemical conversion factor is used.

used in 1988 about 1.5 million barrels petroleum products. By increasing the national petroleum production we can further reduce oil imports, and save the country millions of dollars more. In 1990 the local production already amounted to 1.5 million barrels, while the expansion programme still is in progress. Potentials for more petroleum onshore as well as offshore are high, and exploration programmes are under way.

Due to the economic stagnation in Suriname during the eighties, it is difficult to forecast our growth of energy consumption for the near future. The consumption of energy in the bauxite sector decreased significantly in the past decade and is now stabilized at 2 million barrels per year. Most likely it will remain at this level. For the Rest of Suriname an annual growth of energy consumption 2 percent should be a good estimate. Petroleum products in the local bauxite industry are used mainly for process-steam generation and transport. As a by-product electricity through cogeneration is also obtained. The bauxite sector also consumes the major portion of our hydro-electricity. The Rest of Suriname mainly uses refined petroleum products such as diesel oil, gasoline, kerosine, LPG, and

lube oils, totaling 1.5 million barrels. From this amount, about 16 percent (mainly diesel oil) is used for electricity generation, 8 percent goes in domestic uses, and 61 percent is consumed in the transport sector. In a business as usual scenario perhaps about 20 percent of the petroleum consumption by the Rest of Suriname could be replaced with hydro-energy, but the major part, mainly the transport sector, still will depend on petroleum products.

Staatsolie's production already has reached in volume the total petroleum consumption by the Rest of Suriname. However, the product values differ considerably. Staatsolie produces crude oil (a raw material), whereas the Rest of Suriname needs high grade refined petroleum products, for which much higher prices have to be paid. Staatsolie has estimated that with an investment of US\$ 175 million during the next 3 years (1991-1993) in the national petroleum industry, we can become self sufficient in our petroleum demand, except for the bauxite industry. The investments are needed for the production expansion to 6,500 barrels per day and the construction of a refinery with a capacity of 7,000 barrels per day of Saramacca crude.



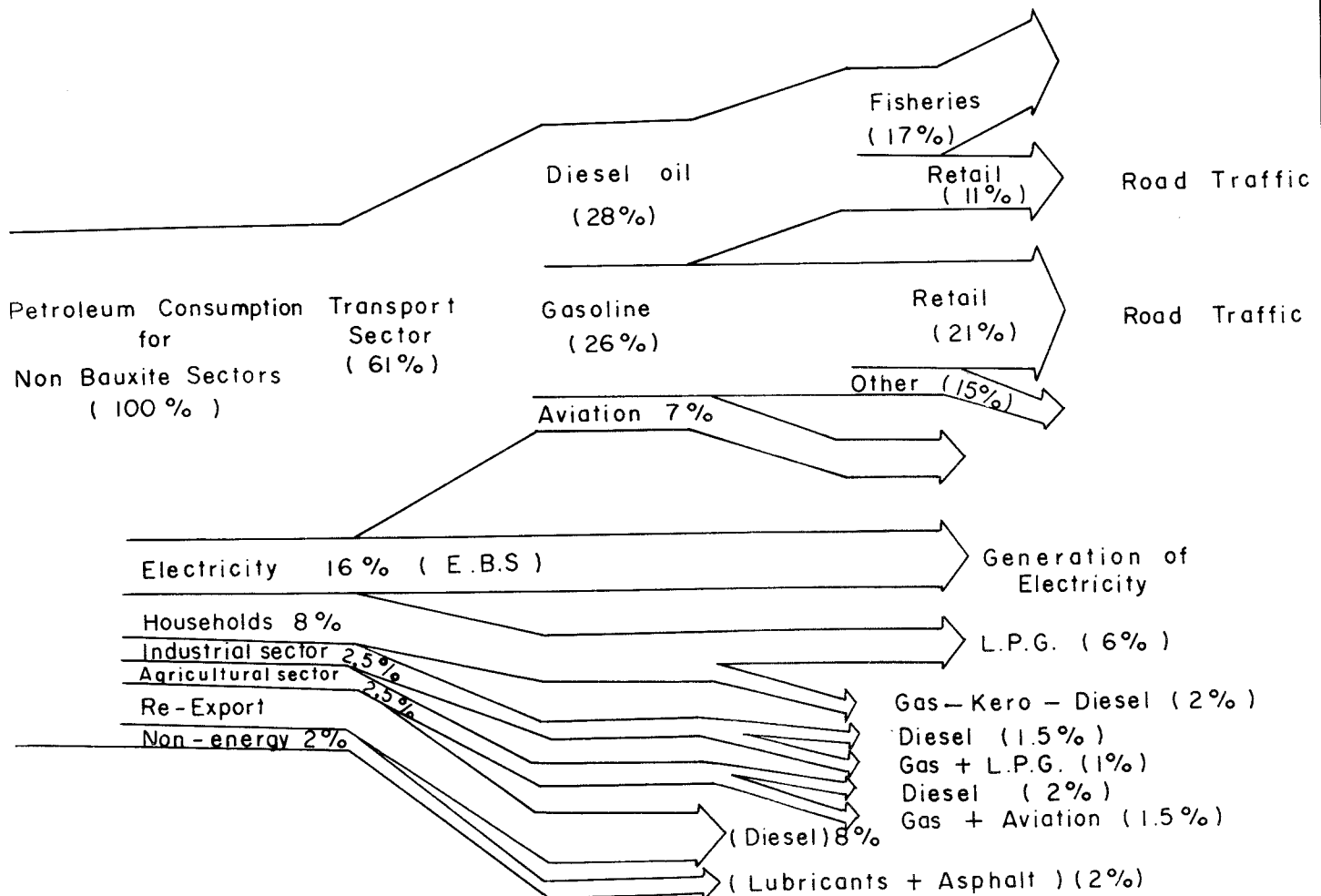
Consumption of Saramacca crude

Marketing

One of Staatsolie's major achievements in this area has been the development of a local market for its crude oil, since no refining capacity exists yet in the country. With field- and laboratory tests Staatsolie demonstrated in the early days that the crude could be used safely as fuel oil in existing burner installations. Since that time we have been selling most of the production as fuel oil to these industries. One of the first companies that agreed to buy the crude as replacement for imported fuel oil is the Suriname Aluminum

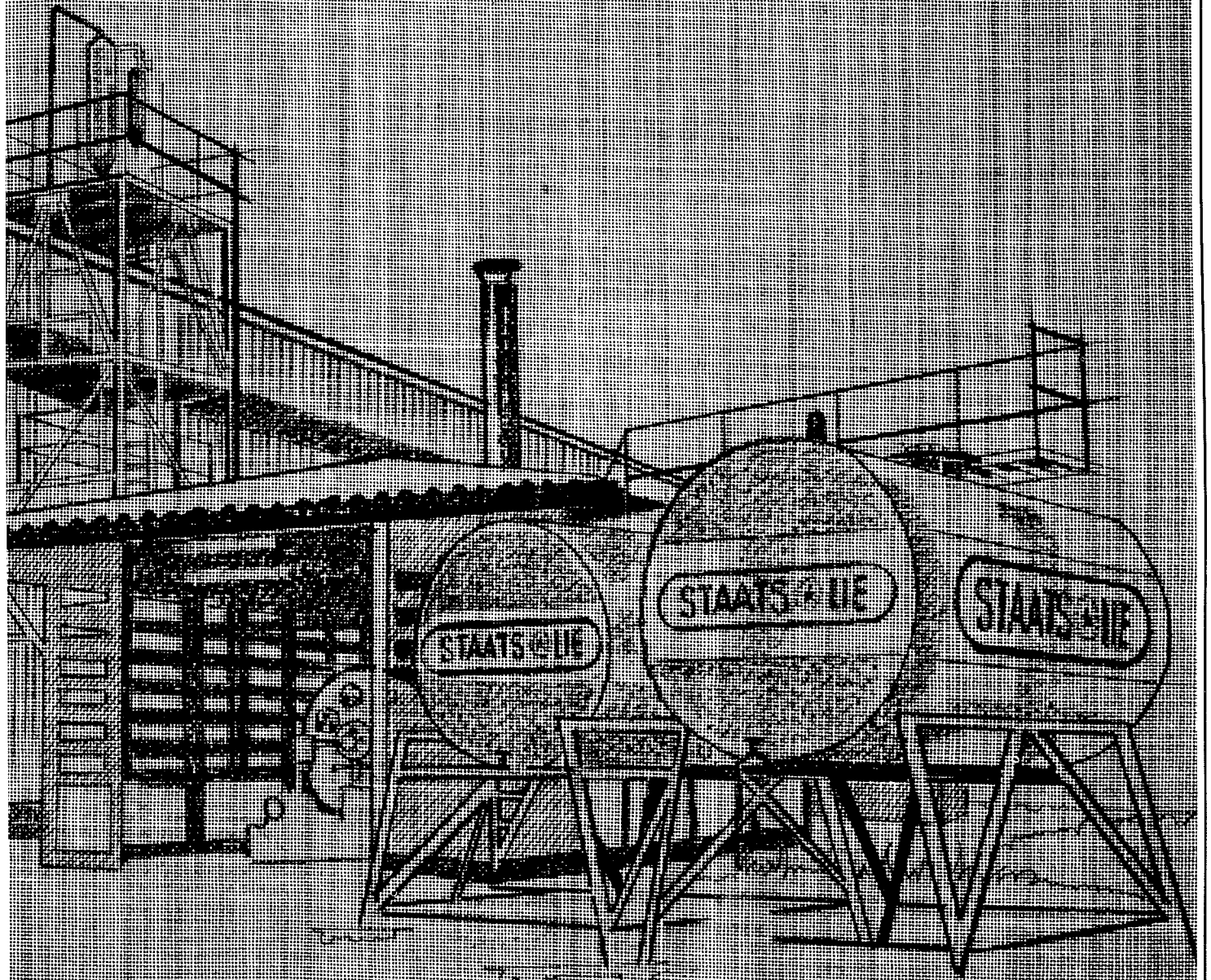
Company (Suralco) who uses the crude for the calcination of bauxite, steam and electricity generation for the processing of bauxite into alumina. Starting from 1988 a portion of the crude was exported and has now reached 50 percent of the production as of 1990. Not only the 'big boys' are benefiting from our cheap and good quality crude oil. Since 1984 we are making several 'cocktails' from our crude oil by blending it with small quantities of diesel oil. These blends are used as a substitute for imported and more expen-

DESTINATION OF PETROLEUM PRODUCTS IN 1987 (x1000 barrels)



Source: Ministry of Natural Resources Suriname

(Gas = Gasoline)



sive heating oil (diesel fuel oil). Our blend, the STAATSOLIE-1500 has already become famous in the rice-industry, while its consumption is expanding in other industries as well, such as tobacco processing, food processing, packing, plastic, soap, alcohol and soft drinks. The recently founded Para Industries (tiles, bricks, glass etc.) have designed their facilities for the use of STAATSOLIE-1500. We sell STAATSOLIE-1500 for about 50 percent of the diesel price, which makes the use of this product a great saving. Furthermore, STAATSOLIE-1500 has more heat per liter compared to diesel oil, which provides the customer an additional saving of about 10 percent in fuel costs. And last but not least since its introduction in 1984, the price has remained the same: 40 Surinamese cents per liter delivered by Staatsolie every-

where in Suriname. Small businesses can plan their fuel costs years ahead with STAATSOLIE-1500, and we are proud to make this happen.



Tank trucks take care of delivery of STAATSOLIE-1500

Marketing of STAATSOLIE-1500



Transport

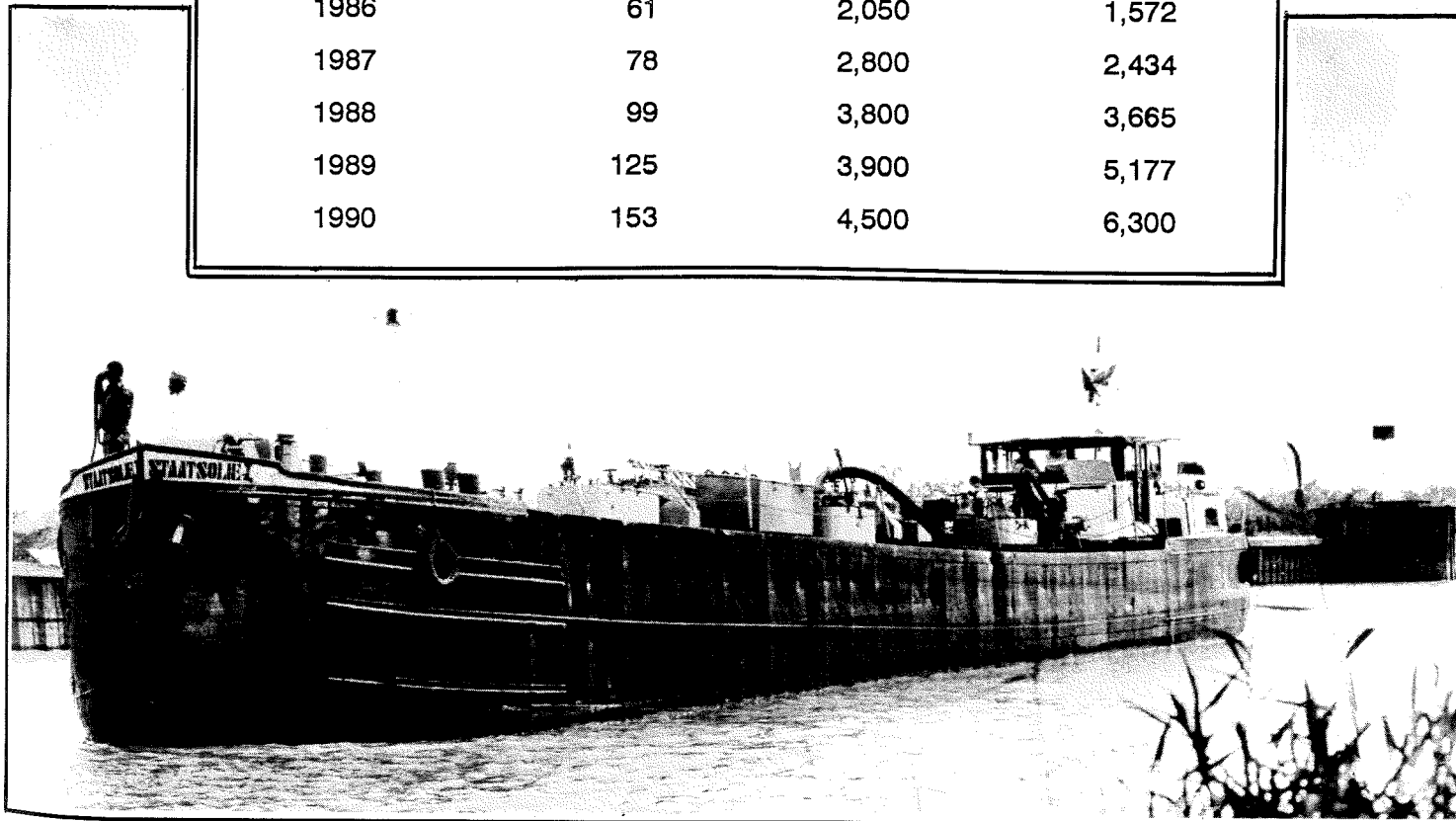
Petroleum can't be sold in a plastic bag. Staatsolie makes sure that its crude oil is transported continuously, safely and efficiently, from the production field, Tambaredjo in Saramacca to the consumers at Paranam, Paramaribo, and Nickerie. The crude is transported in motor barges operated by Staatsolie. The tankers were bought in packages from abroad and assembled in Paramaribo. With the continuous expansion of the production the transport capacity had to keep growing as well and more tankers were built. At present the 'Staatsolie I, II, IV and V' are sailing on our waterways. 'Staatsolie I' (now the 'M.T. Pioneer') and 'Staatsolie II' sail through the Saramacca Canal and

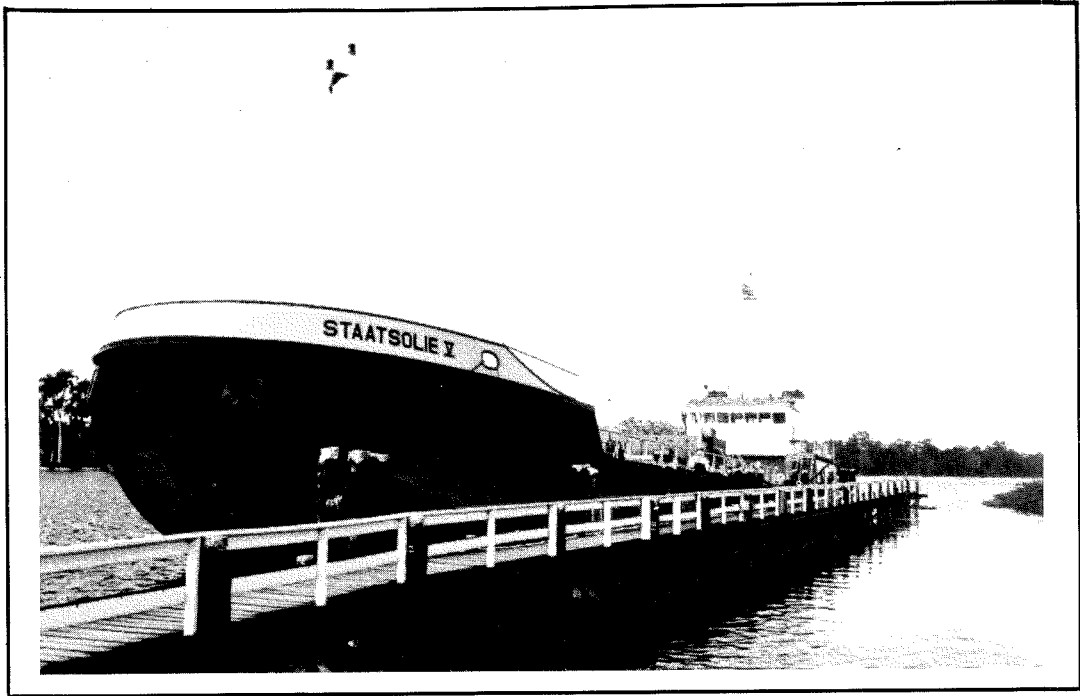
the Suriname River, while 'Staatsolie IV' and 'Staatsolie V' navigate along the coast in the Atlantic Ocean. 'Staatsolie III' is a modern tug boat available for safety and other purposes. The sailing along the coast has turned out to be more efficient than the inland navigation. In the inland waters the tankers experience many problems such as broken down sluices, big blind obstacles in the water, floating wood-blocks etc., which cause damages to hull and propulsion. Since 1982 the transport capacity has increased systematically from 1,600 barrels to 22,500 barrels. Tank trucks take care of the delivery of our oil to the small industries in Paramaribo and Nickerie.

PRODUCTION FIGURES SARAMACCA CRUDE 1982 - 1990

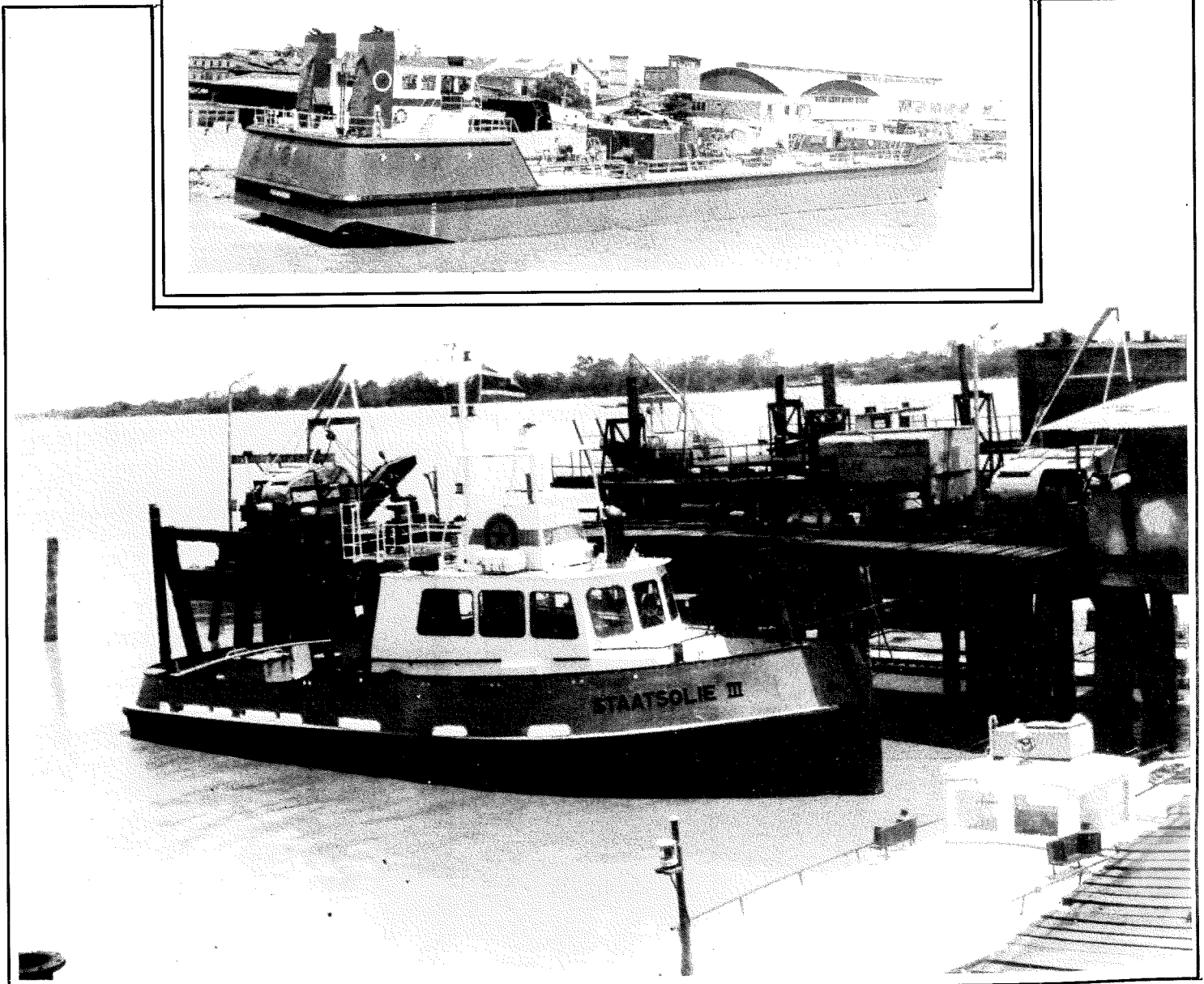
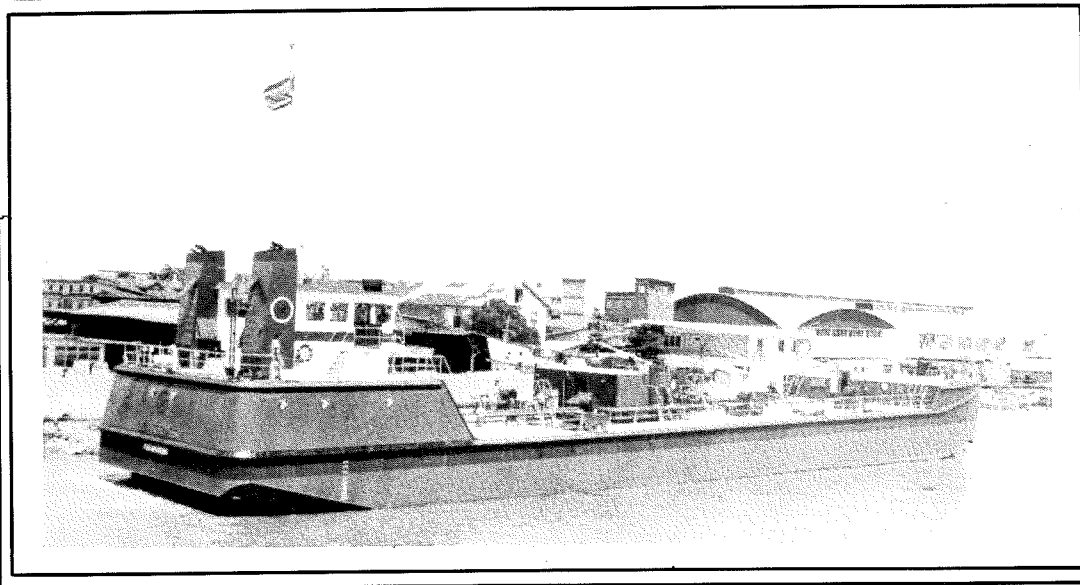
Year	Number prod.wells cumulative	Barrels/day year-end	Prod/year 1000 bbl cum.
1982	5	200	19
1983	12	500	199
1984	20	1,000	408
1985	35	1,150	825
1986	61	2,050	1,572
1987	78	2,800	2,434
1988	99	3,800	3,665
1989	125	3,900	5,177
1990	153	4,500	6,300

M.T. Staatsolie I





Part of our
tankerfleet



PERSONNEL POLICIES AND WORKING CONDITIONS

Staatsolie started its activities in 1981 with 5 employees, but during the past 10 years its workforce has increased to 340 people in 1990. This explosive growth is closely related to the dynamic development of the petroleum industry in Suriname headed by Staatsolie. In addition to the direct employment by Staatsolie, our

operations involve numerous other companies, small and big, in almost year round activities in the fields of engineering, construction and building, installation, shipping and supplies, maintenance and various other services.

Staatsolie has always taken care of its employees and their working environment, and we still strive for improvement. As a highlight, a new central office was inaugurated on August 3, 1988. This building is not only an asset for the city of Paramaribo, but it is also an example for a modern office building in our climate for maximum efficiency, cleanliness and comfort (sometimes we have to remind



employees to go home after office hours).

Since the beginning of Staatsolie our employees have enjoyed job security. The only requirement is to have confidence in our own abilities, and to work hard. As production increased, the salaries and other benefits for personnel also improved with the same pace, and rank today as one of the best in the country. On April 29, 1988 Staatsolie signed the first Collective Labour Agreement with the Staatsolie Workers Union. The agreement formalized rules and provisions that management had put in place during the early years. The foundation of the Staatsolie Workers Union was an important development in Staatsolie for the benefit of the relation between management and employees as the Company kept growing and expanding. The benefits for the personnel vary amongst others from safety and health to study, family allowance, holidays and retirement. Pursuant to the Collective Labour Agreement, the company introduced a function analysis and a function valuation system in 1989, in order to regulate duties and compensation according to weight and level. Since the foundation of the Company, employees

participated in a saving and pension Fund for Private Employees in Suriname. Staatsolie and employees pay contribution of respectively 15 and 5 percent of the salary of the employee in the Fund. This provision was a transitional arrangement, prior to the establishment of a definite pension plan for Staatsolie employees. Retired employees will receive two percent of salary for every year in service to a maximum of 70 percent of the average fixed gross salary of the last year in which they have worked. The age for being entitled to retirement will be 60 for men and 55 for women. The pension fund will also provide arrangements for widows, widowers and orphans.

Although all shares are held by the Republic of Suriname, Staatsolie's employees share in the annual profits.

As of 1990 Staatsolie has been structured into four main divisions, each division consists of several departments. The divisions are headed by directors, who report to the managing director. The coordination between division activities is done from the central office, but the daily operations are managed by the division directors from regional offices, which are located where the action is.

STAATSOLIE'S MAIN DIVISIONS:

* EXPLORATION AND DRILLING DIVISION	- 128 EMPLOYEES
* PRODUCTION DIVISION	- 140 EMPLOYEES
* ADMINISTRATION DIVISION	- 37 EMPLOYEES
* ENGINEERING AND SALES DIVISION	- 28 EMPLOYEES

Safety first!

In the petroleum industry people work with heavy equipment and machines as well as with highly inflammable petroleum and products. Therefore safety at work is a must.

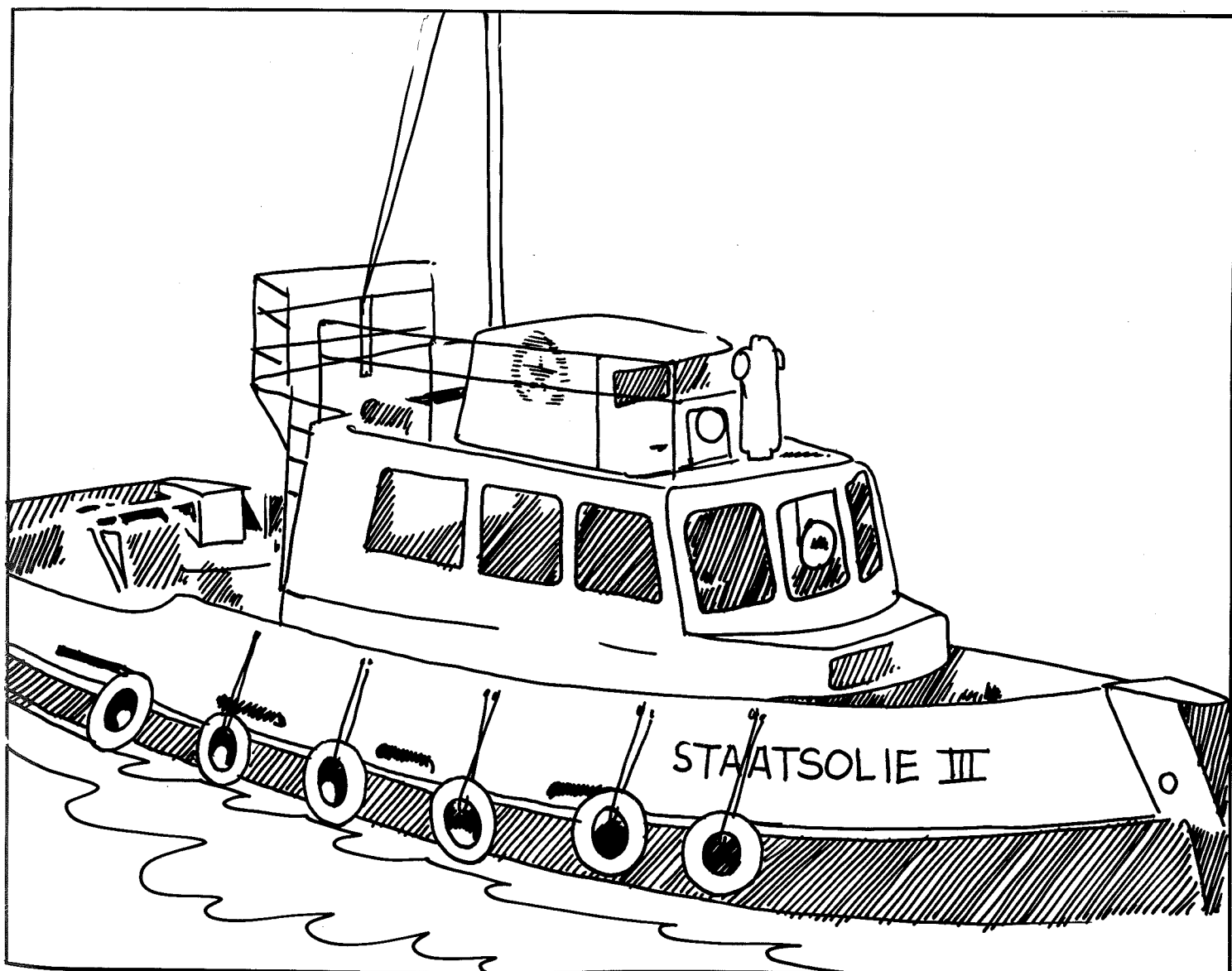
In the production field stringent safety rules are observed. Helmets and safety boots are obligatory in the shops, construction sites and the tankbattery. During grinding and welding activities safety spectacles and welding helmets are obligatory. During welding fire extinguishers must be on stand-by. When crossing on the river in small boats employees are obliged to put on swimming vests.

During drilling activities stringent safety precautions are also observed. Here they

work in shifts with heavy pipes, rods, cables, drill bits, drilling mud, etc. Smoking and fire are forbidden at the drillsite. Safety helmets and safety boots are obligatory. When climbing the derrick it is obligatory to wear a safety belt. If an employee wears spectacles he or she must have a safety frame and safety glasses.

Without stringent safety precautions a continuous production process cannot be guaranteed. Therefore the employees in the field receive special information and training on how to work safe. Courses and on the job exercises are being held regularly in fire-fighting and first aid.

On board of the oil tankers safety vests are in the cabins for the crews. Also, at



various places on deck there are life buoys in case someone falls in the water. Fire fighting equipment are found almost everywhere on the ships. Should a large fire break out in the engine room, then the captain and the first mate will decide whether or not CO₂ will be used in the engine room. They must be sure that nobody is in the engine room, because of the risk of suffocation. If serious calamities should occur on board of a tanker, and the crew has to abandon the ship, inflatable life boats are available on the ships. The ship can only be abandoned when it capsizes, or when it breaks in the middle or when a large fire breaks out on board.

Staatsolie can state with pride that during its first decade not a single catastrophic

accident has happened among its personnel. This, in spite of the fact that petroleum industry was completely new in Suriname, and we didn't always have the right equipment.

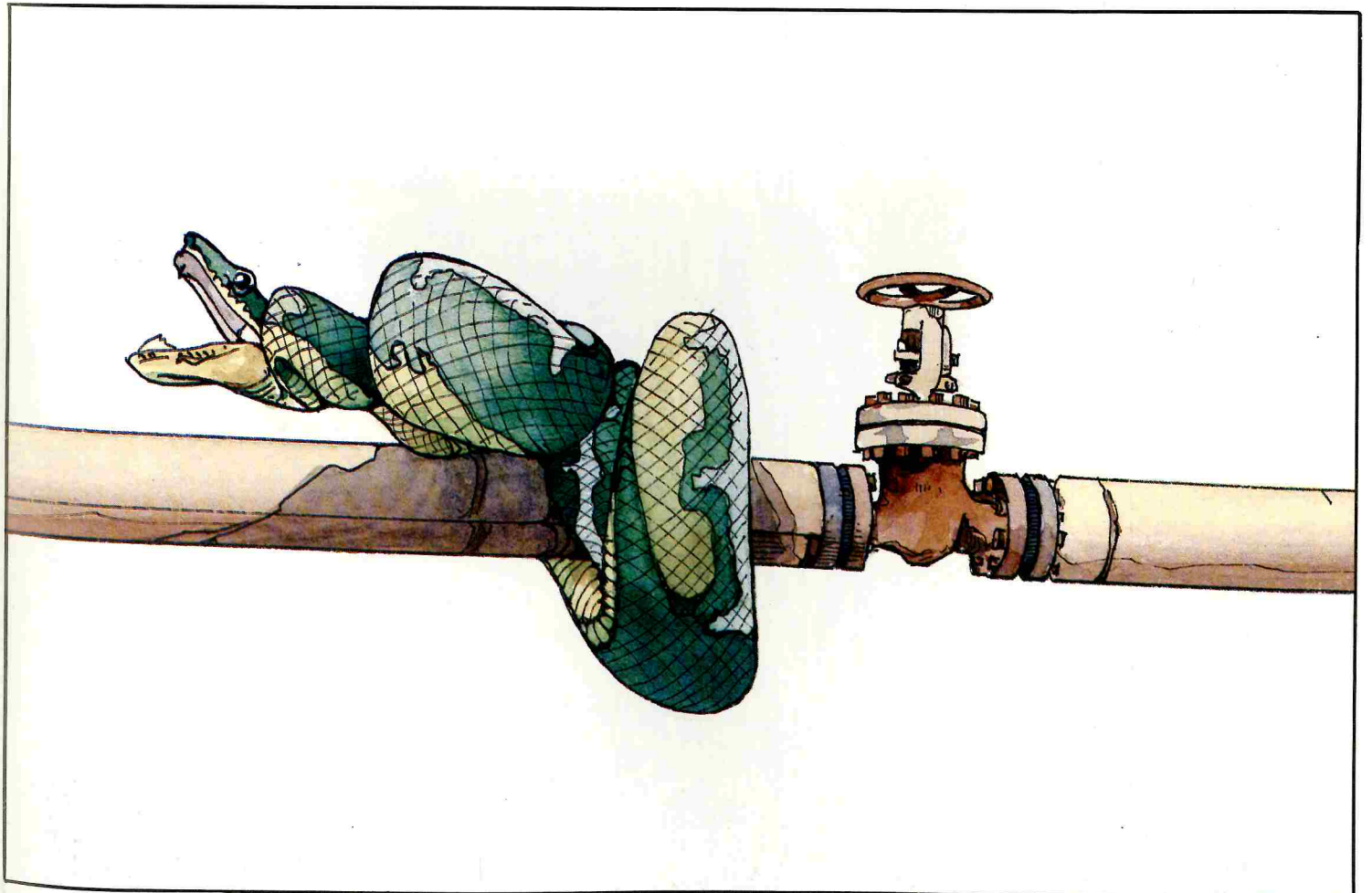


The environmental policy

Oil definitely is not a clean product. It is sometimes thick syrup-like that stinks and sticks and can be detrimental to nature and environment. Oil can make life in water impossible for animals and plants. Oil can contaminate drinking water. Oil can contaminate the air when it is on fire. When oil is spilled it is always in one way or another detrimental to people, animals and plants. The damage can be catastrophic (Exxon oil spill near Alaska, March 24, 1989) or less serious but the consequences for life in nature and for the environment are ALWAYS detrimental. Therefore oil companies should have environmental policy to prevent oil spills and oil leakages and to act immediately for containment and cleanup if a spill occurs. In the Tambaredjo treating plant our oil is separated from the water which is pro-

duced together with the crude. This so-called waste water, still contains small amounts of oil. Staatsolie has done many studies and tests in order to remove the last traces of oil from the waste water. Now we have built a combined three-stage water treatment installation which removes almost all oil remnants from the waste water.

In order to contain and clean oil leakages a special oil spill plan has been designed. In case of such an accident actions are taken immediately to limit the damages and start cleanup. Staatsolie has a coordination team that comes into action when such an accident occurs. Through international exchange programmes and cooperation, the knowledge of both prevention and fighting of oil spills is systematically improved.





Training and education

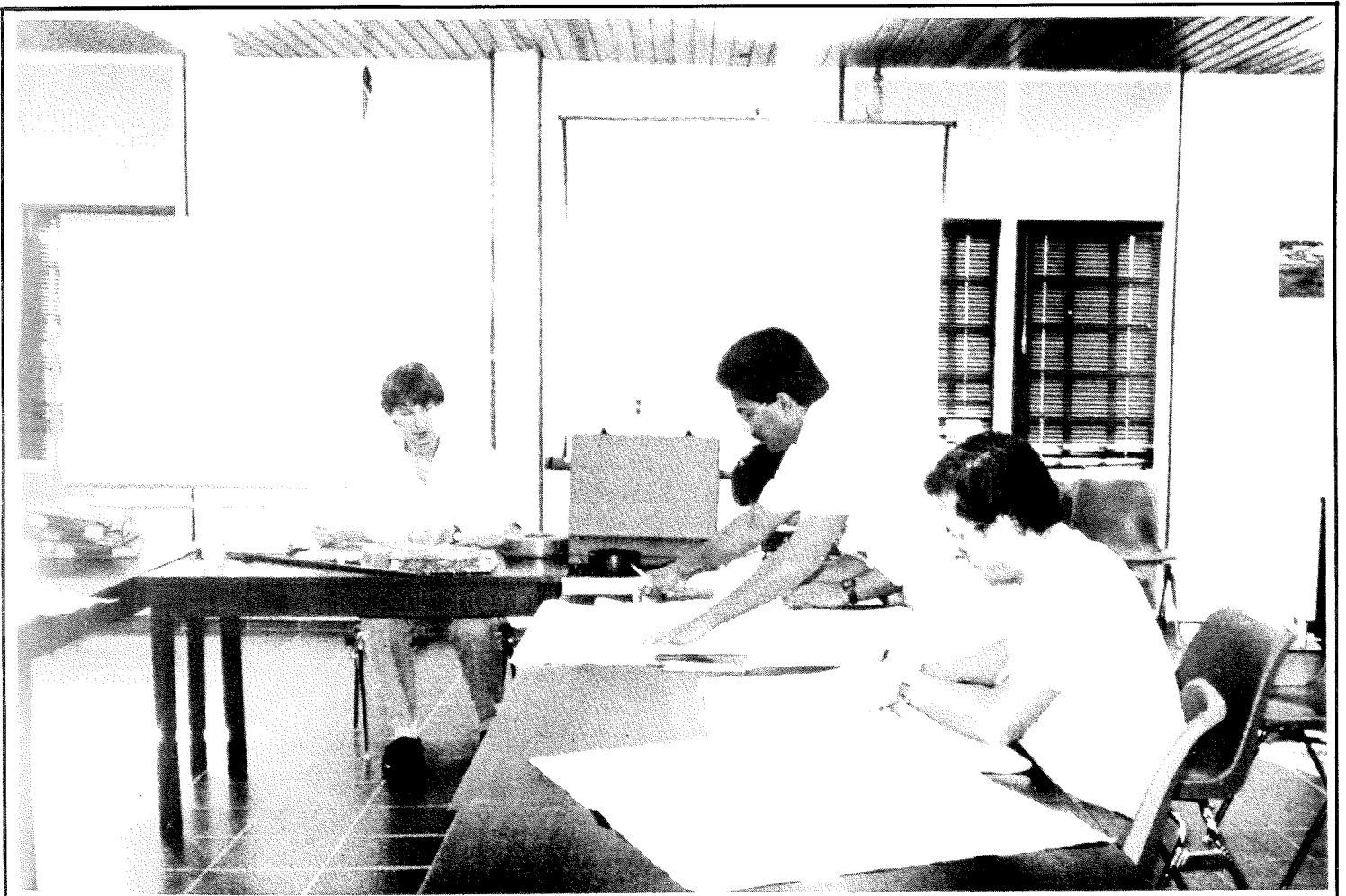
The management has always successfully emphasized the need for training, engagement and motivation of the Staatsolie employees. Over the last couple of years Staatsolie has a department that is structurally engaged in training and education of the personnel. Herewith the management endeavors an optimal realization of human capacity in the Company. The fact that people do not work alone for personal material benefits is taken into account; people also strive

for immaterial goals such as values, acknowledgement of their achievements, and for benefits of the entire nation. When it goes well with our country, it will also be going well for the Surinamese people.

Staatsolie's philosophy is based on these principles and the results and achievements of the past ten years have proved the correctness of this conviction. Therefore our slogan rightly says:

CONFIDENCE IN OUR OWN ABILITIES

Training



OUR FUTURE DEVELOPMENT PLANS

Since the founding of Staatsolie in 1980, both our Company as well as the petroleum industry had to develop under pretty difficult circumstances. The past decade will be remembered in Suriname as a period of extreme political and socio-economic turmoil in the country. Many Surinamers, faced with uncertainties and economic problems just quit and left the country. Others remained and are still persisting even though said circumstances are worsening and the future looks very dim. Regardless of how big our problems may seem today, we must remember that there will be always a tomorrow, a future and everyone of us has a goal. We should not be afraid or paralyzed by the circumstances and the events, but accept them as part of life and incorporate their influences as parameters in our plans and our activities.

This means that after ten years of hard work we stand for even greater challenges to consolidate and to further expand the development which we have started. We have proven to have confidence in our own abilities, now we must also show confidence in the future of this country and its people!

Staatsolie's plans for the next three years are aimed at the further expansion and consolidation of our petroleum industry; the building of a refinery, production increase, and expansion of the exploration activities onshore as well as offshore, and the construction of a 60 kilometer pipeline for the transport of crude oil from the Tambaredjo field to the export terminal near Paramaribo at the Suriname River. Total investments for these projects amount to US\$ 175 million.

million.

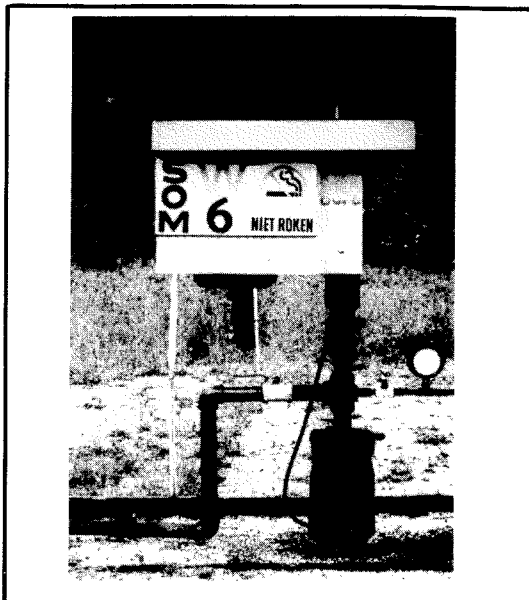
Piping



The refinery

Prefeasibility studies of the refinery were completed mid 1990. The building of a refinery is an indispensable link in our young petroleum industry. The total construction costs of the entire project have been estimated at US\$ 120 million. In view of the present social and political circumstances and financing possibilities, internal as well as external, two scenarios have been designed to construct the refinery: building the whole refinery at once (total cost US\$ 120 million), or in two stages, whereby the first phase will cost US\$ 40 million. At the time this report was prepared, negotiations for financing were being carried out with commercial banks. Staatsolie is very optimistic about the financing and is willing to guarantee any loans with her export earnings. With the construction of the refinery the marketing of our Saramacca crude will be secured while the import of expensive products such as diesel oil, cooking gas (LPG), asphalt and fuel oil will be reduced considerably. Although in the first Phase about 80 percent of the products will be exported, it will be a major step in insuring Staatsolie's long term development.

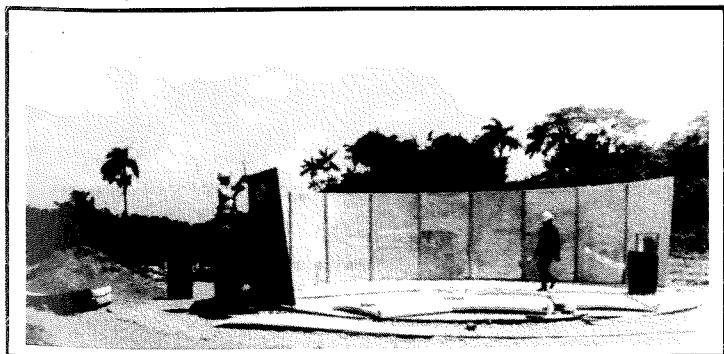
more production wells



Exploration

Petroleum reserves declines as it is produced. Therefore we must always keep exploring for new oil fields. The search for petroleum in Suriname is still in the beginning stage. For the onshore area an extensive exploration programme costing around Sf 15 million for the next three years is already being carried out. Exploration activities in the offshore area will also be starting again with the participation of foreign oil companies. Negotiations with several oil companies are in progress, and a new petroleum code has been issued at the end of 1990.

tankbuilding

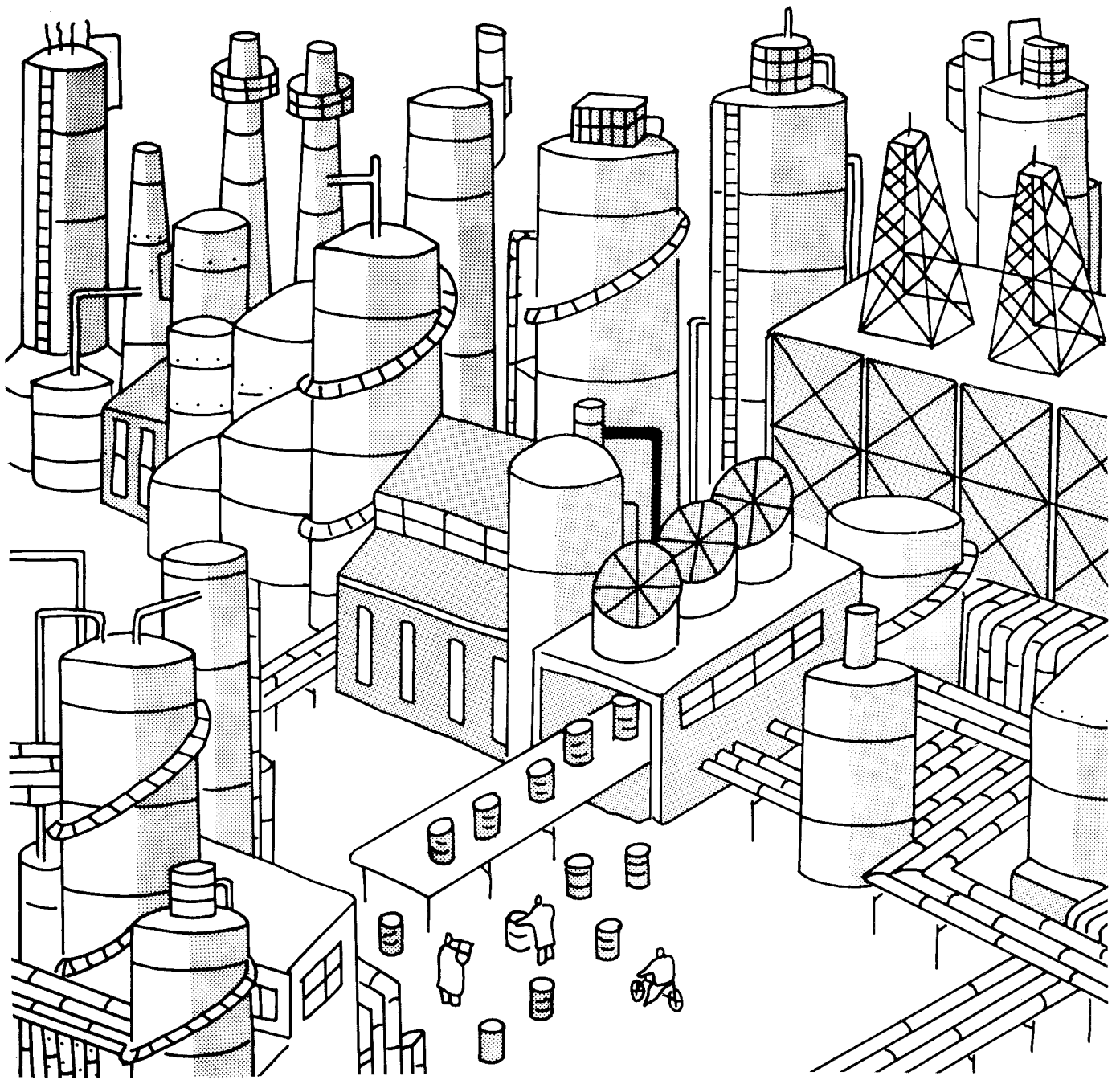


Production expansion

In the next three years (1991-1993) the oil production will be increased from 4,400 barrels per day to 6,500 barrels. About 150 new wells will be drilled and completed in the Tambaredjo field. The total investments have been estimated at US\$40 million. For the future transportation of the crude oil a sixty kilometer pipeline will be built in the country from the production field in Saramacca to Paramaribo.

more petroleum





our future refinery

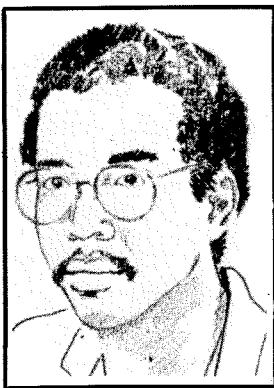
COMMENTS FROM OUR VETERANS AND FRIENDS



Charles Rene Monsels, Supervisor Production Development at the Production Division: 'The nicest memory that I have of those days was the fine and mutual cooperation. Mr. Jharap always helped when he was in the field. He has amongst other things, helped laying the flowlines from the first wells to the tank battery. There was no time for arguing and complaining. We all were pioneers. We have always worked very hard in order to obtain our business goals'.



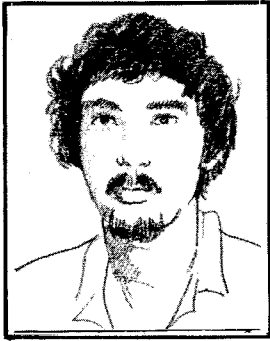
Anita Miskin-Amatkoesmin, Secretary at the Exploration and Drilling Division: 'In the early days we didn't need to be motivated much. We all knew what we were working for. We took into account that Staatsolie did not have any income yet so that our pay was very modest, and no one complained about difficult working circumstances. We started very sober and were prepared to make sacrifices. Today things are quite different'.



Lloyd Read, Production Supervisor at the Production Division: 'Staatsolie has gone through a rapid growth in the past ten years due to the exertion and loyalty of the employees and the management. We also owe our success to the fact that we acted as a close-knit team towards the outer world'.



Orwine Ong A Fat, Service woman at Mr. Jharap's office: 'Before we started in the old Staatsolie building, it had to be cleaned. Mr. Jharap helped me to clean that building. While I was scrubbing the floor he threw with water to remove the dirt. I used to clean the whole office on my own. But our present office building is so big that I cannot longer do it alone'.



Parmanand Gajapersad, Drilling Engineer at the Drilling Division: 'When I was employed, the most important thing for me was to have a job and a place to stay. But soon I was in the ban of the work and the suspense of finding oil. Working for Staatsolie began to mean more than only having a job and a place to stay. At that time we were like a big family. You can still see it at our Division. The drilling personnel has a close tie among themselves, because they depend on each other during the drilling process. We are at locations where we have little contact with other employees'.



Ray Bergval, Director of Exploration and Drilling Division: 'Since its foundation, Staatsolie has grown enormously. This is also due to the cooperation, the exertions and the enthusiasm of our employees, the management, the Board of Commissioners and the Shareholders. In the beginning we had to solve many problems: general technical problems, drilling-problems, production problems, processing problems, finding and training of

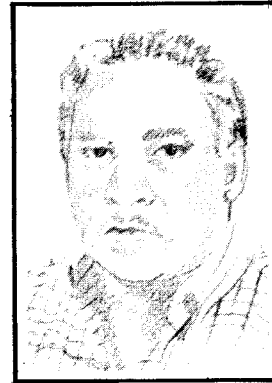
staff personnel, finding a market for the crude, and arranging the financing of expansion programmes. Although the present results are satisfactory, the challenge for the company is to provide our country increasing amounts of petroleum, and through the export, to be a foreign currency generating industry. Despite the complex geology of the coastal area we now work with all means available to increase our onshore reserves and production. When we speak about onshore, it does not only regard the Tambaredjo field, but also occurrences at Weg naar Zee, Coronie, Nickerie, and other occurrences in the Saramacca district as well. Although the search in the offshore area is still in an early stage, the results so far are encouraging. We should hereby realize that in other parts of the world, twenty to fifty wells at average have to be drilled before reaching to offshore oil production at a large scale. Any economy which respects itself, aims at the maximum benefits it can obtain from its raw materials. Therefore it is imperative for Staatsolie to build the refinery in order to maximize its capacity of foreign currency saving and earning. Despite the big problems in our country and for the investment climate we continue with confidence to work towards our objectives. Staatsolie is facing great challenges!'



Marc Waaldijk, Director Engineering & Sales Division. 'First of all I would like to congratulate Staatsolie on her tenth anni-

versary, with a tribute to the fact that she has managed to secure a distinct position in our community, in such a short time. Something we have to be very proud of, indeed! The preceding period can be characterized as one in which the company progressed aggressively under the inspiring leadership of the managing director. Because of tremendous commitment, hard work and the stimulation we got from others, growth was possible, sometimes under very difficult conditions. The in the meantime very famous slogan 'GELOOF IN EIGEN KUNNEN' ('Confidence In Our Own Abilities'), was a strong motivation for this success. I would like to compare this young company with a teenager who, at the end of his adolescence, is slowly but surely approaching maturity. Inherent to this process is the learning through hardship and sometimes through live and learn. Staatsolie's strength, in my view, is in her flexibility and in the admission of the deficiencies in its organization. Consequently, obstacles are usually eliminated, even though major and painful surgery is required. In principal it is this dynamic and positive approach that attracts people to join this company. In my opinion many young companies and also all the entrepreneurs in Suriname could learn from the applied management technics in our complex and frequently changing environment. As a company we have very ambitious future goals which will only be realized if we formulate our plans correctly, streamline the entire company and properly synchronize our strategies. Our immediate focus should be on cost control and efficiency and quality improvement, which is truly not an easy mission in our rapidly deteriorating economical climate. The path to adulthood will therefore definitely not be a paved one. In the past years we have learned, however, that every problem creates new challenges, each with associated problems attached. Problem

solving should therefore not be seen as merely following a clearly defined action plan, but more as a process in which plans must be continuously adapted, because of ever changing conditions. The main objective is to reach our goal! I am convinced that Staatsolie will develop into a fully integrated and mature company in the next decade'.



Hugo Coleridge, Chairman of the Board of Commissioners: 'Preceded by an emotional and 'politically' charged discovery of petroleum at Calcutta (Saramacca) on October 13, 1965 Staatsolie started with good spirit and courage, about 15 years later on December 13, 1980 with the following tasks: 'to carry out the exploration, production, treatment, storage, transport and marketing of hydrocarbons in Suriname'. Really a heavy task; at any rate a mouthful of words and good intentions of which we never were short of in our country, but which seldom or never needed to be executed. To the surprise of many people, these pioneers were extremely serious with the tasks given to them. The seriousness and dedication of these pioneers were an unusual affair for our beloved Suriname and consequently in the initial period it caused many jokes and even discouraging remarks from various people. Fully supported by the government and the Surinamese bankers, they worked tirelessly to solve the many problems that came with the young

industry and from which they obtained knowledge and experience for further growth and survival. Ten years later we can take pride in what has been achieved so far and our special thanks and appreciation goes to those who, with their commitment and efforts, as it now appears, have saved Suriname from an energy calamity which hits so many developing countries. On behalf of the Board of Commissioners, I hope that courage, enthusiasm and confidence in our own abilities will remain the guiding beacon for the further and undoubtedly successful growth and consolidation of our national State Oil Company'.



Rudi Goossen, First Chairman of the Board of Commissioners of Staatsolie: 'As Chairman of the Board for amply 3 years at the cradle of this company, I feel the need to elaborate the lucky circumstances, which made the growth and blooming of Staatsolie possible:

- the will and interest of the government for the foundation of an oil company of our own;
- the political backing, without however, any influencing in what is going on in the Company;
- the purely business-like approach of the Board of Commissioners and the Management;

- the cooperation between the Management and the Board, whereby quite often there was no distinction of functions and everybody was 'just' working hard for the goal which was set.

The amount of decisions to be taken and the work to be carried out, did not oblige us to elaborate too long on, amongst others, clarifications of statutory provisions. Further it was a pleasure to experience how differences in opinion from diverse social visions were solved. Besides the normal activities such as personnel policies and the preparation of various activity programmes, a couple of interesting issues were at stake, such as separation between competences pertaining to Private and Public Law. The financial foundation was laid with the issue of shares by the government so we could obtain the confidence of the bankers, and we got. Without interrupting the activities, Staatsolie increased its capabilities through short training courses and on-the-job practice, while the financial and juridical basis of contracts were at an international level. In the meantime there was quite some suspense, because the pilot production programme had to show if there were sufficient oil supplies for economic production. At last the hard work was awarded because in 1982 oil could be delivered to Suralco with our own tankers. It was a pleasure, together with the other members of the Board: Mr. R.M.I. Kensenhuys, Drs. R.W. Roseval and the gentlemen Ir. J. Abdul and Drs. J. Pahladsingh (both for a short period), to make a contribution to this development. The man however, who inside and outside the Company knew how to deal with all the problems is Mr. Jharap, the managing director himself. He deserves much praise with his staff. In view of the recent information concerning Staatsolie, development has been very positive even after the change of my Board. Therefore congratulations to the Management, the

Board and also to the Surinamese community as well, is justified, certainly for the contributions to the economy of the country now, but especially for the future'.



Freddie Vos, Managing director of the ABN-Bank Paramaribo: 'When I have to comment, as a banker, on 10 years of Staatsolie, I cannot resist the temptation to elaborate on matters such as credit worthiness and the importance of Staatsolie for the national economy. My first encounter with Eddy Jharap has defined the close relationship that ever since has existed between Staatsolie and the ABN-Bank. People often think that a bank doesn't provide any credit, until the debtor is willing and is able to provide sufficient current securities. Certainly, it cannot be denied that this aspect is important for the assessment of a credit proposal, but, criteria such as expertise, reliability and courage of the entrepreneur and the willingness to be always as open as possible toward the creditor are as much, if not more important. These criteria were so evidently manifest in Eddy Jharap so that already during our first encounter I was immediately impressed. These values have always been a basis for him to do business. It did cost me initially some efforts to convince Mr. Jharap that it is sound for a company to finance part of its operations with credits, but once he understood, we enthusiasti-

cally arranged the first local loan, which at his request, was made with a consortium of all the commercial banks operating in Suriname. I faced a far more difficult task when Staatsolie approached me with the request to mediate for a loan in US dollars by the ABN-Bank. I cannot and should not conceal the fact that this request caused me much trouble, but at last ABN-Bank, be it reluctantly, agreed. With great pleasure I like to mention that this loan in foreign currency has been followed by many other and larger loans, owing to the excellent performance of Staatsolie. With these loans Staatsolie has been able to increase its production gradually which at the present (Sept. 1990) has reached to 4,200 barrels per day. Our most recent loan agreement which involves a credit of US\$ 15 million was signed in August 1990. With this facility Staatsolie can proceed with the expansion programme to bring production at 6,500 barrels per day. With this production capacity Staatsolie endeavors to build a small refinery. The importance of Staatsolie for the national economy hardly needs further explanation. I am just referring to the very important contributions its activities have on the balance of payments and on the ample and high quality employment which Staatsolie has been providing over the years, direct and indirect. Professional management, trust and support from the shareholders and other third parties, amongst others bankers, customers, suppliers, contractors, etc., the courage to acknowledge its own limits and to hire foreign experts when needed, made Staatsolie grow into a solid company in a period of 10 years, and can no longer be overlooked in our country. I am very pleased that the ABN-Bank has been able to make an essential contribution to this development. In my opinion and it should not remain unmentioned is the fact that Staatsolie owes its success to a large extent to the excellent team spirit

among the employees and the continuous enthusiasm with which they exert themselves for the industry. Praise for this attitude! Shareholders, management, staff and personnel, I congratulate you all cordially with this milestone. I wish the Company further growth and more productive years, and Staatsolie can be assured of my continued cooperation'.



The late Dr. Ir. Anne van Dijk, a great pioneer in our rice industry: 'Staatsolie-1500 is saving us farmers money and it is saving Suriname foreign currency. This is a very important point. Diesel oil has to be imported. Staatsolie-1500 is supplied with about 10 to 12 percent of the imported diesel and the rest (Saramacca crude) comes from Suriname. Staatsolie-1500 costs us 40 Surinamese cents per liter, delivered right here in Nickerie. Diesel oil now (1985) costs already 73 cents. That is a difference of 33 cents per liter. Previously we used 15 liters diesel oil per ton of dried paddy. If we assume that Staatsolie-1500 has more energy because it comes from Suriname, we will perhaps need only 14 liters Staatsolie-1500 per ton dried paddy. I started using Staatsolie-1500 because I am convinced that it has a good future; in the first place for Suriname, in the second place for my own company and in the third place for the industries in Suriname that can use this fuel oil. My first

experience with Staatsolie-1500 and the Saramacca crude dates a few years back when Mr. Jharap and I tested this fuel oil in existing diesel-burners of the paddy driers. The University of Suriname also provided me with some test data. After many field tests it turned out that it was not sufficiently safe to operate with this fuel on these diesel burners. So we had to purchase new burners, and the examples I had, came from Staatsolie itself, which provided me lots of information and from LOC-Commewijne, a rice drying facility already using Staatsolie 1500. We hereby once again wish to express our appreciation for Mr. Jharap and his staff for the way they have built an organization in such a relatively short period, which is an asset. Steady forward, with steps not too big, so that the Company has remained manageable for Suriname'.



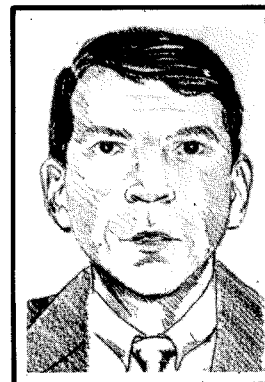
Jack Bradford, retired Petroleum Engineer and Management employee of Gulf Oil Corporation: 'While working for GEOMAN, a division of Gulf Oil which furnished contract engineering and supervisory services for Staatsolie, I coordinated the initial studies and planning for evaluating Dr. Jharap's dream that the oil seeping from a well drilled for water on the school grounds near Tambaredjo and shows in wells drilled by Shell Oil Company could be proved to be productive and of commercial value. This proved to be a challenging task since

there were financial limitations and the availability of equipment normally used in oil field drilling and production were not present in Suriname. With assistance from Houston geologists, Technical Services, and Gulf Research in Pittsburgh it was determined that the oil was commercially suitable for fuel, that a market existed in Suriname, and the probability of a reservoir existed. Production might be established if the sand movement in the pay section could be controlled during production. A plan was devised to drill three wells to determine the answer to three questions:

- (1) the existence of a reservoir;
- (2) to determine if a well could be made to produce at commercial rates; and
- (3) there existed sufficient reserves to warrant a drilling program.

With the assistance of two drilling Supervisors from Gulf Oil and equipment and personnel from the government Water Company and the Mining Service the project was successfully completed and all objectives reached. Some unusual techniques were devised to cement and gravel pack the test well since equipment normally used for these procedures were not available. Analysis of the results indicated a commercial project was feasible and a test programme of five wells and the installation of producing equipment was recommended. Dr. Jharap managed to raise the financing for this project and with the successful completion of this project Staatsolie became a going concern. I have great admiration for Dr. Jharap, his courage to proceed when there was doubt in the beginning and the manner he reasoned through his many problems during those days. I have many memories of this three year period which I treasure greatly. I made a number of friends and have the satisfaction of having helped in the creation of a Company and an industry that should be of great benefit to Suriname and its people for a long time to come. If I were younger

I would love to participate in the continued growth of your company. My best regards to Eddy and the rest of the Company, I wish well at your anniversary celebration'.



Ed White, President of International Distribution Services Company (IDSCO): 'The negotiations between Suriname and Gulf Oil Corporation in late 1980 led to the birth of a vibrant flower growing within the beautiful tropical country of Suriname, a newly-formed republic struggling for control and identity. I first met Drs. Jharap on the occasion of the signing of a Technical Assistance Agreement with Gulf in Houston. I had been instructed by Gulf executive management to provide any assistance necessary to assure the success of the agreement. At that time I was Purchasing and Export Traffic Manager of Gulf's worldwide exploration and production company. Drs. Jharap would meet with me on each of his visits to Houston to discuss various problems. The early eighties were booming times in the oil industry and my staff of 165 people was spending 900 million dollars annually purchasing for 35 overseas operations and 70 different operating locations within the United States. I recall a staff meeting in early 1981 wherein I instructed R.Wilson, Director Export Purchases, to give special handling to all Staatsolie purchases and to not let them get lost in the heat of the

activity. In the beginning months the purchases were comparatively small, but I was acutely aware of their importance to the success of Staatsolie's early start-up efforts. Staatsolie's first drilling rig was purchased used from a supplier in Canada. Rigs were scarce, and this one required considerable rehabilitation. Bob Rhind, the senior Gulf engineer assigned to Staatsolie, spent almost every day in our offices communicating requirements. A small plane was chartered to carry vital parts on one occasion. Locally within Suriname, countless obstacles had to be overcome due to political and economical crises which were developing. Hard currency transfers through the Central Bank slowed to a trickle which directly affected our ability to obtain necessary parts and supplies. Special import restrictions were imposed. Local officials had to be educated about the needs of the oil industry. In 1984 Gulf was consumed by Chevron Corporation in the then largest corporate merger ever. In late 1984 Chevron decided to discontinue the activities of GEOMAN, the Bermuda based Gulf company which was providing technical assistance to Staatsolie. Joe Martinelli was President of Geoman and had been involved in the activities of Staatsolie from the outset. Staatsolie's future had special meaning to Martinelli. He contacted me in early 1985 and told me to investigate alternatives for providing purchasing and traffic services to Staatsolie because the technical assistance agreement was going to be terminated. In May 1985 I accompanied Mr. Martinelli to Suriname to terminate the agreement. We presented several alter-

natives to replace the terminated agreement. The International Distribution Services Company (IDSCO), was conceived and formed as a division of an existing Texas corporation, SAW INC. IDSCO, of which I am the president, became the purchasing agent of Staatsolie in the United States. This way supplies of the materials for the petroleum activities in Suriname were guaranteed. Upon the celebration of Staatsolie's tenth anniversary, Sherry and I personally take great pride in being associated with the management, staff and employees of Staatsolie Maatschappij Suriname N.V. Recently hired employees and the community at large should take careful notice of the sacrifices, dedication, motivation and the vision of these early pioneers of the oil industry in Suriname. At last count there were 16 developing countries in the world that have indigenous heavy crude oil which is not being produced at a time when those countries are totally reliant upon imports, cash poor and looking for world aid. The Republic of Suriname, even with its widely diverse cultures and resulting diverse politics and agendas, should fully support the efforts of Staatsolie, and set a goal to become the role model for other developing countries. The next ten years will provide many more potential crises, but I am confident that Staatsolie will convert these into opportunities and become a fully integrated energy company second to none. I also hope that IDSCO has an opportunity to participate in some small way in the realization of those opportunities. Happy anniversary to Staatsolie from IDSCO.

CONCLUDING REMARKS

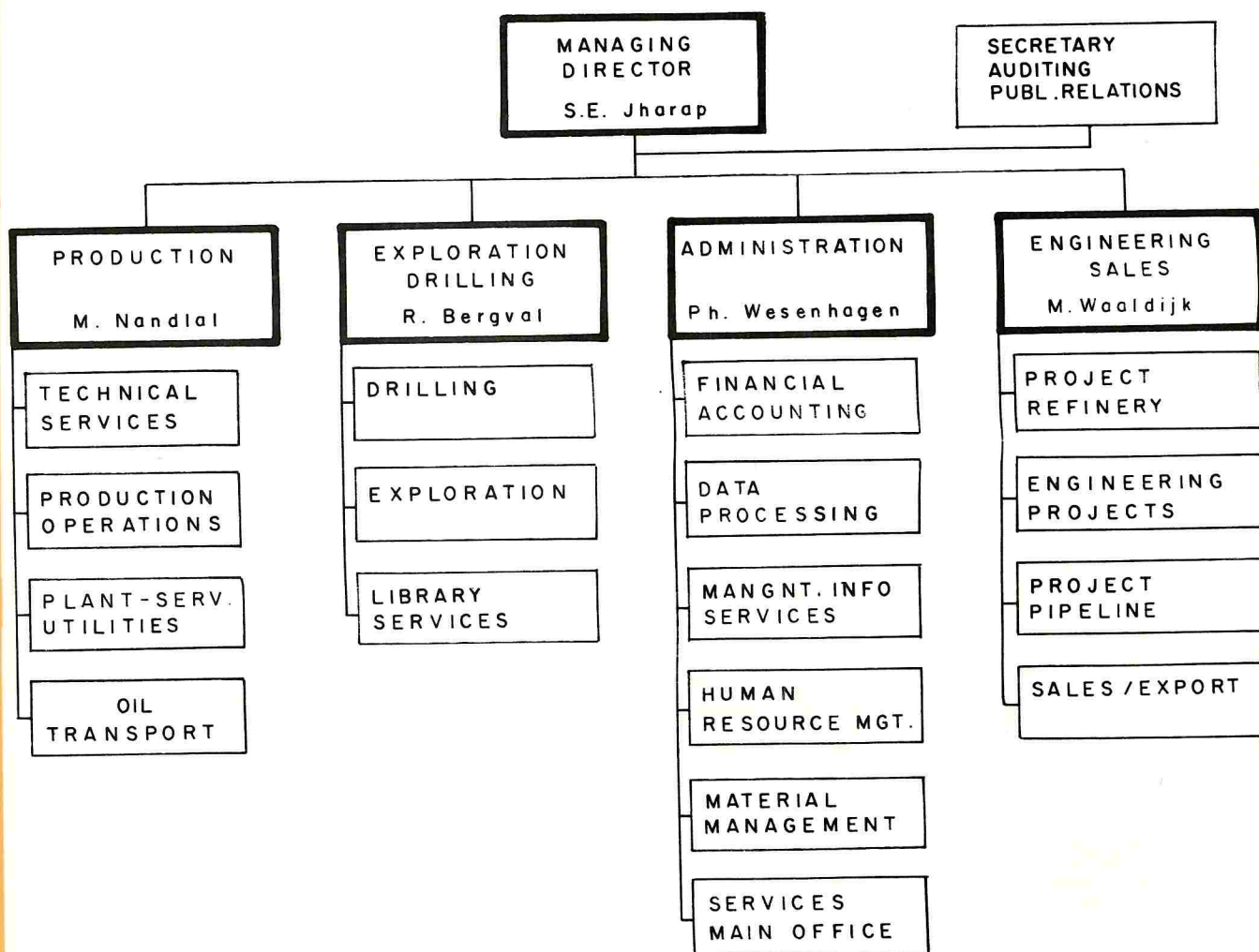
With a few anecdotes, old memories, technical and financial data, we have tried to describe the circumstances that has shaped Staatsolie and to make a present picture of our Company. In 1980 not only a time of great opportunities for entrepreneurs in Suriname had started, but began also a period of unprecedented political and socioeconomic turbulence as well. In spite of this environment, we have managed to attract and to cultivate the aspirations of a young generation of Surinamers who were eager to build a technologically advanced basic industry, fully managed and owned by Suriname. The technical and managerial knowledge, we lacked, were acquired from international oil companies, and investment capital we obtained from commercial banks. We recruited our staff personnel and other employees among our own people in the country. We didn't run away from problems, internal or external, but confronted those as new chal-

lenges and solved them with joined efforts and the desire to succeed. Therefore, the successful development of Staatsolie is not unique and cannot be ascribed to fortune alone. First and foremost, its success is the result of having confidence in our own abilities and hard work for objectives our employees and many other friends liked. The development of Staatsolie has been beneficial for Suriname in many ways, and found much support, sympathy and appreciation in broad layers of our community and from abroad. We have worked with pleasure for the development of Staatsolie during the past period, and we are willing, and hoping to have the opportunity, to further expand and to strengthen this industry with the same elan during the next decade. We invite all our friends and admirers to support these activities or to follow our example in other sectors of the economy of Suriname.

APPENDICES

1. Staatsolie's organization chart and Manpower per 1990
2. Index numbers per 1990
3. Balance Sheet per December 31, 1990
4. Profit- and Loss Statement per December 31, 1990

STAATSOLIE Organization Chart 1990



October 1990

Total Empl.: 344

MANPOWER 1988 - 1990

EDUCATION/TRAINING	1990*	1989	1988
Academic (Drs, Msc, Ir)	8	7	4
Higher Vocational Education/ Higher Technical Education	26	27	23
Senior Secondary Vocational Education	104	91	66
Primary Education	204	183	178
TOTAL PERSONNEL	342	308	271
Number of women	50	46	43
Number of men	292	262	228

** Per September 1990*

INDEX NUMBERS PER END OF 1990 (CUMULATIVE 1981 - 1990)**AMOUNTS IN THOUSANDS**

Production (in barrels)	6,320
Investments	116,480
Revenues	173,548
Expenses	66,121
Depreciation	54,690
Interest payments	13,058
Allowances	5,236
Income before taxes	34,443
Income taxes	15,185
Foreign currency requirements	52,018
Net foreign currency savings	110,699

(Money amounts are in Suriname guilders US\$ 1.00 = Sf 1.77)

BALANCE SHEET PER DECEMBER 31, 1990

THOUSANDS SURINAME GULDERS
US\$ 1.00 = SF 1.77

	1990*	1989	1988
ASSETS			
Current Assets			
Cash	3,416	5,537	3,227
Receivables	3,500	4,908	1,494
Inventories			
- Crude oil	1,500	1,128	1,707
- Materials and supplies	5,500	6,293	4,896
Total Current Assets	13,916	17,866	11,324
Fixed Assets			
Properties, plants and equipment	66,456	56,812	47,058
TOTAL ASSETS	80,372	74,678	58,382
LIABILITIES			
Current Liabilities			
Income tax	6,109	7,012	6,462
Short-term bank credits	17,600	14,120	19,287
Accounts payable and other current liabilities	9,000	8,560	7,028
Total Current Liabilities	32,709	29,692	32,777
Long Term Liabilities			
Bank loans	5,504	12,930	2,195
Government loans	14,713	13,640	7,511
Other long term debts	331	331	331
TOTAL LIABILITIES	53,257	56,593	42,814
STOCKHOLDERS' EQUITY			
Common stock (Sf 1000 per value)			
Shares authorized: 20,000			
Shares issued : 5,750	13,550	5,750	5,000
Reserve fund	13,565	12,335	10,568
TOTAL STOCKHOLDERS' EQUITY	27,115	18,085	15,568
TOTAL LIABILITIES & STOCKHOLDERS' EQUITY	80,372	74,678	58,382

* 1990 figures are provisional

PROFIT AND LOSS STATEMENT 1988 - 1990

THOUSANDS SURINAME GULDERS
(US\$ 1.00 = SF 1.77)

	1990*	1989	1988
REVENUES			
Sales	38,400	33,318	23,136
Other operating revenues	1,600	1,701	1,386
OPERATING REVENUES	40,000	35,019	24,522
COSTS AND EXPENSES			
Production costs	8,500	7,703	6,521
Exploration costs	4,000	2,783	1,678
Selling, General and Administrative expenses	6,000	4,823	4,047
Depreciation	13,800	10,885	7,821
Interest	3,600	2,824	1,980
Allowances	1,000	1,000	1,000
OPERATING COSTS AND EXPENSES	36,900	30,018	23,047
OPERATING PROFIT	3,100	5,001	1,475
OTHER INCOME	1,000	916	420
INCOME BEFORE INCOME TAXES	4,100	5,917	1,895
INCOME TAXES	1,800	2,650	953
NET INCOME	2,300	3,267	942

* 1990 figures are provisional