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GEOLOGY AND ORE RESERVES
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VOL. I

HORWOOD - SILK TOWNSHIPS
SWAYZE GOLD BELT
NORTHEASTERN ONTARIO
NTS : 41 0/16

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Canada

T. Atkins
W. Gilman
G. Harper, Ph.D.
F. T. Manns, Ph.D.

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1.0 SUMMARY

1.1 CONCLUSIONS

The Orofino Gold deposit is typical of structurally controlled quartz-gold vein deposits occurring in intrusive bodies and volcanic-sedimentary successions of Archean greenstone belts (Boyle, 1979).

The host-rocks were mineralized relatively late but prior to lamprophyes and porphyry dykes intrusion.

The mineralized veins are probably confined to a 'diorite' body beneath a nonconformity surface of unknown extent.

The structures consist of six vein zones, the gently dipping Replacement Zone, and the mineralized Fault Zone.

The single most important gold hosting structure is the No. 1 South Vein Zone which has been tested to a vertical depth of 1,140 feet (83-39). Failure to locate the regional Hardiman Bay Fault, previously feared to cut off the No. 1 South Zone at depth suggests that the No. 1 South Zone and the gold mineralization could extend to 3,600 feet from surface.

The Replacement Zone is also a very important structure with as much Probable category ore as the sum of Proven plus Probable ore in the No. 1 South Zone.

The Ore Reserves of Proven and Probable category in the Orofino deposit are estimated to contain 70,086.9 troy ounces of gold in 344,628.2 tons at a grade of 0.20 ounces per ton (opt) with a cut-off grade of 0.10 opt.

A mineral inventory conducted following the end of drilling in 1983 has delineated more than 1.6 million short tons of gold mineralization at a grade of 0.14 opt at a cut-off of 0.05 opt.

1.1 CONCLUSIONS

The relatively low proportion of Proven and Probable ore is partly an artifact of the system of definitions whereby Proven Ore must be delineated from a surface trench or underground opening.

In estimating the inventory, allowances have been made for dyke dilution, mining to a minimum seven foot mining width, and cutting of anomalous grades, in order to produce a realistic geological reserve picture. Additional dilution and delineation to define mineable reserves are in progress.

Economic analysis is also now underway. If results look encouraging it may be necessary to enhance the reliability of the knowledge of Reserves by further detailed tests in areas of Possible mineralization.

1.2 RECOMMENDATIONS

In order of maximum benefit-minimum cost the following steps are recommended for improved knowledge of reserves.

1.2.1 TRENCHING

The next priority of the program must be to determine the near surface potential of the mine area. This will require extrapolating the mineralized zones to the surface, trenching overburden and channel and bulk sampling wherever possible. The trenching targets should be the intersection of No. 1 South and No. 1 North Vein Zones and the intersection of both zones with the mineralized fault zone. All of the 1935 - 51 trenches should be located and resampled.

Discrepancies exist between the map positions of the surface trenches and the extrapolated zones from underground workings. These will need to be resolved by new surveys.

1.2.1 TRENCHING

If time and circumstances permit, veins shown on the southern block maps should be tested by blasting and sampling.

1.2.2 UNDERGROUND DEVELOPMENT

A trial raise or trial stope in the No. 1 South Zone would very likely allow reclassification of considerable Probable and Possible category tonnage to Proven Ore.

1.2.3 DRILLING

A program of surface drilling in the mine area would be required to test the Possible category mineralization in the near surface zones.

There is every indication that an up-dip extension of the Replacement Zone exists southeast of the Mine Area in an area not yet adequately tested by diamond drilling (see DDH CF-81-8). Though not an immediate priority, the Replacement Zone could be tested by a fence of 450 foot holes on line 13,000 north from sections H through L.

Near the conclusion of the drilling program, drill hole 83-39 yielded a strong indication of the continuation of mineralization to the north. An intersection of 7.1 feet graded 0.22 opt from 1,079.3 feet to 1,086.4 feet; an intersection of 5.5 feet ran 0.29 opt from 1,115.0 feet to 1,120.5 feet including one foot of 1.12 opt. At some future date a drilling program must be mounted to determine the down-dip potential of these northernmost discoveries.

2.0 INTRODUCTION

The exploration program for 1983 was intended to test peripheral and internal drill targets in order to increase the tonnage of the deposit. The underground workings were pumped dry to allow channel sampling of the development drifts, cross-cuts, and stub raises to complement the 1948 - 1953 channel sampling. These dual projects were successful in demonstrating that the Orofino deposit has good potential down-dip as indicated in DDH 83-39, and contains consistently good grades near to surface in the underground workings in the No. 1 South Zone, the No. 1 North Zone, the No. 5 Zone and the new Fault Zone.

During the mineral inventory study it became apparent that the extrapolated position of the up-dip subcrop of the Replacement Zone lay farther east than had been suspected. Therefore, another exploration target has suggested itself for future drilling.

Pending evaluation for mining reserves, the program of drilling and underground sampling has been a technical success.

3.0 PROPERTY LOCATION AND ACCESS

The Orofino Mine Property is located 100 air kilometers southwest of Timmins, in Northeastern Ontario and 32 air kilometers south of Foleyet, a small community west-southwest of Timmins at the point where Highway 101 from Timmins to Wawa crosses the transcontinental CN rail line.

Timmins with a population of 45,000 is a major base and precious metal mining centre with extensive support facilities including district Government Offices. Regular jet air services link Timmins with Toronto several times daily.

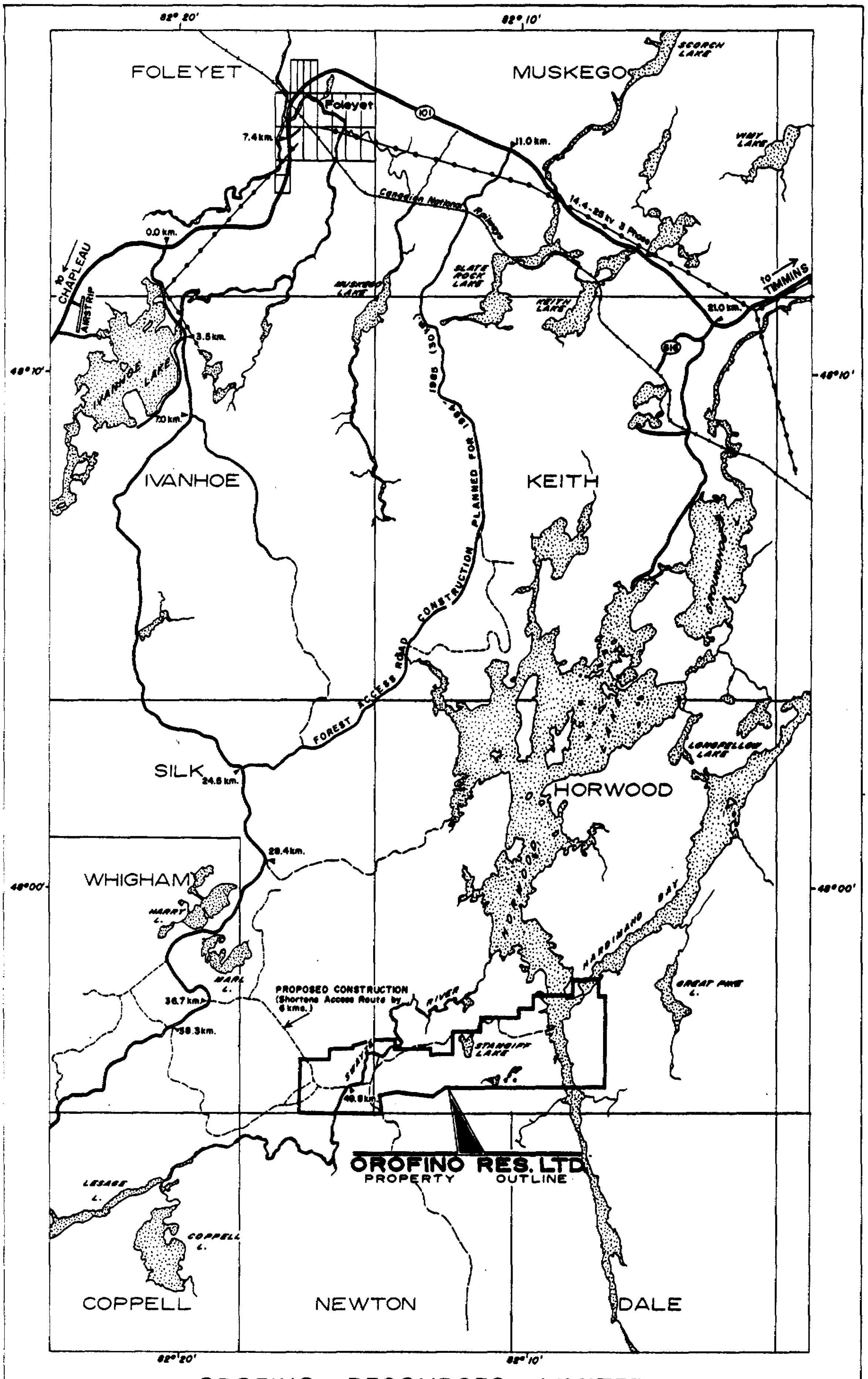
Foleyet was originally a section of the CN rail system but has suffered in recent years as CN has centralized its control and maintenance operations to other towns. With a population of about 700 down from a peak of 1,100, its livelihood is derived from woods operations, Ministry of Natural Resources, tourism and Highway maintenance in addition to the CN. There is some spare housing. An Ontario Hydro 125KV line extends west half the distance from Timmins at which point it steps down to 25KV with a branch to the talc mine in Penhorwood Township, another branch to Kukatash and a third branch to Foleyet and 7 kilometers beyond to Ivanhoe Park thence 2 kilometers south to an old forestry company camp.

The Orofino Mine claims lie along the south edge of Horwood and Silk Township boundaries. Neither Township has been formally surveyed but limited lengths of the perimeter lines were cut and surveyed many years ago, possibly in conjunction with the patent claims survey. The east end of the property extends across the south end of Horwood Lake, a major north-south oriented 20 km long lake on the north draining Groundhog River system. The lake outlet is controlled by a dam accessible by road from Palomar on Hwy. 101. An old woods road extends west from the lake along the north side of the claims to the mine site, following an esker for a good proportion of its length. Thus access to the mine site can be facilitated by road and water combination.

3.0 PROPERTY LOCATION AND ACCESS

The above access to the mine site was superseded by an all road route from Hwy. 101 just west of Foleyet as forestry operations extended through the area in the 30's and more recently. Table I and Fig. I show details of this road route. Under a five year forestry plan starting 1984 part of this access route is being upgraded/reconstructed/rerouted over the next two years as part of a plan for a 100 ft. right-of-way primary forest access road south to Sultan on the CP rail line where it will connect with existing roads to Espanola. This new route will substantially improve the quality of access to the mine and in conjunction with a proposed reconstruction near the mine shorten the time and distance for travel to Foleyet and Timmins.(Table II)

The route south from Foleyet lies on good gravel and sand overburden for all but the last six kilometers which is on the clay belt running along the Swayze River valley. A vintage wooden bridge presently spans the Swayze River immediately short of the present mine camp. This bridge is incapable of supporting heavy vehicles and would require reconstruction as part of any access upgrading.



OROFINO RESOURCES LIMITED

PRESENT

PROPERTY ACCESS ROUTE

KILOMETRES

10 5 0 5 10

Drawn by RODEL ORTIZ June 1984

Figure 1

Table I PRESENT ACCESS ROUTE TO OROFINO MINE

Distance west from Timmins to Foleyet on Hwy 101 --------------	104 kms
Thereafter, from Foleyet turn-off follow Hwy 101 west to Ivanhoe Provincial Park (turn-off to left) ----------------	7.4 kms
Thereafter, distances are from zero at Hwy 101 turnoff as follows:	
Follow south on Ivanhoe paved road past Ivanhoe Lodge --------	1.2 kms
Road over dam top, end of paving and immediately thereafter, a Y fork. Take left fork at --------------------	3.5 kms
Stay on main road to right at ------------------------------	7.0 kms
Take left hand road at --	15.0 kms
Take left hand road at --	18.8 kms
Follow straight on main road which is to right at ------------	24.5 kms
Take right hand road at ---------------------------------------	28.4 kms
Take right hand road at (old sawmill intersections, where new short-cut road might start) ---------------------	36.7 kms
Take left hand turn off main road into Scarified forestry area at --	38.3 kms
The end of sand and start of clay belt starts at -------------	43.1 kms
Arrive at bridge over Swayze Road Mine. Camp/offic at --------	49.8 kms

Table II PRESENT VERSUS POTENTIAL ROAD ACCESS TO OROFINO MINE

	Distance by:		
Destination	Present Route	Near Mine Cut-off	Near Mine Cut-off + "Palomar" Cut-off
Mine Site --- Foleyet	57 kms	51 kms	60 kms
Mine Site --- Timmins	158 kms	152 kms	141 kms
Mine Site --- Hwy. 101 near Palomar			49 kms

4.0 HISTORY OF EXPLORATION

4.1 PREVIOUS WORK

Activity on what is now the Orofino Property began in 1933 when 12 claims were staked by J. Burke and J. McIllory for G.A. Thorne, following a visible gold discovery east of the Swayze River in Silk Township. In 1935, Hollinger Consolidated optioned this property and initiated a trenching, channel sampling and 4,800 foot (25 holes) diamond drill program. By 1938, Hollinger Consolidated dropped its option on these claims. The property, along with 13 additional claims, was restaked by Ed Ferland and Paul Doyon for Mining Research Corporation (Dadson, 1980; Gordon et al, 1979; Breaks, 1978). See Table III.

In 1945, Orofino Mines Limited purchased Mining Research Corporation's claims and began a three year stripping, trenching and 22,068 foot drilling program which established mineralization to a depth of 200 feet over a strike length of 700 feet.

During 1948 to 1949, a three compartment shaft was sunk to a depth of 306 feet with levels established at 150 feet and 276 feet, and included 210 feet of lateral work. A forest fire destroyed the head frame in 1949, but after its reconstruction in 1950, underground lateral work continued resulting in a total of 2,058 feet of drifting, 1,134 feet of crosscutting and 21 feet of raising. Twenty-two underground diamond drill holes, totalling 1,850 feet, were completed during this same period (Gordon et al, 1979).

By the end of 1951, total underground work had increased to a total of 3,381 feet of drifting, 1,299 feet of crosscutting, 78 feet of raising and 7,656 feet (52 holes) of underground drilling. Another fire destroyed the replacement headframe in late 1951 or 1952.

TABLE III: RECORD OF DIAMOND DRILLING **

OPERATOR	PERIOD	LOCATION	FOOTAGE	NO. OF HOLES	CORE SIZE	HOLE NOMENCLATURE
Hollinger Consolidated	1935-37	Mine Site	* 4,800	25	NO LOGS ON FILE	
Orofino Mines Ltd.	1945-46	Mine Site	12,240	52	AX	1I - 49I
Orofino Mines Ltd.	1947	Mine Site	9,828	32	AX	50I - 80I
Orofino Mines Ltd.	1950-51	Underground	9,506	74	?	UI - U76
Orofino Mines Ltd.	1962-63	Mine Site	23,207	30	AX	81 - 100
Camflo Option	1973-74	Mine Site and South Area	8,200	15	AQ	C-73-1 to C-74-23
Northgate/Orofino J.V.	1980	Mine Site	32,866	34	AQ	Section/Year/No.
J.V.	1980	Gifford	* 2,095	* 8	AQ	GP 80-1 to 8
J.V.	1981	Mine Site and South Area	29,145	38	AQ	Section/Year/No. CF 81-1 to 21
Orofino Resources Ltd.	1983	Mine Site and Outlying Claims	23,505	46	AQ/NQ	83-1 to 46
	TOTAL		148,497	321		

* Deleted from total

** Compiled from Drill Logs - 1983

4.1 PREVIOUS WORK

No mill was ever established on the property and all mine muck is piled on surface or has been redistributed around the site as fill for road foundations.

The period, 1962 - 1963, saw a brief resumption of activity as Orofino Mines completed 23,207 feet of surface diamond drilling on a grid pattern to test for mineralization down to the one thousand foot level.

Camflo Mines Limited optioned the property during 1973 and 1974 and drilled 15 diamond drill holes totalling 8,200 feet (Dadson, 1980).

In late 1979, a joint venture agreement was reached between Orofino Mines Limited and Northgate Exploration Limited whereby Northgate coula earn a 60% interest in Orofino's 80 mining claims (of which 27 are patented claims) after the expenditure of $1.3 million (for additional details, please refer to the Introductory Report; Dadson, 1980). Northgate's attraction to the property was primarily the potential for additional reserves in a flat lying 'replacement' zone at depth, interpreted by W. W. Weber from the limited drilling to 1,000 feet completed by Orofino Mines Limited.

The Orofino share capital was consolidated on a one for four basis and the company name changed to Consolidated Orofino Resources.

The field activities for the 1980 summer exploration season included line cutting, a program of magnetic and electromagnetic surveys, stream sediment, humus and soil sampling for gold content, geological mapping on reconnaissance and detailed scales, prospecting, trenching, sampling, mine site clearance with bulldozer and hydraulic sluicing, the staking of an additional 63 claims to encompass further areas of potential to the north and east and 32,866 feet (34 holes) of surface diamond drilling to test the 'replacement zone' on the mine site. In addition, three prospects (the North, Landry and Gifford) received limited testing, including the drilling of 2,095 feet on the Gifford prospect (Dadson and Weber, 1981).

4.1 PREVIOUS WORK

Work continued through into 1981 with the installation of a new trailer camp, and core logging buildings. A preliminary evalution of the geologic reserves was conducted in the fall of 1980 resulting in an estimated 896,000 tons grading 0.21 oz Au per ton (Dadson and Weber, 1981).

The field activity continued through to October 1981 with 29,145 feet of diamond drilling (38 holes), geochemical sampling and geophysical surveys in outlying claims, detailed and reconnaissance mapping at both the mine site and outlying EM conductors and VLF and humus anomalies, the staking of six new claims and the cancellation of four of the older claims due to overstaking, thus bringing the total claim package to 27 patented and 118 unpatented claims.

The additional diamond drilling provided the information to more accurately interpret the dyking and calculate geologic reserves as 825,000 tons grading 0.17 oz Au per ton. Construction of a 40,000 foot capacity core storage shed and maintenance work on the one kilometer road from the camp to the mine site and the bridge over the Swayze River were undertaken (Weber et al, 1981).

Although 1982 was a year of decreased field exploration, with minor follow-up geochemical work performed on some interesting anomalies in the outlying claims, considerable effort was directed to the compilation and interpretation of the extensive data acquired over the course of the 1979 - 1981 exploration period.

The year 1983 brought a number of changes to Cons. Orofino Resources Ltd. These began with the acquisition of Northgate Exploration Ltd.'s 60% interest in the Orofino gold property and three other gold properties, following shareholder approval by Orofino, in exchange for 3,259,875 Orofino shares. This provided Orofino with four gold properties in Ontario, at various stages of exploration, at which time the company changed its name to Orofino Resources

4.1 PREVIOUS WORK

Limited to more accurately reflect its broader scope. Prior to the initiation of the 1983 Field exploration program, Orofino Resources completed an underwriting, to finance these projects, on the Vancouver Stock Exchange of 1.3 million units at $1.50 per unit to gross $1,950,000.

4.2 EXPLORATION PROGRAM FOR 1983

An independent review of the geology and mineralization at the Orofino Mine property was completed by the consulting firm of Derry, Michener, Booth and Wahl in January 1983. It was recommended that an exploration program in 1983 be directed towards a) testing the area of gold intersections 1,100 to 1,400 ft. south and southwest of the shaft, b) delineating the extent of the deep 'replacement' zone to the north, c) exploring the vein zone to the east, d) probing the supposed Hardiman Bay Fault location and testing several anomalies on the outlying areas of the property. In order to investigate these areas, a 10,000 ft. surface drilling program was recommended.

Northgate Exploration's staff, to whom Orofino Resources contracted the exploration work, proposed that confirmation of the 1940's underground results by resampling and mapping of the old Orofino underground workings was important in order to better define and calculate the geologic reserves in conjunction with the recent drill hole knowledge.

The 1983 exploration season began in early April and continued well into the fall, past September 30th (the end of Orofino Resources financial year). During the period up to September 30, 1983 the main activities at the property included both mine site geology and exploration drilling at several outlying targets. Table IV summarizes the 1983 diamond drilling.

TABLE IV

OROFINO MINE

DIAMOND DRILLING PROGRESS - 1983

										SURVEY DATA				
HOLE	LAT (Approx.)	DEP (Approx.)	ANGLE	AZI.	DEPTH AQ	DEPTH NQ	CUM FOOTAGE	DATE START	DATE FINISH	ELEV.	N.	E.	AZI	DIP
83-1	12436 N	9350 E	-60	180	347'		347'	April 18	April 20	1261.00	12436.93	9339.64	183°23'	59°13'
83-2	12368 N	9350 E	-45	180	400'		747'	April 21	April 22	1265.01	12365.63	9340.10	179°40'	44°50'
83-3	12100 N	9350 E	-90	-		200'	947'	April 22	April 23	1259.6	12104.30	9337.68	-	-
83-4	12100 N	9350 E	-60	180		253'	1200'	April 24	April 26	1259.6	12102.21	9337.72	183°00'	59°24'
83-5	12450 N	9400 E	-60	180	377'		1577'	April 27	April 28	1266.3	12456.00	9390.44	178°11'	60°30'
83-6	12433 N	9300 E	-60	180	357'		1934'	April 29	April 30	1259.6	12427.89	9295.12	178°30'	60°41'
83-7	12504 N	9350 E	-60	180	400'		2334'	May 1	May 2	1262.9	12497.85	9352.23	184°38'	57°16'
83-8	12691 N	9260 E	-90	-	400'		2734'	May 3	May 4	1257.4	12693.68	9252.01	-	-
83-9	12691 N	9260 E	-60	180	402'		3136'	May 4	May 6	1257.4	12690.30	9252.07	179°51'	61°52'
83-10	14278 N	9546 E	-45	180		101'	3237'	May 6	May 7	1236.33	14272.99	9547.51	184°07'	44°51'
83-11	14278 N	9546 E	-90	-		101'	3338'	May 7	May 8	1236.33	14278.56	9547.90	-	-
83-12	14243 N	9596 E	-60	180		91'	3429'	May 8	May 9	1237.52	14234.38	9596.04	183°12'	59°52'
83-13	14243 N	9596 E	-90	-		102'	3531'	May 9	May 9	1237.52	14236.92	9596.19	-	-
83-14	14193 N	9546 E	-60	180		101'	3632'	May 10	May 10	1246.10	14183.65	9541.45	186°34'	61°14'
83-15	14193 N	9546 E	-90	-		101'	3733'	May 10	May 10	1246.10	14186.82	9541.68	-	-
83-16	14187 N	9465 E	-70	180		162'	3895'	May 11	May 11	1241.84	14191.68	9461.97	179°17'	70°30'
83-17	14187 N	9465 E	-45	180		102'	3997'	May 11	May 11	1241.84	14187.76	9461.75	183°45'	44°44'
83-18	15654 N	9636 E	-45	180	366'		4363'	May 12	May 14					
83-19E	14070 N	9314 E	-90	-	1051'		5414'	May 16	May 19	1247.20	14072.11	9314.22	-	-
83-20E	14356 N	9267 E	-90	-	401'		5815'	May 19	May 20	1230.40	14359.39	9267.83	-	-
83-21D	14349 N	9225 E	-90	-	1132'		6947'	May 21	May 24	1226.22	14347.08	9215.42	-	-
83-22E	13612 N	9380 E	-90	-	800'		7747'	May 24	May 24	1267.13	13622.33	9377.63	-	-
83-23F	13820 N	9406 E	-90	-	853'		8600'	May 29	June 2	1266.49	13817.35	9406.46	-	-
83-24F	14018 N	9372 E	-90	-	877'		9477'	June 2	June 6					
83-25	Anomaly H	Claim P571512	-60°	180°	503'		9.980'	June 6	June 8					
83-26	Stangiff L Gb	Claim P529342	-45°	180°	101'		10,081'	June 9	June 9					
83-27	" L "	Claim P529342	-90°		502'		10,583'	June 9	June 11					
83-28	Gossan/Sed.	Claim P520308			501'		11,084	July 7	July 11					
83-29 H	14034 N	9473 E	-90°		902'		11,986'	July 11	July 14	1253.2	14028.88	9473.08		
83-30 I	13895 N	9547 E	-90°		1,001'		12,987'	July 15	July 18	1268.8	13896.75	9540.83		
83-31 H	13886 N	9497 E	-90°		702'		13,689	July 18	July 20	1268.0	13883.33	9494.85		
83-32 G	13978 N	9430 E	-90°		931'		14,620'	July 21	July 24	1252.9	13980.51	9430.26		
83-33 G	13637 N	9479 E	-90°		452'		15,072'	July 24	July 26	1268.9	13639.90	9477.43		
83-34 L	13852 N	9708 E	-90°		307'		15,379'	July 26	July 27	1248.0	13847.10	9707.74		
83-35 K	13913 N	9644 E	-90°		354'		15,733'	July 27	July 28	1245.5	13908.61	9649.96		
83-36 K	13675 N	9683 E	-90°		437'		16,170'	July 28	July 29	1258.5	13690.63	9678.80		
83-37 I	13675 N	9589 E	-90°			255'	16,425'	July 30	July 30	1269.4	13628.67	9581.50		
83-38 F	14583 N	9283 E	-90°		1,876'		18,301'	July 31	Aug. 15	1218.5	14602.01	9299.69		
*	Additional Footage caused by wedge				90'		18,391'							
83-39 B	200' Mag. W of 83-38		-90°		1,587'		19,978'	Sept.10	Sept. 18	1220.6	14582.61	9091.68		
83-40	200' Mag. N. of 83-38		-90°		1,838'		21,816'	Sept.20	Sept. 27	1223.5	14795.16	9275.50		
83-41	100' W. of 83-9		-90°		457'		22,273'	Sept.29	Oct. 1	1246.2	12705.60	9148.24		
83-42	50' E of 83-9		-90°		327'		22,600'	Oct. 2	Oct. 4	1256.0	12700.67	9302.18		
83-43		Claim P520300	-45°	360°	350'		22,950'	Oct. 5	Oct. 7					
83-44		Claim P520300	-45°	360°	101'		23,051'	Oct. 8	Oct. 9					
83-45		Claim P520300	-45°	360°	101'		23,152'	Oct. 10	Oct. 10					
83-46		Claim P520300	-90°		353'		23,505'	Oct. 11	Oct. 12	1239.9	11065.33	7641.26		

4.2.1 MINE SITE

21,300 feet of diamond drilling in 36 holes were required to test the south zone, the eastern extensions of the vein zones, the northern extension of the deeper zones, and for fill-in drilling of the mine area.

The mine workings were rehabilitated and dewatered. This required considerable excavation about the old collar with subsequent buildup of timber sets to the desired level of the collar. Approximately 1.6 million gallons were pumped out of the opening. The shaft timbers, rails, pipe, etc. were found to be in good condition.

Geologic mapping of the Orofino mine shaft, levels and raises was completed on a scale of 20 ft. to the inch in conjunction with channel sampling of the underground workings. Mapping of the hydraulically stripped area to the south of the shaft area was also completed.

Channel sampling of the shaft, 150 foot and 275 foot levels and raises amounted to approximately 1700 samples of which 25% were from areas that had not previously been sampled. The remaining 75% followed the sampling completed in 1949 - 1951 with coverage of no less than 50% of the density of the earlier work. The results of this work are incorporated in a complete reassessment of the reserves (Section 8) to provide a basis for pre-feasibility analysis of the economics of exploitation. The feasibility analysis will be undertaken immediately after completion of this report.

Prior to the commencement of the underground program an initial environmental study was completed under the guidance of the Ministry of the Environment. The optimum site for the discharge of the mine water was located after determining that these waters would not require treatment prior to their discharge. Monitoring continued throughout the course of the underground program.

4.2.1 MINE SITE

Locations of the drill collars were surveyed by T. E. Rody Ltd., O.L.S. Levi Laine and Orazio Antonacci of Pamour Mines Ltd. of Timmins surveyed the extension of surface points to the underground workings.

4.2.2 OUTLYING CLAIMS

Prior to drilling, follow-up geological mapping was performed in areas of geochemically and geophysically anomalous targets.

1,973 ft. (5 holes) of diamond drilling was completed in order to test a) the possible location of the Hardiman Bay Fault (drill hole 83-18, 366 ft.). b) geophysical anomaly 'H' near Horwood Lake (claim P571512, drill hole 83-25, 503 ft.) c) the Stangiff Lake Gabbro (claim P529342, drill holes 83-26 and 83-27, 101 ft. and 502 ft. respectively), and d) a gossan to the west of the mine site (claim P520308, drill hole 83-28, 501 ft.).

Road work and bridge maintenance continued in an effort to keep the access route passable despite the increased public traffic. Major reconstruction was delayed as an alternate mine access route has been proposed thereby reducing the distance from Foleyet by at least 6 kilometers. Extensive camp maintenance was performed in order to repair damage as a result of vandalism. An additional large core storage rack was constructed.

4.3 EXPLORATION PROGRAM: OCTOBER 1983 - JUNE 1984

The exploration program, initiated early in April 1983 continued past the Orofino September 30th financial year end and into 1984. Activities in this latter period include:

(a) Continued diamond drilling to the south of the mine shaft (drill hole 83-42, 327 feet).

4.3 EXPLORATION PROGRAM: OCTOBER 1983 - JUNE 1984

(b) Additional drilling on outlying claim P520300 to the southwest to test, on the basis of topographic relief and geophysical response, a possible fault system (drill holes 83-43 to 350 feet, 83-44 to 101 feet, 83-45 to 101 feet and 83-46 to 353 feet). The last hole intersected a section of "hybrid diorite". This additional activity brought the 1983 diamond drilling total to 23,505 feet in 46 holes.

(c) Completion of all the remaining underground mapping and sampling in the Orofino Mine by early October 1983.

(d) Enlarging the property area by optioning the adjoining Tionaga gold property in early October 1983. The Tionaga, a 2,299 oz gold and 404 oz silver producer in the mid to late 1930's is surrounded by the pre-existing Orofino claims under and immediately east of Horwood Lake in south-central Horwood Township.

(e) Drilling began on the Tionaga claims from the Horwood Lake ice in early February 1984 subject to an agreement to spend $100,000 on exploration in 1984. Ten vertical diamond drill holes were completed for a total of 3,642.5 feet to probe for vein and value continuity up and down dip of the old mine workings and in parallel structures. Of these ten holes, hole 84-1 (530 feet) and 84-2 (567 feet), drilled from the lake ice northwest of the old shaft, tested for vein and value continuity down dip from the old stopes west of the shaft. Holes 84-3 (499.5 feet) and 84-4 (460 feet), drilled east of the lake shore north of the shaft, tested for the down dip extension of known ore shoots inferred from stopes on the lowest level east of the shaft. Hole 84-5 (301 feet), drilled 100 feet south of 84-4, was targeted at the same up dip shoot as 84-4 while hole 84-6 (300 feet), drilled 100 feet west of 84-5, sought the upper extension of the shoot intersected by 84-3. Holes 84-7 (250 feet), 84-8 (350 feet), 84-9 (35 feet) and 84-10 (250 feet) were drilled from the lake ice to

4.3 EXPLORATION PROGRAM: OCTOBER 1983 - JUNE 1984

(e) test the same zone as holes 84-1 and 84-2, but up dip of the old stopes on the west drifts.

(f) An exploration access road, to facilitate overburden trenching on claim P520317 was constructed with a D7 bulldozer by D. Belkosky of Foleyet, Ontario. This 1.5 kilometer road follows a route around swamps and large outcrops through claims S40728, S40732, S40731 and into claim P520317.

Work began on the calculation of geologic reserves for the Orofino Mine in early January 1984. The results of this work embody a Section 8.0 in this report. The mineral inventory study was completed in late May 1984.

5.0 REGIONAL GEOLOGIC SETTING

The orofino Deposit lies within an Archean Age 'greenstone' belt known as the Swayze-Deloro belt. The Swayze-Deloro belt is a metavolcanic-metasedimentary western extension of the Abitibi Subprovince of the Superior Province of the Canadian Shield. For a compilation of the Geology of the Swayze Belt see Thurston et al (1977).

The central part of the Swayze-Deloro belt (Halcrow, Denyes, Swayze, Dore, Heenan and Marion Townships) is typified by prominent felsic metavolcanic units with associated metasedimentary rocks. These are overlain and change facies eastward into a 10,000 foot thick sequence of felsic to intermediate rocks in Marion and Heenan Townships. This mixed-intermediate sequence is succeeded by mafic to intermediate metavolcanics to the north in Coppell, Newton and Dale Townships.

The metasedimentary rocks of the Swayze Belt comprise about 10% of the bedrock. These include, in decreasing abundance, graywacke, arkose, conglomerate, quartzite, and argillite.

Siliceous matrix and felsic clast conglomerates tend to be rare and are associated with interbeds of felsic metavolcanics in Denyes and Greenlaw Townships. Basic conglomerate with a graywacke matrix is the predominant type of conglomerate in the Swayze-Deloro belt. Conglomerates were at one time assumed to be indicative of proximal distance to shore. Modern oceanographic studies have proven this assumption to be false. Provenance studies have not been performed but in spite of that it is clear that the conglomerates and associated graywackes are marine sediments that have been derived in large part from distant subaerial environments.

Quartzite and arkose are not common but are present in scattered lenses proximal to felsic metavolcanic centres.

5.0 REGIONAL GEOLOGIC SETTING

Oxide iron formation facies tend to be associated with felsic volcanic centres in the central part of the belt. The majority of sulphide facies iron formation occurs in the southeastern part of the belt and is interpreted to indicate sediment starvation in a fairly large relatively uniform deep basin far from shore (Thurston, et al 1977); the metasediments largely represent high energy rapid deposition by turbidites on an open abyssal plan and above mentioned sulphide iron-formation indicates lengthy quiessence between episodes of sedimentation. Thurston et al. (1977) estimate that less than 10% of the Swayze-Deloro Belt is underlain by sedimentary rocks which indicates a sediment starved deep basin setting for the majority of the volcanics.

The present day margins of the belt are scalloped by younger granite domes. Relatively few granitic plutons occur in the belt proper.

The metamorphic grade is greenschist facies; a rather low grade of metamorphism that is consistent with low rate of sedimentation, slow subsidence and only moderate of burial metamorphism.

The best model is probably one that allows for submarine lava plains that evolve with isolated volcanic centres and basins (Dimroth et al, 1982, 1983a, 1983b). The Wilson cycle was probably operating during the Archean with spreading and subduction both active. However, the belt has subsequently been somewhat deformed and had its defined basin margins largely destroyed by Superior Province Plutons. The belt preserves the most distal environments to land, principally the marine volcanics, remnant volcanic islands, and associated structural features such as through going transform-like faults and local fault-bounded sedimentary basins.

6.0 REGIONAL MINERAL POTENTIAL

The Swayze Greenstone Belt appears to be geologically and mineralogically favourable for the occurrence of both gold and base-metal deposits. Numerous and widespread gold occurrence are known; lead and zinc deposits are present in Keewatin iron formations, particularly in Cunningham Township, two townships southwest of the Orofino Mine site.

In addition to the Orofino property, shafts have been sunk in Cunningham, Halcrow, Horwood, Keith, Newton, Osway and Swayze Townships (Table V). Gold showings in the belt are numerous; for background the reader can refer to Gordon *et al* (1979).

Map coverage at 1 to 20,000 scale is complete, but much of the mapping is obsolete in light of scientific advances. The mapping is largely descriptive and suffers from a piece-meal approach. Exploration has clearly been hindered throughout the belt by an insufficient highway network. Also, though the two major railways are close at hand only the C.N.R. has traversed a significant portion of the belt. Therefore the absence of railroad cut exposures has probably also played a role in slowing the exploitation of the region.

Couple these with heavy forest cover, locally thick blankets of sand plains and eskers and one readily becomes aware that the showings and deposits outlined so far are only poorly indicative of the great mineral wealth waiting for the patient explorer.

TABLE V

PREVIOUS UNDERGROUND DEVELOPMENT IN THE SWAYZE GREENSTONE BELT - GOLD

Township	Name	Published * Estimated Reserves Tons	Grade	Comment
Cunningham	Swayze-Huycke	None		Faulted out
Greenlaw	Lee Mines	Not available		Faulted out below 250' Level
Halcrow	Halcrow-Swayze	127,500T	0.11	Includes 35,000T @ 0.17 opt
Horwood	Tionaga	This Report		6,653T @ 0.35 Mined
Horwood	Orofino	This Report		No past production
Keith	Joburke	Mined out		182,000T Produced @ 0.09
Newton	Rundle No. 1	100,000T	0.29	Has potential for moderately larger tonnage at lower grade.
Osway	Jerome Mine	344,000T	0.19	335,060T @ 0.17 Mined
Swayze	Kenty Mine	359,000T	Not Reported	1947 - 500T Tested 0.82 oz/T

* Gorden _et_ _al_, 1979

7.0 MINE AREA GEOLOGY

7.1 INTRODUCTION

The Orofino Gold deposit occurs within a lens or fold of diorite enclosed by marine volcanic and sedimentary rocks (Figures 2 and 3). The host-diorite, as would be expected, has been interpreted as an intrusive body (Breaks, 1978; Dadson, 1980; Dadson and Weber, 1981), younger than the surrounding country rocks. However, a body of evidence has been accumulated during recent exploration that contradicts this opinion and supports another origin of the diorite.

7.2 ROCK DESCRIPTIONS - OROFINO MINE AREA BY W. GILMAN

The following rock descriptions are arranged in decreasing geological age. The relative ages of the host-rocks have been determined from field relations and the petrogenetic interpretation is based on alteration paragenesis. The table of rock types, Table VI, is arranged in order of youngest to oldest and demonstrates the consanguinous nature of the alteration, migmatization, and veining episode.

7.2.1. ANDESITE

The andesite is a fine grained or medium grained, dark green basic rock with holocrystalline to variably foliated fabric (depending on degree of mechanical deformation) approaching schist. The main constituent is usually chlorite with lesser carbonate and epidote. In the massive phase, representing the central portion of a flow, chloritic amphibole and feldspar may be in equal quantities; in the foliated phase, representing the margins of a flow, only chlorite and minor carbonate may be evident. Volcanic textures are rarely evident but are sometimes observed in a deformed and altered state.

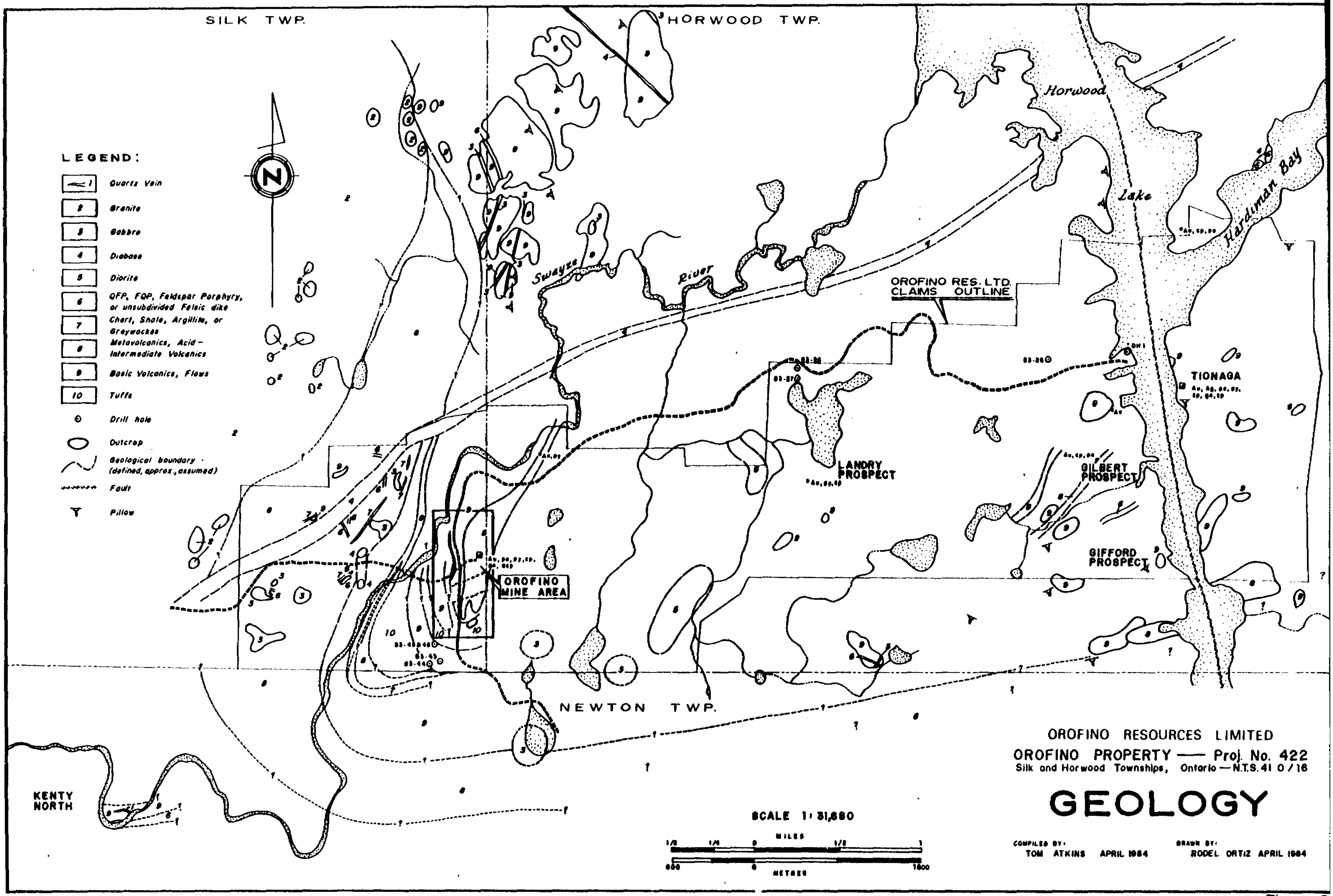

SILK TWP.
HORWOOD TWP.
NEWTON TWP.
KENTY NORTH
LEGEND:
1 Quartz Vein
2 Granite
3 Gabbro
4 Diabase
5 Diorite
6 QFP, FQP, Feldspar Porphyry, or unsubdivided Felsic dike
7 Chert, Shale, Argillite, or Greywackes
8 Metavolcanics, Acid - Intermediate Volcanics
9 Basic Volcanics, Flows
10 Tuffs
Drill hole
Outcrop
Geological boundary (defined, approx., assumed)
Fault
Pillow
N
Swayze River
Horwood Lake
Hardiman Bay
OROFINO RES. LTD. CLAIMS OUTLINE
TIONAGA
LANDRY PROSPECT
GILBERT PROSPECT
GIFFORD PROSPECT
OROFINO MINE AREA
SCALE 1: 31,680
MILES
METRES
OROFINO RESOURCES LIMITED
OROFINO PROPERTY — Proj. No. 422
Silk and Horwood Townships, Ontario — N.T.S. 41 O / 16
GEOLOGY
COMPILED BY: TOM ATKINS APRIL 1984
DRAWN BY: RODEL ORTIZ APRIL 1984

Figure 2

TABLE VI

MINE AREA ROCK TYPES IN ORDER OF YOUNGEST TO OLDEST

- Brown Dyke Intrusive
- Fine Crystalline Lamprophyres
- Coarse crystalline multiple Lamprophyres
- Feldspar Porphyries
- Quartz Veins - Silicic Replacement Zones
- Retrograde Diorite
- Diorite (Migmatite)
- Diorite
- Hybrid Diorite
- Graywacke - Tuff - Agglomerate
- Rhyolite
- Andesite - Volcanic Breccia

7.2.1. ANDESITE

Under magnification, the rock fabric often consists of mats of chlorite with intersertal carbonate, epidote, zoisite, magnetite and leucoxene. In the massive variety, carbonate rimmed plagioclase and epidote transitional to plagioclase are in interlocking array with chlorite-pocked amphibole.

7.2.2. VOLCANIC BRECCIA

A rare occurrence of breccia originating either from resurgent flowage within a previously crusted flow or from angular rock fragments ejected from an effusive source is found in the southeast margins of the shaft area. The matrix of the rock is dark green with predominantly linear mats of chlorite and minor carbonate; the clasts are usually felsic unsorted angular fragments of fine grained epidotic rock with vague relict amygdule-filled vari-coloured alteration products. Segments of volcanic breccia are usually narrow and are not correlatable.

7.2.3. RHYOLITE

The rhyolite is a white, yellow, to very pale green, very fine grained rock often of nearly amorphous appearance. It commonly occurs as dykes or segments of limited width. It consists of fine anhedral feldspar with varying quantities of free silica and minor smears and permeations of feldspar by pale epidote.

7.2.4. TUFF - AGGLOMERATE

The tuff is a finely banded fine grained rock ranging from pale green through black, usually with mats of fine chlorite arranged in parallel laminae with variable widths of carbonate and carbonate and quartz interlayered and parallel to chlorite. Fine shards of amorphous silica are sometimes present and are concentrated within carbonate laminae.

7.2.4. <u>TUFF - AGGLOMERATE</u>

Fine angular or rounded relict fragments are at times sparingly present over short widths.

In the agglomerate, clusters and segregations of rounded or stretched varisized felsic segregations occur in a matrix of more basic composition of laminated tuff or fine amorphous textured rock. Fragments usually consist of feldspar, quartz and epidote.

7.2.5 <u>GRAPHITE SCHIST</u>

The schist is dark blue black with mats of graphite in sheets and lenses of varying purity which contain dispersed lenses and boudins of carbonate. Coarse subhedral pyrite of <u>in situ</u> origin is often disseminated through a contorted matrix. Synonymous with graphitic tuff.

7.2.6 <u>GRAYWACKE</u>

The graywacke is a very dark gray to black, fine to medium grain homogeneous clastic sedimentary rock. The graywacke is composed of an angular assemblage of varied fragments: largely amphibole, basic feldspar and basic rock fragments. There is a vague bedded appearance to the rock often overshadowed by strong foliation which may be parallel or at an acute angle to relict bedding. Short intersections are present in the drill core and minor amounts occur in mine workings. Graywacke is often associated with graphitic tuff.

7.2.7 <u>HYBRID DIORITE</u>

Hybrid diorite is the same megascopically as diorite but with a slightly greater ratio of white constituents; under magnification, the ratio of feldspar laths to mafics can be high and unsorted subhedral feldspar are often associated with amphibole. Quartz augen with enclosed subhedral feldspar are dispersed through the matrix; these are plainly visible with a hand lens.

7.2.8 DIORITE

The diorite is a medium to dark green holocrystalline rock of coarse crystalline, basic appearance. White feldspar is evident in a chloritic amphibole matric where mafic minerals predominate over felsic constituents. The chloritic matrix contains subhedral feldspar laths with variable accessory epidote, carbonate, zoisite, magnetite and very little feldspar other than feldspar enclosed in quartz augens. A fairly constant content of 2% pyrite is disseminated through the matrix.
N.B. Categorization of varieties is based upon subtle differences visible only with hand lens. (e.g. diorite - hybrid - migmatized andesite).
With true diorite, matrix plagioclase has regressed tó carbonate-zoisite-feldspar relicts (in the fresh) and new coarse subhedral feldspar has recrystallized within quartz augen.

7.2.9 DIORITE (MIGMATITE)

The rock is essentially the same as the above described hybrid diorite with variable zones and lenses of finer grained basic rock that have been invaded by quantities of allogenic, usually less basic, constituents. The quantity of feldspar matrix varies with the degree of migmatization and recrystallization. Ideally, the unsorted feldspar laths are fresh and subhedral. A few quartz augen with internal feldspar laths may occur.

7.2.10 RETROGRADE DIORITE

The classic retrograde diorite texture is typified by stretched and shattered quartz augens with wisps of carbonate along the fractures. These are the last remnants of feldspar disintegration.
Hybrid diorite metamorphosed to retrograde hybrid diorite is transitional as widespread feldspar laths present in the primary fabric may be only partly converted to carbonate or, alternatively, short segments of fresh feldspar bearing rock may be present in a fabric with almost total feldspar conversion to carbonate wisps and metacrysts. The distinction between diorite and its altered equivalent is determined by the disintegration of feldspar enclosed in quartz augen.

7.2.11 QUARTZ VEINS - SILICIC REPLACEMENT ZONES

The quartz veins which are older than the lamprophyre and feldspar porphyry dykes have varying sulphide content, usually pyrite, with minor pyrrhotite and trace sphalerite or chalcopyrite. Variable gold content is usually proportional to sulphide quantity and variety. The quartz is white and frosted with the luster proportional to fracture density; intense fracturing creates the frosted appearance. Carbonate content is erratic and may occur in any quantity, up to portions of a vein being entirely carbonate.

The replacement zone is a shallow dipping siliceous body of white quartz of variable purity which displays a relict diorite fabric partially digested by quartz permeation. Schlieren of chlorite and carbonate are characteristic. Pyrite is vari-sized and content is erratic up to 20% of the replacement zone volume. Pyrite occurs up to 1 to 2 cm. in subhedral crystals and gold content is probably proportional to size and quantity of pyrite.

7.2.12 FELDSPAR PORPHYRY

The feldspar prophyry is a light gray to red brown siliceous rock with phenocrysts of subhedral feldspar laths commonly ranging up to 40% of total fabric. The laths are gray-white usually but are buff to pink in the red-brown variety. Colour is more intense toward the contacts. Feldspar laths range up to 1 cm. Single books of black biotite to 5 mm. are randomly distributed and make up 5% of total fabric. The matrix between phenocrysts is a fine grained silica-rich gray to red-brown mix of indistinguishable crystals. Although highly siliceous, these dyke-like intrusions rarely display free quartz. Pyrite is constantly present in the amount of 2%.

In the larger dykes, away from contacts, silicification often becomes intense tending to obliterate and frost the rock fabric. Rims of

7.2.12 FELDSPAR PORPHYRY

phenocrysts are partly resorbed by later silica. Feldspar phenocrysts are spectacularly zoned and are coarse and abundant adjacent to the contacts.

The rock was injected as a crystal mush with _in situ_ crystallization confined to the mesostasis. The zoning in plagioclase suggests a complicated history of migration and origins.

7.2.13 LAMPROPHYRE

The rock always occurs in dyke-like forms. The dykes are of two main types of vastly different appearance. Most common is a fine grained, light to medium gray rock with the matrix of individual feldspar and carbonate. The matrix is liberally sprinkled with 5 mm. anhedral phenocrysts of black biotite or amphibole. The amphibole varies in colour from black to pale green depending on the extent of chloritization. Margins of individual crystals are embayed and the interiors of phenocrysts are commonly pocked. The coarse disseminated mafic constituents make up 15 to 20% of the total rock fabric. Hardness is variable and dependent on the intensity of secondary silicification. When devoid of silicic injection, the carbonated matrix is similar in hardness to an average 'greenstone'.

The second (and probably older) common lamprophyre is a biotite-rich variety in which a coarse fabric of light to medium gray carbonate-feldspar equigranular matrix hosts a profusion of slightly larger grains of black biotite. This style of dyke was emplaced by a pulsating series of injections and is often multiple with one or more additional injections within a dyke of identical composition. This variety is seldom silicified and is of medium hardness.

Both of these, very common, nearly vertical dykes, postdate the feldspar porphyry dykes.

7.2.14 BROWN DYKE INTRUSIVE

The youngest intrusive is a sheet like injection of shallow dip with constant width. It is a brittle fine grained brown intrusive with a large disseminated array of black and green anhedral crystals with rounded phenocrysts of 'amygdules' of white, pink and green colour which resemble zeolites. Sharp intrusive contacts are characteristic and although altered, are unmetamorphosed. It transects all formations at a high angle. Minor pyrite is present. The Brown Dyke is soft and disintegrates readily along abundant fractures. There is no foliation and a directional quantity to the phenocrysts is due to *in situ* crystallization.

7.3 FIELD RELATIONSHIPS

The 'metamorphic' origin of diorite in the Swayze region was appreciated by two of the early investigators of the Swayze Belt. Furse (1932) noted that "In Coppell Township an outcrop [of lower volcanics] ..... shows a coarse dioritic texture, but this is believed to be due to recrystallization caused by the body of granite that underlies Whigham Township to the north". Furse (1932) noted a similar circumstance for the younger volcanics that he referred to as 'Haileyburian'; "In a few small areas a slightly altered diorite appears to grade into a fairly fresh andesite". Incidently, Furse (1932) was unsure of the age assignment of the Haileyburian volcanics and admitted that they could turn out to be Lower volcanics of the Keewatin Division. Thus the diorites could be similar to his Coppell Township outcrop.

Rickaby (1934) in describing Keewatin volcanics of the same region examined by Furse (1932) stated that "Where the flows are comparatively thick, the centres consist of diabase gabbro and diorite in which cases it is difficult to distinguish them from later intrusive rocks. This condition is especially true in the Dore Township section of the map area, south of Crossley Lake".

7.3 FIELD RELATIONSHIPS

However, Liard (1935) and Harding (1937) both refer to the Orofino Diorite as intrusive.

Significant new evidence emerged from the mine after dewatering where the exposure of a contact of the diorite with andesite and associated sediments occur in a 150 level drift. In the north branch of the 13401 W. Drift, the host diorite is overlain by a thin (1.5 - 4.0 ft.) andesite that is in turn overlain by argillite and fine sand graywacke. Portions of the argillite are thinly layered with light and dark gray bands on a mm to cm scale.

The contact shows neither skarn development nor faulting. Even if the thin andesite is interpreted as a chilled margin of the diorite intrusive, skarn and physical disruption of unconsolidated sediments or sedimentary rocks would have been inevitable. Relative absence of shouldering effects in the argillite implies that the sediments were deposited on top of the volcanic/diorite surface and that the way up is to the west. The underground exposure clearly indicates that the diorite upper contact is a nonconformity rather than an intrusive contact. In the stripped area west of the shaft, the contact is obscured by soil and the first rocks above the diorite are massive, locally pillowed amnygdaloidal flows indicative of marine but not necessarily deep water eruption. Sedimentary rocks were not seen.

Further compelling evidence for *in situ* origin of the diorite comes from observations made on drill core. The drill logs for the southern region (penetrated by drill holes CF81-19 and 83-1 through 83-7) contain numerous references to extrusive volcanic textures that are mutually exclusive with a truly intrusive diorite body. In the mine area, these log entries include andesite (83-25, 815'), hybrid diorite (83-20, 852') tuff agglomerate (83-10, 22'), lapilli tuff (83-8, 344') and volcanic breccia (83-8, 335').

7.4 STRUCTURE

7.4.1 QUARTZ VEIN ZONES

We have inferred from the geometry of the mineralized zones that they constitute a vein system; a system wherein all the zones formed at the same time but were aligned in differing directions. This implies that they probably originated as a conjugate joint system. Joints tend to develop preferentially in competent members of a rock series rather than weak members. This could explain why the vein zones are largely restricted to a single unit, the Orofino Diorite. Though a few prominent quartz veins are present in the hanging-wall volcanics, so far they have proved to be barren.

The veins were probably initiated during the 'dioritization' event following a template of pre-existing conjugate joints. The thinner quartz veins in outcrops are invariably displaced at the cm scale usually in a disorganized fashion but occasionally in *en echelon* parallel segments with horses of sulphide-bearing Orofino Diorite between. Numerous examples of flowage or creep occur.

The larger vein zones that occur in the mine area show no evidence of major flow folding. The zones may be plotted on longitudinal sections rather easily and are essentially planar at a scale of 50 feet to the inch.

7.4.2 FAULTING

Two types of faulting have been recognized. The first is the prominent NNE trending fault that affects the mine area. The main north crosscut of the 275 level exposes the trace of the fault in much of the length of the crosscut. The fault dips steeply west. In the vicinity of the mineralized zones the fault zone is also mineralized sufficiently to warrant its evaluation as a gold zone in its own right.

7.4.2 FAULTING

The age of the fault is poorly known. Obviously the fault zone was present before or during the mineralizing event. Judging from the offsets of the No. 5 Vein Zone across the fault, it is clear that the fault has been active subsequent to the vein development. This most recent motion across the fault has been minor and may predate the final gold mineralizing/remobilizing event.

Numerous small fault zones were encountered during core-logging. These are discontinuous and minor. Their origin is probably due to volume problems created during the injection of the dykes.

The major regional break, the Hardiman Bay Fault, has not been encountered in drilling and therefore is not present at the location shown on Breaks Horwood Lake Map. It may be located further north along the Olivine diabase dyke trace.

7.5 ALTERATION

Physical alteration of wall rock adjacent to the veins is due to crushing of the rock, as is indicated by crushed quartz augens in the retrograde diorite. The chemical alteration is chiefly due to carbonate replacement of feldspar and the introduction of pyrite and other sulphides: minor galena, sphalerite and chalcopyrite. This type of alteration has been explained by Studemeister (1983) in terms of hydrothermal convection system. In the Studemeister model, cool seawater infiltrates oceanic basalts and becomes progressively heated and concentrated as it descends. Upon reaching the input region of a local 'heat engine' (intrusive), flow is redirected into any and all associated major joints and cracks. With additional heating and concentration the evolved waters rise along fractures to the sea floor. At some point, cooling ensues which induces precipitation of sulphides, quartz and carbonatization of wall rock adjacent to the plumbing system. Perhaps the tensional regime of the developing vein system enhances the precipitation reactions.

7.5 ALTERATION

Penultimate origin of the gold is speculative. Gold could be derived from magmatic fluid addition to the sea-water hydrothermal system but just as well might be derived from concentration of seawater during the hydrothermal cycle.

The gold apparently came out of solution during the alteration event. Therefore sulphides and alteration are good guides to gold mineralization. Well developed quartz veins are not always present but are sufficiently common to be the best guides to ore.

7.6 DISCUSSION

Andesite migmatite is the first step in the production of Orofino Diorite from an original andesite. Where fresh feldspar appears, particularly at an angle to the general foliation, then the fabric is no longer typical 'greenstone' and is recognized as a migmatite.

Hybrid Orofino Diorite is more strongly altered andesite migmatite transitional to Orofino Diorite.

True Orofino Diorite is characterized by white polycrystalline clusters of carbonate and relict feldspar occurring in a chlorite-amphibole matrix accompanied by clear coarse subhedral feldspar enclosed in quartz augen and clear coarse feldspar laths occur in the chlorite-amphibole matrix.

The diagnostic feature of Retrograde Oroino Diorite is that the quartz augen have been crushed which has allowed the feldspar laths to be altered to carbonate.

7.6 DISCUSSION

The picture that emerges is that an original volcanic pile composed of basic and intermediate rocks 'basalts and andesites' and interflow puddles of sediments has been altered to coarse-crystalline diorite. Remnants of each of the intercalated sediments and interbedded volcanics are diagnostic for the origin of the succession.

At some point during neomorphism, the isochemical transition from volcanic to intrusive texture (Folk, 1965; Bathurst, 1971), the developing 'diorite' was faulted and fractured. The fractures enlarged and evolved into quartz-vein systems mineralized with sulphides. The wall rocks of the vein system were altered to retrograde diorite as the quartz augen were crushed and the feldspar was altered to carbonate.

The heat engine required for these events may have been the granite intrusive encountered in DDH CF81-19, 83-2, 83-3 and 83-4 to the south of the mine area.

8.0 ORE RESERVE CALCULATIONS

8.1 INTRODUCTION

The principals for defining the reserves conform to the regulations and recommendations of the Canadian Securities Administrators (National Policy 2A). The methods and guidelines were designed specifically to suit the Orofino deposit geology. The guidelines and definitions followed are shown in Table VII. The strength of the estimate lies in the fact that the reserve blocks are relatively small and numerous. For the mine openings the blocks are based on a great number of channel assays and commonly carload muck assays. Therefore, the random errors inherent in the estimate should not alter the ultimate tonnage and grade by a significant amount.

8.2 PRESENTATION OF RESULTS

8.2.1 SUMMARY OF THE GOLD INVENTORY

The total gold inventory contains more than 1.6 million short tons of potential ore at a grade of 0.14 troy ounces of gold per ton. Table VIII displays the distribution of the inventory by Category and Zone. The Ore Reserves total 344,628.2 short tons containing an estimated 70,086.9 ounces for a grade of 0.20 ounces per ton. Ore Reserves are defined as the total of the Proven and Probable Ore estimates as per the 1983 amendment of National Policy 2A.

These Ore Reserves constitute geological reserves. The estimates have been approached from a conservative viewpoint and probably will require further modification in order to arrive at a pre-production target of tons and grade for mining reserves.

The estimates have been reduced 1) by cutting anomalous assays (Section 8.4.5), 2) to account for the volume of unavoidable major dykes included in the Reserve Blocks, 3) to account for overbreak of avoidable major

TABLE VII

GUIDELINES FOR MINERAL INVENTORY AND ORE RESERVE CALCULATIONS

	PROVEN ORE	PROBABLE ORE	POSSIBLE MINERALIZATION
Source	Mine Openings	Mine Openings and Diamond Drilling	Mine Openings, Diamond Drilling and Geological Inference
Cut-off Grade	0.10 oz Au/Ton	0.10 oz Au/Ton	0.05 oz Au/Ton
Minimum True Width	7.0'	7.0'	7.0'
Maximum Extrapolation Distance along Strike from Data Point	20'	25'	Geological Continuity
Maximum Extrapolation Distance along Dip from Data Point	20'	25'	Geological Continuity
Continuity Requirements	Partial intersections not sufficiently reliable	Partial intersections: weighted average with adjacent samples than GT 50'	Geological Inference

Tonnage Factor	11.5 for all dykes, diorite replacement and vein material.
Cutting	Greater than 10 oz Au/Ton goes to 10; GT 5 goes to 5; GT 2 goes to 2; GT 1 goes to 1
Carload Data	Used in arithmetic average with channel samples where available.
Treatment of 'Major' Dykes	Greater than 8' excluded; Less than 8' included.
Treatment of 'Minor' Dykes	8 Percent dilution determined from drill holes in mine area.

TABLE VIII

OROFINO GOLD INVENTORY

TOTALS BY ZONE AND CATEGORY 5/24/84

CATEGORY		PROVEN ORE			PROBABLE ORE			POSSIBLE MINERALIZATION			TOTAL		
ZONE	BLOCKS	TONS	OUNCES	GRADE	TONS	OUNCES	GRADE	TONS	OUNCES	GRADE	TONS	OUNCES	GRADE
No. 1 South	257	29,241.2	7,847.4	0.27	100,949.2	17,993.7	0.18	454,026.6	60,438.9	0.13	584,217.0	86,280.0	0.15
No. 1 North	129	18,885.9	4,760.3	0.25	32,035.8	5,954.1	0.18	106,704.3	14,904.2	0.14	157,626.0	25,618.6	0.16
No. 5 Zone	56	9,840.9	2,715.8	0.28	4,682.5	1,458.9	0.31	27,719.6	6,161.6	0.22	42,243.0	10,336.3	0.24
Fault Zone	43	5,250.9	808.0	0.15	4,022.9	833.4	0.21	12,643.9	2,032.7	0.16	21,917.7	3,674.1	0.17
No. 2 Zone	20	2,822.4	592.8	0.21	2,336.0	341.7	0.15	11,711.3	1,467.4	0.12	16,869.7	2,401.9	0.14
Replacement Zone *	140	-	-	-	125,058.6	25,172.8	0.20	534,548.7	49,218.3	0.09	659,607.3	74,391.1	0.11
No. 3 Zone	11	-	-	-	4,923.5	1,189.1	0.24	5,756.9	809.1	0.14	10,680.4	1,998.2	0.19
No. 4 Zone	3	-	-	-	517.4	246.7	0.48	931.3	149.7	0.16	1,448.7	396.4	0.27
Isolated Blocks *	53	-	-	-	4,061.0	765.0	0.19	153,020.3	18,377.5	0.12	157,081.3	19,142.5	0.12
TOTAL	712	66,041.3	16,131.5	0.24	278,586.9	53,955.4	0.19	1,307,062.9	153,559.4	0.12	1,651,691.1	224,239.1	0.14

* No Minor Dyke Dilution; all other zones - 8% of ounces have been deducted.

Ore Reserves: Total of Proven and Probable Ore 344,628.2 Tons 70,086.9 Ounces 0.20 OPT

8.2.1 SUMMARY OF THE GOLD INVENTORY

dykes, 4) to achieve a minimum seven-foot mining width in sections of zones where mineralization is narrower than seven foot and 5) eight percent to account for minor dyke dilution by dykes that are not correlative from one drill hole to another but might be unavoidable during mining. The eight percent minor dyke dilution was calculated from a survey of all drill holes in the mine area and has been applied to all mine area zones (Appendix 3).

8.2.2 CONCLUSIONS

- More than 200,000 ounces of gold are present in the Orofino deposit exclusive of Isolated blocks of mineralization

- The grade estimates from old and new underground channel sampling and 1948 - 1951 carload sampling are consistently higher than estimates based on AQ and NQ core assays. Therefore the Replacement Zone grades which are based entirely on AQ core assays could be better than estimated.

- Though diamond drilling is of enormous value in determining the areal distribution of mineralization in the Orofino deposit it is less reliable as an indicator of grade.

8.2.3 LONGITUDINAL SECTIONS

Ten Longitudinal sections were required to define the tonnage and grade of the mineral zones in the mine area. The zones dip to the north and intersect one another at various angles to form a complicated array of planes. Therefore reserves could not be depicted by a single standard plan view. Ten longitudinal sections were prepared at a scale of twenty feet to the inch. These were compiled from the fifty scale diamond drill sections, the mine level plans and the surface geologic map.

8.2.3 LONGITUDINAL SECTIONS

Each longitudinal section was plotted in the plane of its vein which is viewed looking south from above (normal to the plane). The fault zone mineralization is laid out on a longitudinal section that dips steeply to the west and hence is viewed looking east.

The Longitudinal sections display drill holes, mine workings, cross-cutting dykes and the ore reserve blocks. The blocks are outlined with solid lines for Proven category reserves, long dashes for the Probable category and with short dashes for the Possible category. The blocks were numbered to correspond with the number of the block calculation sheet.

The following longitudinal sections were prepared and are included in this report:

- No. 1 South Vein
- No. 1 South Vein - Upper Split
- No. 1 North Vein - East
- No. 1 North Vein - West Lower Split
- No. 2 Zone
- No. 3 Zone - Shaft Zone
- No. 5 Zone - West
- No. 5 Zone - East
- Fault Zone

8.2.4 CROSS-SECTIONS

The 50 scale cross-sections show reserve blocks of the Replacement Zone and deeper continuations of the other zones.

Cross-sections at fify feet to the inch scale were used as the basis for calculation of the reserves outside the limits of the longitudinal sections. These are spaced fifty feet apart and show relevant subsurface geology and ore blocks indicated by diamond drilling.

8.2.4 CROSS-SECTIONS

Reserves of No. 1 South Vein Zone below Brown's dyke (nominally mine elevation 9,700') and the Replacement Zone are shown. Also depicted are a number of isolated blocks that principally occur northeast of the shaft; some of these could define a zone in their own right but insufficient drilling leaves them isolated for the time being.

8.2.5 BLOCK CALCULATION SHEETS

Each block of mineralization shown on longitudinal and cross-section is documented by a block calculation sheet that shows all the original assays and calculations that were the source for the tonnage and grade of the block.

The block calculation sheet has provisions for correction of drill hole intersection lengths to true thickness of intersection in the zone as well as allowance for dyke dilution. The results from each calculation sheet and the location and identification of each block are stored on a computer file.

The computer file is listed in Appendix 6.

8.3 METHODS AND GUIDELINES FOR ESTIMATION OF GOLD INVENTORY AND RESERVES

8.3.1 DATA BASE

The data base includes gold assays from a variety of sources, over a number of program years. Virtually all determinations were by the fire assay-gravimetric method. There has been considerable overlap in the chip sampling of the underground workings which allows comparison between the 1948 - 51 values and the 1983 values. The results are comparable as is demonstrated on block calculation sheets.

8.3.1 DATA BASE

A set of check samples from 1981 drilling were selected for gold and silver assays in 1983. These are shown in Appendix 2 . The results are considered comparable for gold data.

8.3.1.1 MINE OPENING SOURCES

The mine openings sampled are the drifts and cross-cuts of the 150 and 275 levels. Because of the sinuous trace of the vein swarms and the absence of visible gold, short sample lengths have been the rule for both the 1949 sampling program and for the 1983 program.

This sinuous vein geometry has led to the situation where veins are commonly not followed 'full width' by the drifts. In addition the underground samplers tended to sample quartz veins on the assumption that they were the gold-bearing feature. It has become apparent that the wall rock adjacent to veins and within vein swarms is at least as well mineralized as the quartz veins.

In instances where the drifts have not wandered from the zones, widths could be scaled from the drift assay plans; inspection of the sample distribution on the backs and walls of drifts was used to estimate the widths of the zones. Sketches were often made on the reverse side of the block calculation sheet to determine the true width for dilution and block determination.

In several cases the widths of the zone are wider than the mine openings. This is the case where the vein zones cross each other and where they cross the Fault Zone. This is the case, for instance, at the intersection of No. 1 South and No. 1 North Zones on the first level. True widths were estimated from cross-sections constructed on the appropriate block calculation sheet.

8.3.1.1 MINE OPENING SOURCES

Partial intersections of the vein occur in a number of instances where the drift only grazes the true thickness of the zone. These have been allowed for by reviewing level plans and cross-sections to determine a realistic true width. If an estimate was not possible, then the intersection was diluted at zero grade to the minimum mining width of seven feet.

Carload data is shown on level plans that date from the initial underground development in 1949. These consist of average grades of muck samples and the number of carloads sampled; each carload carried about one ton of muck. It was found during calculation of grades from drifts that the channel sample assays from 1949 - 51 and 1983 in many instances were lower than the grades of the carload samples taken during development. It is now realized that the channel samples which have had a bias towards the vein quartz-rich sections are not representative of the true grade of the zone. Where carload grades are lower than channel grades it is inferred that the zone is either narrower than the drift (in which case the grade was diluted at zero grade to a seven-foot minimum width) or that a 'partial intersection' has been sampled.

These inconsistancies between carload grades and channel samples were treated by taking the arithmetic average of the old channels, the carloads and the new channels. This allows an upward correction to be applied where bulk sampling (carloads) has shown the channel sampling to be inadequate and should help offset those portions of zones that required dilution at zero grade or treatment as a partial intersection.

8.3.1.2 DIAMOND DRILL SOURCES

Width of intersections of diamond drill holes have been adjusted to true width of the zone. Both vertical and horizontal sine corrections were made where necessary. In cases of thin zones, the grades of the intersections have been diluted after rotational correction to a seven foot

8.3.1.2 DIAMOND DRILL SOURCES

minimum mining width by addition of zero-grade unless assays adjacent to the intersection dictated otherwise.

Generally, one drill hole pierce point is used for each ore block. All pierce points are shown on longitudinal sections whether assayed or not.

8.3.2 DYKE DILUTION

8.3.2.1 MAJOR DYKES

Major dykes are those of significant size and continuity to allow correlation and plotting on the longitudinal sections. It has been assumed that wide major dykes will probably be left as mine pillars and are termed 'avoidable' major dykes; one foot of overbreak dilution at zero grade was used for grade estimates of blocks contiguous to wide major dykes. Narrow major dykes are considered 'unavoidable' and are incorporated, diluting the ore block grade proportional to their tonnage at zero grade.

The cut-off between 'narrow' and 'wide' major dykes was set at eight feet measured in the plane of the longitudinal section. The figure of eight feet was arrived at because one foot of overbreak is considered to be unavoidable due to the irregular diorite to dyke contacts observed in the underground workings and because, in actual practice, a dyke narrower than six feet is easier to mine and muck in one round than to avoid. Therefore, in practice, the six feet and two feet overbreak sum of eight feet is probably unavoidable.

8.3.2.2 MINOR DYKES

There are thin discontinuous lamprophyre dykes and less commonly feldspar porphyry dykes that cannot be correlated and plotted on longitudinal section. These are probably fillings of shear fractures or splayed feather ends of major dykes. It must be assumed that these dyke rocks will be mined. Therefore a dyke interference dilution factor was calculated. The interference factor ranges from 3.3% to 10.5% and has a weighted average of 7.5% . A conservative 8% figure was used to deduct ounces from the mine area zone totals presented in Table VIII, section 8.2.1. Appendix 3 covers minor dyke dilution in greater detail.

8.3.3 TONNAGE FACTOR

A tonnage factor of 11.5 cu. ft. per ton was determined from the specific gravity determinations from Lakefield Research Laboratories of Canada, Lakefield, Ontario.

8.3.4 BLOCK DIMENSIONS

8.3.4.1 MINIMUM MINING WIDTH

The zones were defined to have a minimum mining width of seven feet. Where the zones are narrower than the minimum mining width, tonnage will be increased at the expense of grade. However, it is felt that seven feet is a realistic mining width if overbreak is taken into account. For zones thicker than minimum mining width, overbreak is assumed to be negligible. Tonnages are therefore calculated from the full width of the zone without dilution.

8.3.4.2 MAXIMUM BLOCK DIMENSIONS
PROVEN AND PROBABLE ORE AND POSSIBLE MINERALIZATION

The maximum ore block length for Proven and Probable Ore was determined geostatistically. The raw data and calculations are presented in Appendix I. The semivariogram method (Clark, 1979) showed that the range

8.3.4.2 MAXIMUM BLOCK DIMENSIONS
PROVEN AND PROBABLE ORE AND POSSIBLE MINERALIZATION

of influence for a sample is 30 feet horizontally in the zone in each direction from a sample point.

The vertical range of influence (in the plane of the mineralized zone) could not be determined geostatistically due to inadequate data. It cannot be assumed that the Ore Zones are isotropic but judging from the relative distribution of the mineralized zones on 150 and 275 levels, it is likely that the highest grade portions extend continuously between levels. Also, there is a strong geological argument to suggest that, where the low and high angle zones intersect, they form stockworks that are steeply plunging chutes of enriched grade ore.

When mine openings become available in the form of test raises or trial stopes, a geostatistical determination of the vertical range of influence and the range of influence for an ore chute should be calculated.

Proven Ore Blocks are based on mine openings and extend vertically twenty feet above the back of the mine opening and twenty feet below the rail elevation. For Probable Ore Blocks the range was set at twenty-five feet vertically above and below a mine opening or a diamond drill intersection. Proven and Probable Blocks laid out horizontally from mine openings were extended up to twenty feet and twenty-five feet respectively beyond sampled sections subject to a maximum length of fifty feet for a reserve block. These constraints yield a block forty feet by forty feet for Proven Ore and fifty feet by fifty feet for Probable Ore. Where drill spacing is closer than fifty feet, block margins were drawn at half the distance between pierce points.

Mine openings were assumed to be dimensionless. Though this departs from the semivariogram philosophy, it has long been standard industry practice.

8.3.4.2 MAXIMUM BLOCK DIMENSIONS PROVEN AND PROBABLE ORE AND POSSIBLE MINERALIZATION

In any case the vertical and horizontal ranges of influence of twenty and twenty-five feet respectively for Proven and Probable Ore is clearly biased on the conservative side because these dimensions are well under the range of influence of thirty feet predicted by the semivariogram method.

The continuity of Possible Mineralization is decided on geological inference that isolated mineralization is correlative with established mineralized zones. Possible mineralization is calculated from the isolated intersections to the edges of correlative zones. Depending upon local controls, presence of dykes, etc., Possible Mineralization has been extrapolated up to 200 feet away from known mineralization in certain cases. Possible Mineralization is delineated to one-half the distance to below-grade sources of information.

8.3.5 GRADE CUTTING

Hill, Goettler & DeLaporte Ltd. was requested in September 1983 to review the assay results to determine the advisability of cutting high assay values. They concluded that there was a possible influence due to the nugget effect. The method suggested was no doubt rigourously based but was rejected as too complicated for use in daily operation (Appendix IV).

A more conservative cutting procedure was established than recommended by Hill, Goettler & DeLaporte Ltd. All assays greater than 10 opt were cut to 10 opt; assays between 10 opt and 5 opt were cut to 5 opt; assays between 5 opt and 2 opt were cut to 2 opt, and those between 2 opt and 1 opt were cut to 1 opt.

Cut grades are cited for reserves; cut and uncut grades are shown on the Block Calculation Sheets.

8.4 DEFINITIONS

8.4.1 PROVEN ORE

In accordance with National Policy No. 2A Guide for Engineers, Geologists and Prospectors submitting reports on mining properties, 'Proven Ore' was computed from measurements made in mine openings from a moderately large number of channel samples (no fewer than five or ten assays and commonly greater than twenty assays). Dilution to mining widths of seven feet, if necessary, is taken at assayed values or at zero grade. The lower cut-off grade for proven ore is a cut grade of 0.10 oz. Au/Ton. Proven Ore is held to extend a maximum of twenty feet vertically and horizontally from a mine opening.

8.4.2 PROBABLE ORE

'Probable Ore' is that material indicated from drill intersections or mine opening to have a cut grade equal to or greater than 0.10 oz. Au/Ton over a minimum mining width of seven feet. Probable Ore is held to extend a maximum of twenty-five feet vertically and horizontally from a drill intersection or mine opening. In the case of a partial intersection a weighted grade is calculated using all samples closer than fifty feet.

8.4.3 POSSIBLE MINERALIZATION

The delineation of 'Possible Mineralization' has been determined on geological grounds. Drill indicated mineralization inferred to be correlative with a defined ore zone falls into the category of possible mineralization. The grade cut-off was set a 0.05 oz. Au/Ton. This also allows inclusion of below grade drift material which might become economic at some unspecified future date.

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APPENDIX 1

GEOSTATISTICS

APPENDIX 1

GEOSTATISTICS

A semivariogram (Clark, 1979) is a statistical method to ascertain the range of influence of a regionalized variable. In this study the assays are regionalized variables, i.e. the assays vary with distance. The semivariogram allows an estimate of the distance over which an assay value is probably valid. In our case a series of assays taken six feet apart were treated mathematically and plotted on graph paper. The inflection point at which the variation curve in values reached a maximum and leveled off is taken to be the range of influence for assays taken horizontally along a drift in the No. 1 South Zone.

The semivariogram displays one-half the statistical variance (standard deviation squared) of sets of paired assay values at even spacing. The first point on the graph is the semivariance for pairs of samples taken six feet apart. The second point on the graph is the semivariance for pairs of samples taken twelve feet apart. The third point on the graph is the semivariance from points taken eighteen feet apart and so on. The final point is the semivariance for pairs of samples taken 120 feet apart.

The semivariogram shows that the sample variance for the deposit at the west end of No. 1 South Zone on the 275 foot level is approximately thirty feet. At thirty foot pair spacing, the semivariance reaches a definite maximum and levels off.

In application, the Reserve Block grades are estimates based on a large number of assays in the drift which clearly enhances the validity of the thirty foot range of influence figure.

Dykes on the drift were not considered in the measurements because they are later in age and displace the gold values. Hence for semivariogram treatment they have zero width.

GEOSTATISTICS

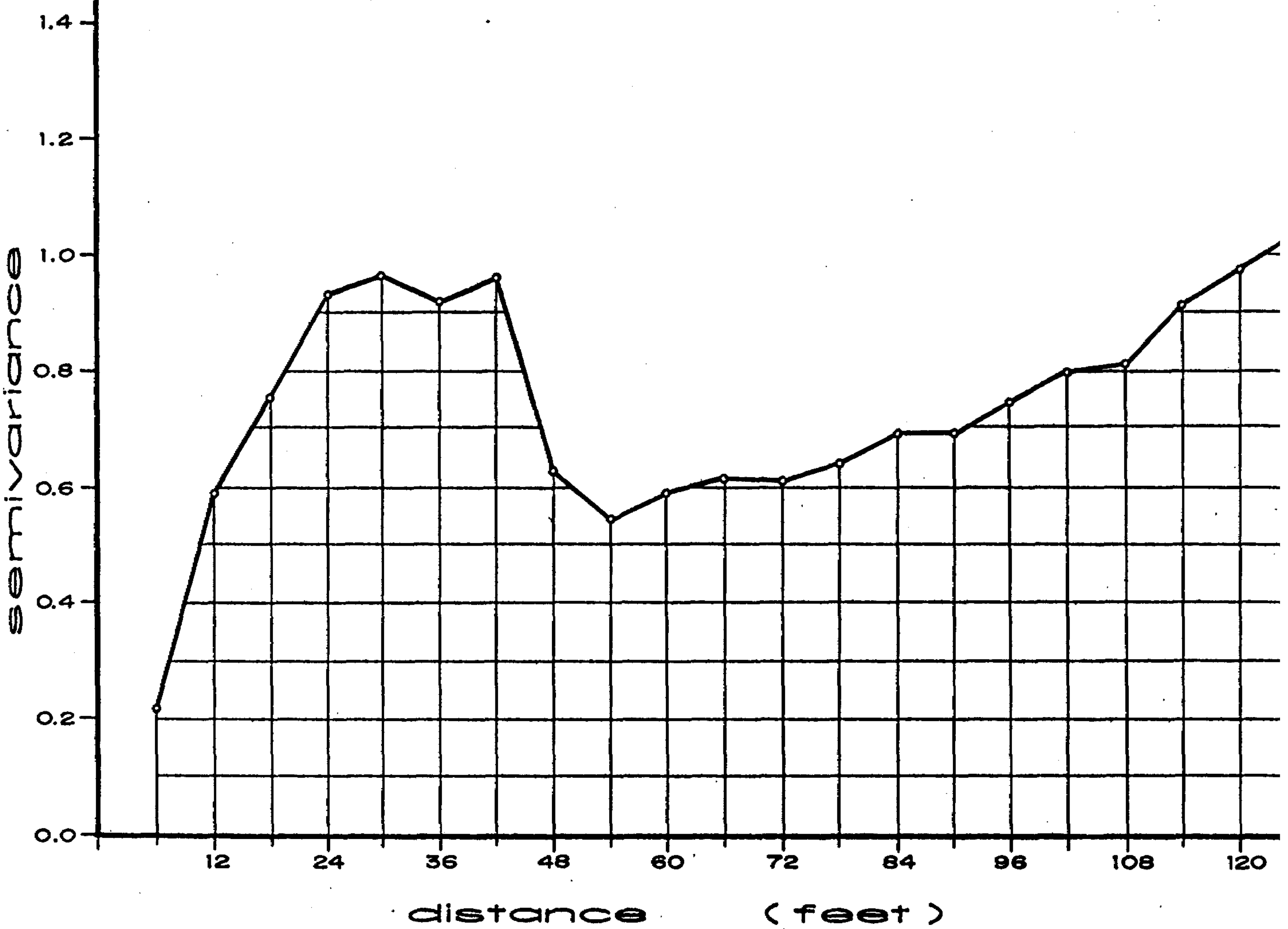
The vertical range of influence may be greater than thirty feet. A stope or raise between levels would be required in order to perform a test. An underground drill test in the plane of the vein from one level to another would probably also be useful for a vertical semivariogram.

TABLE I

Assay Values from 13,401 West Drift No. 1 South Zone taken at 6' Intervals.

VALUES USED FOR SEMIVARIOGRAM

Order	Assay opt	Order	Assay opt	Order	Assay opt
1.	0.05	16.	0.03	31.	1.85
2.	0.10	17.	0.23	32.	0.20
3.	0.25	18.	0.13	33.	0.02
4.	0.04	19.	0.02	34.	0.11
5.	0.03	20.	0.09	35.	0.33
6.	0.02	21.	0.13		
7.	0.02	22.	0.05		
8.	0.08	23.	0.07		
9.	0.04	24.	0.07		
10.	Tr.	25.	0.06		
11.	0.06	26.	0.31		
12.	0.18	27.	0.14		
13.	0.03	28.	2.24		
14.	0.16	29.	4.78		
15.	0.14	30.	0.63		



Appendix I: Semivariogram of No. 1 South Zone at 6 feet interval

APPENDIX 2

CHECK ASSAYS AND ASSAYS FOR SILVER

MEMORANDUM

TO: A. H. Meldrum
G. Harper
J. F. Kearney

FROM: W. W. Weber

DATE: June 21, 1983

RE: CHECK SAMPLING
OROFINO RESOURCES LIMITED

PURPOSE

Forty samples were randomly selected from the pulps in storage at Timmins. The samples are listed below:

	BELL-WHITE	HOLE	X-RAY	
Sample	Original Assay Au oz/ton		Check Assay Au oz/ton	Ag oz/ton
6857	0.038	E-80-6	0.010	0.010
7309	0.090	I-81-1	0.086	Tr
7322	0.078	I-81-1	0.100	Tr
7327	0.065	I-81-1	0.047	Tr
7345	0.113	J-81-3	0.110	Tr
7346	0.003	J-81-3	Tr	Tr
7522	0.013	D-80-7	0.012	Nil
7568	0.013	C-80-6	0.013	Nil
7600	0.013	B-81-1	0.011	Tr
7700	Tr	C-80-7	0.002	Nil
7946	0.055	E-80-8	0.044	0.10
8520	Tr	C-81-2	0.003	Tr
8686	0.060	D-80-3	0.003	Tr
8905	0.030	C-81-12	0.027	0.10
8907	0.153	C-81-12	0.150	0.10
8908	0.033	C-81-12	0.033	Tr
8909	0.045	C-81-12	0.048	Tr
8911	0.045	C-81-12	0.039	0.10
8913	0.003	C-81-12	0.007	Nil

CHECK SAMPLING
OROFINO RESOURCES

Sample	BELL-WHITE Original Assay Au oz/ton	HOLE	X-RAY Check Assay Au oz/ton	Ag oz/ton
8914	0.050	C-81-12	0.049	Tr
8915	0.045	C-81-12	0.047	Tr
8916	0.128	C-81-12	0.120	0.10
8917	0.073	C-81-12	0.064	Tr
8918	0.025	C-81-12	0.027	Tr
8919	0.103	C-81-12	0.099	Tr
8920	0.075	C-81-12	0.070	Nil
8941	0.073	C-80-9	0.160	0.10
8943	0.035	C-80-9	0.003	Nil
8946	0.083	C-80-9	0.007	Nil
8947	0.035	C-80-9	Nil	Nil
8948	0.058	C-80-9	0.019	Nil
8949	0.108	C-80-9	0.003	Nil
8950	0.063	C-80-9	0.001	Nil
8951	0.105	C-80-9	0.093	Tr
9610	0.080	J-81-3	0.078	Tr
9617	0.053	J-81-3	0.150	Nil
9829	0.080	A-81-1	0.080	Tr
12150	0.110	E-80-8	0.094	Tr
12218	0.283	E-80-7	0.290	Tr
12345	0.008	CF-81-19	0.004	Tr

CONCLUSION

It is apparent above that with one exception the assay results (original and check sampling) are comparable. Sample 8949 was the sole exception.
Original Assays $\bar{x}=0.063\pm0.051$ opt   Check Assays $\bar{x}=0.055\pm0.055$ opt

It is concluded that the assaying has been reliable and within the limits of good performance.

Dr. W. W. Walker

WWW:sd

APPENDIX 3

MINOR DYKE DILUTION: EXAMPLE CALCULATION

APPENDIX 3

CALCULATION OF MINOR DYKE DILUTION

Minor dykes, in this report, are those dykes that are deemed too small for correlation, or do not appear to be correlative between drill holes. The minor dyke dilution has been calculated in order to most accurately approximate what is felt to be the total dyke dilution (the sum of major and minor dykes) for the Orofino Mine geologic reserve.

The method for calculating this dilution includes a simple summation of all minor dyke interval lengths over the length of each drill hole in each cross-section (Example section G; Table 1). This minor dyke length is then found to represent a percentage of the total lengths of the drill holes for the section. The weighted average was calculated for the Sections A-O in order to provide an average value for the minor dyke dilution over the area of the Orofino Mine (Table 2). In keeping with the previously used conservative estimates through the ore reserve calculations, an 8% minor dyke dilution was assigned.

TABLE 1

TABLE OF VALUES FOR MINOR DIKE DILUTION - SECTION G

DRILL HOLE NUMBER	LENGTH OF DRILL HOLE (FEET)	LENGTH OF MINOR DIKES (FEET)
DH 72	333	3
G 81-14	410	43
83-33 G	402	32
G 80-2	410	11
G 80-13	403	40
DH 79	100.5	3
U 74	66	0
U 65	130	8
U 72	124	18
U 19	144	10
U 71	88	35
G 80-12	397	21.5
G 80-11	360	30
83-32 G	358	55
G 80-10	360	58
G 80-4	353	22
	4,438.5	389.5

Weighted Average: (389.5/4,438.5) 100 = 8.8%

TABLE 2

SUMMARY TABLE FOR MINOR DIKE DILUTION - SECTION A-O

SECTION	NUMBER OF SAMPLES	TOTAL LENGTH OF DRILL HOLE DATA (FT)	TOTAL LENGTH OF MINOR DIKES (FT)	PERCENTAGE OF MINOR DIKES TO TOTAL FOOTAGE
A	3	717.0	55.0	7.7
B	2	336.0	11.0	3.3
C	4	992.0	78.0	7.9
D	4	1,553.5	49.5	3.2
E	8	2,473.0	113.5	4.6
F	10	2,437.5	226.0	9.1
G	15	4,438.5	389.5	8.8
H	10	1,634.5	145.0	8.9
I	3	272.0	16.0	5.8
J	8	1,793.5	188.0	10.5
K	2	293.5	15.0	5.1
L	6	1,420.0	84.0	5.9
M	5	567.0	30.0	5.3
N	3	206.0	21.0	10.2
O	3	868.5	77.0	8.9
		20,002.0	1,498.5	105.2

Arithmetic Average: (105.2/15)X100 = 7.0%

Weighted Average: (1,498.5/20,002)X100 = 7.5%

APPENDIX 4

GRADE CUTTING RECOMMENDED BY CONSULTANT

EXHIBIT 5

FORMULATION OF APPROXIMATE CUTTING RULES

A. Channel and Chip Samples

All assays above 1.00 oz. Au/ton should be cut.

From 1 oz. Au/ton to 2 ozs. Au/ton	-	cut to 1 oz. Au/ton.
From 2 ozs. Au/ton to 3 ozs. Au/ton	-	reduce to ½.
From 3 ozs. Au/ton to 4½ ozs. Au/ton	-	cut to 1½ oz. Au/ton.
From 4½ ozs. Au/ton to 10 ozs. Au/ton	-	reduce to 1/3.
From 10 ozs. Au/ton to 16.5 ozs. Au/ton	-	cut to 3.3 ozs. Au/ton.
Above 16.5 ozs. Au/ton	-	reduce to 1/5.

B. Muck Samples

All assays above 1.5 ozs. Au/ton should be cut.

From 1.5 ozs. Au/ton to 3.0 ozs. Au/ton	-	cut to 1½ ozs. Au/ton.
From 3 ozs. Au/ton to 7.5 ozs. Au/ton	-	reduce to ½.
From 7.5 ozs. Au/ton to 18.75 ozs. Au/ton	-	cut to 3.75 ozs. Au/ton.
From 18.75 ozs. Au/ton to 50.00 ozs. Au/ton	-	reduce to 1/5.
From 50.00 ozs. Au/ton to 100 ozs. Au/ton	-	cut to 10 ozs. Au/ton.
Above 100.00 ozs. Au/ton	-	reduce to 1/10.

APPENDIX 5

CLAIM STATUS

OROFINO CLAIM STATUS PROJECT 422 8 JUNE 1984

84/04/06 11:24	CLAIM#	RECORDED	CREDIT	FILED	COMMENTS
422	P510349	78/07/05	200	0	EXTENSION TO LEASE MUST BE SENT OUT MID JUNE EACH YEAR.
	P510350	78/07/05	200	0	SEE P510349
	P510351	78/07/05	200	0	SEE P510349
	P510352	78/07/05	200	0	SEE P510349
	P510353	78/07/05	200	0	SEE P510349
	P510354	78/07/05	200	0	SEE P510349
	P510355	78/07/05	200	0	SEE P510349
	P510356	78/07/05	200	0	SEE P510349
	P510357	78/07/05	200	0	SEE P510349
	P520299	78/07/05	200	0	SEE P510349
	P520300	78/08/09	227.16	0	SURPLUS CREDITS EXTENSION OF TIME FORMS MUST BE FILED MID JULY
	P520301	78/08/09	200	0	EXTENSION OF TIME FOR BRINGING TO LEASE MUST BE FILED MID JULY EVERY YEAR TIL 1989.
	P520302	78/08/09	200	0	SEE P520301
	P520303	78/08/09	200	0	SEE P520301
	P520304	78/08/09	200	0	SEE P520301
	P520305	78/08/09	200	0	SEE P520301
	P520306	78/08/09	200	0	SEE P520301
	P520307	78/08/09	228.16	0	SEE P520300 AND 301
	P520308	78/08/09	200	0	SEE P520301
	P520309	78/08/09	200	0	SEE P520301
	P520310	78/08/09	200	0	SEE P520301
	P520311	78/08/09	200	0	SEE P520301
	P520312	78/08/09	200	0	SEE P520301
	P520313	78/08/09	200	0	SEE P520301
	P520314	78/08/09	200	0	SEE P520301
	P520315	78/08/09	200	0	SEE P520301
	P520317	78/08/09	162	0	38 DAYS WORK REQUIRED BEFORE AUGUST 9 1984 ALSO EXTENSION OF TIME TO BE FILED
	P529284	80/07/21	227.16	0	27.16 DAYS AVAILABLE TO SPREAD FROM 100 DAYS OF D.D.H. CLAIM GOOD TIL 86 EXTESION REQ'D LATE JUNE.
	P529292	80/07/21	132.2	0	7.8 DAYS REQ'D BEFORE JULY 21 84
	P529293	80/07/21	107.16	0	32.84 DAYS REQ'D BEFORE JULY 21 84.
	P529297	80/07/21	107.16	0	SEE P529293
	P529298	80/07/21	112.16	0	27.84 DAYS REQ'D BEFORE JULY 21 84.
	P529299	80/07/21	107.16	0	SEE P529293
	P529300	80/07/21	107.16	0	SEE P529293
	P529301	80/07/21	122.16	0	17.84 DAYS REQ'D BEFORE JULY 21 84.
	P529302	80/07/21	127.16	0	12.84 DAYS REQ'D BEFORE JULY 21 84.
	P529313	80/07/31	107.16	0	SEE P529293
	P529314	80/07/31	122.16	0	SEE P529301
	P529315	80/07/31	148.16	0	53.84 DAYS REQ'D BEFORE JULY 31 85.
	P529316	80/07/31	107.16	0	SEE P529293
	P529342	80/07/21	127.16	0	SEE P529302
	P529343	80/07/21	112.16	0	SEE P529298
	P529344	80/07/21	117.16	0	22.84 DAYS REQ'D BEFORE JULY 21 84.
	P529345	80/07/21	127.16	0	SEEP529302
	P529346	80/07/21	127.16	0	SEE P529302
	P529347	80/07/21	127.16	0	SEE P529302
	P529348	80/07/21	127.16	0	SEEP529302

OROFINO CLAIM STATUS PROJECT 422 8 JUNE 1984

84/04/06 11:24	CLAIM#	RECORDED	CREDIT	FILED	COMMENTS
	P529349	80/07/21	127.16	0	SEE P529302
	P529350	80/07/21	127.16	0	SEE P529302
	P529351	80/07/21	127.16	0	SEE P529302
	P529352	80/07/21	160	0	40 DAYS REQ'D BEFORE JULY 21 85.
	P529353	80/07/21	112.2	0	SEE P529298
	P529354	80/07/21	160	0	SEE P529352
	P529355	80/07/21	112.2	0	SEE P529298
	P529356	80/07/21	132.2	0	SEE P529292
	P529358	80/07/21	161.2	0	SEE P529352
	P529360	80/07/21	161.2	0	SEE P529352
	P529361	80/07/21	189	0	11 DAYS REQ'D BEFORE JULY 21 85.
	P536985	79/10/12	140	0	60 DAYS REQ'D BEFORE OCT 12 84.
	P536986	79/10/12	140	0	SEE P536985
	P536987	79/10/12	140	0	SEE P536985
	P536988	79/10/12	140	0	SEE P536985
	P539900	79/10/12	140	0	SEE P536985
	P539901	79/10/12	140	0	SEE P536985
	P539902	79/10/17	200	0	EXTENSION FOR LEASE REQ'D SEPT. 17 85.
	P539903	79/10/17	200	0	SEE P539902
	P539904	79/10/17	150	0	50 DAYS REQ'D BEFORE OCT.17 84.
	P539905	79/10/17	150	0	SEE P539904
	P539906	79/10/17	150	0	SEEP539904
	P539907	79/10/17	150	0	SEE P539904
	P539908	79/10/17	227.16	0	SEE P539902 ALSO 27.16 DAYS CAN BE SPREAD.
	P539909	79/10/12	160.62	0	39.38 DAYS REQ'D BEFORE OCT. 12 84.
	P539910	79/10/12	160.62	0	SEE P539909
	P539911	79/10/12	140	0	SEE P536985
	P545647	79/10/12	160.62	0	SEE P539909
	P545648	79/10/12	160.62	0	SEE P539909
	P545692	79/10/12	140	0	SEE P536985
	P545693	79/10/12	140	0	SEE P536985
	P545694	79/10/12	140	0	SEE P536985
	P545695	79/10/12	140	0	SEE P536985
	P545696	79/10/12	140	0	SEE P536985
	P546154	79/10/12	140	0	SEE P536985
	P546155	79/10/12	140	0	SEE P536985
	P546156	79/10/12	140	0	SEE P536985
	P565946	80/07/21	107.16	0	SEE P529293
	P565947	80/07/21	160	0	40 DAYS REQ'D BEFORE JULY 21 85.
	P565948	80/07/21	160	0	SEE P565947
	P565949	80/07/21	132.2	0	SEE P529292
	P565950	80/07/21	132.2	0	SEE P529292
	P565951	80/07/21	132.2	0	SEE P529292
	P568627	80/07/31	107.16	0	SEE P529293
	P568628	80/07/31	148.16	0	51.84 DAYS REQ'D BEFORE JULY 31 85.
	P568631	80/07/21	107.16	0	SEE P529293
	P568632	80/07/21	122.16	0	18.84 DAYS REQ'D BEFORE JULY 21 84.
	P568633	80/07/21	127.16	0	SEE P529302
	P568634	80/07/21	127.16	0	SEE P529302
	P568639	80/07/21	127.16	0	SE P529302
	P568640	80/07/21	127.16	0	SEE P529302
	P571506	80/07/21	127.16	0	SEE P529302
	P571507	80/07/21	127.16	0	SEE P529302
	P571508	80/07/21	127.16	0	SEE P529302
	P571509	80/07/21	127.16	0	SEE P529302

OROFINO CLAIM STATUS PROJECT 422 8 JUNE 1984

84/04/06 11:24	CLAIM#	RECORDED	CREDIT	FILED	COMMENTS
	P571510	80/07/21	127.16	0	SEE P529302
	P571511	80/07/21	127.16	0	SEE P529302
	P571512	80/07/21	148.16	0	51.84 DAYS REQ'D BEFORE JULY 21 85.
	P571513	80/07/21	148.16	0	SEE P571512
	P805428	84/05/22	0	0	20 DAYS REQ'D BEFORE MAY 22 85.
	P805429	84/05/22	0	0	SEE P805429

APPENDIX 6

OROFINO GOLD INVENTORY BY SECTIONS AND ELEVATIONS

APPENDIX 6

OROFINO GOLD INVENTORY BY SECTIONS AND ELEVATIONS

KEY

SECTION

9200E to 9600E	- South of the mine shaft area
A - P	- 50 foot spacing cross-sections in mine area

ELEVATION

100	- above 150 level to surface
99	- between levels
98	- above Brown's Dyke
97	- above 9500 elevation
95	- above 9000 elevation
90	- below 9000 elevation

ZONE

1SO	- Isolated Block
R	- Replacement
1S, 1SU	- No. 1 South, No. 1 South Upper Zone
1N, 1NE, 1NW, 1NU	- No. 1 North, East, West, Upper Zones
2, 2W	- No. 2, No. 2 West
3, 4	- No. 3 Zone, No. 4 Zone
5E, 5W	- No. 5 East, West
FA	- Fault Zone

GRADE

- No minor dyke dilutions. Each region must be treated separately at 8% where dyke swarms are present

CATEGORY

PA	- Proven
PB	- Probable
PO	- Possible

OROFINO GOLD INVENTORY BY SECTION AND ELEVATION : 8/6/84 Without M D D.

SECTION	ELEVATION	BLOCK	ZONE	TONS	OUNCES	GRADE	CATEGORY
9200E	98	6	ISO	3,530.4	729.8	.21	PO
		7	ISO	3,530.4	211.8	.06	PO
			Total:	7,060.8	941.6		
9250E	98	4	ISO	3,043.5	213.0	.07	PO
		3	ISO	2,130.4	298.3	.14	PO
			Total:	5,173.9	511.3		
9350E	99	2	ISO	2,373.9	227.7	.10	PO
		1	ISO	3,530.4	741.4	.21	PO
			Total:	5,904.3	969.1		
9600E	97	5	ISO	6,087.0	365.2	.06	PO
			Total:	6,087.0	365.2		
A	95	3	R	3,043.5	213.0	.07	PO
		2	R	3,347.8	200.9	.06	PO
		1	R	7,760.9	1,241.7	.16	PO
			Total:	14,152.2	1,655.6		
B	100	2	1S	813.0	203.0	.25	PA
		71	1S	462.0	116.0	.25	PO
		43	1S	102.0	26.0	.25	PB
	90	6	1S	18,521.7	4,074.8	.22	PO
		5	1S	20,391.3	4,690.0	.23	PO
		4	1S	25,982.6	1,559.0	.06	PO
	95	19	R	6,908.7	690.9	.10	PO
		18	R	5,478.3	602.6	.11	PO
		17	1S	3,469.6	242.9	.07	PO
		16	1S	2,100.0	147.0	.07	PO
		15	1S	6,347.8	507.8	.08	PO
		14	1S	3,241.3	291.7	.09	PO
		13	1S	926.1	83.3	.09	PO
		12	R	3,043.5	578.3	.19	PO
		11	R	11,139.1	1,002.5	.09	PO
		10	R	7,578.3	378.9	.10	PO
		9	1S	1,732.2	103.9	.06	PO
		8	1S	2,982.6	686.0	.23	PO
		7	1S	5,186.1	1,140.9	.22	PO
	97	20	ISO	23,009.7	1,610.6	.07	PO
	99	1	1S	644.0	161.0	.25	PA
		44	1S	98.0	22.0	.23	PB
		102	1S	2,676.0	562.0	.21	PO
		10	1SU	1,442.6	115.5	.08	PO
			Total:	154,276.5	19,596.6		
B-C	100	6	1SU	810.7	603.1	.74	PO
	98	12	1SU	575.2	51.8	.09	PO

OROFINO GOLD INVENTORY BY SECTION AND ELEVATION : 8/6/84

SECTION	ELEVATION	BLOCK	ZONE	TONS	OUNCES	GRADE	CATEGORY
			Total:	1,385.9	654.9		
B-D	100	3	1SU	410.4	305.2	.74	PB
		1	1SU	1,631.1	1,214.4	.75	PA
	99	8	1SU	4,457.1	3,351.0	.75	PO
		4	1SU	412.7	310.2	.75	PB
		2	1SU	1,892.6	1,425.5	.75	PA
			Total:	8,803.9	6,606.3		
C	100	21	1SO	7,791.3	623.3	.08	PO
	90	22	1SO	5,260.9	683.9	.13	PO
	95	47	R	4,915.0	295.0	.06	PO
		46	R	5,031.0	503.0	.10	PO
		45	R	5,783.0	463.0	.08	PO
		44	R	6,650.0	466.0	.07	PO
		43	R	5,667.0	680.0	.12	PO
		41	1S	7,027.0	562.0	.08	PO
		40	R	2,556.0	204.0	.08	PO
		39	R	5,409.0	354.0	.06	PO
		38	R	5,025.0	302.0	.06	PO
		37	R	8,615.0	1,723.0	.20	PB
		36	R	7,179.0	646.0	.09	PO
		35	R	5,791.0	463.0	.08	PO
		34	R	4,504.0	630.1	.14	PO
		33	R	4,504.0	495.0	.11	PO
		32	R	2,533.0	355.0	.14	PB
		31	R	5,432.9	543.3	.10	PO
		30	1S	2,520.0	580.0	.23	PB
		29	1S	4,680.0	281.0	.06	PO
		28	R	2,009.0	161.0	.08	PO
		27	R	943.0	123.0	.13	PO
		26	R	3,043.0	274.0	.09	PO
		25	1S	3,730.0	560.0	.15	PB
		24	1S	3,043.0	243.0	.09	PO
		23	1S	9,016.0	1,803.0	.20	PO
		22	1S	6,087.0	426.1	.07	PO
		58	R	1,906.0	686.0	.36	PB
	99	3	1S	1,157.0	64.0	.06	PO
		9	1SU	863.7	40.1	.05	PO
			Total:	138,671.8	15,232.8		
C-D	98	118	1S	2,998.0	270.0	.08	PO
		11	1SU	353.0	17.2	.05	PO
			Total:	3,351.0	287.2		
D	100	4	1S	5,156.0	309.0	.06	PO
		6	1S	956.0	57.0	.06	PO
		34	1NW	532.2	79.8	.15	PO
		400	4	724.3	62.1	.09	PO
	95	50	1S	7,608.7	380.4	.05	PO
		49	1S	7,826.0	470.0	.06	PO

OROFINO GOLD INVENTORY BY SECTION AND ELEVATION : 8/6/84

SECTION	ELEVATION	BLOCK	ZONE	TONS	OUNCES	GRADE	CATEGORY
D		48	1S	7,213.0	505.0	.07	PO
		81	R	4,499.0	315.0	.07	PO
		79	ISO	5,444.0	653.0	.12	PO
		78	R	9,582.6	1,437.4	.15	PB
		77A	R	3,478.0	522.0	.15	PB
		77	R	1,522.0	365.0	.24	PB
		76	R	1,110.0	178.0	.16	PB
		75W	R	692.0	109.0	.16	PO
		75	R	1,461.0	234.0	.16	PB
		74	R	3,290.0	362.0	.11	PB
		73E	R	1,722.0	189.0	.11	PO
		73W	R	2,276.0	250.0	.11	PO
		73A	R	1,043.0	52.0	.05	PO
		73	R	3,130.0	438.0	.14	PB
		72	R	1,278.0	179.0	.14	PB
		71W	R	724.0	101.0	.14	PO
		71E	R	548.0	77.0	.14	PO
		71	1S	1,461.0	204.0	.14	PB
		70	1S	2,933.0	235.0	.08	PO
		69	1S	2,539.0	203.0	.08	PO
		68	1S	2,222.0	178.0	.08	PO
		67	1S	1,729.0	259.0	.15	PB
		66	R	1,047.0	157.0	.15	PB
		65	R	487.0	73.0	.15	PB
		64	1S	1,112.0	122.0	.11	PB
		63	1S	1,363.0	204.0	.15	PB
		62	1S	1,120.0	123.0	.11	PB
		61	1S	1,217.0	134.0	.11	PB
		60	ISO	2,603.0	312.0	.12	PO
		59A	R	4,855.0	388.0	.08	PO
		59	R	1,949.0	701.0	.36	PB
		58A	R	4,747.0	380.0	.08	PO
		57	1S	1,717.0	137.0	.08	PO
		56	1S	1,655.0	132.0	.08	PO
		55	1S	2,207.0	132.0	.06	PO
		54	1S	2,125.0	128.0	.06	PO
		53	1S	2,379.0	286.0	.12	PB
		52	1S	710.0	85.0	.12	PB
		51	1S	2,087.0	250.0	.12	PB
	97	82	1S	2,879.0	230.0	.08	PO
		80W	1S	444.0	49.0	.11	PO
		80N	1S	274.0	30.0	.11	PO
		80S	1S	487.0	54.0	.11	PO
		80	1S	1,522.0	167.0	.11	PB
	99	5	1S	3,363.0	202.0	.06	PO
		84	1S	561.0	151.0	.27	PO
			Total:	125,609.8	13,030.7		
D-E	98	62	1S	185.0	54.0	.29	PB
		25	1S	755.0	162.0	.21	PA
		111	1S	717.0	208.0	.29	PO
	99	61	1S	167.0	47.0	.28	PB
		26	1S	665.0	193.0	.29	PA
		83	1S	1,000.0	260.0	.26	PO

OROFINO GOLD INVENTORY BY SECTION AND ELEVATION : 8/6/84

SECTION	ELEVATION	BLOCK	ZONE	TONS	OUNCES	GRADE	CATEGORY
			Total:	3,489.0	924.0		
E	100	8	1S	830.0	166.0	.20	PA
		72	1S	2,856.0	571.0	.20	PO
		45	1S	196.0	39.0	.20	PB
		120	1S	1,308.7	261.7	.20	PO
	95	87	1SO	1,565.0	407.0	.26	PB
		86	1SO	2,546.0	153.0	.06	PO
		85	1S	6,026.0	362.0	.06	PO
		84	1S	3,433.0	206.0	.06	PO
		83	1S	2,556.0	179.0	.07	PO
		75E	R	292.0	47.0	.16	PO
		126	R	5,080.0	457.0	.09	PO
		125	R	11,230.0	674.0	.06	PO
		124	R	16,239.0	2,111.1	.13	PO
		123	R	22,096.0	3,314.0	.15	PO
		122	R	2,260.0	517.0	.23	PO
		121	R	4,930.0	592.0	.12	PB
		120	R	5,935.0	593.0	.10	PO
		119	R	3,972.0	238.0	.06	PO
		118	R	6,087.0	791.0	.13	PO
		114	R	3,988.0	359.0	.09	PO
		113	1SO	7,027.0	843.0	.12	PO
		112	1SO	2,301.0	230.0	.10	PO
		111	1S	502.0	166.0	.33	PO
		110	1S	1,522.0	213.0	.14	PO
		109	1S	548.0	71.0	.13	PO
		108	1S	1,522.0	198.0	.13	PB
		107	1S	2,432.0	122.0	.05	PO
		106	R	3,579.0	311.0	.09	PO
		105	R	185.0	44.0	.24	PO
		104	1S	427.0	60.0	.14	PO
		103	1S	329.0	46.0	.14	PO
		102	R	3,437.0	825.0	.24	PB
		101A	R	3,477.0	209.0	.06	PO
		101	R	1,848.0	443.0	.24	PB
		100	R	1,093.0	98.0	.09	PO
		99A	R	978.0	78.0	.08	PO
		99	R	1,630.0	652.0	.40	PB
		98	R	4,957.0	1,190.0	.24	PB
		97A	R	6,746.0	405.0	.06	PO
		97	R	2,739.0	657.0	.24	PB
		96	R	1,076.0	387.0	.36	PB
		95	R	3,652.0	1,315.0	.36	PB
		94	R	807.0	226.0	.28	PB
		93A	R	293.0	26.0	.09	PO
		93	R	489.0	196.0	.40	PB
		92	R	1,596.0	255.0	.16	PB
		91	1S	3,312.0	530.0	.16	PB
		90A	R	2,717.0	190.0	.07	PO
		90E	R	1,200.0	192.0	.16	PO
		90	R	3,261.0	685.0	.21	PB
		89E	1S	216.0	71.0	.33	PO
		89	1S	1,804.0	595.0	.33	PB

OROFINO GOLD INVENTORY BY SECTION AND ELEVATION : 8/6/84

SECTION	ELEVATION	BLOCK	ZONE	TONS	OUNCES	GRADE	CATEGORY
E		87E	160	652.0	104.0	.16	PO
		87L	160	1,196.0	60.0	.05	PO
		87U	160	565.0	51.0	.09	PO
		87A	160	1,409.0	225.0	.16	PO
	97	80E	1S	1,155.0	127.0	.11	PO
		127	1S	2,045.0	695.0	.34	PO
		116	1S	1,790.0	1,002.0	.56	PO
		115	1S	1,278.0	434.0	.34	PO
		128	1S	1,406.0	787.0	.56	PO
	98	117	1S	2,663.0	373.0	.14	PO
		88	1NU	3,177.0	604.0	.19	PO
		35E	1S	720.0	72.0	.10	PB
		119	1S	673.0	67.0	.10	PO
	99	7	1S	1,001.0	220.0	.22	PA
		46	1S	235.0	52.0	.22	PB
		28	1S	91.0	5.0	.06	PO
		87	1S	368.0	110.0	.30	PO
		82	1S	2,355.0	542.0	.23	PO
		7	1SU	676.4	101.5	.15	PO
		5	1SU	729.8	109.5	.15	PB
			Total:	195,302.9	29,307.8		
E-F	100	13	1NW	730.4	199.8	.27	PB
		40	1NW	82.2	17.2	.21	PO
		32	1NW	1,495.6	433.7	.29	PB
		402EW	4	207.0	100.6	.49	PO
		401	4	517.4	268.2	.52	PB
	99	47	1NW	658.7	68.3	.10	PO
			Total:	3,691.3	1,087.8		
E-G	100	35	1NW	3,002.1	870.6	.29	PO
			Total:	3,002.1	870.6		
F	100	10	1S	783.0	235.0	.30	PA
		47	1S	196.0	71.0	.36	PB
		73	1S	2,856.0	1,028.0	.36	PO
		121	1S	1,308.7	471.1	.36	PO
		9	3	662.9	269.8	.41	PO
		1	3	759.9	155.2	.20	PB
	95	160EW	1S	228.0	32.0	.14	PO
		160	1S	815.0	114.0	.14	PB
		159	1S	1,224.0	86.0	.07	PO
		158	1S	1,071.0	66.0	.06	PO
		157	R	2,182.0	175.0	.08	PO
		156	R	380.0	53.0	.14	PO
		155WE	R	1,088.0	152.0	.14	PO
		155	R	3,804.0	533.0	.14	PB
		154	R	2,337.0	164.0	.07	PO
		153A	R	897.0	63.0	.07	PO
		153	R	1,628.0	260.0	.16	PB
		152	R	1,519.0	76.0	.05	PO
		151	R	4,553.0	410.0	.09	PO

OROFINO GOLD INVENTORY BY SECTION AND ELEVATION : 8/6/84

SECTION	ELEVATION	BLOCK	ZONE	TONS	OUNCES	GRADE	CATEGORY
F		150	1S	1,936.0	135.0	.07	PO
		149	1S	7,683.0	4,994.0	.65	PO
		148	1S	3,374.0	236.0	.07	PO
		146A	1S	689.0	117.0	.17	PB
		146	1S	1,913.0	325.0	.17	PB
		145	R	1,741.0	139.0	.08	PO
		144	R	1,722.0	258.0	.15	PB
		143W	R	651.0	104.0	.16	PO
		143A	R	482.0	77.0	.16	PB
		143	R	1,956.0	276.0	.16	PB
		142	R	2,600.0	1,352.0	.52	PB
		141	1S	1,960.0	510.0	.26	PB
		140	1S	2,800.0	728.0	.26	PO
		139	1S	2,176.0	522.0	.24	PB
		138	1S	3,400.0	816.0	.24	PB
		137A	1SO	1,312.0	66.0	.05	PO
		137	1SO	2,296.0	459.0	.20	PO
		135W	1SO	651.0	117.0	.18	PO
		135A	1SO	643.0	116.0	.18	PO
		135	1SO	974.0	175.0	.18	PB
		134W	1S	744.0	126.0	.17	PO
		134A	1S	667.8	113.5	.17	PB
		134	1S	1,113.0	189.0	.17	PB
		133	1S	2,276.0	410.0	.18	PO
		132A	1S	1,363.0	218.0	.16	PB
		132	1S	1,522.0	243.0	.16	PB
		131A	1SO	968.0	116.0	.12	PO
		131	1SO	1,522.0	183.0	.12	PB
		183	1SO	3,144.0	157.0	.05	PO
		182	1SO	3,144.0	314.0	.10	PO
		181	R	1,820.0	946.0	.52	PB
		180	R	482.0	72.0	.15	PO
		177A	R	19,116.0	1,529.0	.08	PO
		177	R	44,605.0	6,245.0	.14	PO
		175	R	128,779.0	10,302.0	.08	PO
		174A	R	978.0	59.0	.06	PO
		174	R	1,370.0	219.0	.16	PB
		173A	R	430.0	30.0	.07	PO
		173	R	2,296.0	230.0	.10	PB
		171	R	4,239.0	339.0	.08	PO
		170	R	1,956.0	332.0	.17	PB
		169	R	1,826.0	146.0	.08	PO
		165	R	978.0	166.0	.17	PB
		164	R	3,027.0	151.0	.05	PO
		163E	R	1,512.0	181.0	.12	PO
		163	R	6,000.0	960.0	.16	PB
		162E	1S	224.0	22.0	.10	PO
		162A	1S	1,750.0	152.0	.10	PB
		162	1S	1,248.0	125.0	.10	PB
		161	1S	1,419.0	71.0	.05	PO
	97	130	1SO	3,429.0	274.0	.08	PO
		184	1S	3,696.0	185.0	.05	PO
		172	1S	6,522.0	391.0	.06	PO
	98	147A	1SO	1,263.0	76.0	.06	PO
		147	1NU	1,768.0	230.0	.13	PO

OROFINO GOLD INVENTORY BY SECTION AND ELEVATION : 8/6/84

SECTION	ELEVATION	BLOCK	ZONE	TONS	OUNCES	GRADE	CATEGORY
F		129	1NW	2,609.0	130.0	.05	PO
		27	1S	590.0	35.0	.06	PO
		112	1S	2,216.0	177.0	.08	PO
	99	136	1SO	2,324.0	232.0	.10	PO
		9	1S	604.0	217.0	.36	PA
		63	1S	173.0	107.0	.62	PB
		48	1S	125.0	45.0	.36	PB
		30	1S	530.0	329.0	.62	PA
		29	1S	1,126.0	135.0	.12	PB
		91	1S	609.0	390.0	.64	PO
		89	1S	476.0	171.0	.36	PO
		210	1S	329.0	46.0	.14	PO
		86	1S	329.0	46.0	.14	PO
		85	1S	329.0	210.0	.64	PO
		14	1NW	690.9	151.7	.22	PB
		41	1NW	745.3	181.8	.24	PO
		18	1NU	911.6	113.7	.13	PO
		16	1NU	305.6	28.9	.10	PO
			Total:	341,470.7	44,184.7		
F-G	100	37	1NW	861.9	198.2	.23	PO
		27	1NW	1,702.6	391.6	.23	PB
	98	13	2W	1,301.1	75.0	.06	PO
		18	2W	149.1	13.5	.09	PO
	99	15	1NW	323.4	81.7	.25	PB
		48	1NW	287.0	31.8	.11	PO
		46	1NW	3,375.3	225.5	.07	PO
		42	1NW	830.9	226.3	.27	PO
		33	1NW	406.0	43.1	.11	PB
		5	1NU	646.4	75.6	.12	PB
		3	1NU	1,052.2	577.7	.55	PB
		17	2W	93.7	10.3	.11	PO
		14	1NU	1,882.2	131.8	.07	PO
		12	1NU	1,644.8	972.4	.59	PO
			Total:	14,556.6	3,054.4		
F-H	99	43	1NW	2,477.9	1,450.9	.58	PO
			Total:	2,477.9	1,450.9		
G	100	12	1S	983.0	354.0	.36	PA
		74	1S	3,491.0	1,606.0	.46	PO
		122	1S	1,400.0	644.0	.46	PO
		26	1NW	524.1	178.2	.34	PB
		36	1NW	367.0	124.8	.34	PO
		5	3	412.8	95.5	.23	PB
		2	3	942.3	549.7	.58	PB
		34	5W	301.8	31.5	.10	PA
		49	1S	239.0	110.0	.46	PB
	90	186	1S	19,783.0	1,780.0	.09	PO
		166	1S	13,391.0	803.0	.06	PO
	95	202	1S	1,935.6	174.0	.09	PO
		201	R	2,934.8	704.3	.24	PB

OROFINO GOLD INVENTORY BY SECTION AND ELEVATION : 8/6/84

SECTION	ELEVATION	BLOCK	ZONE	TONS	OUNCES	GRADE	CATEGORY
G		200	1S	3,695.6	591.3	.16	PB
		199	ISO	3,008.6	361.0	.12	PO
		196	SW	4,324.8	994.7	.23	PO
		195	1S	5,226.2	1,149.8	.22	PO
		194	1S	6,847.8	1,506.5	.22	PB
		193	R	6,072.0	364.3	.06	PO
		192	1S	2,609.0	261.0	.10	PB
		191A	1S	1,261.0	76.0	.06	PO
		191	1S	1,522.0	928.0	.61	PB
		190	1NU	2,410.0	747.0	.31	PB
		189	ISO	7,229.0	1,157.0	.16	PO
		188A	1S	522.0	63.0	.12	PO
		188E	1S	850.0	102.0	.12	PO
		188	1S	1,330.0	160.0	.12	PB
		187	1S	5,661.0	453.0	.06	PO
		185	1S	6,391.0	383.0	.06	PO
		179	R	201.5	18.0	.09	PO
		178	R	250.0	40.0	.16	PO
		176	1S	1,461.0	146.0	.10	PB
		168	1S	7,532.6	1,657.2	.22	PB
		167	1S	3,061.0	1,102.0	.36	PB
		225	R	5,483.7	712.9	.13	PB
		224	1S	973.9	116.9	.12	PB
		223	R	2,742.2	137.1	.05	PO
		222	R	6,608.7	330.4	.05	PO
		221	R	2,434.8	170.4	.07	PO
		220	R	2,939.1	235.1	.08	PO
		219	R	6,093.0	792.1	.13	PB
		217W	R	232.8	16.3	.07	PO
		217	R	1,369.6	95.9	.07	PO
		216	R	1,956.5	313.0	.16	PB
		215	R	1,677.6	83.9	.05	PO
		214	R	2,847.8	456.6	.16	PB
		213	R	1,521.7	152.2	.10	PB
		212	R	1,600.9	144.0	.09	PO
		211	R	1,677.6	83.9	.05	PO
		207	ISO	2,275.3	227.5	.10	PO
		206	1S	1,278.3	242.9	.19	PB
		205	R	1,427.2	189.4	.13	PB
		204	R	2,501.7	400.3	.16	PB
		203A	R	2,143.0	171.4	.08	PO
		203	R	1,869.6	1,009.6	.54	PB
	97	198	ISO	1,129.1	112.9	.10	PO
		197	1NU	2,580.9	283.9	.11	PB
		218	1S	1,789.6	107.4	.06	PO
	98	227	2W	2,678.3	508.9	.19	PO
		226	2W	2,644.8	264.5	.10	PO
		210	1NU	1,762.2	193.8	.11	PO
		209	1NU	2,209.5	552.4	.25	PO
		208	1NU	1,958.7	235.0	.12	PO
		64	1S	173.0	60.0	.35	PB
		31	1S	846.0	279.0	.33	PA
		113	1S	925.0	314.0	.34	PO
		25	FA	67.4	6.5	.10	PB
		12	FA	350.4	37.1	.11	PA

OROFINO GOLD INVENTORY BY SECTION AND ELEVATION : 8/6/84

SECTION	ELEVATION	BLOCK	ZONE	TONS	OUNCES	GRADE	CATEGORY
G		43	FA	67.4	6.7	.10	PO
		49	1NW	1,666.4	96.1	.06	PO
		14	2W	394.4	69.0	.18	PO
		12	2W	700.6	70.4	.10	PB
		45	5W	633.0	39.5	.06	PO
		36	1NW	1,781.9	160.4	.09	PO
		10	1NW	1,047.0	104.7	.10	PB
	99	11	1S	648.0	298.0	.46	PA
		65	1S	183.0	66.0	.36	PB
		50	1S	72.0	30.0	.42	PB
		33	1S	1,035.0	383.0	.37	PB
		32	1S	730.0	263.0	.36	PA
		93	1S	1,330.0	559.0	.42	PO
		92	1S	1,937.0	697.0	.36	PO
		90	1S	1,583.0	523.0	.34	PO
		22	FA	64.7	7.1	.11	PB
		11	FA	258.8	28.5	.11	PA
		31	1NW	827.5	474.5	.57	PB
		11	2W	334.8	36.8	.11	PB
		10	2W	662.9	72.9	.11	PO
		9	2W	141.5	15.6	.11	PB
		7	2W	541.7	59.6	.11	PA
		46	5W	97.4	5.8	.06	PO
		4	1NW	882.6	93.5	.11	PB
			Total:	206,562.0	32,613.1		
G-F	99	4	1NW	2,062.2	484.1	.23	PA
			Total:	2,062.2	484.1		
G-H	100	2	1NW	1,792.0	222.8	.12	PA
		1	1NW	1,308.7	340.0	.26	PA
		7	3	584.4	140.3	.24	PO
		3	5W	468.0	121.7	.26	PA
	98	24	FA	231.8	37.1	.16	PB
		10	FA	1,205.5	191.9	.16	PA
		42	FA	231.8	37.1	.16	PO
		31	1NW	496.7	38.5	.08	PO
	99	9	FA	927.3	141.0	.15	PA
		23	1NW	377.8	71.8	.19	PB
		16	1NW	204.5	28.7	.14	PB
		5	1NW	2,743.6	488.6	.18	PA
		50	1NW	136.0	25.7	.19	PO
		36	5W	177.8	18.7	.11	PO
		4	5W	529.9	135.7	.26	PA
		27	1NW	160.7	11.8	.07	PO
		17	1NW	292.2	31.3	.11	PO
		15	1NW	194.8	19.5	.10	PO
		13	1NW	843.9	226.9	.27	PO

OROFINO GOLD INVENTORY BY SECTION AND ELEVATION : 8/6/84

SECTION	ELEVATION	BLOCK	ZONE	TONS	OUNCES	GRADE	CATEGORY
			Total:	12,907.4	2,329.1		
G-I	99	52-52A	1S	104.0	21.0	.20	PB
		44	1NW	1,728.5	326.6	.19	PO
			Total:	1,832.5	347.6		
H	100	4	3	868.0	138.9	.16	PB
		14	1S	2,048.0	328.0	.16	PA
		51	1S	510.0	102.0	.20	PB
		3	3	707.9	106.2	.15	PB
		75	1S	7,650.0	1,989.0	.26	PO
		123	1S	1,932.0	521.6	.27	PO
		25	1NW	1,324.2	235.4	.18	PB
		38	1NW	257.5	46.3	.18	PO
		6	3	3,028.6	181.7	.06	PO
		17	5W	1,230.0	113.0	.09	PO
		16	5W	767.0	753.0	.98	PB
		2	5W	361.6	110.4	.31	PA
		323	1SO	1,065.2	235.9	.22	PO
		322	1SO	608.7	42.6	.07	PO
		321	1SO	1,065.2	73.0	.07	PO
		320	1SO	2,573.9	231.7	.09	PO
		48	5W	401.7	458.0	1.14	PO
	95	342	R	4,271.7	213.6	.05	PO
		341	1S	6,439.1	457.7	.07	PO
		340	R	1,537.0	107.6	.07	PO
		339	1S	3,026.1	605.2	.20	PB
		338	R	1,537.0	338.1	.22	PO
		337	R	2,460.7	172.2	.07	PO
		336	1S	1,943.0	233.2	.12	PB
		335	1S	2,411.3	482.3	.20	PB
		334	1S	3,678.3	735.7	.20	PB
		333	R	8,608.7	516.5	.06	PO
		332	R	3,425.9	342.6	.10	PO
		331	1S	7,278.3	363.9	.05	PO
		330	1S	10,125.0	708.8	.07	PO
	97	329	1SO	1,177.8	141.3	.12	PO
		328	1SO	5,478.3	864.8	.16	PO
	98	114	1S	767.0	100.0	.13	PO
		94	1S	951.0	114.0	.12	PB
		23	FA	121.3	14.6	.12	PB
		57	1NW	105.8	20.1	.19	PO
		28	1NW	589.4	112.0	.19	PB
		15	2W	857.7	160.6	.19	PB
		8	2W	578.0	63.6	.11	PA
		327	1NU	2,130.4	176.1	.08	PO
		326	1NU	1,917.4	421.8	.22	PO
		325	1NU	1,630.4	249.5	.15	PO
		30	1NU	357.8	23.4	.07	PO
	99	13	1S	1,826.0	402.0	.22	PA
		34	1S	2,087.0	209.0	.10	PB
		97	1S	1,356.0	108.0	.08	PO
		96	1S	1,589.0	222.0	.14	PO

OROFINO GOLD INVENTORY BY SECTION AND ELEVATION : 8/6/84

SECTION	ELEVATION	BLOCK	ZONE	TONS	OUNCES	GRADE	CATEGORY
H		95	16	450.0	63.0	.14	PB
		21	FA	231.8	35.4	.15	PB
		19	1NW	37.8	7.2	.19	PB
		18	1NW	55.8	11.1	.20	PB
		9	1NW	151.1	28.7	.19	PA
		110	1NW	44.2	6.9	.15	PO
		51	1NW	47.2	7.3	.15	PO
		30	1NW	1,372.1	260.7	.19	PB
		6	2E	260.2	64.1	.25	PO
		2	2E	150.7	41.3	.27	PB
		1	-2E	649.6	194.6	.30	PA
		44	5W	1,042.4	156.1	.15	PO
		28	5W	270.0	39.3	.15	PB
		26	5W	66.1	15.1	.23	PB
		25	5W	104.5	33.4	.32	PB
		5	5W	731.0	92.4	.13	PA
		1	5W	368.1	117.8	.32	PA
		324	180	1,004.3	180.8	.18	PO
		40A	5W	35.6	6.3	.18	PO
		26	1NU	272.8	17.6	.07	PO
			Total:	114,007.2	15,726.0		
H-G	100	8	3	348.8	52.3	.15	PO
			Total:	348.8	52.3		
H-I	100	3	1NW	2,577.5	501.0	.19	PA
		33	5W	1,198.0	399.2	.33	PO
		20	5W	166.4	55.0	.33	PB
		9	5W	634.6	146.3	.23	PA
		52	5W	2,451.8	301.2	.12	PO
		11	3	1,132.2	235.4	.21	PO
	98	8	FA	466.4	56.0	.12	PA
		22	1NW	37.8	7.0	.18	PB
		21	1NW	97.7	22.9	.23	PB
		12	1NW	193.4	36.7	.19	PA
		11	1NW	557.5	138.0	.25	PA
		41	FA	121.3	14.6	.12	PO
		40	FA	693.3	53.7	.09	PO
		56	1NW	52.9	10.0	.19	PO
		55	1NW	136.8	29.5	.21	PO
		16	2W	2,300.9	138.1	.06	PO
		3	2E	1,053.1	326.5	.31	PA
		29	1NU	459.0	59.3	.13	PO
	99	34	FA	565.5	203.6	.36	PO
		20	FA	121.3	14.1	.12	PB
		17	FA	417.8	150.4	.36	PB
		7	FA	485.2	57.9	.12	PA
		17	1NW	745.0	171.8	.23	PB
		8	1NW	388.0	95.8	.25	PA
		7	1NW	322.8	400.5	1.24	PA
		6	1NW	4,609.2	1,054.3	.23	PA
		39	FA	145.6	16.7	.11	PO
		38	FA	735.4	66.2	.09	PO

OROFINO GOLD INVENTORY BY SECTION AND ELEVATION : 8/6/84

SECTION	ELEVATION	BLOCK	ZONE	TONS	OUNCES	GRADE	CATEGORY
H		59	1NW	334.8	413.8	1.24	PO
		40	5W	280.2	83.0	.30	PO
		8	5W	758.0	261.3	.35	PA
		25	1NU	131.9	14.6	.11	PO
		24	1NU	465.7	103.9	.22	PO
			Total:	24,837.0	5,638.3		
H-J	98	34	1NU	2,767.4	296.7	.11	PO
			Total:	2,767.4	296.7		
I	100	30	FA	585.8	186.2	.32	PO
		15	FA	337.0	101.9	.30	PB
		1	FA	485.2	139.8	.29	PA
		24	1NW	336.0	80.6	.24	PB
		39	1NW	1,536.9	368.9	.24	PO
		19	5W	112.2	26.9	.24	PB
		11	5W	448.9	105.5	.23	PA
		313	1SO	608.7	200.9	.33	PO
		50	5W	808.0	193.9	.24	PO
		51	5W	929.8	94.3	.10	PB
		10	3	1,232.6	247.0	.20	PB
	95	319	R	11,604.8	696.3	.06	PO
		318	1S	14,677.8	733.9	.05	PO
		317	R	4,808.7	288.5	.06	PO
		316	R	4,717.4	235.9	.05	PO
		315	1S	3,956.5	197.8	.05	PO
	97	314	1S	2,891.3	144.6	.05	PO
	98	35	1S	1,751.0	140.0	.08	PO
		103	1S	329.0	39.0	.12	PO
		20	1NW	119.6	161.4	1.35	PB
		10	1NW	642.9	868.0	1.35	PA
		54	1NW	167.4	226.0	1.35	PO
		5	2E	1,225.9	378.7	.31	PO
		4	2E	150.7	46.7	.31	PB
		7	5W	290.5	72.1	.25	PA
		7	1NU	181.0	23.5	.13	PB
		343	1NU	6,239.1	998.3	.16	PO
		9	1NU	1,300.6	131.1	.10	PB
	99	36	1S	256.0	20.0	.08	PO
		105	1S	1,018.0	132.0	.13	PO
		104	1S	228.0	32.0	.14	PO
		99	1S	456.0	87.0	.19	PO
		33	FA	315.4	113.5	.36	PO
		2	FA	458.8	165.2	.36	PA
		45	1NW	2,434.7	301.2	.12	PO
		29	1NW	3,664.3	428.3	.12	PB
		43	5W	3,200.9	690.0	.22	PO
		29	5W	601.6	140.0	.23	PB
		24	5W	158.7	55.5	.35	PB
		10	5W	571.4	104.6	.18	PA
		6	5W	1,937.0	493.2	.25	PA
		6	1NU	44.0	4.3	.10	PB
		39A	5W	1,126.4	381.3	.34	PO

OROFINO GOLD INVENTORY BY SECTION AND ELEVATION : 8/6/84

SECTION	ELEVATION	BLOCK	ZONE	TONS	OUNCES	GRADE	CATEGORY
I		23	1NW	455.0	114.5	.25	PO
			Total:	79,401.5	10,390.3		
I-J	100	53	1S	548.0	126.0	.23	PB
		29	FA	644.8	231.5	.36	PO
		28	FA	927.8	321.8	.35	PO
		14	FA	337.0	104.3	.31	PB
		13	FA	121.3	43.7	.36	PB
		1	1NE	100.4	22.1	.22	PA
		31	SW	473.6	180.0	.38	PO
		27	SW	763.1	251.8	.33	PO
	98	53	1NW	2,415.2	162.3	.07	PO
		28	1NW	461.9	45.2	.10	PO
	99	54	1S	540.0	119.0	.22	PB
		98	1S	3,068.0	583.0	.19	PO
		32	FA	294.4	101.7	.35	PO
		16	FA	350.4	122.3	.35	PB
		2	1NE	400.0	88.0	.22	PA
		52	1NW	1,544.0	102.5	.07	PO
		39	SW	1,077.3	258.5	.24	PO
		23	SW	112.2	26.9	.24	PB
		20	1NW	561.8	39.3	.07	PO
			Total:	14,741.2	2,929.9		
I-K	98	35	1NW	4,564.1	585.5	.13	PO
			Total:	4,564.1	585.5		
J	100	16	1S	1,721.7	329.8	.19	PA
		76	1S	5,713.0	1,233.4	.22	PO
		124	1S	980.0	196.0	.20	PO
		18A	SW	65.8	25.0	.38	PB
		13	SW	526.3	200.0	.38	PA
		307	1SO	669.6	46.9	.07	PO
		306	1SO	1,043.5	177.4	.17	PO
		305	1SO	4,591.3	665.9	.15	PO
	95	312	1S	4,930.4	443.7	.09	PO
		311	1SO	3,165.2	696.3	.22	PO
	97	310	1NE	2,156.5	107.8	.05	PO
	98	68	1S	152.0	15.0	.10	PB
		66	1S	185.0	28.0	.15	PB
		37	1S	739.0	103.0	.14	PA
		115	1S	4,832.0	676.0	.14	PO
		47	SW	743.8	166.1	.22	PO
		32	SW	462.6	96.0	.21	PB
		8A	1NW	56.3	24.3	.43	PB
		8	1NW	408.6	173.9	.43	PB
		309	1NW	3,134.8	156.7	.05	PO
		308	1NW	4,291.3	321.4	.07	PO
		33	1NW	1,361.3	575.2	.42	PO
		11	1NW	1,862.0	240.4	.13	PB
	99	15	1S	2,203.0	441.0	.20	PA
		67	1S	111.0	11.0	.10	PB

OROFINO GOLD INVENTORY BY SECTION AND ELEVATION : 8/6/84

SECTION	ELEVATION	BLOCK	ZONE	TONS	OUNCES	GRADE	CATEGORY
J		38	1S	739.0	111.0	.15	PA
		101	1S	185.0	15.0	.08	PO
		100	1S	2,627.0	158.0	.06	PO
		37	FA	1,908.3	339.3	.18	PO
		18	FA	1,506.5	256.9	.17	PB
		13	1NE	221.0	48.6	.22	PO
		4	1NE	300.4	33.5	.11	PB
		3	1NE	91.3	20.1	.22	PB
		42	5W	624.5	138.3	.22	PO
		41	5W	650.7	112.0	.17	PO
		30	5W	547.8	112.7	.22	PB
		12	5W	699.9	231.2	.35	PA
		38A	5W	538.3	37.7	.07	PO
		22	1NU	126.3	47.0	.37	PO
			Total:	56,872.0	8,811.5		
J-K	100	7	1NE	3,792.2	291.0	.08	PO
		35	5W	2,009.1	180.8	.09	PO
	99	8	1NE	779.1	48.3	.06	PO
		15	1NE	3,109.2	327.7	.10	PO
		14	1NE	439.6	49.8	.11	PO
		38	5W	1,541.6	555.8	.36	PO
		37	5W	687.5	61.9	.09	PO
		21	5W	133.9	46.5	.35	PB
		21	1NU	591.3	212.5	.36	PO
		19	1NU	1,547.0	107.7	.07	PO
			Total:	14,630.5	1,882.0		
J-L	98	32	1NU	1,291.6	470.0	.36	PO
			Total:	1,291.6	470.0		
K	100	18	1S	375.6	82.2	.22	PA
		55	1S	99.6	16.8	.17	PB
		77	1S	1,520.0	328.3	.22	PO
		125	1S	1,050.0	241.5	.23	PO
	98	39	1S	609.0	61.0	.10	PA
		116	1S	2,663.0	240.0	.09	PO
		6	FA	563.5	50.2	.09	PO
		2	1NU	334.8	96.6	.29	PA
	99	17	1S	601.0	133.3	.22	PA
		56	1S	174.0	38.0	.22	PB
		40	1S	609.0	55.0	.09	PO
		108	1S	5,785.0	521.0	.09	PO
		107	1S	1,068.0	128.0	.12	PO
		106	1S	591.0	136.0	.23	PO
		5	FA	613.3	60.9	.10	PA
		5	1NE	2,959.1	321.4	.11	PB
		1	1NU	701.8	309.0	.44	PA

OROFINO GOLD INVENTORY BY SECTION AND ELEVATION : 8/6/84

SECTION	ELEVATION	BLOCK	ZONE	TONS	OUNCES	GRADE	CATEGORY
			Total:	20,317.7	2,819.2		
K-L	99	36	FA	1,008.2	100.6	.10	PO
		31	FA	789.9	105.9	.13	PO
		19	FA	114.6	11.6	.10	PB
		3	FA	342.9	27.0	.08	PO
			Total:	2,255.6	245.1		
L	100	20	1S	1,043.0	136.0	.13	PA
		57	1S	261.0	34.0	.13	PB
		78	1S	2,426.0	291.0	.12	PO
		27	FA	396.8	55.5	.14	PO
		126	1S	913.0	127.8	.14	PO
		9	1NE	2,753.7	135.8	.05	PO
		1	SE	478.2	286.9	.60	PA
		302	ISO	1,826.1	1,689.2	.93	PO
		304	ISO	2,587.0	129.3	.05	PO
		303	ISO	2,739.1	164.3	.06	PO
	98	70	1S	183.0	35.0	.19	PB
		41	1S	730.0	139.0	.19	PA
		117	1S	2,719.0	489.0	.18	PO
		4	FA	367.6	25.0	.07	PO
	99	19	1S	868.2	115.6	.13	PA
		69	1S	183.0	31.0	.17	PB
		58	1S	3,048.0	421.7	.14	PO
		42	1S	730.0	139.0	.19	PA
		109	1S	2,119.0	318.0	.15	PO
		35	FA	994.7	86.6	.09	PO
		26	FA	943.5	66.1	.07	PO
		10	1NE	1,360.7	62.1	.05	PO
		6	1NE	550.9	63.8	.12	PB
		4	SE	1,602.1	913.8	.57	PO
		3	SE	183.9	66.2	.36	PB
		2	SE	735.7	441.4	.60	PA
		16	1NE	684.2	106.0	.15	PO
			Total:	33,427.4	6,569.1		
L-M	98	17	1NE	1,586.5	235.9	.15	PO
			Total:	1,586.5	235.9		
M	100	22	1S	826.0	149.0	.18	PA
		59	1S	52.0	5.0	.10	PB
		80	1S	733.0	103.0	.14	PO
		79	1S	774.0	116.0	.15	PO
		127	1S	1,141.3	205.4	.18	PO
		11	1NE	4,347.4	260.8	.06	PO
		301	ISO	1,978.2	516.2	.26	PO
	98	18	1NE	1,212.1	97.0	.08	PO
	99	21	1S	826.0	140.0	.17	PA
		60	1S	206.0	37.0	.18	PB
		110	1S	1,881.0	322.7	.17	PO

OROFINO GOLD INVENTORY BY SECTION AND ELEVATION : 8/6/84

SECTION	ELEVATION	BLOCK	ZONE	TONS	OUNCES	GRADE	CATEGORY
		12	1NE	1,676.2	94.4	.06	PO
			Total:	15,653.2	2,046.5		
N	100	24	1S	512.0	36.0	.07	PO
		81	1S	804.0	40.0	.05	PO
	99	23	1S	1,850.4	125.7	.07	PO
			Total:	3,166.4	201.7		
P	100	300	1SO	3,991.3	199.6	.05	PO
			Total:	3,991.3	199.6		
			Total:	1,651,691.1	235,605.0		

#63·4296

GEOLOGY AND ORE RESERVES
OROFINO GOLD MINE
VOL. III JUNE 1984
DIAMOND DRILL LOGS 1983 - 1 to
1983 - 30

OM83-5-C-23

NORTHGATE EXPLORATION LIMITED

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Property: Orofino
Location: 9350E 12433W
Co-ordinates:

83-7
HOLE: [redacted]
Core size: AQ

Section: 93.50 E
Length: 347.1 ft
Elevation:
Azimuth: 180° Dip: 60°

Dip Tests: Acid-250 & 347' 60° -60°
Started: April 18, 1983
Completed: April 19, 1983
Logged by: Warren Gilman

DRILL LOG

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal → to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
0.0	6.0	CASING									
6.0	14.6	DIORITE: dark green, coarse grain feld laths with qtz augen and inclusions in fine matrix, migmatized basic volcanic, disseminated fine py, <1%, a crude preferential orientation 45°TCN, and core N.									
14.0	23.2	ANDESITE: (basic Vc ?) fine grain med. green matrix with faint euhedral feld. inclusions, some dioritization along fractures and seams with increase py., po adjacent to slips, av. 2 to 3% py									
		14.6-17.8 fine grain volcanic, relict coarse feld., 2 mm. cb. slips with coarse py, av. 3%	7101	3.2	14.6	17.8	.008				
		17.8-19.1 2 qtz veins (3 to 5 cm) 60°TCN, minor cpy, trace po	7102	1.3	17.8	19.1	.002				
		19.1-23.2 folt'n pronounced 70°TCN, erratic coarse and fine py	7103	4.1	19.1	23.2	.020				
23.2	25.8	QUARTZ VEIN: several chloritic inclusions and xenoliths country rock, largely barren, erratic py, minor fine po, trace cpy, average 1%, vein 30°TCN, coarse cb. inject'n seems post qtz									
		23.2-25.8 90% wh. 'frosted' bull qtz, 20% chloritic inclusions	7104	2.6	23.2	25.8	.002				
25.8	33.0	ANDESITE: (basic Vol ?) strange faint feld. fabric, strong silicification upper Ct. decreasing to strong carbonification lower Ct									
		25.8-27.0 several en echelon 1 to 3 cm. qtz veins 0 to 20°TCN	7105	1.2	25.8	27.0	.002				
		27.0-30.0 silicified Vc ? with relict vague diorite fabric, clotted py (from 27.0 to 28.5 bleached to light tan--silicified)	7106	3.0	27.0	30.0	Tr				
33.0	36.2	DIORITE RETROGRADE: c.g., dark green, relict feld. largely cb., clots chloritic amphibole, aggregated py av. 3%, relict skeletal leucoxene									
36.2	50.0	DIORITE: fine grain matrix interstitial to feld., cu, epidote clusters, typical diorite with fabric of igneous intrusive									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-1
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
50.0	52.0	DIORITE RETROGRADE: schisted en echelon Cb. lenses, stringers, feld. replaced by Cb., remobilized, clustered 3% py									
52.0	86.5	DIORITE: e.g. med to dark green, interstitial fig. matrix with clustered feldspar and intergrown qtz with relict euhedral cloritized amphibole, 2% py, a vague lineation 70°TCN									
86.5	118.1	FELDSPAR PORPHYRY, fine grain, grey interstitial matrix for subhedral white feldspar to 1 cm., phenocrysts 30% of matrix, isolated light green chloritized amphibole, upper Ct. 25°TCN, lower Ct. 70°TCN, some lone biotite phenocrysts, av. 1% disseminated py									
118.1	130.2	DIORITE RETROGRADE: relict diorite fabric, cb clots after feld., chl after amph., chl matrix 118.1-121.2 retrograde light green, carbonate rich matrix with en echelon silicous inject'n and matrix silicification with coarse py saturation along fractures	7107	2.1	118.1	121.2	.006				
130.2	140.2	DIORITE: coarse clustered feld with qtz inclusions in a finer med. green chl. matrix, clustered chloritic amphiboles, minor dissem. py.									
140.2	157.5	ANDESITE: (basic Vol) undioritized fine grain fabric with faint relict feld. clots, epidote cb., mini schlieren, probably original fabric after met'm but pre-inject'n 154.0-157.5 (154.5-154.8) qtz vein 70°TCN with parallel 1 cm. cb. vein, minor py with bleached sericitic light grey fine grain alteration zone, 3% py	7112	3.5	154.0	157.5	.002				
157.5	181.0	DIORITE: clustered subhedral cream feld., in chl. finer matrix, chl. amph. clots 1% py., variable sized feld characteristic of 'south' diorite									
181.0	189.8	LAMPROPHYRE: red brown, fine grain matrix, clots chl. amph., some ovoidal qtz augen, sharp upper Ct. 70°TCN, several (2) diorite inclusions to 181.8 due to angle of cutting or stringers off main dyke, (contact									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-1
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
		181.0 - 189.8 (con't)									
		portion similar to 'brown dyke' with some orange inclusions, abundant fine Cb. slips with stronger fine py, lower Ct. 20°TCN									
189.8	207.2	MIGMATITE: multiple bleaching, alteration, original chlorite fabric with imprint of later inject'n, remobilization, normal soft non-silicic matrix, abundant relict minerals in fabric, coarse skeletal leucoxene progressively less altered toward lower contact, py erratic to 4%, variable size.									
		189.8-196.0 strongly bleached injected relict diorite, beige color, 3% py	7113	6.2	189.8	196.0	Tr				
		196.0-201.3 migmatized grn diorite, felt'n 70°TCN, variable py	7114	5.3	196.0	201.3	Tr				
		201.3-203.5 strong silica replacement of bleached migmatite, 8% py a mini replacement zone	7115	2.2	201.3	203.5	.002				
		203.5-207.2 relict diorite fabric, med. grn, 8% py, cb. slips	7116	3.7	203.5	207.2	.002				
207.2	212.6	QUARTZ VEIN: wh. vitrous qtz, chloritic inclusions in fabric at both contacts, minor py, to 5% in chl. remnants, upper Ct. at 70°TCN									
		207.2-212.6 lower 2.0' vein, 20% chl. remnants, lower Ct. 70°TCN	7108	5.4	207.2	212.6	.002				
212.6	233.7	ANDESITE: migmatized silica saturated f.g. volcanic with pink and wh. silica inject'n some beige bleaching in upper portion, py variable, pronounced stringers silica at 40°TCN, grades to more typical f.g. green Vc below 217.0.									
		212.6-217.0 minor brecciation with pink silica inject'n, 5% py	7117	4.4	212.6	217.0	.002				
233.7	242.3	DIORITE: rock fabric pseudo c.g. with typical diorite fabric, crs,clustered, cream feld in vaguely foliated chlorite rich matrix with imprint of silicification towards lamprophyre at lower contact, folt'n av. 70°TCN, minor sulphide									

NORTHGATE EXPLORATION LIMITED

Property:
Location:
Co-ordinates:

HOLE: 83-1
Core size:

Section:
Length:
Elevation:
Azimuth: Dip:

Dip Tests:
Started:
Completed:
Logged by:

DRILL LOG

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
242.3	246.8	LAMPROPHYRE: grn gry brown dyke, strongly silicic, f.g. fabric with amphibole shards in fine matrix, upper Ct. 70°TCN, py concentrated towards upper Ct., lower Ct. at 10°TCN N.B. brown pink cast to rock fabric due to hematitic siliceous late inject'n									
246.8	256.4	DIORITE: feld clustered, white and pink, brown qtz interstitial to feld in chl. matrix with some chl. amphiboles, abundant 2 to 3 cm. cb slips with py concentrat'n sporadic secondary bleaching and beige alteration 251.0-255.0 secondary sporadic silica inject'n, minor 4' feld qtz vn	7118	4.0	251.0	255.0	Tr				
256.4	261.2	LAMPROPHYRE: f.g. green brown matrix with ovoidal and irregular qtz feld intergrowths dispersed thru fine matrix, similar to fabric of 'brown dyke' so common in shaft area, minor fine py, 'psuedo amygdules' 5% of fabric									
261.2	273.2	ANDESITE: sporadic silicificat'n thus varying coarseness of grain fabric, coarsening with secondary silicificat'n, sporadic beige alt'n zones									
273.2	273.8	LAMPROPHYRE: dk brown siliceous, f.g., profusion lt. green., brown wh. psuedo amygdules - strongly silicified, identical fabric with brown dyke of shaft area, contacts 10°TCN minor vy fine py.									
273.8	278.3	QTZ VEIN: vitreous wh. qtz., several irregular inclusions bleached vc. host rock strongly pyritized inclusions--massive qtz has minor sulphide, near nil 273.8-278.3 silicic rk inclusions 10% + small py, vn cts 0°TCN	7109	4.5	273.8	278.3	.004				
278.3	299.2	ANDESITE: f.g. lt. to med. grn, -- selective silicificat'n, coarsening fabric with increase silicificat'n, py clustered toward upper Ct. near Vn. folt'n 70°TCN 278.3-280.1 predominantly silica sat'rn of Vc rock, 8% py	7110	1.8	278.3	280.1	.002				

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-1
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet of 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t
278.3	299.2	con't					
		280.1-284.2 melange of 5 cm. qtz vns, en echelon qtz stringers and 60% selectively silicified pyritized Vc host	7111	4.1	280.1	284.2	Tr.
299.2	331.0	TUFF: banded alternate cb. layers with lt. grey green sericitic, av. 3 mm. at 30 to 40°TCN, several secondary 5mm. to 1cm. cb. lenses parallel banding and folt'n., 1mm. subhedral py variable in matrix some random qtz stringers.					
		299.0-305.0 fine banded tuff with disseminated single xstal py,av. 5%	7119	6.0	299.0	305.0	.006
		305.0-309.0 as above, py oriented parallel banding, slips with late cb qtz	7120	4.0	205.0	309.0	.010
		309.0-317.0 py decrease progressively retains delicate banding	7121	8.0	309.0	317.0	.002
		317.0-321.0 random crs po with isolated py in banded tuff	7122	4.0	317.0	321.0	.036
		321.0-326.0 multiple cb. qtz vns at all angles to core normal, some 90°TCN- very minor sulphides in vns but constant in matrix	7123	5.0	321.0	326.0	.008
		326.0-331.0 py persists with minor po in matrix with irregular brecciated flow top	7124	5.0	326.0	331.0	.004
331.0	340.0	ANDESITE: f.g. lt. grn matrix with abundant single and lenticular cb. qtz segregations in parallel orientation,tr prevailing folt'n,some minor py., some random qtz vns 1 cm. to 5 cm. with marginal py,po in matrix of flow					
340.0	347.0	DIORITE RETROGRADE: c.g. med. grn, a finer chloritic fabric with aggregated cb. rich fold abundant thru fabric, minor py N.B. diorite is pseudo diorite, resembles fabric of shaft diorite but probably is c.g. volcanic, internal fabric and mineralogy bears little relation to shaft diorite, called diorite to distinguish from obvious Andesite					
347.0		END OF HOLE					

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property: Orofino
Location: 12362N 9350E
Co-ordinates:

Section: 9350 E
Length: 400' ft
Elevation:
Azimuth: 180° Dip: -45°

83-2
[redacted]
Core size: AQ

Dip Tests: 150' -48
400' -48
Started: April 20/83
Completed: April 21/83
Logged by: Warren Gilman

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet of 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
0.0	17.6	CASING									
17.6	18.7	ANDESITE: f.g., med. green flow, (perhaps boulder) casing to 26' depth in BR									
18.7	27.0	FELDSPAR PORPHYRY: primary grey matrix with beige alteration, limonitic seams strong secondary silicification, original phenocrystic fabric recrystallized altered fabric predominantly vitreous masking phenocrysts of feldspar, chl. biotite amph. phenos destroyed by alteration									
27.0	72.4	DIORITE: c.g., med. grn., clustered phenocrystic cream feld. with intersertal qtz in dk. green chloritic amphobolitic matrix, local epidotic slips, cb. slips, some finer grained xenoliths and finer grained portions due to local sheating granulation and chloritization, sporadic py, general av. 1%									
72.4	78.8	LAMPROPHYRE DYKE: brown f.g. matrix with fine phenocrysts cream feld. and amphibole and ovoidal to subhedral random feld to 3 cm. secondary silicic hematization visible along slips and permeating fabric to produce a brown matrix, upper Ct. flat, lower Ct. 70°TCN.									
78.8	144.0	HYBRID DIORITE-ANDESITE: obvious secondary injection feld. qtz of original fine fabric basic Vc., feld. epidote injection along preferential slips with recrystallization of marginal fabric 90.7-92.5 local shear, schisting of matrix to layered sericitic flowage fabric, alternate mica and silica layers recrystallized and vitreous 70°TCN (98.7-98.9 massive Cb at 45°TCN and massive Cb 107.1 to 107.2) minor py thru matrix to 1%, local concentrat'ns py adjacent to Cb. slips									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

HOLE: 83-2
Core size:

Section:
Length:
Elevation:
Azimuth: Dip:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
144.0	145.8	LAMPROPHYRE DYKE: f.g. green gry matrix, mini phenocrysts wh. pink feld, qtz, black biotite, amphibole, xenoliths to 1 cm., lava fragments disseminated 1% py, upper Ct. 10^{O}TCN, lower Ct. 30^{O}TCN									
145.8	163.0	DIORITE: c.g. med. green, chloritic **mesostasis** with 3 mm. feld. intergrowths with intersertal qtz and chloritized amphibole phenocrysts crude lineation appears 60^{O}TCN, abundant local silica, epidotic injections along slips, py variable, some coarse concentrat'ns, generally uniform 1% of matrix (more complete migmatitic effect on original andesite fabric gives shaft type diorite									
163.0	175.0	ANDESITE: Arbitrary contact with above, a f.g. fabric with felsic injecta in fine chloritic matrix, migmatized Vc grading to andesite, py sporadic 168.7-171.2 rhythmical alternation of qtz Vn with host perhaps set of qtz stringers (5 cm. wide) with intervening 5 cm. host rck, py concentrated on margin of Vn. injecta	7125	2.5	168.7	171.2	Tr				
175.0	177.2	LAMPROPHYRE DYKE: brown grn f.g. strongly silicic fabric with anhedral grn Vc xenoliths, imprint of brown on fabric probably from secondary silica hematite saturation of original grey matrix, upper Ct. 10^{O}TCN, lower 30^{O}, minor py									
177.2	182.0	ANDESITE: migmatized, f.g. chloritic matrix, injected by felsic pink injecta related to lamprophyre silicification, imprint of m. to c.g. to original Vc fabric									
182.0	184.2	LAMPROPHYRE DYKE: as above, upper Ct. 10^{O}, lower 20^{O}TCN, few random qtz cb slips 30^{O}TCN, abundant amphibole phenos									
184.2	186.7	ANDESITE, migmatized, secondary injection, as above									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-2
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH		DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS				
from	to						Au oz/t				
186.7	189.4	TUFF: banded basic tuff, crs 5 mm. chl. bands alternate with cb. silica lenses at 10° TCN, leucoxene clots, minor py									
189.4	191.9	LAMPROPHYRE DYKE: f.g., grey green matrix with phenocrysts amphibole, chloritic clots to 5 mm., probable altered xenoliths, less silicic than brownish phase, very fine py, upper Ct. 10° TCN, lower 10°, vague lineation 60° TCN									
191.9	203.5	TUFF--AGGLOMERATE: lt. green banded tuff to 194 grading to mini-agglomerate fabric, vague 3 mm. angular oriented fragments in fine chloritic base									
		198.0-202.0 py segregat'ns 8% in fine fragment agglomerate, some crs po	7126	4.0	198.0	202.0	.002				
203.5	217.3	ANDESITE: f.g. med. grn. with abundant metacrysts of cb. feld in fine matrix, all contacts arbitrary, imperceptable fabric changes, less siliceous than fragmental									
217.3	222.7	ANDESITE: bleached altered injected with Cb with progressive increase silica, inject'n toward lower Vn. contact--altered phase of above andesite									
		217.3-220.3 altered Cb Vc. pink wh. qtz Vn 218.3-218.8 at 10° TCN sporadic fine py in Vn and host rock	7127	3.0	217.3	220.3	Tr				
		220.3-222.7 irregular inject'n qtz stringers with 50% chl. mesostasis, minor py	7128	2.4	220.3	222.7	Tr				
222.7	226.0	QUARTZ VEIN: white vitreous bull qtz, brittle fractured									
		222.7-226.0 trace py in minute chloritc schlieren	7129	3.3	222.7	226.0	Tr				
226.0	231.8	QUARTZ VEIN: silicic injected Andesite-melange, Vc heavily coursed by irregular 5 mm. to 1 cm. qtz stringers, pink silica epidote inject'n predates qtz vn.									
		226.0-230.0 impure chloritic qtz Vn 50% and 50% silicified Vc rk	7130	4.0	226.0	230.0	Tr				
		230.0-231.8 silicified chloritic vc remnants with irregular 1 cm. qtz inject'n considerable pink qtz, clustered sporadic py	7131	1.8	230.0	231.8	Tr				

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-2
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
231.8	260.5	ANDESITE-HYBRID: f.g. chloritic matrix with irregular clots brownish silica, abundant, decreasing from about 240' depth into more defined siliceous brown stringers in matrix 243.8-249.2 several 3 to 4 cm. qtz vns, sharp Cts, 80% of section with rare internal py and bordering concentrations py	7132	5.4	243.8	249.2	Tr				
260.5	266.1	DIORITE: c.g. med grn., cream feld aggregates with interstitial qtz in chloritic amphibole matrix with typical diorite intrusive texture, minor fine py <1%									
266.1	267.0	LAMPROPHYRE DYKE: v.f.g. grey brown, sharp contacts but irregular, 60°TCN									
268.0	277.0	BASIC LAVA: v.f.g. dk. grn dense, homogeneous, some vague pseudo amygdules, some vague flow features, random fracturing with irregular qtz inject'n, random silicificat'n with increase dissem py									
277.0	286.4	TUFF: well banded basic tuff, alternating silica, cb bands with thin grn mica bands at 20°TCN, sulphides py, po, in isolated random clots 282.0-286.4 minor authigenic py, multiple qtz slips 1 cm. parallel folt'n barren	7133	4.4	282.0	286.4	.004				
286.4	288.1	QUARTZ VEIN: impure grey wh. vn with abundant irregular inclusions and larger schlieren chlorite-minor py, po, lower Ct 20°TCN 286.4-288.1 minor py concentrated in chl. inclusions, none in massive qtz	7134	1.7	286.4	288.1	.012				
288.1	288.8	LAMPROPHYRE DYKE: dk. grn., non silicic, homogeneous, disseminated 3% py									
288.8	292.0	QUARTZ VEIN: branching impure chloritic with abundant irregular host remnants 288.8-292.0 banded cts, appear like multiple inject'n, very chloritic some brecciation near contacts, py heaviest bordering Cts, isolated py in massive qtz appears remobilized	7135	3.2	288.8	292.0	.008				

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-2
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
292.0	293.0	CHLORITE SCHIST: abundant schlieren pink qtz enwrapped by chloritic random py to 2 mm., folt'n 30°TCN.									
293.0	293.5	QTZ VEIN: massive, faint chloritic seams, minor reticulate, remobilized py vein Cts 30°TCN 292..0-293.5 combined sample of chl. schist and qtz vn. py sporadic av ? 2%	7136	1.5	292.0	293.3	.048				
293.5	296.0	TUFF: banding accentuated by secondary pink silica inject'n along bedding planes in tuff 293.5-296.0 bedding 5°TCN, av. 3% fine py	7137	2.5	293.5	296.0	.016				
296.0	307.2	ANDESITE: more basic than usual--drker grn, matrix permeated,parallel folt'n by silica and hematitic alt'n, later fractures 5 mm. of red silica along slips and fractures, folt'n 10°TCN 303.0-307.2 abundant injection irregular qtz injecta with marginal hematitic qtz pronounced tuffaceous banding at random, py clustered along bands marinal to qtz injecta	7138	4.2	303.0	307.2	.002				
307.2	307.6	LAMPROPHYRE DYKE: dk. grn. f.g. lamp., injected along fractures with pinkish silica inject'n, probably post gold									
307.6	308.6	ANDESITE: migmatized-saturated thru matrix with pinkish silica, saturat'n, some multiple qtz, cb. and pink cb. veining at 0°TCN									
308.6	310.5	LAMPROPHYRE DYKE: as above, Ct. 15°TCN									
310.5	324.6	DIORITE: c.g. med. green, reticulated feld aggregates with interstitial qtz in chloritic finer matrix with dk. grn amphibole xstals, random 1% py pronounced lineation 20°TCN, abundant vari sized slips of qtz Cb. hematite profusions of finer grained original volcanic remnants, Cb. slips 30°TCN have stronger bordering f.g. host rock	x								

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

HOLE: 83-2
Core size:

Section:
Length:
Elevation:
Azimuth: Dip:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
324.6	372.0	ANDESITE: f.g. med. green, flow, with sporadic inject'n hematitic pink qtz to matrix with pronounced silicificat'n, several randon qtz vns, some with pink brown qtz inclusions which predates veining, schisted margins to veins 20^{0}TCN, minor py concentrated on Vn margins, matrix 2% py, silicificat'n sporadic but increasing intensity toward lower Ct.									
		324.6-327.0 impure qtz vn. 325.4-326.3 with schisted marginal flow, minor py, upper Ct. 20^{0}TCN, lower 0^{0}TCN	7139	2.4	324.6	327.0	Tr				
		332.0-334.5 qtz vn 1.5 cm. 90^{0}TCN, hematite rich, minor marginal py, cut by late Cb vein 3 cm. at 45^{0}TCN	7140	2.5	332.0	334.5	Tr				
		336.3-339.0 qtz vn 90^{0}TCN (336.5-336.9) qtz vn (338.1-339.0) 90^{0}TCN	7141	2.7	336.3	339.0	.004				
		339.0-344.0 several multiple slips 40^{0}TCN, massive qtz and massive Cb, abundant hematite alt'n in matrix, vc rock and some veins breccia with qtz saturation and sporadic py 342.0-344.0	7142	5.0	339.0	344.0	.002				
		344.0-346.0 qtz veins (2) .6' and .8', one with strong marginal hem. qtz cb, random py	7143	2.0	344.0	346.0	.002				
		368.7-372.0 qtz veins (2) 372.1-373.5 and 371.0-372.0 at 60 to 70^{0}TCN with abundant chloritic schlieren, marginal pink silica fractured and invaded by later qtz vein., erratic py segregations marginal py to veins and associated with chlorite schlieren, no py in massive bull qtz	7144	3.3	368.7	372.0	Tr				
		N.B. series of qtz veins are later than pink silicificat'n and along same channels of weakness. pink red alteration permeates rock fabric with generation of some epidote									
372.0	400.0	GRANITE: distinct m.g. type F.P. unusual (a granite dyke) subhedral tan feld., anhedral qtz, amphibole phenos 2 to 3 mm., partly resorbed Vc xenoliths, upper Ct. dyke obliterated, may be 90^{0}TCN, minor isolated py, hi preponderence qtz 30% of matrix, pronounce lineation of fabric 30^{0}TCN									
400.0		END OF HOLE									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property: Orofino
Location: 9350E 12100N
Co-ordinates:

Section:
Length: 200'
Elevation:
Azimuth: Dip: 90^{o}

83-3
HOLE: [redacted]
Core size: N.Q.

Dip Tests: 200' -86^{o}
Started: April 22, 1983
Completed: April 23, 1983
Logged by: Warren Gilman

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
0.0	16.0	CASING									
16.0	25.8	ANDESITE: f.g. med. grn flow, variable fabric due to intensity of inject'n, secondary silica epidote, feld, granularity varies with inject'n dykelet F.P. 3 cm. at 18', 50^{o}TCA-tan phenocrystic F.P., profusion orbicular pink brown silica below F.P. dyke rendering fabric vaguely like hybrid diorite typical original 'andesite' has fine matrix with mini white feld cb. discernable grains and mini dk. grn chl. amphiboles, erratic crs and fine subhedral py, skeletal leucoxene pronounced folt'n 20 to 30^{o}TCN 22.8-24.3 irregular branching qtz vn 90^{o}TCN, invading fractured andesite, abundant angular host rk fragments perpendicular to core axis, approx. 50% vn, 50% host rk, py to 10% in rk. fragments adjacent vein	7145	1.5	22.8	24.3	Tr				
25.9	26.8	FELDSPAR PORPHYRY: sheared recrystallized beige, F.P. with vague masked feld phenocrysts due to silica saturation of matrix, migration of mafic material in reticulate lenses, upper Ct 0^{o}TCN, lower 30^{o}									
26.8	27.0	ANDESITE: strong lineation chlorite schist fabric silicified, granulated 30^{o}TCN, parallel F.P. contact									
27.0	32.7	LAMPROPHYRE DYKE: tan to beige dyke with intense silicificat'n masking original fabric lensing green clots chloritic mafic minerals migrate along lineation, skeletal leucoxene abundant, fine py erratic and ubiquitous, lineation parallels contacts 30^{o}TCN, some multiple inject'n of dyke (pale green) invading dyke, grades to green porphyritic less altered variety below multiple inject'n									
32.7	82.7	DIORITE: c.g. med. green, reticulate aggregates subhedral cream feld. with interstitial qtz in chl. amph. matrix with solitary amphibole phenocrysts									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-3
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal ... to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
32.7	82.7	con't									
		some skeletal leucoxene, 2% disseminated matrix py--from 52.0 to 54.3 zone of epidotic siliceous alteration of diorite fabric, vague foliation 60°TCN, numerous chloritic,.epidote, qtz slips, abundant multiple fine fractures									
82.7	87.9	ANDESITE: f.g. med. green, mini wh. feld cb. and equi-grained amphibole in chloritic matrix									
		82.7-84.0 py 2% oriented along fine fractures in fine matrix	7146	1.3	82.7	84.0	.002				
		84.0-85.7 py 4% tr sphalerite, tr po, sulphides on fine fractures	7147	1.7	84.0	85.7	Tr				
		85.7-87.9 py 4%, 2 cm. vein qtz feld. minor sphal.; tr po	7148	2.2	85.7	87.9	Tr				
87.9	88.8	QUARTZ FELDSPAR: VEIN flat sharp contacts 0°TCN, aggregated lensing crm. feld in matrix of lt. grey qtz, minute chl. inclusions mainly near margins,									
		87.9-88.8 vitreous grey qtz with minor sulphides, minor calcite	7149	.9	87.9	88.8	Tr				
88.8	96.6	ANDESITE: f.g. matrix, abundant fine qtz cb. blebs enwrapped in sericite chl. shards, remobilized schlieren chl. in sericite matrix, profusion skeletal leucoxene									
		88.8-91.4 remobilized matrix, foliat'n variable 30°TCN, at 89.3 a multiple epidote qtz banded vn 5 cm. with sphalerite clots, minor py	7150	1.6	88.8	91.4	.002				
		91.4-95.0 remobilized schistose fabric 30°TCN, abundant leucoxenized metacrysts, minor py	7151	3.6	91.4	95.0	.002				
		95.0-96.6 qtz cb. slips (2) minor, partly bleached vc, at vn Ct., minor py	7152	1.6	95.0	96.6	Tr				
96.6	97.9	QUARTZ VEIN: crm wh. vitreous, brecciated upper margin with chl. schlieren									
		96.6-97.9 trains of remobilized py along chl. lenses infractured qtz, 2%py	7153	1.3	96.6	97.9	.002				
97.9	100.6	ANDESITE-QU VN: several multiple qtz stringers at all angles branching from flat vein., in bleached silicified remobilized andesite with 3% py									
		97.9-100.6 flat chloritic vn. (.6') with 1 cm. marginal py (recrystallized)	7154	2.7	97.9	100.6	Tr				

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-3
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
100.6	101.4	QUARTZ VEIN: multiple type with en echelon chl. lenses, qtz feld lenses and vitreous wh. qtz center; pink silica blebs, tr 1 cm., flat with parallel chl. and sericite									
		100.6-101.4 fine py in chl. lenses, massive bull qtz	7155	.8	100.6	101.4	Tr				
101.4	108.0	ANDESITE: splotchy matrix due to recrystallization, segregation epidote feld. anhedral metacrysts, some qtz augen, chl. amphibole segregation in chl. matrix, skeletal leucoxene, 2% py									
		100.5-104.0 several fracture vns (av. 1cm.) some 3 cm. multiple vns, sph. bleb	7156	2.6	101.4	104.0	.002				
		104.0-108.0 several 3 cm. qtz vns with marginal feld. cb chl. 30°TCN, a multiple type vn with banded margins, minor sph. blebs, marginal py, matrix py po 2% in andesite	7157	4.0	104.0	108.0	Tr				
108.0	112.0	DIORITE: c.g. m. green, glomero-aggregates subhedral feld with interstitial qtz, amphibole phenocrysts in finer chloritic matrix, contact-diorite-andesite arbitrary, reverts to diorite when pronounced intrusive, igneous fabric is evident									
112.0	113.1	LAMPROPHYRE DYKE: f.g. grey strongly siliceous matrix with isolated subhedral stubby zoned feldspar phenocrysts, upper Ct. 10°TCN, lower 30°, minute later fractures with wh. and pink Cb. banding, fine py									
113.1	122.6	DIORITE: as above, some epidote saturation zones 3 to 4 cm. wide 45°TCN oriented parallel F.P. (feld. porph.) feeder dykes, (3 cm. porphyritic F.P.) at 121'									
122.6	123.0	FELDSPAR PORPHYRY: grey matrix, cream feld. phenocrysts, 45°TCN, near 90° to foliation invaded diorite at 30°TCN, obvious fracture filling									
123.0	132.5	DIORITE: as above, single feld phenocrysts to 5 mm., minute leucoxene coated pseudomorphs, minor py, prevailing vague folt'n 20 to 30°TCN (at 127' F.P. 2 cm. dyke)									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-3
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH		DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS				
from	to						Au oz/t				
132.5	135.0	DIORITE HYBRID: (or contorted diorite) pronounced lineation, lensing clots epidotic feldspar in fine darker recrystallized matrix at 30°TCN multiple 5 mm. qtz feld. epidote stringers parallel folt'n									
135.0	147.5	ANDESITE: f.g. dark green, qtz epidote feldspar segregations similar to above hybrid but lower percent of metacryst, segregations									
		135.0-137.0 winding vertical banded vein, 1 to 2 cm. wide, pink qtz, wh. qtz., feld, minor Cb banded vn, marginal py, 90° to folt'n of host rock	7158	2.0	135.0	137.0	Tr				
		140.0-142.0 1 to 2 cm. banding pink, wh. qtz cb. banded vn, minor py	7159	2.0	140.0	142.0	Tr				
		145.5-147.5 a few qtz, pk feld vns 1 cm., Cb joint slips, fine py in matrix	7160	2.0	145.5	147.5	Tr				
147.5	150.0	QUARTZ VEIN: flat vitrous wh. vn., abundant chloritic schlieren with py concentrations, trace sph									
		147.5-150.0	7161	2.5	147.5	150.0	Tr				
150.0	156.0	TUFF: fine laminations, light and dark, chloritic layers alternate with quartzose segments 152-153 agglomeratic tuff--abundant orbicular feld--epidote fragments in fine medium green chloritic matrix									
		150.0-152.0 contains several satellitic stringers of overlying vein 2 to 3% py	7162	2.0	150.0	152.0	Tr				
		153.5-154.6 flat breccia vein, stringers 1 cm to 4 cm. cut host rock, 3% py upper Ct. 10°TCN, lower, 30°TCN	7163	1.1	153.5	154.6	.002				
156.0	161.8	AGGLOMERATE: orbicular feld epidote									
161.8	164.7	DIORITE: c.g. med. green, glomero subhedral feld with interstitialfeld, minute skeletal leucoxene									
164.7	170.2	ANDESITE: patches of (pseudo) agglomerate--dense dark green fabric has orbicular clots epidote, feld, may be migmatization (metamorphic pre-diorite process)									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-3
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
170.2	172.2	FELDSPAR PORPHYRY: c.g. beige pink matrix, large feld phenocrysts with minimum fine matrix, bordering biotite, amphibole, upper Ct 30°TCN, lower 80°TCN									
172.2	185.0	TUFF: finely laminated dark green matrix, discontinuous elongate micaceous lenses alternate with cb. epidote feldspar lenses at 50°TCN, later pink silica, feld lenses parallel bedding, related to F.P. above, random thin Cb. lenses parallel trend of laminae, minor fine py enwrapped in dark mica									
185.0	191.7	ANDESITE-FLOW TOP: amygdaloidal, lighter green, fine grain flow with segments of fractured flow top with some agglomerate intermingled, but by sporadic pink silica multiple stringers with Cb. bands indicating a layering effect to veining parallel to primary bedding orientation; at 189' several wedge inject'ns of silica with epidotized lava margins parallel lineation rock fabric, minor py									
191.7	200.0	TUFF: as above, finely laminated, 30° to 40°TCN, random irregular injecta pink silica, predominantly parallel, several segments with orbicular 'pseudo' amygdules (recrystallized agglomeratic fragments with resorbed borders)									
200.0		END OF HOLE									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property: Orofino
Location: 9350E - 12500N
Co-ordinates:

Section:
Length: 250'
Elevation:
Azimuth: 180° Dip: -60

83-4
HOLE: [redacted]
Core size: NQ

Dip Tests: 250' -62°
Started: April 24/83
Completed: April 24/83
Logged by: Warren Gilman

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au /oz.t.				
0.0	19.0	CASING									
19.0	19.6	LAMPROPHYRE: - vitreous v.f.g. grey dyke, en echelon epidotic fractures with silica inject'n; 5% fine py, 80 & 85° contact to TCN									
19.6	28.3	ANDESITE: f.g. med. grn, in Ct. with glassy grey lamprophyre, flow fabric more coarse adjacent to near vertical contact, abundant orbicular inclusions in f.g. chloritic fabric, some amygdules, some metacrystic due to migration of fluids with alterat'n.									
		24.0-26.3 series flat stringers 0°TCN, mainly massive Cb, some 1 cm. to 5 cm., qtz slips with tr sph., vein material 30% of sect'n	7164	2.3	24.0	26.3	Tr				
		26.3-28.3 series flat and 45° Cb and of qtz stringers, minor clustered py, pink silica inject'n may pre-date veining	7165	2.0	26.3	28.3	Tr				
28.3	34.0	FELDSPAR PORPHYRY: pink c.g. dyke; with subhedral cream phenocrysts in c.g. matrix, 5 mm. biotite and amphibole phenocrysts, upper Ct. 75°TCN, lower 60°; xenoliths magmatized andesite, sporadic v.f. py									
34.0	45.5	ANDESITE: fine grn matrix discernable feld. chl. amph. grains, fine clusters epidotic feldspar cut by innumerable qtz cb. pink silica multiple en echelon veins 30° to 70°TCN, multitude Cb. tensions fractures at right angles to veins, minor py									
		34.0-37.0 veins comprise 30° of length in andesite, 2% av. sporadic py, trace sph. N.B. relict leucoxene, fine py av. 1 to 2% in flow fabric	7166	3.0	34.0	37.0	Tr				
45.5	91.2	DIORITE: c.g. med grn., classic intrusive fabric, 50% glomeroaggregates subhedral feld, interstitial qtz, chloritic mesostasis with amphibole clusters, somewhat arbitrary contact due to generation of diorite from andesite, skeletal leucoxene, isolated single grain 1% py, foliat'n 40°TCN, parallel epidotic slips, retrograde margins reconvert to f.g. 'andesite', 62 to 62.8; 63.3 - 68.9; 66.7 - 67.1 zones of plastic flow and introduction regenerated minerals, not a true dyke, recrystallized f.g. pseudo dykes									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

HOLE: 83-4
Core size:

Section:
Length:
Elevation:
Azimuth: Dip:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au /oz.t.				
		45.5 - 91.2 (con't)									
		40°TCN at 74.5, 5 mm. slips with silica epidote and marginal sphalerite N.B. random clustered 3 mm. slips, some entirely cb, some silica epidote.									
91.2	102.5	DIORITE RETROGRADE: strongly oriented reworked diorite, migration of feld. aggregates some resorbtion, a shearing of diorite fabric, feld. drawn into lengthy chains with crude chloritic landing interlayed, increase epidote, pink silica injecta, foliat'n 70° to 90° TCN.									
102.5	106.0	ANDESITE: f.g. amygdoloidal, agglomeratic, tuff accounts lighter green fragmental band, 10° TCA 102.5-104.4 massive vertical (along core axis) calcite vein along angular fracture, some breccia, vuggy with subhedral calcite, no sulphides	7167	1.9	102.3	104.4	Tr				
106.0	111.0	DIORITE: typical, as described 45.5 - 91.2									
111.0	114.5	ANDESITE: dark green fine matrix with mini-clustered epidote feld, abundant mini augen, injected silica, small leucoxene relicts 15 to 20°TCN 111.7-112.1 banded vein-monomineralic-epidote, white cb, pink cb, chl., white qtz, pink qtz, at 45°TCN									
114.5	130.3	DIORITE: typical, as described 45.5 - 91.2									
130.3	131.4	LAMPROPHYRE: f.g. dark grey vitreous matrix with phenocrysts cream feldspar, Cts 45°TCN									
131.4	139.7	DIORITE: as described above, several slips 5 mm. with qtz feld. epidote, tr sph.									
139.7	140.4	FELDSPAR PORPHYRY: c.g. tan brown, feldspathic crystal mush, in excess over minor qtz and interstitial micas, resembles porphyritic granite rather than usual fabric of F.P., py random fine and 2 mm. size, av. 1% upper Ct 60°TCN, lower 75°, bordered contacts 5 cm. massive Cb									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-4
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au /oz.t				
140.4	148.8	DIORITE: typical fabric, strong hematitic saturation of matrix feld., folt'n appears 20 to 30°TCN, isolated large amphibole phenocrysts, leucoxene relicts transgress folt'n and related to multiple slips atturing diorite fabric									
148.8	150.8	LAMPROPHYRE: near 90°TCN, f.g. dark green grey, as described 130.3-131.4 from 143.3-148.9 contact diorite-lamprophyre									
150.8	152.0	DIORITE: as above, identical to 140.4 - 148.8									
152.0	163.5	ANDESITE: stringly altered, variable fabric, all degrees of alteration, much injected silica and epidotizat'n parallel folt'n 10°TCN, variable pink qtz inject'n of fine matrix 162.0-163.5 fractures vein, 3 cm. at 70°TCN, hematitic feldspathic multiple vein, crystallizat'n outward from margins (slow cooling), matrix py in predominant andesite, vein 30% of total mass.	7168	1.5	162.0	163.5	.002				
163.5	167.0	QUARTZ VEIN: impure chloritic, relict host rock 40% of section, host heavily permeated with orbicular red silica, fractured and cut by wh. bull qtz 163.5-167.0 minor py in host rock cut by barren bull qtz	7169	3.5	163.5	167.0	.002				
167.0	169.5	ANDESITE: f.g. dark green, minute feld. epidote single grains imbedded in fine dark chl. matrix 167.0-169.5 matrix py 3%, folt'n 30°TCN, cut by lamprophyre stringer 2 cm at rt ∢x to foliation, non silicic, some red silica matrix permeat'n	7170	2.5	167.0	169.5	Tr				
169.5	172.6	QUARTZ VEIN: massive frosted barren bull qtz, Cts 20° to 30°TCN, at 172.3 F.P. dykelot (pink) cut QV. at 80°TCN 169.5-172.6 massive, barren	7171	3.1	169.5	172.6	Tr				

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-4
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz.t				
172.6	173.5	ANDESITE: schisted, chl. ser. matrix, en echelon fracturing at rt <'s to fol'n 20°TCN; abundant red silica permeat'n of matrix 172.6-173.5 1% fine py, mylonite textures imposed on original fabric	7172	.9	172.6	173.5	Tr				
173.5	176.6	QUARTZ VEIN: wh. massive frosted bull qtz, Cts 45°TCN, rare semi-chloritic schlieren with clusters of remobilized py, some pink silica inject'n on slips 173.5-176.6 random angular host rock fragments with py	7173	3.1	173.5	176.6	Tr				
176.6	177.1	ANDESITE: heavily impregnated with ovoidal patches lenses pink silica, massive pink silica at vein margin, intermixed pink Cb in matrix 176.6-177.1 fine disseminated subhedral py 10% of matrix, cpy	7174	.5	176.6	177.1	Tr				
177.1	180.3	QUARTZ VEIN: massive wh. frosted bull qtz, with chl. schlieren and angular xenoliths andesite with pink inject'n imposed on fabric, minor fine py 177.1-180.3 upper Ct 30°TCN, lower Ct an irregular fracture inject'n with qtz	7175	3.2	177.1	180.3	Tr				
180.3	181.7	ANDESITE: heavily fractured, silicified, angular remnants invaded by qtz breccia 180.3-181.7 fine matrix py 1%, invading qtz barren	7176	1.4	180.3	181.7	Tr				
181.7	184.8	QUARTZ VEIN: frosted white massive bull qtz with relict chl. schlieren and angular fragments of host rock, cross cutting pink silica saturated host rock 181.7-184.8 minor fine py in xenolithic relicts, no sulphides with qtz, 10% plus impurities	7177	3.1	181.7	184.8	Tr				
184.8	188.4	ANDESITE: altered, absorbed, recrystallized, silicified--red silica rich andesite cut by vertical fracture vein 4 cm. wide, part of vein at 90°TCN and at 0°TCN 184.8-188.4 fine py 5% in migmatized andesite proximate to qtz vein 30% vein, 70% host rock, epidotic, isolated stained leucoxene	7178	3.6	184.8	188.4	Tr				

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-4
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au /oz.t				
188.4	210.0	GRANITE: pink equigrannular fabric--individual xstals 2 to 5 mm., abundant qtz with pink feld., pale green sericitic amphibole, 2% py 1 mm., foliat'n appears 70°TCN, upper Ct. 10°TCN, some chloritic to 2 cm., rounded, resorbed margins, massive, uniform matrix, pyritic silica joint planes 60°TCN, most matrix py occurs in multi-sized mafic xenoliths									
210.0	212.5	QUARTZ VEIN: frosted white massive bull qtz, angular segments host rock, micaceous remnants of host in massive qtz, upper Ct. destroyed, lower Ct 70°TCN 210.0-212.5 barren vein, minor disseminated py in host fragments 2%	7179	2.5	210.0	212.5	Tr				
212.5	253.0	GRANITE: light beige to greenish beige, as described above, consistent quartzose homogeneous fabric									
253.0		END OF HOLE									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE:
Core size: 93-5

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au /oz.t				
160.2	160.9	LAMPROPHYRE: dark green satellitic to main dyke, fabric of matrix unperfectly developed, 5% py, imbricate Cb lined 1 mm. slips, Cts irregular and imperfect 70°TCN									
160.9	164.0	DIORITE:									
164.0	169.0	ANDESITE: f.g. med. green, abundance of relict flow features, some remnants of contorted dioritic features indicating a zone of contortion within the volcanic rock									
169.0	180.0	DIORITE: typcial intrusive fabric, some Po with 1% py									
180.0	205.0	ANDESITE: f.g. med. green, vc fabric results from met'm, silica cb segregations enwrapped in fine chl. lenticular chains, met'm has converted original fabric, no feld. relicts (now Cb with minor qtz) - occassional glomero-aggregates of feld and interstitial qtz of diorite associat'n, 2% fine py, random cb. slips, epidotic siliceous slips									
205.0	205.9	QUARTZ VEIN: frosted white banded, monomineralic, later qtz inject'n, perhaps multi-aged									
		205.0-205.9 multiple qtz, cb. banded vein with minor pyritic mica schlieren	7182	.9	205.0	205.9	.002				
205.9	220.2	ANDESITE: original fabric destroyed, faint orbicular cb. schlieren epidote clusters (relict feld.) in green mica matrix, skeletal leucoxene									
		205.9-210.0 stronger fine disseminated py 3% in f.g. flow top, multi-angled slips with pink silica	7183	4.1	205.9	210.0					
		216.8-220.2 py 5% in pink silica injected fabric, some late 3 cm. barren vein	7184	3.4	216.8	220.2	Tr				
220.2	221.3	QUARTZ VEIN: 50% cb. bands marginal to Cts, heavily fragmented, contacts destroyed									
		220.2-221.3 barren (fragmented)heavily limonite stain	7185	1.1	220.2	221.3	Tr				

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-5
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured ~~normal~~ to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au /oz/t				
221.3	224.5	ANDESITE: flow top, multitude of features, partial pillow selvedge, some minor 3 cm. veins 221.3-224.5 veins flat and 45°TCN, 3-4% matrix py, isolated grns to 5 mm.	7186	3.2	221.3	224.5	Tr				
224.5	226.0	QUARTZ VEIN ANDESITE: fractured angular, brecciated, pink silica saturat'n of host, cut by massive barren qtz 224.5-226.0 breccia fill bull qtz post pink silica alterat'n	7187	1.5	224.5	226.0	Tr				
226.0	229.5	QUARTZ VINE: barren bull qtz., rare sericitic remnants, strongly resorbed 226.0-229.5 frosted white, solitary rare py xstals	7188	3.5	226.0	229.5	.004				
229.5	234.8	ANDESITE: pink, saturated pink Cb. silica matrix, cut by low angle 3 cm. qtz veins - barren 229.5-234.8 pink andesite 80% of segment, strongly silica permeated minor py	7189	5.3	229.5	234.8	Tr				
234.8	253.1	ANDESITE: pinkish-green grading to green, cb. silica hematitic saturat'n gradually lessening, disseminated py 3 to 4% in saturated rock decreasing to 1%; from 248 - 251, fabric must resemble retrograde diorite with glomero feld abundant with interstitial chl. fabric, 30°TCN, lone single xstal py, pink silica saturat'n later than Cb slips 234.8-239.7 must pink silica, cb. saturat'n of matrix, persistent disseminated py	7190	4.9	234.8	239.7	.004				
253.1	264.7	LAMPROPHYRE: red, non-vitreous, matrix saturated with bricks, red cb, fabric has abundant single phenocrysts, amphibole, chloritic amphibole, metacrysts grey cb, silica, feld., very fine py, upper Ct 80°TCN, lower Ct 5°TCN									
264.7	268.4	ANDESITE: carbonated micaceous matrix with en echelon pink silica inject'n 20°TCN									
268.4	272.2	LAMPROPHYRE: f.g. green, same fabric as pink dyke above, chloritic amphibole, phenocrysts to 5 mm., strongly carbonated matrix, fine py to 3% through fabric, upper Ct 10°TCN, lower 30°									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-5
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz.t				
272.2	276.3	QUARTZ VEIN: massive frosted barren bull qtz, lower Ct 0°TCN									
		272.2-276.3 feature less vein, mecaceous lower Ct. .1' with 3% py	7191	4.1	272.2	276.3	.006				
276.3	277.0	LAMPROPHYRE: grey-black variety of 'brown dyke'; soft cb. rich matrix, with chilled f.g. margins and central core with chalky solitary phenocrysts so typical of fabric of 'brown dyke'; orbicular clots colorless cb									
277.0	286.0	ANDESITE-FLOW TOP: altered, fractured injected by en echelon pink silica qtz, host converted to chlorite schlieren at 70°TCN, in turn cut by qtz stringers (white) obvious 2 ages inject'n much of host rock with 5% py									
		277.0-282.0 erratic py, host rock 5% py, later veins barren, 60% host to vein	7192	5.0	277.0	282.0	.002				
		282.0-286.0 largely a 3 cm. multiple vein parallel core axis, pink qtz erratic 2% py	7193	4.0	282.0	286.0	.006				
286.0	291.5	ANDESITE: f.g. carbonate impregnated flow fabric, abundant multiple 3 m.. Cb fractures at low angle to CN									
291.5	296.0	ANDESITE: c.g. identical fabric to retrograde diorite, so well established in shaft area									
296.0	301.4	ANDESITE: f.g., amygdaloidal flow top, ovoidal cb. amygdules with marginal epidote in chl. matrix, flow fabric 40°TCN, en echelon qtz cb. fractures mainly 0°TCN, erratic 1% py, pre-pink qtz inject'n, latter followed by white qtz cb.									
301.4	304.6	QUARTZ VEIN: random py in train like aggregates, migration to mini-fractures in vien									
		301.4-304.6 many irregular wisps chloritic schlieren, vestigial host rk	7194	3.2	301.4	304.6	.036				
304.6	306.2	ANDESITE: chloritic schisted fabric, folt'n 20°TCN, matrix mainly chl. and Cb erratic 2% py									
		304.6-306.2 random clustered remobilized py, trains parallel folt'n	7195	1.6	304.6	306.2	.002				

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-5
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz.t				
306.2	308.5	QUARTZ VEIN-ANDESITE: 70% 3 cm. py at 30 to 70°TCN, lesser Cb 306.2-308.5 host rk inter-vein converted to monomineralic lenses chl. or carbonate	7196	2.3	306.2	308.5	.004				
308.5	309.5	ANDESITE: as described 304.6 - 306.2; schisted, altered, remobilized segment between veins, non-silicic 308.5-309.5 minor py	7197	1.0	308.5	309.5	Tr				
309.5	315.8	QUARTZ VEIN: impure chloritic vein, saturation type, with imprint of relict host andesite flow 309.5-312.6 chlorite schlieren between barren veins, 5% py assoc. with chlorite	7198	3.1	309.5	312.6	.006				
		312.6-315.8 proportion po to py high, av. 4% py migrated into fractures in vein	7199	3.2	312.6	315.8	Tr				
315.8	338.0	TUFF: recrystallized, migration of more soluble components, cb in ovoidal blobs, lenses enwrapped by chlorite, faint banding 40°TCN, minor py									
338.0	351.7	DIORITE: c.g. med. green, classic intrusive fabric, glomeroaggregates subhedral cream feld. with interstitial qtz, chloritic finer matrix, amphibole phenos solitary py									
351.7	353.7	TUFF: f.g. with lithic fragments, amygdules, 1% po, several slips 20°TCN, cb and quartz									
353.7	364.5	DIORITE: as described above 338.0 - 351.7 but with some alterat'n, eliminat'n of intersertal qtz from feldspar rosettes, folt'n appears 30°TCN, 1% py									
364.5	377.0	ANDESITE: f.g. med. green amygdaloidal flow top, 40° to 60°TCN, 3 mm. to 2 cm. slips parallel folt'n, smaller are massive cb, with increasing width greater ratio of qtz, characteristic of slips is monomineralic banding suggesting slow soiling and or multiple inject'n, tr py									
377.0		END OF HOLE									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property: Orofino
Location: 12433N 9300E
Co-ordinates:

Section:
Length: 357'
Elevation:
Azimuth: 180° Dip: -60°

83-6
HOLE: [redacted]
Core size: AQ

Dip Tests: 357' -61°
Started: April 29/83
Completed: April 30/83
Logged by: Warren Gilman

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal ... to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au /oz.t				
0.0	9.0	CASING									
9.0	19.5	ANDESITE: f.g. dark green matrix with mini-discernable feld. qtz epidote, cb clusters in fine chl. matrix with lenticular monomineralic chl. schlieren oriented parallel prevailing folt'n 30° to 60°TCN, minor fine py 16.2-29.5 bleached pale grn andesite, cut by irregular 3 cm. qtz veins at 20°TCN	7200	3.3	16.2	29.5	.008				
19.5	20.7	QUARTZ VEIN: frosted white bull qtz, some chloritic inclusions lenticular wisps upper Ct 5°TCN 19.5-20.7 minor py random in qtz, chl. and sericitic schlieren with minor py	7201	1.2	19.5	20.7	.002				
20.7	23.0	ANDESITE: altered, bleached to pale grn adjacent to above vein with 3% weathered py. 20.7-23.0 py irregular, some segregations to 5 mm., generally parallel crude folt'n, 20°TCN	7202	1.3	20.7	23.0	Tr				
23.0	77.0	ANDESITE: porphyritic, euhedral and subhedral cream feld phenocrysts 1 to 3 mm. and amphibole phenos in fine chloritic matrix, progressions of andesite towards diorite, usual epidote impregnated fabric, large epidote permeat'n adjacent to cb and qtz slips, 1% random py									
77.0	111.1	DIORITE: c.g., m.g., glomeroaggregates cream feld and subhedral larger amphibole with interstitial chloritic matrix, random amphibolitic portions, individual amphiboles to 1 cm., usually with greater inject'n felsic material, py 1%, cut by 3 to 5 mm. hematitic qtz slips									
111.1	142.0	FELDSPAR PORPHYRY: tan matrix classic F.P. zoned cream feld phenos to 1 cm. in fig. vitreous matrix with pale green amphibole phenos to 2 mm., solitary py <1%, upper Ct 90°TCN, feld phenos 50% of fabric									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 81-6
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz.t				
142.0	150.0	LAMPROPHYRE: red brick color, f.g. matrix with solitary orbicular colorless cb and amphibole phenos, uniform fine py <1% slips lined with qtz cb py bleached margins of slips hematitic, lower Ct. 50°TCN									
150.0	153.3	FELDSPAR PORPHYRY: tan matrix, as described 111.1 - 142.0									
153.3	157.0	DIORITE RETROGRADE: extremely remobilized regressive texture next to dyke contact vague c.q. relict fabric, chlorite, schlieren, orbicular cb. alter typical diorite									
157.0	171.3	DIORITE: as described 111.1 - 142.0									
171.3	175.4	DIORITE RETROGRADE: as described 153.3 - 157.0									
175.4	181.0	DIORITE: as described 111.1 - 142.0; qtz hematite slips 60°TCN									
181.0	186.2	TUFF: dk grn, basic, rhythmically founded, some orbicular qtz grns, agglomeratic nodes? silicified minor py, banding 5°TCN 185.0-186.2 dk grn tuff, bleached beige 185.8 to 186.2 increase to 10% py	.4' 7203	1.2	185.0	186.2	Tr				
186.2	187.4	QUARTZ VEIN: 30% remnants beige bleached tuffs 5°TCN, 5% py, qtz near barren 186.2-187.4 sericitic epidotic tuff remnants, super saturated in vn qtz	7204	1.2	186.2	187.4	.036				
187.4	189.2	QUARTZ REPLACEMENT: granulated silica fabric with interstitial cb & sericite, 10% py 187.4-189.2 sericitic remnants of saturated tuff in granular silica matrix with 10% py to 5 mm.	7205	1.8	187.4	189.2	.096				
189.2	193.8	QUARTZ FRACTURES: relict silicified green tuff, intense siliciat'n destroys recognizable fabric, fracture veins at 20° to 30°TCN, qtz veins comprise 30% 189.2-193.8 py 10% silicated host, aggregates to 1 cm., veins barren trace sph.	7206	4.6	189.2	193.8	Tr				
193.8	197.4	QUARTZ VEIN: frosted white barren bull qtz, upper Ct 30°TCN 193.8-197.4 trace vestigial rock remnants with minor py	7207	3.6	193.8	197.4	Tr				

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-6
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz.t				
197.4	199.0	ANDESITE QTZ: impure, angular fragments, schlieren chloritic host rock in vein with altered injected remnants host rock (impossible decipher original rk) rock silica injected original 197.4-199.0 py <5% in host rock -- veins qtz barren, host rock, 70% of section	7208	1.6	197.4	199.0	Tr				
199.0	202.0	ANDESITE: dk grn chloritic, abundant ovoidal 'pseudo amygdules', permeated with pink silica, original may be amygdoloidal flow top, possible altered agglomerate 199.0-202.0 pink silica, cb. injected chl. amtrix, 2% erratic py, aggl.	7209	3.0	199.0	202.0	Tr				
202.0	211.0	AGGLOMERATE: basic, dk grn, altered, masking of fabric by silicat'n, abundant faint fragments stretched parallel folt'n 30°TCN, 2% py 202.0-204.0 qtz vein injected in spotted host, 5% py, trace cpy	7210	2.0	202.0	204.0	.058				
211.0	235.5	DIORITE: c.g. med. grn, with classic diorite fabric over much of length, many local transition zones with high ratio of matrix andesite with smaller feld. development (portions could be called porphyritic andesite) minor py, occassional contact fragments lamprophyre complicate granularity									
235.5	237.6	LAMPROPHYRE: red brown, ovoidal cream solitary, phenocrysts, some mafic phenos in v.f.g. brn. grn, Cts 20°TCN									
237.6	247.6	DIORITE: c.g. med. grn, classic diorite fabric, some finer grained portions with less feld., less distinct phenos, minor py									
247.6	251.3	LAMPROPHYRE: red brown as described 235.5 - 237.6; matrix indistinct feld., biotite cb, amph., Cts 20°TCN									
251.3	262.5	DIORITE: f.g. med. green, as described previously 211.0 - 235.5									
262.5	270.2	TUFF: alternating dark and pale grn chloritic bands, silicic, ovoidal fragments resorbed margins imprint hematitic silica permeat'n of matrix, short agglomeratic breccia zones 265.4-267.0 multiple qtz inject'n, some brecciat'n with silica intrusion, minor py (3%)	7211	1.6	265.4	267.0	Tr				

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 93-6
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au /oz.t				
		262.5 - 270.2 (con't)									
		269.2-270.2 single qtz vein .4' with .6' banded tuff, 2% py	7212	1.0	269.2	270.2	.002				
270.2	270.8	LAMPROPHYRE: f.g., med. grn, brn, some fabric, constituents as BROWN DYKE wht, grn, orange phenocrysts in dense f.g. dk brn matrix, silicified cts. 30°TCN									
270.8	272.0	TUFF: v.f.g., med. grn, bleached to epidote grn at both contacts 20°TCN, some grn, some wht. agglomeratic fragments finely banded fabric									
		270.8-272.0 epidotic carbonated Cts., trace py	7213	1.2	270.8	272.0	.002				
272.0	278.9	QUARTZ VEIN: frosted wht barren vein, barren, rare chloritic schlieren and angular xenolithic fragments with minor 2% py									
		272.0-277.4 barren bull qtz	7214	5.4	272.0	277.4	.002				
		277.4-278.9 angular matrix of altered vc host rock cut by frosted qtz veins, host 5% py	7215	1.5	277.4	278.9	.002				
278.9	296.5	ANDESITE: f.g., dk grn, many alterat'n features, epidote wisps, shards, much pillow selvage spaced to pillow width, entire core silicified to some degree, bleaching and intense silicat'n toward upper Ct									
		278.9-281.6 several massive Cb veins, and qtz vns, matrix py 5%, tr sph. leucoxene	7216	2.7	278.9	281.6	.002				
296.5	313.0	TUFF: basic, drk grn, altered, reworked, chloritic bands alternate with epidote lenses and cb lenses, fractures from 1 mm. to 5 mm. with massive cb., fine py thru tuff matrix									
		296.5-299.0 py 2 stages - very fine matrix py and .3 mm. subhedral py	7217	2.5	296.5	299.0	Tr				
		299.0-300.2 thin multiple qtz vn 70°TCN av. 2 cm. wide in tuff, 3% py	7218	1.2	299.0	300.2	Tr				
		300.2-302.0 py 5% in clusters, epidote en echelon bands, strong alterat'n	7219	1.8	300.2	302.0	Tr				
		302.0-305.5 pk qtz permeated epidotic matrix, 3-5 mm. qtz slips, 2 ages py	7220	3.5	302.0	305.5	Tr				
		310.6-313.0 some 1 cm. qtz fractures 0° to 70°TCN, minor matrix py	7221	1.6	310.6	313.0	Tr				

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-6
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz.t				
313.0	314.6	QUARTZ VEIN: wht. with abundant chlorite schlieren mainly 0°TCN, py in schlieren 313.0-314.6 py 5% in schlieren to 2 and 3 mm., wht. qtz post, pink silication is barren, Cts. 0°TCN	7222	1.6	313.0	314.6	.002				
314.6	334.0	ANDESITE: f.g., med. grn, various stages alterat'n, inject'n, pk silica inject'n of much of fabric 314.6-316.5 some multiple qtz cb fractures in andesite, minor py	7223	1.9	314.6	316.5	Tr				
334.0	357.0	DIORITE: c.g., med. grn, classic fabric, folt'n appears 60°TCN, skeletal leucoxene									
357.0		END OF HOLE									

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property: Orofino
Location: 12504N 9350E
Co-ordinates:

Section:
Length: 400'
Elevation:
Azimuth: 180° Dip: -60°

83-7
HOLE: [redacted]
Core size: AQ

Dip Tests: 400' -62°
Started: May 1, 1983
Completed: May 2, 1983
Logged by: Warren Gilman

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
0.0	6.0	CASING									
6.0	20.5	DIORITE: coarse grain med. green, glomeroaggregates cream feld., interstitial qtz, phenocrysts amphibole, coarse chlorite matrix, 1% py in solitary crystals									
20.5	25.5	DIORITE: hi ratio of fine chloritic matrix, feld phenocrysts less distinct, folt'n 30°TCN (trend of feld. aggregates)									
25.5	40.7	ANDESITE: transitional fine grain andesite, varying degrees of injection, felsic material producing feldspar rosettes and ovoidal qtz. 31.0-35.2 several en echelon cb. qtz veins 5 to 10 cm., some qtz brecciate resorbed cut by later cb., minor py, some aggregated blebs 36.0-40.6 sample by Manns ?	7224 7225	4.2 4.6	31.0 36.0	35.2 40.6	Tr .002				
40.7	43.5	LAMPROPHYRE: very fine grain, red brown matrix, abundant shard like amphibole biotite, epidotic feld. phenocrysts, a phase of abundant smaller pale chlorite phenocrysts (probably post-amphibole) -- silicic hard fine matrix, < 1% py, upper V shaped Ct. with V aligned phenos, lower Ct. 60°TCN									
43.5	48.0	ANDESITE-MIGMATITE: fine grain chl. matrix liberally injected with qtz (orbicular) and lone cream feld. aggregates of diorite association									
48.0	70.8	DIORITE: exactly as described 20.5-25.5									
70.8	71.8	ANDESITE: with minor local diorite 40°TCN									
71.8	73.0	DIORITE:									
73.0	90.2	ANDESITE: distinguishable feld., qtz, epidote, amph., chl., cb. magnetite grains, cb. slips 30° to 60°TCN; at 83.2-84.3 py 10% in cb. filled shatter zone 40°TCN	7226	1.0	74.0	75.0	Tr				
90.2	96.6	DIORITE ANDESITE: intermingling, original andesite converted to diorite along rythmical short segments 5 to 10 cm. 90.0-91.2 andesite with minor qtz vein, 5% py	7227	1.2	90.0	91.2	.002				
96.6	100.5	DIORITE									

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-7
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
100.5	105.0	ANDESITE: as described 73.0-90.2									
105.0	164.4	DIORITE: N.B. 140.0-142.0 a fine grained dense dark green silicated zone of shear or Protected Zone or retrograded to fine grain									
164.4	172.4	FELDSPAR PORPHYRY: tan to brown silicated fine grain matrix with zoned cream feld. phenos to 5 mm., amphibole, biotite phenos, zoned phenos comprise 25% of fabric, lineation to feld. 20°TCN, trace fine py, upper Ct. 40°TCN, lower 30°TCN									
172.4	187.0	DIORITE: some mafic matrix greater than classic diorite fabric									
187.0	191.5	DIORITE RETROGRADE: feld. loses interstitial qtz, progresses to fine grain with cb. chl. toward lower dyke contact									
191.5	194.6	FELDSPAR PORPHYRY: tan brown matrix - as described 164.4-172.4; upper Ct. irregular 20°TCN, lower 60°TCN									
194.6	206.0	DIORITE RETROGRADE: schisted andesite - relict structures 194.6-198.5 several cb. qtz intrusive veins, barren, random clustered remobilized py, generally meager	7228	3.9	194.6	198.5	Tr				
206.0	206.9	LAMPROPHYRE: red brown fine grain matrix, distinguishable red felsic matrix with abundant mafic individual crystals, contacts sharp and irregular 30-70°TCN									
206.9	211.9	DIORITE: classic textured fabric, single crystals py 2%, approx. 20°TCN									
211.9	215.4	LAMPROPHYRE: med.green-grey matrix, minute individual anhedral feld., chl., amph., matrix with isolated anhedral cream feld. phenos, some pink, fine py, Cts. flat									
215.4	216.1	DIORITE RETROGRADE: partial remobilization fabric, 3% py									
216.1	223.8	LAMPROPHYRE: as described 211.9-215.4; flat 0°TCN contacts									
223.8	226.2	DIORITE RETROGRADE: as described 215.4-216.1; 5% py skeletal leucoxene 223.8-226.2 py aligned along fractures, qtz. slips with remobilized py	7229	2.4	223.8	226.2	Tr				

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-7
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
226.2	235.6	LAMPROPHYRE: bleached buff green fine grain matrix, amph. and lone cream feld. phenos., disseminated py 226.2-235.6 abundant fine py 3%, much remobilized along fractures	7230	9.4	226.2	235.6	Tr				
235.6	239.7	QUARTZ VEIN: massive vitreous qtz. with impure portions, chlorite schlieren, xenoliths retrograde diorite, vein is post red silica hematitic impregnation contacts irregular, ragged 235.6-239.7 diorite xenoliths in all stages of bleaching silicification, 3% py N.B. log is post split,therefore,measurements off	7231	4.1	235.6	239.7	.020				
239.7	250.6	DIORITE RETROGRADE: chloritic matrix, glomeroaggregates feld., in excess of amts. present in migmatized andesite, secondary silicification 239.7-241.4 secondary pink qtz. cb. augen, 4% disseminated py	7232	4.1	239.7	241.4	Tr				
250.6	253.6	QUARTZ VEIN: impure chloritic vein, abundant chl. schlieren, Cts. 40°TCN 250.6-253.6 qtz barren, xenoliths with 5% disseminated fine py	7233	3.0	250.6	253.6	Tr				
253.6	261.1	LAMPROPHYRE: fine grain,original green matrix, silicified (hematitic) permeation of fine matrix, phenocrysts chl. biotitic amphibole and red feld., 1% fine py, Cts 50°TCN									
261.1	264.0	DIORITE RETROGRADE: glomeroaggregates fretted, carbonated feld. within qtz. augen, minor py									
264.0	283.0	DIORITE: a transitional fabric from migmatized andesite to near diorite fabric, feld. laths in glomeroaggregates fresh, unaltered in strongly fine grain silicated vestigial andesite fabric, minor py, some po.									
283.0	284.9	DIORITE RETROGRADE: as described 261' - 264'; altered carbonated feld. minor py									
284.9	286.0	DIORITE RETROGRADE: injected with pigmatitic pink feld. roughly along folt'n 284.9-286.0 pink pegmatitic injecta 30% with vestigial diorite fabric 5% fine py.	7234	1.1	284.9	286.0	.002				

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-7
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
286.0	286.9	BROWN DYKE: (lamprophyre) strong silication, largely very fine grain, dark brown matrix, with clustered white anhedral phenocrysts, some pink, correlates with brittle brown dyke of shaft area, abundant fine grain black anhedral phenos, upper Ct. flat, lower 60°TCN N.B. actual blue grey colour.									
286.9	292.0	QUARTZ VEIN: frosted bull qtz with rare chloritic schlieren, very fine py associated with minor chl. 286.9-292.0 thin pale chl. schlieren less than 10% in barren frosted qtz.	7235	5.1	286.9	292.0	.158				
292.0	293.4	QUARTZ VEIN (IMPURE): white frosted qtz, abundant schlieren with pale chl. and fine py, some pegmatitic pink feld. injection, fine py, minor fine grey (galena?) 292.0-293.4 fine py 10% plus in chl. and pegmatitic injection, white qtz 40% total	7236	1.4	292.0	293.4	.008				
293.4	294.9	LAMPROPHYRE: fine to med. grain, med. to pale green,carbonated dyke, unlike typical, could be andesite dyke 293.4-294.9 trace py, carbonate threads (barren) - contacts destroyed	7237	1.5	293.4	294.9	.004				
294.9	302.0	DIORITE RETROGRADE: med. to coarse grain, med. green, feld. carbonated, qtz, augen 294.9-299.3 several 5 cm. qtz veins with chl. schlieren, 5% fine py as 15% of total section, py to 8% in host rock	7238	4.4	294.9	299.3	.020				
302.0	303.0	RHYOLITE DYKE: light grey vitreous very fine grain matrix, pink feld. injecta, later than matrix, brittle, threaded with fine cb., mainly fine py, some crs py, Cts 40°TCN									
303.0	303.8	DIORITE RETROGRADE:									
303.8	304.2	RHYOLITE DYKE: vertical Cts									
304.2	316.6	DIORITE-HYBRID DIORITE: essentially a migmatized andesite with variable permeation by felsic components, variable grain size, composition 3% py, much in minute fractures, barren 3 mm. qtz cb. fractures									

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-7
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
316.6	320.0	LAMPROPHYRE: med. grey, med. grain, anhedral chl. (xenoliths), cream subhedral feld. phenocrysts Cts. 50°TCN, 5% py, very hi ration feld. phenos., unlike any lamprophyre of shaft area									
320.0	320.3	DIORITE-HYBRID DIORITE									
320.3	320.8	LAMPROPHYRE: as above 316.6-320.0; branching, xenoliths diorite, 50°TCN									
320.8	328.6	DIORITE-HYBRID DIORITE: abundant, glomerofeld.laths with interstitial qtz and some qtz augen with internal feld. laths,									
328.6	329.0	LAMPROPHYRE: fine grain med. grey, flat Cts									
329.0	330.3	DIORITE-HYBRID DIORITE:									
330.3	338.5	DIORITE RETROGRADE: slightly crushed, contorted fabric, much feld. obliterated, cb'td fabric of migmatized andesite some minor qtz injecta with light green mica									
		331.9-338.5 py 5% in matrix and several 2 cm. qtz injecta (flat)	7239	6.6	331.9	338.5	.002				
338.5	347.8	QUARTZ VEIN: impure, intimate mix of chloritic qtz vein, retrograde rock segments and micaceous schlieren, 5 to 8% py, sporadic, vein at all angles, predominantly flat									
		338.5-343.9 impure chloritic qtz vein 60% and 40% pyritized retrograde, 8% py	7240	5.4	338.5	343.9	.002				
		343.9-347.8 py 5 to 8% minor cb. trace po., impurities comprise 30% of vn.	7241	3.9	343.9	347.8	.028				
347.8	352.5	DIORITE RETROGRADE: foliated med. green, retrograde, feld. cb'td., folt'n near flat, py 8%									
		347.8-352.0 matrix cb. and mica, with pink cb. and qtz. augen, fine py N.B. skip in sample numbers	7243	4.2	347.8	352.0	Tr				
352.5	400.0	DIORITE: coarse grain med. green, glomeroaggregates cream feld. anhedral, subhedral with minor interstitial qtz, not typical diorite or hybrid, resembles more a migmatized andesite (note: field classification would be diorite). progressively more silicic from 382' with fabric more vague, lighter colour									

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-7
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured ~~normal~~ to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
		352.5 - 400.0 (con't)									
		resembles the pseudo diorite in upper part of hole, with light tan qtz augen, from 388' to 390' po 1% disseminated in fabric, at 388.5 a 5 mm. qtz epidote vein 70°TCN with knots of sphalerite, and po, strong alteration and some bleaching adjacent to mini-vein several 2 to 3 cm. veins, qtz cb. at 45°TCN with clustered po., some disseminated matrix po., from 388' to 400' fabric a sporadically migmatized andesite, very atypical diorite, sporadic alteration with associated po.									
	400.0	END OF HOLE									

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property: Orofino
Location: 12691N 9260E
Co-ordinates:

Section:
Length: 400'
Elevation:
Azimuth: Dip: -90°

HOLE: 83-8 [redacted]
Core size: AQ

Dip Tests: 200' -90° 400' -90°
Started: May 3, 1983
Completed: May 4, 1983
Logged by: Warren Gilman

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
0.0	4.0	CASING									
4.0	40.5	DIORITE: coarse grain, med. green, chl. amph. epidote matrix with glomeroaggregates cream feld. with interstitial qtz, and later clear qtz augen with enclosed feld. laths., large single leucoxene skeletons abundant, minor py <1%									
40.5	44.0	DIORITE RETROGRADE: coarse grain, med. green, feld. carbonated, qtz augen, pronounced folt'n 80 to 90°TCN, skeletal leucoxene, minor epidote, minor py									
44.0	51.6	CARBONATE VEIN: cream cb. with chlorite schlieren with irregular impure segments and short portions cb'td. host rock, veins at 90° and 0°TCN, minor py in barren cb. vein as multiple injection 44.0-51.6 Ctd. retrograde rock 50% of segment, 50% vein	7548	7.6	44.0	51.6	.004				
51.6	59.5	DIORITE: coarse grain, med. green, as described 4.0-40.5									
59.5	61.4	LAMPROPHYRE: fine grain, grey matrix with orbicular clots of chl. mats and prisms of chl. mats, with abundant cream. feld. laths, minor py, Cts 40°TCN									
61.4	69.0	DIORITE RETROGRADE: sheared matrix pronounced 20°TCN, aggregated mica lenses with minor en echleon cb., fine disseminated 5% py, could be interpreted as tuff but doubtful, probable regressive shear in diorite 62.0-67.0 py average 5%, sporadic, trace cpy, minor qtz with cb. NOTE: regression in sample numbers	7242	5.0	62.0	67.0	.016				
69.0	133.0	DIORITE: coarse grain med. green, exactly as diorite above, a 'diabasic' array of cream feld. with minor interstitial qtz and later injecta of qtz augen with enclosed and rimming pale cream feld. py variable, sporadic, some segments 5%, general <1% 85.0-86.5 cb. vein in fracture with minor py great variability in granularity over short segments, some epidote saturate portions with massive epidote segregations, amphibolitic portions with amphibole prisms to 2 cm. in length, sulphides sporadic in local segments with crs and fine po.									

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-8
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
133.0	135.8	LAMPROPHYRE: med. grey, fine grain matrix, lone euhedral zoned cream plag. phenocrysts, BROWN DYKE (south extension or equivalent of Brown Dyke), minor glomero-chl. aggregates Cts. 30°TCN									
135.8	194.5	DIORITE: coarse grain med. green, exactly as described 69.0-133.0 granularity highly variable, sulphides extreme sporadic, very local segments with strongly disseminated po. but very minor widths, random epidote permeat'n usually with excess silica, (green feld) at 185' qtz vein 2 cm. wide with py, po, cpy									
194.5	209.2	DIORITE RETROGRADE: coarse grain med. green, cb. wisps remnant of feld., abundant qtz augen, grades into classic retrograde, rounded qtz with interlayered green mica with cb. wisps in fractures increase py to 4%, threaded with qtz cb. fill in fractures									
		199.1-201.7 qtz vein .7' , py random 5% average, 2/3 segment retrograde, 5% py	7244	2.6	199.1	201.7	.006				
		201.7-204.0 classic retrograde, no sulphides									
		204.0-207.0 retrograde with 2% py, a 5 cm. qtz. vein, clustered 8% py rims	7245	3.0	204.0	207.0	.012				
209.2	212.7	LAMPROPHYRE: fine to med. grain, amphibole, feld. matrix with knots of pink cb. to 4 mm., very close to Andesite comp'n, anhedral cb. probable metacrysts, Cts 5°TCN, pronounced folt'n to matrix 50°TCN									
212.7	215.7	DIORITE RETROGRADE: as described 194.5-209.2; a cm. cb. fracture at 80°TCN with minor rimming po, py (random), matrix py 2%									
215.7	222.0	DIORITE: as described 135.8-194.5; <1% disseminated py									
222.0	228.0	DIORITE RETROGRADE: as described 194.5-209.2; several en echelon cb. fractures, py sporadic, clustered aggregates adjacent to 1 cm. cb., matrix py minor									
228.0	249.7	DIORITE: as described 135.8-194.5; highly variable grain size, segments of mafic diorite (i.e. fine to med. grain matrix with random orbicular qtz, feld.) some amphibolitic portions -- at 248.5, minor movement and displacement within diorite, some bleaching, oxidation, reversal in folt'n, wedge lamp. in diorite along minor fault plane, fault - mylonitization .5' ,									

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-8
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
		228.0 - 249.7 (con't) average 4% py, 70°TCN - very little footwall alt'n.									
249.7	255.8	LAMPROPHYRE: bleached, altered to cream and to beige from original grey, relict fabric (phenocrystic) intact - away from main break, upper Ct. 5°TCN, lower Ct. 30°TCN, no sulphides FAULT: 251.6-253.0 bleached, altered, limonitized cb., qtz along sole of break - strong secondary silicat'n along mylonitized dyke fabric, with outer margin .5' strongly carb't'd., fault plane 45°TCN, folt'n 80°TCN reverses 90° across break, dyke and fault devoid of py.									
255.8	259.0	DIORITE RETROGRADE: coarse grain, med. green, vestigial fabric intact, feld. obliterated, matrix cb. oxidized, limonitic, sporadic clots py, av. $<1\%$									
259.0	264.0	LAMPROPHYRE: bleached, altered, relict fabric (phenocrystic) intact, not so altered as segment above 249.7-255.8; silicified where bleached to near lower Ct. which retains much of original grey colour, Cts. 40°TCN, No sulphides									
264.0	265.0	DIORITE RETROGRADE: as above 255.8-259.0; 2% py									
265.0	301.5	DIORITE: coarse grain,med. green, some as 4.0-45.0; as described 135.8-194.5; short segments with less abundant feld. laths., mainly profession orbicular qtz. with internal and rimming feld., sulphides sporadic, 285.5-286.5 local retrograde with hematitic brx (3 cm.), small 2 cm. qtz vein -- 5 to 8% py.									
301.5	307.8	DIORITE RETROGRADE: med. grain chl. matrix with orbicular qtz and anhedral qtz blebs, undeformed except for feld. absent, fine matrix cb., slight softer than normal diorite, py, more Crs. as lone aggregates 3 to 4%									
307.8	319.0	DIORITE: coarse grain, med. green									
319.0	330.2	DIORITE-RETROGRADE: 320.1-327.0 classic retrograde with flat folt'n, 12% py in lensing clusters, .2 cm. flat qtz. veins	7246	6.9	320.1	327.0	.066				

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83 - 8
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
		319.0 - 330.2 (con't)									
		327.0-330.2 qtz vein (barren) 50% of segments, remainder pyritic retrograde, somewhat granulated diorite Average 10% py, vein and rock folt'n flat	7247	3.2	327.0	330.2	.016				
330.2	333.5	QUARTZ VEIN: white barren bull qtz, minor py on margins of vein -- flat 330.2-333.5 trace py in rare chl. schlieren of barren vein	7248	3.3	330.2	333.5	.008				
333.5	335.5	LAPILLI TUFF: rounded clots in sericitic and chl. lenses at 10°TCN, 8% py includes .5' lamprophyre dyke 335.0-335.5 N.B.: sampled prior to logging 333.5-335.5 (probable undetected fault here) av. 5% py in granular matrix	7249	2.0	333.5	335.5	.026				
335.5	340.5	VOLCANIC BRECCIA: oriented fragments in flow top brx. 20°TCN grading down to granular fabric with sericitic slips (appears like footwall of fault) 338.9-340.5 py 2% in lone coarse crystals in granular fabric	7250	1.6	338.9	340.5	.002				
340.5	341.3	BROWN DYKE: dark brown,fine grain,soft matrix with clustered phenocrysts, white feld. cb., dark green anhedral phenocrysts, green biotite, Cts. 5°TCN, N.B.: first instance of two brown dyke units in same hole - each is mirror image of the other									
341.3	356.0	DIORITE: coarse grain, med. green (except at upper sampled Ct.), a granular bleached fault zone altered, injected but original feld. intact, later permeat'n with orbicular pink silica, at least 3 stages of inject'n into pre-diorite fabric, a 'diabasic' feld. orientation with later 'dioritic' orbicular qtz with internal and rimming, cream feld. laths. and final pink qtz. inject'n py 4 to 5% 341.0-342.2 fault footwall, granular qtz. enwrapped in sericite, white to beige bleach, 5% py	7251	1.2	341.0	342.2	Tr				
		at 348.0-349.5 vertical 1 cm. cb. with minor qtz, vein, 5% 5 mm. euhedral py.									

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property:
Location:
Co-ordinates:

HOLE: 83 - 8
Core size:

Section:
Length:
Elevation:
Azimuth: Dip:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
356.0	359.9	LAMPROPHYRE: very fine grain light grey, silicified with multisized 'phenocrysts' green mica, brown mica (often aggregated) and white feld. cb., actually micas are more metacrysts due to contamination of injected host, feld only true phenocrysts, upper Ct. 30°TCN, lower 60°, minor fine lenses chl. py <1%									
359.9	360.4	DIORITE RETROGRADE: contorted, carbonated, abundant crs skeletal leucoxene									
360.4	366.0	LAMPROPHYRE: very fine grain, grey to light brown matrix, fabric resembles Brown Dyke, euhedral pink stained cream feld. usually concentrated in select portions of dyke (probable source of flat Brown Dyke of shaft area)									
366.0	367.7	DIORITE: coarse grain, med. green, variety with feld. laths., very high ratio, trace interstitial qtz.									
367.7	369.5	LAMPROPHYRE: as above 360.4-366.0; upper Ct. 80°TCN, lower 30°									
369.5	369.8	DIORITE: actually xenolith surrounded by dyke									
369.8	370.1	LAMPROPHYRE: as above, continuous part of 367.7-369.5; all the above has many similarities to immature imperfectly developed Feldspar porphyry									
370.1	371.7	DIORITE: much epidote saturation with green feldspar									
371.7	372.2	LAMPROPHYRE: with strong resemblance to feldspar porphyry, upper Ct. 10°TCN, lower Ct. 60°									
372.2	385.3	LAMPROPHYRE: very fine grain, grey-brown silicic matrix, isolated subrounded (resorbed borders) feldspar phenocrysts, often with pink hematitic staining from 381-382 xenolith on vertical Ct. of diorite with dyke, some fracturing in dyke with qtz. stringers and some crs. py.									
		382.0-383.6 from dyke rim, some xenolith, some regenerated qtz. in dyke fractures, isolated lone py.	7252	1.6	382.0	383.6	Tr				
		considerable late qtz fractures through dyke, with lone crs. py; upper and lower Ct. 70°TCN									
		NOTE: from 356.0 to 385.3 close kinship with felspar porphyry, resembles									

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83 - 8
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
		372.2 - 385.3 (con't)									
		porphyry more closely further down hole -- thin section, easily determine comp'n.									
385.3	400.0	DIORITE: coarse grain, med. green, type with very hi feld. to qtz ratio, minor qtz interstitial, trace feld. laths., 70% of total rock fabric, minor py., minor local slips with extra py and relict marginal leucoxene crystals at 395' , trace po. with qtz injecta									
	400.0	END OF HOLE									

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property: Orofino
Location: 12691N 9260E
Co-ordinates:

Section: -
Length: 402'
Elevation:
Azimuth: 180° Dip: -60°

83-9
HOLE: [redacted]
Core size: AQ

Dip Tests: 200' -62° 400' -60°
Started: May 4, 1983
Completed: May 6, 1983
Logged by: Warren Gilman

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
0.0	6.0	CASING									
6.0	30.4	DIORITE: coarse grain med. green, epidote, chl., amphibole matrix with 'diabasic' textured feld. laths. and interstitial qtz and later orbicular qtz with internal smaller feld. laths., some variation grain size to med. grain over short segments (not readily understood) and variable disseminated crs magnetite (seems more abundant with more mafic phases of diorite) < 1% py, trace po. 6.0 to 10.0 AX or BQ									
30.4	34.0	DIORITE RETROGRADE: chloritic med. grain matrix with orbicular qtz cb. and later hematite stained qtz cb., 4 to 5% py 30.4-34.0 minor cb. veinlets, 2 cm. qtz vein, average 4 to 5% disseminated py	7253	3.6	30.4	34.0	.002				
34.0	45.0	DIORITE: coarse grain, med. green, as described 6.0-30.4; typical diorite ('intrusive') fabric with 60% plus cream feld. qtz., large lone skeletal leucoxene, 39.5 qtz vein 5 cm. layered vein 70°TCN, barren, chloritic bands									
45.0	46.5	LAMPROPHYRE: fine grain, brown-grey matrix of mica, cb. feld., (qtz)? with minute anhedral clustered phenocrysts of qtz cb., py 4%, Cts 10°TCN									
46.5	59.2	DIORITE: as described 34.0-45.0									
59.2	66.8	DIORITE RETROGRADE: strong mafic, med. grain matrix with lone qtz. augen 59.2-65.3 several thin en echelon cb. lenses, 3 cm. qtz vein all parallel folt'n 30°TCN, average 3% py	7254	6.1	59.2	65.3	Tr				
66.8	228.0	DIORITE: as above 6.0-30.4 and 34.0-45.0 strong 3% disseminated po 77' to 78.5 with 2% py at 94' layered qtz vein, barren 70°TCN feldspar of diorite 'intrusive' of two generations, a yellow cream feld. with very minor qtz and later light cream feld. associated with orbicular									

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-9
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal -- to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
		66.8 - 228.0 (con't) qtz and or qtz enclosed in feld. laths. random short epidote permeated segments with green feld. laths. and often crs leucoxene and excess silica, random minor po. at 140.5 epidote saturated fracture with minute central cb. vein with cpy, py; at 143.5 qtz cb. vein 2 cm. with very crs py 40°TCN (crs py usually with Au); from 142.0 to 150.0 random development crs magnetite with increase py to 3% in variously epidote saturated segment at 168.5 qtz cb. vein 3 cm. at 50°TCN with crs py, marginal py in adjacent host rock minor at 172.5 cb. chl. vein 1 cm. with crs py at 50°TCN coarse amphibolitic (10') segment above 184' with 2 cm. amph. laths. 183.6-185.0 several en echelon cb., qtz 1 cm. fractures, some with py, po, cpy, average 4% py	7549	1.4	183.6	185.0	.002				
		from 185 to 189 a slightly contorted mafic segment with stretched magnetite and med. grain chloritic fabric and minimal small feldspar laths., some cb. threading 70° and 80°TCN other short mafic segments with small amount feld. laths. through to 228.0 random minor po throughout.									
228.0	234.0	DIORITE RETROGRADE: vague cb't'd fuzzy fabric with feld. cb't'd with abundant matrix cb. - slight increase py 231.0-234.0 several flat 1 to 2 cm. qtz cb. veins, micacious fabric, flat folt'n, some imbricate cb. threads, 5% py	7550	3.0	231.0	234.0	.002				
234.0	238.8	LAMPROPHYRE: intimate mix of fine grain grey lamph. with grain mica phenocrysts and xenolithic diorite and en echlon qtz. cb. narrow flat veins 234.0-238.8 Av. 3% py in 2 cm. veins and matrix (qtz vein 237-minor cpy)	7551	4.8	234.0	238.8	.012				
238.8	246.0	DIORITE RETROGRADE: as described 228.0-234.0; random fractures 1 to 2 cm. flat with qtz or qtz cb., minor py 238.8-242.0 several en echleon qtz cb. veins, rare py, matrix py 2%	7552	3.2	238.8	242.0	.008				

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-9
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
246.0	271.5	DIORITE: coarse grain med. green, glomeroaggregates feld. laths. with silica rims in dark green amph. and chl. matrix, some segments more vague fabric, feld. partly cb't'd., epidotic, <1% py									
271.5	276.7	DIORITE RETROGRADE: heavily cb't'd matrix and cb't'd relict feld. clots, cb't'd slips 271.5-276.7 extensive fractures, cb. filled, thin 1 cm. veining from 10^{o} to 80^{o}TCN, average 5 to 8% py, variable clots, dissemination	7553	5.2	271.5	276.7	.018				
276.7	281.0	LAMPROPHYRE: med. grain grey, matrix equigrained cb., grey and black mica, massive, no phenos., some rotation within dyke along slips, abrupt change granularity along slips, upper Ct. 0^{o} and 90^{o}TCN, very fine < 1% py FAULT 280.5-281.0 beige bleached granulated matrix, limonitic, no sulphide									
281.0	282.2	DIORITE RETROGRADE: strong folt'n cb't'd matrix, 10^{o}TCN, thin cb fractures parallel folt'n, 3% py									
282.2	288.4	LAMPROPHYRE: med. grain, grey colour, as described 276.7-281.0; same dyke, upper Ct 80^{o}TCN, lower Ct. 80^{o}; central part of dyke anhedral cb. to 1 cm., cb. threads in fractures en echelon, minor very fine py									
288.4	291.0	DIORITE RETROGRADE: med. grain banded, all characteristics of tuff, probable well sheared schistose retro-diorite, matted chl. lenses with interlayered parallel thin massive cb. 5^{o} to 10^{o}TCN, average 8% clustered random py 288.4-291.0 cb. vein 5 cm. barren, matrix py 8%, cb. 50%, mica 50%	7556	2.6	288.4	291.0	.020				
291.0	293.6	LAMPROPHYRE: med. grain grey mica, cb. dyke, same as three previous intersections random large cb. clots (metacrysts), upper Ct. 70^{o}TCN, lower 30^{o}, minor py									
293.6	295.0	DIORITE RETROGRADE: heavily cb't'd., partially schistose mica cb. fabric with cb saturation vein, sporadic 5% py									
295.0	295.3	BROWN DYKE: fine grain soft brittle matrix with small black (mica?) phenos and white feld. phenos., cb., 5^{o}TCN									

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-9
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal ... to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
295.3	299.0	DIORITE RETROGRADE: as described 293.6-295.0; py strong in thin cb. fractures (2mm.)									
299.0	303.5	LAMPROPHYRE: silicic dark black-brown porphyritic dyke with isolated crs subhedral phenocrysts, dyke never seen before -- seems related to lamp. and to F.P. and older than F.P., matrix mafic with much amphibole, saturated with silica with subhedral feld. phenos. as 25% of fabric, upper Ct. 45°, very high amount magnetite									
303.5	329.2	FELDSPAR PORPHYRY: fine grain vitreous matrix with very high ratio feld. phenocryst from irregular ct. (branching) a med. brown Ct. at Ct. grading to lighter brown beige, some small pale green mica phenos. and larger anhedral biotite (typical of most F.P.) micas much subordinate to zoned plagioclose at 307.5; frosted matrix to due to internal cb't'n, silicification producing characteristic vague fabric with feld. masked with alt'n; at 313' hematite stained silicated interdyke fault, minor py, lower Ct. 0°									
329.2	333.0	LAMPROPHYRE: same silicic dark black porphyritic rock as above, 1 cm. qtz vein with cpy upper Ct., great decrease magnetite content									
333.0	354.2	FELDSPAR PORPHYRY: as described 303.5-329.2; upper Ct. 70°TCN; previous dyke had long margins of red brown matrix, contact here is light grey grading to very light grey in silicified center									
354.2	354.8	LAMPROPHYRE: as described above, dark green black silicic									
354.8	355.1	FELDSPAR PORPHYRY: abundant small feld. phenos., Cts 70°TCN, F.P. probably post dates this lamprophyre									
355.1	355.8	LAMPROPHYRE									
355.8	374.0	DIORITE: coarse grain,med. to darker green mafic rock with scattered feld. subhedral phenocrysts with attendant intergranular and marginal qtz, at 366.2 dark grey lamprophyre fragment within strong epidote permeation zone 369.5-372.0 strong felsic (f.g. qtz feld., permeat'n through matrix, leucoxene, mag'n, 2% py)	7750	2.5	369.5	372.0	.002				

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-9
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
		355.8 - 374.0 (con't)									
		372.0-374.0 py 3 to 4% mainly lining minute fractures in silicified diorite	7751	2.0	372.0	374.0	.002				
374.0	374.8	LAMPROPHYRE: black fine grain massive minor dyke with continuous xenolithic diorite in core length, drilling along rim of dyke									
		374.0-374.8 sampled to complete length ore intersection, 2% fine py, aggregated 5% py near contacts	7752	.8	374.0	374.8	Tr				
374.8	388.2	DIORITE: coarse grain med. green, typical diorite fabric, hi proportion of feld. laths, qtz.									
		374.8-376.8 qtz vein 2 cm. at Ct. sporadic py, .6' disseminated py po 10% combined ratio 1::1, 8% py below dyke Ct.	7554	2.0	374.8	376.8	.488*				
		some amphibolitic portions with long prisms amphibole									
		376.8-379.0 sporadic epidotization, silication, small segments with 8% py, 8% magnetite	7753	2.2	376.8	379.0	.002				
		379.0-381.0 some clustered py, po attendant with sporadic silication, epidote, magnetite	7754	2.0	379.0	381.0	.002				
		381.0-383.0 py 3% fine, disseminated with sporadic silication, crs matrix epidote, trace po	7755	2.0	381.0	383.0	Tr				
		383.0-385.0 strong epidotization, silication, minor py 1 to 2%, crs amphiboles	7756	2.0	383.0	385.0	.002				
		385.0-387.0 py 1 to 2% amphibolitic diorite, leucoxene, secondary recrystal-ization, rare cb.	7757	2.0	385.0	387.0	Tr				
388.2	391.3	LAMPROPHYRE: light grey silicic, fine grain massive dyke with continuous xenolithic diorite in core length, drilling along rim of dyke									
391.3	393.0	DIORITE RETROGRADE: altered, carbonated feld., epidotized matrix, cb. permeation									
		391.3-393.0 py 8% in clustered crs groups, lenses, cb. vein with sulphide	7555	1.7	391.3	393.0	.002				
393.0	402.0	DIORITE: classic fabric of di intrusive grades into strange fine to med. grain mafic diorite with scattered feld. qtz phenocrysts, 80% plus fine grain mafic matrix with, py rare									
	402	END OF HOLE									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property: Orofino
Location: 14278N 9546E
Co-ordinates:

Section:
Length: 101'
Elevation:
Azimuth: 180° Dip: -45°

83-10
HOLE: [redacted]
Core size: AQ

Dip Tests: 100' / -48°
Started: May 6, 1983
Completed: May 7, 1983
Logged by: Warren Gilman

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
0.0	6.0	CASING									
6.0	22.0	DIORITE: coarse grain, med. green, glomero-aggregates cream feld. with intersertal qtz in chl. matrix, chloritic anph. phenos to 3 mm., 2% disseminated fine py, at 8' brecciated qtz feld. chloritic vein 3 cm., flat cts, increase py, several epidotized segments as wide margin on thin qtz fractures at varied angles TCN, qtz cb. slips out by thin cb. filled slips									
22.0	30.2	TUFF: andesitic, fine chlorite lenses with interlayered cb. to 1 mm. width, probable tuff, segments with discontinuous parallel lenses in foliated chl. matrix 20°TCN 26.0-30.2 qtz cb. veins (3) of 5 cm. at 20°TCN, minor py in banded tuff with short segments stretched agglomerate, 5% py, coarse 2 mm. py with thin qtz slips	7255	4.2	26.0	30.2	.003				
LOGGED INCORRECTLY 30.2 30.2 - 38.4 is a multiple Lamp. chl. schist — actually grey dyke.	33.8	LAMPROPHYRE: dark green, fine grain silicic fabric of felsic mafic constituents and dark green chl. amph. phenos to 3% of matrix, minute cb. threading of matrix, 27% py, Cts 10°TCN									
33.8	34.0	CHLORITE SCHIST: original dark green rock, minor mineralic chl. and minor cb.									
34.0	38.4	LAMPROPHYRE: dark grey biotite rich mafic dyke, matrix composed of band biotite equigrained, some rare ovoidal cream cb. phenos (age relation of dykes established, see old logs) Cts 10°TCN									
38.4	42.4	QUARTZ VEIN: white cream bull qtz abundant chl. schlieren 20% of matrix, upper Ct. 30°TCN, lower 60°; several lone lenses massive cb 38.4-42.4 py in solitary cubes, 1% of matrix, near barren	7256	4.0	38.4	42.4	.130				
42.4	46.3	DIORITE RETROGRADE: entire matrix remobilized, feld. converted to cb. amphiboles to chlorite, some qtz as lone segregations, 2% py 42.4-46.3 py as lone 1 mm. crystals, probably remobilized	7257	3.9	42.4	46.3	.004				

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-10
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
46.3	48.6	QUARTZ VEIN: impure chloritic progresses to intrusive 4 cm. vein angling on Core Axis									
		46.3-48.6 single coarse euhedral py in vein, marginal trains py at vein Ct.	7258	2.3	46.3	48.6	.008				
48.6	54.2	TUFF: as described 22.0-32.2 -- difficulty is that with dynamic met'm, a rock of identical comp'n can be obtained with corresponding fabric from pre-existing diorite, main py with cb clots, lenses, appears migrated to Cb.									
		48.6-50.5 matrix chl. cb with 2% disseminated py, abundant 1 cm. stringers qtz barren, qtz veining flat irregular, no Cb	7259	1.9	48.6	50.5	.003				
54.2	74.2	DIORITE RETROGRADE: remobilized fabric migration recrystallization ovoidal qtz and cb., cb. wisps marginal to qtz, linear chl. cb. matrix with metacryst due to deterioration of feld., linear trains magnetite sporadic, py erratic to 8% in trains parallel to folt'n at 30° to 0°TCN									
		60.0-64.0 sporadic concentrations disseminated trains (recrystallized) py, retrograde test	7260	4.0	60.0	64.0	.007				
		64.0-67.0 several 3 cm. qtz., minor cb. veins with extra marginal py	7261	3.0	64.0	67.0	.004				
		67.0-70.0 more contorted retrograde developing chloritic fine fabric with metacrysts qtz. and cb., wispy Cb., (feld. deterioration)	7262	3.0	67.0	70.0	.005				
		N.B. sporadic leucoxene relicts reflect folt'n later fracturing threaded with hematitic qtz. appears post vein as distinct from some qtz veins in CF-82 South area									
74.2	76.3	LAMPROPHYRE: fine grain, dark green vitreous porphyritic matrix, fine felsic mafic, cb. matrix, impossible determine minerals, porphyritic central portion, zoned pink and cream phenos to 3 mm. as solitary phenocrysts more common type of lamprophyre, < 1% single py crystals, Cts. 10°TCN with chl. schist lenses at Ct.									
76.3	101.0	DIORITE: local areas of contortion, partial deformation, insufficient to destroy diorite fabric; glomero-subhedral aggregates cream feld with intersertal									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-10
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS				
		76.3 - 101.0 (con't)									
		qtz, varying ratios of chl. matrix to feld. and amph. phenocrysts, local epidotization and alteration, sporadic magnetite, 1 to 2% py.									
	101.0	END OF HOLE									

Page 1 of 2

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property: Orofino
Location: 14278N 9546E
Co-ordinates:

Section:
Length: 101'
Elevation:
Azimuth: Dip: -90°

83-11
HOLE: [redacted]
Core size: NQ

Dip Tests: 100' -88°
Started: May 7, 1983
Completed: May 8, 1983
Logged by: Warren Gilman

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
0.0	4.0	CASING									
4.0	11.0	DIORITE: coarse grain, med. green, glomeroaggregates feld. interstitial qtz., chloritic matrix, epidote qtz. slips, matrix py <1%									
11.0	30.6	TUFF - Andesite: vague chl. lenses, laminae with interlayered b., delicate banding at times obscure, en echelon 1 cm. qtz injecta parallel banding 20°TCN, segments discontinuous Cb. lenses in chl. matrix									
		14.1-16.1 several qtz cb. irregular veins, barren 20°TCN	7263	2.0	14.1	16.1	ND				
		18.5-21.0 qtz cb. fracture fill 0° and 90°TCN, irregular	7264	2.5	18.5	21.0	Tr				
		N.B. nearby hole displays prominent tuff fabric, extremely vague here									
30.6	34.4	LAMPROPHRE: med. grey, equigrained (antithesis of type described in previous logs) essentially biotite shards in Cb rich matrix, featureless, flat contacts, isolated subhedral py <1%, age relation with vitreous fine grain lamprophyre in previous logs									
34.4	38.0	QUARTZ VEIN: massive cream vitreous, individual schlieren with strong cpy, po., rare, and chloritic schlieren in lower portions, flat contacts									
		34.4-36.0 schlieren po and cpy, thin threads py, mainly massive qtz.	7265	1.6	34.4	36.0	.005				
		36.0-38.0 parallel impure lenses, schlieren chl. in massive qtz., lenses massive Cb and separate cb. chl. lenses with py	7266	2.0	36.0	38.0	.027				
38.0	52.0	DIORITE RETROGRADE: directional chloritic fabric with ovoidal qtz augen with marginal cb. wisps, clotted aggregates green biotite, fabric remobilized									
		38.0-39.3 a .5' qtz cb chl.filagree with 3% py in retrograde matrix	7267	1.3	38.0	39.3	.010				
		39.3-41.3 granular recrystallized, augen qtz with wispy cb. margins, 3% py.	7268	2.0	39.3	41.3	.002				
		41.3-42.3 qtz. multiple flat inject'n, barren, aggregated py in chlorite	7269	1.0	41.3	42.3	.062				
		42.3-43.9 erratic 3% py in lone crystals, some flat barren qtz vein	7270	1.6	42.3	43.9	.003				
		43.9-45.9 grannular remobilized ovoidal qtz with marginal Cb. wisps, very minor py.	7271	2.0	43.9	45.9	Tr				

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83 - 11
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS				
52.0	56.0	DIORITE: some alt'n, epidotic interslices, lone large skeletal leucoxene with intact feld. aggregates with intersertal qtz, minor py.									
56.0	68.5	DIORITE RETROGRADE: granular (orbicular) qtz. with wisps marginal Cb. in fibrous chl. matrix, prominent leucoxene relicts, widespread epidote, lone magnetite crystals, vague folt'n appears about 70°TCN, minor py.									
68.5	80.5	DIORITE: coarse grain, med. green, classic texture, glomero-aggregated cream feld. with intersertal qtz, some matrix epidote with chl., leucoxene relicts, minor magnetite, slender amphibole phenos to 1 cm.,									
80.5	85.0	DIORITE RETROGRADE: granulated, rotated fabric, orbicular qtz margined by wispy Cb., in chloritic matrix with prominent skeletal leucoxene, amphiboles destroyed, fabric oriented 30 to 40°TCN, aggregated (remobilized) 3 to 4% py									
85.0	101.0	DIORITE HYBRID: nontypical diorite fabric, resembles coarse grain flow, (diabasic texture) inter-locked feld. laths and chloritized amph. with orbicular qtz with interstitial feld. embedded in coarse matrix, and chloritized stressed chloritic fabric, 1% py									
	101.0	END OF HOLE									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property: Orofino
Location: 14243N 9596E
Co-ordinates:

Section:
Length: 91.0
Elevation:
Azimuth: 180° Dip: -60°

83-12
HOLE: [redacted]
Core size: NQ

Dip Tests: 100' -59°
Started: May 9, 1983
Completed: May 9, 1983
Logged by: Warren Gilman

DEPTH		DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS				
from	to						Au oz/t				
0.0	8.0	CASING									
8.0	18.0	DIORITE HYBRID: coarse grain, med. green, 'diabasic texture', coarse grain basic flow, feld laths (saturated with epidote) with interspersed chl amphibole with random orbicular qtz injecta with enclosed minute feld laths (fresh) leucoxene crystals imprint on older fabric, impregnated with Cb., 1% py 17.0-18.0 fine schisted chl. matrix with clear qtz augen with enclosed feld laths									
18.0	21.6	LAMPROPHYRE: fine grain, med. green ('green biotite' type described in previous logs), homogenous matrix green mica, cb, lenses hematitic silica parallel in matrix, solitary phenocrysts of pinkish qtz, contact 40°TCN									
21.6	22.6	DIORITE RETROGRADE: fine grain chloritic remobilized oriented matrix with epidotic solitary plag. phenos, recrystallized py 4%									
22.6	29.0	DIORITE HYBRID: epidotic chloritic finer matrix, foliated 20°TCN with orbicular qtz injecta with contained fresh feld. laths,									
29.0	36.0	ANDESITE: possible retrograde diorite -- finer chl. cb., vague orbicular carbonaceous clots, minor py 34.1-36.0 small cb. clots - lenses in chlorite, 2% clustered py	7272	1.9	34.1	36.0	.002				
36.0	37.3	QUARTZ VEIN: highly impure, multiple vein., intervening chloritic rock layers, 10% py, silica permeation of rock matrix, flat to 10°TCN. 36.0-37.3 py 10% some euhedral to 5 mm.	7273	1.3	36.0	37.3	.036				
37.3	49.1	ANDESITE: fine grain, med. green, some granulation rotation near upper vein contact, a fibrous chl. cb. matrix with lone orbicular qtz, enclosed feld laths 37.3-38.7 py 2% in contorted granulated matrix, en echelon cb N.B. random local areas subhedral crystals magnetite	7274	1.4	37.3	38.7	.008				
49.1	77.8	DIORITE HYBRID: variable grain chloritic, epidotic matrix with segments of crs epidotic feld laths injected with oribulcar qtz containing enclosed feld laths									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-12
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS				
77.8	81.6	LAMPROPHYRE: fine grain equigrained dark green mica, cb, epidote matrix, lone cb. phenos, 2% fine py, leucoxene									
81.6	91.0	DIORITE HYBRID: as described 49.1-77.8; segments with amphi-phenos to leucoxene									
	91.0	END OF HOLE									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property: Orofino
Location: 14243N 9596E
Co-ordinates:

Section:
Length: 102'
Elevation:
Azimuth: Dip: -90°

83-13
HOLE: [redacted]
Core size: NQ

Dip Tests: 100' -88°
Started: May 8, 1983
Completed: May 9, 1983
Logged by: Warren Gilman

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS				
0.0	10.0	CASING									
10.0	15.0	ANDESITE: schisted micaceous matrix, schlieren cb. enwrapped in chlorite, isolated subhedral py to 2 mm., epidote, augen, lenses cb., 70 to 90°TCN									
15.0	16.3	LAMPROPHYRE: fine grain equigranular green mica, cb matrix ('green biotitic' type) with lone orbicular cb phenocrysts, some fine py, flat Cts.									
16.3	28.7	ANDESITE: as above, less schistose below dyke with orbicular qtz injecta amphibole phenos en echelon 10°TCN, minor py									
		27.0-28.7 clustered lensing regenerated py 5% on 2 cm. qtz margin	7275	1.7	16.3	28.7	.005				
28.7	29.5	QUARTZ VEIN, multiple flat vitreous qtz with interlayered host rock 20% of volume									
		28.7-29.5 cubic py preferential in xenoliths of host, vein barren	7276	.8	28.7	29.5	.014				
29.5	38.0	ANDESITE: fine chlorite cb. med. green epidotic matrix with orbicualr qtz and cb., cb. threads and epidotized matrix, 1% pyrite, chloritic amphibole phenocrysts									
		29.5-31.0 py 1 to 2% in lone small crystals, qtz 1 cm. fractures (barren)	7277	1.5	29.5	31.0	.003				
38.0	43.0	DIORITE HYBRID: essentially same fabric as above andesite but progressive development orbicular qtz with imbedded subhedral feld laths, lone skeletal leucoxene fractures with massive 1 cm. cb. 90°TCN									
43.0	48.5	ANDESITE: as described 29.5-38.0									
48.5	51.6	DIORITE HYBRID: as described 38.0-43.0									
51.6	54.4	LAMPROPHYRE: as described 15.0-16.3; 'green biotite' type with cb. chl. matrix includes a satellite lamprophyre at lower Ct. 45°TCN with intervening host rock									
54.4	77.0	DIORITE HYBRID: as described, key feature is abundance of orbicular qtz and enclosed cream feld laths									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-13
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal . to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS				
77.0	80.0	ANDESITE: as described 29.5-38.0; magnetite intact, elongate crystals parallel folt'n									
80.0	102.0	DIORITE HYBRID: as described but with coarse matrix epidotic feld. amph., chl. and profusion orbicular qtz with included cream feld laths, fresh magnetite, amphibolitic segments, amph. prisms to 1 cm., leucoxene rimmed magnetite N.B. at 94.5-95.5 shear retrogressive zone orbicular clear qtz in fine chloritic matrix									
	102.0	END OF HOLE									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property: Orofino
Location: 14193N 9546E
Co-ordinates:

Section:
Length: 102'
Elevation:
Azimuth: 180° Dip: -60°

83-14
HOLE: [redacted]
Core size: NQ

Dip Tests: 100' -61°
Started: May 9, 1983
Completed: May 10, 1983
Logged by: Warren Gilman

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
0.0	3.0	CASING									
3.0	5.0	A.Q. CORE: (from N.Q. casing) DIORITE aggregated feld laths with lesser qtz									
5.0	22.0	ANDESITE: fine grain chloritc epidotic matrix, local areas diabasic texture laths of epidotic feld., with enclosed chloritic amphibole, abundant skeletal leucoxene, en echelon cb. qtz slips 1 cm. at 70°TCN									
		12.0-16.5 brittle fractured fine grain andesite, qtz and cb. irregular slips, some cb. heavily rusted, 2% subhedral py, narrow veins parallel folt'n	7278	4.5	12.0	16.5	.011				
		16.5-19.0 intermittent veins and matrix saturation silica, 5% py, clustered	7279	2.5	16.5	19.0	.004				
22.0	25.0	FAULT ZONE: brecciated (ovoidal fragments) bleached silicified fault zone in fine grain volcanic rock, some transported breccia fragments along break at 223', grading to very fine grain silicified pulverized zone, very fine py, much in transported fragments at 80°TCN									
		22.0-25.0 fine py erratic in pulverized ultrasilicic matrix	7280	3.0	22.0	25.0	ND				
25.0	30.7	ANDESITE: as described above, altered to chloritic fabric with augen, lenses, seams cb., minor py.									
30.7	33.3	LAMPROPHYRE: 'green biotitic' type - fine grain bleached light grey matrix with laths like green phenocrysts of green mica after amphibole, matrix very fine silicic beige grey feldspar too fine to distinguish, upper Ct 50°TCN lower 70°TCN, very fine py									
33.3	36.5	ANDESITE: same as 25.0-30.7; essentially chloritic fabrix enwrapping Cb. clusters, vague appearing perhaps due to softness of rock									
36.5	43.3	LAMPROPHYRE: 'green biotite' type as described 30.7-33.3; upper Ct. 25°TCN, lower 90°TCN, light grey pink color due to hematitic alt'n, several en echelon slips with 1 cm. chl. cb. and marginal py, fine disseminated 3% py in matrix									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-14
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS				
43.3	49.9	ANDESITE: same as 33.3-36.5; vague chl. cb. fabric with cb. in segregations, increasing lone orbicular qtz injecta									
49.9	54.8	LAMPROPHYRE: probably not same dyke as intersected above, a green biotite matrix with cb and orbicular qtz augen as solitary phenocrysts, minor dissem. py, upper Ct. 30°TCN and lower 50°TCN; phenocrysts 8% of matrix oriented parallel Cts									
54.8	71.5	ANDESITE: increase to med. grain., epidotic subhedral feld matrix, intercalated epidote, magnetite common, increasing orbiuclar qtz inject'n, some with inperfect feld. inclusions progressing slightly to diorite hybrid, abundant phenocrystic chlorite proximate to dyke margins N.B. 61.2-61.4 flat lamprophyre satellite cb. wisps marginal to orbicular qtz, relict skeletal leucoxene abundant									
71.5	97.0	DIORITE HYBRID: orbicular qtz inclusions with enclosed laths cream feld in med. grain chloritic matrix with epidotic feld., maph. phenos, 1% lone py cubes; 73' to 76' dyke of 'green biotite' type with green mica phenocrysts 3 cm. wide cutting core at general 90°TCN 90.0-97.0 amphibolitic coarse grain with chl. amph. phenos to 1 cm. plus, epidotic matrix									
97.0	102.0	ANDESITE: chlorite schist, possible tuff, laminae chloritic (mono-minerallic) fabric with interspersed schlieren of cb., epidote, saussurite, leucoxene in lensing wisps all parallel folt'n at 10°TCN, small trains py 2% parallel folt'n flat 3 cm. qtz vein at bottom of hole with strong marginal py.									
	102.0	END OF HOLE									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property: Orofino
Location: 14193N 9546E
Co-ordinates:

Section:
Length: 101'
Elevation:
Azimuth: Dip: -90°

83-15
HOLE: [redacted]
Core size: NQ

Dip Tests: 100' -88°
Started: May 10, 1983
Completed: May 10, 1983
Logged by: Warren Gilman

DEPTH		DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereor	sample number	width	from	to	ASSAYS				
from	to						Au oz/t				
0.0	4.0	CASING									
4.0	12.2	DIORITE HYBRID: some later shearing alteration, epidotized crs matrix with fresh silica and enclosed feld. laths, 7.5-8.6 2 cm. pink white cb. vein parallel C Axis, barren									
12.2	17.2	ANDESITE: chlorite schist, possible tuff (could be merely sheared Andesite) chloritic directional matrix with Cb. schlieren, minor py, folt'n 30-60°TCN									
		12.2-14.1 schist with rare py with .3' bull qtz vein	7281	1.9	12.2	14.1	.001				
		14.1-17.2 schist-layering chl. laminae with intervening cb, minor py	7282	3.1	14.1	17.2	.002				
17.2	17.7	QUARTZ VEIN: impure with abundant parallel chl. lenses, 30 - 60°TCN, vein flat									
		17.2-17.7 py sporadic, clustered, lone euhedral crystals, 2% py	7183	.5	17.2	17.7	.052				
17.7	19.8	ANDESITE: fabric masked by carbonatization, silicification, some re-crystallizat'n post schisting, could be reworked tuff, some bleaching to very light grey-green									
		17.7-19.8 phenocrystic clots vague chl. to 5 mm.	7284	2.1	17.7	19.8	.003				
19.8	23.0	QUARTZ VEIN - ANDESITE: zones (2) of highly irregular qtz. vn. 19.8-23.0 stringer Qu Vn .8' each with intervening Andesite, fine py in chl. vein	7285	3.2	19.8	23.0	.017				
23.0	26.2	LAMPROPHYRE: silicic fine grain light grey green, main portion of dykes with bleached buff feld. phenocrysts to 3 mm. -- abundant post silica fracturing--bleaching Cts 30°TCN									
26.2	28.1	ANDESITE: as described 12.2-17.2; py 2% in matrix of layered rock, py lenses and clusteres parallel lineation at 0°TCN									
		26.2-28.1 qtz cb. chl. 2 cm. vein 90°TCN, clustered py 10% adjacent vn.	7286	1.9	26.2	28.1	.011				
28.1	31.2	LAMPROPHYRE: as described 23.0-26.2; brittle fractured, bleaching along breaks									
31.2	39.0	ANDESITE: fine grain carbonated, strongly fractured, cb. inclusions, a fine grain volcanic rock cut by en echelon qtz cb hematite slips 60°TCN, minor py									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-15
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
39.0	49.0	LAMPROPHYRE: silicified dark grey green fine grain rock with anhedral feld phenocrysts to 5 mm., through central portion, strong later fracturing with minute cb. threading, upper Ct. 60°TCN, lower 90°TCN									
49.0	51.0	FAULT ZONE: bleached beige - granulated, near clay gauge in abundant elongate beige fragments; orginal rock probable med. green diorite hybrid 49.0-51.0 py 4% in lensing trains parallel folt'n 80°TCN, 1' beige clay alt'n	7287	2.0	49.0	51.0	.001				
51.0	56.5	DIORITE HYBRID RETROGRADE: clear orbicular qtz in cb. epidote, chl. amph. matrix with clustered, regenerated py 4%, cb. wisps marginal to qtz, abundant skeletal leucoxene 51.0-56.5 py regenerated clustered, drawn parallel folt'n 70°TCN	7288	5.5	51.0	56.5	.002				
56.5	70.1	DIROITE HYBRID: coarse grain med. green, epidotic feld., chl. amph. matrix with cb., magnetite, orbicular qtz 15% of matrix with subhedral laths light green plag. inclusions, abundance leucoxene relicts sporadic, 1% py folt'n appears variable 30° to 70°TCN									
70.1	70.9	LAMPROPHYRE: silicic med. grey green, (probable 'green biotite' type), small and imperfectly developed, individual greens, chl. amph, pink feld., Upper Ct. 60°TCN, lower irregular									
70.9	79.7	DIORITE HYBRID: coarse grain, med. green, 'diabasic texture', feld laths with ecnlosed chloritic amphibole, abundant orbicular qtz injecta with enclosed fresh light green and cream feld laths, amyphibole phenocrysts 1 cm., some matrix feld. subhedral to 3 mm., minor py									
79.7	80.0	LAMPROPHYRE: silicic satellitic imperfectly formed 'green biotite' type									
80.0	96.9	DIORITE HYBRID: as described 70.9-79.7; variable coarse grain and med. grain segments but all with key orbicular qtz and enclosed fresh feld laths., varying leucoxene, much amphibole fresh recrystallized, minor py									
96.9	97.3	FELDSPAR PORPHYRY: abundant subhedral zoned plag. phenocrysts in tan fine grain silicic matrix irregular generally flat contacts									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-15
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH		DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS				
from	to						Au oz/t				
97.3	101.0	DIORITE HYBRID: as described 70.9-79.7; coarse grain matrix, various degrees of leucoxenized magnetite, varying epidote content, py <1%									
	101.0	END OF HOLE									

NORTHGATE EXPLORATION LIMITED

Property: Orofino
Location: 14187N 9465E
Co-ordinates:

Section:
Length: 162'
Elevation:
Azimuth: 180° Dip: -70°

83-16
HOLE: [redacted]
Core size: NQ

Dip Tests: 152' -70°
Started: May 11, 1983
Completed: May 11, 1983
Logged by: Warren Gilman

DRILL LOG

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
0.0	16.0	CASING									
16.0	16.6	ANDESITE: med. grain, med. green, flow, equigranular fold., chl. epidote, cb matrix									
16.6	16.9	LAMPROPHYRE: siliceous 'green biotite' type, Cts 10°TCN									
16.9	17.4	ANDESITE: as above 16.0-16.6									
17.4	20.0	LAMPROPHYRE: biotite Cb equigrained matrix, lone orbicular cb. phenocrysts, charactoristic type, age relations of lamp dykes available in previous logs, multi-en echelon fractures threaded with Cb., <1% fine py									
20.0	24.0	ANDESITE: chlorite schist, possible tuff see 83-15 (12.2'-17.2') for description									
(N.B. problem here is 12' core represents 9' of measure by drilling)		20.0-22.0 lenses, seams en echelon Cb. between chl. laminae, <1% py landing 5° to 20°TCN	7289	2.0	20.0	22.0	.002				
		22.0-24.0 several qtz, cb. stringers generally parallel banding minor lenticular py, 20°TCN, late qtz inject'n 10% fabric	7290	2.0	22.0	24.0	.002				
24.0	27.0	QUARTZ VEIN - ANDESITE: impure irregular chloritic vein, 50% of segment chlorite schist, 8% py									
		24.0-27.0 py in elongate trains parallel schistosity cut by barren qtz-Cb., trace py	7291	3.0	24.0	27.0	.05				
27.0	27.5	LAMPROPHYRE: grey black biotite type as described 17.4-20.0, drill intersected previous hole									
27.5	32.5	ANDESITE: broken fragments (27.5-28.0) same tuff or pseudo-tuff, strong directional character									
		27.5-32.5 py 2% in lone subhedral crystals in cb-chl. tuff 20°TCN, magnetite	7292	5.0	27.5	32.5	.002				
32.5	34.5	ANDESITE: altered med. grain basic flow--typical green stone texture									
34.5	36.5	DIORITE HYBRID: orbicular qtz with enclosed feld laths									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-16
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
36.5	54.5	ANDESITE: contorted chloritic fabric, typical greenstone, orbicular qtz eyes with vague outlines, carbonated matrix after feld., disseminated magnetite inclusions dyke in core, marginal 1 cm. chl. and marginal py.	7293*	1.5	43.0	44.5	.004				
54.5	67.4	LAMPROPHYRE: fine grain light grey 'green biotite' type, cb. green mica matrix with phenocrysts monomineralic chl. after amphibole, slender prisms 80°TCN, minor subhedral py 2%, upper Ct. 60°TCN, lower Ct. 90°TCN, cuts off at 60°TCN									
67.4	68.3	ANDESITE: coarse grain, magnetite rich cb. scl. regenerated from carbonated andesite									
68.3	70.9	LAMPROPHYRE: 'green biotite', no phenocrysts, marginal section running along contact, Ct 60°TCN									
70.9	85.2	ANDESITE: coarse grain, med. green, epidote saturated feld. in more coarse fabric, some minor injected orbicular felsic material, cb. clusters, boudins, minor py									
85.2	86.7	LAMPROPHYRE: med. grey, very fine grain, imperfectly crystallized, Cts 80°TCN									
86.7	92.0	ANDESITE: med. grain, med. green, greenstone matrix of eopidotic feld., chl., cb amphibole relicts, epidote, magnetite, minor qtz, and random orbicular qtz injecta									
92.0	111.1	DIORITE HYBRID: essentially same matrix as described above, with sufficient orbicular qtz eyes with enclosed cream and light green feld laths to evolve a distinctly new fabric, contact is transitional and arbitrary, magnetite and chloritic phenocrysts (after amphibole) abundant, lenses seams, segregations, fracture fill of Cb., minor py, increase py in and around fractures, seams (practise is that once mechanism of felsic inject'n and recrystallization is recognized in fabric, rock is named type of diorite)									
111.1	112.3	LAMPROPHYRE: 'green biotite' type, as described above, solitary chlorite phenocrysts after amphibole, Cts 60 TCN, abundant fine Cb. in matrix, minor fine py									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 93 - 16
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
112.3	128.0	DIORITE HYBRID: as described above--retains characteristic--hybrid intrusive fabric near dyke contacts, with concentrations phenocrysts chlorite at 126.5 cb. filled slip 3 cm. with included py, increase matrix py adjacent to slip									
128.0	131.7	ANDESITE: rock retrograded to strong foliated chloritic andesite fabric, carbonate rich, minor fault 129.5-130.0 series cb. fractures with granular bleached beige fault zone 60°TCN									
131.7	132.9	LAMPROPHYRE: 'green biotite' type of light grey dyke, 60°TCN									
132.9	137.9	ANDESITE: as described 128.0-131.7 134.2-134.5 bleached beige kaolinized schist with excess cb., 5° to 30°TCN									
137.9	139.8	LAMPROPHYRE: 'green biotite' type, as described above, upper Ct 60°TCN, lower Ct 0° to 90°TCN									
139.8	140.6	ANDESITE:									
140.6	141.7	LAMPROPHYRE: 'green biotite' type									
141.7	147.3	ANDESITE:									
147.3	149.5	LAMPROPHYRE: 'green biotite' type									
149.5	162.0	ANDESITE: mainly slight schistose, chloritic abundant cb. lenses, seams, inclusion 154.5-156.5 minor shear, chloritic schist--increase fine py, 5% parallel folt'n 60°TCN from 156.5 progressing toward diorite hybrid with qtz inclusions plentiful and less directional quality to rock fabric (more intrusive type fabric)	7294	2.0	154.5	156.5	.002				
	162.0	END OF HOLE									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property: Orofino
Location: 14187N 9465E
Co-ordinates:

Section:
Length: 102'
Elevation:
Azimuth: 180° Dip: -45°

83-17
HOLE: [redacted]
Core size: NQ

Dip Tests: 100' -47°
Started: May 11, 1983
Completed: May 11, 1983
Logged by: Warren Gilman

DEPTH		DESCRIPTION NOTE: All angles are measured . normal . to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS				
from	to						Au oz/t				
0.0	18.0	CASING									
18.0	18.5	ANDESITE: coarse grain, med. green									
18.5	19.0	LAMPROPHYRE: ground tablets rock from 18.0-20.0, thus no particulars									
19.0	20.0	ANDESITE: same as 18.0-18.5									
20.0	23.0	ANDESITE TUFF - LAPILLI TUFF - CHLORITE SCHIST: alternating irregular laminae, lenses, inclusions cb. enwrapped by irregular chl. lenses, later shattering and intrusion en echelon qtz stringers, 0°TCN, 2 generation (sizes) py, fine and 4 and 5 mm.									
		20.0-23.0 py 10% over 1' where qtz stringers abundant, recrystallized subhedral 3 m.. py	7295	3.0	20.0	23.0	.032				
23.0	24.5	QUARTZ VEIN: impure chloritic, en echelon 0°TCN, 20% of segment is fractured tuff fragments									
		23.0-24.5 coarse 8% py, av. 4 to 5 mm. recrystallized in chl. adjacent to qtz	7296	1.5	23.0	24.5	.026				
24.5	33.1	ANDESITE - LAPILLI TUFF: cb. fragments enwrapped by chlorite, directional cb. and chloritic amphibole phenocrysts in malted chlorite laminae 10°TCN									
		24.5-26.0 segment with multiple en echelon qtz stringers at 0°TCN, py 8%, some few to 1 cm., in chlorite laminae adjacent to qtz injecta	7297	1.5	24.5	26.0	.086				
		26.0-27.9 lapilli tuff with several qtz with minor cb stringers 0° and 45°TCN, py 3%, 2 mm. subhedral lone crystals	7298	1.9	26.0	27.9	.016				
		27.9-31.8 py 3% disseminated in carbonate chlorite tuff, all fine py	7299	3.0	27.9	31.8	Tr				
		31.8-33.0 several barren en echelon cb. filled fractures 10° to 90°TCN py 3% in host rock, cb. barren	7300	1.2	31.8	33.0	.002				
33.0	47.5	ANDESITE: typical 'greenstone', altered andesite, epidote chl. cb. med. grain fabric, partially cb. feld intergral part of mosaic, contorted, appears average 30°TCN									
		33.0-37.0 py in lenticular array along slips, minor py, considerable mag.	7301	4.0	33.0	37.0	.002				

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-17
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
		33.0 - 47.5 (con't)									
		37.0-39.4 qtz cb vein 3 cm. 90°TCN, barren minor py regenerated on margins, minor matrix py in host rock, dark green chloritic amphibole phenocrysts developed proximate to dyke Ct.	7302	2.4	37.0	39.4	.002				
47.5	53.2	LAMPROPHYRE: med. grain black mica cb. matrix with abundant vague cb. phenocrysts, fine euhedral py 1%, Cts and linear fabric of dyke at 0°TCN, soft Ct. matrix									
53.2	54.2	ANDESITE: contorted schisted-- a cb. chl. striped rock with large xenolith lamprophyre but much different above type--(hard light grey-green phenocrystic 'green biotite' type)									
54.2	82.0	LAMPROPHYRE: green biotite' type, fine grain matrix, green, mica, cb. feld with imprint of silicification, 15% prism and lath like chl. pseudomorphs of amphibole phenocrysts, some imprint of silicification vitreous fabric compared to grey mica lamprophyre, upper Ct 40°TCN, phenocrystic array 40°TCN, at 57.0-57.5 several en echelon lenses massive chl. parallel 10°TCN, phenocrysts are less abundant toward lower Ct. -- brittle fractures matrix with minute fractures lined with chl. py									
82.0	102.0	DIORITE HYBRID: near upper Ct. resemble med. grain andesite but injecta of orbicular qtz into fabric increasing progressively,down hole away from dyke at about 90' assumes diroite hybrid intrusive fabric with orbicular qtz enclosing laths of light green, cream feld., 2% py									
	102.0	END OF HOLE									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property: Orofino
Location: 15654N 9636E
Co-ordinates:

Section:
Length: 366'
Elevation:
Azimuth: 180° Dip: -45°

83-18
HOLE: [redacted]
Core size: AQ

Dip Tests: 200' 366'
Started: May 12, 1983
Completed: May 14, 1983
Logged by: Warren Gilman

DEPTH		DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS				
from	to						Au oz/t				
0.0	22.0	CASING									
22.0	65.0	ANDESITE: coarse grain, med. green flow, 'diabasic texture', laths epidotic plag. with interlocked amphibole, phenocrysts amphibole prisms to 1 cm., epidote minor qtz segregations due to feld alt'n., magnetite, leucoxene, minor py 22.0-27.0 greater py with amphibolitization, 2% lenticular py, 1% po, trace cpy	7303	5.0	22.0	27.0	Tr				
		tendency toward diorite and diorite hybrid with amphibolitization, some qtz segregations with lath like internal feld., - transition to diorite hybrid is orbitrary sulphide decrease down dip; possible small pillow selvedge, chloritic, epidotic at 29.5', 43', and 48.5'; minor 2 cm. qtz cb slips (barren) at 39.5', 54.5', and 59.5' 59.5-62.0 cb. lenses barren 10°TCN in finer grain segment, < 2% py	7304	2.5	59.5	62.0	.002				
65.0	79.8	LAMPROPHYRE: fine grain dark green, grey, non silicic matrix, homogeneous fabric, matrix light green chl., dark green amph, cb., feld., too miniscule to identify, upper Ct. 40°TCN, en echelon fractures lined with late cb., fine py									
79.8	82.0	ANDESITE: altered, chloritic matrix with cb. metacrysts									
82.0	119.2	LAMPROPHYRE: as described above, resembles 'green biotite' type sans phenocrysts upper Ct. 10°TCN, abundant cb. metacrysts with serrated margins oriented 10°TCN; minor fine py disseminated									
119.2	121.2	ANDESITE - TUFF: or sheared andesite; chlorite laminae with interlayered cb. lenses, pods, no sulphides 0°TCN									
121.2	127.0	ANDESITE - ALTERED: vague carbonated fabric, some relict feld. remnants									
127.0	168.0	DIORITE HYBRID: crs. grain, med. green, basic volcanic flow fabric with sporadic but sufficient orbicular qtz injecta with enclosed feld. laths. to categorize as intrusive fabric, 5 mm. amphibole phenocrysts, large skeletal leucoxene, minor clustered regenerated py, random po, folt'n av. trend appears 10°TCN, at 160' multiple cb. vein with chl. schists margins 4 cm., barren, 10°TCN									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83 - 18
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
168.0	183.0	DIORITE HYBRID RETROGRADE: retains crs. fabric, feld. obliterated chl. matrix enclose cb. qtz segregations with fretted margins									
183.0	183.6	LAMPROPHYRE: thin satellite dyke 80°TCN, 2 cm. wide, thin massive cb. margin									
183.6	187.9	DIORITE HYBRID RETROGRADE: chloritic matrix with irregular segregations cb., qtz. in vague cb. permeated matrix									
187.9	191.0	LAMPROPHYRE: fine grain, med. green, some equigranular chl. cb. amph. feld. fabric, minor fine py, upper Ct. 20°TCN, lower 45°TCN									
191.0	198.9	DIORITE HYBRID RETROGRADE: replica of 183.6-187.9; < 1% py									
198.9	200.0	LAMPROPHYRE: replica 187.9-191.0; lower Ct. 50°TCN									
200.0	201.2	DIORITE HYBRID RETROGRADE: contorted chloritic matrix, wispy cb.									
201.2	214.0	LAMPROPHYRE: some fine grain, med. green with slight brown alt'n to matrix, silicic, small grain chl. phenocrysts, some white feld. phenocrysts, upper Ct. 70°TCN, lower Ct. 40°TCN									
214.0	216.1	DIORITE HYBRID RETROGRADE: replica 200.0-201.2									
216.1	227.3	LAMPROPHYRE: fine grain, very light grey, ultra-silicic, abundant (15%) chl. prisms phenos after amphibole, 1 mm. random py cubes, upper Ct. 10°TCN, through lower part develops lone zoned cream feld. phenos to 5 mm.									
227.3	231.6	LAMPROPHYRE: very fine grain, contact phase of 'green biotite' type dyke, cut by abundant irregular later qtz. general 90°TCN, brittle intimate fracturing threaded with light green cb., lower Ct. flat 227.3-231.6 py 5% in subhedral cubes proximate to vein margins	7305	4.3	227.3	231.6	.002				
231.6	247.8	ANDESITE: fine grain, med. green silicified hornfelsed adjacent to dyke, segments of intense epidote saturation, threading with fine epidote along brittle fractures									

NORTHGATE EXPLORATION LIMITED

Property:
Location:
Co-ordinates:

HOLE: 83-18
Core size:

Section:
Length:
Elevation:
Azimuth: Dip:

Dip Tests:
Started:
Completed:
Logged by:

DRILL LOG

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
247.8	255.9	LAMPROPHYRE: dyke sequence 227.3-231.6; flat Ct., very fine grain 5' purplish (brownish green) border zone, grading 5' med. green, isolated chl. prisms varisized, cb. orbicles.									
255.9	256.7	ANDESITE - DIORITE HYBRID RETROGRADE: rock is non chl. cb. with fine chl. phenos, peppered with fine py and jagged qtz injection (barren)									
256.7	266.9	LAMPROPHYRE: typical cb. black mica, light grey dyke, softer med. grain matrix, some long chl. phenos									
266.9	274.3	BROWN DYKE: subhedral 5 mm. cream, orange, green phenocrysts, described previously 45°TCN upper Ct., at 273' seam .7' ground or caved									
274.3	275.9	ANDESITE: carbonated fine to med. grain homogeneous matrix									
275.9	276.8	LAMPROPHYRE: very fine grain, dark green silicated matrix, rimmed by massive barren cb., flat Cts.									
276.8	289.6	ANDESITE: fine grain chloritic carbonated matrix, irregular segregations cb., minor py									
289.6	311.1	ANDESITE: classic porphyritic flow top (289.6-290.0) cream feld. in hexagons, imperfect octahedrons grading trace scoriaceous (deformed) brecciated, post diagenesis featuring, intervening fine grain massive med. green segments, drill stem skimming upper part of flow, repetition of epiditic, silicated, carbonated ropey flow, pillow selvedge, very fine grain fragments enwrapped in lava of varying granularity, 1% fine grain pyrite at 308' grading into more massive med. grain central portion of flow, post diagenesis fracturing, threaded with silica, epidote, cb'nte, minor py <1%									
311.1	311.5	LAMPROPHYRE: light grey green, fine grain, crusted, fragmented, inclusions xenolithic massive chl., Cts 60°TCN									

NORTHGATE EXPLORATION LIMITED

Property:
Location:
Co-ordinates:

HOLE: 83 - 18
Core size:

Section:
Length:
Elevation:
Azimuth: Dip:

Dip Tests:
Started:
Completed:
Logged by:

DRILL LOG

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
311.5	326.8	ANDESITE: med. grain central massive central part of flow; at 320' carbonate rich, scoraceous flow top grading to fractured fine grain upper part of flow with alteration in en echelon silica, epidote stringers cutting flow at 90°TCN, very fine minor py									
326.8	344.2	LAMPROPHYRE: distinct porphyritic type (not observed previously), fine grain light grey, slight pink matrix with 50% matrix, 50% phenocrysts, varisized cream feld. and chl. amphibole, to 1 cm. as pseudomorphs of amphibole, phenocrystic to a degree that intrusive was crystal mush in injection, minor very fine py, upper Ct. 30°TCN, lower 30°									
344.2	348.4	ANDESITE: fine grain grading to med. grain cb. rich altered chloritic 'greenstone', slight increase py with excess cb., segregations cb. enwrapped in chl. epidotic fractures									
348.4	351.4	FELDSPAR PORPHYRY: classic red brown fine grain siliceous matrix with sub-an-euhedral zoned fled phenocrysts, smaller black and light green mica phenos with disseminated lone fine py, upper Ct. 25°TCN, lower 90°TCN parallel core									
351.4	366.0	ANDESITE: fine grain, med. green homogeneous flow, abundant crs. skeletal leucoxene through matrix at 90°TCN indicating hole angle is passing through maximum thickness of individual portions of flow, en echelon fractures 45°TCN indicate vertical fracturing, minor py <1%									
	366.0	END OF HOLE									

NORTHGATE EXPLORATION LIMITED

Property: Orofino
Location: 14070N 9314E
Co-ordinates:

83-19
HOLE: [redacted]
Core size: AQ

Section: E
Length: 1051'
Elevation:
Azimuth: Dip: -90°

Dip Tests: 500' -90° 1050' -87°
Started: May 15, 1983
Completed: May 19, 1983
Logged by: Warren Gilman

DRILL LOG

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
0.0	12.0	CASING									
12.0	14.0	ANDESITE MIGMATITE: pseudo diorite, orbicular and lensing injecta of agglomerated feld. in fine chloritic matrix									
14.0	30.8	ANDESITE: an upper epidotized altered zone grading to fine grain chloritic matrix with cb. clots, lenses, a typical altered fine grain homogeneous met'n flow, increase in cb. injection gives megascopic med. grain aspect, develops string 70°TCN folt'n, at 23.7-23.9 flat qtz barren vein with massive chl. patches									
30.8	34.4	LAMPROPHYRE: very fine grain borders grading to central porphyritic zone, dyke is altered which is unusual, appears carbonitization of dyke, smearing fabric vague contorted phenocrysts with later silicification, upper Ct. 90°TCN, lower Ct. flat									
34.4	41.5	ANDESITE: as described 14.0-30.8									
41.5	50.0	LAMPROPHYRE: fine grain, green black matrix, homogeneous, some larger cb. phenos. with fretted margins, drill probing margin of dyke, generally featureless, lower Ct. 20°TCN									
50.0	52.0	ANDESITE: strong cb. metacrystic and injected, 4% py, 4 cm. flat qtz vein 50.0-52.0 py 2 and 3 mm. random through matrix, average 4%	7306	2.0	50.0	52.0	.002				
52.0	53.0	QUARTZ VEIN: impure, irregular, 30% chl. schlieren, outer-Cts flat 52.0-53.0 segments massive cb., py 2 mm. marginal in chloritic remnants	7307	1.0	52.0	53.0	Tr				
53.0	?	ANDESITE - RETROGRADE DIORITE: med. grain fabric, fine interstitial chl. with orbicular cb. and metacrysts., cb. minor qtz, impossible decipher original rock 53.0-55.0 py 3%, a 3 cm. qtz cb. flat vein, imbricate fractures with cb. threads, strong folt'n through upper 2'	7308	2.0	53.0	55.0	Tr				
71.2	77.8	LAMPROPHYRE: random crs. py through fabric, average 1% py, progressive develop'm't orbicular qtz, epidote 'green biotite' type, massive chl. phenocrysts prominent, described in previous logs, cts 70°TCN, minor py, orbicular feld. phenos									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-19
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal - to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
77.8	80.5	RETROGRADE DIORITE: altered, strong epidote injection, amph. recrystallized, strong folt'n against dyke with increase py									
80.5	107.0	DIORITE HYBRID: aggregated feld. fresh, laths associated with injected silica - transitional fabric between hybrid and diorite 'intrusive', minor py									
107.0	108.6	DIORITE HYBRID RETROGRADE: stressed fabric with strong cb. development, obliteration feld. increase clustered py parallel lineation									
108.6	109.0	FELDSPAR PORPHYRY: phenocrystic classic porphyry, cts upper 20°TCN, lower 80°TCN									
109.0	121.8	DIORITE HYBRID RETROGRADE: schisted, carbonated over lengthy zone probably due to proximate dyke, lenses, seams, inclusions cb. extensively developed, 30°TCN									
		109.0-111.0 an impure chl. qtz vein .5' with 3 mm. py average 5% with bordering schisted host rock	7309	2.0	109.0	111.0	.006				
		111.0-115.0 irregular lenticular py clusteres to 1 cm., py sporadic, average 3%	7310	4.0	111.0	115.0	.022				
121.8	127.8	FELDSPAR PORPHYRY: classic tan fine grain matrix with 25% orbicular zoned cream feld. phenos, upper Ct. 60°TCN, lower 30°									
127.8	240.3	DIORITE: coarse grain, med. green, glomeroaggregates cream feld laths with intersertal qtz in chl. amph. matrix, minor py, minor late fractures with silica, epidote, amph. phenos to 1 cm.,local minor areas epidote slips at 157.0; extensive skeletal leucoxene, adjacent 'intrusive' fabric intact, some epdiote slips on by saturate, original feld., much of diorite texture and some of diorite hybrid (orbicular qtz with enclosed feld laths)									
		214.0-216.5 local finer grain, more mafic segment with 5 to 8% py, feld intact; coarse grain ampholitic predominant texture through at 239.5 to .7 a satellitic lamprophyre at 20°TCN.	7311	2.5	214.0	216.5	.002				
240.3	241.0	LAMPROPHYRE: fine grain dark green, homogeneous, siliceous, cts 20°TCN									
241.0	265.0	DIORITE: as above 127.8-240.3; more amphibolitic, epidotic, crs amphiboles, less qtz inclusions with related feld laths; at 152.5 epidotic slip 1 cm. 70°TCN with crs magnetite									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-19
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
265.0	275.0	ANDESITE TUFF - CHLORITE SCHIST: or intensely sheared diorite retrograde, chl. laminae with intervening parallel cb. lenses, pods, seams, py variable, erratic concentrations along slips, fine py parallel banding 30°TCN									
		265.0-270.0 pods lenses py drawn parallel banding, average 4%	7312	5.0	265.0	270.0	.012				
		270.0-275.0 local concentrations heavy py to 10%, some 4 cm. barren cb.	7313	5.0	270.0	275.0	.036				
275.0	281.7	DIORITE RETROGRADE: some of chloritization, carbonatization, perhaps because of dyke proximity, orbicular qtz. cb. wisps, epidote magnetite, granulation of matrix to fine grain chlorite									
281.7	290.0	LAMPROPHYRE: 'green biotite' type, silicated, bleached, secondary hematitic injection, abundant chl. phenos after amphibole, minor fine py, Cts and late fractures 70°TCN									
290.0	291.8	FAULT ZONE: granular silicified bleached fault plane - probably diorite maybe lamprophyre - beige bleached original vitreous blue green, 80°TCN, random 5% py, successive mini-boudins qtz encased in silicated mica mosaic, abundant leucoxene									
291.8	295.0	DIORITE RETROGRADE: chl. matrix, orbicular qtz, cb. wisps, leucoxene relicts									
295.0	335.5	DIORITE: coarse grain, med. green, much of texture similar to diorite hybrid, (orbicular qtz with internal cream feld. laths)., distinct from classic diorite fabric, minor py, lineation appears 30°TCN									
335.5	338.6	ANDESITE: fine grain, med. green, chl. homogeneous matrix, very minor injected material									
338.6	349.6	FELDSPAR PORPHYRY: classic beige vitreous fine grain matrix with subhedral cream zoned feld phenos., grading to supersaturated beige porphyry at 342' with blurred fabric due to silication, minor py upper Ct. 20°TCN, lower 60°, beige supersaturate continues to 349.6									
349.6	351.4	LAMPROPHYRE: dark green, brown, silicified 'green biotite' type - relict fabric under silication									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
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Azimuth: Dip:

HOLE: 83-19
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured . normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
351.4	355.6	BROWN DYKE: soft chocolate fine grain matrix, with orbicular white cb. phenocryst, lesser black phenocrysts, cts flat 2 to 4°TCN									
355.6	357.6	LAMPROPHYRE: as above 349.6-351.4, lower Ct. 45°TCN									
357.6	371.5	FELDSPAR PORPHYRY: beige with overprint intense silicification, large phenocryst feld., lesser black biotite in fine grain matrix, minor py, lower Ct 60°TCN									
371.5	388.8	DIORITE RETROGRADE: some relict feld. preserved in matrix as epidote relicts									
388.8	389.7	LAMPROPHYRE: dark green, homogeneous, lower Ct 70°TCN									
389.7	392.4	DIORITE: fabric between diorite 'intrusive' and diorite hybrid									
392.4	392.9	LAMPROPHYRE: Cts. 70°TCN									
392.9	393.4	DIORITE									
393.4	393.9	LAMPROPHYRE: Ct. 80 - 90°TCN									
393.9	416.9	DIORITE: as above 389.7-392.4									
416.9	426.3	DIORITE: dark green, more chloritic, relict fabric preserved, feld. laths obliterated, progressive folt'n 90°TCN 416.9-421.0 cb. slips 2 cm. flat, hematite silica slips, chlorite rich fabric, 8% py	7314	4.0	416.9	421.0	.058				
426.3	428.4	FELDSPAR PORPHYRY: classic brown vitreous fine grain matrix with cream phenocrysts feld. upper Ct. highly irregular 0 to 90°									
428.4	431.6	LAMPROPHYRE: 'green biotite' type, abundant chl. prisms to 5 mm., after amphibole, flat Cts									
431.6	463.5	FELDSPAR PORPHYRY: as described 426.3-428.4; a central brittle zone with later imbricate fractures with bleached margins grading to classic F.P. toward lower Ct., which is destroyed	FAULT	@ 445'							

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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
463.5	489.0	DIORITE - DIORITE HYBRID: features of rock fabric 50% of each, minor py feld. laths in every array 0 to 90°TCN, fresh feld laths also in chloritic matrix together with prisms recrystallized amphibole 487.0-489.0 dramatic increase py, euhedral with lesser Po, 3 mm., abuts F.P.	7315	2.0	487.0	489.0	.070				
489.0	515.7	FELDSPAR PORPHYRY: classic F.P. vitreous brown matrix, very strongly phenocrystic, varisized, emplaced as crystal mush, a vague partly resorbed mush of crystals (anhedral) with later fresh zoned cream plagioclase, minor chloritic dark green amphibole and biotite prisms, random fine py, upper Ct. 60°TCN, lower Ct. in fractured diorite									
515.7	522.2	DIORITE - DIORITE HYBRID: profusion orbicular qtz with enclosed feld laths, texture of hybrid, minor py, upper Ct. 2' epidote saturated clear feld. relicts, no deformation against dyke, sharp Ct. (suggests F.P. lower temp. on emplacement)									
522.2	524.2	LAMPROPHYRE: atypical, a fine grain chl. qtz, feld. altered fabric, non-characteristic of common types lamp., thoroughly carbonated 'frosted' matrix, Cts. 10°TCN									
524.2	528.2	DIORITE HYBRID: orbicular qtz with enclosed feld laths, minor py									
528.2	542.2	FELDSPAR PORPHYRY: as described 489.0-515.7, upper Ct. 60°TCN, lower 90°TCN									
542.2	546.5	DIORITE HYBRID: epidotized matrix and light green permeated feld. laths, unaltered other than epidotization, minor py									
546.5	547.0	LAMPROPHYRE: fine grain dark green grey									
547.0	547.8	DIORITE HYBRID: fresh unaltered, py, po, tr. cpy, 8% sulphides, small lamprophyre dykelets									
547.8	556.5	FELDSPAR PORPHYRY: brown vitreous matrix with abundant multi-sized phenocrysts, as above									

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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
556.5	559.4	LAMPROPHYRE: fine grain dark green grey - atypical - as described 522.2-524.2; carbonated matrix upper Ct. 40°TCN, lower Ct. 70°TCN									
559.4	601.0	DIORITE - DIORITE HYBRID: atypical - considerable crs matrix feld. independant of orbicular qtz augen, all feld. fresh unaltered, sulphides <1%, random crs po., steadily decreasing, folt'n maybe 70°TCN									
		597.0-601.0 sporadic py clustered 'trains' mainly along slips	7316	4.0	597.0	601.0	.002				
601.0	605.0	DIORITE RETROGRADE: orbicular qtz, feld. obliterated, cb. wisps, sulphides increasing									
		601.0-605.0 py po 5%, 2 mm. lone crystals, no mix, individual groups cb. vein, qtz vein 2 cm. with py po, 0° to 20°TCN	7317	4.0	601.0	605.0	.030				
605.0	616.0	LAMPROPHYRE: dark green grey-homogeneous, fine grain, some orbicular cb. phenocrysts, 2% py, trace cpy., many slips with beige bleached margins, stretched altered chl. remnant phenos, Cts 70°TCN									
616.0	636.0	DIORITE RETROGRADE: classic texture, granular appearance, orbicular qtz, cb. wisps enwrapped in chl. minor sulphides steadily increasing									
		623.0-625.0 minor py, random euhedral po, short protected zones with intact feld.	7318	2.0	623.0	625.0	.002				
		625.0-627.6 po 5% to 5 mm., py 5% irregular qtz injection at 90°TCN	7319	2.6	625.0	627.6	.222*				
		627.6-629.5 short qtz stringers at low angle TCN, 15% py po intergrown	7320	1.9	627.6	629.5	.060				
		629.5-632.0 classic retrograde fabric but minor sulphides <1%	7321	2.5	629.5	632.0	.006				
		632.0-636.0 minor slips with py, very minor sulphides in matrix	7322	4.0	632.0	636.0	Tr				
636.0	637.1	LAMPROPHYRE: 'green biotite' type, abundant green chl. phenocrysts, av. 3 to 4 mm., Cts 10°TCN									
637.1	644.0	DIORITE RETROGRADE: coarse grain, med. green., feld obliterated, cb. wisps, strong epidote alt'n, development chl. amphibole phenocrysts proximate to upper dyke Ct., some random veining									
		637.1-642.0 qtz cb. vein 80°TCN, 1 cm. .8' with pockets massive py segregations po in vein, main matrix 2% py	7323	4.9	637.1	642.0	Tr				

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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
		637.1 - 644.0 (con't)									
		642.0-644.0 retrograde with minor py po, some thin slips with concentrations py, po	7324	2.0	642.0	644.0	.002				
644.0	673.5	DIORITE - DIORITE HYBRID: as described 559.4-601.0; minor py									
673.5	680.0	DIORITE RETROGRADE: coarse grain med. grain, extensive cb. development, chl. matrix extensive, multi-fractures with cb., py, po, concentrated along slips, disseminated py po in matrix									
		673.5-677.0 py po sporadic, average ? 2%	7325	3.5	673.5	677.0	.002				
		677.0-680.0 from 679-80 multiple beige slips along multi planed fault, py po	7326	3.0	677.0	780.0	.002				
680.0	696.0	DIORITE RETROGRADE - FAULT (680'): beige alt'n, permeation of matrix with cb. below fault, some massive chl. plane 20°TCN									
		680.0-683.0 heavily frosted with cb. alt'n, schlieren massive chl., py po	7327	3.0	680.0	683.0	.252*				
		683.0-685.0 several en echelon cb and qtz stringers 70°TCN, erratic py po on margins	7328	2.0	683.0	685.0	.127*				
		685.0-690.0 en echelon cb. fractures (barren) at 20°TCN, minor matrix py	7329	5.0	685.0	690.0	.012				
696.0	698.0	CARBONATE VEIN - CARBONATE SATURATION ZONE									
		696.0-698.0 cb. vein 90°TCN (barren) includes zone of chloritic cb., some py, trace po	7330	2.0	696.0	698.0	.014				
698.0	719.5	DIORITE RETROGRADE: schisted-extensive cb. permeation and chl. development									
		698.0-701.0 en echelon cb. injection at 80°TCN, 2% py, minor po, tr cpy	7331	3.0	698.0	701.0	Tr				
		701.0-706.0 schisted 70°TCN, some parallel cb. zones, marginal py,	7332	5.0	701.0	706.0	.002				
		717.0-720.0	7333	2.5	717.0	719.5	.008				
719.5	722.4	FROSTED RELICT ZONE: silica, saturation permeation of diorite fabric, large cubes py									
		719.5-722.4 crs py aggregates to 2 cm., some reticulated po only near margins	7334	2.9	719.5	722.4	.224*				

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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t
722.4	724.9	DIORITE RETROGRADE: as above 698.0-719.5; 3% po, unmixed py and monominerallic po					
		722.4-724.9 py 10% over much of length, 3% po	7335	2.5	722.4	724.9	.082
724.9	725.9	FROSTED RELICT ZONE					
		724.9-725.9 sulphides 10% intermix- py::po ratio 5::2, minor sphal	7336	1.0	724.9	725.9	.060
725.9	747.0	DIORITE RETROGRADE: heavily permeated with cb. over silicification, chloritized distorted fabric					
		725.9-728.5 po excess over py, random, 8% po, tr cpy, near upper Ct	7337	2.6	725.9	728.5	.004
		728.5-733.5 po 3% disseminated 1 to 2 mm.--minor cb. fractures barren	7338	5.0	728.5	833.5	.002
		733.5-737.0 po 3% disseminated 1 to 2 mm.--sporadic, minor py intermixed	7339	3.5	833.5	737.0	.002
		737.0-742.0 minor lone py segregations, flat cb. fractures barren	7340	5.0	737.0	742.0	.002
		742.0-747.0 trace py, minute po, cpy on rare slips in chloritized matrix	7341	5.0	742.0	747.0	.002
747.0	757.0	TRANSITION: partly carbonated matrix with vague orbicular cb. qtz, recognizable feld. laths, tr S					
757.0	759.0	DIORITE RETROGRADE: recrystallized clustered chl. matrix, cb. orbicular and lenses, seams					
		757.0-759.0 po 2 to 3% sporadic, increasing toward lower Ct., py 2% random	7342	2.0	757.0	759.0	.006
759.0	767.3	FROSTED RELICT ZONE: as above 724.9-725.9 and 719.5-722.4; from 759.0-762.0 ultra silicification, 762.0-767.0 cb. permeation post silicification					
		759.0-762.0 crs chains euhedral py (15%) in white silica, relict diorite fabric	7343	3.0	759.0	762.0	.100*
		762.0-767.3 impure contorted, recrystallized, qtz cb. matrix with black reticulate 'biotite' as integral part of matrix, py 15% as smaller 2 mm. cubes, distinct 30°TCN contact at lower end. frosted zone with retrograde	7344	5.3	762.0	767.3	.084
767.3	782.2	DIORITE RETROGRADE: chl. aggregates enwrapping orbicular qtz. cb.					
		767.3-769.3 some crs po, 5% py, sporadic through matrix	7345	2.0	767.3	769.3	.116*
		769.3-773.0 classic retrograde fabric, rare crs po, some py	7346	3.7	769.3	773.0	.008
		773.0-777.5 sheared 70°TCN, some minor cb. veins, rare migrated py, po on margins	7347	4.5	773.0	777.5	.002
		777.5-782.2 several cb. fractures with py,po,crs,finer py po adjacent to veins	7348	4.7	777.5	782.2	.080

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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
782.2	788.4	LAMPROPHYRE: altered, strongly carbonated, original mafic phenocrysts bleached to light green chl., 10% euhedral disseminated py, Cts 70°TCN, lone 2 mm. cream feld phenos									
		782.2-788.4 py cubes 10% uniformly disseminated, some feld. phenos	7349	6.2	782.2	788.4	.002				
788.4	791.2	DIORITE RETROGRADE: chl. matrix, orbicular qtz, some 2 mm. po, py									
		788.4-791.2 random crs po, py, average ? 3%	7350	2.8	788.4	791.2	.002				
791.2	800.0	DIORITE HYBRID: coarse grain, med. green, orbicular qtz with clear feld laths, hybrid fabric, predominates, minor py from 797 to 800' a peculiar predominant med. grain fabric with lone orbicular qtz and enclosed fresh feld laths, change of fabric a mystery									
800.0	805.0	DIORITE RETROGRADE: classic fabric, chlorite matrix, orbicular qtz., feld. destroyed, cb. wisps									
		800.0-802.5 random fine py, po, qtz cb. 4 cm. vein at 801.6 at 40°TCN with crs po	7351	2.5	800.0	802.5	.012				
805.0	811.0	DIORITE HYBRID: some as 791.2-800.0 with a mystery segment of essentially med. grain									
811.0	815.0	DIORITE HYBRID RETROGRADE: tendency for alteration not as extreme as classic texture									
815.0	819.0	DIORITE HYBRID: same as 805.0-811.0; minor py, tr po									
819.0	824.2	DIORITE HYBRID RETROGRADE: classic, chloritic matrix, orbicular qtz, cb. wisps									
		819.0-822.0 very minor X, tr py, tr po	7352	3.0	819.0	822.0	.002				
		822.0-824.2 lost .5' po po fine disseminated 10%, main matrix with tr py po	7353	2.2	822.0	824.2	.018				
824.2	829.2	FROSTED REPLACEMENT ZONE: ultrasilicic, 15% 5 mm. euhedral py, mafic impurities in silica saturated fabric, Ct. 20°TCN									
		824.2-827.0 rare black amorphous inclusions in crs, py, some cellular py	7354	2.8	824.2	827.0	.052				
		827.0-829.2 tendency to fine grain py in euhedral crystals 2 to 3 mm. in biotitic amphorous qtz of relict diorite fabric	7355	2.2	827.0	829.2	.036				

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829.2	829.6	LAMPROPHYRE: contorted, granulated ultrasilicic, Cts 40°TCN, no sulphides									
829.6	851.3	FROSTED REPLACEMENT ZONE: frosted is intimate mixture silica and cream feld. laths									
		829.6-832.2 py 15% euhedral disseminated crystals average 3 to 4 mm.	7356	2.6	829.6	832.2	.092				
		832.2-835.5 abundant disseminated black green fibreous 'amphibole?' 15%py	7357	3.3	832.2	835.5	.098				
		835.5-839.0 silica matrix becoming strongly impure, dk.grey, random 8%py	7358	3.5	835.5	839.0	.531*				
		839.0-841.5 dark grey impure silica, leucoxene abundant, folt'n flat	7359	2.5	839.0	841.5	.865*				
		841.5-845.5 contains .3' grey mica lamprophyre at 82.2'; 15% small py considerable mineral components other than silica in zone, bladed black mineral abundant	7360	4.0	841.5	845.5	.244*				
		845.5-851.3 silica feld. mafic blades, dark grey matrix 10°TCN, 15% mainly 2 to 3 mm. euhedral py, at 851.3 silicated bleached granular fault zone; .3' at 5°TCN	7361	5.8	845.5	851.3	.158*				
851.3	867.0	DIORITE RETROGRADE: chl. matrix, orbicular qtz, feld. obliterated but not intense retrograde, steepening folt'n 30° to 60°TCN									
		851.3-852.3 py 10% - sulphide in flat array grinding to 20°TCN	7362	1.0	851.3	852.3	.132*				
		below 852.3 sulphide sporadic, local pockets grading to barren zones									
		852.3-857.0 minor py in retrograde matrix	7363	4.7	852.3	857.0	.002				
		862.0-867.0 sporadic excess py with minor 3 mm. po	7364	5.0	862.0	867.0	.002				
867.0	880.2	DIORITE HYBRID: sufficient orbicular qtz with enclosed fresh feld. laths to impart diorite texture, minor py									
880.2	883.7	LAMPROPHYRE: fine grain dark green, imperfectly formed probable 'green biotite' type dyke, general fine grain dense, homogeneous, non phenocrystic, fine grain light and dark matrix appears to be fine black mica and minute carbonated feldspar, some very fine py									
883.7	918.0	DIORITE HYBRID: abundant orbicular qtz with eu and subhedral laths cream feld. minor py									
918.0	923.0	DIORITE HYBRID RETROGRADE: develops classic retrograde fabric, cb. wisps									
		922.0-923.0 py 5% lesser po	7365	1.0	922.0	923.0	.236*				

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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
923.0	924.0	D.H. RETROGRADE - QTZ CB VEIN: .6' vein with qtz core and rimming massive grey cb 723.0-924.0 py po intermixed on vein margins, matrix 10% py po	7366	1.0	923.0	924.0	.255*				
924.0	943.0	D.H. RETROGRADE same as 918.0-923.0; lessening S, random py and 3 mm. po 924.0-927.0 en echelon cb. slips with marginal py, po	7367	3.0	924.0	927.0	.115*				
943.0	947.0	DIORITE HYBRID: much of segment is epidote saturated feld laths (protected from carbonatization)									
947.0	952.0	DIORITE HYBRID RETROGRADE									
952.0	957.0	DIORITE HYBRID									
957.0	959.0	DIORITE HYBRID RETROGRADE: minor py									
959.0	961.0	LAMPROPHYRE: 'green biotite' type, no phenocrysts, dense, homogeneous, Ct. 30°TCN									
961.0	962.0	FAULT ZONE: beige pink - silica bands alternate with pink clay, beige bleached, granualtion, 50°TCN, strong silication over kaolinization									
962.0	968.0	DIORITE HYBRID RETROGRADE: some lone unaltered, feld laths below 964.0 962.0-964.0 py, minor po, 3 to 4% combined, profusion leucoxene, cb. wisp	7368	2.0	962.0	964.0	.002				
968.0	990.0	DIORITE HYBRID: orbicular qtz has one or more enclosed feld. laths, minor py									
990.0	1000.5	DIORITE HYBRID RETROGRADE: chl. aggregates enwrap orbicular qtz, rare lone feld laths									
1000.5	1006.0	LAMPROPHYRE DYKE: 'green biotite' type, no phenocrysts upper Ct. 40°, lower 50°									
1006.0	1007.1	DIORITE HYBRID RETROGRADE: several xenoliths lamprophyre									
1007.1	1008.3	LAMPROPHRE DYKE: same as 1000.5-1006.0, upper Ct. 80°TCN, lower 70°									
1008.3	1008.9	D.H. RETROGRADE									
1008.9	1009.2	LAMPROPHYRE DYKE: upper Ct. 70°TCN, lower parallel slips in intrusive at 30°TCN									
1009.2	1010.4	D.H. RETROGRADE									
1010.4	1010.9	LAMPROPHYRE: upper Ct 70°TCN, lower 0°TCN									

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1010.9	1014.0	D.H. RETROGRADE: with a later distinct injection of finer grain qtz feld, an over print of later action on regressive fabric, 3% aggregated py									
1014.0	1039.0	LAMPROPHYRE: 'green biotite' type, abundant 2 to 4 mm. cream feld as phenocrysts and dark green amphibole prisms in fine grain chl. cb. feld matrix, combined cream and green phenocrysts to 4 mm. 15% of total fabric, minor py, upper Ct. 50°TCN, lower 70°TCN									
1039.0	1044.5	D.H. RETROGRADE									
1044.5	1047.0	ANDESITE DYKE: perhaps remobilization along fracture, fine grain, homogeneous light and dark green and cb, feld., matrix									
1047.0	1051.0	D.H. RETROGRADE: replica 1010.9-1014.0; minor py									
	1051.0	END OF HOLE									

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DRILL LOG

Property: Orofino
Location: 14356N 9267E
Co-ordinates:

Section: E
Length: 401'
Elevation:
Azimuth: Dip: -90°

83-20
HOLE: [redacted]
Core size: AQ

Dip Tests: 200' -88° 400' 86°
Started: May 19, 1983
Completed: May 20, 1983
Logged by: Warren Gilman

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured ~~normal~~ to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
0.0	14.0	CASING									
14.0	66.0	ANDESITE: fine grain med. green, porphyritic flowtop, a repetitive sequence of porphyritic andesite 1' wide separated by 1' non - porphyritic, drilling along top of one or two flows, scattered dark green amygdules associated with 4 mm. cream phenocrysts of aggregated feldspar, matrix in a fine melange of chloritic amphibole and carbonated feldspar, minor py									
66.0	69.5	LAMPROPHYRE: porphyritic dark grey biotite, cb. dyke, orbicular cb. with some qtz phenos, Cts 10°TCN									
69.5	78.0	QUARTZ VEIN: white bull qtz., some strong internal fractures with intersertal chl. threads, no S.									
		69.5-72.0 some chloritic lenses and threads upper Ct. 20°TCN	7369	2.5	69.5	72.0	.022				
		72.0-78.0 massive bull qtz, no sulphides, lower Ct. 10°TCN	7370	6.0	72.0	78.0	.002				
78.0	180.8	ANDESITE: central massive, med. grain, segment of flow - homogeneous, some 3% py for some distance from upper Ct.									
		78.0-81.0 py 3%	7371	3.0	78.0	81.0	.002				
		from 83' med. grain center of flow develops remnant 'diabasic' fabric, epidotic feld laths with chloritized amphiboles associated, usual en echelon cb., epidote slips, very minor py									
		97.0-101.0 cb. vein 1.5 cm. barren 90°TCN	7372	4.0	97.0	101.0	Tr				
		105.3-106.5 cb. vein 2 cm. barren 85°TCN	7373	1.2	105.3	106.5	Tr				
		from 110', a succession of thin flows 15' wide with 2' porphyritic flow top grading down through med. grain to cg. central portion, a thin ropey top 4 cm. through sequence									
		142.7-144.6 barren cb. vein, 1.5 cm. 80°TCN, trace py	7374	1.9	142.7	144.6	Tr				
		171.9-176.0 several cb. fractures at 20° to 40°TCN, minor py, margins and matrix	7375	4.1	171.9	176.0	.004				
		N.B. LAMPROPHYRE invades c.grain central portion of flow with epidotized feld matrix									
180.8	196.0	LAMPROPHYRE: 'green biotite' type, abundant dark green relict phenos after amphi. upper Ct 50°TCN, lower Ct 20°TCN, 1% fine matrix py in single crystals ~~lower Ct at flow top~~									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-20
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH		DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS				
from	to						Au oz/t				
196.0	199.0	ANDESITE: as described 78.0-180.8									
199.0	201.9	LAMPROPHYRE: 'green biotite' type, as above 180.9-196.0, contacts 10°TCN									
201.9	295.0	ANDESITE: as above - upper part of flow, fine grain divided by threading cb. along brittle top 214.0-217.5 cb. vein 3 cm. wide at 0° and 90°TCN, trace py, rare tr cpy from 217.5 coarse central portion of flow-massive, homogeneous several epidote filled fractures, at 264' epidotized flow top, unexplained long segment to 295 of coarse grain 'diabasic'massive part of flow epidote plag. laths. with intersertal amphibole and amphibole prisms comprise matrix	7376	3.5	214.0	217.5	.002				
295.0	295.5	LAMPROPHYRE: dark grey, dense, fine grain border phase 'green biotite' type, cts 5°TCN, cb. margins, minor py, red silica alt'n on margins									
295.5	317.6	ANDESITE: med. green, coarse grain (coarse grain for flow 1 mm. crystals), homogeneous, matrix amph. feld. epidote, qtz									
317.6	322.3	BROWN DYKE: pink orbicular phenocrysts cb., fine brown matrix, flat Cts, described previous logs									
322.3	323.2	ANDESITE: contorted schistose 30°TCN, abundance orbicular cb. lenses cb. with interlayered matted chl., eh. filled fractures, No S									
323.2	327.7	LAMPROPHYRE: fine grain grey green, contorted, schisted, heavily carbonated, a brecciated central portion with massive barren cb. injected parallel prevailing folt'n 30°TCN, parallel upper Ct. non-porphyritic, some fibrous chloritic shards as contorted phenocrysts fine matrix py 1%									
327.7	346.0	ANDESITE: possible tuff or schisted basic flow, chl. lamellae with cb. augen, lenses, schlieren, minute dark green mineral, abundant multi-sized blue qtz in matrix and lenses									
		327.7-335.0 massive cb. 3 cm. fracture fill, barren, <1% py	7377	7.3	327.7	335.0	.004				
		335.0-339.0 thin lamellae cb. within chl. lamellae <1% py	7378	4.0	335.0	339.0	Tr				
		339.0-343.5 py sporadic, about 1% average, much with no sulphide	7379	4.5	339.0	343.5	.002				

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-20
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured -normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
		327.7 - 346.0 (con't)									
		343.5-346.0 py sporadic, about 1% av., similar regressive met'm to retrograde diorite	7380	2.5	343.5	346.0	.058				
		346.0-348.9 5% py (crs) to 5mm. with similar fabric array to replacement zone, a brecciated qtz cb vien 5 cm. at 347.2 at 20° TCN	7381	2.9	346.0	348.9	.002				
348.9	?	ANDESITE - ALTERED RETROGRADED: essentially qtz chl. cb., 40% cb. strong folt'n 70°TCN									
		348.9-351.0 py decrease rapidly to 1% of matrix	7382	2.1	348.9	351.0	.002				
367.3	370.0	LAMPROPHYRE: dark green, fine grain, dense, homogeneous, matrix largely chl. cb., fine disseminated py, upper Ct. 30°TCN, lower 30°									
370.0	371.0	ANDESITE - RETROGRADED: contorted - elongate lenses cb. in contorted chl. matrix, 8% py drawn parallel 30° foliation									
371.0	372.2	LAMPROPHYRE: as described 367.3-370.0; Cts 30°TCN									
372.2	376.0	ANDESITE: fine to med. grain, med. green, schisted at 70°TCN, with epidotic slips, some magmatitic effect from minor injection									
376.0	376.5	FAULT: granulation, crushing, silication, bringing andesite in ct. with diorite hybrid, flat plane 60°TCN									
376.5	377.0	DIORITE HYBRID									
377.0	377.6	LAMPROPHYRE: silicic (non-carbonated)									
377.6	401.0	DIORITE HYBRID - MIGMATIZED ANDESITE: a coarse grain 'diabasic' andesite texture plag. laths with intersertal amphibole, abundant leucoxene, amphibolitized with 5 mm. amphibole prisms shot through with orbicular qtz enclosing cream feld laths, py in elongate trains probably migrated and recrystallized, py average 1%									
	401.0	END OF HOLE									

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NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property: Orofino
Location: 14399N 9225E
Co-ordinates:

Section: D
Length: 1132'
Elevation:
Azimuth: Dip: -90°

83-21
HOLE: [redacted]
Core size: AQ

Dip Tests: 500' -88° 1132' -84°
Started: May 21, 1983
Completed May 24, 1983
Logged by: Warren Gilman

DEPTH		DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS
from	to						Au oz/t
0.0	14.0	CASING					
14.0	15.8	ANDESITE: fine grain individual crystals, cb., chl., biotite, feld. qtz, epidote 70°TCN					
15.8	16.0	FAULT: granulated andesite, massive cb. along slip 70°TCN, no sulphides					
16.0	33.2	ANDESITE: as above with sporadic .6' and .8' segments with glomeroaggregates epidotic feld., random blue qtz amygdules, 70°TCN, folt'n					
33.2	35.0	FELDSPAR PORPHYRY: fine grain brown matrix, cream zoned feld. phenos to 4 mm., lesser black biotite phenos, minor py, upper Ct. 40°TCN, lower 90°					
35.0	51.0	ANDESITE: as above 16.0-33.2; porphyritic, amygdoloidal, ct't'd. matrix					
51.0	57.5	ANDESITE DYKE: fine grain homogeneous, small black phenocrysts, matrix cb., Cts 40°TCN					
57.5	59.0	ANDESITE: fine grain dense, strong cb. matrix					
59.0	62.6	FLOW TOP - ANDESITE: (small fault at 59.0 - granulation) strongly carbonated amygdaloidal					
62.6	62.9	LAMPROPHYRE: 'green biotite' type					
62.9	66.8	LAMPROPHYRE: (grey dyke) black mica carbonate, equigrained, folt'n 10°TCN					
66.8	72.6	QUARTZ VEIN: frosted white barren bull qtz, brecciated upper Ct. with intersertal chlorite, host rock probably original andesite, threads chl., rare xenoliths with py, cpy; lower Ct 10°TCN 66.8-72.6 rare py, cpy only with chl. xenoliths, minor cb. wisps	7383	5.8	66.8	72.6	.002
72.6	100.0	ANDESITE: porphyritic (aggregated cream epidotic feld.); qtz amygdules with extensive intervening fine grain portions 72.6-75.0 minor py - concentrated adjacent to Q.V.	7384	2.4	72.6	75.0	.002

NORTHGATE EXPLORATION LIMITED

Property:
Location:
Co-ordinates:

HOLE: 83-21
Core size:

Section:
Length:
Elevation:
Azimuth: Dip:

Dip Tests:
Started:
Completed:
Logged by:

DRILL LOG

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
100.0	117.8	BASIC DYKE: vague coarse grain carbonated matrix, chl. segregations in cb. matrix, unseen previously, somewhat contorted fabric, homogeneous, Cts 70°TCN 110.5-115.0 py patches 3% through central part of dyke, some white and green amygdules or segregations, very sharp lower Ct.	7385	4.5	110.5	115.0	Tr				
117.8	151.0	ANDESITE: porphyritic, amygdoloidal with intervening fine grain homogeneous cb. chl. segments, from 127' to 137' porphyritic fabric persists with intervening coarse segments, amphibolitic with diabasic matrix and dark green amphiboles to 1 cm.; at 143' a ropey brecciated flow top with 5 cm. qtz vein and rimming euhedral py									
151.0	152.5	LAMPROPHYRE: med. grey matrix with abundant dark green amphibole phenocrysts, 'green biotite' type; Cts 70°TCN									
152.5	196.0	ANDESITE: as described 117.8-151.0 157.0-168.5 coarse grain central portion of flow, retains short amygdoloidal segments 168.5 ropey brecciated flow top, threaded with cb., folia.,light green mica, 70°TCN, grading down to megascopic individual crystals, feld. mica, dark green amphiboles, epidote 193. to 196 several flat 2 cm. barren qtz and cb. veins barren 0°TCN									
196.0	201.0	LAMPROPHYRE: classic 'green biotite' type, phenocrysts chl. amphibole abundant silicified bleached very light grey central core with beige pink alt'n in matrix, phenocrysts coarse grain with no bleaching, Cts 10°TCN, 1% fine py.									
201.0	268.6	ANDESITE: coarse grain homogeneous central portion of flow, 'diabasic' texture feld. laths with enclosed amphiboles, individual phenocrysts amphibole, some cb., several slips with epidote alt'n, marginal epidote saturation minor py, some minor random phenocrystic portions with glomeroaggregated feld. laths.									
268.6	272.6	LAMPROPHYRE: 'green biotite' type, fine grain grey matrix, abundant phenocrysts dark green amphibole, orbicular phenos frosty qtz - cb., minor py, Cts 10° to 20°TCN									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

HOLE: 83-21
Core size:

Section:
Length:
Elevation:
Azimuth: Dip:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured - normal - to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
272.6	283.5	ANDESITE: as described 201.0-268.6									
283.5	284.2	LAMPROPHYRE: dark grey green, dense, homogeneous, ultrasiliceous, Cts 5°TCN									
284.2	294.6	ANDESITE: as described 201.0-268.6									
294.6	297.7	ANDESITE: altered, carbonated, schisted, fractured, threaded with carbonate, matrix cb. and chl.									
297.7	298.2	LAMPROPHYRE: grey mica dyke, fine to med. grain, cb. chl. (black mica matrix, schisted 10°TCN, cb. fractures)									
298.2	299.2	ANDESITE: as described 294.9-297.7									
299.2	309.2	ANDESITE: more severly altered, schisted, cb. lenses clots in lamellae of green mica, fractured with fill 5 mm. massive cb, en echelon cb. fractures 30°TCN 299.2-309.2 minor recrystallized py in slender needles, minor py	7386	10.0	299.2	309.2	.028				
309.2	313.6	BROWN DYKE: white orbicular cb. phenocrysts to 4 mm., flat contacts									
313.6	319.0	ANDESITE: as described 299.2-309.2 313.6-319.0 some qtz, cb. injection mainly parallel 40°TCN folt'n, py <1%	7387	5.4	313.6	319.0	.002				
319.0	334.0	ANDESITE: coarse grain med. green, as described 201.0-268.6									
334.0	342.2	ANDESITE DYKE: fine grain homogeneous cb. chl. dyke, no features, pronounced folt'n 40°TCN									
342.2	350.5	ANDESITE: coarse grain carbonated, as described 319.0-334.0, 1% dissem. py									
350.5	350.9	LAMPROPHYRE: light grey 'green biotite' type, phenocrystic 'green biotite', Cts 20°TCN									
350.9	351.8	ANDESITE: as above 342.2-350.5									
351.8	353.7	LAMPROPHYRE: as above 350.5-350.9; both Cts in 'V's' (2 angles)									
353.7	355.0	ANDESITE:									
355.0	355.6	LAMPROPHYRE: Cts 10°TCN									

NORTHGATE EXPLORATION LIMITED

Property:
Location:
Co-ordinates:

HOLE: 83-21
Core size:

Section:
Length:
Elevation:
Azimuth: Dip:

Dip Tests:
Started:
Completed:
Logged by:

DRILL LOG

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
355.6	393.9	DIORITE: classic textured 'intrusive', glomero feld., amphibole phenos, epidote									
393.9	396.7	LAMPROPHYRE: cts 10°TCN, 'green biotite' type, green amph. shards to 4 mm.									
396.7	409.0	DIORITE: sufficient feld. laths to class as diorite									
409.0	429.3	RETROGRADE DIORITE: atypical diorite, high prepondrence of chloritic matrix, could well be a retrograded andesite, minor py, cb. wisps with minor qtz augen 417.0-422.0 several en echelon cb and qtz fractures 0°TCN, random py at 421.5, minor internal granulated fault, bleach, 3% py	7388	5.0	417.0	422.0	.002				
429.3	432.2	LAMPROPHYRE: fine dense dark green, homogeneous, imperfectly formed crystallinity 'green biotite' type, lone minute orbicular white phenos and faint amphibole 10°TCN									
432.2	446.0	RETROGRADE DIORITE: close to typical retrograde, fabric, orbicular qtz, cb. wisps folt'n vague and near 10°TCN 442.7-445.5 several en echelon qtz and qtz cb. fractures, flat, minor py	7289	2.8	442.7	445.5	.002				
446.0	458.4	DIORITE: coarse grain med. green, orbicular qtz., glomeroaggregates feld. with intersertal qtz, phenos amphibole to near 1 cm. large angle skeletal leucoxene, epidote, 1% py, folt'n appears 60°TCN									
458.4	459.2	LAMPROPHYRE: fine grain, dark green, 'green biotite' type, imperfectly crystallized flat to 5°TCN									
459.2	481.8	DIORITE: coarse grain med. green, as above 446.0-458.4; isolated clots po, minor py									
481.8	497.0	DIORITE RETROGRADE: epidotic carbonated deformed matrix, cb. fractures, lenses seams, minor py 490.0-493.0 blurred cb. fabric, isolated clots po, minor py 493.0-494.5 impure chloritic qtz vein with cb. margins, 5% combine py po 494.5-496.5 blurred cb. fabric, sporadic py, po, grading to nil sulphide	7390 7391 7392	3.0 1.5 2.0	490.0 493.0 494.5	493.0 494.5 496.5	.004 .002 .002				
497.0	525.0	DIORITE: coarse grain med. green as above 459.2-481.8 522.1-525.0 isolated clumps po, minor py in coarse grain diorite	7393	2.9	522.1	525.0	Tr				

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 93-21
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH		DESCRIPTION NOTE: All angles are measured - normal - to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS				
from	to						Au oz/t				
525.0	527.0	DIORITE RETROGRADE: well folt'd chl. matrix, abundant cb. segregations 525.0-527.0 sporadic po, minor py	7394	2.0	525.0	527.0	Tr				
527.0	528.4	QUARTZ VEIN - FAULT: margining chl. schist, 527.4-527.7 granulated epidote silica Qtz 'pebble' soul of fault with massive qtz at both margins, fault cuts vein, sever 5 mm. blebs massive po on rims of vein 527.0-528.4 fault plane 10°TCN, rusty cb. inclusions in barren vein	7395	1.4	527.0	528.4	.002				
528.4	531.0	DIORITE RETROGRADE: folt'n 20°TCN, qtz augen with cb. rims in chl. matrix 528.4-531.0 very minor py, trace po, sulphides diminish abruptly	7396	2.6	528.4	531.0	.002				
531.0	590.2	DIORITE: coarse grain med. green, tendency to amphibolitic with amphibole prisms to 5 mm. plus, minor py, isolated po crystals, at 551.0 to 552.4 retrograde slip, minor movement; at 560.6 to 561.0 two cm. granular fault zone with po and py, 90°TCN; at 569.0 to 570.2 retrograde schisted zone with strong chl lamellae 85°TCN, minor isolated crs blebs po 574.0-576.0 local retrograde slip 80°TCN, 1 cm. feld. minor qtz fill, no sulphides									
590.2	592.6	LAMPROPHYRE: dark green fine grain dyke with host of xenolithic relict diorite (very unusual) profusion of barren reticulating cb. squeezed through contorted matrix N.B. may be andesite dyke rather than lamprophyre									
592.6	622.0	DIORITE: amphibolitic - very coarse grain - amphibole, prisms actually phenocrysts to 1 cm. plus on coarse grain diorite 'intrusive' matrix at 598 and 599 two cm. epidotic cb. slips 70°TCN at 609 local area of 1' regressive epidotic contorted									
622.0	633.0	DIORITE RETROGRADE: sheared, chloritized, carbonated-recrystallized, chl. lenses with enwrapped cb. lenses, qtz augen, py remobilized drawn into minute lenses parallel folt'n									
		622.0-625.5 py 3% in elongate crystals in banded chl. rock 10°TCN	7397	3.5	622.0	625.5	Tr				
		625.5-626.5 qtz vein-chl. schlieren, impure .6' irregular qtz, 15% py,po	7398	1.0	625.5	626.5	.002				
		626.5-629.3 py 3% in elongate crystals parallel folt'n 10°TCN	7399	2.8	626.5	629.3	.056				

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-21
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
633.0	721.5	DIORITE: coarse grain med. green, amphibolitic with amphibole prisms to 1 cm., several epidote saturated zones of weakness, disseminated 1% py, random crs po with increase granularity (amphibolitization) increase po and py									
		646.0-651.0 sporadic po, mixed py, po and clustered py, 3% epidotic fracture 90°TCN with bordering po	7400	5.0	646.0	651.0	.002				
		683.0-685.0 local small retrograde segment with small qtz vein 70°TCN, py margins	7401	2.0	683.0	685.0	.002				
		695.0-697.5 local qtz replacement zone at 70°TCN with 5% py, po abundant single crystals pink carbonate?	7402	2.5	695.0	697.5	Tr				
		at 712.5 a 3 cm. lamprophyre dyke at 30°TCN									
721.5	723.6	LAMPROPHYRE: very fine grain matrix (silicic) with segregation, clusters cb. peculiar fabric, variation from usual dyke; Cts sharp 30°TCN, dark red brown matrix, metacrysts epidote, cb, metacrystic on sharp dyke Ct.									
723.6	749.0	DIORITE: coarse grain med. green, classic textures of diorite and hybrid, crs amphibolitic, epidotic, sporadic magnetite in segments, py seems less with influx magnetite, py increase toward ct. with lower dyke									
749.0	750.2	LAMPROPHYRE: 'green biotite' type, described previously, upper Ct. 10°TCN, lower 40°TCN, phenocrysts developed right at Ct.									
750.2	757.0	DIORITE: coarse grain med. green, abundant magnetite, large amphiboles									
757.0	762.0	DIORITE RETROGRADE: classic retrograde fabric, orbicular qtz, cb. wisps, chl. matrix									
		757.0-762.0 magnetite abundant, py 5%, skin of vertical cb. vein	7403	5.0	757.0	762.0	.002				
762.0	776.5	DIORITE: as described									
776.5	778.7	LAMPROPHYRE: 'green biotite' type, stressed with oriented fabric parallel Ct. 10°TCN									
778.7	799.3	DIORITE: coarse grain med. green, classic textures, elongate clusters py									
799.3	799.7	LAMPROPHYRE: 'green biotite' type									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

HOLE: 83-21
Core size:

Section:
Length:
Elevation:
Azimuth: Dip:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
799.7	809.9	DIORITE: as above 778.7-799.3									
809.9	814.0	FAULT: (two minor slips - intraformational - granulated bleached)(809.9-811.0) at 811.0 grading to retrograde diorite with slight increase py, schisting only at dyke Ct. 809.9-814.0 strongly folt'd 40°TCN, cb. wisps lenses, 3% clustered py	7404	4.1	809.9	814.0	Tr				
814.0	817.8	LAMPROPHYRE: bleached beige, schisted sericitic pyritic at dyke Ct. (in dyke), strongly carbonated, 'green biotite' type dyke, phenocrystic, upper Ct. contorted, a multiple injection contact (2 phase dyke), lower Ct. sharp 10°TCN									
817.8	830.0	DIORITE RETROGRADE: classic retrograde, orbicular qtz, cb wisps, chl. matrix, minor py retriculate black mica seams prosimate to upper dyke ct., folt'n 30°TCN, some fine matrix feld. from 821 to 827 possibly recrystallized after regression of diorite 821-827 magnetite random and aggregated dark green mica as porphyroblasts, 827-830 classic retrograde with wispy cb., py constant at 1%									
830.0	830.4	LAMPROPHYRE: fine grain light grey dyke - 60°TCN, cts with pyritic xenolith retrograde diorite									
830.4	832.5	DIORITE RETROGRADE: extreme regression, silication, approaching replacement texture 830.4-832.5 mini-silica replacement in retrograde fabric, strong dissem. py, po 10% ratio 1::1	7405	2.1	830.4	832.5	.159*				
832.5	849.5	DIORITE: dark green, med. grain - a strange variety of, mainly mica fabric with random orbicular qtz and enclosed fresh feld. laths, seen before in thick diorite sequences - grading to normal diorite at 842.5									
849.5	859.0	LAMPROPHYRE: comp'n very similar to andesite but central chloritic amph. phenocryst indicate lamp. at 852.5; at 855 and 858, several beige bleached slips in dyke, granulated segments 45°TCN 857.0-858.0 brecciated, silicated zone with reticulating py, matrix granular qtz with interlayered mica	7406	1.0	857.0	858.0	.004				

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-21
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
859.0	872.3	DIORITE: coarse grain med. green, classic diorite, minor py									
872.3	872.9	FELDSPAR PORPHYRY: light brown siliceous matrix with zoned plag. phenocrysts, Cts 10°TCN									
872.9	876.3	DIORITE RETROGRADE: classic texture, orbicular qtz, cb. wisps, chl. fabric, minor py									
876.3	884.3	FELDSPAR PORPHYRY: light brown siliceous matrix, zoned plagioclase, black 3 mm. amphibole phenocrysts rimmed with chlorite, minor py, Cts close to 80°TCN both types phenocrysts come to border with host rock (perhaps rock intruded in plastic semi-mush)									
884.3	890.6	DIORITE: coarse grain med. green, classic textured, small retrograde portion at lower Ct. due to dyke									
890.6	903.5	LAMPROPHYRE: grey dyke - fine grain visible individual crystals (x10) cb. and black mica, heavily cb't'd segment, 'porphyritic' central portion cb. clots as phenocrysts, minor py, flat cts. (second most common type of lamprophyre)									
903.5	911.0	REPLACEMENT ZONE: silicated, relict diorite ghost matrix, replaced with silica permeation, some chlorite relicts, strong py, po, some late qtz feld veining of replaced area and barren of sulphides									
		903.5-906.5 late qtz feld. vein .8' total (barren) silicate matrix 15%py po	7407	3.0	903.5	906.5	.058				
		906.5-908.5 en echelon late qtz stringers 45°TCN in silicate sulphide fabric	7408	2.0	906.5	908.5	.084				
		908.5-911.0 last 2.5' with strong evidence of dioritic fabric 15% py, po ratio py to po 4::1	7409	2.5	908.5	911.0	.054				
911.0	923.8	DIORITE RETROGRADE: strong folt'd 30° 40° 50°TCN, light banding due to deformation amphibole chl. directional fabric with alternating lenses, pods cb, qtz, an imprint of silication over much of fabric									
		911.0-913.0 very minor py, abrupt drop from edge of silicified zone	7410	2.0	911.0	913.0	.002				
		913.0-920.0 repetition of above, trace minute po on thin slips	7411	7.0	913.0	920.0	Tr				
		920.0-923.8 several flat silica impregnations with concentrated py, po silicated pyritic matrix adjacent to impure silica injections	7412	3.8	920.0	923.8	.046				

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
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Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-21
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
923.8	926.1	FELDSPAR PORPHYRE: vague frosted matrix, porphyritic nature obvious but hazy, upper Ct. 25°TCN, lower 45°TCN, minor fine py									
926.1	939.4	DIORITE RETROGRADE: same schisted carbonated retrograde as described 911.0-923.8									
		937.0-939.4 matrix silicified above vein Ct., two small veins with py, po	7413	2.4	937.0	939.4	.164				
939.4	940.5	QUARTZ VEIN: impure chloritic, en echelon chl. lenses 10°TCN, 3% py 1% po, sporadic									
		939.4-940.5 random clots py, po, py with chl. qtz largely barren	7414	1.1	939.4	940.5	.036				
940.5	945.5	DIORITE RETROGRADE: as described 926.1-939.4; minor py									
		940.5-943.5 some recrystallized bladed py at upper Ct., matrix 1%	7415	3.0	940.5	943.5	.028				
945.5	952.0	DIORITE: strange med. grain; strongly mafic diorite with feld. laths, orbicular qtz, discribed many times previously - very atypical, minor py									
952.0	962.0	DIORITE RETROGRADE: coarse grain med. green, orbicular qtz, strongly mafic, chloritic fabric but typical retrograde texture									
		952.0-955.1 minor py in strong folt'd matrix, amph. chl. cb.	7416	3.1	952.0	955.1	.002				
		955.1-955.8 fault intraformational with qtz vein on slip (contained small wedge of a replacement zone with 20% py, po) chl. impure qtz vein devoid of sulphide except inclusions plucked from host	7417	.7	955.1	955.8	.002				
		955.8-959.0 abundant disseminated po on footwall slip, some py, small patches strong silicification with excess po random patches are very small replacement fabric	7418	3.2	955.8	959.0	.002				
		959.0-962.0 minor fine po, in typical retrograde fabric, 2% py	7419	3.0	959.0	962.0	.006				
962.0	1003.0	DIORITE: coarse grain med. green, orbicular qtz with internal feld. laths and lath accumulations with rimming qtz, amph. phenocrysts minor py, spotty difficult to average, rare po, po mixed with py along thin slips									
1003.0	1010.2	LAMPROPHYRE: fine grain light grey, 'green biotite' type, 5 mm. chloritized amphibole in slender prisms, orbicular cb. phenocrysts, non silicic, high cb. in matrix Cts 70°TCN, several local slips evident within dyke itself, (porphyritic segment against fine grain), 1% fine py									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
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Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-21
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
1010.2	1076.2	DIORITE: coarse grain med. green, as described 962.0-1003.0; po spotty and persistent through core, mixed with py or as single crystals po									
1076.2	1086.4	DIORITE RETROGRADE: orbicular qtz augen with interstitial chlorite, amphibole phenocrysts cb. wisps, orbicular qtz devoid of feld. laths; from 1082 to 1084 a sheared retrograde with pronounced chl. bands and intervening cb. qtz bands, at 1082 granulation and gonged fabric are shear with possible interformational fault, 50°TCN, trace sulphides									
1086.4	1104.7	LAMPROPHYRE: fine grain light brown grey matrix, later imprint of strong silicification strongly varisized varishaped 'phenocrysts' (many maybe minute xenolithic remnants, many green to black mica, and chloritized amphibole orbicular white hard phenocrysts of zoned plagioclose, many minute green shards (amphibole mica?), 1% fine py, some thin silica slips with clustered py, uppe Ct. destroyed, lower 10°TCN									
1104.7	1132.0	DIORITE: same as 962.0-1003.0; generally massive with vague folt'n, several epidote slips with margins stained fabric with epidote feld., minor py, trace po									
	1132.0	END OF HOLE									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property: Orofino
Location: 13612N 9380E
Co-ordinates:

Section: E
Length: 800'
Elevation:
Azimuth: Dip: -90°

83-22
HOLE: [redacted]
Core size: AQ

Dip Tests: 400' -88° 800' -90°
Started: May 24, 1983
Completed: May 29, 1983
Logged by: Warren Gilman

DEPTH		DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS				
from	to						Au oz/t				
0.0	8.5	CASING									
8.5	12.5	BASIC FLOW: 'andesite', coarse grain (volcanic) med. green, 'diabasic fabric' feld. laths with interstitial amphiboles, epidotic, abundant fresh amphibole prisms, matrix slightly blurred by epidotic alt'n., (8.5-11.0)									
12.5	16.9	LAMPROPHYRE: fine grain med. grey, 'green biotite' type, porphyritic amphiboles rimmed and packed with chl. small oval white cb. phenocrysts, minor py, en echelon fractures 10°TCN lined with cb., Cts. 60°TCN									
16.9	48.3	BASIC FLOW: 16.9 top of fine grain amygdaloidal 'ANDESITE", upper pt. amygdaloidal to 27 both green and white ovoidal, to 34.3 coarse grain central core, coarsely crystalline with diverse fresh feld laths similar to diorite texture (1 complete flow 16.9-34.3) contact at 34.3 with fine grain amygdaloidal flow top at 50°TCN (strong disseminated leucoxene in zone between top and lower parts of flow) 34.3 to 43.3 a repeat sequence of top to bottom of basic flow;at 43.3 a fow top sequence, cut by diorite at 48.3 N.B. at 48.3 ct. flat en echelon cb., fractures and flat epidote fractures acute ∢to folt'n									
48.3	77.0	DIORITE: coarse grain med. green, orbicular qtz augen,fresh feld laths within augen and white feld laths with intersertal qtz, classic intrusion diorite texture									
77.0	78.6	DIORITE RETROGRADE: charactoristic phenocrystic black biotite (clustered) in retrograde fabric with cb. wisps, py increase 4%									
78.6	93.4	LAMPROPHYRE: ultrasilicic red brown fine grain 'green biotite' dyke, brecciated segments with jagged injection bull qtz, intense red hematitic alt'n., py disseminated sporadic from 10% to <1%, concentrated around qtz vein, upper Ct. 70° schisted, lower Ct. flat									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

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HOLE: 83-22
Core size:

Dip Tests:
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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS X-Ray Au oz/t				
93.4	147.2	DIORITE: coarse grain med. green, classic texture 'shaft' diorite, diverse orientation, cream feld. laths., with varying interstitial qtz., some epidotic segments as zones of migration in massive diorite, at 140' FAULT - interformational 1' chlorite schist, some granulation qtz along plane of fault, wispy cb. stringers, trace py									
147.2	175.0	FELDSPAR PORPHYRY: red brown silicic fine grain matrix with zoned plag phenocrysts to ct. (dyke must have been injected at lower temp. and as crystal mush), upper Ct. contorted 'V' 70°TCN, lower Ct. 50° sharp									
175.0	189.0	DIORITE: coarse grain, med. green, classic diorite fabric, variations in grain size over given segments difficult to explain, a crude folt'n 20 to 30°TCN 5 cm. retrograde at lower Ct.									
189.0	195.5	DIORITE RETROGRADE: qtz augen enwrapped by chl. in mafic matrix, cb. wisps py very variable, associated with qtz cb slips 30°TCN near root ⊥ s to prevailing folt'n at 60°TCN, clusters and lenses in matrix adjacent to slips or fractures; FAULT ZONE: at 189' bleach beige granulated - soul of break at 10°TCN with 5.5' retrograde below 189.0-195.5 variable remobilized py from nil to 10%, no sulphide with fault	7420	6.5	189.0	195.5	.005				
195.5	244.7	DIORITE: coarse grain med. green, classic diorite fabric, minor py, cb. slips, epidote slips 20°TCN									
244.7	245.7	LAMPROPHYRE: red brown silicated porphyritic matrix, green phenocrysts, rare white, Cts 30°									
245.7	251.3	DIORITE: coarse grain med. green, as described 195.5-244.7									
251.3	269.0	DIORITE RETROGRADE: only regressed to carbonitization of feld. laths, amphibole intact 259.0-260.5 qtz vein 5 cm. with chl. schlieren 3% py, margins with py	7421	1.5	259.0	260.5	.090				
269.0	277.0	DIORITE: coarse grain, med. green as described 195.5-244.7									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
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Azimuth: Dip:

HOLE: 83-22
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
277.0	277.9	FELDSPAR PORPHYRY: classic F.P. red brown vitreous matrix, zoned cream plag. phenos. upper Ct. 30°TCN, lower flat									
277.9	281.5	LAMPROPHYRE: red brown, silicated matrix, 5 mm. amphibole shards, some white phenos, upper Ct flat, lower Ct. 60°, some altered xenoliths F.P. within 1% fine py									
281.5	283.5	DIORITE: as above 269.0-277.0									
283.5	286.8	FELDSPAR PORPHYRY: classic F.P., upper Ct. 40°TCN									
286.8	297.3	LAMPROPHYRE: red brown fine grain matrix, non-silicated, 'green biotite' type, (larger than usual) porphyritic only toward margins, great central portion equigranular med. grain, unusual central part green black mica with cb. after feldspar in matrix, some shards green amphibole in equi-granular matrix as phenos, upper Ct. 60°, lower 20°									
297.3	305.8	FELDSPAR PORPHYRY: as above 283.5-286.8; lower Ct. 90°TCN									
305.8	306.5	DIORITE: unaltered possible xenolith entirely undeformed, fresh feld. laths									
306.5	308.6	FELDSPAR PORPHYRY: as above 297.3-305.8; upper Ct. 0° and 90°TCN, lower 80°TCN									
308.6	335.5	DIORITE: coarse grain med. green, local epidotization with marginal retrograde, 308.6-310.8 fresh diorite with several en echelon qtz cb. 2 cm., minor py	7422	2.2	308.6	310.8	.004				
335.5	347.0	FELDSPAR PORPHYRY: classic F.P. described many times, phenocrysts right at Ct., dyke injected in plastic state, a lightening colour to central light beige portiondue to matrix silicification; at 342.7 minor intraformational pink granulated fault zone parallel to 30°TCN contact									
347.0	351.1	CHLORITE SCHIST: possible tuff, med. green, andesite; 30°TCN folt;n - banded, chl. lamellae enwrap cb. lenses, considerable later injection qtz cb. 347.0-351.1 mainly cb., minor qtz as two stage injection, py remobilized in parallel trains along chl. matrix, cb. barren	7423	4.1	347.0	351.1	.240				
351.1	354.8	LAMPROPHYRE: classic phenocrystic 'green biotite' type, strongly silicic, cts 30 TCN, small interformational beige break at 352'.									

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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
354.8	360.3	CHLORITE SCHIST: possible tuff, chl. lamallae, lenses pods cb. intervening, 30°TCN multiple cb. fracture fills 10°TCN, py sporadic 4% 354.8-360.3 py stretched recrystallized in lenses parallel banding	7424	5.5	354.8	360.3	.014				
360.3	362.4	DIORITE RETROGRADE: med. grain fabric with feld. obliterated permeated matrix with cb.									
362.4	366.0	DIORITE: med. grain med. green, abundant fresh feld., folt'n 20°TCN									
366.0	388.0	DIORITE RETROGRADE: med. grain med. green, carbonitization of feld., some chloritization, not extreme regression 377.0-380.0 3 small zones of cb. injection, some qtz, at low angle, 5% marginal py	7425	3.0	377.0	380.0	Tr				
388.0	391.3	BROWN DYKE: very fine grain brittle soft dyke, white and green orbicular phenocrysts, flat Cts									
391.3	408.2	DIORITE RETROGRADE: as above 366.0 - 383.0; difficult to assign as retrograde as only feld. gone, small segments with minor feld. intact, may be proximate to dyke influence									
408.2	410.1	LAMPROPHYRE: 'green biotite' type, chl. amphibole phenocrysts, a central less porphyritic segment, Ct. 30°									
410.1	427.0	DIORITE RETROGRADE: same as 391.3 - 408.2; some strong regressive features, most with slight regraded textures									
427.0	438.5	FELDSPAR PORPHYRY: red brown silicic matrix, profusion zoned feld. phenos, upper Ct 0° and 90°TCN, lower Ct 30°, coarse phenos abut sharp Ct.									
438.5	443.0	DIORITE RETROGRADE: orbicular qtz in profusion with internal feld. laths obliterated, some excess chlorite developed in matrix, 5% py developed in upper 1' adjacent to F.P., minor 2 mm. fracture with excess py									
443.0	487.2	DIORITE: coarse grain med. green, classic texture, homogeneous crs massive diorite varying degree of carbonization of matrix, segments with amphibole prisms to 1 cm. 475.0-476.5 qtz cb vein 3 cm. at 10°TCN, 5% py, minor po, 5% matrix py	7426	1.5	475.0	476.5	.011				

NORTHGATE EXPLORATION LIMITED

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HOLE: 83-22
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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
487.2	487.6	FELDSPAR PORPHYRY: class red brown vitreous fabric, abundant fresh feld., phenocrysts, flat									
487.6	489.6	DIORITE: coarse grain med. green, classic texture, fresh feld.									
489.6	512.5	FELDSPAR PORPHYRY: fine grain red brown matrix, subhedral cream plag. phenocrysts 25% of fabric, black biotite smaller phenos, 1% fine py, upper Ct. 90°TCN lower Ct. 60°TCN, a faintly frosted (silicated) central core, bleaching rock to light brown and masking fabric									
512.5	514.0	DIORITE: coarse grain med. green, as above 487.6-489.6									
514.0	515.4	LAMPROPHYRE: dark green fresh dyke, texture of 'green biotite' type, but green and dark coloured variety of lamp., very rarely seen, both Cts flat									
515.4	519.7	DIORITE: coarse grain med. green as above 512.5-514.0									
519.7	527.9	FELDSPAR PORPHYRY: classic red brown vitreous porphyritic F.P., upper Ct 90°TCN, irregular FAULT 521' intraformational within F.P. 60°TCN, granulated, recrystallized upper .6' mylonitized F.P., lower Ct. F.P. undeformed, silicated, coloured light brown									
527.9	528.1	LAMPROPHYRE: dark green, fine grain, homogeneous aphanitic, Cts 5°TCN, a pyritic slip									
528.1	543.8	DIORITE: coarse grain., med. green, fresh feld. laths in and around orbicular qtz minor carbonat'n masking rock fabric to small degree, an over print of silicification, minor py									
543.8	557.9	FELDSPAR PORPHYRY: as above 519.7-527.9; upper Ct. 20°TCN, lower irregular 10° to 60°TCN									
557.9	561.4	DIORITE RETROGRADE: strong regressive with cb. wisps and lenticles coursing fabric, 4% sulphide 557.9-561.4 doubling py, mixed po, coarse dark green meta'm phenocrysts	7427	3.5	557.9	561.4	.001				
561.4	563.3	LAMPROPHYRE: dark green, equigrained, homogenous, some minute cb. phenos., imperfectly formed, impossible to deduce if 'green biotite' or 'grey mica cb'									

NORTHGATE EXPLORATION LIMITED

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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
		561.4 - 563.3 (con't) type or possibly seperate geneva - similar to above two lamprophyres (compos'n maybe similar to basic lava), Cts 10^{O}TCN									
563.3	567.6	DIORITE: fresh feld. laths, but with ovoidal dark green phenos as Ct. met'm effect from proximate dykes, minor py									
567.6	572.1	LAMPROPHYRE: med. grain med. green black mica cb dyke, ovoidal cb. 'phenocrysts' similar									
572.1	572.6	DIORITE: more coarse grain than above lamp., dark green amphibole phenos, upper Ct. 40^{O}TCN									
572.6	574.3	LAMPROPHYRE: as above 567.6-572.1; upper Ct. lower Ct. 40^{O}TCN									
574.3	578.1	DIORITE: as above 563.3-567.6; abundant amphibole phenos, minor py									
578.1	592.5	FELDSPAR PORPHYRY: classic F.P., 30% feld. phenos, minor bl. biotite, upper Ct. 90^{O}TCN, lower Ct. 80^{O}TCN, minor py									
592.5	664.0	DIORITE: coarse grain med. green, mafic segments (larger amount mafic matrix), local areas slight regressive with feld. laths obliterated or epidotized feld.									
		592.5-597.0 py remobilized near upper Ct. with dyke, 4% in clusters parallel folt'n	7428	4.5	592.5	597.0	Tr				
		at 643.2 a 1 cm. lamprophyre dyke at 45^{O}TCN, slight increase py									
664.0	678.5	DIORITE RETROGRADE: not severe regressive effect, obliteration of feld. laths from augen, minor increase chl. and some cb., at 667' short segment with feld. intact									
		672.0-677.0 slight increase py to 2%, sporadic, trace po	7429	5.0	672.0	677.0	.003				
		677.0-678.5 increase py to 8% 5 cm. above lower Ct., py as euhedral crystals to 3 mm.	7430	1.5	677.0	678.5	.009				
678.5	683.0	REPLACEMENT ZONE - QTZ: cb. saturation, permeation of original diorite fabric, some relict chl. shards and lenses, considerable cb. in matrix, 15% py,									

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HOLE: 83-22
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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
		678.5 - 683.0 (con't) generally small 1 to 2 mm., some remobilized 678.5-683.0 pink alteraton siliceous, py in trains, chl. shards 80^{o}TCN	7431	4.5	678.5	683.0	.110				
683.0	684.8	LAMPROPHYRE: light grey, green porphyritic, cb. rich matrix, large shards, prisms amphibole oriented general flat parallel cts., vague ovoidal cb. metacrysts minor py									
684.8	688.0	REPLACEMENT ZONE: as above, with more intense pink silicification, bleached pale chlorite, 15% py, some crs py to 1 cm., mainly 2 to 3 mm. 684.8-688.0 intense silication, secondary en echelon 5 mm. fractures cut by coarse py	7432	3.2	684.8	688.0	.029				
688.0	688.4	LAMPROPHYRE: fine grain matrix with green 1 mm. phenocrysts carbonate rich, Cts 40^{o}TCN									
688.4	693.5	REPLACEMENT ZONE: ultrasilicic pink chloritic matrix, relict diorite fabric evident an included .8' less intense replacement (10% py), average 15% py in pink matrix, lower Ct. along minor slip 85^{o}TCN 688.4-693.5 mainly small 2 mm. py, rare 1 cm. cubes, fractures with massive py, chl. 70^{o} and 80^{o}TCN	7433	5.1	688.4	693.5	.049				
693.5	707.0	DIORITE RETROGRADE: same as 664.0-678.5; mafic matrix, variable granularity									
		693.5-696.0 classic retrograde 10% py near Ct., sporadic thereafter, 4%	7434	2.5	693.5	696.0	.007				
		696.0-701.0 py 1% or less	7435	5.0	696.0	701.0	.013				
		701.0-705.0 py average 2 to 3%, at 702' chl. cb. slip py, 60^{o}TCN	7536	4.0	701.0	705.0	.001				
		705.0-707.0 strong retrograde, py 2% sporadic, silicic	7437	2.0	705.0	707.0	.007				
707.0	708.0	REPLACEMENT ZONE: beige bleached relict diorite, 15% py, individual cubes 707.0-708.0 ultra silicic, beige, 5 mm. qtz fracture 30^{o}TCN, py 4 mm.	7438	1.0	707.0	708.0	.130				
708.0	721.8	DIORITE RETROGRADE: as above 693.5-707.0									
		708.0-710.0 py 3% in small clusters	7439	2.0	708.0	710.0	.009				
		710.0-712.0 py 1% disseminated	7440	2.0	710.0	712.0	.002				
		712.0-716.5 py 4% - silica fracture at 715' rimmed with py 80^{o}TCN	7441	4.5	712.0	716.5	Tr				

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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
		708.0 - 721.8 (con't)									
		716.5-720.3 py erratic, 4 to 5%	7442	3.8	716.5	720.3	.013				
		720.3-721.8 ultra silicic, half segment beige bleached and 15% py	7443	1.5	720.3	721.8	.038				
721.8	734.3	FELDSPAR PORPHYRY: red brown fine grain vitreous matrix with 25% zoned cream feld phenos, Ct. 80°TCN and 90° to prevailing folt'n in diorite above -- central F.P. strong silication, vague fabric									
734.3	735.5	LAMPROPHYRE: fine to med. grain, light green chl. cb. matrix, orbicular cb., pheno-cyrsts chl. amphibole, upper Ct. 5°TCN, lower 60°; matrix permeated with fine pink cb., minor fine subhedral py, imperfect 'green biotite' type									
735.5	(776.0) 800.0?	FELDSPAR PORPHYRY: central silicic, blurred fabric phenocrystic F.P., very light brown matrix, some en echelon chl. lined fractures 85°TCN, < 1% fine py FAULT 756.5-757.5 intraformational, bleached pink, breccia zone of 5 cm. at 25°TCN - pink alt'n spreads outward for .5' and permeates feld. phenocrysts, footwall develops greatest alt'n, brecciation with 15% py in matrix to 762'									
		757.5-762.0 FOOTWALL FAULT BRX, below main break, random segments crs and fine py, 15%	7444	4.5	757.5	762.0	.005				
		776.0-796.0 white apparent frosted (carbonate saturated matrix) unusual, never encountered previously, relict porphyry fabric? large plag. pseudomorphed by cb., profusion 2 mm. shards chl. and chl. amphibole N.B. may not be F.P., no contact detected between pronounced folt'n 40°TCN, 1% euhedral disseminated py									
		796.0-800.0 porphyritic pink carbonate rich dyke, never seen previously, abundant small chloritic amphibole and partly resorbed plag. phenos. in pink cb. matrix, folt'n appears 80°TCN, from 776 to 800 may be part of FELDSPAR PORPHYRY alt'n sequence no evident contact between them and typical F.P.									
	800.0	END OF HOLE									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property: Orofino
Location: 13890N 9405E
Co-ordinates:

Section: F
Length: 853'
Elevation:
Azimuth: Dip: -90°

83-23
HOLE: [redacted]
Core size: AQ

Dip Tests: 425' -89° 853' -88°
Started: May 29, 1983
Completed: June 2, 1983
Logged by: Warren Gilman

DEPTH		DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS				
from	to						Au oz/t				
0.0	7.0	CASING									
7.0	52.5	DIORITE: coarse grain med. green, orbicular qtz with subhedral feldspar laths in green amphibole, chlorite, epidote matrix, upper few feet, a fuzzy fabric in which feld. partly resorbed with increase cb., local epidotic segments with epidote saturated feld. laths., light green in qtz, from 13 to 17 strongly mafic matrix with subordinate qtz augen with fresh feld. laths, (14-17 strong folt'n with cb. development partly resorbed feld) from 37 to 52 more coarse grain 3mm. average grain size with increase py to near 2%									
52.5	59.0	DIORITE RETROGRADE: strong folt'n 60°TCN, chl. lenses drawn out in parallel array with migration of cb. and qtz to intervening space feld. not evident									
63.7	66.7	LAMPROPHYRE: med. grain black mica, cb. rock, matrix cb. and black mica, phenocrysts orbicular qtz, minor qtz along cb. fractures, upper Ct. flat, lower 60°TCN									
66.7	99.5	FELDSPAR PORPHYRY: fine grain vitreous dark brown matrix with zoned plag. phenocrysts, green black mica lesser phenos, (30%) with central lighter brown core of 60% phenocrysts, emplaced as crystal mush, upper Ct. 60°TCN, lower Ct. 90°, (central core biotite - elongate - average 90°TCN)									
99.5	122.5	DIORITE: as described 7.0-52.5; abundant 5 mm. amphiboles									
122.5	123.8	FAULT: interformational = mylonitized, chl. schist, interlayered granular gouge - colour green to dark green, no sulphides, 60° and 70°TCN, trains py on lower margin, 3 cm. lower segment - regressive with abundant clots leucoxene									
123.8	146.0	DIORITE: from 124-127.5 fractured, rotated, footwall, threaded with epidote, silica as lining of slips, matrix fresh, unaltered - grades to normal classic fabric									
146.0	147.0	DIORITE RETROGRADE: schisted, irregular massive cb., minor qtz injection, multiple segregations massive chl. banded chl. matrix, 10°TCN, no sulphides									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-23
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
147.0	167.8	DIORITE: as described, coarse grain amphibolitic with amphibole prisms to 1 cm., doubling of py to 2 or 3% with coarse grain, epidotic saturation zones average .5' with light green feld., massive, at 167.8 Ct. a 3 cm. qtz cb. barren vein parallel Ct.									
167.8	172.0	LAMPROPHYRE: 'green biotite' type, fine grain light grey matrix with abundant phenocrysts dark green mica (amphibole) to 5 mm., upper Ct. 40°TCN, lower Ct. 30°, phenocryst orientation parallels Ct., minor very fine py									
172.0	200.0	DIORITE: coarse grain, classic textured, orbicular qtz with laths of plag. with diverse orientation, epidote, amphiboles, chl. cb., minor py 192.3-196.0 en echelon cb. and qtz fractures, 5 cm. qtz cb. vein 20°TCN, no sulphides, much magnetite from 196.0-200.0 epidotic saturation segments with leucoxene relicts of magnetite	7445	3.7	192.3	196.0	Tr				
200.0	205.0	LAMPROPHYRE: fine grain to med. grain light grey-green, 'green biotite' type dyke, shard-like dark green amphibole phenocrysts, sporadic augen qtz and qtz cb, minute disseminated py, Cts 40°TCN, chilled fine grain phase at Cts, no phenocrysts, equigranular margins									
205.0	206.6	DIORITE RETROGRADE: strongly cb't'd, fractured with cb. threading matrix, 8% py									
206.6	213.3	LAMPROPHYRE: as above 200.0-205.0; upper Ct. 30°TCN, lower 50°TCN									
213.3	218.0	DIORITE RETROGRADE: classic regressive fabric, contorted orbicular qtz, cb. wisps, chloritic fabric 213.3-218.0 several barren cb. fractures 20° to 50°TCN, 8% remobilized py clusters	7446	4.7	213.3	218.0	Tr				
218.0	220.3	DIORITE: same as 172.0-200.0, interformational fault at 195.6 to 200.0 granulated bleached beige, silicated, granular qtz enwrapped by sericite 0°TCN, minor py									
220.3	230.6	FELDSPAR PORPHYRY: red brown vitreous matrix, subhedral zoned plag. phenos, black 'biotite'									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-23
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
230.6	231.5	LAMPROPHYRE: red brown ultrasilicic matrix, abundant dark green shard like pheno-crysts, lower Ct. 70°TCN, fine disseminated 1% py, pale green chl. euhedral clots.									
231.5	236.4	FELDSPAR PORPHYRY: as described 220.3-230.6									
236.4	239.2	LAMPROPHYRE: same as 230.6-231.5; contact 30°TCN									
239.2	267.0	FELDSPAR PORPHYRY: as described 220.3-230.6; rare dark green xenoliths partly resorbed country rock, - at 245' lighter, tan ultra silicic matrix with more vague fabric, minor masking with silica, plag. becomes packed with cb. and zoning obliterated, chlorite develops to 251.5 from 251.5 to 267.0 normal F.P. classic texture, as described									
267.0	287.0	DIORITE RETROGRADE: classic regressive fabric, 3 to 5 mm. mafic knots at upper Ct., characteristic contact effect, chloritic matrix, qtz augen, cb. wisps, 60° to 30°TCN, 3 to 4% py									
		272.0-274.0 py 3 to 4% (2mm) disseminated, 70°TCN, good folt'n	7447	2.0	272.0	274.0	.010				
		274.0-276.0 flat 2 cm. qtz veins with 8% py to 3 or 4 mm.	7448	2.0	274.0	276.0	.068				
		276.0-280.5 strong 70° folt'n, 3 cm. qtz cb. vein, flat, 2% py in matrix	7449	4.5	276.0	280.5	.016				
		280.5-283.0 QTZ VEIN, branching chloritic, cb. rich, 10% py in matrix, flat	7450	2.5	280.5	283.0	.020				
		283.0-285.0 py 2% in strong foliated, carbonated retrograde	7451	2.0	283.0	285.0	.006				
287.0	306.6	DIORITE: coarse grain med. green, orbicular qtz cream feld. laths of diverse orientation, some features as hybrid (qtz with enclosed feld laths), abundant disseminated 2 mm. magnetite in upper 2', several zones 5 cm. of epidote saturat'n with light green feldspar, magnetite persists through amphibolitic portions									
306.6	320.6	FELDSPAR PORPHYRY: as described 220.3-230.6; Cts 60°TCN									
320.6	325.4	DIORITE RETROGRADE: classic retrograde - orbicular qtz, in chl. matrix with wisps cb., 3% + py in isolated remobilized clots, widespread dull black mafic clots (metacrysts) as Ct. met'm effect at 321' a 1 cm. flat F.P. dyke									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-23
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
325.4	336.8	LAMPROPHYRE: essentially non-porphyritic-homogeneous massive equi-fine grain, Cb. chl. qtz matrix, few relict glomeroaggregate chl. phenos in center Cts 60°TCN									
336.8	337.6	DIORITE RETROGRADE: classic texture, 5% py									
337.6	339.2	LAMPROPHYRE: as described 325.4-336.8; Cts 50°TCN									
339.2	342.0	DIORITE: coarse grain med. green, fresh feld laths in orbicular qtz.									
342.0	348.9	LAMPROPHYRE: as above, with anhedral qtz, qtz cb. clots (rare) phenocrysts, Ct. 50°TCN, original dark green phenos, remobilized in lenticular faint chl. lamellae within fine grain matrix, upper Ct. 60°TCN, lower 60°, abundant fine py 5% in matrix									
348.9	371.5	DIORITE: coarse grain fresh, as above 339.2-342.0									
371.5	376.0	FELDSPAR PORPHYRY: red brown vitreous matrix, 30% subhedral phenocrysts, upper Ct. ? lower Ct. highly irregular 20 to 30°TCN									
376.0	393.5	DIORITE: coarse grain, med. green, amphibolitic, prisms amphibole 1 cm.									
393.5	394.7	DIORITE RETROGRADE: silicated classic deformed matrix, cut by qtz vein, epidotic segments 393.5-394.7 fracture vein, 60°TCN, red silica alt'n, 5% matrix py	7452	1.2	393.5	394.7	Tr				
394.7	398.6	BROWN DYKE: brittle, friable, soft, pink, orange, white phenocrysts, Cts. undulating, 5 to 10°TCN									
398.6	419.5	DIORITE: coarse grain med. green, same as 339.2-342.0; at 419.0 - 1 cm. lamprophyre, 40°TCN									
419.5	471.8	FELDSPAR PORPHYRY: to 424 red brown vitreous fine grain matrix with zoned plag phenos with resorbed margins, unaltered smaller black biotite phenos, upper Ct. 50°TCN, lower Ct. 10°TCN, at lower Ct. reverts slightly to less carbonated more clear dark matrix with only extreme zonation of feld. evident									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 93-23
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
471.8	481.7	LAMPROPHYRE: fine to med. grain light grey homogeneous matrix with 2 to 3 mm. pale green shard like phenos, Cts. 10° to 15°TCN, fine chl. cb. qtz matrix									
481.7	482.2	FELDSPAR PORPHYRY: silicic, discoloured dark green, large altered phenos, lower Ct. 90°TCN									
482.2	501.0	DIORITE RETROGRADE: chl. enwrapping qtz augen, cb. wisps course fractures in qtz									
		482.2-483.7 py 8% is Ct. met'm zone with large mafic porphyroblasts	7453	1.5	482.2	483.7	.010				
		492.4-494.5 classic retrograde, cb. wisps, 1% py, folt'n 60°TCN	7454	2.1	492.2	494.5	.002				
		494.5-496.0 multiple jagged qtz vein 45 to 80°TCN, 2% py, qtz barren	7455	1.5	494.5	496.0	.132				
		496.0-498.0 several en echelon cb. veins 45°TCN and cb. matrix permeat'n 2% py	7456	2.0	496.0	498.0	.020				
		498.0-501.0 retrograde folt'n 60°TCN, sporadic py with thin qtz fractures 2% py	7457	3.0	498.0	501.0	.004				
501.0	506.5	LAMPROPHYRE: light grey fine to med. grain homogeneous, folt'n 40°TCN, relict minor green phenocrysts, matrix is mainly cb. chl., 1% fine py disseminated, Cts. 20°TCN									
506.5	509.2	DIORITE RETROGRADE: as above 482.2-501.0 folt'n 40°TCN, several qtz fractures 3 to 5 cm.									
		506.5-509.2 sporadic crs py with qtz, 5% py in vein and matrix, lone 2 mm. crystals	7458	2.7	506.9	509.2	.056				
509.2	511.0	QUARTZ VEIN: massive white bull qtz with multiple chloritic margins with fine py grading to multiple qtz and cb. parallel veining, some clustered massive py at upper Ct.									
		509.0-511.0 barren bull qtz with minor crs py at margins	7459	1.8	509.2	511.0	.056				
511.0	512.7	CHL. - CB. ROCK and CB. VEIN: multiple inject'n 30°TCN									
		511.0-512.7 chl. cb. veins, sporadic clustered crs py 3 to 4%, veins 20 to 30°TCN	7460	1.7	511.0	512.7	.006				
512.7	514.1	LAMPROPHYRE: as described 501.0-506.5; light grey green, minor minute chl. phenocrysts, Cts 20°TCN									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-23
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
514.1	520.5	DIORITE RETROGRADE: folt'd 30 to 40°TCN, chl. aligned in angle masses with oriented qtz augen enclosed 514.1-520.5 py vary sporadic from NIL to 5% py appears remobilized	9461	6.4	514.1	520.5	.018				
520.5	523.3	FELDSPAR PORPHYRY: light grey, classic texture, radical colour change, small biotite phenos, feld phenos 25% total fabric, upper Ct. 10°, lower 40°TCN									
523.3	528.0	DIORITE RETROGRADE: as above 514.1-520.5; minor py, xenoliths F.P. as irregular inclusions lower segment strongly epidotized, relict fabric retained, green feld. laths									
528.0	529.8	LAMPROPHYRE: med. green massive fine grain dyke, colour of basic volcanic rock, cb. feld. chl. matrix, perhaps phase of ATYPICAL lamprophyre described above, Cts 10°TCN, xenoliths F.P.									
529.8	533.0	FELDSPAR PORPHYRY: red brown vitreous matrix, zoned plag. phenos, lesser biotite Cts. 10°TCN									
533.0	540.5	DIORITE RETROGRADE: feld. obliterated from qtz augen,cb. wisps, chloritic matrix 537.0-540.5 random 5% py, sporadic arseno py with en echelon 2 cm. qtz cb. flat vein	7462	3.5	537.0	540.5	.002				
540.5	560.3	DIORITE: coarse grain,med. green, orbicular qtz. fresh feld. laths, several silica epidote fractures 45°TCN,									
560.3	560.5	LAMPROPHYRE: light grey fine grain 'green biotite' type,Cts. 5 to 10°TCN									
560.5	568.0	DIORITE: as above 540.5-560.3; at 562' a 5 cm. qtz saturation zone with heavy marginal py dissemin't'ns 45°TCN									
568.0	571.0	LAMPROPHYRE: 'green biotite' type strongly porphyritic, bladed green mafic phenocrysts, qtz and cb. round phenocrysts, Cts 10°TCN, green phenos oriented parallel Ct.									
571.0	580.6	DIORITE: as above 540.5-560.3; several en echelon 1 cm. epidote silica saturation fractures									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

HOLE: 83-23
Core size:

Section:
Length:
Elevation:
Azimuth: Dip:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
580.6	585.0	FELDSPAR PORPHYRY: dark brown vitreous porphyritic matrix grading to light brown with cb't'd feld phenos									
585.0	603.0	LAMPROPHYRE: fine to med. grain, red brown (green) carbonate rich matrix with bladed dark green mica phenocrysts 10% of matrix and vari-sized ovoidal cb. crysts in cb. mica, feld. matrix (extreme green biotite type dyke) upper Ct. 30°TCN, lower 5°, py in individual 2 mm. cubes, average 1%									
603.0	611.8	DIORITE: mafic phase - high ration dark green mafic matrix to orbicular qtz with feld. laths									
611.8	612.7	LAMPROPHYRE: as above, smaller crystals, very minor phenocrysts development, upper Ct. 0°TCN, lower 30°TCN									
612.7	623.5	DIORITE: coarse grain, med. green, classic texture, massive, epidotic seams with saturation aureoles									
623.5	631.2	FELDSPAR PORPHYRY: red brown vitreous matrix, phenocrystic to contact, pale brown central core with cb't'd feld. phenos, Cts 60°TCN									
631.2	664.7	DIORITE: coarse grain, med. green, classic texture, massive, folt'n appears 60° TCN, minor py, increase sulphide at lower Ct. over 5 cm.									
664.7	665.7	LAMPROPHYRE: light grey green, non-porphyritic, orbicular chl. clots thru fine matrix, Cts. 30°TCN, slight retrograde diorite (5 cm.) above and below each Ct. with 5% py									
665.7	669.2	DIORITE: as above 631.2-664.7; at 667.7 a 3 cm. lamprophyre dyke at 40°TCN									
669.2	670.7	LAMPROPHYRE: contorted, minor shearing - same dyke as 664.7-665.7, Cts 60°TCN									
670.7	709.0	DIORITE: coarse grain, med. green, amphibole prisms, orbicular and anhedral qtz with internal and rimming cream feld. laths of diverse orientat'n, chl. epidote, minor Cb. in matrix, some disseminated fine py, thin silica slips some amphiboles as 1 cm. blades									
709.0	712.0	DIORITE RETROGRADE: original fabric retained, all feld. laths erased, amphibole prisms intact, a slight regressive effect, abundant fine epidote, minor py									

NORTHGATE EXPLORATION LIMITED

Property:
Location:
Co-ordinates:

HOLE: 83-23
Core size:

Section:
Length:
Elevation:
Azimuth: Dip:

Dip Tests:
Started:
Completed:
Logged by:

DRILL LOG

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
712.0	746.4	DIORITE: as above 670.7-709.0									
746.4	747.8	DIORITE RETROGRADE: as above 709.0-712.0									
747.8	754.8	DIORITE: as above 670.7-709.0									
754.8	757.0	LAMPROPHYRE: same as 669.2-670.7; orbicular clots of aggregated chl. in chl. cb. fine matrix, upper Ct. 80°TCN, some cb. threading, chl. amph, phenocrysts contorted and destroyed by shearing, lower Ct. 30°TCN									
757.0	759.0	DIORITE: mafic phase of high ratio mafic matrix to qtz segregations with plag. laths, folt'n 40°TCN									
759.0	770.1	LAMPROPHYRE: fine to med. grain matrix, light brown alt'n to matrix, multitude vari-sized phenocrysts chl. amphibole, much resorbed material from intruded host, upper Ct. 60°TCN, phenocrysts parallel Ct., 1% fine py, lower Ct. 30°TCN, a central core with excessive Cb. saturation, much fractured with cb. threading									
770.1	775.2	DIORITE: coarse grain med. green to dark green mafic diorite, ratio of dark green matrix to qtz fold. high, minor py									
775.2	781.2	DIORITE RETROGRADE: epidotic chloritic med. grain matrix, with qtz augen, feld. obliterated									
		775.2-777.0 py 3%, some fine seams lined with py	7463	1.8	775.2	777.0	.002				
		777.0-779.0 py 4%	7464	2.0	777.0	779.0	Tr				
		779.0-781.2 py 5%, increase to 8 to 10%, towards lower Ct.	7465	2.2	779.0	781.2	.028				
781.2	786.8	REPLACEMENT ZONE: permeation of relict diorite with pink silica, interstitial chl in granular pink qtz matrix, disseminated py in 2 to 4 mm. subhedral xstal a faint folt'n appears 30 to 40°TCN, py average 15%									
		781.2-784.1 py 4 mm. subhedral, skeletal with inclusions fine black mineral	7466	2.9	781.2	784.1	.084				
		784.1-786.8 py in trains parallel in irregular chl. seams of silicated matrix	7467	2.7	784.1	786.8	.080				
786.8	795.7	REPLACEMENT OR SILICATED DIORITE: frosted pink grading to dark green strong silicated mafic fabric									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-23
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
		786.8 - 795.7 (con't)									
		786.8-789.0 py 15% in slight frosted matrix, fractures with massive chl. py	7468	2.2	786.8	789.0	.244				
		789.0-795.7 py 10% in green silicated mafic diorite, anhedral-subhedral 1 mm. cubes	7469	6.7	789.0	795.7	.149				
795.7	797.6	REPLACEMENT ZONE: pink silica alt'n, relict diorite fabric, folt'n 50°TCN, 15% fine cubes py									
		795.7-797.6 py in subhedral cubes, py concentrated in chloritic seams	7470	1.9	795.7	797.6	.082				
797.6	801.8	DIORITE RETROGRADE: carbonated non-silicic regressive fabric, classic texture, cb. wisps									
		797.6-800.0 py extreme sporadic, a .5' segment pink silicated rock with 15% py	7471	2.4	797.6	800.0	.060				
		800.0-801.8 dark green diorite fabric evident, average 3% py, 60°TCN folt'n	7472	1.8	800.0	801.8	.010				
801.8	811.0	REPLACEMENT ZONE: sharp vertical ct. silicated grey to pink replacement, 15% varisized py									
		801.8-804.0 strong pink silicated matrix with py in interstitial chl. seams	7473	2.2	801.8	804.0	.092				
		804.0-806.4 regressive dark green dioritic 10% py, chl. cb. fractures lined with py	7474	2.4	804.0	806.4	.123				
		806.4-811.0 intense pink with 15% py, py oriented in parallel array reflecting folt'n., few 1 cm. seams massive py	7475	4.6	806.4	811.0	.098				
811.0	815.0	FAULT - CHLORITE SCHIST: silicified strong schistose, vertical folt'n 90°TCN with cb. boudins in schistose chlorite mats with overprint of strong silicat'n, contorted boudins of silicic replacement zone in fault, matrix fine grain brecciated with massive cb. fillings, all orientations 90°TCN									
		811.0-815.0 pyritic boudins of pink replacement zone in fault zone	7476	4.0	811.0	815.0	.018				
815.0	828.0	ANDESITE: fine grain med. to dark green, random brecciation, some minor schisting reflecting above fault, scattered brx't'n with massive cb., sporadic remobilized py, underlying folt'n about 30°TCN, with vertical brx't'n									
		815.0-821.0 random 3% py, in cb. saturated matrix with secondary silicat'n some small massive sections	7477	6.0	815.0	821.0	.002				

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-23
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH		DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS				
from	to						Au oz/t				
		815.0 - 828.0 (con't)									
		821.0-828.0 strong fracturing, brx't'n with cb. fill, fault effects more prominent in footwall, py sporadic 5%	7478	7.0	821.0	828.0	.002				
828.0	831.6	ANDESITE: fine to med. grain mini'diabasic' texture, epidote stained 1 mm. feld laths in dark green chloritic matrix, minor epidote, 3% py in lone cubes, some minor fractures with cb.									
831.6	832.4	FAULT: intraformational beige break, about 60°TCN, very minor granulation original volcanic texture evident through break, some black unidentifiable grains disseminated in beige matrix									
832.4	835.5	ANDESITE: same as 828.0-831.6									
835.5	836.3	LAMPROPHYRE: light grey, very fine grain 'green biotite' type, bladed green mica phenocrysts, later fractures with massive cb. threads, upper Ct. 50°TCN, lower 80°TCN									
836.3	836.6	ANDESITE: med. grain, strongly carbonated									
836.6	838.3	LAMPROPHYRE: light grey 'green biotite' type, contorted, fractured with massive cb. threads, upper Ct. 50°, lower 60°TCN									
838.3	839.7	CHLORITE SCHIST - FAULT: remobilized volcanic vertical, with boudins, seams chl. cb. in schist, some brx with pink silica over 3 cm. at 70°TCN									
839.7	853.0	ANDESITE: med. grain, med. green, equigrained chl. amph., feld. qtz, epidote matrix massive, vague 40 to 60° folt'n, minor fracturing with cb. threads, some near flat en echelon cb. fractures, epidotic seams and marginal permeation fine 2% disseminated py N.B. at 846.5 a 3 cm. lamprophyre dyke 'green biotite' type, upper Ct. flat, lower 80°TCN									
	853.0	END OF HOLE									

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NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property: Orofino
Location: 14018N 9372E
Co-ordinates:

Section: F
Length: 877'
Elevation:
Azimuth: Dip: 90°

HOLE: [redacted]
Core size: AQ

Dip Tests: 437' -86° 877' -86°
Started: June 2, 1983
Completed: June 6, 1983
Logged by: Warren Gilman

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
0.0	12.3	CASING									
12.3 (12.3-14.4 as standard)	17.6	FELDSPAR PORPHYRY: fine grain light grey vitreous matrix with 30% phenocrysts, zoned feld. to 1 cm. small green mica phenocrysts, well into dyke with usual black biotite converted green, folt'n 20°TCN									
17.6	21.2	ANDESITE: med. grain chl. matrix, cb. relicts of feld., epidote, skeletal leucoxene, folt'n appears 20°TCN, 1% disseminated py, joints lined with carbonate schlieren stretched cb. in chl. mats									
21.2	58.9	FELDSPAR PORPHYRY : fine grain light grey as above 12.3-17.6; upper Ct. light grey coarse phenocrysts feld. abut ct. 10°TCN, at 25.5 ct. multiple injection, reverts to red brown matrix with 30 to 35% feld. phenocrysts, smaller than in main portion of dyke progresses to frosted core zone with carbonated plag. phenos with overprint silicat'n									
58.9	59.7	ANDESITE: strongly cb't'd altered, (lower Ct. above dyke 20°TCN), cb. schlieren in chl. folia									
59.7	61.2	LAMPROPHYRE: light grey, vaguely porphyritic, 'green biotite' type dyke, phenos are light green mica blades cts. 50°TCN									
61.2	63.6	ANDESITE: same as 58.9-59.7; several crs clots agglomerated py, remobilized, feld. carbonated clots and schlieren, random pink silication, myriad skeletal leucoxene									
63.6	74.5	LAMPROPHYRE: fine grain light grey, porphyritic, light green phenos, orbicular frosty qtz augen at 73.3' multiple lamprophyre injection, several pulses and surges of dyke into dyke upper Ct 50°TCN, lower Ct. 20°TCN, bladed mica phenos proximate to ct.									
74.5	77.0	ANDESITE MIGMATITE: original fine to med. grain basic flow heavily injected with pink silica, and feld., original fabric chloritized, carbonated, relict original feld.									
77.0	81.1	LAMPROPHYRE: as described 63.6-74.5; 'green biotite' type, phenocrysts bladed green parallel ct. 70°TCN, lower Ct. flat									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-24
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
81.1	85.4	ANDESITE: contorted, carbonated, minor schisting, essentially chl. matrix with cb. clots, 3% py									
85.4	88.6	LAMPROPHYRE: as above 63.6-74.5; upper Ct. 30°TCN, lower Ct. vertical									
88.6	89.7	CHLORITE SCHIST: folt'n 80°TCN, chl. in matted lenses enwrapping boudins cb.									
89.7	106.2	FAULT: lamprophyre - contorted granulated, strong brx't'n, mylonitized, main break at 97 to 99' vertical, 90°TCN - 3 mm. gouge (carbonate chl.) in ultra silicic brecciated lamprophyre - bleached very light green, cream, strong brxt'n below main break with epidotic sericite cement, minor py aligned along break, rare in brx below, above and below vertical break, prevailing 60 to 70° folt'n, strong cb. in brx, lower Ct. 70°TCN									
106.2	114.9	ANDESITE: strong brxt'n 106.2-110.0' silica epidote, minor cb. cement, several fractures 60° to 70°TCN, grading to massive altered epidotic basic lava, single skeletal leucoxene 20% of matrix, py regenerated in isolated blebs									
114.9	123.5	LAMPROPHYRE: ultrasilicic light beige, bleached 'green biotite' type dyke, cts. 70°TCN, xenoliths chloritic host in matrix, bladed green phenocrysts prominent in fine matrix, 3% py, some grains 2mm. beige bleached dyke unusual									
123.5	182.5	ANDESITE: altered matrix, relict flow top and amygdules evident grading down in med. grain central portion of flow, leucoxene abundant thru matrix, matrix thru top and center mainly chl., cb. but retains relict fabric, minor thin cb. threads on fractures, py 1%, folt'n appears 70°TCN parallel dyke ct. above									
		130.9-138.5 many qtz cb fractures, some 2 and 3 cm. at 70 and 80°TCN, 5%py	7479	7.6	130.9	138.5	TR				
		N.B. increasingly difficult to separate flows, what appear no amygdules could be implanted by magnetization, all flow characterized by chl. and abundant disseminated leucoxene									
		148.0-152.5 several qt. cb. thin vertical stringers and branching qtz cb (barren) 5% py matrix, area of silica permeation with disseminated py	7480	4.5	148.0	152.5	.002				
		172.0-174.6 strong carbonitization of matrix (a 4 cm. lamprophyre at 173.5 at 80°TCN with host rock andesite 8% py	7481	2.6	172.0	174.6	.002				

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-24
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
		123.5 - 182.5 (con't) 177.0-182.5 barren cb. 2 cm. vein 80°TCN along core rimming py 5% matrix	7482	5.5	177.0	182.5	.002				
182.5	211.2	ANDESITE MIGMATITE: injected anhedral qtz, cb., metacrysts cb., some feld. laths within, developing a pseudo mafic diorite fabric, orbicular injecta 25% of fabric, fine to med. grain matrix, chl. cb. epidote, minor amphibole qtz, (matrix saturated with cb. chl., soft, orbicular qtz with feld. laths sporadic in short segments), degree of injection such that original characteristics of texture questionable, <1% py									
211.2	233.9	LAMPROPHYRE: fine grain cb. feld. chl. matrix with small abundant green bladed phenocrysts ' green biotite' lamprophyre, 5% orbicular qtz 'crysts', upper Ct. 60°TCN, from 230.0-233.9 fractured dyke threaded with qtz cb., most fractures near vertical, barren, lower Ct. destroyed									
233.9	237.7	FAULT: vertical core is mix of pseudo diorite, mylonitized in ct. with sheared lamprophyre heavily threaded with cb., about 5% py in remobilized knots, folt'n undulating 60 to 90°TCN, fault break 90°TCN 233.9-237.7 mylonite gouge, rolled qtz enwrapped in chl., cb. schlieren 5% py (two types py, clots and minute disseminations)	7483	3.8	233.9	237.7	.002				
237.7	271.2	LAMPROPHYRE: fine to med. grain light grey 'green biotite' type, imperfect clotted green mica phenos, some white qtz orbicular, Cts 70°TCN, fine py 5%+ in matrix									
271.2	278.6	DIORITE RETROGRADE: coarse grain med. green, orbicular qtz, cb. wisps, chl. matrix 4% disseminated magnetite 271.2-278.6 extreme high ratio, magnetite, py random fine and clustered	7484	7.4	271.2	278.6	.006				
278.6	279.2	LAMPROPHYRE: as above 237.7-271.2; 'green biotite' type, bladed green phenos, anhedral white cb., inclusions diorite ratio, cts irregular, upper Ct. 90°TCN									
279.2	279.9	DIORITE RETROGRADE: much of matrix permeated with cb, minor py, folt'n 85°TCN									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-24
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
279.9	281.7	LAMPROPHYRE: fine grain light green grey 'green biotite' type dyke, upper Ct. series of intruding lamprophyre stringers in host rock, lower Ct. vertical runs along core to 290.5									
281.7	285.0	DIORITE RETROGRADE: same as 2712-278.6; py in 2 mm. clots, no magnetite 281.7-285.0 individual subhedral crystals py 2 mm., average 5%	7485	3.2	281.7	285.0	.052				
285.0	289.9	LAMPROPHYRE: as above 279.9-281.7; upper ct. 85°TCN, lower 40°									
289.9	291.0	DIORITE RETROGRADE: as above 271.2-278.6; disseminated magnetite, py <1%									
291.0	308.4	LAMPROPHYRE: fine grain light green grey, bladed green phenocrysts, white orbicular cream phenocrysts, upper Ct. 30°TCN, lower 80°									
308.4	309.5	DIORITE: fresh unaltered feld. in orbicular qtz, amphibole phenocrysts, folt'n seems parallel to upper dyke contact									
309.5	311.2	LAMPROPHYRE: as above 291.0-308.4; cts 70° and 80°TCN									
311.2	315.2	DIORITE: as described 308.4-309.5; steep foliation, minor py, mafic with abundant med. grain matrix									
315.2	320.0	DIORITE RETROGRADE: mafic high ratio chloritic matrix, mild shearing, schlieren cb., folt'n appears 20 to 30°, py sporadic 5% 315.2-320.0 remobilized py in clots and chains parallel folt'n	7486	4.8	315.2	320.0	.006				
320.0	362.2	LAMPROPHYRE: as above 291.0-308.4; orbicular green blebs of matted chl. to 5 mm. upper Ct. 80°TCN, central core develops 10% plus subhedral to laths shaped cream feld. with lesser green blades in mica, cb. matrix									
362.2	366.2	BROWN DYKE: soft, friable, fine grain dark brown, orbicular white green phenocrysts, Ct. 20 to 10°TCN									
366.2	367.2	LAMPROPHYRE: 'green biotite' type, as above 320.0-362.2; sans white phenocrysts only green blades, lower Ct. 80°TCN									
367.2	369.2	DIORITE RETROGRADE: orbicular qtz, cb. wisps, 3% py									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-24
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
369.2	388.6	DIORITE: coarse grain light green white 'felsic' diorite, very high ratio orbicular qtz feld. laths, 20% interstitial chl., textures of diorite and of hybrid minor py, epidotic joints									
388.6	393.6	LAMPROPHYRE: med. grain light grey green, 'green biotite' type, unusual crs fabric for lamprophyre dyke, upper Ct. 30°TCN, lower 10°, no py evident									
393.6	418.0	DIORITE: coarse grain med. green, slightly more mafic than above, some thin segments with feld obliterated and chloritization of amphiboles									
418.0	420.0	DIORITE RETROGRADE: vertical shear with finer recrystallized matrix, contorted qtz cb. stringers, minor py trace 3% but sporadic									
420.0	424.8	DIORITE: as described 393.6-418.0; <1% py									
424.8	433.0	FELDSPAR PORPHYRY: fine grain red brown vitreous matrix, zoned orbicular feld. phenos., upper Ct. 70°TCN, lower Ct. flat									
433.0	455.6	DIORITE: coarse grain med. green, typical 'intrusive' texture, diorite and of hybrid, fresh unaltered at F.P. contact with doubling of py content and clustered dark green chlorite									
455.6	458.0	FELDSPAR PORPHYRY: as above 424.8-433.0; upper Ct. 60°TCN									
458.0	461.5	LAMPROPHYRE: fine grain light green grey 'green biotite' type, some xenoliths F.P., Cts. 10° to flat									
461.5	474.7	FELDSPAR PORPHYRY: as above 424.8-433.0; at 464' central core F.P., frosted white with carbonated feld. and pale grey white matrix with overprint of silicification, dark green black prisms to 2 mm. persist in both fabrics									
474.7	481.3	LAMPROPHYRE: as above 458.0-461.5; contacts 60°TCN									
481.3	500.0	FELDSPAR PORPHYRY: central core, 'frosted' fabric, more vague phenocrysts in grey white matrix from 495 to 500' reverts to red brown matrix with clear fresh zoned phenos, lower Ct. 50°TCN									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-24
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
500.0	511.7	DIORITE: as described 433.0-455.6; long segment very slight retrograde, feld. partially obliterated, pocked with cb., fretted, indistinct, otherwise fabric unchanged									
511.7	513.0	LAMPROPHYRE ATYPICAL: med. grain cb., amphibole matrix, rare white orbicular phenos, Ct. 50°TCN, more crs than most lamp. dykes									
513.0	519.0	DIORITE: as described 433.0-455.6									
519.0	519.6	LAMPROPHYRE: fine grain rims, med. grain center 'green biotite' type, abundant bladed light green phenos cts 10 and 20°TCN									
519.6	527.0	DIORITE: as above 433.0-455.6, some feature at lower Ct., extra py, some minor clustered chl.									
527.0	551.6	FELDSPAR PORPHYRY: fine grain red brown vitreous from ct. inward, grading to med. grain equigrained feld. mica, amphibole matrix with phenos. zoned plag. and dark green 'biotite and amphibole and reverting at 1' from lower Ct. to fine grain red brown matrix, Cts. 20°TCN									
551.6	559.3	DIORITE: as above 433.0-455.6; same ct. feature at upper Ct., extra py, some clustered chl. aggregates									
559.3	561.2	LAMPROPHYRE: fine grain light green grey, abundant light green bladed phenos, Cts 30°TCN									
561.2	580.2	DIORITE: as above 433.0-455.6; same Ct. feature at upper Ct. .3' extra py, clustered chl. metacrysts, several narrow segments epidote permeation, a zone of slight retrograde with partly carbon't'd feld., major zone of fresh unaltered diorite									
580.2	582.7	LAMPROPHYRE: light green (andesite) dyke, a fine grain dyke with mini-green bladed phenos minute cream blebs, Cts. 10°TCN									
582.7	612.6	DIORITE: duplicate of 561.2-580.2 and 551.6-559.3 and 519.6-527.0 and 513.0-519.0 same intensity of reaction to invading dykes, (fresh feld. laths at Ct. with excess py)									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
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Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-24
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
612.6	613.0	FAULT: beige granulated, rolled diorite in light tan clayey matrix 50°TCN, with .2' beige lamprophyre strongly bleached, sericitized at lower Ct., no py									
613.0	613.7	LAMPROPHYRE: fine grain light green 'green biotite' type, bladed green phenos, lower Ct. 10°TCN									
613.7	617.4	CHLORITE SCHIST: with .3' unaltered diorite at upper Ct., sheared diorite, matted chl. laminae with orbicular qtz migrating into distinct layers, with later cb. lenses generally parallel folt'n (variable 20° to 60°TCN), ragged xenoliths lamprophyre 613.7-617.4 py random, average 4%, no sulphides with later cb.	7487	3.7	613.7	617.4	.004				
617.4	620.9	FELDSPAR PORPHYRY: fine grain vitreous dark brown matrix with zoned plag. phenos, abundant green blades to 3 mm., upper Ct. branching, 30°TCN									
620.9	621.9	LAMPROPHYRE: light green 'green biotite' type, bladed green 'mica' phenocrysts, Cts 10°TCN									
621.9	632.8	FELDSPAR PORPHYRY: as above 617.4-620.9; a lightening colour to center with light grey green with carbonated feld. augen in slightly more vague matrix reverting rapidly to red brown fine grain matrix to lowerCt. (irregular 0 to 30°TCN)									
632.8	634.3	DIORITE									
634.3	645.8	DIORITE RETROGRADE: 5 cm. shear zone at top of undeformed retrograde, feld. obliterated, amphiboles chloritized, retains relict diorite fabric 643.0-645.8 sporadic lone 3 to 5 mm. py, 4%, random crs arsenopy	7488	2.8	643.0	645.8	.006				
645.8	646.4	LAMPROPHYRE: slight pink hue to dark green 'green biotite' type dyke with bladed green phenocrysts, cts flat with subsidiary stringers at both Cts									
646.4	662.8	DIORITE RETROGRADE: finer grain, dark green chlorite rich, mafic diorite, orbicular qtz, cb. wisps, small pockets of fresh 'intrusive' diorite, py random, several local shears; 652.8 to 653.0 653.5-653.7 intraformational beige granulated flat faults ultrasilicic on fault trace, matrix is bleached mica enwrapping granular qtz.									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

HOLE: 83-24
Core size:

Section:
Length:
Elevation:
Azimuth: Dip:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH		DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS				
from	to						Au oz/t				
		646.4 - 662.8 (con't)									
		654.8-661.0 several 2 cm. qtz cb. barren veins, py remobilized in matrix parallel variable folt'n orientations	7489	6.2	654.8	661.0	.002				
		661.0-662.8 random 3% py in 70°TCN, folt'n, very chloritic, minor cb. sat'n	7490	1.8	661.0	662.8	.002				
662.8	664.9	QUARTZ CB. VEIN: mix of qtz cb. highly irregular vein with 30% cb. schlieren, crs py									
		662.8-664.9 barren vein, random 4 mm. py, scattered crs po	7491	2.1	662.8	664.9	.006				
664.9	669.6	DIORITE RETROGRADE: severely altered, injected with qtz and very abundant cb. schlieren chl., relict fabric over half of segment, remainder heavily injected.									
		664.9-667.0 sporadic, euhedral py, po :2::1 ratio to py	7492	2.1	664.9	667.0	.014				
		667.0-669.6 sporadic py, po, coarse crystals, ratio 1::1, qtz cb stringers	7493	2.6	667.0	669.6	.062				
669.6	670.9	QUARTZ VEIN: saturation type vein into carbonated diorite, vein appears nearly flat									
		669.6-670.9 marginal 20% reticulated po in .8' vein, central core vein, barren	7494	1.3	669.6	670.9	.214*				
670.9	702.0	DIORITE RETROGRADE: dark green, very fine green matrix due to strong chl. generat'n orbicular qtz enwrapped by chl. cb. wisps, several thin fractures with qtz and some cb., recrystallized lone crs py crystals, folt'n 70°TCN									
		670.9-672.0 py 3 to 4% plus minor po, subhedral 2 mm. crystals	7495	1.1	670.9	672.0	.020				
		672.0-677.0 py po extreme sporadic average 2% ?	7496	5.0	672.0	677.0	.006				
		677.0-682.0 several minor qtz stringers, near flat, po average 3%	7497	5.0	677.0	682.0	.028				
		682,0-687.0 abundant en echelon cb, qtz fractures 1 cm., av. 3% py	7498	5.0	682.0	687.0	.068				
		687.0-691.8 py subhedral crs, recrystallized oriented parallel folt'n 4%	7499	4.8	687.0	691.8	.045				
		691.8-694.2 silica replacement 1', relict diorite fabric 15% py:py 1::1	7500	2.4	691.8	694.2	.157*				
		694.2-696.7 typical retrograde, 3% py, minor po	7501	2.5	694.2	696.7	TR				
		696.7-700.0 typical retrograde, 1% py	7502	3.3	696.7	700.0	.004				
		700.0-702.0 qtz cb. veins 3 cm. flat with silica saturation, 15% py po	7503	2.0	700.0	702.0	.250*				

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-24
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
702.0	760.5	DIORITE: coarse grain, med. green, orbicular qtz, feld. laths, chl. epidote matrix large amphibole prisms									
		702.0-704.5 'intrusive' diorite folt'n appears 30°TCN, <2% py diorite is very felsic 70% light green white qtz and feld laths, slips with py, po average 1% py	7504	2.5	702.0	704.5	.002				
		757.5-760.5 felsic diorite, 1% py	7505	3.0	757.5	760.5	TR				
760.5	763.5	DIORITE RETROGRADE: strong mafic, med. grain, orbicular qtz enwrapped by chl.									
		760.5-763.5 py 2% in lone single crystals, local zones of fresh diorite	7506	3.0	760.5	763.5	.002				
763.5	766.8	REPLACEMENT ZONE: ultrasilicic saturation of relict diorite, 20% crs py, 5mm.-1cm.									
		763.5-766.8 smokey grey qtz minute black needles, gradual contact, 1' marginal fine py	7507	3.3	763.5	766.8	.094				
766.8	768.0	DIORITE RETROGRADE: mafic, qtz augen, cb. wisps, vertical 2 cm. chl. cb. vein 8% py									
		766.8-768.0 lone crystals euhedral py, parallel steep folt'n, 8% py	7508	1.2	766.8	768.0	.103				
768.0	773.6	REPLACEMENT ZONE: intimate mix, silicic replacement, relict silicic diorite and en echelon series Fe Cb fissure veins 1 cm. wide, all at low angle to core N									
		768.0-771.0 py 8% remobilized in trains parallel folt'n, cb barren	7509	3.0	768.0	771.0	.070				
		771.0-773.6 py 15% remobilized, rare py in late cb., mainly small py	7510	2.6	771.0	773.6	.078				
773.6	777.5	DIORITE RETROGRADE: most classic regressive fabric, small portion with fretted vague feldspar									
		773.6-777.5 py 3% small lone crystals, very minor po, folt'n 70°TCN	7511	3.9	773.6	777.5	.078				
777.5	787.3	REPLACEMENT ZONE: ultrasilicic frosted white--very vague remnant diorite fabric, 15% plus py in crs perforated or skeletal or porous crystals, inclusions host rock in crystals, scattered black needles thru most ultrasilicic									
		777.5-782.5 py 15% mainly 2 and 3 mm. cubes often clustered	7512	5.0	777.5	782.5	.109				
		782.5-787.3 py 15% large coarse crystals, porous with poikolitic silica	7513	4.8	782.5	787.3	.034				
787.3	789.8	DIORITE RETROGRADE: felsic (high qtz augen) regressive with amph. to interstitial chl. mats									

NORTHGATE EXPLORATION LIMITED

Property:
Location:
Co-ordinates:

HOLE: 83-24
Core size:

Section:
Length:
Elevation:
Azimuth: Dip:

Dip Tests:
Started:
Completed:
Logged by:

DRILL LOG

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal --- to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
		787.3 - 789.8 (con't)									
		787.3-789.8 random pockets po, rare py	7514	2.5	787.3	789.8	.002				
789.8	794.5	DIORITE: coarse grain med to light green, felsic diorite, feld. intact, often vague, with chl. after amph.									
794.5	801.0	DIORITE RETROGRADE: as described 787.3-789.8									
		794.5-797.0 py steady 1% increasing to 3% from 796' with random po	7515	2.5	794.5	797.0	.036				
		797.0-799.0 very random crs py, minor po, with 1 cm. qtz fractures, general matrix 1% py	7516	2.0	797.0	799.0	.050				
		799.0-801.0 py matrix at 2% increase to 8% in lower .5' at conatct	7517	2.0	799.0	801.0	.052				
801.0	803.8	REPLACEMENT ZONE: ultrasilicic, relict diorite fabric evident in frosted white matrix									
		801.0-803.8 py 15% in 3 to 5 mm. single crystals in parallel trains	7518	2.8	801.0	803.8	.064				
803.8	809.0	DIORITE RETROGRADE: as described 787.3-789.8; amphiobles partly chloritized									
		803.8-805.0 py 3% in lone euhedral crystals, abundant euhedral magnetite	7519	1.2	803.8	805.0	TR				
		805.0-809.0 more mafic, py 5%, high ratio chl., euhedral magnetite	7520	4.0	805.0	809.0	.024				
809.0	824.4	DIORITE: coarse grain med. green, qtz augen, feld laths, amphibole, chlorite minor epidote, 1% py									
824.4	825.9	FAULT: intraformational, chl. 'schist', monomineralic lenses enwrap granular qtz., 70°TCN									
825.9	829.0	DIORITE: coarse grain med. green, as above 809.0-824.4									
829.0	835.7	DIORITE RETROGRADE: directional trend 70°TCN, magnetite trains parallel folt'n random py									
		829.0-834.0 magnetite 8%, sporadic, minor py, fine crystals	7521	5.0	829.0	834.0	.002				
		834.0-835.7 classic regressive fabric, minor py 2%, 70°TCN folt'n	7522	1.7	834.0	835.7	.002				
835.7	840.0	REPLACEMENT ZONE: saturation silica, relict diorite upper margin, central core purplish silica									
		835.7-840.0 py 15%, some packed with silica, smaller py dense, minor po most py in aligned xstals flat to 20 TCN, upper Ct. 60 TCN	7523	4.3	835.7	840.0	.068				

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-24
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
840.0	840.5	LAMPROPHYRE: fine grain, med. green, 'green biotite' type, bladed chl.phenocrysts Cts 20^{O}TCN									
840.5	842.8	REPLACEMENT ZONE: relict diorite fabric, less intense silication, 60^{O}TCN folt'n, 10% py									
		840.5-842.8 py 10% in 2 and 3 mm. single xstals, some porous 'skeletal' crystals	7524	2.3	840.5	842.8	.230*				
842.8	846.2	DIORITE RETROGRADE: some matrix silication, small segments with silica replacement and excess py, some po									
		842.8-846.2 sporadic py varies with intensity silicification, average 5%	7525	3.4	842.8	846.2	.134*				
846.2	848.3	REPLACEMENT ZONE: ultrasilicic cream saturation of relict diorite, 2 intense segments with 15% py									
		846.2-848.3 aligned py 70^{O}TCN, 15%, 1% po, fractures with massive chlorite	7526	2.1	846.2	848.3	.144*				
848.3	856.0	DIORITE RETROGRADE: classic regressive fabric with interstitial chl., cb. wisps, minor py									
		848.3-856.0 py 2% in fine clusters, magnetite disseminated to lower Ct	7527	7.7	848.3	856.0	010				
856.0	859.0	DIORITE RETROGRADE: impregnated with silica all interstitial material chloritized a chl. qtz relict diorite									
		856.0-859.0 py 10% with high ratio po, excess silication local, with po	7528	3.0	856.0	859.0	.080				
859.0	872.0	DIORITE RETROGRADE: less intense regressive fabric, feld. obliterated, qtz augen with interstitial chl., magnetite disseminated thru matrix generally 70^{O}TCN									
		859.0-863.0 thin local silication with excess py, av. 1 to 2%, 8% magnetite	7529	4.0	859.0	863.0	.002				
		863.0-867.0 local segments with visible feld. laths, sporadic 2% py, trace po, 8% magnetite	7530	4.0	863.0	867.0	TR				
867.0	877.0	DIORITE: coarse grain, med. green, orbicular qtz, feld. laths, amphiboles to 5 mm. in matrix of chl. epidote ch. folt'n appears 60^{O}TCN, no apparent magnetite									
	877.0	END OF HOLE									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property: Orofino
Location: Anomaly "H" MPH Grid
Co-ordinates:

Section: L27+60metersE
7+45metersN
Length: 503
Elevation:
Azimuth: 180° Dip: 60°

83-25
HOLE: [redacted]
Core size: AQ

Dip Tests: 503' -86°
Started: June 6, 1983
Completed: June 8, 1983
Logged by: Warren Gilman

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
0.0	74.0	CASING (anchored in B.R.)									
71.0	95.1	BASIC FLOW - ANDESITE: m.g. (71-73) bleached pale green, cb. permeated, altered folt'n 50°TCN, chloritic fragments threaded with cb., original fabric resorbed by purely regional met'm., no alt'n attributable to hydrothermal or structual induced causes; gradual diminish grain size to pillow selvege at 75', selvege is well folt'd - angular cb. metacrysts, graded stone bubbles (left to right) with reversal (right to left) in size at lower rim (av. 3mm. to 1 mm.), flows probably in normal attitude f.g. segments below pillow selvege several joints with massive cb., 5 mm., some distorted amygdules below selvege and above underlying selvege, rhythmical pillow selvege with abundant stone bubbles with intervening fine grain flow.									
95.1	96.3	LAMPROPHYRE DYKE: f.g. lt grn, cb, ch. matrix with bladed grn 2 mm. phenocrysts, Cts irregular - average 40°TCN, intrude fractures in lava flows, 2% fine py.									
96.3	149.4	BASIC FLOW - ANDESITE: series of pillow selvege with amygdules and f.g. intervening lava as described above to 116.2 at 60°TCN (same ∡ as selvege) c.g. (116.2) matrix of ch. relicts from original mafics, coursed and permeated with epidotic feld. and minor recrystallized qtz, original crystals entirely reworked resulting from regional met'm., minor sporadic py in lenticular trains in fractures at 90° to folt'n., at 120' brecciated acid flow top 3 cm. followed by f.g. segment and rhythmical alterat'n of pillow selvege with sporadic fractured flow tops followed by f.g. segments, some selvege devoid of clustered stone bubbles and are banded acid f.g. margins, partly brx'td., (possibly some acid brx'td bombs altered with resorbed margins) at 130' drawn out, strong folt'd stretched pillow selvege 70°TCN random euhedral py with amygdules									

PORCUPINE MINING DIVISION
RECEIVED
JUN 24 1983
A.M. 7,8,9,10,11,12,1,2,3,4,5,6 P.M.
Drill Holes 25, 26 & 27

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-25
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
149.4	153.4	ACID PORPHYRY DYKE: strong Cb'td matrix, original fabric destroyed, relict crs subhedral cb'td feld. phenocrysts in cb. grn mica, fine matrix, folt'n 20°TCN, upper Ct. 60°TCN, lower Ct. 40°TCN, 8% py, clustered near margins 149.4-153.4 very fine disseminated py 2%, secondary chl. fractures with py, 2 mm. lone py crystals	7531	4.0	149.4	153.4	.002				
153.4	155.4	TUFF: very fine grain dark green banded, lenses, laminae matted chl. with schlieren massive barren cb, 0 to 20°TCN 153.4-155.4 strongly sporadic py, in clustered zones, much of matrix nil.	7532	2.0	153.4	155.4	.002				
155.4	157.0	QTZ VEIN: pure bull qtz, minor fractures, with thin seams massive chl., minor galena? trace py contacts and schlieren flat Cts. 155.4-157.0 barren bull qtz., minor galena, py associated with fractures	7533	1.6	155.4	157.0	.016				
157.0	158.6	TUFF: as above 153.4-155.4; banding 10 to 20°TCN 157.0-158.6 trace py, lone crystals, some very fine py, some ptygmatic folding in tuff	7534	1.6	157.0	158.6	TR				
158.6	174.0	BASIC FLOW - ANDESITE: pillowed fine grain flow - clear areas stone bubbles in pillow selvege, some amygdaloidal sequence and c.g. central and basal portions of flows as described above 71.0-95.1									
174.0	177.8	TUFF: very light green to dark green interlayered fine grain tuff, variable comp'n over short lengths, cut by multiple cb. lenses and schlieren 0 to 10°TCN, tracy py 174.0-177.8 some massive cb. fracture vein, schlieren Cb. with aligned py	7535	3.8	174.0	177.8	.002				
177.8	269.0	BASIC FLOW: very light green, fine grain pillowed flow top with prominent lithophysae and segments fine grain flow, 189.5-197.0 en echelon 5 cm. cb. veins (barren) in andesite flow top with slight distortion due to drill angle, individual flows appear to be 20' thick and have about 10' c.grain massive portion with pillowed tops of adjacent sequence below; ropey fractured very fine grain tops evident (eg. at 265') 50 TCN, trace py, po mainly with amygdules, no	7536	7.5	189.5	197.0	TR				

NORTHGATE EXPLORATION LIMITED

Property:
Location:
Co-ordinates:

HOLE: 83-25
Core size:

Section:
Length:
Elevation:
Azimuth: Dip:

Dip Tests:
Started:
Completed:
Logged by:

DRILL LOG

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
		177.8 - 269.0 (con't) sulphides in coarse grain central part of flow.									
269.0	277.0	TUFF: very light green to dark green interlayered tuff and epidotic lapilli tuff, later fractures lined with cb. and short cb. qtz flat veins, py minor in aligned trains, some ptygmatic folding in tuff, upper Ct bedding folt'n 60°TCN, lower 10° to 20°TCN									
		269.0-277.0 minor aligned py rimming qtz cb. flat vein, cb. later than Qu vein	7537	8.0	269.0	277.0	TR				
277.0	392.3	BASIC FLOW - ANDESITE: as described above 177.8-269.0; repetition of same pillowed sequence with prominent lithophysae in pillow selvege, amygdules grading to med. to coarse grain massive lower part of flow									
		300.0-301.8 en echelon qtz., cb and massive cb. flat veins, some pink cb., trace py	7538	1.8	300.0	301.8	.002				
		at 313.8 a 1 cm. cb. vein with stringers en echelon massive (granular) po parellel 60°TCN									
		at 320.0 a 3 cm. cb flat vein with aggregates granular po, about 20% of total vein									
		335.6-338.2 en echelon cb. fractures parallel 60°TCN, some py, rare heavy po	7539	2.6	335.6	338.2	TR				
		from 340' random massive cb. fractures 5 mm. persistent sporadic									
		374.0-375.0 diffuse cb. vein 65°TCN - total .5' with 10% fine po, some py in cb.	7540	1.0	374.0	375.0	.002				
		386.0-387.5 en echelon cb. qtz barren veins, flat to 10°TCN, tr. fine py	7541	1.5	386.0	387.5	.002				
392.3	394.2	CR'B'T VEIN:									
		392.3-394.2 massive cb. barren flat cts - some chl. schlieren near upper ct	7542	1.9	392.3	394.2	TR				
394.2	434.3	BASIC FLOW - ANDESITE: med. grain massive, cb. chl. matrix after amphibole and feldspar, cb in matrix and metacrysts, folt'n 60°TCN, lone isolated 2 mm. subhedral py.									

NORTHGATE EXPLORATION LIMITED

Property:
Location:
Co-ordinates:

HOLE: 83-25
Core size:

Section:
Length:
Elevation:
Azimuth: Dip:

Dip Tests:
Started:
Completed:
Logged by:

DRILL LOG

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
434.3	434.5	LAMPROPHYRE: fine grain matrix, light grey, cb. mica matrix; green bladed phenocrysts, chloritic amphibole, sharp Cts, 60°TCN.									
434.5	436.3	BASIC FLOW - ANDESITE: as described 394.2-434.3; widespread disseminated lenocoxene oriented parallel folt'n., py extremely sporadic in subhedral crystals									
436.3	437.0	LAMPROPHYRE: as above 434.3-434.5 - bladed amphibole phenocrysts, Cts 50°TCN									
437.0	447.5	BASIC FLOW-ANDESITE: as above 394.2-434.3; med. grain, med. green, abundant disseminated leucoxene, upper portion slightly finer grain, folt'n progressively pronounced toward lower Ct 60°TCN									
447.5	463.1	ALTERED DYKE: med. grain, very light green white matrix, largely Cb and mica, vague abundant Ct't'd, feld. phenos to 5 mm. with serrated rims, possibly original feld. porphyry completely saturated with cb., relict feld. resemble Cb. metacrysts, py sporadic, minor Cb. filled joints, Cts 5°TCN									
463.1	464.0	BASIC FLOW ANDESITE: fine to med. grain, med. green, as above 437.0-447.5									
464.0	465.7	TUFF: chl. epidote bands with intervening sericite cb. bands, irregular cb. schlieren parallel 50°TCN, foliat'n, later fractures with cb. fill, sporadic py, po 464.0-465.7 fractures with late cb. and random grannular po, fine py	7543	1.7	464.0	465.7	.002				
465.7	503.0	BASIC FLOW - ANDESITE: very fine grain to fine grain to med. grain, light green flow top, repetition of pillowed selvege with fine grain central pillows selvege is aligned and rimmed with 2 to 5 mm. light green stone bubbles at 70°TCN, some amygdules and some ropey brecciated tops, py rare (very fine) from 485 to 495 med. grain massive central section of flow, with minor fractures and joints with massive cb. rare agglomerated fine po in cb. fractures									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-25
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
		465.7 - 503.0 (con't)									
		500 to 502 section through pillow with selvege of lithophysae at both cts., dipping 60° and 70° TCN									
	503.0	END OF HOLE									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property: Orofino
Location:
Co-ordinates:

83-26
HOLE: [redacted]
Core size:

Section: S+40N L2+40E
Length:
Elevation:
Azimuth: 180° Dip: 45°

Dip Tests: 101 abandoned
Started: June 9, 1983
Completed: June 9, 1983
Logged by: Warren Gilman

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
0	6	Blue glacial clay (rock flour) -minus 100 mesh, small slivers and grains organic fragments									
6	11	Blue glacial clay (rock flour) -minus 100 mesh									
11	48	Esker - poorly sorted, well rounded boulders, cobbles, pebbles, from 2 cm. to 12 cm. in size, mean size ≃ 7 cm. within a medium grained sand matrix (sorted) with 10% to 20% clay mix with sand									
48	56	Sorted well rounded gravel layer with minor medium grained sand matrix, gravel clasts from 1 cm. to 5 cm., mean size ≃ 3 cm.									
56	66	Silt, dark grey, high content, fine black mica (disintegrated boulder?)									
66	68	Clay - blue grey - limonite concretion 3 to 5 mm.									
68	79	Gravel poorly sorted esker gravel, sand matrix, cuttings mainly gneiss and mica schist									
79	93	Sand - minor cobbles to 5 cm., mainly sand derived from granite gneiss									
93	99	Boulders with intervening sand matrix, from 5 cm. to a half meter with sandy clay matrix									
99	101	Boulders - greenstone and gneiss--rods stuck in hole reaming shells (2) lost, unable penetrate boulder field									
	101	HOLE ABANDONED (impossible penetrate boulders with shallow angle - move to lower elevation with steeper hole)									

NORTHGATE EXPLORATION LIMITED

83-27

Property: Orofino
Location: MPH Grid
Co-ordinates:
100'N Stangiff Lake
Section: L2+40E meters
Length: 502' 3+90N meters
Elevation:
Azimuth: Dip: 90°

HOLE: [redacted]
Core size: AQ

Dip Tests: 502'
Started: June 9, 1983
Completed: June 11, 1983
Logged by: Warren Gilman

DRILL LOG

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
0.0	54.0	CASING									
54.0	82.4	BASIC FLOW - ANDESITE: fine to med. grain featureless dark green to med. green flow, fabric of equigrained chl. cb., local areas abundant cb. metacrysts, met'm and recrystallization not so severe as trace eliminate textures if present, no pillows evident, a vague layering with compositional variation usual minor fractures with cb. lining, slight bleaching of fabric around cb. metacrysts, few features formed at depositional stage									
82.4	88.8	LAMPROPHYRE: fine to med. grain, light green cb. chl. fabric, with bladed green chloritic amph. phenocrysts and abundant chl. metacrysts, central portion of dyke med. grain equigranular; non-typical lamprophyre, Cts. sharp with fine grain margins with inner portions resembling andesite, sporadic py, Av. < 1%--upper Ct. 10°TCN; lower 30°TCN; slippage on joints varying grain size, 1 cm. barren cb. vein 84.5 to 86.0, folt'n 60°									
88.8	109.0	BASIC FLOW - ANDESITE: med. grain grading to coarse grain amphibolitic, amph. blades to 5 mm., orientation of amph. indicates folt'n 90°TCN., N.B. (hole maybe drilled at very bad angle geophysical evidence gave no indication) considerable slippage and rotation on joints causing variation in grain size, actual mini faults, thick featureless fabric may partly result from poor drill angle, usual threading of cb. on joints, minor py with cb. injection, no matrix py.									
109.0	125.7	FELDSPAR PORPHYRY: extremely altered, cb't'd. frosted matrix with strong folt'n 60°TCN, very high silica, feld. content with intervening cb. and cb. pocked feld., vague frosted fabric with faint relict feld. phenos, abundant chl. aggregates and blades are relict amphibole and mica phenos, fine 1% py; upper Ct. 60°TCN, with xenoliths andesite, lower Ct. 10°TCN									
125.7	126.3	BASIC FLOW: Ct'd. bleached beige, amphibolitic recrystallized flow, 30°TCN, possible local fault within Feldspar Porphyry									
126.3	127.9	FELDSPAR PORPHYRY: beige bleached, silicified, large feldspar phenocrysts distinguishable									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-27
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
127.9	128.4	BASIC FLOW: same as 125.7-126.3; 10°TCN, cb'd, amphibolitic flow as wedge in F.P.									
128.4	155.7	FELDSPAR PORPHYRY: ultrasilicic fine grain beige matrix grading to grey at 131', with feld. phenocrysts to 1 cm., 25% of fabric, smaller chl. phenos after amphibole and biotite, 1% py at 129.5 interformational fault with cb. and massive chl. and wide beige bleached margins, granulation and mortaring adjacent to break at rt ∡'s to prevailing folt'n. from 131 grey porphyry, ultrasilicic matrix with very slight masking of feld. phenocrysts, at 138 and 139 local slips in F.P. with massive cb. and massive chl., at 142 and 143' local breaks with 3 cm. brx and massive chl. infractures, prevailing folt'n 60°TCN, Cts 60°TCN									
155.7	238.0	BASIC LAVA - ANDESITE: med. grain, med. green, coarse, homogeneous featureless volcanic rock, matrix equigrained chl. cb. feld. qtz epidote, sporadic disseminated magnetite and clustered py, py random 2% and 2 to 4% magnetite leucoxene some cb. threads and fracture fills, folt'n 60°TCN at 238' flow Ct. at 80°TCN (flows appear abnormally thick due to poor angle of intersection), at 240.5' qtz and pink cb. lined barren 3 cm. vein, chl. schlieren, flat Cts.									
238.0	265.7	BASIC FLOW - ANDESITE: fine grain, med. green, amygdaloidal flow top 60°TCN, white cb. amygdules, most stretched to minor degree parallel folt'n., matrix chl. cb. epidote, usual feature fill and threading of white cb., flowage features in tops 70°TCN, minor fine py., most very brittle and threaded with fine cb., some lenses parallel folt'n, no varietal change over long section at 260' a 2 cm. zone of aligned brx with cb. fill, perhaps very minor fault									
265.7	282.5	FELDSPAR PORPHYRY: light grey, ultrasilicic, vitreous matrix with 30% feld. subhedral phenoscrysts, fine green mica dispersed through matrix, larger bladed grn mica after original amphibole, biotite phenoscrysts, minor py,									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-27
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
		265.7 - 282.5 (con't) upper Ct. 60°TCN, xenolith .5' near upper Ct. fine andesite 90°TCN. at 269.7-270.3 barren qtz vein 10°TCN, subsidiary 1 cm. flat veins on both margins, feld. phenos pocked with cb. masking features; much imbricate fracturing toward lower Ct. with Chl. mats along breaks, lower Ct. 10°TCN along minute tuff like band, suggesting injection along tuff horizon									
282.5	304.5	BASIC FLOW - ANDESITE: fine grain, med. green, same as 238.0-265.7; amygdoloidal flow top, white cb. amygdules, intermittent through long sections of fine grain flow top, small fractures same at 294' with parallel brx lenses, massive barren cb.									
304.5	314.0	FELDSPAR PORPHYRY: med. green, vitreous matrix with 30% feld. phenocrysts, upper Ct. vertical to 80°TCN with feld aligned in vertical array, abundant grn. chl. clustered largely small digested xenoliths, several varisized fine grain andesite xenoliths, lower Ct. 60°TCN									
314.0	317.0	BASIC FLOW - ANDESITE: fine grain, med. grn., with prominant fine flowage features, vertical (90°TCN)									
317.0	319.0	BASIC FLOW - ANDESITE: 3 cm. graphitic shale band in tuff at upper Ct., slippage along tuff -- shale Ct -- pseudo -- non conformity - bedding 10°TCN, above a fine fractured flow top with abundant en echelon Cb. lenses 317.0-319.0 tuff 5 cm. total at 10°TCN, no sulphides, hematite lined fracture	7544	2.0	317.0	319.0	TR				
319.0	502.0	BASIC FLOW - ANDESITE: same as 282.5-304.5 and 238.0-265.7 long continual series fine grain, med. grn, sporadic amygdaloidal flow top with intervening fine grain segments with flowage features all in parallel array 80° to 90°TCN, several 5 cm. cb. brx bands with parallel fragments (3 to 4% py) as possible flow top 80°TCN (actual width 4 cm.) at 321' strange mini-brx. probable lapilli tuff at 10°TCN									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

HOLE: 83 - 27
Core size:

Section:
Length:
Elevation:
Azimuth: Dip:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
		319.0 - 502.0 (con't)									
		amygdules stretched parallel to length of core, through series, some fine py in amygdules, minor very fine py in fine grain matrix									
		428.0-430.5 2 segments 5 cm. and 12 cm. of peculiar aligned brx. saturated with Cb. between long shards of fine grain lava either flow top or strange pillow selvedge, some very fine 1% py	7545	2.5	428.0	430.5	TR				
		all aligned 80-90°TCN, amydaloidal, fine grain, and brx. segments at 85°TCN, some trace py with Cb. fractures, obviously very poor hole ie. dip and of strike for penetrat'n of rock units									
		at 464.4 1 cm. cb. vein; 20°TCN with 2 crs. grain cpy									
		477.0-478.0 Cb. rich aligned brx. trace py, .5' segment and .5' fine grain lava	7546	1.0	477.0	478.0	TR				
		497.0-502.0 slight med. grain texture to massive flow with random 5 mm. Cb. fractures 30 to 40°TCN, av 3% disseminated py, cb. barren	7547	5.0	497.0	502.0	TR				
	502.0	END OF HOLE									

83-28 Page 1 of 5

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property: Orofino
Location: L132+00W
Co-ordinates: 1000'S BL[1] & 30'W

Section:
Length: 501'
Elevation:
Azimuth: 150° Dip: 45°

HOLE: [redacted]
Core size: AQ

Dip Tests: 501' -42°
Started: July 7, 1983
Completed: July 11, 1983
Logged by: Warren Gilman

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/tn				
0.0	12.0	CASING									
12.0	12.5	TUFF: very fine grain, grey black siliceous lapilli tuff, fine grain tuff, graphitic tuff, alternating layers pyritic graphite, amorphous acid tuff, fine kernal lapilli acid dark grey tuff, foliation parallel bedding 20°TCN, chert lenses									
12.5	36.7	RHYOLITE: white to light cream, porphyritic, amygdaloidal, very fine grain vitreous matrix, abundant subhedral phenos cream feld. and avoidal colourless amygdules, secondary minute fractures of brittle matrix lined with discontinuous po., lensing clusters fine brown mica parallel fabric lineation 40°TCN									
		22.5-23.1 breccia type qtz vein marginal fine po., tensional lenses po., pulsing injection	7557	.6	22.5	23.1	.006				
		from 27' colour darkening to grey to dark grey, mica more abundant, some phenocrysts, amygdules; from 31.5-32.2 vertical brecciated qtz vein parallel core (slice along core) barren									
		33.5-36.7 very fine py, po., mix with brown mica disseminated thru matrix, 4 to 5%? includes .4' barren cb. vein at lower Ct.	7558	3.2	33.5	36.7	.002				
36.7	96.0	TUFF: as described 12.0; lighter grey with dark bands, clear sharp bedding with variable 20° to 40°TCN, abundant chert bands and lenses, thin cb. lenses parallel bedding and in fractures at 10° to 40°TCN, local minor arching of beds which are 3 mm. to several cm. thick, several massive segments of lapilli tuff (fine rounded fragments in very fine grain matrix)									
		66.2-67.0 barren cb., branching vein at 20°TCN									
		all features strongly conformable with local angle of bedding, dark grey to brown chert bands brittle, fractured, bleached parallel to fractures, rare py, fine clustered along bedding and in cross fractures only very local at 83', cb. qtz 3 cm. with minor py-po.									
96.0	96.8	BRECCIA: angular fragments; explosive brx., non-oriented, multi-sized fragments very fine grain, slightly more basic matrix with abundant later cb.									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-28
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
		96.0 - 96.8 (con't) injected in matrix, clustered fine po within rhyolite fragments, some in situ fracturing of fragments, a crude orientation 40°TCN									
96.8	181.8	TUFF: as above 36.7-96.0; light grey green dacitic tuff - longer segments (5') massive lapilli tuff with lesser segments bedded tuff - chert 20° to 30°TCN, trace fine py and po., fragments of lapilli tuff predominantly rhyolitic with minor clustered amphibole chlorite (mafics), at 106.6 inter-fragmental Ct. of lapilli tuffs at 115.0 to 116.2, qtz feld. cb. barren, vein slice at 90°TCN, isolated segments of some vein thru lower 4' of core with minor clustered po. below 116.2 ratio of bedded, 5 mm. average, alternately coloured, water lain tuff to lapilli tuff about 1::1 with many recurring sharp Cts. between two types; thru bedded cherty ash tuff some clustered lensing po. (minor) suggests in situ crystallization variation in size of lapilli fragments and thickness over short widths makes for confusion with very thin amygdoloidal dacitic flow segments <1' thick, from 140.5-148.6 continuous segment brownish green lapilli tuff, abnormal thickness from 148.6-149.0 very dark blue-black, very fine grain siliceous delicately bedded tuff, 20°TCN from 171.2-181.8 continual segment of lapilli tuff fabric with 15% stretched 5 mm. to 1 cm. amygdules throughout, oriented 10°TCN, <1% pale py mainly along c'b'd slips									
181.8	189.6	DIABASE: fine to med. grain, grey, running along db. contact, plagioclase, pyroxene in diabasic array, massive, py 2 to 4% at 187' 4 cm. wedge of amygdaloidal rock above, additional wedge 189', lower Ct. 70°TCN									
189.6	192.6	HORNFELS: silicified, baked equivalent of ash tuff (finely bedded) and small widths lapilli tuff, 10° to 20°TCN									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-28
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
192.6	232.3	DIABASE: as above 181.8-189.6; fine grain Ct. phase, dark blue-green 192.6-197', grading to med. grain massive cental portion - 4% py thru fine grain and med. grain, upper blue black Ct. 45°TCN, lower 10°TCN, with 2' fine grain border phase, 3% py									
232.2	246.3	TUFF: intimate mixture lapilli tuff, finely bedded ash tuff, chert lenses with fine grain ash tuff, stretched white (feld.) rhyolite TCN 10° and 20°, lithic fragments in very fine grain, light brown matrix with very fine py <1%, characterized by short lengths of various fragmental phases, highly variable explosive sequence in latter stages of volcanism, met'm has stretched and deformed rhyolite fragments parallel bedding									
246.3	254.0	DIABASE: med. grain dark grey-green, minimal fine grain Ct. phase, upper Ct. 30° TCN, lower 10°; usual 'diabasic' fabric, plag. laths., pyroxene in typical orientation, dyke is massive, featureless with 3% py in isolated clusters, sporadically porphyritic with some larger plag. and some pyroxene, rare fractures with thin cb. fill									
254.0	256.9	TUFF: as above 232.3-246.3; considerable compositional and colour variation over 1 cm. widths with intermittent 5 mm. chert lenses, minor py, all low ∠ to CN									
256.9	259.9	DACITE: very light grey, lightly cb'td, fine grain matrix with abundant chl. clusteres, rosettes and partial lenses, alt'r't'n masked original fabric, minor py, massive, featureless									
259.9	287.2	TUFF: as above 232.3-246.3; extremely variable com'n over short widths, 5 to 15° TCN 268.4-268.8 black slatery siltstone with authegenic blebs fine grain pyr-marcasite similar to modules in graphitic tuff, 5°TCN									
287.2	289.5	ANDESITE: med. grain, med. brown, featureless massive andesite but scattered light amygdules									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-28
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
289.5	328.0	TUFF:well bedded, variable, cherty, consistent thin chert bands, lenses									
		295.0-300.0 py fine authigenic 8% associated with chert parallel bedding	7559	5.0	295.0	300.0	002				
		300.0-305.0 as above, authigenic 5% associated with chert and acid tuff	7560	5.0	300.0	305.0	Tr				
		from 305' several segments crystal tuff, rhyolitic matrix with ovoidal qtz. feldspar augen (mis of qtz. feld.)									
		305.0-311.0 in situ 4% py, lenses cb. with py, threading of fine py in cracks of xstall tuff, total 8% py, cb. fracture 1 cm. with cpy	7561	6.0	305.0	311.0	.002				
		311.0-317.0 several small wiggy veins, mainly in situ py parallel bedding	7562	6.0	311.0	317.0	.002				
		322.0-328.0 rhyolitic bedded tuff with strands of pyritic ash tuff, pumice and crystal tuff, py 2 types, conformable and in cracks, 6 to 8% thin strands rhyolite, chert lenses, Cb. vein .8' barren	7563	6.0	322.0	328.0	.002				
328.0	336.8	RHYOLITE: light green white fine grain siliceous matrix, porphyritic, abundant qtz and subhedral feld. phenos and aggregated chlorite metacrysts, fine py									
336.8	341.0	QTZ CB. VEIN: several en echelon segments qtz cb. vein with intervening rhyolite									
		336.8-341.0 minor marginal py rimming barren qtz. cb. veins, 10^{o} to 40^{o}TCN	7564	4.2	336.8	341.0	.006				
341.0	345.0	RHYOLITE: more pure than above, med. grey, strongly porphyritic, feld. 3 mm. partly resorbed, carbonated, high ratio metacrystic chl. relicts									
345.0	359.6	TUFF: light brown, fine grain bedded tuff, varying intensity brown colour,									
359.6	363.6	CRYSTAL TUFF: rhyolitic cream white base with crs. orbicular qtz in profusion, some impure grey green augen, similar size, chloritic impurities within rare clustered py, nodules oriented 5^{o}TCN, much fine cb. with cream and green augen									

NORTHGATE EXPLORATION LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-38
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
363.6	383.0	TUFF: brown bedded compositional layering, minute fragments in predominant type with interlayered rhyolitic bands, brittle, cut by innumerable fractures and threads with thin bleached rims along bedding and cracks predominantly ash tuff with water lain features, grading of beds indicate tops normal, chert as lenses and beds									
383.0	387.4	FAULT: dark black soft mortared fault gouge, contorted shaley with irregular nodules and schlieren qtz with later cb. schlieren and fracture fills, movement induced black slatey rock into thick tuff sequence, Cts. 45°TCN									
387.4	422.0	TUFF: as above 363.6-383.0; minor to trace py, authigenic po. in parallel grannular lenses with rhyolite (rare)									
422.0	433.6	RHYOLITE: fine grain white siliceous matrix, ovoidal qtz to 3 mm., subhedral phenoscrysts cream feld., chloritic metacrystic aggregated clots (relict mafics), thin en echelon fractures lined with fine py									
433.6	434.0	DIABASE (LAMPROPHYRE): black fine grain stringer dyke, brittle, 5% py as 3 mm. nodules in fine undecipherable matrix, Cts. 45°TCN, minute xenoliths diabase									
434.0	455.8	RHYOLITE: as described 422.0-433.6; fine cream matrix, qtz augen, subhedral feld. phenos.; at 439-440 and at 445-446 qtz cb. 1 cm. vein, clots py 3% 90°TCN, rare py aggregates, cb. stringers with trace sph., flat contacts									
455.8	501.0	TUFF: some alternation of tuffs, predominance of lapilli tuff with thin rhyolite and chert bands, longer segments of each individual rock type, need microscopic analysis to determine rock exactly, concretionary in situ fine po. in chert (note: great quantity fine fragments but megascopically no resemblance to turbidite)									
		471.5-472.2 multiple cb. vein with 5% py 45°TCN and wedge of strange c. grain talcose dyke with 20% fuchsite	7565	.7	471.5	472.2	.002				
		474.1-474.7 same strange talcose white dyke, coarse grain with 20% fuchsite									
	501.0	END OF HOLE									

Page 1 of 10

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property: Orofino
Location: 14034N 9473E
Co-ordinates:

Section: H
Length: 902'
Elevation:
Azimuth: Dip: 90°

83-29
HOLE: [redacted]
Core size: AQ

Dip Tests: 500' -87° 902' -87°
Started: July 11, 1983
Completed: July 14, 1983
Logged by: Warren Gilman

DEPTH		DESCRIPTION NOTE: All angles are measured ... normal... to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS
from	to						Au oz/t
0.0	10.0	CASING					
10.0	12.6	INTERMEDIATE DYKE: coarse grain white acid matrix, qtz augen, cb't'd feld. profusion amphibole phenocrysts, fine matrix chl. minor py, unusual rock for shaft area, not recorded previously					
12.6	15.5	FELDSPAR PORPHYRY: vitreous fine grain grey matrix, profusion large zoned plag. phenocrysts, light green small mica phenos and crs. black mica phenos, py < 1%, Cts 40°TCN					
15.5	20.0	DIORITE: coarse grain med. green, aggregated feld. laths. with marginal qtz., mafic matrix, amphibole, chl., < 1% py					
20.0	20.4	FELDSPAR PORPHYRY: red brown vitreous matrix with feld. phenocrysts and mica phenos. 40°TCN					
20.4	43.9	DIORITE RETROGRADE: chloritic contorted fine grain matrix with cb. feld. phenos. (resorbed) with qtz. augen, crs skeletal leucoxene, cb. wisps line shattered qtz. augen 35.4-37.2 py 5%, 3 cm. qtz., minor cb. vein (barren) 10°TCN	7566	1.8	35.4	37.2	.002
43.9	47.7	LAMPROPHYRE: med. grain dark grey, mica, cb. amph. matrix with larger amphiboles as phenocrysts, minor py, Cts 5°TCN, an atypical basic dyke					
47.7	62.2	DIORITE RETROGRADE: as described 20.4-43.9; very crs skeletal leucoxene, random en echelon fracture fills of qtz, epidote, cb., py <1%, local minor segments 5% py usually with 1 cm. plus qtz fracture 55.0-59.0 several 1 cm. qtz cb. fractures, sporadic 4% py 59.0-62.2 several 3 cm. flat injected veins with 6 to 8% py, folt'n 70°TCN	7567 7568	4.0 3.2	55.0 59.0	59.0 62.2	Tr .020
62.2	85.5	FELDSPAR PORPHYRY: vitreous fine grain grey green matrix with 'clouded' crs feld. phenos from contact inward (no zoning evident), shard and prism smaller chl. relicts and chl. amphibole, < 1% py, en echleon qtz., feld. epidote fractures 2 mm. to 2 cm., 60°TCN					

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE:
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
85.5	87.5	LAMPROPHYRE: red brown fine grain matrix with dark green prisms amphibole and qtz cb. ovoidal phenos., abundant fine py, sporadic clusters to 8%, some later qtz. feld. veins with strong py, upper Ct. 60°TCN, lower 30°									
87.5	89.0	FELDSPAR PORPHYRY: as above 62.2-85.5, same clouded distinct subhedral feld.									
89.0	92.2	LAMPROPHYRE: as above, red brown fine grain matrix, upper Ct. 30°TCN, lower Ct. 70°TCN									
92.2	95.0	FELDSPAR PORPHYRY: vitreous grey green matrix, subhedral feld. and smaller chloritic relict after amphibole, larger black biotite < 1% py									
95.0	101.0	LAMPROPHYRE: red brown matrix, upper Ct. 30°, lower 60°TCN									
101.0	102.2	FELDSPAR PORPHYRY: red brown vitreous matrix (abrupt change comp'n of matrix) very high ratio feld. phenos (to 1 cm.) to fine grain matrix									
102.2	106.6	LAMPROPHYRE: Cts 30°TCN									
106.6	120.3	FELDSPAR PORPHYRY: red brown vitreous matrix, lower Ct. with diorite flat									
120.3	132.0	DIORITE: coarse grain med. green, qtz augen with contained diversily oriented feld laths., epidote, chloritic amphibole prisms, minor cb., < 1% py, typical shaft diorite, some contortion, chloritization of matrix usually at steep angle to CN									
132.0	136.0	DIORITE RETROGRADE: coarse grain matrix carbonated chloritized, contorted, intruded with qtz cb. veins 90°TCN, innumerable fine grain lamprophyre fragments 132.0-136.0 Ct'd rimming diorite adjacent to lam. (xenoliths of), contain 10 cm. fine grain lamp dyke, qtz cb. vein branching, barren, trace py	7569	4.0	132.0	136.0	.002				
136.0	138.0	LAMPROPHYRE: as above, upper Ct. flat, lower 60°TCN									
138.0	139.0	DIORITE RETROGRADE: rimming lamprophyre, trace py									

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-29
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
139.0	141.3	LAMPROPHYRE: red brown fine grain matrix, amphibole and chl. amph. prisms as smaller phenocrysts -- with ovoidal qtz cb. augen, dyke is multiple intrusion dyke into dyke, some rotation along joints affecting granularity upper Ct. 60°, lower 40°TCN, some 5 mm. orbicular mafic mineral in red brown silicified matrix									
141.3	162.3	DIORITE: same as 120.3-132.0, very minor retrograde at upper Ct. grading to shaft diorite, which typical has very hi ratio of qtz to cream feld. laths., usually pool of silica with internal feld., minor but aggregated py as if remobilized									
162.3	165.3	LAMPROPHYRE-DIORITE: stringer fine grain basic dyke 90°TCN, ratio approx. 1::1									
165.2	168.5	DIORITE: same as 141.3-162.3; clear feld. alths. adjacent to lamprophyre									
168.5	188.5	LAMPROPHYRE: fine to med. grain feld. cb. mica, amphi. (qtz?) matrix with penocrysts cream feld. sub-to anhedral with equisized chl. aggregated after amph. as anhedral clots, ratio green clots total 2 to 3::1, 4% fine py, Cts 70°TCN									
188.5	220.2	DIORITE: as described 120.3-132.0; strong chloritization of matrix with clear qtz., feld. immersed in mats of chl., minor py, folt'n appears 70°TCN 211.0-213.0 local area with partly cb't'd matrix and cb't'd feld. relicts 8% py in cb't'd slips and fractures plus matrix py	7570	2.0	211.0	213.0	.002				
220.2	221.4	LAMPROPHYRE: minor phenocrysts in predominant med. grain matrix of fine feld., amph., Cts 45°TCN									
221.4	234.8	DIORITE: as above, described 120.3-132.0; progressively amphibolitic (amphibole prisms to 2 cm.) and felsic with hi ratio introduced qtz feld.									
234.8	236.8	FELDSPAR PORPHYRY: red brown vitreous fine grain matrix with 30% cream, subhedral phenocrysts, upper Ct 60°TCN, lower Ct 0°									
236.8	253.5	DIORITE: as described 120.3-132.0; slight contortion near upper Ct. with F.P. some alteration, py 5 to 8% over short width, intrusive fabric becoming more mafic, finer grain									

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-29
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
		236.8 - 253.5 (con't)									
		251.5-253.5 py 5%, en echleon qtz epidote flat fractures, cb. slips py	7571	2.0	251.5	253.5	Tr				
253.5	256.0	LAMPROPHYRE: fine grain brown matrix, black prisms amphibole,sub and anhedral cream feld., minor fine py, upper Ct. destroyed, lower Ct. 80°TCN									
256.0	263.5	DIORITE: as above, minor alteration, pronounced near upper Ct. with some cb't'n of feld. and disseminated magnetite, chloritization									
		256.0-260.0 py 4%, magnetite 10%	7572	4.0	256.0	260.0	.004				
		260.0-263.5 qtz vein 4 cm. with 8% py, aggregated mafics, ct. met'm effect, most is 10% magnetite, partly altered with 4% py	7573	3.5	260.0	263.5	.002				
263.5	269.5	DIORITE RETROGRADE: silicification permeation over Ct'd. altered matrix, chl. schlieren									
		263.5-266.0 py 3%, 10% magnetite in typical diorite retrograde	7574	2.5	263.5	266.0	.004				
		266.0-269.5 py 10% in 2 mm. crystals, silica permeation	7575	3.5	266.0	269.5	.044				
269.5	271.5	REPLACEMENT ZONE: silica permeation of relict diorite with massive py lenses to 1 cm. at 0° to 70°TCN									
		269.5-271.5 relict diorite with 15% py and thin massive py lenses, wedge of lamprophyre (3 cm.)	7576	2.0	269.5	271.5	.064				
271.5	277.0	DIORITE RETROGRADE: relict ctd. fabric with from 271.5-273.5 strong overprint of silicification									
		271.5-273.5 py 12 to 15% in relict diorite fabric 70° and 80°TCN with parellel py lenses	7577	2.0	271.5	273.5	.479*				
		273.5-277.0 variable py 10% to nil over short segments folt'n 70°TCN	7578	3.5	273.5	277.0	.048				
277.0	319.0	DIORITE: coarse grain med. green, some slight chloritization, carbonitization, feld partly resorbed, folt'n 70°TCN									
		277.0-278.5 FAULT-INTRAFORMATIONAL granular qtz, beige bleach, flat brk	7579	1.5	277.0	278.5	.026				
		278.5-282.5 py 3% in partly chloritized diorite, amphibole destroyed	7580	4.0	278.5	282.5	.018				
		282.5-284.0 py 15% in local silica, feld. impregnat'n zone, py euhedral 3mm	7581	1.5	282.5	284.0	.034				

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-29
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
319.0	336.2	DIORITE RETROGRADE: finer grain diorite fabric, carb'nt'd matrix, feld. relict resorbed crystals, amphiboles chloritized									
		319.0-323.0 several qtz cb. massive chl. veins, angles 0° to 90°, last 1' qtz cb. chl. veins, from 321-322 py-arseno py 15% combined	7582	4.0	319.0	323.0	.004				
		323.0-327.4 several en echelon cb. chl. veins 45°TCN, a vertical qtz. feld vein, minor py	7583	4.4	323.0	327.4	.004				
336.2	337.0	LAMPROPHYRE: fine grain brown green matrix with phenocrysts cream feld. and dark green amph., upper Ct. 45°, lower 70°TCN									
337.0	338.7	DIORITE RETROGRADE: relict 'intrusive' fabric, vague c'b't'd. feld. relicts									
338.7	339.7	LAMPROPHYRE: as above, minimal feld., abundant dark green amphibole, Cts flat, some brown altr'n along slips									
339.7	365.5	DIORITE: coarse grain med. green, epidotic, fresh feld., qtz augen in chloritic fabric, minor py, folt'n appears 80°TCN; at 345.5 small 1 cm. break, intraformational, hematite alt'n 20°TCN									
365.5	369.3	DIORITE RETROGRADE: as described 337.0-338.7; 319.0-336.2									
369.3	369.7	BRITTLE BROWN DYKE: satellite of main dyke, Cts 5°TCN									
369.7	371.2	LAMPROPHYRE: med. grey; fine grain dark contorted, fractured, vertical cb. stringer									
371.2	375.2	BROWN DYKE: described innumberable times in past, unique feature, upper Ct. 80°TCN, Cts always flat, lower Ct. flat									
375.2	387.4	LAMPROPHYRE: extension of 369.7-371.2; vitreous matrix, strong silica permeat'n brittle threaded with cb. infractures with imprint of later silicification porphyritic with isolated feld. augen and aggregated chl. clots after amphibole, lower Ct. 70°TCN, 3 or 4% disseminated subhedral py.									
387.4	402.0	FELDSPAR PORPHYRY: light grey vitreous fine grain matrix with strong folt'n 70°TCN anhedral remobilized white cream feld. phenos < 10% of matrix, chloritic clots of relict amphibole, small chloritic shards through matrix, very different type F.P., lower Ct. 30°TCN									

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property:
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Azimuth: Dip:

HOLE: 83-29
Core size:

Dip Tests:
Started:
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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
402.0	403.2	DIORITE RETROGRADE: relict qtz augen, chlorite matrix, peppered with fine leucoxene									
403.2	405.2	LAMPROPHYRE: same as 375.2-387.4; some brittle fractures with rimming beige alt'n									
405.2	409.5	DIORITE RETROGRADE: relict qtz augen, cb., with chloritic matrix									
		405.2-409.5 py 10% rotated clusters, folt'n 70° and 80°TCN	7584	4.3	405.2	409.5	.024				
409.5	414.0	LAMPROPHYRE: fine grain to med. grain feld. amph., mica cb. matrix sans phenocryst very slightly larger anhedral cream phenos and mafic shards, upper Ct. 20° TCN, lower Ct. flat									
414.0	429.0	DIORITE RETROGRADE: relict coarse grain qtz augen unwrapped in chl. mats, wisps cb., disseminated leucoxene									
		414.0-416.7 py 3% in retrograde rock, folt'n 70°TCN	7585	2.7	414.0	416.7	.006				
		416.7-418.5 .6' barren qtz vein, marginal py, 10% matrix py in 1.2' diorite	7586	1.8	416.7	418.5	.072				
		418.5-424.0 py 12% in diorite 80° folt'n TCN, 3 to 4 cm. qtz cb. flat vein	7587	5.5	418.5	424.0	.169*				
		424.0-425.5 qtz vein 1' with rimming cb. 45°TCN, .5' contact rock	7588	1.5	424.0	425.5	.090				
		425.5-429.0 contorted retrograde 70°TCN, 15% py grading outward to 2%	7589	3.5	425.5	429.0	.016				
429.0	457.4	DIORITE: coarse grain med. green, qtz injecta with internal feld. laths in a chloritic mosaic, qtz. epidote on fine shears, folt'n 70°TCN; at 445.2 a 3 cm. lamprophyre, flat									
457.4	460.0	FELDSPAR PORPHYRY: beige vitreous fine grain matrix, 30% zoned plag. phenocrysts to 5 mm., with pale green mica and larger black mica phenos. Cts 40°TCN									
460.0	460.5	LAMPROPHYRE: 'green biotite' type, cb. mica fine grain matrix with shards and prisms amphibole and chl't'c amphibole, white feld. phenos parallel Cts 40°TCN									
460.5	462.2	FELDSPAR PORPHYRY: as above 457.4-460.0									
462.2	462.2	LAMPROPHYRE: 'green biotite' type									
462.2	487.4	FELDSPAR PORPHYRY: frosted central portion, marked porphyritic fabric to 468' bleaching to whitish pink, grading at 468' to light green, less altered, more clear phenos feld. 30% of fabric, lost 2' red brown vitreous matrix 20% feld. phenocrysts, lower Ct. 50°TCN									

NORTHGATE EXPLORATION LIMITED

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HOLE: 83-29
Core size:

Dip Tests:
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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
487.4	517.0	DIORITE: same as 429.0-457.4; sporadic qtz. cb. fractures flat and 45°TCN									
517.0	518.3	LAMPROPHYRE: fine grain with minute green mica phenocrysts, some anhedral white (minor) 'green biotite' type, 10°TCN									
518.3	523.8	DIORITE: as above									
523.8	532.7	FELDSPAR PORPHYRY: dark red brown vitreous matrix, very minor phenocrysts, upper Ct. grading to abundant (20% matrix) zoned plag. to 4 mm. with black biotite									
532.7	533.5	LAMPROPHYRE: dark brown fine grain matrix, amphibole phenos., 15% anhedral py, Cts. 10°TCN									
533.5	547.9	FELDSPAR PORPHYRY: same as red brown porphy 523.8-532.7; lower Ct. 60°TCN									
547.9	562.0	DIORITE: coarse grain med. green, shaft diorite, 60% injected qtz. with enclosed feld. laths, large dark green amphibole prisms and shards, a fine chlorite mosaic basis of rock fabric, sporadic py, average < 1%, amphibolitic portions with 1 cm. shards amphibole, some folt'n 70°TCN									
562.0	563.8	LAMPROPHYRE: bleached white some cb. 'green biotite' type, strong alt'n but mafic phenocrysts only chloritized, 10°TCN									
563.8	595.0	FELDSPAR PORPHYRY: red brown grey matrix with abundant feld. phenos (subhedral) without obvious zoning, prisms and shards light green									
595.0	595.8	DIORITE RETROGRADE: silicated, 70% qtz schlieren with shard like mica aggregates in interstices, 10% combined py, po, 1 cm. barren flat qtz veins at both Cts									
595.8	598.5	LAMPROPHYRE: fine grain cb. mica, dark green grey, non-porphyritic, extensive fractures, thin cb. threads, flat Cts, en echelon Cb. slips, fine py									
598.5	641.3	DIORITE: coarse grain med. green, shaft diorite same as 547.9-562.0; sporadic py average 1% short segments with 2 or 4% py									
641.3	666.0	DIORITE RETROGRADE: coarse grain med. green, partly sheared, feld. destroyed, Cb't'd relict variance in grain size probably due to proximity of lampro. dyke									

NORTHGATE EXPLORATION LIMITED

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HOLE: 83 - 29
Core size:

Dip Tests:
Started:
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Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured ~~normal~~ to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
		641.3 - 666.0 (con't)									
		657.8-663.8 heavily fractured contorted matrix cut by branching vertical massive Cb. dyke	7590	6.0	657.8	663.8	.002				
666.0	672.0	DIORITE: coarse grain med. green, some large grains magnetite, recrystallized amphiboles, some migration of chloritic matrix, minor py, 70°TCN									
672.0	729.5	DIORITE RETROGRADE: altered cb't'd, diorite fabric									
		675.0-678.2 med. grain retrograde, minor py, few cb. lined fractures	7591	3.2	675.0	678.2	.006				
		678.2-680.0 zone cb. permeation, 2 Ct. veins (5 cm.) at both contacts 10% py	7592	1.2	678.2	680.0	.190				
		680.0-685.0 lesser Cb. permeat'n 6% py, brancing cb. veins rimmed with py, po	7593	5.0	680.0	685.0	.224				
		685.0-690.0 en echelon cb. fractures, minor py, some po, trace cpy	7594	5.0	685.0	690.0	.002				
		690.0-697.0 same en echelon cb. fractures folt'n 70°TCN, 5% py, po, ratio 3::2	7595	7.0	690.0	697.0	.020				
		697.0-700.0 same en echelon cb, fractures 5 mm. vein 0° to 90°TCN, 10% py, po, ratio 3::2	7596	3.0	697.0	700.0	.226				
		700.0-705.0 cb. fractures en echleon, cb. veins, py, po, ratio 3::2, arseno 2%, trace cpy	7597	5.0	700.0	705.0	.140				
		705.0-707.0 magnetite 10%, 3% py, sporadic crs arseno py,	7598	2.0	705.0	707.0	.169				
		707.0-710.0 folt'n 20°TCN, qtz cb. veins and fractures 10% py, po ratio 3::2, arseno	7599	3.0	707.0	710.0	.297				
		710.0-715.0 folt'n 20°TCN, en echelon fractures 10°TCN, py 3%, po 1%, tr ars.	7600	5.0	710.0	715.0	.030				
		715.0-720.0 folt'n 70°TCN, en echelon qtz cb. fractures 10°TCN, py 5%, po 1%	7601	5.0	715.0	720.0	.020				
		720.0-723.0 several en echleon qtz cb. chl. fractures, 10% py, po, arseno py (vaggy po)	7602	3.0	720.0	723.0	.125				
729.5	729.7	LAMPROPHYRE: light grey fine grain 'green biotite' type, 70°TCN inject'n, considerable xenolithic diorite									
729.7	738.0	DIORITE: coarse grain med. green, smaller qtz augen injecta with feld. laths, partly cbt'd, minor py									

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property:
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HOLE: 83-29
Core size:

Dip Tests:
Started:
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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
738.0	740.7	DIORITE: coarse grain med. green, cb't'd matrix, vague cb. relict feld., strong magnetite disseminated 738.0-740.7 cb. 1 cm. vertical vein with disseminated py, magnetite	7603	2.7	738.0	740.7	.002				
740.7	744.3	LAMPROPHYRE: fine grain grey green cb. mica matrix with chloritic amph. phenocrysts and minor small anhedral cb. clots (green biotite) type, 8% fine py, Ct 70°TCN									
744.3	784.4	DIORITE: coarse grain med. green, qtz augen and anhedral qtz injecta with feld. laths. in med. grain cb. mica, feld. epidote matrix, minor py 764.2-764.7 local shear with qtz cb. vein, massive chl., 8% py with retro margins reverting at 764.8 to massive diorite									
784.4	793.0	DIORITE RETROGRADE: cb't'd matrix, relict cb't'd feld., several en echelon cb. lenses fracture fills, small qtz cb. veins parallel pronounced folt'n 40°TCN, 5% py 784.4-789.0 py 3% in cb. and qtz cb. fractures 40°TCN	7604	4.6	784.4	789.0	.034				
793.0	800.0	DIORITE: as above 744.3-784.4									
800.0	805.0	DIORITE RETROGRADE: coarse grain med. green, cb't'd distorted, strong folt'n 40°TCN, minor shear 800.0-805.0 en echelon 5 mm. cb. qtz epidote slips parallel folt'n, 8% py	7605	5.0	800.0	805.0	.002				
805.0	834.0	DIORITE: as aobe 744.3-784.4									
834.0	852.0	DIORITE RETROGRADE: med. grain chloritic, magnetite rich, mafic retrograde (seems not to fit any category--seen many times in previous holes) magnetite 10 to 15%, folt'n appears 70°TCN									
		843.0-845.4 magnetite 10%, 5% py increasing to 10% over 1.5'	7606	2.4	843.0	845.4	.008				
		845.4-848.3 silicified, Ct. met'm effect, brittle, fractured 10% py	7607	2.9	845.4	848.3	.006				
		848.3-852.0 (848.3-848.9) dark grey qtz vein, long segment silicic Ct. met'm brittle rock suggests strong vein nearby (851.5-852.0) a multiple series qtz slips with 15% plus py	7608	3.7	848.3	852.0	.016				

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DRILL LOG

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Azimuth: Dip:

HOLE: 83-29
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
852.0	852.8	LAMPROPHYRE: fine grain med. green 'green biotite' type -- minor dyke, Cts. 50°TCN									
852.8	863.5	DIORITE RETROGRADE: coarse grain med. green, chloritic, strong folt'n 40°TCN, trains magnetite, chloritic lenses with mini-boudins qtz cb., variable py									
		852.8-855.5 py 5%, 8 to 10% magnetite, cb. lenses, 80°TCN fol'tn	7609	2.7	852.8	855.5	.028				
		855.5-857.0 impure chloritic qtz vein 90°TCN, 10% py	7610	1.5	855.5	857.0	.103*				
		857.0-859.0 magnetite 70°TCN, chl. lenses, flat cb. 3 mm. lenses	7611	2.0	857.0	859.0	.002				
		859.0-863.5 magnetite 15%, chl. lenses, mini-boudins qtz, 4% py	7612	4.5	859.0	863.5	.002				
863.5	869.0	DIORITE: coarse grain med. green, as described 744.3-784.4									
869.0	886.5	DIORITE RETROGRADE: varying schistosity, some fairly massive portions, folt'n									
886.5	889.2	LAMPROPHYRE: schistose, dark grey, grey black mica, cb. rich variety, string folt'n 30°TCN									
889.2	891.7	DIORITE RETROGRADE: cb. saturated, schistose, magnetite rich, en echleon cb. fractures									
		889.2-891.7 random silication, 3% py, 10% magnetite, strong folt'n	7613	2.5	889.2	891.7	.002				
891.7	895.9	LAMPROPHYRE: FAULT at 895.0 - beige alt'n zone 1.5' beige pink with brx at 895 in fine grain dyke									
895.9	902.0	DIORITE RETROGRADE: silicified, epidote saturated, relict diorite fabric, minor py									
	902.0	END OF HOLE									

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property: Orofino
Location: 13895N 9547E
Co-ordinates:

Section: I
Length: 1001'
Elevation:
Azimuth: - 0 - Dip: 90^{o}

83-30
HOLE: [redacted]
Core size: AQ

Dip Tests: 1001' -84^{o}
Started: July 15, 1983
Completed: July 18, 1983
Logged by: Warren Gilman

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t
0.0	10.0	CASING					
10.0	12.2	DIORITE RETROGRADE: coarse grain med. green, mafic, pronounced folt'n 70°TCN, qtz augen, oriented in chloritic lenses, crs. magnetite, 2% py.					
12.2	14.1	LAMPROPHYRE: fine grain dark grey green 'green biotite' type, chl. amph. relicts 70°TCN, Cts 70°TCN					
14.1	15.5	DIORITE RETROGRADE: as above 10.0-12.2					
15.5	16.6	LAMPROPHYRE: as above 12.2-14.1 -- Cts 70°TCN, clear amphibole subhedral prisms, fine py					
16.6	39.0	DIORITE RETROGRADE: coarse grain med. green, cb't'd matrix, obliterated feld. laths chloritic segregations, strong folt'n 70°TCN, chlorite, cb., py remobilized 16.6-19.0 cb. vein 3 cm. magnetite rich matrix, chlorite clots, 4% py 34.5-37.0 some en echelon flat qtz vein, 8% py, 10% magnetite	7614 7615	2.4 2.5	16.6 34.5	19.0 37.0	.016 .004
39.0	49.4	DIORITE: coarse grain med. green, qtz augen with internal feld. laths, chl. amph. matrix, folt'n 70°TCN, strong magnetite disseminat'n, amphibole prisms					
49.4	51.6	DIORITE RETROGRADE: coarse grain med. green, cb. and qtz permeation, relict diorite fabric 49.4-51.6 qtz vein, flat, 5 cm. 20% py, strong cb. qtz matrix permeation 10% py	7616	2.2	49.4	51.6	.074
51.6	56.0	LAMPROPHYRE: grey dyke, mica (black) cb. matrix (characteristic non-porphyry) large anhedral metacrysts cb.					
56.0	78.5	FELDSPAR PORPHYRY: red brown vitreous matrix, zoned subhedral cream plag. phenos smaller biotite phenos in fine grain mosaic, minor py 1%, upper Ct. destroyed acentral partly frosted silicated segment beige colour, grading to red brown lower Ct. with irregular angular lower Ct.					
78.5	99.6	DIORITE: coarse grain med. green, qtz injecta into mica (chl.) amph cb. matrix with enclosed feld. laths. segment of very mafic phase with minimal qtz injects and small feld laths, minor py, folt'n 60-70°TCN, strong magnetite to 10% in segments					

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

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HOLE: 83-30
Core size:

Dip Tests:
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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
99.6	102.5	DIORITE RETROGRADE: cb't'd diorite with sporadic silica injection, veining, relict diorite fabric									
		99.6-102.5 en echelon qtz cb. veins with schlieren massive chl., 10% py	7617	2.9	99.6	102.5	.016				
102.5	107.0	DIORITE: coarse grain med. green, more normal 'felsic' (silica injected with fresh feld. laths and slender amph. prisms) random epidote permeation, 2% py									
107.0	109.0	DIORITE RETROGRADE: as described 99.6-102.5; cb. qtz injection, permeation and veining									
		107.0-109.0 py 10% average (sporadic) concentrated in veining at low angle TCN	7618	2.0	107.0	109.0	.096				
109.0	137.3	DIORITE: coarse grain med. green, partly cb. matrix, silica injecta irregular clouded with minor cb., feld. laths fretted and packed with cb., somewhat intermediate between fresh diorite and retrograde, matrix same hardness as normal diorite									
137.3	139.8	LAMPROPHYRE: fine grain grey matrix, abundance crs shards and prisms dark green amphibole, Cts irregular 20°TCN									
139.8	157.7	DIORITE: as described 109.0-137.3; same slight resorbt'n feld. laths pitted and fretted, slight vagueness to Cb'td fabric, minor py, folt'n 60 and 70°TCN									
157.7	158.3	LAMPROPHYRE: fine grain grey matrix, abundant prisms dark green amphibole 'green biotite' type, minor py Cts 70°TCN, same as 1337.3-139.8									
158.3	159.4	DIORITE: as above 139.8-157.7; magnetite, dark green clustered micas typical Ct. metamorphic effect									
159.4	164.5	LAMPROPHYRE: fine grain very light grey white 'green biotite' type dyke with dark green prisms amphibole phenocrysts, bleached white matrix curious, appears to have no excess cb. or silica than usus1 grey lamprophyre, 1 cm. feld. porph. at upper Ct. basic dyke in vades F.P. 30°TCN, lower Ct. 30°TCN, border phase of dyke green grey									

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HOLE: 83-30
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Dip Tests:
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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
164.5	168.5	DIORITE: coarse grain med. green, very slightly resorbed feld. laths in typical diorite mosaic, F.P. xenoliths									
168.5	180.7	FELDSPAR PORPHYRY: fine grain red brown vitreous matrix to 172', typical abundant zoned subhedral plag. phenocrysts and lesser black mica plates, grading to frosted white silicated with vague feld. outlines to 180.7; 1% subhedral py									
180.7	185.8	LAMPROPHYRE: grey equigrained grey black mica, cb. matrix, least of 2 main types lamprophyre, rare orbicular cream cb., some slight contortion to dyke with segregated chloritic vague lenses en echelon thru dyke parallel Cts 50°TCN, 2% fine py									
185.8	188.8	FELDSPAR PORPHYRY: frosted white central portion of F.P., more vague feld. outlines light green mica									
188.8	194.0	LAMPROPHYRE: light grey fine grain 'green biotite' typce, bleached light grey to white central section, light green amphibole and cht'c amphibole phenocrysts abundant thru fabric, minor fine py, Cts 70°TCN									
194.0	210.0	FELDSPAR PORPHYRY: frosted white near central portion with millenium smaller white feld. phenocrysts as 70% of fabric with fine grain vitreous matrix between phenos. from 208 to 210' reverts to red brown matrix, image of upper Ct., 70°TCN									
210.0	221.0	DIORITE: coarse grain med. green, injecta anhedral qtz with enclosed clear white feld. laths in cb. mica amphibole, epidote matrix, minor py, several thin satellite lamprophyre stringers 50°TCN									
221.0	228.0	LAMPROPHYRE: fine grain dark grey mica cb. matrix with chloritic amphibole prisms phenocrysts, Cts. 50°TCN									
228.0	275.7	DIORITE: as described 210.0-221.0; sporadic segments with partial cbt'z'tn of some feld. laths and chlit'z't'n of amphiboles FAULT: 237-238 and 240.5-242.8 -- pink core granular qtz sericite, beige sericitic margins, injected qtz cb. irregular shape -- flat to 45°TCN									

NORTHGATE EXPLORATION LIMITED

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HOLE: 83-30
Core size:

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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
		228.0 - 275.7 (con't)									
		240.5-242.8 sporadic segments 15% py - arseno py, tr nil sulphide, qtz cb. chl. veins	7619	2.3	240.5	242.8	.028				
275.7	276.2	LAMPROPHYRE: red brown matrix, 'green biotite' type, chloritic amph. phenocrysts Cts. Upper 40°TCN, lower 70°TCN									
276.2	277.1	FELDSPAR PORPHYRY: red brown, vitreous matrix, pink and white zone plag. phenos. lower Ct. flat									
277.1	277.8	DIORITE RETROGRADE: cb't'd diorite abundnat metacrysts of dark green mica aggregate Ct. met'm									
277.8	289.7	FELDSPAR PORPHYRY: red brown vitreous matrix at ct. 80°TCN with 45% zoned plag. (small) phenocrysts, pale green (chloritic) smaller less plentiful phenos. grading to grey white									
189.7	312.9	DIORITE RETROGRADE: coarse grain med. green, strong folt'n, variable 30° to 70°TCN migrat'n recryst'n of fabric, aligned chl. lenses with mini boudins qtz cb.									
		289.7-293.0 irregular qtz vein 80°TCN, qtz permeation of folt'd retrog, 8 to 10% py	7620	3.3	289.7	293.0	.086				
		293.0-297.0 several en echelon qtz veins obtuse to folt'n., 8% py in matrix	7621	4.0	293.0	297.0	.165*				
		297.0-303.0 several en echelon qtz veins obtuse 12-15% py, veins barren	7622	6.0	297.0	303.0	.096				
		303.0-310.0 sheared mafic diorite 2-3% py, folt'n 40°TCN, very mafic chloritic	7623	7.0	303.0	310.0	.016				
		310.0-312.9 several variable cb. fractures, lenses, minor qtz veins, 10% py to lower Ct., arsenop	7624	2.9	310.0	312.9	.092				
312.9	314.7	QUARTZ VEIN: grey white qtz, schlieren massive cb., qtz heavy with fracturing, minor chl. schlieren									
		312.9-314.7 py in clustered lenses associated with chl. schlieren, 8% py	7625	1.8	312.9	314.7	.038				
314.7	315.3	DIORITE RETROGRADE: sheared, strong folt'n 20°TCN adjacent to vein, 15% py, arseno py									
		314.7-315.3 sulphides in mini lenses parallel folt'n, ratio py to arsenopy 4::2	7626	.6	314.7	315.3	.090				

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-30
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
315.3	349.2	DIORITE: coarse grain med. green, irregular qtz injecta with enclosed cream feld. laths, qtz great excess over feld., in chl. amph. matrix, minor py, variable folt'n (320.2-320.5 med. grey lamprophyre with fine disseminated py) diorite silicified adjacent to lower Ct.									
349.2	390.7	FELDSPAR PORPHYRY: red brown vitreous fine grain matrix with 5 mm. zoned phenocrysts abutting Ct., stubly prisms (black biotite) amphibole and chlor't'c amphibole, smaller less abundant than feld., minor py, grades to grey pink silicic porphyry at 352 with more vague crs feld. phenos and more small pale green chl. clusters, upper Ct. 60°TCN, at 387.0 red brown fine grain matrix with abundant zoned feld. to lower vertical Ct., py contact sparse in central core, 2 to 3% py in red brown Ct. phase									
390.7	406.8	DIORITE: coarse grain med. green, anhedral qtz injecta, enclosed white feld. laths, amphioles slender prisms, sporadic epidote saturation with green feld., amphibolitic portions with amphiboles 1 to 2 cm. long, minor py									
406.8	412.0	LAMPROPHYRE: silicified red brown grey matrix, abundant fine amphiboles, large augen lone cream feld., fine py, upper Ct. 45°TCN, invaded at 412.0 by flat brittlebrown dyke of friable lamprophyre									
412.0	415.8	BROWN DYKE:brittle, soft, pink and white round 'phenocrysts' (amygdules) calcite rimmed feld., abundant black amphiboles and chloritic aggregates, flat cts									
415.8	418.7	LAMPROPHYRE: silicified red brown grey fine grain matrix, as described 406.8-412.0 lower Ct. 60°TCN									
418.7	460.6	DIORITE: coarse grain med. green, anhedral qtz injecta with internal cream feld. laths, slender amphibole prisms, amphibolitic portions, fine chl. amph. base comprises 30% of total fabric, typical shaft diorite (all feld. laths within qtz as distinct secondary feature, py with tendency as small cluster)									

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property:
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Section:
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Elevation:
Azimuth: Dip:

HOLE: 83-30
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
460.6	470.3	LAMPROPHYRE: dark brown fine grain matrix -- silicified vitreous, individual grains clear in matrix, too minute to identify -- abundant solitary zoned cream plag. phenocrysts with some black stubby pyroxene, and smaller vague chloritic light green phenos. appear as of previous generation, minor lone py, Cts 60°TCN									
470.3	521.5	DIORITE: coarse grain med. green, anhedral qtz with minimum feld. laths., a more siliceous type inject'n with less feld. (unusual feature for diorite) fabric pattern remains same, fine chl. aggregates in matrix, large amphibole (actually metacrysts), 1% py									
521.5	523.3	LAMPROPHYRE: med. grain dark grey green, equigrained cb. mica matrix, shard like green phenocrysts 'green biotite' type, upper Ct. 30°TCN, lower 60°									
523.3	523.6	DIORITE RETROGRADE: dark green knots aggregated micas, Ct. met'm effect, folt'n at near right angle to dyke Cts									
523.6	527.4	LAMPROPHRE: as described 521.5-523.3; Cts 10°TCN									
527.4	529.2	DIORITE RETORGRADE: fractured, carb. injected, micaceous slips, trains py 4% 527.4-529.2 sporadic py, mica slips 10%, massive Cb. nil py	7627	1.8	527.4	529.2	.024				
529.2	532.5	LAMPROPHYRE? non phenocrystic phase, med. green (probably often logged as volcanic) (Andesite) dyke, in distinct clots (metacrysts) Cb., fine grain mica, cb. matrix with appearance of fine grain volcanic rock sharp dyke Cts., upper 45°TCN, lower 10°									
532.5	547.5	DIORITE RETROGRADE: cut by myriad of qtz and qtz cb. and cb. saturation type veining, matrix appears as heavily fractured prior to injection									
		532.5-535.0 branching qtz with massive chl. in diorite, 4% py	7628	2.5	532.5	535.0	.012				
		535.0-540.0 en echelon stringer cb. veins in chl. diorite, 3-4% py, 70°TCN	7629	5.0	535.0	540.0	.006				
		540.0-547.5 cb't'd retrograde, magnetite rich 10%, en echelon cb. fracture 3% py	7630	7.5	540.0	547.5	.002				
547.5	552.0	LAMPROPHYRE? same non phenocrystic fine grain med. green andesite type dyke -- same as 529.2-532.5; essentially cb. mica equigrained matrix, sharp Cts.									

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

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Section:
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Elevation:
Azimuth: Dip:

HOLE: 83-30
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
552.0	553.5	LAMPROPHYRE: fine to med. grain grey green matrix, 'green biotite' type, slender prisms amphibole and chloritic amphibole as prominent phenocrysts, Cts 10°TCN									
553.5	554.0	LAMPROPHYRE? same fine grain 'andesite' dyke contact sharp at 0° and 90°TCN, obviously older than lamprophyre of 'green biotite' type (so widespread thru Orofino mine area) core is mix of cb'td. retrograde and andesite dyke									
554.0	567.7	DIORITE RETROGRADE: schistose, severly cb't'd, chloritic lenses bands with mini-boudins cb., strong disseminated magnetite proximate to upper Ct.									
		554.0-560.0 en echelon cb. branching stringers parallel 70°TCN, 10% magnetite	7631	6.0	554.0	560.0	.004				
		560.0-565.0 irregular cb. stringers at acute angle to folt'n, 3% py	7632	5.0	560.0	565.0	.002				
		565.0-567.7 magnetite rich cb. schist, 5% py	7633	2.7	565.0	567.7	.008				
567.7	570.0	QUARTZ VEIN: frosted white, chl. schlieren, Cts 10°TCN, inclusions relict ghosted diorite									
		567.7-570.0 py 5% in clustered trains in vein fractures, minor cb.	7634	2.3	567.7	570.0	.060				
570.0	576.0	DIORITE RETROGRADE: schisted, prominent folt'n steep to 30°TCN, some qtz cb. veins in fractured diorite -- lower portion matted chl. laminae with mini-boudins cb. magnetite, py									
		570.0-572.0 en echelon and fracture veins cb., 10% py, folt'n 60°TCN	7635	2.0	570.0	572.0	.117				
		572.0-576.0 more massive retrograde, cb. fractures en echelon, 10% magnetite 3% py	7636	4.0	572.0	576.0	.002				
576.0	595.1	FELDSPAR PORPHYRY: red brown, vitreous fine grain matrix with crs. zoned feld. phenocrysts and small light green amphibole (becoming plentiful towards centre of dyke) upper Ct. 0°TCN, lower 0°TCN, from 593 to 595' grey dyke reverts to red brown Ct. phase									
595.1	612.0	LAMPROPHYRE PORPHYRY: (this dyke may have been logged as Feldspar porphyry in some previous holes) strange hi silicic red-brown fine grain vitreous dyke with varied feld. phenos, many as vague ghost-like relicts in dark grey green fine matrix, and often towards Ct., of clear anhedral cream feld. in dark matrix, abundant amphibole and chloritic amph. phenos., many small xenolithic									

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

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HOLE: 83-30
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
		595.1 - 612.0 (con't) LAMPROPHYRE PORPHYRY clots host rock (non anhedral chl. aggregates) probable original lamp. absorbed much F.P. and diorite (a hybrid dyke)									
612.0	627.0	DIORITE: coarse grain med. green, a med. grain mica cb. matrix with injected anhedral qtz with enclosed feld. laths. and corroded pocked relict laths. and dark green amphibole of same generation as qtz feld. association, massive, some minor tight slips often vertical with fine py, sporadic matrix py, rarely to 3%									
627.0	627.4	LAMPROPHYRE: fine grain mica, cb. matrix with minute green blades and blebs of amph. chl. 'green biotite' type, Cts. 10^{o}TCN									
627.4	671.0	DIORITE: coarse grain med. green, two generations feld. laths, a fretted cb't'd matrix laths. and cream sharp laths. enclosed by qtz., sporadic epidotizat'n with green feld. laths. and some disseminated magnetite, random crs amphibolitic segments with slender prisms amphibole to 1 cm.									
671.0	672.0	LAMPROPHYRE: fine grain green grey, some med. size grains, underdeveloped, essentially non-porphyritic, minute green chl. amphibole, Cts. 70^{o}TCN									
672.0	674.8	DIORITE: as above 627.4-671.0									
674.8	675.2	LAMPROPHYRE: as above 671.0-672.0; massive cb. in flat fracture									
675.2	715.8	DIORITE: as above, subtle change to diorite fabric, predominance of matrix feld. over typical enclosed fresh feld. laths, fabric looks same as shaft diorite but appreaching a tentative volcanic migmatite									
715.8	717.5	LAMPROPHYRE: as above but well developed 'green biotite' type with larger (2 and 3 mm.) prisms amphibole and chloritic amphibole (20% of fabric) oriented parallel Cts., upper Ct. 60^{o}TCN, lower Ct. variable with phenocrysts orientation parallel, diorite xenoliths, py 2%									
717.5	726.3	DIORITE: coarse grain med. green, classic fabric, feld. laths in qtz injecta, reverts from above variance of more typical diorite, minor py									

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property:
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Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-30
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
726.3	735.1	LAMPROPHYRE: light grey-green matrix, mica cb., feld. with pronounced amphibole phenos. vertical qtz cb. vein, minor py from 734-735, Cts 30°TCN									
735.1	736.2	DIORITE: coarse grain med. green, as described 717.5-726.3; 10% disseminated magnetite									
736.2	752.7	LAMPROPHYRE: fine grain light grey green, porphyritic 'green biotite' type, amph. to 1 cm., Cts. 70°									
752.7	753.4	DIORITE: much older matrix feld. finer grain than usual									
753.4	758.5	LAMPROPHYRE: same dyke as above, 20% stubby and slender prisms amphibole, upper Ct. 30°TCN, lower Ct. 80-90°TCN, amphiboles oriented parallel Ct.									
758.5	762.3	DIORITE: as described 752.7-753.4; partial retrograde cb't'z'tn feld. pocked and fretted laths amphiboles partially chloritized									
762.3	764.7	LAMPROPHYRE: light grey green -- porphyritic 'green biotite' typce, xenoliths diorite, Cts 80° - 85°TCN									
764.7	765.1	DIORITE: typical diorite fabric, fresh clear cream feld. laths, chloritic amphibole									
765.1	765.8	LAMPROPHYRE - DIORITE: sliver of 'green biotite' dyke 90°TCN in diorite									
765.8	778.0	DIORITE: megascopically same, actual large amount matrix feld. laths pocked with cb. considerable magnetite, finer grain, more vague matrix, epidotized to minor degree, folt'n 70°TCN, minor py 2%									
778.0	790.5	LAMPROPHYRE: fine grain light grey-green matrix, 20% stubby and slender amphibole prisms, partly chloritized,phenocrysts orientation parallel Cts. upper 45°TCN, lower 85°TCN									
790.5	815.0	DIORITE RETROGRADE: med. grain med. green, strange decrease granularity, resembles a med. to coarse grain andesitic flow rather than co-relative of diorite, a mica cb. matrix with c'b'td fretted larger feld. small chloritized amph. sporadic magnetite to 15% over some segments, some 1 mm. py, epidotic over portions, seems definite andesite fabric									

NORTHGATE EXPLORATION LIMITED

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DRILL LOG

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Azimuth: Dip:

HOLE: 83-30
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
		790.5 - 815.0 (con't)									
		798.8-801.8 py 4% in strange med. grain andesite like holocrystalline rock folt'n 30°TCN	7637	3.0	798.8	801.8	.002				
		801.8-803.6 white and pink cb., some silica saturation, minor brecciation 8% py	7638	1.8	801.8	803.6	.016				
		803.6-807.6 3% py in med. grain andesitic rock, folt'n 30°TCN, some cb. veins marginal py	7639	4.0	803.6	807.6	.002				
		807.6-811.3 some cb. silica matrix saturation, coarsening and migration of matrix, 8% py	7640	3.7	807.6	811.3	.022				
		811.3-815.0 irregular pink cb. silica saturation in irregular pulses at flat angle to CN., with random trains massive py parallel to saturation, 40% relict rock	7641	3.7	811.3	815.0	.078				
815.0	818.2	ALTERED DYKE (LAMPROPHYRE-ANDESITE?) upper Ct. destroyed, lower Ct. 20°TCN, equi-granular mica feld. cb. matrix -- colcanic ? dyke ? FAULT: 815.8-816.5 red central core, beige granular qtz sericite for 4 cm. on margins, again at 817' and 818' multiple fault planes, several red and beige fractures through 'dyke', fault later than sulphide saturation zone									
818.2	833.2	DIORITE RETROGRADE: med. grain med. green, sheared, recrystallized, silicic, sporadic intensity of silica permeation, essentially mica cb. matrix variously injected with folt'n 40° and 60°TCN, variable due to rotation									
		818.2-820.5 py 8% proportional sulphide to degree silication	7642	2.3	818.2	820.5	.036				
		820.5-824.8 variable py (20% over 3 cm.) to 8%, average 12%	7643	4.3	820.5	824.8	.038				
		824.8-829.0 silicified matrix, stringers cb. and of qtz, 90° to folt'n, 15% py	7644	4.2	824.8	829.0	.076				
		829.0-833.2 trains and lone xstals 5 mm. py, abundant 1 mm. 15% av. py	7645	4.2	829.0	833.2	.022				
833.2	834.0	QUARTZ VEIN-CB.: stringers, series chloritic qtz veins and intervening massive cb., 20% py 833.2-834.0	7646	.8	833.2	834.0	.018				

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

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Azimuth: Dip:

HOLE: 83-30
Core size:

Dip Tests:
Started:
Completed:
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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
834.0	834.7	LAMPROPHYRE: med. grain, med. green, mica, cb. equigrained fabric, clots cb. (metacrysts) dark green mica clots									
834.7	852.0	DIORITE RETROGRADE: folt'd mica lenses with interlayered b., randomly injected with qtz and cb. stringers, patches original strong silicification, fractured chloritic later qtz stringers									
		834.7-837.5 strongly injected, two generation silicat'n, later qtz stringer	7647	2.8	834.7	837.5	.028				
		837.5-840.0 mica cb. lenses 10% magnetite, 3% fine py, folt'n 40°TCN	7648	2.5	837.5	840.0	.010				
		840.0-844.0 folt'd fabric 30°TCN, en echelon cb. fractures 10% mag'n, minor py	7649	4.0	840.0	844.0	.002				
		at 847.8 granular flat beige intraformation minor fault zone, no Sulphide									
852.0	898.0	DIORITE HYBRID: coarse grain med. green, all megascopic appearances of diorite -- original migmatized chloritic fabric, now amph. chl. with felsic constituent mainly feld. (amorphous and in lath aggregates) with very minimal qtz interstitial in feldspar -- emphasis is on non-diorite fabric although appears near identical, 2 to 3% disseminated py; from 480-487 solid vein like stringers feld. with minor interstitial qtz injected in hybridized diorite (original volcanic rock) some folt'n predominant 80°TCN									
898.0	898.5	LAMPROPHYRE: dark green black silicic, mica feld. equigrained dyke, upper Ct. flat, lower 45°TCN									
898.5	907.9	FELDSPAR PORPHYRY: fine grain red brown ultra-silicic matrix with cream zoned plagioclase phenos and lesser smaller lone black biotite and amphibole phenos., zoned plag. is smaller and only 25% of total fabric, 1 to 2% subhedral py, random xenoliths relict diorite in porphyry.									
907.9	921.3	LAMPROPHYRE: red brown silicic with many varied green clots, much from assimilation of mafic rocks, lone cream feld. phenos, isolated amphibole, ovoidal cb., py 5% disseminations and fractures, upper Ct. flat, lower sharp distinct at 913-914 slice F.P. in lamprophyre, lower Ct. 90°TCN									
921.3	968.2	FELDSPAR PORPHYRY: red brown silicic matrix, feld. and biotite phenocrysts as described 907.9-921.3									

NORTHGATE EXPLORATION LIMITED

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HOLE: 83-30
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
968.2	979.0	DIORITE HYBRID: variety of diorite, megascopically similar, felsic portion is chains and aggregates of cream feld. laths with minute interstitial qtz random within feld. aggregates, vari-sized amphibbles and anhedral chl. clots, minor py									
979.0	983.5	DIORITE RETROGRADE: well folt'd matrix, clusters chl., cb. lenses, clots -- semi cb'td. anhedral feld., epidote qtz segregations, lone crystals skeletal leucoxene, grading into fabric identical to fine to med. grain andesite folt'n 40^{o}TCN									
983.5	1000.0	DIORITE HYBRID: same as 968.2-979.0; grading progressively to med. grain mini-diorite hybrid with same texture only smaller, xstals, many felsic stringer at steep ∢									
1000.0	1001.0	FELDSPAR PORPHYRY: red-brown fine grain ultra-silicic -- zoned plag. phenos -- irregular upper Ct.									
	1001.0	END OF HOLE									

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OROFINO GOLD MINE
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OM83-5-C-23

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property: Orofino
Location: 13886N 9497E
Co-ordinates:

Section: H
Length: 702'
Elevation:
Azimuth: - 0 - Dip: 90°

83-31
HOLE: [redacted]
Core size: AQ

Dip Tests: 702' -88°
Started: July 18, 1983
Completed: July 20, 1983
Logged by: Warren Gilman

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
0.0	10.0	CASING									
10.0	23.0	DIORITE: coarse grain med. green, chloritic matrix with anhedral felsic injecta of qtz with enclosed feld. laths and rimming feld. with interstitial qtz much enclosed feld. is large and stubby (unusual feature), matrix epidote folt'n 40°TCN, 1 cm. long amphiboles, minor py									
23.0	30.0	DIORITE RETROGRADE: schisted chloritic fine grain matrix with parallel lenses cb. and cb'td. feld. laths parallel folt'n 40°TCN, scattered leucoxene, magnetite, cb. clots, qtz augen									
30.0	38.5	DIORITE RETROGRADE: from 30 to 35' strong cb. permeation and later frosted qtz stringers at oblique angle to folt'n, stretched clots black biotite (usually contact met'm effect) parallel folt'n, crs py and aggregated py from 35' stretched crs chloritic diorite									
		30.0-35.0 later qtz appears barren, 8% py interlayered with cb.	7650	5.0	30.0	35.0	.008				
		35.0-38.5 py 2% in folt'd matrix, some magnetite, hi ration chl. matrix	7651	3.5	35.0	38.5	.002				
38.5	56.8	DIORITE: coarse grain med. green, anhedral felsic injecta, cream feld. laths, amphibolitic portions with huge amphiboles, segments with strong epidote permeation, lower 2' aggregated black mica clots (contact met'm), feld. laths. largely intact, minor py, folt'n 50°TCN									
56.8	57.8	LAMPROPHYRE: fine grain dark green dense mica, cb. matrix with dark green knots green black mica with magnetite cores (multiple inject'n) upper fine grain phase Ct. 80°TCN, lower Ct. of knotted prevalent phase 20°TCN									
57.8	72.0	FELDSPAR PORPHYRY: red brown vitreous fine grain matrix with crystal mush of anhedral feld. phenocrysts 70% plus of fabric, small equisized phenos. with lone larger zoned phenos. to 5 mm., smaller lesser lone black biotite phenos									
72.0	75.0	LAMPROPHYRE: as above with contact knotenschiefer of aggregated mica with cores of magnetite adjacent to Ct. (flat), a multiple type injection with main homogeneous equigrained mica, cb. green black dyke, lower Ct 40°									

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

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Property:
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Section:
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Azimuth: Dip:

HOLE: 83-31
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
75.0	82.0	DIORITE RETROGRADE: coarse grain med. green, mafic phase, mica, cb. matrix, fractured qtz augen with cb. wisps, disseminated magnetite, crs xstals near upper Ct. 75.0-80.0 py 4% in remobilized clusters with ct. magnetite grading to less contorted qtz augen retrograde with cb. wisps folt'n intense 70° to 80°TCN	7652	5.0	75.0	80.0	.002				
82.0	138.5	DIORITE: coarse grain med. green, abundant felsic (qtz feld.) injecta in chloritic matrix, as described 10.0-23.0; much crs enclosed feld., some stubby xstals unusual crs feld., minor py; from 98.5-101.0 a mafic phase, largely chloritic matrix, minor qtz feld. injecta, at 118 to 120 slightly greater mafic portion folt'n 85°TCN									
138.5	141.7	LAMPORPHYRE: fine to med. grain mica cb. grey green with chloritic amph. phenos and lesser ovoidal cb. clots, light pink due to matrix cb., fine py, Cts 70°TCN									
141.7	143.6	DIORITE: as described 82.0-138.5									
143.6	147.6	LAMPROPHYRE: fine grain strongly porphyritic 'green biotite' type dyke as above, lenticular shards chloritic amphibole, phenocrysts oriented parallel dyke contacts 40°TCN, fine py									
147.6	159.0	DIORITE: coarse grain med. green, as above with strong disseminated magnetite below dyke contact, epidotic along fractures with matrix green feld., uniform diorite over section									
159.0	178.0	FELDSPAR PORPHYRY: fine grain red brown vitreous matrix with 'crystal mush' 70% plus anhedral feld. phenocrysts, at contact thru dyke in constant proportion 168.0-171.0 interpreted as central beige core of dyke with red brown colour to lower Ct., lesser smaller phenocrysts 'black biotite', amphibole prisms									
178.0	183.0	LAMPROPHYRE: fine grain porphyritic 'green biotite' type grey colour, probably same dyke as 138.5-141.7 and 143.6-147.6; Cts. 40°TCN, large and small cb. clots pinkish, py single xstalls, subhedral 5%									

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-31
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
183.0	210.0	FELDSPAR PORPHYRY: red brown vitreous matrix, fine grain, 70% anhedral feld. phenos as 'crystal mush', zoned, rimmed with feld. differing comp'n, minor py at 192 to 210' fine grain matrix grey brown, larger more vague phenocrysts with greater degree silicification, central core of dyke									
210.0	220.0	LAMPROPHYRE: med. grain grey mica, cb. and small amphibole matrix (much like grey mica rich dyke described in other holes), cut by 'green biotite' type lamprophyre 4 cm. wide at 60°TCN, at 215.4' (unusual as grey dykes interpreted as younger than 'green biotite' type in other holes), Cts 30° and 40°TCN									
22.0	225.7	FELDSPAR PORPHYRY: dark red brown vitreous matrix, phenocrysts anhedral feld. as 'crystal mush' 60% of total fabric, lower Ct. 85°TCN									
225.7	230.6	DIORITE RETROGRADE: med. to coarse grain contorted mosaic, light silicification, fabric vague, mafic, py strong at upper Ct. to 227.0									
		227.0-227.4 red granular fault zone 40°TCN, beige margins	7653	1.7	225.7	227.4	.010				
		227.4-227.4 silicified fault zone, cb'td. diorite 5% py above fault									
		227.4-230.6 chloritzed cb'td mafic diorite, some arsenopy and 4% py	7654	3.2	227.4	230.6	.038				
230.6	231.6	LAMPROPHYRE: fine grain grey green 'green biotite' type dyke, all mafic phenocrysts chloritized, sporadic felsic clots rare, matrix mica, cb, but fairly hard, upper Ct. 40°TCN, lower 60°									
231.6	235.3	DIORITE RETROGRADE: as above 225.7-230.6; mafic, strongly chloritized									
		231.6-233.9 saturation veining qtz; cb., massive chl. 3% py, vein largely barren	7655	2.3	231.6	233.9	.034				
235.3	241.8	LAMPROPHYRE: med. grain grey green, essentially cb. mica matrix, larger clusters chl. and vague pods cb., some slender prisms relict amphibole, fine dissem. 3% py, massive altered near featureless equigrained rock, upper Ct. 60°TCN lower 40°									
241.8	248.5	DIORITE RETROGRADE: random retrograde mafic diorite, segments with minute feld., intact, chlorite, cb. matrix, abundant subhedral qtz augen, relict feld. 'ghosts' disseminated magnetite, folt'n appears 80°TCN, some qtz cb. multiple veining at upper Ct. 60° to 70°TCN, rare py									

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-31
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
248.5	256.5	DIORITE: med. grain dark green mafic with vague small feld. qtz mosaic, unusual diorite fabric, relict chl. mini-schlieren after amphibole, 2 to 3% py									
256.5	259.8	DIORITE RETROGRADE: altered, cb'td, silicified fabric with en echelon qtz stringer to 1 cm., 60°TCN, right angles to folt'n									
		256.5-259.8 py 8% in matrix, very minor in en echelon qtz, small satr'tn vein, massive chl.	7656	3.3	256.5	259.8	.131*				
259.8	262.3	LAMPROPHYRE: as described 235.3-241.8; upper Ct. flat, lower 50°TCN, same non-descript dyke									
262.3	268.5	DIORITE RETROGRADE: strange med. grain partly cb'td type described above, some relict cb'td feld. strong cb't'z'n near upper Ct., with sheared en echelon Ct. stringers and 10% py									
		262.3-265.0 py average 5% disseminated, .5' pink white en echelon cb. vein with aggregated py	7657	2.7	262.3	265.0	.052				
268.5	283.7	FELDSPAR PORPHYRY: red brown vitreous matrix, anhedral feld. crystal mush 70% of fabric, crs phenocrysts at Ct., rare anhedral clots diorite xenoliths, Cts irregular, lower 80°TCN									
283.7	291.5	DIORITE: as described 248.5-256.5; med. grain phase, not considered true shaft diorite									
291.5	294.0	DIORITE RETROGRADE: strong silica permeation, some late veining, 10% py, folt'n 70°TCN									
		291.5-294.0 cb. veining later than qtz cb., permeation, 10% py	7658	2.5	291.5	294.0	1.01*				
294.0	295.7	FELDSPAR PORPHYRY: same red brown phenocryst rich dyke described 268.5-283.7; contacts irregular, upper steep, lower flat, very in congruous Cts.									
295.7	301.5	DIORITE RETROGRADE: cb'td med. to coarse grain matrix, frosted with cb., qtz injecta, feld. replaced by cb., amphiboles chloritized, migrational matrix of chloritic lenses, py in aggregates									
		295.7-299.0 barren flat 5 cm. qtz, upper Ct., folt'n 70°TCN, 8% py	7659	3.3	295.7	299.0	.028				
		299.0-301.5 py 4%, some 2 mm., mainly fine, 2 cm. barren qtz parallel 20°folt'n	7660	2.5	299.0	301.5	.012				

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-31
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
301.5	335.5	DIORITE: med. to coarse grain, med. green, anhedral qtz with small enclosed feld. laths, not typical diorite, profusion small feld. xstals, partly cb'td in sporadic segments; from 312-317' feld. minor, perhaps little in original injected material rather than regressive effect, minor py									
335.5	385.7	FELDSPAR PORPHYRY: short red brown contact phase grading to grey brown silicic phase with vague porphyritic mosaic with feld. margins resorbed and surfaces pocked with alt'n, small subhedral clack biotite phenos, minor py, upper Ct. 60°TCN; at 369.2-370.7 red brown Ct. phase in central core of dyke, attributed to local fold in dyke; from 278 to 385.7 reverts to red brown Ct. phase with clear phenocrystic mosaic and many red feld. phenocrysts, lower Ct. 10°TCN, minor py									
385.7	402.0	DIORITE: coarse grain med. green, typical diorite, distinct from above varieties, chloritic matrix with anhedral qtz. injecta and enclosed thin feld. laths folt'n may be 30°TCN									
402.0	406.0	BROWN DYKE: fine grain brittle, brown, preferential zones of ovoidal cream cb. phenocrysts rimmed with pink (original feld. cb'td) fractures threaded with cb., flat Cts									
406.0	413.7	DIORITE: coarse grain med. green, as above, typical diorite, felsic with profusion qtz and internal feld. amphibole prisms, <1% pt									
413.7	420.3	LAMPROPHYRE: silicified frosted grey rock, fine grain 'green biotite' type with varisized patches agglomerated mica (xenolithic remnants) and amphibole prisms as phenocrysts, ovoidal lone cream feld., variously cb'td, matrix essentially mica cb with overprint silicification, Cts 50°TCN, lower contains xenolithic diorite									
420.3	448.7	DIORITE: classic shaft type coarse grain med. green, as described 406.0-413.7; abundant subhedral amphibole prisms, some to 1 cm. long, predominance of qtz over feld., fine epidote thru matrix, minor py									

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-9
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
448.7	456.0	LAMPROPHYRE: silicified grey (slight pink) porphyritic rock, perhaps logged in past as F.P. variety, crs lone cream feld., isolated grains, 5% of matrix, lone crs biotite crystals, aggregated large clots chlorite (xenolith relicts, upper Ct. 30°TCN, lower Ct. 85°TCN									
456.0	502.0	DIORITE: coarse grain med. green, as described 406.0-413.7 and 420.3-448.7; at 501. to 501.5 local minor shear, schistose 40°TCN within normal diorite unaltered, amphibolitic segments, clustered matrix chlorite transitional to amphibole with felsic injection									
502.0	504.0	LAMPROPHYRE: med. grain grey porphyritic 'green biotite' type, matrix of cb. chl. with shard like prisms green amphibole, abundant ovoidal clots cream cb., minor py, upper Ct. 20°TCN, lower 40°									
504.0	506.0	DIORITE: as above, amphibolitic, epidotic segments with green feldspar, massive epidote in fractures									
506.0	509.3	LAMPROPHYRE: med. grain grey porphyritic 'green biotite' type, as above 502-504., Upper Ct. 20°, lower 10°									
509.3	519.5	DIORITE: as above 504-506; hi ratio qtz injecta to chl. matrix, and enclosed feld. laths., amphibolitic segments -- amphibole prisms to 3 cm.									
519.5	521.1	DIORITE RETROGRADE: coarse grain med. to light green cb'td chl. cb. matrix with relict qtz injecta, folt'n 50°TCN, some en echleon Cb. veining 15°TCN, 5% py 519.5-521.1 qtz cb. veins margined with arsenopy, sporadic 3% py, arsenopy	7661	1.6	519.5	521.1	.006				
521.1	522.0	LAMPROPHYRE: med. grain grey green equigrained rock, non-porphyritic but identical comp'n to 'green biotite' type, satellite (quick cooled) minute shards amph., ovoidal Cb., Cts 20°TCN									
522.0	522.5	DIORITE RETROGRADE: sheared, strongly injected with qtz cb., 8% py, folt'n and multiple veining 80°TCN									

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-31
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t
522.5	524.0	LAMPROPHYRE: fine grain equigrained equivalent of above dyke, all appearance of volcanic andesite dyke (probable fine grain phase of above lamprophyre) minute amphiboles mini-ovoidal cb., Cts 20°TCN					
524.0	528.0	DIORITE RETROGRADE: as above 519.5-521.1; veining irregular qtz, (barren) some qtz cb., parallel to 50°TCN, folt'n and at acute angle 90°TCN, 2% matrix py 524.0-528.0 qtz and qtz cb. stringers barren, minor recrystallized clustered py	7662	4.0	524.0	528.0	.002
528.0	538.0	DIORITE: coarse grain med. green to light green, same as 509.3-519.5; hi ratio felsic to mafic, and silica injecta to feld. laths, minor py					
538.0	540.0	DIORITE RETROGRADE: coarse grain med. green, strong folt'n 75°TCN, abundant en echelon qtz and cb. fractures at 0° to 30°TCN, (barren) with remobilized matrix py, silicated 538.0-540.0 small clusters matrix py with parallel barren stringers	7663	2.0	538.0	540.0	.002
540.0	541.6	LAMPROPHYRE - FELDSPAR PORPHYRY: similar rock types logged as F.P., med. grain silicified mica rich (biotite) matrix with individual felsic xstals, and lone cream and light pink zoned plag. phenocrysts -- upper Ct. 75°TCN					
541.6	543.8	LAMPROPHYRE: med. grain dark green chl. cb. matrix, phenocrysts dark green amphibole and chl. amph., clots white cb. varisized random, all parallel folt'n 30°TCN					
543.8	546.0	DIORITE RETROGRADE: schistose mafic chlorite banded matrix, minor minilenses cb., 5% py 543.8-546.0 py 4% aligned parallel 40° folt'n TCN, some magnetite	7664	2.2	543.8	546.0	.002
546.0	549.6	DIORITE: coarse grain med. green, as described, more mafic, strong chloritic matrix amphibole prisms epidotic, amphibolitic, minor py					
549.6	552.5	FELDSPAR PORPHYRY: grey vitreous fine grain matrix, biotite rich porphyry, low ratio of feld. phenos to biotite (not usual)					
552.5	557.0	LAMPROPHYRE: vitreous dark grey, mica rich porphyry; intrusive into above F.P., matrix 30% chl., biotite, amphibole					

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-31
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
557.0	580.0	FELDSPAR PORPHYRY: strange abnormal dark mica rich porphyry, lone isolated anhedral multi-sized resorbed phenos white feld. to 1 cm., glomero xenolithic clots chlorite; prisms dark green amphibole, phenos orientation 80°TCN									
580.0	596.4	FELDSPAR PORPHRYR: light grey vitreous matrix with 'crystal mush' cream feld. phenos, progressively frosted silicic with fabric more vague, fabric more light grey to white at 591.5 intraformational break, granulated bleached dark pink, recrystallized shallow angle break, Cts flat									
596.4	606.6	DIORITE: coarse grain med. green typical silica injected with enclosed lath. feld. in chloritic matrix with large amphibole prisms, some carbonitization toward lower Ct. with pocked feld. and increase py, folt'n crude, may be 60°TCN									
606.6	607.2	LAMPROPHYRE: dark green fine grain rock, flat Cts, appears as andesite fine grain volcanic (actually quick cool lamprophyre)									
607.2	613.8	DIORITE: coarse grain med. green, as described 596.4-606.6; 1% solitary subhedral py, amphiboles to 1 cm.									
613.8	614.3	LAMPROPHYRE: dark green fine grain 'green biotite' type, abundant chl, amphibole pale green to 4 mm. phenos parallel Ct. exactly, upper Ct. 20° and 90°TCN, lower Ct. 20°									
614.3	633.8	DIORITE: coarse grain med. green, as described 596.4-606.6, felsic, amphibolitic abundant slender amphibole prisms (where recrystallized, prisms at all angles TCN) partial resorbtion and cb't'z'tn of feld. laths, <1% single py grains									
633.8	635.6	DIORITE RETROGRADE: local shear, mafic, dark green, chloritic silicified, pseudo fine grain diorite, at 634.6 massive cb., 5 cm. fracture 30°TCN, chloritic bands, rimnant qtz distorted, rotated									
635.6	637.4	DIORITE: as above, clear feld. laths									
637.4	638.8	DIORITE RETROGRADE: local mafic shear, as described 633.8-635.6 en echelon cb. veins									

NORTHGATE EXPLORATION LIMITED

DRILLING COMPANY:

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-31
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
638.8	666.0	DIORITE: as described 614.3-633.8; amphibolitic 661.0-663.0 with 4% py, mafic amphibole diorite									
666.0	667.2	LAMPROPHYRE: fine grain light green 'green biotite' type, chloritic phenos to 3 mm. flat Cts									
667.2	702.0	DIORITE: mafic silicified, minor silica epidote fractures, minor irregular breaks with py									
		687.5-691.5 py 4% in brittle diorite with minute slips at all angles TC, cb. slips	7665	4.0	687.5	691.5	.002				
		698.0-702.0 minute chloritic slips with py clustered along break, 4% py	7666	4.0	698.0	702.0	.002				
	702.0	END OF HOLE									

OROFINO
RESOURCES LIMITED

DRILL LOG

Property: Orofino
Location: 13978N 9430E
Co-ordinates:

Section: G
Length: 931'
Elevation:
Azimuth: - 0 - Dip: 90°

83-32
HOLE: [redacted]
Core size: AQ

Dip Tests: 702' -88°
Started: July 21, 1983
Completed: July 24, 1983
Logged by: Warren Gilman

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
0.0	6.0	CASING									
6.0	14.8	DIORITE RETROGRADE - ALTERED BASIC LAVA? fine grain med. green chl. matrix with ovoidal clots cb. in fine epidote, mica, cb. matrix, abundant lone leucoxene minor qtz., minute dark green amphiboles, minor py, some cb. threading resembles altered basic lava									
14.8	39.1	FELDSPAR PORPHYRY: fine grain vitreous light grey matrix with 'crystal mush' of feld. 70% of fabric from contact thru center, grading to grey white with portions silicated red with hematite, eu-sub-anhedral block biotite, lesser phenos, 1% py euhedral, upper Ct. 70°TCN, lower 40°									
39.1	39.6	DIORITE RETROGRADE^ original rock perhaps hybrid diorite or migmatized andesite impossible to decipher									
39.6	44.0	LAMPROPHYRE: red brown silicified (hematitic) matrix, of mica, cb. permeated with silica, profusion green amphibole, slender prisms 'green biotite' type, Cts 40°TCN									
44.0	44.1	FELDSPAR PORPHYRY: red brown vitreous matrix, mush of rounded feld. phenos. Cts. flat									
44.1	44.7	DIORITE HYBRID OR VOLCANIC MIGMATITE: crs. hematitic anhedral qtz. injecta with enclosed feld. laths in fine chl. epidote cb. matrix									
44.7	52.7	LAMPROPHYRE: near equi-grained green mica cb. dyke, random silication with red silica, lone ovoidal cb. clots, older lamph. cut by myriad stringers of very light grey, 'green biotite' type dyke, xenolith of host rock toward lower Ct.									
52.7	63.5	DIORITE: coarse grain med. green, a strange diorite, very coarse grain dual textured fabric, evident migmatitic origins, finer chl. epidote cb. matrix injected with large clustered anhedral qtz. injecta with enclosed feld. laths (label of migmatized andesite may be as correct as diorite) imprint of silicification over entire fabric									

OROFINO
RESOURCES LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: G-83-32
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
63.5	73.0	LAMPROPHYRE - FELDSPAR PORPHYRY: silicic fine grain grey matrix with chloritic prisms (altered amphibole) as phenocrysts, with lone crs epidotic feld. enhedral phenocrysts (a combination of LAMPRO and F.P. constituents) such that difficult to provide exact name, type called F.P. probable in past, younger than underlying F.P.									
73.0	85.7	FELDSPAR PORPHYRY: fine grain light grey vitreous matrix with crystal mush of crm. feld. phenos, with chloritic amphibole smaller and lesser phenocrysts, feld. pitted and fretted, zoning obscured, overprint of silicification, Cts., lineation, 20°TCN									
85.7	107.6	DIORITE: coarse grain med. green, atypical fabric, chloritic epidotic, some crs feld fabric with anhedral qtz injecta and enclosed feld. laths (fretted and pocked) with cb. displays original andesitic fabric with felsic injecta to 'dioritize' volcanic flow, random cb. injection thru matrix (barren)									
107.6	112.6	LAMPROPHYRE: med. grain med. green, chl. cb. matrix, relict feld. atypical lamp., lone ovoidal crs. feld. random in matrix, comp'n not suggestive of F.P., Cts. 20°TCN									
112.6	118.5	DIORITE: coarse grain med. green, developing more normal diorite fabric, matrix chl. epidote, feld. with qtz injecta and enclosed stubby crm. feld. laths, some recrystallized thin amph. prisms									
118.5	122.4	LAMPROPHYRE: fine to med. grain, dark grey green, 'green biotite' type, abundant chl. phenos as slender prisms and lone orbicular Cb. clots in chl. cb. matrix Cts. 20°TCN									
122.4	124.9	DIORITE: as described 85.7 - 107.6									
124.9	128.3	DIORITE RETROGRADE: coarse grain contorted, remobilized, epidote, qtz felsic inject'n Cb. fractures, minor py, lamprophyre xenolith with 5% py, matrix chloritic, cb't'd., feld. obliterated									

OROFINO
RESOURCES LIMITED

Property:
Location:
Co-ordinates:

HOLE: G-83-32
Core size:

Section:
Length:
Elevation:
Azimuth: Dip:

Dip Tests:
Started:
Completed:
Logged by:

DRILL LOG

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
128.3	154.5	FELDSPAR PORPHYRY: red brown vitreous fine grain matrix with feld. phenos 'crystal mush' from Ct. 5°TCN, grading to light brown matrix with phenos 60 to 70% of fabric, light green chloritic mafic phenos, smaller and lesser, en echelon joints with felsic injection and silicat'n of matrix									
154.5	159.0	LAMPROPHYRE: dark grey brown, fine to med. grain matrix with chl. amphibole phenos 'green biotite' type, and lone orbicular cb. (after feld.), matrix of cb. mica, feld. minute clots cb ? up Ct. 30°TCN, lower 60°, matrix py fine 2%, concentrated on joint slips									
159.0	169.2	FELDSPAR PORPHYRY: light brown porphyritic central portion of dyke grading to lower dark red brown Ct. marginal phase with clear zoned phenos 70% of fabric, Ct. 50°TCN									
169.2	193.7	DIORITE: coarse grain med. green, hi ratio light green chl. matrix, all qtz enclosed feld. fresh unaltered									
		169.2-172.0 magnetite 10%, py 4% in fresh diorite, minor recrystalization at dyke	7667	2.8	169.2	172.0	Tr				
		grades to typical shaft diorite, fresh, sharp crystal borders, abundant amphibole prisms; from 190 to lower Ct. 10% crs. disseminated magnetite (lower 1' at Ct.) feld. converted to cb't.									
193.7	201.8	LAMPROPHYRE: fine to med. grain light green, 'green biotite' type, abundant smaller chlt'c amphibole prisms, xenolithic aggregated chl. clots, en echelon cb. fractures to 3 mm., Cts. 50°TCN and 70°									
201.8	222.8	DIORITE: coarse grain med. green, fine chl. matrix, abundant recrystallized amphibole crs. anhedral qtz. injecta with enclosed crm. feld. laths									
		201.8-204.0 fresh diorite 4 to 5% py, abundant magneitie, adjacent dyke Ct.	7668	2.2	201.8	204.0	.002				
		206.5-208.5 qtz and cb. stringers 70°TCN, matrix py 4%, vns 2 cm., some py	7669	2.0	206.5	208.5	.004				
		220.0-222.8 fresh diorite, 5% disseminated py, magnetite	7670	2.8	220.0	222.8	Tr				
222.8	225.0	LAMPROPHYRE: fine grain to med. grain brown grey, dark mica cb. matrix, larger blebs agglomerated chl., cb. clots, upper Ct. 70°TCN, strong shear dyke 70° and 80°TCN, lower margins talcose, Ct. 70°TCN									

OROFINO
RESOURCES LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: G-83-32
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
225.0	237.0	DIORITE: coarse grain med. green, as described 201.8-222.8									
		225.0-227.0 crs. lone magnetite 10%, py 8% .8' from Ct., fresh feld. in fabric	7671	2.0	225.0	227.0	.006				
		227.0-232.0 typical diorite, 2% py, some magnetite (upper part) massive	7672	5.0	227.0	232.0	Tr				
		232.0-237.0 several en echelon 1 cm. qtz fracture fill, 2% matrix py	7673	5.0	232.0	237.0	Tr				
237.0	246.2	DIORITE RETROGRADE - CHLORITE SCHIST: progressive retrograde trace chl. schist at 240' magnetite chl. cb. matrix with fractured qtz, cb. wisps progressive to chl. laminae with intervening cb. lenses 30° to 50°TCN folt'n									
		237.0-240.0 magnetite 10%, 2% py in normal retrograde	7674	3.0	237.0	240.0	Tr				
		240.0-243.0 chl. schist, 2% py, sporadic magnetite, cb. veins and lenses	7675	3.0	240.0	243.0	Tr				
		243.0-245.0 magnetite 5% py 4% in strong schist, folt'n 30°TCN	7676	2.0	243.0	245.0	.002				
		245.0-246.2 py 10%, random magnetite in schist, flat 1 cm. cb. vein	7677	1.2	245.0	246.2	.018				
246.2	247.2	QTZ VEIN: chloritic, 30°TCN branching along core-schlieren chlorite, 4% py - several specks V.G.									
		246.2-247.2 py 3 to 4% in chl., specks V.G., 40% of core retro diorite	7679	1.0	246.2	247.2	.037				
247.2	260.8	DIORITE RETROGRADE - CHLORITE SCHIST: as described 237.0-246.2 but in reverse order									
		247.2-248.8 chl. schist, 8% magnetite, 3% py, 30°TCN folt'n	7680	1.6	247.2	248.8	.006				
		248.8-250.3 retro diorite, magnetite 10%, 3% py, 30°TCN folt'n	7681	1.5	248.8	250.3	.002				
		250.3-253.7 retro diorite, magnetite 10%, 3% py	7682	3.4	250.3	253.7	Tr				
		253.7-258.8 retro diorite, magnetite 10%, 3% py	7683	5.1	253.7	258.8	Tr				
		258.8-260.8 some magnetite, abundant amphibole prisms marginal to lower Ct.	7684	2.0	258.8	260.8	.002				
260.8	262.0	LAMPROPHYRE: cb. mica med. grain green grey matrix, clustered agglomeratic clots chl., xenolithic relicts, rare ovoidal cb., cts 20°TCN, fine py									
262.0	273.2	DIORITE RETROGRADE: cb. mica matrix, sporadic silicification, cracked qtz augen, cb. wisps									
		262.0-268.0 magnetite 5%, 3% py, very fine	7685	6.0	262.0	268.0	.002				
		268.0-270.2 retrograde 8% fine py (269.270.2 qtz vein with 1 cm. py, irregular xenolithic lamprophyre stringers)	7686	2.2	268.0	270.2	.036				
		270.2-272.0 5% py, minor magnetite, folt'n appears 70°TCN	7687	1.8	270.2	272.0	.028				
		272.0-273.2 silica saturated matrix, 15% py disseminated	7688	1.2	272.0	273.2	.109				

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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
273.2	276.5	FELDSPAR PORPHYRY: fine grain grey vitreous matrix with 'crystal mush' zoned plag. phenos from Ct. to Ct. upper 20°, lower 40°TCN, 1% single py crystals, glomeroaggregates chl.									
276.5	281.5	REPLACEMENT ZONE: silica permeation relict diorite, upper 1.5' very dioritic less siliceous									
		276.5-278.0 py 8% in lightly silicified diorite	7689	1.5	276.5	278.0	.060				
		278.0-281.5 py 15% in frosted chloritic fabric with faint diorite fabric	7690	3.5	278.0	281.5	.042				
281.5	282.0	LAMPROPHYRE: fine grain to med. grain dark grey green cb, mica matrix, 'green biotite' type, chl. amph. phenos, schisted, Ct. 30°TCN, dyke lineation strong, parallel Cts.									
282.0	286.5	REPLACEMENT ZONE: (silica saturation and permeation relict diorite fabric) 15% py two distinct phases carb'tn (a later cb't'n in slips of silicified fabric)									
		282.0-286.5 py 15% varisized aggregated, transported py to 5 mm., same 276.5-281.5	7891	4.5	282.0	286.5	.046				
286.5	289.0	DIORITE RETROGRADE: typical retrograde, chl. matrix, fractured qtz. injecta, cb. wisps									
		286.5-289.0 folt'n 80°TCN, py 3% thin cb. fractures 5°TCN, steep cb. chl. fractures	7692	2.5	286.5	289.0	.004				
289.0	303.5	DIORITE: coarse grain med. green, vague frosted fabric due to in situ cb'tz'n feld., pitted fretted laths, partial alteration of matrix									
		289.0-292.0 py 1% in massive diorite	7693	3.0	289.0	292.0	.002				
		292.0-297.0 py 2%, at 295' cb fracture and qtz cb. vein (chloritic) py, rimming arseno py	7694	5.0	292.0	297.0	.004				
303.5	322.7	DIORITE RETROGRADE: strange hi chlorite type, common and peculiar, random very mafic fine grain portions alternate with usual qtz relict coarse grain typical retrograde, partly due to contortion of fabric, random segments string magnetite									

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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
		303.5 - 322.7 (con't)									
		307.0-313.0 alternation of mafic fine grain (chloritic with usual retrogr.) en echelon flat epidotic qtz fractures, steep cb. fractures, minor py, 3%, pockets 3 to 5 cm. normal diorite	7695	6.0	307.0	313.0	.002				
		313.0-315.0 magnetite 10%, 4% py, local cb. fracture with rimming arseno py	7696	2.0	313.0	315.0	.002				
		315.0-317.0 retrograde coarse grain 70°TCN folt'n, 2% py, no fractures	7697	2.0	315.0	317.0	.002				
		317.0-319.0 massive cb. vein (flat) rimming py, arseno py, py clusters 3-4 mm.	7698	2.0	317.0	319.0	.050				
		319.0-322.7 en echelon flat massive cb. veins, random py, 321.5 intraformational beige bleached fault, granular qtz cb. matrix, crs 8% py 20°TCN	7699	3.7	319.0	322.7	.144				
322.7	334.0	DIORITE: coarse grain med. green, anhedral qtz injecta, fresh feld. laths., epidote portions (green feld.)									
		322.7-325.5 minor flat 1 cm. cb. veins with clustered py marginal, sporadic fabric py	7700	2.8	322.7	325.5	.040				
334.0	339.5	DIORITE RETROGRADE: coarse grain med. green, qtz injecta cracked with cb. wisps chl. matrix, some few fresh feld. laths									
		334.0-337.0 py 8% disseminated, folt'n 40°TCN	7701	3.0	334.0	337.0	.016				
		337.0-339.5 py 12% plus at 339.0 chloritic fault brx 10°TCN to 40°	7702	2.5	337.0	339.5	.507				
339.5	368.5	DIORITE: coarse grain med. green, classic shaft diorite, described in numerable times previous clear sharp enclosed feld. in anhedral qtz, abundand slender prisms amph., py irregular usually as lone crs. clots, av. 1% ?, folt'n 70-80°TCN ?									
368.5	372.5	BRITTLE BROWN DYKE: fine grain brown soft matrix, vari-sized pk. white dark green phenos, orbicular cb. in lone clots, Cts flat, phenocrysts in layered sequences									
372.5	398.9	DIORITE: coarse grain med. green, as described 339.5-368.5; with considerable matrix feld. laths pitted and fretted (slight crb'tz'n)									

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398.9	401.0	LAMPROPHYRE: very dark green brown, odd lamp. dyke, very fine grain, slight silicification, a pronounced lineation in vague relict fabric, strange faint lensing pods in fabric, 3% fine py, Cts 70°TCN parallel lineation, very uncommon type									
401.0	403.8	DIORITE: coarse grain med. green, typical shaft diorite, same as 339.5-368.5, py content sporadic									
403.8	413.5	LAMPROPHYRE: med. grain light grey, variety of 'green biotite' type (uncommon phase of very common dyke) shards and prisms chloritic amphibole minor, matrix of distinct mica, cb. feld. equigrains, fairly hard, strong lineation 70°TCN (perhaps running near Ct.) later cb. parallel injecta with marginal bleached chl., Cts. 70°TCN									
413.5	415.0	LAMPROPHYRE: older 'green biotite' type, injected by above dyke, a med. grain grey mica rich rock with dark green mica phenocrysts (euhedral mica plates), matrix cb. and mica flat orientation to fabric, flat lower Ct.									
415.0	436.2	DIORITE: coarse grain med. green, same as 339.5-368.5` from 427 to 433 some cb't'n and obliteration of enclosed feld. laths, some pitted fretted vague laths grading to fresh diorite towards lower Ct. 415.0-419.0 upper 2' magnetite 10%, average 5% py, several en echelon cb. 1 cm. fractures	7703	4.0	415.0	419.0	.020				
436.2	439.3	LAMPROPHYRE - DIORITE: vertical segment 'green biotite' type with massive cb. stringers running along core 50% fresh diorite, Cts 80°TCN, minor sulphides									
439.3	456.5	DIORITE: coarse grain med. green, mafic, chloritic phase with isolated qtz injecta and internal feld. laths, some contortion, random lamprophyre stringers towards upper Ct, felsic fresh cb't'd en echelon joints, minor py									
456.5	467.0	LAMPROPHYRE: dark green ultrasilicic, phase of 'green biotite' type, vague amph. phenos, intraformational FAULT 459.5 beige bleach over 8 cm. at 70°TCN with mini-brx with massive cb. at sole of fault, minor sulphide` vitreous dark fabric with ovoidal lone feld to 1 cm. and some ovoidal cb, threading of fabric with silica epidote threads, lower Ct 70°TCN									

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467.0	474.0	DIORITE: coarse grain med. green, normal shaft type diorite, clear sharp feld. laths .5 true retrograde at upper Ct., small increase py from average 1%									
474.0	476.3	LAMPROPHYRE: heavily cb't'd, frosted white matrix with thin shards amphibole phenos and orbicular lone Cb (after feld) upper Ct. 10°TCN									
476.3	512.0	DIORITE: coarse grain med. green, injecta anhedral qtz. with enclosed feld. laths. in chloritic fine fibrous matrix with epidote and cb., local pockets epidote saturation with green feld., minor py, at 398.5-399.5 a mysterious fine grain mafic portion with minor qtz injecta and rare fine feld. laths, random flat cb. fractures, some silica epidote fractures									
512.0	512.2	LAMPROPHYRE: fine grain green massive flat dark green dyke									
512.2	516.6	DIORITE: as above 476.3-512.0									
516.6	523.8	FELDSPAR PORPHYRY: red brown vitreous fine grain matrix, zoned plag. 'crystal mush' cream feld., smaller dark green mica, upper Ct. 60°TCN, lower irregular 40°TCN									
523.8	525.6	DIORITE: as above 476.3-512.0									
525.6	526.0	LAMPROPHYRE: fine grain dark green segment as above 512.0-512.2									
526.0	536.7	DIORITE: as above 476.3-512.0									
536.7	537.9	FELDSPAR PORPHYRY: rich brown matrix, 'crystal mush' feldspar zoned crystals									
537.9	538.2	DIORITE: fresh unaltered									
538.2	540.6	LAMPROPHYRE: fine grain, med. green 'green biotite' type, phenocrysts chl. amph. minor pink silica saturation of matrix concentrated near Cts., minor orbicular cb'd feld. Cts 40°TCN									
540.6	546.3	DIORITE: coarse grain med. green, extra py to 8% for .8' at upper dyke ct. and at lower dyke Ct., with heavy magnetite in very slightly altered diorite but fresh feld. laths throughout FELDSPAR PORPHYRY: 1 cm. flat dykelet replete with large phenocrysts feld.									

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546.3	546.7	LAMPROPHYRE:fine to med. grain med. green equigrained matrix, minute amph. clots and ovoidal Cb., flat									
546.7	549.8	DIORITE: coarse grain dark green, mafic phase, vagueness to matrix due to silicification, 1% py									
549.8	561.4	FELDSPAR PORPHYRY: red brown vitreous fine grain matrix with 'crytal mush' feld. phenos. grading to light grey matrix with more vague unzoned phenos, lesser biotite phenos and reverting back to red brown at lower Ct. upper Ct. 60°TCN lower 10°									
561.4	578.4	DIORITE: coarse grain med. green, chloritic matrix, injected anhedral qtz. with general minor feld. ratio qtz to feld (very hi qtz), a central section with minor alt'n, (slight cbt'z'tn feld.) lower portion amphibolitic, siliceous with abundant 1 cm. amphibole prisms short epidotic portions with green feld minor py									
578.4	579.2	LAMPROPHYRE: med. grain grey mica cb. rock, assimilation of large amount of invaded F.P. contains anhedral feld. phenos. to 25% of fabric, agglomerated green mica and partly resorbed amphibole, no sharp Ct. with F.P. below rather gradual transition to red brown silicic matrix and 'crystal mush' of usual porphyry, retains hi quantity of mica									
579.2	582.0	FELDSPAR PORPHYRY: transitional from mica lamprophyre a detailed above, never observed before, micaceous med. grain fabric, grey green colour with 'crystal mush' feld. phenos 50% of fabric, moderate silicification									
582.0	583.4	LAMPROPHYRE: med. grain med. green, 'green biotite' type, minute green amph., phenos orbicular lone cb, flat Cts									
583.4	626.0	FELDSPAR PORPHYRY: red brown vitreous fine grain matrix, 'crystal mush' of elaborately zoned plag., probable drilling along Ct. unchangeable Ct. phase, lower Ct. vertical 90°TCN at 600.5 local flat orange alt'n along 1 cm. qtz stringer									

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626.0	646.4	DIORITE RETROGRADE: coarse grain med. green, hi ratio qtz injecta to feld., cracked contorted qtz, cb. wisps, amphiboles chloritized, transported, sporadic silicification									
		626.0-630.0 normal relict diorite 3% py, chloritic amphiboles, little distortion	7704	4.0	626.0	630.0	.006				
		630.0-633.0 beige flat intraformational fault (630.1-631.0), wisps cb. 3% py	7705	3.0	630.0	633.0	.004				
		633.0-635.5 several branching 1 to 2 cm. qtz veins, rimming py, silicification, py 10%	7706	2.5	633.0	635.5	.286				
		635.5-638.0 sporadic 10% magnetite to nil, minor silicification, 2% py	7707	2.5	635.5	638.0	.004				
		638.0-641.5 strong folt'n 70°TCN, unsilicified, mafic chloritic, some mag'n, 2% py	7708	3.5	638.0	641.5	.002				
		641.5-646.4 several 3 cm. qtz veins 40°TCN, py clusters to 4 mm., average 8% py	7709	4.9	641.5	646.4	.090				
646.4	648.5	QUARTZ VEIN: multi-branching vein with intervening chl., some relict diorite, py concentrated on margins barren branching qtz., vein segments flat 90°TCN									
		646.4-648.5 py average 8%, heavily concentrated rimming qtz	7710	2.1	646.4	648.5	.062				
648.5	650.0	DIORITE RETROGRADE: coarse grain med. green, mica, cb., fractured qtz injecta, cb. wisps, 4 mm. py									
		648.5-650.0 lone single xstals 8% 4 mm. py	7711	1.5	648.5	650.0	.127				
650.0	650.6	LAMPROPHYRE: fine grain med. green, 'green biotite' type, chloritic amphibole phenos, flat Cts									
650.6	652.8	DIORITE RE RETROGRADE: with .7' barren qtz flat, several qtz stringers in relict diorite									
		650.6-652.8 matrix 1.5' average 15% py with .7' barren vein, py rims stringer qtz	7712	2.2	650.6	652.8	.062				

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652.8	669.5	FELDSPAR PORPHYRY: fine grain red brown vitreous matrix, 'crystal mush' cream zoned phenos to 5 mm., varying preferred orientation to aligned phenos., 80°TCN, gradual lessening to 30°TCN, may be rimming along near Ct. phase thru seguence as red brown matrix throughout, flat Cts									
669.5	677.0	DIORITE RETROGRADE: coarse grain med. green, with mafic chloritic fine grain segment to 674, fine grain chl. segments always mystery, remnant flow or contorted diorite?									
		669.5-673.0 sporadic silicification upper Ct., branching cb. stringers, 2% py	7713	3.5	669.5	673.0	.006				
677.0	772.0	DIORITE: coarse grain med. green fibrous chl. matrix with injected anhedral qtz and enclosed feld laths, slender amphibole prisms, variously saturated locally with cb. or silica or epidote, latter with green feld. laths, some random en echelon Cb. fractures, minor py (682-685) retrograde fine grain zone, rare py									
		702.0-705.0 at 702' local chl. shear 85°TCN with margining retrograde with 3' of 2 to 4% disseminated po and 3% py	7714	3.0	702.0	705.0	.004				
		re-emerges as normal coarse grain diorite below, minor py, local clots po, rare pockets 2 to 3 cm. reticulated po, insufficient concentration for sample amphibolitic portions with slender amphibole prisms to 2 cm.									
772.0	785.5	DIORITE RETROGRADE: coarse grain med. green, a med. grain mesostasis of mica, cb., epdiote, amphibole, cracked anhedral qtz with cb. wisps in fractures, magnetite progressively plentiful, strange (islands) of fresh feld. laths, hardly result of simple retrogression									
		780.5-783.0 chloritic (mafic) matrix, fractured anhedral qtz, cb. wisps, random 2% py	7715	2.5	780.5	783.0	.004				
		783.0-785.5 mafic magnetite 10% diorite, some preserved fresh feld. 4% py 2% po	7716	2.5	783.0	785.5	.020				
785.5	790.5	REPLACEMENT ZONE: silica saturation permeation of host, relict diorite fabric, post permeation qtz veining at 10° to 20°TCN, recrystallized green blk amphibole									

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		785.5 - 790.5 (con't)									
		785.5-789.0 py 15% average, some massive py chains, crystals to 5 mm. with black inclusions, later veining low in sulphide	7717	3.5	785.5	789.0	.161				
		789.0-790.5 py 15% in silicified diorite, less intense permeation	7718	1.5	789.0	790.5	.116				
790.5	792.5	DIORITE RETROGRADE: chl. mafic matrix, silica injecta cracked with cb wisps, fairly massive									
		790.5-792.5 mafic retrograde 3% py, mainly lining cracks, a 5 mm. vein, margin py	7719	2.0	790.5	792.5	.018				
792.5	794.5	REPLACEMENT ZONE: strong silica permeation relict diorite									
		792.5-794.5 py 15% clustered euhedral 5 mm. crystals with blk inclusions	7720	2.0	792.5	794.5	.350				
794.5	808.4	DIORITE RETROGRADE: as described 790.5-792.5; abundant disseminated magnetite									
		794.5-796.0 py 2% magnetite 10% in typical retrograde	7721	1.5	794.5	796.0	.008				
		796.0-798.0 py 2 to 4% magnetite 8% includes small xenoliths lamprophyre	7722	2.0	796.0	798.0	.006				
		806.5-808.4 2 to 4% py, 5% magnetite, py lower .5' Ct. 8% disseminated	7723	1.9	806.5	808.4	.066				
808.4	809.4	REPLACEMENT ZONE: silica permeation, saturation, relict diorite fabric									
		808.4-809.4 py 15% segregated in crs bands 20°TCN	7724	1.0	808.4	809.4	.199				
809.4	818.7	DIORITE RETROGRADE: as described 790.5-792.5;									
		809.4-811.0 py 10% magnetite 5%, mainly med. grain chloritic diorite	7725	1.6	809.4	811.0	.028				
		811.0-817.0 py 2% in mafic retrograde	7726	6.0	811.0	817.0	.002				
		817.0-818.7 py average 3% with 5% plus over .5' at lower Ct., folt'n 65°TCN	7727	1.7	817.0	818.7	.020				
818.7	831.8	REPLACEMENT ZONE: silica permeation, saturation relict diorite with strong folt'n									
		818.7-822.0 py 15 to 20%, euhedral, cellular, many fine holes, chl. intersticas	7728	3.3	818.7	822.0	.163				
		822.0-825.0 aligned trains smaller 3 mm. py 30°TCN, later white qtz injecta	7729	3.0	822.0	825.0	.189				
		825.0-827.0 py 8% greater chloritic impurities and imprint diorite fabric	7730	2.0	825.0	827.0	.174				
		827.0-828.4 py 12% aligned parallel trains, later qtz minor injecta	7731	1.4	827.0	828.4	.133				
		828.4-829.4 relict diorite, folt'n 50°TCN, 2 to 3% scattered py, light silicification	7732	1.0	828.4	829.4	.092				

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		818.7 - 831.8 (con't)					
		829.4-831.8 py 15% with segments relict diorite, later qtz with (poss) tourmaline	7733	2.4	829.4	831,8	.137
831.8	832.4	LAMPROPHYRE: 'green biotite' type, silicified, bleachedat upper flat Ct. with 5 mm. massive py, probable minor slip, lower Ct. flat, no sulphide					
		831.8-832.4 sampled to complete mineralized segment for ore reserves	7734	.6	831.8	832.4	.060
832.4	833.3	REPLACEMENT ZONE: as above, sharp silicic Ct. 50°TCN at 833.3					
		832.4-833.3 py 20% mainly small and fine py, secondary qtz vein, steep	7735	.9	832.4	833.3	.038
833.3	863.0	DIORITE RETROGRADE: relict diorite fabric, magnetite disseminated 10% plus in chl. cb. altered fabric, interseral qtz, cb. wisps, py variable, po sporadic					
		833.3-836.0 at up Ct. .5' 15% py in relict diorite, py spotty over 2.0'	7736	2.7	833.3	836.0	.010
		836.0-842.5 py 4% in mafic retrograde with broken qtz, cb. wisps, magnetite	7737	6.5	836.0	842.5	.002
		842.5-843.5 qtz cb. chl. (massive) flat vein in host, 8% py 2% po	7738	1.0	842.5	843.5	.046
		843.5-846.0 cb. impregnated host, 4% py, ratio py, po 4::1	7739	2.5	843.5	846.0	.068
		846.0-848.0 qtz cb. flat saturation vein, 6% po, 4% py	7740	2.0	846.0	848.0	.238
		848.0-852.5 typical retro., py 4% po 2%, magnetite 5% plus	7741	4.5	848.0	852.5	.016
		852.5-855.0 typical retro., sporadic py, ratio py to po 4::1, 10% magnetite	7742	2.5	852.5	855.0	.048
		855.0-857.0 magnetite 10%, py 5%, po 3%, minor qtz and cb. saturation	7743	2.0	855.0	857.0	.094
		857.0-859.0 magnetite 10%, py 3%, in mafic retrograde	7744	2.0	857.0	859.0	.006
		859.0-863.0 magnetite 15%, py 1% in cb't'd chl't'c relict diorite	7745	4.0	859.0	863.0	.002
863.0	881.7	DIORITE: coarse grain med. green, chl. cb. matrix with injecta qtz and internal feld. laths, amphibole prisms, upper portion with pocked and fretted cb't'd feld., magnetite ubiquitous					
8817.	883.2	DIORITE RETROGRADE: mafic sheared med. grain chloritic 70°TCN, original fabric destroyed					
		881.7-883.2 py 3% in minor retrograde at dyke Ct., en echelon Cb. fractures	7746	1.5	881.7	883.2	.004

OROFINO
RESOURCES LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: G-83-32
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
883.2	885.5	LAMPROPHYRE: very fine grain light grey, some random silicification adjacent small qtz cb. barren veins parallel folt'n in dyke, 40°TCN, some beige alt'n (slippage) probable species related to green biotite type, Cts. 30°TCN, cb. qtz vein 3 cm. at lower Ct., py clustered sporadic									
885.5	899.0	DIORITE RETROGRADE: coarse grain med. green, upper 5' schistose 60°TCN, chloritic laminae with intervening cb. layers, strong disseminated crs magnetite, glomeroaggregates dark mica (contact effect), 3% migrated 2 mm. py, some minor qtz cb. veining (as described below)									
		888.5-891.5 minor qtz cb. 3 cm. vein, magnetite 15%, 3% py, classic retrograde	7747	3.0	888.5	891.5	.002				
		891.5-892.5 impure chlorite 5 cm. qtz vein 5% py, .8' retrograde, 15% mag.	7748	1.0	891.5	892.5	.002				
		892.5-897.0 arcuate lensing 5 cm. vein 5% py, 4' retrograde diorite, 15% magnetite	7749	4.5	892.5	897.0	.002				
899.0	931.0	DIORITE - HYBRID DIORITE: intermediate type; coarse grain med. green matrix of chl. amphibole, lath. feld. with lesser intruded qtz augen with minor enclosed feldspar, resembles diorite texture megascopically; actual different from diorite fabric in that matrix is amphibole, feld. laths. with minimal secondary injecta, 2% py, random local areas of irregular silica permeation with 5% py, crs magnetite									
	931.0	END OF HOLE									

OROFINO
RESOURCES LIMITED

Property: OROFINO RESOURCES
Location:
Co-ordinates: P.C. 13637N 9479E

83-33
HOLE: [redacted]
Core size: AQ

Section: G
Length: 452'
Elevation:
Azimuth: -0- Dip: -90°

Dip Tests: 452' -88°
Started: July 24, 1983
Completed: July 26, 1983
Logged by: Warren Gilman

DRILL LOG

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/T				
0.0	6.0	CASING									
6.0	15.4	DIORITE RETROGRADE: coarse grain med. green, (N.B. 6 to 12' represented by 1.5' of overground kernals of Retro-Dio) local shear at 13-14' 80°TCN, mafic diorite chl. base, qtz augen, cb. wisps infractures, epidotic segment with relict green feld. laths, folt'n general 30°TCN, 2% py									
15.4	20.5	LAMPROPHYRE: fine grain red and dark green, pink cb., saturated with late silicat'n abundant slender amphibole prisms (phenocrysts), single cb. clots through matrix, xenoliths of diorite, clustered py, sporadic, Cts 70°TCN, deformed lamp., stubby amph. from assimilation host rock									
20.5	39.0	DIORITE: coarse grain med. green to dark green, mafic diorite, qtz segregations (orbicular qtz) with internal feld. laths, some matrix plag. (under present system of logging some of this would be hybrid diorite), variable py, clustered, av. 3%, folt'n variable 40° to 90°TCN									
39.0	52.0	DIORITE RETROGRADE: coarse grain med. green to dark green, strong folt'n 50°TCN, chl. lamellae, qtz boudins, tension fractures with cb. wisps in qtz boudins qtz and py regenerates in aligned lenses, variable py									
		42.5-46.5 extremely variable py, minor qtz 3 cm. flat, py av. 3%, 10% magn't	9051	4.0	42.5	46.5	.036				
		46.5-48.0 strong lenses py 20°TCN, disseminated py av. 8%, 10% magnetite	9052	1.5	46.5	48.0	.024				
52.0	84.3	DIORITE: coarse grain med. green, chl. base with qtz augen and enclosed feld. laths slender amph. to 5 mm. and to 1 cm., upper 3' with 10% crs magnetite, some local minor 5 cm. retrograde shears and joints with rotational breaks, 3' above lower Ct. strong metacrystic black grannular (amphibole?) to 5 mm. typical Ct. effect, 2% py Av.									
94.3	98.1	LAMPROPHYRE: dark pink green med. grain partly silicated dyke, slender amph. prisms single cb. and cb't'd feld. clots in a base of cb't'd feld., cb and unknown xstals Cts 10°TCN, very fine disseminated py									
98.1	120.2	DIORITE: coarse grain med. green, as described 52.0-84.3; some random magnetite and coarse black granular amph? indicating proximity of lamprophyre, classic									

OROFINO
RESOURCES LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-33
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
		98.1 - 120.2 (con't) diorite, amphiboles to 1 cm., minor epidotic slips with margining epidote permeation, 2% py									
120.2	125.0	LAMPROPHYRE: rim of dyke, very fine grain, Cts 85°TCN, flowage fabric pink with green in single seams, obviously margining Ct of dyke, very fine disseminated py									
125.0	134.4	DIORITE: coarse grain and some med. grain, med. green, tendency to hybrid with matrix plag. laths as significant part of fabric, in med. grain segments, py variable vertical slips lined with py, Ave. 3% py									
134.4	137.6	LAMPROPHYRE: fine grain dark pink green silicated, very fine grain, laminated banded, running near Ct., chl'tc blebs after amphibole, pods cb. with secondary silication, later fracturing of dyke with massive cb. and py films on fractures, Cts 60°TCN, (py filled vertical fractures)									
137.6	168.0	DIORITE: coarse grain and some fine grain, med. green, chl. base, silicate segregations (augen) with enclosed feld. laths slender amphibole prisms to 5 mm. cg. segments with amph. to 1 cm., epidotic slips with marginal epidote saturation, 5 mm. to 1 cm. qtz -- cb slips with py, py, folt'n 30°TCN, folt'n difficult to decifer									
168.0	177.3	DIORITE RETROGRADE: coarse grain med. green, fabric more vague due to cb'tz'tn and chl., fabric has remnant pattern of above diorite with some feld. intact in qtz., metacrystic bl. 'amphibole'? toward lower Ct., with magnetite, from 176.8-177.3 py 15% subhedral xstals above Ct., concentration by migrat'n of sulphides during injection of dyke (actual strong silica saturation for .5')									
177.3	189.5	FELDSPAR PORPHYRY: red brown fine grain vitreous Cts., 30°TCN, with zoned plag. and lesser biotite phenos grading to central vague fabric light grey ultrasilic zone with partly absorbed plag. phenos, 3 to 4% very fine py									

OROFINO
RESOURCES LIMITED

Property:
Location:
Co-ordinates:

HOLE: 83-33
Core size:

Section:
Length:
Elevation:
Azimuth: Dip:

Dip Tests:
Started:
Completed:
Logged by:

DRILL LOG

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
189.5	202.1	DIORITE RETROGRADE: med. grain dark green, mafic regressive diorite, vague altered matrix, several qtz stringers 0° to 40°TCN, folt'n appears 20°TCN									
		189.5-193.8 several en echelon 3 cm. qtz veins, some py, matrix py 15%	9053	4.3	189.5	193.8	.072				
		193.8-196.8 several larger barren qtz veins, matrix py 10%	9054	3.0	193.8	196.8	.046				
		196.8-199.1 en echelon 2 and 3 cm. flat qtz veins, 15% matrix py	9055	2.3	196.8	199.1	.098				
		199.1-202.1 py 2% in retrograde with no veins, random py to 10% (rare)	9056	3.0	199.1	202.1	.030				
202.1	243.4	DIORITE: med. grain med. green, chl. base, anhedral qtz with enclosed feld. laths, minor matrix plag. laths, disseminated epidote, amphiboles slender 1 to 2 mm. matrix py 2% duplicate of classic diorite with med. grain fabric, some segments are coarse grain with identical comp'n and texture, folt'n appears predominantly 30°TCN, some fabric vague in random segments due to variable silication									
243.4	244.6	LAMPROPHYRE: fine grain light green grey, slender chloritic amph. prisms, 'green biotite' type dyke, flat Cts									
244.6	267.7	DIORITE: med. grain med. green, as described 202.1-243.4; identical fabric to above alternation of pronounced fabric and somewhat vague due to vagaries of silication, matrix py 2%, folt'n 30°TCN, local epidote saturation with green feld.									
267.7	279.1	FELDSPAR PORPHYRY: fine grain red brown vitreous matrix with profusion zoned plag. phenocrysts, crs at ct., 20°TCN Ct., lesser blk and green 'biotite' and chl. amph. phenos grading to grey, ultrasilicic vague central core with masked plag. phenos, pinkish cut by lamp									
279.1	282.6	LAMPROPHYRE: fine grain pink green grey ultrasilicic dyke with knots of cb. and cb'td feld. and dark green slender amphiboles, 'green biotite' type, Cts 20°TCN, a parallel folt'n in dyke									
282.6	295.8	FELDSPAR PORPHYRY: pink red vitreous core grading to red brown at lower Ct. zone pheno orientation parallel Ct. 20°TCN, phenos 50% of fabric, fine ubiquitous py									

OROFINO
RESOURCES LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-33
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
295.8	296.3	DIORITE RETROGRADE: masked coarse grain med. green fabric with feld. destroyed, cb. wisps in qtz augen									
296.3	296.4	LAMPROPHYRE: satellite, very fine grain dark green grey dense matrix with amph. phenos 'green biotite' type, Cts 10°TCN									
296.4	302.6	DIORITE RETROGRADE: extreme regressive near Cts, grading to central portion with clear diorite relict fabric with pseudomorph of Cb't, feld. laths, folt'n appears 70°TCN, 2% py									
302.6	306.5	LAMPROPHYRE: pink green ultrasilicic 'green biotite' type, lone orbicular feld. slender prisms amph. phenos 15% fabric, 5% fine py, heavily fractured with hematite rims									
306.5	316.7	DIORITE RETROGRADE: strong folt'n chl. lamellae with interlayered cb. boudin lenses, clots diorite distinct mafic, hi chl. content, py minor, mine fractures with fine py									
		312.9-315.4 folt'n 70° to 80°TCN, greater py (5%) than 2% av. of segment	9057	2.5	312.9	315.4	.006				
316.7	320.7	LAMPROPHYRE: dark grey green med. grain matrix, profusion green black mica, some banding evident due to grouping of micas 30°TCN, some cb. threading on fractures with extra py, lone orbicular cb,. perhaps a phase of 'green biotite' type dyke, Cts 10°TCN									
320.7	321.8	DIORITE RETROGRADE: relict diorite fabric with masked effect, feld. destroyed cb. wisps									
321.8	326.0	LAMPROPHYRE: chl't'c amph. phenocrysts, up. Ct 10° -- lower 20°TCN (green biotite type) anhedral larger clots chl. digested host rock, some multiple injection									
326.0	331.6	DIORITE RETROGRADE: as described 320.7-321.8; sporadic clustered 3 mm. py, short portions, no continuity, with minor cb. filled fractures									
331.6	332.3	LAMPROPHYRE: dark green grey matrix with phenos chloritic amph., same comp'n as above swarm, 40°TCN, larger anhedral clots chl., cb. segregations									

OROFINO
RESOURCES LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-33
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
332.3	343.0	DIORITE RETROGRADE: as described above, relict fabric, masked effect due to Cb'z'tn									
343.0	350.0	DIORITE: coarse grain med. green, orbicular qtz with enclosed feld. laths, clear, fresh, folt'n 50°TCN									
350.0	393.0	DIORITE RETROGRADE: med. grain dark green mafic diorite, hi chl. matrix smaller relict cb't'd feld., folt'n 60°TCN, several en echelon 5 mm. qtz, cb., massive chl. fractures									
		356.0-359.3 py sporadic to 10% short segments, minor qtz 5% total, rim py	9058	3.3	356.0	359.3	.036				
		359.3-360.8 qtz feld. cb. vein 60% of segment, barren, 10% py in host	9059	1.5	359.3	360.8	.070				
		360.8-363.3 py very sporadic, mainly barren retrograde, spots of 8% py	9060	2.5	360.8	363.3	.010				
		363.3-366.0 py 3% in mafic retrograde, rare qtz fractures	9061	2.7	363.3	366.0	.006				
		366.0-368.0 py 5% in mafic retrograde, more persistent py	9062	2.0	366.0	368.0	.034				
		368.0-371.0 py 5% in mafic retrograde, vertical barren cb. vein	9063	3.0	368.0	371.0	.038				
		371.0-372.5 py 2% in mafic retrograde, abundant barren cb, boudins	9064	1.5	371.0	372.5	.002				
		372.5-375.0 py 2% in mafic retrograde, some 5 mm. cb stringers	9065	2.5	372.5	375.0	.002				
		375.0-377.0 qtz vein 3 cm. with py, minor cb vein, dark mafic diorite 4%py	9066	2.0	375.0	377.0	.099				
		377.0-379.0 mafic dark grey black retrograde, 3% py	9067	2.0	377.0	379.0	Tr				
		379.0-384.0 mafic dark grey black retrograde, 2% py	9068	3.0	379.0	384.0	Tr				
393.0	405.2	DIORITE: coarse grain med. green, chl. base, anhedral qtz with enclosed feld. laths variable fabric in degree of clarity over short segments, due to vagaries of alt'n., fabric becomes masked and with lesser feld. laths abruptly, 2% py									
405.2	408.7	BROWN DYKE: fine grain brittle red brown, with abundant (augen, phenos, metacrysts?) pink white green (appear similar to amygdules in Keweenawan Lavas) upper Ct. 5°TCN, lower 10°, (unusual as most often contacts flat)									
408.7	452.0	DIORITE: coarse grain med. green, as described 393.0-405.2; somewhat masked and lightly regressive fabric for 5' below dyke, at 411' angular wedge of lamp. in diorite above 3 cm. qtz cb. vein, with boudins cb., at 419' a 5 cm. local shear with injected cb. at 50°TCN, schisted footwall, predominantly classic diorite through segment, some minor masked and faintly regressed fabric, at 445.4 some migrat'n of fabric after dioritization									
		444.4-445.4 banded pink white cb. vein 40 TCN 5 cm. barren, matrix py 3%	9069	1.0	444.4	445.4	.002				
		hole ends in classic clear diorite									

OROFINO
RESOURCES LIMITED

Property: OROFINO RESOURCES
Location:
Co-ordinates: P.C. 13852N 9708E

83-34
HOLE [redacted]
Core size: AQ

Section: L
Length: 307'
Elevation:
Azimuth: -0- Dip: 90°

Dip Tests: 307' -89°
Started: July 26, 1983
Completed: July 27, 1983
Logged by: Warren Gilman

DRILL LOG

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured ~~normal~~ to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
0.0	12.0	CASING									
12.0	37.0	DIORITE: coarse grain med. green, chl. base with anhedral qtz and internal feld. laths, variance of fabric from masked lightly regressed fabric to classic clear diorite due to vagaries of alterat'n, near surface strong 70°TCN folt'n, av. 2% py									
37.0	47.7	DIORITE RETROGRADE: coarse grain dark green, mafic, strong chl. base, anhedral qtz, feld. destroyed, cb. wisps, av. 2% py, at 40' a 5 cm. section with 10% py folt'n 70°TCN 45.7-47,7 py 2% at dyke Ct., some 5 mm. qtz slips, barren	9070	2.0	45.7	47.7	.006				
47.7	63.3	FELDSPAR PORPHYRY: red brown vitreous matrix with zoned plag. phenos 35% of fabric abundant to Ct. (intrusion as xstal mush) lesser green and black biotite phenos, with ultrasilicic light grey central zone, reverting back to red brown at lower Ct., Cts 20°TCN, py 3% in central light grey core									
63.3	68.2	LAMPROPHYRE: dark pink brown, grey matrix, silicic 'green biotite' type, lone orbicular white feld and cb't'd feld, slender prisms amphibole, 10% fine py, Cts 5°TCN									
68.2	70.1	LAMPROPHYRE: dark grey black cb., black mica homogeneous cb't'd matrix, minute Cb. phenos									
70.1	81.0	DIORITE RETROGRADE: coarse grain, dark green, mafic chl. matrix, anhedral qtz segregations, cb. wisps, folt'n 70°TCN 70.1-74.6 py 3% disseminated in dark grey black retrograde, some clustered py 74.6-79.3 py 3%, en echelon 1 cm. flat cb. stringers, barren	9071 9072	4.5 4.7	70.1 74.6	74.6 79.3	Tr Tr				
81.0	96.0	DIORITE: coarse green med. green, folt'd diorite 70°-75°TCN, slightly masked fabric minor regression, sulphides sporadic, some remobilization									
96.0	109.2	DIORITE RETROGRADE: coarse grain med. green, chl. base, anhedral fractured qtz with cb. wisps, often intension fractures of qtz, minor granulated 4 cm. beige fault at 98.5									

OROFINO
RESOURCES LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-34
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal - to the long core axis. All measurements in feet or 10thst thereof	sample number	width	from	to	ASSAYS Au oz/t		Chk Smpl		
		96.0 - 109.2 (con't)									
		96.0-100.0 very sporadic 4% remobilized py, 4 cm. fault 40°TCN, mafic	9073	4.0	96.0	100.0	.018				
		106.0-109.2 mafic retrograde, py 4%, lone qtz 3 cm. veins with margins 10% py	9074	3.2	106.0	109.2	.008				
109.2	110.0	LAMPROPHYRE: fine grain brown green, silicated 'green biotite' type, slender prisms amphibole, minute cb. aggregates (metacrysts) 3% fine py, Cts 50°TCN									
		109.2-110.0 sampling re following assay (more sage reassay 106.0-109.2)	9151	.08	109.2	110.0	<.01	N.B. high #'s additional sampling			
110.0	114.7	DIORITE RETROGRADE: as described 96.0-109.2; less severe retrograde, relict diorite fabric, strong folt'n appears 70°TCN									
		110.0-111.5 py 10% in strong cb. chl. rock, retains diorite fabric	9075	1.5	110.0	111.5	.204				
		111.5-114.7 py 3%, strong folt'n 60°TCN, 5 mm. cb. fractures, barren	9152	3.2	111.5	114.7	.01		.002		
114.7	130.3	DIORITE: coarse grain, med. green, chl. base, anhedral qtz segregations with enclosed feld. laths, folt'n deceptive appears 70°TCN, very short med. grain regressive altered segments, py 2%, some flat epidotic fractures with margining green feld.									
130.3	153.6	FELDSPAR PORPHYRY: red brown, vitreous matrix with zoned plag. phenos 35 to 40% of matrix, lesser green black 'biotite' phenos, red brown throughout suggests drilling near dyke margins, upper Ct. 70°TCN, lower Ct. is lamp. presumed younger - evidence sometimes conflicts, 2% py, xenolithic chl. blebs indicative of absorbed host rock									
153.6	157.6	LAMPROPHYRE: pink grey fine green porphyritic 'green biotite' type, slender prisms amphibole, clots disseminated cb. in fine cb. chl.? matrix, Cts 20°TCN, minor py									
157.6	159.9	FELDSPAR PORPHYRY: red brown vitreous matrix with zoned plag. laths, 35% matrix, Cts 10°TCN									
159.9	213.0	DIORITE: coarse grain med. green, chl. and fine epidote base, anhedral qtz segregations with enclosed feld. laths, amphibole prisms, variable slight silications tends to mask rock fabric with degree intensity, amphibolitic									

OROFINO
RESOURCES LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-34
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured . normal ~ to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t		Chk Smpl		
		159.9 213.0 (con't)									
		portions with slender amphiboles to 1 cm., hematitic joints random, common to 183'									
213.0	215.0	DIORITE RETROGRADE: pseudo fine to med. grain (vague relict) coarse grain, some recrystallization, relict anhedral qtz, chl. amph. recrystallized, minor magnetite, epidote, 4% fine py									
215.0	217.7	LAMPROPHYRE: schisted sericitic grey banded lamp., boudins, clots, nodules grey cb., minor py, folt'n 50°TCN parallel Cts									
217.7	235.7	DIORITE RETROGRADE: coarse grain med. to dark green, anhedral qtz in chl. base folt'n 50°TCN									
		222.6-224.6 heavily cb'td matrix, py 3%, amphiboles chlt'z'd	9076	2.0	222.6	224.6	.006				
		224.6-226.3 heavily cb'td, py 15%, minor qtz stringers	9077	1.7	224.6	226.3	.269				
		226.3-229.2 ct'd silicated matrix, several en echelon qtz veins, 15% py	9078	2.9	226.3	229.2	.058	NB RE-ASSAY			
		229.2-232.1 cb'td silicated matrix, some qtz 15% py	9079	2.9	229.2	232.1	.201				
		232.1-233.7 very slightly retrograde, 2% py, sampled for continuity	9153	1.6	232.1	233.7	<.01		.002		
		233.7-235.7 very slightly retrograde, 2% py	9080	2.0	233.7	235.7	.010				
235.7	247.0	DIORITE: coarse grain med. green, chl. base, anhedral qtz, internal feld. laths, amphiboles, epidote									
		238.7-240.7 local 5 cm. with 15% py, remainder 2% py	9081	2.0	238.7	240.7	.008				
247.0	254.5	DIORITE RETROGRADE: coarse grain med. green, wisps, clots cb. replace feld., laths destroyed									
		247.0-249.5 py 5%, 3 to 5 mm. single xstals	9082	2.5	247.0	249.5	.018				
		249.5-252.0 py 10%, 3 to 5 mm. single xstals, disseminated uniformly	9083	2.5	249.5	252.0	.042				
		252.0-254.5 py 15%, 3 to 5 mm. single xstals, a 5 cm. qtz vein with py	9084	2.5	252.0	254.5	.107				
254.5	257.0	REPLACEMENT ZONE: cb'td and later silica saturated, relict diorite, vague relict diorite mosaic, cut by innumberable 1 cm. qtz stringers									
		254.5-257.0 py 20%, matrix cut by barren qtz stringers, py 1 to 2 mm.	9085	2.5	254.5	257.0	.124				

OROFINO
RESOURCES LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-34
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
257.0	258.5	LAMPROPHYRE: fine grain med. grey 'green biotite' type, clots cb. and slender amph. phenos									
		257.0-258.5 sampled for continuity (obvious waste of energy and funds)	9154	1.5	257.0	258.5	<.01				
258.5	259.1	DIORITE RETROGRADE: as described 247.0-254.5									
		258.5-259.1 replacement zone reminant 15% plus py, should be ore grade	9086	0.6	258.5	259.1	.026	NB re-assay			
259.1	260.5	QUARTZ VEIN: barren 'flat' frosty vein with schlieren massive chl., minor py, Cts 10°TCN									
		259.1-260.5 barren frosted vein, minor fracture with crs py, py with chl.	9087	1.4	259.1	260.5	.070				
260.5	271.5	DIORITE RETROGRADE: coarse grain, med. green, anhedral qtz in chl. base sans feld. laths except in central potion (lightly regressive) with cb'td feld. laths relict and few unaltered internal laths, av. 2% py, folt'n appears 60°TCN									
		260.5-261.5 sporadic arsenopy near vein Ct., minor py	9088	1.0	260.5	261.5	.004				
			8501	2.0	261.5	263.5	Tr	Extra Samples			
271.5	280.6	LAMPROPHYRE: fine to med. grain grey, matrix cb. mica, metacrysts cb., random amphibole prisms, chl. clots (altered host rock), profusion minute sub-hedral green amph., multiple injection of dyke, at 274.6 to 276.6 a more coarse grain cb'td variety of same dyke with more clear individual amph. prisms and needles, Cts at 10° to 20°TCN, latest intrusions speculative, py 1 to 2% very fine, phase of dyke with pronounced Cb. metacrysts appears younger, mainly satellitic fingers invade lighter cb. matrix phase of dyke terminal Cts 5 to 10°TCN	8502	2.0	263.5	265.5	Tr				
			8503	2.0	265.5	267.5	Tr				
			8504	2.0	267.5	269.5	Tr				
			8505	2.0	269.5	271.5	Tr				
			8506	3.0	271.5	274.5	.006				
			8507	3.0	274.5	277.5	.004				
			8508	3.1	277.5	280.6	Tr				
280.6	282.1	DIORITE RETROGRADE: coarse grain, med. green, anhedral qtz in chl. base with cb'td relict feld. laths, cb. wisps and clots, amphiboles vague with altered resorbed margins, minor py									
282.1	306.8	FELDSPAR PORPHYRY: red brown vitreous fine grain matrix with zoned plag. phenos to Cts., pink silica stain wide spread, lack of central light grey ultrasilicic portions suggests drilling near Ct along trend of dyke, lesser black 'biotite' phenos and anhedral grainular chl. aggregates, py in lone xstals 2%, Cts 40 TCN, feld. phenos oriented parallel Cts.									

OROFINO
RESOURCES LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-34
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
306.8	307.0	DIORITE RETROGRADE: mafic dark green, amphibole rich diorite with chl. base, minor py									
	307.0	END OF HOLE									

OROFINO
RESOURCES LIMITED

Property: OROFINO RESOURCES
Location:
Co-ordinates: P.C. 13913N 9644E

83-35
HOLE: [redacted]
Core size: AQ

Section: K
Length: 354'
Elevation:
Azimuth: -0- Dip: -90°

Dip Tests: 354' -89°
Started: July 27, 1983
Completed: July 28, 1983
Logged by: Warren Gilman

DRILL LOG

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
0.0	12.0	CASING									
12.0	40.0	DIORITE RETROGRADE: 'med. grain' , dark green, mafic due to strong chl. alt'n, melange of recrystallized chl., qtz augen migrated, cb. wisps, pods, epidote 15% magnetite indistorted matrix, base of chl. cb., undulating folt'n 25.0-28.6 magnetite 15%, py 4% in regenerated fabric, metacrysts cb from 28.6 to 31.5 chl. cb. schist, lamellae chl. lenses cb., magnetite from 31.5 to 39.0 some recryst'd feld. laths, magnetite 20% in recryst'd matrix 39.0-40.0 epidotic matrix, green feld, qtz epidote vein 40°TCN, 4% py	9089 9090	3.6 1.0	25.0 39.0	28.6 40.0	.006 .002				
40.0	41.6	LAMPROPHYRE: med. grain dark grey mica rich cb'nate homogeneous matrix, cb. clots Cts 10°TCN									
41.6	71.8	FELDSPAR PORPHYRY: red brown, vitreous matrix with zoned plag. phenos 35% of fabric lesser 'biotite' phenos (actually dark green amphibole prisms with margining chl.) grading to light grey slight pink central core with ultrasilicic matrix and masked plag., py disseminated uniform 2%, satellite lamprophyre finger at 55.5 to 71.8 euhedral biotite smaller than feld. phenos, through grey core of dyke									
71.8	78.0	LAMPROPHYRE: dark grey med. grain 'green biotite' type, slender amphibole phenos and lone augen of feld. and metacrysts cb., in matrix of cb., mica, and indeterminable xstals, (feld qtz?), upper Ct. 60°TCN, lower Ct. irregular 'V', 5% py									
78.0	83.7	FELDSPAR PORPHYRY: slight grey stopper ct. grading to red brown silicic matrix with 35% zoned plag. phenos and lesser phenos described 41.6-71.8, lower Ct. 65°TCN									
83.7	96.7	DIORITE: coarse grain med. green, magnetite rich, chl. base with anhedral qtz augen and enclosed feld. laths, from upper Ct. is hybrid diorite with abundant matrix plag. grading to classic diorite fabric with ubiquitous qtz and feld. laths enclosed, 15% magnetite persists, folt'n appears 60°TCN, some epidotic slips									
96.7	97.8	LAMPROPHYRE: dark pink green, Ct'd, 'green biotite' type, slender amph phenos, metacrysts Cb., Ct. 60°TCN									

OROFINO
RESOURCES LIMITED

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-35
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DRILL LOG

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
97.8	106.0	DIORITE: coarse grain med. green, as described 83.7-96.7; magnetite abundant									
106.0	120.1	DIORITE RETROGRADE: med. grain med. green, smaller xstals in fabric, reason unknown chl. base, anhedral qtz, cb. wisps, relict cb. after feld., magnetite									
		108.6-110.6 py 3% abundant fine magnetite in med. grain cb'td regressive diorite	9091	2.0	108.6	110.6	.002				
		110.6-112.6 py 15% in strong ct'd matrix with minor qtz, py remobilized	9092	2.0	110.6	112.6	.002	NB re-assay			
		112.6-115.1 strongly cb'td, silicated 20% qtz cb. vein, 15% py	9093	2.5	112.6	115.1	.002	NB re-assay			
		115.1-117.0 Cb't replacement, massive chl., 10% py	9094	1.9	115.1	117.0	.022	NB re-assay			
		117.0-119.0 dark green black retrograde 1% py, minor cb. veins 1 to 3 cm.	9095	2.0	117.0	119.0	.038				
		119.0-120.1 dark green black retrograde, 1% py	9096	1.1	119.0	120.1	.002				
120.1	123.6	LAMPROPHYRE: fine grain med. grey, matrix of cb. and mica, slender amphibole phenos clots cb., Cts 50°TCN									
123.6	131.3	DIORITE: coarse grain med. green, slightly cb'td feld., and chlt'z'd amphibole, 10% magnetite									
		123.6-125.1 magnetite rich, 1% py, extra cb. saturated matrix	9097	1.5	123.6	125.1	.002				
131.3	132.7	LAMPROPHYRE: fine to med. grain dark grey, mica, cb. matrix with vague mini-phenos slender amphiboles, and lone clots cb., imperfectly porphyritic, probable drill near Ct., Cts 60°TCN									
132.7	150.3	DIORITE: coarse grain med. green, chl. epidote cb, base, anhedral qtz with internal feld. laths, accessory magnetite, amphiboles partly cb't'tz'd, resorbed margins from 135-138 abrupt transition to med. grain, very slightly Cbt'd with strong magnetite, random epidotic saturation zones to 5 cm. with free epidote and green feld.									
150.3	175.0	FELDSPAR PORPHYRY: red brown vitreous matrix, fine grain with zoned plag. phenos to 35% of fabric with lesser amphibole and biotite phenos grading to a central ultrasilicic zone with vague mosaic of plag. phenos in fine grain grey white silica base with bleaching and alt'n of amphiboles partial to sericite and chl. with red brown contact zone towards lower Ct., 2% py, Cts 30°TCN, folt'n parallel Cts., some pyritic anhedral xenolithic chl'y'c fragments of mafic host									

OROFINO
RESOURCES LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

HOLE: 83-35
Core size:

Section:
Length:
Elevation:
Azimuth: Dip:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
175.0	217.2	DIORITE: coarse grain, med. green, chl. base, anhedral silica with internal laths white feld., classic diorite, some minor matrix cb. appears to pseudo morph feld., amphiboles chlort'z'd rims, random low angle slips with hematitic saturation over 1 to 2 cm., minor 2% py, folt'n 30°TCN, varies and subject to interpretation, some short fine grain segments from 213-217.2 a mafic med. grain segment with low ratio of qtz segregations and enclosed feld. (reasons for change in granularity and comp'n are unknown)									
217.2	218.5	FELDSPAR PORPHYRY: red brown vitreous matrix with abundant phenos zoned plag, upper Ct. 50°TCN									
218.5	224.0	LAMPROPHYRE: fine grain dark grey, cb. chl. altered matrix with metacrysts ankerite slender dark green amph. phenos, 8% py, Cts 70°TCN, drilling along dyke margin									
224.0	224.4	FELDSPAR PORPHYRY: red brown vitreous matrix, zoned plag. phenos, lesser amph., Ct. lower 50°TCN									
224.4	240.5	DIORITE: coarse grain, med. green, chl. amph. epidote, magnetite base with anhedral silica segregations and enclosed feld. laths, py 2% sporadic clusters along thin shears									
240.5	244.0	LAMPROPHYRE: as described 218.5-224.0, clear amph. phenos, white cb. single clots, Cts 30°TCN									
244.0	245.9	DIORITE: coarse grain med. green, as described 224.4-240.5; magnetite integral part of matrix									
245.9	251.9	LAMPROPHYRE: fine to med. grain cb. rich light grey, multiple dyke, dark satellitic injections after light grey, light grey phenos of slender amph., anhedral cb. clots in individual matrix of chl. cb., upper Ct 30°TCN, lower 60°, fine leucoxene, disseminated py 5%									
251.9	264.5	DIORITE: coarse grain med. green, as described 224.4-240.5 and 245.9-251.9; 261.5-264.5 some cb'td relict feld. some fresh feld., abundant magnetite, 1 cm. vein, average 5% py	9098	3.0	261.5	264.5	.010				

OROFINO
RESOURCES LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 93-35
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
264.5	265.5	DIORITE RETROGRADE: aligned very strong folt'n, separate bands chl. amph. and of cb't 264.5-265.5 py 15% plus, minor 1 cm. qtz stringers, cb heavy at Ct., folt'n 20°TCN	9099	1.0	264.5	265.5	.048				
265.5	267.0	QUARTZ VEIN: barren frosted vein with minor schlieren chl. with trace py 265.5-267.0 clear barren vein with rare chl. schlieren with trace py	9100	1.5	265.5	267.0	.014				
267.0	268.5	DIORITE RETROGRADE: strong cb'td as described 264.5-265.5 267.0-268.5 py 10% cb'td matrix, abundant 1 cm. vertical vein, qtz	9101	1.5	267.0	268.5	.008				
268.5	280.2	FELDSPAR PORPHYRY: red brown vitreous fine grain matrix wth zoned plag. phenos 35% of matrix and lesser dark green amph. biotite phenos, grading to central light grey ultrasilicic core with masked plag. unizoned, bleached light green interstitial chl. and bleached light green chl. amph. (2 distinct generations amphibole), 2% py, Cts 30°TCN, reverts to red brown vitreous matrix approaching lower Ct.									
280.2	282.0	DIORITE RETROGRADE: coarse grain grading to med. grain mafic, chl. base, anhedral qtz with fractures cb. wisps, magnetite, feld. destroyed									
282.0	294.0	DIORITE: med. grain dark green, mafic, lesser plag. phenos, strong chl. amph. epidote magnetite									
294.0	317.7	DIORITE RETROGRADE: med. grain dark green, chl. cb., epidote, magnetite base with anhedral qtz with few protected feld. laths and abundant cb. wisps infractures and matrix									
		296.0-297.0 py 4%, deformed, magnetic, fractured with cb. wisps through matrix	9102	1.0	296.0	297.0	.004				
		297.0-298.5 pink silica saturation over .8', strong py 15%, folt'n 30°TCN	9103	1.5	297.0	298.5	.094				
		298.5-299.5 py 2%, magnetic, cb. wisps, cb. metacrysts lone and with qtz	9104	1.0	298.5	299.5	.032				
		299.5-301.0 py 2% magnetic, cb. wisps	9105	1.5	299.5	301.0	Tr				
		from 301-317.7 feld. obliterated to trace in qtz rich, magnetite chl. epidote cb. mosaic									

OROFINO
RESOURCES LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-35
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
317.7	318.4	LAMPROPHYRE: dark green, Ct phase at 70°TCN, schisted, imperfect amph. phenocrysts fractured									
318.4	334.1	DIORITE RETROGRADE: coarse grain med. green, chl. epidote, cb., magnetite base with anhedral qtz abundant, feld. non-existent to trace, some cb. wisps in qtz fractures suggests continually close to lamprophyre alteration, amph. partly chloritized, folt'n appears 80°TCN, minor py									
334.1	343.1	LAMPROPHYRE: same as 317.7-318.4; multiple injecton, several fingers lamprophyre invade previous dyke, heavily fractured, sheared, chloritic alteration along fractures of partly schisted fractured dyke at 70° to 80°TCN, py sporadic, some portions trace 10% disseminated py laminated on fractures, some silication of original dark green dyke, (complicated ontogeny to this dyke) some unexplainable features									
343.1	350.0	DIORITE: coarse grain med. green, classic shaft area diorite, anhedral qtz with fresh feld. laths, subhedral crs fresh amphiboles in cb. chl. epidote base, minor py									
350.0	354.0	FELDSPAR PORPHYRY: red brown vitreous matrix with zoned palg. phenocrysts to 35% of total fabric, upper Ct. 70°TCN, 2% py, some larger euhedral xstals.									
	354.0	END OF HOLE									

OROFINO
RESOURCES LIMITED

DRILL LOG

Property: OROFINO RESOURCES
Location:
Co-ordinates: P.C. 13675N 9683E

Section: K
Length: 437'
Elevation:
Azimuth: -0- Dip: -90°

83-36
HOLE: [redacted]
Core size: AQ

Dip Tests: 437' -88°
Started: July 28, 1983
Completed: July 29, 1983
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
0.0	12.0	CASING									
12.0	16.0	DIORITE RETROGRADE: med. grain dark green, mafic, hi ratio chl. amph. cb. wisps, vuggy qtz (cb) 1 cm. seams, 2% py, folt'n appears 30°TCN									
16.0	21.0	DIORITE: med. grain dark green, mafic, hi chl., ubiquitous feld. laths, lightly cb'td									
21.0	36.2	DIORITE RETROGRADE: med. grain dark green, mafic, masked dark fabric, feld. destroyed amph. partially chlt'zd									
		25.0-27.0 py 8%, several 1 cm. qtz flat seams	9106	2.0	25.0	27.0	.060				
		27.0-29.2 py 3% in massive regressive diorite	9107	2.2	27.0	29.2	.008				
		29.2-30.7 a 5 cm. 15% py with qtz stringer, mainly 2% py in matrix	9108	1.5	29.2	30.7	.010				
		30.7-32.2 some 1 cm. qtz slips with surrounding 15% py, mainly 2% py	9109	1.5	30.7	32.2	.058				
		32.2-32.8 qtz vein (flat) with chl. schlieren, 15% py in chl.	9110	0.6	32.2	32.8	.050				
		32.8-33.8 matrix 8 to 10% py, qtz stringer, 1 cm. with 15% py	9111	1.0	32.8	33.8	.036				
		33.8-35.5 matrix 8% py in dark regressed diorite	9112	1.7	33.8	35.5	.012				
36.2	48.5	LAMPROPHYRE: fine grain base pink grey, silicated with profusion fine needle amphiboles in matrix larger slender amph. phenos, 'green biotite' type, orbicular clots cb. after feld., upper Ct. 60°, lower 40°, xenoliths of pre-intrusion lampro, 5% fine py									
48.5	82.4	DIORITE: coarse grain med. green, chl. epidote cb. base, anhedral qtz with enclosed feld. laths, subhedral amph. folt'n appears 30° to 50°TCN, 2% py, minor 1 cm. qtz-epidote flat slips									
82.4	84.6	LAMPROPHYRE: described 36.2-48.5; faint hardness, light silicat'n, upper Ct 10° Lower 50°TCN									
84.6	85.4	DIORITE RETROGRADE: classic regressive fabric, cb. wisps in fractures, epidote sat'n, 15% py									
		84.6-85.4 py 15% in cb'td epidote saturation of altered diorite	9113	0.8	84.6	85.4	.002				
85.4	89.2	LAMPROPHYRE: med. grain grey mica cb, dyke with large augen cb., different from above lamp. dykes, Cts near flat, trace py., lone xstals									

OROFINO
RESOURCES LIMITED

P.O. BOX 143, 1 FIRST CANADIAN PLACE, TORONTO, CANADA M5X 1C7 TELEPHONE: (416) 362-6683 TELEX: 06-217766

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-36
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
89.2	100.2	DIORITE: coarse grain med. green, as described 48.5-82.4; some variation grain size, 2% py									
100.2	102.0	LAMPROPHYRE: fine grain light grey, porphyritic as described 36.2-48.5 and 82.4-84.6; 'green biotite' type, slender amph. prisms characterisitic, trace py, Cts 60°TCN									
102.0	128.1	DIORITE: coarse grain med. green, classic shaft intrusive, chl. epidote, amph. base, anhedral qtz, enclosed feld. laths, amphibolitic portions with needles dark green 1 cm. amph., 2% py									
128.1	129.2	LAMPROPHYRE: fine grain light grey 'green biotite' type, as described near flat Cts, minor py									
129.2	129.4	DIORITE: coarse grain med. green									
129.4	129.9	LAMPROPHYRE: fine grain light grey, porphyritic, amph. phenos									
129.9	131.1	DIORITE: coarse grain med. green, lightly regressed, feld. partly cb'td, folt'n 20°TCN, 3% py									
131.1	133.2	LAMPROPHYRE: fine grain, light grey, amph. phenocrysts, upper Ct. 80°TCN, dyke fabric 90°TCN, lower Ct. destroyed									
133.2	143.0	DIORITE: coarse grain med. green, classic shaft diorite, anhedral qtz, enclosed feld. laths, subhedral amph.	8509 8510	2.8 4.0	134.2 137.0	137.0 141.0	Tr Tr	Extra Samples			
143.0	146.0	DIORITE RETROGRADE: sheared med. grain chl. slips, beige hematitic slips (faults) 1 cm., matrix mortared parallel slips 30°TCN, strong folt'n 90°TCN, 2% py	8511 8512	2.0 3.0	141.0 142.0	143.0 146.0	.016 .006				
146.0	146.3	LAMPROPHYRE: fine grain light grey, phenocrystic 'green biotite' type, upper Ct. 80°TCN, lower Ct. 0°TCN	8513	0.3	146.0	146.3	Tr	Extra Sample			
146.3	148.3	DIORITE RETROGRADE: coarse grain med. green, normal regressive fabric with squeezed boudin qtz cb. vein 50°TCN with 10% py over .8' 146.3-148.3 fractured qtz dyke, margin cb. in chl. schist rim, 10% py	9155	2.0	146.3	148.3	<.01				

OROFINO
RESOURCES LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-36
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
148.3	171.4	DIORITE: coarse grain med. green, chl. cb. (aften hi epidote) base with anhedral qtz enclosed feld. laths	8514 8415	1.7 2.0	148.3 150.0	150.0 152.0	Tr .024				
171.4	177.4	LAMPROPHYRE: fine grain pink light grey silicic porphyritic dyke, actual multiple injection of one or more dyke pulses into original lamp dyke, heavily contorted, schisted and cb. irregular boudins through older dyke, massive cb. at Ct. 80^{o}TCN	8516 8517	3.0 3.5	152.0 155.0	155.0 158.5	Tr Tr				
177.4	176.0	DIORITE RETROGRADE: med. grain dark green mafic with feld. destroyed due to dyke injection									
176.0	189.2	DIORITE: med. and coarse grain, med. green, variable grain over short segments, typical intrusive fabric									
189.2	194.3	LAMPROPHYRE: fine grain pink light grey, silicic, porphyritic, slender amph. phenos 5% py, Cts shallow, undulating, orbicular lone Cb. xstals (after alteration feld. phenos)									
194.3	213.7	DIORITE: coarse grain med. green, considerable matrix plag. in matrix (following 1983 classification) resembles hybrid diorite inpart, (N.B. hole proximate to shaft), epidotic segments with green feld.									
213.7	220.3	FELDSPAR PORPHYRY: red brown vitreous matrix with 35^{o} zoned plag. phenos to Ct. upper Ct. 70^{o}TCN, lower 0^{o}, central light grey ultra-silicic zone with masked fabric, to red brown lower Ct.									
220.3	228.0	DIORITE RETROGRADE: med. grain med. green, chl. fine amph. cb. base with relict cb'td feld. laths grading to chl. cb. schist from 224-228' with boudins chl. between chl. laminae 226.6-228.0 en echelon cb. boudins in schist py 5% clustered in schist	9114	1.4	226.6	228.0	.004				
228.0	229.1	LAMPROPHYRE: altered holocrystalline cb. chl. (after amphibole), equigrained, Cts 30^{o}TCN									
229.1	245.9	DIORITE RETROGRADE: med. grain cb. rich, cb. chl. matrix, retains diorite fabric strongly schisted to 234' from upper Ct at 30 TCN, av. 2% py through schist and relict diorite									

OROFINO
RESOURCES LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-36
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
		229.1 - 245.9 (con't)									
		231.0-234.0 mafic schist, 10% py, cb. boudins, lenses 1 cm.	9115	3.0	231.0	234.0	.016				
245.9	246.4	LAMPROPHYRE: fine grain med. grey cb. chl. base with slender amph. phenos, Cts 70°TCN									
246.4	253.7	DIORITE: coarse grain med. green, chl. cb. base relict feld. lightly cb'td, amph rimmed with chl. folt'n 30°TCN									
253.7	254.3	LAMPROPHYRE: fine grain light to med. grey, 'green biotite' type, slender amph. phenos, Cts 60°TCN									
254.3	263.3	DIORITE: coarse grain med. green, anhedral qtz with enclosed plag. laths, some matrix feld. much would class as diorite hybrid, 3 cm. at 259.5 clustered heavy py folt'n 70°TCN									
263.3	267.5	LAMPROPHYRE: fine grain lgiht grey 'green biotite' type, slender amph. phenos as all above dykes, anhedral crs clots chl'tc xenoliths host rock, Cts 30°TCN									
267.5	324.5	DIORITE: coarse grain med. green, much transitory med. grain and diorite hybrid, relict matrix plag. laths preserved by epidotization, py 3% parallel folt'n (appears 80-90°TCN)									
		276.0-278.0 local chl'tc dense mafic shear, py 4%	9116	2.0	276.0	278.0	Tr				
		from 278-301.0 abundant matrix epdiote and green plag. closer to hybrid diorite									
		301.0-304.5 med. grain hybrid, several en echelon cb. stringers, 5 cm. barren qtz, minor py	9117	3.5	301.0	304.5	.002				
		from 304.5-324.5 coarse grain portions classic shaft diorite, med. grain much relict matrix feld.									
324.5	347.4	FELDSPAR PORPHYRY: fine grain vitreous red brown ct. phase with ubiquitous zoned plag. phenos, lesser dark green amph. and biotite? phenos, light green sericitic phenos (relict amph?) minor py, grades to central light grey core in which matrix has crystallized as individual xstals, and a bright pink and grey matrix due to innumerable fractures with hematitic alt'n, upper Ct flat									

OROFINO
RESOURCES LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-36
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
347.4	350.8	LAMPROPHYRE: fine grain med. grey, cb. chl. amph. matrix, phenocrysts slender amph vari-sized cb. metacrysts, banded 30°TCN, upper Ct. 60°TCN, pulsing inject'n mini py									
350.8	351.7	FELDSPAR PORPHYRY: grey to red brown vitreous matrix, still central ultrasilicic zone, pink phenos									
351.7	356.5	LAMPROPHYRE: fine grain med. grey multiple, pusling injection, banded, amph. phenos, banding and internal injection Cts 40°TCN, several en echelon cb. stringers, contract'n fractures lower Ct. 10°TCN									
356.5	359.2	FELDSPAR PORPHYRY: central zone, ultra silicic masked mosaic with vague phenos feld. 50°TCN									
359.2	361.2	basic lava; (or severely regressed diorite or hybrid) rock below F.P. dyke suggests this diorite hybrid 359.2-361.2 schisted basic lava (epidote, amph. chl.) med. grain, 4% py folt'n 20° to 40°TCN	9118	2.0	359.2	361.2	.006				
361.2	363.2	FELDSPAR PORPHYRY: fine grain red brown vitreous matrix (lower Ct of dyke 324.5-347.4) Ct. 80°TCN, near vertical dyke, drilling along dyke, total thickness 38', probable 20' actual									
363.2	372.9	DIORITE HYBRID RETROGRADE: strong folt'n, schisted, chl. cb. epidote matrix with isolated large qtz augen, cb. wisps, lenses boudins at 40°TCN parallel to fine grain matrix grades to less schisted diorite hybrid mosaic below 363.2-368.0 py 4% with sporadic clots 15%, py in massive mini-lenses	9119	4.8	363.2	368.0	.058				
372.9	376.6	BROWN DYKE: red brown fine grain brittle with white green, brown, anhedral phenos dark green amph., flat Cts									
376.6	391.5	DIORITE HYBRID RETROGRADE: med. and coarse grain med. green, retains diorite mosaic large en hedral qtz augen, base of amph. epidote, cb. feld. close to greenston									
391.5	392.0	LAMPROPHYRE: fine grain light green grey 'green biotite' type, slender amph. pheno Cts 30°TCN									

OROFINO
RESOURCES LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-36
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
392.0	424.1	DIORITE: coarse grain med. green, transitory between hybrid and diorite, large anhedral qtz augen sans feld. and mini-laths cb'td feld. in chl. epidote base of intrusive									
424.1	424.3	FELDSPAR PORPHYRY: red brown, vitreous porphyritic, Ct. 30°TCN									
424.3	437.0	DIORITE - DIORITE HYBRID: as described 392.0-424.1; characteristics of both, 1) matrix mini laths 2) feld. enclosed in qtz augen									
	437.0	END OF HOLE									

OROFINO
RESOURCES LIMITED

DRILL LOG

Property: OROFINO RESOURCES
Location:
Co-ordinates: P.C. 13675N 9589E

Section: I
Length: 255'
Elevation:
Azimuth: -0- Dip: -90°

83-37
HOLE: [redacted]
Core size: NQ

Dip Tests: 255' -89°
Started: July 30, 1983
Completed: Aug. 1, 1983
Logged by: Warren Gilman

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
0.0	8.0	CASING									
8.0	10.0	RUBBLE: (represented by 4' fragments, kernals, overground loose detrius partly due to blasting activity, construction, trenching) kernals pyritic retrograde diorite, 15 cm. lamprophyre, only rough indication near surface material									
10.0	12.0	DIORITE RETROGRADE: cb. wisps, clots relict cb'td feld. in chl. cb. matrix with anhedral qtz augen, folt'n 70°, coarse grain med. green									
12.0	57.6	DIORITE: coarse grain med. green, chloritic base with anhedral qtz and enclosed feld. laths, minor matrix feld. (in very fresh material is associated with qtz, in slightly regressive fabric) mini-metacrysts cb. are confused with feld from 12 to 21; slight cbt'zn and epidotization causes fabric to appear like hybrid with min-xstals of cb. and epidote appear after pseudo-feld. from 21-24; silicified with crs amphibole development, 2% py 46.8-47.8 local shear chl. schist 40°TCN, no-increase of sulphides above normal minor slips through diorite displace 1 cm. qtz stringers 5 cm., increase py to 4%	8518 8519 8520 8521 8522 8523 8524	3.0 3.0 2.8 1.0 2.2 3.0 4.6	38.0 41.0 44.0 46.8 47.8 50.0 53.0	41.0 44.0 46.8 47.8 50.0 53.0 57.6	Tr Tr .018 .006 .058 .068 Tr	Extra Samples			
57.6	58.0	LAMPROPHYRE: fine to med. grain holocrystalline, imperfect satellite, quick consolidation does not reflect true lamp. dyke fabric, appears more like greenstone fabric due to chill, fabric description would be identical to med. grain flow (phenos undeveloped) Cts 60°TCN									
58.0	58.4	DIORITE: as above, typical shaft diorite									
58.4	59.8	LAMPROPHYRE: as above, essentially a dense holocrystalline mosaic of chl. cb., equigrained, Cts 60°TCN									
59.8	70.8	DIORITE: coarse grain med. green, chl. base, anhedral qtz with enclosed feld. laths matrix epidote, cb									
70.8	75.9	DIORITE RETROGRADE: coarse grain med. green, cb. saturation of diorite (1') cb., relict chl. amphiboles									
		70.8-71.8 qtz cb. vein 4 cm. at 10°TCN with adjacent 10% py, folt'n 70°TCN	9120	1.0	70.8	71.8	.074				
		71.8-74.9 regressed dark grain mafic rock with 2% py, joints lined with py	9121	3.1	71.8	74.9	.004				

OROFINO
RESOURCES LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-37
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
75.9	87.0	DIORITE: coarse grain med. green, classic shaft intrusive, random array feld. laths fresh in anhedral qtz, chl. epidote, cb. fine matrix with larger subhedral amphibole prisms									
87.0	91.6	LAMPROPHYRE: as described 57.6-58.0; (not usual lamp. of mine area) non-porphyritic essentially equigrained cb., chl. amph. epidote crystalline rock, dark grey green									
91.6	93.0	DIORITE: coarse grain med. green, as described 75.9-87.0; (unusual as no alt'n of fabric near dykes)									
93.0	101.6	LAMPROPHYRE: fine grain silicified 'green biotite' type, acicular amph. phenos, strong silica permeation, bleaching, threaded with qtz, feld. cb. 1 cm. veins, most silicic light beige, py 10%, much aggregated knots, Cts all lamp. flat to 10°TCN, fractures through dyke 90°TCN, amph. revert to light green mica with silicification									
101.6	179.2	DIORITE: coarse grain, med. green, classic intrusive a fine mesostasis of chl. cb., epidote and an over print of crs anhedral qtz with enclosed feld. laths and subhedral amph. prisms, 2% py from 154-157 light regression with feld. partly reverted to cb., increase fine epidote, chl., py remains constant, random 1 cm. massive cb. flat slips and qtz epidote 1 cm. slips, folt'n variable 50°-60°-70°TCN									
179.2	179.7	LAMPROPHYRE: med. grain brown grey holocrystalline, cb. amphibole chl. dyke, non-porphyritic, Cts 20°TCN									
179.7	199.5	DIORITE: coarse grain med. green, as described 101.6-179.2; some fine matrix partly cb'td 197.7-199.5 very slight retrograde, partly cb'td feld. 3% random py	9122	2.5	197.0	199.5	.002				
199.5	203.7	REPLACEMENT ZONE: coarse grain white relict diorite fabric saturated with silica relict chl. amph 199.5-201.7 py 10% in silica matrix, distinct diorite relict fabric	9123	2.2	199.5	201.7	.145				
		201.7-203.7 py 20% in silica matrix, 50% qtz veins post silication with minor py	9124	2.0	201.7	203.7	.377				

OROFINO
RESOURCES LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-37
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
203.7	205.4	FELDSPAR PORPHYRY: red brown vitreous matrix, zoned plag. phenos, fabric parallel Cts 70°TCN 203.7-205.4 sampled to complete segment, no values expected	9156	1.7	203.7	205.4	<.01				
205.4	208.5	REPLACEMENT ZONE: coarse grain relict diorite fabric, chlt'c amph. 15% py, qtz stringers 205.4-208.5 py 10%, parallel vertical qtz stringers through silicated matrix	9125	3.1	205.4	208.5	.032	NB re-assay			
208.5	210.5	FELDSPAR PORPHYRY: as described 203.7-205.4; cts 60°TCN, at oblique angle to folt'n 70°TCN									
210.5	215.0	DIORITE RETROGRADE: coarse grain med. green, retains intrusive fabric, clusters black mica near Ct 210.5-212.0 py 4% in lightly silicated matrix, 1 cm. qtz stringer with trace cpy 212.0-215.0 py 10% with 1 cm. qtz stringers 40°TCN, strong marginal py	9126 9127	1.5 3.0	210.5 212.0	212.0 215.0	.008 .034				
215.0	228.0	DIORITE: coarse grain med. green, chl. epidote, mini amph. with anhedral qtz and enclosed feld. laths, amph. needles to 1 cm. 215.0-217.0 py matrix 4%, 1 cm. qtz stringers, trace py with 15% py on matrix margins	9128	2.0	215.0	217.0	.028				
228.0	228.2	LAMPROPHYRE: very fine grain med. green, stringer, quick chill, no features, upper Ct. 10°TCN, lower follows jagged cut									
228.2	231.9	DIORITE: coarse grain med. green, as described 215.0-228.0; some silication with amphibolitization, amph. needles 1 cm. 230.9-231.9 py 8% in med. grain fresh diorite	9129	1.0	230.9	231.9	.002				
231.9	232.6	LAMPROPHYRE: fine grain med. green, chl. cb. with slender amph. prisms to 5 mm. anhedral xenoliths granular chl. of basic host rock, lineation dyke fabric 70°TCN, Ct. 40°TCN									
232.6	240.1	DIORITE: coarse grain med. green, typical shaft diorite, chl. cb. epidote mini-amph base with anhedral qtz and enclosed feld. laths, amphibolitic with slender 1 cm. amph., 2% lone xstal py									

OROFINO
RESOURCES LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-37
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
240.1	240.7	LAMPROPHYRE: as described 231.9-232.6; lineation dyke 70°TCN, Cts 20°TCN, cb. lined fractures									
240.7	255.0	DIORITE: med. grain and coarse grain med. green, fabric with smaller feld. laths enclosed in qtz, minor matrix plag. resembling diorite hybrid, much is relict epidotic green feld. preserved by epidote folt'n appears 70°TCN, minor py									
	255.0	END OF HOLE									

OROFINO
RESOURCES LIMITED

Property: Orofino
Location: 300' N of F-5
Co-ordinates:

Section: F
Length: 1877'
Elevation:
Azimuth: -0- Dip: 90°

83-38
HOLE: [redacted]
Core size: AQ

TROPARI
Dip Tests: 500' -84°N 157°
1100' -82°N 161°
1870' -77°N 1545°
Started: July 31, 1983
Completed: August 15, 1983
Logged by: Warren Gilman

DRILL LOG

NOTE: hole wedged at 1114'

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS F.A. D.D. Au oz/t
0.0	30.0	CASING					
30.0	66.6	BASIC FLOW: fine grain and med. grain, med. green andesite, chl. cb. matrix with vari-sized primary laths. feld. most fine grain with 1 mm. to .5 mm. laths, threaded with cb. along fractures, sporadic py, some crs xstals, disseminated and lining chloritic fractures, random chl. cb. seams 1 cm. to 3 cm., some barren, usually excess py, upper portion of sect'n with folt'n 40° through 60°TCN					
		> 62.5-66.6 several granitic fractures, minor py sporadic vein basic lava	7758	4.1	62.5	66.6	.01
66.6	80.0	QUARTZ VEIN: frosted white bull qtz, several minor inclusions host rock, Cts 10° to 20°TCN, several crs inclusions ankeritic cb. (limonitic)					
		66.6-69.0 ankeritic ct., brittle qtz, no sulphides	7759	2.4	66.6	69.0	.01
		69.0-72.0 frosted brittle qtz, xenoliths with limonite cubes	7760	3.0	69.0	72.0	Tr
		72.0-75.0 several crs limonitic ankerite inclusions	7761	3.0	72.0	75.0	Tr
		75.0-78.0 several flat chloritic seams, no sulphides	7762	3.0	75.0	78.0	Tr
		78.0-80.0 minor limonite cubes in chlorite inclusions of brittle vein	7763	2.0	78.0	80.0	Tr
80.0	83.5	BASIC FLOW: fine grain green flow with aggregated chlorite blebs, pseudo mini-agglomerate, fracture with minor cpy, trace py; seam at 83.0, minimal coreless					
		80.0-83.5 cpy in seam, trace py	7764	3.5	80.0	83.5	Tr
83.5	89.9	LAMPROPHYRE: grey med. grain, cb. mica grey dyke, less common of two major lamprophyre varieties abundant grey black mica interlayed with cb., 3% fine py, Cts flat seam at 85' with min-nal coreless					
89.9	138.2	BASIC FLOW: fine grain green matrix, chlorite with abundant colorless segregations appear like felsic (qtz feld.) injecta probably separated from matrix by met'm phism, no visible feld. within segregations, some portions with in situ primary matrix feld., sporadic epidote permeation along planes 85°TCN, py random clustered vari-sized aggregates, no uniform dissemination					
138.2	149.0	LAMPROPHYRE: coarse grain dark green variety of amphibolitic lamprophyre, crs prisms amphibole in chl. cb. feld. matrix, ubiquitous fine py, 3%, upper Cts. 75°, lower Ct. flat					

OROFINO
RESOURCES LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-38
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS F.A. Au oz/T	A.A.			
149.0	170.5	BASIC FLOW: fine grain green, silicified upper Ct., chl. cb. matrix basically a cb. chl. rock with varying grain size and fabric, several local strong zones, folt'n with imbricate cb. fractures									
170.5	171.9	LAMPROPHYRE: amphibolite dyke, as above 138.2-149.0; upper Ct. 75°TCN, lower flat									
171.9	183.0	BASIC FLOW: med. grain (volcanic med. grain) green, intimate mix of cb't'd feld. chl., chloritic amphibole, magnetite, epidote and random aggregated py, typical andesite									
		171.9-173.5 chl. cb. schist, upper Ct. flat cb. lenses interlayered chl., 5% py	7765	1.6	171.9	173.5	.01				
183.0	239.0	DIORITE MIGMATITE: coarse grain med. green, recrystallized amphibole prisms, dark grain and light, regenerated augen cb. qtz (devoid of feld laths) usual rimming chl. matrix subhedral feld. without distinct diorite fabric, minor mag'n, abundant leucoxene, fine py 2%, widespread epidote permeation emanating from joints and seams flat to 60°TCN, silica epidote lining joints									
		203.0-206.0 sporadic aggregates po 3 to 4%, some py, silica, epidote saturt'n	7766	3.0	203.0	206.0	.02				
		220.5-223.0 chl. schist, en echelon massive cb. boudins, lenses, 2% py plus sporadic blebs, aggregates po and trace cpy through massive epidotic migmatite, thin cb. joint slips with random po	7767	2.5	220.5	223.0	Tr				
		at 227.0 1 cm. vein, blebs po cpy 60°TCN									
239.0	239.9	LAMPROPHYRE: dark green, fine grain, chilled portion of 'green biotite' type dyke Cts 20°TCN									
239.9	264.4	DIORITE MIGMATITE: as described 183.0-239.0; small qtz cb. augen devoid of feld. at 245' epidote qtz flat vein with rare crs po, cpy blebs									
		252.0-253.6 qtz epidote permeation, flat and 1 cm. veins at 45°, some crs po, cpy, some disseminated po in matrix above 252.0 and very fine po disseminated in matrix 5' below 253.6	7832	1.6	252.0	253.6	Tr		(No's jump due to sampling, latter part of hole first)		
		261.0-264.4 cb. and qtz cb. en echelon 1 to 4 cm. veins, 5% matrix, veins barren	7833	3.4	261.0	264.4	Tr				

OROFINO
RESOURCES LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-38
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS F.A. Au oz/t	A.A			
264.4	265.4	LAMPROPHYRE: multiple dykes, older green grey dyke, abundant black mica injected by lighter grey amphibole rich (phenocrystic) variety, Cts 20°TCN									
265.4	269.5	BROWN DYKE: fine grain dark brown, friable, abundant round 'phenocrysts' white cb. dark green round blebs, cts. flat									
269.5	271.5	LAMPROPHYRE: light grey fine grain cb. rich matrix with trains of chloritic amph. in parallel array lower portion of dyke is typical 'green biotite' type, Ct. irregular, angular									
271.5	275.2	DIORITE MIGMATITE: as above, key is qtz cb, augen without feld. laths crystallized internally, plus some matrix feld. laths.									
275.2	279.2	LAMPROPHYRE: fine grain med. to dark green chill phase with micro-phenocrysts chl. amph. laths, random inclusions host rock (drilling along ct.) lower Ct. 40°TCN									
279.2	283.5	DIORITE MIGMATITE: contorted altered, fractured, threaded with cb., abundant xenoliths fine grain lamprophyre; at 283.0-283.5 barren 3 cm. flat vein with crs po and crs py in matrix, vein barren									
283.5	284.5	LAMPROPHYRE: fine grain dark green, homogenous, individual cb., amph. feld. distinguishable with hand lens, low Ct. 60°TCN									
284.5	304.7	DIORITE MIGMATITE: as described above 183.0-239.0; key is qtz cb. mini-augen without feld. laths crystallized internally, py appears remobilized in minor crs aggregates parallel folt'n, crs amphiboles developing to 5 mm.									
304.7	312.5	BASIC LAVA: fine to med. grain med. green, appears to be andesite dyke, typical fabric of altered andesite flow, homogeneous, equi-grained individual xstals dark and light evident with hand lens, dyke-like cts present but vague, en echelon cb. slips 1 to 5 mm.									
312.5	322.0	DIORITE MIGMATITE: med. grain med. green, chl. cb. amph. feld. epidote matrix with small augen qtz cb. (no internal xstallized feld. laths) sporadic elongate blebs, po with trace cpy									

OROFINO
RESOURCES LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-38
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS F.A. Au oz/t	A.A.				
322.0	326.8	LAMPROPHYRE: med. grain grey brown matrix with grey black mica, and light green chl., phenocrysts ovoidal (qtz feld. cb?) mix, Cts 30°TCN										
326.8	388.0	DIORITE MIGMATITE: med. grain, med. green,as described 312.5-322.0, abundant ovoidal qtz augen, some with laths feld. crystallized within, random crs elongate blebs po with minor cpy, variable granularity, amphibolitic portions with amphibole prisms to 5 mm.										
388.0	394.0	BASIC LAVA: med. grain med. green sheared, possibly retrograded migmatite, abundant leucoxene disseminated through fabric										
394.0	398.0	DIORITE MIGMATITE: as above 326.8-388.0										
398.0	410.0	BASIC LAVA: fine to med. grain, med. green, abundant ovoidal qtz cb. segregations, these are partitioned due to met'm probable key to metamorphosis to eventual diorite, minor py increasing toward lower ct., sporadic po										
		407.0-409.0 fine grain chloritic lava, 3% py, 1% po, minute cb. slips parallel	7834	2.0	407.0	409.0	.002					
		409.0-410.0 py 3% in remobilized trains parallel folt'n	7835	1.0	409.0	410.0	.002					
410.0	411.2	QUARTZ VEIN: frosted white qtz. minor cb., inclusions pryitic lava, strong py, po margins										
		410.0-411.2 minor py in vein, margins py, po, some crs py cubes	7836	1.2	410.0	411.2	.004					
411.2	412.5	CHLORITE SCHIST: fine grain laminae chl. with interlayed cb. lenses, blebs, minor py, po										
		411.2-412.5 py average 3%, 10% on both cts, folt'n 45°	7837	1.3	411.2	412.5	.010					
412.5	413.8	QUARTZ VEIN: saturation type vein along folt'n of host, relict host in vein										
		412.5-413.8 py 10% in host inclusions, vein barren, vein 20% cb.	7838	1.3	412.5	413.8	.012					
413.8	416.8	BASIC LAVA: remobilized chloritic matrix with ovoidal segregations cb., fine chl. 45° folt'n										
		413.8-416.8 py sporadic remobilized parallel folt'n, average 5%	7839	3.0	413.8	416.8	.012					
416.8	418.5	QUARTZ VEIN: near barren white qtz, minor oriented chl. inclusions with py smears										
		416.8-418.5 chl. inclusions 15%, clots cb. 3% py	7840	1.7	416.8	418.5	.022					

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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS F.A. Au oz/t	A.A.				
418.5	422.2	BASIC LAVA: fine grain med. green, strong folt'n, chlorite laminae, lenses cb. (near chl. schist) erratic py, 3 to 5% magnetite, minor slippage, oblique angle to folt'n										
		418.5-422.2 py 3% near Cts, lessening to nil, strong fine magnetite	7841	3.7	418.5	422.2	.002					
422.2	423.5	QUARTZ VEIN: en echelon qtz, cb. 3 cm. to 5 cm. veins parallel folt'n, 35% host rock										
		422.2-423.5 veins barren, chloritic host 5% elongate py, minus po	7842	1.3	422.2	423.5	.002					
42.35	431.1	BASIC LAVA or RETROGRADED MIGMATITE: schistose, chl. laminae with interlayered pods boudins, lenses cb., end product same from several sources, source speculative (near chlorite schist)										
		423.5-427.0 remobilized 3% py, elongate parallel folt'n 60°TCN	7843	3.5	423.5	427.0	Tr					
431.1	432.0	LAMPROPHYRE: fine grain green grey, 'green biotite' typce, shard-like prisms green amphibole in fine grey matrix										
432.0	435.0	BASIC LAVA: or same as 423.5-431.1, schisted basic rock										
435.0	447.0	DIORITE HYBRID: coarse grain med. green, close to diorite, matrix feld., elongate laths with crs amph. epidote, augen qtz cb. with some internal feld. laths. megascopically indistinguishable from true diorite, abundant leucoxene in relict xstals, minor py, trace po										
447.0	448.2	FAULT: beige alteration, en echelon fractures, silica granules enwrapped in sericite interlayered qtz vein segments, barren, cb. vugs, intraformational break										
		447.0-448.2' mortared fabric with qtz 'augen', seems devoid of sulphides	7844	1.2	447.0	448.2	.002					
448.2	463.5	DIORITE HYBRID: coarse grain med. green, as described above 435.0-447.0; strong crs po developed toward lower Ct., abundant crs amph. shards to 1 cm.										
463.5	468.5	DIORITE HYBRID RETROGRADE: contorted matrix -- no feldspar, sinuous cb. wisps, excess chlorite, internal fine grain flow slip fabric, abundant fine po.										
		463.5-468.5 flowage fabric, greater fine po with excess movement	7845	5.0	463.5	468.5	.006					

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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS F.A. O.A. Au oz/t				
468.5	537.2	DIORITE HYBRID: coarse grain med. green, as described 435.0-447.0; key feature is fresh crs matrix feld. and augen qtz with enclosed fresh white laths feld., several 2 to 3 cm. steep mortared fine grain segments with fine po at 509' qtz stringers 3 cm. 60°TCN, crs py, cpy; through lower 500' developing abundant crs cream feld. in qtz augen, lesser crs matrix feld. approaching true diorite									
537.2	543.0	DIORITE HYBRID RETROGRADE--CHLORITE SCHIST: fine grain schistose, folt'n average 30°TCN innumerable fine en echelon cb. stringers, short multiple qtz veins 1 to 2 cm., 537.2-543.0 py variable, remoblized parallel folt'n, 2 to 3 mm., veins barren NOTE: abundant relict leucoxene disseminated parallel folt'n	7846	5.8	537.2	543.0	.002				
543.0	624.3	DIORITE HYBRID: coarse grain med. green, as described, abundant matrix plag. laths and ovoidal qtz augen, some with internal fresh feld. laths., py 2%; random crs clustered po, trace cpy pursists through hybrid amphiboles to 1 cm., extremely variable orientation 20° to 70°TCN, skeletal leucoxene widespread, several local intraformational faults at steep angle with mortared matrix en-wrapping qtz augen, minimum sulphides, migmatitization decreases toward lower Ct., py sporadic, heavily clustered to nil									
624.3	628.3	LAMPROPHYRE: fine grain dark green grey matrix, homogeneous, drill along Ct., chill phase, silicified, some vague white augen, perhaps original cb. permeated with silica; disseminated fine py, upper Ct. 40°TCN, lower 70°									
628.3	642.0	DIORITE HYBRID: coarse grain med. green, as described, ratio of matrix feld. laths high, much qtz augen devoid of feld., local interformational shears mortared granulated with 10% py over 3 to 4 cm. and some with minor py									
642.0	653.0	DIORITE HYBRID RETROGRADE: fine grain matrix with megascopic xstals qtz augen with cb. wisps, leucoxene, widespread epidote, duplicate of fine grain andesite possibly relict green stone segment or regressive diorite hybrid									

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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS FA. AA. Au oz/t				
		642.0 - 653.0 (con't)									
		644.0-646.6 py remobilized in aligned blebs, variable 4 to 5% average	7847	2.6	644.0	646.6	.002				
		646.6-647.4 qtz saturation, permeation zone with crs euhedral py, arsenic	7848	.8	646.6	647.4	.004				
653.0	666.0	LAMPROPHYRE: fine grain grey matrix with abundant dark green black amphibole prisms as phenocrysts, pale green chl. phenocrysts, very common variety noted as 'green biotite' type, disseminated fine py and concentrations along slips, Cts 70°TCN									
666.0	676.8	DIORITE HYBRID: coarse grain, med. green, as described, matrix feld. laths and qtz augen, some with internal thin feld. laths, 3% py									
676.8	680.3	LAMPROPHYRE: grey, biotite rich, probable Ct. phase of 'green biotite' type, fine to med. grain non-porphyritic, multiple type, later injections satellite stringers Cts 20°TCN									
680.3	707.5	DIORITE HYBRID: coarse grain med. green, as described, several med. grain segments, subhedral matrix feld., qtz augen with some internal feld. laths, keys to identifications, minor py amphibole prisms to 1 cm., average 45°TCN									
707.5	712.5	FELDSPAR PORPHYR: red brown fine grain vitreous matrix with zoned plag. phenocrysts from Ct.									
712.5	719.0	DIORITE HYBRID: coarse grain med. green, as described, short med. grain retrograde schisted segment at both contacts, some random 5% py, average 2%									
719.0	724.0	FELDSPAR PORPHYR: red brown fine grain vitreous at contacts grading outward to light grey centers, Cts 80°TCN									
724.0	728.8	DIORITE HYBRID: as described, some contortion and regression, crs skeletal leucoxene matrix feld. intact, some fracturing threaded with cb., pronounced folt'n, variable, 5% py									
728.8	729.1	FELDSPAR PORPHYRY: dark red brown matrix, Cts from 20 to 70°TCN									

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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS F.A. A.A. Au oz/t				
729.1	775.5	DIORITE HYBRID: as described 724.0-728.8; some regression, crs leucoxene, fabric partly destroyed by contortion, stubby matrix feld. laths fresh, minor py away from F.P. contacts, amphiboles oriented fresh prisms									
775.5	782.9	DIORITE HYBRID RETROGRADE: med. and coarse grain schistose cb. chl. fabric with continual protected knots of undeformed hybrid with boudin shape, folt'n 50°TCN, gradually diminishing knots toward lower Ct., last few feet approximate chl. schist, py remobilized lenticular parallel folt'n									
782.9	790.0	DYKE: ultra silicic light grey, porphyritic, variety of F.P. not to be confused with typical F.P., fine grain silicated matrix with vague random euhedral upzoned plag. and crs dark green amphiboles 5 mm. sporadic 5% of matrix, 5% py Cts 70°TCN (closest to F.P. than lamprophyre)									
790.0	797.4	DIORITE HYBRID RETROGRADE: med. grain med. green, cb. chl. rock, foliated unschisted fabric, segment with excess py, a homogeneous cb. chl., amph. rock indistinguishable from greenstone									
		791.4-792.5 qtz vein 2 cm., 70°TCN, margined by clustered crs py 10%	7849	1.1	791.4	792.3	.036				
797.4	798.1	LAMPROPHYRE: satellite of dyke below, distinct variety with subhedral feld. phenos and ubiquitous green amphibole and crs chlorite, clots, atypical; neither of common types lamp. -- puzzling mix of 'green biotite' type and grey mica dyke									
798.1	798.8	DIORITE HYBRID RETROGRADE: as above									
798.8	813.0	LAMPROPHYRE: strong silicified, 30% varisized amphibole phenocrysts, orbicular clots chl. (relict basic host), random large feld. to 3 mm., some fine py; 811.5 to 813.0 later lamprophyre injection with previous dyke of same comp'n, later var has smaller amphibole phenos to 1 mm. against older dyke 5 mm. amph. phenos, Ct. 70°TCN									
813.0	814.2	DIORITE HYBRID RETROGRADE: coarse grain med. green, essentially undulating laminae of fibrous chl. enwarpping miniboudins of cb. -- folt'n vertical, upper lamp Ct. near at ∢ 5 to folt'n, lower lamp. dyke Ct. near parallel to folt'n, minor py									

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Dip Tests:
Started:
Completed:
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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS F.A. A.A. Au oz/t				
814.2	828.0	LAMPROPHYRE: fine grain silicated very light grey matrix with amphiboles phenocrysts 25% of vari-sized matrix, slender prisms amphibole to 1 cm., a multiple injection along upper Ct., same dyke as 798.8-813.0; lower Ct. 45°TCN									
828.0	833.5	DIORITE HYBRID RETROGRADE: coarse grain med. green, not as regressive as above; eg. pseudomorphs of subhedral feld. converted to cb., some amphiboles intact, minor py									
833.5	833.9	LAMPROPHYRE: fine grain med. green, resembles chill phase, mini amph., chl. as phenos not same dyke as above, doubtful satellite of above, Cts very irregular Cts 60°TCN									
833.9	839.1	DIORITE HYBRID RETROGRADE: as described 828.0-833.5; abundant qtz augen with minor cb. barren of feld. laths, clustered remobilized py									
839.1	839.9	LAMPROPHYRE: fine grain med. green, as described 833.5-833.9; folt'n 70°TCN									
839.9	848.2	DIORITE HYBRID RETROGRADE: coarse grain med. green, as described 833.9-839.1; folt'n 70°TCN									
848.2	853.0	DIORITE HYBRID RETROGRADE: line of distortion vertical along core, retrograde develops a fine grain to med. grain flowage feature along shear or close to proximate dyke, fabric typical of greenstone (recognizable individual xstals amph. epidote, cb.) fine grain habit develops for no-obvious reason, appears as dyke with no contacts									
853.0	871.8	FELDSPAR PORPHYRY: fine grain red brown vitreous matrix with profusion subhedral zoned phenos, (partly resorbed margins) with lesser chl. amph. phenos grading to central zone light grey ultrasilicic vague phenocrystic unzoned fabric with fine grain interstices, reverting to red brown to lower Ct., minor py lower Ct. 80°TCN									
871.8	882.0	DIORITE HYBRID RETROGRADE: coarse grain med. green, with many irregular swirls of h.g. silica rich light green injecta coarsing thru coarse grain fabric, obvious secondary injection sporadic to 879, thereafter local shears of .5' length en echelon showing flowage and recrystalization of fabric along plastic shear.									

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HOLE: 83-38
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Dip Tests: *Primary core before wedge
Started:
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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS F.A. A.A. Au oz/t				
882.0	888.0	DIORITE HYBRID RETROGRADE: fine to med. grain flowage fabric due to recrystallization along zone of minor displacement, qtz augen in monomineralic plastic chl. fabric many 'xenoliths' of coarse grain fabric between flowage zone, some magnetite, epidote, threaded with fine cb., py remoblized crs but minor sole of flowage zone at 888' at 60°TCN									
888.0	919.0	DIORITE HYBRID RETROGRADE: coarse grain, med. green, chains qtz cb. augen with interstitial swirls of chl., megascopically resembles hybrid but feld. destroyed grades through varying degrees of retrograde with decrease granularity and increase chl., faint relict crs diorite fabric with qtz augen in section of pseudo fine grain, cb. wisps prominent, rare 1 cm. qtz stringers with 5 mm. py (evidence of fabourable mineralization) py thru regressive matrix minor									
919.0	943.0	DIORITE HYBRID RETROGRADE: schistose, med. grain and coarse grain, chl. laminae cb. pods and indistinct lenses 60°TCN, minor cb. stringers parallel folt'n and 3 mm. joint fillings at oblique angle to folt'n, rare beige cb. slips some sporadic crse matrix py									
943.0	950.2	LAMPROPHYRE: silicic brown-grey matrix, fine grain, masked fabric by silication abundant fracturing and beige alteration along break, veining with strong continous py, Cts 60°TCN, 3% disseminated matrix py									
950.2	984.8	DIORITE HYBRID RETROGRADE: as above 919.0-943.0; changing rapidly to coarse grain phase similar to 888.0-919.0; minor py; at 964.5-971.5 chlorite schist, fine grain med. green, chl. laminae, interlayered cb., minor py to 2%, remobilized parallel folt'n 60°TCN, coarse grain phase to 978.5 with beige fault zone in 1' schist, intraformational fault, minor py 40°TCN, fault alteration at low angle to steep foliation on either margin									
984.8	985.0	LAMPROPHYRE: very fine grain, brown black, epidote filled fractures, chill zone, no features									
985.0	1036.2	DIORITE HYBRID RETROGRADE: coarse grain med. green essentially same as 888.0-919.0 with rare, protected feld. laths in qtz augen, amphiboles fresh possibly									

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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS F.A. Au oz/t	A.A.			
		985.0 - 1036.2 (con't)									
		recrystallized, minor py, folt'n generally steep; 999.5-1002.0 strange fine grain, 'andesite' phase, a segment of original lava or regenerated diorite hybrid, recrystallized,at 1002.0 3 cm. barren qtz 20°TCN, at 1022.0 3 cm. barren qtz chl. vein, flat, coarse grain med. green, holocrystalline folt'd 40°TCN, chl. cb. matrix varying intensity cb. permeation, disseminated fine magnetite 10%, py constant 5%									
		1029.0-1033.5 cb. rich retrograde, cb. saturation parallel folt'n 15% mag. 5% py	7768	4.5	1029.0	1033.5	Tr	.004			
		1033.5-1036.2 silicified over 1.5' at Ct., 10% magnetite, 5% py, 1.2 cb rich	7769	2.7	1033.5	1036.2	Tr	.011			
1036.2	1038.3	LAMPROPHYRE: med. grain grey mica cb. rock, matrix essentially equigrained cb. and books grey black mica, second most abundant type lamprophyre, both Cts flat									
		1036.2-1038.3 sampled as adjacent Qu vein, 1% py, a 4 cm. qtz vein 10% py	7770	2.1	1036.2	1038.3	Tr	.005			
1038.3	1041.0	QUARTZ VEIN: breccia type qtz qith oriented angular inclusions silica saturated retrograde									
		1038.3-1041.0 euhedral 3 mm. py 15%, concentrated in host rock adjacent vein	7771	2.7	1038.3	1041.0	.01	.010			
1041.0	1042.0	LAMPROPHYRE: as above, kernals cave, foreign rock with mica dyke									
		1041.0-1042.0 whole rock (no split) kernals, minor py, much is cave volcanic rock	7772	1.0	1041.0	1042.0	.02	.016			
1042.0	1047.0	LOST CORE									
1047.0	1056.7	DIORITE HYBRID RETROGRADE: med. grain med. green, unrecognizable, diorite fabric, silicification imprint over cb't'z'n, 20% uniform disseminated magnetite, 5% py, several ages of silication and cbt'z't'n (from cross cutting joints cutting oblique fractures fills)									
		1047.0-1048.0 chl. laminae with intervening layered qtz, FAULT--15°TCN actual mylonite, silicified, beige bleached over .5', 20% limonite cubes, 5% py	7773	1.0	1047.0	1048.0	.03	.031			
		1048.0-1052.0 magnetite 20%, stretched aligned py clusteres 4%, lone py cubes	7774	4.0	1048.0	1052.0	.05	.040			

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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS F.A. Au oz/t	A.A.			
		1047.0 - 1056.7 (con't)									
		1052.0-1056.7 magnetite 20%, stretched aligned py clusters 4%, lone py bubes	7775	4.7	1052.0	1056.7	.01	.007			
1056.7	1061.8	LAMPROPHYRE: grey black mica dyke, as described 1036.2-1038.3; Cts 30°TCN, 4% py									
1061.8	1071.5	DIORITE HYBRID RETROGRADE: med. grain med. green, cb. chl. matrix, 10% plus magnetite selective short segments silication, epidote qtz stringers, 4% py									
		1061.8-1067.0 epidote multiple injection, later multiple qtz lenses, 5% py some po	7776	5.2	1061.8	1067.0	Tr	.005			
		1067.0-1071.5 epidote permeation, 20% magnetite, 3 to 4% py	7777	4.5	1067.0	1071.5	Tr	.006			
1071.5	1072.2	LAMPROPHYRE: med. grain green mica -- hybrid between grey black mica dyke and common 'green biotite' type, stretched clusteres chl. after amphibole, Cts 60°TCN and 90° from folt'n of dyke, pronounced uncommon feature									
1072.2	1077.0	DIORITE HYBRID RETROGRADE: med. grain med. green strong folt'n 60°TCN, an atypical retrograde more deformed than average retrograde cb. clots enwrapped by chl.									
		1072.2-1077.0 magnetite 20%, py 4% crs oriented aggregates, all parallel folt'n, several ages cbt'z'tn -- chlt'z'tn from crosscutting	7778	4.8	1072.2	1077.0	.01	.002			
1077.0	1083.2	LAMPROPHYRE: med. grain grey black mica, cb. holocrystalline rock, same dyke as above, Cts flat									
1083.2	1088.0	DIORITE HYBRID-RETROGRADE: cb. masked fabric with sporadic silication, fabric is a dark green mass with faint feld. xstals, difficult because of intensity later alt'n, 10% lenticular py in parallel seams									
		1083.2-1085.6 clustered lenticular very brassy py, fine xstals, thin late silica seams	7779	2.4	1083.2	1085.6	.12	.105			
		1085.6-1088.0	7780	2.4	1085.6	1088.0	.09	.120			
1088.0	1091.7	QUARTZ VEIN: frosted white impure qtz abundant faint schlieren grey mica, some xenolithic host rock									
		1088.0-1091.7 py 8% clustered in chl. schlieren, rare in vein later than silication	7781	3.7	1088.0	1091.7	.03	.021			

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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS F.A. Au oz/T	A.A.			
1091.7	1093.7	CHLORITE SCHIST: chl. laminae with interlayered cb. lenses, 40°TCN, magnetite 15% py in elongate lenses parallel folt'n, py 4%									
		1091.7-1093.7 as described above	7782	2.0	1091.7	1093.7	.01	.009			
1093.7	1097.0	DIORITE RETROGRADE: med. grain epidote feld. chl. amph. matrix, 20% magnetite, hybrid rock									
		1093.7-1097.0 py random clusters parallel folt'n, ubiquitous magnetite	7783	3.3	1093.7	1097.0	Tr	.004			
1097.0	1103.0	DIORITE HYBRID: coarse grain med. green, equigrained matrix chl. amph. feld. with scattered qtz augen injecta with internal feld. laths, differs from typical diorite in that crs feld. visible in matrix rather than obliterated by cb't'n									
		1097.0-1102.0 whole rock dispatched, mainly over run kernals	7784	5.0	1097.0	1102.0	Tr	.004			

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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS F.A. Au oz/t	A.A.			
1004.0	1035.6	DIORITE HYBRID RETROGRADE: coarse grain med. green, well foliated 40°TCN, aligned chl. cb. sequestered toward layers, disseminated (aligned) magnetite 15%, 4% py matrix primarilly chl. cb., qtz augen, small amphibole magnetite									
		1029.0-1034.0 magnetite 15%, random py, deformed parallel folt'n	7785	5.0	1029.0	1034.0	Tr	.005			
		1034.0-1035.6 py 5%, crs to 3 mm. for 5 cm., minor magnetite several random med. grain segments, resemble massive flow but evidence of migmatization	7786	1.6	1034.0	1035.6	Tr	.008			
1035.6	1036.8	LAMPROPHYRE: med. grain grey, grey black mica cb., common lamp., Ct. 5 to 10°TCN									
1036.8	1037.9	DIORITE RETROGRADE: coarse grain med. green, sporadic silication, en echelon qtz fractures bleaching recrystallization chl. parallel silica injection, same retrograde fabric as above described									
		1036.8-1037.9 py 4% in retro-fabric, isolated subhedral 5 mm. py in qtz	7787	1.1	1036.8	1037.9	.02	.081			
1037.9	1041.4	QUARTZ VEIN: multiple type two stage vein, qtz injecta in cb'td schisted, bleached chl. schist, 40° and 70°TCN, ankerite and white cb. permeate qtz fracture vein, 10% py most clustered 5 mm. to 1 cm. crs py is poikilitic with qtz inclusions, lone crs py in late qtz fractures									
		1037.9-1041.4 impurities chl. sch. 40%, qtz, minor cb. fract vein	7788	3.5	1037.9	1041.4	.12	.080			
1041.4	1043.7	LAMPROPHYRE: med. grain grey, cb., black mica dyke, common genre, Cts 5 to 10°TCN, en echelon 1 cm. cb. fractures 10 to 40°TCN									
		1041.4-1043.7 py 4% fine and med. grain, only sampled to complete section	7789	2.3	1041.4	1043.7	Tr	.005			
1043.7	1045.5	QUARTZ VEIN: multiple type vein with later qtz frac. fill into chl. retrograde, py to 1 cm.									
		1043.7-1045.5 py 15%, some crs poikilitic with orbicular qtz, 40% retrograde	7790	1.8	1043.7	1045.5	.08	.045			
1045.5	1046.5	DIORITE RETROGRADE: coarse grain med. green foliated 40°TCN, silicified 4% py									
		1045.5-1046.5 fractured with stock work qtz (no S), silicat'd matrix	7791	1.0	1045.5	1046.5	.04	.028			
1046.5	1048.5	CHORLITE SCHIST: chl. laminae, with interlayered cb. lenses and included qtz augen en echelon qtz cb. fractures parallel folt'n, some beige bleach, 4% py									
		1046.5-1048.5 py 4% deformed, migrated parallel 40 TCN folt'n	7792	2.0	1046.5	1048.5	.02	.039			

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1048.5	1053.5	DIORITE RETROGRADE: med. grain med. green, maybe hybrid diorite, altered schisted folt'n 40°TCN									
		1048.5-1051.0 py 3%, 40°TCN folt'n, chl. cb. matrix, minor cb. threading	7793	2.5	1048.5	1051.0	.04	.010			
		1051.0-1053.5 py 3% magnetite 15%, med. grain mafic chl. cb. rock, possible relict andesite wedge, random epidotic injecta in cb. chl. matrix	7794	2.5	1051.0	1053.5	Tr	.006			
1053.5	1066.0	DIORITE HYBRID RETROGRADE: med. grain med. green, andesitic, chl. feld. matrix, cb't'd matrix, small feld. laths pocked with cb., some cb. qtz augen, 15 to 20% magnetite, sporadic epidote saturation, en echelon cb. chl. filled fractures, widespread irregular siliceous grey fine grain injecta, random (diorite forming fluids), folt'n 60°TCN, minor py									
1066.0	1077.4	DIORITE HYBRID RETROGRADE: coarse grain med. green, more obvious 'intrusive' fabric than above problematical fabric, 20% magnetite, recrystallization and migration of magnetite adjacent to fine grain mini-andesite irregular dyklets, perhaps remobilized host rock injected along fractures, irregular light grey diorite forming injecta random through section, py average 3%, often aggregated parallel folt'n									
1077.4	1081.6	LAMPROPHYRE: med. grain, grey, holocrystalline grey black mica, cb. fabric, common type grey dyke, extremely fine py, mincro granular clustered po, Cts 40°TCN									
1081.6	1088.8	DIORITE HYBRID RETROGRADE: coarse grain med. green, migrated chl. towards lenses interlayered cb. after feldspar, qtz augen, folt'n 55° and 60°TCN, py clustered 8% recrystallized, aligned parallel folt'n									
		1081.6-1084.5 very mafic altered fabric, py 8% in anhedral 1 cm. clusters	7795	2.9	1081.6	1084.5	.04	.025			
		1084.5-1087.0 slight schist fabric, 5 mm. clustered 5% py	7796	2.5	1084.5	1087.0	.09	.060			
		1087.0-1088.8 slight schist fabric, py remobilized, thin lenses parallel folt'n	7797	1.8	1087.0	1088.8	.14	.125			
1088.8	1090.7	QUARTZ VEIN: frosted white qtz, minor cb., massive chl. schlieren, remnant hybrid multiple stringers at all angles TC, outer Cts 0 to 60°TCN									
		1088.8-1090.7 py 8% in chl. portions adjacent to veins, none in late qtz	7798	1.9	1088.8	1090.7	.06	.049			

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1090.7	1091.5	CHL. SCHIST: sheared hybrid, laminae chl. interlayed cb., migrated py parallel folt'n 60°TCN 1090.7-1091.5 py 10%, secondary chl. shear after cb't'z'tn, 80°TCN	7799	.8	1090.7	1091.5	.12	.118			
1091.5	1093.0	QUARTZ VEIN: frosted white qtz, minor intermixed cb., chl. schlieren, 5% py, relict diorite hybrid 20% of total fabric, Cts 10°TCN 1091.5-1093.0 py 5% remobilized by vein, py associated with chl. schlieren	7800	1.5	1091.5	1093.0	.03	.028			
1093.0	1095.5	CHLORITE SCHIST: chl. lamellae, intervening cb. lenses with included qtz augen, folt'n 40°TCN, magnetite 20% aligned parallel folt'n, py 5% aligned clusters 1093.0-1095.5 magnetite 20%, py 5%, cb. chl. striped matrix	7801	2.5	1093.0	1095.5	.05	.046			
1095.5	1158.7	DIORITE HYBRID: coarse grain med. green, essentially chl. cb. matrix original feld. destroyed, upper 2.5' deformation intense below chl. sch., lenses of chl. alternite with relict rock 1095.5-1097.5 py 3%, magnetite 20%, some en echelon cb., threading 1097.5-1102.0 py 3%, crs magnetite 15% to 20%, sporadic epidote, en echelon from 1102' very close to true diorite, migmatitization extreme, only ubiquitous feld. laths in matrix defer calling fabric diorite; 2 or 3% py random throughout fabric	7802 7803	2.0 4.5	1095.5 1097.5	1097.5 1102.0	Tr .02				
1158.7	1159.4	LAMPROPHYRE: fine to med. grain, med. green, micro-phase of 'green biotite' type, abundant small round green knots represent locii of amph. phenocrysts, Cts 60°TCN									
1159.4	1212.0	DIORITE HYBRID: coarse grain med. green, chloritic matrix with stubby amphiboles and fresh green-white feld. laths in diabasic array with augen later qtz and some internal thin laths plagioclose, disseminated variable magnetite content widespread cb. thru matrix, sporadic silica injection, with increase volume recrystallization amphiboles to slender prisms, (progressively amphibolitic) transition from andesite thru diorite hybrid approaching true diorite in core segment, 2 to 3% clustered recrystallized py, random epidotic portions at 119.2-1190.7 multiple cb. vein with lesser internal qtz, py on margins 60°TCN reverts sporadically to med. grain with lesser silica and resemblance to crs basic flow									

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1212.0	1222.0	DIORITE HYBRID RETROGRADE: med. grain med. green, cb'td feld. relict laths, epidotic matrix, 20 to 30^{o}TCN, sporadic magnetite to 20% of fabric 1219.0-1221.0 en echelon qtz cb. frac. fill, 1 to 3 cm. margining clustered py, random, no average, some magnetite, 20^{o}TCN	7804	2.0	1219.0	1221.0	.006				
1222.0	1237.0	DIORITE HYBRID: coarse grain med. green, as described 1159.4-1212.0									
1237.0	1238.1	LAMPROPHYRE: (term of convenience) fine grain dyke probably exact comp'n of altered anhedral minute shards of green amphibole as phenocrysts, resembles 'green biotite' type									
1238.1	1242.0	DIORITE HYBRID RETROGRADE: med. grain mafic dark green, hi chl. matrix, cb. magnetite 1238.1-1240.5 qtz fract. vein 10 cm. at upper Ct., 5% py, matrix py 3%	7805	2.4	1238.1	1240.5	Tr				
1242.0	1254.2	DIORITE HYBRID: coarse grain med. green as described 1159.4-1212.0; abundant crs feld. laths in 'diabasic' array in matrix, cb't'd matrix, disseminated magnetite, grey felsic siliceous injecta commencing 1249.0, permeating matrix to 1254.2, fluids convert med. grain andesite by migmatitization to diorite									
1254.2	1259.4	ANDESITE DYKE: fine grain, med. green, some epidotic med. grain fabric, boudins qtz, cb. slips erratic 3% py; at 1255' a bleached beige ultra silicic zone, FAULT, 45^{o}TCN, silica sole of fault multiple qtz stringers remmed by beige host with relict fabric, No Sulphides									
1259.4	1295.0	DIORITE HYBRID: very close to coarse grain flow, abundant feld. laths in 'diabasic' array, log as coarse grain andesite would be as appropriate as diorite hybrid with advent migmatizing fluids basic flow progresses thru hybrid to true diorite									
1295.0	1308.7	CHLORITE SCHIST: fine grain med. green, dense chl. laminae with intervening lenses cb. and post schist en echelon qtz cb. injection partially parallel folt'n 1295.0-1299.0 py 5% aligned parallel folt'n in chl., later cb. barren continual schisting, minor py, sporadic crs knots magnetite, folt'n 40^{o}TCN	7806	4.0	1295.0	1299.0	.008				
		1305.4-1308.0 en echelon cb., some qtz fracture vein across folt'n, py very sporadic	7807	2.5	1305.4	1308.0	.002				

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1308.7	1386.0	DIORITE HYBRID: med. grain med. green, minor sporadic coarse grain segments, mainly chl. feld. lath fabric with random 3 to 10 cm. areas of qtz (felsic) inject'n internal feld laths in qtz thus true diorite sporadic in hybrid, minor py at 1333.0-1335.0 local segment, small shear with bordering epidote saturat'n a retrograde segment in hybrid at 1350.5-1359.0 lone 3 cm. qtz cb. veins with marginal py; great variability in grain size over short segments, progressively more coarse approaching diorite (an active zone of migmatilization)						
1386.0	1410.5	DIORITE HYBRID RETROGRADE: med. grain med. green, foliated, feld. obliterated, chl. fabric oriented 60°TCN, local slippage with epidotic alt'n 1389.0-1391.5 multiple en echelon chl. epidote slip planes, minor FAULT brx. with rotated granules qtz in bleached chl. mosaic, 4% py	7808	2.5	1389.0	1391.5	.002	
1410.5	1430.0	DIORITE HYBRID: coarse grain med. green, prominent feld. laths in chl. matrix, indistinguishable from central portion of basic flow, coarse sporadic magnetite and leucoxene widespread epidote permeates matrix and along preferential planes						
		1420.0-1421.0 qtz vein 4 cm. flat, py 4% on margins with retrograded margins from 1423.0-1425.0 severe epidote permeation with relict hybrid fabric	7809	1.0	1420.0	1421.0	Tr	
		1425.3-1426.4 migmatized, aphibolitic, po trace cpy to 1 cm., 8% minor py several 1 cm. flat qtz vein with marginal py; too small to sample	7810	1.1	1425.3	1426.4	Tr	
1430.0	1452.0	DIORITE HYBRID RETROGRADE: schisted, deformed matrix, recrystallized amph. prisms cb. wisps 1442.6-1443.5 flat qtz with massive chlorite, 10% py, 9 cm. 60° folt'n TCN	7811	.9	1442.6	1443.5	Tr	
1452.0	1487.5	DIORITE HYBRID: coarse grain med. green, chloritic fabric interspersed thru diverse oriented feld. laths with some amphiboles, epidote, leucoxene, minor magnetite 2% py, resembles crs portion of basic flow						
1487.5	1497.0	DIORITE HYBRID RETROGRADE: coarse grain med. green, cb, cb wisps, and cb'td. fretted pocked relict feldspar grading to chl. cb. schist 60°TCN, qtz boudins						

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		1487.5 - 1497.0 (con't)										
		1487.5-1491.0 some stringer veining, all angles, minor po with trace cpy over very short widths, with segments barren qtz and host rock	7812	3.5	1487.5	1491.0	.006					
		1491.0-1493.0 chl. cb. sch. chl. lamellae, cb. lenses, very erratic py	7813	2.0	1491.0	1493.0	.002					
		1493.0-1494.0 crs clots black mica, qtz vein, minor cb., erratic py av. 5%	7814	1.0	1493.0	1494.0	.018					
		1494.0-1495.0 typical ch. schist, sporadic py, cb. en echelon in schist	7815	1.0	1494.0	1495.0	.002					
		1495.0-1497.0 grading out of schist to folt'd retrograde, minor py	7816	3.0	1495.0	1497.0	.002					
1497.0	1508.0	DIORITE HYBRID: coarse grain med. green, crs clustered feld. laths in chl. matrix, some variable stages of slight regression, (shearing -epidote inject'n) thru fabric, rare qtz fracture fill to 5 mm. to 1 cm., minor erratic py										
1508.0	1538.0	DIORITE HYBRID RETROGRADE: coarse grain med. green, schistose, strong folt'n 70°TCN hi chl.										
		1508.0-1513.5 several steep barren cb. qtz stringer vein, minor py; long segment schisted 40°TCN cb. chl., lamellae chl. with stretched cb. pods	7817	5.5	1508.0	1513.5	Tr					
		1528.0-1529.0 cb. rich schist, py 3% small disseminations	7818	1.0	1528.0	1529.0	Tr					
		1529.0-1530.3 vertical 3 to 4 cm. qtz vein, margins with fine py	7819	1.3	1529.0	1530.3	.002					
		1530.3-1533.5 sinuous vertical vein qtz, 75% schist, py 3%	7820	3.2	1530.3	1533.5	.002					
1538.0	1560.2	DIORITE HYBRID: coarse grain med. green, epidotic and cream laths matrix feld. in chloritic base with occasional qtz augen and internal feld. laths, a crude folt'n 20°TCN, several 1 cm. epidotic fractures, 2% py										
1560.2	1562.6	LAMPROPHYRE: dark green, (chill phase of 'green biotite' type) very fine grain dark green cb. rich matrix with abundant vague dark green amphibole prisms, Cts 60°TCN										
1562.6	1574.7	DIORITE HYBRID: coarse grain med. green, as described 1538.0-1560.2; folt'n variable										
1574.7	1581.2	LAMPROPHYRE: fine to med. grain ultrasilicic, fine grain light mosaic with abundant ragged amphibole oriented in single direction (various stages of reversion to black mica) lone subhedral feld. phenos av 5 mm., 8% subhedral py to 3mm. Cts 10 TCN, later qtz, some massive chl. in flat fractures of dyke										

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1581.2	1598.0	DIORITE HYBRID: coarse grain med. green, as described 1538.0-1560.2; feld. clusters aligned in parallel array, 20°TCN, toward lower portion, vestigial clots fine grain host rock, fretted margins, pitted interiors						
1598.0	1603.7	DIORITE HYBRID RETROGRADE: margining to chlorite-sericite schist towards lower Ct progressive developing chl. laminae with interlayered cb. pods at 1602 a bleached segment chl. sericite schist close to fault movement, minor cb. threading at all angles to prevailing 20°TCN folt'n						
1603.7	1606.4	LAMPROPHYRE: very fine grain dense green black, silicic, with phenocrystic clots white cb., individual dark green phenocrystic amphiboles in fine matrix, 8% py, to 1 mm. a different lamprophyre than at 1574.7; lower Ct 60°TCN						
1606.4	1650.7	DIORITE HYBRID RETROGRADE: strong schist, med. grain due to deformation 50°TCN, chl. lamellae interlayered cb. pods stretched parallel, minor py, cut by irregular random qtz cb. veining, minor py						
		1608.7-1611.0 vertical qtz cb. vein variable width, minor py to 5 mm., pronounced random qtz cb. veining, minor py	7821	2.3	1608.7	1611.0	.002	
		1618.5-1620.5 schist 50°TCN, 5% py, recrystallized algined amph. cb.	7822	2.0	1618.5	1620.5	Tr	
		1620.5-1625.0 schist with several en echelon 1 cm. qtz cb. veins parallel folt'n	7823	4.5	1620.5	1625.0	Tr	
		1625.0-1627.0 qtz cb. en echelon veins 30% of total fabric, minor py	7824	2.0	1625.0	1627.0	.002	
		1627.0-1630.0 qtz cb. en echelon veins 30% of total fabric, minor py	7825	3.0	1627.0	1630.0	Tr	
		1630.0-1635.0 qtz cb. en echelon veins 40% of total fabric, minor py	7826	5.0	1630.0	1635.0	.002	
		1635.0-1637.0 en echelon barren qtz cb. veins parallel folt'n, minor py	7827	2.0	1635.0	1637.0	.002	
		1637.0-1640.0 irregular sinuous stringers barren qtz cb., minor py	7828	3.0	1637.0	1640.0	Tr	
		1640.0-1645.0 myriad of primary and secondary, X cutting qtz cb. veins, 4% py, hematite alt'n in primary vein	7829	5.0	1640.0	1645.0	Tr	
		1645.0-1650.7 myriad qtz cb. and qtz feld. chl. veins, very erratic py	7830	5.7	1645.0	1650.7	.002	
1650.7	1651.1	LAMPROPHYRE: schisted dark grey green fine grain satellite dyke, mini-boudins cb., deformed amph. Cts 10°TCN, trace fine py						
1651.1	1652.0	CHLORITE SCHIST: chl. lamellae, cb. pods, deformed, en echelon cb. qtz 1 mm. lenses beige alt'n						

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1652.0	1667.0	LAMPROPHYRE: dark green grey, soft, chl. cb. matrix, partly resorbed amphiboles (relict phenos) subhedral lone cream feld. phenos 2 mm., some partly cb't'd, abundant xenoliths; (1) schisted hybrid near Ct. (2) porphyritic granite thru dyke with large xstals zoned plag. (true granite rather than feld. porph.) xenoliths to 10 cm.									
1667.0	1670.7	DIORITE HYBRID: coarse grain med. green, epidotic, silicified, feld. in matrix partly resorbed, corroded, epidotized, lath shape destroyed, slight regression of fabric, trace py, cbt'z'tn widespread									
1670.7	1682.5	LAMPROPHYRE: fine grain dark green grey, fine chl. cb. matrix, phenocrysts amphibole irregular clots and wisps pink cb., lone xstals subhedral feld. (zoned) pocked with cb., 5% py, Cts 80°TCN									
1682.5	1688.6	DIORITE HYBRID RETROGRADE: deformation of hybrid develops rock resembling andesite (med. grain volcanic) feld. cb't'd, amphibole chloritized, essentially cb. chl. matrix with fine leucoxene, minor py, some local protected short segments unaltered hybrid; at 1687.5 a 3 cm. qtz cb. vein vertical with rimming py, heavy leucoxene									
1688.6	1719.0	DIORITE HYBRID: coarse grain med. green, chl. matrix with recrystallized amphiboles abundant crs matrix plagioclose, vague qtz injecta (impure) with faint internal feld. laths, leucoxene, minor py (key is crs matrix feld. laths) several short fine grain segments have varying amounts crs feld. laths.									
1719.0	1724.6	LAMPROPHYRE: same dyke 1670.7-1682.5; Cts 80°TCN									
1724.6	1735.0	DIORITE HYBRID: same as 1688.6-1719.0; characterisitic of this 'intrusive' is varying degree of injection of migmatizing felsic fluids and varying granularity of feldspar, local pods of intense injection numerous and obvious									
1735.0	1743.5	DIORITE HYBRID RETROGRADE: fine grain deformed, cb'td, en echelon qtz 2 cm., fine py on margins									
1743.5	1750.0	DIORITE HYBRID: coarse grain med. green, abundant matrix feld., epidotic, folt'n 60°TCN									

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1750.0	1751.6	LAMPROPHYRE: med. grain dark green, amphibole type (distinct variety) predominantly amphibole with interstitial cb. (akin to classic lamprophyre of Larder Lake district); disseminated crs biotite, upper Ct. vertical, lower 30°TCN, 5% uniform py									
1751.6	1786.6	DIORITE HYBRID: variable granularity, and degree of migmatitization, segments with dioritic fabric, some med. grain with segregations plag., local areas 1762.0-1764.0 of local schisting with retrograde cb., much feld. destroyed, predominantly a deformed, rotated pseudo med. grain fabric with crs clots feld. random and abundant, minor py									
1786.6	1786.9	LAMPROPHYRE: fine grain grey matrix (green biotite type) fresh amphibole shards as phenos, Ct. 45°TCN									
1786.9	1807.0	DIORITE HYBRID: duplicate of 1751.6-1786.6; variable granularity, deformation, migmatitization									
1807.0	1813.7	DIORITE HYBRID RETROGRADE - CHLORITE SCHIST: chl. lamellae, micro-boudins, pods interlayered cb., some magnetite, disseminated leucoxene 1809.0-1811.0 en echelon multi-widths qtz cb. veins, 3% random rim py folt'r 40 to 60°TCN	7831	2.0	1809.0	1811.0	.002				
1813.7	1815.7	FELDSPAR PORPHYRY: vitreous fine grain dark red matrix, abundant subhedral zoned plag. -- lesser biotite									
1815.7	1824.5	LAMPROPHYRE: fine grain grey brown chl. cb. matrix 'green biotite' type -- plentiful prisms green amphibole, lone xstals crs zoned plagioclose, multi-sized amphiboles 80°TCN, minor py lower Ct. 90°TCN (at 1818.0 Feld. Porph. 5 cm. in lamprophyre 10°TCN)									
1824.5	1825.6	FELDSPAR PORPHYRY: light grey vitreous matrix, feld. phenos, light pink, to 5 mm., zoned, lesser green biotite and amphibole 65% of fabric, minor py									
1825.6	1825.9	LAMPROPHYRE: as described 1815.7-1824.5; (green biotite) type, Cts 40°TCN									

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1825.9	1866.0	FELDSPAR PORPHYRY: light grey brown fine grain vitreous matrix, zoned subhedral plag. phenos 60% of rock fabric, lesser biotite phenos, minor py, a central core of frosted ultrasilicic grey bleached dyke core with pocked and slight fretted feld. phenos and bleached mica reverting at 1849.0 to red brown outer margin phase, minor py									
1866.0	1868.2	LAMPROPHYRE: original 'green biotite' type -- absorbed so much silica in transit has fine grain pink grey vitreous matrix with probable chemical comp'n of granite, abundant amphibole prisms as phenocrysts, lone beige feld. phenos, Cts 30°TCN, minor py									
1868.2	1877.0	FELDSPAR PORPHYRY: red brown vitreous fine grain siliceous matrix with beige feld. phenos with dykes of above lamprophyre (1866.0-1868.2); at 1872.0 and at 1874.5-1875.5 with Cts 20°TCN; lamp is ultrasilicic									
	1877.0	END OF HOLE									

OROFINO
RESOURCES LIMITED

DRILL LOG

Property: OROFINO
Location: 200' mag. W of 83-38
Co-ordinates:

Section: B
Length: 1587'
Elevation:
Azimuth: -0- Dip: 90°

83-39
HOLE: [redacted]
Core size: AQ

Dip Tests: 500' -85°; 1577' -79°
Started: September 10, 1983
Completed: September 18, 1983
Logged by: Warren Gilman

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
0.0	21.5	CASING									
21.5	68.6	BASIC LAVA: fine and med grain Andesite, grey-green, the fine grain is dense homogeneous with faint folt'n, cb. threads, individual dark and light crystals discernable, med. grain has pronounced green and light grey crystals, fabric mainly chl. and cb. after amph. and feld., med. grain is nearer central portion of flow									
		35.0-39.5 qtz grain (3) steep 70°TCN, 3 cm to 8 cm with fringing py	7850	4.5	35.0	39.5	.002				
		54.5-59.5 qtz veins (4) mainly 70° folt'n, variable py, impure chloritic	8702	5.0	54.5	59.5	.002				
		59.5-64.0 qtz veins (4) mainly 70° folt'n, variable py, impure chloritic	8703	4.5	59.5	64.0	.004				
68.6	92.6	SEDIMENT: fine to med. grain light grey green tuffaceous sediment, Cts somewhat arbitrary clustics 50-50 ratio with tuff interstices and individual layers sporadic graphite and dark tuff, some agglomeratic and lapilli tuff all interbedded and difficult to segregate, sporadic in situ py with graphite tuff, folt'n 70°TCN to 50°TCN, bedding off times very evident, chert bands									
92.6	170.0	VOLCANIC MIGMATITE: med. grain dark green, feld laths tendency to cluster and epidotic matrix feld. laths with crystallization of larger amphiboles, short segments are completely recrystallized flow, glomeroaggregates crs feld. in coarse grain matrix is characteristic with shorter segments med. grain with fresh laths feld. in diabasic array and peculiar qtz augen, minor py, appear to be obvious additive met'm prism, minor epidote saturation bands 1 to 4cm minor 1 cm, qtz fractures at 10°TCN, porphyritic fabric ends at 166', med. grain fabric less distinct at 170' approximately									
170.0	192.5	BASIC LAVA: fine to slight med. grain, regional met'm, andesite (greenstone), altered fabric recrystallized, elongate chl. aggregates parallel folt'n, cryst'n after plastic flow qtz with minor cb. 1 cm. to 4 cm. veins, flat to 70°TCN with minor py, trace po, cpy, (probably carry gold over cm.) random clots po thru matrix									

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DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-39
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
192.5	196.9	LAMPROPHYRE: med. grain grey, cb. frosted matrix, of chl. and cb., segregations, profusion very dark green subhedral amphiboles (black) and fretted, cb. saturated feld. aggregates, Cts 20°TCN									
196.9	260.2	BASIC LAVA: fine grain and med. grain, intimate mixture of typical fine grain med. green foliated greenstone matrix and med. grain to coarse grain amphibolitic fabric, matrix cb. and chl. with minor epidote and variable lenticular or shard like amphiboles, profusion cb. filled fractures mainly in fine grain 'flow top'									
		220.0-223.5 en echelon cb. filled fractures, 20% total fabric, no sulphide	8704	3.5	220.0	223.5	Tr				
		232.5-233.5 chl. matrix, contorted saturated injected, qtz, minor cb, trace py	8705	1.0	232.5	233.5	.002				
		at 237' to 237.5 intraformational small fault, mortared slip with rounded epidotic nodules 60 to 65°TCN, no sulphides continuation of variability of matrix of short segments to 260.2									
260.2	266.8	LAMPROPHYRE: med. grain grey, grey mica dyke -- relict cb, phenos after feld., chloritic amph. phenos, pronounced folt'n 30 to 60°TCN, upper Ct. flat, Cts deceptive, folt'n direction more significant thru Ct. seen in a core, lower Ct. 5°TCN, (most of mafic minerals in dyke are green, overall dyke appears grey), very common type of lamprophyre									
266.8	271.5	BASIC LAVA: med. grain, med. green, porphyritic lava (same as upper part of hole) glomeroaggregates epidotic feld. in med. grain amph. chl. epidotic feld. cb. qtz, matrix, no sulphides									
271.5	273.0	LAMPROPHYRE: same grey lamp. as described 260.2-266.8; knots of mafic minerals become dark green to black at lower Ct., all Cts flat, lower governed by injection brown dyke									
273.0	278.0	BROWN DYKE: abundant white phenocrysts, brittle, fragmented, flat dense non-porphyritic cts.									

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Property:
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HOLE: 83-39
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DRILL LOG

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
278.0	368.2	BASIC LAVA: med. grain med. green, porphyritic to 290', segments of fine grain and altered recrystallized portions with chl. mosaic with interstitial cb., all original fabric destroyed									
		294.0-296.0 qtz cb. veins to 4 cm., much satellite stringers, trace py from 313 to 338, a coarse grain appearance due to clots of felsic minerals recrystallized, NOTE: qtz and minor cb., irregular stringers favour fine grain flow tops	8706	2.0	294.0	296.0	Tr				
		340.0-343.2 qtz cb. veins, erratic, devoid of py, all angles TC from 344.0 to 363.0 coarse grain (central portion of flow) altered recrystallized cb. chl. matrix supplemented by added felsic clots (either injected or regenerated within flow sequences, nebulae of feld. laths in clots of qtz cb.	8707	3.2	340.0	343.2	.002				
368.2	381.0	TUFF: fine grain bedded volcano sediment, oriented ash fragments, variable comp't'n and ash content over small segments, some fine grain grey silty tuff, bedding 35°TCN									
		377.0-378.6 qtz cb. vein, 2 lter .5' barren qtz veins 40°TCN, trace po, minor py	8708	1.6	377.0	378.6	.308				
381.0	382.7	LAMPROPHYRE: fine grain light grey matrix with profusion dark green black, amph. prisms, shards crudely parallel to Cts 60°TCN									
382.7	399.4	BASIC LAVA: strongly variable very fine grain to coarse grain, porphyritic over small segments (perhaps due to drill penetration) diversity of granularity explained only by folding									
399.4	399.8	LAMPROPHYRE: same dyke as phenocrystic amphibole type above 381.0-382.7									
399.8	401.0	BASIC LAVA: fine grain 'greenstone' individual relict and recrystallized minerals evident, possibly sheared tuffaceous sediment, faint banding may be bedding or response to folt'n, some cb. filled fractures									
401.0	401.2	LAMPROPHYRE: as above 399.4-399.8; Cts 30°TCN									

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Property:
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HOLE: 83-39
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Started:
Completed:
Logged by:

DRILL LOG

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
401.2	404.3	TUFF: fine grain banded, chl. laminae with intervening boudins, lenses, cb. 30°TCN, minor py 403.3-404.3 irregular flat reticulate 3 cm. vein, in tuff, marginal py	8709	1.0	403.3	404.3	.008				
404.3	406.3	QUARTZ VEIN: flat, some impurities, chl. schlieren, py cubes to 3 mm. in chl., vein barren 404.3-406.3 flat vein, 20% chl. in matrix as angular fragments, av. 2% py	8710	2.0	404.3	406.3	.006				
406.3	410.8	TUFF: fine grain bedded volcano-sedimentary tuff, 30°TCN, innumerable en echelon irregular qtz and qtz. cb. fractures, some 4 mm. aggregated py with internal chl. laminae 406.3-410.5 minor matrix py, fine variable, some 4 mm. cubes marginal to veins	8711	4.5	406.3	410.5	.002				
410.8	413.7	BASIC LAVA: fine grain med. green, 'greenstone', typical fabric, individual cb. amph., chl. aggregates, homogeneous fabric, 3% disseminated py									
413.7	421.0	LAMPROPHYRE: fine grain med. grey, porphyritic, amphibole dyke, contorted, reworked much amph. in chloritic mini-lenses with recrystallization of felsic crystals, Cts 20°TCN									
421.0	428.2	QUARTZ VEIN: vertical frosted white vein, minor knots cb., both Cts vertical 90° over long core length, no apparent py 421.0-428.2 impure vertical vein, abundant xenoliths host 'greenstone', no py	8712	7.2	421.0	428.2	.002				
428.2	434.4	BASIC LAVA: fine grain, med. green, 'greenstone' as described 410.8-413.7 428.2-431.2 py sporadic, 3% average subhedral	8713	3.0	428.2	431.2	Tr				
434.0	463.2	BASIC LAVA - MIGMATIZED VOLCANIC: med. grain, med. green, recrystallization of crs amphiboles and crystallization of feld. qtz., possible additive met'm maybe reorganization of original constituents, sporadic porphyritic short segments (something to do with original fabric), with recrystallization is it proper as migmatite or met'm									

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Length:
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Azimuth: Dip:

HOLE: 83-39
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
463.2	465.7	LAMPROPHYRE: dark 'purple' green, silicified, with hornfelsed margins, strange central core of dyke with abundant glomeroaggregates felsic crystals, variety never seen before, Cts 30°TCN, fabric outside core contains phenocrysts slender amphibole									
465.7	486.8	MIGMATIZED VOLCANIC: med. grain to coarse grain, med. green, reorganization of fabric, segregated felsic 2 mm. epidotic crystals, abundant amphiboles after chl., minor py, some short porphyritic segments, (phenocrysts epidotic feld.), massive homogeneous rock, rare cb. or epidote slips, rare blebs po thru lava and migmatite									
486.8	487.0	LAMPROPHYRE: flat dense fine grain with knots of chl. in center, related to 'green biotite' type, flat									
487.0	491.0	BASIC LAVA: rearranged, not essentially migmatized, some recrystallization									
491.0	491.3	LAMPROPHYRE: Cts 5°TCN, as described 486.8-487.0									
491.3	530.0	BASIC LAVA: coarse grain med. green -- as described 487.0-491.0; 511 - 513 fine grain minor shear, cb. threads 527 - 530' well sheared 40°TCN, fine grain, essentially folt'd chl. with boudins, lenses cb., some remobilized py									
530.0	532.0	LAMPROPHYRE: schistose lampro., partitioning of felsic and mafic into individual bands, long blackish shards mainly chl. with interlayered boudins, cb. feld., qtz, 50°TCN									
532.0	544.0	BASIC LAVA: porphyritic, fine to med. grain, abundance clustered feld. glomeroaggregates, all shapes, crudely parallel folt'n, (upper 2' sheared), perhaps flow top cut at oblique angle, some local fracturing with inject'n later fine grain flow, either near in situ or perhaps later inject'n, no sulphide									

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DRILL LOG

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HOLE: 83-39
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Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
544.0	678.0	BASIC LAVA: fine grain typical 'greenstone' fabric, some later epidotic injection along fractures abundant fine knots cb. reflect original feld., no py									
		522.3-553.1 flat brx, tectonic related, qtz cement, 4% py, po 1:1	8714	.8	552.3	553.1	Tr				
		553.1-558.0 en echelon qtz cb. 3 mm. fracture fill 15% of fabric, minor py	8715	4.9	553.1	558.0	.002				
		through 678', same random intermix of fine grain; porphyritic and coarse grain reflects original fabric of flow, recrystallization to a degree within relict fabric									
		NOTE: constant short sporadic porphyritic segments of mysterious origin constant disseminated po <1% throught, trace cpy									
		at 642' qtz feld. 1 cm. vein 75°TCN with strong blebs po									
		at 660' qtz feld. 3 cm. vein, flat, po, trace cpy									
		662.0-663.2 irregular qtz, minor cb.vein in fractured lava, 8% py	8716	1.2	662.0	663.2	.004				
		663.2-668.0 minor qtz veins (1 at 5 cm.), barren, sporadic strong py in lava	8717	4.8	663.2	668.0	.002				
		at 675' qtz vein .4', minor py, lower Ct. 70°TCN									
678.0	681.8	LAMPROPHYRE: med. to coarse grain dark grey, black mica, thin prisms amphibole, similar to 530-532; strong fine py, lower Ct. 80°TCN, some amphiboles 5 mm., resemble tourmaline									
681.8	705.8	MIGMATIZED BASIC LAVA: med. grain and coarse grain and porphyritic with glomero-aggregates fabric epidotic phenos, (cryptocrystalline mix of feld. qtz., epidote, recrystallized matrix laths and amphiboles) widespread epidote saturation qtz epidote joint filled with marginal epidote permeation, py sporadic 8% to nil									
705.8	714.5	LAMPROPHYRE: multiple hodge podge of dyke into dyke, steep contacts, grey matrix with abundant black mica, drilling along rim of multiple injection, Cts 70°TCN, irregular saturation by secondary Cb.									
714.5	793.0	MIGMATITE: med. grain bordering on diorite hybrid, recrystallized matrix feld. and amphibole, orbicular qtz augen sans feld., abundant disseminated leucoxene, random disseminated po and trace cpy, minor py, (zone of weakness									

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DRILL LOG

Property:
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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
		714.5 - 793.0 (con't)									
		filled by lamprophyre?) recrystallized matrix feld. laths, slightly epidotic and in diabasic array at about 777' matrix feld. becomes vague indistinct, chl. strong, orbicular augen distinct -- a slight regression in migmatite fabric									
793.0	810.3	LAMPROPHYRE: purple grey fine grain matrix, abundant stubby and thin prisms amph. silicified dark grey 'green biotite' type, multiple injection corresponding fine grain porphyritic silicic dyke at lower Ct. 80°TCN, control older met'm, central portion, aggregated mafic constituents in cb. rich matrix									
810.3	819.5	MIGMATITE - RETROGRADE: reverts to fine grain altered, relict rock to 819.5 -- coarse grain cb. rich chl. rock to 821.0 with cb. wisps thru fabric									
		810.3-813.5 multiple qtz, 2 to 5 cm. with fine grain retrograded migmatite 10% py	8718	3.2	810.3	813.5	.004				
		813.5-819.5 sinuous flagellate veining, 80% matrix, disseminated 10% py to 5mm.	8719	6.0	813.5	819.5	.002				
819.5	819.8	LAMPROPHYRE									
819.8	821.0	MIGMATITE - RETROGRADE									
821.0	821.3	LAMPROPHYRE: fine grain dark green, Cts 10°TCN, imperfect faint phenocrysts									
821.3	824.9	MIGMATITE RETROGRADE: coarse grain cb. rich altered fabric, minor py, chl'tized amph.									
824.9	835.6	FELDSPAR PORPHYRY: fine grain vitreous red brown matrix, abundant zoned plag. to Ct. bleached light grey central portion, fine biotite phenocrysts 1 mm., fine py, Cts 10°TCN									
835.6	842.0	MIGMATITE RETROGRADE: as described 821.3-824.9; cb. migrated to single crs pods.									
842.0	852.0	MIGMATIZED BASIC FLOW: bordering on diorite hybrid, feld. laths, subhedral in matrix with qtz augen with some recrystallized feld. laths. internal									

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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
852.0	882.0	MIGMATIZED RETROGRADE: coarse grain med. green, feld. revert to cb. lenticles with fibrous chl. matrix, some deformed partly cb'td feld., widespread clustered black amphibole and biotite (always a contact phenomena -- nearby intrusive) crs and sporadic 4% py with black phenocrysts (porphyroblast)									
		864.0-866.0 strong cb. saturation, 10% py (some minute bl. intrusions) 1 cm. qtz	8720	2.0	864.0	866.0	.002				
		from 866' abundant aggregated biotite amph. clots indicative of contact effect.									
		874.2-876.0 multiple qtz vein, flat, impure, earlier pk. qtz., chloritic, 5% py (bl. inclusions)	8721	1.8	874.2	876.0	.008				
882.0	902.0	DIORITE HYBRID: coarse grain med. green, abundant matrix laths. feld. in 'diabasic' array, amphiboles recrystallized, some matrix chl. cb., orbicular qtz augen, some with internal recrystallized feld., random crs aggregated py									
902.0	908.0	DIORITE HYBRID RETROGRADE: med. grain with isolated knots qtz., chloritic fabric with cb. wisps, sheared, granulated, altered fabric due to near dyke or shear									
		902.0-907.0 aggregated crs py, migrational 4% due to local met'm	8722	5.0	902.0	907.0	.058				
908.0	952.0	DIORITE HYBRID: coarse grain med. green, as described 882.0-902.0									
952.0	957.0	DIORITE HYBRID RETROGRADE: fine grain med. green, sheared, mortared, granulated 'plastic flow'									
957.0	965.3	DIORITE HYBRID: coarse grain med. green, matrix amph., feld. laths, epidote, leucoxene, chl. interstices, random qtz augen, most with internal recrystallized feld. laths, minor py									
965.3	973.7	LAMPROPHYRE: fine grain, cb. rich matrix with abundance stubby and slender chl't'c amphibole phenos., phenos. stretched, contorted resorbed, many are recrystallized xenolithic basic remnants host rock, Cts 50°TCN									
973.7	977.0	DIORITE HYBRID RETROGRADE: coarse grain schist adjacent dyke, Chl. matrix 70°TCN, cb. boudins									

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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
977.0	997.0	DIORITE HYBRID: coarse grain med. green, key qtz augen with internal feld. laths., some mafic diorite.									
997.0	1010.0	MIGMATIZED AMPHIBOLITE: strong cb. matrix permeation, prolific recrystallized subhedral amphiboles, pronounced folt'n 0° and segments at 90°TCN, irregular injected masses qtz (minor cb) with internal amphiboles, pronounced zone of migmatitization, minor migrated sulphides									
1010.0	1022.0	DIORITE HYBRID: coarse grain med. green, matrix feld. laths, some qtz augen with internal feld. laths									
1022.0	1029.3	DIORITE HYBRID RETROGRADE: strong folt'n, cb. chl. matrix, qtz augen with cb. wisps									
1029.3	1031.3	FAULT: multiple qtz injection, beige alt'n, some mortared 'sericitic' fabric, granules qtz									
		1029.3-1031.3 flat qtz vein in beige fault zone, 8% py parallel fault	8723	2.0	1029.3	1031.3	.036				
1031.3	1036.6	DIORITE HYBRID RETROGRADE: approach chl. schist, small cb. knots within Chl. laminae, stretched chloritized amph., 20°TCN, 3% py in trains parallel folt'n lower 1.3' contains en echelon qtz 3 cm. with strong pyritic margins									
		1031.3-1034.6 py 3% in schistose retrograde	8724	3.3	1031.3	1034.6	.018				
		1034.6-1036.6 en echelon 3 cm. qtz veins 45°TCN, 10% matrix py	8725	2.0	1034.6	1036.6	.048				
1036.6	1041.0	QUARTZ VEIN: frosted white massive vein, innumerable chlorite schlieren, random 5 to 8% py									
		1036.6-1041.0 py in clusters, mainly with chl. schlieren, trace cpy	8726	4.4 (Actual 5.4' core in box of the vein)	1036.6	1041.0	.008				
1041.0	1042.7	CHLORITE SHCIST: chl. lamellae, fine grain soft, cb. boudins .7', replacement silicated pyritic zone .7' and .3' flat lamprophyre dyke -- sampled as one unit as practical solution, schisted replacement zone 20% py									
		1041.0-1042.7 barren chl. sch. .7', pyritic replaced zone .7', lamp. .3'	8727	1.7	1041.0	1042.7	.020				
1043.7	1052.3	DIORITE HYBRID RETROGRADE: schisted magnetite rich, chl. cb. rock, folt'n average 60°TCN, cut by random qtz injecta paralleling folt'n									
		1042.7-1045.5 several en echelon qtz veins to 3 cm., sporadic 8% py	8728	2.8	1042.7	1045.5	.050				
		1045.5-1048.7 strong 60° folt'n, typical retrograde, 8% diss. py, minor po	8729	3.2	1045.5	1048.7	.018				

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HOLE: 83-39
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Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
		1042.7 - 1052.3 (con't)									
		1048.7-1050.8 several later qtz cb. slips, 8% py.po, 1:1 ratio, sporadic	8730	2.1	1048.7	1050.8	.032				
		1050.8-1052.3 folt'd retrograde, py, po extremely variable	8731	1.5	1050.8	1052.3	.012				
1052.3	1055.1	REPLACEMENT ZONE: qtz saturation, permeation relict diorite hybrid, chl. migrates into schlieren between fractured qtz									
		1052.3-1055.1 py 20% disseminated (at center segment) po 20% disseminated NOTE: this replacement zone much loarger than indicated, there has been core lost here, coarse grain broken ends do not match and abrupt change mineralization in centre of zone from 20% py to 20% po	8732	2.8	1052.3	1055.1	.040				
1055.1	1056.3	DIORITE HYBRID RETROGRADE: med. grain chl. cb. schistose 4% py disseminated									
		1055.1-1056.3 py 4%, ct. with replacement zone sharp 20°TCN, py 15% at Ct.	8733	1.2	1055.1	1056.3	.012				
1056.3	1058.0	BASIC LAVA: porphyritic, 5 mm. glomeroaggregates of feld. (.7') significant, perhap recrystallized amygdules with coarse grain flow segment (1') below									
1058.0	1079.3	DIORITE HYBRID: coarse grain med. green, fine chloritic mesostasis with augen qtz and internal feld. laths., appraching true mafic diorite, some matrix, feld all feld. clear and fresh (fabric appears recrystallized after regression of lava flow matrix 1058-1060)									
		1078.0-1079.3 diorite hybrid with strong magnetite, fresh feld., minor py	8734	1.3	1078.0	1079.3	.004				
1079.3	1085.4	REPLACEMENT ZONE: silica, less cb. replacement of diorite fabric, relict dark mica relict rock saturated with frosted injecta, 10% py, po, (mainly py near Cts grading to central po) minute magnetite in qtz									
		1079.3-1082.0 replacement zone with later qtz vein cutting fabric (barren)	8735	2.7	1079.3	1082.0	.230				
		1082.0-1085.4 (samples identical) cut to check assays, 10% py, po	8736	3.4	1082.0	1085.4	.251				
1085.4	1097.5	DIORITE HYBRID: approaching true mafic diorite, feld. laths. fresh recrystallized strong folt'n 70°TCN, with strong interstitial chl., minor py									
		1085.4-1086.4 py, po 8% below 70° Ct. of replacement zone	8737	1.0	1085.4	1086.4	.078				

OROFINO
RESOURCES LIMITED

Property:
Location:
Co-ordinates:

HOLE: 83-39
Core size:

Section:
Length:
Elevation:
Azimuth: Dip:

Dip Tests:
Started:
Completed:
Logged by:

DRILL LOG

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured . normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
1097.5	1100.5	DIORITE HYBRID RETROGRADE: small slip, granulation, alteration at 1098', schisting a 10 cm. qtz vein 40°TCN with arseno, matrix py, po, minor arseno									
		1097.5-1100.5 qtz vein with arseno, po, average 3% py thru segment	8738	3.0	1097.5	1100.5	.109				
1100.5	1112.0	DIORITE HYBRID: well foliated, linear chl. with oriented qtz. augen and internal feld. laths, strong magnetite, directional 60°TCN, minor py									
1112.0	1142.0	DIORITE HYBRID RETROGRADE: med. to coarse grain med. green, schisted, chl. laminae interlayered parallel, cb'td relict feld. 30°TCN, 10% disseminated magnetite minor py									
		1115.0-1116.6 FAULT: intraformational, mortared, granular qtz, beige mica en echelon qtz stringers, random 5% py, break at 1115.4-1116.4; matrix py 3%, fault zone 20% qtz at 40°TCN	8739	1.6	1115.0	1116.6	.200				
		1116.6-1118.0 typical schisted retrograde 3% py	8740	1.4	1116.6	1118.0	.104				
		1118.0-1119.0 mini-replacement silica saturation relict rock, 15% py	8741	1.0	1118.0	1119.0	1.12				
		1119.0-1120.5 qtz vein 8 cm. flat multiple injection in retrograde, 5% py po, trace aspy	8742	1.5	1119.0	1120.5	.078				
		1120.5-1122.5 retrograde, 2% py, 15% magnetite, 40°TCN	8743	2.0	1120.5	1122.5	.004				
		from 1122.5 section of retrograde shisted with relict cb. feld. laths, resorbed									
		1133.9-1134.9 chlorite schist, 35°TCN, cb. schlieren in chl.	8744	1.0	1133.9	1134.9	.010				
		1134.9-1136.1 qtz vein parallel stringers on margins, py migrated to fractures	8745	1.2	1134.9	1136.1	.106				
		1136.1-1139.1 retrograde schisted with 5 cm. multiple qtz vein, fringing py on vein	8746	3.0	1136.1	1139.1	.084				
		1139.1-1142.0 cb. qtz veins, multiple stringers 50% of segment, sporadic py	8747	2.9	1139.1	1142.0	.012				
1142.0	1142.2	LAMPROPHYRE: grey green, fine grain, satellite dyke 40°TCN, abundant cb. knots, no sulphides									
1142.2	1143.2	QUARTZ VEIN: frosted white, chl. schlieren 60°TCN, marginal py									
		1142.2-1143.2 fine oriented py clusters in shist marginal to barren vein	8748	1.0	1142.2	1143.2	.070				

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HOLE: 83-39
Core size:

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Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
1143.2	1145.5	DIORITE HYBRID RETROGRADE: schisted to 1145.5, chl. schist adjacent 8 cm. vein 1143.2-1145.5 qtz vein 5 cm. flat and 45° stringers, oriented py in schist	8749	2.3	1143.2	1145.5	.002				
1145.5	1162.5	DIORITE: coarse grain med. green, misostasis of chl. and fine alteration minerals and coarse grain anhedral qtz augen with enclosed laths fresh feld. as main constituent, minor py, 5% plus magnetite, folt'n appears about 70°TCN									
1162.5	1166.5	DIORITE RETROGRADE: pseudo med. grain, very mafic matrix, orbicular qtz, cb wisps, minor py									
1166.5	1168.7	REPLACEMENT ZONE: relict diorite fabric, complete silica saturation, permeation sharp Cts 30°TCN, 15% combined py, po, appears as vein like injection 1166.5-1168.7 py, po variable ratio; small internal slip, py (left hand) po right	8750	2.2	1166.5	1168.7	.016				
1168.7	1169.3	DIORITE RETROGRADE: silicated, strong py, baked border 1168.7-1169.3 py euhedral to 5 mm., 15% of matrix, hornfelsed Ct.	8758	0.7	1168.7	1169.3	.068			NOTE: Jump in Sample Nos.	
1169.3	1171.2	FELDSPAR PORPHYRY: fine grain vitreous grey matrix, feld. phenocrysts developed to Ct.									
1171.2	1174.7	DIORITE RETROGRADE: coarse grain med. green, honfelsed lower Ct., minor py									
1174.7	1176.5	REPLACEMENT ZONE: relict diorite fabric, 20% sulphides, sulphides parallel folt'n 1174.7-1176.5 py 20% subhedral single crystals parallel trains, sharp Cts 40°TCN	8759	1.8	1174.7	1176.5	.004				
1176.5	1177.5	DIORITE RETROGRADE: fine grain Ct. no sulphides, non-silicated 1176.5-1177.5 no sulphides, abrupt Ct. with ore zone	8760	1.0	1176.5	1177.5	.002				
1177.5	1190.5	LAMPROPHYRE: fine grain cb'td matrix, light grey, slender prisms amphibole and orbicular chl.									
1190.5	1198.2	DIORITE: coarse grain med. green, original 'recrystallized' fabric unaffected by dykes above and below									

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HOLE: 83-39
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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
1198.2	1205.5	FELDSPAR PORPHYRY: fine grain vitreous grey matrix, abundant feld. phenos, profusion of shard - amphiboles to 1 cm., pods chl., absort'n of host rock, Cts 70° TCN									
1205.5	1224.3	DIORITE: coarse grain med. green, chl., mesostasis, orbicular qtz with internal laths. plag., trace py, po, random steep epidotic slips									
1224.3	1229.0	DIORITE RETROGRADE: develops to chl. schist, chl. laminae, qtz cb. mini-boudins, cb. wisps in fractured qtz.									
		1226.0-1228.0 chl. schist, no sulphides, 50°TCN	8761	2.0	1226.0	1228.0	Tr				
		1228.0-1229.0 as above, 10 cm. fine parallel py at lower Ct.	8762	1.0	1228.0	1229.0	.018				
1229.0	1234.0	REPLACEMENT ZONE - ATYPICAL: beige alt'n, granulation, silicified but not complete as in usual zone, relict fabric obvious en echelon faulting, beige clayey mesostasis, (appears lower F.P. invades a replacement zone)									
		1229.0-1231.5 py 15% mainly fine, possible fault, little movement on break	8763	2.5	1229.0	1231.5	.044				
		1231.5-1234.0 py 20% more crs 3 mm. euhedral, en echelon beige alt'n	8764	2.5	1231.5	1234.0	.016				
1234.0	1247.0	FELDSPAR PORPHYRY: fine grain vitreous matrix, silicic dyke, feld. phenos vague, black biotite, amphibole lesser phenos (3%), minor py, Cts destroyed									
1247.0	1275.6	DIORITE: med. grain med. green, slightly retrograded and some hybrid, (e.g. matrix feld. pitted, cb't'd.) partly resorbed, chl. widespread, amphiboles partly chloritized, perhaps faulting shifts hybrid diorite below true diorite									
1275.6	1276.1	LAMPROPHYRE: fine grain med. grey, 'green biotite' type, slender amph. prisms parallel Cts 60°TCN									
1276.1	1302.0	DIORITE RETROGRADE: coarse grain med. green, very mafic, cb'td minimal feld.									
		1276.1-1277.4 pyritic retrog. with .7' qtz vein (3% py) margins 20% py	8765	1.3	1276.1	1277.4	.058				
		1277.4-1280.0 py variable in mafic matrix, av. 5%, mainly 1 mm. py to 1278, py 15% adjacent .6' variable vein to 1280	8766	2.6	1277.4	1280.0	.042				
		1280.0-1282.0 clustered sporadic py 10%, en echelon qtz stringers	8767	2.0	1280.0	1282.0	.022				
		1282.0-1286.0 py 3% in dark green mafic retrograde	8768	4.0	1282.0	1286.0	.014				
		1286.0-1288.0 py 15% marginal to en echelon 3 cm. qtz stringers, flat	8769	2.0	1286.0	1288.0	.042				
		1288.0-1292.0 py 3%, same as 1282-1286, cb. wisps	8770	4.8	1288.0	1292.0	.002				

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HOLE: 83-39
Core size:

Dip Tests:
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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
1302.0	1381.0	DIORITE: coarse grain med. green, chl. mesostasis, qtz augen with fresh white feld. laths, some local areas minor cb. (masking feld.-chloritizing amphiboles) at 1312 to 1313.5 local intense shear schisting massive diorite, slight increase py, considerable disseminated magnetite from 1323, local short fine grain segments with lamprophyre stringers									
		1373.0-1375.5 silicification of existing diorite fabric, 5% py disseminated 3 cm. qtz vein	8771	2.5	1373.0	1375.5	.038				
		1378.0-1379.0 silicification, several en echelon 5 mm. qtz fractures 10° TCN, 10% py	8772	1.0	1378.0	1379.0	.002				
1381.0	1382.0	FAULT: fine grain beige sericite shear, augen qtz (minor, schlieren qtz in sericite vug lower Ct									
		1381.0-1382.0 fault 30°TCN, sulphides rare, qtz xstals in vug	8773	1.0	1381.0	1382.0	Tr				
1382.0	1384.8	LAMPROPHYRE: fine grain light green, schistose 30°TCN, heavily fractured, threaded barren qtz cb.									
1384.8	1408.0	DIORITE RETROGRADE: contorted schistose 70°TCN, irregular qtz cb injecta, several en echelon qtz 3 cm. marginal py to 15%									
		1384.8-1387.0 py 20% over 1.5' adjacent to low angle 3 cm. qtz	8774	2.2	1384.8	1387.0	.088				
		1387.0-1389.0 sporadic 15% py, average 8%, en echelon 1 cm. qtz veins, flat	8775	2.0	1387.0	1389.0	.050				
		1391.0-1392.0 qtz vein 3 cm. 10°TCN margin by 15% py in retrograde	8776	1.0	1391.0	1392.0	.012				
		1398.9-1401.0 partly silicated matrix, 3 cm. qtz, flat, 15% py in retro.	8777	2.1	1398.9	1401.0	.042				
		1401.0-1404.0 sporadic 15% py with silication, most of segment barren	8778	3.0	1401.0	1404.0	.044				
1408.0	1426.0	DIORITE: coarse grain med. green, ct arbitrary, chloritic mesostasis with qtz augen and enclosed feld. laths. increasing down hole, crude folt'n appears low angle TC									
1426.0	1434.2	DIORITE RETROGRADE: coarse grain med. green, typical retrogr., fractured qtz augen cb wisps, chl. and minor cb. matrix, segment progressively silicic toward lower Ct.									
		1429.5-1431.5 secondary silication, py on mini-fractures 5%, folt'n 10°TCN	8779	2.0	1429.5	1431.5	.010				
		1431.5-1434.2 qtz vein .6' massive erratic py in vein, fractured matrix with py	8780	2.7	1431.5	1434.2	.042				

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DRILL LOG

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Elevation:
Azimuth: Dip:

HOLE: 83-39
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t
1434.2	1447.0	FELDSPAR PORPHYRY: fine grain vitreous red brown matrix with 5 mm. subhedral feld. phenos tot., grading to central grey ultrasilicic zone with unzoned phenos with fretted rims, back to red brown at lower Ct., upper Ct. 40°, lower 60°TCN, minor py, 5% black biotite, green amph. phenos					
1447.0	1463.2	LAMPROPHYRE: fine grain contorted, schlieren chl. after amph. in parallel array, a multiple injection of lamp. dykes of varying but similar comp'n, 4% py 1454.5-1456.5 vertical sliver F.P. in Ct with lamprophyre; lower lamp. dyke is 'green biotite' type, less met'm ph'd than overlying dykes					
1463.2	1465.2	DIORITE RETROGRADE: random silication, 10 cm. of intense replacement with 20% py 1463.2-1465.2 Crs py over 10 cm., margins with disseminated 5% py	8781	2.0	1463.2	1465.2	.022
1465.2	1465.6	LAMPROPHYRE: fine grain dark grey satellite dyke, massive, no features, Cts 40°TCN					
1465.6	1483.0	DIORITE RETROGRADE: coarse grain, med. green, chl. mesostasis, qtz augen, cb. wisps chl't'ic amphibole, local small intense shears 60°TCN, minor py					
1483.0	1499.0	DIORITE: coarse grain med. green, as described 1302.0-1381.0, folt'n appears 60°TCN from 1494.6-1496. local mafic retrograde segment due to local shear 80°TCN					
1499.0	1509.9	DIORITE RETROGRADE: fine to med. grain, matrix very vague, dark green, lone small relict cb'td feld., almost seems like protected segment basic lava, a vague diorite fabric, fairly massive, thin cb'td joint planes					
		1502.0-1502.9 obvious dio-retrograde, 3% py	8782	.9	1502.0	1502.9	.006
		1502.9-1503.9 silicified, some saturation, 3 cm. vein, 15% crs py.po	8783	1.0	1502.9	1503.9	.030
		1503.9-1505.9 py 8% crs blebs along fractures in regressed diorite	8784	2.0	1503.9	1505.9	.004
1509.9	1540.0	DIORITE: coarse grain med. green, as described 1302.0-1381.0; several short mafic segments with lone qtz augen and enclosed feld. laths (fresh unaltered) 2% py, at 1528.5 - 4 cm. segment with 15% disseminated py					
1540.0	1548.0	LAMPROPHYRE: fine grain med. grey, individual xstals distinct in matrix, solitary cb. 1 mm. xstals as phenocrysts in matrix (probably pseudomorph feld.), minor py, Cts upper-lower 65°TCN, abundant, amphibole chl. as prisms and					

OROFINO
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DRILL LOG

Property:
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Length:
Elevation:
Azimuth: Dip:

HOLE: 83-39
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS				
		1540.0 - 1548.0 (con't)									
		clots larger than matrix, 'green biotite' type									
1548.0	1555.5	LAMPROPHYRE: med. grain dark grey, black mica rich matrix, black green mica and amphibole (acicular) xstals (so abundant as to be part of matrix rather than phenocrysts) many previous logs named this 'grey mica dyke'; lower Ct. 60°TCN									
1555.5	1558.0	LAMPROPHYRE: fine grain med. grey, 'green biotite' type, large 1 cm. chl. xenoliths of digested host rock, Cts 60°TCN, no Cb. metacrysts as in facies above 1540' etc.									
1558.0	1559.5	LAMPROPHYRE: med. grain dark grey, as described 1548.0-1555.5; Cts 60°TCN									
1559.5	1562.0	LAMPROPHYRE: fine grain, med. grey 'green biotite' type, upper Ct. 60°TCN, lower Ct. 0°TCN									
1562.0	1584.5	FELDSPAR PORPHYRY: fine grain vitreous red brown matrix with subhedral phenocrysts to Ct. grading outward to grey long distance from Ct., minor py									
1584.5	1587.0	LAMPROPHYRE: fine grain near grey, 'green biotite' type dyke -- these 2 varieties are most common of all in the Mine Area									
	1587.0	END OF HOLE									

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Property: OROFINO RESOURCES
Location: 200' mgg N. of 83-38
Co-ordinates: 14795.16N
9275.50E
Section: F
Length: 1838'
Elevation: 1223.5'
Azimuth: -0- Dip: -90°

83-40
HOLE: [redacted]
Core size: AQ
Dip Tests: 1000' -85° 1838' -81°
Started: Sept. 20, 1983
Completed: Sept. 27, 1983
Logged by: Warren Gilman

DRILL LOG

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t
0.0	12.0	CASING					
12.0	42.8	BASIC LAVA - ANDESITE: med. grain med. green, typical greenstone fabric, individual equi-sized xstals, amph., cb., epidote, feld. (various stages conversion to cb.), homogeneous, 5% disseminated py, random joints 60°TCN with cb. 2-4 mm.					
		18.5-21.5 en echelon qtz cb. veins 1 cm. to 10 cm. 60°TCN, 5% py, 1% po	8930	3.0	18.5	21.5	.06
		22.8-25.8 en echelon qtz cb veins 1 to 3 cm., 20°TCN, 5% py, trace po	8931	3.0	22.8	25.8	.01
		27.3-30.3 en echelon qtz cb veins 1 to 3 cm., 20°TCN, py in volcanic margins, 15% vein	8932	3.0	27.3	30.3	.01
		at 36' a 10 cm. qtz cb. barren vein 70°TCN; folt'n variable 30 to 70°TCN, av. matrix py of greenstone 1%					
42.8	85.0	BASIC LAVA - ANDESITE: met'mphased, amphibolitized - no additive migmetitization recrystallized amph. slender prisms to 1 cm., fabric met'm'd and regressed to a degree after recrystallization - much is a vague fabric, Cb'td with crs amphibole and very fine leucoxene, po sporadic in crs clots to 2%, some silication with amphibolitization					
85.0	108.0	BASIC LAVA -ANDESITE: variations of both above types, lava 85 to 87 fine grain schisted lava threaded with cb (barren), local regressed zone; 87 to 101 as described, amphibolitic, coarse grain 42.8-85'; 101 to 108 finer grain regressed schisted lava, chl. laminae, interlayed cb. pods at 20°TCN, several qtz cb. barren veins 70°TCN, 2 to 3 cm. wide					
108.0	119.9	TUFF - ANDESITIC: fine grain med. green, waterserted, delicate fine banding 20° to 30°TCN, fine chl. laminae, interlayered lenses, pods, seams cb., later parallel fractures with thin film cb. parallel roughly to banding, sporadic py from nil to 8%, most vicinity of qtz veins, not insitu py					
		110.4-113.5 py 4% random, minor 2 mm. cb. fractures, cpy trace in cb. vein	8933	3.1	110.4	113.5	Tr
		113.5-118.3 en echelon barren qtz 10 cm. to 1 cm. 0°-70°TCN, py on margins	8934	4.8	113.5	118.3	Tr
		118.3-119.9 fine bedded tuff, barren 5 cm. qtz vein, 3% py, beds 10°TCN	8935	1.6	118.3	119.9	.01
119.9	127.6	LAMPROPHYRE: fine grey matrix, phenocrysts slender amphibole, 'green biotite' type, a multiple injection, secondary Cb'td fabric in long segment with vague fabric and distortion of amphiboles (and migrat'n), a central small dyke of black biotite dyke, with cb. metacrysts, Cts irregular, general 10°TCN, minor fine py					

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Property:
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HOLE: 83-40
Core size:

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Dip Tests:
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Completed:
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DRILL LOG

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
127.6	152.3	TUFF - ANDESITIC: fine grain, med. green, as described 108.0-119.9; same multiple cb. fracture py in some predates cb., several sporadic qtz veins, as described in sampling py in tuff matrix 1%									
		133.5-136.0 sinuous 2 cm. qtz vein, with cb, vertical, py on margins	8936	2.5	133.5	136.0	Tr				
		136.0-140.5 QTZ VEIN (discontinuous 80% of length) 0° to 60°TCN, py margins	8937	4.5	136.0	140.5	.01				
		140.5-143.8 qtz vein 5 cm. and 10 cm. near vertical fine py margins	8938	3.3	140.5	143.8	Tr				
		143.8-146.5 tuff - 2% py, some vertical sinuous qtz cb. vein, 2 cm.	8939	2.7	143.8	146.5	Tr				
		146.5-147.7 vertical qtz, lesser cb. vein; barren, minor py on margins definite variance in texture across bedding recognizable in tuff, tops may be possible	8940	1.2	146.5	147.7	.02				
152.3	207.4	BASIC LAVA - ANDESITE: med to coarse grain variable texture over short widths several met'm'd amphibolitized portions, slender amphiboles to 1 cm., (in diabasic array), some vague crs fabric (cbt saturation of fabric, clouding xstals) with fine leucoxene, epidote, py 1%; at 172' a .5' fine grain cb'td fractured local shear, no sulphides; from 180' segments with abundant fresh matrix plag. laths with tendency to migmatite with glomeroaggregates plag. laths, sporadic clots po., usual 1% py, slender laths amphibole, local 3 cm. epidotic injecta, flat to 20°TCN, with local crs vague textured segments intervening, areas of vague fabric silicified to a degree with 2% disseminated po									
207.4	214.0	LAMPROPHYRE: fine grain light to med. grey, individual xstals, dark and light, cb. after feld. phenos of slender green amph., 'green biotite' type, central core with black biotite, upper Ct. 50°TCN, lower 60°, lower with several intervening lenses host parallel ct. trace cpy, 2% py, slendor amphiboles parallel Ct. orientation near margins									
214.0	245.0	BASIC LAVA - ANDESITE: as described 152.3-207.4; amphibolitized, silicifed, epidotic recrystallized with feld. collecting as glomeroaggregates, progressing toward migmatite, migration of xstals in fabric with silication, scattered po									
245.0	248.0	BASIC LAVA - ANDESITE: (retrograde), local shear and fracture zone of fine grain regressed fabric, cut by myriad of cb. and central silica - epidote core, no sulphides, cb'td									
		245.0-248.0 cb. lined fractures, core of qtz-epidote 20° to 70°TCN, no S	8941	3.0	245.0	248.0	Tr				

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Elevation:
Azimuth: Dip:

HOLE: 83-40
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH		DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS			
from	to						Au oz/t			
248.0	260.5	BASIC LAVA - ANDESITE: as described 152.3-207.4 and 214.0-245.0; coarse grain med. green, amphibolitic with slender amph. prisms, ct'd feld. epidote, some 'islands' migrational qtz, primary stages migmatitization, scattered po								
260.5	261.5	'ANDESITE' DYKE: fine grain med. green, typical fine greenstone fabric, white, dark green, and epidotic, cb. fabric with abundant thin fractures with film of po and py to 3%, Cts 30°TCN								
261.5	262.4	BASIC LAVA - ANDESITE: as described - flat 3 cm. qtz vein, lower Ct., some py, po								
262.4	263.0	LAMPROPHYRE: med. grain dark green, phase of 'green biotite' type, flat Cts								
263.0	267.7	BROWN DYKE: as described in all previous holes, brittle fine grain red brown matrix with abundant orbicular green and white clots (pseudo amygdules) a crs'er phase with orange brown subhedral feld. laths varisized to 3 mm., trace py, flat Cts								
267.7	270.5	LAMPROPHYRE: med. grain to coarse grain dark green, anhedral clots amphibole to 5 mm., lower Ct 50°TCN, injected by flat brown dyke, minor py as films on fractures								
270.5	275.6	BASIC LAVA -ANDESITE: coarse grain, med. green, amphibolitic, amph. to 5 mm., matrix feld. laths with interlayered amph. epidote, some regression near upper-lower dyke Cts, minor py								
275.6	279.1	LAMPROPHYRE: coarse grain brownish green, smaller white cb'td feld. clots and dark green amph. to 5mm., crs amph. of diverse orientation, minor py, upper Ct. 40°TCN, lower 20°								
279.1	279.9	BASIC LAVA - ANDESITE: coarse grain, as described 270.5-275.6; amphibolitic fresh matrix								
279.9	281.1	ANDESITE DYKE: perhaps a marginal phase of lamprophyre, fine grain massive, some py and cb. threads with po, some minerals as 260.5-261.5; Cts 10°TCN								
281.1	293.0	LAMPROPHYRE: some crs phenocrysts in finer matrix								

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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
293.3	310.2	BASIC LAVA - ANDESITE: coarse grain med. green, mild silication and masking of matrix with feld. vague cb't'd., characterisitic large amph. average 5 mm. some xstals to 2 cm., folt'n very difficult, amph. with diverse orientation trace py, po to 1%, trace cpy									
310.2	320.0	BASIC LAVA - ANDESITE: fine to med. grain schisted, strong folt'n 20°TCN, en echelon cb. laminae interlayered with fine grain matrix with individual xstals intact, NOT chl. schist sulphides, py, po, migrated to mini-lenses parallel folt'n, fine leucoxene									
320.0	359.0	BASIC LAVA - ANDESITE: med. grain med. green, typical greenstone fabric with recrystallized amph. individual feld. amph., leucoxene, epidote in fabric, some slender recrystallized amph. in diverse array, coarse grain segments down hole with masked fabric due to light silication, abundance amphiboles, fine leucoxene, trace po, py, masking of fabric due to segments with epidote permeation, folt'n 70°-80°TCN									
359.0	367.7	BASIC LAVA - ANDESITE: fine to med. grain typical greenstone fabric, individual xstals, folt'n 70°TCN, fine disseminated po 2%, minor py, cb. lined joints									
367.7	416.7	BASIC LAVA -ANDESITE: med. to coarse grain amphibolitic with segments mild epidote permeation po < 1%, trace py, longer amphibolitic segments with amphibole 1.5 cm.									
		387.0-397.0 po 2 or 3%, aggregated recrystallized, epidotic slips with po po persists random through amphibolitic lava	8942	10.0	387.0	397.0	Tr				
		from 397' fabric approaching migmatized and rapidly passing to DIORITE HYBRID with abundant felsic segregations (pale grey silica) matrix plag. laths small but fresh and abundant, amphibole laths prominent, minute feld. at times in felsic orbicular aggregates									
416.7	420.0	LAMPROPHYRE: fine grain brown green silicic matrix with reticulating trains chl. with some amph., migrated, recrystallized, with abundant anhedral small cb. clots, a central segment of 'granular' pink green alteration feature set in mosaic of fine chlorite, seen before in lamp. dykes at North end of property upper Ct 60°TCN, lower 40°									

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420.0	459.0	ANDESITE MEGMATITE: approaching diorite hybrid, amphibolitic, very abundant matrix plag. laths with anhedral felsic segregations, some with minute feld., prominent amphiboles, minor po persists, minor py									
459.0	465.0	BASIC LAVA - ANDESITE: fine to med. grain typical greenstone fabric, possible regression of fabric along minor shear, en echelon Cb'td joints 30°TCN, schistosity 60°-70°TCN, vertical qtz cb. 1 cm. vein, random py, minor po, migrated parallel folt'n									
		460.0-465.0 some en echelon cb. and 2' vertical cb qtz vein, lenticular S	8943	5.0	460.0	465.0	Tr				
465.0	499.3	ANDESITE MIGMATITE: appraching diorite hybrid with innumberable pale grey felsic segregations, abundant matrix plag, sporadic crs and fine po, average 2%, trace py folt'n may be 70°TCN at 475-476 local fine grain 'regressed' segment, local shear or proximate to hidden dyke, minor py, po									
499.3	499.6	LAMPROPHYRE: fine grain dark green, 'green biotite' type, abundant slender prisms amphibole									
499.6	506.3	ANDESITE MIGMATITE: as above 465.0-499.3; long regressive segment, med. grain drilling near Ct. of vertical dyke, change granularity but matrix plag. intact									
506.3	516.6	ANDESITE DYKE: fine grain dark individual xstals partly evident in matrix, prolific with varisized clots cb. (after feld.), sporadic migrated clots sulphides, cb. drawn out parallel dyke lineation (not lamprophyric texture), minute plag through matrix, partly cb't'd., lineation dyke mainly vertical Cts 40°TCN									
516.6	528.0	ANDESITE MIGMATITE: as described, resemblance to andesite, lesser large amphiboles more med. grain with abundant chl. cb. and small matrix feld. recrystallized Andesite									
528.0	536.0	BASIC LAVA - ANDESITE: local shear with fine grain chl. matrix, en echelon qtz cb fractures cb. threading, py sporadic, fine, from nil to 8%									
		529.0-536.0 en echelon qtz cb 15°TCN parallel schistosity, variable py	8944	7.0	529.0	536.0	.01				

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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t			
536.0	569.2	DIORITE HYBRID: coarse grain med. green, silicic orbicular and anhedral clots with internal plag. laths, matrix fresh feld. laths, in chl. amph base, clustered epidote, recrystallized amphiboles, 4% disseminated py to 456, trace cpy same texture with very minor sulphides below 456, from 558 to 569.2 zone of epidote silica saturation and amphibolitization and masking of felsic fabric with alteration								
569.2	573.2	LAMPROPHYRE: med. grain black biotite- cb. type dyke, multiple injection with internal faulting a schisted black mica, cb. rock with internal beige fault 3 cm. with central qtz vein (no S) later injection schists enclosing walls of earlier injection of same, folt'n strong 30°TCN, some crs py at upper Ct py abundant in some portions to 5% at 5 mm.								
		569.2-573.2 unusual features in lamp. dyke plus crs cellular py, random py	8945	4.0	569.2	573.2	Tr			
573.2	578.8	DIORITE HYBRID RETROGRADE: med. grain chl. laminae and interlayered cb. clots, boudins, lenses, 30°TCN, several beige slips with granular mortared slip plane minor py, fine leucoxene, py mainly fine 3%								
		573.2-578.8 small beige slips, trace py, matrix py of schist 3%	8946	5.6	573.2	578.8	Tr			
578.8	579.5	LAMPROPHYRE: fine grain grey green, cb'td matrix with abundant amphibole prisms 'green biotite' type, Cts 20°TCN, distinct difference from black biotite lamp (569.2-573.2)								
579.5	581.0	DIORITE HYBRID RETROGRADE: coarse grain med. green, cb't'd mosaic, chl. amph. cb feld.								
581.0	642.0	DIORITE HYBRID: coarse grain med. green, as described 536.0-569.2; laths feld. matrix and in anhedral qtz augen, widespread epidote permeation, varied generation of amphiboles, (3 cm. lamprophyre 'green biotite' type at 587') at 607' irregular injecta of grey felsic fine grain migmatizing media?; at 626' and 637.5' excellent example of felsic migmatizing fluid to develop diorite random qtz cb. lining joints, minor epidotic 1 to 2 cm. shears, Po Py extreme sporadic, 5% po over short widths								

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642.0	649.0	DIORITE HYBRID RETROGRADE: mafic, strong folt'n, med. grain, med. green, folt'n 70°TCN, feld. to cb., cb. wisps in qtz augen, amphiboles to chl. local zone of regressive shearing									
649.0	657.8	DIORITE HYBRID: coarse grain med. green, as described 581.0-642.0; strong epidote saturation and amphibole development, crs leucoxene, py very sporadic									
657.8	658.3	LAMPROPHYRE: dark brown green, silicic, vague fabric 'green biotite' type, flat Cts. veins massive Cb. parallel Cts									
658.3	667.0	DIORITE HYBRID: coarse grain med. green classic hybrid, approaching true diorite orbicular qtz with internal feld. laths predominates in fabric mosaic, sporadic py									
667.0	682.2	DIORITE HYBRID RETROGRADE: coarse grain med. green, orbicular qtz with cb. wisps along fractures, matrix mainly chl. cb., amphiboles chloritized, magnetite, folt'n 60°TCN									
682.2	690.2	FELDSPAR PORPHYRY: red brown fine vitreous matrix with zoned plag. phenos 30% of matrix, lesser anhedral biotite phenos, Cts 85°TCN, xenoliths host rock near Cts, py									
690.2	702.5	DIORITE HYBRID: coarse grain med. green, as described 658.3-667.0; approach diorite, py extreme sporadic 2% average									
702.5	706.9	DIORITE HYBRID RETROGRADE: schisted, masked fabric 20° to 30°TCN, cb'td, chlt'zed 705.0-706.9 py 5% aligned parallel folt'n, magnetite, barren late cb. slips	8947	1.9	705.0	706.9	.02				
706.9	708.2	QUARTZ VEIN: impure chloritic, some pink cb., later fractures with felsic injecta 10% py, Cts. 70°TCN 706.9-708.2 py in trains along chloritic fractures of vein, 2 ages to vein	8948	1.3	706.9	708.2	Tr				
708.2	710.0	DIORITE HYBRID RETROGRADE: schisted, chl. lamellae with interlayered clots, boudins, lenses cb., strong magnetite parallel folt'n 40°TCN, several 3 cm. flat satellite lamp dykes 708.2-710.0 includes 9 cm. lamp. dykes, 5% py in schist, 3 mm. py	8949	1.3	708.2	710.0	Tr				

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710.0	711.2	LAMPROPHYRE: med grain grey black biotite, schistose, abundant pods, 'metacrysts' anhedral cb. a mini-black biotite type dyke, folt'n 20°TCN parallel Cts									
711.2	719.0	DIORITE HYBRID RETROGRADE: schisted, as described 708.2-710.0; abundant magnetite 711.2-713.4 inject'n sporadic qtz cb., chloritic inject'n of fabric, 10% py 713.4-715.0 chl. schist magnetite, 20°TCN folt'n, clustered py 5 to 8%	8950 8951	2.2 1.6	711.2 713.4	713.4 715.0	.01 .01				
719.0	732.5	DIORITE HYBRID: coarse grain med. green, approach true diorite, clear feld. laths in qtz, some matrix feld. 2% py, random epidotic slips, larger epidotic segments with leucoxene									
732.5	745.5	LAMPROPHYRE: profusion amph. laths and xenolithic recryst clots amphibole 30% plus total fabric in slight pink, grey cb'td matrix, 5 mm. anhedral clots host rock, minor py, orbicular clots cb., upper Ct 15°TCN									
745.5	747.4	LAMPROPHYRE: older fine grain dyke, 'green biotite' type, darker grey, cb. matrix with slender ampliboles, fine py, (segments in above lamp) Ct flat, lower Ct 90°TCN									
747.4	749.8	DIORITE HYBRID: coarse grain med. green, clear internal feld. laths, minor py, folt'n appears steep									
749.8	755.5	LAMPROPHYRE: med. grain med. green (unusual), chl'z'd amph. cb. rock, 60% chl. relicts after amph. with interspersed cb., relict cb'td feld., inclusions massive Cb., Cts 20°TCN									
755.5	757.6	FELDSPAR PORPHYRY: red brown vitreous matrix, zoned plag. phenocrysts 35% of matrix Cts 20°TCN, lesser green-black biotite phenos, minor py									
757.6	760.3	LAMPROPHYRE: med. grain med. green, same dyke as described 749.8-755.5; lower Ct 70°TCN, very sporadic py, abundant Cb. relicts after feldspar									
760.3	786.0	DIORITE HYBRID: approach true diorite, coarse grain med. green, large laths matrix plag. much amphibolitized very crs diverse amph. xstals to 1 cm., skeletal leucoxene disseminated, local minor shear at 766, banded chl. schist 80°TCN									

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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t		Chk Smpl		
786.0	786.3	LAMPROPHYRE: fine grain with phenocrysts slender amphbole, 'green biotite' type, chloritic amph. to 3 mm., flat									
786.3	788.3	DIORITE HYBRID: as described 760.3-786.0; at 787.2-787.4 flat lamprophyre 'green biotite' type									
788.3	789.5	LAMPROPHYRE: fine grain porphyritic, slender green amphiboles, fabric masked, a fine grain phase cut near Ct.									
789.5	797.5	DIORITE HYBRID: coarse grain med. green, crs amphiboles, epidote clusters, py very sporadic 5% to nil									
797.5	801.6	LAMPROPHYRE: fine and med. and coarse grain med. green, fine matrix over portions near Cts, similar trace greenstone texture, comp, large knits feld. and imperfect amphiboles, much relict diorite hybrid incorporated in dyke (coarse grain), fabric slightly vague, variable py (many of these dykes - multiple injections, variable py, Cts 20°TCN									
801.6	857.0	DIORITE HYBRID: coarse grain med. green, large matrix feld. laths, orbicular qtz with internal feld., amphiboles 5 mm., epidote aggregates, crs skeletal leucoxene, 3% py, local thin granular (schistose) shears with fine py, amphibolitic portions with amphibole to 1 cm., thin 1 cm. migmatizing felsic (silicic) injecta with 10% py and some with 5% crs po., minor cb. lined joints, barren, folt'n appears 60°TCN, rare crs po through matrix									
857.0	863.7	DIORITE HYBRID RETROGRADE: coarse grain med. green, massive epidote 5 cm. at upper Ct., chlorite base with orbicular fractured qtz and cb. wisps in fractures and matrix 859.0-863.7 schistose, chl. lamellae, Cb. boudins, pods, lenses, stretched magnetite, 40°TCN, 3% py	8952	4.7	859.0	863.7	.01				
863.7	865.0	QUARTZ VEIN: impure, abundant inclusions, host rock, massive chl., mainly barren margins with py, po 863.7-865.0 aggregated trains py, po at Cts (flat) with pyritic massive chl.	8953	1.3	863.7	865.0	Tr		.002		

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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
865.0	869.0	DIORITE HYBRID RETROGRADE: schisted, chl. lamellae, cb. lenses, clots, boudins, stretched magnetite 865.0-869.0 chl. cb. schist, 5% py, diminishing away from qtz, recryst parallel folt'n	8954	4.0	865.0	869.0	Tr				
869.0	882.0	DIORITE HYBRID: partly retrograded, feld. converted partly to cb., retains diorite fabric, at 874 to 877 local shear with fine grain granular fabric with crs py, some feld. intact, several 1 to 3 cm. granular chl't'c shears parallel folt'n 40°TCN									
882.0	911.5	DIORITE HYBRID: crs amphibolitic, epidotic, abundant light green matrix plag., amphiboles sub-hedral to 1 cm. grading to non-epidotic crs diorite with aggregated matrix epidote, random crs py									
911.5	927.0	LAMPROPHYRE: med. grain multiple, pulsing injection, fine grain into med. grain and crs, a network of cht'z'd amphiboles with intervening cb. (after feld.) fingers of fine grain through older part of green dyke, (not seen in mine area), fine grain Cts of dark green brown with small amphibole laths (suggests relation to 'green biotite' type lamp.) Upper Ct. 10°TCN with thin satellite fingers above 911.5, lower vertical Ct. with slivers of diorite invaded by fine grain dark grey green dyke									
927.0	973.5	DIORITE HYBRID: coarse grain med. green, diorite like fabric, chl. base, crs amph. matrix plag. talths, orbicular qtz with internal feld., aggregated epidote skeletal leucoxene, minor py; at 932-942 a med. grain segment, essentially granulose texture but smaller grain size; at 935 and 945 felsic vertical felsic vein injection, (the migmatizing fluid); at 947-950 coarse grain fresh diorite hybrid, aggregated py, po, thin locals shears with po, tr cpy									
973.5	978.5	DIORITE HYBRID RETROGRADE: schisted, chl. lamellae, interlayered cb. boudins, lenses, clots, elongate sericite - leucoxene, thin crenulated shards, fine py drawn cut parallel folt'n 973.5-978.5 py 4% drawn out, fine grain along folt'n planes with leucoxene wisps 40°TCN	8955	5.0	973.5	978.5	Tr				

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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
978.5	984.3	DIORITE HYBRID: med. to coarse grain some contortion of matrix chloritic, but qtz clusters with internal feld. laths and matrix laths feld. in mafic matrix average 2% py									
984.3	1001.0	LAMPROPHYRE: fine grain dark red brown green silicic, homogeneous matrix with amphibole, prisms as phenocrysts, minute xstal matrix cb., dark amphibole? 'green biotite' type dyke, amphiboles 0° to 90°TCN, fine dispersed py, Cts 70°TCN									
1001.0	1017.7	DIORITE HYBRID: strong chlorite base, oft referred to as mafic hybrid, abundant med. grain fresh plag., appears to have been granulated contorted prior to migmatitization folt'n 70°TCN, 5% plus magnetite parallel folt'n, irregular swirls of felsic migmatizing fluid invading mafic hybrid, py remobilized parallel folt'n									
1017.7	1029.5	FELDSPAR PORPHYRY: red brown fine grain vitreous matrix with plag. phenos, silicat'n masks zoning, strong dyke orientation 70°TCN, tenticular amphiboles, xenoliths mafic rock, massive chl. with py in joints, central ultrasilicic frosted core of dyke, Cts 80°TCN									
1029.5	1045.0	DIORITE HYBRID RETROGRADE - ATYPICAL REGRESSIVE: textures, very mafic, chlorite, 10% recryst magnetite, portions are pseudo fine grain with vague relict orbicular qtz									
		1029.5-1032.0 qtz vein 8 cm. flat, chloritic matrix 5% py, some fresh feld. from 1032' progressively more mafic, lesser cb. and increase magnetite	8956	2.5	1029.5	1032.0	Tr				
1045.0	1057.3	DIORITE HYBRID: very mafic dark green grading to epidotic coarse grain, 10% stretched, magnetite, from 1045-1052 probably never heavily migmatized, minor concentration felsic injecta grades at 1052 to epidotic, strong folt'n 60° and 70°TCN, with clustered fresh feld. some aggregated recrystallized py									
1057.3	1071.0	FELDSPAR PORPHYRY: fine grain red brown vitreous matrix with 5 mm. plag. phenos, grading to central silicic beige white core with sericite, resorbed mafic xstals, 1068-1070 pink alteration granular texture, inter dyke fault 20°TCN upper Ct 70°, lower 30°TCN									

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1071.0	1073.3	DIORITE HYBRID RETROGRADE: chl. lamellae, interlayered boudins lenses cb., epidote, sericite									
		1071.0-1073.3 magnetite 5%, py 3%, folt'n 40°TCN, qtz remnants	8957	2.3	1071.0	1073.3	Tr		.002		
1073.3	1077.0	REPLACEMENT ZONE: silicic, some relict hybrid, near complete silica saturation of matrix with later qtz veins 3-4 cm. steep to vertical through replaced zone, 10% py from 1 to 5 mm. anhedral to euhedral, late qtz barren									
		1073.3-1077.0 py remobilized in bands adjacent to late qtz vein, py 10%	8958	3.7	1073.3	1077.0	.01		.014		
1077.0	1083.0	DIORITE HYBRID RETROGRADE: med. grain progressing to pseudo fine grain, mafic, silicified to varying degree, feld. converted to cb., chloritized amphibole folt'n 40°TCN to vertical									
		1077.0-1079.7 py 8% in med. grain chl. cb. magnetite mosaic, massive chl. with hi py	8959	2.7	1077.0	1079.7	.01		.016		
		1079.7-1083.0 contorted 70°TCN folt'n, py 5%, minor qtz slips, barren	8960	3.3	1079.7	1083.0	.01		.004		
1083.0	1084.0	QUARTZ VEIN: white frosted, minor sericite, pink stain, py 3%, Cts 60°TCN, mainly barren									
		1083.0-1084.0 barren qtz, sericite clots with minor py	8961	1.0	1083.0	1084.0	.02		.002		
1084.0	1098.0	DIORITE HYBRID RETROGRADE: coarse grain strong folt'n, chl. discontinuous lamellae and cb. blebs pods, magnetite, leucoxene, very mafic hybrid									
		1084.0-1086.5 multiple seams beige alt'n, 4 cm. qtz vein 80°TCN beige break 10% py	9062	2.5	1084.0	1086.5	.02		.024		
		1086.5-1088.0 folt'n 70°TCN, 5% magnetite, 8 to 10% py	8963	1.5	1086.5	1088.0	.01		.006		
		1088.0-1092.5 py 5% in crs aggregated group, remobilized	8964	4.5	1088.0	1092.5	Tr		.004		
1098.0	1160.0	DIORITE HYBRID: coarse grain med. green, mafic chloritic base with orbicular felsic segregations, with widespread magnetite parallel folt'n in upper portion, grading to coarse grain amphibolitic diorite with feld. laths internal in qtz augen, at 1125.5 epidote saturated fracture zone; from 1127' grades to mafic coarse grain hybrid with abundance of orbicular and aggregated felsic (silica) segregations with only random internal feld. laths, only minor matrix feld. laths an Atypical type coarse grain 'intrusive', random py, folt'n 70° TCN									

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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t		Check Smpl		
1160.0	1177.3	DIORITE HYBRID RETROGRADE: pronounced folt'n mafic hybrid, abundant qtz augen, cb. wisps, magnetite, predominance chloritic matrix									
		1168.5-1173.5 silica saturated retrograde with 10% py, late silica inject.	8965	5.0	1168.5	1173.5	Tr		.006		
		1173.5-1177.3 (1174.5 30% py over 1') average 4% py, epidotic chl. base	8966	3.8	1173.5	1177.3	.01		.008		
1177.3	1179.7	LAMPROPHYRE: altered cb'td bleached lamp. - schisted, cb. base with chloritic relict amphiboles converted to chl. - folt'n 70°TCN, lower Ct. 70°TCN									
1179.7	1182.5	DIORITE HYBRID RETROGRADE: relict diorite fabric, abundant orbicular qtz, silica py saturation, vein 1 cm. upper Ct.									
		1179.7-1182.5 py sporadic, to 5 mm. euhedral, 10% magnetite	8967	2.8	1179.7	1182.5	Tr				
1182.5	1192.5	LAMPROPHRE: odd med. grain dyke, chl. cb. base, light green with chloritic amph. oriented 60° and 70°TCN, trace py, upper Ct. vague									
1192.5	1199.5	LAMPROPHYRE: fine grain pink and light green lamp. with masking cb'tn and later silicification vague minute shards chloritic amph., fine py, brecciated and lined with massive chl. or cb., upper Ct. 70°TCN, lower 30°									
1199.5	1203.5	LAMPROPHYRE: med. grain 'black biotite' dyke, older, injected by dykes above and below, varisized knots, segregations cb. in black mica cb. matrix, (common dyke in mine area)									
1203.5	1233.3	LAMPROPHYRE: fine grain light green pink, abundant xenoliths fine grain andesite, profusion chloritic amphiboles oriented general 60°TCN, Cts are typical 'green biotite' type, cb. lined joints minor									
1233.3	1236.8	DIORITE HYBRID RETROGRADE: upper Ct. 60° chl. lamellae, cb. boudins, pods with 8% py grading to hornfelsed fine grain recrystallized Ct. phase, drilling near Ct.									
		1233.3-1236.8 py 8% grading to 4% from schist to hornfels	8968	3.5	1233.3	1236.8	<.01				
1236.8	1238.7	LAMPROPHYRE: as described 1182.5-1192.5; magnetite 15% oriented 70°TCN parallel Cts									
1238.7	1243.2	DIORITE HYBRID RETROGRADE: contorted 70°TCN									

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Azimuth: Dip:

HOLE: 83-40
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t			
1243.2	1243.7	LAMPROPHYRE: as described 1182.5-1192.5; a confused melange with random relict diorite hybrid incorporated in dyke, lamprophyric saturation								
1243.7	1255.4	FELDSPAR PORPHYRY: beige vitreous fine grain matrix with 5 mm. zoned plag. phenos lesser anhedral black biotite, a central ultrasilicic buff zone with masked fabric, some local internal breaks with beige alteration rims, variable py, Cts 40°TCN								
1255.7	1267.8	LAMPROPHYRE: as described 1203.5-1233.3; silicified with buff alteration, abundant anhedral mafic xenoliths, slender amphibole prisms, oriented 10°TCN parallel upper Ct., lower Ct. 60°TCN, fine epidote with pink silicification of matrix, 1% py								
1267.8	1283.4	RETROGRADE: appears like fine to med grain Andesite, strong folt'n, essentially med. grain mafic fabric unknown of original hybrid or if original andesite enough remnant fabric to indicate original diorite hybrid, random py 1274.0-1279.0 mafic regressed fabric, heavily fractured, en echelon cb., some qtz, py	8969	5.0	1274.0	1279.0	<.01			
1283.4	1286.2	LAMPROPHYRE: fine grain dense dark green, larger amphiboles as phenos in coarse fabric near andesite basalt compn., clots pale oribuclar cb., 1% py, upper Ct. 70°TCN, lower 80°TCN								
1286.2	1308.8	DIORITE HYBRID: med. grain and coarse grain, med. green, abrupt change, below zone of migmatitization, a pulsing sporadic injection of felsic fluids, short segments original lava, portions recrystallized, and or epidotized between transformed diorite segments -- too innumerable to measure exactly								
1308.8	1309.6	LAMPROPHYRE: fine grain dense, dark green dyke, Cts 80°TCN, drilling along fine grain contact								
1309.6	1327.4	DIORITE HYBRID: as described 1286.2-1308.8; even less migmatized portions, actually closer resemblance to coarse flow, minor local regressed shears; at 1325.5 a 10 cm. flat chloritic vein with minor py								

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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t		Chk Smpl	
1327.4	1334.6	LAMPROPHYRE: fine to med. grain dark green dense fabric, individual dark xstals (amphibole) light feld., little else determinable, (comp'n probably close to basic lava), minor py cts fairly flat								
1334.6	1404.7	DIORITE HYBRID: coarse grain med. green, approach true diorite (perhaps hidden fault pre lamp. dyke) back in solid 'intrusive', glomeroaggregate feld laths, coarse amphibole, epidote, subhedral coarse leucoxene, except for aggregated matrix feld. would be typical diorite very minor 1 cm. shears, epidotic slips, 2% py disseminated, rare cb. slips with py from 1382.0-1384.5 variable epidotic saturation 10° to 80°TCN with partial retrograde med. grain fabric, some cb'tn, no increase sulphides, some qtz vein at 1400' thin 2 cm. local shears minor py								
1404.7	1406.8	LAMPROPHYRE: med. grain dark grey, base of clustered light green chl. and fine cb., phenos of slender dark green amph., augen frosted cb. (so called black biotite lamp.) Cts 40°TCN								
1406.8	1412.5	DIORITE HYBRID: as described 1334.6-1404.7; aggregates epidote prominent in mosaic minor py								
1412.5	1431.0	BASIC LAVA - ANDESITE: med. grain, med. green, abrupt transition to fabric and comp'n of med. grain basic flow, individual mini crystals of some comp'n as diorite cb'td feld. partly, small amphibole, epidote, minor qtz, some py								
1431.0	1436.4	BASIC LAVA - ANDESITE - RETROGRADE: pronounced folt'n 40°TCN, lenticular chl'zd amphboles, cb'td feld. epidote, magnetite, regressed along slight shear 1433.9-1436.4 chl. lamellae, interlayered cb., magnetite 20%, py 3%	8970	2.5	1433.9	1436.4	<.01			
1436.4	1437.6	QUARTZ VEIN - CARBONATE: impure chloritc, aggregated microgranular black mineral, crs py to 2 cm. flat Cts 1436.4-1437.6 py 15%, subhedral to 2 cm., lenticular aggregates parallel Ct	8971	1.2	1436.4	1437.6	<.01		.022	
1437.6	1442.1	BASIC LAVA - ANDESITE - RETROGRADE: as described 1431.0-1436.4; schisted, magnetite rich 1437.6-1442.1 py 4%, magnetite 20%, thin later cb. stringers, barren	8972	4.5	1437.6	1442.1	<.01			

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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
1442.1	1452.0	BASIC LAVA - ANDESITE: as described 1412.5-1431.0; massive, homogeneous, minor cb slips, epidotic									
1452.0	1455.7	BASIC LAVA - ANDESITE - RETROGRADE: med. grain basic flow, feld. cb'td, amph. chloritized, reverting to chl. schist toward lower Ct.									
		1453.1-1455.7 py 4% in chl. cb. schist, 30°TCN, 10% magnetite	8973	2.6	1453.1	1455.7	<.01				
1455.7	1456.2	QUARTZ VEIN: multiple 2 generation vein, impure, chloritic, later stringers barren 30% py									
		1455.7-1456.2 chloritic portions with 50% aggregated py, late stringers nil	8974	0.5	1455.7	1456.2	.09				
1456.2	1457.8	LAMPROPHYRE: fine grain dark grey green matrix with slender amph. prisms to 3 mm. 'green biotite' type upper Ct. 20°TCN, lower Ct. 40°, minor py									
1457.8	1484.7	BASIC LAVA - ANDESITE: med. grain med. green, as described 1412.5-1431.0; massive, homogeneous, lower 1' at contact is retrograded chl. cb. schist adjacent to dyke, at 1458.4, 1463.5, 1468.5, 4 cm. massive barren cb. on slips, 30°TCN									
1484.7	1491.4	LAMROPHYRE: fine grain dark grey green matrix, cb., chl. with phenos slender amph. prisms, Cts 30°TCN									
1491.4	1492.7	CHLORITE SCHIST: sericite, chl. with boudins qtz cb. adjacent dyke, 30°TCN, minor py									
1492.7	1493.1	LAMPROPHYRE: as described 1484.7-1491.4; Cts 50°TCN									
1493.1	1499.5	DIORITE HYBRID RETROGRADE: chl'z'd amph., cbt'd feld., two zones 1494.5 and 1495.5 beige granulated, mortared zones with sericite interlayered with granular quartz and central core of 1 cm. qtz vein, 20°TCN (FAULT), no sulphides, chl. lamellae with cb. boudins, some epidote permeation									
1499.5	1504.6	DIORITE HYBRID: coarse grain med. green, resembles very cros flow, sufficient silica, feld. lath ass'n to class as hybrid, prolific matrix plag. laths, amphibole, chl. base, 2% py									
1504.6	1516.6	DIORITE HYBRID RETROGRADE: med. grain med. green, chl. base, qtz augen, cb. wisps, folt'n 40°TCN, aggregated 4% magnetite, 3% fine py, some qtz cb. slips 1 cm. sharp Cts. between diorite and hybrid									

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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured ~~normal~~ to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
1516.6	1524.5	DIORITE HYBRD: as above									
1524.5	1527.0	DIORITE HYBRID RETROGRADE: as described 1504.6-1516.6									
1527.0	1533.5	DIORITE HYBRID: typical coarse grain hybrid, abundant anhedral qtz with internal feld. laths, minor steep slips, abrupt contacts with retrograde									
1533.5	1552.3	DIORITE HYBRID RETROGRADE: med. grain, chl. base, prolific relict cb'td feld. and cb. wisps with some qtz augen, folt'n 70°TCN, py sporadic, nil to 8%, at 1542' 3 cm. qtz, cb vein with crs and fine py, no margining py									
1552.3	1563.7	DIORITE HYBRID: coarse grain med. green bordering on migmatized lava, matrix plag. laths intact, epidotized laths, glomeroaggregates feld., random 1 cm. qtz injoints with py, matrix py of hybrid 2%, varying degrees of migmatitic injection evident in rock fabric, folt'n 70°TCN									
1563.7	1588.5	BASIC LAVA - ANDESITE: med. grain med. green, fabric of med. grain basic flow, chl. base with abundant fine laths epidotic plagioch., minor addition of migmatizing fluids with aggregated feld. laths along preferential folt'n planes and adjacent to thin qtz injecta at 20° to 40°TCN, minute cb. threads with strong py, matrix py 1%, folt'n appears flat									
1588.5	1598.0	DIORITE HYBRID: coarse grain med. green, as described 1552.3-1563.7; some feld. aggregated, some irregular shoots of felsic injecta									
1598.0	1636.0	BASIC LAVA - ANDESITE: med. grain med. green, as described 1563.7-1588.5; cb'td retrograded segment 1602.0-1605.5 with 5% py 1602.0-1605.5 py 5% in lenticular aggregates, 1 to 3 cm. minor qtz from 1634.0-1636.0 schisted andesite (regressed) chl. lamellae, cb. pods at 80°TCN, increase py to 4% plus in trains parallel folt'n	8975	3.5	1602.0	1605.5	<.01				
1636.0	1651.0	DIORITE HYBRID: coarse grain med. green, as described 1552.3-1563.7; typical crs hybrid with qtz plag. laths association, resemblance to flow destroyed, sporadic qtz cb. injection along joints at varied angles TCN, minor py									
1651.0	1654.8	DIORITE HYBRID RETROGRADE: coarse grain med. green, strong folt'n of matrix, feld. cb'td., dark green disseminated recryst. amphibole toward lower Ct									

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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t			
1654.8	1660.0	LAMPROPHYRE: fine grain light pink grey matrix, cb'td, with profusion slender amph. phenos, orbicular clots cb. to 5 mm., fine disseminated 2% py, Cts 20°TCN								
1660.0	1684.5	DIORITE HYBRID RETROGRADE: coarse grain med. green, some remnant partly cb'td feld. most reverted to cb. wisps and clots in chloritic base, segments of strong folt'n, aligned matrix with interlayered cb. clots 20°TCN, minor py, random qtz injecta, at 1668.5 3 cm. vein with py, increasing qtz en echelon injecta toward lower Ct.								
		1678.0-1680.0 minor en echelon qtz vein 1 cm. with 3% py	8976	2.0	1678.0	1680.0	<.01			
		1680.0-1683.0 qtz cb. 1 cm. veins en ehcleon in schisted matrix, qtz 20% of segment, 2% py	8977	3.0	1680.0	1683.0	<.01			
		1683.0-1684.0 qtz and qtz cb. 60% of total, 10% clustered py, 0° to 40°TCN	8978	1.0	1683.0	1684.0	<.01			
		1684.0-1684.5 chl. cb. schist, 5% py, folt'n 40°TCN	8979	0.5	1684.0	1684.5	<.01			
1684.5	1685.6	LAMPROPHYRE: fine grain brown grey banded dyke, matrix predominantly black 'biotite' with interspersed cb., Cts 10°TCN								
1685.6	1688.0	DIORITE HYBRID RETROGRADE - SCHISTED: chl. lamellae, cb. clots, lenses, en echelon qtz, 70°TCN								
		1685.6-1688.0 several en echelon 1 cm. qtz at wide angle to folt'n, 8% matrix py	8980	2.4	1685.6	1688.0	<.01			
1688.0	1693.3	LAMPROPHYRE: fine grain light pink grey matrix with secondary silication obscuring matrix xstals, slender dark green amphibole phenos, late felsic, qtz feld. (mix) injection, 8% py 5 mm. euhedral through fabric, upper Ct. 40°TCN, lower Ct. vague, unclear								
1693.3	1705.6	DIORITE HYBRID RETROGRADE: coarse grein med. green, strong folt'n, chl. lamellae, interlayered partly cb'td feld., spotted matrix with metacrystic dark green to black amphiboles typical of ct. fabric (presumed passing along border of dyke), metacryst amph. aligned parallel folt'n, py variable								
		1696.0-1701.5 some py with 1 to 2 cm. veins 30°TCN, magnetite, minor py in matrix	8981	5.5	1696.0	1701.5	<.01			

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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t		Chk Smpl		
		1693.3 - 1705.6 (cont'd)									
		1701.5-1703.1 variable minor py, 1 to 3 cm. qtz vein 0 and 20°TCN, barren	8982	1.6	1701.5	1703.1	<.01				
		1703.1-1705.6 minor qtz, variable py, 'metacrystic' hybrid 30°TCN	8983	2.5	1703.1	1705.6	<.01				
1705.6	1706.3	LAMPROPHYRE: dark grey, fine grain cb'td matrix, primarily altered mix of cb. chl. with slender amph. phenos, 40°TCN Cts, phenos at all diverse angles to clots									
1706.3	1838.0	DIORITE HYBRID RETROGRADE: as described 1693.3-1705.6									
		1706.3-1711.0 several flat 3 cm. and 1 cm. qtz veins--barren, variable matrix py	8984	4.7	1706.3	1711.0	<.01		Tr		
		1711.0-1713.0 steep irregular branching qtz vein (barren) some matrix py	8985	2.0	1711.0	1713.0	<.01		.002		
		retrograded foliated fabric persists over long distance									
		1719.5-1721.0 strong folt'n 40°TCN, black knots, magnetite, minor py	8986	1.5	1719.5	1721.0	<.01		.002		
		1721.0-1723.0 en echelon felsic vein, variable width and py, 90° to folt'n	8987	2.0	1721.0	1723.0	<.01		.002		
		1723.0-1731.0 blanket test of folt'd retrograde, py with minor qtz veins	8988	8.0	1723.0	1731.0	<.01		.006		
		average py in strong folt'd retrograde 1% plus									
		1741.5-1745.0 en echelon boudins, streaks cb., several 1 cm. fractures with qtz, 2% py	8989	3.5	1741.5	1745.0	<.01				
		1745.0-1747.0 1 cm. qtz veins with sporadic fine py	8990	2.0	1745.0	1747.0	<.01				
		1747.0-1750.0 irregular impure chloritic branching vein - segment 40% qtz, py 4%	8991	3.0	1747.0	1750.0	<.01				
		1750.0-1752.0 very fine random py in folt'd matrix with black amph. phenos	8992	2.0	1750.0	1752.0	<.01				
		drilling through broad shear - cbt - chl. schist- dearth of sulphides									
		1761.0-1767.0 py fine random 1% plus, shear 70° - 80°TCN, cb. streaks, boudin	8993	6.0	1761.0	1767.0	<.01				
		1767.0-1769.5 vertical shear, py realigned parallel, 1% plus	8994	2.5	1767.0	1769.5	<.01				
		1769.5-1772.5 qtz 2 cm. vertical vein, marginal py sporadic 5 to 8%	8995	3.0	1769.5	1772.5	<.01				
		1772.5-1774.5 vertical shear, vein 2 cm., parallel, minor py	8996	2.0	1772.5	1774.5	<.01				
		1774.5-1780.0 vertical shear 2% aligned py	8997	5.5	1774.5	1780.0	<.01				
		1780.0-1785.5 chl. cb. schist, minor py, vertical orientation	8998	5.5	1780.0	1785.5	<.01				
		schisted diorite hybrid, probable trace of large fault, essentially a chl. cb. schist unable to tell if in hybrid diorite or original greenstone, any									

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DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
		1706.3 - 1838.0 (cont'd)									
		relict qtz has migrated out of schist, from 1792.0-1798.0 reverts to coarse grain med. green diorite hybrid with abundant leucoxene, py minimal									
		1807.0-1812.0 several 2 to 3 cm. irregular cb. veins in chl. cb. vertical schist	8999	5.0	1807.0	1812.0	<.01				
		progressively down hole, folt'n and schistosity flatten to 30°-20°TCN and to 0° remnant glomeroaggregates cb'td feld. suggest diorite hybrid to end of HE									
		1832.0-1838.0 cb. chl. schist, folt'n 5° to 10°TCN, minor cb. veins 2 cm., trace py	9000	6.0	1832.0	1838.0	<.01				
	1838.0	END OF HOLE									

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DRILL LOG

Property: Orofino
Location: 100'W of 83-9
Co-ordinates: 12705.60N
9148.24E
Section:
Length: 457'
Elevation: 1246.2'
Azimuth: -0- Dip: -90°

83-41
HOLE: [redacted]
Core size: AQ
Dip Tests: 457' -87°
Started: September 29/83
Completed: October 1/83
Logged by: Warren Gilman

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
0.0	8.0	CASING									
8.0	85.7	BASIC LAVA - ANDESITE: fine med. and coarse grain, med. green, porphyritic - vari-sized matrix of cb. chl., amphibole, epidote, feld. relicts with glomero epidotic feldspar aggregates of varying quantity thru matrix from nil to 30% of fabric, variable textural size over very short limits; at 27.0 heavily clustered glassy amygdules over 5 cm., probable flowtop at epidotic Ct. 10°TCN, random qtz cb. 3 cm. veining at 30°TCN, some minor py; possible reason for varied texture is minor slippage along joints bringing fine grain against coarse grain; glomerophenocrysts are random, most evident within more crs. flow fabric at 33' and 38'; 45' and 50' amygduloidal flowtop in fine matrix, several 1 cm. qtz cb. stringers at 20°TCN coursing through flowtop, amygdules white fresh undeformed at 30°TCN, perhaps all same flow, 53 to 58' basal coarse grain portion of flow with mosaic of 2 mm. feld. laths with amphiboles; at 58' amygdoloidal flow top, fine grain segment to 68' with coarse grain basal flow to 85.7 62.0-67.0 fine grain top segment, en echelon cb. qtz 3 cm. segments 20°TCN, rare py	8791	5.0	62.0	67.0	Tr				
85.7	87.5	LAMPROPHYRE: very fine grain dark grey, near amorphous matrix, orbicular cb. in central pt. dyke, 5% py, Cts 45°TCN, some dark green vague amphiboles									
87.5	151.8	BASIC LAVA - ANDESITE: coarse grain med. green, basal part of flow, abundant fresh feld. laths to 2 mm. in diabasic array with subhedral amphiboles, minor 1 cm slips with qtz epidote transitional into migmatized basic flow, progressive into fabric with some orbicular qtz augen with internal white feld. laths with random disseminated po., 2% (123 to 125) about this depth fabric is that of hybrid diorite with abundant orbicular qtz., local 3 to 4 cm. felsic injecta producing qtz felsic augen are abundant below 130' to 151.8 actually near diorite hybrid, massive cb. along fractures, persistent but variable quantity po., multiple cb. vein 4 cm. at lower Ct., barren, dyke related									

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151.8	154.2	LAMPROPHYRE: fine grain med. grey, distinguishable light and dark mineral assemblage, orbicular cb., chl. clots, Cts 40°TCN, profusion fine py disseminated through dyke									
154.2	166.5	BASIC LAVA - DIORITE HYBRID: coarse grain med. green, epidotic matrix plag. laths with chl. and amph., abundant relict leucoxene, orbicular qtz augen with internal laths. fresh feld., resulting fabric is diorite hybrid or migmatized crs lava, minor py									
166.5	169.8	LAMPROPHYRE: fine grain med. grey, as described 151.8-154.2; later felsic injection in dyke along fractures, hi silicic in and around beige saturation, Cts 80°TCN									
169.8	177.0	BASIC LAVA - DIORITE HYBRID: as described above, abundant qtz augen with internal feld. in crs matrix with plag. laths in diabasic array, minor py much matrix plag. as glomeroaggregates (same texture as in porphyritic flow) gradually matrix plag. becoming retrograded to a degree, with any slight shear some po. accompanies granulation									
177.0	179.8	LAMPROPHYRE: as described 166.5-169.8; flat upper Ct. with 15 to 20° fine py thru dyke, dyke is multiple injection									
179.8	201.0	BASIC LAVA - DIORITE HYBRID: as described above, with 3 cm. sheared Ct., at dyke with multiple qtz and regenerated py with po. grading to usual hybrid with less prominent matrix plag., some regression of plag., random 2 cm. shears with po., abrupt textural changes over short segments, (rotation along joints and 'protected' less migmatized lava retaining 'flow' (granularity), minor random po.									
201.0	206.0	LAMPROPHYRE: original fine grain dark grey dyke, has been silica saturated giving a vague pseudo coarse grain fabric with vestigial chl. reticulate in fabric 60°TCN Cts., 3% py, folt'n in dyke parallel Cts.									
206.0	226.9	DIORITE HYBRID: a fine chl. cb. base with lone augen qtz with internal laths. feld. some epidote, amphibole, 2% py, 1% po (random)									

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Azimuth: Dip:

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Started:
Completed:
Logged by:

DRILL LOG

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
226.9	228.9	ANDESITE: (Lamprophyre) dyke -- fine grain matrix, cb. chl. amph., white light green, near block with epidote, comp's'n identical with fine grain volcanic rock, Cts. 60°TCN									
228.9	231.5	DIORITE HYBRID: as described 206.0-216.9; sheared 60°TCN, en echelon qtz cb. veins	8792	2.6	228.9	231.5	.02				
231.5	233.3	ANDESITE: (Lamprophyre) dyke --as described 226.9-228.9; fine massive, med. green Cts. 40°TCN									
233.3	239.0	DIORITE HYBRID RETROGRADE: contorted, granulated, mortared fabric, recrystallized, qtz augen in chl. cb. mesostasis, en echelon qtz cb. 233.3-236.0 py 3 to 4%, some po., trace cpy., qtz cb. 1 cm. veins barren, sulphides remobilized against upper Ct.	8793	2.7	233.3	236.0	.01				
239.0	272.5	DIORITE HYBRID: coarse grain med. green, chl. cb. base with ovoidal qtz and internal feld. laths., close to true diorite, minimal matrix feld. laths., random crs amphiboles, leucoxene relicts, epidote abundant, slips and local shears with epidote qtz with po py concentrations, some distinct tongues of felsic injecta (qtz. feld. epidote) with remobilized py, many 5 mm. beige slips at 0°TCN, some 3 cm. barren qtz cb. veins at 10°TCN, variable texture due to obvious felsic infusion and migmatitization, disseminated po. sporadic									
272.5	277.8	LAMPROPHYRE: fine grain very light grey, pink green, strong silicat'n masks fabric of 'green biotite' type lamp. -- amphibole phenocrysts are fretted chl. clots, Cts 40°TCN									
277.8	278.3	DIORITE HYBRID RETROGRADE: med. grain contorted, cb'td., folt'd 90° to dyke Ct									
278.3	279.2	LAMPROPHYRE: fine grain very light grey, ultra-silicic, with random cb. clots after amphibole									
279.2	279.7	DIORITE HYBRID RETROGRADE: fractured permeated with barren qtz stringers									
279.7	280.3	LAMPROPHYRE: as above 278.3-279.2; flat upper Ct., lower Ct. 20°TCN, py <1%									

OROFINO
RESOURCES LIMITED

Property:
Location:
Co-ordinates:

HOLE: 83-41
Core size:

Section:
Length:
Elevation:
Azimuth: Dip:

Dip Tests:
Started:
Completed:
Logged by:

DRILL LOG

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
280.3	285.5	DIORITE HYBRID RETROGRADE: med. grain contorted cb'td, random pink cb. saturation and beige alt'n, some adjacent to qtz 3 cm. veins, matrix heavily cb'td masks and bleaches fabric									
		281.5-285.5 py sporadic, associated with mini-qtz stringers, lost .5' fault brx at Ct. with lamprophyre, minor py	8794	4.0	281.5	285.5	Tr				
285.5	290.0	LAMPROPHYRE: beige silicated frosted bleached 'green biotite' type dyke, fabric masked									
290.0	292.7	QTZ VEIN: barren bull qtz, minor cb (ankerite) innumerable small inclusions lamp.,									
		290.0-292.7 qtz (minor cb. vein) 20% inclusions lamp, minor margin py	8795	2.7	290.0	292.7	.01				
292.7	303.0	DIORITE HYBRID RETROGRADE: bleached, folt'd, 40°TCN, amphiboles converted to chl., qtz augen drawn into partial lenses, several en echelon qtz veins									
		292.7-295.6 en echelon 3 cm. qtz, minor cb. veins, flat, random py	8796	2.9	292.7	295.6	.01				
		295.6-300.0 en echelon 3 to 5 cm. qtz veins, minor py, widespread leucoxene	8797	4.4	295.6	300.0	.01				
		300.0-303.0 segment is 50% qtz, 50% retrograde, single vein 1.3'	8798	3.0	300.0	303.0	Tr				
303.0	309.6	QUARTZ VEIN: white frosted bull qtz., some clots sericite, relict clots bleached beige diorite hybrid									
		303.0-305.0 impure with en echelon sericitic relict rock with minor py	8799	2.0	303.0	305.0	Tr				
		305.0-309.6 pure qtz vein, little sericite, cb. trace py	8800	4.6	305.0	309.6	Tr				
309.6	329.8	DIORITE HYBRID RETROGRADE: coarse grain light green, bleached folt'd 40°TCN, reticulate chl. interspersed with lensing clusters qtz cb., some cb. permeation of matrix, diminishing below vein									
		309.6-313.3 several segments frosted qtz vein (barren), minor py	8901	3.7	309.6	313.3	Tr		(N.B. jump in Numbers)		
		313.3-315.0 folt'd cb. permeated, magnetite and 3% py	8902	1.7	313.3	315.0	Tr				
		315.0-320.0 magnetite 5%, 2% py, folt'n 50°TCN	8903	5.0	315.0	320.0	.01				
		320.0-322.3 as above - sampled for continuity, 3% py, pink cb.	8904	2.3	320.0	322.3	.01				
		322.3-325.3 slight beige alt'n, bleaching, crs leucoxene, 5% py	8905	3.0	322.3	325.3	Tr				
		325.3-327.0 intense beige alt'n frosted qtz vein 50%, flat, minor py	8906	1.7	325.3	327.0	Tr				
		327.0-329.3 strong cb. permeation, coarse leucoxene 5% py	8907	2.3	327.0	329.3	Tr				

OROFINO
RESOURCES LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-41
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t		Check Smpl		
329.3	358.3	DIORITE HYBRID - DIORITE: a fine grain chl. cb. epidote base with crs orbicular qtz with enclosed fresh laths. plg., some glomeroaggregates feld. laths. and minor finer matrix plag., po sporadic through core, 1 to 2' segments, few random stringers greyish cb. at 45°TCN with blebs po., occasional 1 cm. segments, flat, with strong po., minor py									
358.3	359.6	BROWN DYKE: fine to med. grain dark brown uniform brittle flat dyke, with small orbicular white cb.									
359.6	415.2	DIORITE HYBRID - DIORITE: as described 329.3-358.3; sufficient matrix plag. in fresh laths. that has not been completely reconstituited to diorite, sporadic crs po., some fine po (insufficient Concentration for sample), some 1 cm. barren cb., some cb. slips with strong py (diverse ages), some marginal alt'n along steep to vertical cb. slips with no sulphides, sporadic accumulations po., no concentration, at times with crs granularity, often with finer granularity and slight alt'n, textural variance abrupt through segments,									
		412.0-415.2 random crs po., slip at 415, strong crs py with cb. 60°TCN	8908	3.2	412.0	415.2	Tr		Tr		
415.2	416.0	LAMPROPHYRE: dark brown, soft (related to brown dyke) dark anhedral clots (imperfect amphibole), Cts 50°TCN, pale green 2 mm. clots epidotic feldspar									
416.0	457.0	DIORITE HYBRID - DIORITE: as described 329.3-358.3; matrix plag. laths still prominent, fabric is fresh unaltered, minor py, sporadic po.; from 441' to 442' - 1 cm. cb. slip with py and altered matrix with 4% py-po, 1::1 ratio, folt'n prevails 60°TCN and flattens to 30°TCN near bottom.									
	457.0	END OF HOLE									

OROFINO
RESOURCES LIMITED

DRILL LOG

Property: Orofino Resources
Location: 50'E of 83-9
Co-ordinates: 12700.67N
9302.18E
Section:
Length: 327'
Elevation: 1256.0'
Azimuth: -0- Dip: -90°

HOLE: 83-43 [redacted]
Core size: AQ

Dip Tests: -90° at 327'
Started: October 2, 1983
Completed: October 4, 1983
Logged by: Warren Gilman

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
0.0	10.0	CASING									
10.0	10.4	BASIC LAVA-ANDESITE: chloritic epidotic, 5% pyrite									
10.4	13.8	QUARTZ VEIN: vitreous white, some impurities, chl. and sericite schlieren, minor py 10.4-13.8 py at margins, vein barren, minor rock inclusions with py	8909	3.4	10.4	13.8	Tr				
13.8	17.2	BASIC LAVA-ANDESITE: fine grain dark green, chloritic, later permeation with silica 13.8-17.2 several en echelon 5 cm. qtz veins, minor py, some cpy	8910	3.4	13.8	17.2	.02				
17.2	26.5	DIORITE HYBRID RETROGRADE: vague relict hybrid fabric, fretted relict cb't'd feld., crs leucoxene, mafic chloritic base with faint diorite texture, local irregular epidotic saturation, a schisted zone, 22 to 26.5 chl. lamellae adjacent 10 cm. quartz vein, Ct 40°TCN 22.0-26.5 schist with aligned py trains, ave. 5% -- barren quartz	8911	4.5	22.0	26.5	.01				
26.5	48.0	DIORITE HYBRID: coarse grain med. green, chl. base with glomeroaggregates white plag. laths with mainly interstitial qtz., some amphiboles, some matrix plag. with hint of in situ crystallization, 2% py, plentiful felsic augen, silica subordinate, trace feld. laths									
48.0	51.3	LAMPROPHYRE: fine grain dark brownish green, dense, massive, strong silication, 8% fine py, abundant vague crs 'phenocrysts', altered by later silication, Cts 20°TCN, several xenoliths diorite hybrid or margin between dyke fingers									
51.3	67.0	DIORITE HYBRID: coarse grain med. green, as described 26.5-48.0									
67.0	74.0	DIORITE HYBRID RETROGRADE: fine grain med. green, some relict fabric, schisting to fine grain, folt'n 10°TCN, chl. lamellae with stretched boudins cb. 70.5-74.0 aligned migrated 5% py parallel schist lamellae, en echelon 3 cm. quartz	8912	3.5	70.5	74.0	.02				
74.0	134.7	DIORITE HYBRID: coarse grain med. green, less like diorite, more like hybrid, chl. base and profusion crs and fine fresh white feld. laths more as individual xstals than clustered as in diorite, some crs amphiboles, minor local 1 to 3 cm. shears with regressive fabric, some epidotic and/or felsic permeations									

OROFINO
RESOURCES LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-42
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t				
		74.0 - 134.7 (con't)									
		over very small widths, generally constant granularity, trace po, py sporadic to 2 mm., Average 2% ?, folt'n general 60°TCN, last 20' return to hybrid with abundant quartz felsic augen, some sans feld. (not through regression) sulphides remain as above									
134.7	138.8	LAMPROPHYRE: fine grain dark brown porphyritic dyke, ubiquitous subhedral zoned feld. laths to 2 mm., 15% of matrix, minor dark green anhedral amphiboles ? set in fine matrix of individual brown and green, all silicified, Cts 60°TCN (may have been called Feld. Porphyry by many previous workers)									
138.8	148.8	DIORITE HYBRID: coarse grain, med. green, chl. base, abundant feld. laths in qtz augen, large random amphiboles, some matrix plagioclase laths., epidote, random magnetite, leucoxene, pyrite, of ten aggregated (recrystallized) trace po., irregular swirls of fine grain grey injecta (siliceous) possible offshoots of lamprophyre									
148.8	149.2	LAMPROPHYRE: as described 134.7-138.8; porphyritic, light grey, Cts 20°TCN									
149.2	172.5	DIORITE HYBRID: coarse grain med. green, as described 138.8-148.8; at 161.0, 1 cm. flat qtz vein, epidotic rims, some py, at 169.5 1 cm. qtz vein, py									
172.5	175.5	DIORITE HYBRID RETROGRADE: minor contortion, feld. carb'td in situ, shear 90°TCN threaded with Cb and 2 cm. vertical vein, crs vein, py, 8% matrix py									
		172.5-175.5 py 8%, crs in vein, finer in matrix, probable trace sph. in vein	8913	3.0	172.5	175.5	Tr				
175.5	188.0	DIORITE HYBRID: coarse grain med. green, as described 138.8-148.8 and 149.2-172.5									
188.0	196.6	DIORITE HYBRID RETROGRADE: coarse grain med. green, abundant orbicular qtz, sans feld. in fine chlorite base -- fretted cb'td remnants feld.									
		188.0-190.0 clustered py, lone aggregates, 4% py, cb. fractures 3 mm. py	8914	2.0	188.0	190.0	.02				
		190.0-191.0 py clustered 5%, 3 mm. cb. vein, at 45°TCN with V.G.	8915	1.0	190.0	191.0	.08				
		191.0-193.0 py very fine 5% plus, folt'n 45° to 55°TCN, cb. threads	8916	2.0	191.0	193.0	.02				
		193.0-196.6 qtz cb. 1 cm. veins 40°TCN margined by 2 mm. euhedral py	8917	3.6	193.0	196.6	.03				

OROFINO
RESOURCES LIMITED

Property:
Location:
Co-ordinates:

HOLE: 83-42
Core size:

Section:
Length:
Elevation:
Azimuth: Dip:

Dip Tests:
Started:
Completed:
Logged by:

DRILL LOG

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t		Check Samples	
196.6	198.3	QUARTZ VEIN: frosted white bull quartz, schlieren and relict chloritic host rock 25% impurities								
		196.6-198.3 upper Ct. 0°TCN, lower 90°TCN, chl. inclusions 5% py, vein barren	8918	1.7	196.6	198.3	Tr		.002	
198.3	211.5	DIORITE HYBRID RETROGRADE: as described 188.0-196.6; folt'n steepens 70°TCN								
		198.3-201.0 several flat qtz veins, 3 cm. 5 cm. 10 cm. with margins crs py	8919	2.7	198.3	201.0	.04		.030	
		201.0-204.5 py 5%, sporadic, some nil segments, 5 mm. cb. fractures, py	8920	3.5	201.0	204.5	.025		.018	
		204.5-207.0 py 5% sporadic, some nil segments, 5 mm. cb. fractures barren	8921	2.5	204.5	207.0	.01		.010	
		207.0-208.5 several en echelon qtz 20°TCN, 2 to 4 cm. barren, minor py margin	8922	1.5	207.0	208.5	.02		.010	
		208.5-211.5 py 1 to 2%, 1 cm. cb. fractures, barren, cb. perhaps later age	8923	3.0	208.5	211.5	.01		.002	
211.5	226.6	DIORITE HYBRID: coarse grain med. green, a fine chl. base, qtz augen mainly barren of feld. laths, small matrix plag. laths, all textures of hybrid but not most obvious, sporadic epidotic saturation segments with light green feld., abundant amphiboles minor py								
226.6	229.5	LAMPROPHYRE: fine grain grey green matrix, individual dark and light xstals, fine cb'td. feld., single clots (metacrysts) cb., lone (mainly near Cts) Cts 30°TCN rare trace py								
229.5	242.0	DIORITE HYBRID: coarse grain med. green, chlor.base,qtz augen, matrix plag., partially retrograded fabric, feld. partly cb'td., fretted, segments epidotized with light green feld. laths, slender amphiboles to 1 cm., increase py with epidotic or of cb'td saturation; at 241' some 2 cm. cb. veins with 8% py								
242.0	246.6	DIORITE HYBRID RETROGRADE: med. grain mafic epidotic dark green, appears Cb'td then saturated with epidote and some silica, deformed, py in crs aggregates								
		242.0-243.5 barren 1 cm. qtz veins, crs aggregated matrix py 5%	8924	1.5	242.0	243.5	.01		.002	
		243.5-246.6 scattered 5% py, widespread fine py may average 10%	8925	3.1	243.5	246.6	Tr		.002	
246.6	259.3	DIORITE HYBRID: coarse grain med. green, as described 229.5-242.0; mainly fresh textured feld. but vague due to silication of matrix, variable py								
259.3	263.1	LAMPROPHYRE: fine grain brown green as described 226.6-229.5; distinct fine matrix xstals, wisps and clots cb., some perfect orbicular qtz, minor py, Cts 20°TCN								

OROFINO
RESOURCES LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-42
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All measurements in feet or 10ths thereof	sample number	width	from	to	ASSAYS Au oz/t		Check Smpls	
263.1	275.5	DIORITE HYBRID: coarse grain med. green, as described 229.5-242.0; exactly as 246.6-259.3; 272.5-275.5 lower 1' retrograded against vertical dyke, clustered migrated py 8%	8926	3.0	272.5	275.5	Tr		.002	
275.5	278.0	LAMPROPHYRE: fine grain brown green, as described 226.6-229.5; exactly as 259.3-263.1 Cts 80°TCN								
278.0	279.2	DIORITE HYBRID: coarse grain med. green, folt'n 60°TCN, near 90° to upper and lower dyke Ct.								
279.2	279.6	LAMPROPHYRE: fine grain brown green, satellite of same dyke described above, 70°TCN Cts								
279.6	291.0	DIORITE HYBRID RETROGRADE: med. grain, med. green with much beige bleach, fractured crushed granulated fabric, widespread leucoxene -- exteme retrograde several flat fractures with 1 cm. qtz and beige margins, some flat white qtz veins, fault hanging wall, minor py, no silication, folt'n 70°TCN								
		281.0-286.0 qtz vein 10 cm. barren, retrograded leucoxene rich fabric, minor py	8927	5.0	281.0	286.0	.01		.002	
		286.0-291.0 beige 1 cm. fractures, 289-291 bleached buff, very minr py	8928	5.0	286.0	291.0	Tr			
291.0	293.0	FAULT ZONE: severely retrograded beige diorite hybrid, heavy limonite stain, .8' quartz vein								
		291.0-293.0 minor py, py margins on qtz vein, strong silication, folt'n 70°TCN	8929	2.0	291.0	293.0	Tr			
293.0	327.0	DIORITE HYBRID: coarse grain med. to dark green, mafic, strong chl. base with auger qtz and some internal feld. laths and matrix feld. laths, most is partly retrograded with feld. laths partlv cb'td, many are fretted, some epidotic slips, generally massive, rare limonitic slips, py clustered as if some migrat'n, perhaps 2-3%, folt'n problematical 30 to 40°TCN AV? minor steep 1 cm. cb. slips, minor py on some slips								
	327.0	END OF HOLE								

OROFINO
RESOURCES LIMITED

Property: Orofino
Location: Claim 520300 (see sketch map)
Co-ordinates: Not surveyed

HOLE: 83-43
Core size: AQ

Section:
Length: 350'
Elevation:
Azimuth: Tr North Dip: -45°

Dip Tests: -43° 350'
Started: Oct. 5/83
Completed: Oct. 7/83
Logged by: Warren Gilman

DRILL LOG

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All lengths in feet and tenths of feet	sample number	width	from	to	ASSAYS Au oz/t				
0.0	28.0	CASING									
28.0	34.6	FELDSPAR PORPHYRY: central ultra-silicic frosted coarse grain porphyry, vague phenocrysts due to late silication, feld. to 5 mm. partly resorbed with fretted margins, assuming a vague granitoid fabric, black biotite phenos to 3 mm., Ct. flat									
34.6	36.2	LAMPROPHYRE: silicified, beige grey fine grain dyke, vague amphibole phenos as slender prisms, 'green biotite' type dyke, commonest in mine area, fine py Cts flat.									
36.2	42.2	BASIC LAVA; ANDESITE: fine grain, med. green, chl. matrix with reticulate cb. across fabric, massive, fine fractures lined with epidote and some py, po, silica typical greenstone									
42.2	50.7	FELDSPAR PORPHYRY: red brown fine grain vitreous matrix, with 35% zoned feld. phenos right to Ct. and minor subhedral biotite phenos, fine py, Cts 10°TCN (drilling proximate to dyke Ct. through section)									
50.7	59.3	BASIC LAVA - ANDESITE: as described 36.2-42.2									
59.3	63.3	FELDSPAR PORPHYRY: red brown, marginal phase, described 42.2-50.7; Cts 90°TCN									
63.3	65.0	BASIC LAVA - ANDESITE: as described 36.2-42.2; xenoliths porphyry									
65.0	66.0	FELDSPAR PORPHYRY: as described 36.2-42.2; upper Ct. 50°TCN, lower Ct. destroyed									
66.0	73.4	BASIC LAVA - ANDESITE: fine grain, med. green, as described 36.2-42.2									
73.4	74.8	FELDSPAR PORPHYRY: red brown, fine grain, as described 42.2-50.7									
74.8	86.0	BASIC LAVA - ANDESITE: as described 36.2-42.2; py, po persists in cb. fractures 70°TCN									
86.0	90.8	FELDSPAR PORPHYRY: red brown, fine grain contact phase, Cts 0°TCN, therefore about 45° dip on dyke									
90.8	92.0	BASIC LAVA - ANDESITE: fine grain, med. green, as described 36.2-42.2									

OROFINO
RESOURCES LIMITED

Property:
Location:
Co-ordinates:

HOLE: 83-43
Core size:

Section:
Length:
Elevation:
Azimuth: Dip:

Dip Tests:
Started:
Completed:
Logged by:

DRILL LOG

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All lengths in feet and tenths of feet	sample number	width	from	to	ASSAYS Au oz/t				
92.0	93.7	FELDSPAR PORPHYRY: as described 42.2-50.7									
93.7	113.0	BASIC LAVA - ANDESITE: as above, described 36.2-42.2; some 3 cm. epidote, qtz, feld. veins 30°TCN									
113.0	115.0	FELDSPAR PORPHYRY: fine grain red brown, marginal phase Cts 0° to 10°TCN									
115.0	126.3	BASIC LAVA - ANDESITE: as above, local strong fractures threaded with silica, epidote, 3 cm. qtz vein at 120.5 barren, random fine py, 2% average									
126.3	129.7	FELDSPAR PORPHYRY: fine grain red brown, ultra-silicic marginal phase, as above, feld. phenos 5 mm. upper Ct. 80°TCN, lower 70°TCN									
129.7	139.0	BASIC LAVA - ANDESITE: as above, fine grain med. green, at 132.5-133.3; FAULT--intraformational, mortared granular fragments in chl. matrix 90°TCN, volcanic banding 40°TCN in Foot Wall; from 134-139 recognizable fragmental and mini-brx flow top, flowage during crystallization									
139.0	142.0	FELDSPAR PORPHYRY: red brown very fine grain, silicic, spare phenocrysts plag., 10%, to 5 mm. Cts flat, greyish center, probably smaller satellite dyke									
142.0	158.5	BASIC LAVA - ANDESITE: flow top, mini brx, epidotic bombs, fractured, grading to fine grain flow									
158.5	158.7	FELDSPAR PORPHYRY: 20°TCN Cts									
158.7	160.5	LAMPROPHYRE: fine grain light grey massive but heavily fractured and threaded with silica epdiote, lower halt bleached to tan, fine grain soft sericitic, en echelon qtz stringers, no sulphides									
160.5	178.5	FELDSPAR PORPHYRY: very light tan, fine grain silicic light matrix, 'crystal mush' of anhedral feld. phenos 60% of fabric - typical F.P., colour due to alt'n (never seen before in 80,000 ft. drilling) bleached from upper Ct. to .5' from lower Ct., typical red brown abundant en echelon qtz feld. veining through tan bleach at 40° to 80°TCN, minor py									

OROFINO
RESOURCES LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-43
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All lengths in feet and tenths of feet	sample number	width	from	to	ASSAYS Au oz/t				
178.5	221.0	BASIC LAVA - ANDESITE:fine grain med. green, 'roapy' flow top, some lighter green epidotic brecciated bombs and fragmentals, short amygdaloidal segments, with recrystallized small angular and ovoidal amygdules, stretched at 70° to 80°TCN, very poor angle of intersection, appears intersection of flow with low dip ∢, sulphides rare, sporadic with local minor shears 90°TCN, fine py rims epidotic bleached bombs; at 196' intraformational fault 10 cm., fine brx cemented by cb., 4% py 207.0-212.0 brecciated shear, threaded with fine cb., 8% disseminated py shear probably satellite to larger fault, dips -70°N from horizontal at 207' flow top features disappear with fine grain folt'd non-descript lava below with 3% disseminated py; at 219' vein qtz cb. parallel fault -70°N, 10 cm. interlayered qtz cb., at 20° angle to prevailing folt'n	8785	5.0	207.0	212.0	.002				
221.0	228.1	FELDSPAR PORPHYRY: (not to be confused with F.P. of mine area) a med. grain light grey green carb't'd matrix with anhedral feld. phenos (white) and amphibole to 3 mm., finer matrix 30% amph. chl., very fine py, Cts 45°TCN -- some feld. zoned and 1 cm.									
228.1	241.2	BASIC LAVA - ANDESITE: fine grain (to med. grain for colcanic flow) massive, homogeneous, med. green, individual xstals distinct (X10), chl. cb. epidote, fine leucoxene, amph. and unaltered subhedral feld. (not severely met'mph'd) minor thin cb. threads with fine py, some epidotic fractures, disseminated matrix py 1%, folt'n vague									
241.2	251.8	FELDSPAR PORPHYRY: fine grain light beige, fabric and texture same as mine area dykes F.P., bleached due to alt'n from faulting within dyke, displacement along slips, secondary silica veins, cut off, same 35 to 45% feld phenos, zoned (some epidotic interiors), 5% green amphibole phenos to 3 mm., irregular secondary fractures in porphyry with sericite and chl. mats, py average 3%, Cts 10°TCN, from 250.0-250.4 xenolith of fine grain lava, Cts 10°TCN, probably lower 1.3' is a satellite dyke, secondary displacement within dyke along slips, not evident in mine area F.P.									

OROFINO
RESOURCES LIMITED

Property:
Location:
Co-ordinates:

HOLE: 83-43
Core size:

Section:
Length:
Elevation:
Azimuth: Dip:

Dip Tests:
Started:
Completed:
Logged by:

DRILL LOG

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All lengths in feet and tenths of feet	sample number	width	from	to	ASSAYS Au oz/t				
251.8	280.2	BASIC LAVA - ANDESITE: (as described 228.1-241.2), heavier disseminated py at both Cts of F.P. with minor fracturing, py may average 4 to 5% for 10 cm., Cb. vein at 263 to 263.7 80°TCN, multiple, layered lower temp. variety, barren									
280.2	301.8	FELDSPAR PORPHYRY: as described 221.0-228.1; a med. grain very light grey green, but silicated matrix, very abundant 20% varisized amphiboles as matrix and small phenos, very unlike F.P. 241.2-251.8 described above, this dyke appears like hybrid of lamprophyre and silicated F.P.; bleached beige in center with minor slippage, Cts irregular 80° and 90°TCN, disseminated py to 8% in central beige core									
301.8	305.3	BASIC LAVA - ANDESITE: as above 228.1-241.2 and 251.8-280.2; non-silicic, pronounced folt'n 80°TCN, parallel beige schlieren (sericite), threaded with thin cb. roughly parallel schistosity, slippage along steep fractures (variable folt'n opposite breaks, minor py, trace po with slips									
305.3	322.0	FELDSPAR PORPHYRY: as described 241.2-251.8, very similar to mine area F.P., upper Ct. 10°TCN, lower 40°, same sporadic beige alt'n, absorbtion mafics									
322.0	328.6	BASIC LAVA - ANDESITE: fine to med. grain, med. green, homogeneous massive, some F.P. and lamp. stringers									
328.6	331.0	LAMPROPHYRE: med. grain pink green matrix of pink cb., chloritic amphibole with ovoidal white cb. phenos to 2 mm., Cts 40°TCN									
331.0	332.8	BASIC LAVA - ANDESITE: as above, massive texture, permeated with lamprophyre fluids									
332.8	348.8	FELDSPAR PORPHYRY: fine grain vitreous red brown matrix, usual F.P. with small 2 to 3 mm. feld. phenocrysts, grading to light grey to white from 335 to 338' to beige to 345'; at 345' displacement within dyke alters fabric to pink, vitreous light pink matrix and darker pink feld. phenos, passes to beige to light grey to red brown at lower Ct. (Faulting post F.P. is unusual), 15% fine shards amphibole in grey F.P., obliterated with advanced pink alteration, persistent 3% fine py, post fracturing with silica, sericite lining, Cts 60° TCN									

OROFINO
RESOURCES LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-43
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All lengths in feet and tenths of feet	sample number	width	from	to	ASSAYS Au oz/t				
348.8	350.0	BASIC LAVA - ANDESITE: fine grain dark green matrix, silicified with widespread fine leucoxene, original cb., chl. meta'morphic fabric imprinted with silication, e.g. chl. mesostasis with wormy cb. intergrowths, a .3 cm. Cb. qtz barren vein at 15°TCN, 3% fine disseminated py									
	350.0	END OF HOLE									

W. H. Gilman

OROFINO
RESOURCES LIMITED

Property: Orofino
Location: Claim 520300 (see sketch map)
Co-ordinates: Not surveyed

HOLE: 83-44 [redacted]
Core Size: AQ

Section:
Length: 101'
Elevation:
Azimuth: Tr North Dip: -45°

Dip Tests: NIL
Started: Oct. 8/83
Completed: Oct. 9/83
Logged by: Warren Gilman

DRILL LOG

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All lengths in feet and tenths of feet	sample number	width	from	to	ASSAYS Au oz/t
0.0	0.3	Humus					
0.3	1.0	B horizon - limonitic, sand, clay					
1.0	1.7	Bleached white zond, sand, clay					
1.7	12.0	Fine white qtz beach sand (amathyst, jasper, white chert)					
12.0	18.0	Quartz beach sand, pebbles granite					
18.0	24.0	Several clay layers .1' interbedded with fine white sand					
24.0	37.0	Small cobbles random through clayey white sand					
37.0	51.0	White quartz beach sand, jasper, amathyst					
51.0	68.0	.5' sand clay layers interbedded with fine white beach sand					
68.0	70.0	Gravel to 1 cm. interlayed with small pebbles granite gneiss					
70.0	82.0	White quartz beach sand - small concentration vari-coloured heavy minerals					
82.0	88.0	Some sand - with extensive coarse gravel (granite gneiss - greenstone pebbles)					
88.0	94.0	Coarse quartz sand with fractured rock fragments					
94.0	95.0	Granite boulders 20 to 50 cm. with white beach sand					
95.0	101.0	Boulders - gneiss, greenstone, mica schist - rods temporarily stuck, lower rod sheared - twisted					
	101.0	HOLE ABANDONED					

W.F. Gilman

OROFINO
RESOURCES LIMITED

Property: Orofino
Location: Claim 520300 (see sketch map)
Co-ordinates: Not surveyed
Section:
Length: 101'
Elevation:
Azimuth: Tr. North
Dip: -45°

HOLE: 83-45 [redacted]
Core size: AQ
Dip Tests: NIL
Started: October 10/83
Completed: October 10/83
Logged by: Warren Gilman

DRILL LOG

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All lengths in feet and tenths of feet	sample number	width	from	to	ASSAYS Au oz/t				
0	3	Black Muck (acid)									
3	7	Clay -- grey white									
7	9	Clay -- blue									
9	24	Fine white quartz beach sand (amathyst, jasper, white chert)									
24	32	Quartz beach sand, pebbles (granite gneiss, mica schist)									
32	43	Several thin clay layers interbedded with quartz beach sand									
43	48	Several thin pebble bands interbedded with white quartz sand									
48	57	Intermittent cobbles and gravel layers with white quartz beach sand									
57	73	Gravel to 1 cm. interlayered with pebbles granite gneiss									
73	86	White sand with coarse gravel layers, cobbles granite									
86	94	Coarse quartz sand with fractured rock fragments (granite gneiss)									
94	101	Sand between coarse boulders (impossible to penetrate without tri-cone bit -- danger of losing rod string)									
	101	HOLE ABANDONED									

W. T. Gilman

OROFINO
RESOURCES LIMITED

83-46

Property: Orofino
Location: Claim 520300 (see sketch map)
Co-ordinates: L72 ~~E~~, W
11065.33N 7641.26E
Section:
Length: 353'
Elevation: 1239.9'
Azimuth: 0° Dip: 90°

HOLE: [redacted]
Core size: AQ
Dip Tests: -88° 353'
Started: October 11/83
Completed: October 12/83
Logged by: Warren Gilman

DRILL LOG

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All lengths in feet and tenths of feet	sample number	width	from	to	ASSAYS Au oz/t				
0.0	58.0	CASING									
58.0	85.6	BASIC LAVA - ANDESITE: fine grain med. green, chl. matrix with equi-amount dark green fine amphibole, ovoidal blebs cb., massive, fine fractures with cb., silica, several random qtz veins from 5 mm. to 3 cm., some pink cb. on margins veins average 10° to 40°TCN, some with minor py, most are barren, pronounced migmatitization of basic lava at lower Ct.									
85.6	87.9	LAMPROPHYRE: fine grain light grey, cb. chl. matrix with 25% phenocrysts dark green amphibole, lath. and shards amphibole, some anhedral xenoliths undigested chloritic host rock, cb't'd., some py lining fractures, Cts 60°TCN									
87.9	92.6	BASIC LAVA: porphyritic, med. grain feld., chl. amph. matrix with 3 to 5 mm. glomero-aggregates cream feld., inclusions or segregations are a felsic melange from which laths plag. radiate from nucleas, migmatized lava									
92.6	93.0	LAMPROPHYRE: fine grain dark green homogeneous satellite dyke, Cts 0°TCN, vague phenos amphibole									
93.0	105.0	BASIC LAVA - ANDESITE: from Ct. to 98' essentially med. grain porphyritic as described above, from 98 a foliated fine grain chloritic flow with vague 'phenocrystic' clots chl., 3 to 4% disseminated py, grading to fine to med. grain leucoxene rich pase with 'metacrysts' leucoxene with ovoidal clots cb. through 105', leucoxene parallels schistosity 60°TCN, some random massive cb. injection 30° to 90°TCN.									
105.0	189.5	BASIC LAVA - ANDESITE: very coarse amphibole - feld. recrystallized and migmatized fabric, an interlocking array of crs amphiboles with intervening cb. feld. mosaic, to 5 mm., folt'n varies from 5° to 80°TCN over short segments; from 121 to 123 a fine grain anygdoloidal flow top in Cb't'd med. grain matrix with 2% fine py; below 123 coarse grain recrystallized phase persists migmatized basic lava, crs amphiboles, feld. in diabasic array, chl. epidote intermixed, crs single leucoxene, reworked fabric, minor pulverized shears at 80 TCN, some qtz cb. fractures to 3 cm., py rare, several colourless clots of felsic comp'n appear through 150 to 175, tending toward migmatization to diorite, folt'n 90°TCN									

OROFINO
RESOURCES LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

HOLE: 83-46
Core size:

Section:
Length:
Elevation:
Azimuth: Dip:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured . normal to the long core axis. All lengths in feet and tenths of feet	sample number	width	from	to	ASSAYS Au oz/t				
189.5	199.1	BASIC LAVA - ANDESITE: a retrograded migmatite, fine grain med. green, crs leucoxene large blebs quartz cb. in a contorted fine matrix of chl. cb., fine epidote folt'n vertical, fabric shows evidence of grinding and rotation prior to recrystallization									
		190.6-191.4 cb. qtz contorted vertical 3 cm. vein, slips in vein later, 2%cpy	8786	1.0	190.6	191.4	.002				
199.1	200.0	LAMPROPHYRE: fine grain med. green 'green biotite' type, prisms amphibole with some chloritic alt'n, in a fine matrix of chl. cb. feld. epidote -- most common lamprophyre in mine area, Cts 30°TCN									
200.0	209.0	BASIC LAVA - ANDESITE: partial obliteration, contortion of volcanic, migmatite fabric, local ptygmatic folding, some schisting, short cb. veins 1 to 2 cm. at 60°TCN									
		206.0-209.0 several flat qtz veins to 10 cm., trace py, some py on margins	8787	3.0	206.0	209.0	Tr				
209.0	211.7	BASIC LAVA - ANDESITE MIGMATITE: clear aggregated feld. laths in diabasic array in amphibole, chl. cb. epidote matrix with dominant clustered chloritic amph.									
211.7	217.0	LAMPROPHYRE: fine grain light grey, cb. chl. matrix with lone 'phenocrysts' orbicular cb. and amorphous clots chl. (probable xenoliths basic lava) no fresh distinct amphiboles, some larger feld. 'phenocrysts' partly cb't'd, Cts 40°TCN									
217.0	241.5	BASIC LAVA - ANDESITE - MIGMATITE: as above 209.0-211.7; random segments with aggregated magnetite, at 70°TCN, chloritic fine grain segments with some regression of fabric									
		221.3-226.3 qtz veins (2) flat, barren, cb. qtz minor vein 45°TCN, rare py	8788	5.0	221.3	226.3	.002				
241.5	244.0	BASIC LAVA - ANDESITE: fine to med. grain with some very fine from 241.5-243.0; due to some regression by vein									
		241.5-243.0 cb. vein .8' impure chloritic 70°TCN some rimming py to 5%, grades thereafter to typical fine grain andesite with minute xstals feld. amph. epidote cb.	8789	1.5	241.5	243.0	.002				

OROFINO
RESOURCES LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-46
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All lengths in feet and tenths of feet	sample number	width	from	to	ASSAYS Au oz/t			
244.0	268.0	BASIC LAVA - ANDESITE - MIGMATIZED: coarse grain med. green, crs amphiboles, epidotized fretted feld., chl., massive, folt'n 70°TCN, local 1 to 3 cm. 'islands' of felsic migmatitic injection with white feld. laths and qtz cb., fabric recrystallized then epidotized, later random migmatitization; at 247 and at 252, 10 cm. qtz cb. barren branching veins at 30°TCN with adjacent fine grain lava, rare py on margins								
268.0	268.2	LAMPROPHYRE: fine grain med. green, 'green biotite' type, prisms and blebs, chl. amph., upper Ct. 70°TCN								
268.2	286.0	BASIC LAVA - ANDESITE - MIGMATIZED: coarse grain med. green, exactly as above 244.0-268.0; sporadic py, folt'n appears 70°TCN								
286.0	302.0	MIGMATIZED LAVA: grading toward diorite - hybrid - a fine grain chl. cb. matrix with abundant orbicular felsic qtz inclusions with fresh white plag. laths. internal, coarse amphiboles random, magnetite sporadic, an original matrix feld. partly destroyed and pocked with cb. some 1 cm. qtz epidote veins at 50°TCN with marginal py								
302.0	309.0	BASIC LAVA - ANDESITE: fine grain med. green, typical fabric of Abitibi greenstone minute crystals epidote, cb., feld. amph., undisturbed other than regional alt'n grading to chl. schist with boudins cb. from 308 to 309, cb. threading throughout, schist 80°TCN								
309.0	328.0	LAMPROPHYRE: (following represents a major Shear Zone and Fault Trace) schisted cb. rich, saturation, penetration of dyke along schist planes of chl. schist, probable later movement has produced resulting fabric, boudins and schlieren pink and grey cb. with interlayed chl. mats, a strongly schisted dyke with prevailing 60° to 70°TCN trend parallel folt'n, some small chl. schist inclusions within Cb. rich mosaic, post consolidation fracturing threaded with clear white and pink cb., central portion of dyke 80° to 90°TCN								

OROFINO
RESOURCES LIMITED

DRILL LOG

Property:
Location:
Co-ordinates:

Section:
Length:
Elevation:
Azimuth: Dip:

HOLE: 83-46
Core size:

Dip Tests:
Started:
Completed:
Logged by:

DEPTH from	DEPTH to	DESCRIPTION NOTE: All angles are measured normal to the long core axis. All lengths in feet and tenths of feet	sample number	width	from	to	ASSAYS Au oz/t				
328.0	333.5	CHLORITE SCHIST: chl. laminae with mini-boudins of cb. parallel to folt'n, a post fracturing filled with white cb. as contorted brx., 2 qtz veins barren of 20 cm. 328.0-333.5 barren contorted chl. sch. with later brxt'n parallel folt'n, trace py	8790	5.5	328.0	333.5	.002				
333.5	346.0	LAMPROPHYRE: schisted cb. rich light grey to slight pink saturation type penetration of chl. schist along chl. folia, py minimal to Nil -- as described 309.0-328.0 folt'n most intense at 80° to 90°TCN									
346.0	353.0	BASIC LAVA - ANDESITE: fine grain med. to dark green, some cb. lenses parallel folt'n., (some schist at upper Ct. grading rapidly to massive lava with post consolidation fractures with cb. cement) py increases from Nil to 4% in last 5' of hole, (xenoliths massive lamprophyre is segment)									
	353.0	END OF HOLE									

W. F. Gilman

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-1	14.6	17.8	7101	X			.008	X		X					
	17.8	19.1	7102	X			.002	X		X					
	19.1	23.2	7103	X			.020	X		X					
	23.2	25.8	7104	X			.002	X		X					
	25.8	27.0	7105	X			.002	X		X					
	27.0	30.0	7106	X			Trace	X		X					
	118.1	121.2	7107	X			.006	X		X					
	154.0	157.5	7112	X			.002	X		X					
	189.8	196.0	7113	X			Trace	X		X					
	196.0	201.3	7114	X			Trace	X		X					
	201.3	203.5	7115	X			.002	X		X					
	203.5	207.2	7116	X			.002	X		X					
	207.2	212.6	7108	X			.002	X		X					
	212.6	217.0	7117	X			.002	X		X					
	251.0	255.0	7118	X			Trace	X		X					
	273.8	278.3	7109	X			.004	X		X					
	278.3	280.1	7110	X			.002	X		X					
	280.1	284.2	7111	X			Trace	X		X					
	299.0	305.0	7119	X			.006	X		X					
	305.0	309.0	7120	X			.010	X		X					
	309.0	317.0	7121	X			.002	X		X					
	317.0	321.0	7122	X			.026	X		X					
	321.0	326.0	7123	X			.008	X		X					
	326.0	331.0	7124	X			.004	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
<u>ORO-83-2</u>	168.7	171.2	7125	X			Trace	X		X					
	198.0	202.0	7126	X			.002	X		X					
	217.3	220.3	7127	X			Trace	X		X					
	220.3	222.7	7128	X			Trace	X		X					
	222.7	226.0	7129	X			Trace	X		X					
	226.0	230.0	7130	X			Trace	X		X					
	230.0	231.8	7131	X			Trace	X		X					
	243.8	249.2	7132	X			Trace	X		X					
	282.0	286.4	7133	X			.004	X		X					
	286.4	288.1	7134	X			.013	X		X					
	288.1	292.0	7135	X			.008	X		X					
	292.0	293.3	7136	X			.048	X		X					
	293.3	296.0	7137	X			.016	X		X					
	303.0	307.2	7138	X			.002	X		X					
	324.6	327.0	7139	X			Trace	X		X					
	332.0	334.5	7140	X			Trace	X		X					
	336.3	339.0	7141	X			.004	X		X					
	339.0	344.0	7142	X			.002	X		X					
	344.0	346.0	7143	X			.002	X		X					
	368.7	372.0	7144	X			Trace	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-3	22.8	24.3	7145	X			Trace	X		X					
	82.7	84.0	7146	X			.002	X		X					
	84.0	85.7	7147	X			Trace	X		X					
	85.7	87.9	7148	X			Trace	X		X					
	87.9	88.8	7149	X			Trace	X		X					
	88.8	91.4	7150	X			.002	X		X					
	91.4	95.0	7151	X			.002	X		X					
	95.0	96.6	7152	X			Trace	X		X					
	96.6	97.9	7153	X			.002	X		X					
	97.9	100.6	7154	X			Trace	X		X					
	100.6	101.4	7155	X			Trace	X		X					
	101.4	104.0	7156	X			.002	X		X					
	104.0	108.0	7157	X			Trace	X		X					
	135.0	137.0	7158	X			Trace	X		X					
	140.0	142.0	7159	X			Trace	X		X					
	145.5	147.5	7160	X			Trace	X		X					
	147.5	150.0	7161	X			Trace	X		X					
	150.0	152.0	7162	X			Trace	X		X					
	153.5	154.6	7163	X			.002	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-4	24.0	26.3	7164	X			Trace	X		X					
	26.3	28.3	7165	X			Trace	X		X					
	34.0	37.0	7166	X			Trace	X		X					
	102.5	104.4	7167	X			Trace	X		X					
	162.0	163.5	7168	X			.002	X		X					
	163.5	167.0	7169	X			.002	X		X					
	167.0	169.5	7170	X			Trace	X		X					
	169.5	172.6	7171	X			Trace	X		X					
	172.6	173.5	7172	X			Trace	X		X					
	173.5	176.6	7173	X			Trace	X		X					
	176.6	177.1	7174	X			Trace	X		X					
	177.1	180.3	7175	X			Trace	X		X					
	180.3	181.7	7176	X			Trace	X		X					
	181.7	184.8	7177	X			Trace	X		X					
	184.8	188.4	7178	X			Trace	X		X					
	210.0	212.5	7179	X			Trace	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-5	41.3	42.9	7180	X			.006	X		X					
	148.0	155.5	7181	X			.004	X		X					
	205.0	205.9	7182	X			.002	X		X					
	205.9	210.0	7183	X			Trace	X		X					
	216.8	220.2	7184	X			Trace	X		X					
	220.2	221.3	7185	X			Trace	X		X					
	221.3	224.5	7186	X			Trace	X		X					
	224.5	226.0	7187	X			Trace	X		X					
	226.0	229.5	7188	X			.004	X		X					
	229.5	234.8	7189	X			Trace	X		X					
	234.8	239.7	7190	X			.004	X		X					
	272.2	276.3	7191	X			.006	X		X					
	277.0	282.0	7192	X			.002	X		X					
	282.0	286.0	7193	X			.006	X		X					
	301.4	304.6	7194	X			.036	X		X					
	304.6	306.2	7195	X			.002	X		X					
	306.2	308.5	7196	X			.004	X		X					
	308.5	309.0	7197	X			Trace	X		X					
	309.0	312.6	7198	X			.006	X		X					
	312.6	315.8	7199	X			Trace	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-6	16.2	19.5	7200	X			.008	X		X					
	19.5	20.7	7201	X			.002	X		X					
	20.7	23.0	7202	X			Trace	X		X					
	185.0	186.2	7203	X			Trace	X		X					
	186.2	187.4	7204	X			.036	X		X					
	187.4	189.2	7205	X			.096	X		X					
	189.2	193.8	7206	X			Trace	X		X					
	193.8	197.4	7207	X			Trace	X		X					
	197.4	199.0	7208	X			Trace	X		X					
	199.0	202.0	7209	X			Trace	X		X					
	202.0	204.0	7210	X			.058	X		X					
	265.4	267.0	7211	X			Trace	X		X					
	269.2	270.2	7212	X			.002	X		X					
	270.8	272.0	7213	X			.002	X		X					
	272.0	277.4	7214	X			.002	X		X					
	277.4	278.9	7215	X			.002	X		X					
	278.9	281.6	7216	X			.002	X		X					
	296.5	299.0	7217	X			Trace	X		X					
	299.0	300.2	7218	X			Trace	X		X					
	300.2	302.0	7219	X			Trace	X		X					
	302.0	305.5	7220	X			Trace	X		X					
	310.6	313.0	7221	X			Trace	X		X					
	313.0	314.6	7222	X			.002	X		X					
	314.6	316.5	7223	X			Trace	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-7	31.0	35.2	7224	X			Trace	X		X					
	36.0	40.6	7225	X			.002	X		X					
	74.0	75.0	7226	X			Trace	X		X					
	90.0	91.2	7227	X			.002	X		X					
	194.6	198.5	7228	X			Trace	X		X					
	223.8	226.2	7229	X			Trace	X		X					
	226.2	235.6	7230	X			Trace	X		X					
	235.6	239.7	7231	X			.020	X		X					
	239.7	241.4	7232	X			Trace	X		X					
	250.6	253.6	7233	X			Trace	X		X					
	284.9	286.0	7234	X			.002	X		X					
	286.0	292.0	7235	X			.158	X		X					
	292.0	293.4	7236	X			.008	X		X					
	293.4	294.9	7237	X			.004	X		X					
	294.9	299.3	7238	X			.020	X		X					
	331.9	338.5	7239	X			.002	X		X					
	338.5	343.9	7240	X			.002	X		X					
	343.9	347.9	7241	X			.028	X		X					
	347.8	352.0	7243	X			Trace	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-8	44.0	51.6	7548	X			.004	X		X					
	62.0	67.0	7542	X			.016	X		X					
	199.1	201.7	7244	X			.006	X		X					
	204.0	207.0	7245	X			.012	X		X					
	320.1	327.0	7246	X			.066	X		X					
	327.0	330.2	7247	X			.016	X		X					
	330.2	333.5	7248	X			.008	X		X					
	333.5	335.5	7249	X			.026	X		X					
	338.9	340.5	7250	X			.002	X		X					
	341.0	342.2	7251	X			Trace	X		X					
	382.0	383.6	7252	X			Trace	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
<u>ORO-83-9</u>	30.4	34.0	7253	X			.002	X		X					
	59.2	65.3	7254	X			Trace	X		X					
	183.6	185.0	7549	X			.002	X		X					
	231.0	234.0	7550	X			.002	X		X					
	234.0	238.8	7551	X			.012	X		X					
	238.8	242.0	7552	X			.008	X		X					
	271.5	276.7	7553	X			.018	X		X					
	288.4	291.0	7556	X			.020	X		X					
	369.5	372.0	7750	X			.002	X		X					
	372.0	374.0	7751	X			.002	X		X					
	374.0	374.8	7752	X			Trace	X		X					
	374.8	376.8	7554	X			.488*	X		X					
	376.8	379.0	7753	X			.002	X		X					
	379.0	381.0	7754	X			.002	X		X					
	381.0	383.0	7755	X			Trace	X		X					
	383.0	385.0	7756	X			.002	X		X					
	385.0	387.0	7757	X			Trace	X		X					
	391.3	393.0	7555	X			.002	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-10	26.0	30.2	7255	X			.003	X		X					
	38.4	42.4	7256	X			.130	X		X					
	42.4	46.3	7257	X			.004	X		X					
	46.3	48.6	7258	X			.008	X		X					
	48.6	50.5	7259	X			.003	X		X					
	60.0	64.0	7260	X			.007	X		X					
	64.0	67.0	7261	X			.004	X		X					
	67.0	70.0	7262	X			.005	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-11	14.1	16.1	7263	X			ND	X							
	18.5	21.0	7264	X			Trace	X							
	34.4	36.0	7265	X			.005	X							
	36.0	38.0	7266	X			.027	X							
	38.0	39.3	7267	X			.010	X							
	39.3	41.3	7268	X			.002	X							
	41.3	42.3	7269	X			.062	X							
	42.3	43.9	7270	X			.003	X							
	43.9	45.9	7271	X			Trace	X							

DRILL HOLE NUMBER	FOOTAGE from	FOOTAGE to	SAMPLE NUMBER	ASSAYED BY: B.W.	ASSAYED BY: SW.	ASSAYED BY: X-R.	VALUE (gold) oz/ton	REFERENCE: D.L.	REFERENCE: S.B.	REFERENCE: A.R.	SAMPLE NUMBER	ASSAYED BY: B.W.	ASSAYED BY: SW.	ASSAYED BY: X-RAY	VALUE (gold) oz/ton
ORO-83-12	34.1	36.0	7272	X			.002	X							
	36.0	37.3	7273	X			.026	X							
	37.3	38.7	7274	X			.008	X							

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-13	16.3	28.7	7275	X			.005	X							
	28.7	29.5	7276	X			.014	X							
	29.5	31.0	7277	X			.003	X							

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-14	12.0	16.5	7278	X			.011	X							
	16.5	19.0	7279	X			.004	X							
	22.0	25.0	7280	X			ND	X							

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-15	12.2	14.1	7281	X			.001	X							
	14.1	17.2	7282	X			.002	X							
	17.2	17.7	7283	X			.052	X							
	17.7	19.8	7284	X			.003	X							
	19.8	23.0	7285	X			.017	X							
	26.2	28.1	7286	X			.011	X							
	49.0	51.0	7287	X			.001	X							
	51.0	56.5	7288	X			.002	X							

DRILL HOLE NUMBER	FOOTAGE from	to	SAMPLE NUMBER	ASSAYED BY: B.W.	SW.	X-R.	VALUE (gold) oz/ton	REFERENCE: D.L.	S.B.	A.R.	SAMPLE NUMBER	ASSAYED BY: B.W.	SW.	X-RAY	VALUE (gold) oz/ton
ORO-83-16	20.0	22.0	7289	X			.002	X		X					
	22.0	24.0	7290	X			.002	X		X					
	24.0	27.0	7291	X			.05	X		X					
	27.5	32.5	7292	X			.002	X		X					
	43.0	44.5	7293	X			.004	X		X					
	154.5	156.5	7294	X			.002	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-17	20.0	23.0	7295	X			.032	X		X					
	23.0	24.5	7296	X			.026	X		X					
	24.5	26.0	7297	X			.086	X		X					
	26.0	27.9	7298	X			.016	X		X					
	27.9	31.8	7299	X			Trace	X		X					
	31.8	33.0	7300	X			.002	X		X					
	33.0	37.0	7301	X			.002	X		X					
	37.0	39.4	7302	X			.002	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-18	22.0	27.0	7303	X			Trace	X		X					
	59.5	62.0	7304	X			.002	X		X					
	227.3	231.6	7305	X			.002	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-19	50.0	52.0	7306	X			.002	X		X					
	52.0	53.0	7307	X			Trace	X		X					
	53.0	55.0	7308	X			Trace	X		X					
	109.0	111.0	7309	X			.006	X		X					
	111.0	115.0	7310	X			.022	X		X					
	214.0	216.5	7311	X			.002	X		X					
	265.0	270.0	7312	X			.012	X		X					
	270.0	275.0	7313	X			.036	X		X					
	416.9	421.0	7314	X			.058	X		X					
	487.0	489.0	7315	X			.070	X		X					
	597.0	601.0	7316	X			.002	X		X					
	601.0	605.0	7317	X			.030	X		X					
	623.0	625.0	7318	X			.002	X		X					
	625.0	627.6	7319	X			.222*	X		X					
	627.6	629.5	7320	X			.060	X		X					
	629.5	632.0	7321	X			.006	X		X					
	632.0	636.0	7322	X			Trace	X		X					
	637.1	642.0	7323	X			Trace	X		X					
	642.0	644.0	7324	X			.002	X		X					
	673.5	677.0	7325	X			.002	X		X					
	677.0	680.0	7326	X			.002	X		X					
	680.0	683.0	7327	X			.252*	X		X					
	683.0	685.0	7328	X			.127*	X		X					
	685.0	690.0	7329	X			.012	X		X					
	696.0	698.0	7330	X			.014	X		X					
	698.0	701.0	7331	X			Trace	X		X					
	701.0	706.0	7332	X			.002	X		X					
	717.0	719.5	7333	X			.008	X		X					
	719.5	722.4	7334	X			.224*	X		X					
	722.4	724.9	7335	X			.082	X		X					
	724.9	725.9	7336	X			.060	X		X					
	725.9	728.5	7337	X			.004	X		X					
	728.5	733.5	7338	X			.002	X		X					
	733.5	737.0	7339	X			.002	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-19 (con't)	737.0	742.0	7340	X			.002	X		X					
	742.0	747.0	7341	X			.002	X		X					
	757.0	759.0	7342	X			.006	X		X					
	759.0	762.0	7343	X			.100*	X		X					
	762.0	767.3	7344	X			.084	X		X					
	767.3	769.3	7345	X			.116*	X		X					
	769.3	773.0	7346	X			.008	X		X					
	773.0	777.5	7347	X			.002	X		X					
	777.5	782.2	7348	X			.080	X		X					
	782.2	788.4	7349	X			.002	X		X					
	788.4	791.2	7350	X			.002	X		X					
	800.0	802.5	7351	X			.012	X		X					
	819.0	822.0	7352	X			.002	X		X					
	822.0	824.2	7353	X			.018	X		X					
	824.2	827.0	7354	X			.052	X		X					
	827.0	829.2	7355	X			.036	X		X					
	829.6	832.2	7356	X			.092	X		X					
	832.2	835.5	7357	X			.098	X		X					
	835.5	839.0	7358	X			.531*	X		X					
	839.0	841.5	7359	X			.865*	X		X					
	841.5	845.5	7360	X			.244*	X		X					
	845.5	851.3	7361	X			.158*	X		X					
	851.3	852.3	7362	X			.132*	X		X					
	852.3	857.0	7363	X			.002	X		X					
	862.0	867.0	7364	X			.002	X		X					
	922.0	923.0	7365	X			.236*	X		X					
	923.0	924.0	7366	X			.255*	X		X					
	924.0	927.0	7367	X			.115*	X		X					
	962.0	964.0	7368	X			.002	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-20	69.5	72.0	7369	X			.022	X		X					
	72.0	78.0	7370	X			.002	X		X					
	78.0	81.0	7371	X			.002	X		X					
	97.0	101.0	7372	X			Trace	X		X					
	105.3	106.5	7373	X			Trace	X		X					
	142.7	144.6	7374	X			Trace	X		X					
	171.9	176.0	7375	X			.004	X		X					
	214.0	217.5	7376	X			.002	X		X					
	327.7	335.0	7377	X			.004	X		X					
	335.0	339.0	7378	X			Trace	X		X					
	339.0	343.5	7379	X			.002	X		X					
	343.5	346.0	7380	X			.058	X		X					
	346.0	348.9	7381	X			.002	X		X					
	348.9	351.0	7382	X			.002	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-21	66.8	72.6	7383	X			.002	X		X					
	72.6	75.0	7384	X			.002	X		X					
	110.5	115.0	7385	X			Trace	X		X					
	299.2	309.2	7386	X			.028	X		X					
	313.6	319.0	7387	X			.002	X		X					
	417.0	422.0	7388	X			.002	X		X					
	442.7	445.5	7389	X			.002	X		X					
	490.0	493.0	7390	X			.004	X		X					
	493.0	494.5	7391	X			.002	X		X					
	494.5	496.5	7392	X			.002	X		X					
	522.1	525.0	7393	X			Trace	X		X					
	525.0	527.0	7394	X			Trace	X		X					
	527.0	528.4	7395	X			.002	X		X					
	528.4	531.0	7396	X			.002	X		X					
	622.0	625.5	7397	X			Trace	X		X					
	625.5	626.5	7398	X			.002	X		X					
	626.5	629.3	7399	X			.056	X		X					
	646.0	651.0	7400	X			.002	X		X					
	683.0	685.0	7401	X			.002	X		X					
	695.0	697.5	7402	X			Trace	X		X					
	757.0	762.0	7403	X			.002	X		X					
	809.9	814.0	7404	X			Trace	X		X					
	830.4	832.5	7405	X			.159*	X		X					
	857.0	858.0	7406	X			.004	X		X					
	903.5	906.5	7407	X			.058	X		X					
	906.5	908.5	7408	X			.084	X		X					
	908.5	911.0	7409	X			.054	X		X					
	911.0	913.0	7410	X			.002	X		X					
	913.0	920.0	7411	X			Trace	X		X					
	920.0	923.8	7412	X			.046	X		X					

DRILL HOLE NUMBER	FOOTAGE from	FOOTAGE to	SAMPLE NUMBER	ASSAYED BY: B.W.	ASSAYED BY: SW.	ASSAYED BY: X-R.	VALUE (gold) oz/ton	REFERENCE: D.L.	REFERENCE: S.B.	REFERENCE: A.R.	SAMPLE NUMBER	ASSAYED BY: B.W.	ASSAYED BY: SW.	ASSAYED BY: X-RAY	VALUE (gold) oz/ton
ORO-83-21	937.0	939.4	7413	X			.164*	X		X					
(con't)	939.4	940.5	7414	X			.036	X		X					
	940.5	943.5	7415	X			.028	X		X					
	952.0	955.1	7416	X			.002	X		X					
	955.1	955.8	7417	X			.002	X		X					
	955.8	959.0	7418	X			.002	X		X					
	959.0	962.0	7419	X			.006	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-22	189.0	195.5	7420			X	.005	X		X					
	259.0	260.5	7421			X	.090	X		X					
	308.6	310.8	7422			X	.004	X		X					
	347.0	351.1	7423			X	.240	X		X					
	354.8	360.3	7424			X	.014	X		X					
	377.0	380.0	7425			X	Trace	X		X					
	475.0	476.5	7426			X	.011	X		X					
	557.9	561.4	7427			X	.001	X		X					
	592.5	597.0	7428			X	Trace	X		X					
	672.0	677.0	7429			X	.003	X		X					
	677.0	678.5	7430			X	.009	X		X					
	678.5	683.0	7431			X	.110	X		X					
	684.8	688.0	7432			X	.029	X		X					
	688.4	693.5	7433			X	.049	X		X					
	693.5	696.0	7434			X	.007	X		X					
	696.0	701.0	7435			X	.013	X		X					
	701.0	705.0	7436			X	.001	X		X					
	705.0	707.0	7437			X	.007	X		X					
	707.0	708.0	7438			X	.130	X		X					
	708.0	710.0	7439			X	.009	X		X					
	710.0	712.0	7440			X	.002	X		X					
	712.0	716.5	7441			X	Trace	X		X					
	716.5	720.3	7442			X	.013	X		X					
	720.3	721.8	7443			X	.038	X		X					
	757.5	762.0	7444			X	.005	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-23	192.3	196.0	7445	X			Trace	X		X					
	213.3	218.0	7446	X			Trace	X		X					
	272.0	274.0	7447	X			.010	X		X					
	274.0	276.0	7448	X			.068	X		X					
	276.0	280.5	7449	X			.016	X		X					
	280.5	283.0	7450	X			.020	X		X					
	283.0	285.0	7451	X			.006	X		X					
	393.5	394.7	7452	X			Trace	X		X					
	484.2	483.7	7453	X			.010	X		X					
	492.2	494.5	7454	X			.002	X		X					
	494.5	496.0	7455	X			.132*	X		X					
	496.0	498.0	7456	X			.020	X		X					
	498.0	501.0	7457	X			.004	X		X					
	506.9	509.2	7458	X			.056	X		X					
	509.2	511.0	7459	X			.056	X		X					
	511.0	512.7	7460	X			.006	X		X					
	514.1	520.5	7461	X			.018	X		X					
	537.0	540.5	7462	X			.002	X		X					
	775.2	777.0	7463	X			.002	X		X					
	777.0	779.0	7464	X			Trace	X		X					
	779.0	781.2	7465	X			.028	X		X					
	781.2	784.1	7466	X			.084	X		X					
	784.1	786.8	7467	X			.080	X		X					
	786.8	789.0	7468	X			.244*	X		X					
	789.0	795.7	7469	X			.149*	X		X					
	795.7	797.6	7470	X			.082	X		X					
	797.6	800.0	7471	X			.060	X		X					
	800.0	801.8	7472	X			.010	X		X					
	801.8	804.0	7473	X			.092	X		X					
	804.0	806.4	7474	X			.123*	X		X					
	806.4	811.0	7475	X			.098	X		X					
	811.0	815.0	7476	X			.018	X		X					
	815.0	821.0	7477	X			.002	X		X					
	821.0	828.0	7478	X			.002	X		X					

DRILL HOLE NUMBER	FOOTAGE from	FOOTAGE to	SAMPLE NUMBER	ASSAYED BY: B.W.	ASSAYED BY: SW.	ASSAYED BY: X-R.	VALUE (gold) oz/ton	REFERENCE: D.L.	REFERENCE: S.B.	REFERENCE: A.R.	SAMPLE NUMBER	ASSAYED BY: B.W.	ASSAYED BY: SW.	ASSAYED BY: X-RAY	VALUE (gold) oz/ton
ORO-83-24	130.9	138.5	7479	X			Trace	X		X					
	148.0	152.5	7480	X			.002	X		X					
	172.0	174.6	7481	X			.002	X		X					
	177.0	182.5	7482	X			.002	X		X					
	233.9	237.7	7483	X			.002	X		X					
	271.2	278.6	7484	X			.006	X		X					
	281.7	285.0	7485	X			.052	X		X					
	315.2	320.0	7486	X			.006	X		X					
	613.7	617.4	7487	X			.004	X		X					
	643.0	645.8	7488	X			.006	X		X					
	654.8	661.0	7489	X			.002	X		X					
	661.0	662.8	7490	X			.002	X		X					
	662.8	664.9	7491	X			.006	X		X					
	664.9	667.0	7492	X			.014	X		X					
	667.0	669.6	7493	X			.002	X		X					
	669.6	670.9	7494	X			.214*	X		X					
	670.9	672.0	7495	X			.020	X		X					
	672.0	677.0	7496	X			.006	X		X					
	677.0	682.0	7497	X			.028	X		X					
	682.0	687.0	7498	X			.068	X		X					
	687.0	691.8	7499	X			.045	X		X					
	691.8	694.2	7500	X			.137*	X		X					
	694.2	696.7	7501	X			Trace	X		X					
	696.7	700.0	7502	X			.004	X		X					
	700.0	702.0	7503	X			.250*	X		X					
	702.0	704.5	7504	X			.002	X		X					
	757.5	760.5	7505	X			Trace	X		X					
	760.5	763.5	7506	X			.002	X		X					
	763.5	766.8	7507	X			.094	X		X					
	766.8	768.0	7508	X			.103	X		X					
	768.0	771.0	7509	X			.070	X		X					
	771.0	773.6	7510	X			.078	X		X					
	773.6	777.5	7511	X			.078	X		X					
	777.5	782.5	7512	X			.109	X		X					

DRILL HOLE NUMBER	FOOTAGE from	FOOTAGE to	SAMPLE NUMBER	ASSAYED BY: B.W.	SW.	X-R.	VALUE (gold) oz/ton	REFERENCE: D.L.	S.B.	A.R.	SAMPLE NUMBER	ASSAYED BY: B.W.	SW.	X-RAY	VALUE (gold) oz/ton
ORO-83-24	782.5	787.3	7513	X			.034	X		X					
(con't)	787.3	789.8	7514	X			.002	X		X					
	794.5	797.0	7515	X			.036	X		X					
	797.0	799.0	7516	X			.050	X		X					
	799.0	801.0	7517	X			.052	X		X					
	801.0	803.8	7518	X			.064	X		X					
	803.8	805.0	7519	X			Trace	X		X					
	805.0	809.0	7520	X			.024	X		X					
	829.0	834.0	7521	X			.002	X		X					
	834.0	835.7	7522	X			.002	X		X					
	835.7	840.0	7523	X			.068	X		X					
	840.5	842.8	7524	X			.230*	X		X					
	842.8	846.2	7525	X			.134*	X		X					
	846.2	848.3	7526	X			.144*	X		X					
	848.3	856.0	7527	X			.010	X		X					
	856.0	859.0	7528	X			.080	X		X					
	859.0	863.0	7529	X			.002	X		X					
	863.0	867.0	7530	X			Trace	X		X					

DRILL HOLE NUMBER	FOOTAGE from	FOOTAGE to	SAMPLE NUMBER	ASSAYED BY: B.W.	SW.	X-R.	VALUE (gold) oz/ton	REFERENCE: D.L.	S.B.	A.R.	SAMPLE NUMBER	ASSAYED BY: B.W.	SW.	X-RAY	VALUE (gold) oz/ton
ORO-83-25	149.4	153.4	7531	X			.002	X		X					
	153.4	155.4	7532	X			.002	X		X					
	155.4	157.0	7533	X			.016	X		X					
	157.0	158.6	7534	X			Trace	X		X					
	174.0	177.8	7535	X			.002	X		X					
	189.5	197.0	7536	X			Trace	X		X					
	269.0	277.0	7537	X			Trace	X		X					
	300.0	301.8	7538	X			.002	X		X					
	335.6	338.2	7539	X			Trace	X		X					
	374.0	375.0	7540	X			.002	X		X					
	386.0	387.5	7541	X			.002	X		X					
	392.3	394.2	7542	X			Trace	X		X					
	464.0	465.7	7543	X			.002	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-27	317.0	319.0	7544	X			Trace	X		X					
	428.0	430.5	7545	X			Trace	X		X					
	477.0	478.0	7546	X			Trace	X		X					
	497.0	502.0	7547	X			Trace	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-28	22.5	23.1	7557	X			.006	X		X					
	33.5	36.7	7558	X			.002	X		X					
	295.0	300.0	7559	X			.002	X		X					
	300.0	305.0	7560	X			Trace	X		X					
	305.0	311.0	7561	X			.002	X		X					
	311.0	317.0	7562	X			.002	X		X					
	322.0	328.0	7563	X			.002	X		X					
	336.8	341.0	7564	X			.006	X		X					
	471.5	472.2	7565	X			.002	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-29	35.4	37.2	7566	X			.002	X		X					
	55.0	59.0	7567	X			Trace	X		X					
	59.0	62.2	7568	X			.020	X		X					
	132.0	136.0	7569	X			.002	X		X					
	211.0	213.0	7570	X			.002	X		X					
	251.5	253.5	7571	X			Trace	X		X					
	256.0	260.0	7572	X			.004	X		X					
	260.0	263.5	7573	X			.002	X		X					
	263.5	266.0	7574	X			.004	X		X					
	266.0	269.5	7575	X			.044	X		X					
	269.5	271.5	7576	X			.064	X		X					
	271.5	273.5	7577	X			.479*	X		X					
	273.5	277.0	7578	X			.048	X		X					
	277.0	278.5	7579	X			.026	X		X					
	278.5	282.5	7580	X			.018	X		X					
	282.5	284.0	7581	X			.034	X		X					
	319.0	323.0	7582	X			.004	X		X					
	323.0	327.4	7583	X			.004	X		X					
	405.2	409.5	7584	X			.024	X		X					
	414.0	416.7	7585	X			.006	X		X					
	416.7	418.5	7586	X			.072	X		X					
	418.5	424.0	7587	X			.169*	X		X					
	424.0	425.5	7588	X			.090	X		X					
	425.5	429.0	7589	X			.016	X		X					
	657.8	663.8	7590	X			.002	X		X					
	675.0	678.2	7591	X			.006	X		X					
	678.2	680.0	7592	X			.190*	X		X					
	680.0	685.0	7593	X			.224*	X		X					
	685.0	690.0	7594	X			.002	X		X					
	690.0	697.0	7595	X			.020	X		X					
	697.0	700.0	7596	X			.226*	X		X					
	700.0	705.0	7597	X			.140*	X		X					
	705.0	707.0	7598	X			.169*	X		X					
	707.0	710.0	7599	X			.279*	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-29 (con't)	710.0	715.0	7600	X			.030	X		X					
	715.0	720.0	7601	X			.020	X		X					
	720.0	723.0	7602	X			.125*	X		X					
	738.0	740.7	7603	X			.002	X		X					
	784.4	789.0	7604	X			.034	X		X					
	800.0	805.0	7605	X			.002	X		X					
	843.0	845.4	7606	X			.008	X		X					
	845.4	848.3	7607	X			.006	X		X					
	848.3	852.0	7608	X			.016	X		X					
	852.8	855.5	7609	X			.028	X		X					
	855.5	857.0	7610	X			.103*	X		X					
	857.0	859.0	7611	X			.002	X		X					
	859.0	863.5	7612	X			.002	X		X					
	889.2	891.7	7613	X			.002	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-30	16.6	19.0	7614	X			.016	X		X					
	34.5	37.0	7615	X			.004	X		X					
	49.4	51.6	7616	X			.074	X		X					
	99.6	102.5	7617	X			.016	X		X					
	107.0	109.0	7618	X			.096	X		X					
	240.5	242.8	7619	X			.028	X		X					
	289.7	293.0	7620	X			.086	X		X					
	293.0	297.0	7621	X			.165*	X		X					
	297.0	303.0	7622	X			.096	X		X					
	303.0	310.0	7623	X			.016	X		X					
	310.0	312.9	7624	X			.092	X		X					
	312.9	314.7	7625	X			.038	X		X					
	314.7	315.3	7626	X			.090	X		X					
	527.4	729.2	7627	X			.024	X		X					
	532.5	535.0	7628	X			.012	X		X					
	535.0	540.0	7629	X			.006	X		X					
	540.0	547.5	7630	X			.002	X		X					
	554.0	560.0	7631	X			.004	X		X					
	560.0	565.0	7632	X			.002	X		X					
	565.0	567.7	7633	X			.008	X		X					
	567.7	570.0	7634	X			.060	X		X					
	570.0	572.0	7635	X			.117*	X		X					
	572.0	576.0	7636	X			.002	X		X					
	798.8	801.8	7637	X			.002	X		X					
	801.8	803.6	7638	X			.016	X		X					
	803.6	807.6	7639	X			.002	X		X					
	807.6	811.3	7640	X			.022	X		X					
	811.3	815.0	7641	X			.078	X		X					
	818.2	820.5	7642	X			.036	X		X					
	820.5	824.8	7643	X			.038	X		X					
	824.8	829.0	7644	X			.076	X		X					
	829.0	833.2	7645	X			.022	X		X					
	833.2	834.0	7646	X			.018	X		X					

DRILL HOLE NUMBER	FOOTAGE from	FOOTAGE to	SAMPLE NUMBER	ASSAYED BY: B.W.	ASSAYED BY: SW.	ASSAYED BY: X-R.	VALUE (gold) oz/ton	REFERENCE: D.L.	REFERENCE: S.B.	REFERENCE: A.R.	SAMPLE NUMBER	ASSAYED BY: B.W.	ASSAYED BY: SW.	ASSAYED BY: X-RAY	VALUE (gold) oz/ton
ORO-83-30	834.7	837.5	7647	X			.028	X		X					
	837.5	840.0	7648	X			.010	X		X					
(con't)	840.0	844.0	7649	X			.002	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-31	30.0	35.0	7650	X			.008	X		X					
	35.0	38.5	7651	X			.002	X		X					
	75.0	80.0	7652	X			.002	X		X					
	225.7	227.4	7653	X			.010	X		X					
	227.4	230.6	7654	X			.038	X		X					
	231.6	233.9	7655	X			.034	X		X					
	256.5	259.8	7656	X			.131*	X		X					
	262.3	265.0	7657	X			.052	X		X					
	291.5	294.0	7658	X			1.01*	X		X					
	295.7	299.0	7659	X			.028	X		X					
	299.0	301.5	7660	X			.012	X		X					
	519.5	521.1	7661	X			.006	X		X					
	524.0	528.0	7662	X			.002	X		X					
	538.0	540.0	7663	X			.002	X		X					
	543.8	546.0	7664	X			.002	X		X					
	687.5	691.5	7665	X			.002	X							
	698.0	702.0	7666	X			.002	X							

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-32	169.2	172.0	7667	X			Trace	X		X					
	201.8	204.0	7668	X			.002	X		X					
	206.5	208.5	7669	X			.004	X		X					
	220.0	222.8	7670	X			Trace	X		X					
	225.0	227.0	7671	X			.006	X		X					
	227.0	232.0	7672	X			Trace	X		X					
	232.0	237.0	7673	X			Trace	X		X					
	237.0	240.0	7674	X			Trace	X		X					
	240.0	243.0	7675	X			Trace	X		X					
	243.0	245.0	7676	X			.002	X		X					
	245.0	246.2	7677	X			.018	X		X					
	246.2	247.2	7679	X			.037	X		X					
	247.2	248.8	7680	X			.006	X		X					
	248.8	250.3	7681	X			.002	X		X					
	250.3	253.7	7682	X			Trace	X		X					
	253.7	258.8	7683	X			Trace	X		X					
	258.8	260.8	7684	X			.002	X		X					
	262.0	268.0	7685	X			.002	X		X					
	268.0	270.2	7686	X			.036	X		X					
	270.2	272.0	7687	X			.028	X		X					
	272.0	273.2	7688	X			.109	X		X					
	276.5	278.0	7689	X			.060	X		X					
	278.0	281.5	7690	X			.042	X		X					
	282.0	286.5	7691	X			.046	X		X					
	286.5	289.0	7692	X			.004	X		X					
	289.0	292.0	7693	X			.002	X		X					
	292.0	297.0	7694	X			.004	X		X					
	307.0	313.0	7695	X			.002	X		X					
	313.0	315.0	7696	X			.002	X		X					
	315.0	317.0	7697	X			.002	X		X					
	317.0	319.0	7698	X			.050	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-32	319.0	322.7	7699	X			.144	X		X					
	322.7	325.5	7700	X			.040	X		X					
(con't)															
	334.0	337.0	7701	X			.016	X		X					
	337.0	339.5	7702	X			.507	X		X					
	415.0	419.0	7703	X			.020	X		X					
	626.0	630.0	7704	X			.006	X		X					
	630.0	633.0	7705	X			.004	X		X					
	633.0	635.5	7706	X			.286	X		X					
	635.5	638.0	7707	X			.004	X		X					
	638.0	641.5	7708	X			.002	X		X					
	641.5	646.4	7709	X			.090	X		X					
	646.4	648.5	7710	X			.062	X		X					
	648.5	650.0	7711	X			.127	X		X					
	650.6	652.8	7712	X			.062	X		X					
	669.5	673.0	7713	X			.006	X		X					
	702.0	705.0	7714	X			.004	X		X					
	780.5	783.0	7715	X			.004	X		X					
	783.0	785.5	7716	X			.020	X		X					
	785.5	789.0	7717	X			.161	X		X					
	789.0	790.5	7718	X			.116	X		X					
	790.5	792.5	7719	X			.018	X		X					
	792.5	794.5	7720	X			.350	X		X					
	794.5	796.0	7721	X			.008	X		X					
	796.0	798.0	7722	X			.006	X		X					
	806.5	808.4	7723	X			.066	X		X					
	808.4	809.4	7724	X			.199	X		X					
	809.4	811.0	7725	X			.028	X		X					
	811.0	817.0	7726	X			.002	X		X					
	817.0	818.7	7727	X			.020	X		X					
	818.7	822.0	7728	X			.163	X		X					
	822.0	825.0	7729	X			.189	X		X					

DRILL HOLE NUMBER	FOOTAGE from	FOOTAGE to	SAMPLE NUMBER	ASSAYED BY: B.W.	ASSAYED BY: SW.	ASSAYED BY: X-R.	VALUE (gold) oz/ton	REFERENCE: D.L.	REFERENCE: S.B.	REFERENCE: A.R.	SAMPLE NUMBER	ASSAYED BY: B.W.	ASSAYED BY: SW.	ASSAYED BY: X-RAY	VALUE (gold) oz/ton
ORO-83-32	825.0	827.0	7730	X			.174	X		X					
(con't)	827.0	828.4	7731	X			.133	X		X					
	828.4	829.4	7732	X			.092	X		X					
	829.4	831.8	7733	X			.137	X		X					
	831.8	832.4	7734	X			.060	X		X					
	832.4	833.3	7735	X			.038	X		X					
	833.3	836.0	7736	X			.010	X		X					
	836.0	842.5	7737	X			.002	X		X					
	842.5	843.5	7738	X			.046	X		X					
	843.5	846.0	7739	X			.068	X		X					
	846.0	848.0	7740	X			.238	X		X					
	848.0	852.5	7741	X			.016	X		X					
	852.5	855.0	7742	X			.048	X		X					
	855.0	857.0	7743	X			.094	X		X					
	857.0	859.0	7744	X			.006	X		X					
	859.0	863.0	7745	X			.002	X		X					
	881.7	883.2	7746	X			.004	X		X					
	888.5	891.5	7747	X			.002	X		X					
	891.5	892.5	7748	X			.002	X		X					
	892.5	897.0	7749	X			.002	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO - 83-33	42.5	46.5	9051	X			.036	X		X					
	46.5	48.0	9052	X			.024	X		X					
	189.5	193.8	9053	X			.072	X		X					
	193.8	196.8	9054	X			.046	X		X					
	196.8	199.1	9055	X			.098	X		X					
	199.1	202.1	9056	X			.030	X		X					
	312.9	315.4	9057	X			.006	X		X					
	356.0	359.3	9058	X			.036	X		X					
	359.3	360.8	9059	X			.070	X		X					
	360.8	363.3	9060	X			.010	X		X					
	363.3	366.0	9061	X			.006	X		X					
	366.0	368.0	9062	X			.034	X		X					
	368.0	371.0	9063	X			.038	X		X					
	371.0	372.5	9064	X			.002	X		X					
	372.5	375.0	9065	X			.002	X		X					
	375.0	377.0	9066	X			.099	X		X					
	377.0	379.0	9067	X			Trace	X		X					
	379.0	384.0	9068	X			Trace	X		X					
	444.4	445.4	9069	X			.002	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-34	45.7	47.7	9070	X			.006	X		X					
	70.1	74.6	9071	X			Trace	X		X					
	74.6	79.3	9072	X			Trace	X		X					
	96.0	100.0	9073	X			.018	X		X					
	106.0	109.2	9074	X			.008	X		X					
	109.2	110.0	9151				<.01	X		X					
	110.0	111.5	9075	X			.204	X		X					
	111.5	114.7	9152				.01	X		X					
	222.6	224.6	9076	X			.006	X		X					
	224.6	226.3	9077	X			.269	X		X					
	226.3	229.2	9078	X			.058	X		X					
	229.2	232.1	9079	X			.201	X		X					
	232.1	233.7	9153				<.01	X		X					
	233.7	235.7	9080	X			.010	X		X					
	238.7	240.7	9081	X			.008	X		X					
	247.0	249.5	9082	X			.018	X		X					
	249.5	252.0	9083	X			.042	X		X					
	252.0	254.5	9084	X			.107	X		X					
	254.5	257.0	9085	X			.124	X		X					
	257.0	258.5	9154				<.01	X		X					
	258.5	259.1	9086	X			.026	X		X					
	259.1	260.5	9087	X			.070	X		X					
	260.5	261.5	9088	X			.004	X		X					
	261.5	263.5	8501				Trace	X		X					
	263.5	265.5	8502				Trace	X		X					
	265.5	267.5	8503				Trace	X		X					
	267.5	269.5	8504				Trace	X		X					
	269.5	271.5	8505				Trace	X		X					
	271.5	274.5	8506				.006	X		X					
	274.5	277.5	8507				.004	X		X					
	277.5	280.6	8508				Trace	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-35	25.0	28.6	9089	X			.006	X		X					
	39.0	40.0	9090	X			.002	X		X					
	108.6	110.6	9091	X			.002	X		X					
	110.6	112.6	9092	X			.002	X		X					
	112.6	115.1	9093	X			.002	X		X					
	115.1	117.0	9094	X			.022	X		X					
	117.0	119.0	9095	X			.038	X		X					
	119.0	120.1	9096	X			.002	X		X					
	123.6	125.1	9097	X			.002	X		X					
	261.5	264.5	9098	X			.010	X		X					
	264.5	265.5	9099	X			.048	X		X					
	265.5	267.0	9100	X			.014	X		X					
	267.0	268.5	9101	X			.008	X		X					
	296.0	297.0	9102	X			.004	X		X					
	297.0	298.5	9103	X			.094	X		X					
	298.5	299.5	9104	X			.032	X		X					
	299.5	301.0	9105	X			Trace	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-36	25.0	27.0	9106	X			.060	X		X					
	27.0	29.2	9107	X			.008	X		X					
	29.2	30.7	9108	X			.010	X		X					
	30.7	32.2	9109	X			.058	X		X					
	32.2	32.8	9110	X			.050	X		X					
	32.8	33.8	9111	X			.036	X		X					
	33.8	35.5	9112	X			.012	X		X					
	84.6	85.4	9113	X			.002	X		X					
	134.2	137.0	8509				Trace	X		X					
	137.0	141.0	8510				Trace	X		X					
	141.0	143.0	8511				.016	X		X					
	143.0	146.0	8512				.006	X		X					
	146.0	146.3	8513				Trace	X		X					
	146.3	148.3	9155				<.01	X		X					
	148.3	150.0	8514				Trace	X		X					
	150.0	152.0	8515				.024	X		X					
	152.0	155.0	8516				Trace	X		X					
	155.0	158.5	8517				Trace	X		X					
	226.6	228.0	9114	X			.004	X		X					
	231.0	234.0	9115	X			.016	X		X					
	276.0	278.0	9116	X			Trace	X		X					
	301.0	304.5	9117	X			.002	X		X					
	359.2	361.2	9118	X			.006	X		X					
	363.2	368.0	9119	X			.058	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-37	38.0	41.0	8518				Trace	X		X					
	41.0	44.0	8519				Trace	X		X					
	44.0	46.8	8520				.018	X		X					
	46.8	47.8	8521				.006	X		X					
	47.8	50.0	8522				.058	X		X					
	50.0	53.0	8523				.068	X		X					
	53.0	57.6	8524				Trace	X		X					
	70.8	71.8	9120	X			.074	X		X					
	71.8	74.9	9121	X			.004	X		X					
	197.0	199.5	9122	X			.002	X		X					
	199.5	201.7	9123	X			.145	X		X					
	201.7	203.7	9124	X			.377	X		X					
	203.7	205.4	9156				<.01	X		X					
	205.4	208.5	9125	X			.032	X		X					
	210.5	212.0	9126	X			.008	X		X					
	212.0	215.0	9127	X			.034	X		X					
	215.0	217.0	9128	X			.028	X		X					
	230.9	231.9	9129	X			.002	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-38	62.5	66.6	7758				.01	X		X					
	66.6	69.0	7759				.01	X		X					
	69.0	72.0	7760				Trace	X		X					
	72.0	75.0	7761				Trace	X		X					
	75.0	78.0	7762				Trace	X		X					
	78.0	80.0	7763				Trace	X		X					
	80.0	83.5	7764				Trace	X		X					
	171.9	173.5	7765				.01	X		X					
	203.0	206.0	7766				.02	X		X					
	220.5	223.0	7767				Trace	X		X					
	252.0	253.6	7832				Trace	X		X					
	261.0	264.4	7833				Trace	X		X					
	407.0	409.0	7834				.002	X		X					
	409.0	410.0	7835				.002	X		X					
	410.0	411.2	7836				.004	X		X					
	411.2	412.5	7837				.010	X		X					
	412.5	413.8	7838				.012	X		X					
	413.8	416.8	7839				.012	X		X					
	416.8	418.5	7840				.022	X		X					
	418.5	422.2	7841				.002	X		X					
	422.2	423.5	7842				.002	X		X					
	423.5	427.0	7843				Trace	X		X					
	447.0	448.2	7844				.002	X		X					
	463.5	468.5	7845				.006	X		X					
	537.2	543.0	7846				.002	X		X					
	644.0	646.6	7847				.002	X		X					
	646.6	647.4	7848				.004	X		X					
	791.4	792.3	7849				.036	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-38	1029.0	1033.5	7768				Trace	X		✓					
(con't)	1033.5	1036.2	7769				Trace	X		✓					
	1036.2	1038.3	7770				Trace								
	1038.3	1041.0	7771				.01	X		✓					
	1041.0	1042.0	7772				.02	X							
	1047.0	1048.0	7773				.03	X		✓					
	1048.0	1052.0	7774				.05	X		✓					
	1052.0	1056.7	7775				.01	X		✓					
	1061.8	1067.0	7776				Trace	X		✓					
	1067.0	1071.5	7777				Trace	X		✓					
	1072.2	1077.0	7778				.01	X		✓					
	1083.2	1085.6	7779				.12	X		✓					
	1085.6	1088.0	7780				.09	X		✓					
	1088.0	1091.7	7781				.03	X		✓					
	1091.7	1093.7	7782				.01	X		✓					
	1093.7	1097.0	7783				Trace	X		✓					
	1097.0	1102.0	7784				Trace	X		✓					
	1029.0	1034.0	7785				Trace	X		✓					
	1034.0	1035.6	7786				Trace	X		✓					
	1036.8	1037.9	7787				.02	X		✓					
	1037.9	1041.4	7788				.12	X		✓					
	1041.4	1043.7	7789				Trace	X		✓					
	1043.7	1045.5	7790				.08	X		✓					
	1045.5	1046.5	7791				.04	X		✓					
	1046.5	1048.5	7792				.02	X		✓					
	1048.5	1051.0	7793				.04	X		✓					
	1051.0	1053.5	7794				Trace	X		✓					
	1081.6	1084.5	7795				.04	X		✓					
	1084.5	1087.0	7796				.09	X		✓					
	1087.0	1088.8	7797				.14	X		✓					
	1088.8	1090.7	7798				.06	X		✓					
	1090.7	1091.5	7799				.12	X		✓					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-38	1091.5	1093.0	7800				.03	X		✓					
	1093.0	1095.5	7801				.05	X		✓					
(con't)	1095.5	1097.5	7802				Trace	X		✓					
	1097.5	1102.0	7803				.02	X		✓					
	1219.0	1221.0	7804				.006	X							
	1238.1	1240.5	7805				Trace	X							
	1295.0	1299.0	7806				.008	X							
	1305.4	1308.0	7807				.002	X							
	1389.0	1391.5	7808				.002	X							
	1420.0	1421.0	7809				Trace	X							
	1425.3	1426.4	7810				Trace	X							
	1442.6	1443.5	7811				Trace	X							
	1487.5	1491.0	7812				.006	X							
	1491.0	1493.0	7813				.002	X							
	1493.0	1494.0	7814				.018	X							
	1494.0	1495.0	7815				.002	X							
	1495.0	1497.0	7816				.002	X							
	1508.0	1513.5	7817				Trace	X							
	1528.0	1529.0	7818				Trace	X							
	1529.0	1530.3	7819				.002	X							
	1530.3	1533.5	7820				.002	X							
	1608.7	1611.0	7821				.002	X							
	1618.5	1620.5	7822				Trace	X							
	1620.5	1625.0	7823				Trace	X							
	1625.0	1627.0	7824				.002	X							
	1627.0	1630.0	7825				Trace	X							

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-38	1630.0	1635.0	7826				.002	X							
	1635.0	1637.0	7827				.002	X							
(con't)	1637.0	1640.0	7828				Trace	X							
	1640.0	1645.0	7829				Trace	X							
	1645.0	1650.7	7830				.002	X							
	1809.0	1811.0	7831				.002	X							

DRILL HOLE NUMBER	FOOTAGE from	FOOTAGE to	SAMPLE NUMBER	ASSAYED BY: B.W.	ASSAYED BY: SW.	ASSAYED BY: X-R.	VALUE (gold) oz/ton	REFERENCE: D.L.	REFERENCE: S.B.	REFERENCE: A.R.	SAMPLE NUMBER	ASSAYED BY: B.W.	ASSAYED BY: SW.	ASSAYED BY: X-RAY	VALUE (gold) oz/ton
ORO-83-39	35.0	39.5	7850	X			.002	X		X					
	54.5	59.5	8702	X			.002	X		X					
	59.5	64.0	8703	X			.004	X		X					
	220.0	223.5	8704	X			Trace	X		X					
	232.5	233.5	8705	X			.002	X		X					
	294.0	296.0	8706	X			Trace	X		X					
	340.0	343.2	8707	X			.002	X		X					
	377.0	378.6	8708	X			.308	X		X					
	403.3	404.3	8709	X			.008	X		X					
	404.3	406.3	8710	X			.006	X		X					
	406.3	410.5	8711	X			.002	X		X					
	421.0	428.2	8712	X			.002	X		X					
	428.2	831.2	8713	X			Trace	X		X					
	552.3	553.1	8714	X			Trace	X		X					
	553.1	558.0	8715	X			.002	X		X					
	662.0	663.2	8716	X			.004	X		X					
	663.2	668.0	8717	X			.002	X		X					
	810.3	813.5	8718	X			.004	X		X					
	813.5	819.5	8719	X			.002	X		X					
	864.0	866.0	8720	X			.002	X		X					
	874.2	876.0	8721	X			.008	X		X					
	902.0	907.0	8722	X			.058	X		X					
	1029.3	1031.3	8723	X			.036	X		X					
	1031.3	1034.6	8724	X			.018	X		X					
	1034.6	1036.6	8725	X			.048	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-39	1036.6	1041.0	8726	X			.008	X		X					
(con't)	1041.0	1042.7	8727	X			.020	X		X					
	1042.7	1045.5	8728	X			.050	X		X					
	1045.5	1048.7	8729	X			.018	X		X					
	1048.7	1050.8	8730	X			.032	X		X					
	1050.8	1052.3	8731	X			.012	X		X					
	1052.3	1055.1	8732	X			.040	X		X					
	1055.1	1056.3	8733	X			.012	X		X					
	1078.0	1079.3	8734	X			.004	X		X					
	1079.3	1082.0	8735	X			.230	X		X					
	1082.0	1085.4	8736	X			.251	X		X					
	1085.4	1086.4	8737	X			.078	X		X					
	1097.5	1100.5	8738	X			.109	X		X					
	1115.0	1116.6	8739	X			.200	X		X					
	1116.6	1118.0	8740	X			.104	X		X					
	1118.0	1119.0	8741	X			1.12	X		X					
	1119.0	1120.5	8742	X			.078	X		X					
	1120.5	1122.5	8743	X			.004	X		X					
	1133.9	1134.9	8744	X			.010	X		X					
	1134.9	1136.1	8745	X			.106	X		X					
	1136.1	1139.1	8746	X			.084	X		X					
	1139.1	1142.0	8747	X			.012	X		X					
	1142.2	1143.2	8748	X			.070	X		X					
	1143.2	1145.5	8749	X			.002	X		X					
	1166.5	1168.7	8750	X			.016	X		X					
	1168.7	1169.3	8758	X			.068	X		X					
	1174.7	1176.5	8759	X			.004	X		X					
	1176.5	1177.5	8760	X			.002	X		X					
	1226.0	1228.0	8761	X			Trace	X		X					
	1228.0	1229.0	8762	X			.018	X		X					
	1229.0	1231.5	8763	X			.044	X		X					
	1231.5	1234.0	8764	X			.016	X		X					

DRILL HOLE NUMBER	FOOTAGE from	FOOTAGE to	SAMPLE NUMBER	ASSAYED BY: B.W.	ASSAYED BY: SW.	ASSAYED BY: X-R.	VALUE (gold) oz/ton	REFERENCE: D.L.	REFERENCE: S.B.	REFERENCE: A.R.	SAMPLE NUMBER	ASSAYED BY: B.W.	ASSAYED BY: SW.	ASSAYED BY: X-RAY	VALUE (gold) oz/ton
ORO-83-39 (con't)	1276.1	1277.4	8765	X			.058	X		X					
	1277.4	1280.0	8766	X			.042	X		X					
	1280.0	1282.0	8767	X			.022	X		X					
	1282.0	1286.0	8768	X			.014	X		X					
	1286.0	1288.0	8769	X			.042	X		X					
	1288.0	1292.0	8770	X			.002	X		X					
	1373.0	1375.5	8771	X			.038	X		X					
	1378.0	1379.0	8772	X			.002	X		X					
	1381.0	1382.0	8773	X			Trace	X		X					
	1384.8	1387.0	8774	X			.088	X		X					
	1387.0	1389.0	8775	X			.050	X		X					
	1391.0	1392.0	8776	X			.012	X		X					
	1398.9	1401.0	8777	X			.042	X		X					
	1401.0	1404.0	8778	X			.044	X		X					
	1429.5	1431.5	8779	X			.010	X		X					
	1431.5	1434.2	8780	X			.042	X		X					
	1463.2	1465.2	8781	X			.022	X		X					
	1502.0	1502.9	8782	X			.006	X		X					
	1502.9	1503.9	8783	X			.030	X		X					
	1503.9	1505.9	8784	X			.004	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			CHECK SAMPLES SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-40	18.5	21.5	8930				.06	X		X					
	22.8	25.8	8931				.01	X		X					
	27.3	30.3	8932				.01	X		X					
	110.4	113.5	8933				Trace	X		X					
	113.5	118.3	8934				Trace	X		X					
	118.3	119.9	8935				.01	X		X					
	133.5	136.0	8936				Trace	X		X					
	136.0	140.5	8937				.01	X		X					
	140.5	143.8	8938				Trace	X		X					
	143.8	146.5	8939				Trace	X		X					
	146.5	147.7	8940				.02	X		X					
	245.0	248.0	8941				Trace	X		X					
	387.0	397.0	8942				Trace	X		X					
	460.0	465.0	8943				Trace	X		X					
	529.0	536.0	8944				.01	X		X					
	569.0	573.2	8945				Trace	X		X					
	573.2	578.8	8946				Trace	X		X					
	705.0	706.9	8947				.02	X		X					
	706.9	708.2	8948				Trace	X		X					
	708.2	710.0	8949				Trace	X		X					
	711.2	713.4	8950				.01	X		X					
	713.4	715.0	8951				.01	X		X					
	859.0	863.7	8952				.01	X		X					
	863.7	865.0	8953				Trace	X		X	8953				.002
	865.0	869.0	8954				Trace	X		X					
	973.5	978.5	8955				Trace	X		X					

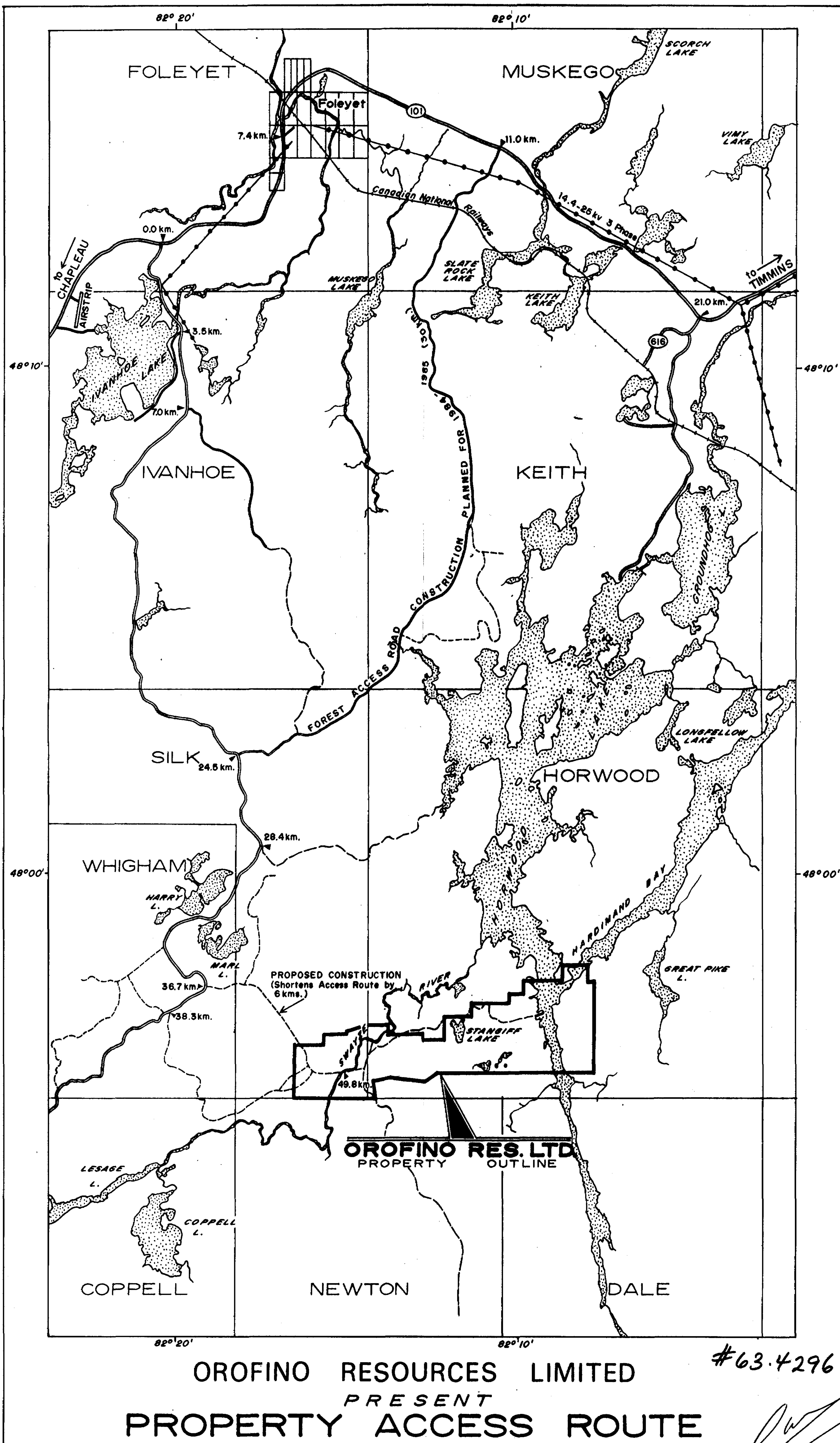
DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			CHECK SAMPLES SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-40	1029.5	1032.0	8956				Trace	X		X					
(con't)															
	1071.0	1073.3	8957				Trace	X		X	8957				.002
	1073.3	1077.0	8958				.01	X		X	8958				.014
	1077.0	1079.7	8959				.01	X		X	8959				.016
	1079.7	1083.0	8960				.01	X		X	8960				.004
	1083.0	1084.0	8961				.02	X		X	8961				.002
	1084.0	1086.5	8962				.02	X		X	8962				.024
	1086.5	1088.0	8963				.01	X		X	8963				.006
	1088.0	1092.5	8964				Trace	X		X	8964				.004
	1168.5	1173.5	8965				Trace	X		X	8965				.006
	1173.5	1177.3	8966				.01	X		X	8966				.008
	1179.7	1182.5	8967				Trace	X		X					
	1233.3	1236.8	8968				<.01	X		X					
	1274.0	1279.0	8969				<.01	X		X					
	1433.9	1436.4	8970				<.01	X		X					
	1436.4	1437.6	8971				<.01	X		X	8971				.022
	1437.6	1442.1	8972				<.01	X		X					
	1453.1	1455.7	8973				<.01	X		X					
	1455.7	1456.2	8974				.09	X		X					
	1602.0	1605.5	8975				<.01	X		X					
	1678.0	1680.0	8976				<.01	X		X					
	1680.0	1683.0	8977				<.01	X		X					
	1683.0	1684.0	8978				<.01	X		X					
	1684.0	1684.5	8979				<.01	X		X					
	1685.6	1688.0	8980				<.01	X		X					
	1696.0	1701.5	8981				<.01	X		X					
	1701.5	1703.1	8982				<.01	X		X					
	1703.1	1705.6	8983				<.01	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			CHECK SAMPLES SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-40	1706.3	1711.0	8984				< .01	X		X	8984				Trace
(con't)	1711.0	1713.0	8985				< .01	X		X	8985				.002
	1719.5	1721.0	8986				< .01	X		X	8986				.002
	1721.0	1723.0	8987				< .01	X		X	8987				.002
	1723.0	1731.0	8988				< .01	X		X	8988				.006
	1741.5	1745.0	8989				< .01	X		X					
	1745.0	1747.0	8990				< .01	X		X					
	1747.0	1750.0	8991				< .01	X		X					
	1750.0	1752.0	8992				< .01	X		X					
	1761.0	1767.0	8993				< .01	X		X					
	1767.0	1769.5	8994				< .01	X		X					
	1769.5	1772.5	8995				< .01	X		X					
	1772.5	1774.5	8996				< .01	X		X					
	1774.5	1780.0	8997				< .01	X		X					
	1780.0	1785.5	8998				< .01	X		X					
	1807.0	1812.0	8999				< .01	X		X					
	1832.0	1838.0	9000				< .01	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			CHECK SAMPLES SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-41	62.0	67.0	8791				Trace	X		X					
	228.9	231.5	8792				.02	X		X					
	233.3	236.0	8793				.01	X		X					
	281.5	285.5	8794				Trace	X		X					
	290.0	292.7	8795				.01	X		X					
	292.7	295.6	8796				.01	X		X					
	295.6	300.0	8797				.01	X		X					
	300.0	303.0	8798				Trace	X		X					
	303.0	305.0	8799				Trace	X		X					
	305.0	309.6	8800				Trace	X		X					
	309.6	313.3	8901				Trace	X		X					
	313.3	315.0	8902				Trace	X		X					
	315.0	320.0	8903				.01	X		X					
	320.0	322.3	8904				.01	X		X					
	322.3	325.3	8905				Trace	X		X					
	325.3	327.0	8906				Trace	X		X					
	327.0	329.3	8907				Trace	X		X					
	412.0	415.2	8908				Trace	X		X	8908				Trace

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	REFERENCE:			CHECK SAMPLES SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-42	10.4	13.8	8909				Trace	X		X					
	13.8	17.2	8910				.02	X		X					
	22.0	26.5	8911				.01	X		X					
	70.5	74.0	8912				.02	X		X					
	172.5	175.5	8913				Trace	X		X					
	188.0	190.0	8914				.02	X		X					
	190.0	191.0	8915				.08	X		X					
	191.0	193.0	8916				.02	X		X					
	193.0	196.6	8917				.03	X		X					
	196.6	198.3	8918				Trace	X		X	8918				.002
	198.3	201.0	8919				.04	X		X	8919				.030
	201.0	204.5	8920				.025	X		X	8920				.018
	204.5	207.0	8921				.01	X		X	8921				.010
	207.0	208.5	8922				.02	X		X	8922				.010
	208.5	211.5	8923				.01	X		X	8923				.002
	242.0	243.5	8924				.01	X		X	8924				.002
	243.5	246.6	8925				Trace	X		X	8925				.002
	272.5	275.5	8926				Trace	X		X	8926				.002
	281.0	286.0	8927				.01	X		X	8927				.002
	286.0	291.0	8928				Trace	X		X					
	291.0	293.0	8929				Trace	X		X					

DRILL HOLE NUMBER	FOOTAGE		SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton	R E F E R E N C E:			SAMPLE NUMBER	ASSAYED BY:			VALUE (gold) oz/ton
	from	to		B.W.	SW.	X-R.		D.L.	S.B.	A.R.		B.W.	SW.	X-RAY	
ORO-83-43	207.0	212.0	8785				.002	X		X					
ORO-83-44	NIL														
ORO-83-45	NIL														
ORO-83-46	190.6	191.4	8786				.002	X		X					
	206.0	209.0	8787				Trace	X		X					
	221.3	226.3	8788				.002	X		X					
	241.5	243.0	8789				.002	X		X					
	328.0	333.5	8790				.002	X		X					



#63.4296

OROFINO RESOURCES LIMITED

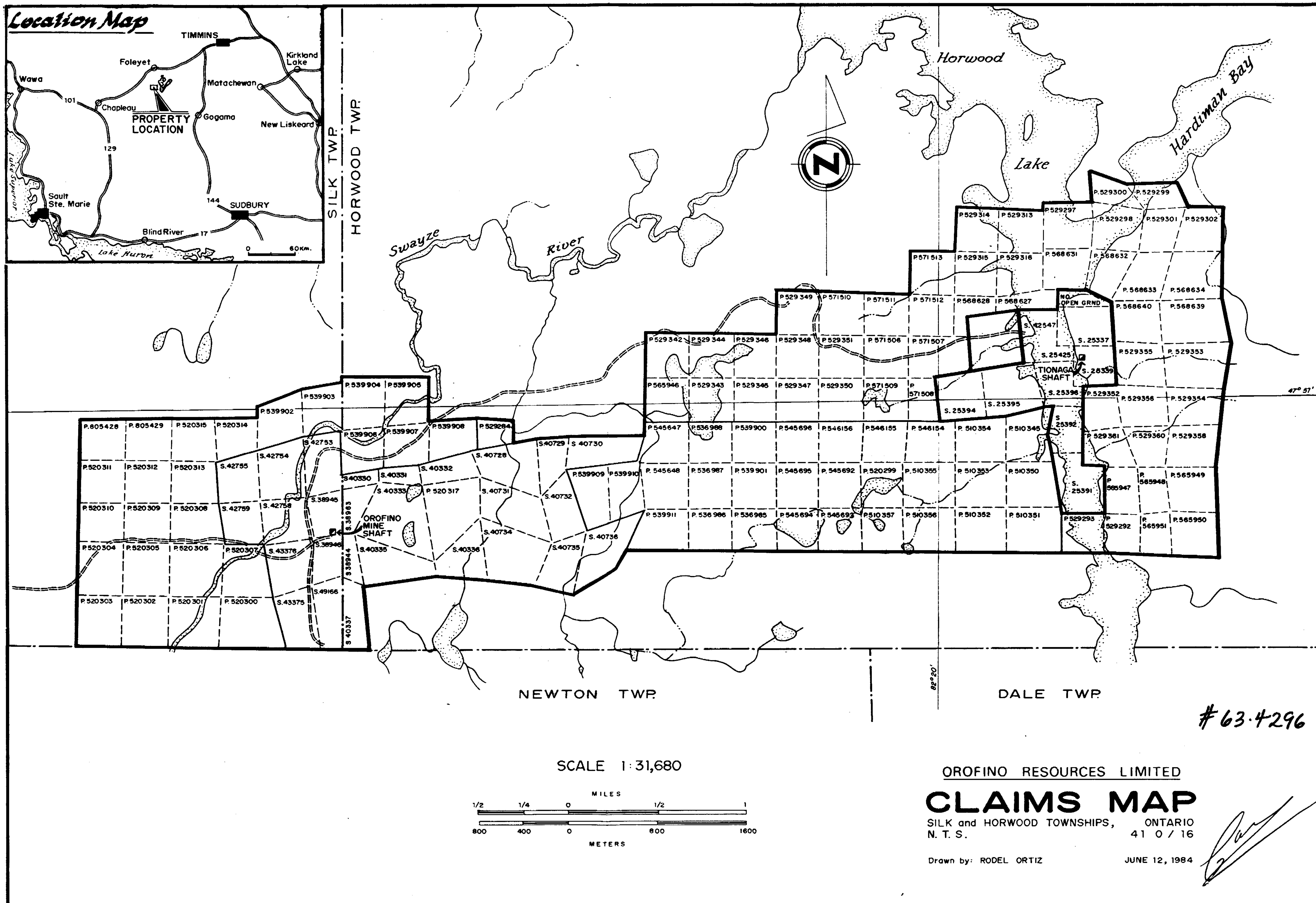
PRESENT

PROPERTY ACCESS ROUTE

KILOMETRES
10 5 0 5 10

Drawn by RODEL ORTIZ June 1984

Figure 1


Location Map
TIMMINS
Foleyet
Kirkland Lake
Wawa
Matachewan
101
Chapleau
PROPERTY LOCATION
Gogama
New Liskeard
129
Lake Superior
Sault Ste. Marie
144
SUDBURY
Blind River
17
Lake Huron
0
60Km.
SILK TWP.
HORWOOD TWP.
Horwood
Lake
Hardiman Bay
Swayze
River
OROFINO MINE SHAFT
TIONAGA SHAFT
NO OPEN GRND
47° 57'
82°20'
NEWTON TWP.
DALE TWP.
#63.4296
SCALE 1:31,680
MILES
1/2
1/4
0
1/2
1
800
400
0
800
1600
METERS
OROFINO RESOURCES LIMITED
CLAIMS MAP
SILK and HORWOOD TOWNSHIPS, ONTARIO
N. T. S. 41 O / 16
Drawn by: RODEL ORTIZ
JUNE 12, 1984

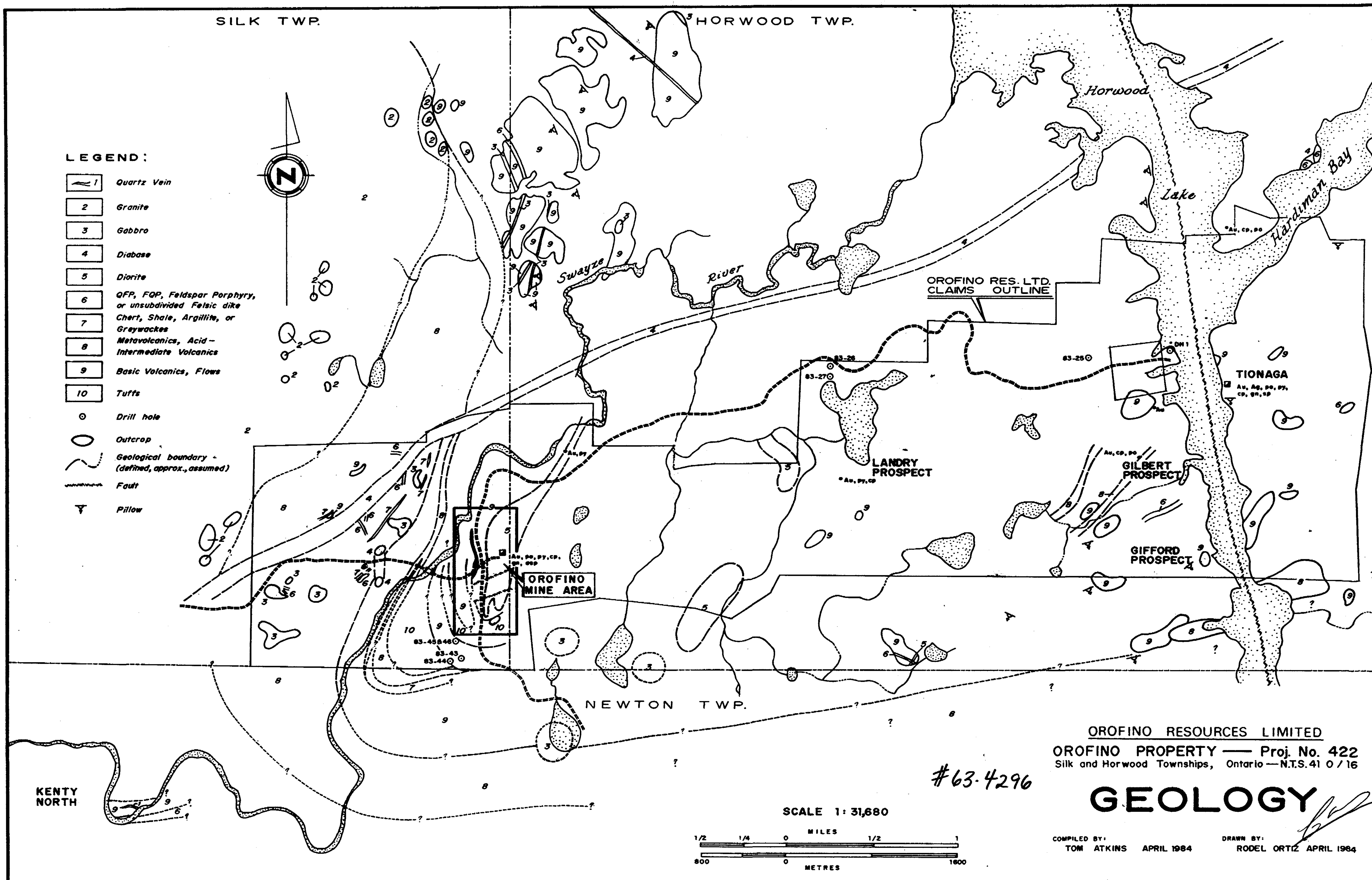
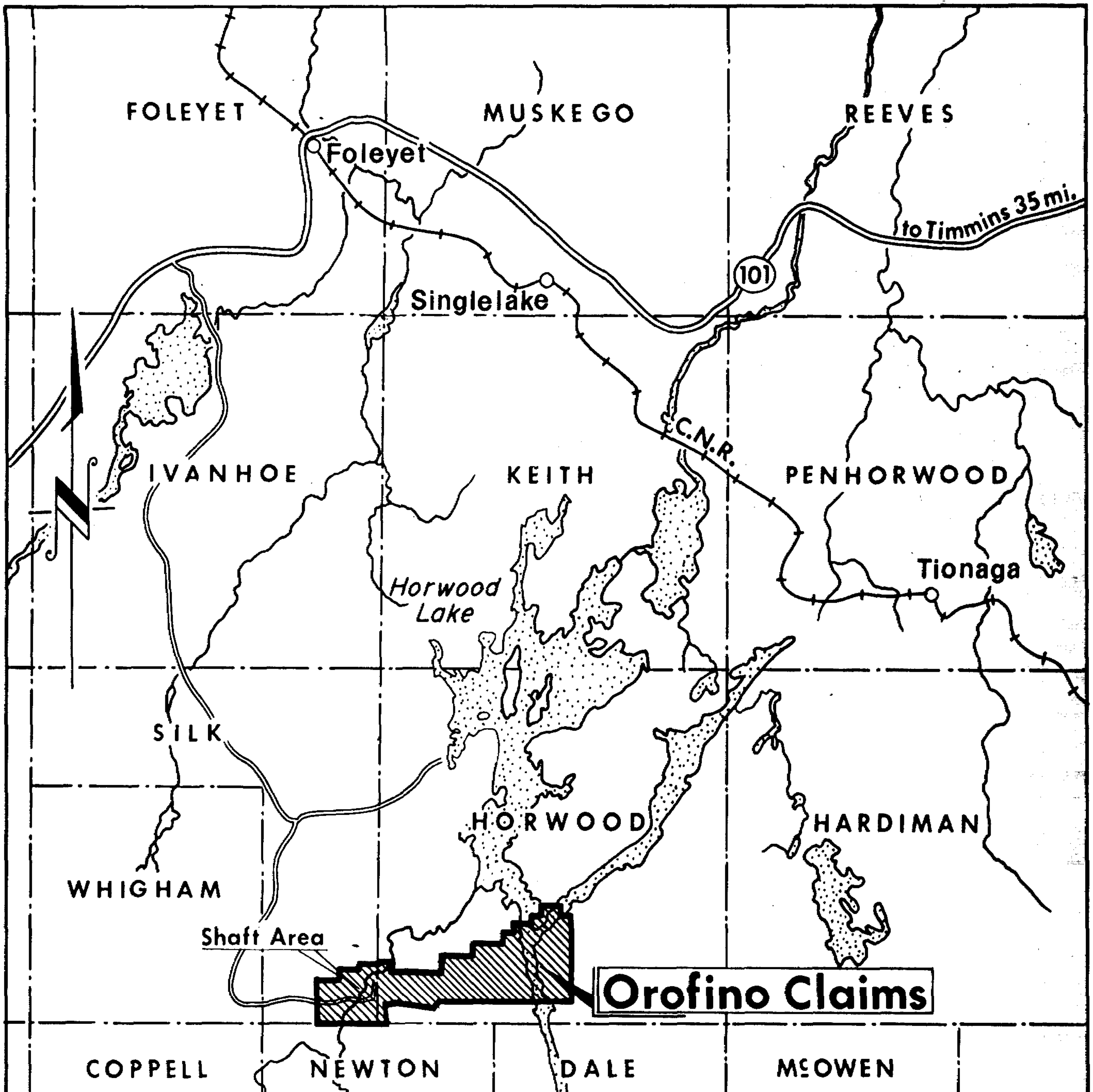

SILK TWP.
HORWOOD TWP.
NEWTON TWP.
KENTY NORTH
LEGEND:
1 Quartz Vein
2 Granite
3 Gabbro
4 Diabase
5 Diorite
6 QFP, FQP, Feldspar Porphyry, or unsubdivided Felsic dike
7 Chert, Shale, Argillite, or Greywackes
8 Metavolcanics, Acid-Intermediate Volcanics
9 Basic Volcanics, Flows
10 Tuffs
Drill hole
Outcrop
Geological boundary (defined, approx., assumed)
Fault
Pillow
N
Swayze River
Horwood Lake
Hardiman Bay
OROFINO RES. LTD. CLAIMS OUTLINE
TIONAGA
LANDRY PROSPECT
GILBERT PROSPECT
GIFFORD PROSPECT
OROFINO MINE AREA
SCALE 1: 31,680
MILES
1/2 1/4 0 1/2 1
800 0 1600
METRES
OROFINO RESOURCES LIMITED
OROFINO PROPERTY —— Proj. No. 422
Silk and Horwood Townships, Ontario — N.T.S. 41 O/16
GEOLOGY
COMPILED BY: TOM ATKINS APRIL 1984
DRAWN BY: RODEL ORTIZ APRIL 1984
#63-4296

Figure 2



#63.4296

OROFINO RESOURCES LIMITED

PROPERTY LOCATION MAP

0 2 4 8 12

MILES

OROFINO RESOURCES LIMITED

PROPERTY DESCRIPTION AND LOCATION

The property which is the subject of this 1983 OMEP application is owned by Orofino Resources Limited and its wholly-owned subsidiary, Orofino Exploration Limited, and comprises 27 Crown Patented claims, 111 unpatented claims and 3 Licences of Occupation, covering approximately 5,500 acres in a block straddling the south end of the common boundary of the unsurveyed Townships of Silk and Horwood, Porcupine Mining Division, District of Sudbury. The claims are as follows:

i) Crown Patented Claims

S38945
S38946
S42753 to S42755 (inclusive)
S42758
S42759
S43375
S43376
S49166
S38943
S38944
S40330 to S40333 (inclusive)
S40335 to S40337 (inclusive)
S40728 to S40732 (inclusive)
S40734 to S40736 (inclusive)

ii) Unpatented Claims

P520300 to P520315 (inclusive)
P510349 to P510357 (inclusive)
P520299
P520317
P529284
P529292
P529293
P529297 to P529302 (inclusive)
P529313 to P529316 (inclusive)
P529342 to P529356 (inclusive)
P529358
P529360
P529361
P536985 to P536988 (inclusive)
P539900 to P539911 (inclusive)
P545647
P545648
P545692 to P545696 (inclusive)
P546154 to P546156 (inclusive)
P565946 to P565951 (inclusive)
P568627
P568628
P568631 to P568634 (inclusive)
P568639
P568640
P571506 to P571513 (inclusive)
P611365 to P611369 (inclusive)

(iii) Licences of Occupation

11176
12022
12053

41016NW0016 63.4296 HORWOOD

900

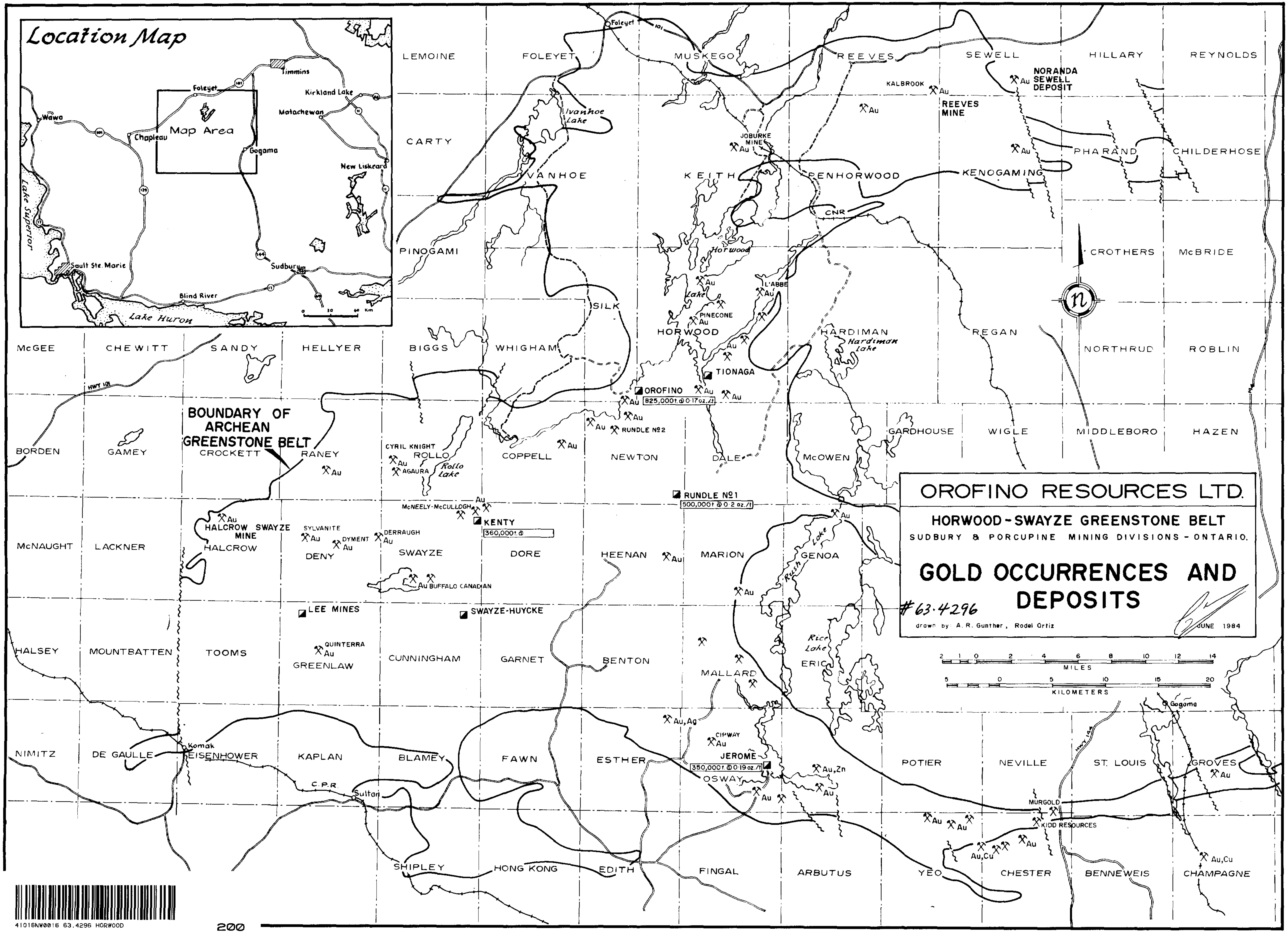
OM 83-5-C-23

THIS SUBMITTAL CONSISTED OF VARIOUS REPORTS, SOME OF WHICH HAVE BEEN CULLED FROM THIS FILE. THE CULLED MATERIAL HAD BEEN PREVIOUSLY SUBMITTED UNDER THE FOLLOWING RECORD SERIES (THE DOCUMENTS CAN BE VIEWED IN THESE SERIES):

THE FOLLOWING REPORTS WERE PREVIOUSLY SUBMITTED:

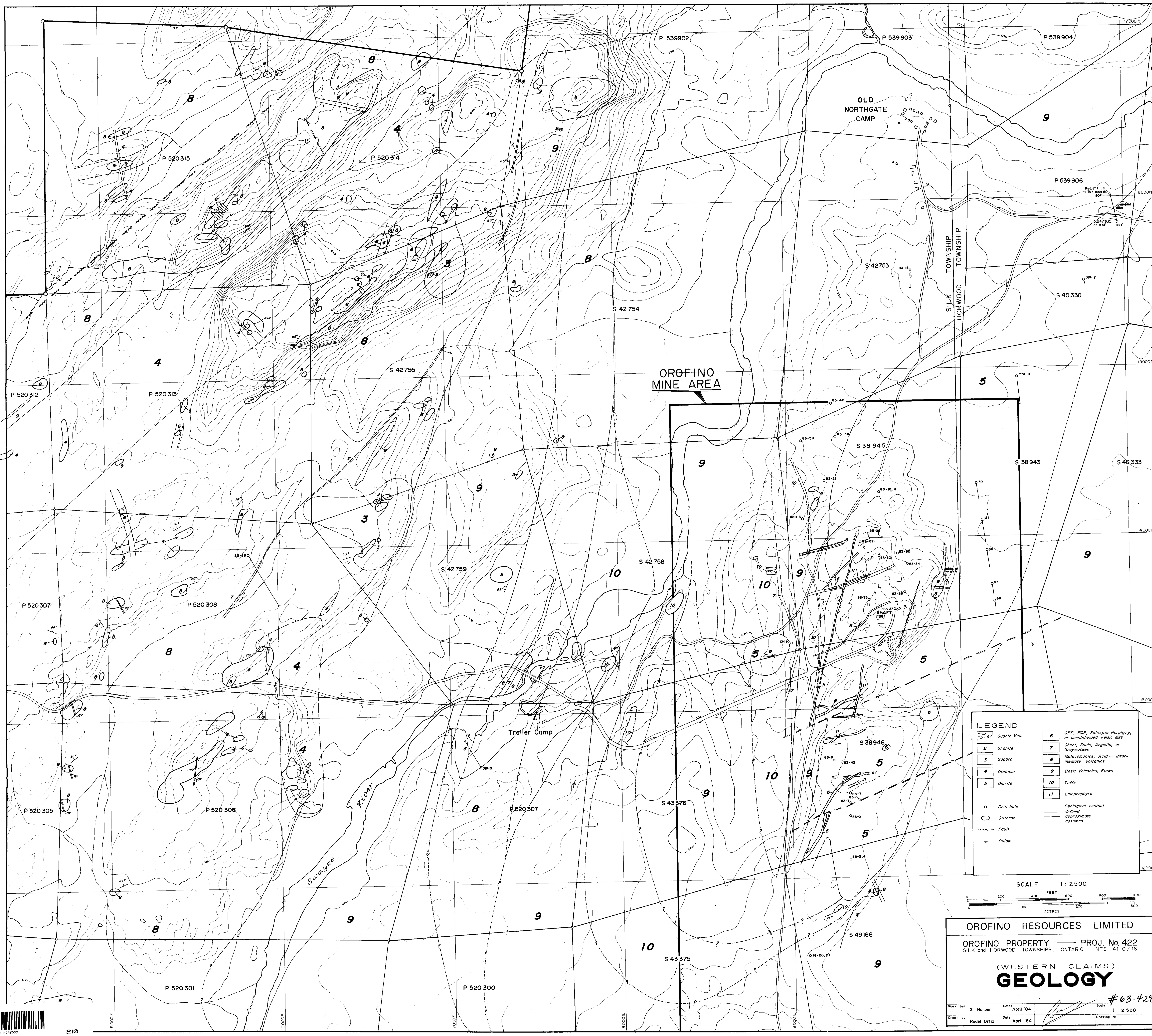
1. DDH 8325, 83-26, 83-27 → SEE: DDR 25, HORWOOD TP.

THE REMAINDER OF THE REPORT WAS FILED → #63.4296



41016NW0016 63.4296 HORWOOD

200


P 539902
P 539903
P 539904
OLD NORTHGATE CAMP
P 520315
P 520314
P 539906
S 42753
SILK TOWNSHIP
HORWOOD TOWNSHIP
S 40330
S 42754
S 42755
OROFINO MINE AREA
P 520312
P 520313
S 38945
S 38943
S 40333
S 42759
S 42758
P 520307
P 520308
SHAFT
Trailer Camp
S38946
P 520305
P 520306
P 520307
S 43376
Swayze River
S 49166
S 43375
P 520301
P 520300
LEGEND:
qv Quartz Vein
2 Granite
3 Gabbro
4 Diabase
5 Diorite
6 QFP, FQP, Feldspar Porphyry, or unsubdivided Felsic dike
7 Chert, Shale, Argillite, or Greywackes
8 Metavolcanics, Acid — Intermediate Volcanics
9 Basic Volcanics, Flows
10 Tuffs
11 Lamprophyre
Drill hole
Outcrop
Fault
Pillow
Geological contact
defined
approximate
assumed
SCALE 1:2500
FEET
0 200 400 600 800 1000
0 100 200 300
METRES
OROFINO RESOURCES LIMITED
OROFINO PROPERTY —— PROJ. No. 422
SILK and HORWOOD TOWNSHIPS, ONTARIO NTS 41 O/16
(WESTERN CLAIMS)
GEOLOGY
#63.4296
Work by: G. Harper Date: April '84
Drawn by: Rodel Ortiz Date: April '84
Scale: 1 : 2 500
Drawing No.

210

#63-4296

LEGEND:

83-10 101'(AQ)-45° O — 1983 OROFINO RESOURCES LTD. DRILLING
dip
drill core size
drill hole lenght

D80-4 CF81-6 o — 1980-81 NORTHGATE EXPLOR. LTD. DRILLING

SCALE 1 : 600

OROFINO RESOURCES LIMITED

OROFINO PROJECT – No. 422
SILK and HORWOOD TOWNSHIPS, ONTARIO – NTS 41 O/16

SURFACE
DRILL PLAN
(NORTH SHEET)

Work by	Date	Scale 1:600 (1" = 50')
Drawn by Rodel Ortiz	Date Sept 1983	Drawing No. Sheet 1 of 3

#63-4296

LEGEND:

83-10 101'(NQ)-45° O — 1983 OROFINO RESOURCES LTD. DRILLING
— dip
— drill core size
— drill hole lenght

D80-4 CF81-6 O — 1980-81 NORTHGATE EXPLOR. LTD. DRILLING

SCALE 1:600

FEET 50 0 50 100 150 FEET
METRES 10 5 0 10 20 30 40 METRES

n

OROFINO RESOURCES LIMITED

OROFINO PROJECT — No. 422
SILK and HORWOOD TOWNSHIPS, ONTARIO — NTS 41 O/16

SURFACE
DRILL PLAN
(CENTRE SHEET)

Work by	Date		Scale 1:600 (1" = 50')
Drawn by Rodel Ortiz	Date Sept. 1983		Drawing No. Sheet 2 Of 3

230

CF81-14
CF81-18
CF81-11
CF81-10
83-3
83-4
CF81-12
CF81-13
CF81-21
CF81-20
12000N
11500N
11000N
8500E
9000E
9500E
10000E
SILK TOWNSHIP
HORWOOD TOWNSHIP
LEGEND:
83-10 — 1983 OROFINO RESOURCES LTD. DRILLING
dip
drill core size
drill hole lenght
D80-4
CF81-6 — 1980-81 NORTHGATE EXPLOR. LTD. DRILLING
SCALE 1:600
#63.4296
OROFINO RESOURCES LIMITED
OROFINO PROJECT — No. 422
SILK and HORWOOD TOWNSHIPS, ONTARIO — NTS 41 O/16
SURFACE
DRILL PLAN
(SOUTH SHEET)
Drawn by Rodel Ortiz
Date Sept 1983
Scale 1:600 (1" = 50')
Sheet 3 of 3
240

63-4296

OROFINO RESOURCES LIMITED

OROFINO PROJECT — No. 422

SILK and HORWOOD TOWNSHIPS, ONTARIO — NTS 41 O/16

VERTICAL PROJECTION of

GOLD VEINS / ZONES

OUTLINE (NORTH SHEET)

Work by: Tom Atkins	Date: May 1984	Scale: 1:600 (1" = 50')
Drawn by: Rodel Ortiz	Date: May 1984	Drawing No: Sheet 1 Of 3

250

63-4296

LEGEND:

83-10
101'(NQ)-45° O — 1983 OROFINO RESOURCES LTD. DRILLING
dip
drill core size
drill hole lenght

D80-4
CF81-6 O — 1980-81 NORTHGATE EXPLOR. LTD. DRILLING

SCALE 1:600

150 FEET
40 METRES

OROFINO RESOURCES LIMITED

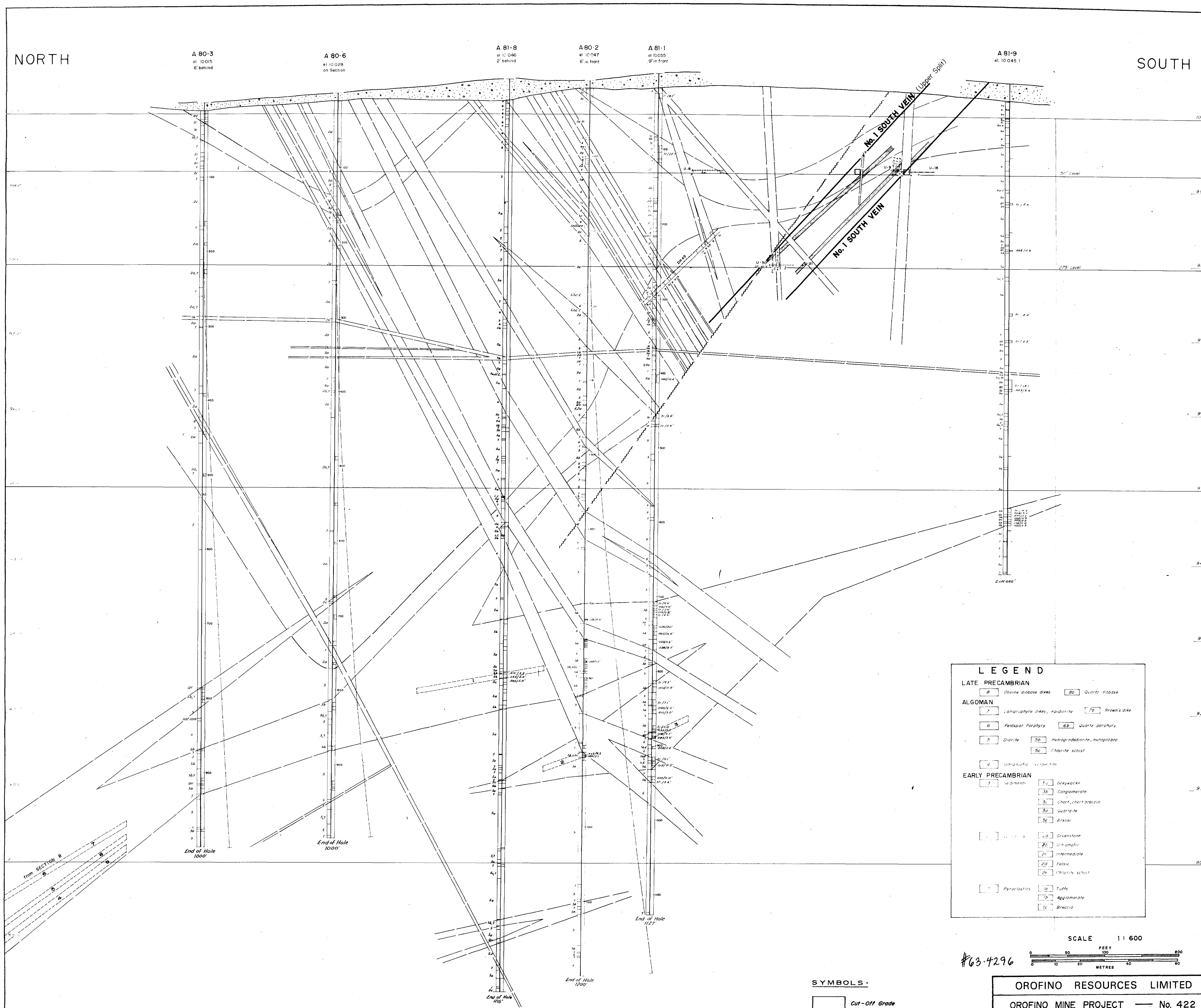
OROFINO PROJECT — No. 422
SILK and HORWOOD TOWNSHIPS, ONTARIO — NTS 41 O/16

VERTICAL PROJECTION
of
GOLD VEINS / ZONES
OUTLINE
(CENTRE SHEET)

Work by Tom Atkins	May 1984		Scale 1:600 (1" = 50')
Drawn by Rodel Ortiz	Date May 1984		Drawing No Sheet 2 Of 3

4101SNW0016 63.4296 HORWOOD

260



LEGEND

LATE PRECAMBRIAN

8	Olivine diabase dikes	8b	Quartz diabase

ALGOMAN

7	Lamprophyre dikes, epidiorite	7b	Brown's dike
6	Feldspar Porphyry	6b	Quartz porphyry
5	Diorite	5b	Retrogradediorite, metagabbro
		5c	Chlorite schist
4	Ultramafic serpentite		

EARLY PRECAMBRIAN

3	Sediments	3a	Greywacke
		3b	Conglomerate
		3c	Chert, chert breccia
		3d	Quartzite
		3e	Arkose
2		2a	Greenstone
		2b	Ultramafic
		2c	Intermediate
		2d	Felsic
		2e	Chlorite schist
1	Pyroclastics	1a	Tuffs
		1b	Agglomerate
		1c	Breccia

SCALE 1 : 600

FEET 0 50 100 200

METRES 0 10 20 40 60

#63·4296

SYMBOLS:

- Cut-Off Grade
- Proven Ore
- Probable Ore
- Possible Mineralization
- 2 3 Ore Block Number
- No. 2 ZONE Longitudinal Section Line

OROFINO RESOURCES LIMITED

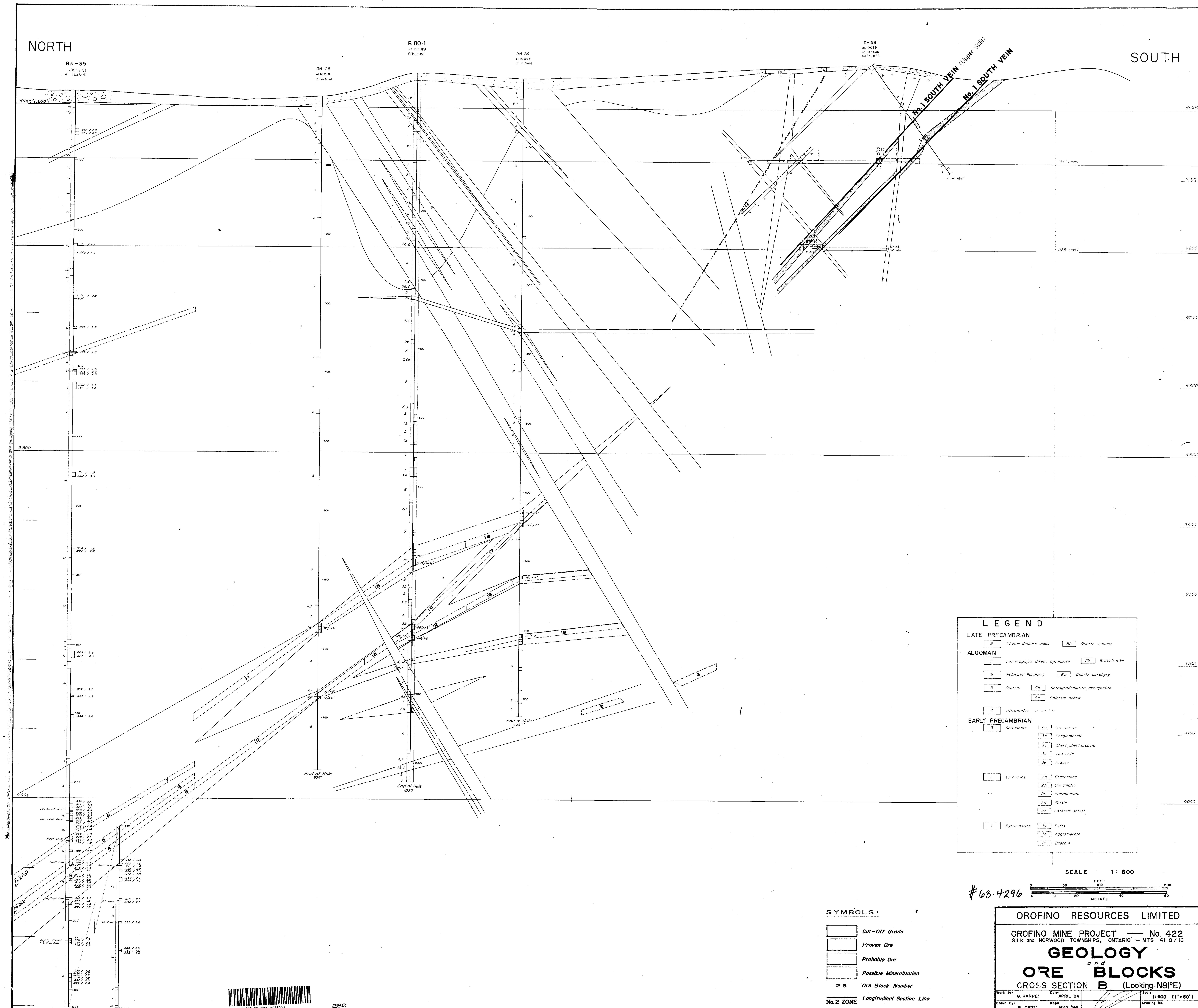
OROFINO MINE PROJECT —— No. 422
SILK and HORWOOD TOWNSHIPS, ONTARIO — NTS 41 O/16

GEOLOGY and ORE BLOCKS

CROSS SECTION A (Looking N81°E)

Work by: G. HARPER	Date: APRIL '84		Scale: 1:600 (1" = 50')
Drawn by: RODEL ORTIZ	Date:		Drawing No.

270



OROFINO RESOURCES LIMITED

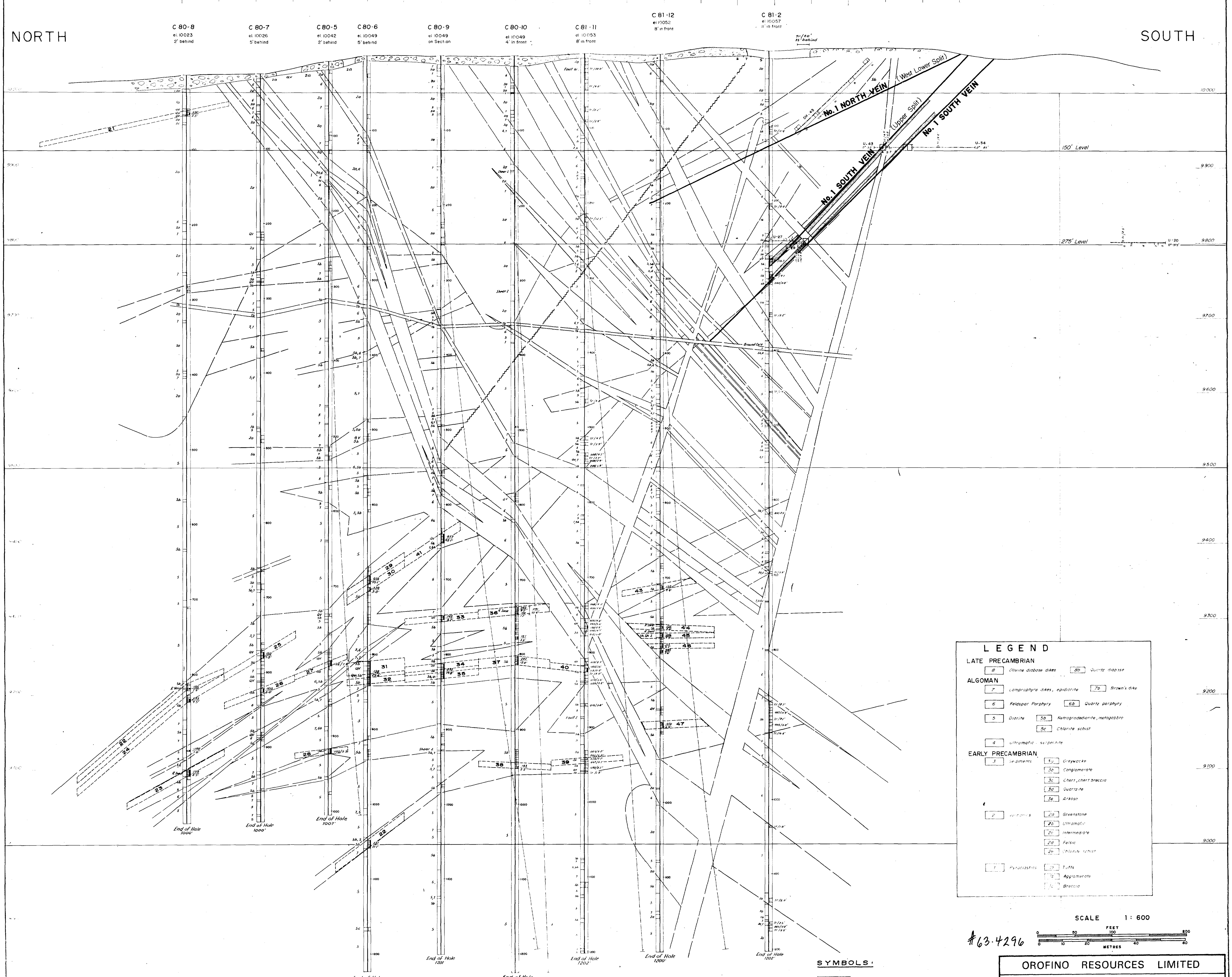
OROFINO MINE PROJECT — No. 422
SILK and HORWOOD TOWNSHIPS, ONTARIO — NTS 41 O/16

GEOLOGY and ORE BLOCKS

CROSS SECTION B (Looking N81°E)

Work by: G. HARPER	Date: APRIL '84		Scale: 1:600 (1" = 50')
Drawn by: R. ORTI[illegible]	Date: MAY '84		Drawing No.

280



#63-4296

SYMBOLS:

- Cut-Off Grade
- Proven Ore
- Probable Ore
- Possible Mineralization
- 23 Ore Block Number
- No. 2 ZONE Longitudinal Section Line

OROFINO RESOURCES LIMITED

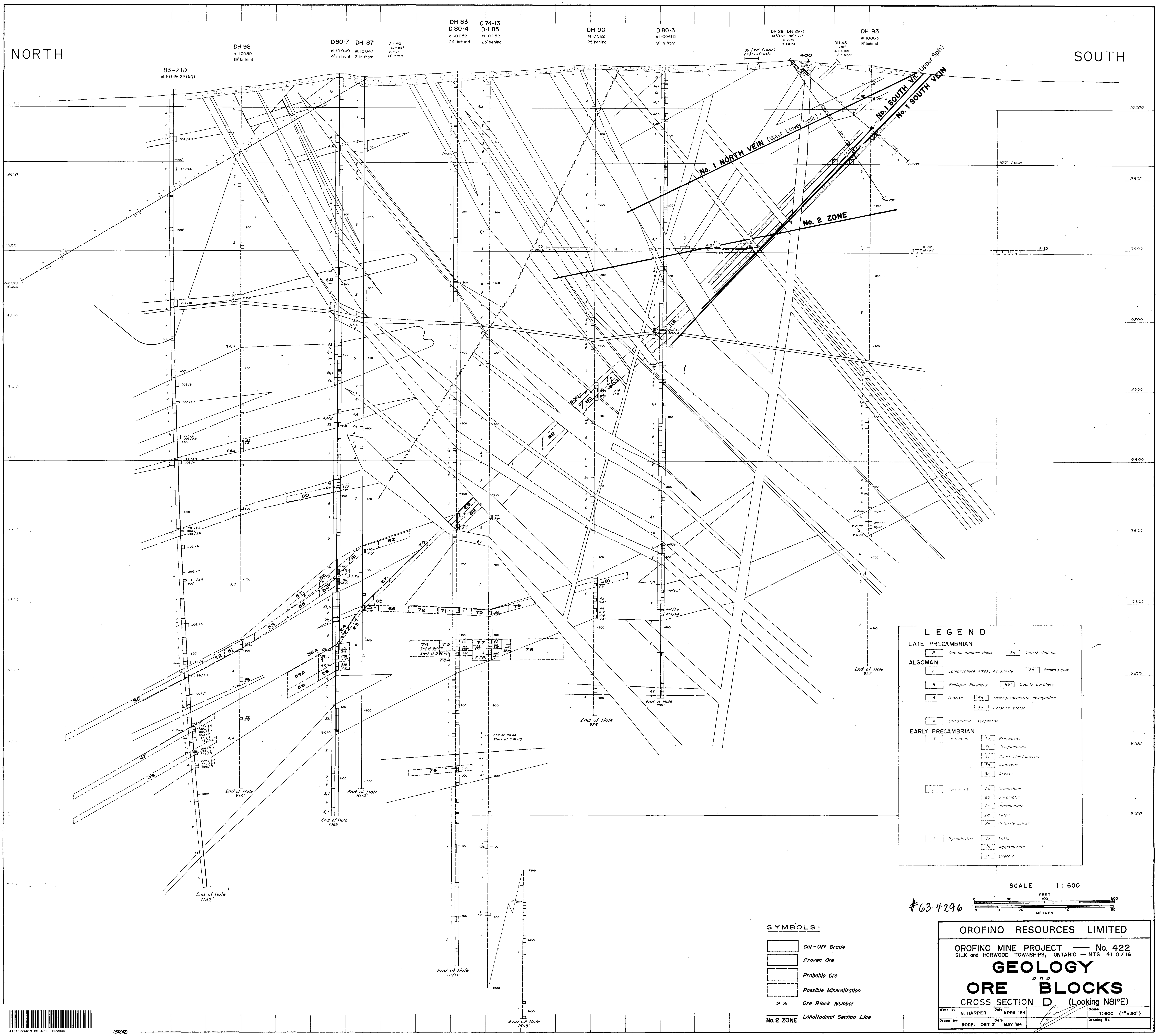
OROFINO MINE PROJECT — No. 422
SILK and HORWOOD TOWNSHIPS, ONTARIO — NTS 41 O/16

GEOLOGY and ORE BLOCKS

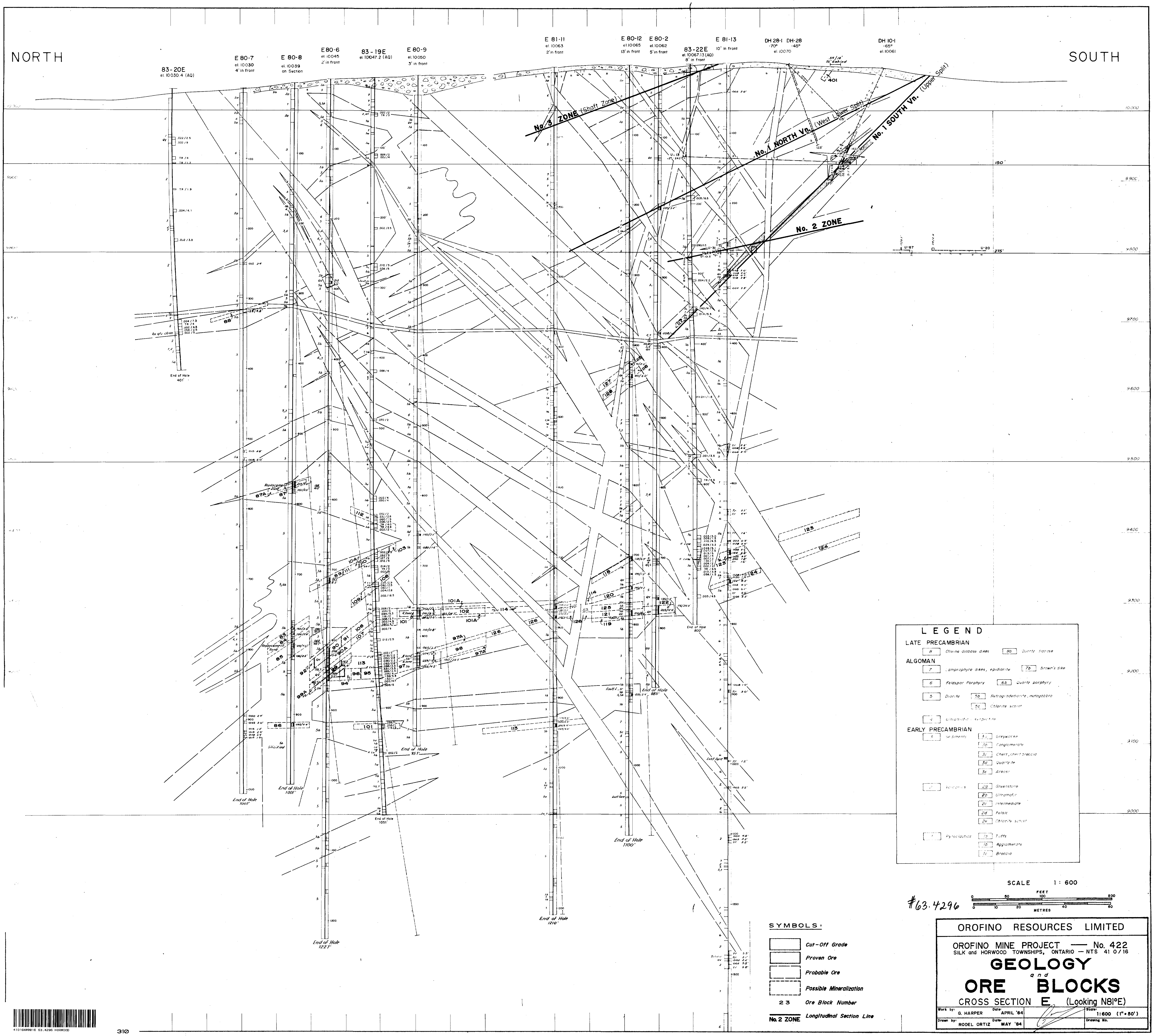
CROSS SECTION C (Looking N81°E)

Work by: G. HARPER	Date: APRIL '84		Scale: 1:600 (1" = 50')
Drawn by: RODEL ORTIZ	Date: MAY '84		Drawing No.

290

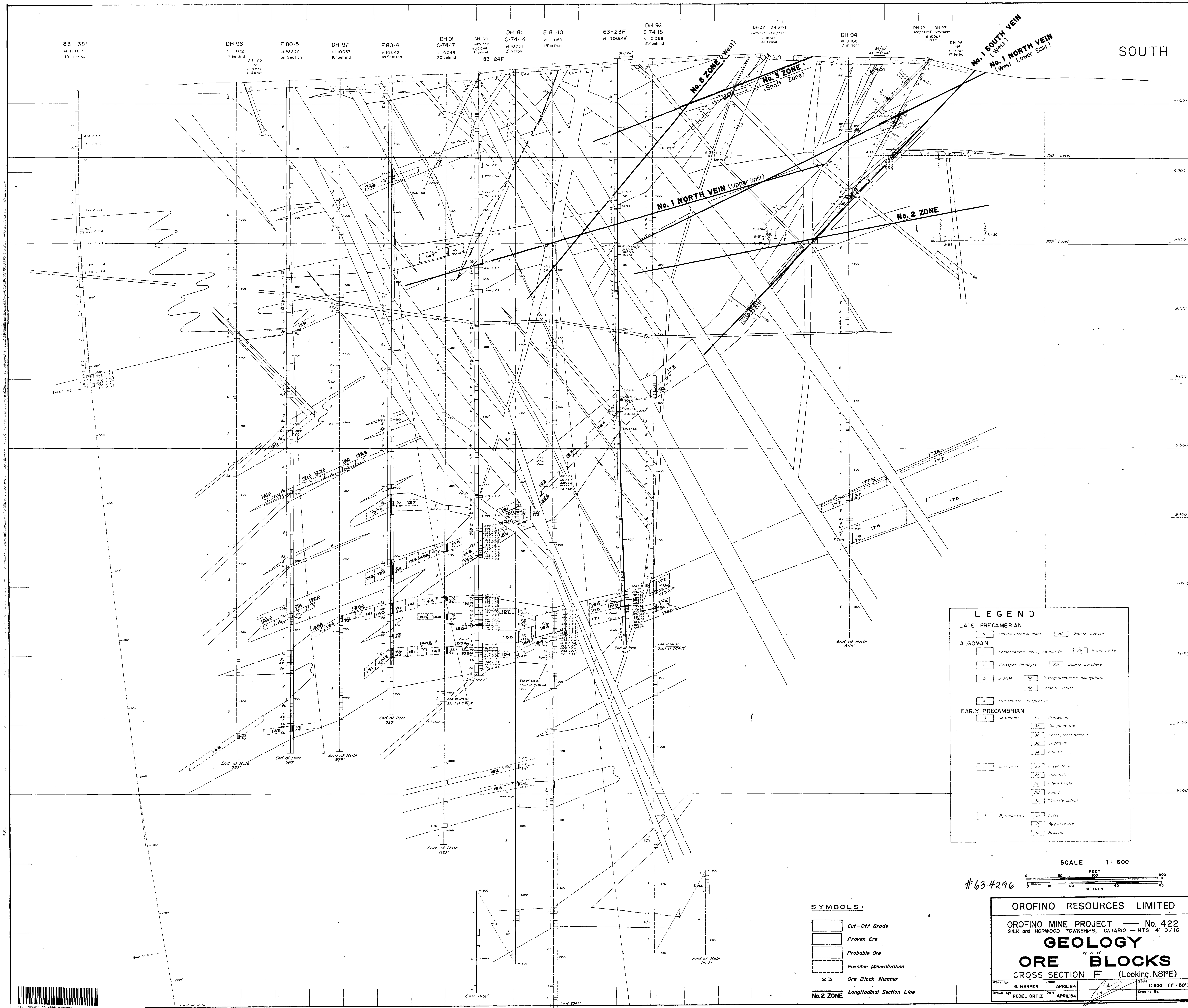


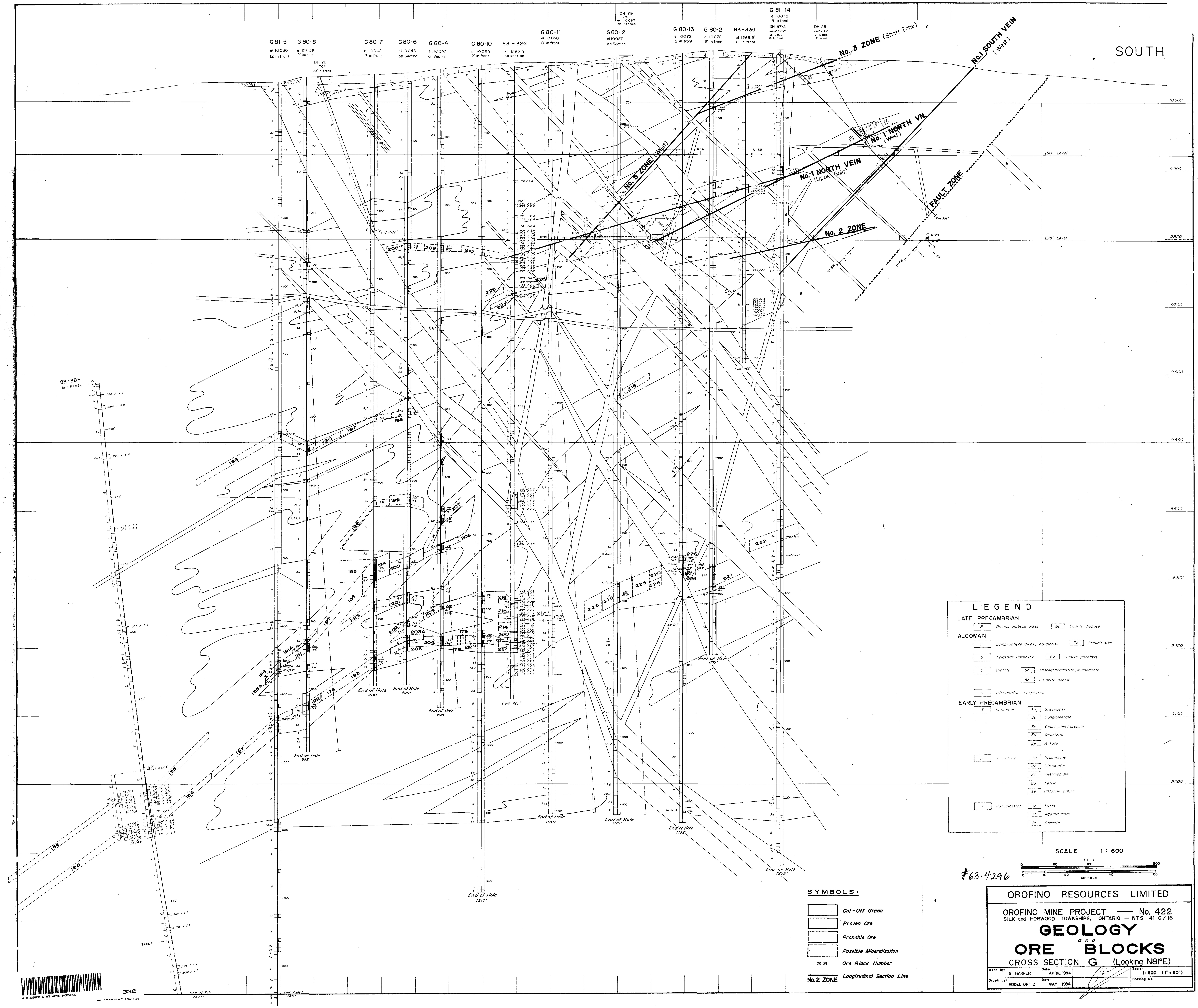
NORTH
SOUTH
83-21D
el. 10 026.22 (AQ)
DH 98
el. 10030
19' behind
D80-7
el. 10049
4' in front
DH 87
el. 10047
2' in front
DH 83
D 80-4
el. 10052
24' behind
C 74-13
DH 85
el. 10052
25' behind
DH 90
el. 10062
25' behind
D 80-3
el. 10061.5
9' in front
DH 29
DH 29-1
DH 45
DH 93
el. 10063
8' behind
No. 1 NORTH VEIN (West Lower Split)
No. 1 SOUTH Vn. (Upper Split)
No. 1 SOUTH VEIN
No. 2 ZONE
150' Level
10000
9900
9800
9700
9600
9500
9400
9300
9200
9100
9000
End of Hole 1132'
End of Hole 996'
End of Hole 1055'
End of Hole 1010'
End of Hole 1210'
End of Hole 1509'
End of Hole 925'
End of Hole 853'
LEGEND
LATE PRECAMBRIAN
8 Olivine diabase dikes
8b Quartz diabase
ALGOMAN
7 Lamprophyre dikes, epidiorite
7b Brown's dike
6 Feldspar Porphyry
6b Quartz porphyry
5 Diorite
5b Retrogradediorite, metagabbro
5c Chlorite schist
4 Ultramafic - serpentite
EARLY PRECAMBRIAN
3 Sediments
3a Greywacke
3b Conglomerate
3c Chert, chert breccia
3d Quartzite
3e Arkose
2 Volcanics
2a Greenstone
2b Ultramafic
2c Intermediate
2d Felsic
2e Chlorite schist
1 Pyroclastics
1a Tuffs
1b Agglomerate
1c Breccia
SCALE 1 : 600
FEET
0 50 100 200
0 10 20 40 60
METRES
#63-4296
SYMBOLS:
Cut-Off Grade
Proven Ore
Probable Ore
Possible Mineralization
23 Ore Block Number
No. 2 ZONE Longitudinal Section Line
OROFINO RESOURCES LIMITED
OROFINO MINE PROJECT — No. 422
SILK and HORWOOD TOWNSHIPS, ONTARIO — NTS 41 O/16
GEOLOGY
and
ORE BLOCKS
CROSS SECTION D (Looking N81°E)
Work by: G. HARPER
Date: APRIL '84
Drawn by: RODEL ORTIZ
Date: MAY '84
Scale: 1:600 (1" = 50')
Drawing No.
300



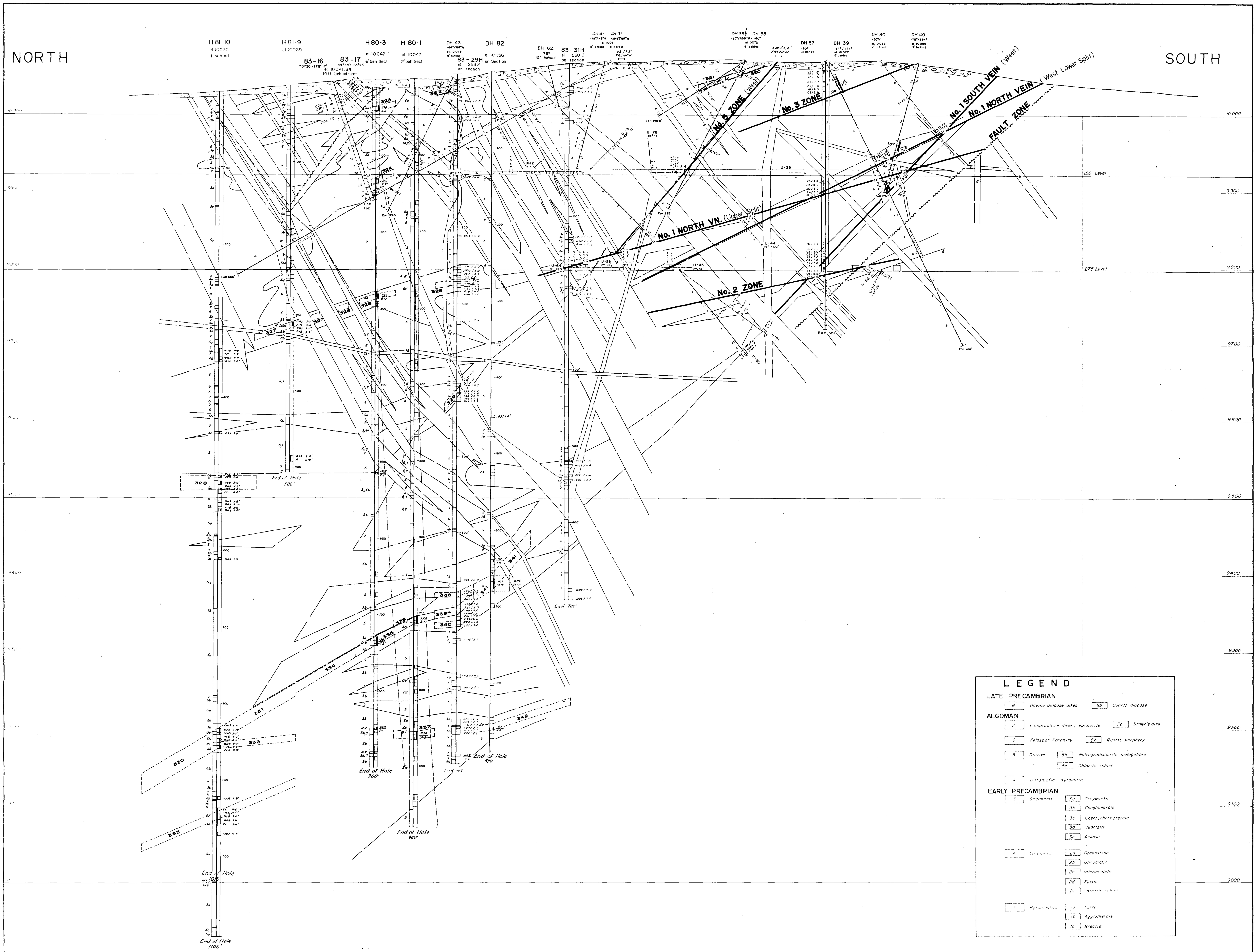
NORTH
SOUTH
83-20E
el. 10030.4 (AQ)
E 80-7
el. 10030
4' in front
E 80-8
el. 10039
on Section
E 80-6
el. 10045
2' in front
83-19E
el. 10047.2 (AQ)
E 80-9
el. 10050
3' in front
E 81-11
el. 10063
2' in front
E 80-12
el. 10065
13' in front
E 80-2
el. 10062
5' in front
83-22E
el. 10067.13 (AQ)
8' in front
E 81-13
10' in front
DH 28-1
-70°
el. 10070
DH 28
-45°
DH 10-1
-65°
el. 10061
No. 3 ZONE (Shaft Zone)
No. 1 NORTH Vn. (West Lower Split)
No. 1 SOUTH Vn. (Upper Split)
No. 2 ZONE
End of Hole 401'
End of Hole 1001'
End of Hole 1001'
End of Hole 1227'
End of Hole 1051'
End of Hole 957'
End of Hole 1210'
End of Hole 1100'
End of Hole 885'
End of Hole 800'
LEGEND
LATE PRECAMBRIAN
8 Olivine diabase dikes
8b Quartz diabase
ALGOMAN
7 Lamprophyre dikes, epidiorite
7b Brown's dike
6 Feldspar Porphyry
6b Quartz porphyry
5 Diorite
5b Retrogradediorite, metagabbro
5c Chlorite schist
4 Ultramafic - serpentite
EARLY PRECAMBRIAN
3 Sediments
3a Greywacke
3b Conglomerate
3c Chert, chert breccia
3d Quartzite
3e Arkose
2 Volcanics
2a Greenstone
2b Ultramafic
2c Intermediate
2d Felsic
2e Chlorite schist
1 Pyroclastics
1a Tuffs
1b Agglomerate
1c Breccia
SCALE 1 : 600
FEET
METRES
#63.4296
SYMBOLS:
Cut-Off Grade
Proven Ore
Probable Ore
Possible Mineralization
23 Ore Block Number
No. 2 ZONE Longitudinal Section Line
OROFINO RESOURCES LIMITED
OROFINO MINE PROJECT — No. 422
SILK and HORWOOD TOWNSHIPS, ONTARIO — NTS 41 O/16
GEOLOGY
and
ORE BLOCKS
CROSS SECTION E (Looking N81°E)
Work by: G. HARPER
Date: APRIL '84
Drawn by: RODEL ORTIZ
Date: MAY '84
Scale: 1:600 (1" = 50')
Drawing No.

310


SOUTH
DH 96
F 80-5
DH 97
F 80-4
DH 91
C-74-17
DH 44
DH 81
C-74-14
E 81-10
83-23F
DH 92
C-74-15
DH 37
DH 37-1
DH 94
DH 12
DH 27
DH 26
83-24F
83-38F
DH 73
No. 1 SOUTH VEIN (West)
No. 1 NORTH VEIN (West Lower Split)
No. 5 ZONE (West)
No. 3 ZONE (Shaft Zone)
No. 1 NORTH VEIN (Upper Split)
No. 2 ZONE
150' Level
275' Level
End of Hole
LEGEND
LATE PRECAMBRIAN
ALGOMAN
EARLY PRECAMBRIAN
SCALE 1 : 600
FEET
METRES
#63.4296
SYMBOLS:
Cut-Off Grade
Proven Ore
Probable Ore
Possible Mineralization
23 Ore Block Number
No.2 ZONE Longitudinal Section Line
OROFINO RESOURCES LIMITED
OROFINO MINE PROJECT — No. 422
SILK and HORWOOD TOWNSHIPS, ONTARIO — NTS 41 O/16
GEOLOGY
and
ORE BLOCKS
CROSS SECTION F (Looking N81°E)
G. HARPER APRIL'84
ROGEL ORTIZ APRIL'84
1:600 (1" = 50')
320



SOUTH
G 81-5
el 10030
12' in front
G 80-8
el 10026
2' behind
DH 72
G 80-7
el 10042
3' in front
G 80-6
el 10043
on Section
G 80-4
el 10047
on Section
G 80-10
el 10055
2' in front
83 - 32G
el 1252.9
on section
G 80-11
el 10068
8' in front
DH 79
G 80-12
el 10067
on Section
G 80-13
el 10072
2' in front
G 80-2
el 10076
6' in front
83-33G
el 1268.9'
6' in front
G 81-14
el 10078
DH 37-2
DH 25
No. 3 ZONE (Shaft Zone)
No.1 SOUTH VEIN (West)
No. 1 NORTH VN. (West)
No. 5 ZONE (West)
No. 1 NORTH VEIN (Upper Split)
FAULT ZONE
No. 2 ZONE
150' Level
275' Level
10000
9900
9800
9700
9600
9500
9400
9300
9200
9100
9000
83-38F
End of Hole 992'
End of Hole 900'
End of Hole 900'
End of Hole 940'
End of Hole 1211'
End of Hole 1105'
End of Hole 1115'
End of Hole 1132'
End of Hole 1202'
LEGEND
LATE PRECAMBRIAN
8 Olivine diabase dikes
8b Quartz diabase
ALGOMAN
7 Lamprophyre dikes, epidiorite
7b Brown's dike
6 Feldspar Porphyry
6b Quartz porphyry
5 Diorite
5b Retrogradediorite, metagabbro
5c Chlorite schist
4 Ultramafic - serpentite
EARLY PRECAMBRIAN
3 Sediments
3a Greywacke
3b Conglomerate
3c Chert, chert breccia
3d Quartzite
3e Arkose
2a Greenstone
2b Ultramafic
2c Intermediate
2d Felsic
2e Chlorite schist
1 Pyroclastics
1a Tuffs
1b Agglomerate
1c Breccia
SCALE 1 : 600
FEET
0 50 100 200
0 10 20 40 60
METRES
#63·4296
SYMBOLS:
Cut-Off Grade
Proven Ore
Probable Ore
Possible Mineralization
23 Ore Block Number
No. 2 ZONE Longitudinal Section Line
OROFINO RESOURCES LIMITED
OROFINO MINE PROJECT — No. 422
SILK and HORWOOD TOWNSHIPS, ONTARIO — NTS 41 O/16
GEOLOGY and ORE BLOCKS
CROSS SECTION G (Looking N81°E)
Work by: G. HARPER Date: APRIL 1984
Drawn by: RODEL ORTIZ Date: MAY 1984
Scale: 1:600 (1" = 50')
Drawing No.
330



LEGEND

LATE PRECAMBRIAN

8	Olivine diabase dikes	8b	Quartz diabase

ALGOMAN

7	Lamprophyre dikes, epidiorite	7b	Brown's dike
6	Feldspar Porphyry	6b	Quartz porphyry
5	Diorite	5b	Retrogradediorite, metagabbro
		5c	Chlorite schist
4	Ultramafic serpentite		

EARLY PRECAMBRIAN

3	Sediments	3a	Greywacke
		3b	Conglomerate
		3c	Chert, chert breccia
		3d	Quartzite
		3e	Arkose
2	Volcanics	2a	Greenstone
		2b	Ultramafic
		2c	Intermediate
		2d	Felsic
		2e	Chlorite schist
1	Pyroclastics	1a	Tuffs
		1b	Agglomerate
		1c	Breccia

SCALE 1 : 600

FEET 0 50 100 200

METRES 0 10 20 40 60

#63-4296

SYMBOLS:

- Cut-Off Grade
- Proven Ore
- Probable Ore
- Possible Mineralization
- 23 Ore Block Number
- No. 2 ZONE Longitudinal Section Line

OROFINO RESOURCES LIMITED

OROFINO MINE PROJECT — No. 422

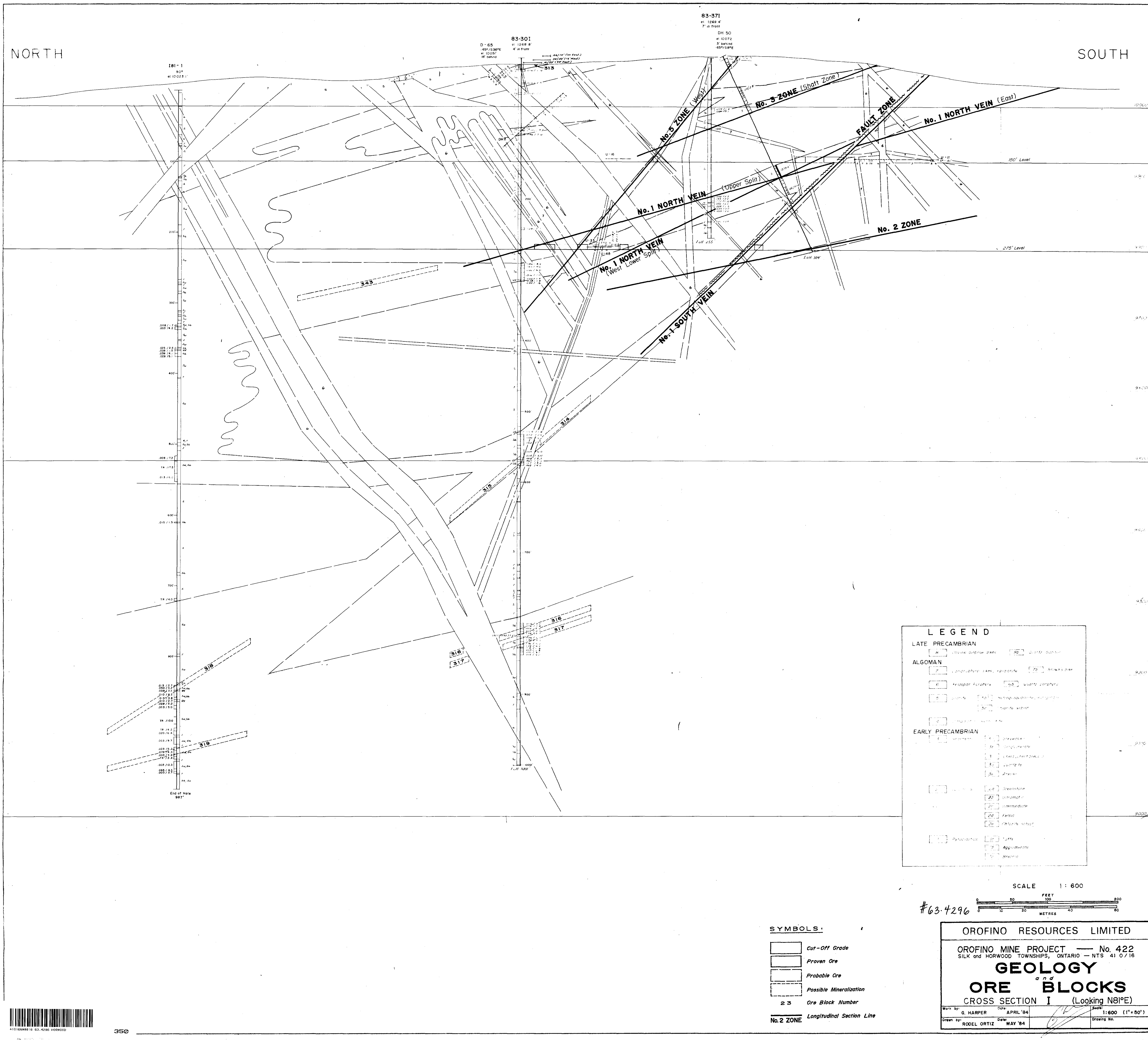
SILK and HORWOOD TOWNSHIPS, ONTARIO — NTS 41 O/16

GEOLOGY and ORE BLOCKS

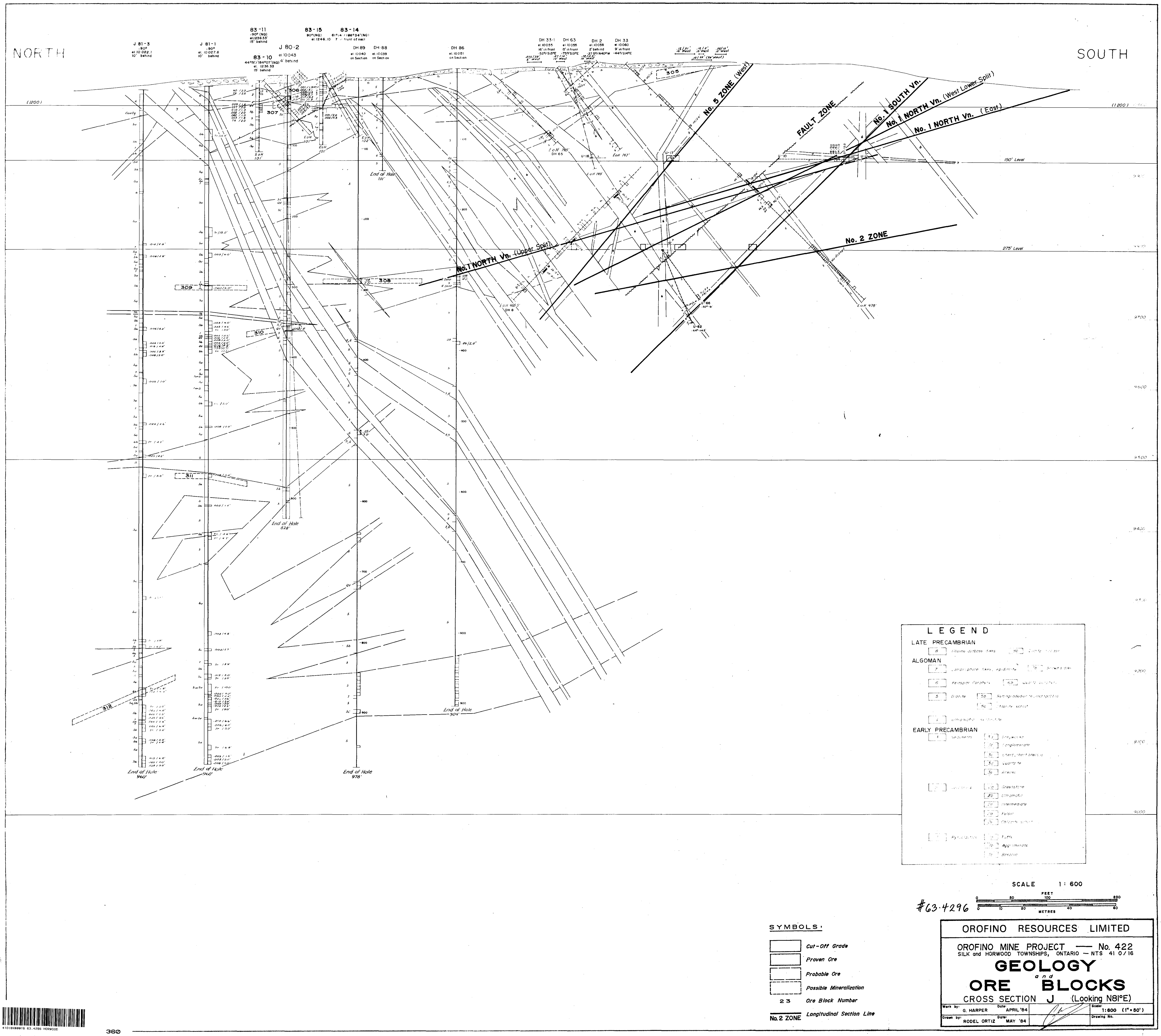
CROSS SECTION H (Looking N81°E)

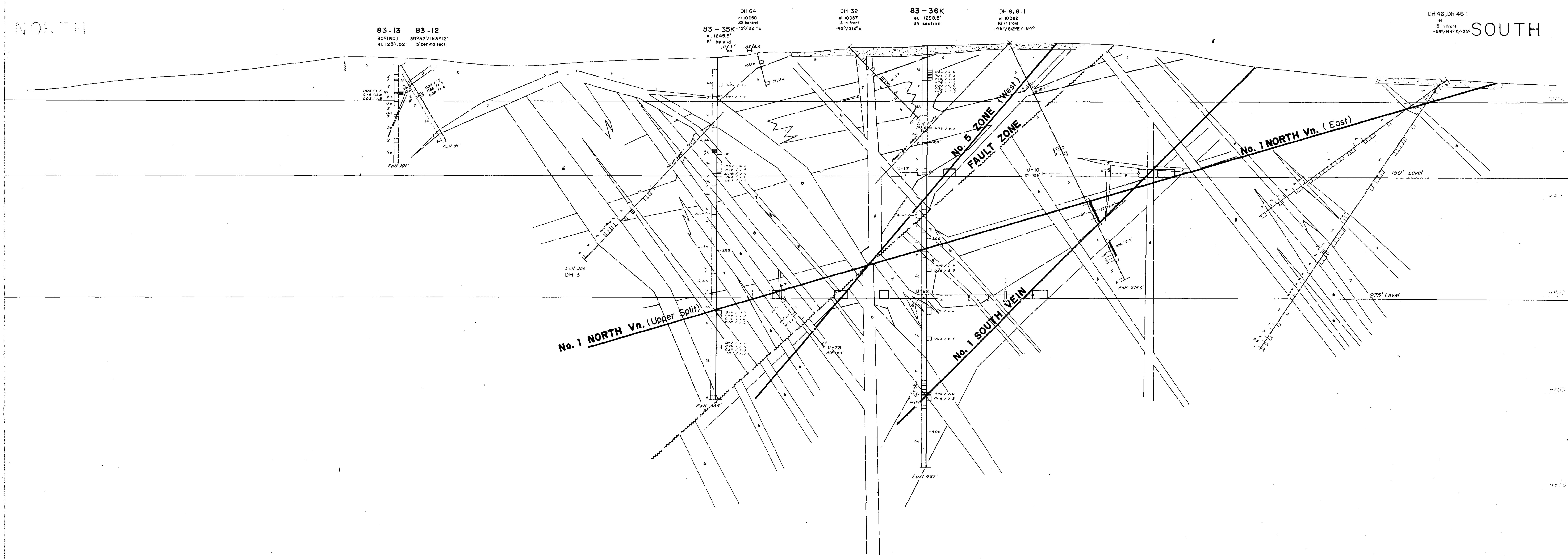
Work by: G. HARPER	Date: APRIL 1984	Scale: 1:600 (1" = 50')
Drawn by: RODEL ORTIZ	Date: MAY 1984	Drawing No.

340



NORTH
SOUTH
181-1
83-301
D-65
83-371
DH 50
313
No. 5 ZONE (West)
No. 3 ZONE (Shaft Zone)
FAULT ZONE
No. 1 NORTH VEIN (East)
150' Level
No. 1 NORTH VEIN (Upper Split)
No. 2 ZONE
275' Level
No. 1 NORTH VEIN (West Lower Split)
343
No. 1 SOUTH VEIN
314
315
316
317
318
319
End of Hole 987'
LEGEND
LATE PRECAMBRIAN
ALGOMAN
6 Feldspar Porphyry
EARLY PRECAMBRIAN
2d Felsic
1 Pyroclastics
Agglomerate
SCALE 1 : 600
FEET
0 50 100 200
0 10 20 40 60
METRES
#63-4296
SYMBOLS:
Cut-Off Grade
Proven Ore
Probable Ore
Possible Mineralization
23 Ore Block Number
No. 2 ZONE Longitudinal Section Line
OROFINO RESOURCES LIMITED
OROFINO MINE PROJECT — No. 422
SILK and HORWOOD TOWNSHIPS, ONTARIO — NTS 41 O/16
GEOLOGY and ORE BLOCKS
CROSS SECTION I (Looking N81°E)
Work by: G. HARPER Date: APRIL '84
Drawn by: RODEL ORTIZ Date: MAY '84
Scale: 1:600 (1" = 50')
Drawing No.
350


NORTH
SOUTH
J 81-3
J 81-1
J 80-2
83-10
83-11
83-15
83-14
DH 89
DH 88
DH 86
DH 33-1
DH 63
DH 2
DH 33
No. 5 ZONE (West)
FAULT ZONE
No. 1 SOUTH Vn.
No. 1 NORTH Vn. (West Lower Split)
No. 1 NORTH Vn. (East)
No. 1 NORTH Vn. (Upper Split)
No. 2 ZONE
150' Level
275' Level
End of Hole 960'
End of Hole 960'
End of Hole 978'
End of Hole 904'
End of Hole 528'
End of Hole 131'
305
306
307
308
309
310
311
312
LEGEND
LATE PRECAMBRIAN
ALGOMAN
EARLY PRECAMBRIAN
Tuffs
Agglomerate
Breccia
SCALE 1 : 600
FEET
0 50 100 200
0 10 20 40 60
METRES
#63·4296
SYMBOLS:
Cut-Off Grade
Proven Ore
Probable Ore
Possible Mineralization
23 Ore Block Number
No. 2 ZONE Longitudinal Section Line
OROFINO RESOURCES LIMITED
OROFINO MINE PROJECT — No. 422
SILK and HORWOOD TOWNSHIPS, ONTARIO — NTS 41 O/16
GEOLOGY
and
ORE BLOCKS
CROSS SECTION J (Looking N81°E)
Work by: G. HARPER Date: APRIL '84
Drawn by: RODEL ORTIZ Date: MAY '84
Scale: 1:600 (1" = 50')
Drawing No.
360



LEGEND

LATE PRECAMBRIAN

8	Olivine diabase dikes
8t	Quartz diabase

ALGOMAN

7	Lamprophyre dikes, epidiorite
7b	Brown spar
6	Feldspar Porphyry
6b	Quartz porphyry
5	Diorite
5b	Retrogradediorite, metagabbro
5c	Chlorite schist
4	Ultramafic, serpentite

EARLY PRECAMBRIAN

3	Sediments	3a	Greywacke
		3b	Conglomerate
		3c	Chert, chert breccia
		3d	Quartzite
		3e	Arkose
2	Volcanics	2a	Greenstone
		2b	Ultramafic
		2c	Intermediate
		2d	Felsic
		2e	Chlorite schist
1	Pyroclastics	1a	Tuffs
		1b	Agglomerate
		1c	Breccia

SCALE 1 : 600

FEET 0 50 100 200

METRES 0 10 20 40 60

#63-4296

SYMBOLS:

- Cut-Off Grade
- Proven Ore
- Probable Ore
- Possible Mineralization
- 23 Ore Block Number
- No. 2 ZONE Longitudinal Section Line

OROFINO RESOURCES LIMITED

OROFINO MINE PROJECT — No. 422

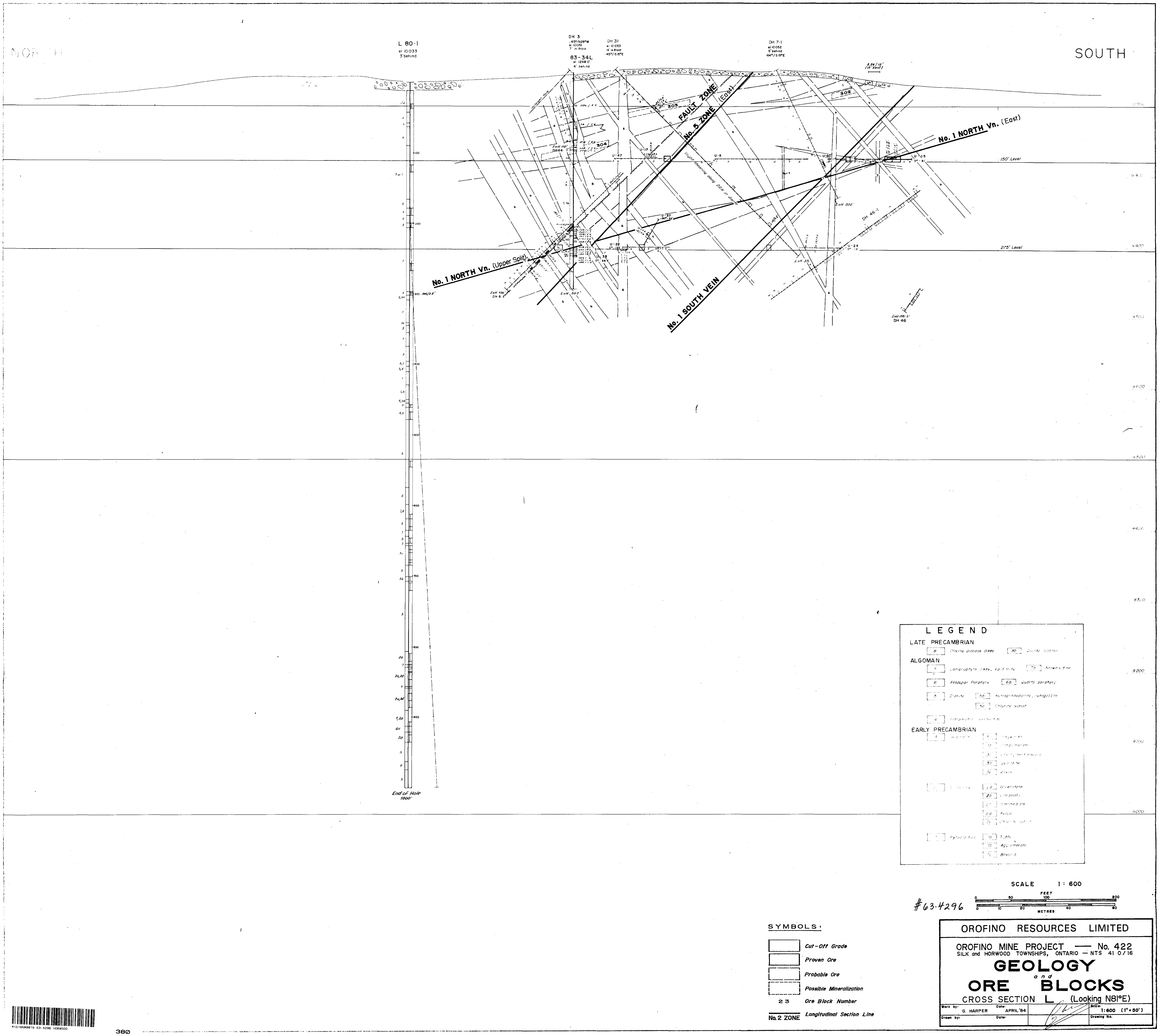
SILK and HORWOOD TOWNSHIPS, ONTARIO — NTS 41 O/16

GEOLOGY and ORE BLOCKS

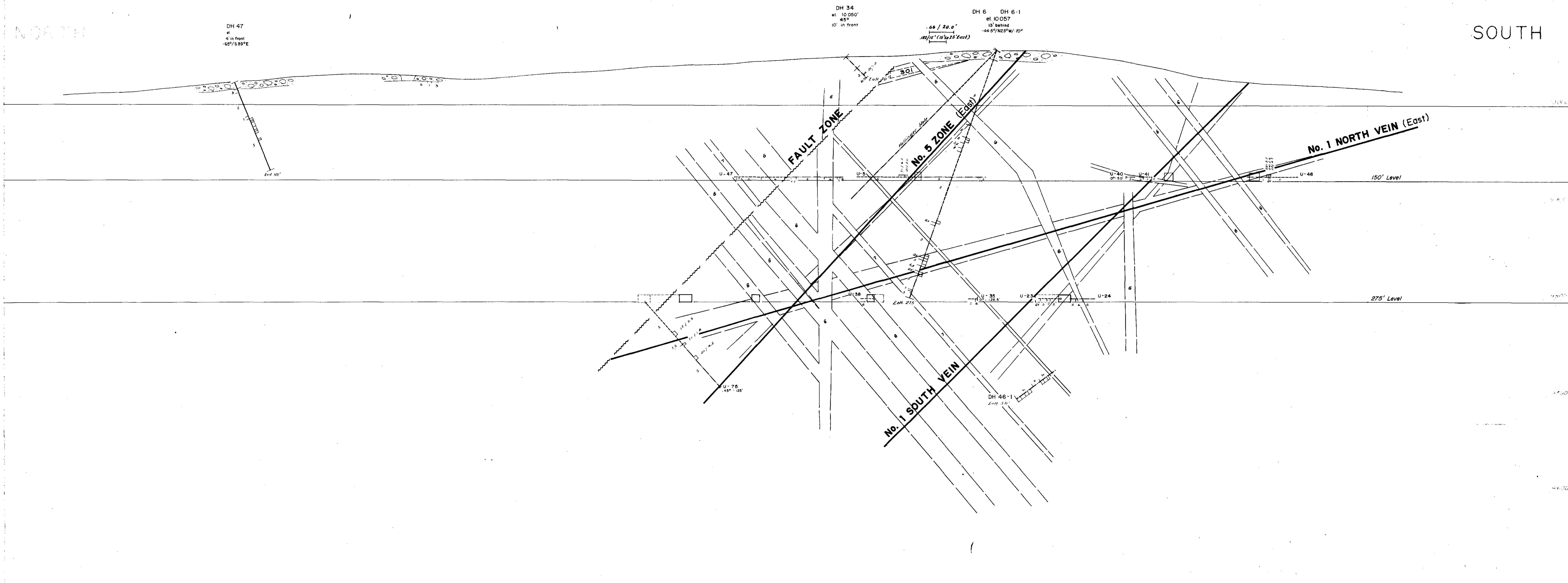
CROSS SECTION K (Looking N81°E)

Work by: G. HARPER	Date: APRIL '84	Scale: 1:600 (1" = 50')
Drawn by: RODEL ORTIZ	Date: MAY '84	Drawing No.

370



SOUTH
L 80-1
el 10033
3' behind
DH 3
DH 31
DH 7-1
83-34L
FAULT ZONE
No. 5 ZONE (East)
No. 1 NORTH Vn. (East)
No. 1 NORTH Vn. (Upper Split)
No. 1 SOUTH VEIN
303
304
302
150' Level
275' Level
U-47
U-17
U-8
U-40
U-15
U-37
U-22
U-24
DH 46-1
DH 46
End of Hole 1000'
LEGEND
LATE PRECAMBRIAN
8 Olivine diabase dikes
8b
ALGOMAN
7b Brown's dike
6 Feldspar Porphyry
6b Quartz porphyry
5c Chlorite schist
EARLY PRECAMBRIAN
2a Greenstone
2d Felsic
1 Pyroclastics
1a Tuffs
1b Agglomerate
SCALE 1 : 600
FEET
METRES
#63-4296
SYMBOLS:
Cut-Off Grade
Proven Ore
Probable Ore
Possible Mineralization
23 Ore Block Number
No. 2 ZONE Longitudinal Section Line
OROFINO RESOURCES LIMITED
OROFINO MINE PROJECT — No. 422
SILK and HORWOOD TOWNSHIPS, ONTARIO — NTS 41 O/16
GEOLOGY
and
ORE BLOCKS
CROSS SECTION L (Looking N81°E)
Work by: G. HARPER
Date: APRIL '84
Scale: 1:600 (1" = 50')
Drawn by:
Date:
Drawing No.
380



LEGEND

LATE PRECAMBRIAN

8 — Olivine diabase dikes; 8b — Quartz diabase

ALGOMAN

7 — Lamprophyre dikes, epidiorite; 7b — Brown's dike

6 — Feldspar Porphyry; 6b — Quartz porphyry

5 — Diorite; 5b — Metagabbro; 5c — Chlorite schist

4

EARLY PRECAMBRIAN

3 — Greywacke; Conglomerate; Chert, chert breccia; 3a — Quartzite; 3e — Arkose

Agglomerate

SCALE 1 : 600

FEET: 0, 50, 100, 200

METRES: 0, 10, 20, 40, 60

#63·4296

SYMBOLS:

- Cut-Off Grade
- Proven Ore
- Probable Ore
- Possible Mineralization
- 23 — Ore Block Number
- No. 2 ZONE — Longitudinal Section Line

OROFINO RESOURCES LIMITED

OROFINO MINE PROJECT — No. 422

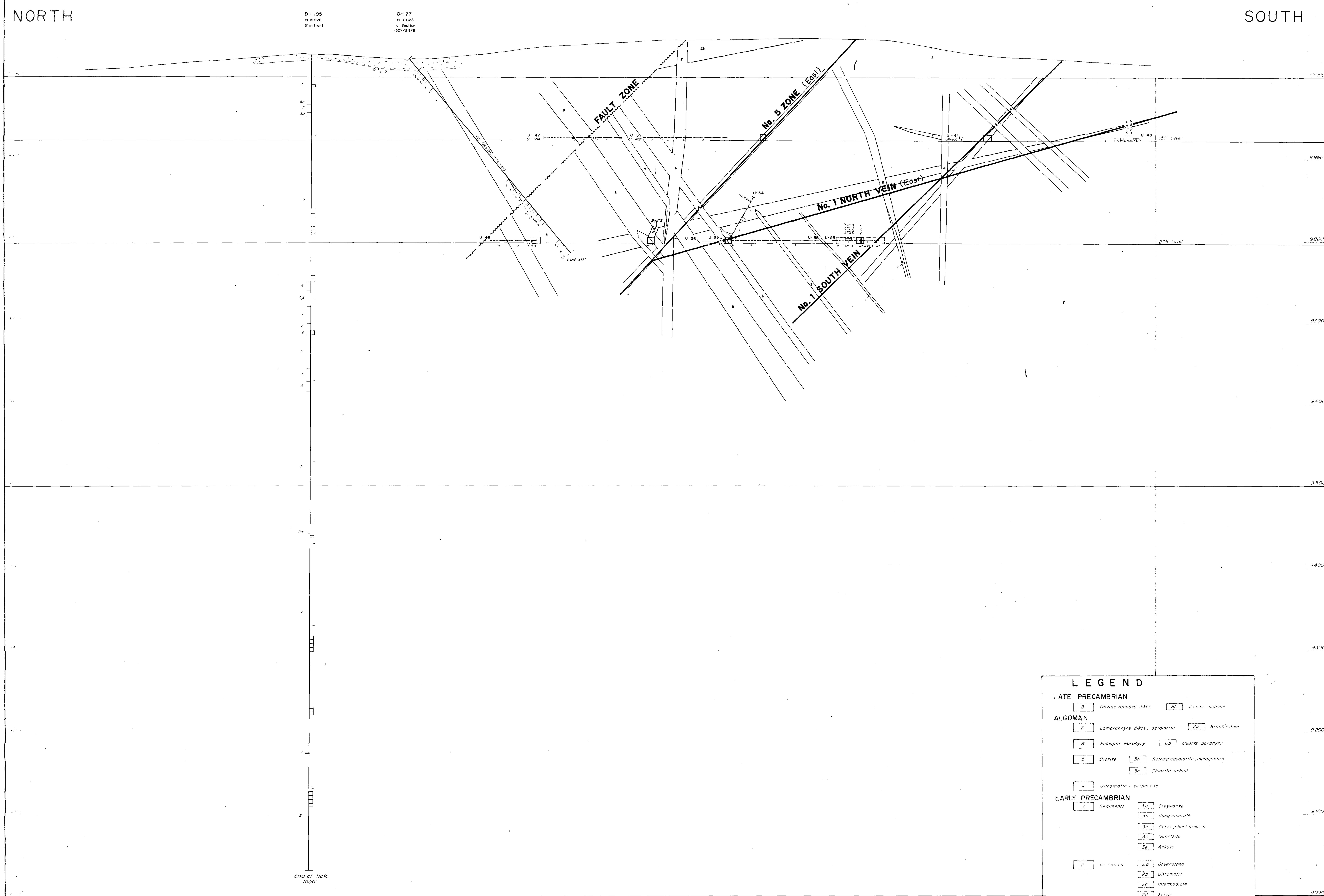
SILK and HORWOOD TOWNSHIPS, ONTARIO — NTS 41 O/16

GEOLOGY and ORE BLOCKS

CROSS SECTION M (Looking N81°E)

Work by: G. HARPER	Date: APRIL '84		Scale: 1:600 (1" = 50')
Drawn by: RODEL ORTIZ	Date: MAY '84		Drawing No.

390



LEGEND

LATE PRECAMBRIAN

- 8 Olivine diabase dikes — 8b Quartz diabase

ALGOMAN

- 7 Lamprophyre dikes, epidiorite — 7b Brown's dike
- 6 Feldspar Porphyry — 6b Quartz porphyry
- 5 Diorite — 5b Retrogradediorite, metagabbro; 5c Chlorite schist
- 4 Ultramafic - serpentite

EARLY PRECAMBRIAN

- 3 Sediments — 3a Greywacke; 3b Conglomerate; 3c Chert, chert breccia; 3d Quartzite; 3e Arkose
- 2 Volcanics — 2a Greenstone; 2b Ultramafic; 2c Intermediate; 2d Felsic; 2e Chlorite schist
- 1 Pyroclastics — 1a Tuffs; 1b Agglomerate; 1c Breccia

SCALE 1 : 600

FEET 0 50 100 200

METRES 0 10 20 40 60

#63-4296

SYMBOLS:

- Cut-Off Grade
- Proven Ore
- Probable Ore
- Possible Mineralization
- 23 Ore Block Number
- No. 2 ZONE Longitudinal Section Line

OROFINO RESOURCES LIMITED

OROFINO MINE PROJECT — No. 422

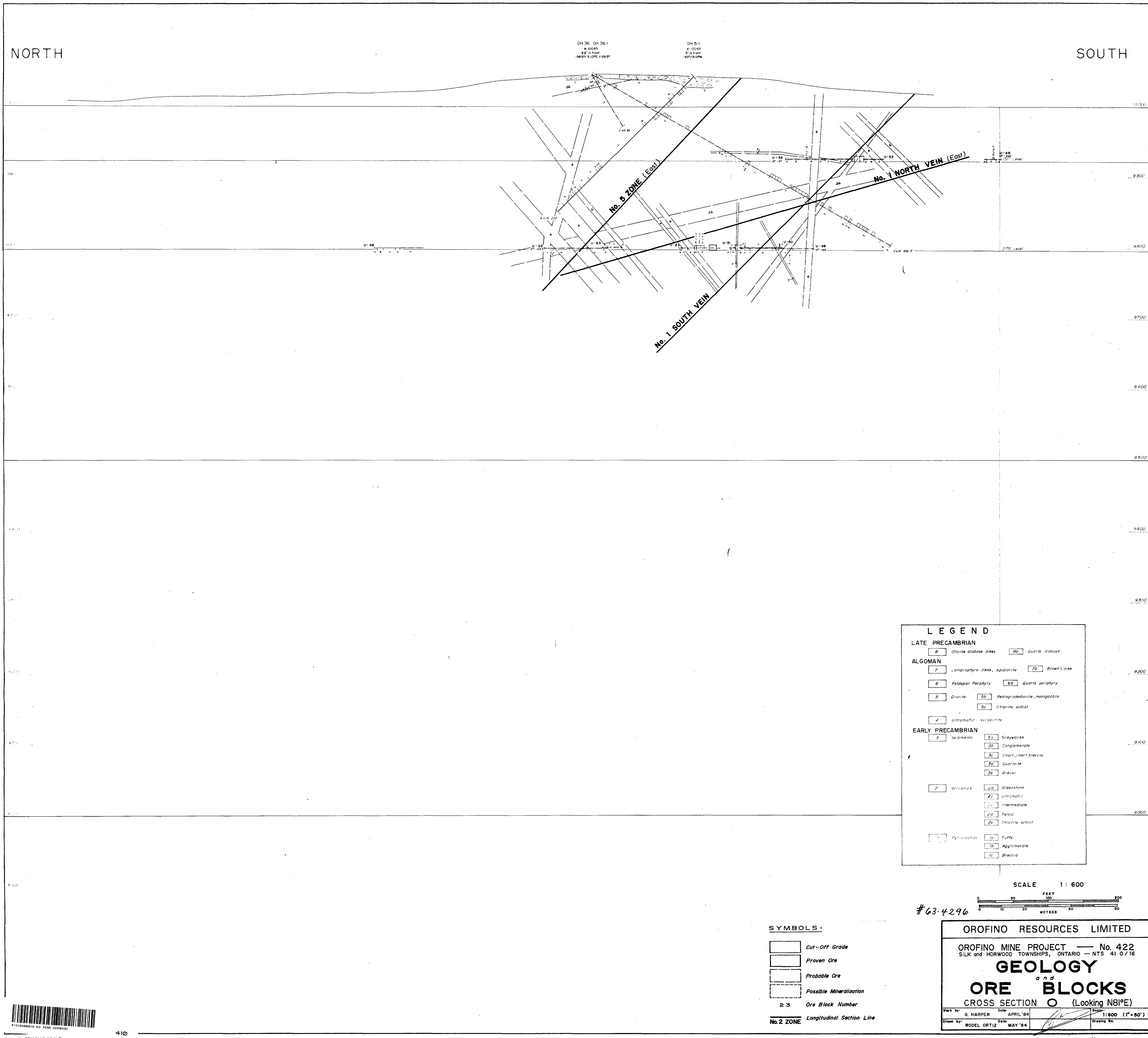
SILK and HORWOOD TOWNSHIPS, ONTARIO — NTS 41 O/16

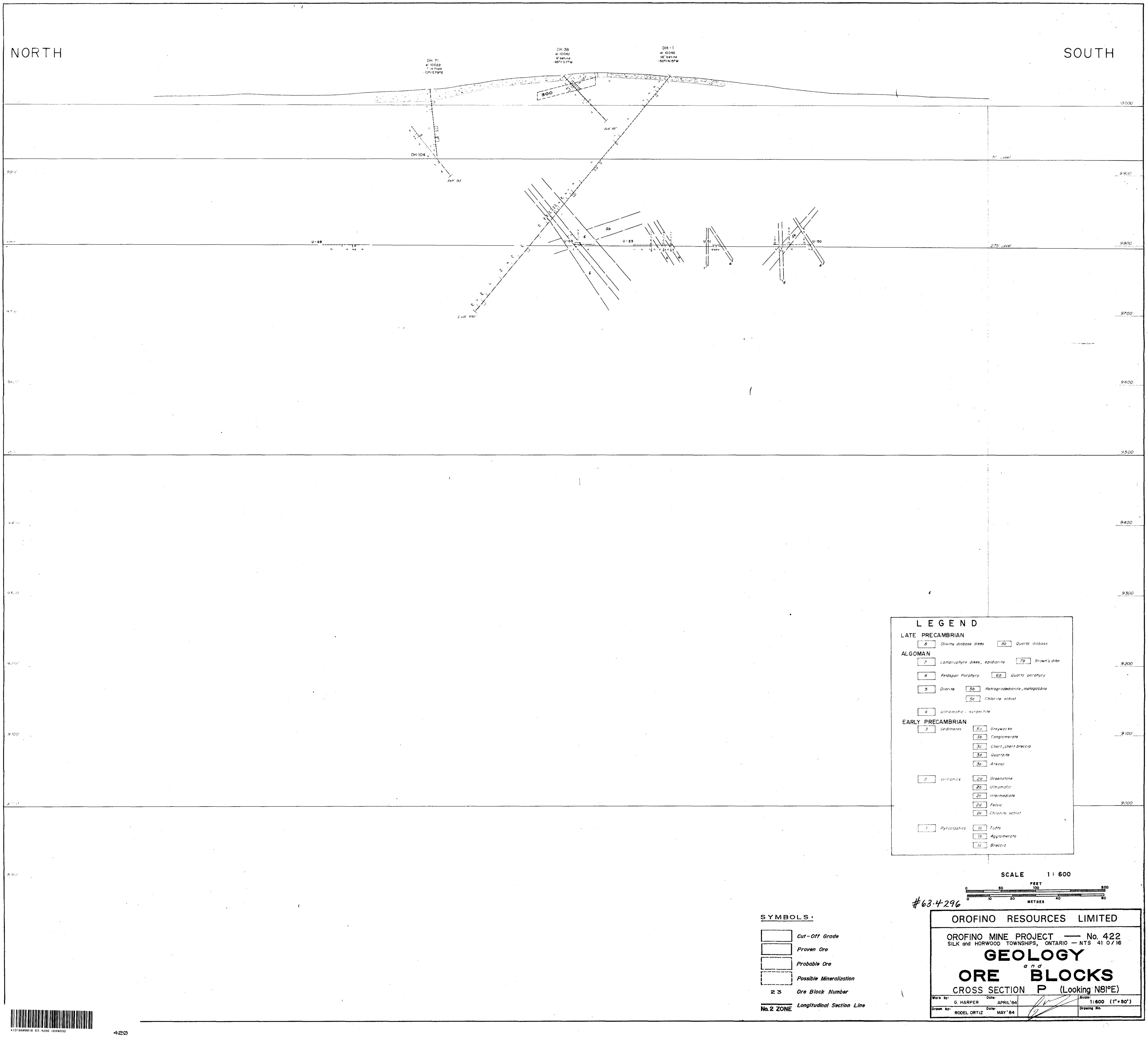
GEOLOGY and ORE BLOCKS

CROSS SECTION N (Looking N81°E)

Work by: G. HARPER	Date: APRIL '84		Scale: 1:600 (1" = 50')
Drawn by: RODEL ORTIZ	Date: MAY '84		Drawing No.

400


NORTH
SOUTH
No. 5 ZONE (East)
No. 1 NORTH VEIN (East)
No. 1 SOUTH VEIN
275 Level
10000
9900
9800
9700
9600
9500
9400
9300
9200
9100
9000
LEGEND
LATE PRECAMBRIAN
8 Olivine diabase dikes
8b Quartz diabase
ALGOMAN
7 Lamprophyre dikes, epidiorite
7b Brown's dike
6 Feldspar Porphyry
6b Quartz porphyry
5 Diorite
5b Retrogradediorite, metagabbro
5c Chlorite schist
4 Ultramafic - serpentite
EARLY PRECAMBRIAN
3 Sediments
3a Greywacke
3b Conglomerate
3c Chert, chert breccia
3d Quartzite
3e Arkose
2 Volcanics
2a Greenstone
2b Ultramafic
2c Intermediate
2d Felsic
2e Chlorite schist
1 Pyroclastics
1a Tuffs
1b Agglomerate
1c Breccia
SCALE 1 : 600
FEET
0 50 100 200
0 10 20 40 60
METRES
#63·4296
SYMBOLS:
Cut-Off Grade
Proven Ore
Probable Ore
Possible Mineralization
23 Ore Block Number
No. 2 ZONE Longitudinal Section Line
OROFINO RESOURCES LIMITED
OROFINO MINE PROJECT — No. 422
SILK and HORWOOD TOWNSHIPS, ONTARIO — NTS 41 O/16
GEOLOGY
and
ORE BLOCKS
CROSS SECTION O (Looking N81°E)
Work by: G. HARPER Date: APRIL '84
Drawn by: RODEL ORTIZ Date: MAY '84
Scale: 1:600 (1" = 50')
Drawing No.
410


NORTH
SOUTH
DH 71
el. 10022
in front
-72°/S79°E
DH 38
el. 10042
8' behind
-46°/S7°W
DH - 1
el. 10042
16' behind
-50°/N15°W
300
EoH 88'
DH 104
10000
9900
9800
9700
9600
9500
9400
9300
9200
9100
9000
U-48
U-63
U-23
U-51
U-50
5b
275 Level
LEGEND
LATE PRECAMBRIAN
8 Olivine diabase dikes
8b Quartz diabase
ALGOMAN
7 Lamprophyre dikes, epidiorite
7b Brown's dike
6 Feldspar Porphyry
6b Quartz porphyry
5 Diorite
5b Retrogradediorite, metagabbro
5c Chlorite schist
4 Ultramafic - serpentite
EARLY PRECAMBRIAN
3 Sediments
3a Greywacke
3b Conglomerate
3c Chert, chert breccia
3d Quartzite
3e Arkose
2 Volcanics
2a Greenstone
2b Ultramafic
2c Intermediate
2d Felsic
2e Chlorite schist
1 Pyroclastics
1a Tuffs
1b Agglomerate
1c Breccia
SCALE 1 : 600
FEET
0 50 100 200
0 10 20 40 60
METRES
#63.4296
SYMBOLS:
Cut-Off Grade
Proven Ore
Probable Ore
Possible Mineralization
23 Ore Block Number
No. 2 ZONE Longitudinal Section Line
OROFINO RESOURCES LIMITED
OROFINO MINE PROJECT — No. 422
SILK and HORWOOD TOWNSHIPS, ONTARIO — NTS 41 O/16
GEOLOGY
and
ORE BLOCKS
CROSS SECTION P (Looking N81°E)
Work by: G. HARPER Date: APRIL'84
Drawn by: RODEL ORTIZ Date: MAY'84
Scale: 1:600 (1" = 50')
Drawing No.
420

LEGEND:

LATE PRECAMBRIAN

8	Olivine diabase dikes	8a	Quartz diabase

ALGOMAN

7	Lamprophyre dikes, epidiorite	7b	Brown's dike		
6	Feldspar porphyry	6a	Dike - granite, chlorite	6c	Rhyolite dike
		6b	Quartz porphyry		
5	Diorite	5b	Retrogradediorite, metagabbro	5c	Chlorite schist
		5a	Hybrid diorite	5d	Migmatite
4	Ultramafic-serpentite				

EARLY PRECAMBRIAN

3	Sediments	3a	Greywacke, hornfels	3d	Quartzite
		3b	Conglomerate	3e	Arkose
		3c	Chert, chert breccia		
2	Volcanics	2a	Greenstone, basic lavas	2d	Felsic, rhyolite
		2b	Ultramafic	2e	Chlorite schist
		2c	Intermediate		
1	Pyroclastics	1a	Tuffs		
		1b	Agglomerate		
		1c	Breccia		

41016NW0016 63.4296 HORWOOD

430

SYMBOLS:

- Geological contact
- Fault
- Shears
- Strike and Dip
- Joints
- , qv Quartz vein
- Sulphide mineralization
- Qtz Carb Epidote Vein
- U-23 Underground drill hole
- Outcrop (defined)
- Outcrop (partly exposed)
- Trench Sampling (oz/t over footage (Au))
- Trench Re-sampling

KEY MAP

1	2
3	4

SCALE 1 240

40 60 FEET

10 METRES

OROFINO RESOURCES LIMITED

OROFINO MINE PROJECT — No. 422
SILK and HORWOOD TOWNSHIPS, ONTARIO NTS 41 O/16

GEOLOGY

#63-4296 (SURFACE)

Work by: Tom Atkins	Date: Aug 1983		Scale: 1 240 (1" = 20')
Drawn by: Rodel Ortiz	Date: May 1984		Drawing No. SHEET 2

Note: Refer to Map No. 2 for legend

KEY MAP
1
2
3
4

SCALE 1:240

FEET 40 60 FEET

10 METRES

OROFINO RESOURCES LIMITED

OROFINO MINE PROJECT — No. 422
SILK and HORWOOD TOWNSHIPS, ONTARIO NTS 41 0/16

GEOLOGY

(SURFACE)

#63.4296

Work by: Tom Atkins	Date: Aug 1983		Scale: 1: 240 (1" = 20')
Drawn by: Rodel Ortiz	Date: May 1984		Drawing No. SHEET 3

LEGEND:

LATE PRECAMBRIAN

8	Olivine diabase dikes
8a	Quartz diabase

ALGOMAN

7	Lamprophyre dikes, epidiorite
7b	Brown's dike
6	Feldspar porphyry
6a	Dike - granite, chlorite
6b	Quartz porphyry
6c	Rhyolite dike
5	Diorite
5b	Retrogradediorite, metagabbro
5a	Hybrid diorite
5c	Chlorite schist
5d	Migmatite
4	Ultramafic-serpentite

EARLY PRECAMBRIAN

3	Sediments
3a	Greywacke, hornfels
3b	Conglomerate
3c	Chert, chert breccia
3d	Quartzite
3e	Arkose
2	Volcanics
2a	Greenstone, basic lavas
2b	Ultramafic
2c	Intermediate
2d	Felsic, rhyolite
2e	Chlorite schist
1	Pyroclastics
1a	Tuffs
1b	Agglomerate
1c	Breccia

SYMBOLS:

- Geological contact
- Fault
- Shears
- Strike and Dip
- Joints
- , qv Quartz vein
- Sulphide mineralization
- Surface drill hole
- U-23 Underground drill hole

41016NW0016 63.4296 HORWOOD

450

SCALE 1:240

FEET 20 0 20 40 60 FEET

METRES 10 8 6 4 2 0 10 METRES

OROFINO RESOURCES LIMITED

OROFINO MINE PROJECT — No. 422
SILK and HORWOOD TOWNSHIPS, ONTARIO NTS 41 O/16

GEOLOGY

#63-4296 (150' LEVEL)

Work by:	Date:		Scale: 1:240 (1" = 20')
Drawn by: Rodel Ortiz	Date:		Drawing No.

LEGEND:

LATE PRECAMBRIAN

8	Olivine diabase dikes	8a	Quartz diabase

ALGOMAN

7	Lamprophyre dikes, epidiorite	7b	Brown's dike		
6	Feldspar porphyry	6a	Dike - granite, chlorite	6c	Rhyolite dike
		6b	Quartz porphyry		
5	Diorite	5b	Retrogradediorite, metagabbro	5c	Chlorite schist
		5a	Hybrid diorite	5d	Migmatite
4	Ultramafic-serpentite				

EARLY PRECAMBRIAN

3	Sediments	3a	Greywacke, hornfels	3d	Quartzite
		3b	Conglomerate	3e	Arkose
		3c	Chert, chert breccia		
2	Volcanics	2a	Greenstone, basic lavas	2d	Felsic, rhyolite
		2b	Ultramafic	2e	Chlorite schist
		2c	Intermediate		
1	Pyroclastics	1a	Tuffs		
		1b	Agglomerate		
		1c	Breccia		

SYMBOLS:

- Geological contact
- Fault
- Shears
- Strike and Dip
- Joints
- qv Quartz vein
- Sulphide mineralization
- Surface drill hole
- U-23 Underground drill hole

41016NW0016 63.4296 HORWOOD

460

SCALE 1:240

20 0 20 40 60 FEET

METRES 10 8 6 4 2 0 10 METRES

OROFINO RESOURCES LIMITED

OROFINO MINE PROJECT — No. 422

SILK and HORWOOD TOWNSHIPS, ONTARIO NTS 41 O/16

GEOLOGY

#63·4296 (275' LEVEL)

Work by:	Date:		Scale: 1:240 (1" = 20')
Drawn by: Rodel Ortiz	Date: Nov. 1983		Drawing No.

#63-4296

LEGEND:

LATE PRECAMBRIAN

8	Olivine diabase dikes	8a	Quartz diabase

ALGOMAN

7	Lamprophyre dikes, epidiorite	7b	Brown's dike		
6	Feldspar porphyry	6a	Dike - granite, chlorite	6c	Rhyolite dike
		6b	Quartz porphyry		
5	Diorite	5b	Retrogradediorite, metagabbro	5c	Chlorite schist
		5a	Hybrid diorite	5d	Migmatite
4	Ultramafic-serpentite				

EARLY PRECAMBRIAN

3	Sediments	3a	Greywacke, hornfels	3d	Quartzite
		3b	Conglomerate	3e	Arkose
		3c	Chert, chert breccia		
2	Volcanics	2a	Greenstone, basic lavas	2d	Felsic, rhyolite
		2b	Ultramafic	2e	Chlorite schist
		2c	Intermediate		
1	Pyroclastics	1a	Tuffs		
		1b	Agglomerate		
		1c	Breccia		

SYMBOLS:

- Geological contact
- Fault
- Shears
- Strike and Dip
- Joints
- , qv Quartz vein
- Sulphide mineralization
- Qtz. Carb Epidote Vein
- U-23 Underground drill hole
- Surface Ddh
- Outcrop (defined)
- Outcrop (partly exposed)
- Trench Sampling (oz/t over footage (Au))
- Trench Re-sampling
- Surface Projection Of Gold Veins / Zones
- Surface Projection Of Longit. Sect.

41016NW0016 63.4296 HORWOOD

470

KEY MAP

1	14575N
2	13950N
3	13325N
4	12700N
	11075N

9060E 10000E

SCALE 1:240

FEET 20 0 20 40 60 FEET

METRES 10 8 6 4 2 0 10 METRES

OROFINO RESOURCES LIMITED

OROFINO MINE PROJECT — No. 422

SILK and HORWOOD TOWNSHIPS, ONTARIO NTS 41 O/16

GEOLOGY and GOLD VEINS / ZONES (SURFACE)

Work by: Tom Atkins	Date: Aug 1983		Scale: 1:240 (1" = 20')
Drawn by: Rodel Ortiz	Date: May 1984		Drawing No. 2

Note: Refer to Map No. 2 for legend

KEY MAP

1
2
3
4

SCALE 1:240

FEET 60 FEET

METRES 10 METRES

#63-4296

OROFINO RESOURCES LIMITED

OROFINO MINE PROJECT — No. 422
SILK and HORWOOD TOWNSHIPS, ONTARIO NTS 41 0/16

GEOLOGY
and
GOLD VEINS / ZONES
(SURFACE)

Work by: Tom Atkins	Date: Aug 1983		Scale: 1:240 (1" = 20')
Drawn by: Rodel Ortiz	Date: May 1984		Drawing No. 3

480

LEGEND:

LATE PRECAMBRIAN

8	Olivine diabase dikes	8a	Quartz diabase

ALGOMAN

7	Lamprophyre dikes, epidiorite	7b	Brown's dike		
6	Feldspar porphyry	6a	Dike - granite, chlorite	6c	Rhyolite dike
		6b	Quartz porphyry		
5	Diorite	5b	Retrogradediorite, metagabbro	5c	Chlorite schist
		5a	Hybrid diorite	5d	Migmatite
4	Ultramafic-serpentite				

EARLY PRECAMBRIAN

3	Sediments	3a	Greywacke, hornfels	3d	Quartzite
		3b	Conglomerate	3e	Arkose
		3c	Chert, chert breccia		
2	Volcanics	2a	Greenstone, basic lavas	2d	Felsic, rhyolite
		2b	Ultramafic	2e	Chlorite schist
		2c	Intermediate		
1	Pyroclastics	1a	Tuffs		
		1b	Agglomerate		
		1c	Breccia		

SYMBOLS:

- Geological contact
- Fault
- Shears
- Strike and Dip
- Joints
- Quartz vein, qv
- Sulphide mineralization
- Surface drill hole
- U-23 Underground drill hole
- proven ore
- probable ore
- possible mineralization
- longitudinal sect. line
- No. 5 ZONE (111° / 54°N) title, strike and dip

SCALE 1 : 240

#63·4296

OROFINO RESOURCES LIMITED

OROFINO MINE PROJECT — No. 422
SILK and HORWOOD TOWNSHIPS, ONTARIO NTS 41 O/16

GEOLOGY and ORE BLOCKS (150' LEVEL)

Work by: Date:		Scale: 1 : 240 (1" = 20')
Drawn by: Rodel Ortiz Date:		Drawing No.

41016NW0016 63.4296 HORWOOD

LEGEND:

LATE PRECAMBRIAN

- 8 Olivine diabase dikes
- 8a Quartz diabase

ALGOMAN

- 7 Lamprophyre dikes, epidiorite
- 7b Brown's dike
- 6 Feldspar porphyry
- 6a Dike - granite, chlorite
- 6b Quartz porphyry
- 6c Rhyolite dike
- 5 Diorite
- 5b Retrogradediorite, metagabbro
- 5a Hybrid diorite
- 5c Chlorite schist
- 5d Migmatite
- 4 Ultramafic-serpentite

EARLY PRECAMBRIAN

- 3 Sediments
- 3a Greywacke, hornfels
- 3b Conglomerate
- 3c Chert, chert breccia
- 3d Quartzite
- 3e Arkose
- 2 Volcanics
- 2a Greenstone, basic lavas
- 2b Ultramafic
- 2c Intermediate
- 2d Felsic, rhyolite
- 2e Chlorite schist
- 1 Pyroclastics
- 1a Tuffs
- 1b Agglomerate
- 1c Breccia

SYMBOLS:

- Geological contact
- Fault
- Shears
- Strike and Dip
- Joints
- Quartz vein (qv)
- Sulphide mineralization
- Surface drill hole
- U-23 Underground drill hole
- proven ore
- probable ore
- possible mineralization
- No. 5 ZONE (111° / 54° N) longitudinal sect. line title, strike and dip

41016NW0016 63.4296 HORWOOD

500

SCALE 1:240

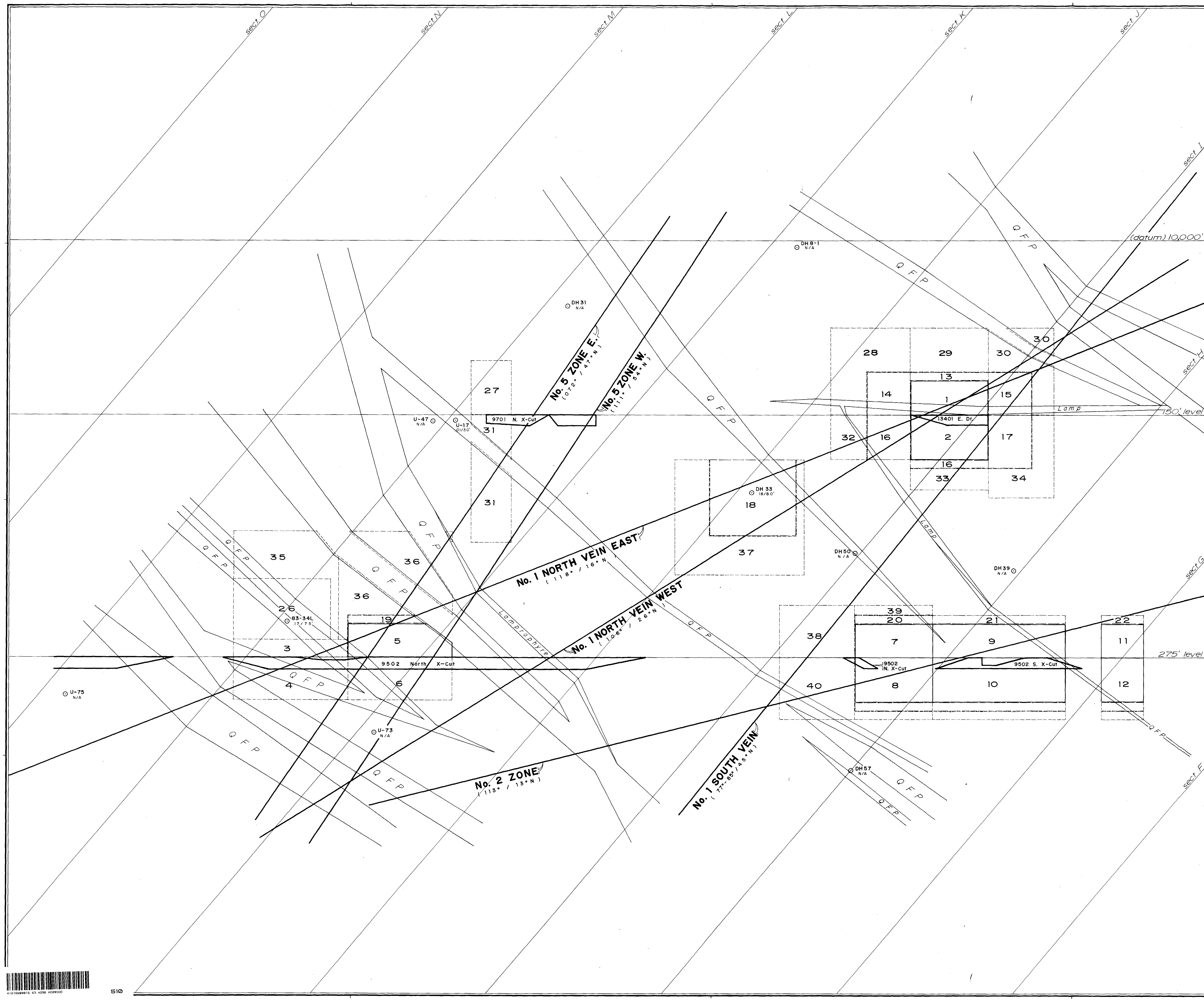
#63.4296

OROFINO RESOURCES LIMITED

OROFINO MINE PROJECT — No. 422
SILK and HORWOOD TOWNSHIPS, ONTARIO NTS 41 O/16

GEOLOGY and ORE BLOCKS
(275' LEVEL)

Work by:	Date:		Scale: 1:240 (1" = 20')
Drawn by: Rodel Ortiz	Date: Nov. 1983		Drawing No.



Legend :

- proven ore
- probable ore
- possible mineralization
- 23 — ore block number
- ddh penetration point
- E80-2 — drill hole number
- .28 / 3.2' — assay (oz per ton over lenght (ft))
- N/A — no assay
- N/S — not sampled
- adjacent ddh intersection
- QFP — quartz feldspar porphyry
- Lamp — lamprophyre
- fault

SCALE 1 : 240

FEET 25 0 25 50 FEET

METRES 10 0 10 METRES

#63.4296

OROFINO RESOURCES LIMITED

OROFINO MINE PROJECT — No. 422
SILK and HORWOOD TOWNSHIPS, ONTARIO NTS 41 O / 16

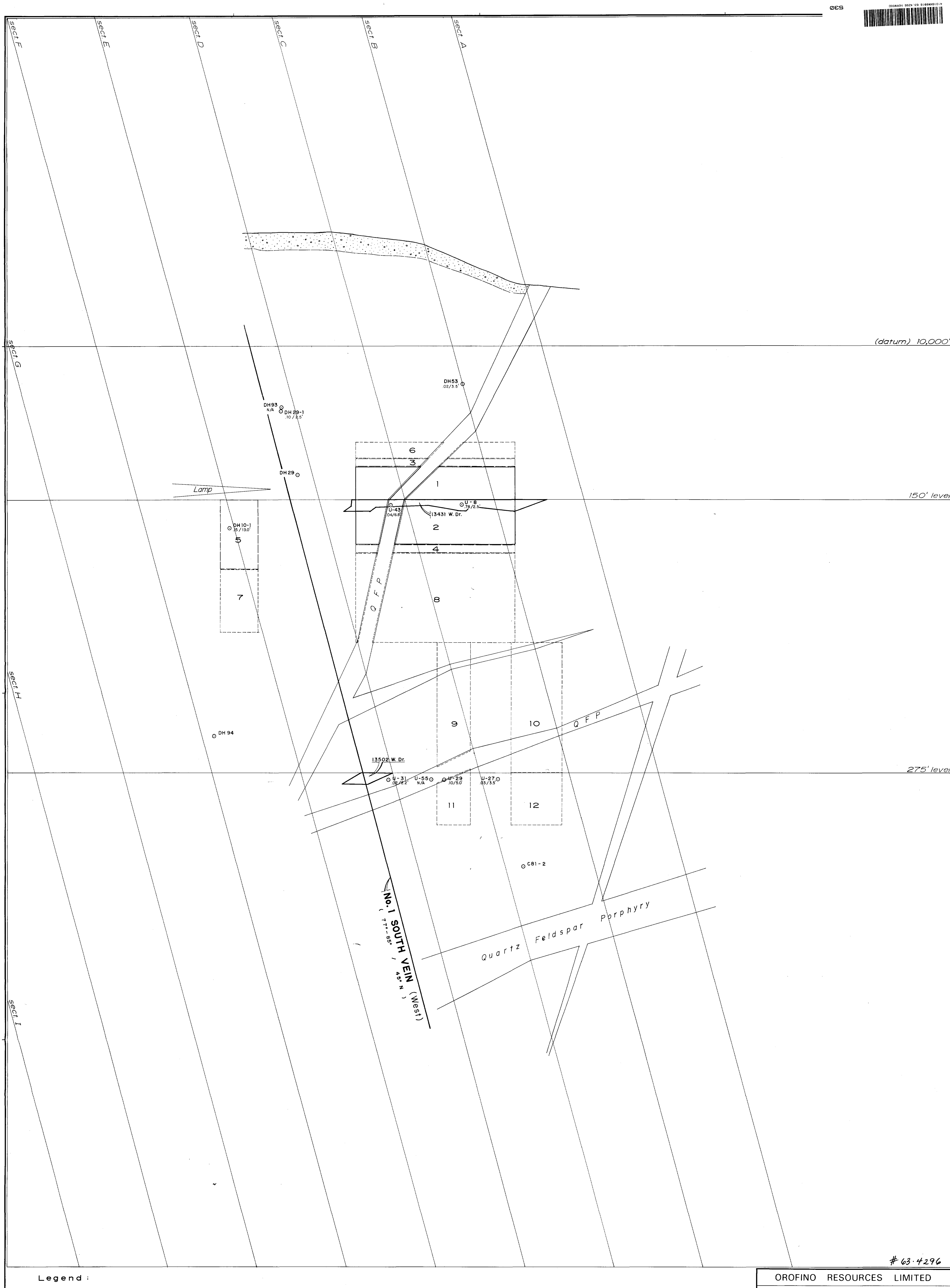
LONGITUDINAL SECTION — 020° / 62°W

FAULT ZONE

Work by: G Harper, F. Manns, T. Atkins — Date: March '84		Scale: 1:240 (1" = 20')
Drawn by: Rodel Ortiz — Date: March '84		Drawing No.

510

#63-4296
OROFINO RESOURCES LIMITED
OROFINO MINE PROJECT — No. 422
SILK and HORWOOD TOWNSHIPS, ONTARIO NTS 41 O/16
LONGITUDINAL SECTION — 77°-85°/45°N
No.1 SOUTH VEIN
Work by G. Harper, F. Manns, T. Atkins March '84
Drawn by Rodel Ortiz March '84
Scale 1:240 (1" = 20')
SCALE 1:240
FEET 25 0 25 50 FEET
METRES 10 0 10 METRES
Legend:
proven ore
probable ore
possible mineralization
2 3 ore block number
ddh penetration point
E80-2 drill hole number
28/3.2' assay (oz. per ton over lenght (ft))
N/A no assay
N/S not sampled
adjacent ddh intersection
QFP quartz feldspar porphyry
Lamp lamprophyre
fault
sect. N
sect. M
sect. L
sect. K
sect. J
sect. I
sect. H
sect. G
sect. F
sect. E
sect. D
sect. C
sect. B
sect. A
overburden
(datum) 10,000'
Quartz Feldspar Porphyry
Lamprophyre
QFP
Lamp
13401 E. DRIFT
13401 W. DRIFT
9501 S. X-CUT
9732 E. DR
13582 E. DRIFT
13502 W. DRIFT
SHAFT
STUB RSE 1
STUB RSE 2
DH53 .01/8.5'
DH29-1
DH93 .07/4.0'
DH29 .04/11.1'
DH10-1 .20/2.3'
DH7-1 .13/8.0'
DH37-2 .64/4.0'
DH39 .11/13'
DH26 N/A
DH94 .14/10'
DH8 .10/16.5'
DH50
DH33 .14/3.0'
DH31
U-27
U-28 Y/W
.03/3.5'
U-30
C81-2 Tr/20' (H/W Upper Vn.)
C81-2 Tr/9.7' (Lower Vn.)
C81-2 .003/3' (F/W to Lower Vn.)
E81-13 below grade
U-65
I83-22E .24/4.1'
D80-3 .25/6.0'
D80-3 .05/1.0'
520



63·4296

Legend :

proven ore
probable ore
possible mineralization
2 3 ore block number

E80-2 — drill hole number
.28/3.2' — assay (oz. per ton over lenght (ft.))
ddh penetration point
N/A — no assay
N/S — not sampled

QFP quartz feldspar porphyry
Lamp lamprophyre
fault

SCALE 1 : 240

FEET 25 0 25 50 FEET
METRES 10 0 10 METRES

OROFINO RESOURCES LIMITED

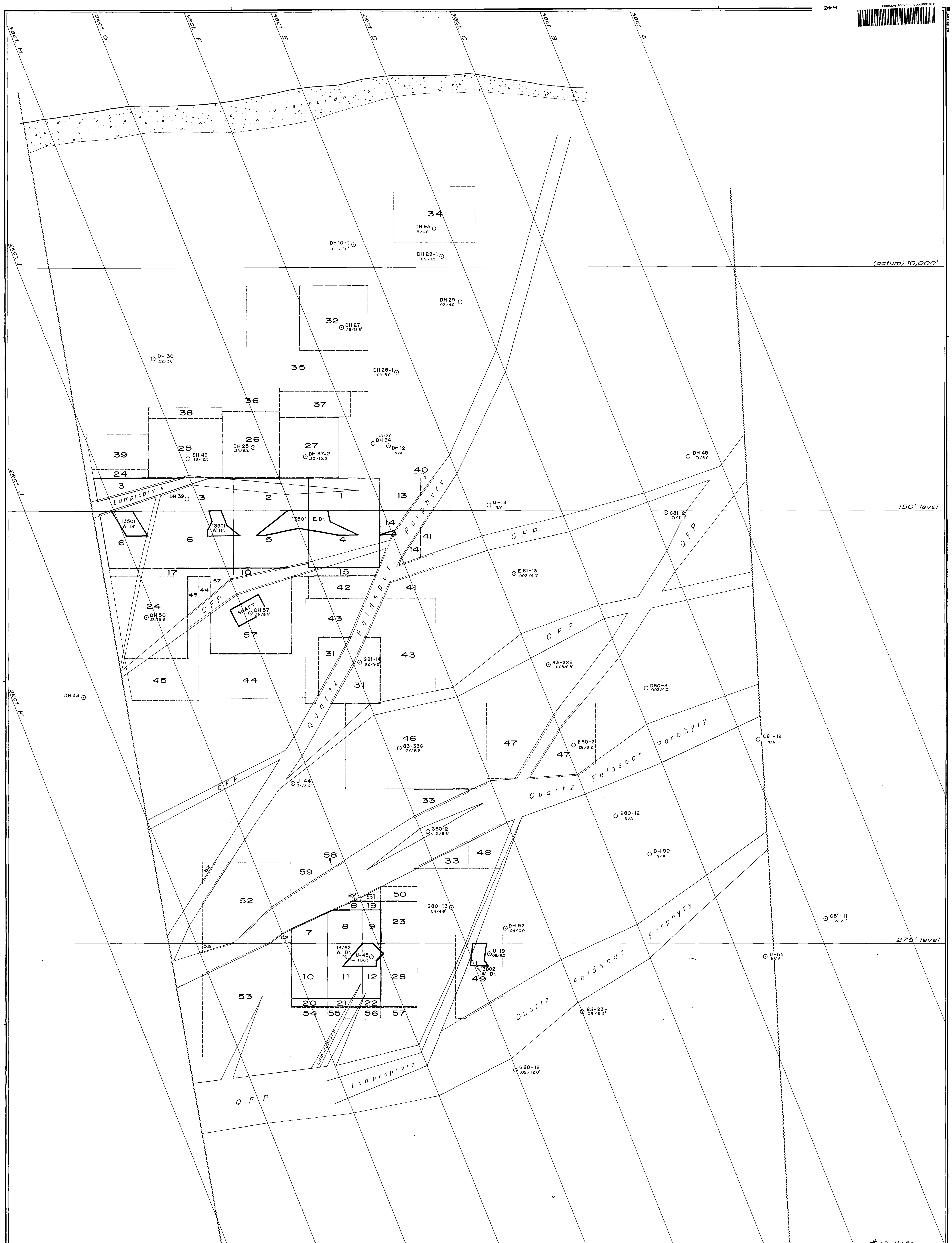
OROFINO MINE PROJECT — No. 422
SILK and HORWOOD TOWNSHIPS, ONTARIO NTS 41 O/16

LONGITUDINAL SECTION — 103° / 47°N

No. 1 SOUTH VEIN

(Upper Split)

WORK BY: G. Harper, F. Manns, T. Atkins DATE: March '84		SCALE: 1 : 240 (1"= 20')
DRAWN BY: Rodel Ortiz DATE: March '84		DRAWING NO.



63-4296

Legend:

- proven ore
- probable ore
- possible mineralization
- 23 — ore block number

- ddh penetration point
- E80-2 — drill hole number
- .28/3.2' — assay (oz. per ton over lenght(ft))
- N/A — no assay

- QFP — quartz feldspar porphyry
- Lamp — lamprophyre
- fault

SCALE 1 : 240

FEET 25 0 25 50 FEET

METRES 10 0 10 METRES

OROFINO RESOURCES LIMITED

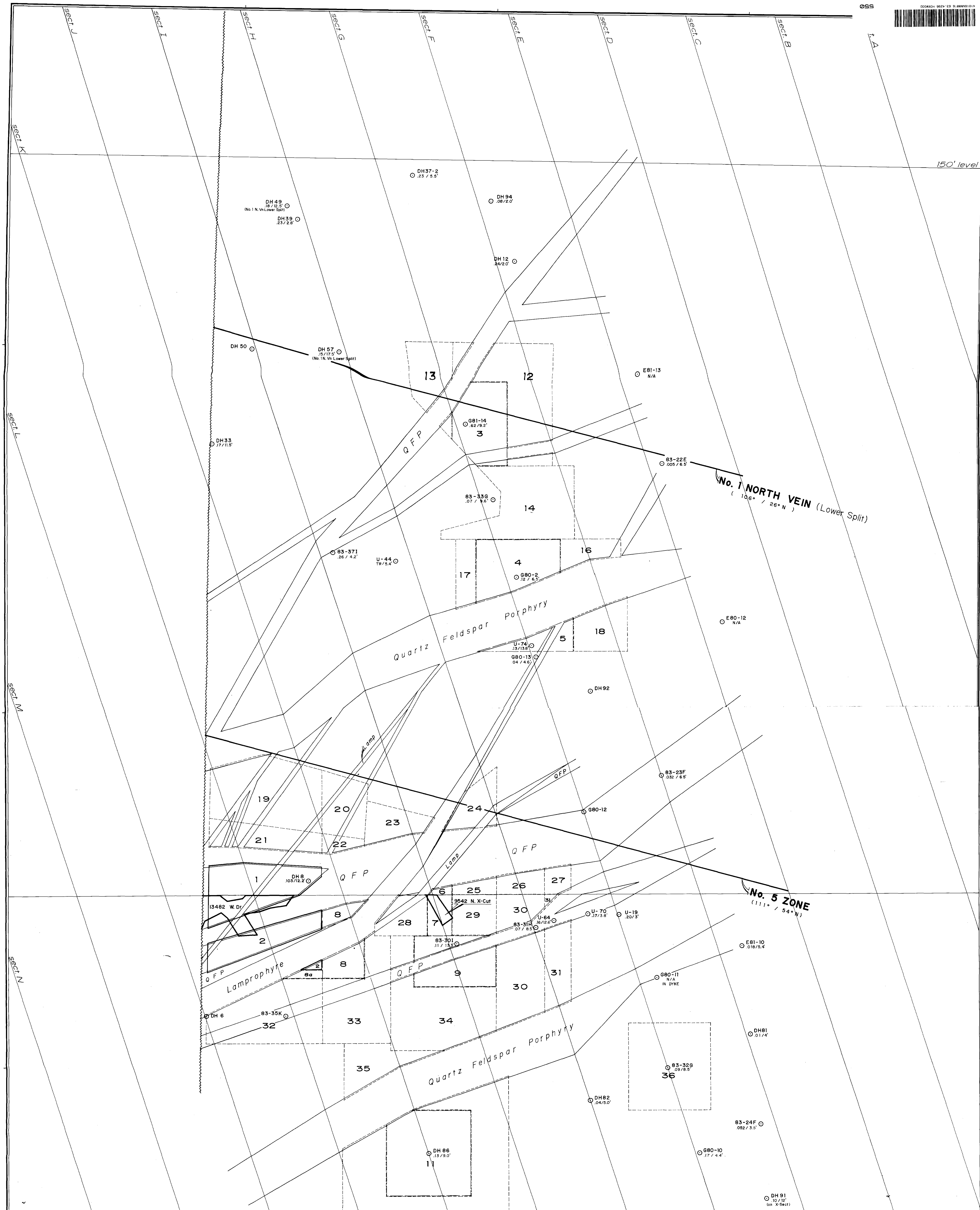
OROFINO MINE PROJECT — No. 422
SILK and HORWOOD TOWNSHIPS, ONTARIO NTS 41 O/16

LONGITUDINAL SECTION — 106° / 26°N

No. 1 NORTH VEIN

(West Lower Split)

WORK BY: G. Harper, F. Manns, T. Atkins	DATE: March '84		SCALE: 1: 240 (1" = 20')
DRAWN BY: Rodel Ortiz	DATE: March '84		DRAWING NO.



#63-4296

Legend :

(solid box)	proven ore
(dashed box)	probable ore
(dotted box)	possible mineralization
23	ore block number
⊙	ddh penetration point
E80-2	drill hole number
.28/3.2'	assay (oz. per ton over lenght (ft))
N/A	no assay
N/S	not sampled
QFP	quartz feldspar porphyry
Lamp	lamprophyre
(wavy line)	fault

SCALE 1:240

FEET 25 0 25 50 FEET

METRES 10 0 10 METRES

OROFINO RESOURCES LIMITED

OROFINO MINE PROJECT — No. 422

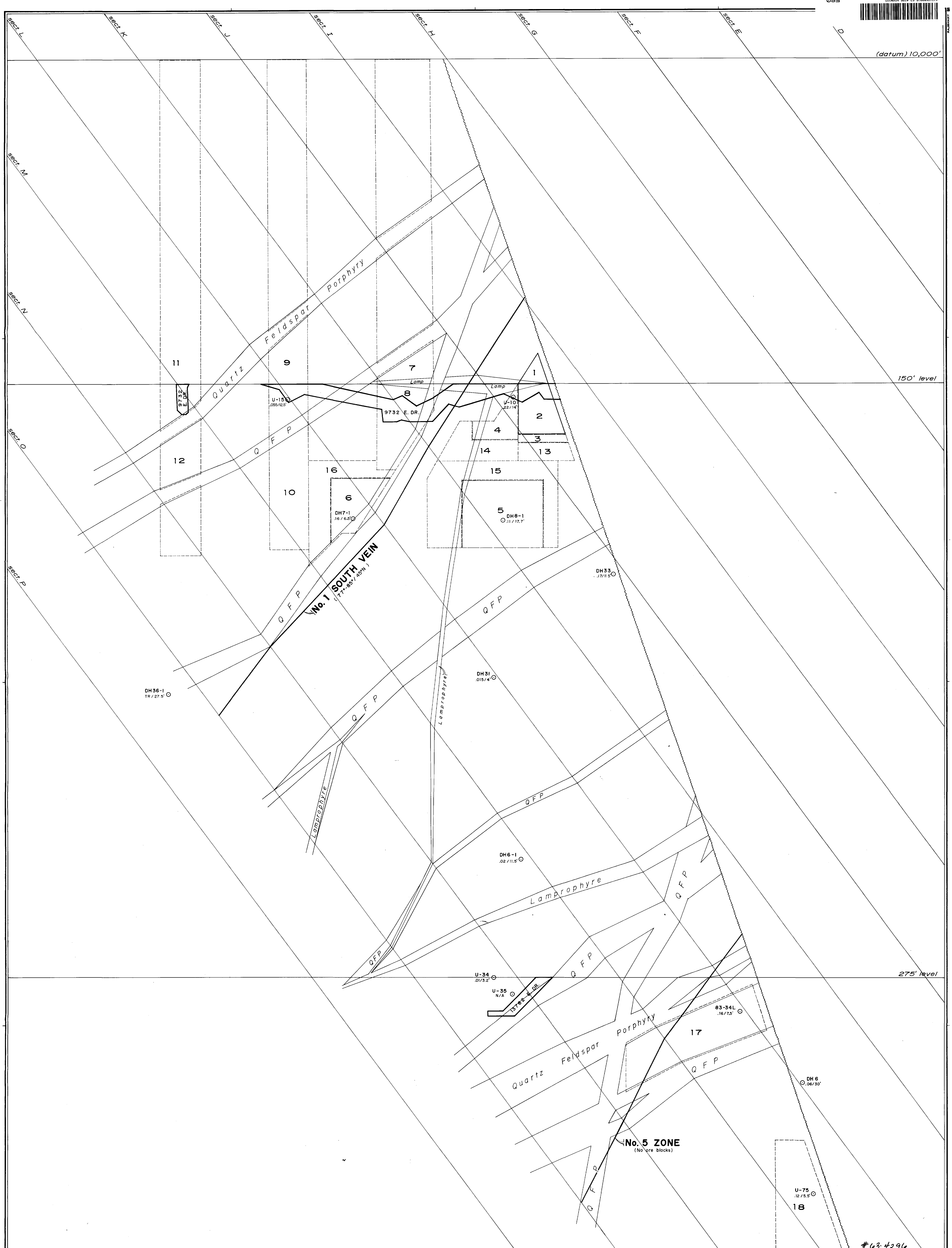
SILK and HORWOOD TOWNSHIPS, ONTARIO NTS 41 O/16

LONGITUDINAL SECTION — 100° / 16°N

No. 1 NORTH VEIN

(Upper Split)

WORK BY:	DATE:		SCALE:
G. Harper, F. Manns, T. Atkins	March '84		1:240 (1"=20')
DRAWN BY: Rodel Ortiz	DATE: March '84		DRAWING NO.



Legend:

(solid box)	proven ore
(dashed box)	probable ore
(dashed box)	possible mineralization
23	ore block number
⊙	ddh penetration point
E80-2	drill hole number
.28/3.2'	assay (oz. per ton over lenght (ft))
N/A	no assay
QFP	quartz feldspar porphyry
Lamp	lamprophyre
(wavy line)	fault

SCALE 1:240

FEET 25 0 25 50 FEET

METRES 10 0 10 METRES

OROFINO RESOURCES LIMITED

OROFINO MINE PROJECT — No. 422

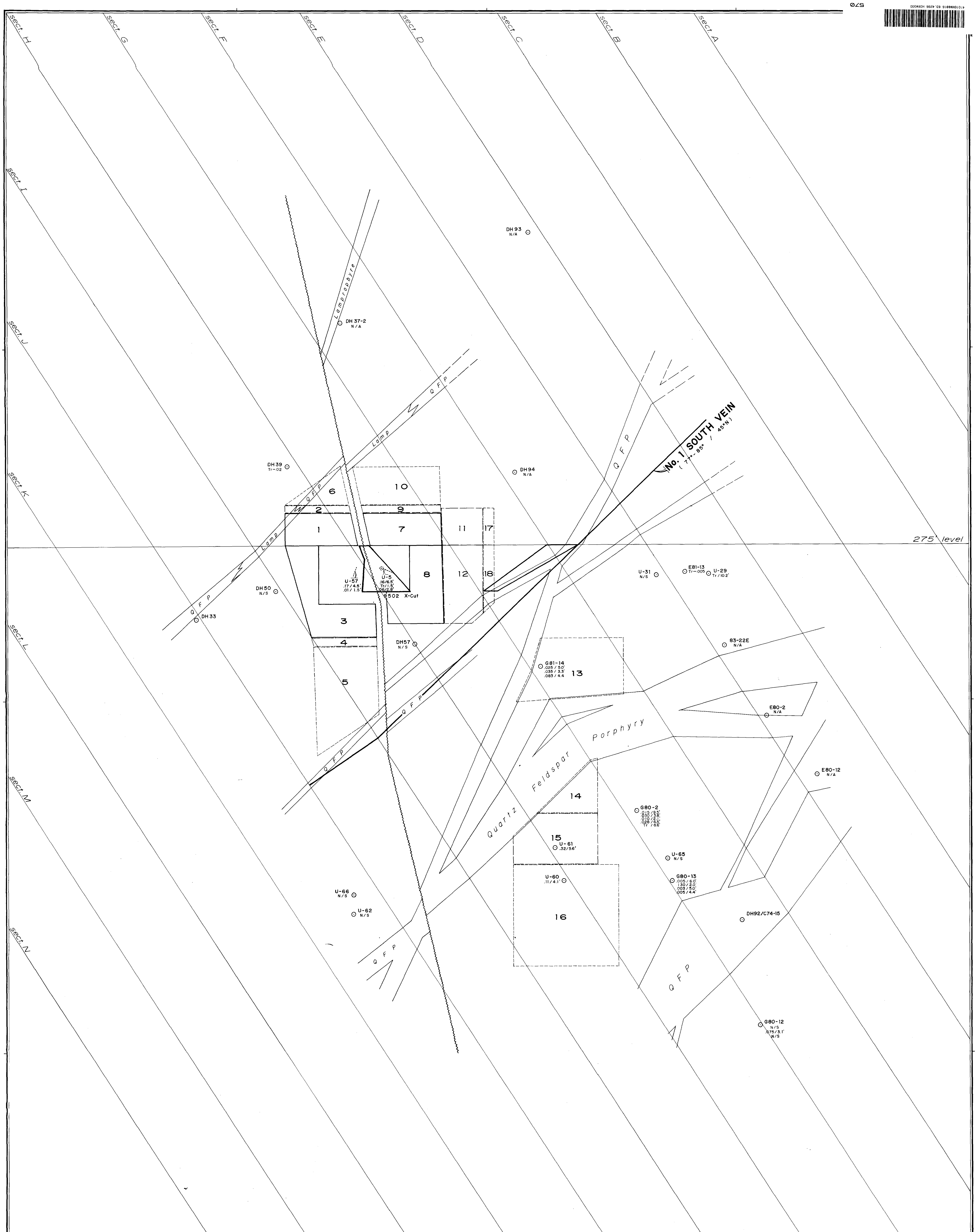
SILK and HORWOOD TOWNSHIPS, ONTARIO NTS 41 O/16

LONGITUDINAL SECTION — 118° / 16°N

No. 1 NORTH VEIN

(East)

WORK BY: G. Harper, F. Manns, T. Atkins	DATE: March '84		SCALE: 1:240 (1" = 20')
DRAWN BY: Rodel Ortiz	DATE: March '84		DRAWING NO.



63-4296

Legend:

- proven ore
- probable ore
- possible mineralization
- 23 ore block number
- ddh penetration point
- E80-2 drill hole number
- .28/3.2' assay (oz. per ton over lenght (ft))
- N/A no assay
- N/S not sampled
- QFP quartz feldspar porphyry
- Lamp lamprophyre
- fault

SCALE 1:240

FEET 25 0 25 50 FEET

METRES 10 0 10 METRES

OROFINO RESOURCES LIMITED

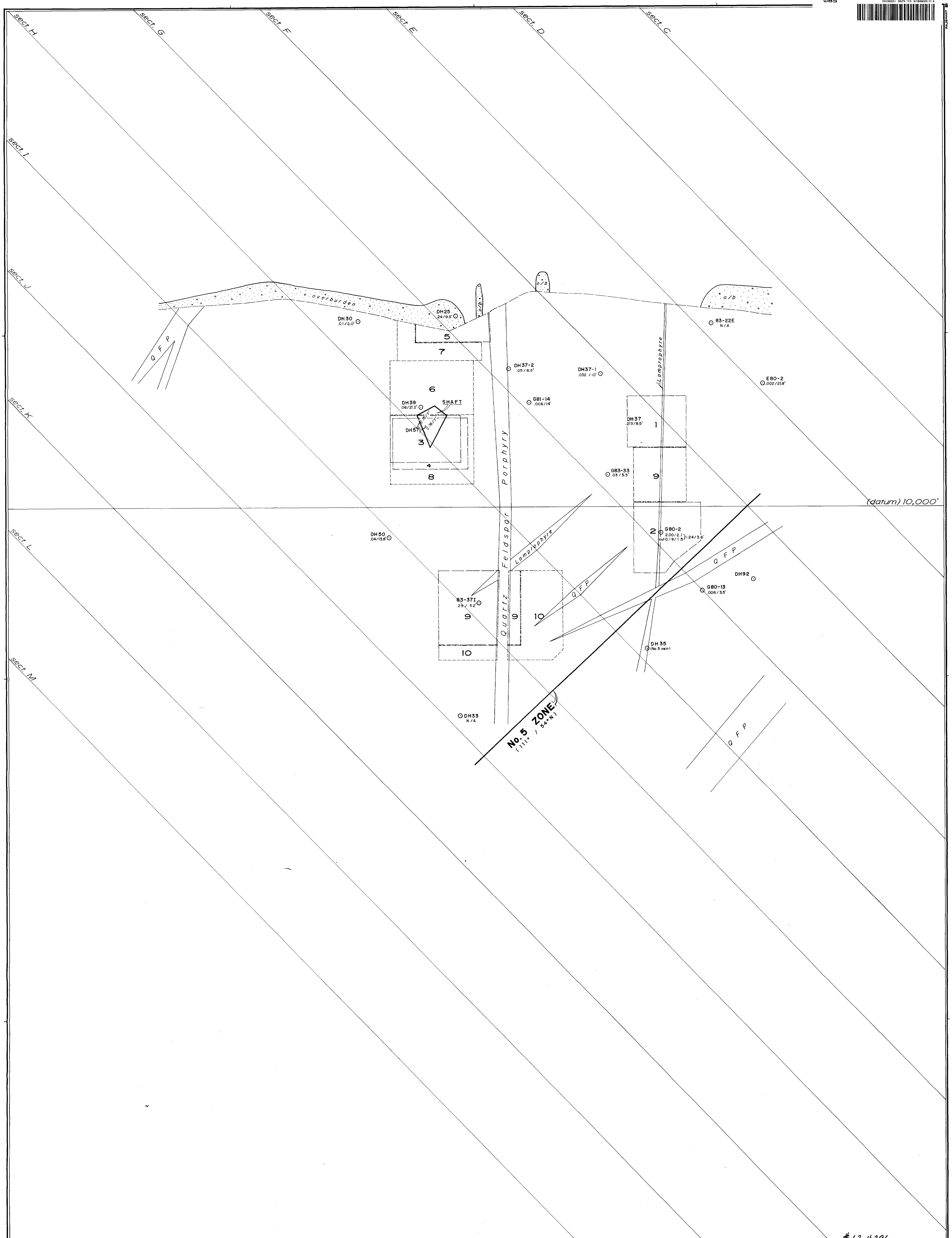
OROFINO MINE PROJECT — No. 422

SILK and HORWOOD TOWNSHIPS, ONTARIO NTS 41 O/16

LONGITUDINAL SECTION — 113° / 13°N

No. 2 ZONE

WORK BY: G. Harper, F. Manns, T. Atkins	DATE: March '84		SCALE: 1:240 (1" = 20')
DRAWN BY: Rodel Ortiz	DATE: March '84		DRAWING NO.



Legend:

(solid box)	proven ore
(dashed box)	probable ore
(long-dashed box)	possible mineralization
2 3	ore block number
⊙	ddh penetration point
E80-2	drill hole number
.28/3.2'	assay (oz. per ton over lenght(ft))
N/A	no assay
QFP	quartz feldspar porphyry
Lamp	lamprophyre
~~	fault

SCALE 1:240

FEET 25 0 25 50 FEET

METRES 10 0 10 METRES

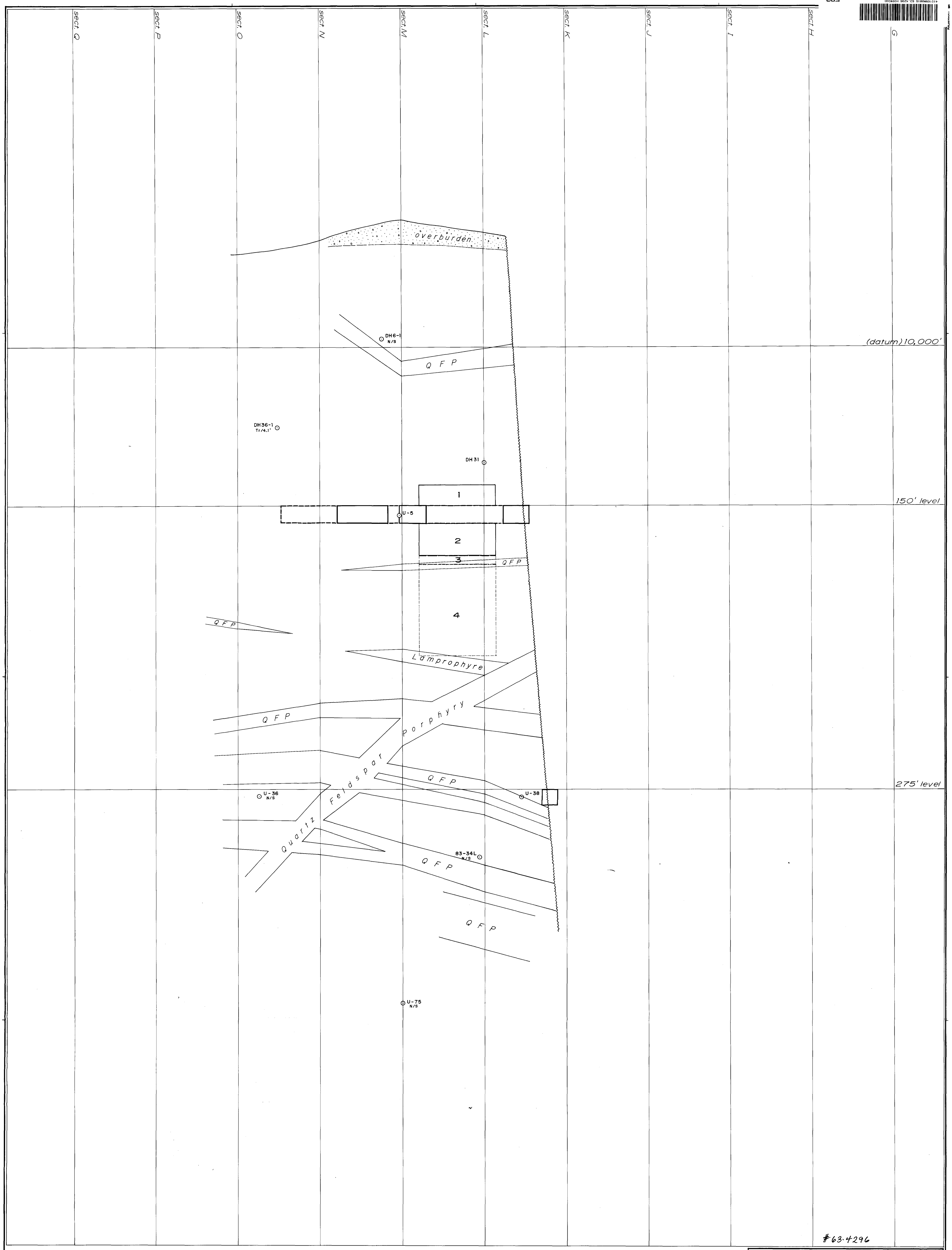
OROFINO RESOURCES LIMITED

OROFINO MINE PROJECT — No. 422
SILK and HORWOOD TOWNSHIPS, ONTARIO NTS 41 O/16

LONGITUDINAL SECTION — 131° / 21°N

No. 3 ZONE
(Shaft Zone)

WORK BY:	DATE:		SCALE:
G. Harper, F. Manns, T. Atkins	March '84		1:240 (1" = 20')
DRAWN BY: Rodel Ortiz	DATE: March '84		DRAWING NO.



#63·4296

Legend :

- proven ore
- probable ore
- possible mineralization
- 2 3 — ore block number

- ddh penetration point
- E80-2 — drill hole number
- .28/3.2' — assay (oz. per ton over lenght (ft))
- N/A — no assay
- N/S — not sampled

- QFP — quartz feldspar porphyry
- Lamp — lamprophyre
- fault

SCALE 1:240

FEET 25 0 25 50 FEET

METRES 10 0 10 METRES

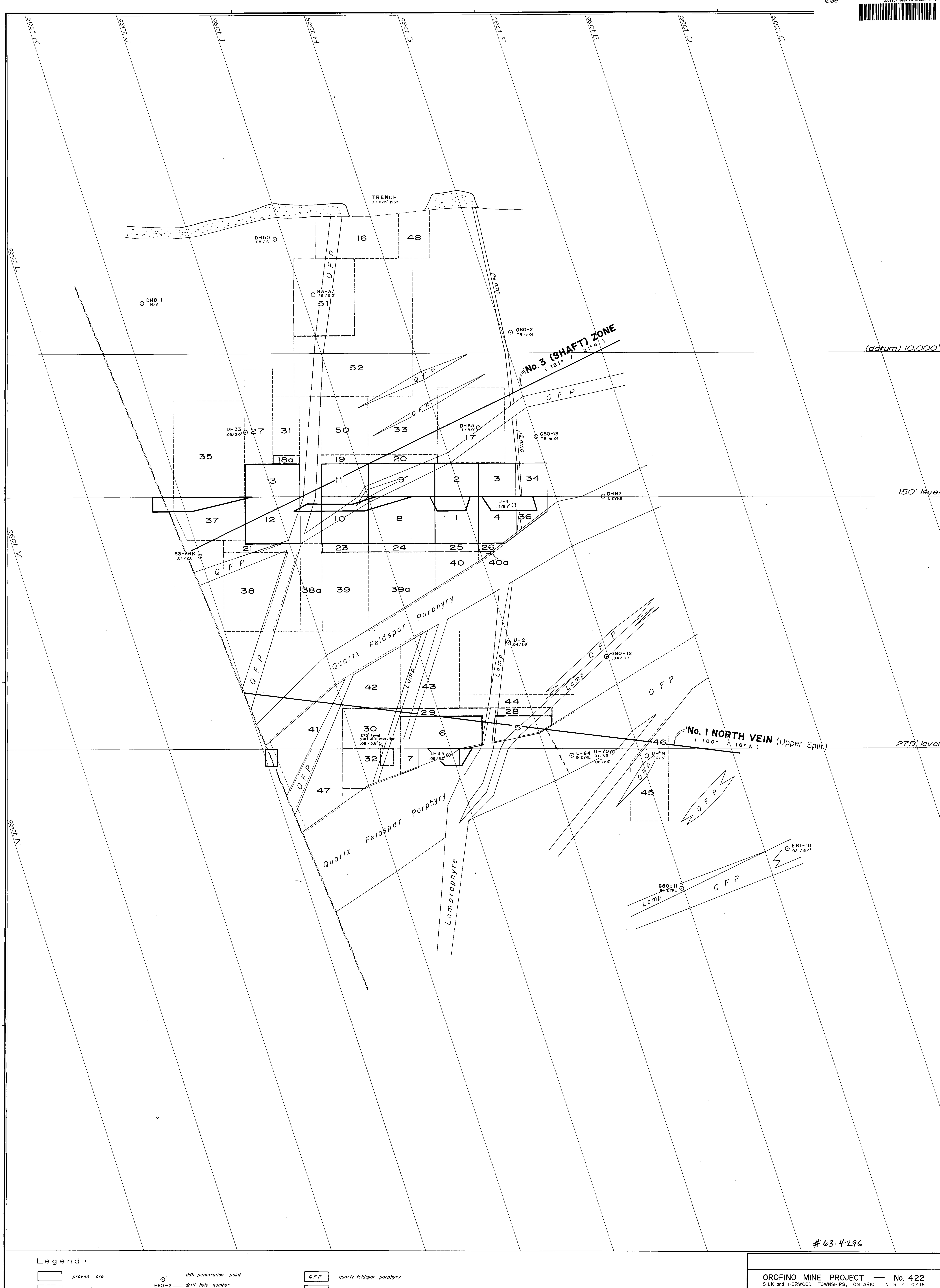
OROFINO RESOURCES LIMITED

OROFINO MINE PROJECT — No. 422
SILK and HORWOOD TOWNSHIPS, ONTARIO NTS 41 O/16

LONGITUDINAL SECTION — 072° / 47°N

No. 5 ZONE
(East)

WORK BY: G. Harper, F. Manns, T. Atkins	DATE: March '84		SCALE: 1:240 (1"=20')
DRAWN BY: Rodel Ortiz	DATE: March '84		DRAWING NO.



Legend:

(solid box)	proven ore
(dashed box)	probable ore
(dashed box)	possible mineralization
23	ore block number
⊙	ddh penetration point
E80-2	drill hole number
.28/3.2'	assay (oz. per ton over lenght (ft))
N/A	no assay
N/S	not sampled
QFP	quartz feldspar porphyry
Lamp	lamprophyre
(wavy line)	fault

SCALE 1:240

FEET 25 0 25 50 FEET

METRES 10 0 10 METRES

OROFINO MINE PROJECT — No. 422

SILK and HORWOOD TOWNSHIPS, ONTARIO NTS 41 O/16

LONGITUDINAL SECTION — 111° / 54°N

No. 5 ZONE

(West)

WORK BY: G. Harper, F. Manns, T. Atkins	DATE: March '84	SCALE: 1:240 (1"=20')
DRAWN BY: Rodel Ortiz	DATE: March '84	DRAWING NO.

OROFINO RESOURCES LIMITED

OROFINO MINE PROJECT — No. 422
SILK and HORWOOD TOWNSHIPS, ONTARIO NTS 41 O/16

ASSAY PLAN

#63.4296 (150' LEVEL)

Drawn by Rodel Ortiz

Scale 1:240 (1" = 20')

610

LEGEND

83-371 — surface ddh intersection at level

— underground drill hole

— assayed section

U-23

rib sampling loc. before slashing

survey station

32/2.5 — assay result (oz/t over footage)

— breast sampling location

— rib sampling location

— back sampling location

— muck sampling location

12(24) — muck (number of car loads)

SCALE 1:240

FEET 20 0 20 40 60 FEET

METRES 10 8 6 4 2 0 10 METRES

OROFINO RESOURCES LIMITED		
OROFINO MINE PROJECT — No. 422 SILK and HORWOOD TOWNSHIPS, ONTARIO NTS 41 O/16		
ASSAY PLAN		
#63.4296 (275' LEVEL)		
Work by: Date:		Scale: 1:240 (1" = 20')
Drawn by: Rodel Ortiz Date: Nov. 1983		Drawing No.

41O16NW9816 63.4296 HORWOOD

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