10

1 foolscap

margin footnote

Old Mines in Limestone

The Oceana

(1) Location and Access

(2) History

(3) Output and Profit

(4)

Old Mines in Limestone

The Oceana

(1) Location and Access.

The Oceana mine is 250 chains S.S.E. from the Zeehan Post Office; 185 chains due south from the Zeehan Station and 60 chains S.W. from the Hydro-Electaic Sub-Station at the Smelters.

Access is via the Smelters Road to Austral Siding, thence by 35 chains of old wooden tramway usable by tractor or horse and sledge. An alternate route is from the Oceana Siding on the Zeehan-Strahan Railway along the 160 chains of old tramway. This tramway is well graded but two bridges are down.

(2) History.

Originally known as Bell + Hall's, this mine was floated as the Oceana in 1890. The No 1 or 40 ft level was developed over a length of 700 feet and the tramway was put in from Oceana Siding. This latter work proved too big a strain on the Company's finances and the mine closed down late in 1892.

In 1896 the mine was refloated as the Oceana Proprietary. A new Main Shaft was sunk and the No 2 or 80 ft level was developed over a length of 500 feet. Sinking was resumed, but when the shaft had reached 150 feet, cavities in the limestone near the shaft collapsed, warped the shaft and stopped the pump-rods. The shaft was abandoned and the mine closed down in March 1899.

In 1912 a man named Fox took up the area and entered into a contract with the Tasmanian Smelting Coy to supply 1000 tons of gossan flux. He constructed the wooden tramway from Austral Siding. He obtained his gossan from the lode outcrops south of the previous workings and is responsible for the southern open-cut observable to-day. He also reopened the old No 1 Shaft

sunk by the original company on the lode and extracted some gossan from the upper part of the old workings. He ceased operating in 1913. Since then the mine has lain idle.

(3) Output and Profit.

The total output of sulphide and oxidised ores apparently amounted to 3000 tons. This comprised the following:-

Oceana Company : 1000± tons gossan + galena
Oceana Proprietary : 1000± tons galena
Fox 1000 tons gossan.

No accurate figures as to assay values are available, but the following are indicators of the order of magnitude of values:-

	Pb %	Ag ozs.
Oceana Company	39	14.5
Oceana Proprietary	50	21
Fox	"	"

Although for limited periods both the Oceana Companies showed a small margin over working expenses, no dividends eventuated. Whatever profit was made was swallowed up in equipment costs. The Oceana Proprietary started off with £500 working capital but the collapse of the Main Stage found them financially unable to meet the situation. Fox made a modest competence.

(4) Geologic Environment.

(a) The Limestone Bed

The width of the limestone bed is not visible in the vicinity of the Oceana mine. Although the eastern boundary or top of the bed is defined the western limit or bottom portion is obscured by glacio-fluviatile deposits. But this is fortunately counteracted by the existence and adequate exposure of the mating-piece at the old Smelters limestone quarry. This is due to the effect of the Oceana Tear Fault which has sliced off the northern extension of the limestone bed at the Oceana and moved it bodily 2000 feet

north-eastwards to its position adjacent to the Smelters. It is thus disclosed that the width of the Oceana limestone bed is 1000 feet.

This limestone block, designated Block 19 in the original report by the writer "Concise Statement on the Lead-Zinc-Silver Ore-bodies of Zeehan" has been further investigated by survey, diamond-drilling and surface-examination. Additional facts have been disclosed, but our knowledge is as yet far from complete. The most reliable indication of strike is that suggested by the correlation of a band of arenaceous limestone in Bores 2 and 5; this gives a strike of 339°. Numerous measurements of sedimentation bands in drill cores gives the dip as varying from 60° E to 88° W; in other words, allowing for flattening of the drill holes, the limestone of Block 19 is practically vertical or slightly overturned.

The conclusion therefore emerges that observations of dip in the overlying sandstones are no guide as to the dip of the limestone. This can be due both to a slight disconformity between limestone & sandstone and to the dips being measured in sandstones of a structural block, adjoining the limestone being considered, and separated from it by a previously unsuspected minor tear-fault.

This seems to be the case at the south end of Block 19 where sandstones in the tramway cutting were originally measured as dipping 50-55° E and were taken as indicative of the dip of the limestone bed. Actually these sandstones would now seem to be on the south side of a tear fault which separates Block 19 from Block 20.

It would thus appear that the limestone bed in Block 19 is 1300 feet in length and descends practically vertically.

(b) The Tear Fault System.

The Oceana Tear Fault retains its position as originally plotted. The results of No 1 Bore would seem to indicate that its width at the Oceana mine is at least as great as that shown in the southern end of the Smelters limestone quarry. Its southerly dip has not yet been measured.

The nature of the difficulties encountered in Diamond-Drill Bore No 4 in its deeper portion suggests faulting. If

cognisance be taken of the apparent change in strike of the ore-body as indicated in the old mine plans and also of the apparent absence of ore for 180 feet in the west crosscut from the Main Shaft at the 80ft level as compared with the eastward bulge of ore immediately to the north, the assumption of a fault in this locality may be justified. There would thus seem to be a posibility of the existence of a minor tear fault paralleling the Occard tear fault and affecting both the 80ft level crosscut and the deeper portion of No 4 Bore. It is, however, at present merely a possibility.

At the south end of Block 14 the exsistence of the tear fault seems more definite. The sharp offsetting of the eastern limit of the limestone and evidence to the west on the eastern slope of the south-eastern spur from Mount Teetan are significant indications. But its conclusive identification and fixation must await the detailed geological mapping of this area. Such mapping is very important and is destined to produce valuable results from this point southwards to the South Occara and Pyramid.

(c) Meridional Fractures.

No advance has been made in our knowledge of this factor. Apparent breaks in ore continuity indicated by diamond-drill results e.g. bore No 5 would seem to indicate that there is no pronounced meridional fracture which has acted as feeder. But judgment on this problem must await the results of underground examination.

(5) The Ore-bodies.

(a) The Outcrop.

The Occara ore-body showed a prominent outcrop at several points along its length. These may be designated from north to south:- Creek, Bell's, Fox's and Corner Outcrops.

The Creek Outcrop was the site of the first discovery. As observable at the present time this outcrop indicates a width of lode formation of 180 feet.

Hall's Outcrop occurs on a small knoll where the

centre open-cut with square-set timbers now shows. This outcrop was apparently continuous southwards as far as No1 Shaft — a distance of about 300 feet. It was trenched by the Oceana Proprietary Company who reported its width as 55 feet. It is now obscured by the centre open-cut workings.

Fox's Outcrop occurs south of No1 Shaft. A shaft was sunk on it by the Oceana Proprietary Company to a depth of at least 32 feet. Fox started an open-cut on this outcrop & towards its southern end. His cut shows the lode formation to be 70 feet wide.

The Corner Outcrop is much less prominent. Shallow pits sunk on it show a total width of 20 feet of lode formation containing limestone bands.

The total distance from Creek Outcrop to Corner Outcrop is 950 feet.

(b) Underground Evidence.

Bell & Hall sank Nos 3 & 2 Shafts on Bell's Outcrop to a depth of 35 feet. Both of these shafts were in ore.

The original Oceana Company sank No1 Shaft, 40 feet south of No2 Shaft, to a depth of 45 feet in ore. The No1 or 40 ft level was opened out at 35 feet leaving a well of 10 feet. The north drive was started from the flat. There are no underground workings south of No1 Shaft.

The drive northwards from No1 Shaft was in ore all the way for a total length of 720 feet. In that length there are five crosscuts.

No1 Crosscut is 40 feet north of No1 Shaft. It is 35 feet in length and showed neither hanging-wall nor footwall of the ore-body.

No2 Crosscut is 112 feet north of No1 Shaft and is 72 feet in length. It is stated to have shown the footwall but not the hanging-wall of the ore-body.

No3 Crosscut is 300 feet north of No3 Shaft i.e. 450 feet along the drive from No1 Shaft. It is not shown on the old plans but is mentioned in a report on the mine in the Tuetan & Dundas Herald 17th Feb 1898. However no details as to length are given, but towards its eastern end the trench put in in the floor encountered solid galena. It was from here that the winze was sunk to the 80 ft level on solid galena.

No 4 Crosscut is 380 feet north of No 3 Shaft. It was driven 25 feet eastwards from the drive and from its eastern end a short drive of 15 feet was put in northwards. From the end of this drive connection was made with No 4 Shaft and thence to the surface

No 5 Crosscut is at the extreme northend of the 40 ft level. It was driven on the eastern side of the level for a length of 45 feet. There is no information as to what it encountered.

The Main Shaft was sunk by the Occara Proprietary Company in 1896 on the initiation of their work. They opened out at 50 feet and drove westwards to cut the ore-body. They had estimated that they were 200 feet east of the hanging-wall. In sinking the shaft veins of galena were encountered at 25 feet. At 40 feet heavy water caused "suspension of sinking" largely due to cutting a branch lode in the shaft". (1)

At 50 feet down the mine manager reports: "ground in shaft is very troublesome for sinking, parts of it being running ground, interspersed with hard dolomite which requires blasting" (2) This necessitated retimbering the shaft with 9 x 9 sets.

In crosscutting westwards the ground is described as ranging from "soft favourable slate country" to "hard limestone". Occasionally seams of carbonate of iron are reported. The hanging-wall of the lode is reported to have been cut at 180 feet. but the plans show the north drive on the body as starting at 170 feet. The reports dealing with the progress of the crosscut through the ore-body are missing, but the old plans show a width of 25 as penetrated with, however, no indication that the true footwall had been reached.

After driving 38 feet northwards, drives on the ore-body was started from the western end of the crosscut southwards. The first 40 feet took a direction approximately paralleling the southern portion of the old 40 ft level drive for 33 ft but then the drive was edged away towards due south and a

(1) Zeehan + Dundas Herald 24/3/1897.
(2) " " 9/4/1897.

distance of 21 feet. It was then turned south-westwards, crossing the ore-body diagonally for 21 feet, beyond which it was driven along the ore-body for 23 feet. No further work was ever done at this south end. During this driving southwards progress reports describe the ore thus:- "Fair percentage of Milling ore to 16 ft" (12/11/1897)

"The lode has not yet improved in quality at 30 ft" (18/11/1897)

" lode showing a little galena at 34 ft" (24/11/1897)

" lode poor at 37 ft" (1/12/1897)

" lode becoming more solid and small seams of galena are showing in the face at 46 ft" (15/12/1897)

" lode very much broken, small slugs of galena are occasionally met with at 70 ft" (6/1/1898)

" lode soft and unsettled at 93 ft" (19/1/98).

At 15 feet south of the crosscut a rise was put to the 40 ft level for air. It held through in 41 feet. It was in good milling ore all the way.

"The rise has continued second-class ore all the way from one level to the other". (11/12/1897).

The manager sums up the outcome of driving south to 37 feet as follows:- "For the small amount of work done, the lode has opened up well, and is showing a large body of good milling ore" (11/12/1897).

If we assume a strike of 310° for this southern portion of the ore-body, this being the strike indicated by the disclosures at the 40 ft level, this work at the 80 ft level indicates the width of the lode to be 70 feet. Further, if cognisance be taken of the east end of the No 2 Crosscut at 40 ft level, the eastern wall of Fox's outcrop and the hanging-wall reported in the main crosscut at 80 ft level, the indication emerges that the strike of the hanging-wall is 310° and that it is practically vertical.

It is not stated why driving southwards was discontinued. One would have thought that the known prize ahead would have induced them to continue. But they chose to turn their attention northwards.

From the 38 ft point driving was directed in a general

northerly bearing. The following are the reports as to development to appearing in the "Zeehan & Dundas Herald":

"At 38 ft lode very much disturbed and not showing great deal of mineral" (3/11/1897)
"At 45 ft lode well defined and contains second-class ore for full width of drive" 2/2/1898.
"At 54 ft lode same as last reported" 10/2/1898.
"At 65 ft lode about the same as last reported" 24/2/1898
"At 86 ft lode looking more favorable" 2/3/1898
"At 111 ft ground very favourable for driving; occasionally slugs of galena are met with" 9/3/1898
"At 129 ft the lode is improving in quality" 17/3/1898
"At 151 ft the lode matter is soft decomposed limestone, and at present not showing any ore in the face. The ore that has been passed through in driving has crossed the lode formation from footwall to hanging-wall" 23/3/1898.
"At 186 ft soft decomposed lode matter. Occasionally slugs of galena are met with. At present the face is not showing any ore" (31/3/1898)
"At 216 ft lode soft and occasionally showing a little galena" (7/4/1898)
"At 240 ft passed through a seam of ore 6 ft wide" (13/4/1898)
"At 252 ft holed through to winze sunk from 40 ft level. On eastern side of it there is a body of ore 6 ft wide" (20/4/1898).
"At 256 ft lode 6 ft wide the greater part being seconds" (28/4/1898)
"From 240 ft to 257 ft taking out eastern wall 17 ft long with 6 ft caps as best ore occurs here. Lode formation very wide; first & second class ore still showing on east side." (20/5/1898)
"At 265 ft lode is poor but charge for better is coming in" (26/5/1898)
"At 272 ft lode greatly improved, the ore is full width of drive and is looking well. There will be a large body of ore available from this part of the mine." (1/6/1898)
"At 280 ft lode for greater part of week has been 3 ft wide of clean solid galena and is going down solid under foot. Last shift or two lode not looking so well" (8/6/1898).

"At 277 ft crosscut west to ascertain width of ore-body; first 5 feet driven was mostly clean galena, making the sheet 8 ft wide and is going down solid under foot" (17/6/1898).

"At 283 ft lode shows carbonate of iron + small bunches of galena" (17/6/1898).

In addition the following reports as to progress appear in the Launceston "Examiner":

"At 305 ft lode chiefly second-class ore with bunches of clean galena. Rise begun at 267 ft on 3 ft solid metal." (20/7/98)

"At 317 ft whole of face is in sulphide of lead, bulk of which is of medium quality" (28/7/98)

"At 329 ft lode in face much improved, there being 2 ft of clean galena with good concentrating ore on either side of it" (5/8/98)

"At 348 ft lode continuing. Will continue level ore for 50 ft + then cut across the whole lode formation to easterly + westerly walls. Are now cutting across lode easterly 12 feet north of winze" (11/8/98)

"At 350 ft in cross-driving lode matter carrying a little carbonate of lead and native silver" (Z + D.H 16/8/98)

The Launceston Examiner of 11/10/98 gives the following summary of developments:-

Concurrently with this, however, there was work going on in the northern portion of the 40 ft level. This information is gleaned from verbal descriptions of Charles Lucas who was at work there at the time of the collapse. Lucas describes how he was set to work as a boy of 17 or 18 cleaning up the most northerly (No 5) crosscut at the 40 ft level. He and a mate stacked the ore along the side of the drive. They were collecting the ore lying in No 4 Crosscut and stacking it along the drive when there was suddenly a loud roar and rumbling. The rush of air blew their candles out. When the disturbance had ceased, they relit their candles and walked northwards along the drive. In a few feet they stood on the edge of a great cavity described by Lucas as very deep as tested by throwing lumps of ore down. The next day the shaft

was found to have moved and underground operations ceased.

(c) Diamond Drilling Indications.

No 1 D.D. Bore was located near the north end, about 100 feet south of the Oceana Tear Fault, and was designed to penetrate the ore-body below the most northerly underground workings. The eastern wall of the ore-body was penetrated a few feet southwards of the eastern end of No 2 crosscut at 80 ft level. The bore continued in the formation for 96 feet but the core recovery was only 30%. From 244 ft to 315 feet the bore was in loose sand with occasional core of calcareous shale, drilling being very difficult and the rods repeatedly seized making withdrawal very difficult. A reasonable deduction from the drilling experience coupled with the story of the collapse in the northern portion of the 40 ft level, is that the drill went through the debris at the bottom of the collapsed cavern. The last foot or two showed apparently that the drill had entered solid calcareous shale which showed galena impregnations. At this stage the hole had to be abandoned as withdrawal of the rods became a major operation & their final seizure was threatened. But it is clear that this drill-hole did not reach the western limit of the lode. In general, therefore, No 1 D.D. Bore indicates a width of mineralised zone corresponding to that disclosed at the surface.

No 2 D.D Bore gave a core recovery of 96%. Its total length was 969 feet. It was in limestone from start to finish. It entered a mineralised zone at 270'6" which continued to 309'. At 333'6" there was 6 inches of lode material assaying 9·6% Pb. At 401' a mineralised zone was entered which continued to 487'. The first mineralised zone is thus 16 ft horizontal width but shows only 0·8% Pb. The second zone shows 36 ft horizontal width with 10% Pb. Included in this width of 36 ft is a richer section of 10 ft horizontal width assaying 33% Pb. This ore-shoot is vertically below the centre open-cut and the stopes on the 40 ft level at the No 2 Shaft.

44

No 3 D.D. Bore located south of Fox's open-cut gave a core recovery of 78·2%. It was wholly in limestone. It gave only one ore intersection - from 249' to 253'. Four feet of core, however, only showed 1·7% Pb.

No 4 D.D. Bore did not reach the mineralised zone having been abandoned because of numerous roughs and caving ground.

No 5 D.D. Bore was in limestone throughout. It was designed to penetrate the mineralised zone approximately half way between Nos 1 & 2 Bores. The average core recovery was 82% but between 385' and 485' the recovery was only 50%. No mineralisation whatever was visible in the core.

(6) The Ore

(a) Constituent Minerals.

The metallic minerals are galena and sphalerite. In the gossan cerussite and native silver occur. It is at present uncertain as to what are the mineral species giving the lead, zinc and silver values in the oxide-carbonate material encountered in No 1 Bore.

The gangue minerals are siderite, calcite and chert.

(b) The Ore Types.

In the dumps and ore heaps at the surface several ore-types are observable. The most prevalent, constituting as it does the greater portion of the mullock dump at the Main Shaft, is one which on the exposed surface is black. On breaking the fresh fracture shows galena, sphalerite and siderite in a cherty ground mass which represents silicified limestone. The siderite is obviously manganiferous because of the blackening in weathering.

Another type, much more impressive to the naked eye is a galena-siderite aggregate which tends to show a banded arrangement of these minerals. Some calcite is observable accompanying the siderite. Sphalerite is present but in very small amounts.

A third type is exposed in the corner outcrop. This is a coarse grained aggregate of galena and sphalerite in

unaltered limestone. The sphalerite is not crystalline but occurs as reddish-brown veins and bunches of fine texture. The galena is coarsely crystalline.

Another type occurs on the dumps in the north-western portion of the workings. This consists of blebs and veins of very light coloured sphalerite in black calcareous shale.

(c) The Concentrations.

Within the mineralised zone there occur concentrations of galena of appreciable size. This is in addition to the occurrence of veins, stringers and bunches of galena apparently sporadically distributed through the mineralised zone. The larger concentrations seem to be of the galena-siderite ore-type. Four of them have been penetrated underground.

Hall's shoot is located at No 1 Staff which was sunk on it. It has been stoped for a length of 10 ft over a width of 10 ft at the 40 ft level. The 80 ft level did not reach it.

Powell's shoot is 30 ft north of No 1 Staff. It was stoped from 40 ft level for a length of 60 feet over a width of up to 30 feet. No 2 D.D. Bore apparently cut the downward continuation of this shoot at a vertical depth of 380 feet and showed it to be 10 feet in width.

Daveri's shoot is 160 ft north of No 1 Staff. It was stoped from the 40 ft level for a length of 10 feet over a width of 15 feet. The south drive at 80 ft level did not reach it.

Daniels' shoot is 250 feet north of the Main Crosscut at 80 ft level. It was stoped at 40 ft level for a length of 25 feet over a width of 15 feet. At the 80 ft level the stope when operations ceased was being taken out 40 feet long by 21 feet wide.

The ore in all these shoots is partly solid galena and partly a mixture of galena and siderite, the lead assay ranging from 20% to upwards of 60%. The silver values average 0·4 oz Ag per unit of lead.

(7) Mine Workings.

(a) Adits.

The only adit driven into the mineralised zone is that known as Grube's Adit. This is at the northern end and was driven westwards from the creek bed only a few feet below the surface. It penetrated the oxidised zone but how far it explored the width is unknown as it is now collapsed.

The adit driven in a northerly direction into the Oceana Hill is north of the Oceana Tear Fault and is wholly within the purple mudstones of the West Coast Range Conglomerate Series.

(b) Open-cuts.

Halls open-cut is 100 feet long by 40 feet wide and 6 to 15 feet deep. It is above Powells ore-shoot.

Fox's open-cut is 30 feet long by 70 feet wide and 15 feet deep. It is south of No 1 Shaft.

(c) Shafts.

No 1 Shaft was sunk to 45 feet. No 1 or 40 ft level was opened out at 35 feet leaving a sump of 10 feet. It was used ultimately as a baling shaft. Fox reopened it in 1912 and used it for hauling ore from the 40 ft level. The collar is standing. It measures 8' x 4'.

No 2 Shaft was sunk to the 40 ft level and used as a hauling shaft by the original Oceana Coy. The collar has been obliterated by Halls open-cut.

No 3 Shaft was sunk from the surface and connected with the 40 ft level. This shaft is now only a depression in the surface.

No 4 Shaft is 540 feet N.N.W. of No 1 Shaft. It was sunk from the surface and was connected to 40 ft level by No 4 Cross-cut and a short drive therefrom. It is now only a depression in the ground.

Powell's Shaft was started by the original Oceana Coy as a main shaft. It is 10' x 4' and untimbered. Its depth is 39 or 40 feet. It has stood since 1892. It is in an excavated area of 100' x 40'.

Jolly's shaft is 110 feet south of No 4 Shaft. It is 6' x 4'. The collar is standing but it is blocked. 20 feet down. It is uncertain that it reached the 40 ft level.

No 5 Shaft was sunk to 42 feet as a prospecting shaft on Fox's outcrop by the Occara Proprietary Coy. It is still open.

The Main Shaft was sunk by the Occara Proprietary and reached a total depth of 150 feet before the upper portion warped. It is 12' x 6'. It was timbered by 9" x 9" sets from 25 ft to 50 feet. The collar has collapsed and the shaft site is now a huge irregular hole 20 feet deep.

There are other small shafts in the northern portion but these are now just hollows in the ground. They were prospect shafts and have no future significance.

(d) Drives

The drive from No 1 Shaft along the lode at the 40 ft level is 700 feet in length.

The total driving at the 80 ft level was 98 feet southwards from the crosscut and northwards for 457 feet, making 555 feet in all.

(e) Crosscuts.

The crosscuts at the 40 ft level have been described under the heading "underground evidence" above.

At the 80 ft level the Main Crosscut is 200 feet in length. The No 1 Crosscut runs westwards from the supposed hanging wall at 198 feet along the drive northwards from the Main Crosscut. It is 75 feet in length. No 2 Crosscut is 15 feet back from the northern end of the drive and is 32 feet in length.

The West Crosscut at 80 ft level was started at 260 feet along the north drive. It is 140 feet in length.

(f) Rises and Winzes.

(Crosscuts) No 2 Rise was really sunk from No 3 Crosscut at the 40 ft level. It connects with the 80 ft level at which level it is known as a Rise.

No 1 Rise was put up from the south drive on 80 ft level and connected with 40 ft level at 41 feet up. It is only 10 feet south of Main Crosscut.

No 3 Rise was put up from 80 ft level at 50 feet south

of No 1 Winze. It was on solid galena but apparently did not hold through to 40 ft level.

No 4 Rise is 50 feet north of No 1 Winze but did not reach 40 ft level. It was on a 2 ft seam of solid galena which petered out upwards.

There were no winzes sunk from the 80 ft level.

(8) Discussion of Possibilities.

(a) Known Ore

High-grade ore occurs in Hall's, Powell's, Daveni's and Daniel's shoots at the 40 ft level. Daniel's shoot extended to 80 ft level and was reported as going strongly underfoot. The south drive at 80 ft level did not reach Daveni's, Powell's or Hall's shoots. But No 2 D.D. Bore penetrated what is apparently Powell's shoot at a vertical depth of 380 feet or 340 feet below 40 ft level.

Lower-grade ore is consistently reported from all of the underground workings with the exception of the first 170 feet of the Main Crosscut. The West Crosscut at 80 ft level was started in ore and the reports refer to this continuing for 80 feet without reaching the western wall, but no information can be gleaned as to what was disclosed in the remainder of the crosscut.

The only portion of the exploratory work at 80 ft level reported as carrying no ore or as particularly poor is from 150 ft to 180 ft along the drive from the Main Crosscut. Within this section there are several references to "face not showing any ore".

(b) Replacement Ore in Dumps.

This ore constitutes the major portion of the dumps from Main Shaft. It carries galena and sphalerite with sedrite gangue in a groundmass of silicified limestone. Where did it come from? It is quite clear that it came from the 80 ft level. But where in that level? The reports of progress along the Main Crosscut repeatedly mention "very hard limestone". But it is

difficult to imagine this ore being so referred to unless it was diluted to hide the presence of zinc. Is it from the West Crosscut? It has not been shown in any drill core so far obtained.

Light on this problem will be obtained when the 80 ft level is unwatered and open for examination and study.

© Correlation of D.D. Results and Underground Evidence.

No 1 D.D. Bore gave results in general concordance with underground evidence. The east wall location tallies with the surface outcrop, but the bore did not disclose the western wall. The type of ore in the eastern intersection corresponds with the description of ore encountered in the northern portion of "80 ft level" "in oxidised lode matter carrying a little carbonate of lead and native silver", although the core with only 30% recovery shows no bunches of carbonate of lead but does show filiform native silver. The downward continuation of such oxidised ore below the 80 ft level would be surprising if it were present, but it is certainly not. The true nature of this ore, its origin and its relation to the sulphide ore has yet to be determined.

No 2 D.D. Bore shows a vertical continuation of Powells shoot with a mineralised zone to the east thereof. There is no abnormality here.

No 3 D.D. Bore was laid out with the expectation of cutting in depth the southern continuation of the 70 ft wide ore-body in Fox's Open-cut. But it only intersected a narrow vein of ore. This would seem to indicate a sudden ending of ore at the south end of Fox's Open-cut, but the ore in the corner outcrop indicates that although No 3 D.D. Bore is practically blank there is ore both to north & south of it. Is it a barren transverse zone?

No 5 D.D. Bore showed no ore at all. There is ore both to the north and south of it. Is it in another barren transverse zone? As bearing on this it may be of significance that the apparently barren or very

poor zone reported in the north drive at 80 ft level from 150 ft to 180 ft lies above the bore-hole and only 50 – 80 ft north of it.

If the first 180 ft drivin northwards at the 80 ft level followed a wall on its right hand side (there is no mention of this in the reports, but what were they following in that direction?) the possibility of a transverse fault enters the picture. Some substance is given to this possibility by the marked offsetting of the limestone-sandstone contact to the east and the reference in the reports to 'lode very much disturbed' at the western end of Main Crosscut. The barren No 5 Bore result could be explained by such a transverse fault with a northerly dip, but this is purely speculation. Again any decision must be deferred until after examination and study of 80 ft level.

(d) Possible Outlines of Ore-body.

A tentative delineation of the outlines of the ore-body, or perhaps more correctly at the present juncture mineralised zone, may be attempted.

Beginning at the Oceana Tear Fault as 180 feet wide it narrows to 50 feet at the Main Crosscut by a bending of the east wall towards the western wall, which as yet incidentally is quite undefined. The length of this portion is 440 ft. Southwards from the Main Crosscut it widens to 70 feet in Tom's Open-Cut, and seems to end abruptly at that width. The length of this portion is also 440 feet.

What perhaps may be another zone starts as a stringer in No 3 D.D. Bore & widens to 20-30 feet at the Corner Outcrop. Is this, however, a separate zone springing from the South Oceana Tear Fault for which there is evidence to the south of Corner Outcrop? The length of this portion is upwards of 150 feet.

Sofus Hills
20th July 1947.

(To follow "Examiner extract)

The plan of the Oceana mine dated 11/2/1899 shows, at 260 feet north along the northern workings from the Main Crosscut at the 80ft level, a west crosscut 140ft in length. In spite of diligent search among available records there is still uncertainty as to what was passed through in this crosscut. The above extract from the Launceston "Examiner" refers to "A drive along the lode north was driven 250 ft, and crosscut put in west for 80ft through oxidised matter without reaching the wall" If this refers to the long west crosscut it must have been continued after the date of that summary (11th October 1898) but there is no mention of it in whatever subsequent reports are available between that date and 11th February 1899. On the other hand there is shown on the plan what is virtually a west crosscut starting at 198 ft from the Main Crosscut and the length of this is 75 feet. Is this the "crosscut put in west" mentioned in the "Examiner" article? If this were so the reporter certainly was confused in his distance measurements. It seems more probable that it is the 140 feet crosscut which is meant as this springs from the north drive at 274 feet from Main Crosscut. But the question still remains as to what was encountered in the 60 feet westwards beyond the 80 ft and 'no wall' stage of the "Examiner" report.

In effect we do not yet know where the western limit of the mineralised zone is in these northern workings.