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1. Introduction

The entire Jachymov project is subdivided into a number of individual mines or shafts, the majority of which are situated either directly in the outskirts of Jachymov or in the area west of Jachymov covering about 100 square kilometers. There is one major exception to this: the Schlackenwalde or Slavkov shaft, also belonging to the Jachymov project, is located about 50 km. SW from Jachymov. Following are the names and/or locations of the shafts these are not all the shafts there, but the majority of them

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a. Bratrstvi (former name: Bruderlichkeit); Rovnost (Gleichheit); Svornost (Einigkeit). These three shafts are roughly located in the northern and northwestern outskirts of the town of Jachymov. Bratrstvi is about 1,500 meters from the tobacco plant (the Tabakovka, to be mentioned later) which itself is located in the northeastern end of the city; it also is about the same distance southeast of the Keillberg, an elevation 1245 meters high north of the city. Svornost is located on the western edge of the northwestern end of the city, on the south side of the road leading from Jachymov to Dresden, and almost directly opposite a high-towered church. Rovnost is not quite 2,000 meters southwest of Svornost.

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b. Other shafts are: Eduard; Elias; Irene. These three shafts are located in a wooded area west of the city on the east side of a forest path which goes from the town of Bozi Dar (Gottesgab) and leads into the wooded area in a roughly southern direction. This path, which in February 1949 was being improved, bisects the angle formed by the roads from Abertham to Gottesgab and from Gottesgab to Jachymov. The northermost of these three shafts is Eduard, which is under construction. Jachymov (February 1949) had a depth of only 70 meters, but it is scheduled to become the main and central shaft of the entire Jachymov project, with underground connections to all other shafts except Slavkov. On the west side of the forest path, almost directly opposite, though slightly to the southwest of Eduard, is a deep boring named Hildebrand, reaching a depth of 400 meters. Attempts to locate ore in this boring have had unsatisfactory results. South of Eduard on the east side of the forest path is Elias, and about 100 meters farther to the south, on the same side of the path, is Irene. Although they are individual and separate shafts, Elias and Irene must be considered

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together for more than one reason, as will be seen below. Also belonging to the Elias-Irene complex is the Upravna, an ore-washing plant, situated about 1 km south of Irene on the western side of the path. The Elias-Irene-Upravna complex covers an area of about 1 square km and is about 4 km due west of Jachymov. Farther down the path, on the west side about 1 km south of the Upravna, is a small shaft [redacted] this shaft was considered productive. 50X1-HUM

c. Other shafts are: Breitenbach, near the town of the same name; Seify (Seifen), near the town of the same name; Abertham, near the town of the same name; and the above-mentioned Slavkov (Schlackenwalde). On the north side of the Abertham-Gottesgab road, about one-third of the way from Abertham, there is a shaft [redacted] About 2 km south of Jachymov on the Jachymov-Ostrov road, there is another shaft [redacted] 50X1-HUM 50X1-HUM

d. In addition to the shafts mentioned and the vertical Hildebrand boring, there are a number of galleries bored into hillsides where prospecting has been done with varying results [redacted] the following galleries [redacted] were built or enlarged after 1945. If a straight line is drawn between Bratrstvi and Svornost (connecting the two northern ends of the city), one of these galleries lies slightly to the northwest of a middle point on this line. Another gallery lies at the southern edge of the city, west of the road leading to Ostrov and immediately south of the Radium Palast. West of the above-mentioned forest path, between the town of Gottesgab and the Hildebrand boring, there is another gallery. There is one more south of the Upravna and north of the afore-mentioned small shaft of unknown name, just west of the forest path. [redacted] 50X1-HUM 50X1-HUM

2. Svornost Shaft [redacted] 50X1-HUM

a. [redacted] the Svornost area is located just outside Jachymov south of the Gottesgab-Dresden road and opposite the Jachymov church. The shaft frame (Forderturm) in the hauling plant has a height of about 30 meters; it operates two hauling cages of a height of 11 meters each. The cages are of iron construction and run in wooden guide rails. The cages are suspended on a steel hoisting cable which has a diameter of 38 millimeters. They are operated by an electric winch located in the machine shop. Each hauling cage has three stories, of which the two lower stories are for transporting crews and hauling ore, while the upper story is exclusively for hauling dead rock. The shaft frame is constructed over a hauling track leading to the Svornost rock heap, about 1 km north-east of the shaft. The trains on this hauling track are operated by both Diesel and electric locomotives. 50X1-HUM

b. Along the south side of the hauling plant runs the main road of the Svornost area which joins the Gottesgab-Dresden road to the west. Across this road, opposite the hauling plant, is the Svornost machine shop, which has been rebuilt from an older one; rebuilding was completed in the fall of 1948. It now consists of 5 parts: a generator room, the machine proper, a compressor room, a transformer room, and a room containing sanitary installations with an ore cellar underneath it. The transformer room (in the northwest corner of the building) contains 5 transformer cells with one oil transformer each. Of these 5 transformers, two are of 800 KVA, one is of 500 KVA and the other two are undetermined. The electric power arriving at the transformer room comes from a power cable carrying 22,000 V and servicing the entire Jachymov mining area. It has been rumored among the Jachymov crews that this power comes from the Soviet zone in Germany. [redacted] The hauling winch for the cages, operated by a direct current motor, is in the machine room proper. The compressor room has two compressors of 6 atm. each, producing compressed air for pneumatic air drills and dredges which runs underground in seamless steel tubes, each five to eight meters in length, which are flanged together.

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c. To the east of the machine shop are: (1) the Svornost workshop, containing a forge, a turner's shop, and an electrical workroom on the first floor, and a tinsmith's workroom, a joinery, and a dispensary on the second floor; (2) a house used partly as residence for mine foremen and partly as offices for Russian members of the Svornost administration; (3) the residence of the Director General of the entire Jachymov mining project (a Czech of Slovak origin [redacted] (4) an office building for Czech members of the Svornost administration; (5) a warehouse for storing tools, tubes, rails, cement, lumber, etc.

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d. In the southwest corner of the Svornost area is the camp for German PW's, which is fenced in with barbed wire and, being located on a hill, has a fenced-in stair path (151 steps) leading to the entrance of the shaft.

e. The whole Svornost area is fenced in, on its northern side with a three-meter wooden fence topped by barbed wire, on its southern side by a barbed wire fence. There are two guarded entrances located on the main mine road inside the fence.

f. The main mine road leads eastward to Mariasorge, where housing for Svornost miners was under construction in February 1949, in an area of about one and a half square kilometers.

g. At the Svornost rock heap, which is outside the fenced-in area, there is a charging station for the batteries of the electric locomotives operating the hauling track between the shaft and the rock heap.

h. The Svornost shaft has a depth of 556 meters (the shaft, which was originally deeper, had to be closed with concrete at this depth because of the existence of an underground source of water below that level). The shaft has twelve levels from which seams extend in all directions.

1) The first two levels, the Tagesstollen, at a depth of about 30 meters, and Nepomuk, a little lower, are dead levels not in use.

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2) The next level, Barbara, at about 100 m. depth, is rich in ore.

[redacted]

3) Then follow Daniel at about 200 m. depth with good deposits, and Stollert at about 250 m, also with good deposits. At Daniel there is an old connection with the Rovnost shaft, not in use now. In Barbara, Daniel, and Stollert, only a little shooting and blasting is being done, since most of the ore coming from there is waste material left behind when the shaft was previously exploited for other than pitchblende ore.

4) At about 300 m. is the Second Level, with poor deposits. (Note: the designation "Second Level", and the following "Fifth", does not correspond to the actual succession of levels but is neverthless correct.)

5) Next is the Fifth Level at about 350 m. with good deposits. The Second and the Fifth Levels are vertically connected by a number of chimneys through which dead rock is dropped, collected on the Fifth Level and from there carried by hand to a bin extending vertically from the Fifth to the next, Seventh, Level from which it is removed.

6) The Seventh Level at about 400 m serves only this purpose; no digging is done there.

7) At the Fifth Level a connecting passage to Bratrstvi is under construction. In February 1949 it was estimated that its completion would take one more year.

8) Then there is the Eighth Level at about 450 m with rich deposits. Some of the rock on the Eighth Level is extremely hard, so that special drills, so-called "distance drills", have to be used. They have cutters of 40 mm. diameter of varying lengths permitting borings as deep as 50 m. and are made of special steel. From the Eighth Level a number of chimneys lead to the Tenth Level for the purpose of dropping dead rock. From there the dead rock is carried to a bin extending vertically from the Tenth to the Eleventh Level, where it is collected and removed.

9) The Tenth Level at about 500 m. has good deposits, but the Eleventh Level, like the Seventh, serves only for the removal of waste and has no digging.

10) The last level, called the Twelfth, has rich deposits. A small hauling installation runs between the Twelfth and Tenth Levels and the bin there so that rock can be hauled into the bin and removed on the Eleventh Level. A connecting passage from the Twelfth Level to Bratrstvi is under construction. It is estimated that its completion will take as much time as that of the corresponding passage on the Fifth Level (above). The reason for the attempts to connect Bratrstvi with Svornost is that the rock heaps at Bratrstvi are nearly filled and the two connecting passages under construction will be for the transportation of dead rock from Bratrstvi to Svornost and the good hauling installations of Svornost may also then be used for Bratrstvi. The Twelfth Level also has a connection with Rovnost, about 1.7 km in length which, though stemming from earlier times, is now in operation and is being used to transport lead rock from Rovnost to the hauling installations of Svornost. The hauling is done in trains pulled by electric locomotives pulling twenty to twenty-five mine cars (Hunde) each. [redacted]

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i. Most of the mechanical and electric equipment inside the shaft is concentrated on the Twelfth Level. In addition to the Twelfth Level equipment (mentioned below) there is a train of mine cars on the Twelfth Level pulled by a Diesel locomotive over a stretch of 700 to 800 meters, and there are two small conveyor belts on the Seventh and Eleventh Levels (one at each) servicing the bins terminating there. On the Twelfth Level there is an electric switch station which is fed from the transformer room in the machine shop above ground. The switch station serves the electric light system, the pump system, the above-mentioned small hauling installation from the Twelfth to the Ten level, and two big ventilators in operation since February 1949 (on the other floors there are small ventilators). The switch station is connected to the transformer room above ground by two cables each having three conductors 310 mm square and one conductor 190 mm square and carrying alternating current of 380 V, 500 amperes, and by another cable having four conductors 80 mm square carrying alternating current of 3000 V, 35 amp. for one of the pumps mentioned below. Two more cables each having one conductor 400 mm square and carrying direct current of 280 V, 400 amp. lead down from the transformer room to the Twelfth Level without passing through the switch station; they serve the electric trains operating between Svornost and Rovnost. There is, furthermore, a signal cable serving the signal installations at the loading station on the individual levels. This electric signal system was not yet finished [redacted] 50X1-HUM in February 1949 but is probably finished by now. The former signal system consisted of mechanical installations operated by ropes. There is also a telephone cable for telephone connections between the Twelfth Level and all other levels and above ground and between the individual levels. All these cables, with the exception of the above-mentioned 3000 V cable, were newly installed or rebuilt during the winter of 1948/49. The electric light system inside the shaft is rather poor with the exception of the system on the Twelfth Level, which is more extensive. On Barbara, Daniel, Stollert, and the Second Levels there is only one electric light at the filling stations of these levels and beyond that there are no lamps. There are several lights at the bins on the Fifth and Tenth Levels, and several on the

Seventh, Eighth, and Eleventh Levels. The electric light current branches off from the 380 V cable and passes through small, 21 ampere transformers installed on the individual levels, where it is transformed into 24 V, 48 V and also 220 V (in spite of the fact that use of 220 V light current is prohibited in mines). The pumping system on the Twelfth Level consists of four pumps, two of which were installed during the winter of 1947/48 after the shaft was inundated up to the Tenth floor as a result of the melting of heavy snow. All pumps are operated by three-phase alternating current. The two pumps which were there before the winter of 1947/48 are a sump water pump for accumulated water and a radium water pump. Each of them is able to pump about 1,000 liters of water per minute up to the level of Daniel (i.e. a height of about 250 m.), and from there it runs through pipes outside the shaft. The radium water is led into the city of Jachymov. The capacity of 1,000 liters per minute is attempted only during inundations; normally there is only radium water from a source on the Twelfth floor, of which an average 60 liters per minute is pumped to Daniel, in addition to some sump water from time to time. The sump water pump is driven by a motor of 380 V, 230 amp; the radium water pump by a high-speed Schorsch motor of 3,000 V, 230 amp. and 1,800 to 1,900 revolutions per minute. The two pumps, newly installed in the winter of 1947/48, are driven by CKD motors (Ceskomoravska Kolben-Danek) of 380 V, 150 amps. These two pumps are mounted in a serial pump connection, one sucking, the other forcing the water to Daniel and from there outside.

j. Svornost is working in three shifts of eight hours each. On the average, the crew composing one underground shift consists of 120 PW's and 150 civilians, mostly Czechs with some Russians and Germans among them. Of these 270 men per shift about 55 are actual hewers in the proportion of 15 PW's to 40 civilians. No women are working underground (with the exception of geologists or radiometric workers, to be mentioned later) but about 20 to 25 women per shift work above ground.

k. At the end of an old and the beginning of a new shift, the hauling installation transports the crews; i.e. it hauls out the old crew and, at the same time, lowers in the new one in the double-cage hauling elevators. In one run six crew members can be carried in each of the two lower stories of each hauling cage which, when transporting crews, runs at an average speed of 6 m per second. Immediately after the crews are transported, the hauling out of dead rock begins, lasting an average of six hours per shift. The dead rock is hauled in the uppermost story of the hauling cage which on this occasion runs at a speed of 10 m per second. Then powder and blasting material are delivered to the individual levels from the Twelfth Level, where the explosives dump is located. This material is transported in the crew stories of the hauling cage; no ordinary crew members are allowed to accompany such transports except head hewers and shift leaders. The blasting powder called Donarit is carried in boxes of 25 Kg. An average varying from 2 to 4,5 of these boxes per shift is hauled and used. The last activity of the hauling installation at the end of a shift is transporting ore.

l. The Svornost yield of dead rock and ore is as follows. Yield of dead rock, though varying, can be set at an average 600 tons per eight-hour shift, transported by 200 runs of the cage carrying three tons each time. After arriving above ground the dead rock is emptied into bins and from there into tilting carts. Transfer of the rock from the bins to the carts is done by three persons operating hand levers. The rock is then carried in trains powered by electric or Diesel engines to the Svornost rock heap (about 1 km. distance). It is hard to fix the Svornost yield of ore because it varies greatly [redacted] the following February 1949 yield of ore may be considered reasonably representative of the average over a longer period. In February 1949, the average Svornost yield of ore was 100 buckets per shift, a bucket carrying from 20 to 50 kg of ore, according to its specific weight. The following circumstances must be taken into consideration in order to arrive at a reasonable appreciation of the yield figures: 50X1-HUM 50X1-HUM

1) The above-mentioned figure for the Svornost yield of dead rock per shift includes the yield of dead rock coming from Rovnost through the Twelfth Level connecting passage between the two shafts. The electric trains between Rovnost and Svornost carry an average of

150 to 200 mine cars per shift. These cars have a capacity of 0.75 cu. meters, each taking about 1500 to 2000 pounds of dead rock if filled up and if the rock is wet, as is the case in both shafts. This means that the Rovnost share in the Svornost yield of dead rock constitutes a maximum of 200 tons per shift, leaving the Svornost yield proper at about 400 tons per shift. However, the Rovnost figure does not represent its entire shift yield because Rovnost also has a hauling installation of its own.

2) The daily output of dead rock as well as ore is not arrived at by multiplying by three the yield figure per shift for the following reason: One of the three eight-hour shifts is almost exclusively for the transportation of material from above ground into the shaft (an operation called Materialsteckung), such as lumber, iron, explosives, tools, etc. This is done mostly during the night shift. Only in emergency cases, e.g. if too much material has been accumulated within the shaft, will the third shift or part of it be used for hauling-out operations. This fixes the daily Svornost yield of dead rock, including the Rovnost share, at an average of 1,200 to a maximum of 1,500 tons. The corresponding daily figure for ore yield is 200 buckets, representing an average of from 4,000 to a maximum of 10,000 kg per day. In regard to monthly output it must be taken in consideration that the number of holidays granted to Jachymov workers is less than the normal rule, and this goes not only for PW's but also for civilian workers. Although at least two work-free Sundays per month are granted to them on paper, this rule is not adhered to in practice; frequently there is only one holiday per month, although other main holidays such as Easter, Christmas, New Year are usually observed. The average work-month is therefore longer in Jachymov than is the rule; it can be set at 28 to 29 days, making an average work-year of roughly 335 to 345 days. Vacations do not influence the work time because a worker going on leave (or falling sick) will be replaced by another one.

3) The above-mentioned yield figure for ore of 100 buckets per shift is a good average; i.e. it is reached only after the yield has been high over a relatively long period of shifts.

4) Part of the yielded ore is streaked with dead rock and goes as such into the ore buckets.

m. The ore mined at Svornost is pitchblende ore; nothing else is mined there and there are no by-products. The Svornost ore occurs in two main qualities:

1) A very hard, very black quality which is found mainly in the lower Svornost levels from the Second Level on down, but also occurs in smaller quantities in the upper levels. It looks like very black coal. Because of its hardness it does not react when scraped with metal. Hewers and Russian control personnel frequently test black material found there by scraping it with metal; if, after the scraping, a white trace appears, it is thrown with the dead rock; if no trace appears, it is considered to be good ore. The harder this kind of ore is, the better its quality. [redacted] 50X1-HUM

Pieces of this hard ore of average fist-size have been frequently estimated by the miners to weigh 700 to 800 grams (European).

2) The ore mainly found on Barbara, Daniel and Stollort Levels is of much softer quality, often loamy and crumbly. It is also a black color but usually interspersed with yellow streaks. This ore too is considered to be good quality, though not as good as the other. 50X1-HUM

The ore throughout Svornost occurs in veins with thicknesses varying from the thickness of a postcard to about three centimeters. [redacted] veins of much greater thickness have occasionally been found there; the maximum thickness have occasionally been found there; the maximum thickness was indicated by such miners as having been 30 cm. The veins very seldom run in a horizontal direction; they are most frequently imbedded

obliquely (diagonally), less frequently in vertical positions.

n. First picking or sorting of the ore takes place at the spot where it is found before it is put into the ore buckets. This rough sorting serves the purpose of separating it from dead rock. After the ore is put into the buckets, the name of the hewer and the place where it was found are inscribed with chalk on the buckets and it is hauled above ground. The buckets are carried by hand from the hauling cage to the ore cellar in the machine shop, where the second sorting takes place. This sorting is done by a crew usually consisting of 10 women and 3 PW's or civilians. It is done by eye, and the ore is separated into three categories (good, medium, bad). The graded ore is then packed into wooden boxes 30 by 30 by 30 centimeters with the grade stamped on them, loaded on ten-ton Tatra trucks, and transported to Bratrstvi. All ore obtained in the entire Jachymov project, including ore coming from the washeries described below, goes to Bratrstvi for final sorting in a central sorting plant and for shipping. (There is one possible exception to this [redacted] The final 50X1-HUM sorting at Bratrstvi is done by sorting apparatus [redacted] After the final sorting, the ore is emptied into 50X1-HUM cylindrical tin pails of about 30 cm diameter and about 30 cm height; each pail is inscribed with a letter and a number, the letter indicating the final determination of quality and the number being a serial number. After a sufficient quantity of pails is accumulated at Bratrstvi, they are loaded on Tatra trucks and hauled (always by truck, never by train) to Ostrov. From Ostrov the ore goes by freight trains to Brest-Litovsk where it is reloaded on Russian-gauge trains. That the ore (or at least part of it) goes to Brest-Litovsk is common knowledge in Jachymov [redacted] 50X1-HUM PW's were ordered to help in reloading of a train as described above. They inadvertently broke one of the pails (which are welded) and found that it contained the ore which they met again in Jachymov not long afterward. The kind of inscriptions on the pails was also the same.

o. The instrument used by the hewer is a compressed-air drilling machine with a body (machine) length of about 80 cm. Cutter rods with lengths varying between one and three meters, all having the same diameter of 40 mm, can be inserted into it. The machine has a support which can be regulated by air pressure to prevent sagging when the drill is brought into an elevated position. The cutter rods are made of Widia steel (stands for "Wie Diamant" meaning "hard as diamond", a tungsten-carbide fabricated by Krupp). Drilling at Svornost is wet drilling. Water is led into the cutter which washes out the drill mud. Air pressure applied is 6 atm. In addition to this standard instrument, there is the distance drill to be used for very hard rock, as mentioned above; it is made of a special steel [redacted] 50X1-HUM

p. Motors used at Svornost come mostly from the Skoda and Bata works. Electric switches, distribution tables, and cables are of AEG as well as Siemens origin. The signal installations come from CKD. The conveyor belts used at Svornost as well as Upravna (see below) come from Russia; the same is true of the electric battery locomotives operating above ground. The electric locomotives working underground are Czech machines which were originally produced for export to Russia but were kept in Jachymov. [redacted] 50X1-HUM

q. The explosive for blasting, Donarit, a yellow gelatin mass enveloped in oil paper, is used in cartridges of about 15 cm length and a diameter of about 38 mm. After several cartridges are inserted into the drill hole, they are exploded by means of a blasting cap affixed to a cartridge in the middle of the others, and a firing cord of black color burning at a speed of slightly more than one cm per second.

r. Neither PW nor civilian workers have any protective clothing against radioactivity. Rubber suits are issued to those workers who have to work in particularly wet places. The miners wear helmets made of either leather or bakelite [redacted] Pit lamps provided the miners are made in CSR. 50X1-HUM

s. A radiometric (or, as it is called in Jachymov, a geological) team is attached to each shift, its size varying from two to ten members; a limited number of women are employed in these teams. The teams work with three sorts of radiometric instruments:

1) An aluminum case in the form of a rod about 60 cm in length and 4 cm in diameter. The rod has a plug for an earphone connection. Inside the rod are a battery and a counter.

2) Same as above with a rod length of about 80 cm and the same diameter. In this case the battery is worn in a box suspended across the chest.

3) Same as in (2) with the following difference: Length of the rod is about one meter and the same diameter, while another rod 30 cm in length and 4 cm in diameter is affixed in a T-form across the top of the first one. [redacted] in this case the latter part contains the counter. 50X1-HUM

4) In operation, the rods are passed over the rocks in all directions, very close to, but without touching them. If a click or crackling sound is recorded the spot is marked with white oil paint. With none of the mentioned instruments is it possible to determine the quantity, quality, or distance of the radio-active material discovered. (For other radiometric equipment used at Upravna and in protecting, see below).

t. There are no turning platforms on any of the Svornost levels but only tin iron sheets of about 1 cm thickness on which the wagon traffic is maneuvered by hand. Ventilation throughout Svornost shaft is very bad with the exception of the Twelfth Level, where it is satisfactory.

u. Near the Svornost rock heap there is a new shaft under construction. This is actually an old shaft which is been deepened. [redacted] 50X1-HUM [redacted] in February 1949, this shaft had reached a depth 50X1-HUM of about 300 m. It will be connected to Svornost shaft. This new shaft will be exclusively for transporting crews and hauling in material. Svornost shaft will then only be used for hauling out dead rock and ore, because it would not be possible to perform all hauling operations at Svornost after the two connecting passages to Bratrstvi are completed and part of the Bratrstvi hauling is transferred to Svornost.

4. Elias and Irene shafts

The Elias and Irene shafts, on the east side of the forest path leading from Gottesgab south, and the ore washery Upravna on its west side form one complex covering about 1 square km, fenced in with barbed wire and illuminated at night. At the southeast corner of the complex is a PW camp lodging the German PW's working there. Between the camp and the path is an old rock heap [redacted] containing the wastermate ial from 50X1-HUM Elias and Irene from the time when they were exploited for silver rather than pitchblende ore. This rock heap is the dump from which Upravna draws its raw material. The two shafts are close together on the same side of the path and surrounded by an old machine shop, a new machine shop under construction, an office building, and storage facilities. On the other side of the path is a new rock heap [redacted] where the dead rock from the 50X1-HUM present operation of the shafts is dumped. Beyond it lies another old rock 50X1-HUM heap [redacted] originating in pre-pitchblend times and not yet being exploited (as of February 1949). Another new rock heap [redacted] situated closer to Upravna, 50X1-HUM receives the waste material left after the processing of ore at Upravna. Upravna is located in the northwest corner of the complex together with a boiler room and a transformer station. [redacted] 50X1-HUM

a. Elias, an old shaft about 150 m in depth, does not have a hauling frame because it is not vertical but oblique. The crews descend into and leave the shaft by ladders. Dead rock and ore are loaded into wagons inside the shaft and moved by hand to special mine cars into which the material is loaded. The special mine cars are then drawn above ground by a cable winch driven by an electromotor and empty their contents there automatically. The shaft is operated in three shifts. The average shift yield of dead rock is about 100 wagons of 0.75 cubic meter volume each, i.e. each holding between 1500 and 2000 pounds of wet rock (yield figure as of February 1949). The yield of ore is unknown [redacted] Elias is considered to be a shaft of medium yield. The shaft is very wet, and because of its slanting position, the hauling in this shaft is complicated. It is therefore planned that the Elias hauling be taken over by Irene, once this latter shaft is completed. 50X1-HUM 50X1-HUM

b. Irene, thus called in honor of a Russian woman geologist, Irene von Tannenbaum, who worked in Jachymov [redacted] was an old dead shaft which was re-opened under the postwar Jachymov mining project. In February 1949 it was about 90 m deep and was being deepened further. Under the present Jachymov mining project, Irene is scheduled to be provided with the same hauling frame and machinery as Svornost (see above). It has now (September 1947 to February 1949) a temporary old hauling frame. Parts of the new hauling frame and machinery arrived in October 1948 but by February 1949 they were not yet complete. 50X1-HUM

c. The crews working in Elias and Irene amount to a total of 550 PW's and 200 civilians of Czech, Russian, and German origin. Of these 750 persons, about two-thirds are working above ground and one third underground. About 15 of them are women who are occupied above ground. The proportion of the above ground crews is relatively high because many of them are working on the old rock heap [redacted] in connection with its exploitation through Upravna. 50X1-HUM

5. Upravna

This ore washery (and another smaller one at Bratrstvi and possibly one more at Slavkov-see below) is the only place in the entire Jachymov mining project where ore is actually dressed. That means that in the Jachymov project only that ore is dressed which comes from old rock heaps originating in the days when pitchblende was considered to be waste material. All Jachymov ore hauled from underground is only picked and sorted there and at Bratrstvi, and is shipped to Russia in this state. [redacted] in February 1949, only ore from the old rock heap [redacted] near the PW camp in the Elias-Irene-Upravna complex had been dressed in Upravna, but it was planned that Upravna should later take on ore for dressing from the other old rock heap [redacted] in the same complex, and from rock heaps attached to other shafts throughout the Jachymov project. The old rock heap [redacted] lies in a cavity, reaching a height of 35 to 40 m from its deepest point. Roughly speaking it has a width of 175 to 200 m and a horizontal depth (sic) of about 400 m (these dimensions which strictly would only apply to a regular body are meant to give an approximate idea of its volume). Parts of it are covered with grass, plants, and small trees. Its main body is dead rock with crumbs of ore in it. The old rock heap [redacted] scheduled to be exploited in the future by Upravna and separated from the first one by the forest path, and the new rock heap [redacted] are of lesser dimensions, having about one third of the volume of the first one. 50X1-HUM 50X1-HUM 50X1-HUM 50X1-HUM 50X1-HUM 50X1-HUM 50X1-HUM

a. The total area covered by Upravna, its auxiliary buildings, and transport installations is about 500 by 500 m. The main Upravna building has four floors and is about 50 m long and 48 m wide. It is built into the side of a hill, one floor reaching beyond the other before touching the hill, so that its upright projection resembles a reversed stair case [redacted] Ore coming from the rock heap reaches the fourth floor first. The first floor contains 51 vibrator tables, office rooms, and, in a wall recess, an electric distribution board serving all floors. On the second floor are 51 more vibrator tables, 2 ball mills, and 2 screening tables. The third floor has 2 roller mills and a small laboratory. The fourth floor contains a stone-crushing machine, a sifting screen, a fitter's shop, a turner's shop, an electric workshop, and a supply room. 50X1-HUM 50X1-HUM

b. Material obtained from the old rock heap [redacted] is put on a lattice which sorts out the biggest pieces. These large pieces are examined there with counters. Those large pieces which are good are packed in wooden boxes and transferred to Bratrstvi; the worthless large pieces are dumped onto one of the new rock heaps [redacted] as waste material. The fine material which has now been separated from the biggest pieces, is transported from the old rock heap [redacted] to a sorting station located opposite the rock heap on the other side of the forest path. The transport is made by two conveyor belts in succession, the material falling from the first belt onto the second, which is a little lower. The total length of the two belts together is about 300 m. Reaching the sorting station, the material falls into a drum about 5 m in length and about 80 cm in diameter. The drum is provided with holes of different sizes varying in diameter size from 2 to 8 cm. When the drum revolves, some pieces fall through the holes and those which are too big remain in the drum. These latter pieces fall from the drum onto two slow-moving, parallel conveyor belts which pass through a control station. There a team of two or three geologists examine the pieces with counters while they are slowly passing. Pieces which do not react are left on the belts and pass on to the new rock heap [redacted] where they are dumped. Those which react are removed by hand, dumped into wooden boxes which, when filled, are shipped to Bratrstvi. This procedure again eleminates pieces exceeding a certain size. All the other pieces, having fallen through the holes of the revolving drum into a funnel, are carried on small conveyor belts into wagons. The loaded wagons, each accompanied by a man, pass on to a two-wall control station (different from and next to the one mentioned above). This station consists of two walls of either sheet iron or aluminum [redacted] facing each other across a distance of about 60 cm. The approximate dimensions of the walls are; height 80 cm, length 1 m, thickness 4 cm. Behind one of the walls a geologist (radiometric operator) is seated at a table on which there is [redacted] an ammeter and various lamps (sic: these "lamps" may be vacuum tubes). The loaded mine car and the man accompanying it remain between the two walls about 15 seconds. During this time the geologist determines the radioactive quality of the contents of the car as a whole by consulting the reaction of the electrical instrument and the lamps. He then assigns a number to the car, which he communicates to the man accompanying it and which he enters in a record. All passing cars are thus divided into three different grades. Having passed the station, the mine car is emptied on one of three dumps according to the number assigned to it. The material put on the two dumps representing the better qualities is packed in wooden boxes and transferred to Bratrstvi. Only the lowest quality material is loaded onto two successive conveyor belts of a total length of about 370 m. These belts carry it uphill to the main Upravna building for processing there.

50X1-HUM 50X1-HUM 50X1-HUM 50X1-HUM 50X1-HUM 50X1-HUM 50X1-HUM

c. From the last belt the material falls into a bin with a base of 3 to 4 meters square and a height of 7 to 8 meters. By means of a slide which can be automatically opened at the base of the bin, the material falls onto a conveyor belt which runs from the base of the bin to a jig screen on the fourth floor of the Upravna building where it is sprinkled with water coming from pierced pipes above the jig screen. The water washes mud and very small pieces out of the material, and this watery mud is led through pipe connections directly to the pebble mills on the second floor. The jig screen separates the remaining substance into fine and rough material. The fine material is led into the roller mills on the third floor by belt conveyors. The rought material is carried by belt to the stone-crushing machine on the fourth floor, where it is crushed and then carried to the rolling mills. There the material is crushed again between two rollers and again sprinkled with water. Under each rolling mill is a funnel into which the crushed and muddy material falls from the mills, and from there it drops to a belt passing underneath the funnels. The belt moves over three iron-plate bins, each provided with a stripping device (sic) with which the material is stripped from the belt into the bins, from which it is conveyed to the pebble mills on the second floor, finally

reaching the processing stage of the watery mud led there directly from the jig screen on the fourth floor. Each pebble mill has a body length of 4.5 and a diameter of 3.5 m. The mills are half filled with loose steel balls of sizes varying from 3 to 6 cm in diameter. While the mills revolve slowly, crushing the material again, water is led into them. The processed material is piped to the two screening tables, also on the second floor, where it is again screened into a fine and a rougher type. The rougher type is pumped back into the pebble mills and processed again until it reaches a sufficiently fine stage. This fine material is led through trough conveyors to the individual vibrator tables on the second and first floors. Each table consists of a wooden board topped with a cement coating 2.5 m in length and 1 m in width. The board is supported on each end by a group of 4 lamellas of oak wood 80 cm high which stand on another board. Underneath the upper board is a strong spring stretched diagonally down to the lower one. The cement coating has a series of horizontal grooves lying close to each other. Each table has a motor attached to it which when in operation shakes it. Through the combined action of the motor, the elastic oak lammellas, and the spring, the table is made to vibrate lengthwise back and forth. When the watery ore mud enters one end of the table, the vibration exerts a separating effect on it. The lightest parts of it pass over the grooves and flow off the table. Heavier parts settle in the grooves and are carried across part of the table before they flow off. Only the heaviest parts reach the end of the table as a fine, sandlike streak of watery ore. Only this last part is caught in open ore buckets, while all the rest is dumped into a mud basin outside the building as waste material. The open buckets containing the heaviest concentrate are brought into a drying station near the building and the ore is dried over an open fire. This primitive drying system was to be improved, and by [redacted] February 1949, two electric stoves of CSR make had arrived for this purpose but were not yet in operation. After drying, the ore is put into buckets which can be closed, loaded on trucks and transported to Bratrstvi for further shipment to Russia. The result of this dressing is a concentrate of 8 per cent. (Informant was unable to state whether this means the concentrated ore contains 8 per cent uranium.) 50X1-HUM

d. Power supply for Upravna (as well as Elias and Irene) comes from the previously mentioned 22,000 V line, which enters the Elias-Irene-Upravna complex at its southeast corner near the PW camp, and leads to the Upravna transformer station. It is there transformed by two oil transformers of 800 and 500 KVA, respectively. Water supply for Upravna is pumped from nearby brooks .

e. Upravna works in three eight-hour shifts. The crew of one shift consists of 80 PW's, 30 civilian women mostly of Czech and German origin and 30 to 40 male civilians of the same nationalities. On an average 200 mine cars (of the 0.75 cubic m type) filled with material from the old rock heap [redacted] are processed by one Upravna shift. The yield quota as ordered by Russian authorities is uniformly 50 kg of concentrate in its wet (undried) condition per vibrator table and per shift. This quota cannot be fulfilled because the yield depends on the quality of the arriving material. The actual yield of wet concentrate of 8 per cent varies from 20 to 40 kg per vibrator table and per shift. 50X1-HUM

5. As mentioned above, there is also an ore washery attached to Bratrstvi. The vibrator table system there consists of one series of 12 tables and another of 24 tables. The better quality material which is sorted out from the Elias-Irene rock heap, in the way described in paragraph 4, and shipped to Bratrstvi, is subjected there to the same concentrating process as the smaller, lower quality material in Upravna. The yield figures are unknown [redacted] 50X1-HUM

6. The hauling frame and machine shop of Bratrstvi are underground. The entrance to the shaft runs horizontally. Trucks are able to approach the hauling frame.

7. Bore holes in the Jachymov area are dug with boring bars of about 12 cm diameter

which are threaded together. Radiometric investigation of these holes is done with aluminum cases of the kind mentioned above, but of smaller length than those used inside the shafts and galleries. The case is suspended on a rubber cable which is uncoiled from a drum and slowly lowered into the hole.

8. The entire Jachymov mining project is under mixed Russian-Czech administration, with the Russians exerting the highest authority! One of the highest Russian administrators there is Engineer Usherov, allegedly holding the rank of Colonel. A Russian named Morisov, allegedly a general, is in charge of all German PW's working there. The name of the commander of the PW camp for those PW's who work in shops, messes, etc., and not in shafts, is Alexander. The administrative headquarters of the entire Jachymov project is located in an old tobacco factory (Tabakovka), situated in the northeast end of the city(see sketch #1). The Tabakovka complex, consisting of the main Tabakovka building and a number of other buildings such as repair shops for machines and vehicles, workshops, warehouses, etc. for the entire Jachymov area, is fenced in by barbed wires and guarded. The main building has 4 stories. The top floor is reserved for residences of Russian personnel; the other floors contain offices and a central laboratory consisting of several rooms. The rail line from Jachymov to Ostrov starts within the Tabakovka complex .

9. A central storage house for the entire Jachymov project is located about 5 km from Jachymov in the direction of Ostrov in a place called Horny Brand on the railroad to Ostrov. Bigger parts, such as pipes, machines, and machine parts, etc., are stored there.

10. The entire Jachymov area is a controlled area. People entering or leaving it need special passes. Each shaft area is fenced off by wooden or barbed wire fences or both. Entrances and exits belonging to shaft areas are permanently guarded by Czech civilian mine police armed with pistols and carbines. The chief of this police, a Slovak by the name of Korima, is under Russian orders. Everyone passing through a shaft area entrance or exit has to produce a special pass. Throughout the entire mining area, the SNB police undertakes frequent control drives with cars and motorcycles; the same is done in the streets of Jachymov and the adjoining towns. On the streets of the city and outside the city throughout the mining area, frequent spot checks are carried out by the SNB with the aid of counters in order to determine whether or not ore has been removed from the shaft areas. The same is done from time to time in the residences of all miners. PW camps are searched with the aid of counters about once in three months. All ore transports within the mining area are accompanied by civilian armed guards consisting mostly of Russians. Railroad ore transports are guarded by Russian soldiers and officers.