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CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

COUNTRY Yugoslavia

SUBJECT Situation and Operational Methods of Slovenian Coal Mines

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1. All Slovenian coal mines are underground deep mines, gaseous and with large quantities of water. The coal is brown coal or lignite and the coal seam is normally very thick. The brown coal mines are Trbovlje, Zagorje, Hrastnik, Lasko, Zabukovca and Senovo; lignite coal mines are Velenje, Kocevje, St Janz and Crnomelj.

2. Trbovlje -This is the oldest coal mine in Slovenia and is situated on the river Sava. This mine is modern and mechanized. A wide front is opened with a length of 300 feet or more and the coal is loaded on shaker conveyors. The shaker conveyors deliver the coal to belt conveyors which convey to the main shaft. Here the coal is loaded into mine cars and transported through the shaft to the coal cleaning and washing station after which it is classified. Production of coal today (1954) at Trbovlje is between 25 hundred and three thousand long tons (cleaned coal) with approximately 14 to 15 per cent ash. The coal seam is nearly 75 feet thick and the space from which the coal is mined out has to be filled in with crushed rock. The pressure in the mine is very high and it is necessary to support the roof. Both wood and steel supports are used. Because of the number of necessary supports, it is impossible to use heavy underground coal mining machines.

Slovenian coal mines use mechanization similar to that used in German coal mines because the coal seam structure is the same. All the mines use roof supports because of their depth, heavy pressure, and much water. The coal seam has to be divided into several mining heights because of the thickness. The rock used to fill in empty space is crushed outside the mine to a size of approximately one inch in diameter. This crushed rock is usually transported through pipes using water to assist. The pipes are 8" in diameter and a high water pressure is used to force the crushed rock underground. The water must then be piped out again which is an expensive operation.

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Known coal reserves will last approximately 15 years at the present production. There are additional reserves but deeper drilling is necessary. The additional reserves are not expected to be extensive. The coal from Trbovlje has approximately 48 hundred calories per one kilogram of coal (1 calorie equals 3.969 BTU).

Trbovlje has a 36,000 kw modern steam turbine power station. The capacity of this station is to be increased to 60,000 kw or more. The boilers are heated with fine coal tailings from the coal washing station. The repair shop at Trbovlje has been enlarged and modernized since World War II and is now [54] operated as a new state-owned factory. It manufactures different types of conveyors (belt, chain, shaker and others), small and large hoists, small shovels, mining cars, shafts, and accessories. This factory is also used as a consulting mining plant. Trbovlje has a modern cement mill with a daily capacity of approximately 350 long tons of cement. There is also a brick factory located at the mine.

3. Zagorje -This is the second largest brown coal mine in Slovenia. It is west of the Trbovlje mine. The production at the Zagorje mine will be increased because of the small reserves at Trbovlje. As Zagorje increases production, Trbovlje will decrease its production holding an even total production. The reserves at Zagorje are much larger than at Trbovlje. The large undeveloped coal fields lie northwest of Zagorje. High mountains divide the Zagorje coal valley from the Trbovlje coal valley. Both mines are on the main railroad Ljubljana and Zagreb.

Zagorje's production today [1954] is two thousand metric tons of washed coal. The coal has approximately the same calories per kilo as coal from Trbovlje. However, the percentage of sulfur is one-tenth to two-tenths per cent higher. The coal seam is 50 or more feet thick and mining operations are the same as at Trbovlje.

Two large hoists were recently purchased. These hoists will be placed in two vertical shafts being drilled in two new coal mines near Zagorje. These two shafts will be in operation by April or May 1954 and will increase production considerably.

4. Hrastnik - The Hrastnik mine is situated on the Sava River east of Trbovlje. It has two coal seams and the town is situated between them. The coal seams are inclined and the mine gets deeper as the seams are mined out. Additional hoists and shafts are needed in order to maintain the present capacity. The shafts and hoists now in operation are old and small and are being used at the rate of 100% overload. The coal from Hrastnik is nearly the same in quality as coal from Trbovlje; it is of better quality as the mine goes deeper. Coal is transported underground to the wash plant at Trbovlje. Hrastnik produces 1200 to 1500 long tons of coal daily and has large reserves. The coal seams have methane gas. Operations are dangerous because of the inclined coal seams and the increasing underground pressure. Water increases with depth and the pumping station must operate 24 hours per day. Large fans carry fresh air to the miners and a constant watch is maintained in the mine for safety reasons. Hrastnik has improved its operations since World War II by adding shaker conveyors, chain, and belt conveyors.

5. Lasko -This is a small mine east of Hrastnik. The daily capacity is approximately 300 long tons. Its coal is of the highest quality and the cleanest. The percentage of sulfur is practically nil. The coal is used only in steel production. Production cannot be increased because the known reserves are small. The vicinity of this mine has not been explored extensively as yet, however.

6. Zabukovca - Zabukovca is a small mine eight miles from Celje. Daily production is approximately 200 long tons of coal. It has the best coal mined in Slovenia. It runs five thousand calories per one kilo of coal and has only traces of sulfur. The coal is used only in the steel industry. The coal seam is thin and is sometimes found in the form of lences. The operation of this mine is expensive as it operates under difficult conditions - the pressure is high, water quantity large, and methane gas exists.

7. Senovo - Senovo is the newest coal mine in Slovenia. The vicinity of Senovo is rich with coal but very little drilling and exploration has been done. Therefore, known reserves are small. The coal seam is 25 to 30 feet thick and the quality is poorer than in the other mines. Daily production is between 1500 and two thousand long tons. The coal is 3,800 calories per kilo and the percentage of ash is higher than at the other mines. The coal seam is not deep and no methane gas exists. There is a shortage of water, however, and air pressure is used in place of water to force the crushed rock through the 8" pipes to fill in the mined seams. This makes the operation of this mine more expensive.

8. Velenje - Velenje is a lignite coal mine and the coal looks like brown wood. It is a young coal and reserves are almost one billion tons. The coal basin is about two and one-half miles long and one and one-half mile wide. The coal seam is in the center and is approximately 300 feet thick. The lignite is of poor quality - approximately two thousand calories per one kilo of coal. It has a high percentage of moisture and has to be dried before it can be delivered for consumption. When the moisture is reduced to 12% the amount of calories is increased to approximately 3800 calories per one kilo. Velenje recently installed a new vertical hoist and since this installation the capacity has been two thousand long tons per day. Plans call for an increased capacity to five thousand tons of lignite daily.

   The plans to increase Velenje's tonnage ties in with the plans to build a new power station near the town of Sostanj which will supply 120 thousand kilowatts. The new power station will also act as a standby station for the new aluminum plant in Strnisce. Four water power stations have been built on the Drava River in recent years. These stations are primarily for supplying the aluminum plant, but Yugoslavia considers the new station a must as a reserve power supply in case of low water in the Drava River. Sostanj is one mile from Velenje. The aluminum plant in Strnisce is built for a capacity of 30 thousand tons of aluminum yearly; however, the plant will only be able to produce 15 thousand tons of aluminum yearly until it has adequate power.

9. Kocevje - A small coal mine nearly 45 miles south of the city of Ljubljana. It is an underground and open pit mine and the coal is lignite. The daily capacity is 250 to 350 long tons and the known reserves will last for approximately 10 years. The coal is wet.

10. St Janz - This small lignite mine is east from the town of Sevnica. The mine was fully destroyed in World War II. The present daily capacity is 250 to 300 long tons, and the quality is poor. Reserves are large. The lignite is wet and hard to sell because the mine is not equipped with a drying station.

11. Crnomelj - A new lignite coal mine located near the city of Crnomelj, 60 miles south from Ljubljana. Coal has three thousand calories per kilo. The known reserves will last for 10 to 15 years but there is much coal in the vicinity.

12. Coal can be found in Slovenia in many areas other than the above-mentioned areas. Additional coal producing mines will be developed as necessity warrants.

/The attached free-hand sketch is a layout of the coal mining areas./

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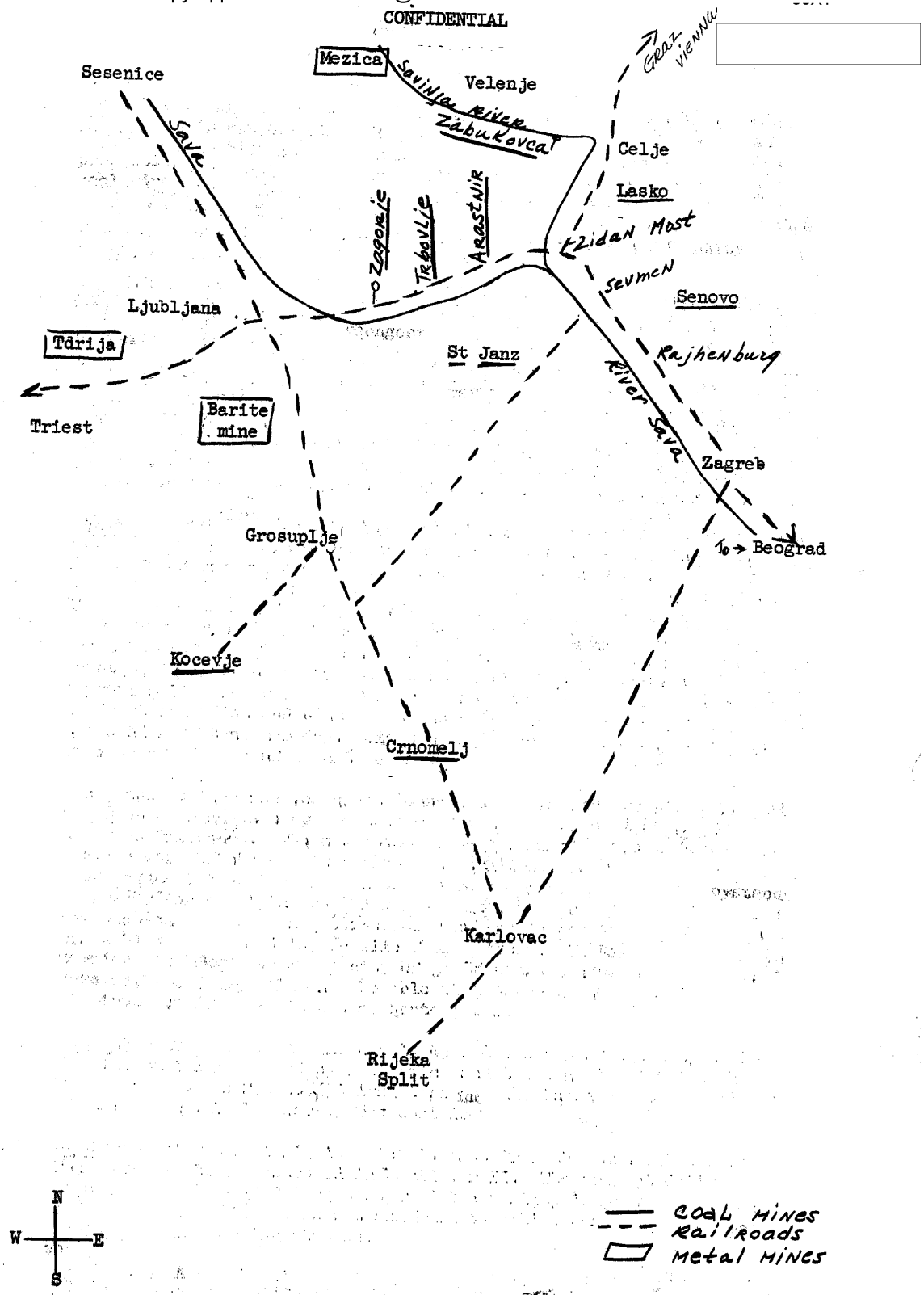

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