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TO: Mr. B. L. MacKusick

FROM: Mr. M. R. Mandelbaum *MR*

CIOS Accession List No. 8 of miscellaneous reports from sources other than CIOS agencies lists Serial No. M.284 "a review of the Rumanian oil situation during the war". -The covering letter states that the report is available for perusal in Room 301, 32 Bryanston Square, telephone Regent 8494, extension 938.

The report should be read to see whether it is itself of interest or points to any targets of which we have no knowledge.

M 2 4

**A REVIEW OF THE ROMANIAN OIL SITUATION  
DURING THE WAR**

The outbreak of war in Europe on September 1st, 1939 resulted in a stronger demand for oil being felt immediately.

Pressure exercised on Romania by the belligerent parties compelled the government to appoint in January 1940 Prof. Ghoron Notta as commissary at the head of a petroleum committee which received instructions to drastically increase the exploration and exploitation drilling programmes in order to check the rapid decline of production which had set in since 1937. Secretary of this committee was Vasile Păuntrușiu until 10th July 1940 and thereafter, Ing. Al. Plomocanu.

The attempts of the oil companies to comply with the larger requirements were to a great extent frustrated by the steadily increasing difficulties experienced with the export of products. The stagnation of the export by sea, which after June 1940 came to a complete standstill and the lack of sufficient shipping facilities on the Danube as well as by rail, caused a serious congestion of stocks in the fields, which from September 1940 to January 1941 made it imperative to close in part of the production.

Moreover the mobilization of the army with the consequent removal of workmen from the oilfields and employees from the offices and finally the disturbing political conditions in the whole country, hampered the execution of the established working programme considerably.

Towards the summer of 1940 the political tension in the country reached its culmination and in rapid succession certain events took place which will be briefly related here as they are of importance for a better conception of the oil situation.

On June 21st King Carol tried to surmount the political troubles by forming a national party under his personal leadership. On the 27th June, however, Russia occupied Bessarabia and the northern Bukovina, which fact turned the scales definitely towards a closer relation with the axis powers.

In July the prime minister Ion Gîrgușiu announced that the government had adopted a foreign policy of close collaboration with Germany and Italy. Hungary and Bulgaria availed themselves of this new situation immediately by claiming the territory occupied by Romania after the world war. The arbitration in Vienna resulted in the loss of the greater part of Transylvania to Hungary whilst Bulgaria obtained Dobruja. On September 6th King Carol abdicated in favour of his son Mihai. General Ion Antonescu took the reins in hand as 'conducator' of the Romanian state. The constitution of 1938 was abolished, the parliament sent home and thus a new regime made its entry in Romania.

The commissary general for the oil industry was dissolved on September 1st, 1940, his duties being taken over by the Ministry of National Economy under the leadership of Vasile Păuntrușiu.

In the economic condition of the country, regarding regular development, an attempt of armed resistance by the Iron Guard and the military was suppressed. During the upheaval a German major was murdered and the situation from now on, strong military intervention followed leading to the nationalization of all important industries and the putting under control of the state with foreign capital.

The supervisor of the Astra Refinery, Ing. Al. Păuntrușiu was appointed on July 24th 1941; as far as is known he has however, never actually in office. It should be mentioned here too, that on November 1st 1940 a strong earthquake occurred which caused a further temporary disorganization, although no damage was done to the oilfield installations proper.

In the economic state of the main difficulties with regard to oil during the war are abundant and that the restriction of the production could be lifted in February 1941.

On December 4th 1940 a decree had been issued confiscating all privately owned pipelines, which measure, however, was cancelled in view of its impracticability.

In order to establish the means for regular shipping via the Danube two 1000-ton lines were laid from Ploesti to Giurgiu, one for gasoline and the other for motor oil. These new lines, each of a capacity of 3000 tons daily, were put into service on July 4th 1941. At Ploesti twelve refineries were connected with the Danube by a ring-line. Until the state pump station was ready the Astra Refinery pump station handled the shipping through these lines.

During 1940 tank ships have been brought from the Rhine to the Danube with a total tonnage of 92000 tons and in addition many ships were put on the stocks at the shipyards in Vienna.

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As due to the adverse factors described above the increase of production hoped for could not materialise in 1940, Domitriuc in March 1941 set out a new programme aiming at an increase of production of 300,000 tons over the 1940 figure. For that purpose 165 exploitation wells with a total motorage of 248,000 would be drilled during the year and in addition 54 exploration wells. The amalgamation of small Roumanian companies would be promoted by the government and favourable exploration rights extended to them.

During June and July, particularly after the war with Russia had broken out on June 22nd, the production in the fields had to be curtailed again; this time on account of insufficient air raid protection.

Still other factors, have, however, to be added so as to fully comprehend the difficulties with which the oil companies were faced in carrying out the work expected from them. These are:

1. The shortage of drilling and production material, already evident before the war, but still further accentuated due to the impossibility to import material from overseas.

2. The departure of the complete foreign staffs - for the most part technical of some of the major oil companies. In September 1940 34 foreign employees of the Astra Romana had left the country.

3. The shortage of food and clothing for the workmen. This condition soon reached a very precarious state of affairs.

Adding to all this the bureaucratic slowness with which even the most important questions were treated by the mining department it is not surprising that in spite of all serious efforts made by the oil companies to force the production up, it instead went still further down in 1941. A slight improvement could be achieved in 1942 but the 1943 production figure showed a further decline again.

Many were the discussions held before the war with respect to the mining law of 1937, which in connection with exploration concessions contained several points quite unacceptable for the oil companies. Although much pressure was exercised on the government to get this law modified, it was not until July 17th 1942 that a new Mining Law was promulgated.

The provisions of this new law are workable but extremely complicated, to the extent that it lasted until June 1943 before the first exploration concessions were issued.

In the absence of readily available exploration objectives - a condition which much part of the oil companies had already laboured for many years - the companies were compelled to look for drilling locations in the possible extensions of existing fields. Many of the Roumanian oilfields, however, had already been worked out very thoroughly during previous years, so that not much new oil could be expected from this source.

In this respect Petrobra is in a better position than many of the competitors. A certain reserve drilling area was available in the undeveloped gasifer territories situated between Idsoara and Galipesti and at Marghara. Besides a promising semi-enclosed objective could be taken in hand for rapid development in Gura.

It will thus be seen from the statistical figures that Petrobra's share of the total Roumanian production, which had previously remained at around 23%, went up to 24.4% in 1941 and to 27.2% in 1942. As the total Roumanian production went down during the same period it is evident that the production of the competitor suffered relatively and quantitatively, a rather strong decline.

A further means for stimulating exploration work is the fiscal creation, by decree of April 1st 1943 of a tax free exploration fund, which each operating company is legally allowed to carry of "the balance sheet" to begin with the one for 1942.

An exploration fund amount to 15% of the net profit made during the year, a maximum of 25% of the share capital. On the Astra balance for the year 1942 a sum of 174 mill. lei has, etc., been put aside as an exploration fund, which since ever therefore, Astra's exploration expenses for 1943.

In case exploration wells and installations are engaged over to exploration the fund is credited for the respective values with the purpose therefore, the company put aside should actually be a sum for new exploration work.

If during three consecutive years the aggregated exploration expenses do not amount to 1% of the share capital, the remaining exploration fund is either a profit made in the same year and is then taxed accordingly.

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EXPANSION OF GERMAN INTERESTS IN THE  
ROMANIAN OIL INDUSTRY

The German influence in the Roumanian oil industry increased during the war in the following ways:

1. By taking over large interests owned by French and Belgian groups in the Concordia and Columbia, both major producing and refining companies. To this end the Kontinentale Oel A.G. was formed under the protection of the Reichswirtschaftsministerium. Many of the large banks and oil companies in Germany are represented in the same.
2. The reorganization and merger of the petrol-block and I.R.D.P. This construction was likewise only possible by the acquisition of French holdings.
3. The formation of an exploration syndicate in which the major German oil companies are participating.
4. The formation of new companies for transport and trade of oil, partly through the absorption of Roumanian companies.
5. The closing of working agreements between the Kontinentale and various operating companies.

Ad.1 In 1940 the Concordia shares owned by the petrofin (Congolese financiers Edouard Des Petroles) were acquired by the Kontinentale, which thereby obtained a controlling interest in the Concordia.

Taking effect from January 1st 1941 a merger took place with the poraky romanesca. This latter company was formed in 1922 with a share capital of 30 mil. Lei, controlled by the bankhaus Sponholz Ghesstadt u. Schroder, Berlin. The poraky again controls the Moldonaphta formed in 1926 with a capital of 22 mil. Lei.

As regards this poraky deal it will be remembered that at the end of 1939 their holdings were offered to Astra, which after studying the possibilities considered them to be unattractive.

The production quota of poraky amounted to 52,700 tons in 1939 and 44,480 tons in 1940.

The share capital of Concordia was first adjusted from 1,015 mil. Lei to 1,421 mil. Lei and after the merger with poraky to 1,470 mil. Lei, from which it is deducted that the poraky deal has cost 55 mil. Lei.

A further increase to 2,030 mil. Lei took place later on, possibly in connection with the acquisition of the Roumanian holdings in the Steam Franchise, which were in the hands of the Quintus Francaise des Petroles.

In the Columbia the French interest held by the Quintus Francaise des Petroles in total probably 270,544 shares at 500 Lei, were also taken over by the Kontinentale. The share capital remained at 380 mil. Lei.

#### Ad.2 Petrol Block.

This company dating from 1919, owned the refinery at Luceni (capital 2,000 million Lei) and were unable to pay a contracting German Highroller Koenigsfoldor Braun, Czechoslovakia.

A reorganization took place in 1939, the capital was increased to 3,000 million Lei and at the same time the company was reorganized by the acquisition of 3,000 million shares which thus brought the capital to 4,700 million Lei.

The Sudostehrische Hochlagerellschaft, Berlin, is mentioned as the main shareholder at present, which means that the 1/3 of the company must have been acquired by the holdings of Braun-Koenigsfoldor, whose claim was partly paid off with 100 million Lei in 1939.

At the end of 1940 the company had a capital of 4,700 million Lei and a production capacity of 100,000 tons of oil per day.

Due to dismanagement the I.R.D.P. towards the end of 1940 received 100,000 tons of oil, from which they were helped out by 100,000 tons of oil (in cash) from the latter, and around 30 million Lei shares in the I.R.D.P., acquired in addition 100 million Lei shares from the French Highroller group (Societe Industrielle des Petroles Roumanes) and a further number of shares from an unnamed Roumanian group. These transactions paved the way for a complete reorganization for the I.R.D.P. which took place at the end of 1940 and which meant a reduction of their share capital from 4,700 to 120 million Lei.

The Petrol Block remains the main asset of the I.R.D.P. and is being the only one being only surpassed by Astra Romana.

Ad.3 In 1941 a syndicate was formed called Ge-Jera, with a capital of 60 million Lei, in which the proussag, Fluwrath Wintorschall and D.P.A.G. participated. The object is to obtain exploration rights in state exploration concessions.

Under this item we further mention the Buna Speranta, formed in 1924, with a capital of 15 mil Lei and controlled by Haniel & Lueg.

Ad.4 In 1939 the gardep (Societate Anonima Romana pentru dezvoltarea exportului petrolului) was formed by the deutsche gasoline and Hugo stinnes, with a share capital of 20 mil lei, which was later on increased to 60 mil lei.

The gardep together with the kontinentale took over the Sarpetrol (Societate Anonima Romana pentru comertul titeiului si industria de petrol) with a share capital of 35 mil lei which was increased to 70 mil lei.

The gardep has furthermore formed together with S.R.D. (State shipping Co on the Danube) the S.M.A.D. (Societate Anonima Romana de transporturi pe apa si depozitare) with a capital of 16 mil lei, later on increased to 80 mil lei. Gardep holds 50%.

In september 1943 the formation of still another company was announced; Doicesti with a capital of 100 mil lei. shareholders are: gardep with 50 mil., S.R.D. with 25 mil. and a group of rounanians with 25 mil lei

Doicesti acquired the refinery of the conzrals Do mine si petrol for the sum of 75 mil lei. The share capital of the latter was 30 mil lei

Ad 5. The kontinentale closed working agreements with;

- a. Astra Romana. This agreement will be discussed in a separate chapter.
- b. A.C.E.X. (Administratia Comerciala pentru prospectiuni si exploatare miniera) with the object of further exploring the Manesti field. The konti were to put several drilling rigs at the disposal of the A.C.E.X. for a 70% share in the expenses and income of wells drilled therewith. This agreement is operated through the Concorfia.
- c. Haphta Romana. An arrangement for the drilling of wells has been made. The Sarpetrol will buy all oil produced.

THE EXPANSION OF ITALIAN INTERESTS  
IN THE ROMANIAN OIL INDUSTRY

Before the war the Italians had a share in the producing and refining branches of the oil industry already through the Prahova, of which the entire share capital (330 mil Lei) is in the hands of the A.G.I.P. (Azienda Generale Italiana Petroli).

In 1942 the A.N.I.C. (Azienda Nazionale Idrogenazione Combustibili), owned by the Italian Montecatini group, acquired the Petrolina, an insignificant producing company, formed in 1926 with a capital of 20 mil Lei, of which 15 mil. was in the hands of Romanians and 5 mil. of a Belgian group.

The petrolina thereupon bought 3,000 ha of oil land from the Forage Romoine, probably at the cost of 20 mil Lei, as the petrolina increased then their share capital to 40 mil Lei.

Taking effect from November 30th 1942, a merger followed with two other small producing companies, viz. Continental petrolifera, formed in 1926 with a share capital of 6 mil Lei and the I.R.M. (Industria Romana Mineră), formed in 1930 with a capital of 20 mil Lei. The production of these two companies in the year 1940 amounted to 9,714 tons and 7,949 tons respectively.

The share capital of petrolina was now increased to 150 mil Lei and at the same time new shares were issued for the exchange at 1 : 1 with Continental and I.R.M. shares and thus reached a figure of 168 mil Lei.

In 1943 a further merger took place with the Xonic, the controlling interest of which was acquired from Redoventa. This company, dating from 1935 has a refinery at Ploesti with a capacity of 700 tons daily intake. The share capital was 50 mil Lei.

The capital of petrolina was thereupon increased to 216 mil Lei and due to all these transactions this company has entered now the list of the more important operating oil companies of Romania.

CONTRACT ASTRA ROMANA/KONTINENTALE OEL A.S.

with the purpose to stimulate the exploration and development of concessions held by the Astra Romana outside their exploitation fields and taking into account the shortage of drilling material available an agreement was signed on May 28th 1941 between the above parties.

A concise review of the same is given below;

par.1 - The Agreement Area

The agreement area is divided into three zones, delineated on two maps, which constitute part of the contract.

These zones are:

1. The Moldavian zone
2. The western zone
3. The central zone

(Remark: These zones exclude all exploitation land and proved oil bearing territory with the exception of Berca. The latter should not have been included as prior to signing the contract Astra had a producing well here and could easily have developed this field further with their own means.)

par.2 - The participation quota.

All expenditure and receipts will be divided on 50/50 basis. All concessions and installations remain the property of each party.

par.3 - Operating Clause.

The konti will put ten complete drilling installations at the disposal of Astra for the joint operations (free of charge.)

(Remark: Of these only six arrived, one of which was returned on account of it's being unserviceable. The other five upon arrival had to be overhauled and needed completing with Astra material. The first locations drilled by the latter are: Campinita 3, Cornu 1, Filipesti 40 - a repair well outside the agreement area - Berca 4 and Ploesti 1. In fact, therefore, only 4 out of 10 provided installations were actually put to work by Astra for contractual purposes\*)

In the three zones mentioned in par.1, the following stipulations apply: In the Moldavian zone Astra will take all expenditure for exploration and production for their account until an equal amount is spent as invested by Konti on any other zone. Thereafter expenditure will be on a 50/50 basis. Astra is operator here during the first five years, whereafter the operations will be alternately by Astra and Konti for periods of five years. Production is divided on a 50/50 basis.

In the western zone in Moldavia Astra will take all expenditure for exploration and production for their account until an equal amount is spent as invested by Konti on any other zone. Thereafter expenditure will be on a 50/50 basis. Astra is operator here during the first five years, whereafter the operations will be alternately by Astra and Konti for periods of five years. Production is divided on a 50/50 basis. Astra has a loan of 1,049,594, to which interest has to be added. Astra has not had that any work had been carried out by Astra in the area. The only benefit obtained by Astra so far consists of the expenses for land holdings paid by Konti amounting to lei 78,831,106 until November 1943 plus perhaps some costs in connection with participations in one or two state exploration areas).

This zone is subdivided into the following units:  
1. Vilpesti      The units 1 and 2 have been excluded from the contract area as from July 1st 1943.  
2. Pitiorasa  
3. Ghebeoni  
4. Iaculoti  
5. Sotunga  
6. Poleesti      (units 3, 4, 5 and 6 have taken place and are underlined)

Production is shared as follows: Astra receives a royalty per well for the first 5 tons production. For wells with a daily production up to 5 tons: 5% up to 10 tons: 10% up to 15 tons: 15% over 15 tons, 20%. Until such time that Konti has spent an amount equalling Astra's previous investments in the area, Astra has the option to participate on a 50/50 basis. This option right remains effective also after such expenditure has been



equalised in case that Konti's exploration drilling work has not been extended over at least five different structures.

(Remark: Astra's expenditures in this western zone to the date of signing amount to R.M. 8,176,778 to which interest has to be added. Konti's activities will be described in a separate chapter.)

In case Astra exercises the option, the above mentioned royalty right is cancelled and replaced by a 50% share of net production. If in such case Konti has not yet spent an amount equalling Astra's old investments, the remainder is paid in kind to Astra out of Konti's share of the net oil.

c. central zone. Astra is operator in this zone. Expenditures are paid on a 50/50 basis.

If oil is exploited in one of the units in which the zone is subdivided Astra receives a royalty on the gross production obtained depending on the daily yield per well, viz; of wells with a daily production up to 5 tons; 6%, up to 10 tons; 12%, up to 15 tons; 18%, over 15 tons 22%. This is in payment of the goodwill of bringing in the Astra concession rights and for paying off old investments made in each of the units of this zone. The remaining net production is divided 50/50.

(Remark: The activities which took place in this zone will be discussed in a separate chapter.)

d. General stipulations concerning costs.

All drilling cost will be considered all the equipment purchased (not pertaining to the ten rigs mentioned in par.3), all casing and other equipment acquired for the joint operation, also repairs and replenishments of the same.

A tool rental will be charged for drilling equipment lent by Astra or Konti (not for the ten rigs mentioned in par.3). Priority will be given to the use of Astra rigs.

par 4. working programs. From time to time parties will agree upon a working program for each zone, taking the following points into consideration:

- The keeping alive of the concession rights in the agreement area by complying with existing obligations.
- The exploration of the area geologically, geographically and by means of shallow and deep drilling.
- The production requirements.

All work carried out by parties may give rise to overloads, including a respective share of overloads. The latter will be fixed each year at an overall percentage which will apply for both parties.

par 5. refining. In case Astra's refining capacity is insufficient (taking 1,500,000 tons yearly intake as a basis) Konti will be obliged to buy all the share of crude oil to Astra for refining.

par 6. Co-operation in the

par 7. Astra and Konti will co-operate in the

Concessions.

They will not compete each other in the same area. Each party will be free to operate inside the three agreement zones as long as it does not interfere with the operations of the other party. No party shall not acquire concessions in the same area as the other party obtains to its own party.

par 8. Duration of grants

Each party has at all times the right to terminate the agreement in the same in which case, however, the other party will be obliged to operate the concessions free of charge, paying 50% of the cost of the drilling and installations on the same.

ACTIVITY IN ACCORDANCE WITH THE ASTRA/KONTI CONTRACT

Contract zone

This zone is subdivided into 10 units, which are from east to west:

1. Uta goaca
2. Genita
3. Compinita-Cornu
4. Iscoval
5. Juleanesti-Malaortii (excluding the exploitation area of the pacureti field proper)
6. LEONAVESCHII-Racova (This unit has been discarded from the contract area as from July 1st 1943)
7. gaurani-galvini
8. Intarcul-udroesti (units in which activity took place are underlined)
9. Monteoru garat
10. Barbulescu

1.2. Genita

The first exploration well was spudded on december 30th 1943, in which also the foreign partners participate. On march 23rd 1944, a depth was reached of 1,074m,

1.3. Compinita-Cornu

In Compinita Astra had drilled a well No. 1 for the exploration of oil and gas prospects. Upon encountering oil shows at shallow depth it was suspended in september 1939 on account of the land situation which had still to be consolidated.

In view of the expectation to develop a small oil-field here drilling was taken up again in March 1941. However, by coring continuously to a depth of 896 m, only little sand was encountered, showing poor permeability. Subsequent tests carried out at various depths showed only water with slight oil and gas indications.

The area was still in an exploratory stage when the contract with Konti was signed.

Wells drilled for joint account

Well No. 2 spudded 8th August 1941. After much caving trouble a total depth of 1,385 m was reached without finding any prospects for oil. The well was abandoned on 1st July 1942.

Well No. 3 spudded 10th August 1941 and drilled into vertical oil-bearing beds until it had reached a depth of 752 m in December 1941.

Wells

Well No. 1/1 spudded 1st June 1942. Drilled to 964 m and abandoned in period of 1942. Account of continuous caving trouble and lack of prospects for oil in various oil-bearing beds.

Well No. 1/2 spudded 29 Sept. 41. Drilled into vertical oil-bearing beds and was abandoned to a depth of 752 m in November 1941. An actual footage of 3,887 was drilled in this unit for joint account on 1st July 1945.

1.4. Intarcul

Astra started drilling in Intarcul in 1939. The well was abandoned at a depth of 1,221 m with oil and gas shows. An attempt to deepen the well was made in 1941, but on 1st March of that year on account of technical difficulties.

At the date of signing the contract the area was therefore still in an exploratory stage.

Wells drilled for joint account

Well No. 2 spudded 10th July 1941, reached a depth of 1,385 m without finding any prospects for oil. Attempts to deviate the hole or deepen it were definitely abandoned on 21st December 1942.

Well No. 1 located near the crest of the paleozoic anticline was drilled in 1942. Total depth 829 m. In this well oil and gas shows were encountered and tested between 474-480 m. It started flowing 1 ton of asphaltum per day at a flow rate of 6 m<sup>3</sup> per hour with a GOR of 80. In 39 days a total production of 142 tons of asphaltum and balling was obtained. The well appeared finally to be good for a pumping production of only 1-2 tons. All further tests were abandoned.

Ploponi No 2 spudded 27th October 1942. Drilled to 1,220 m. It stopped drilling on 23rd February 1943 without results. The well was abandoned.

Carjari No 1 lying on the plunge of the Malaosti structure. (Concordia and Romania participate in this exploration). The well was spudded in on 3rd June 1943. On 23rd March 1944 a depth was reached of 1,991 m. so far without results.

The motorage drilled for joint account in this unit amounts to 5,545 units. 23rd March 1944.

#### Ad 9. Montocru-sarat.

A well (A.R. 1 Naoni) started drilling in this unit in September 1943 in order to investigate the Mootic below a steep overthrust of older formations. In this well also Colombia and Concordia participated. In March 1944 the well was abandoned at a depth of 2,020 m as a dry hole in steep dipping Jovantine formation.

#### Ad 10. Berca

This structure, already proved productive before the war, could at the time of signing the Astra-Konti contract be considered as one of the best promising objectives for rapid development. Exploration drilling had started in 1938. The first well encountered a considerable thickness of well saturated grotto oil sands at shallow depth (850-1000 m), only part of which was tested, yielding clean oil at the rate of about 15 tons a day.

Oil is accumulated here against a N-S trending trap fault on the steep flank of the Berca anticline. Wells 3 and 6 proved this pool to extend to a distance of 1,000 m, whilst wells 51 and 53 proved the oil belt in width to a distance of about 300 m from the fault line. The actual thickness of oil sands was found to be 22 m.

Further possible extensions to the N and S of 1,000 and 500 m respectively are indicated. The dip of this part flank is steep (30°) and in view of the fact that the oil is little saturated with gas and that the initial bottom hole pressure is low, it is assumed that conditions are favourable for gravity drainage with a consequent high percentage of recovery.

Wells 6, 51 and 53 were brought in from the full thickness of the sandstone good for 75, 60 and 34 tons respectively, whilst well 7 now produces clean oil at 30 tons daily.

Taking all the above factors into account, the recoverable oil in this pool is estimated at 1,000,000 tons.

South of the pool just described another oil sandstone formation has been explored by wells 2, 5, 7 and 12. The oil sands are leaner and so far only wells of 5 to 10 tons size can be obtained from this area. The recoverable oil here is estimated at 80,000 tons.

In January 1944 an estimate was made of the possible oil reserves in the Astra and Konti according to the provisions of the contract. It was estimated that the 1,080,000 tons available oil Astra will obtain at the end of 1944, whilst Konti's share will amount to about 34,000 tons.

Until the beginning of 1944 no regular output of oil was obtained due to lack of pipe line facilities. It seemed that the oil which was obtained was piped to a steams station at Arbaust. A 40 inch pipe line with the Captura field, laid in the beginning of 1944, made it possible to produce the field at full capacity.

From the latest information available (March 1944) it is estimated that drilling continuously in Berca.

Location distances have been fixed at 100 ft. from the north and south of the new line through well A.R. 1 and at 100 ft. from wells 51 and 53.

BERCA WELLS DRILLED FOR JOINT  
ACCOUNT UNTIL 23rd MARCH 1944

<u>well no</u>	<u>depth in m</u>	<u>results</u>
3	1,195	producer, 40 tons
4	736	dry hole
5	885	producer, 5 tons
6	1,053	producer, 75 tons
7	705	producer, 12 tons
8	440	producer, 8 tons
10	404	dry hole
12	609	producer, 3 tons
16	330	producer, 15 tons
51	1,052	producer, 60 tons
52	990	Bringing in
53	1,194	producer, 34 tons
56	1,140	Bringing in
<u>Total motorage</u>		
	10,733	

The total motorage drilled by Astra in the whole contract zone until 23rd March 1944 amounted to 24,276

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Western zone

Attention is drawn in the first place to the fact that towards the W. part of the oil basin the Mootic oil formation is gradually thinning out. Likewise is the sand content relatively diminishing in that direction with a consequent decrease of oil possibilities.

At poicosti and gotanga Astra had drilled several wells, which confirmed these general conditions, a total of only 50 m of Mootic appeared to be present containing only a few metres of sand.

At poicosti the Mootic sands proved to be unproductive. In underlying Miocene beds, however, some of the older had found a small production on top of the structure. Deep drilling in the Miocene did not disclose further possibilities. However, as conditions are tectonically very complicated in the Miocene, this exploration cannot as yet be considered as definitely condemned. It certainly is not an attractive proposition though.

A further oil possibility at poicosti, in the underthrust structure on the S flank was explored by Astra in a couple of wells (no 9 and 12). Drilling was suspended in February 1944 without finding an oil accumulation.

At gotanga 3 wells were drilled by Astra in a section across the S flank of the anticline. In the highest well no 1 the Mootic was found to be gas bearing and the same sands proved to be water-bearing in the structurally lowest well, no 2. The last well drilled, no 3, is half-way between the two former ones. It was brought in as a producer in January 1944, yielding 3 tons daily of clean oil.

The results at gotanga showed, therefore, that a little oil is present but the occurrence is limited to a narrow belt of max. 200 m width.

Such were the conditions when the negotiations with the Konti took place. In view of the poor outlook of prospects for this whole area it is considered quite reasonable that for this zone a farming-out scheme was preferred by Astra, especially when also taking into account the large investments already made there.

Konti's activities

In 4 of the 6 units in which the zone is sub-divided, drilling activity took place.

poicosti no 11. This well, previously drilled by Astra, was taken into repair by Konti. Four intervals of Miocene sands were tested between 640-693 m, but proved to be water bearing. The well was definitely abandoned.

poicosti no 13 spudded in October 1944. It was drilled to a depth of 691 m including through Mootic prospects. The well was abandoned. Tests carried out between 548-625 m showed unproductive intervals of oil only, therefore the well was abandoned.

poicosti no 14 spudded in August 1944. It was drilled to a depth of 750 m on 14th October 1943.

poicosti no 15 spudded in August 1944. It was drilled to a depth of 7330 m to the Mootic formation. The well was abandoned as not worth testing were encountered.

gotanga no 2. This well, previously drilled by Astra, was tested again by Konti from the interval between 582-610 m. Only a few metres entered and the well was consequently abandoned.

gotanga 101 spudded in August 1944. It was drilled to a depth of 730 m through 4 m. R.H. with a G.O.N. of 1. The well was situated in the narrow oil belt described above. It produced the perforations between 592 and 594 m opposite the Mootic II sand. The oil contained gasoline with a high octane number. The total depth of the well is 698 m.

gotanga 102. This north flank well was drilled by Konti in January 1944. It was abandoned as a dry hole at 491 m.

gotanga 104 started drilling in August 1944. It was drilled to a depth of 563 and 584.5 m. Its total depth is 61 m.

gotanga 106 was completed in February 1944 at a depth of 825 m (plugged back to 575 m) as a small producer.

The total motorage drilled by Konti in the western zone on Astra territory up to 23rd March 1944 amounted to 5,528.

The Colombia (controlled by Kontinentale) drilled an unsuccessful well at vojnosti.

In consequence of the unfavourable results obtained at vojnosti and at pasaleti these two units were discarded from the contract area as from 1st July 1943.

In summing up it can be said that Konti's efforts resulted so far (March 1944) in the further exploration of the one small productive area at gotanga. It seems doubtful however, whether under normal circumstances a paying field can be developed here. The proved area is only 1300 by 200 m and when taking a sand thickness of 2 m a recovery factor of 0.04 and a specific gravity of 0.87, the proved reserves can be evaluated at only 13,000 tons.

KONTINENTALE OEL A.G.

production from agreement area (in tons)

Monthly prod.	1941	1942	1943	1944
January		?	68	
February		78	197	
March		40	769	
April		33	994	
May		43	1366	
June		41	851	
July		8	?	
August		?		
September		23		
October	102	288		
November	93	64		
December	151	178		
yearly total	406			

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OIL PRODUCTION

<u>Years</u>	<u>Romania</u>	<u>Astra Romana</u> (inclusive Gospiro share excl natural gasoline)	
1979	6,240,000	1,374,925	22.2
1980	5,815,000	1,184,986	20.4
1981	5,577,000	1,351,459	24.2
1982	5,665,357	1,538,667	27.2
1983	5,330,410	1,447,520	27.2

METREAGE DRILLED

	<u>Romania</u>	<u>Astra Romana</u> (as operator)
1979	250,000	46,962
1980	277,000	46,782
1981	282,000	65,308
1982	282,000	93,000

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ROMANIAOil production of 9 largest companies

in tons	<u>1939</u>	<u>1940</u>	<u>1941</u>	<u>1942</u>	<u>1943</u>
1. Astra	1,374,925	1,184,986	1,351,459	1,538,667	1,447,520
2. Rom. Am.	(780,060)	(727,345)	(722,973)	(617,180)	(734,500)
3. Conc	824,445	744,202	(703,801)+	(696,286)	(681,790)
4. St. Rom.	732,874	643,783	(563,867)	(580,333)	(539,490)
5. Aradova	(524,357)	(652,000)	(585,329)	(525,090)	(490,700)
6. Colob. I.	599,050	(585,193)	(450,300)	(432,483)	(414,440)
7. Cr. Min.	304,068	292,165	(279,969)	(267,214)	(264,060)
8. Ershova	303,570	272,400	(247,640)	(244,533)	(220,510)
9. I. R. D. P.	140,604	101,957	( 89,779)	(120,627)	(128,840)

The above production figures are according to the annual reports published. Those between brackets are the productions of the respective companies as operators.

+ The production of the Poraky Romanasca, which company was taken over by the Concordia as from 1st January 1941, is included from that date.



YEARLY PRODUCTION MORENI-FILIPESTI AREA  
ASTRA ROMANA

in tons	1940	1941	1942	1943
<hr/>				
Moreni-bana Piscuiri				
asph.	150,745	166,646	158,415	
par.	36,748	30,304	31,526	
Sospiro area Astra share				
asph.	8,773	35,804	52,777	
par	29,338	35,883	50,113	
Filipesti				
asph.	-	-	240	
par.	closed in	40,577	87,195	
<hr/>				
total asph.	159,518	202,450	211,432	
total par.	66,086	106,764	168,834	
<hr/>				
grand total	225,604	309,214	380,266	

CUMULATIVE PRODUCTION ASTRA ROMANA  
(incl Sospiro share)

in tons	per 31st december 1942
asph. oil	2,924,047
par. oil	2,394,065
<hr/>	
total	12,518,112

MORENI FIELD

An analysis of the production situation as given in the accompanying statement shows that a yearly increase of 75,000 tons was obtained in 1941 and 1942 from the area. This was achieved mainly by opening up the Filipesti wells (which had remained closed in for restriction purposes during previous years) and furthermore by building up new production in the Gospiro area.

In the continuation of the Moreni-Piscuiri south flank the prader layer productive of asphaltic oil, was found to be normally developed in eastern direction up to the boundary of Filipesti. In this zone Astra (as operator for Gospiro) completed in the period between March 1941 and December 1943 20 producers for asph. oil, averaging 24 tons daily initial and 4 wells for paraffinous oil with an average daily initial of 50 tons.

The possibilities for further locations for asphaltic oil (for which class preference existed due to its high content of lubricating oil) were practically exhausted at the end of 1943 as the oil belt is a narrow strip of some 200 to 400 meters width only. Still the settled production of asphaltic crude obtained from this strip amounted to 100 tons daily in December 1943.

The Filipesti south flank proved to very prolific. The production here of some 120 tons per day opened up in the beginning of 1941 of paraffinous crude could be improved, by drilling wells in the Eastern extension towards Galinesti, to 300 tons per day at the end of 1943. A reinterpretation of subsurface conditions led to the discovery of these good possibilities and a certain number of further locations is still available here. The average initial production of new wells is about 70 tons daily in this area.

In the Northern part of the Gospiro area, in the continuation of the Moreni-Piscuiri North flank, the Romano Americana is operator. They drilled up the available locations for asphaltic oil here in 1941. For paraffinous crude there were no further possibilities here.

In the rest of the Moreni-Piscuiri field, no new development is planned. By repairing and redrilling a number of old wells the production is kept continuously at the highest possible level.

SOSPIRO PRODUCTION (A.R. & R.A.)

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	in tons	
1935	583	
1936	57,460	
1937	90,680	These figures are taken from the annual reports published up to 1940; thereafter the production has been estimated.
1938	137,740	
1939	125,060	
1940	151,240	
1941	(257,000)	
1942	(303,000)	

The cumulative total gospiro production at the end of 1943 may have reached approx 1,400,000 tons.

The Gospiro deal was closed in 1933 on the basis of an estimated total recovery of approx 3,000,000 tons. That estimate, due to unsatisfactory results obtained at Aricesti and Boldesti (Gagori) was reduced by Campina in 1937 to approx 1,300,000 tons.

At present it looks probable that the original estimate will be substantiated as a considerable tail production can still be expected from the piscuri-pilipesti area, especially from the pacic wells drilled there during the war. This is further illustrated by the following figures:

PISCURI - FILIPESTI, SOSPIRO PRODUCTION

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in tons	<u>1940</u>	<u>1941</u>	<u>1942</u>
	76,222	143,374	208,780

BOLDESTI FIELD

yearly production by companies:

in tons	1939	%	1940	%	1941	%	1942	%
Astra Rom.	356,495	51.3	301,854	51.-	361,787	56.8	462,856	61.9
Rom. Amor.	171,593	24.7	140,756	23.6	149,473	23.5	172,214	23.-
Stoaua Rom.	74,573	10.7	73,888	12.2	48,440	7.6	42,637	5.7
Unirea	70,370	10.2	57,098	9.6	57,155	9.-	50,041	6.7
Cred. Min.	21,799	3.1	20,579	3.6	20,188	3.2	19,542	2.7
Total:	694,830		597,175		637,043		747,290	

As shown in this statement Astra as operator increased its share of the total field's production from 75% in 1939 to 85% in 1942.

The figures of 1940 and to a lesser extent those of 1941 are influenced by the production curtailments which in 1940 were caused by lack of export facilities and in 1941 by the outbreak of the war with Russia. In 1942 production was appreciably higher again, even than in 1939, particularly as a result of the completion of a number of good wells in the northern zone in 1942.

The general situation as regards oil recovery from this field can be judged from the following statement:

cumulative production by companies:

in tons	situation as on December 31st 1942	%
Astra Rom.	6,381,195	50.42
Rom. Amor.	2,930,577	23.16
Stoaua Rom.	1,510,339	11.93
Unirea	1,367,061	10.80
Cred. Min.	466,910	3.69
Total:	12,656,082	

The two string drilling programs in force in 1940 was continued unchanged as only a number of semi-proved locations was available in the northern area. The undrilled gap existing there could only gradually be filled up by stopping out alternately from the S and from W. In doing so it was proved that the underthrust flank continues undisturbed in this region and a gentle dip of the same made it possible to drill a second row of wells here. Whether even a third is justified will be found out by well 165 now drilling. In the S the only two remaining locations were drilled in 1940 (145 and 147).

During 1943 the situation as regards locations had become such that it was decided to drill a number of new wells alongside certain old wells, which had to be abandoned prematurely for some reason or other. It stands to reason that in such old drained areas only small producers could be expected, and that a worthwhile drilling under normal circumstances. The results obtained are indeed rather unsatisfactory.

The results obtained from the above drilling are tabulated in the following table:

Year	number of completions	oil production obtained (in tons daily initial)
1940	9	312
1941	6	367
1942	6	227
1943	5	108

The results obtained from the above drilling are tabulated in the following table:

In order to cope with the increasing demand for gas a number of shallow wells were drilled in the central and northern parts of the field. In addition certain old wells were reworked and the gas production increased. The total amount of gas needed for lifting and circulating through the compressor plant had reached a figure of 780,000 m<sup>3</sup> per day in February 1943 as against 500,000 m<sup>3</sup> per day at the end of 1940.

number of producing wells at the end of december:

	<u>1940</u>	<u>1941</u>	<u>1942</u>
flowing	17	23	23
gas lifting	35	47	51
pumping	1	5	10
total:	<u>53</u>	<u>75</u>	<u>84</u>

This table not only illustrates the above-mentioned increased gas lift activity, but it also shows the efforts made to boost up the production to the highest possible figure by putting a number of small old wells on the beam. This, however, could in most cases only be achieved after carrying out costly repair jobs.

TINTEA

The Meotio oil pool in the North flank of Tintea, discovered in 1937 has from the beginning been developed in a scientific way. It constitutes the first example in Roumania of close co-operation between all operators with the full support of the government.

In the tectonic unit in which Astra's private land is situated, the first wells were brought into production in 1938. They had a high potential capacity (250 tons and more) and in order to conserve the gas energy a rational production scheme was devised, whereby a max allowable production for each well was established according to a formula based on the potential capacity of the well and the gas/oil ratio of the same.

In the beginning the bottom hole pressure was 3.66 kg/10,000 tons of oil produced, but gradually, by adjusting the formula, this figure could be reduced to 1.08 by the end of 1939 and to 0.67 by the end of 1940.

During the war the adopted policy of rational exploitation was continued very strictly. In December 1941, eg, further negotiations regarding conservation of gas energy led to the closing of a unit operation agreement for the Tintea North block under discussion, in which Astra's share was fixed at 83.73%, whereas Unirea obtained 14.85% and Colombia 1.42% of the production. By shutting in wells with a high gas/oil ratio and producing wells at a structurally lower position with less back pressure a considerable quantity of gas could be left in the ground. The gas/oil ratio, which initially was about 240 m<sup>3</sup>/b had risen to an average of 365 in October 1941, but after the joint exploitation agreement was put into force the average gas/oil ratio could in December 1941 be reduced to 233, which shows the remarkable improvement in production conditions achieved.

In the eastern part of the North Flank Astra holds jointly with Steaua Romana a state perimeter (valca lui pan). This area forms part of a structural unit, for which likewise a unit operation agreement has been closed.

In both areas a close watch on the bottom hole pressure and temperature conditions is being observed all the time. The bottom hole pressure, which amounted in the beginning to 270-290 atm. had dropped to about 150 atm at the end of 1942. A repressuring scheme has been worked out, but due to the lack of compressors and the shortage of high pressure gas (needed for other purposes, eg gas lifting at Boldesti) those plans could not yet be executed.

ASTRA PRODUCTION AT TINTEA  
(in tons)

<u>1938</u>	<u>1939</u>	<u>1940</u>	<u>1941</u>	<u>1942</u>	<u>1943</u>
138,510	201,307	246,500	275,078	275,922	
			as operator		

Drilling

In 1940 operations drilling at Tintea had practically come to an end. The main reason was the drilling of 13 strings to the more prolific loess pool, the Meotio (M.I). In January 1942 one string was occupied in drilling to the Meotio pool, to the upper Meotio sand series (M.I). These wells average initially about 75 tons.

In 1941 two strings were put on exploration drilling work, viz, one string at Balcoi north where Astra holds a 65% interest in a large area pooled with Romania, Beckersang (15%) and Colombia (15%) and the second string at Balcoi south.

The drilling at Balcoi north resulted in the discovery of an oil accumulation of importance in the western part of the block. This area is being developed further. In 1943 two wells, R. 17 and R.A. 290 were brought in here with 85 and 52 tons initial production respectively.

The drilling at Balcoi south proved the subsurface conditions in the Astra block of holdings to be unfavourable (steep dip and high salt water level). Drilling consequently stopped here.

CEPTURA-URLATI

yearly production Astra Romana (quota) in tons:

<u>1940</u>	<u>1941</u>	<u>1942</u>	<u>1943</u>
176,650	164,719		

Cumulative production Astra Romana up to 31st December 1941 in tons:

2,786,912

structurally the field can be subdivided into 3 units:

- a. The old Ceptura field
- b. The Orzoaia structure
- c. The Urlati structure

The first two units were fully developed and (with the exception of state land) practically drilled up before the war. The last-mentioned unit constitutes an entirely new feature developed during the war. By gradually stepping out on the plunge of the Orzoaia structure towards the S. a new pool was discovered in the second half of 1940, situated below and to the N.W. of the town of Urlati. It consists of a closure in the overthrusted limb, where the big Valca Calagorasca fault bends from an E-W direction towards N.

Drilling

In the old Ceptura field 9 wells in which Astra participates were completed up to September 1943 with an average per well of 17 tons now production.

On the Orzoaia structure 8 filling-in wells were drilled during the same period, averaging 38 tons initial daily production per well.

On the new Urlati structure all privately owned sub-surface rights were practically in the hands of Astra Romana and the Romano Americana, and a joint agreement for the acquisition of land there. During the war all state perimeters were acquired in the same area for joint account (one of which also the Crou. Miner participated).

Up to September 1943 Astra and Romano Americana completed 19 wells in the new area, averaging 45 tons daily initial production. In all these wells Astra participates with varying percentages.

The above described drilling activity resulted in the maintenance of sufficient new production to offset the decline of six production wells in the Ceptura area.

MARGINENI

The productive area in this field was fairly well defined in 1940. It will be remembered that the main feature is an elongated anticline running WSW-ENE, with a regular S flank but with a N flank which is thrust down along a strike-fault. The trend of the latter was known from the Astra wells nos 2 and 4.

In the culmination of the anticline the Mootie was proved to be gas bearing only; later on it was recognised that here conditions prevail conducive for the production of distillate. The fact that only very moderate possibilities were found in the Mootie was not quite understood until more prolific oil layers were encountered in Miocene sands, unconformably underlying the Mootie. Further exploration of the Miocene showed that here production was limited to a belt at the NE end of the anticline, where a sufficiently sandy development exists. The extension of this Miocene pool was also known in 1940 as a result of the exploration carried out by Astra in its wells nos 7 and 12.

The proved Miocene productive area was drilled up during 1941. It runs through Gospiro territory where Romane Americana is operator. The wells drilled during that year are Gosp. 1, 5, 7, 10 and 11. These were followed by two dry holes drilled in 1942 with the purpose of again exploring the N flank of the structure. These wells: Gosp. 12 and A.R. 14 proved that the underthrust plane is much flatter than anticipated, causing the anticline to nearly turn over towards the W.W. Neither the Mootie nor the Miocene contain any oil here and the limit of productivity is thus fixed by a line running through wells A.R. 5 and Gosp. 7.

Due to the absence of further possibilities drilling was stopped in 1942 after completing well Gosp. 17.

Up to January 1st 1942, the cumulative production of the field amounted to 449,000 tons, of which Astra's share was 170,000 tons, which figures clearly show that the field as a whole is a disappointment. However, the fact remains that a number of proved locations was available for immediate drilling, which enabled Astra to build up a daily production here of some 200 tons. The production of Romane Americana was thereby equally stimulated,

Daily production Astra Romane in tons:

	1939	1940	1941	1942	1943
Daily production Astra Romane in tons:	10,736	11,961	19,361		
Cumulative production Astra Romane in tons:	1939	1940	1941	1942	1943
	45,870	90,843	170,204		



OCHIRU-RASVAD

No new developments of importance took place in the area.

Production Astra Romana in tons:

	<u>Pacic oil</u>	<u>Mootic oil</u>
1940	16,410	161,080
1941	13,510	162,421
1942	13,584	182,228
1943		

Cumulative production of Astra Romana in tons:

situation on 31st december 1942

Ochiuri		
	Pacic oil	1,254,600
	Mootic oil	1,247,800
Rasvad		
	Mootic oil	1,713,000
Total:		4,215,400

Filling:

During 1941 to 1944 a small number of filling-in locations were drilled in the S7 and S8 part of the field. These averaged 20 tons daily initial production.

During 1943 and 1944 high grade pacic drilling was started in the field. Out of 5 mootic wells completed in that year 2 were failures and 3 yielded 5-10 tons new production per well. In the same year also a number of pacic wells were drilled which came in with 1-2 tons daily.

It is very doubtful whether this activity was paying.

BUCSANE

yearly production by companies in tons:

	<u>1940</u>	<u>1941</u>	<u>1942</u>	<u>1943</u>
Entre Rom.	18,737	15,708	17,640	
Roma Rom.	-	-	-	
Entre Rom.	125,899	103,583	110,696	
Entre Rom.	36,828	25,860	18,778	
Entre Rom.	63,705	54,991	46,254	
Entre Rom.	7,715	6,356	4,863	
Entre Rom.	625	506	376	
	<u>253,509</u>	<u>207,004</u>	<u>198,627</u>	

No new developments took place in this field.

From the following table the total recovery of all companies can be seen.

Productive production as per 31st December 1942 in tons:

Entre Rom.	436,189	8.4
Roma Rom.	62,875	1.2
Entre Rom.	2,400,241	46.2
Entre Rom.	825,301	15.9
Entre Rom.	1,137,320	21.6
Entre Rom.	293,675	5.6
Entre Rom.	46,101	0.9
	<u>5,210,502</u>	

## ASTRA ROMANA

deliveries of refined products  
in tons

		<u>1939</u>	<u>1940</u>	<u>1941</u>	<u>1942</u>
Gasoline	inland	41,774	50,312	46,804	57,686
	export	376,206	216,807	525,695	435,177
Kerosene	inland	51,067	47,986	54,280	107,558
	export	149,183	93,205	103,851	80,192
Diesel & fuel	inland	328,383	366,130	384,444	426,001
	export	413,217	227,096	313,554	306,982
Lubricant	inland	6,621	7,577	9,443	14,308
	export	30,186	16,142	25,232	30,038
Other prod.	inland	20,932	17,660	29,140	18,969
	export	22,996	11,300	18,462	16,199
Total:		1,440,565	1,054,215	1,510,905	1,493,110

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ASTRA ROMANA REFINERY, PLOESTI  
December 1942

## Intake of crude:

Naphthenic	20,559 tons
Intermediary	9,891 "
Paraff.	85,716 "
Total:	116,166 tons

## Intake of cracking plant:

paraff. pacura	41,060 tons
gasoil	4,010 "
Total:	45,070 tons

## Intake of Lubricating oil plant:

Asph. pacura	5,786 tons
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## Products manufactured:

	tons	%	av. 1939	av. 1938
	—	—	%	%
Gasoline	35,218	30.32	24.36	23.37
fluid gas	403	0.35	-	-
white spirit and				
kerosene	11,514	9.91	14.70	15.51
gasoil	14,597	12.56	16.47	16.81
pacura	35,577	28.90	32.28	32.23
spec. fuel oil	10,005	8.61	1.79	1.79
lubricating oil	3,000	2.58	2.13	2.17
asphalt	2,237	1.93	1.52	2.68
coke	24	0.02	0.40	0.69
pressure distillate	33	0.03	-	0.33
fuel gas	2,162	2.72	4.11	3.05
losses	2,291	1.98	2.19	1.94
naphtholens	105	0.09	0.05	0.03
	116,166	100.00	100.00	100.00

FROM MONTHLY REPORTS  
1940                      1939  
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MERGER ASTRA ROMANA/GENERALA PETROLIFERA

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On December 9th 1943, a meeting of shareholders took place in which a resolution was carried to sanction the merger agreement closed with the generala petrolifera.

Astra paid a nominal value of Lei 13,333,500 in shares (having a market value of Lei 80,000,000 when taking a quotation of 600% as a basis) and obtained thereby:

1. The royalty rights on generala's land holdings at Seconi (Boldesti), is  $4\frac{1}{2}\%$  on oil and 10% on gas produced. In money this royalty amounted to:

in 1939 :	Lei 4,618,368
1940 :	?
1941 :	" 2,246,089
1942 :	" 4,794,411

2. The surface rights on 68 ha at Seconi up to the year 1973. Important installations of the Boldesti field are situated on this property, viz, main pumping station, tank farm, electric dehydration plant, gasoline absorption plant, compressor plant, workmen's colony etc.
3. The subsurface rights on 104 ha at Seconi from 1956 - 1973.

In the same meeting an increase of Astra's share capital from Lei 2,542,500,000 to Lei 2,555,833,500 was voted.

Prepared by (a) (b) (c) (d) (e) (f) (g) (h) (i) (j) (k) (l) (m) (n) (o) (p) (q) (r) (s) (t) (u) (v) (w) (x) (y) (z) (aa) (ab) (ac) (ad) (ae) (af) (ag) (ah) (ai) (aj) (ak) (al) (am) (an) (ao) (ap) (aq) (ar) (as) (at) (au) (av) (aw) (ax) (ay) (az) (ba) (bb) (bc) (bd) (be) (bf) (bg) (bh) (bi) (bj) (bk) (bl) (bm) (bn) (bo) (bp) (bq) (br) (bs) (bt) (bu) (bv) (bw) (bx) (by) (bz) (ca) (cb) (cc) (cd) (ce) (cf) (cg) (ch) (ci) (cj) (ck) (cl) (cm) (cn) (co) (cp) (cq) (cr) (cs) (ct) (cu) (cv) (cw) (cx) (cy) (cz) (da) (db) (dc) (dd) (de) (df) (dg) (dh) (di) (dj) (dk) (dl) (dm) (dn) (do) (dp) (dq) (dr) (ds) (dt) (du) (dv) (dw) (dx) (dy) (dz) (ea) (eb) (ec) (ed) (ee) (ef) (eg) (eh) (ei) (ej) (ek) (el) (em) (en) (eo) (ep) (eq) (er) (es) (et) (eu) (ev) (ew) (ex) (ey) (ez) (fa) (fb) (fc) (fd) (fe) (ff) (fg) (fh) (fi) (fj) (fk) (fl) (fm) (fn) (fo) (fp) (fq) (fr) (fs) (ft) (fu) (fv) (fw) (fx) (fy) (fz) (ga) (gb) (gc) (gd) (ge) (gf) (gg) (gh) (gi) (gj) (gk) (gl) (gm) (gn) (go) (gp) (gq) (gr) (gs) (gt) (gu) (gv) (gw) (gx) (gy) (gz) (ha) (hb) (hc) (hd) (he) (hf) (hg) (hh) (hi) (hj) (hk) (hl) (hm) (hn) (ho) (hp) (hq) (hr) (hs) (ht) (hu) (hv) (hw) (hx) (hy) (hz) (ia) (ib) (ic) (id) (ie) (if) (ig) (ih) (ii) (ij) (ik) (il) (im) (in) (io) (ip) (iq) (ir) (is) (it) (iu) (iv) (iw) (ix) (iy) (iz) (ja) (jb) (jc) (jd) (je) (jf) (jg) (jh) (ji) (jj) (jk) (jl) (jm) (jn) (jo) (jp) (jq) (jr) (js) (jt) (ju) (jv) (jw) (jx) (jy) (jz) (ka) (kb) (kc) (kd) (ke) (kf) (kg) (kh) (ki) (kj) (kk) (kl) (km) (kn) (ko) (kp) (kq) (kr) (ks) (kt) (ku) (kv) (kw) (kx) (ky) (kz) (la) (lb) (lc) (ld) (le) (lf) (lg) (lh) (li) (lj) (lk) (ll) (lm) (ln) (lo) (lp) (lq) (lr) (ls) (lt) (lu) (lv) (lw) (lx) (ly) (lz) (ma) (mb) (mc) (md) (me) (mf) (mg) (mh) (mi) (mj) (mk) (ml) (mm) (mn) (mo) (mp) (mq) (mr) (ms) (mt) (mu) (mv) (mw) (mx) (my) (mz) (na) (nb) (nc) (nd) (ne) (nf) (ng) (nh) (ni) (nj) (nk) (nl) (nm) (nn) (no) (np) (nq) (nr) (ns) (nt) (nu) (nv) (nw) (nx) (ny) (nz) (oa) (ob) (oc) (od) (oe) (of) (og) (oh) (oi) (oj) (ok) (ol) (om) (on) (oo) (op) (oq) (or) (os) (ot) (ou) (ov) (ow) (ox) (oy) (oz) (pa) (pb) (pc) (pd) (pe) (pf) (pg) (ph) (pi) (pj) (pk) (pl) (pm) (pn) (po) (pp) (pq) (pr) (ps) (pt) (pu) (pv) (pw) (px) (py) (pz) (qa) (qb) (qc) (qd) (qe) (qf) (qg) (qh) (qi) (qj) (qk) (ql) (qm) (qn) (qo) (qp) (qq) (qr) (qs) (qt) (qu) (qv) (qw) (qx) (qy) (qz) (ra) (rb) (rc) (rd) (re) (rf) (rg) (rh) (ri) (rj) (rk) (rl) (rm) (rn) (ro) (rp) (rq) (rr) (rs) (rt) (ru) (rv) (rw) (rx) (ry) (rz) (sa) (sb) (sc) (sd) (se) (sf) (sg) (sh) (si) (sj) (sk) (sl) (sm) (sn) (so) (sp) (sq) (sr) (ss) (st) (su) (sv) (sw) (sx) (sy) (sz) (ta) (tb) (tc) (td) (te) (tf) (tg) (th) (ti) (tj) (tk) (tl) (tm) (tn) (to) (tp) (tq) (tr) (ts) (tt) (tu) (tv) (tw) (tx) (ty) (tz) (ua) (ub) (uc) (ud) (ue) (uf) (ug) (uh) (ui) (uj) (uk) (ul) (um) (un) (uo) (up) (uq) (ur) (us) (ut) (uu) (uv) (uw) (ux) (uy) (uz) (va) (vb) (vc) (vd) (ve) (vf) (vg) (vh) (vi) (vj) (vk) (vl) (vm) (vn) (vo) (vp) (vq) (vr) (vs) (vt) (vu) (vv) (vw) (vx) (vy) (vz) (wa) (wb) (wc) (wd) (we) (wf) (wg) (wh) (wi) (wj) (wk) (wl) (wm) (wn) (wo) (wp) (wq) (wr) (ws) (wt) (wu) (wv) (ww) (wx) (wy) (wz) (xa) (xb) (xc) (xd) (xe) (xf) (xg) (xh) (xi) (xj) (xk) (xl) (xm) (xn) (xo) (xp) (xq) (xr) (xs) (xt) (xu) (xv) (xw) (xx) (xy) (xz) (ya) (yb) (yc) (yd) (ye) (yf) (yg) (yh) (yi) (yj) (yk) (yl) (ym) (yn) (yo) (yp) (yq) (yr) (ys) (yt) (yu) (yv) (yw) (yx) (yy) (yz) (za) (zb) (zc) (zd) (ze) (zf) (zg) (zh) (zi) (zj) (zk) (zl) (zm) (zn) (zo) (zp) (zq) (zr) (zs) (zt) (zu) (zv) (zw) (zx) (zy) (zz)

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