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A.F. Reeve

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Report # 450

Destiny Bay Properties

Northern Pacific Mines , Ltd.

Nelson Mining Division B.C.

By; A.F.Reeve, Geological Engineer

A REPORT

ON

DESTINY BAY PROPERTIES
NORTHERN PACIFIC MINES LTD.

NELSON MINING DIVISION

49° 25' - 116° 43'

BRITISH COLUMBIA

by

Albert F. Reeve, Geological Engineer

May 20, 1964.

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INTRODUCTION

On April 30, 1964, the writer was requested by Mr. M.J. Pritchard, 5504 - 109 St., Edmonton, Alberta, of Northern Pacific Mines Ltd., to examine and report on a gold, silver, tungsten occurrence known as the Valparaiso-Government vein. The present holdings are to be known as "Destiny Bay Properties." On May 7, 1964, the writer, assisted by Mr. R.A. Granger, carried out the examination. It consisted of inspecting surface exposures of the occurrence, accessible underground workings, and surface plant. A preliminary sketch map of the area examined was tied in by a compass-tape survey. Thirteen chip and grab samples from dumps and surface exposures were taken to roughly confirm the results of previous detailed sampling records. A number of character samples of mineralized material were taken for further study. The following report has been compiled from field observations, and research of available records by previous operators, and the B.C. Dept. of Mines and Petroleum Resources. A bibliography of sources and a map of the area examined is enclosed. This work was supervised by Mr. Jos. Sullivan, P.Eng., of Vancouver.

LOCATION & ACCESS

The property is located on the east side of Kootenay Lake about 2 scale miles northwest of the town of Creston, and 3 scale miles southeast of the settlement of Boswell, Nelson M.D. (Approx. $49^{\circ}-25'$... $116^{\circ}-43'$) The mine plant and mill buildings are situated at about the 4300' elevation, 2500' above Kootenay Lake.

The property access road departs from paved Highway #3 about $1\frac{1}{2}$ miles south of Akokli Creek. It is a steeply graded switch back route 3 miles in length, suitable for 4-wheel drive vehicles. Highway mileage from Vancouver is about 540. The nearest rail point is Sirdar on the C.P.R. 15 mi. to the south.

PROPERTY

The following 21 claims are held by Mr. M.J. Fritchard on behalf of Northern Pacific Mines Ltd.

1) Mineral Leases

<u>NAME</u>	<u>NUMBER</u>
No. 3	Lot 4911
Starter	Lot 4912
Martilda	Lot 3870
Schmulka	Lot 3871

2) Crown grants purchased from Palouse Co. Ltd.

<u>NAME</u>	<u>NUMBER</u>	<u>REMARKS</u>
Valparaiso	Lot 4907	Taxes due, 1961-62-64
Government	Lot 4908	Taxes due, 1961-62-64

3) Recorded claims purchased from Palouse Co. Ltd.

<u>NAME</u>	<u>NUMBER</u>	<u>ASSESSMENT ANNIVERSARY</u>
F.U. #1	5359	May 24, 1965
F.U. #2	5360	May 24, 1965
F.U. #3	5361	May 24, 1965

4) Claims acquired by staking.

<u>NAME</u>	<u>NUMBER</u>	<u>ASSESSMENT ANNIVERSARY</u>
Halo #1	502510	April 23, 1965
" #2	502511	" " "
" #3	502512	" " "
" #4	502513	" " "
" #6	502168	April 24, 1965
" #7	502169	" " "
" #8	502170	" " "

<u>NAME</u>	<u>NUMBER</u>	<u>ASSESSMENT ANNIVERSARY</u>
Halo #9	502171	April 24, 1965
" #10	502518	" " "
" #11	502519	" " "
" #12	502520	" " "
" #13	502521	" " "

The above information was verified at the Mining Recorder's office, Nelson, B.C. on May 8, 1964. The claims are shown on the Key map enclosed in the appendix.

CLIMATE TOPOGRAPHY & LOCAL RESOURCES

Climate

In this locality at the elevation of the workings (Approx. 4300'), summers are warm and moderately dry. The winters are mild and the ground is covered with 2' to 4' of snow from December to April. At the lake level (1750') winter weather is milder, and there is seldom more than a few inches of snow on the ground.

Topography

The property lies on a steep (20° - 40°) south-westward, facing mountain slope of the Purcell Range, over-looking Kootenay Lake. Locally, the bedrock is partially covered by buff-coloured, gravelly, rock debris. Elsewhere the mountain side consists of steep, rounded rock bluffs and timbered talus slopes. The southern part of the property is dissected by the headwaters of Ginol Creek.

Timber

At the elevation of the workings, the area is timbered by small (less than 10") balsam as well as a few pine and poplar. The underbrush is light. At lower elevations, there are much heavier stands of spruce, pine, cedar, and fir.

Water

Water was supplied to previous operators (1953-1955) by a gravity-fed, 13,800 ft., 1½" dia., plastic, pipeline. The source of this water lies to the northeast, but its exact location is not mentioned in available records. The condition of the pipe is unknown, but it is likely that some repair work would be required to make it usable. An alternate supply of water could be pumped from the headwaters of Ginol Creek, which lie on the southern part of the property. The flow reliability of this stream is unknown to the writer. The mine workings are wet and water is reported in a winze at the end of the north drift in the Valparaiso workings. Water from the above sources would be adequate for the purposes of such preliminary operations as diamond drilling, underground exploration, and pilot mill testing. The adequacy of these sources for full scale mining and milling would require study.

Power

A 2200 volt power line feeds a bank of transformers near the Government shaft. The power line appears to be in good condition. It extends approximately one mile down the mountain slope where it is connected to a line which runs along the east shore of Kootenay Lake. Existing mine and mill equipment is electric-powered.

HISTORY AND PREVIOUS WORK

Workings

The "Valparaiso-Government" vein zone and associated workings include the most intensely developed part of the property. Surface workings, vein exposures, and underground openings in this area were examined and tied in by tape and compass traversing, and are shown on the enclosed surface-under

--ground plan.

Government Workings

- 1) Shaft - 275' deep inclined down the dip of the vein at 40° ; 9' x 14' with manway and skip compartment , timbered and lagged, headframe, air hoist; 1 ton rail skip, bulkhead at 125' down dip - good condition.
- 2) Drifts - 80' down dip from the collar
450' northward (caved)
80' southward (caved)
- 3) Raise - 300' north of shaft (80') to surface.

Valparaiso Workings - portal about 1300' north of Government shaft.

- 1) Cross-cut adit - intersects vein 200' east of portal (condition unknown)
- 2) Drifts - 540' southward (condition unknown)
- 125' northward (condition unknown)
- 3) Cross-cuts - 400' south of adit intersection
- 35' eastward
- 65' westward
- 4) Raise - 30' north of adit intersection, 75' up dip
- 5) Winze - 120' north of adit intersection, 100' down dip (filled with water)

Total drifting on the Valparaiso-Government zone equals about 1200'.

The north end of the Government drift is 250' south of and 60' below the south end of the Valparaiso drift.

Fifteen hundred feet of exploratory long-hole percussion drilling is reported to have been carried out in 1954.

Numerous surface trenches and open cuts are located on the vein above these workings.

Other Workings

The following workings are reported but were not inspected by the writer:

Lower Valparaiso cross-cut adit - located 130' below the upper portal and a little to the north. This opening has been driven 90' eastward without reaching the vein.

Lost Mine adit-drift - collared at least 4000' north of the Government shaft and driven southward for 120', presumably on an extension of the Valparaiso-Government vein structure.

Gold King cross-cut adit - located a little further north of lost mine and 100' below, is 225' in length intersecting the vein at 92' and drifted on for 31'.

Imperial Workings - are located about 1100' east and 700' above the Government shaft on a vein structure similar to and parallel to the Valparaiso-Government zone. The workings consist of a 130' cross-cut adit and several surface cuts for about 400' along the vein.

Existing Surface Plant

Surface plant buildings are located near the Government underground workings and are shown on the enclosed surface-underground plan.

- 1) Timber headframe - Government shaft. (see "workings")
- 2) Small powder shack on skids
- 3) Cook-house (poor condition)
- 4) Bunkhouse (poor condition)
- 5) Sample preparation shop (good condition)
- 6) Compressor house - dry building (excellent condition)

- 7) Pilot mill (50 - 100 TPD) (excellent condition)
8) Assay laboratory (excellent condition)

A more detailed inventory of equipment and surface plant is included in the appendix.

History

The following is a brief historical summary of past activities on the property.

- 1898 - A claim was staked on the Imperial vein.
- 1900 - The Valparaiso Gold Mining Company acquired 7 claims in the vicinity of the present workings and drove the Valparaiso cross-cut adit 200' east to the vein.
- 1901 - The Imperial and Valparaiso were closed due to litigation.
- 1919 - Imperial Mines Ltd. drove a 130' cross-cut to the Imperial vein.
- 1926 - Associated Mining and Milling Co. Ltd. acquired the claims of the Valparaiso Gold Mining Co. and Imperial Mines Ltd. and staked 20 additional claims. Work consisted of cleaning out old workings.
- 1927 - The holdings of Associated Mining & Milling Co. Ltd. were increased to 60 claims. No shipments were made to this point.
- 1928 - Sanca Mines Ltd. acquired the property of Associated Mining & Milling Co. Ltd. Some assessment work was done.
- 1930 - Sanca Mines Ltd. performed assessment work.
- 1932 - Canada Smelters Ltd., an associate company of Sanca Mines Ltd., built a pole track tramway from the Valparaiso portal to an ore storage bin 3000' downslope. A small portable gasoline-powered mill was installed.
- 1933 - Canada Smelters Ltd. shipped 324 tons of gold-silver ore to the Trail smelter. Average grade and character of the shipments is shown in the appendix. The Government shaft was sunk to a depth of 275' and about 600'

of lateral work was done in the Government and Valparaiso workings.

All of the ore shipped was reportedly taken from development headings.

1953 - Mr. Willson of Boswell leased the Valparaiso and Government claims and staked 15 more for the purpose of investigating the area for tungsten occurrences. The Valparaiso workings were cleaned out and surface stripping was done. A 1000 lb. bulk sample was shipped out for testing.

1954 - Akokli Tungsten Mine Ltd. (associated with Palouse Co. Ltd. of Moscow, Idaho) , performed underground lateral development, 1500' of long hole percussion drilling and some surface trenching on the Valparaiso-Government zone. An electric powerline was extended into the property, and a 500 CFM compressor was installed. A headframe, compressor-house, and pilot mill building were erected.

1955 - Akokli Tungsten Mine Ltd. improved the Government shaft, did some drifting and drove a raise to surface. The pilot mill was completed. The mill treated 533 tons of tungsten material, and produced 11,200 lb. of tungsten-pyrite concentrate. Work ceased in November when the water-line froze.

1956 - Mr. E. Hougland, Consulting Geologist of Republic, Washington, did sampling and geological work, during a three month period, on behalf of Palouse Co. Ltd. Papers found on the property suggest that some work has been done since 1956, but records of the exact nature or extent of this work are not presently available to the writer. In 1964, the present holdings were acquired by Mr. M.J. Pritchard on behalf of Northern Pacific Mines Ltd.

GEOLOGY

General

The property is underlain by a batholithic intrusive rock reported to be of late Mesozoic age. The intrusive consists of granite, granodiorite, and quartz-diorite. On the property, a grey, biotite-granite phase predominates. Narrow dikes of lamprophyre and aplite cut the granite. Locally, the intrusion consists of an embayment about 3 miles in diameter, partially surrounded by sedimentary host rocks of late Precambrian Age. The sediments are known as the Purcell group, which has a northerly trend and is composed of limestone, argillite, and quartzite. General geology is shown on the key plan enclosed in the appendix.

ECONOMIC GEOLOGY

Character of Mineralization

The host rock is a coarse grey biotite-granite with very minor amounts of hornblende. It appears to be somewhat porphyritic near the mineralized zone. The rock is massive and is jointed in a plane which trends north and dips variably eastward (+45°).

Mineral deposition in the Valparaiso-Government zone is controlled by a narrow but very persistent fault structure which appears to be concordant with the joint system in host rock. The mineralization is a primary high temperature, hydrothermal, vein type deposit which, was probably formed by ascending solutions.

The upper portion of the mineral zone is oxidized and leached. The vein matter is coated with limonite and the granite walls are partially kaolinized. Underground work suggests that the oxidation zone extends to a depth of at least 200' down dip. In the underground workings, the granite

vein walls are clean and stand up well, while the oxidized vein material tends to slough and cave easily.

Primary vein minerals in approximate order of their abundance are; massive milky white vein quartz, pyrite, arsenopyrite, wolframite, muscovite, galena, sphalerite and chalcopyrite.

A band of kaolinitic fault gouge (1' to 6" thick) occurs within the vein zone and on the hanging wall intermittently along the Valparaiso-Government vein.

The quartz veins vary in thickness from a few inches to 8 feet. The zone often includes several narrow bands of vein quartz intercalated with bands of sheared host rock. It is reported that the vein zone branches southward into two parts in the south drift of the Valparaiso workings. Sulphide minerals occur as bands, blebs, and disseminations in the vein quartz. Wolframite occurs mainly in sheared sections of the granite foot wall. A little wolframite was also observed in some vein quartz. A small pod of highgrade galena and chalcopyrite was encountered in the Valparaiso drift, but elsewhere these sulphides are scarce. Several hand-picked boxes of this type of material were seen at the Valparaiso portal. Assay results indicate that gold and silver values are generally confined to quartz-sulphide material. While gold values are reported to be both free and "locked" in the sulphides, sampling records suggest that most of the gold values are associated with sulphides, particularly pyrite.

Other quartz veins on the property reported, but not examined by the writer are:

- 1) Several sub-parallel enechelon quartz veins were cut by a cross-cut east of the drift in Valparaiso workings.
- 2) The Imperial vein is similar in character and parallel to the Valparaiso-Government zone. It is exposed over a length of 400' and is located

about 1100' east and 700' up the hill from the Government shaft.

(see Appendix for Imperial vein assays)

- 3) A number of vein exposures are reported between the Imperial and Valparaiso-Government veins. (B.F. O'Grady, Dept. of Mines, 1926)

Gold and Silver Values

The underground workings have been intensively sampled by past operators, government engineers and independent examiners from 1926 to 1956. In May, 1964, the writer took 13 surface samples over a broad area to roughly verify the nature and persistence of gold and silver values. Some of the previous results are difficult to assess because exact sample locations and types of material sampled are not clearly recorded. Definite properly recorded sampling information by Hougland (1956), Curtin (1933), and O'Grady (1926 & 1927) have been plotted on the enclosed underground-surface plan along with the writer's surface sampling results. A complete summary of assay results taken from available records is included in the appendix.

In general, it can be said that the controlling fault structure is strong and continuous for at least 3300' and possibly for over one mile, and where quartz sulphide vein material is present in the structure, gold and silver values can be expected.

Furthermore about 1200' of vein carrying persistent values in gold and silver has been developed by drifting at about 80' - 125' below surface. Between the two main workings is approximately 250' of unexplored ground. Present sampling information, as it is plotted on the enclosed plan, indicates that the 1200' of developed vein, taken as a whole, is of sub-marginal grade. However, there are 3 sections of developed vein which might possibly provide mineable grade material if they develop volume down dip and along strike.

They are:

1) 80' south to 100' north of the Government shaft - Hougland (1956) states that this section extending north and south of the shaft should average at least .3 oz. Au/ton and 2 oz. Ag/ton over a width of 5'. Coranson (1933), reports .546 oz. Au/ton and 5.12 oz. Ag/ton in the same area over a 29" width. Eichelberger (1933), reports .41 oz. Au/ton and 4.1 oz. Ag/ton over a width of 18" in the shaft.

2) 100' at the north end of the Government drift - Close sampling by Hougland indicates 100' of material running .31 oz. Au/ton and 1.5 oz. Ag/ton over a width of 6½'. According to Mr. Hougland, these samples were taken primarily to determine tungsten values. The entire sampling shown on the plan of the Government workings was done on this basis. He comments in his report that re-sampling for gold and silver over narrower widths could well show an improved grade.

A chip sample, taken by the writer 320' south of the shaft (A-9 & A-10) across 6', tends to support this observation. A 3.5' section of vein quartz ran .04 oz. Au/ton and .3 oz. Ag/ton. The remainder, a 2.5' section of sheared granite carrying tungsten, ran .01 oz. Au/ton and trace silver.

3) 100' at the south end of the Valparaiso drift - Mr. Hougland reports that this area should average .2 oz. Au/ton and 3 to 4 oz. Ag/ton.

All of the above sections are open downwards and the south end of #3 is also open on strike.

In 1933, Canada Smelters Ltd. shipped nine carloads of material to the Trail Smelter: 324 tons averaged .36 oz. Au/ton and 3.45 oz. Ag/ton. The shipments are described as "unsorted mine run ore." (Company Smelter receipts and Minister of Mines report 1933)

SUMMARY & CONCLUSIONS

The property under consideration has been prospected and worked for gold-silver ore intermittently from 1900 to 1934. From 1953 to 1956, attempts were made to develop the Valparaiso-Government zone as a tungsten mine.

Considerable shallow underground development work has been done on the Valparaiso-Government vein and other veins in the vicinity.

A strong fault structure with continuity for at least 4000' appears to control the vein type mineralization on the main zone (Valparaiso-Government). Where the structure is occupied by quartz-sulphide material, gold-silver values occur persistently. The main workings lie along a gold-silver bearing vein for a distance of about 1450'. Projecting down dip half the strike length, it can be reasonably assumed that the Valparaiso-Government vein can be expected to extend at least 700' down dip from surface and the fault structure at least 2000'.

On the main vein zone drifting has cut three sections of higher than average gold values which may represent material of mineable grade, should they develop volume down dip or along strike. These three sections are open downwards. In addition, there are a number of parallel and sub-parallel quartz veins to the east including the Imperial. The above indicates that the property is underlain by a zone of fairly intense primary mineralization which should favour extension and repetition of presently known gold-silver zones.

The three sections described as being of "possible mineable grade" should average about \$13.00 - \$20.00 per ton, at current prices, before dilution or metallurgical loss. Maintaining their presently exposed total, lateral dimensions of about 3' by 380', these three sections would develop about 115 tons per foot down dip. In addition, substantial downward

continuity would also, make some of the lower grade parts of the vein more attractive as economic material.

Assay results underground and on surface also suggest the possibility of improved grade at depth.

While lateral development has been extensive very little is known regarding depth beyond 100' below the surface; and for this, no reasonable estimate of tonnage can be made at this time. However, present indications of character and lateral extent strongly suggest that gold-silver bearing vein material will persist at depth. Therefore, exploration work below the present workings is essential to test the downward development of tonnage.

RECOMMENDED EXPLORATION PROGRAMME

It is suggested that exploration work be carried out in three general phases, so that the continuence of the programme will depend upon the results of prior work.

- 1) Preliminary diamond drilling - 1500' of drilling will be required to test the persistence of values immediately beneath the existing workings, and to establish firm verification of previous sampling records. Some local surface and underground sampling should be done while the drilling is in progress.
- 2) Diamond drilling and general surface exploration - 5000' of diamond drilling is recommended to probe possible extensions, at depth or along strike, of favourable zones in the Valparaiso-Government vein system. In conjunction with this, a complete surface examination and mapping programme over the entire property should be carried out. This work would include a transit-tape base survey, mapping of geological features

and old workings, and sampling of surface showings and accessible underground workings. In addition, some plugger work should be done to freshen old surface trenches and open up unworked vein exposures.

- 3) If 1 & 2 yield encouraging results a follow-up programme underground exploration and development at depth would be required.

ESTIMATED COST OF RECOMMENDED PROGRAMME

1) Preliminary Diamond Drilling:

a) Mobilization.....	\$ 2,000.00
b) 1500' Diamond Drilling (AX Core) @ \$6.00/ft.....	\$ 9,000.00
c) Assaying.....	\$ 200.00
d) Local Transportation.....	\$ 500.00
e) Engineering & Supervision.....	\$ 1,500.00
f) Travelling & Misc. Expenses.....	<u>\$ 1,000.00</u>
	SUB-TOTAL.....\$ 14,200.00
g) Contingency Allowance.....	<u>\$ 1,300.00</u>
	<u>TOTAL.....\$ 15,500.00</u>

Time Required - 3 to 4 weeks

-
- 1) Foot Note: The existing underground workings are in poor condition due to the oxidized nature of the ground. Therefore, It may be impossible to do any extensive inspection or sampling without considerable clean-up and re-timbering.
 - 2) Foot Note: Re - Diamond Drilling; It will be essential to exercise extreme caution when coring the vein zone to insure maximum sample recovery. For this reason, sludge sampling and close supervision of the drilling operation will be required.

2) Diamond Drilling and Surface Exploration:

a) Mobilization.....	\$ 2,000.00
b) 5000' diamond drilling (AX Core) @ \$5.00/ft.....	\$ 25,000.00
c) Salaries - Field Supervisor @ \$700.00/mo.....	\$ 2,100.00
- Field Assistant @ \$350.00/mo.....	\$ 1,150.00
- Equipment Operator @ \$550.00/mo.....	\$ 1,650.00
(tractor, plugger & portable compressor)....	
d) Field accomodation (staff).....	\$ 1,500.00
e) Equipment maintainence.....	\$ 1,500.00
f) Assaying 200 Au & Ag @ \$3.50.....	\$ 700.00
g) Local transportation.....	\$ 2,000.00
h) Travelling & misc. expenses.....	\$ 2,500.00
i) Engineering.....	\$ 2,500.00
	Sub-total.....
	\$ 42,600.00
j) Contingency allowance.....	\$ 4,400.00
	TOTAL
	\$ 47,000.00

Time Required - 3 months

3) A follow-up programme of underground exploration and development
would require at least.....\$ 75,000.00

Submitted by A.F. Reeve
A.F. Reeve, Geological
Engineer

Supervised by Jos. Sullivan
Jos. Sullivan, P.Eng.

APPENDIX 1

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Moscow, Idaho.

APPENDIX 11

SAMPLING RECORDS

<u>B.T. O'Grady, 1926</u>	Au oz/ton	Ag oz/ton
1) Grab sample, south end of Government drift.....	.58	8.6
2) Grab sample, south end of Government drift.....	.42	16.2
3) 2' of vein matter, Valparaiso Cross-cut adit.....	1.04	4.2
4) Grab sample, Lost mine dump.....	.02	.8
5) Imperial Workings:		
Grab, surface - quartz disseminated with pyrite & galena...	.01	.9
" " - rusty quartz.....	.02	2.7
" " - quartz and pyrite.....	.04	1.7
" Dump - rusty quartz.....	.02	1.1
" " - quartz, pyrite+ (wolframite & galena).....	.03	.5
" " - selected vein matter.....	Tr.	.7
" " - quartz, pyrite+ (galena & malachite).....	.02	1.1
30" sample, upper tunnel, rusty vein quartz, H.W.03	2.7

B.T. O'Grady, 1927

11 channel samples north end of Valparaiso Drift

(125' x 5.8') see enclosed assay plan - Average..... .10 1.1

Smelter Receipt, Consolidated Mining & Smelting Co. Ltd. (copy) 1933

B.T. O'Grady, 1933

9 carloads of "unsorted mine run ore", 324 tons:

Sulphur %	Silica %	Lime %	Iron %	Au oz/ton	Ag oz/ton
58.36	58.36	13.75	.6	.356	3.455

Prices paid - silver 3.41/oz

- gold \$20.00/oz + \$11.10/oz bonus

APPENDIX 11 (cont.)

C.J. Curtin, 1936

	<u>Au</u> <u>oz/ton</u>	<u>Ag</u> <u>oz/ton</u>
1) Average of 101 channel samples (taken 1933).....	.59	5.257
(Records of length, character, and location of samples not available)		
2) 15 channel samples, south end (330') of Valparaiso drift.		
See enclosed assay plan.		

Coranson (1933?)

Average over a 29" width, along the drift in the vicinity of the Government shaft. .546 5.12

Eichelberger, 1933

Average in government shaft over a width of 18" .41 4.1

Hougland, 1956

- 1) Estimates (from tungsten sampling) A section in the south end of the Valparaiso drift (100' x 5') should Avg. .2 3 to 4
- 2) Estimates - (from tungsten sampling) A section 80' south & 100 north of the shaft, 5' wide, would average .3 2
- 3) 65 channel samples taken in the Government workings are shown on the enclosed assay plan. Tungsten assays have been omitted.
- 4) The following are Mr. Hougland's general remarks regarding sampling, taken from his report of 1956.

"Older reports contain compilations of many samples taken.".....

"On the basis of my work in 1956, I believe this earlier sampling to represent true values."

"In 1956, I took 150 channel samples in the two workings previously described and on surface. These samples were taken primarily to

determine tungsten values and were largely cut in places which might be considered favourable for the occurrence of that mineral. However, the bulk of them were also tested for gold values."....."A re-sampling job with the emphasis on gold and silver only as the objective could well show an improved grade over the one inferred at present."

A.P. Reeve, May 1964 (All Surface)

<u>NO.</u>							
A-1	3' chip	3100' S. of shaft	Rusty, quartz			.04	1.0
A-2	5½' "	2000' "	"	"	(FW)	.01	.3
A-3	5½' "	2000' "	"	"	(HW)	.01	.2
A-4	Grab	1900' "	"	"	"	.04	.7
A-5	Grab	Valparaiso Dump	Quartz vein matter			.02	.3
A-6	4' chip	1200' S. of shaft	Massive quartz			.10	1.5
A-7	Grab	1000' "	"	Composite-3 quartz veins		.04	.4
A-7a	1' chip	1150' "	"	Rusty quartz + blk. Mineral		.04	.8
A-8	6½' chip	440' "	"	Rusty quartz		.04	.5
A-9	2½' "	320' "	"	Sheared granite + wolframite	(FW)	.01	Trace
A-10	3½' "	320' "	"	Rusty vein quartz (HE)		.04	.3
A-11	Grab "	Valparaiso dump	Massive galena			.04	27.8
A-12	Grab	Government dump	Quartz, 25% pyrite			.56	36.9

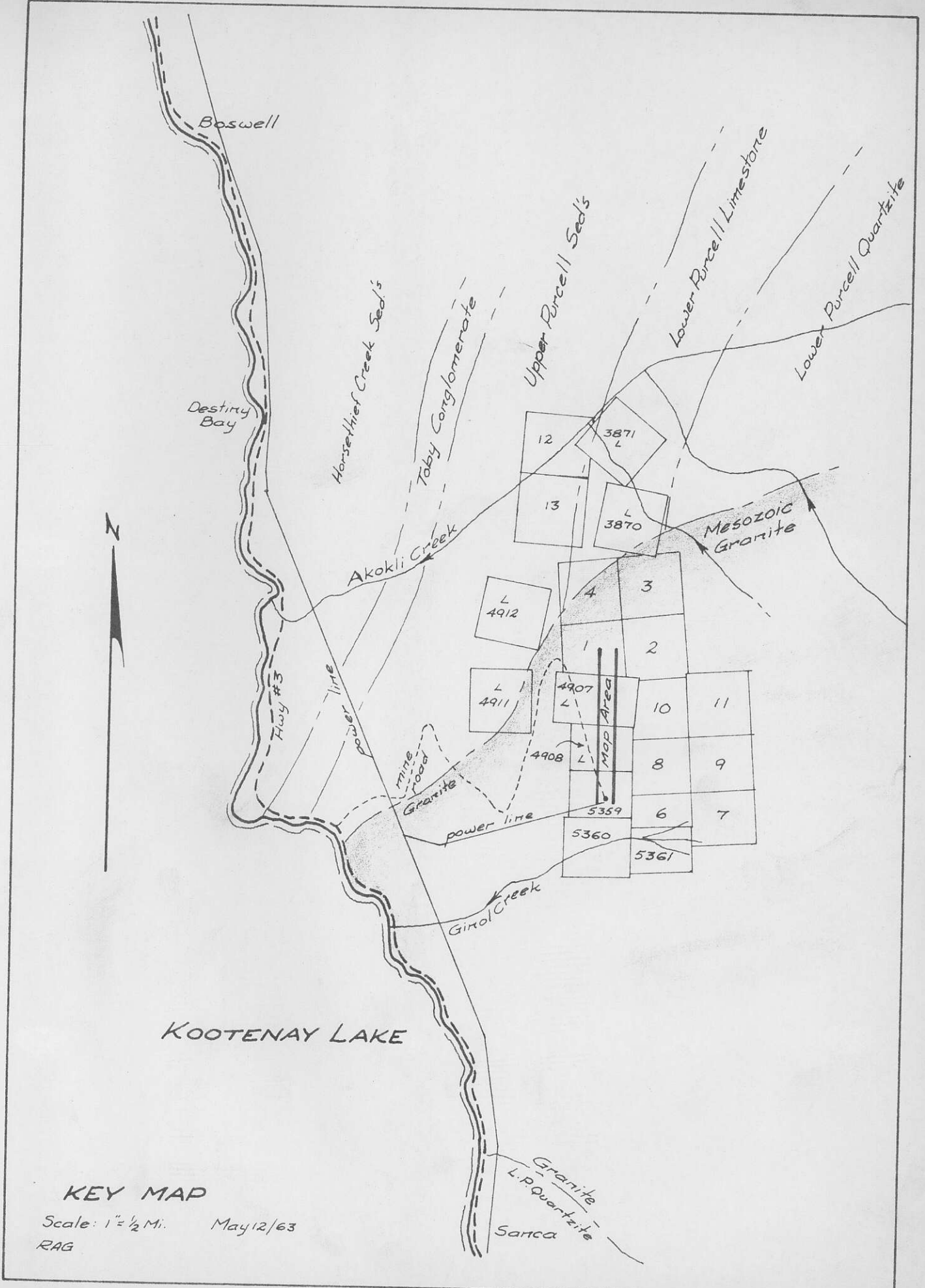
Note: See assay plan also.

APPENDIX 111
PLANT EQUIPMENT INVENTORY

The following is an inventory of equipment left on the property by the previous operators. The major items are stored in the surface plant buildings and appear to be in good condition. Items marked * are stored at Boswell. The mucking machine is located in the north drift of the Government workings. Some small items such as tools and fittings are missing.

Tape	Drills	ME9860 Control Panel 125 V
1" Sandpump & motor	*Jack Drill	Voltimeter 0-6 Scale
1½" Sandpump & motor	3 KVA Transformers	CR 7006 D3C 440 V Magnetic Switch
20 hp Motor & Rails	Transformer	50 hp Magnetic Starter & Heaters
Classifier	5 mine cars	20 30 amp. 550 V Disc Switches
6 cell Flotation Unit	8 lights, mine	200 amp. 3 phase switch
Ball mill, elevator & screen	6 lights, mine	21 Cr 7006 Magnetic switches
Conditioner	Welder	400 amp. 440 V Main switch
Small Rod Mill w/m	Oil Furnace	400 amp. 440 V Gutter switch
Vacuum Pump wo/m	D.C. 60, cat	20 hp Comp, CR1034
Small Rolls	2 laboratory pulverizers	#2 SS Magnetic switch
Feeder	1½" Sandpump	200 amp, 3 phase switch
Jaw Crusher wo/m	8 Motors, 1, 2 & 3 hp	400 amp, Gutter switch
Dorce Sizer	Laboratory-complete	8 #4673 Fluorescent fixtures
Denver Duplex Jig	Portable Compressor	38 #4673, 2/40 Fluorescent fixtures
Hydro Separator	1600' Plastic Pipe	FM 116 WCH Furnace
Feeder for Jaw Crusher	11,600' Plastic Pipe	75 hp Compensator
1, 2 and 3 hp motors	1,000 Gal. Storage tank	400 amp switch

Gardner-Denver Pump	54" x 5' x 18' tank	1 50 KVA, 2300/115/230 V transformer
Crushing Rolls	*#1579 Sioux Drill	McCulloch Power Saw
Vibrating Screen	*#1580 Sioux Drill	Compressor Hose
4 tables	1 DOC Metal Master Outfit	Welder Cables
Mucking Machine,	#960 Walker Jack	*H.D. 10 Allis Chalmers & Angle Dozer
Hoist	Butterfield Tap & Die set	
*Stoper, complete	Set Gray Bonney Tools	Some part of Ball Mill is in Spokane.
Compressor and 100 hp Motor	Set Gray Bonney tools	
*Jack Stoper, complete	Portable Magnetic operator	
*Jack Leg, complete	Tool set	
*Pickhammer	ME7406 Charging Rack (12 lamp cap)	



CERTIFICATE

I, Albert F. Reeve of Vancouver, British Columbia,
hereby certify:

- 1) That I am a geological engineer residing at 1096 Comox St.,
Vancouver, B.C.
- 2) That I am a graduate of Michigan College of Mining and
Technology, and have practised as a geological engineer
for three years.
- 3) That I am a certified member of the Association of Profes-
sional Engineers of the Province of Ontario.
- 4) That I have not, nor do I expect to receive any direct or
indirect interest whatsoever in the Mining properties of
Northern Pacific Mines Ltd.
- 5) The accompanying report is my own work based on my examina-
tion of Destiny Bay Properties and study of literature and
maps.

Signed.....
A.F. Reeve, Geological
Engineer



CERTIFICATE

I, Joseph Sullivan, of the City of Vancouver, in the Province of British Columbia, hereby certify as follows:

- 1) That I am a Registered Professional Engineer of British Columbia, residing at 2766 West 30th Ave., Vancouver 8, B.C.
- 2) That I am a graduate of the University of British Columbia, and have practised my profession for 12½ years.
- 3) I have no direct or indirect interest in "Destiny Bay Properties."
- 4) I inspected the property on May 9, 1964 and supervised the writing of the enclosed report by Albert P. Reeve.

Signed.....*J. Sullivan*
Jos. Sullivan, P.Eng.



June 5, 1964.
Vancouver, B.C.

ADDENDUM

To - report on "Destiny Bay Properties", dated May 20, 1964.

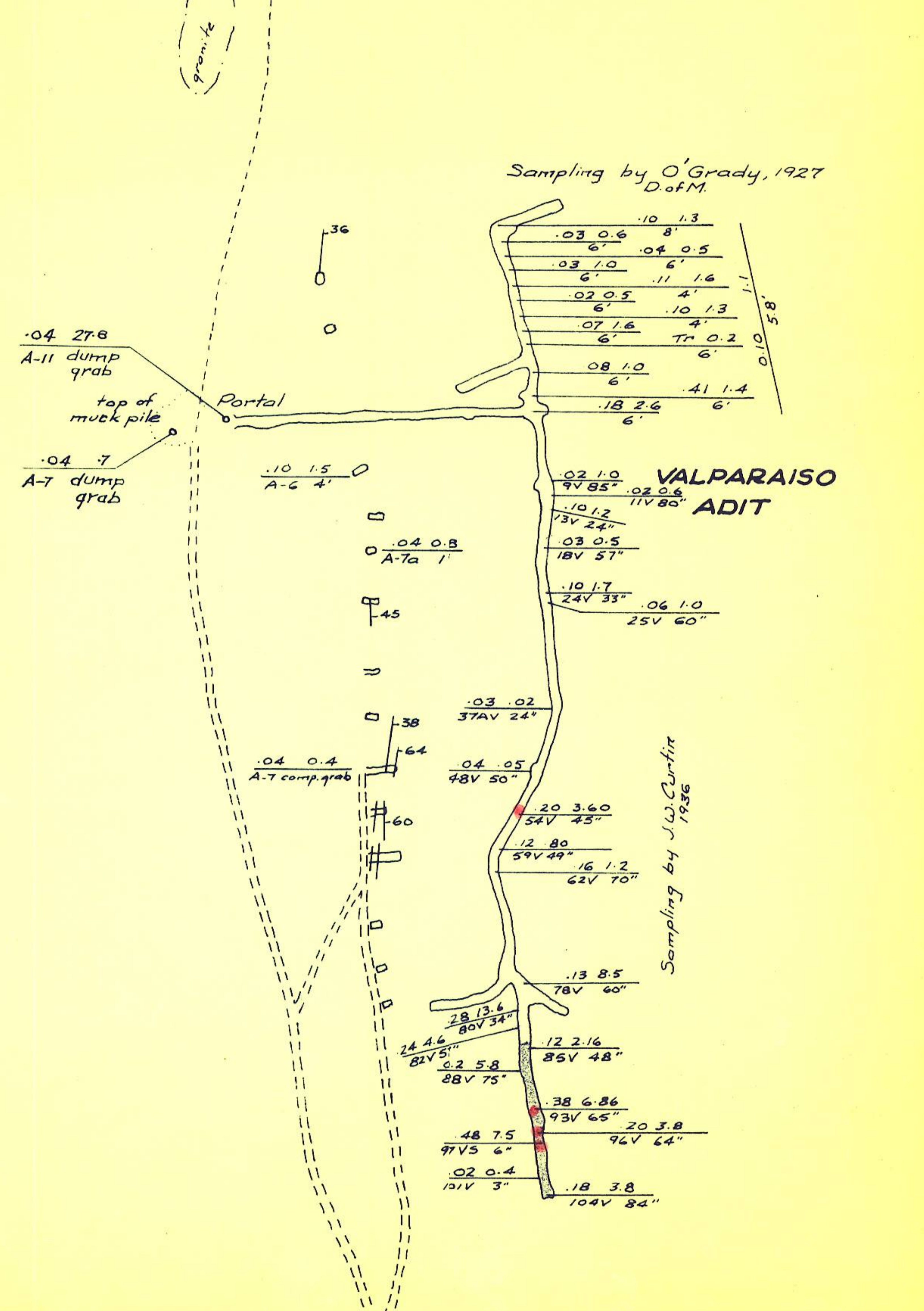
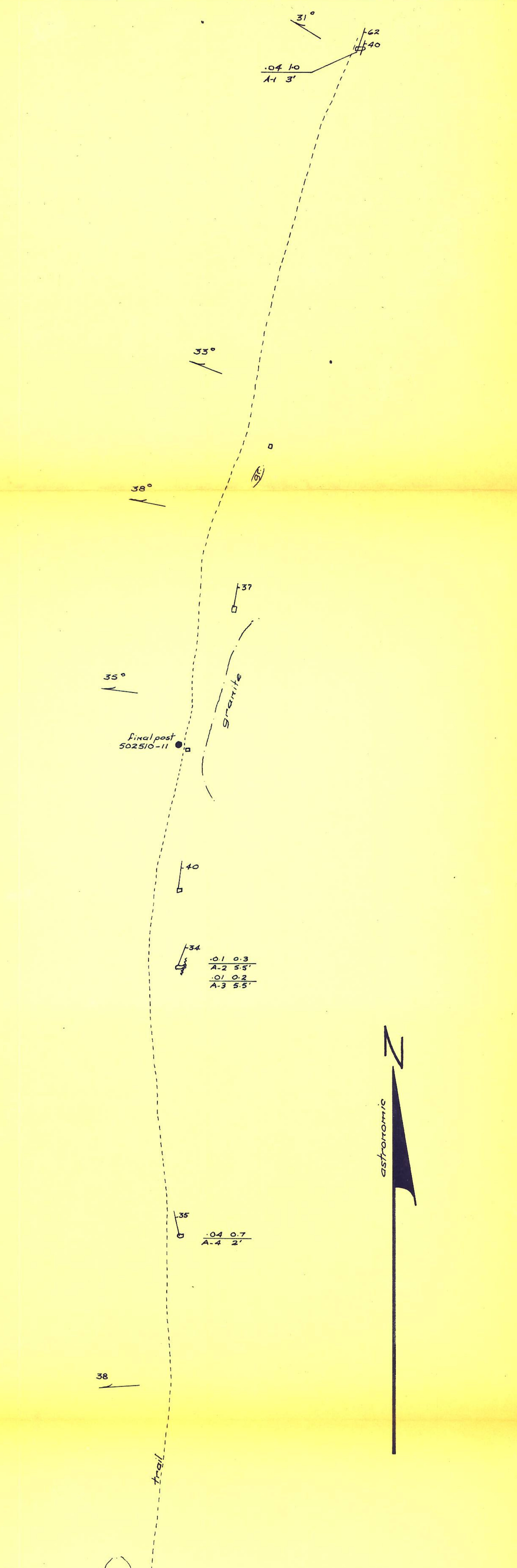
(1) The following 3 claims have been added to Destiny Bay Properties since the report was compiled;

<u>NAME</u>	<u>NUMBER</u>	<u>ASSESSMENT ANIVERSARY</u>
Halo#5	502536	May 12, 1965
Halo #14	502537	" " "
Halo #15	502536	" " "

(2) Mr.M.J.Pritchard of Halo Holdings Ltd. is acting on behalf of Northern Pacific Mining Corporation Ltd. The latter company is incorrectly referred to in the report as Northern Pacific Mines Ltd.

A.F.Reeve
Geological Engineer.



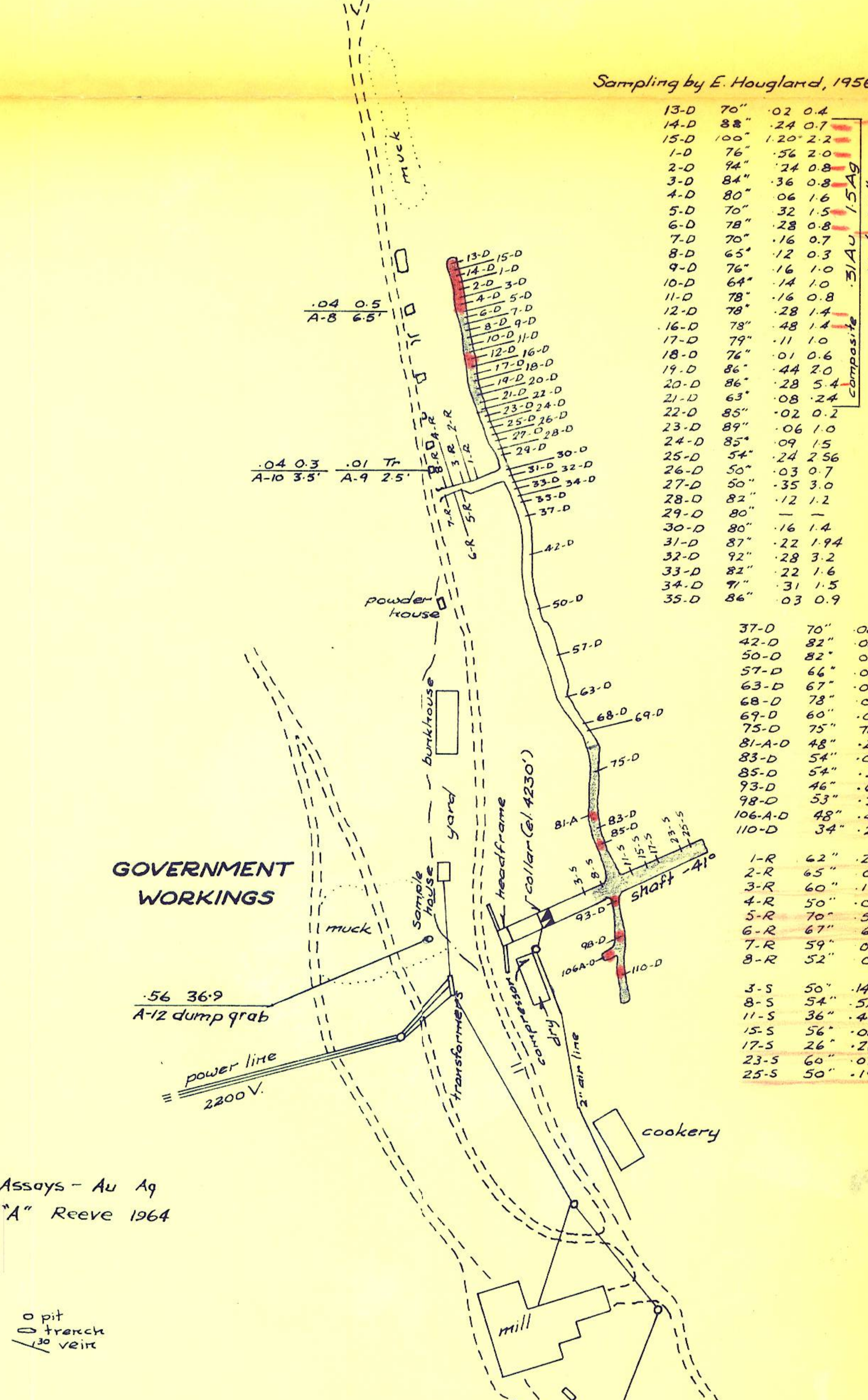


Sampling by O'Grady, 1927
D.O.F.M.

.03	0.6	8'	10	1.3
.04	0.5	6'	0.4	0.5
.03	1.0	6'		
.02	0.5	4'		
.07	1.6	6'	1.0	1.3
.08	1.0	6'	1.0	0.2
.18	2.6	6'	4.1	1.4
.02	1.0	14V 85"	.02	0.6
.10	1.2	13V 24"	.11	1.6
.03	0.5	18V 57"		
.10	1.7	24V 33"	.06	1.0
			.25	6.0"
.20	3.60	54V 45"		
.12	.80	59V 49"		
.16	1.2	62V 70"		
.13	.85	78V 60"		
.28	13.6	80V 34"		
.24	4.6	81V 51"		
.22	5.8	88V 75"		
.38	6.86	93V 65"		
.48	7.5	97V 6"		
.02	0.4	101V 3"		
.18	3.8	104V 84"		

Sampling by E. Hougland, 1956

13-D	15-D	70"	.02	0.4
14-D	1-D	88"	.24	0.7
15-D	100"	120"	2.2	
1-D	76"	.56	2.0	
2-D	94"	.24	0.8	
3-D	84"	.36	0.8	
4-D	80"	.06	1.6	
5-D	70"	.32	1.5	
6-D	78"	.28	0.8	
7-D	70"	.16	0.7	
8-D	65"	.12	0.3	
9-D	76"	.16	1.0	
10-D	69"	.14	1.0	
11-D	78"	.16	0.8	
12-D	78"	.28	1.8	
16-D	78"	.48	1.4	
17-D	79"	.11	1.0	
18-D	76"	.01	0.6	
19-D	86"	.44	2.0	
20-D	86"	.28	5.4	
21-D	63"	.08	2.4	
22-D	85"	.02	0.2	
23-D	89"	.06	1.0	
24-D	89"	.09	1.5	
25-D	54"	.24	2.56	
26-D	50"	.03	0.7	
27-D	50"	.35	3.0	
28-D	80"	.12	1.2	
29-D	80"	.16	1.4	
30-D	80"	.22	1.94	
31-D	87"	.28	3.2	
32-D	82"	.22	1.6	
33-D	82"	.31	1.5	
34-D	79"	.03	0.9	
35-D	86"	.03	0.9	
37-D	70"	.08	1.2	
42-D	82"	.08	1.6	
50-D	82"	.08	1.4	
57-D	66"	.04	2.6	
63-D	67"	.05	2.6	
68-D	78"	.06	2.6	
69-D	60"	.02	7.7	
75-D	75"	.77	.05	
81-A-D	48"	.28	2.52	
83-D	54"	.04	2.6	
85-D	54"	.26	2.76	
93-D	46"	.60	7.4	
98-D	53"	.30	3.0	
106-A-D	48"	.40	5.32	
110-D	34"	.20	3.80	
1-R	62"	.28	1.4	
2-R	65"	.04	0.5	
3-R	60"	.16	1.4	
4-R	50"	.05	1.2	
5-R	70"	.52	1.8	
6-R	67"	.64	1.2	
7-R	59"	.06	0.8	
8-R	52"	.06	.46	
3-S	50"	.14	4.6	
8-S	54"	.52	4.6	
11-S	36"	.44	1.2	
15-S	56"	.08	1.0	
17-S	26"	.20	3.8	
23-S	60"	.02	.30	
25-S	50"	.19	.20	



Assays - Au Ag
"A" Reeve 1964

o pit
o trench
/ vein

DESTINY BAY PROPERTIES
Northern Pacific Mines Limited
Composite of Surface & Underground
Scale: 1"=100' May 12/64 RAG

