



## Occurrence Details

**Occurrence Number:** 1051 069

**Occurrence Name:** Pelly North

**Occurrence Type:** Hard-rock

**Status:** Deposit

**Date printed:** 6/16/2025 12:40:36 PM

## General Information

**Primary Commodities:** lead, zinc

**Aliases:** Selwyn, Howards Pass

**Deposit Type(s):** Sediment hosted Sedimentary Exhalative Zn-Pb-Ag (Sedex)

**Location(s):** 62°38'10" N - -129°47'11" W

**NTS Mapsheet(s):** 105I12

**Location Comments:** .5 Kilometres

**Hand Samples Available:** No

**Last Reviewed:**

### Capsule

#### Work History

Staked as Oro cl 1-40 (Y70595) in Nov/72 by Noranda Exploration Company Ltd following the announcement of a significant lead-zinc discovery by Canex Placer Ltd in the fall of 1972. Noranda carried out stream and soil sampling and geological mapping in the summer of 1973. The company added Buc cl 1-20 (Y73614), Mar cl 1-3 (Y73627) and Dar cl 1-4f (Y73630) in Jul/73 and Dar cl 5-7f (Y73957) in Aug/73. In Sep/73 Noranda tested a barite horizon 3 km to the south (Minfile Occurrence 1051 036) with 6 diamond drill holes (312.7m).

The area to the west was staked as Bev cl 1-104 (Y71747) in Dec/72 by Cominco Ltd which carried out geological mapping and geochemical sampling in 1973.

In Aug/75 the Ogilvie Joint Venture (Brinco Ltd, Mitsubishi Metal Corporation and Venture West Capital Ltd) staked Tang cl 3-4 (Y84533) and Tang cl 5-16 (Y84535), east and west respectively of the remaining 8 Oro claims (Oro claims 5-12) and carried out geological mapping later that year. In 1976 and 1977 the Joint Venture carried out additional geological mapping and geochemical sampling.

The northernmost Oro claims (including this occurrence) were restaked as OP cl 176-190 (YA00008) in Nov/75 by Canex Placer. The Bev group was partially restaked as She cl 1-2 (YA11300) in Oct/76 by Yukon Revenue Mines Ltd and Hudson Bay Exploration and Development Company Ltd staked Fast cl 1-30 (YA68856) 2.4 km to the southwest in Aug/82 and carried out geological mapping and geochemical sampling in 1983. Although records are sketchy it appears the last claims surrounding this occurrence expired by the end of 1984.

In May/2005 Pacifica Resources Ltd entered into a Letter of Intent to purchase a 100% interest in the neighbouring Howard's Pass property for the sum of \$10,000,000 spread over 7 years and a commitment to spend a minimum of \$3,500,000.00 in exploration expenditures. The agreement was signed between Pacifica and Placer Dome (CLA) a wholly owned subsidiary of Placer Dome Inc (51% owner) and Cygnus Mines Ltd (49% owner). Pacifica immediately staked 415 Selwyn claims in order to cover open ground in the Howard's Pass area, especially on the west end of the property. Selwyn cl 190-350 (YC28176) cover the area surrounding this occurrence and the Oro occurrence (Minfile Occurrence 1051 036) located 3 km to the south. The property agreement between Pacifica Resources and Placer Dome and Cygnus Mines was formally approved in Aug/2005.

Pacifica Resources drilled 53 diamond drill holes (8,286.9 m) on the Howard's Pass property in 2005. None of the holes were collared near this occurrence. Elsewhere on the property the company also carried out Dense Media Separation test work and regional mapping and soil sampling programs.

In Mar/2006 Barrick Gold Corporation acquired Placer Dome Inc. In May 2006 Barrick sold Placer Dome's 51% interest and other mines and exploration properties to Goldcorp Inc. In Jul/2006 Goldcorp sold Placer Dome's 51% interest in the Howard's Pass property to Terrane Metals Corp. During 2006 Pacifica completed 191 diamond drill holes (40,096.5 m). Seven holes (1,438.5m) targeted the Pelly North showing. The company also continued Dense Media Separation test work, geochemical sampling, commenced baseline environmental and engineering studies and surveyed all previous drill hole locations, roads and grids in order to digitize and compile all historical geological data.

In Jan/2007 Pacifica released a preliminary assessment report for the development of the Howard's Pass project. The assessment indicates excellent potential for a long life mine, having large-scale, low cost zinc and lead production. The company used the results to help plan future exploration and engineering work.

On January 29, 2007 Pacifica Resources announced a plan of re-organization in which the Howard's Pass project would be spun off to a new company, Selwyn Resources Ltd and the company's remaining properties would be transferred to a new company Savant Exploration Ltd. Pacifica shareholders received shares in Savant Exploration as compensation for the transfer of assets from Pacifica to Savant. The agreement was approved on May 31, 2007 and completed on June 6, 2007 at which time control of the Howard's Pass property, commonly referred to as the Selwyn Project was transferred to Selwyn Resources and the charter of Pacifica Resources was cancelled.

In 2007 Selwyn collared 106 diamond drill holes (37,208.6 m) on the Selwyn Project. None of the holes targeted this occurrence. The company continued environmental and engineering studies, opened a new camp in the Don Valley and closed the camp located near the XY central zone.

On Jan 29, 2008 Selwyn Resources announced an initial mineral resource estimate for the newly designated Pelly North zone. Selwyn collared 13 diamond drill holes (3,856.9 m) on the Howard's Pass property in 2008 and 10 diamond drill holes (4,214 m) in 2009. None of the holes targeted this occurrence.

In mid-2009 Selwyn opened discussions with various companies regarding the formation of a possible strategic partnership. The company announced in Dec/2009 that they had signed a binding Framework Agreement with Yunnan Chihong Zinc & Germanium Company Ltd (China), whereby both companies would form a joint venture company to hold all assets associated with the Selwyn project. In return for a 50% interest in the joint venture Yunnan Chihong deposited 100 million dollars in cash irrevocably to a bank account for the joint venture to use to fund development of the Selwyn project. As part of the agreement Yunnan Chihong agreed to fund all of Selwyn Resources direct costs incurred from July 1, 2009 on the Selwyn project.

On January 5, 2010 Selwyn Resources announced that they had engaged Wardrop Engineering Inc to start a Phase 1 work program leading to the completion of a National Instrument 43-101 compliant feasibility study on the Selwyn project. The company hopes to complete the study by the end of 2010.

On August 18, 2010 Selwyn announced the completion of the joint venture with Yunnan Chihong and the formation of a new company Selwyn Chihong Mining Ltd. Selwyn Resources transferred all Selwyn Project claims, equipment, permits and licenses to the new company. At the same time the joint management committee approved in principal a predevelopment budget of 89 million dollars for 2010 and 2011. The money will be directed to the advancement of permitting, completion of the feasibility study and related engineering and resource definition drilling various surface and underground deposits.

A September 2012 report by Kirkham Geosystems lists a global resource for the Selwyn Project,

#### Capsule Geology

The Selwyn project (Howard's Pass project) is located in eastern Yukon and straddles the Northwest Territories border, approximately 350 km northeast of Whitehorse, Yukon and approximately 80 km north-northwest of the former mining town of Tungsten. Over ninety percent of the property lies in the Yukon. To date Selwyn Resources Ltd has identified 15 lead-zinc deposits over a strike length of 37.5 km.

The Selwyn Basin is a region of deep-water offshore sedimentation that persisted from Late Precambrian to Middle Devonian time. Its basal deposits consist of late Precambrian rift (-) clastics; it is overlain by rift clastics of late Devonian age. On its north-eastern side are time-equivalent shallow shelf strata of Mackenzie Platform. Along its southwestern margin there developed in the Silurian to Devonian a carbonate-clastic shelf the Cassiar Platform. Its southwestern limit is essentially the limit of the miogeocline as presently preserved in the Yukon.

Geological mapping in the Howard's Pass area has changed significantly since Pacifica/Selwyn Resources Ltd has acquired control of the entire area. Based on various reports released by the companies stratigraphy in the Howard's Pass area can be summarized as follows. Regionally, Selwyn Basin stratigraphy overlies a basement of Upper Proterozoic to Lower Cambrian maroon to dark blue-grey weathering shale assigned to the Narchilla Formation of the Hyland Group. This unit is conformably overlain by the Upper Cambrian to Lower Ordovician Rabbitkettle Formation. The Rabbitkettle Formation is comprised of an Upper member consisting of grey weathering fine crystalline nodular limestone and a Lower member consisting of grey orange weathering, argillaceous to silty limestones usually limited to beds of less than 10 cm.

Pacifica/Selwyn Resources report the presence of a Transition Formation between the Rabbitkettle Formation and the overlying Duo Formation. This unit identified in drill core, consists of thin interaminations of grey limestone and buff coloured shale, generally well cleaved.

The Transition Formation is overlain by the Ordovician to Middle Silurian Road River Group which is divided into the Duo Lake and Steel Formations. Various operators working in the area have locally renamed the Duo Formation the Howard's Pass Formation and have subdivided it into various units. Currently Pacifica/Selwyn Resources have divided the Duo Formation into five member units measuring 300 m thick. The lowest member is a pyritic siliceous shale member, which is overlain by a calcareous mudstone member and a lower cherty mudstone member. These members are overlain by the Active member, a heterogeneous mudstone, limestone, chert that hosts the region's abundant sulphide mineralization in lamella within a poorly preserved graptolite horizon. An upper siliceous mudstone member tops the formation. The Steel Formation which measures approximately 140 m thick and consisting of a flaggy mudstone containing orange weathered siliceous argillite in beds 10-80 cm thick overlies the Howard's Pass Formation.

The Road River Group is overlain by the Lower to Upper Devonian Portrait Lake Formation of the Lower Earn Group. The Portrait Lake Formation comprises a Lower, Middle and Upper member. The Lower Member consists of a dark brown weathering, silty shale and shale in beds up to 420 m thick. The Middle member consists of a black weathering, massive pebble conglomerate up to 195 m thick and the Upper Member consists of a gun-blue weathering black platy siltstone up to 260 m thick.

The Portrait Lake Formation is overlain by the Upper Devonian to Middle Mississippian Prevost Formation of the Upper Earn Group. It also divided into Lower, Middle and Upper members. The Lower member consists of a grey weathering, dark grey, medium to coarse-grained chert-quartz sandstone up to 160 m thick. The Middle member consists of brown weathering, dark grey, thin bedded shale and siltstone measuring up to 90 m thick and an Upper member consisting of coarse-grained, poorly sorted, chert-quartz sandstone and conglomerate in beds up to 300 m thick. The entire sequence is intruded by various Middle to Late Cretaceous stocks and batholiths ranging in composition from intermediate to granitic assigned to the Selwyn plutonic suite.

Historical drilling and geological mapping carried out by Placer Development suggested that the XY and Anniv (Minfile Occurrences 105I 012 & 037) sedimentary-exhalative deposits occurred in separate sub-basins along the base of a paleo-slope of the eastern Selwyn Basin. New geological mapping and diamond drilling carried by Pacifica/Selwyn Resources indicates the lead-zinc mineralization hosted by the Selwyn project (Howard's Pass property) was part of a long-lived, single mineralizing event. As proof of this theory the companies report that the sulphide textures, mineralogy and thickness are similar in each of the 15 deposits identified to date. The hydrothermal fluids that formed the different deposits are also isotopically identical throughout the property. The companies believe the strataform and tabular Active Member was affected by post-depositional structural deformation. At least two generations of brittle faults offset the tabular geometry of the Active Member within the Don Valley (located to the west of this occurrence) which likely accounts for the thickening and thinning of the Active Member across the property. Understanding the timing of the faults with respect to each other will aid future exploration programs in locating extensions of the known deposits and locating new resources.

Zinc and lead mineralization at the Selwyn project is hosted in the Active Member and consists of alternating layers of carbonaceous mudstone, limestone and chert, interlayered with stratobound laminated sulphide rich bands. The sulphides are fine grained and dominantly sphalerite and galena with minor pyrite. The mineralized horizon is generally 20 to 30 m thick and is texturally and mineralogically consistent throughout the property.

Ongoing metallurgical test work has confirmed that high-grade zinc and lead concentrate can be achieved. These concentrates have low levels of deleterious elements. Floatation test work indicates that a zinc concentrate grading 55 to 50% can be produced with an overall recovery of about 80% and a lead concentrate grading 65 to 70% lead with a recovery of approximately 70%. The ore will require fine grinding and floatation processing which will include the removal of carbon prior to producing high grade concentrates. Test work completed to date on the application of dense media separation indicates that simple gravity processing could provide an effective means of upgrading run-of-mine ores.

This occurrence (Pelly North zone) is located at the western end of the property approximately 37 km west of the Yukon – Northwest Territories border. Previous exploration in the area appears to have been focused on the Oro occurrence (Minfile Occurrence 105I 036) located approximately 3 km to the south. Noranda discovered a thinly bedded barite horizon, 1,100 m long, 15 to 50 m wide and up to 50 m thick at the base of the Lower to Upper Devonian Portrait Lake Formation. Diamond drilling returned numerous 3 m intersections grading up to 88.52% barium sulphate (BaSO<sub>4</sub>) but only trace amounts of zinc and lead. Canex Placer extended the OP claims over the northern half of this area but it appears they only carried out basic exploration work before dropping those claims located on the west side of the Pelly River. The Ogilvie Joint Venture was successful in extending the barite horizon northwest onto their Tang claims but were unable to located any significant zinc-lead mineralization.

Pacifica Resources carried out geological mapping and soil and silt sampling program in 2005 in order to identify potential drill targets. In 2006 the company tested various zinc-lead geochemical anomalies with a fence of 7 diamond drill holes (1,438.5m) spaced over a distance of 2.07 km. Three of the holes intersected the Active Member with the best hole (PLN-007) intersecting 10.65 m grading 2.9% zinc and 3.51% lead. The occurrence location marks the approximate center point of this zone. The area did not see follow-up drilling as the company concentrated their efforts on higher grade deposits located to the east.

In Jan/2008 Selwyn Resources calculated that the Pelly North zone hosts an inferred mineral resource of 6,850,000 tonnes grading 3.20% zinc and 0.90% lead. The company reports that the Pelly North zone remains open for expansion with further drilling.

As of Sep/2010 the entire Howard's Pass property (consisting of 15 individual deposits) hosts an indicated resource (using a 2% zinc cut-off) of 154,350,000 tonnes grading 5.35% zinc and 1.86% lead and an inferred resource of 234,150,000 tonnes grading 4.54% zinc and 1.41% lead.

A September 2012 report by Kirkham Geosystems lists a global resource for the Selwyn Project, which includes the 2008 estimate for the Pelly North deposit. At a 2% Zn cut-off grade, the Global INDICATED Mineral Resource for the Selwyn Project is calculated at 185,570,000 tonnes grading 5.2% Zn and 1.79% Pb for a contained total of 21.26B lbs (9.64B kg) Zn and 7.3Blbs (3.3B kg) Pb. The Global INFERRED resource is listed at 237,860,000 tonnes grading 4.47% Zn and 1.38% Pb for a contained total of 23.45B lbs(10.63B kg) Zn and 7.22Blbs (3.27B kg) Pb.

## Work History

