QUEENSTAKE RESOURCES LTD.

MOYIE RIVER EXPLORATION PROJECT
CRANBROOK, B.C.
BULK SAMPLING PROGRAM

Fort Steele Mining District

N.T.S. 82F/SE

Placer Leases #1902, 1080, 1775, 1773
Queenstake Resources Ltd.

Placer Leases #1080 and 1081
Hamilton Klinkhammer Option

by

MICHAEL P. HENRICK, Ph.B.

Covering work carried out during the period:

May 25 through September 18

January, 1988

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PHASE II EXPLORATION PROGRAM

Work Completed and Results

The balance of Pit 1 was stripped and a total of 25,153 yd^3 of tertiary channel was processed between July 28 and August 26, 1987. The total from the pit was 27,814 yd^3 producing an overall grade of 0.025 fine ounces per cubic yard. A total of 58,068 square feet of bedrock was exposed and cleaned within the pit. Due to uneven, rubbly, decomposed bedrock conditions a significant dilution factor was encountered. If a constant six foot deep section of pay dirt had been mine over the entire 58,068 square feet of exposed bedrock only 12,904 cubic yards of paydirt would have been washed returning an overall grade of 0.06158 ounces crude per cubic yard for the entire bulk sample.

Conclusion

The Pit 1 bulk sample confirmed the upstream reserves along the strike of the channel, as indicated by the 1987 drill program. These reserves can be economically mined but there is insufficient information to determine the grade and lateral extent on the channel.

Recommendations

It was recommended that the Phase III exploration program be undertaken to determine the grade and lateral extent of the tertiary pay channel.

PHASE III EXPLORATION PROGRAM

Work Completed and Results

A total of 65,884 yd^3 was stripped and 16,808 yd^3 of tertiary channel was processed from Pit 2. The grade of the lateral portion of the channel is 0.030 oz per yd^3. The overall grade across the width of the channel as determined from Phase I, II and III is 0.030 oz per yd^3.

Conclusion

The grade of 0.030 oz per yd^3 across the channel is economic and a production decision is warranted.

Recommendations

It is recommended that mining proceed upstream. Queenstake drill line 48+00S is 150 upstream from the end of the bulk sampled area. The Cominco drill line 49+00S is 115 feet upstream from Queenstake's line. These drill results indicate an economic pay channel and mining can be extended beyond the Cominco line for 200 feet with minimum risk. Additional development drilling is recommended before mining proceeds upstream beyond this point.

Respectfully Submitted,

Michael P. Henrick

Michael P. Henrick

APPENDIX A

MOYIE RIVER PROJECT, 1987 DRILL PROGRAM

TO: Gordon Gutrath

FROM: Mike Henrick

DATE: May 23, 1987

The winter drill project was completed in two phases. Phase One from late November through mid December 1986 was mainly an experimental phase. It was decided to try and outline the tertiary channel using cheaper drill methods such as top hammer, rotary and downhole hammer. These methods proved only moderately successful as ground water caused caving and it was extremely hard to accurately determine bedrock depth. This method did help to delineate the channel edges on lines 40 + 48 south. The Barber Dual drill rig was used to quickly sink six inch casing to a depth of 45'. It was hoped that a cable tool drill rig would then be able to drill open hole through the pay zone and into bedrock to a depth of from 50 to 55 feet, allowing the auriferous gravels to be evaluated by accepted placer drilling and sampling methods. Three casings on line 40S were drilled to a depth of 45 feet utilizing the Barber Dual drill rig. The Cable tool was not able to deepen these holes as the gravels kept sloughing and the Barber casing shoe was not strong enough to be advanced by the Cable tool drill rig. This method was thus abandoned. One hole #D1, on line 48S was drilled into bedrock with the Barber Dual. This hole produced a value of .246 fine ounces per cubic yard over two feet between 49 and 51 feet.

Phase Two began in mid March and continued through mid April. During this phase the two initial holes M_1 + M_2 were drilled with the new Owen's drilling placer bit. This bit although effective did not stand up and was abandoned in hole #M_2. The remaining 11 holes M_3 through M_{13} inclusive were drilled with the Barber Dual rig using conventional drill procedures, to outline the remaining Channel and assess the auriferous section within the channel. This system although quick, leaves a lot to be desired when quantitative data is required. Five of the twelve holes drilled within the channel contained gold and ranged in values from .647 fine ounces per cubic yard to .01 ounces per cubic yard through to trace with an overall average grade of .227 fine ounces per cubic yard. All the values achieved from this program fell on lines 44 and 48S. Line 40S did not produce any values at all. The values achieved were for the

most part spectacular and do correlate with the 1940 Cominco drilling located above line 48S. The second phase did outline the tertiary channel limits showing that the channel varies in width from 227 feet on line 40S through 316 feet on line 44S to 272 feet on line 48S, when a mineable paydirt depth of six feet is used.

Bedrock in all holes within the channel appeared to be soft, friable argillite and in 70% of the holes limonite and hemalite staining was noted.

The longitudinal bedrock gradient between lines 40 + 44S was surveyed and calculated at 1.51%. The longitudinal bedrock gradient between lines 44 + 48S was surveyed and calculated at 3.88%. These gradients seem to be excessive and may be due in part to the softer friable bedrock found on lines 40 + 44S. It was hard to determine from the cuttings exactly where bedrock started on these lines.

Costs of Phase Two were $23.74 per foot actual drill costs, plus $2.27 per foot supervision and processing for an all up cost of $26.01 per foot for the job.

Recommendations:

I recommend that a minimum size test pit of 500' x 175' be excavated between 42 + 50S & 47 + 50S as shown on the enclosed plan. This pit would cover all of the best holes delineated by the 1987 drill program. If values continued within the channel the pit could then be widened laterally or lengthened to expose the best pay sections within the channel.

A pit of this size would contain 150,000 cubic yards of gravel to be stripped. There would be approximately 19,450 cubic yards of auriferous gravels to sampled.

Michael P. Henrick

Bibliography of Reports

M. P. Henrick "Moyie River Exploration Report, work carried out during the period August 12 through September 20, 1985", unpublished report.

M. P. Henrick "Moyie River Exploration Report, work carried out during the period January 27 through March 6, 1986", unpublished report.

M. P. Henrick "Moyie River Exploration Report, work carried out during the period June 11 through September 23, 1986", unpublished report.

M. P. Henrick "Moyie River Exploration Report, work carried out during the period November 16, 1986 through April 15, 1987", unpublished report.

INTRODUCTION

The Queenstake Resources Ltd. Moyie River Placer Project consists of six contiguous placer leases (1902, 1080, 1775, 1773, 2948 and 1081) situated approximately twelve kilometers below the headwaters of the Moyie River and extending downstream for a distance of 6.0 kilometers. All of the leases are owned outright by Queenstake Resources Ltd. and bear no contractual or royalty obligations. (See Fig. 1).

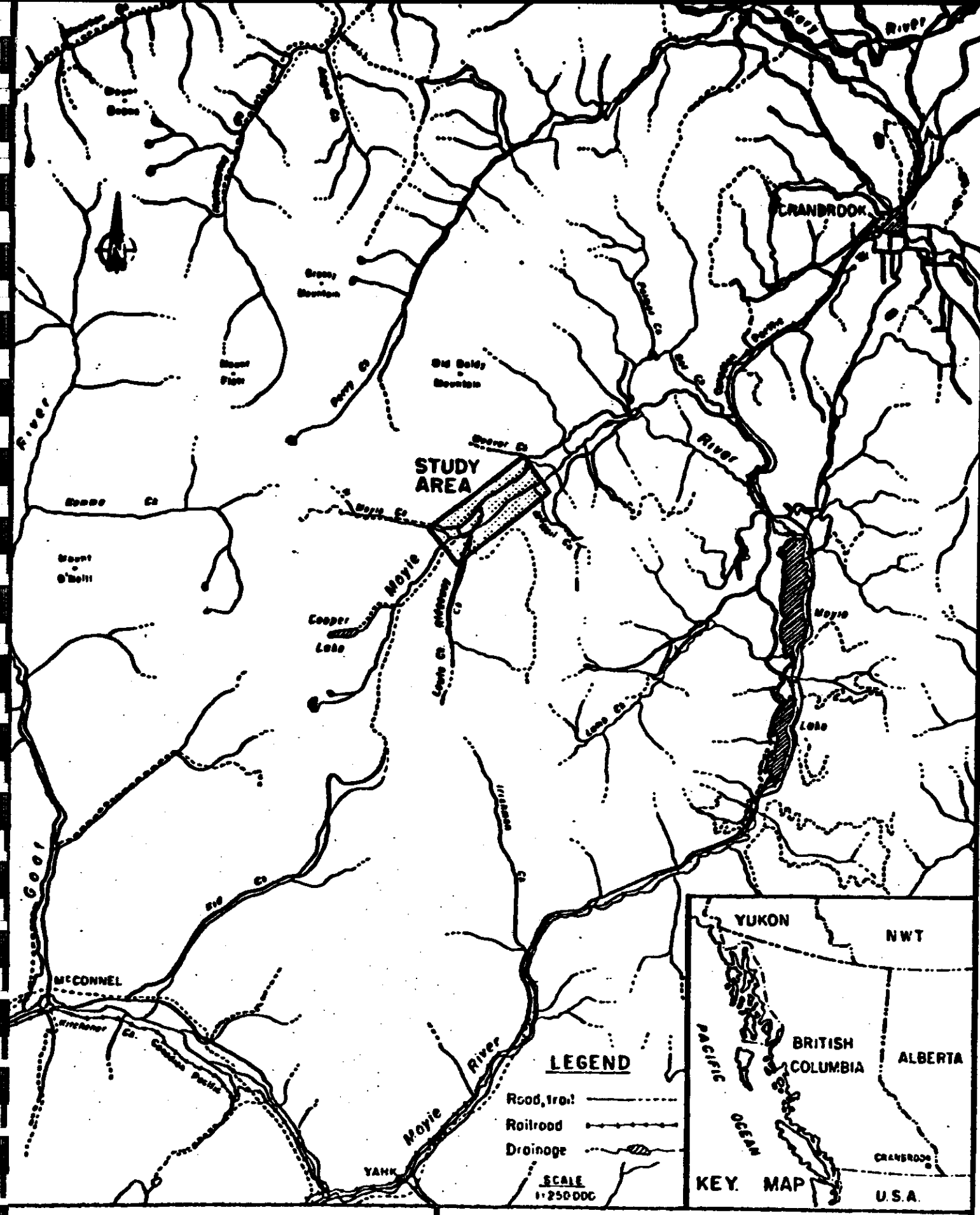
The objective of the 1987 exploration program was to determine whether gold was present within the tertiary channel on the Moyie River in sufficient quantity to support a viable placer operation. Equally important was to determine if drilling criteria developed during the 1986 exploration program could be reliably used to indicate economic gold bearing gravels.

The Queenstake 1987 winter drill program had indicated that the tertiary channel did exist, bedrock was suitably fractured and weathered and erratic gold values were present. In order to determine if the gold values could be economically mined a bulk sampling program was carried out in the summer of 1987.

The report summarizes the 1987 bulk sampling program and divides it into three exploration Phases. The Phase I program was high risk exploration with no indication as to the gold content of the channel. If this phase had not been successful in finding economic gold values the exploration program would have been terminated and the work area reclaimed. The Phase II program was of lesser risk since economic values were found in the Phase I program but the larger sample confirmed the grade along the strike of the channel. The Phase III program evaluated the lateral extent and grade of the gold bearing channel.

LOCATION AND ACCESS

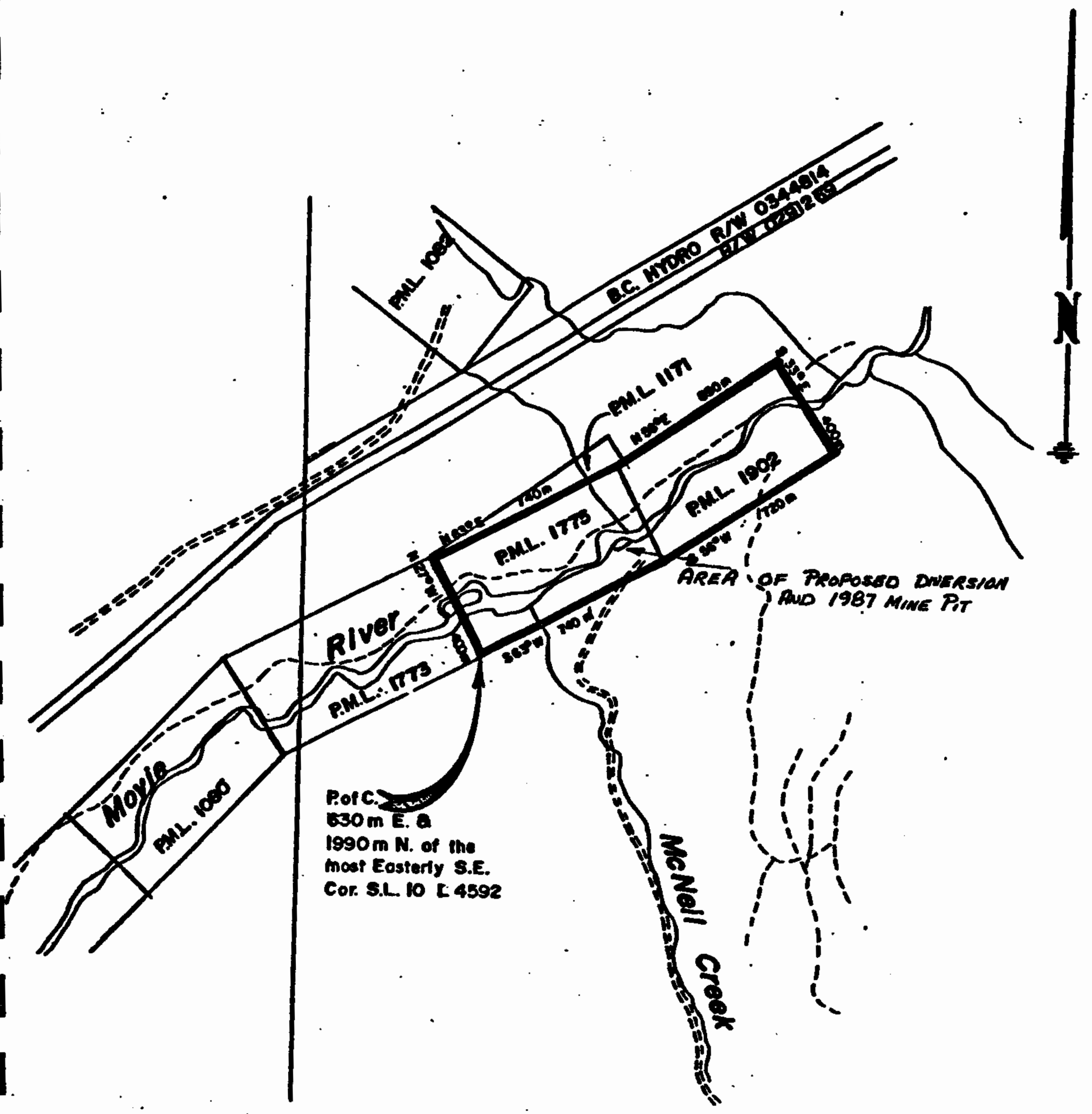
The property is located in the Fort Steele Mining District of south central British Columbia; N.T.S. 82F/SE, Map Sheet, Moyie Lake. Access to the property is via highway 3 and 95 south from Cranbrook to the Lumberton turnoff, a distance of 16 kilometers, thence via the Moyie River road and the Semlin Creek road a distance of 16 kilometers to the lower end of the property.



QUEENSTAKE RESOURCES LIMITED
MOYIE RIVER PLACER LEASES
STUDY AREA LOCATION PLAN

CG12078

FIG 1


B.C. HYDRO R/W 0344814
P.M.L. 1171
P.M.L. 1902
P.M.L. 1775
P.M.L. 1773
P.M.L. 1080
Moyie
River
McNeil Creek
N
AREA OF PROPOSED DIVERSION
AND 1987 MINE PIT
P. of C.
630 m E. &
1990 m N. of the
most Easterly S.E.
Cor. S.L. 10 L 4592

HISTORY

During 1939 - 1940, Cominco drilled 48 cable tool drill holes for a total footage of 1,825 feet. The testing indicated reserves of 1,318,000 cubic yards grading .016 fine ounces per cubic yard. These reserves have been extended to 2,036,000 cubic yards grading .014 fine ounces per cubic yard.

In 1982, Moyie Mining Company processed 19,000 cubic yards of auriferous tertiary gravels and recovered 1,141 ounces of fine gold of which 85 percent was comprised of +4 mesh sized gold. The stripping ratio for this operation was 6.3 to 1.

In 1985, Queenstake conducted a placer drilling program and seismic survey of the property prior to deciding to commence with a bulk testing sampling program in 1986.

REGIONAL AND LOCAL GEOLOGY

The entire property is underlain by the Aldridge formation. The lower lease #1902 is partially underlain by a diorite sill. The area of economic interest lies entirely within the auriferous gravels of the tertiary channel which for the most part parallels the north west bank of the Moyie River Valley. The tertiary channel which was outlined by seismic and drill data is buried beneath 35 to 46 feet of till and gravel.

WORK COMPLETED TO MAY, 1987

Queenstake Resources Ltd. acquired the property by outright purchase in August 1985 and immediately cut a grid on the property for survey control purposes. A total of 36,296 feet of base and picket lines were cut and chained on the six leases. All of the lines were mapped and surface elevations were measured at 100' stations and at major breaks in topography. A total of fifteen picket lines were surveyed with an OYO McSeis 1500 seismic unit to outline and define the tertiary channel throughout the entire length of the property. From January 27 through March 6, 1986 twenty holes totalling 906 feet

of overburden drilling were completed on three picket lines (0+24S, 0+28S and 0+32S) on placer lease #1902. The drilling was laid out to delineate the tertiary channel within this section. The drilling was done by Owen's Drilling Ltd. of Cranbrook, B.C. using a Barber dual 1224 air rotary drill with a downhole hammer and rotating casing. Values obtained from this drilling ranged from 0.036 oz fine per cubic yard to 0.101 oz fine per cubic yard, with an overall average grade of 0.0670 oz fine per cubic yard. The 1986 summer bulk sampling programme encountered an overall grade of 0.012 ounces of gold per cubic yard of washed auriferous gravel.

The actual mining was carried out under contract by Fiorentino Brothers Contracting of Cranbrook, British Columbia. The project was managed and supervised by M. P. Henrick, of Okanagan Falls, B.C., acting as agent for Queenstake Resources Ltd. of Vancouver B.C. During the period from June 11 through September 23, 1986 a total of 144,542 cubic yards of gravel was stripped and transported from the excavated bulk sample pit on placer lease #1775. Between August 18 and September 23, 1986 17,729 cubic yards of gravel was washed in a portable trommel sluice plant.

Twenty-six holes totalling 374.9 meters were drilled to delineate the tertiary channel on picket lines 40+00S. 44+00S and 48+00S on placer lease #1775 between November 16, 1986 and April 15, 1987. Fourteen holes totalling 217.3 meters were drilled by Owen's Drilling Ltd. of Cranbrook, B.C. using a Barber Dual 1224 air rotary drill with a down hole hammer and rotating casing. The remaining twelve holes totalling 157.6 meters were drilled by Fiorentino Bros. Contracting Ltd. of Cranbrook, B.C. using a D6 Caterpillar mounted four inch downhole hammer.

The Fiorentino Brothers Contracting Ltd. downhole hammer was used to delineate the periphery of the tertiary channel. The Owens' Drilling Ltd. Barber Dual 1224 drill was used to sample the auriferous gravels and to check the bedrock conditions within the channel. This programme effectively outlined the channel and produced grades of between 0.065 ounces fine per cubic yard and 0.01 ounces fine per cubic yard with an overall average grade of 0.023 ounces fine per cubic yard. The values thus achieved coupled with favourable bedrock conditions indicated economically viable auriferous gravels within this section of the tertiary channel. It was recommended that a second bulk sample programme be undertaken during the summer of 1987 to accurately evaluate this section of tertiary channel.

SUMMARY

A Phase I bulk sampling program was completed on the Queenstake Resources Ltd. Moyie River project between May 25th and July 28th, 1987 to assess the grade of the gold bearing tertiary gravels within an area drilled in the spring of 1987 (Appendix A - Moyie River project, 1987 Drill Program).

In 1986 Queenstake carried out a drilling program to evaluate a section of tertiary channel on its Moyie River property. The drill results indicated economic gold values although there was concern that the coarse gold particles may result in the sample being inordinately high because of the "nugget" effect. The drilling was followed by a bulk sampling program that was designed to test two different bedrock types, a diorite intrusive and a sedimentary argillaceous formation. The first samples were taken from the diorite bedrock surface and, although not economic, was considered encouraging because the diorite was not expected to develop a good surface to trap the downstream migrating placer gold. The sampling continued upstream past the diorite contact with the expectation that much better grade would be found in the sedimentary formation that was considered to be a more suitable bedrock for the entrapment of gold. However, it was found that the intrusive had moderately silicified the sedimentary formation making it extremely competant with very few fractures for the entrapment of gold.

In addition, the competant bedrock had caused the channel to narrow. The grade in the sedimentary bedrock was one half of the grade found in the diorite bedrock. Although this 1986 program was a very high cost exploration project and produced negative economic results it did develop the criteria that give a reasonable confidence level to the interpretation of drill results to warrant using drilling to evaluate the property. The following items are the criteria developed to interpret the potential of the tertiary channel from drill hole data.

1. The gold recovered in the drill samples is only an indication that gold is present and cannot be used to determine grade.

2. The evaluation of the bedrock sample is very important. Positive factors are the lack of silicification, presence of oxide minerals and if the bedrock is a friable argillite as opposed to silicified argillite or diorite.

3. The drill spacing must be dense enough to determine the width and gradient of the tertiary channel. If the channel is narrow and the gradient steep the original stream will have flowed through the channel at high velocity resulting in rapid erosion producing a smooth surface that will not trap gold. The high velocity of the stream will also have much greater carrying power resulting in the gold not being able to settle in the channel.

The 1987 drill program produced a range of gold values, determined that the bedrock was oxidized friable sediments and that the channel width was approximately 270 feet wide. These are positive criteria indicating a potentially economic gold bearing tertiary channel. The only negative factor was the gradient of the channel. The first section of the channel was low in the order of 1.51% which is favourable for the accumulation of gold. However, the next section had a gradient of 3.38% which is high and would not be considered a favourable gradient for the entrapment of gold. However, the drill results were positive enough to proceed with the bulk sampling program.

In order to take the bulk sample a minimum size pit was excavated to allow the tertiary channel to be exposed for sampling. Between July 21 and July 28 a 2,261 yd^3 sample was processed with an average grade of 0.031 crude oz per yd^3. The volume yd^3 processed on July 28 was from the bedrock tertiary channel interface and had a grade of 0.045 crude oz per yd^3 (0.04 fine oz). On receipt of the positive results from exploration Phase I, Phase II and III a production and development drilling program were initiated.

PHASE I EXPLORATION PROGRAM

Work Completed and Results

A total of 118,767 yd^3 of gravel was removed from the minimum size pit between May 25 and July 28, 1987. The pit was benched down using mobile excavating equipment to a depth of 44 feet in the northeast side of the pit before the tertiary channel was exposed in the area of drill holes M10 and M11.

Between July 16 and July 21, 1987 a total of 2,261 yd^3 of tertiary channel was taken to the mobile trommel screen-sluice plant for processing. Between July 21 and July 28 the bulk sample of 2,261 yd^3 was processed. The sample had an average grade of 0.031 fine oz per yd^3. The last volume of material processed from this sample had a grade of 0.041 fine oz per yd^3 and the lowest grade volume processed was 0.023 fine oz per yd^3.

Conclusion

The results of the bulk sampling program combined with the 1987 drill results indicated that the reserves are economic and that the exploration pit did not have to be abandoned and reclaimed. In addition it provided a large area of bedrock that could be evaluated as to its suitability as a gold trap. The sample pit encountered similar fractured and oxidized bedrock conditions as indicated in the drill program. The gradient of the stream channel, width of channel, nature of bedrock combined with economic grade of gold mineralization as determined by the bulk sample indicate that additional evaluation is warranted prior to full scale production. The reserves are expected to be viable but additional data gained by mining the entire channel width will provide important grade information that will give confidence to the grade of the lateral and upstream reserves as indicated by the drilling on line 48+00S.

The combination of economic grades and bedrock geology was very positive compared with the results of the 1986 bulk sampling program. The results also indicated that the criteria developed from the 1986 drilling program was valid and could be used in the interpretation of drill data.

Recommendations

It was recommended that a Phase II exploration program continue with the evaluation of the tertiary channel for the balance of Pit 1. In addition the north wall of the pit be channel sampled to assure that gold values are continuing to the north. The Phase III exploration program was contingent on the results of Phase II. The program would consist of bulk sampling the area to the north of Pit 1 to confirm that laterial extent and grade of the channel.