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Plato Gold Corp. Good Hope Niobium Property

Assessment Work Report Detailed Diamond Drill Core Sampling July 25, 2021 to September 4, 2021

MARATHON AREA NORTHWESTERN ONTARIO, CANADA

NTS 42E/02B, C, G Killala Lake, Cairngorm Lake, Foxtrap Lake Areas

For
Plato Gold Corp.
1240 Bay Street, Suite 800
Toronto, Ontario M5R 2A7



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July 22, 2023

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1.0 SUMMARY

Superior Rift Geoconsulting Inc. was contracted by Plato Gold Corp. of Toronto, Ontario, to carry out a detailed drill core sampling program related to the Good Hope Niobium Property. Sampling was conducted between July 25th and September 4, 2021, at a location immediately outside of the City of Thunder Bay where the drill core has been stored. The Good Hope Property consists of 254 contiguous unpatented mining cell and boundary claims, located approximately 45 km northwest of the town of Marathon, Ontario (Figures 1 and 2). The property lies within the Killala, Cairngorm and Foxtrap Lake Areas north of Lake Superior.

Plato Gold Corp. completed a 5016 m, 12-hole, diamond drilling program on the Good Hope Niobium Property between March and June of 2018 in the northwest quadrant of the claim group (Site 28 area). Holes targeted known surface mineralization (from previous pitting and trenching) at depth, a well-defined radiometric anomaly, and the swampy region which curves around the west half of the radiometric anomaly. In 2010, prospector and property vendor, Rudy Wahl, had collected a sample from the area assaying 1.63% Nb₂O₅.

All holes intersected zones of massive carbonatite within a brecciated system consisting of variably fenitized alkalic rocks (syenite to alkali feldspar granite) intruded by carbonatite dykes and crosscutting carbonatite veins. The drilling encompassed an area of approximately 500 m by 500 m with all holes drilled in a northwesterly direction. The nine completed drill holes ranged in length from 372 m to 672 m, testing the area to a vertical depth of between 285 m and 580 m (Giroux 2018). The 2018 diamond drilling program and recently (2021) completed High-Resolution Airborne Magnetic and Radiometric geophysical survey, indicate the potential size of the niobium-rich zone to be at least 500 sq m in area with a confirmed depth of 500 m. The geophysical survey data also confirmed the Good Hope Niobium occurrences represent a discrete intrusion distinct from Nuinsco Resources Limited's Prairie Lake Carbonatite complex located to the southeast and contiguous with Plato Gold's property.

In 2021 (July 25 to September 4) a total of 2,314 one-meter (approximately) samples were collected from the remaining drill core not sampled during the 2018 drilling program (representing 60% of the total core extracted) and included all nine holes. Sampling during the 2018 program covered only 40% of the total core recovered. The complex nature of the niobium mineralization made it difficult to identify during the original logging or mapping of the drill core in 2018. Additional research since this time strongly indicated the presence of niobium to be much more extensive than previously recognized and was the reason for initiating the 2021 sampling program.

Results from the 2018 and 2021 drill core sampling programs identified numerous niobium-rich sections including 0.307% Nb₂O₅ over 32 m and 0.405% Nb₂O₅ over 10.67 m (Table 2). Significant grab sample results from exploration trenching

conducted between 2010 and 2015, ranged from 1.47% Nb₂O₅ to 2.11% Nb₂O₅. Radiometric data from the recent (2021) airborne geophysical survey and geochemical results from diamond drill core, indicates anomalous potassium contents, low to non-existent thorium and uranium mineralization and a high gamma-ray signature specific to the area of the Good Hope niobium-rich main zone.

2.0 INTRODUCTION

Niobium is on the ‘technology-critical elements’ list in the U.S., the E.U. and Canada. In addition to its common uses in the steel industry and as a superconducting alloy, it is now used in emerging clean energy production as a component in electric vehicle (EV) batteries to add stability, increased capacity and faster charging. The rapidly increasing demand for EV batteries will only enhance the value of niobium and its specialty uses.

In 2021 Plato Gold conducted Ultraviolet (UV) scans of the 2018 diamond drill core to assess the extent of niobium mineralization in unsampled drill core sections. Ultraviolet scans are particularly useful in the evaluation of this carbonatite as the apatite associated with the pyrochlore exhibits a very strong blue photoluminescence. This work indicated much higher amounts of niobium-rich pyrochlore than were previously recognized. As a result, the company initiated an extensive resampling program across all 12 drill holes which included 2,314 one-meter samples submitted for analysis to Activation Laboratories Ltd. in Thunder Bay, Ontario. Key assay results from this sampling program are listed in Table 2.

A staff of 3 people were used to conduct the 2021 sampling program; 2 technician assistants, Frederick Lowndes and Ryan Anderson, and the QP (Qualified Professional) geologist and author, Gerry White (P.Ge.). A diamond core saw was used to split the one-meter sections, which were carefully numbered, bagged and delivered to the Thunder Bay laboratory at regular intervals during the process. The program was initiated on July 25 and completed by September 4, 2021.

3.0 LOCATION AND INFRASTRUCTURE

The Good Hope Property consists of 254 contiguous unpatented mining cell and boundary claims (see claim list below), located approximately 45 km northwest of the town of Marathon, Ontario along the north shore of Lake Superior (Figures 1 and 2). The niobium-rich zone on the property can be accessed via the all-weather Deadhorse Road 28 km north from Trans-Canada Highway 17. The Good Hope claim group is situated within the Thunder Bay Mining Division on NTS map sheet 42E02, with the main zone (Site 28 area) centered on UTM Zone 16, 519637E, 5432636N. The Good Hope Property surrounds Nuinsco Resources Limited’s Prairie Lake Property centered on the Prairie Lake Carbonatite Intrusive Complex.

Good Hope Niobium Property Claim List:

- 334668, 339051, 339052, 339053, 339054, 339055, 112798, 112799, 112800, 112532, 114481, 114482, 112334, 114783, 114784, 114786, 113961, 113962, 113607, 114641, 114642, 123336, 123337, 131688, 131689, 131946, 138497, 137249, 137250, 137842, 139878, 139879, 140552, 139235, 139547, 140573, 146003, 145320, 145321, 145322, 145191, 147950, 148381, 148382, 148558, 149351, 157394, 159369, 159370, 159371, 159372, 158743, 157306, 158755, 160000, 160001, 162088, 164066, 160769, 160770, 165391, 164689, 164690, 164691, 167396, 167416, 169257, 169258, 169259, 177481, 174083, 174084, 184342, 184343, 185846, 185847, 185848, 191516, 194093, 193974, 193975, 196487, 196488, 194677, 197457, 202009, 204727, 206711, 206712, 210041, 212706, 212721, 212647, 211921, 211922, 211400, 210736, 212031, 212032, 213413, 214712, 213718, 216835, 221497, 222066, 222067, 223465, 223466, 223467, 224770, 223480, 223481, 224094, 222691, 222692, 222693, 222694, 224712, 233453, 230752, 230753, 231414, 231415, 231416, 231437, 239846, 239847, 239844, 239845, 240551, 247279, 243601, 247278, 246422, 247197, 251341, 247693, 248574, 248575, 251638, 249943, 249962, 249963, 256569, 258738, 260041, 258661, 258662, 259412, 260709, 260710, 262747, 262748, 261399, 262707, 264025, 263655, 263656, 265960, 268139, 272698, 268154, 271484, 269340, 277214, 277899, 275920, 278027, 287320, 287321, 299680, 299681, 298730, 298731, 298732, 298733, 300547, 307243, 308567, 305230, 305231, 305232, 308538, 307859, 306443, 312534, 313232, 313233, 314599, 314600, 316509, 312618, 312619, 315219, 317290, 317340, 320412, 318566, 318567, 325265, 325266, 322582, 322583, 322584, 327374, 327375, 327376, 325329, 325330, 325331, 329283, 329284, 325981, 328016, 328062, 328071, 328072, 332601, 332075, 332076, 332077, 331502, 331503, 331504, 333648, 331758, 331759, 113653, 132005, 162087, 185845, 201949, 211923, 214736, 216233, 224711, 233409, 249338, 257968, 262661, 262706, 262731, 270144, 277900, 299993, 307858, 312533, 312535, 317273, 327377, 331891, 332506, 332573, 238571

The Property is situated in the Pic River Ojibway Forest within the traditional territory of the Biigtigong Nishnaabeg - Ojibways of the Pic River First Nation. It is important to note that Plato Gold Corp. possesses an approved Work Permit covering all planned exploration activities over the property in this area.

The topography of the region consists mainly of low terrain, including swamps separated by hills that rise from 100-200 m above the swamps and river valleys. The property partially covers both Ruffle Lake (at the north end of the property) and Prairie Lake (at the south end).

There is a skilled workforce in the neighboring towns of Marathon, Manitouwadge, White River, and the Biigtigong Nishnaabeg and Pic Mobert First Nation communities. The two largest nearby centers are Marathon with a population of approximately 3,100 and Manitouwadge with a population of 1,974 (2021 Census,

Statistics Canada), which supply the bulk of the labor to Barrick Gold Corporation’s Hemlo area Williams Mine. The Mine employs approximately 700 people, including contractors and temporary employees. The average age of the workforce at the mine is 46 years old. This illustrates that local and regional resources are adequate to supply a large combined open pit and underground gold mine. In addition, the planned development of Generation Mining Limited’s Marathon Palladium-Copper Project will also have a significant effect on the growth of the local communities.

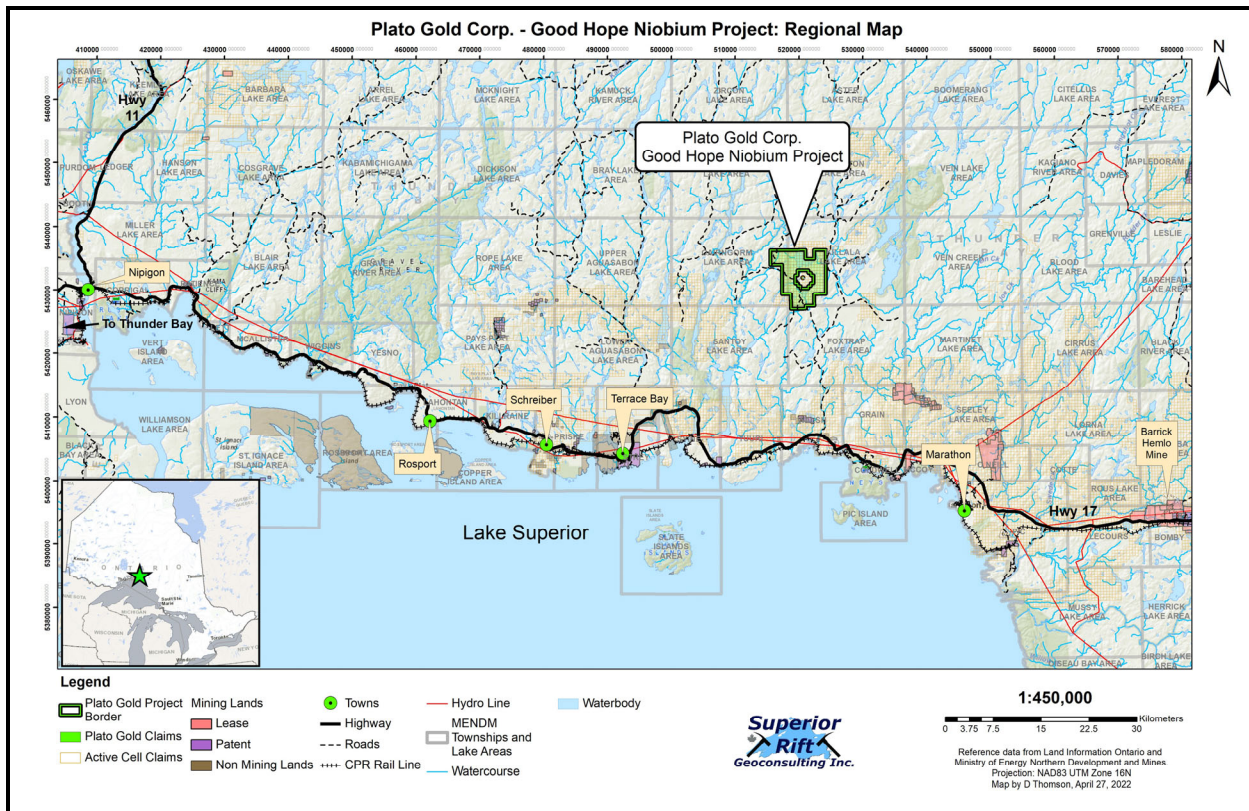


Figure 1. Good Hope Niobium Project Location Map and Infrastructure

Additional infrastructure includes the existing east-west 230 KV transmission line along Highway 17 and the recently completed (2022), 230-kilovolt Nextbridge East-West Tie Transmission line from Thunder Bay to Wawa, Ontario. (This line will provide much needed additional energy to support new economic growth in the region). Support services including accommodations, supplies, equipment rentals and operators are available in the nearby communities of Marathon, Manitouwadge, and in the city of Thunder Bay located approximately 300 km west of the Good Hope Niobium Property along Trans-Canada Highway 11/17.

4.0 PROPERTY HISTORY

The mineral potential of the Marathon area is considered high, based on the increased global demand for mineral resources together with extensive exploration

activity within and surrounding the Schreiber-Hemlo Greenstone Belt. Most of the historic exploration in the Good Hope Property area has focused on Nuinsco Resources Limited's Prairie Lake Property in the heart of the Carbonatite Intrusive Complex (see Giroux 2012 for a detailed property history).

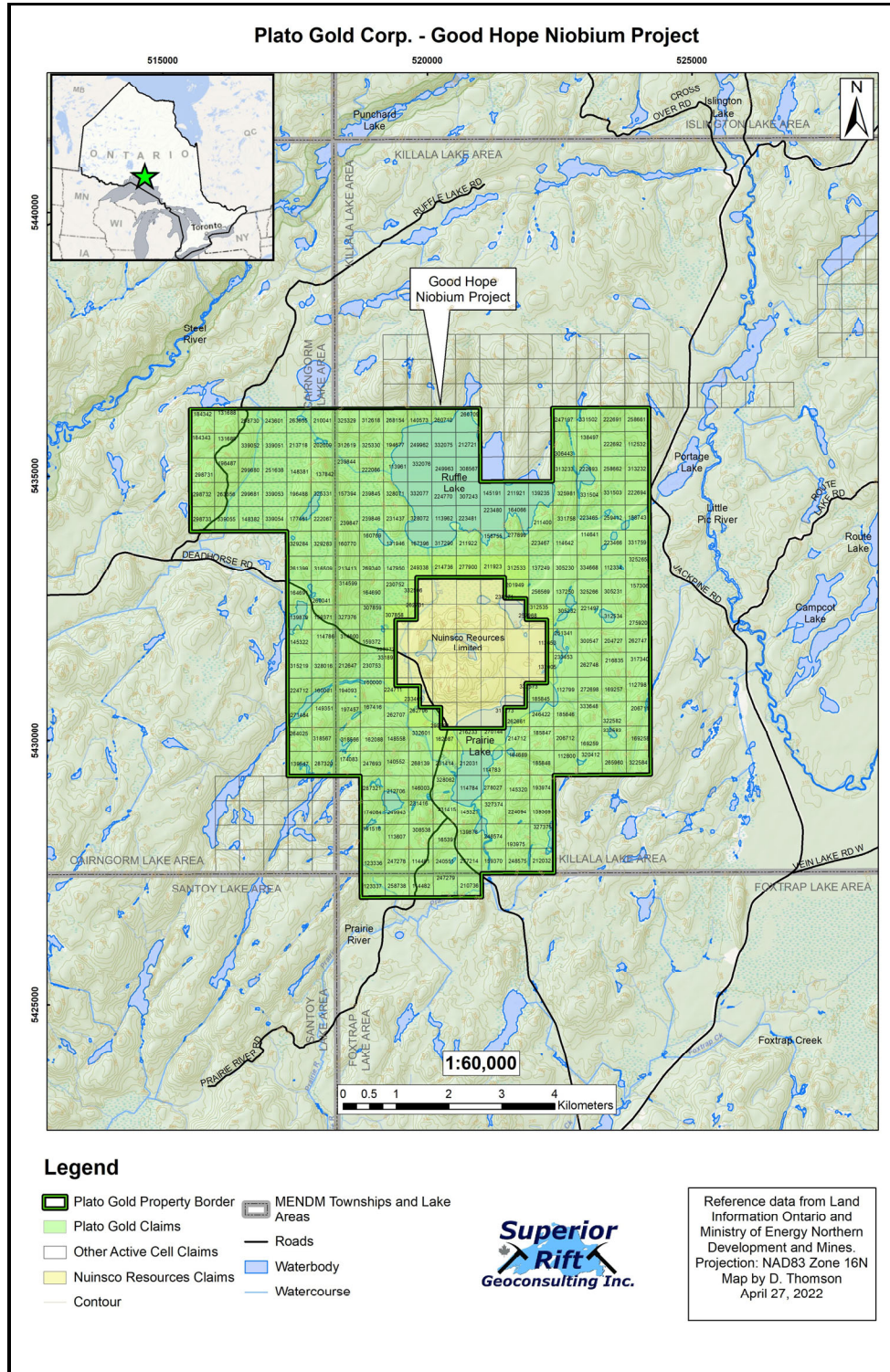


Figure 2. Good Hope Niobium Property, Detailed Claim Map

2010: Prospector Rudy Wahl collected a sample from the Discovery Pit #1 at the main zone on the Good Hope Niobium Property assaying 1.63% Nb₂O₅ (Wahl 2015). The property was subsequently optioned to Vancouver-based Canadian International Minerals Inc. (CIM). In 2011 the company completed a program of prospecting, rock and soil sampling, trenching, channel sampling, and radiometric surveying (Quist 2011). However, CIM's work was focused on rare earth elements and samples were not analyzed for niobium.

2014: Mr. Wahl undertook a program of prospecting, hand stripping, geological mapping and rock sampling to follow up the 2010 discovery at Pit #1. The area surrounding Pit #1 (Site 28) was stripped and 5 additional pits were dug. Seventeen samples were collected which assayed up to 1.466% Nb₂O₅ and 11.52% P₂O₅ (Wahl 2015).

During this same period, Dr. Roger Mitchell of Lakehead University was brought in as an advisor and initiated a study of the samples collected from the main zone at Pit #1. Dr. Mitchell identified two main types of pyrochlore: a fluorine (F)-free, strontium (Sr)-poor type with relatively high Fe and Nb, and a F-Na-Sr bearing type with relatively low Fe and Nb. Many pyrochlores are replaced in part by fersmite (CaNb₂O₆) and/or ferrocolumbite (FeNb₂O₆); minerals also with very high Nb₂O₅ contents. Importantly, from an environmental viewpoint, all pyrochlores analyzed were devoid of thorium and had very low uranium contents. Samples with the greatest amount of pyrochlore occur in pyrochlore-apatite clasts.

2015: The property was optioned to a company from Montreal, Quebec and a program of prospecting, mapping, trenching and channel sampling was completed. The highest assay results from channel samples collected in trenched bedrock exposures of carbonatite and syenite-carbonatite breccia, returned 1.205% Nb₂O₅ over 1.1 m and 0.437% Nb₂O₅ over 0.6 m, respectively. Seven locations were trenched (TR-01-PL15 through TR-07-PL15) in the Site 28 area. The highest assay from grab samples collected at various outcrop exposures, boulder occurrences and trenches in the main area, returned 2.11% Nb₂O₅.

At this time the company also commissioned a Scanning Electron Microscope (SEM) study at the University of Quebec to examine pyrochlores in ferro-carbonatite samples from the main Trench #1. The pyrochlores were found to occur almost always in association with apatite and to be a low uranium variety containing inclusions of fluoro-carbonates and other related minerals.

2016: The claims were returned to owner Rudy Wahl and work continued on the property. Mr. Wahl completed a small heliborne magnetic and radiometric survey (flown by Prospectair Geosurveys Inc. of Quebec) and 2 diamond drill holes totaling 280.7 m in length over the main area of interest. The holes were drilled near the center of the 2016 total count radiometric anomaly. The assay highlights for the first drill hole PL-01 were 0.45% Nb₂O₅ with 1.85% P₂O₅ over 1.0 m (from 51.0 - 52.0 m) and 6.25% P₂O₅ with 0.098% Nb₂O₅ over 1.0 m (58.55 - 59.55 m). The second drill

hole PL-02 intersected 0.34% Nb₂O₅ with 2.61% P₂O₅ over 1.0 m (from 107.5-108.5 m) and 5.81% P₂O₅ with 0.039% Nb₂O₅ over 1.0 m (55.5-56.5 m). The niobium mineralization was associated with carbonatite and syenite-carbonatite breccia.

2017: Plato Gold Corp. of Toronto, Ontario optioned the Good Hope Niobium Property from Rudy Wahl. Plato commenced a mapping, prospecting, and due diligence program on the property focusing on both the Site 28 and Site 21A areas. Resampling of Discovery Pit #1 (Site 28) returned 1.055% Nb₂O₅ and 9.25% P₂O₅. Resampling of trench TR-01-PL15 returned assays up to 1.053% Nb₂O₅ and 6.73% P₂O₅ (Selway 2017). At Site 21A, which is south of the Prairie Lake Carbonatite Complex and approximately 3.5-4km south of Site 28, geologists mapped and sampled a 700 m long northeast trending granite breccia with a carbonatite matrix.

2018 to 2021: Plato Gold completed a 12-hole, 5016 m diamond drilling program in the main zone area (Site 28) (Figure 3) and a Prospectair Geosurveys High-Resolution Airborne Magnetic and Radiometric Survey over the entire Good Hope claim group. See 'Plato Gold's Current Work' below for detailed results from this work.

5.0 GEOLOGY AND MINERALIZATION

A majority of the world's identified resources of niobium occur as pyrochlore (a niobium-rich mineral with chemical formula (Na,Ca)₂Nb₂O₆(OH,F)) in carbonatite deposits. Carbonatites are intrusive igneous rocks that contain more than 50%-by-volume, carbonate minerals. Carbonatite structures are relatively rare throughout the world and are commonly associated with anomalous amounts of uranium, thorium and potassium. They may also contain other critical metals and rare earth elements (REE) such as barium, zirconium, cerium, yttrium, lanthanum and vanadium. However, not all carbonatites contain niobium. Current known resources of niobium are limited principally to only two countries, Brazil (88%) and Canada (10%). The Brazilian deposits, Canada's Niobec Mine in Quebec and the Good Hope Niobium Property are all associated with carbonatite intrusions containing niobium-rich pyrochlore mineralization.

The Good Hope Niobium Property is located within the Western Schreiber-Hemlo Greenstone Belt, which is part of the Wawa-Abitibi Terrane of the Superior Province in Ontario. Rocks within the Wawa-Abitibi Terrane across the province, share similar lithological, geochemical and age characteristics, and structural and metamorphic histories (Stott et al. 2010). The Wawa-Abitibi Terrane is a typical Archean greenstone-granite terrane consisting of primitive ultramafic to felsic volcanic rocks and associated metasedimentary rocks, intruded, and enclosed by granitoid rocks (Figure 4). It is bounded in the north by the Quetico metasedimentary basin or subprovince (Magnus 2019, Stott 2011). The Wawa-Abitibi Terrain contains a series of greenstone belts of similar age (ca. 2.95 to 2.68 Ga) hosting gold, nickel, and zinc deposits. In Northwestern Ontario, these

deposits include the Hemlo Gold Mine at Marathon (located approximately 70 km southeast of the Good Hope Niobium Property) and past producers; the Geco VMS (Cu-Zn) Mine at Manitouwadge, the Shebandowan Ni-Cu Mine and the Winston-Pick Lake VMS Zn-Cu Mine north of Schreiber.

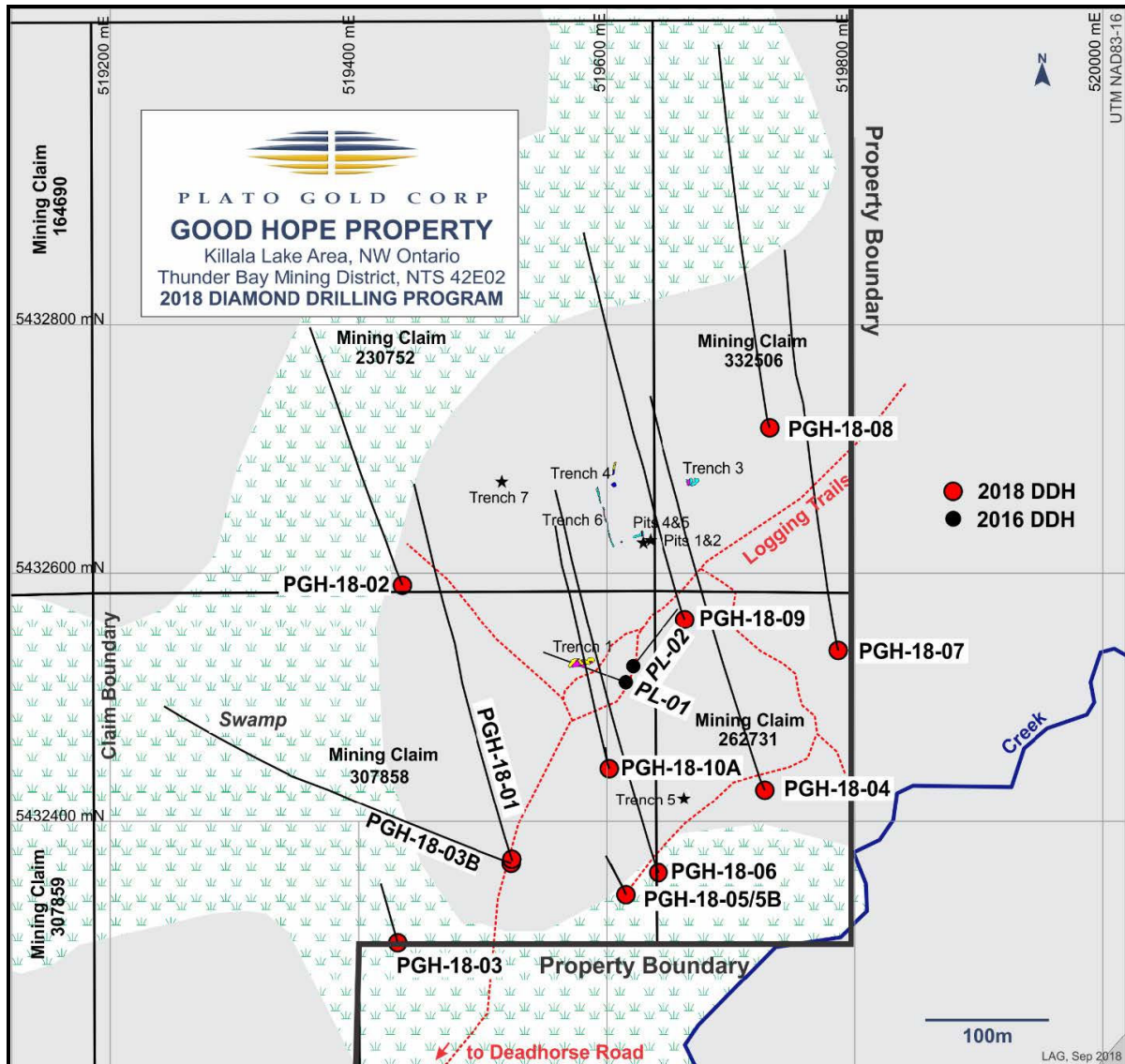


Figure 3. Good Hope Niobium Property, 2018 Diamond Drilling Plan Map

The emplacement of the much younger Prairie Lake Carbonatite intrusion (ca. 1 to 1.2 Ga) is related to a major structural feature known as the Trans-Superior Tectonic Zone which formed during Midcontinent Rifting in the Lake Superior region. The Trans-Superior Tectonic Zone is a north-northeast trending fault system which extends for over 600 km northwards from Michigan through the Lake Superior basin and across the much older north shore greenstone belts of the western Wawa-Abitibi Terrane (Sage 1987, Sage and Watkinson 1995). The

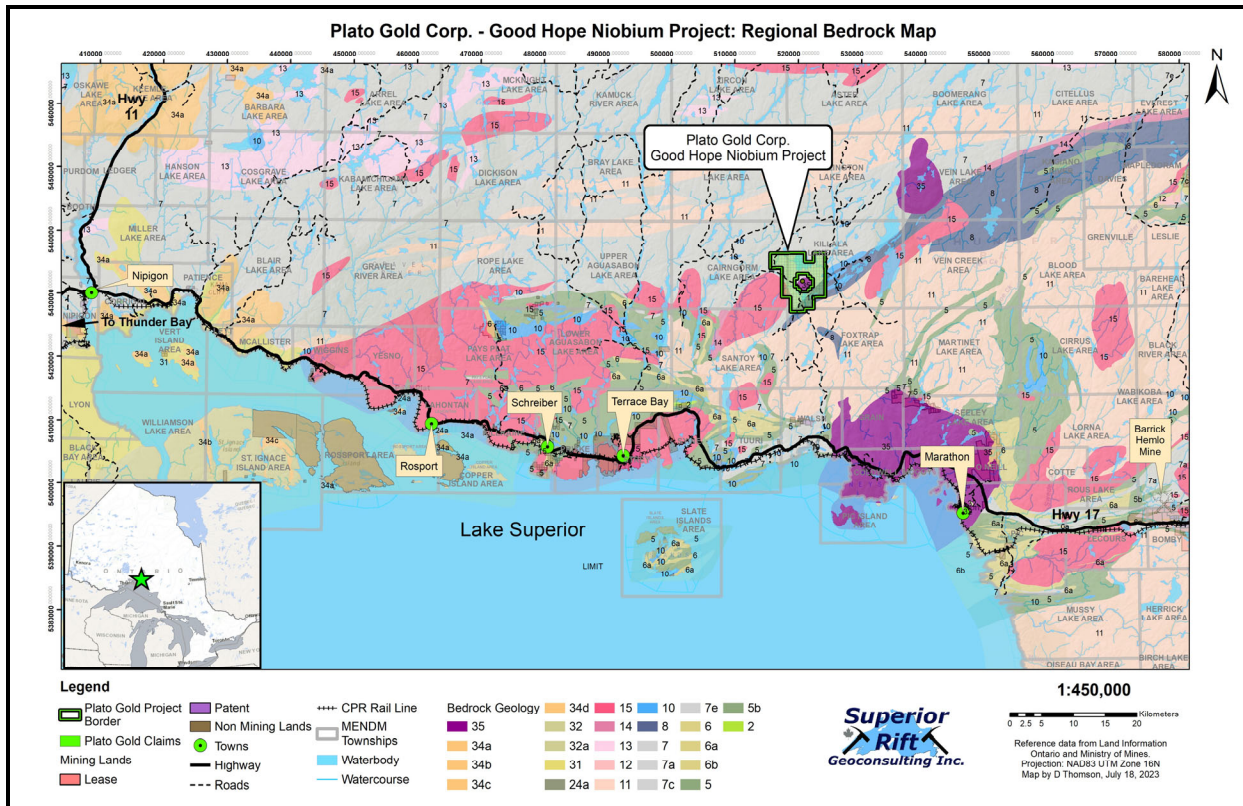


Figure 4. Good Hope Niobium Property, Regional Bedrock Geology Map

The Midcontinent Rift System is thought to represent a failed rift resulting from an upwelling mantle plume 1.1 billion years ago during Mesoproterozoic time (Burke & Dewey, 1973). Also, as a result of this major rifting event, other north-trending structures formed along the north shore of Lake Superior and were responsible for the emplacement of several carbonatite and alkaline intrusions. This included, in addition to the Prairie Lake Complex, the Coldwell Complex north of Marathon, the Killala Lake Alkaline Complex and the Chipman Lake fenites and carbonatite dikes in the Longlac area. Both the Coldwell and Killala Lake complexes do not contain carbonatites, whereas Chipman Lake and Prairie Lake do contain niobium-bearing carbonatites.

The Good Hope Property surrounds the Prairie Lake Complex, which is owned by Nuinsco Resources Limited (Figure 5). The Prairie Lake Complex is an example of a carbonatite-alkaline rock intrusion. It covers an area of approximately 2.8 square km and has a pronounced circular topographic expression. The complex exhibits a very strong circular magnetic anomaly due to the presence of abundant magnetite and ferromagnesian silicates.

Plato Gold’s diamond drilling work in the west central portion of the Good Hope Niobium Property (Site 28 area) indicates the presence of a discrete carbonatite complex. The carbonatites are host to niobium mineralization which occurs principally as pyrochlore-apatite clasts within a carbonatite breccia (although discrete pyrochlores occur in all carbonate phases of the complex (Mitchell et al.

2020). The carbonatites are distinct in their mineralogy from the Prairie Lake Complex and the absence of a significant magnetic anomaly is due to the paucity of magnetite and ferromagnesian silicates.

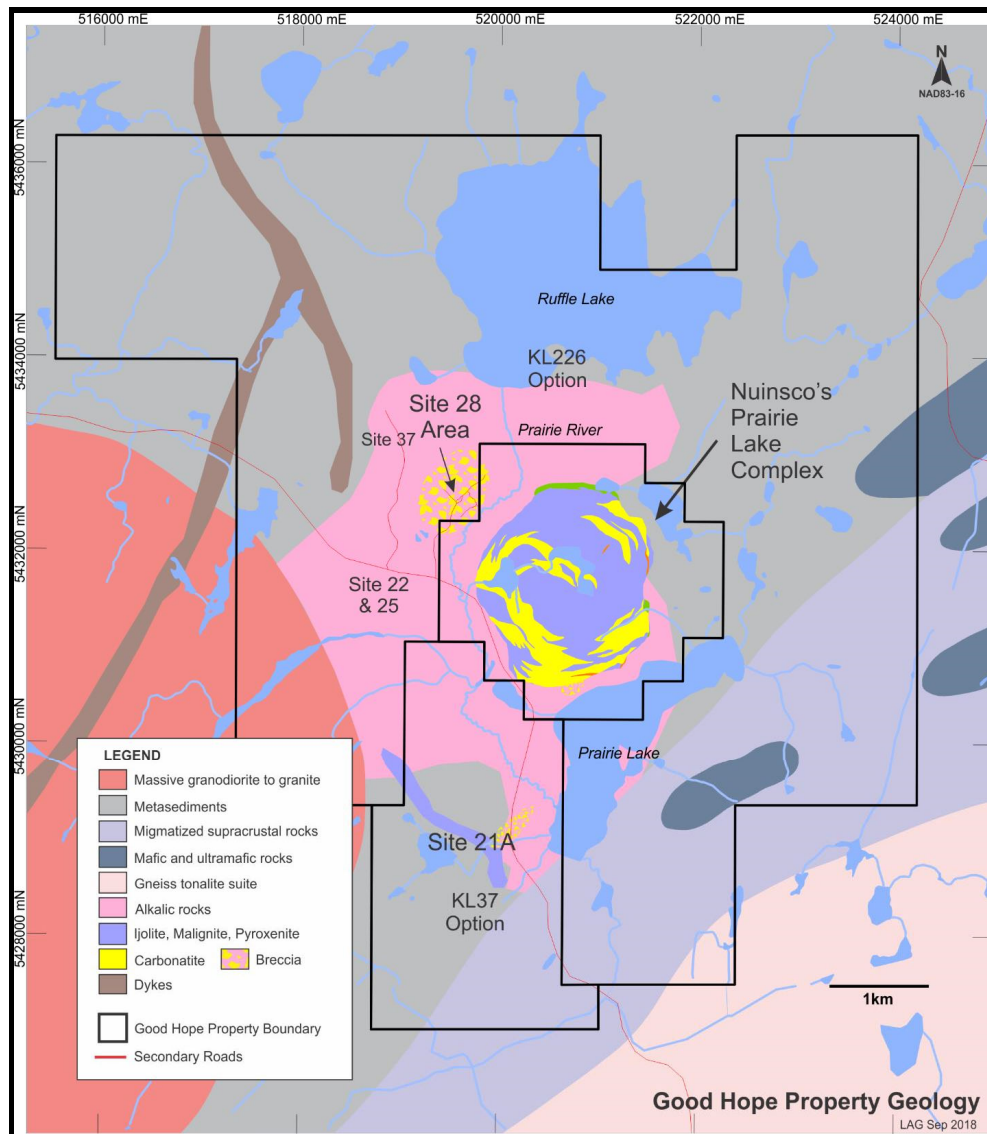


Figure 5. Good Hope Niobium Property Geology Map (Giroux 2018)

6.0 DRILL CORE SAMPLING PROGRAM

In 2018 Plato Gold Corp. completed a preliminary diamond drilling program consisting of 12 holes totaling 5016 m in the main zone Site 28 area. Table 1 includes location data for the diamond drill hole collars (UTM coordinates) and claims covered by the drilling. As a result of this exploration work, Plato has satisfied its option agreement with vendor Rudy Wahl and was able to acquire 100% ownership of the property in 2019.

Table 1. Good Hope Niobium Property, Drill Hole Collar Data (NAD 83, Zone 16)

Drill Hole	Eastings	Northing	Elev (m)	Az (°)	Dip (°)	Length (m)	Start Date	Completion Date	Claims
PGH-18-01	519527	5432369	313	338	-50	501	2018-03-13	2018-03-21	307858, 230752
PGH-18-02	519437	5432594	310	338	-50	372	2018-03-21	2018-03-25	230752
PGH-18-03*	519435	5432302	308	338	-50	78	2018-03-27	2018-03-28	307858
PGH-18-03B	519527	5432369	313	290	-50	480	2018-03-28	2018-04-04	307858
PGH-18-04	519729	5432428	311	337	-60	672	2018-04-04	2018-04-17	262731, 332506, 230752
PGH-18-05/5B**	519618	5432342	308	337	-60	60/72	2018-04-17	2018-04-19	307858
PGH-18-06	519644	5432360	311	338	-60	633	2018-04-19	2018-04-30	262731, 307858, 230752
PGH-18-07	519787	5432542	315	344	-60	669	2018-04-30	2018-05-08	262731, 332506
PGH-18-08	519731	5432724	318	344	-50	498	2018-05-08	2018-05-14	332506
PGH-18-09	519664	5432567	316	337	-50	510	2018-05-14	2018-05-20	262731, 332506, 230752
PGH-18-10/10A***	519604	5432445	319	341	-60	36/435	2018-05-20	2018-05-25	307858, 230752

* Failed to reach bedrock
**Abandoned due to issues with azimuth
***Restarted due to issues with azimuth

In 2021 Plato Gold conducted Ultraviolet (UV) scans of the 2018 diamond drill core to assess the extent of niobium mineralization in unsampled drill core sections. Ultraviolet scans are particularly useful in the evaluation of this carbonatite as the apatite associated with the pyrochlore exhibits a very strong blue photoluminescence. This work indicated much higher amounts of niobium-rich pyrochlore than were previously recognized. As a result, the company initiated an extensive resampling program across all 12 drill holes which included 2,314 approximately one-meter samples submitted for analysis to Activation Laboratories Ltd. in Thunder Bay, Ontario. Key assay results from this sampling program and 2018 sampling, are provided in Table 2 below.

Claim ID	Prov Cell Grid ID	Assays Total
230752	42E02B163	461
262731	42E02B184	306
307858	42E02B183	806
332506	42E02B164	741

It is important to note that the initial sampling in 2018 when the drilling was completed, tested only 40% of the drill core recovered during the program. The 2021 sampling program captured the remaining 60% of untested diamond drill core from all twelve holes.

7.0 DISCUSSION OF RESULTS

In addition to the summer 2021 drill core sampling program, Plato Gold also completed a High-Resolution Airborne Magnetic and Radiometric geophysical survey covering the entire Good Hope claim group (survey flown by Prospectair Geosurveys Ltd. of Gatineau, Quebec) in October 2021. Survey data indicates the Good Hope Niobium occurrences represent a discrete intrusion distinct from Prairie Lake Carbonatite complex located to the southeast (Figure 5, Site 28 area). Geophysical data and detailed drill core sample results from the 2018 and 2021 programs by the company, also indicate the potential size of the niobium-rich zone to be at least 500 sq m in area with a confirmed depth of 500 m.

Table 2. Good Hope Niobium Property Key Assay Results

Plato Gold Corp Good Hope Project 2018 Drill Holes (Sampling 2018, 2021)	From (m)	To (m)	Interval (m)	Grade (% Nb₂O₅)
PGH-18-01	273.92	278.30	4.38	0.366
	317.00	321.22	4.22	0.215
	324.00	342.16	18.16	0.232
Incl	324.00	331.80	7.81	0.320
PGH-18-02	39.25	50.50	11.25	0.218
Incl	39.25	44.00	4.74	0.334
	225.00	227.00	2.00	0.455
PGH-18-03B	188.73	196.00	7.27	0.247
	218.86	223.30	4.44	0.381
	254.00	257.63	3.63	0.165
	411.00	418.50	7.50	0.229
PGH-18-04	498.84	507.59	8.75	0.291
	527.22	551.25	24.03	0.279
Incl	537.75	549.75	12.00	0.395
PGH-18-05B	64.00	72.00	8.00	0.236
PGH-18-06	371.34	402.67	31.33	0.262
Incl	392.00	402.67	10.67	0.405
PGH-18-07	573.14	586.42	13.28	0.300
	645.00	648.57	3.57	0.444
PGH-18-08	8.70	11.00	2.30	0.445
	376.00	380.24	4.24	0.201
PGH-18-09	446.17	459.65	13.48	0.179

Plato Gold Corp Good Hope Project 2018 Drill Holes (Sampling 2018, 2021)	From (m)	To (m)	Interval (m)	Grade (% Nb₂O₅)
	488.00	492.96	4.96	0.180
PGH-18-10A	265.95	269.55	3.60	0.348
	321.77	326.45	4.68	0.237
	364.24	396.24	32.00	0.307
Incl	364.24	377.30	13.06	0.391

Additional highlights related to the recently completed geophysical survey and sampling program in 2021 and the general infrastructure surrounding the Good Hope Project, are provided below:

- Results from the 2018 and 2021 drill core sampling program identified numerous niobium-rich sections including 0.307% Nb₂O₅ over 32.00 m and 0.405% Nb₂O₅ over 10.67 m (Table 2). By comparison, the Measured and Indicated resource at the Quebec Niobec Niobium Mine in 2015 (Iamgold Corporation) was listed as 2.6 million tonnes grading 0.41% Nb₂O₅.
- Spectrometric data from the 2021 Prospectair survey completed by Plato Gold and geochemical analysis of the drill core from the 2018 work, indicates anomalous potassium (K), low to non-existent thorium (Th) and uranium (U) mineralization and a high Gamma-Ray signature specific to the area of the Good Hope niobium-rich zone.
- The Residual Total Magnetic Intensity map covering the Good Hope niobium-rich zone, indicates a coincident prominent low intensity signature.
- Favorable infrastructure: Road accessible property 30 km north of the Trans-Canada Highway 17 and the recently constructed Nextbridge east-west 230-KV transmission line. The Canadian Pacific Railway mainline also parallels Highway 17 along the north shore of Lake Superior south of the Good Hope Niobium Property.

8.0 RECOMMENDATIONS

The next stage in Plato Gold's development of the project will involve a detailed diamond drilling program targeting the zones of high-grade niobium with the objective of formulating a NI 43-101 resource for the property. In tandem with the major drilling program, detailed geological mapping, sampling and ground geophysical surveys will be conducted across the entire property in an attempt to locate additional sources of niobium mineralization and investigate all recently

determined airborne geophysical anomalies.

Plato Gold's exploration plan for 2022 to 2023 includes costs related to 24,000 m of detailed diamond drilling within the main zone (Site 28 area), diamond drilling along extensions of the main zone (east and west) and work related to the mapping and surveying of the drill site area, for a total budget estimate of \$6.92M.

Diamond drilling would be laid out in a grid pattern over the critical Site 28 area with holes at 50 m to 100 m intervals and a planned depth of 600 m for a total of 40 holes. A 50-meter spacing would be based on the highest assay results over the longest intersections from the 2018 drilling completed by Plato Gold. The drill hole spacing would move out to a 100-meter interval east and west along strike from this core area (Figure 6).

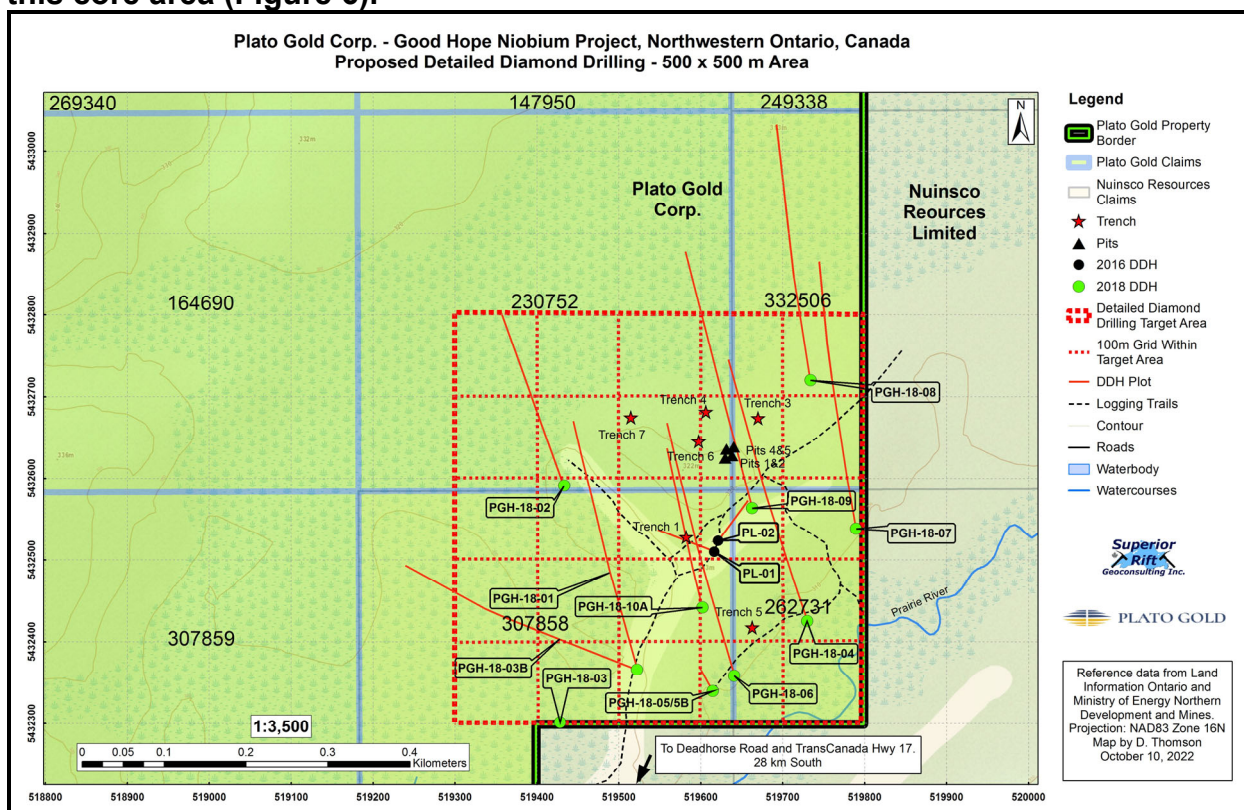


Figure 6. Good Hope Niobium Property, Proposed Diamond Drilling Program for 2023-2024

The drill core from each hole will be logged and scanned by UV light to obtain a visual estimate of the niobium-rich pyrochlore content, then split, sampled and sent for analysis. Depending on the level and consistency of the assay results, which are represented in % Nb₂O₅, an attempt will be made to build a resource for the property.

Note that an extensive sampling program is required due to the nature of niobium deposits as a consequence of the extensive mineralogical heterogeneity and the “nugget effect” of pyrochlore distribution (Mitchell 2015). Unlike common ore

deposits such as gold deposits, the grades of niobium deposits cannot be determined by limited sampling programs. The best analogy with respect to sampling is similar to that followed for porphyry copper deposits and diamond-bearing kimberlites. The currently known grades for Good Hope Property suggest that the deposit could be developed as an open pit operation rather than an underground mine.

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Statement of Qualifications

AUTHOR'S CERTIFICATE

I, Gerald Dewar White, do hereby certify as follows:

1. I am an independent consulting geologist, and I reside and carry-on business at 28 Hill Street South, Thunder Bay, Ontario, P7B 3T5 under Superior Rift Geoconsulting Inc.;
2. That I have the degree of Bachelor of Science in Geology, 1979, from the University of Manitoba;
3. That I am a member in good standing of the Association of Professional Geoscientists of Ontario (Member No. 0184, effective June 22, 2002)
4. That I have been practicing my profession in Canada continuously since 1979;
5. That I am the author of a report entitled "Good Hope Niobium Project, Killala Lake, Cairngorm Lake and Foxtrap Lake Areas, Marathon Area, Northwest Ontario, Canada" prepared for Plato Gold Corp., with an effective date of July 22, 2023 and that I am responsible for all sections of the Report;
6. That, as at the effective date of the Report, to the best of my knowledge, information and belief, the Report contains all scientific and technical information that is required to be disclosed to make the Report not misleading.

Dated at Thunder Bay, Ontario
This 23rd day of July 2023



Gerald White, BSc., P.Geo.

APPENDIX I

LIST OF ABBREVIATIONS

Ba	Barium
Ca	Calcium
Cu	Copper
DDH	Diamond Drill Hole
EM	Electromagnetic (geophysical survey)
EU	European Union
EV	Electric Vehicle
F	Fluorine
Fe	Iron
GIS	Geographic Information System
GPS	Global Positioning System
g/t	Grams per tonne (Metric ton, 1,000 kg)
ha	Hectare
HQ	Drill Core Diameter / 61.1 mm (2.406 in)
K	Potassium
Kg	Kilogram
Km	Kilometer
KV	Kilovolt (electricity grid)
m	Meter
MAG	Magnetometer (geophysical survey)
Na	Sodium
NAD83	North American Datum 1983
Nb	Niobium
Ni	Nickel
NI	National Instrument
NTS	National Topographic System
NWOPA	Northwestern Ontario Prospectors Association
OGS	Ontario Geological Survey
OPA	Ontario Prospectors Association
Ounce	Troy ounce (used for precious metals) = 31.103 grams
ppb	Parts Per Billion
REE	Rare Earth Elements
Sc	Scandium
Sr	Strontium
Th	Thorium
TSTZ	Trans-Superior Tectonic Zone
U	Uranium
US	United States
UTM	Universal Transverse Mercator (map projection)
UV	Ultraviolet
V	Vanadium
VMS	Volcanogenic Massive Sulphides
VTEM	Versatile Time Domain Electromagnetic (airborne geophysical survey)
WAT	Wawa-Abitibi Terrane
Y	Yttrium
Zn	Zinc
Zr	Zirconium

APPENDIX II
CORE SAMPLE ASSAY RESULTS

Core Sampling Data: Drill Hole PGH-18-01

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
PGH-18-01	918402	2.6	4.0	1.4	184
	918403	4	5.0	1.0	75
	918404	5	6.0	1.0	270
	918405	6	7.0	1.0	263
	918406	7	8.0	1.0	111
	918407	8	9.0	1.0	44
	918408	9	10.0	1.0	99
	918409	10	11.0	1.0	54
	918410	11	11.85	0.85	62
	918411	148.3	149.0	0.7	70
	918412	149	150.0	1.0	35
	918413	150	151.0	1.0	62
	918414	151	152.3	1.3	34
	918415	152.65	154.0	1.35	51
	918416	154	154.6	0.6	82
	918417	155	156.0	1.0	58
	918418	158.5	159.0	0.5	21
	918419	159	160.0	1.0	108
	918420	160	161.0	1.0	46
	918421	161	162.0	1.0	18
	918422	162	163.0	1.0	34
	918423	189.6	190.1	0.5	81
	918424	190.1	191.5	0.4	74
	918425	195.8	197.0	1.2	54
	918426	197	198.0	1.0	57
	918427	300.3	301.0	0.7	45
	918428	301	302.0	1.0	44
	918429	302	303.0	1.0	61
	918430	303	304.0	1.0	19
	918431	304	305.0	1.0	29
	918432	305	306.0	1.0	33
	918433	416.7	417.4	0.7	320
	918434	417.4	418.2	0.8	179
	918435	453	454.0	1.0	43
	918436	454	454.8	0.8	29
	918437	455.3	456.0	0.7	89
	918438	456	457.0	1.0	59
	918439	457	457.65	0.65	44
	918440	467	468.0	1.0	58
	918441	468	469.0	1.0	80
	918442	469	470.0	1.0	49
	918443	470	471.0	1.0	44
	918444	475.2	476.0	0.8	52
	918445	476	477.0	1.0	68

Core Sampling Data: Drill Hole PGH-18-01

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	918446	478	479.0	1.0	48
	918447	479	480.0	1.0	51
	918448	480.5	481.0	0.5	169
	918449	481	482.0	1.0	63
	918450	482	483.0	1.0	119
	918451	483	484.0	1.0	66
	918452	484.8	486.0	1.2	42
	918453	486	487.0	1.0	48
	918454	487	488.0	1.0	55
	918455	488	489.0	1.0	85
	918456	489	489.6	0.6	101
	918457	490	491.0	1.0	38
	918458	491	491.85	0.85	50
	918459	499.9	501.0	1.1	43

Core Sampling Data: Drill Hole PGH-18-02

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
PGH-18-02	918340	31.2	32.0	0.8	30
	918341	32.0	33.0	1.0	56
	918342	33.0	34.0	1.0	120
	918343	34.0	35.4	1.4	28
	918344	35.8	37.0	1.2	34
	918345	37.0	38.0	1.0	32
	918346	38.0	38.75	0.75	25
	918347	85.5	86.0	0.5	55
	918348	86.0	87.0	1.0	60
	918349	87.0	87.7	0.7	613
	918350	90.8	91.6	0.8	78
	918351	92.0	93.0	1.0	64
	918352	93.0	94.0	1.0	63
	918353	94.0	95.0	1.0	72
	918354	95.0	96.0	1.0	92
	918355	96.0	97.0	1.0	58
	918356	97.0	98.2	1.2	71
	918357	100.0	101.0	1.0	203
	918358	101.0	102.0	1.0	90
	918359	102.0	102.7	0.7	181
	918360	108.65	110.0	1.35	116
	918361	110.0	111.0	1.0	204
	918362	111.0	112.0	1.0	135
	918363	112.0	113.2	1.2	131
	918364	135.0	136.0	1.0	98
	918365	136.0	137.0	1.0	46
	918366	137.0	138.0	1.0	50
	918367	138.0	139.0	1.0	64
	918368	157.6	158.0	0.4	95
	918369	158.0	159.0	1.0	120
	918370	159.0	160.0	1.0	72
	918371	160.0	161.0	1.0	107
	918372	161.0	161.5	0.5	141
	918373	166.75	168.0	1.25	131
	918374	168.0	169.0	1.0	141
	918375	169.0	170.0	1.0	170
	918376	170.0	171.0	1.0	94
	918377	171.3	172.0	0.7	85
	918378	172.0	173.0	1.0	81
	918379	173.0	174.0	1.0	232
	918380	174.0	175.0	1.0	150
	918381	175.0	175.8	0.8	68

Core Sampling Data: Drill Hole PGH-18-02

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	918382	176.55	177.0	0.45	450
	918383	177.0	178.0	1.0	119
	918384	178.0	179.0	1.0	92
	918385	179.0	180.0	1.0	105
	918386	180.0	180.8	0.8	78
	918387	210.0	211.0	1.0	65
	918388	211.0	212.0	1.0	36
	918389	212.0	212.85	0.85	38
	918390	246.35	247.0	0.65	72
	918391	247.0	247.7	0.7	53
	918392	248.1	249.0	0.9	47
	918393	249.0	250.0	1.0	62
	918394	250.0	250.4	0.4	55
	918395	283.0	284.0	1.0	127
	918396	284.0	285.0	1.0	82
	918397	285.0	286.0	1.0	59
	918398	286.0	287.0	1.0	59
	918399	287.0	287.6	0.6	77
	918400	360.75	362.0	1.25	57
	918401	362.0	363.0	1.0	32

Core Sampling data: Drill Hole PGH-18-03B

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
PGH-18-03B	918001	3.0	4.0	1.0	33
	918002	4.0	5.0	1.0	208
	918003	5.0	6.0	1.0	135
	918004	6.0	7.0	1.0	393
	918005	7.0	8.0	1.0	630
	918006	8.0	9.0	1.0	38
	918007	9.0	10.0	1.0	126
	918008	10.0	11.0	1.0	70
	918009	11.0	12.0	1.0	82
	918010	12.0	13.0	1.0	75
	918011	13.0	14.0	1.0	445
	918012	14.0	15.0	1.0	915
	918013	15.0	16.0	1.0	420
	918014	16.0	17.0	1.0	432
	918015	17.0	18.0	1.0	338
	918016	18.0	19.0	1.0	1280
	918017	19.0	20.0	1.0	1410
	918018	20.0	21.0	1.0	26
	918019	21.0	21.5	0.5	21
	918020	23.8	25.0	1.2	84
	918021	25.0	26.0	1.0	1720
	918022	26.0	27.0	1.0	156
	918023	31.9	33.0	1.1	22
	918024	33.0	34.0	1.0	27
	918025	34.0	35.0	1.0	253
	918026	35.0	36.0	1.0	382
	918027	36.0	37.0	1.0	427
	918028	38.6	39.0	1.0	25
	918029	39.0	40.0	1.0	213
	918030	40.0	41.0	1.0	80
	918031	41.0	42.0	1.0	61
	918032	42.0	43.0	1.0	39
	918033	43.0	44.0	1.0	137
	918034	44.0	45.0	1.0	42
	918035	45.0	46.0	1.0	127
	918036	46.0	47.0	1.0	26
	918037	47.0	48.0	1.0	71
	918038	48.0	49.4	1.4	23
	918039	50.0	51.0	1.0	21
	918040	62.5	63.0	0.5	41
	918041	63.0	64.0	1.0	285
	918042	64.0	65.0	1.0	147

Core Sampling data: Drill Hole PGH-18-03B

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	918043	65.0	66.0	1.0	593
	918044	66.0	67.0	1.0	129
	918045	67.0	67.5	0.5	55
	918046	68.3	69.5	1.2	113
	918047	74.9	76.0	1.1	79
	918048	76.0	77.0	1.0	44
	918049	77.0	78.0	1.0	26
	918050	78.0	79.0	1.0	25
	918051	79.0	79.8	0.8	28
	918052	81.16	82.0	0.84	112
	918053	82.0	83.0	1.0	64
	918054	83.0	84.0	1.0	55
	918055	84.0	84.5	0.5	39
	918056	87.9	89.0	1.1	48
	918057	89.0	90.0	1.0	142
	918058	95.0	96.0	1.0	151
	918059	96.0	97.0	1.0	922
	918060	97.0	98.0	1.0	48
	918061	98.0	99.0	1.0	297
	918062	99.0	100.0	1.0	245
	918063	100.0	101.0	1.0	328
	918064	101.0	102.0	1.0	200
	918065	102.0	103.0	1.0	29
	918066	103.0	104.0	1.0	36
	918067	104.0	105.0	1.0	34
	918068	105.0	106.0	1.0	127
	918069	106.0	107.0	1.0	356
	918070	107.0	108.0	1.0	104
	918071	108.0	109.0	1.0	171
	918072	109.0	110.0	1.0	259
	918073	110.0	111.0	1.0	117
	918074	111.0	112.0	1.0	158
	918075	112.0	113.0	1.0	92
	918076	113.0	114.0	1.0	341
	918077	114.0	115.0	1.0	53
	918078	115.0	116.0	1.0	62
	918079	116.0	117.0	1.0	101
	918080	117.0	118.0	1.0	762
	918081	118.0	119.0	1.0	85
	918082	119.0	120.0	1.0	331
	918083	120.0	121.0	1.0	1160
	918084	121.0	122.0	1.0	105

Core Sampling data: Drill Hole PGH-18-03B

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	918085	122.0	123.0	1.0	356
	918086	123.0	124.0	1.0	118
	918087	124.0	125.0	1.0	190
	918088	125.0	126.0	1.0	145
	918089	126.0	127.0	1.0	613
	918090	127.0	128.0	1.0	46
	918091	128.0	129.0	1.0	198
	918092	129.0	130.0	1.0	56
	918093	130.0	131.0	1.0	32
	918094	131.0	132.0	1.0	198
	918095	132.0	132.5	0.5	242
	918096	134.5	135.0	0.5	212
	918097	135.0	136.0	1.0	343
	918098	136.0	137.0	1.0	428
	918099	137.0	138.0	1.0	30
	918100	138.0	139.0	1.0	54
	918101	139.0	140.0	1.0	71
	918102	140.0	141.0	1.0	100
	918103	141.0	142.0	1.0	47
	918104	142.0	143.0	1.0	105
	918105	143.0	144.0	1.0	75
	918106	144.0	145.0	1.0	239
	918107	145.0	146.0	1.0	29
	918108	146.0	147.0	1.0	33
	918109	147.0	148.0	1.0	37
	918110	148.0	149.0	1.0	35
	918111	149.0	150.0	1.0	17
	918112	150.0	151.0	1.0	25
	918113	151.0	152.0	1.0	40
	918114	152.0	153.2	1.2	179
	918115	156.0	157.0	1.0	178
	918116	161.0	162.0	1.0	68
	918117	162.0	163.0	1.0	191
	918118	163.0	164.0	1.0	416
	918119	164.0	165.0	1.0	1510
	918120	165.0	166.0	1.0	1270
	918121	166.0	167.0	1.0	88
	918122	167.0	168.0	1.0	86
	918123	168.0	169.0	1.0	147
	918124	169.0	169.95	0.95	300
	918125	173.4	174.0	0.6	95
	918126	174.0	175.0	1.0	573

Core Sampling data: Drill Hole PGH-18-03B

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	918127	175.0	176.0	1.0	79
	918128	176.0	177.0	1.0	41
	918129	177.0	178.0	1.0	563
	918130	178.0	179.0	1.0	217
	918131	179.0	180.0	1.0	35
	918132	180.0	181.3	1.3	109
	918133	183.0	184.0	1.0	126
	918134	184.0	185.4	1.4	145
	918135	186.0	186.8	0.8	142
	918136	196.0	197.0	1.0	313
	918137	197.0	198.0	1.0	136
	918138	198.0	199.0	1.0	1260
	918139	199.0	200.0	1.0	875
	918140	200.0	201.0	1.0	403
	918141	201.0	202.0	1.0	547
	918142	202.0	203.0	1.0	2250
	918143	203.0	204.0	1.0	120
	918144	204.0	205.0	1.0	78
	918145	205.0	206.0	1.0	183
	918146	206.0	207.0	1.0	32
	918147	207.0	208.0	1.0	50
	918148	208.0	209.0	1.0	19
	918149	209.0	210.0	1.0	116
	918150	210.0	211.0	1.0	94
	918151	211.0	212.0	1.0	27
	918152	212.0	213.0	1.0	56
	918153	213.0	214.0	1.0	80
	918154	214.0	215.0	1.0	158
	918155	215.0	216.0	1.0	40
	918156	216.0	217.0	1.0	138
	918157	217.0	218.0	1.0	80
	918158	218.0	218.4	0.4	47
	918159	224.0	225.0	1.0	20
	918160	225.0	226.0	1.0	108
	918161	226.0	227.0	1.0	134
	918162	227.0	228.0	1.0	217
	918163	228.0	229.0	1.0	47
	918164	229.0	230.0	1.0	29
	918165	230.0	231.0	1.0	347
	918166	231.0	232.0	1.0	725
	918167	232.0	233.0	1.0	538
	918168	233.0	234.0	1.0	84

Core Sampling data: Drill Hole PGH-18-03B

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	918169	234.0	235.0	1.0	108
	918170	235.0	236.0	1.0	42
	918171	236.0	237.0	1.0	74
	918172	237.0	238.3	1.3	200
	918173	243.6	244.0	0.4	32
	918174	244.0	245.0	1.0	206
	918175	245.0	246.35	1.35	80
	918176	255.5	256.8	1.3	594
	918177	257.65	259.0	1.35	78
	918178	259.0	260.0	1.0	62
	918179	260.0	261.0	1.0	236
	918180	261.0	262.0	1.0	31
	918181	262.0	262.5	0.5	44
	918182	268.0	269.0	1.0	105
	918183	276.1	277.0	0.9	57
	918184	277.0	277.7	0.7	98
	918185	283.25	284.1	0.85	62
	918186	286.0	286.5	0.5	48
	918187	286.5	287.0	0.5	84
	918188	287.0	288.0	1.0	324
	918189	288.0	289.0	1.0	314
	918190	289.0	290.0	1.0	759
	918191	290.0	291.0	1.0	150
	918192	291.0	292.0	1.0	53
	918193	292.0	293.0	1.0	437
	918194	293.0	294.0	1.0	19
	918195	294.0	295.0	1.0	21
	918196	295.0	296.0	1.0	484
	918197	296.0	296.75	0.75	325
	918198	300.25	301.0	0.75	151
	918199	301.0	302.0	1.0	526
	918200	302.0	303.0	1.0	320
	918201	303.0	304.0	1.0	115
	918202	304.0	305.0	1.0	92
	918203	305.0	306.0	1.0	259
	918204	306.0	307.0	1.0	131
	918205	307.0	308.0	1.0	146
	918206	308.0	309.0	1.0	373
	918207	309.0	310.0	1.0	70
	918208	310.0	311.0	1.0	69
	918209	311.0	312.0	1.0	462
	918210	312.0	313.0	1.0	100

Core Sampling data: Drill Hole PGH-18-03B

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	918211	313.0	314.0	1.0	32
	918212	314.0	315.0	1.0	423
	918213	315.0	316.0	1.0	190
	918214	316.0	317.0	1.0	22
	918215	317.0	317.8	0.8	22
	918216	319.8	320.4	0.6	84
	918217	321.0	322.0	1.0	145
	918218	322.0	323.0	1.0	504
	918219	323.0	324.0	1.0	129
	918220	324.0	325.0	1.0	124
	918221	325.0	326.0	1.0	137
	918222	326.0	327.0	1.0	29
	918223	327.0	328.0	1.0	29
	918224	328.0	329.0	1.0	15
	918225	329.0	330.0	1.0	98
	918226	330.0	331.2	1.2	673
	918227	332.55	333.0	0.45	108
	918228	333.0	334.0	1.0	302
	918229	334.0	335.0	1.0	148
	918230	335.0	336.0	1.0	45
	918231	336.0	337.0	1.0	24
	918232	337.0	338.0	1.0	341
	918233	347.5	348.0	0.5	84
	918234	348.0	349.0	1.0	146
	918235	349.0	350.0	1.0	86
	918236	350.0	351.0	1.0	288
	918237	351.0	352.0	1.0	133
	918238	352.0	353.0	1.0	54
	918239	353.0	354.0	1.0	133
	918240	354.3	355.0	0.7	77
	918241	355.0	356.0	1.0	309
	918242	356.0	357.0	1.0	132
	918243	357.0	358.0	1.0	65
	918314	443.0	444.0	1.0	30
	918315	444.0	445.0	1.0	87
	918316	445.0	445.8	0.8	42
	918317	446.75	448.0	1.25	168
	918318	448.0	449.0	1.0	68
	918319	449.0	450.0	1.0	24
	918320	450.0	451.0	1.0	27
	918321	451.0	452.0	1.0	34
	918322	452.0	453.0	1.0	80

Core Sampling data: Drill Hole PGH-18-03B

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	918323	453.0	454.0	1.0	93
	918324	454.0	455.0	1.0	72
	918325	455.0	456.0	1.0	191
	918326	456.0	457.0	1.0	115
	918327	457.0	458.0	1.0	569
	918328	458.0	459.0	1.0	245
	918329	459.0	460.0	1.0	80
	918330	460.0	461.0	1.0	55
	918331	464.35	465.0	0.65	41
	918332	465.0	466.0	1.0	40
	918333	466.0	467.0	1.0	82
	918334	467.0	468.0	1.0	78
	918335	468.0	469.0	1.0	17
	918336	469.0	470.4	1.4	48
	918337	477.6	478.0	0.4	79
	918338	478.0	479.0	1.0	34
	918339	479.0	480.0	1.0	76

Core Sampling Data: Drill Hole PGH-18-04

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
PGH-18-04	918460	24.0	25.0	1.0	155
	918461	25.0	26.0	1.0	155
	918462	49.0	50.0	1.0	112
	918463	50.0	51.0	1.0	131
	918464	51.0	52.0	1.0	109
	918465	52.0	53.0	1.0	87
	918466	53.0	54.0	1.0	181
	918467	54.0	54.7	0.7	105
	918468	57.8	59.0	1.2	99
	918469	59.0	60.0	1.0	109
	918470	60.0	61.0	1.0	108
	918471	61.0	62.0	1.0	103
	918472	62.0	63.0	1.0	84
	918473	63.0	64.0	1.0	45
	918474	64.0	65.0	1.0	44
	918475	65.0	65.5	1.0	25
	918476	66.0	67.0	1.0	51
	918477	67.0	68.0	1.0	43
	918478	68.0	68.9	0.9	42
	918479	71.4	72.0	0.6	114
	918480	72.0	73.0	1.0	120
	918481	75.3	76.0	0.7	74
	918482	76.0	77.0	1.0	28
	918483	77.0	78.0	1.0	28
	918484	78.0	79.0	1.0	58
	918485	79.0	80.0	1.0	66
	918486	81.0	82.0	1.0	149
	918487	82.0	83.4	1.4	38
	918488	85.2	86.0	0.8	75
	918489	86.0	87.0	1.0	62
	918490	87.0	88.0	1.0	85
	918491	88.0	89.0	1.0	183
	918492	89.0	90.0	1.0	144
	918493	90.0	91.0	1.0	63
	918494	94.0	95.0	1.0	114
	918495	95.0	96.0	1.0	242
	918496	96.0	97.0	1.0	128
	918497	97.0	97.6	0.6	52
	918498	108.0	108.5	0.5	43
	918499	118.3	119.0	0.7	88
	918500	119.0	120.0	1.0	176
	918501	120.0	121.0	1.0	133

Core Sampling Data: Drill Hole PGH-18-04

	918502	121.0	122.0	1.0	188
	918503	122.0	123.0	1.0	61
	918504	123.0	124.0	1.0	94
	918505	124.0	125.0	1.0	106
	918506	125.0	126.0	1.0	204
	918507	126.0	127.0	1.0	136
	918508	127.0	128.0	1.0	53
	918509	128.0	129.0	1.0	53
	918510	129.0	130.0	1.0	52
	918511	130.0	131.0	1.0	221
	918512	131.0	132.0	1.0	167
	918513	132.0	132.9	0.9	78
	918514	143.4	144.0	0.6	78
	918515	144.0	145.0	1.0	98
	918516	145.3	146.0	0.7	77
	918517	146.0	147.0	1.0	706
	918518	147.0	148.0	1.0	499
	918519	148.0	149.0	1.0	83
	918520	149.0	150.0	1.0	108
	918521	150.6	151.0	0.4	90
	918522	151.0	152.0	1.0	82
	918523	152.0	153.0	1.0	150
	918524	153.0	154.0	1.0	115
	918525	154.0	155.0	1.0	45
	918526	155.0	156.0	1.0	91
	918527	156.0	157.0	1.0	73
	918528	157.0	158.0	1.0	41
	918529	158.0	159.0	1.0	22
	918530	159.0	159.9	1.0	26
	918531	160.8	162.0	1.2	86
	918532	162.0	163.4	1.4	109
	918533	164.45	165.2	0.75	115
	918534	167.6	169.0	1.4	569
	918535	169.0	170.4	1.4	345
	918536	174.0	175.0	1.0	88
	918537	175.0	176.0	1.0	172
	918538	176.0	177.0	1.0	84
	918539	177.0	178.4	1.4	61
	918540	180.8	182.1	1.3	90
	918541	182.6	184.0	1.4	188
	918542	184.0	185.0	1.0	268
	918543	185.0	186.0	1.0	145
	918544	186.0	187.0	1.0	65
	918545	187.0	188.0	1.0	60
	918546	188.0	189.0	1.0	86

Core Sampling Data: Drill Hole PGH-18-04

	918547	189.0	190.0	1.0	32
	918548	190.0	191.0	1.0	49
	918549	191.0	192.0	1.0	74
	918550	192.0	193.0	1.0	61
	918551	193.0	194.0	1.0	30
	918552	194.0	195.0	1.0	32
	918553	195.0	196.0	1.0	37
	918554	196.0	197.0	1.0	50
	918555	197.0	198.0	1.0	170
	918556	198.0	199.0	1.0	133
	918557	199.0	200.0	1.0	41
	918558	200.0	201.0	1.0	101
	918559	201.0	202.0	1.0	39
	918560	207.5	208.0	0.5	99
	918561	208.0	209.0	1.0	199
	918562	209.0	209.7	0.7	246
	918563	211.1	212.0	0.9	480
	918564	212.0	213.0	1.0	221
	918565	213.0	214.0	1.0	236
	918566	214.0	215.0	1.0	102
	918567	215.0	216.0	1.0	78
	918568	216.0	216.7	0.7	116
	918569	222.6	223.0	0.4	76
	918570	223.0	224.0	1.0	244
	918571	224.0	225.0	1.0	107
	918572	225.0	226.0	1.0	95
	918573	226.0	227.0	1.0	93
	918574	228.2	229.0	0.8	85
	918575	229.0	230.0	1.0	58
	918576	232.7	234.0	1.3	245
	918577	234.0	235.0	1.0	315
	918578	235.0	236.0	1.0	121
	918579	238.2	239.0	0.8	117
	918580	239.0	240.0	1.0	309
	918581	240.0	240.85	0.85	178
	918582	241.9	243.0	1.1	199
	918583	243.0	243.7	0.7	42
	918584	246.2	247.0	0.8	218
	918585	247.0	247.6	0.6	107
	918586	249.1	250.0	0.9	95
	918587	250.0	251.0	1.0	105
	918588	251.0	252.3	1.3	86
	918589	253.0	254.0	1.0	63
	918590	254.0	255.0	1.0	349
	918591	255.0	256.3	1.3	81

Core Sampling Data: Drill Hole PGH-18-04

	918592	256.8	258.3	1.5	49
	918593	258.9	260.0	1.1	244
	918594	260.0	261.0	1.0	58
	918595	261.0	261.7	0.7	24
	918596	265.35	266.0	0.65	183
	918597	266.0	267.0	1.0	106
	918598	267.0	268.0	1.0	71
	918599	268.0	269.0	1.0	53
	918600	269.0	270.0	1.0	82
	918601	270.0	271.0	1.0	41
	918602	271.0	272.0	1.0	86
	918603	272.0	273.0	1.0	236
	918604	273.0	274.0	1.0	118
	918605	274.0	275.0	1.0	72
	918606	275.0	276.0	1.0	32
	918607	276.0	277.0	1.0	76
	918608	277.0	278.0	1.0	896
	918609	278.0	279.0	1.0	81
	918610	283.1	284.0	0.9	68
	918611	284.0	285.0	1.0	47
	918612	285.5	286.6	1.1	187
	918613	287.2	288.0	0.8	112
	918614	289.3	290.4	1.1	38
	918615	291.6	293.0	1.4	83
	918616	293.0	294.0	1.0	39
	918617	294.0	295.0	1.0	101
	918618	295.0	296.0	1.0	359
	918619	296.0	297.0	1.0	81
	918620	298.2	299.0	0.8	87
	918621	299.0	300.0	1.0	148
	918622	300.0	301.0	1.0	146
	918623	301.0	302.0	1.0	34
	918624	302.0	303.0	1.0	97
	918625	303.0	304.0	1.0	41
	918626	304.0	305.0	1.0	124
	918627	305.0	306.0	1.0	88
	918628	306.0	307.0	1.0	56
	918629	307.0	308.0	1.0	12
	918630	308.0	309.0	1.0	150
	918631	309.0	310.0	1.0	231
	918632	310.0	311.0	1.0	62
	918633	311.0	312.0	1.0	100
	918634	312.0	313.0	1.0	142
	918635	313.0	314.0	1.0	234
	918636	314.0	314.5	0.5	160

Core Sampling Data: Drill Hole PGH-18-04

	918637	315.5	316.0	0.5	166
	918638	316.0	317.0	1.0	256
	918639	317.0	318.4	1.4	62
	918640	319.8	321.0	1.2	77
	918641	321.0	322.0	1.0	230
	918642	322.0	323.0	1.0	216
	918643	323.0	324.0	1.0	25
	918644	324.0	325.0	1.0	37
	918645	325.0	326.0	1.0	53
	918646	326.0	327.0	1.0	57
	918647	327.0	328.0	1.0	32
	918648	328.0	329.0	1.0	74
	918649	329.0	330.0	1.0	128
	918650	330.0	331.0	1.0	85
	918651	331.0	332.0	1.0	0
	918652	332.0	333.2	1.2	26
	918653	333.8	335.0	1.2	28
	918654	335.0	336.0	1.0	156
	918655	336.0	337.0	1.0	1980
	918656	337.0	338.0	1.0	426
	918657	338.0	339.0	1.0	467
	918658	339.0	340.0	1.0	94
	918659	340.0	341.0	1.0	151
	918660	341.0	342.0	1.0	151
	918661	342.0	343.0	1.0	170
	918662	343.0	344.0	1.0	208
	918663	344.0	345.0	1.0	17
	918664	345.0	346.0	1.0	29
	918665	346.0	347.0	1.0	434
	918666	347.0	348.0	1.0	358
	918667	348.0	349.0	1.0	17
	918668	349.0	349.8	0.8	0
	918669	354.3	355.0	0.7	346
	918670	355.0	356.0	1.0	227
	918671	356.0	357.0	1.0	104
	918672	357.0	358.0	1.0	113
	918673	358.0	359.0	1.0	119
	918674	359.0	360.0	1.0	205
	918675	361.0	362.0	1.0	291
	918676	362.0	362.7	0.7	219
	918677	364.0	365.0	1.0	78
	918678	365.0	366.0	1.0	121
	918679	366.0	367.0	1.0	16
	918680	367.0	368.0	1.0	146
	918681	368.0	369.0	1.0	158

Core Sampling Data: Drill Hole PGH-18-04

	918682	369.0	370.0	1.0	125
	918683	370.0	371.0	1.0	186
	918684	371.0	372.0	1.0	579
	918685	372.0	373.0	1.0	273
	918686	373.0	374.0	1.0	379
	918687	374.0	374.6	0.6	174
	918688	376.0	377.0	1.0	349
	918689	377.0	378.0	1.0	456
	918690	378.0	379.0	1.0	403
	918691	379.0	380.0	1.0	534
	918692	380.0	380.6	0.6	128
	918693	381.9	383.0	1.1	78
	918694	383.0	384.0	1.0	153
	918695	384.0	385.0	1.0	833
	918696	386.0	387.0	1.0	552
	918697	388.0	389.0	1.0	127
	918698	389.0	389.7	0.7	93
	918699	391.0	392.0	1.0	144
	918700	392.0	293.0	1.0	187
	918701	393.0	394.0	1.0	265
	918702	394.0	395.0	1.0	112
	918703	395.0	396.0	1.0	216
	918704	396.0	397.0	1.0	106
	918705	397.0	398.0	1.0	64
	918706	398.0	399.0	1.0	133
	918707	399.0	400.0	1.0	84
	918708	400.0	401.0	1.0	127
	918709	401.0	402.0	1.0	85
	918710	402.0	403.0	1.0	51
	918711	403.0	404.0	1.0	68
	918712	404.0	405.0	1.0	80
	918713	405.0	406.0	1.0	87
	918714	406.0	407.0	1.0	39
	918715	407.0	408.0	1.0	80
	918716	408.0	409.0	1.0	184
	918717	409.0	410.0	1.0	173
	918718	410.0	411.0	1.0	29
	918719	411.0	412.0	1.0	154
	918720	412.0	413.0	1.0	28
	918721	413.0	414.0	1.0	44
	918722	414.0	415.0	1.0	225
	918723	415.0	416.0	1.0	45
	918724	416.0	417.0	1.0	27
	918725	418.2	419.0	0.8	190
	918726	419.0	420.0	1.0	523

Core Sampling Data: Drill Hole PGH-18-04

	918727	420.0	421.0	1.0	104
	918728	421.0	422.0	1.0	234
	918729	422.0	423.0	1.0	43
	918730	423.0	424.0	1.0	55
	918731	425.0	426.0	1.0	95
	918732	426.0	427.0	1.0	22
	918733	427.0	428.0	1.0	141
	918734	428.0	429.0	1.0	128
	918735	432.0	433.0	1.0	74
	918736	433.0	434.0	1.0	80
	918737	434.0	435.0	1.0	87
	918738	437.0	438.0	1.0	26
	918739	438.0	439.0	1.0	250
	918740	439.0	440.0	1.0	14
	918741	440.0	441.0	1.0	156
	918742	441.0	441.6	0.6	78
	918743	443.0	444.0	1.0	111
	918744	444.0	444.4	0.4	78
	918745	445.0	446.0	1.0	202
	918746	446.0	447.0	1.0	379
	918747	447.0	448.0	1.0	456
	918748	448.0	449.0	1.0	437
	918749	449.0	449.7	0.7	140
	918750	451.0	452.0	1.0	566
	918751	452.0	453.0	1.0	147
	918752	453.0	453.6	0.6	127
	918753	458.0	459.0	1.0	53
	918754	459.0	460.0	1.0	67
	918755	460.0	461.0	1.0	502
	918756	461.0	462.0	1.0	26
	918757	462.0	462.5	0.5	110
	918758	463.0	464.0	1.0	38
	918759	464.0	465.0	1.0	443
	918760	465.0	466.0	1.0	23
	918761	466.0	467.0	1.0	230
	918762	467.0	468.0	1.0	1610
	918763	468.0	469.0	1.0	238
	918764	469.0	470.0	1.0	387
	918765	475.2	476.0	0.8	95
	918766	476.0	477.0	1.0	50
	918767	477.0	478.0	1.0	174
	918768	478.0	479.0	1.0	89
	918769	479.0	480.0	1.0	70
	918770	480.0	481.0	1.0	91
	918771	481.0	482.0	1.0	611

Core Sampling Data: Drill Hole PGH-18-04

	918772	482.0	483.0	1.0	140
	918773	483.0	484.1	1.1	116
	918774	485.5	486.3	0.8	294
	918775	487.8	489.3	1.5	641
	918776	621.6	622.0	1.0	16
	918777	622.0	623.0	1.0	161
	918778	623.0	624.0	1.0	71
	918779	624.0	625.0	1.0	101
	918780	625.0	626.0	1.0	53
	918781	626.0	627.0	1.0	27
	918782	627.0	628.0	1.0	17
	918783	628.0	629.0	1.0	14
	918784	629.0	630.0	1.0	121
	918785	630.0	631.0	1.0	226
	918786	631.0	632.0	1.0	30
	918787	632.0	633.0	1.0	126
	918788	633.0	634.0	1.0	70
	918789	634.0	635.0	1.0	160
	918790	635.0	636.0	1.0	351
	918791	636.0	637.0	1.0	184
	918792	637.0	638.0	1.0	19
	918793	638.0	639.0	1.0	40
	918794	639.0	640.0	1.0	8
	918795	640.0	641.0	1.0	77
	918796	641.0	642.0	1.0	522
	918797	642.0	643.0	1.0	63
	918798	643.0	644.0	1.0	29
	918799	644.0	645.0	1.0	33
	918800	645.0	646.0	1.0	1100
	918801	646.0	647.0	1.0	342
	918802	647.0	648.0	1.0	39
	918803	648.0	649.0	1.0	25
	918804	649.0	650.2	1.2	1060
	918805	667.1	668.0	0.9	556
	918806	668.0	669.0	1.0	134
	918807	669.0	670.0	1.0	442
	918808	670.0	671.0	1.0	625
	918809	671.0	672.0	1.0	115

Core Sampling Data: Drill Hole PGH-18-05

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
PGH-18-05	918810	8.3	9.0	0.7	69
	918811	9.0	10.0	1.0	78
	918812	10.0	11.2	1.2	71
	918813	24.5	25.0	0.5	54
	918814	25.0	26.0	1.0	78
	918815	26.0	27.0	1.0	78
	918816	57.8	59.0	1.2	166
	918817	59.0	60.0	1.0	255

Core Sampling Data: Drill Hole PGH-18-05B

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
PGH-18-05B	918818	3.3	4.0	0.7	960
	918819	4.0	5.0	1.0	424
	918820	5.0	6.0	1.0	327
	918821	6.0	7.0	1.0	1050
	918822	7.0	8.0	1.0	309
	918823	8.0	9.0	1.0	243
	918824	9.0	10.0	1.0	120
	918825	10.0	11.0	1.0	108
	918826	11.0	12.0	1.0	94
	918827	12.0	13.0	1.0	281
	918828	13.0	14.0	1.0	139
	918829	14.0	15.0	1.0	530
	918830	15.0	16.0	1.0	171
	918831	16.0	17.0	1.0	329
	918832	17.0	18.0	1.0	1320
	918833	18.0	19.0	1.0	213
	918834	19.0	20.0	1.0	557
	918835	20.0	21.0	1.0	351
	918836	21.0	22.0	1.0	280
	918837	22.0	23.0	1.0	319
	918838	23.0	24.0	1.0	549
	918839	24.0	25.0	1.0	92
	918840	25.0	26.0	1.0	127
	918841	26.0	27.0	1.0	44
	918842	27.0	28.0	1.0	77
	918843	28.0	29.0	1.0	139
	918844	29.0	30.0	1.0	1080
	918845	30.0	31.0	1.0	63
	918846	31.0	32.0	1.0	64
	918847	32.0	33.0	1.0	465
	918848	33.0	34.0	1.0	504
	918849	34.0	35.0	1.0	185
	918850	35.0	36.0	1.0	58
	918851	36.0	37.0	1.0	540
	918852	37.0	38.0	1.0	329
	918853	38.0	39.0	1.0	211
	918854	39.0	40.0	1.0	842
	918855	40.0	41.0	1.0	401
	918856	41.0	42.0	1.0	153
	918857	42.0	43.0	1.0	227
	918858	43.0	44.0	1.0	266
	918859	44.0	45.0	1.0	143
	918860	45.0	46.0	1.0	498
	918861	46.0	47.0	1.0	226

Core Sampling Data: Drill Hole PGH-18-05B

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	918862	47.0	48.0	1.0	284
	918863	48.0	49.0	1.0	442
	918864	49.0	50.0	1.0	144
	918865	50.0	51.0	1.0	332
	918866	51.0	52.0	1.0	889
	918867	52.0	53.0	1.0	321
	918868	53.0	54.0	1.0	381
	918869	54.0	55.0	1.0	91
	918870	55.0	56.0	1.0	96
	918871	56.0	57.0	1.0	178
	918872	57.0	58.0	1.0	283
	918873	58.0	59.0	1.0	580
	918874	59.0	60.0	1.0	354
	918875	60.0	61.0	1.0	141
	918876	61.0	62.0	1.0	126
	918877	62.0	63.0	1.0	199
	918878	63.0	64.0	1.0	254
	918879	64.0	65.0	1.0	2040
	918880	65.0	66.0	1.0	1440
	918881	66.0	67.0	1.0	213
	918882	67.0	68.0	1.0	759
	918883	68.0	69.0	1.0	1190
	918884	69.0	70.0	1.0	2700
	918885	70.0	71.0	1.0	1620
	918886	71.0	72.0	1.0	3160

Core Sampling Data: PGH-18-06

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
PGH-18-06	918887	7.75	9.0	1.25	273
	918888	9.0	10.0	1.0	84
	918889	10.0	11.0	1.0	113
	918890	11.0	12.0	1.0	228
	918891	12.0	13.0	1.0	314
	918892	13.0	14.0	1.0	992
	918893	14.0	15.3	1.3	410
	918894	18.1	19.0	0.9	100
	918895	19.0	20.0	1.0	468
	918896	20.0	21.0	1.0	593
	918897	21.0	22.0	1.0	204
	918898	22.0	23.0	1.0	521
	918899	23.0	24.0	1.0	181
	918900	24.0	25.0	1.0	92
	918901	25.0	25.8	0.8	54
	918902	41.4	42.0	0.6	89
	918903	42.0	43.0	1.0	69
	918904	43.0	44.0	1.0	114
	918905	44.0	45.0	1.0	99
	918906	45.0	46.0	1.0	82
	918907	46.0	47.0	1.0	106
	918908	47.0	48.2	1.2	85
	918909	48.6	49.6	1.0	101
	918910	50.4	51.6	1.2	111
	918911	58.0	59.0	1.0	61
	918912	59.0	60.0	1.0	93
	918913	60.0	61.0	1.0	47
	918914	61.0	62.0	1.0	42
	918915	62.0	63.0	1.0	89
	918916	63.0	64.0	1.0	61
	918917	64.0	65.0	1.0	55
	918918	65.0	66.0	1.0	403
	918919	66.0	67.0	1.0	382
	918920	67.0	68.0	1.0	185
	918921	68.0	69.0	1.0	161
	918922	69.0	70.0	1.0	164
	918923	70.0	71.0	1.0	98
	918924	71.0	72.0	1.0	176
	918925	72.0	73.0	1.0	106
	918926	73.0	74.0	1.0	181
	918927	75.0	76.0	1.0	158
	918928	76.0	77.0	1.0	84

Core Sampling Data: PGH-18-06

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	918929	77.0	78.0	1.0	132
	918930	78.0	79.0	1.0	165
	918931	79.0	80.2	1.2	111
	918932	91.3	92.0	0.7	388
	918933	92.0	93.0	1.0	90
	918934	93.0	94.0	1.0	121
	918935	94.0	95.0	1.0	403
	918936	95.0	96.0	1.0	221
	918937	96.0	97.0	1.0	152
	918938	97.0	97.6	0.6	92
	918939	110.7	112.0	1.3	100
	918940	112.0	113.0	1.0	147
	918941	113.0	114.0	1.0	295
	918942	114.0	115.0	1.0	229
	918943	115.0	116.0	1.0	119
	918944	116.0	117.0	1.0	319
	918945	125.0	126.0	1.0	173
	918946	126.0	126.4	0.4	207
	918947	134.0	135.0	1.0	113
	918948	135.0	136.0	1.0	192
	918949	136.0	137.0	1.0	203
	918950	137.0	138.0	1.0	284
	918951	138.0	139.0	1.0	172
	918952	139.0	140.0	1.0	223
	918953	140.0	141.5	1.5	195
	918954	160.0	161.0	1.0	262
	918955	161.0	162.0	1.0	402
	918956	162.0	163.0	1.0	269
	918957	163.0	164.0	1.0	248
	918958	164.0	165.0	1.0	170
	918959	165.9	167.0	1.1	202
	918960	167.0	168.0	1.0	169
	918961	168.0	169.0	1.0	139
	918962	169.0	170.0	1.0	225
	918963	170.0	171.0	1.0	154
	918964	171.0	172.0	1.0	142
	918965	172.0	173.0	1.0	155
	918966	173.0	174.0	1.0	92
	918967	174.0	175.0	1.0	255
	918968	175.0	176.0	1.0	187
	918969	176.0	177.0	1.0	251
	918970	177.0	178.0	1.0	94

Core Sampling Data: PGH-18-06

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	918971	232.6	233.0	0.4	138
	918972	233.0	234.0	1.0	124
	918973	234.0	235.0	1.0	224
	918974	235.0	236.0	1.0	187
	918975	236.0	237.0	1.0	226
	918976	237.0	237.8	0.8	125
	918977	244.6	246.0	1.4	108
	918978	246.0	247.0	1.0	279
	918979	247.0	247.5	0.5	186
	918980	250.2	251.0	0.8	166
	918981	251.0	252.0	1.0	90
	918982	252.0	252.8	0.8	112
	918983	257.7	259.0	1.3	105
	918984	259.0	260.0	1.0	116
	918985	260.0	261.0	1.0	187
	918986	261.0	262.0	1.0	156
	918987	262.0	263.0	1.0	113
	918988	263.0	264.0	1.0	253
	918989	264.0	265.0	1.0	108
	918990	265.0	266.0	1.0	374
	918991	266.0	267.0	1.0	196
	918992	267.0	268.0	1.0	230
	918993	268.0	269.0	1.0	131
	918994	269.0	270.0	1.0	113
	918995	270.0	271.0	1.0	63
	918996	271.0	272.0	1.0	91
	918997	272.0	273.0	1.0	80
	918998	273.0	274.0	1.0	205
	918999	274.0	275.0	1.0	135
	919000	275.0	276.0	1.0	279
	919001	276.0	276.6	0.6	116
	919002	281.9	283.0	1.1	104
	919003	283.0	284.0	1.0	263
	919004	284.0	285.0	1.0	194
	919005	290.2	291.0	0.8	217
	919006	291.0	292.3	1.3	99
	919007	294.0	295.0	1.0	102
	919008	295.0	296.0	1.0	107
	919009	296.0	296.6	0.6	54
	919010	298.3	299.0	0.7	275
	919011	299.0	300.0	1.0	104
	919012	300.0	301.0	1.0	97

Core Sampling Data: PGH-18-06

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	919013	301.0	301.6	0.6	136
	919014	304.3	305.0	0.7	193
	919015	305.0	306.0	1.0	122
	919016	306.0	307.0	1.0	124
	919017	307.0	308.0	1.0	156
	919018	308.0	309.0	1.0	212
	919019	309.0	310.0	1.0	150
	919020	310.0	311.0	1.0	461
	919021	311.0	312.0	1.0	487
	919022	312.0	313.0	1.0	288
	919023	313.0	313.7	0.7	301
	919024	317.5	318.0	0.5	268
	919025	318.0	319.0	1.0	106
	919026	319.0	320.0	1.0	72
	919027	320.0	321.0	1.0	234
	919028	321.0	322.0	1.0	221
	919029	322.0	323.0	1.0	98
	919030	323.0	323.7	0.7	83
	919031	325.3	326.0	0.7	72
	919032	326.0	327.0	1.0	135
	919033	327.0	328.1	1.1	22
	919034	335.2	336.0	0.8	207
	919035	336.0	337.0	1.0	34
	919036	337.0	338.0	1.0	134
	919037	338.0	338.8	0.8	98
	919038	344.0	344.4	0.4	552
	919039	350.0	351.0	1.0	47
	919040	351.0	352.0	1.0	49
	919041	352.0	353.0	1.0	47
	919042	353.0	354.1	1.1	129
	919043	362.0	363.0	1.0	87
	919044	363.0	364.0	1.0	88
	919045	364.0	365.0	1.0	81
	919046	365.0	366.0	1.0	67
	919047	366.0	367.0	1.0	51
	919048	367.0	368.0	1.0	98
	919049	368.0	368.8	0.8	96
	919050	447.3	448.0	0.7	144
	919051	448.0	449.0	1.0	61
	919052	449.0	450.0	1.0	145
	919053	450.0	451.0	1.0	224
	919054	451.0	452.0	1.0	91

Core Sampling Data: PGH-18-06

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	919055	452.0	453.0	1.0	73
	919056	453.0	454.0	1.0	36
	919057	454.0	455.0	1.0	70
	919058	455.0	456.0	1.0	21
	919059	456.0	457.0	1.0	114
	919060	457.0	458.0	1.0	16
	919061	458.0	459.0	1.0	13
	919062	459.0	460.0	1.0	19
	919063	460.0	461.0	1.0	25
	919064	461.0	462.0	1.0	98
	919065	462.0	463.0	1.0	19
	919066	463.0	464.0	1.0	10
	919067	464.0	465.0	1.0	20
	919068	465.0	466.0	1.0	95
	919069	466.0	467.0	1.0	461
	919070	467.0	468.4	1.4	80
	919071	468.7	470.0	1.3	239
	919072	470.0	471.0	1.0	136
	919073	471.0	472.0	1.0	70
	919074	472.0	473.0	1.0	49
	919075	473.0	474.0	1.0	69
	919076	474.0	475.0	1.0	232
	919077	475.0	476.0	1.0	65
	919078	476.0	477.0	1.0	86
	919079	477.0	478.0	1.0	71
	919080	478.0	479.0	1.0	194
	919081	479.0	479.65	0.65	129
	919082	481.0	482.0	1.0	88
	919083	482.0	483.0	1.0	68
	919084	483.0	484.0	1.0	67
	919085	484.0	485.0	1.0	173
	919086	485.0	486.0	1.0	104
	919087	486.0	487.0	1.0	54
	919088	487.0	488.0	1.0	92
	919089	488.0	488.75	0.75	488
	919090	493.2	493.6	0.4	227
	919091	510.6	511.0	0.4	85
	919092	511.0	512.0	1.0	423
	919093	512.0	513.0	1.0	316
	919094	513.0	514.0	1.0	57
	919095	514.0	515.0	1.0	63
	919096	515.7	517.0	1.3	65

Core Sampling Data: PGH-18-06

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	919097	517.0	518.0	1.0	20
	919098	518.0	519.0	1.0	39
	919099	519.0	520.0	1.0	62
	919100	520.0	521.0	1.0	60
	919101	521.0	522.0	1.0	101
	919102	522.0	523.0	1.0	183
	919103	523.0	524.0	1.0	125
	919104	524.0	525.0	1.0	309
	919105	525.0	526.0	1.0	110
	919106	526.0	527.0	1.0	572
	919107	527.0	528.0	1.0	236
	919108	528.0	529.0	1.0	44
	919109	529.0	530.0	1.0	104
	919110	530.0	530.65	0.65	89
	919111	533.0	534.0	1.0	75
	919112	534.0	535.0	1.0	128
	919113	535.0	536.0	1.0	140
	919114	536.0	537.0	1.0	60
	919115	537.0	538.0	1.0	32
	919116	538.0	539.0	1.0	80
	919117	539.0	540.0	1.0	83
	919118	540.0	541.0	1.0	40
	919119	541.0	542.3	1.3	101
	919120	544.0	545.0	1.0	75
	919121	545.0	546.0	1.0	50
	919122	547.5	549.0	1.0	87
	919123	549.0	549.6	0.6	74
	919124	550.7	552.0	1.3	64
	919125	552.9	554.0	1.1	76
	919126	554.0	555.0	1.0	75
	919127	555.0	556.45	1.45	32
	919128	557.4	558.0	0.6	189
	919129	558.0	559.3	1.3	683
	919130	560.3	561.0	0.7	78
	919131	561.0	562.0	1.0	357
	919132	562.0	563.0	1.0	74
	919133	563.0	564.0	1.0	147
	919134	564.0	565.2	1.2	101
	919135	569.2	570.0	0.8	59
	919136	570.0	571.0	1.0	66
	919137	571.0	572.0	1.0	71
	919138	572.0	573.0	1.0	255

Core Sampling Data: PGH-18-06

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	919139	573.0	574.0	1.0	94
	919140	574.0	575.0	1.0	56
	919141	575.0	576.0	1.0	66
	919142	576.0	576.8	0.8	136
	919143	578.1	579.0	0.9	70
	919144	579.0	580.0	1.0	166
	919145	580.0	581.0	1.0	156
	919146	581.0	582.0	1.0	229
	919147	582.0	583.0	1.0	35
	919148	583.0	584.0	1.0	38
	919149	584.0	585.0	1.0	42
	919150	585.0	586.0	1.0	109
	919151	586.0	587.3	1.3	63
	919152	589.3	590.0	0.7	129
	919153	590.0	591.0	1.0	47
	919154	591.0	592.0	1.0	72
	919155	592.0	593.0	1.0	30
	919156	593.0	594.0	1.0	36
	919157	594.0	595.2	1.2	35
	919158	596.7	598.0	1.3	25
	919159	598.0	599.0	1.0	63
	919160	599.0	600.0	1.0	140
	919161	600.0	601.0	1.0	81
	919162	601.0	602.0	1.0	60
	919163	602.0	603.0	1.0	133
	919164	603.0	604.0	1.0	465
	919165	604.0	605.0	1.0	160
	919166	605.0	606.0	1.0	38
	919167	606.0	607.0	1.0	117
	919168	607.0	608.0	1.0	77
	919169	608.0	609.0	1.0	878
	919170	609.0	610.0	1.0	482
	919171	610.0	611.0	1.0	884
	919172	611.0	612.0	1.0	925
	919173	612.0	613.0	1.0	144
	919174	613.0	614.0	1.0	49
	919175	614.0	615.0	1.0	198
	919176	615.0	616.0	1.0	35
	919177	616.0	617.0	1.0	36
	919178	617.0	618.0	1.0	35
	919179	618.0	618.7	0.7	80
	919180	620.2	621.0	0.8	224

Core Sampling Data: PGH-18-06

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	919181	621.0	622.0	1.0	359
	919182	622.0	623.0	1.0	1530
	919183	623.0	623.8	0.8	93
	919184	625.5	626.0	0.5	76
	919185	626.0	627.0	1.0	103
	919186	627.0	628.0	1.0	173
	919187	628.0	629.0	1.0	256
	919188	629.0	630.0	1.0	28
	919189	630.0	630.9	0.9	38

Core Sampling Data: Drill Hole PGH-18-07

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
PGH-18-07	919190	3.2	4.0	0.8	40
	919191	4.0	5.0	1.0	48
	919192	5.0	6.0	1.0	22
	919193	6.0	7.0	1.0	0
	919194	7.0	8.0	1.0	160
	919195	8.0	9.0	1.0	70
	919196	9.0	10.0	1.0	313
	919197	10.0	11.2	1.2	167
	919198	17.8	19.0	1.2	134
	919199	19.0	20.0	1.0	77
	919200	20.0	21.0	1.0	30
	919201	21.0	22.0	1.0	43
	919202	22.0	23.0	1.0	52
	919203	23.0	24.0	1.0	52
	919204	24.0	25.0	1.0	14
	919205	25.0	26.0	1.0	25
	919206	26.0	27.0	1.0	15
	919207	27.0	28.0	1.0	43
	919208	28.0	29.0	1.0	23
	919209	29.0	30.0	1.0	141
	919210	30.0	31.0	1.0	54
	919211	31.0	32.0	1.0	101
	919212	32.0	33.0	1.0	878
	919213	33.0	34.0	1.0	115
	919214	34.0	35.0	1.0	123
	919215	35.0	36.0	1.0	68
	919216	36.0	37.0	1.0	38
	919217	37.0	38.0	1.0	127
	919218	38.0	39.0	1.0	66
	919219	41.0	42.0	1.0	57
	919220	42.0	43.0	1.0	165
	919221	43.0	44.0	1.0	130
	919222	44.0	45.0	1.0	61
	919223	45.0	46.0	1.0	53
	919224	46.0	47.0	1.0	50
	919225	47.0	48.0	1.0	89
	919226	48.0	49.0	1.0	32
	919227	49.0	50.0	1.0	26
	919228	50.0	51.0	1.0	39
	919229	51.0	51.8	0.8	32
	919230	54.0	55.1	1.1	74
	919231	56.0	57.0	1.0	208

Core Sampling Data: Drill Hole PGH-18-07

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	919232	57.0	58.4	1.4	251
	919233	59.2	60.0	0.8	189
	919234	60.0	61.0	1.0	121
	919235	61.0	62.0	1.0	166
	919236	62.0	63.0	1.0	320
	919237	63.0	64.0	1.0	96
	919238	64.0	65.45	1.45	128
	919239	66.0	67.3	1.3	279
	919240	69.4	70.0	0.6	174
	919241	70.0	71.0	1.0	154
	919242	71.0	72.0	1.0	108
	919243	72.0	73.0	1.0	147
	919244	73.0	74.0	1.0	143
	919245	75.9	77.0	1.1	153
	919246	77.0	78.0	1.0	243
	919247	78.0	79.0	1.0	221
	919248	79.0	80.0	1.0	49
	919249	80.0	81.0	1.0	120
	919250	81.0	82.0	1.0	208
	919251	86.3	87.0	1.0	104
	919252	87.0	88.0	1.0	57
	919253	88.0	89.0	1.0	57
	919254	89.0	90.0	1.0	79
	919255	90.0	91.0	1.0	45
	919256	91.0	92.0	1.0	135
	919257	92.0	93.0	1.0	71
	919258	93.0	94.0	1.0	401
	919259	94.0	95.0	1.0	218
	919260	95.0	96.0	1.0	137
	919261	96.0	97.0	1.0	640
	919262	97.9	99.0	1.1	273
	919263	99.0	99.4	0.4	361
	919264	101.3	102.0	0.7	1170
	919265	102.0	103.1	1.1	437
	919266	104.3	105.0	0.7	253
	919267	105.0	106.0	1.0	104
	919268	106.0	107.0	1.0	106
	919269	107.0	108.0	1.0	97
	919270	108.0	108.4	0.4	43
	919271	109.3	110.0	0.7	164
	919272	110.0	110.8	0.8	122
	919273	111.6	112.0	0.4	72

Core Sampling Data: Drill Hole PGH-18-07

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	919274	112.0	113.0	1.0	138
	919275	113.0	114.0	1.0	134
	919276	114.0	115.0	1.0	131
	919277	115.0	116.0	1.0	102
	919278	116.0	117.0	1.0	150
	919279	117.0	118.0	1.0	125
	919280	118.0	119.0	1.0	151
	919281	119.0	120.0	1.0	240
	919282	120.0	121.0	1.0	289
	919283	121.0	122.0	1.0	188
	919284	122.0	123.0	1.0	312
	919285	123.0	124.0	1.0	125
	919286	124.0	125.0	1.0	143
	919287	125.0	126.0	1.0	340
	919288	126.0	127.0	1.0	116
	919289	127.0	128.0	1.0	139
	919290	128.0	129.0	1.0	102
	919291	129.0	130.0	1.0	96
	919292	130.0	131.0	1.0	65
	919293	131.0	132.0	1.0	53
	919294	132.0	133.0	1.0	63
	919295	133.0	134.2	1.2	86
	919296	135.8	137.0	1.2	119
	919297	137.0	138.0	1.0	52
	919298	138.0	139.0	1.0	108
	919299	143.2	144.0	0.8	73
	919300	144.0	145.0	1.0	54
	919301	145.0	146.0	1.0	99
	919302	146.0	146.6	0.6	143
	919303	148.9	150.0	1.1	59
	919304	150.0	151.2	1.2	37
	919305	152.9	154.0	1.1	64
	919306	154.0	155.0	1.0	86
	919307	155.0	156.0	1.0	42
	919308	156.0	157.0	1.0	146
	919309	157.0	158.0	1.0	80
	919310	158.0	159.0	1.0	121
	919311	159.0	160.0	1.0	51
	919312	160.0	161.0	1.0	65
	919313	161.0	162.0	1.0	178
	919314	162.0	163.0	1.0	120
	919315	163.0	164.0	1.0	75

Core Sampling Data: Drill Hole PGH-18-07

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	919316	164.0	165.0	1.0	632
	919317	165.0	166.0	1.0	368
	919318	166.0	167.0	1.0	23
	919319	167.0	168.0	1.0	137
	919320	168.0	169.0	1.0	38
	919321	169.0	169.8	1.0	49
	919322	182.0	183.0	1.0	105
	919323	183.0	184.0	1.0	142
	919324	184.0	185.0	1.0	60
	919325	185.0	186.0	1.0	80
	919326	186.0	187.0	1.0	77
	919327	187.0	188.0	1.0	264
	919328	188.0	189.0	1.0	526
	919329	189.0	190.0	1.0	261
	919330	190.0	191.0	1.0	37
	919331	191.0	192.0	1.0	38
	919332	192.0	193.0	1.0	146
	919333	193.0	194.0	1.0	187
	919334	194.0	195.0	1.0	27
	919335	196.0	197.0	1.0	403
	919336	197.0	198.0	1.0	158
	919337	198.0	199.0	1.0	166
	919338	199.0	200.0	1.0	113
	919339	200.0	201.0	1.0	140
	919340	206.6	208.0	1.4	66
	919341	208.0	209.0	1.0	62
	919342	209.0	210.0	1.0	68
	919343	210.0	211.0	1.0	87
	919344	211.0	212.0	1.0	131
	919345	212.0	213.0	1.0	65
	919346	213.0	214.0	1.0	32
	919347	220.2	221.0	0.8	38
	919348	221.0	222.0	1.0	65
	919349	222.0	223.0	1.0	90
	919350	223.0	224.0	1.0	109
	919351	224.0	225.0	1.0	234
	919352	225.0	226.0	1.0	104
	919353	236.3	237.0	0.7	112
	919354	237.0	238.0	1.0	145
	919355	238.0	239.0	1.0	181
	919356	239.0	240.0	1.0	98
	919357	240.0	241.0	1.0	193

Core Sampling Data: Drill Hole PGH-18-07

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	919358	241.0	242.0	1.0	134
	919359	242.0	243.0	1.0	71
	919360	243.0	244.0	1.0	54
	919361	244.0	245.0	1.0	50
	919362	245.0	246.0	1.0	368
	919363	246.0	247.0	1.0	57
	919364	247.0	248.0	1.0	109
	919365	249.3	250.0	0.7	78
	919366	250.0	251.0	1.0	423
	919367	251.0	252.0	1.0	230
	919368	252.0	253.0	1.0	89
	919369	253.0	254.0	1.0	111
	919370	254.0	255.0	1.0	94
	919371	255.0	256.0	1.0	92
	919372	256.0	257.0	1.0	191
	919373	257.0	258.0	1.0	78
	919374	258.0	259.0	1.0	93
	919375	259.0	260.0	1.0	169
	919376	260.0	261.0	1.0	283
	919377	261.0	262.0	1.0	681
	919378	262.0	263.0	1.0	341
	919379	263.0	264.0	1.0	316
	919380	264.0	265.0	1.0	156
	919381	265.0	266.0	1.0	165
	919382	289.0	290.0	1.0	134
	919383	290.0	291.0	1.0	175
	919384	291.0	292.0	1.0	2500
	919385	292.0	293.3	1.3	248
	919386	307.4	308.0	0.6	229
	919387	308.0	309.0	1.0	490
	919388	309.0	310.0	1.0	113
	919389	310.0	311.0	1.0	86
	919390	311.0	312.0	1.0	457
	919391	312.0	313.1	1.1	76
	919392	315.9	317.0	1.1	240
	919393	317.0	318.0	1.0	201
	919394	318.0	319.0	1.0	155
	919395	319.0	320.0	1.0	649
	919396	320.0	321.0	1.0	243
	919397	323.85	324.85	1.0	597
	919398	326.3	327.0	0.7	266
	919399	327.0	328.0	1.0	197

Core Sampling Data: Drill Hole PGH-18-07

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	919400	328.0	329.0	1.0	118
	919401	329.0	330.0	1.0	109
	919402	330.0	331.0	1.0	101
	919403	331.0	332.0	1.0	278
	919404	332.0	332.7	0.7	99
	919405	335.5	336.0	0.5	112
	919406	336.0	337.0	1.0	256
	919407	337.0	338.0	1.0	168
	919408	338.0	338.7	0.7	164
	919409	339.6	341.3	1.7	95
	919410	342.0	343.0	1.0	583
	919411	343.0	344.0	1.0	95
	919412	344.0	345.0	1.0	55
	919413	345.0	345.5	0.5	83
	919414	348.0	349.0	1.0	166
	919415	349.0	350.0	1.0	271
	919416	350.0	351.0	1.0	108
	919417	351.0	352.0	1.0	49
	919418	352.0	353.0	1.0	308
	919419	353.0	354.0	1.0	257
	919420	354.0	355.0	1.0	774
	919421	355.0	356.0	1.0	343
	919422	356.0	357.0	1.0	234
	919423	357.0	358.0	1.0	172
	919424	358.0	359.0	1.0	80
	919425	359.0	359.7	0.7	123
	919426	361.0	362.0	1.0	39
	919427	362.0	363.0	1.0	87
	919428	363.0	364.0	1.0	41
	919429	364.0	365.0	1.0	34
	919430	365.0	366.0	1.0	144
	919431	366.0	367.0	1.0	17
	919432	367.0	368.0	1.0	84
	919433	368.0	369.0	1.0	131
	919434	369.0	370.0	1.0	23
	919435	370.0	371.0	1.0	68
	919436	371.0	372.0	1.0	23
	919437	372.0	372.75	0.75	98
	919438	375.4	376.0	0.6	120
	919439	376.0	377.0	1.0	220
	919440	377.0	378.0	1.0	106
	919441	378.0	378.8	0.8	71

Core Sampling Data: Drill Hole PGH-18-07

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	919442	379.85	381.0	1.15	55
	919443	381.0	382.0	1.0	44
	919444	382.0	383.0	1.0	380
	919445	383.0	384.0	1.0	410
	919446	384.0	385.0	1.0	47
	919447	385.0	386.0	1.0	27
	919448	386.0	387.0	1.0	161
	919449	388.3	389.2	0.9	21
	919450	391.1	392.0	0.9	40
	919451	392.0	393.0	1.0	40
	919452	393.0	394.0	1.0	80
	919453	394.0	395.0	1.0	84
	919454	395.0	396.0	1.0	64
	919455	396.0	397.0	1.0	71
	919456	397.0	398.0	1.0	189
	919457	398.0	399.0	1.0	94
	919458	399.0	400.0	1.0	72
	919459	400.0	401.0	1.0	66
	919460	401.0	402.4	1.4	150
	919461	405.5	406.0	0.5	66
	919462	406.0	407.0	1.0	28
	919463	407.0	408.0	1.0	106
	919464	408.0	409.0	1.0	15
	919465	409.0	410.0	1.0	52
	919466	410.0	411.0	1.0	38
	919467	411.0	412.0	1.0	53
	919468	412.0	413.0	1.0	164
	919469	413.0	414.0	1.0	312
	919470	414.0	415.0	1.0	51
	919471	415.0	416.0	1.0	65
	919472	416.0	417.0	1.0	435
	919473	417.0	418.0	1.0	35
	919474	418.0	419.0	1.0	50
	919475	419.0	420.0	1.0	64
	919476	420.0	421.0	1.0	77
	919477	421.0	422.0	1.0	198
	919478	422.0	423.0	1.0	262
	919479	423.0	424.0	1.0	79
	919480	424.0	425.0	1.0	158
	919481	425.0	426.0	1.0	48
	919482	426.0	426.7	0.7	82
	919483	439.6	441.0	1.4	47

Core Sampling Data: Drill Hole PGH-18-07

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	919484	441.0	441.7	0.7	318
	919485	442.3	443.0	0.7	437
	919486	443.0	444.4	1.4	110
	919487	445.0	446.0	1.0	99
	919488	446.0	447.0	1.0	56
	919489	447.0	448.0	1.0	34
	919490	448.0	449.0	1.0	875
	919491	449.0	450.0	1.0	275
	919492	450.0	451.0	1.0	70
	919493	451.0	452.0	1.0	25
	919494	452.0	453.0	1.0	209
	919495	453.0	454.0	1.0	25
	919496	454.0	455.0	1.0	58
	919497	455.0	456.0	1.0	30
	919498	456.0	457.0	1.0	59
	919499	457.0	458.0	1.0	31
	919500	458.0	459.0	1.0	33
	919501	459.0	460.0	1.0	62
	919502	460.0	461.0	1.0	106
	919503	461.0	462.0	1.0	135
	919504	462.0	463.0	1.0	378
	919505	463.0	464.0	1.0	224
	919506	464.0	465.0	1.0	105
	919507	465.0	466.0	1.0	138
	919508	466.0	467.0	1.0	151
	919509	467.0	468.1	1.1	57
	919510	478.4	479.0	0.6	60
	919511	479.0	480.0	1.0	146
	919512	480.0	481.0	1.0	84
	919513	481.0	482.0	1.0	280
	919514	482.0	483.2	1.2	74
	919515	486.7	488.0	1.3	201
	919516	488.0	489.0	1.0	102
	919517	489.0	490.0	1.0	119
	919518	490.0	491.0	1.0	263
	919519	491.0	492.0	1.0	157
	919520	492.0	492.5	0.5	211
	919521	494.9	496.0	1.1	102
	919522	496.0	497.0	1.0	232
	919523	497.0	498.0	1.0	410
	919524	498.0	499.0	1.0	60
	919525	499.0	500.0	1.0	75

Core Sampling Data: Drill Hole PGH-18-07

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	919526	500.0	501.05	1.05	52
	919527	506.5	507.0	0.5	74
	919528	507.0	508.0	1.0	505
	919529	508.0	509.0	1.0	151
	919530	509.0	510.0	1.0	122
	919531	510.0	511.0	1.0	550
	919532	511.0	512.1	1.1	294
	919533	532.8	534.0	1.2	155
	919534	534.0	534.5	0.5	50
	919535	535.0	535.9	0.9	21
	919536	536.5	537.0	1.5	22
	919537	537.0	538.0	1.0	26
	919538	538.0	539.0	1.0	45
	919539	539.0	540.0	1.0	34
	919540	540.0	541.0	1.0	28
	919541	541.0	542.0	1.0	18
	919542	542.0	543.0	1.0	29
	919543	543.0	544.1	1.1	59
	919544	556.1	557.0	0.9	104
	919545	557.0	558.0	1.0	22
	919546	558.0	559.0	1.0	402
	919547	559.0	560.0	1.0	311
	919548	560.0	561.0	1.0	183
	919549	561.0	562.0	1.0	46
	919550	562.0	563.0	1.0	94
	919551	563.0	564.0	1.0	965
	919552	564.0	565.0	1.0	187
	919553	565.0	566.0	1.0	280
	919554	566.0	567.0	1.0	108
	919555	567.0	568.0	1.0	73
	919556	568.0	570.0	1.0	132
	919557	569.0	570.0	1.0	98
	919558	570.0	570.6	0.6	131
	919559	591.6	593.0	1.4	121
	919560	593.0	594.0	1.0	143
	919561	594.0	595.0	1.0	347
	919562	595.0	596.0	1.0	56
	919563	596.0	597.0	1.0	91
	919564	597.0	598.2	1.2	639
	919565	600.2	601.0	0.8	57
	919566	601.0	602.0	1.0	34
	919567	602.0	603.0	1.0	53

Core Sampling Data: Drill Hole PGH-18-07

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	919568	603.0	604.0	1.0	54
	919569	604.0	605.0	1.0	202
	919570	605.0	606.0	1.0	71
	919571	606.0	607.0	1.0	185
	919572	607.0	607.8	0.8	37
	919573	653.0	654.0	1.0	152
	919574	654.0	655.0	1.0	147
	919575	655.0	656.0	1.0	107
	919576	656.0	657.0	1.0	125
	919577	657.0	658.0	1.0	477
	919578	658.0	659.0	1.0	109
	919579	659.0	660.0	1.0	147
	919580	660.0	661.0	1.0	196
	919581	661.0	662.0	1.0	220
	919582	662.0	662.6	0.6	96
	919583	666.0	667.0	1.0	331
	919584	667.0	668.0	1.0	88
	919585	668.0	669.0	1.0	62

Core Sampling Data: Drill Hole PGH-18-08

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
PGH-18-08	919586	8.7	10.0	1.3	4780
	919587	10.0	11.0	1.0	928
	919588	11.0	12.4	1.4	205
	919589	16.5	17.0	0.5	39
	919590	17.0	18.0	1.0	76
	919591	18.0	19.0	1.0	449
	919592	19.0	20.0	1.0	44
	919593	20.0	21.0	1.0	81
	919594	21.0	22.0	1.0	53
	919595	22.0	23.0	1.0	74
	919596	23.0	24.0	1.0	261
	919597	24.0	25.0	1.0	96
	919598	25.0	26.0	1.0	580
	919599	26.0	27.0	1.0	683
	919600	27.0	28.2	1.2	60
	919601	29.7	31.0	1.3	340
	919602	31.0	32.1	1.1	640
	919603	33.5	34.0	0.5	211
	919604	34.0	35.0	1.0	246
	919605	35.0	36.0	1.0	90
	919606	73.0	74.0	1.0	70
	919607	74.0	75.0	1.0	56
	919608	75.0	76.0	1.0	89
	919609	76.0	77.0	1.0	409
	919610	77.0	78.0	1.0	26
	919611	78.0	79.0	1.0	97
	919612	79.0	80.0	1.0	355
	919613	80.0	81.0	1.0	81
	919614	81.0	82.0	1.0	29
	919615	82.0	83.0	1.0	136
	919616	83.0	84.0	1.0	129
	919617	84.0	85.0	1.0	44
	919618	85.0	86.0	1.0	123
	919619	86.0	87.0	1.0	64
	919620	87.0	88.0	1.0	164
	919621	88.0	89.0	1.0	128
	919622	89.0	89.6	0.6	163
	919623	102.6	104.0	1.4	53
	919624	104.0	105.0	1.0	125
	919625	105.0	106.0	1.0	103
	919626	106.0	107.0	1.0	133
	919627	107.0	108.0	1.0	103

Core Sampling Data: Drill Hole PGH-18-08

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	919628	108.0	108.7	0.7	67
	919629	123.8	125.0	1.2	102
	919630	125.0	126.0	1.0	143
	919631	126.0	127.0	1.0	169
	919632	127.0	128.0	1.0	358
	919633	128.0	129.0	1.0	303
	919634	129.0	130.0	1.0	83
	919635	130.0	131.0	1.0	523
	919636	131.0	132.0	1.0	45
	919637	132.0	133.0	1.0	171
	919638	133.0	134.0	1.0	155
	919639	134.0	135.0	1.0	81
	919640	135.0	136.0	1.0	57
	919641	136.0	137.0	1.0	139
	919642	137.0	138.3	1.3	74
	919643	140.7	142.0	1.3	102
	919644	142.0	143.0	1.0	197
	919645	143.0	144.0	1.0	273
	919646	144.0	145.0	1.0	111
	919647	145.0	146.0	1.0	214
	919648	146.0	147.0	1.0	158
	919649	147.0	148.2	1.2	82
	919650	183.0	184.0	1.0	108
	919651	184.0	185.0	1.0	110
	919652	185.0	186.0	1.0	44
	919653	186.0	187.0	1.0	192
	919654	187.0	188.0	1.0	73
	919655	188.0	189.0	1.0	51
	919656	189.0	190.0	1.0	165
	919657	190.0	191.0	1.0	82
	919658	191.0	192.0	1.0	104
	919659	192.0	193.0	1.0	83
	919660	193.0	194.0	1.0	34
	919661	194.0	195.0	1.0	150
	919662	195.0	196.0	1.0	49
	919663	196.0	197.0	1.0	637
	919664	197.0	198.0	1.0	184
	919665	198.0	199.0	1.0	51
	919666	199.0	200.0	1.0	60
	919667	200.0	201.0	1.0	157
	919668	201.0	202.0	1.0	642
	919669	202.0	203.0	1.0	59

Core Sampling Data: Drill Hole PGH-18-08

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	919670	203.0	204.0	1.0	50
	919671	204.0	205.0	1.0	63
	919672	205.0	206.0	1.0	77
	919673	206.0	207.0	1.0	55
	919674	207.0	208.0	1.0	679
	919675	208.0	209.0	1.0	79
	919676	209.0	210.0	1.0	170
	919677	210.0	211.0	1.0	132
	919678	211.0	212.0	1.0	100
	919679	212.0	213.0	1.0	168
	919680	213.0	214.0	1.0	264
	919681	214.0	215.0	1.0	179
	919682	215.0	216.0	1.0	216
	919683	216.0	217.0	1.0	574
	919684	217.0	218.0	1.0	159
	919685	218.0	219.0	1.0	153
	919686	219.0	220.0	1.0	156
	919687	220.0	221.0	1.0	145
	919688	221.0	222.3	1.3	107
	919689	224.2	225.0	0.8	148
	919690	225.0	226.0	1.0	54
	919691	226.0	227.0	1.0	132
	919692	227.0	228.0	1.0	102
	919693	228.0	229.0	1.0	90
	919694	229.0	230.3	1.3	96
	919695	232.2	233.0	0.8	42
	919696	233.0	234.0	1.0	26
	919697	234.0	235.0	1.0	11
	919698	235.0	236.0	1.0	201
	919699	236.0	236.7	0.7	86
	919700	240.4	241.0	0.6	268
	919701	241.0	242.0	1.0	282
	919702	242.0	243.0	1.0	61
	919703	243.0	244.0	1.0	75
	919704	244.0	245.0	1.0	88
	919705	245.0	246.0	1.0	339
	919706	246.0	247.0	1.0	26
	919707	247.0	248.0	1.0	33
	919708	248.0	249.0	1.0	26
	919709	249.0	250.0	1.0	233
	919710	250.0	251.4	1.4	127
	919711	251.9	253.0	1.1	62

Core Sampling Data: Drill Hole PGH-18-08

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	919712	253.0	254.0	1.0	126
	919713	254.0	255.0	1.0	450
	919714	255.0	256.0	1.0	101
	919715	256.0	257.0	1.0	374
	919716	257.0	258.0	1.0	792
	919717	258.0	259.0	1.0	450
	919718	259.0	260.0	1.0	109
	919719	260.0	261.0	1.0	16
	919720	261.0	262.0	1.0	16
	919721	262.0	263.0	1.0	226
	919722	263.0	264.0	1.0	40
	919723	264.0	265.0	1.0	31
	919724	265.0	266.0	1.0	252
	919725	266.0	267.0	1.0	391
	919726	267.0	268.0	1.0	534
	919727	268.0	269.4	1.4	365
	919728	270.0	271.0	1.0	63
	919729	271.0	272.0	1.0	48
	919730	272.0	273.0	1.0	24
	919731	273.0	274.0	1.0	24
	919732	274.0	275.0	1.0	40
	919733	275.0	276.0	1.0	25
	919734	276.0	277.0	1.0	508
	919735	277.0	278.3	1.3	52
	919736	278.9	280.0	1.1	547
	919737	280.0	281.0	1.0	71
	919738	281.0	282.0	1.0	62
	919739	282.0	283.0	1.0	152
	919740	283.0	284.0	1.0	234
	919741	284.0	285.0	1.0	490
	919742	285.0	286.1	1.1	51
	919743	287.0	288.0	1.0	342
	919744	288.0	289.0	1.0	194
	919745	289.0	290.0	1.0	41
	919746	290.0	290.9	0.9	294
	919747	338.0	339.0	1.0	91
	919748	339.0	340.0	1.0	47
	919749	340.0	341.0	1.0	94
	919750	341.0	342.0	1.0	48
	919751	342.0	342.8	0.8	47
	919752	347.0	348.0	1.0	35
	919753	348.0	349.0	1.0	132

Core Sampling Data: Drill Hole PGH-18-08

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	919754	349.0	350.0	1.0	80
	919755	350.0	351.0	1.0	92
	919756	351.0	352.0	1.0	58
	919757	352.0	353.0	1.0	49
	919758	353.0	354.0	1.0	62
	919759	354.0	355.0	1.0	314
	919760	355.0	356.0	1.0	172
	919761	356.0	357.15	1.15	61
	919762	412.0	413.0	1.0	64
	919763	413.0	414.0	1.0	97
	919764	414.0	415.0	1.0	76
	919765	415.0	416.0	1.0	51
	919766	416.0	417.0	1.0	44
	919767	420.0	421.0	1.0	179
	919768	421.0	422.0	1.0	421
	919769	422.0	423.0	1.0	314
	919770	423.0	424.0	1.0	372
	919771	424.0	425.0	1.0	75
	919772	425.0	426.0	1.0	292
	919773	426.0	427.0	1.0	229
	919774	427.0	428.0	1.0	30
	919775	428.0	429.0	1.0	36
	919776	429.0	430.0	1.0	33
	919777	430.0	431.0	1.0	37
	919778	431.0	432.0	1.0	85
	919779	432.0	433.0	1.0	162
	919780	433.0	434.0	1.0	34
	919781	434.0	435.0	1.0	35
	919782	435.0	436.0	1.0	223
	919783	436.0	437.0	1.0	67
	919784	437.0	438.0	1.0	41
	919785	438.0	439.0	1.0	55
	919786	439.0	440.0	1.0	119
	919787	440.0	441.0	1.0	118
	919788	441.0	441.6	0.6	93
	919789	443.0	444.0	1.0	77
	919790	444.0	445.0	1.0	98
	919791	445.0	446.2	1.2	49
	919792	449.5	450.0	0.5	17
	919793	450.0	451.0	1.0	21
	919794	451.0	452.0	1.0	31
	919795	452.0	453.0	1.0	384

Core Sampling Data: Drill Hole PGH-18-08

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	919796	453.0	454.0	1.0	202
	919797	454.0	455.0	1.0	231
	919798	455.0	456.0	1.0	67
	919799	456.0	457.0	1.0	66
	919800	457.0	458.0	1.0	300
	919801	458.0	459.0	1.0	58
	919802	459.0	460.0	1.0	24
	919803	460.0	461.0	1.0	122
	919804	461.0	462.0	1.0	205
	919805	462.0	463.0	1.0	43
	919806	463.0	464.0	1.0	120
	919807	464.9	466.0	1.1	123
	919808	466.0	467.0	1.0	103
	919809	467.0	468.0	1.0	37
	919810	468.0	469.0	1.0	163
	919811	469.0	470.0	1.0	222
	919812	470.0	471.0	1.0	46
	919813	471.0	472.0	1.0	27
	919814	472.0	473.0	1.0	25
	919815	473.0	474.0	1.0	274
	919816	474.0	475.0	1.0	145
	919817	475.0	476.0	1.0	51
	919818	476.0	477.1	1.1	85
	919819	480.6	482.0	1.4	166
	919820	482.0	483.0	1.0	85
	919821	483.0	484.0	1.0	240
	919822	484.0	485.0	1.0	287
	919823	485.0	486.0	1.0	48
	919824	486.0	487.0	1.0	39
	919825	487.0	488.0	1.0	28
	919826	488.0	489.0	1.0	141
	919827	489.0	490.0	1.0	117
	919828	490.0	491.0	1.0	56
	919829	491.0	492.0	1.0	70
	919830	492.0	493.0	1.0	153
	919831	493.0	494.0	1.0	243
	919832	494.0	495.0	1.0	81
	919833	495.0	496.0	1.0	51
	919834	496.0	497.0	1.0	72
	919835	497.0	498.0	1.0	41

Core Sampling Data: Drill Hole PGH-18-09

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
PGH-18-09	919836	3.0	4.0	1.0	464
	919837	4.0	5.0	1.0	75
	919838	5.0	6.0	1.0	44
	919839	6.0	7.0	1.0	63
	919840	7.0	8.0	1.0	116
	919841	8.0	9.0	1.0	338
	919842	9.0	10.0	1.0	283
	919843	10.0	11.0	1.0	144
	919844	11.0	12.0	1.0	264
	919845	12.0	13.0	1.0	211
	919846	13.0	14.0	1.0	118
	919847	14.0	15.0	1.0	68
	919848	15.0	16.0	1.0	84
	919849	16.0	17.0	1.0	323
	919850	17.0	18.0	1.0	198
	919851	18.0	19.0	1.0	86
	919852	19.0	20.0	1.0	103
	919853	20.0	21.0	1.0	55
	919854	21.0	22.0	1.0	29
	919855	22.0	23.0	1.0	41
	919856	23.0	24.0	1.0	101
	919857	24.0	25.0	1.0	244
	919858	25.0	26.0	1.0	770
	919859	26.0	27.0	1.0	131
	919860	27.0	28.0	1.0	66
	919861	28.0	29.0	1.0	72
	919862	29.0	30.0	1.0	113
	919863	30.0	31.0	1.0	102
	919864	31.0	32.0	1.0	170
	919865	32.0	33.0	1.0	123
	919866	33.0	34.0	1.0	172
	919867	34.0	35.0	1.0	227
	919868	35.0	36.0	1.0	72
	919869	36.0	37.0	1.0	66
	919870	37.0	38.0	1.0	97
	919871	38.0	39.0	1.0	113
	919872	39.0	40.0	1.0	145
	919873	40.0	41.0	1.0	138
	919874	41.0	42.0	1.0	100
	919875	42.0	43.0	1.0	281
	919876	53.0	54.0	1.0	115
	919877	54.0	55.0	1.0	77
	919878	55.0	56.0	1.0	89
	919879	56.0	57.0	1.0	210

Core Sampling Data: Drill Hole PGH-18-09

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	919880	57.0	58.0	1.0	189
	919881	58.0	59.0	1.0	189
	919882	65.65	67.0	1.35	112
	919883	67.0	68.0	1.0	61
	919884	68.0	69.0	1.0	132
	919885	69.0	70.0	1.0	76
	919886	70.0	71.0	1.0	57
	919887	71.0	72.0	1.0	58
	919888	72.0	73.0	1.0	151
	919889	73.0	74.0	1.0	31
	919890	74.0	75.0	1.0	42
	919891	75.0	76.0	1.0	30
	919892	76.0	77.0	1.0	73
	919893	77.0	78.0	1.0	50
	919894	78.0	79.0	1.0	78
	919895	79.0	80.0	1.0	35
	919896	80.0	80.4	0.4	17
	919897	81.0	82.0	1.0	59
	919898	82.0	83.0	1.0	52
	919899	83.0	84.0	1.0	116
	919900	84.0	85.0	1.0	254
	919901	85.0	86.0	1.0	334
	919902	86.0	87.0	1.0	84
	919903	87.0	88.0	1.0	112
	919904	88.0	89.0	1.0	58
	919905	89.0	90.0	1.0	42
	919906	90.0	91.0	1.0	67
	919907	91.0	92.0	1.0	97
	919908	92.0	93.0	1.0	789
	919909	93.0	94.0	1.0	205
	919910	94.0	94.8	0.8	243
	919911	97.0	98.0	1.0	69
	919912	98.0	99.0	1.0	205
	919913	99.0	100.0	1.0	82
	919914	100.0	100.4	0.4	79
	919915	104.1	105.0	0.9	176
	919916	105.0	106.0	1.0	134
	919917	106.0	107.0	1.0	81
	919918	107.0	108.0	1.0	93
	919919	108.0	109.0	1.0	73
	919920	109.0	110.0	1.0	56
	919921	110.0	111.0	1.0	13
	919922	111.0	112.0	1.0	27
	919923	116.8	118.0	1.0	86

Core Sampling Data: Drill Hole PGH-18-09

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	919924	118.0	119.0	1.0	40
	919925	119.0	120.0	1.0	702
	919926	120.0	121.0	1.0	107
	919927	121.0	122.0	1.0	165
	919928	122.0	122.5	0.5	69
	919929	135.1	136.0	0.9	124
	919930	136.0	137.0	1.0	229
	919931	137.0	138.0	1.0	127
	919932	138.0	139.0	1.0	516
	919933	139.0	140.0	1.0	553
	919934	140.0	141.0	1.0	113
	919935	148.8	150.0	1.2	124
	919936	150.0	151.0	1.0	74
	919937	151.0	152.0	1.0	54
	919938	152.0	153.0	1.0	74
	919939	153.0	154.0	1.0	124
	919940	154.0	155.0	1.0	186
	919941	155.0	156.0	1.0	780
	919942	156.0	157.0	1.0	766
	919943	157.0	158.0	1.0	111
	919944	158.0	159.5	1.5	207
	919945	189.0	190.0	1.0	580
	919946	190.0	191.0	1.0	852
	919947	191.0	192.0	1.0	612
	919948	192.0	193.0	1.0	779
	919949	193.0	194.0	1.0	198
	919950	194.0	195.0	1.0	227
	919951	195.0	196.0	1.0	415
	919952	196.0	197.0	1.0	641
	919953	197.0	198.0	1.0	612
	919954	198.0	199.0	1.0	735
	919955	199.0	200.0	1.0	782
	919956	200.0	201.0	1.0	884
	919957	212.0	213.0	1.0	160
	919958	213.0	214.0	1.0	287
	919959	214.0	215.0	1.0	781
	919960	215.0	216.5	1.5	990
	919961	217.0	218.0	1.0	139
	919962	218.0	219.0	1.0	360
	919963	219.0	220.0	1.0	50
	919964	220.0	221.0	1.0	53
	919965	221.0	222.0	1.0	205
	919966	222.0	223.0	1.0	154
	919967	223.0	224.0	1.0	128

Core Sampling Data: Drill Hole PGH-18-09

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	919968	224.0	225.0	1.0	26
	919969	225.0	225.74	0.74	42
	919970	227.2	228.0	0.8	157
	919971	228.0	229.0	1.0	171
	919972	229.0	230.0	1.0	65
	919973	230.0	231.0	1.0	17
	919974	231.0	232.0	1.0	91
	919975	232.0	233.0	1.0	38
	919976	233.0	234.4	1.0	60
	919977	239.0	240.0	1.0	92
	919978	240.0	241.0	1.0	85
	919979	241.0	242.0	1.0	82
	919980	242.0	243.0	1.0	80
	919981	243.0	243.6	0.6	35
	919982	244.6	246.0	1.4	99
	919983	246.0	247.0	1.0	782
	919984	247.0	248.0	1.0	45
	919985	248.0	249.4	1.4	63
	919986	256.7	258.0	1.3	253
	919987	258.0	259.0	1.0	493
	919988	259.0	260.0	1.0	206
	919989	260.0	261.0	1.0	43
	919990	261.0	262.0	1.0	31
	919991	262.0	263.0	1.0	135
	919992	263.0	264.0	1.0	418
	919993	264.0	265.0	1.0	145
	919994	265.0	266.3	1.3	249
	919995	274.0	275.0	1.0	107
	919996	275.0	276.0	1.0	54
	919997	276.0	277.0	1.0	66
	919998	297.4	298.0	0.6	359
	919999	298.0	299.0	1.0	62
	920000	299.0	300.0	1.0	83
PGH-18-09	912551	300.0	301.0	1.0	340
	912552	301.0	302.0	1.0	427
	912553	302.0	303.0	1.0	188
	912554	303.0	304.0	1.0	384
	912555	304.0	305.0	1.0	373
	912556	305.0	306.0	1.0	1860
	912557	306.0	307.0	1.0	230
	912558	307.0	308.0	1.0	226
	912559	308.0	309.0	1.0	170
	912560	310.3	311.0	0.7	162
	912561	311.0	312.0	1.0	41

Core Sampling Data: Drill Hole PGH-18-09

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	912562	312.0	313.2	1.2	55
	912563	325.4	326.0	0.6	185
	912564	326.0	327.0	1.0	74
	912565	327.0	328.0	1.0	329
	912566	328.0	329.0	1.0	182
	912567	329.0	330.0	1.0	331
	912568	330.0	331.45	1.45	172
	912569	342.0	343.0	1.0	146
	912570	343.0	344.0	1.0	89
	912571	344.0	345.0	1.0	242
	912572	347.2	348.0	0.8	213
	912573	348.0	349.0	1.0	42
	912574	349.0	350.0	1.0	40
	912575	350.0	351.0	1.0	65
	912576	351.0	352.0	1.0	171
	912577	354.3	355.0	0.7	41
	912578	355.0	356.0	1.0	297
	912579	356.0	357.0	1.0	175
	912580	357.0	358.0	1.0	151
	912581	358.0	359.5	1.5	102
	912582	360.1	361.0	0.9	51
	912583	361.0	362.0	1.0	94
	912584	362.0	363.0	1.0	71
	912585	363.0	364.2	1.2	85
	912586	365.0	366.0	1.0	209
	912587	366.0	367.0	1.0	34
	912588	367.0	368.4	1.4	136
	912589	372.0	373.0	1.0	73
	912590	373.0	374.0	1.0	612
	912591	374.0	375.3	1.3	485
	912592	383.2	384.0	0.8	262
	912593	384.0	385.0	1.0	298
	912594	385.0	386.0	1.0	221
	912595	386.0	387.0	1.0	31
	912596	387.0	388.0	1.0	41
	912597	388.0	389.0	1.0	133
	912598	389.0	390.0	1.0	65
	912599	390.0	390.6	0.6	44
	912600	391.9	393.0	1.1	102
	912601	393.0	393.7	0.7	334
	912602	397.0	398.0	1.0	406
	912603	398.0	399.0	1.0	256
	912604	399.0	399.7	0.7	71
	912605	401.2	402.0	0.8	184

Core Sampling Data: Drill Hole PGH-18-09

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	912606	402.0	403.0	1.0	678
	912607	403.0	404.0	1.0	190
	912608	404.0	405.0	1.0	57
	912609	405.0	406.0	1.0	425
	912610	406.0	407.0	1.0	801
	912611	407.0	408.0	1.0	51
	912612	408.0	409.0	1.0	56
	912613	409.0	410.0	1.0	69
	912614	410.0	411.0	1.0	17
	912615	411.0	412.0	1.0	39
	912616	412.0	413.0	1.0	40
	912617	413.0	414.0	1.0	316
	912618	414.0	415.0	1.0	189
	912619	415.0	416.0	1.0	964
	912620	416.0	417.0	1.0	393
	912621	417.0	418.0	1.0	416
	912622	418.0	419.0	1.0	307
	912623	419.0	420.0	1.0	192
	912624	420.0	421.0	1.0	185
	912625	421.0	422.0	1.0	70
	912626	422.0	423.0	1.0	140
	912627	423.0	424.0	1.0	105
	912628	424.0	425.0	1.0	149
	912629	425.0	426.0	1.0	194
	912630	426.0	426.8	0.8	705
	912631	437.4	438.0	0.6	238
	912632	438.0	439.0	1.0	94
	912633	439.0	440.0	1.0	284
	912634	440.0	441.0	1.0	601
	912635	441.0	442.0	1.0	79
	912636	442.0	443.0	1.0	60
	912637	443.0	444.0	1.0	530
	912638	444.0	445.0	1.0	197
	912639	460.8	462.0	1.2	405
	912640	462.0	463.0	1.0	676
	912641	463.0	464.0	1.0	364
	912642	464.0	465.0	1.0	637
	912643	465.0	465.5	0.5	307
	912644	468.6	470.0	1.4	442
	912645	470.0	471.0	1.0	234
	912646	471.0	472.0	1.0	51
	912647	472.0	473.0	1.0	101
	912648	473.0	474.0	1.0	50
	912649	474.0	474.7	0.7	56

Core Sampling Data: Drill Hole PGH-18-09

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	912650	482.9	484.0	1.1	349
	912651	484.0	485.0	1.0	39
	912652	485.0	486.0	1.0	77
	912653	486.0	487.0	1.0	435
	912654	495.0	496.0	1.0	68
	912655	496.0	497.0	1.0	98
	912656	497.0	498.0	1.0	142
	912657	498.0	499.0	1.0	66
	912658	499.0	500.2	1.2	84
	912659	501.3	502.0	0.7	737
	912660	502.0	503.0	1.0	782
	912661	503.0	503.8	0.8	289
	912662	505.6	507.0	1.4	257
	912663	507.0	508.0	1.0	106
	912664	508.0	509.0	1.0	544
	912665	509.0	510.0	1.0	62

Core Sampling Data: Drill Hole PGH-18-10

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
PGH-18-10	912832	3.0	4.0	1.0	149
	912833	4.0	5.0	1.0	348
	912834	5.0	6.0	1.0	721
	912835	6.0	7.0	1.0	328
	912836	7.0	8.0	1.0	406
	912837	8.0	9.0	1.0	83
	912838	9.0	10.0	1.0	257
	912839	10.0	11.0	1.0	235
	912840	11.0	12.0	1.0	103
	912841	12.0	13.0	1.0	154
	912842	13.0	14.0	1.0	170
	912843	14.0	15.0	1.0	2360
	912844	15.0	16.0	1.0	589
	912845	16.0	17.0	1.0	756
	912846	17.0	18.0	1.0	645
	912847	18.0	19.0	1.0	368
	912848	19.0	20.0	1.0	324
	912849	20.0	21.0	1.0	166
	912850	21.0	22.0	1.0	369
	912851	22.0	23.0	1.0	69
	912852	23.0	24.0	1.0	227
	912853	24.0	25.0	1.0	204
	912854	25.0	26.0	1.0	240
	912855	26.0	27.0	1.0	193
	912856	27.0	28.0	1.0	1050
	912857	28.0	29.0	1.0	954
	912858	29.0	30.0	1.0	555
	912859	30.0	31.0	1.0	392
	912860	31.0	32.0	1.0	270
	912861	32.0	33.0	1.0	482
	912862	33.0	34.0	1.0	289
	912863	34.0	35.0	1.0	164
	912864	35.0	36.0	1.0	73

Core Sampling Data: Drill Hole PGH-18-10A

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
PGH-18-10A	912666	30.0	31.0	1.0	493
	912667	31.0	32.0	1.0	277
	912668	32.0	33.0	1.0	311
	912669	33.0	34.0	1.0	470
	912670	34.0	35.0	1.0	119
	912671	35.0	36.0	1.0	115
	912672	36.0	37.0	1.0	112
	912673	37.0	38.0	1.0	50
	912674	38.0	39.0	1.0	83
	912675	39.0	40.0	1.0	44
	912676	40.0	41.0	1.0	92
	912677	41.0	42.0	1.0	104
	912678	42.0	43.0	1.0	298
	912679	43.0	44.0	1.0	227
	912680	44.0	45.0	1.0	232
	912681	46.0	47.0	1.0	190
	912682	47.0	48.0	1.0	136
	912683	48.0	49.0	1.0	65
	912684	49.0	50.0	1.0	116
	912685	50.0	51.0	1.0	67
	912686	51.0	52.0	1.0	41
	912687	52.0	53.0	1.0	13
	912688	53.0	53.9	0.9	55
	912689	56.1	57.0	0.9	101
	912690	57.0	58.0	1.0	80
	912691	58.0	59.0	1.0	393
	912692	59.0	60.0	1.0	170
	912693	60.0	61.0	1.0	52
	912694	61.0	62.0	1.0	44
	912695	62.0	63.4	1.4	93
	912696	64.1	65.0	0.9	174
	912697	65.0	65.8	0.8	152
	912698	66.0	67.0	1.0	85
	912699	67.0	68.0	1.0	63
	912700	68.0	69.0	1.0	132
	912701	69.0	70.0	1.0	93
	912702	70.0	71.0	1.0	116
	912703	71.0	72.0	1.0	80
	912704	72.0	73.0	1.0	207
	912705	73.0	74.0	1.0	101
	912706	74.0	75.0	1.0	147
	912707	75.0	76.0	1.0	135

Core Sampling Data: Drill Hole PGH-18-10A

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	912708	76.0	77.3	1.3	89
	912709	77.9	79.0	1.1	380
	912710	79.0	80.0	1.0	203
	912711	80.0	81.0	1.0	110
	912712	81.0	82.3	1.3	529
	912713	83.3	84.0	0.7	299
	912714	84.0	85.0	1.0	203
	912715	85.0	86.1	1.1	112
	912716	87.2	88.0	0.8	272
	912717	88.0	89.2	1.2	207
	912718	91.6	92.3	0.7	168
	912719	118.9	120.0	1.1	306
	912720	120.0	121.0	1.0	716
	912721	121.0	122.0	1.0	113
	912722	122.0	123.0	1.0	147
	912723	123.0	124.0	1.0	820
	912724	124.0	125.0	1.0	82
	912725	128.0	129.0	1.0	110
	912726	129.0	129.7	0.7	158
	912727	132.2	133.0	0.8	458
	912728	133.0	134.0	1.0	219
	912729	134.0	135.0	1.0	238
	912730	135.0	136.0	1.0	148
	912731	136.0	137.0	1.0	114
	912732	137.0	138.0	1.0	58
	912733	138.0	139.0	1.0	130
	912734	139.0	139.6	1.0	282
	912735	140.7	142.0	1.3	117
	912736	142.0	143.0	1.0	118
	912737	143.0	144.0	1.0	275
	912738	144.0	145.0	1.0	184
	912739	145.0	146.0	1.0	461
	912740	152.0	153.0	1.0	99
	912741	153.0	154.0	1.0	188
	912742	154.0	155.4	1.4	59
	912743	170.9	172.0	1.1	87
	912744	172.0	173.0	1.0	54
	912745	173.0	174.0	1.0	65
	912746	180.0	181.0	1.0	78
	912747	181.0	181.8	0.8	47
	912748	182.6	183.0	0.4	276
	912749	183.0	184.0	1.0	162

Core Sampling Data: Drill Hole PGH-18-10A

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	912750	184.0	185.0	1.0	60
	912751	185.0	185.5	0.5	189
	912752	188.0	189.0	1.0	201
	912753	189.0	190.0	1.0	54
	912754	190.0	191.4	1.4	70
	912755	193.7	195.0	1.3	86
	912756	195.0	196.0	1.0	44
	912757	196.0	197.0	1.0	75
	912758	197.0	198.0	1.0	130
	912759	198.0	199.0	1.0	152
	912760	199.0	200.0	1.0	101
	912761	200.0	200.7	0.7	139
	912762	202.0	203.0	1.0	73
	912763	203.0	204.0	1.0	173
	912764	204.0	205.0	1.0	127
	912765	205.0	205.8	0.8	147
	912766	210.3	211.0	0.7	86
	912767	211.0	212.0	1.0	141
	912768	212.0	213.0	1.0	279
	912769	213.0	214.0	1.0	57
	912770	216.6	218.0	1.4	107
	912771	218.0	219.0	1.0	245
	912772	219.0	219.5	0.5	156
	912773	221.75	223.0	1.25	159
	912774	223.0	224.0	1.0	23
	912775	224.0	225.1	1.1	66
	912776	227.8	229.0	1.2	57
	912777	229.0	230.0	1.0	142
	912778	230.0	231.2	1.2	125
	912779	231.5	232.0	0.5	291
	912780	232.0	233.0	1.0	88
	912781	233.0	234.0	1.0	28
	912782	234.0	235.0	1.0	100
	912783	235.0	235.7	0.7	59
	912784	239.6	241.0	1.4	493
	912785	241.0	242.0	1.0	104
	912786	242.0	243.0	1.0	133
	912787	243.0	244.0	1.0	65
	912788	244.0	245.0	1.0	90
	912789	245.0	245.5	0.5	114
	912790	254.1	255.0	0.9	95
	912791	255.0	256.3	1.3	257

Core Sampling Data: Drill Hole PGH-18-10A

Drill Hole No.	Core Sample No.	Drill Hole Interval (m)		Core Sample Length (m)	Assay Result Nb (ppm)
		To	From		
	912792	256.8	258.0	1.2	711
	912793	258.0	259.0	1.0	305
	912794	259.0	259.8	0.8	134
	912795	273.7	275.0	1.3	191
	912796	275.0	275.8	0.8	373
	912797	283.0	284.0	1.0	1120
	912798	284.0	285.0	1.0	118
	912799	285.0	286.2	1.2	130
	912800	291.1	292.0	0.9	352
	912801	292.0	293.0	1.0	277
	912802	293.0	294.0	1.0	498
	912803	294.0	295.0	1.0	745
	912804	303.0	304.0	1.0	66
	912805	304.0	305.0	1.0	182
	912806	305.0	306.0	1.0	66
	912807	306.0	307.0	1.0	329
	912808	307.0	307.8	0.8	534
	912809	308.8	310.0	1.2	76
	912810	310.0	311.0	1.0	378
	912811	311.0	312.0	1.0	110
	912812	312.0	313.0	1.0	137
	912813	313.0	313.5	0.5	113
	912814	316.4	317.0	0.6	105
	912815	317.0	318.0	1.0	136
	912816	318.0	319.0	1.0	143
	912817	319.0	320.0	1.0	94
	912818	320.0	321.0	1.0	200
	912819	321.0	321.8	0.8	122
	912820	337.9	339.0	1.1	401
	912821	339.0	340.0	1.0	380
	912822	340.0	341.0	1.0	581
	912823	341.0	342.0	1.0	912
	912824	342.0	343.0	1.0	626
	912825	343.0	344.0	1.0	526
	912826	344.0	345.0	1.0	631
	912827	400.7	402.0	1.3	164
	912828	402.0	403.0	1.0	232
	912829	416.0	417.0	1.0	75
	912830	417.0	418.0	1.0	29
	912831	434.2	435.0	0.8	22

**APPENDIX III
DIAMOND DRILL LOGS**

CODES / SHORT FORM USED IN LOGGING

LITHOLOGY

<u>Code</u>	<u>Description</u>
GRAN	Granite
SYE	Syenite
SYE-BX	Syenite-Breccia (Sye clasts in lesser CRBT matrix) (note also used where clasts more qtz-rich/granitic in composition)
CRBT	Carbonatite
CRBT-BX	Carbonatite-Breccia (CRBT matrix>>SYE clasts)
FEN	Fenite
MDYKE	Mafic Dyke
DIAB	Diabase
UNKN	Unknown Rock Type
FZ	Fault Zone

ORIENTED STRUCTURES

<u>Code</u>	<u>Description</u>
CT	Contact
VN	Vein
FZ	Fault Zone
BND	Banding
UC	Upper Contact
LC	Lower Contact
FRAC	Fracture

LOGGING

<u>Code</u>	<u>Description</u>
alt'd	altered
alt'n	alteration
amph	amphibole
ap/apt	apatite
bt/biot	biotite
bx	breccia
bx'td	brecciated
bx'tn	brecciation
carb	carbonate
cg	coarse grained
chl	chlorite
cps or c/s	counts per second
crbt	carbonatite
dol	dolomite
dtca	degrees to core axis
ep	epidote
fe	iron
fg	fine grained
fract	fracture
fspar/fsp	feldspar
gran	granite
H	hardness
hem	hematite
kspar	potassium feldspar
LC/LCT	lower contact
mag	magnetic
mg	medium grained
mt	magnetite

<u>Code</u>	<u>Description</u>
Nb	niobium
neph	nepheline
peg	pegmatite
plag	plagioclase
po	pyrrhotite
py	pyrite
pych	pyrochlore
pyx	pyroxene
qtz	quartz
rxn	reaction
scint	scintillometer
sil	silica
sulph	sulphide
susc	susceptibility
syen	syenite
tca	to core axis
UC/UCT	upper contact
vfg	very coarse grained
vfg	very fine grained
xtals	crystals



Drilled by:	Chibougamau Diamond Drilling	Start Date:	13-Mar-2018
Township/Area:	Killala Lake Area	End Date:	21-Mar-2018
Claims (converted):	307858, 230752	Described by:	LA Giroux, MSc, PGeo, A. Cleaver, BSc
Claims (legacy):	TB 4256251	Log date:	25-Mar-2018

Collar

Azimuth: 338.00°		Easting: 519527		Core size: HQ		Cemented: No	
Plunge: -50.00°		Northing: 5432369		Casing: Pulled		Stored: Yes	
Length: 501.00 m		Elevation: 313.0m					

COORDINATES UTM (NAD83 zone 16)

Down hole surveys

Drill Hole	Type	Depth (m)	Azimuth - Corrected (°)	Dip (°)	Mag
PGH-18-01	Reflex	9	336.6	-50.7	57030
PGH-18-01	Reflex	60	338.1	-50.7	56430
PGH-18-01	Reflex	111	338.2	-50.7	56316
PGH-18-01	Reflex	162	337.7	-50.8	56866
PGH-18-01	Reflex	213	339.1	-50.7	56500
PGH-18-01	Reflex	264	343.4	-50.5	56017
PGH-18-01	Reflex	315	338	-50.4	56790
PGH-18-01	Reflex	369	339.5	-50.6	56253
PGH-18-01	Reflex	420	340.6	-50.4	56359
PGH-18-01	Reflex	471	340.2	-50.3	56512
PGH-18-01	Reflex	495	340.6	-50.2	56460

Description

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-01	0	3	OVB	Casing	Overburden to ~2.5m.
PGH-18-01	3	9.05	SYE	Alkaline Feldspar Rock	Med pink to dark red mg to cg kspar with up to 30% finer grained dark blue-black to black amphibole or pyx. Variably brecciated by up to 15cm wide light grey carbonate veins, typically <1-2cm wide. At 6.26m: 2cm wide fracture, reddish-brown powdery coating + minor white calcite, rough non planer surface at 60-70deg (from bottom mark of core). Carbonate veins from 3.46-3.66m and 7.20-7.40m.
PGH-18-01	9.05	9.32	MDYKE	Mafic Dyke	Massive, dark grey, fine grained, <10% fg-mg calcite + vfg dark red mineral. At ~70dtca (alpha angle).
PGH-18-01	9.32	13.63	SYE	Alkaline Feldspar Rock	Similar to above. Deep reddish colour. More fenitized in appearance compared to upper interval. Crosscut by fg dark blue-black amph? veins. which also 'envelops' some of the calcite veins. Occasional blebs of fg to cg (cubes) of pyrite associated with dark blue-black veins. Calcite veins typically <1-2cm wide. From 11.84-12.08m: CRBT with highly brecciated non-planar upper and lower contacts (generally perpendicular to CA) with up to 1cm bleb vfg py, and patches vfg black mafic minerals (mica + pyx?), faint banding // to contact, spotted with fine dark reddish kspar.
PGH-18-01	13.63	14.48	CRBT	Carbonatite	Patchy vein of lighter pink carbonatite and darker purplish -grey more silicate rich carbonatite. At ~25dtca. Upper and lower contacts irregular. Carbonate veining/banding parallel to contact extends out in KSPAR ROCK at both contacts. Approaching silicocarbonatite composition? < vfg deep red mineral - hematite?
PGH-18-01	14.48	15.6	SYE	Alkaline Feldspar Rock	Similar to previous unit.
PGH-18-01	15.6	19.7	CRBT	Carbonatite	Pale greyish pink carbonatite with subintervals (30% overall) of brecciated (sub- to angular) med pink to deep red Kspar Rock (with lesser mafic component than above). CRBT locally banded. Trace to 1% fg-mg disseminated pyrite (some cubes). At 17.27m & 19.03m: 1 & 3cm wide (respectively) fractures reddish-brown and cruddy, pitted rough non planer surface at 70deg.
PGH-18-01	19.7	22.18	UNKN	Fractures/Ijolite???	19.7 to 19.85m: Two perpendicular dark brown cruddy, earthy, limonitized pitted open fractures (as previously described). At 35 and 65 dtca (measured from bottom mark of core). Upper shallower angled fracture is non-planar, lower steeper fracture is planar. 19.85 to 22.18m: Possible ijolite? Fg dark green (pyroxene + black mica) with 20-30% pale orangy pink nepheline?. Crosscutting carbonate veins/stringers (spotted with up to 10% fg kspar). Transitions from a more massive unit uphole to a banded unit where it is interbanded with repeating 10-20cm wide intervals of Kspar Rock. Banding at 15-45dtca. Blotchy pale green alteration within kspar rich bands (epidote?) and darker green chlorite. Mag Susc = 0.92.
PGH-18-01	22.18	26.21	SYE	Alkaline Feldspar Rock	Similar to previous unit.
PGH-18-01	26.21	26.73	CRBT	Carbonatite	Wispy banding perpendicular to core axis towards centre of interval with fine white calcite veining (extensional fracturing). Deep red (hematite alt'd) banding at upper contact. Lower contact is highly irregular and brecciated. Spotted with fine deep red hematite alteration throughout (mag susc 0.4, other crbt intervals have typically been ~0.1).
PGH-18-01	26.73	27.82	SYE	Alkaline Feldspar Rock	Similar to above. Faintly brecciated with single 13cm wide massive CRBT vein at ~60dtca.
PGH-18-01	27.82	28.85	UNKN	Unknown Dyke	Possibly ijolitic in composition. Very fine grained. Overall pale grey in colour - spotted with vfg black, med green and pink (nepheline?), Highly irregular flowing, banded appearance. Highly irregular low angle upper contact. More planer lower contact at 30dtca. Massive (unbrecciated). Mag Susc = 5.75.
PGH-18-01	28.85	30.13	SYE	Alkaline Feldspar Rock	Similar to above.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-01	30.13	30.7	UNKN	Unknown Dyke	Similar to previous unknown unit. UCT at 75dtca, planar, limonitized (as above). At 30.25m: another fracture at 70dtca, 4cm thick dark brown earthy alt'n. LCT at ~10dtca, irregular, banded slightly.
PGH-18-01	30.7	32.3	SYE	Alkaline Feldspar Rock	Overall similar breccia to before. Carbonatite vein from 31.18 to 31.50m, vein is fg pale grey to green, spotted with a fg deep red mineral and vfg mafic mineral, faint banding and minor deep red breccia clasts are present within the vein.
PGH-18-01	32.3	33.1	CRBT	Carbonatite	More silicate rich, darker grey carbonatite vein. Silicocarbonatite. Fine micaceous bands at 35-40dtca. Single 6cm angular alkali clast with greenish rim. UCT brecciated. LCT at 50dtca, sharp, planar. Trace vfg mineral fluoresces purple.
PGH-18-01	33.1	35.82	SYE	Alkaline Feldspar Rock	Similar alkalic feldspar rich unit brecciated by carbonate veins up to 10cm wide (25-35dtca generally). Becoming overall lighter pink in colour and less brecciated downhole. Increasing quartz to a more alkalic granite composition.
PGH-18-01	35.82	41.75	QTZ-SYE	Quartz Syenite	Medium to coarse grained alkali quartz-rich syenite Medium pink in colour. 10%-20% quartz. At ~39m, becomes coarser grained and more mafic (predominantly black mica, lesser dark green pyx?). Unbrecciated. Occasional fine (<1cm) carbonate veins. Single fine grained black chlorite-hematite filled fracture.
PGH-18-01	41.75	42	CRBT	Carbonatite	Pale mg-cg greyish carbonatite. Spotted by 1-2% fg deep red hematite + sulphides + black mineral (plus two 1-2cm patches). Planar UCT at 45dtca. Bx'td lower contact.
PGH-18-01	42	65.82	QTZ-SYE	Quartz Syenite	Carbonate brecciated over top ~1m. Similar med to coarse grained alkali quartz syenite to previous unit. From 43.0 to 46.5m: Abundant patchy dark green (chl) and paler green (epidote) alteration, also in fractures. From 46.52-46.6m: CRBT vein at 55-60dtca. Small clasts (<1cm) of purply red hematized gran?. At 47.8m, fine (1mm) vein of shiny black (non magnetic) mineral at 55dtca. From 51.5-52.64m: Ijolite dyke? Subintervals of banded coarse dark green chlorite-micas at 75dtca. Paler pink nepheline (no kspar) in banded sections. From 56.57: Increasing carbonate brecciation. Sulphide bearing carbonate veins from 61.3m to LCT.
PGH-18-01	65.82	81.26	CRBT	Carbonatite	Light pink to light grey medium grained Carbonatite. Mottled/patchy appearance. Minor brecciation in top 10cm. Locally faintly banded. Speckled with fine dark red alteration. Typically <1% (locally 1-2%) disseminated to blebby pyrite + pyrochlore? (black, non magnetic). Pyrochlores generally but not always associated with pyrite. At 67.32m and 67.62m, two mm-thick black veins (somewhat dendritic in appearance) at 60 & 30dtca respectively. Develops a more greenish wispy appearance below ~77m. Angular alkalic fsp clasts with thick fg black rims from 78.56 to 79.1m. From 79.4-80.18m: Greenish grey wispy banding at 50dtca. Some bands of brecciated angular kspar-chl material. Followed by 30cm massive cg clast of kspar+pyx. Blebs of py+pyrochlore? form two incomplete bands/veins at 50dtca. UCT at 30dtca, sharp, planar. Brecciated LCT approx. perpendicular to CA. (Note - apparent true dip of UCT is vertical, LCT near vertical dipping slightly to SE).

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-01	81.26	95.66	GRAN	Granite	Top ~1m is deep reddish colour (predominantly kspar w/ 20% black pyx), then transitions to a paler pink cg granite similar to previous Gran unit. 30% dark green to black mafic component. Some weak banding defined by mafics. <5% quartz overall (locally absent). Fine calcite veining and chlorite veining (mm-scale) at variable angles (including //-to ca). Single 1cm wide qtz vein (with lesser kspar+milky white calcite) at 84.05m at 60dtca. Patchy bright green epidote-chlorite alteration in places. From 95.0 to 95.37m: Very fine irregular banding approx. perpendicular to core axis - light to med green chlorite+ black mica and whitish carb bands - mafic dyke? 7cm wide carb vein at 93.15m. 26cm carb vein wide 93.85m. Both approx. perpendicular to CA.
PGH-18-01	95.66	96.29	CRBT	Carbonatite	Pale pinkish grey to pale blueish grey where greater fine micas present. Irregular flow banding. Occasional clasts of kspar rich rock up to 8cm wide. Up to 0.5cm blebs of fg brassy pyrite + black pyrochlore? 1-2% sulphide overall, blebs elongated along flow bands forming discontinuous veinlets in places. UCT at 65dtca. LCT at 70dtca. Both somewhat brecciated, near planar.
PGH-18-01	96.29	98.13	SYE-BX	Alkaline Feldspar Rock	Similar to previous Alkaline Feldspar Breccia units. Top 13 cm is a vein near perp to CA of greenish-grey colour and spotted by fine deep reddish hematite alteration and up to 5% fine sulphide blebs. Below, alkali feldspar rock is med to coarse grained, deep red in colour (finitized) and coarsely brecciated by crosscutting carbonate veins 1-10cm in width. Patches are more mafic rich with up to 10-15% black pyx plus a lighter coloured mica locally. Brecciated lower contact.
PGH-18-01	98.13	99.19	CRBT	Carbonatite	Massive medium grained light pink grey to pale white carbonatite. Speckled with fg deep red mineral (feldspar or hematite?) which defines faint purplish bands. Cross cutting millimeter thick veins of a dark green-black, soft mineral at 50 degrees. Fine rare blebs of sulphides. Brecciated contacts.
PGH-18-01	99.19	101.78	SYE	Alkaline Feldspar Rock	Coarse grained deep reddish-pink alkali feldspar rich rock with 10% quartz and 5% mafics. Common crosscutting carbonate and/or mafic veins typically <1cm thick.
PGH-18-01	101.78	102.31	CRBT	Carbonatite	Fine to medium grained carbonatite mottled/spotted with deep red to purple. UCT and LCT 80dtca. Contains up to 5cm wide clasts of deep reddish kspar-rich rock.
PGH-18-01	102.31	112.49	SYE	Alkaline Feldspar Rock	Overall similar to Alkaline Feldspar Rock units with red deep k-feldspar clasts and crossing cutting carbonatite veins. From 106.40 to 109.70m, rock becomes rubbly and broken. Minor mafic mineral contain, with some mafic minerals occurring in fine veins. At 102.75m, a 17cm thick medium grained grey to light pink carbonatite vein with a dark purple black mafic bands. UCT and LCT 40 dtca. From 104.66 to 105.08m, grey to pink banded carbonatite vein speckled with fine grained red mineral. Red mineral outlines faint banding and colour variations from grey to pink. Contains a few deep red clasts up to 5cm.
PGH-18-01	112.49	113.59	CRBT	Carbonatite	Medium grained carbonatite with strong banding. Bands alternate between pink to light grey and mafic rich bands. Fine bands of a very fine grained red mineral are also present. Bands have a fairly consistent orientation at 40 dtca. UCT and LCT are brecciated. Rare, isolated very fine sulphide grains are present. Few clasts up to 5cm thick are also present with associated sulphides.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-01	113.59	123.28	SYE	Alkaline Feldspar Rock	Similar Alkaline Feldspar Rock. UCT and LCT is brecciated. Top of unit contains blebs of sulphides with associated black mineral. Clasts are red deep and contain variable amounts of mafic minerals, locally some areas contain up to 40% mafic minerals. Locally up to 20% quartz. Some areas contain no quartz. Cross cutting carbonatite veins range from <0.5cm to 8cm thick. Fine carbonatites veins are more common. At 115.10m there is a 5cm grey-pink thick carbonatite vein at 50 dtca. At 115.60m ,20cm thick grey to pink carbonatite with <0.5cm blebs of sulphides.
PGH-18-01	123.28	125.31	CRBT	Carbonatite	Medium grained light pink to grey carbonatite, with disseminated very fine grain sulphides and a red mineral. Faint banding present and sometimes outlined by a fine black mineral. At 124.38m, there is a 13cm thick Alkaline Feldspar Clast, which is deep red and contains approximately up to 10% mafic minerals. Carbonatite below this clast is a darker grey with pink to pale green banding .Millimetre thick veins of a dark mineral (Chlorite?) with some sulphides is present. At 124.90m, there is another Alkaline Feldspar clast which is 24 cm thick and cross cut by carbonatite veins. In the bottom 20cm, the carbonatite has a grey to pink mottled appearance (Similar to brecciated surface sample at pit 1). 5cm above the LTC, the carbonatite is brecciated with a pebbly/conglomerate appearance, containing sub-rounded alkaline feldspar contains 1-2cm thick.
PGH-18-01	125.31	141.44	SYE	Alkaline Feldspar Rock	Similar Alkaline Feldspar Rock. Generally red deep and more brecciated then the previous unit. From 130.32 to 130.62 is a light pink to grey carbonatite vein. UCT is at 60 dtca and LCT is brecciated. Banding within the vein is variable from 25 to 40 dtca. Banding is defined by the fine back mica. Possible fluorite seen within the mafic bands. Trace to 1% disseminated sulphides. Few angular Alkaline clasts up to 5cm are found within the vein. Below this vein, the lithology is highly brecciated. Carbonatite veins tend to be finer and heterogenous in composition. The carb veins contain higher amounts of red minerals, mafics, and blebs of sulphides compared to typical carbonatite veins. Significant sulphides present in vein from 139.65 to 139.95m. Veins generally range from millimetres to about 7 cm. Some carbonatite veins are enveloped by fine grained mafic minerals and speckled with red mineral. Alkaline Feldspar clasts tend to be fairly consistent with deep red colour with minor amounts of mafics. A light pale green mineral is locally present. Locally some areas reach 40% mafic minerals and 15% quartz, elsewhere quartz absent.
PGH-18-01	141.44	142.96	CRBT	Carbonatite	Highly variable carbonatite divided by a subinterval of Alkaline Feldspar Rock. UCT brecciated at 60 dtca. From 141.44-142.08m: Massive unbanded cg pink carbonatite cut by 3 1-3cm wide high CA fg light greenish grey veins. From 142.08-142.42m: Alkali Feldspar clasts highly brecciated by multiple generations of heterogenous carbonatite veins. Veins are pink to pale green and contain variable amount of red minerals, mafics and sulphide blebs. Veins are irregular in nature. UCT planar at 50dtca. LCT crosscut by both massive pink carbonatite and banded green carbonatite below. From 142.42-142.96m: Banded green carbonatite. Irregular moderately angled banding defined by fine reddish mineral. Several up 1cm wide sulphide (py) bands. Single 0.5cm by 2-3cm patch of fine purple fluorite? following banding. Broken lower contact.
PGH-18-01	142.96	143.42	SYE	Alkaline Feldspar Rock	Typical alkali feldspar rich rock with 5-10% quartz, and 5-10% mafics . LCT is sharp and planar at 55dtca.
PGH-18-01	143.42	144.5	DIAB	Diabase Dyke	Fg dark grey to black massive diabase dyke with 15-20% plagioclase phenocrysts (some lath shapes) and carbonate. Rare mm-scale carbonate or sulphide veins. UCT sharp and planar at 55dtca. LCT sharp but slightly irregular at 60dtca.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-01	144.5	156	QTZ-SYE	Quartz Syenite/Granite	Coarse grained greyish pink to medium pink in colour. 10-30% quartz. Generally lesser quartz and deeper red colour towards contacts with upper and lower diabase dykes. Locally up to 40% dark green mafic component, defining faint banding in places. High to moderate angle carbonate veining up to 4cm wide, generally <1cm. Veins typically flanked by chlorite and epidote+/-hematite alteration envelopes. From 145.2-145.8m: Pale pink carbonatite. Banded green-grey-red (hem) towards centre with bx'td kspar rich inclusions. Occasional blebs of sulphides (py). UCT at 80dtca, LCT at 60dtca.
PGH-18-01	156	158.2	DIAB	Diabase Dyke	Similar to previous. Spotted by fg red and green. UCT at 40dtca, sharp, planar. LCT faulted.
PGH-18-01	158.2	158.5	FZ	Fault Zone	Very broken up core. Intact pieces are heavily brecciated and chlorite-hematite altered. Some remnant calcite veining.
PGH-18-01	158.5	163	QTZ-SYE	Quartz Syenite/Granite	Med to coarse grained medium pink qtz-syenite to granite. Variable quartz (10-30%) and mafic (5-40%) content. Crosscutting carbonate +/- chlorite fractures typically mm-scale, few up to 2cm. From 159.45-159.65m: Brecciated, brittle core with open & chloritic fractures. Possible brittle fault. From 160.94-161.19m: Zone of broken core. Broken along chlorite+hematite coated fractures.
PGH-18-01	163	164.3	CRBT	Carbonatite	Coarse grained, whitish carbonatite. Massive over top half. Bottom half is banded (~//-LCT) by purplish bands and spotted with deep red hem alt'd mineral. Trace-1% fine disseminated sulphides. Very fine (<1mm) red (hem) and black (chl?) filled fractures. Spotted w/ <1% fg black pyx? (non-metallic appearance). UCT at 75dtca in near planar, sharp. LCT at 65dtca, planar, slightly carb bx'td.
PGH-18-01	164.3	170.4	GRAN	Granite	Coarse grained red to pink granite. Generally quartz rich (~30%)with lesser amount of mafics (~10-15%). Carbonatite veins are generally <1cm, but up to 3 cm locally. Carbonatite veins tend to be enveloped by a black mafic mineral. Locally, thicker veins are present At 165.58m, 8cm thick coarse grained, light grey to pink carbonatite vein enveloped by a soft mafic mineral (chl?) and hematite. At 169.84m, 21 cm thick medium grained, grey to light purple banded carbonatite vein with a few granite clasts up to 5cm wide. At 170.20m, 12cm thick light pink carbonatite vein faintly banded purple and fine hematite bands. Dark black to light grey fine mineral veins are also present, generally on the millimetre scale. Fine light green alteration is locally present.
PGH-18-01	170.4	171.36	CRBT	Carbonatite	Massive light pink coarse grained carbonatite. Mottled with purplish-red alteration. Rare very fine hematite veinlets. Brecciated UCT at 55dtca. Brecciated LCT at 40dtca with some kspar-rich material caught up in Crbt.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-01	171.36	190.09	GRAN	Granite	<p>Med pink to deeper reddish-pink granite to syenite. Quartz varies from absent to 30%. Up to 20% black mafics. Carbonatite veins commonly cross cut the core with a wide range of sizes. Carbonatite veins are generally massive, medium to coarse grained, pink to purplish grey associated chlorite rims with more significant veins located at 175.77 to 175.85m, 178.60 to 178.70m, 179.07 to 179.16m, 181.20 to 181.35m all at 40 dtca.</p> <p>From 183.75-183.87m, 183.96 to 184.07m, 184.55 to 184.70m, 188.45 to 188.58 additional significant carbonatite veins with more variably angles, some are cross cut by other veins. Rare blebs of sulphides present in veins.</p> <p>From 189.40 to 189.58m, carbonatite vein with blebs and veins of 10-15% sulphides - pyrite cubes in a more rusty/brassy brown sulphide (pyrrhotite?) matrix with coarse magnetite (attracts magnet - mag susc 30.6). UCT, LCT somewhat bx'td and irregular (wavy). Vein at ~50dtca.</p> <p>From 177.46 to 180.7m: Bands of greyish-green alteration (epidote+/-chlorite) overprinting granitic interval. Bands at 65-90dtca. Granite generally finer grained over these intervals.</p> <p>Small 5cm wide diabase dyke at 176.03m at 40dtca.</p>
PGH-18-01	190.09	198	DIAB	Diabase Dyke	<p>Typical fg dark grey aphanitic diabase dyke with fine (millimetre scale) calcite veins enveloped by hematite. UCT at 25dtca, sharp, planar. LCT at 30dtca, sub planar, broken.</p> <p>From 190.66 to 190.90m: vein of pink to white carbonatite brecciating the diabase dyke. Contains diabase clasts up to 4 cm wide with red (hematite) alteration.</p> <p>From 192.0 to 192.67m, rubbly very broken up fault zone with abundant, very soft pieces of chlorite. Larger pieces have abundant slickenlines present on chloritic fractures.</p> <p>Over last 60cm to LCT, fine (<1cm) white carbonate veins brecciate the diabase dyke resulting in angular diabase clasts. Section also includes a single 4 cm wide red deep kspar-rich clast.</p>
PGH-18-01	198	203.49	CRBT	Carbonatite	<p>Medium to coarse grain, light grey to pink massive carbonatite. Carbonatite gradually changes from a grey to light pink in colour. Spotted with of deep red mineral (hem) and fine black mafic mineral. Spotting is more dominant in pink sections. Blebs up sulphides up to 3cm are present and contain both py and a bronze sulphide (pyrrhotite?). Carbonatite has a mottled/ patchy appearance and lacks banding. At ~202.5m, two (3cm and 7cm wide) light green to green-grey bands spotted with purplish-red hematite alteration.</p>
PGH-18-01	203.49	206.63	SYE-BX	Breccia Zone	<p>Breccia with abundant carbonatite and alkaline feldspar clasts. Carbonatite is generally pink to pale white. Kspar-rich clasts rimmed by up to 0.5cm wide envelops of vfg dark green to black mineral (some mica flakes noted). Clasts cg and sometimes spotted with 10% white carbonate & 5-10% pistachio green epidote alt'n. Clasts typically 2-3cm, up to 10cm wide and angular. Carbonate veins commonly spotted by a fg deep red mineral (hem). Trace sulphides.</p>
PGH-18-01	206.63	208.67	GRAN	Granite	<p>Coarse grained granite with up to 30% quartz locally, patchy epidote+/-chlorite alteration where more mafic rich (15-20% mafics). Medium pink to deeper reddish-pink in colour. Below 208.25m becomes brecciated (as upper CRBT-BX unit) as approaches lower contact with CRBT. Crosscutting carbonate veins enveloped by fg dark brown to black minerals (incl. mica).</p>
PGH-18-01	208.67	210.88	CRBT	Carbonatite	<p>More banded, white to medium grey coarse grained carbonatite. Pinker toward LCT. Abundant blebs and veinlets (near stringers following crbt banding) of py+pyrrhotite - 2-3% overall. Banding at 65dtca. UCT at 20dtca. LCT is brecciated.</p>

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-01	210.88	213	SYE-BX	Breccia Zone	Similar to previous Carbonatite-Breccia interval with 30-40% carbonate matrix, 60-70% angular kspar rock clasts (up to 30cm wide, rimmed by chlorite).
PGH-18-01	213	217.39	GRAN	Granite	Medium to coarse grained, red granite with variable quartz and mafic content. Quartz ranges from 0-30%, mafics range from 5-30%. Small scale carbonatite veining is less common. Light green alteration present locally. Weak banding outlined by mafic minerals ~ 10cm above LCT. From 214.29-214.67m: Light pink, coarse grained carbonatite with angular bx'td clasts of kspar rock enveloped by ~0.5cm fine black mineral rims and blebs of py+po. Clasts are up to 8cm wide. Spotted with fine red hem. UCT at 40 dtca and LCT at 60 dtca, both contacts are irregular.
PGH-18-01	217.39	218.28	CRBT	Carbonatite	Heterogeneously coloured carbonatite, generally light pink to medium grey, with areas of wispy banded grey-green, purple to dark grey, and white. Carbonatite is generally massive and patchy in appearance with spotted hem and fine black mineral. Disseminated sulphides (py) are present. Top 9cm is banded and contains a few deep red medium grain angular alkaline feldspar clasts rimmed by the black mineral. UCT is at 55 dtca. LCT is at 55 dtca.
PGH-18-01	218.28	222.65	GRAN	Granite	Similar to previous granite unit. Med to coarse grained massive pink granite with 30-40% dark green to black mafics (black mica) and 10-20% quartz, 10-20% epidote+/-chl alteration. Below 220.98m, carbonate veins become more common, ranging from 1cm to 10cm wide. Veins vary in direction and cross cut each other. Veins tend to be fine grained with grey-green bands outlined by hem and black mineral, but also often with no envelopes.
PGH-18-01	222.65	223.67	CRBT	Carbonatite	Coarse grained, massive, white to pink carbonatite spotted with red hem and black mineral. Blebs of sulphides (py) are present and abundant near the LCT. UCT is at 70 dtca and LCT is brecciated with wispy bands of a fine black mineral (mica) and abundant sulphides (py).
PGH-18-01	223.67	227.16	GRAN	Granite	Similar to previous granite unit. Coarse grained, massive granite with 10-30% mafics, 10-15% quartz, and 10-30% epidote+/-chlorite alteration. UCT is wispy and irregular. Carbonate veins are generally rare and <1cm thick. At 224.29m, 13cm wide grey-green banded carbonatite vein. UCT is a 30 dtca and LCT is irregular.
PGH-18-01	227.16	242.49	MIX ZONE	Mixed Zone	A mix interval dominated by sections of brecciated alkaline feldspar breccia (55%) with lesser carbonatite (15%) and granite (30%). The alkaline feldspar breccia contains angular, coarse grained, red deep alkaline feldspar clasts with up to 1cm thick envelopes of a fine grained black mineral. At ~ 241.50m, 5cm wide band of possible coarse grain hematite? (Purple/grey in colour with red edges in area, non-magnetic) + a couple fine grain py grains .Carbonatite is generally medium to coarse grained, massive pink to white and occurs in sections averaging 55cm long. Carbonatite also occurs as wispy, grey-purple veins at transition between different intervals. Within wispy carbonatite intervals, blebs of sulphides (cm-scale) black-dark grey, non-magnetic, metallic mineral + py. One 3cm long purple patch of fine grained fluorite in a small carbonatite vein at 232.5m. Granite is coarse grained and contains up to 10% quartz and up to 40% mafics.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-01	242.49	255.81	MIX_ZONE	Mixed Zone	A mix interval similar to previously unit but with greater carbonatite (30%). Alkaline feldspar breccia comprises ~45%, granite ~25%. Carbonatite is generally coarse grained, pink to light purple in colour, with abundant sulphides blebs (py) and some well formed up to 1cm pyrite cubes. Often massive with few mm-scale wispy of purple to dark minerals. Grey-green wisps/bands are common during transition areas. One 40cm long section carbonatite section at 242.49m is medium to coarse grained, massive carbonatite, very purple in appearance, with multiple cm-scale blebs of coarse grained, cubic py. Granite is coarse grained with less mafics than previous unit (up to 10% quartz, 20% mafics, 10-20% epidote+/-chl) with few cm-scale carbonate veins (grey-grey-green in colour). Granite occurs in dominantly one ~2m section. Alkaline Feldspar breccia is similar to previously described breccia units.
PGH-18-01	255.81	268.02	SYE-BX	Breccia Zone	Dominantly, alkaline feldspar breccia with a few significant carbonatite veins. Alkaline feldspar breccia clasts are angular deep red with up to 20% mafics and up to 20% epidote+/-chl alteration. Clasts are enveloped by hem +fine black mineral. Clasts range from 2-3cm up to 20cm. Larger clasts are dominant near middle of interval. Cross cutting carbonatite veins tend to be medium grain, pink to light grey and generally range from 1-10cm wide. Significant carbonatite veins include: From 255.81 to 256.39m, massive white to light pink, coarse grain carbonatite vein. Centimeter scale sulphide blebs (1-2%) with py + black mineral are present. UCT is brecciated and LCT at 50 dtca. From 264.33 to 264.95m, white to purple-grey, medium, coarse grain, banded carbonatite vein. UCT at 65 dtca and LCT is highly brecciated. Finely banded where colour changes due to hematite (reddish-purple) and occasionally a fine-medium grained dark purple mineral (fluorite). Fluorite rich areas occur locally and up to 6cm wide. Vein contains alkaline feldspar clasts up to 5cm wide. Some carbonatite within the breccia directly below vein also contains fluorite rich areas. From 266.69 to 267.23, coarse grain, white to light grey carbonatite with fluorite bands at 70 dtca. Fluorite bans are fine grained, dark purple and up to 0.5cm wide. From 267.79 to 268.02m, medium grained, banded, grey to light pink carbonatite spotted with hem and fine black mineral. Wisps of a fine black mineral (mica) are also present. UCT and LCT are brecciated.
PGH-18-01	268.02	273.91	GRAN	Granite	Coarse grained medium to dark reddish-pink. Upper 50cm faintly-weakly brecciated by carbonate (no alteration rims). 5-15% dark green to black mafic component and up to 10% quartz. Locally mafic intermingled with coarse dark metallic red-brown hematite. Granite crosscut by up to 20% carbonate veining up to 10cm wide, typically <2cm. Generally veins have chloritic or fine hematite alt'd salvages.
PGH-18-01	273.91	278.3	CRBT	Carbonatite	Multiple crosscutting phases of carbonatite. Youngest phases consists of sharply defined light greenish-grey to darker chloritic green to hematitic brown bands that cut perpendicular to CA. Bands locally well spotted by hematite alt'n. Overall carbonatite is mg-cg and pink to light grey. 1-2% disseminated pyrite associated w/ vfg dark (black) mineral. UCT banded, cross cut by vein, ~perpendicular to CA. LCT at 40dtca, planar chlorite coated.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-01	278.3	287.5	GRAN	Granite	Lighter to medium pink, massive, medium to coarse grained granite with up to 30% quartz locally. Predominantly potassium feldspar with 5-15% dark green to black mafics. Crosscut by minor carbonate +/- chlorite veins, typically 1cm or less in width. Very coarsely brecciated by carbonatite at lower contact with angular kspar-rich clasts rimmed by chlorite up to 10cm wide.
PGH-18-01	287.5	291.33	CRBT	Carbonatite	Fine to medium grained, light grey to pink carbonatite. Massive. Locally streaked by wispy vfg blueish-black mineral. Some greenish-grey carb alt'n-hem banding at lower contact. Up to fg to coarser cubes of 1% pyrite. Spotted by 1-3% fine hematite. Drillers had difficulties during night shift - dropped the rods - core changes drastically in diameter. Both upper and lower contacts brecciated (no angle measured).
PGH-18-01	291.33	292.24	SYE	Alkaline Feldspar Rock	Brecciated kspar rich rock (few % quartz) in carbonate matrix. Fg to mg, deep reddish colour. <5% mafics (chl).
PGH-18-01	292.24	292.97	UNKN	Mica-Carbonate Rock	A fine to medium grained dark grey rock comprised of 70-80% black mica (+other fg mafic minerals?) and 20-30% coarser grained pink carbonate. UCT at 50dtca. LCT at 60dtca.
PGH-18-01	292.97	295.91	GRAN	Granite	Medium to coarse grain, massive red granite with up to 15% quartz and 15-20% mafics. Cross cut with minor medium grey to light pink carbonate veins with chl envelopes, generally 2-4cm wide. One 12cm wide coarse grained pink carbonatite vein at ~295m.
PGH-18-01	295.91	299.1	CRBT	Carbonatite	Coarse grained, massive, pink to light grey carbonatite with cross cutting green-grey carbonate and red hem veins, typically 1-4cm. Ribbons of sulphides generally <1cm thick (py). From 297.51 to 298.5m, Brecciated section with deep red alkaline clasts and green-grey chl envelopes. Clasts are generally <5cm, but can be up to 15cm. Carbonatite is heterogenous in colour ranging from pink to green to grey-green. sulphides blebs are also present (py).
PGH-18-01	299.1	313.49	GRAN	Granite	Coarse grained red to light grey, massive granite with generally abundant quartz (quartz 0-40%, mafics up to 20% (mica rich)). Quartz is less abundant near contacts. Locally up to 15% chlorite and epidote alteration. A few fine 1cm black mineral and carbonate veins are present. Veins generally have chl/hem alteration and associated blebs of sulphides. At ~308.50, 18cm thick, coarse grained, grey to pink-grey carbonatite vein with hem/chl envelopes. LCT at 70 dtca. At 309.20-309.58m, Light pink to white carbonatite vein. UCT is highly brecciated with clasts up to 5cm wide with black envelopes up to 1cm thick. Carbonatite contains black to grey wisps associated with sulphide rich blebs (py). LCT at 70dtca. At 309.89 to 310.23m, White to light pink carbonatite vein with very similar features are described above. At 310.54 to 311.56m, light pink to grey carbonatite vein containing hem + grey-green to black veins (1-3cm wide). Veins are typically associated with sulphide ribbons + blebs (py). Locally spotted by hem and black mineral (mica). UCT at 50dtca, LCT brecciated.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-01	313.49	340.9	CRBT	Carbonatite	<p>Continuous interval of light grey to light pink massive carbonatite. Coarse to very coarse grained. Locally up to 30% fine blueish- to greenish-grey irregular wispy banding. Coarse (up to 2cm) very pale yellowy-green subhedral to euhedral apatite crystals (white under UV light, crystals fine sugary texture up close) most notably from 337.64-338.08m (not observed in upper carbonatite sections). Up to 2.5cm wide radiating masses of acicular blueish-black amphibole common from ~334m to ~338m. Coarse blebs of sulphide 1-2% (locally up to 10%) py+/-po. Deep reddish-brown 1-5mm mica 'books' (notably at ~338m). UCT at 65dtca (chl-amph? alt'n at contact), LCT brecciated. Minor brecciated granite caught up within carbonatite near contacts.</p> <p>From 320.57-321.22m (with sulph band at LCT) and 326.76-327.03m: Highly micaceous intervals. Fg, dark grey, 70-80% mica/mafics + 20-30% carb. Previously called 'Mica Rock', could be called Silicocarbonatite. Moderately magnetic locally (mag susc up to 3.35).</p> <p>At 322.0m: 3cm wide band at 60dtca spotted by fg mt. Similar band at 339.7m (2cm) wide.</p> <p>From 335.2-337.0m: Magnetite bearing sections. Locally up to 10% fine to medium grained magnetite. Mag susc readings up to 57.8. 30cm of brecciated 'kspar-rock' rimmed with brownish chl-mafics directly above mt-rich interval.</p> <p>From 338.25-338.37m: Band of phlogopite (deep brown mica) + fg sugary pale green apatite? (glows white/light blue under UV).</p> <p>From 338.5m-339.6m: Medium pink mg granite spotted by light green epidote+/-chl. Weakly bx'td by up to 3cm wide white carb veins. Gran clasts rimmed by dark brown-black chl-mica.</p> <p>From 340.43-340.5m: Mt + mica(?) rich band at 70dtca. Mag susc 45.4.</p>
PGH-18-01	340.9	354.58	MIX ZONE	Mixed Zone	<p>A mixed interval comprised of equal parts carbonatite and alkali granite (0.20-1m long intervals). Carbonatite varies from fine to coarse grained (generally coarse). Ranges from massive light pink in colour to light-grey with patches/wispy bands of blue-grey (looks greener on broken surfaces) fine acicular/needle-like (sometimes radiating) amph. Granite is cg and comprised primarily of kspar (pink) with up to 40% mafics (dark brown mica, fg blueish-black amph? or pyx). Locally 10-20% qtz (absent in more mafic sections). Mafic rims kspar where in contact with carbonate veins. Local chlorite-epidote alteration.</p> <p>From 347.0-348.52m: Carbonatite w/ 5-7% mg magnetite (1-2mm). Appears to be associated with vfg sugary light green apatite. Mag susc - 86. Scintillometre counts up to 500. LCT with gran (75dtca). Fine black needle-shaped mineral noted contact.</p> <p>From 340.43-340.54m, 354.58-354.88m: Medium grey-green to brown micaceous banded subintervals. >80% black mica + carbonate. Upper interval mod magnetic. Banding at 65-80dtca.</p> <p>In CRBT, patches of blebby py+po (tr-1%). Patches often associated with wispy blue-grey amphibole bans. Spotted by <1% fg disseminated hem? (deep red).</p>

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-01	354.88	369	GRAN	Granite	<p>Mg to cg, patchy pink to grey-green to blue-grey to brown granitic unit. Variably chlorite-epidote alt'd and carbonate brecciated granite (~10-20% crosscutting carbonate veins). Much less mixed than previous interval.</p> <p>Low (//to CA) to moderate angle vfg aphanitic med-grey mafic dykes. Medium grey-green chl+/-ep alt'd (wither entirely or up to 2cm thick at contacts). Most significant interval from 367.0-367.43m at 45dtca.</p> <p>Highly bx'td (~50% gran, 50% crbt) with very little remnant texture from 362.78-363.45m and ~366.0-366.4m.</p> <p>Chl-mica alt'd rims up to 1cm thick (typically <0.5cm) where granite contact carbonatite.</p> <p>Faintly banded by coarse grained mafics from ~357-359m, 360-361m etc.</p> <p>Deep red hematite? bands in some carb veins.</p>
PGH-18-01	369	395.41	GRAN	Granite	<p>Massive coarse grained granite with up to 30-40% micaceous dark green to black mafic component. Somewhat gneissic in texture locally. Up to 20% quartz locally (opaque white in places, very hard).</p> <p>Generally lesser crosscutting carbonate veining and less brecciated. More significant CRBT veins are at:</p> <p>371.90-372.09m: Vcg, spotted w/ 1% hem & blebby sulph (py), irregular bx'td contacts.</p> <p>373.42-374.0m: Core is finely pitted, deep purplish colour on broken surfaces. 1cm thick blebby sulphide veinlets and light pinkish-orange carb(?) veins parallel to UCT at 25dtca. LCT bx'td, spotted red, few % sulph.</p> <p>380.4-380.78m: Crosscutting, hem spotted, blebby sulph.</p> <p>381.74-382.24m: Light pink, cg, spotted by fine hem? coarse py blebs +/- specular hem (shiny grey). UCT & LCT bx'td at 20-30dtca. Only place in interval where granitic clasts have mafic-micaceous rims (up to 1cm thick)</p> <p>From 385.9-387.65m: 'Absorbed' breccia similar to 362.78-363.45m & 366.0-366.4m. Bx'td contact, blotchy beige-pink colour. Fg. Some remnant kspar clasts can be distinguished locally. Coarse blebs of pyrite (1-3%). More massive whitish carbonatite towards centre.</p> <p>From 391.71-392.0m: Wispy banded light pink to white carbonatite vein. 10cm angular kspar-rich clast at LCT. 1-3% blebby py.</p> <p>From 392.29-395.41m: Granite bx'td by up to 30% x-cutting carbonate veins. Wispy bands of blueish fibrous (blue-->sodic) amphibole in carbonate veins and rimming gran clasts.</p>
PGH-18-01	395.41	397.52	CRBT	Carbonatite	<p>From 395.41-397.52m: Massive, light pink to grey Carbonatite. Includes 30cm fenitized kspar rimmed and spotted by mafics (blue amph) near UCT. Includes from 396.4-396.62m: vfg dark grey micaceous interval (mafic dyke - mica rock). Perpendicular to CA.</p>

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-01	397.52	412	GRAN	Granite	<p>From 398m, granite is mg to cg, med to dark red, and becoming more banded in places with a generally higher mafic component (mg black mica (biot) +/- dark green to black pyx?). 10-30% qtz locally.</p> <p>Crosscut by larger carbonatite veins from 5-50cm wide and also minor x-cutting mm-scale carb veins (<5% overall).</p> <p>Locally up to 1cm thick (most notable at ~410m) blue amph (fibrous) + carb veins. Notably less qtz where present. Elsewhere mafics replaced by patches & veins of bright medium to dark green (ep+/-chl) or secondary pyx?</p> <p>Carbonatite: 399.82-400.07m: Massive white, single sulph vein, no significant fluorescence, not sampled 401.52-402.13m: Transitions into bx'td zone below. Cg, white to v. light pink, blebby patches py (1%). UCT banded with ap, 40dtca. 404.14-404.72m: Light pink, finer grained towards centre, irregular very light green ap+/-? band wraps around gran clast (only partly fluoresces). 405.54-406.15m: Two crbt intervals broken up by a kspar-rich clast w/ patchy green alteration, blue amph+carb veins, deep purple hem+carb b veins. Crbt is light pink. Contains deep purple (hematized) clasts. 408.1-408.55m: Light pink cg carbonatite. Vfg red & yellow-green spotted veins/bands (ap?) and fg micaceous bands (<1 up to 5cm wide), 1-2% blebs sulph. 411.05-411.23m: Finer to med grained, spotted w/ fine red hem?. No obvious ap under UV. Blebs sulph at LCT only.</p>
PGH-18-01	412	442	GRAN	Granite	<p>Granite similar to above. Mg to vcg. Abundant (20%) fine ribbony carb veins (1-2mm) from ~413.5-421m.</p> <p>Carbonatite from 413.95-414.35m: Banded w/ sulph +/- hem at 35dtca. Up to 5% py.</p> <p>414.35-414.9m: Heavily chloritized bx'td kspar-rich granite. Chl coating fractures. FZ.</p> <p>415.47-416.7m: Carbonatite with ~25c alt'd kspar-rich clast near UCT. Mg, pinkish grey, spotted by 2-4% fg red mineral (hem?), tr-1% disseminated py, occasional mm-thick hem veins. Bx'td LCT. Nothing under UV.</p> <p>420.8-425m: Multiple shorter carbonatite intervals up to 14cm wide at high angle to CA.</p> <p>429.19-429.69m: Patchy light pink to white Carbonatite. UV light indicates apatite in 3cm wide bands perpendicular to CA. Blebs py (<1%) generally associated w/ banding. UCT at 75dtca.</p> <p>432.8-343.1m: Granite is coarsely/angularly bx'td by up to 3cm wide carb veins.</p> <p>436.85-438.0m: Low angle (//-to CA) 3cm wide QTZ vein (milky white to semi-translucent, very hard, doesn't react to HCL) w/ black pyx? Hematized along fractures & along grain boundaries in qtz. Crosscut by softer carb veins.</p> <p>438.88-439.6m: CRBT. Fg, pinkish-grey to grey. UV light shows possible fg ap. Minor granitic clasts at both contacts.</p>
PGH-18-01	442	445.5	GRAN	Granite	<p>Continuation of unit above.</p> <p>442.48-442.7m: Small CRBT vein, mg, purplish grey, 1-2% blebs py+pych??. spotted by vfg hem? (1-2%).</p> <p>444.1-444.37m: X-cutting fg greyish-pink CRBT. Sulphide blebs near contacts w/ gran.</p> <p>444.37-445.17m: Bands up to 20cm wide of very dark green chl-mica dominated rock w/ up to 20% carb --> alt'd mafic dykes? At 50dtca. Finely interbanded pink crbt, kspar, mica (pink to green to black) btwn micaceous sections.</p>

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-01	445.5	447.4	CRBT	Carbonatite	Carbonatite to Carbonatite-Gran Breccia. CRBT towards upper and lower contacts - bands of 'absorbed' gran clasts towards centre. Predominantly kspar + carbonates, some micaceous patched. Becomes purplish and somewhat pitted towards lower contact w/ up to 1% py blebs, 1-3% fine disseminated hem (+ <1mm veinlets).
PGH-18-01	447.4	450	GRAN	Granite	Continuation of unit above. 449.6-450m: Carb vein, undulating contacts & bands (ap+sulp+hm?) at 25dtca.
PGH-18-01	450	459.55	GRAN	Granite	Cg gran/syenite. 0-30% quartz (highly variable). Where more syenitic in appearance there are dark blue-grey x-cutting veins up to 1cm wide + patches (blue fibrous amphibole +/- carb). Where more qtz present, veins and patches of light yellow to yellow-green ep+/-chl.
PGH-18-01	459.55	460.17	DIAB	Diabase Dyke	Vfg, dark grey to black, massive, aphanitic. Undulating fine mm to 1cm white carb veining over 6cm. UCT at 25dtca, LCT at 25dtca. Both contacts sharp but slightly irregular.
PGH-18-01	460.17	480	GRAN	Granite	As above. 460.17-460.4m: CRBT, light grey, blebby sulph. 462.4-462.6m: Coarse blebs sulph in x-cutting carb. 465.57-465.78m: CRBT 466.74-466.95m: CRBT w/ ribbony veins of py+pych?? 466.95-467.19m: Carb-chl bx'td FZ. Up to 1cm wide mafic and gran clasts in carb matrix. UCT at 35dtca. LCT at 45dtca. 468.3-468.8m: Rubbly FZ. Carb veining at LCT (15dtca). From 459m, deeper reddish pink colour. Somewhat more syenitic in appearance, still 10-15% qtz. 471.08-471.97m: CRBT. Light pink to grey. Cg. Apatite (+ blebby py, deep red kspar?) patches. UCT at 55dtca w/ banded ap+sulp+kspar. LCT at 55dtca is slightly irregular and bx'td. 473.96-474.42m: CRBT. Cg, light greyish pink, bands/veins of apatite (UV) perpendicular to CA. UCT at 65dtca. LCT perpendicular to CA. Spotted by 1-2% fg deep red hem/pych??. 476.23-476.28m: BRECCIA DYKE. Medium yellowish-green grey dyke with vfg matrix at 50dtca. Rounded to angular clasts up to 1.5cm wide (mixed kspar-rich & mafic clasts). 477.35-477.46m: BRECCIA DYKE. Similar to previous but with fewer clasts (all less than 0.5cm). Clasts only near contacts. Irregular undulating contacts.
PGH-18-01	480	493.56	GRAN	Granite	Granite generally with lesser carb veining. 480.18-480.34m and 482.1-482.19m: Smaller CRBT veins in massive cg granite. Hem+/-amph bands at contacts, fg ap?, coarse blebs py, spotted by fg hem? Or red pych??. 484.35-484.53m: Carbonatite at 30dtca. Fg, purplish grey, banded //- to contacts. <1% disseminated sulph. Vfg deep red hem veins. No apatite under mid-wave UV light. Both veins and patches (pyx xtal shape replacement?) of blue-grey amph+carb & med pistachio green ep+/-chl alteration present. In places green ep veins appear to cross-cut blue amph veins.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-01	493.56	499.36	CRBT	Carbonatite	Mg to vcg locally. Light grey to pink in colour. Lathy shaped xtals where vcg. Patches/bands of cg apatite noted under UV light. UCT at 65dtca contains granitic clasts but still fairly sharp and planar. LCT at 80-85dtca. Coarse blebs of py from 497.15-497.5m.
PGH-18-01	499.36	501	GRAN	Granite	Massive cg granite. Banded by fibrous blue amph + biotite (black) at contact with upper Crbt. Very little carb veining. No bx'tn. EOH at 501.0m.

Assays

DDH	From	To	Width (m)	SampleID	BatchID	SiO2 (%)	Al2O3 (%)	Fe2O3(T) (%)	MnO (%)	MgO (%)	CaO (%)	Na2O (%)	K2O (%)	TiO2 (%)	P2O5 (%)	LOI (%)	Total (%)	Sc (ppm)	Be (ppm)	V (ppm)	Ba (ppm)
PGH-18-01	495.85	496.74	0.89	589196	A18-03918	0.2	0.06	1.81	0.403	1.16	52.37	0.06	0.04	0.02	1.36	41.07	98.55	4	< 1	18	314
PGH-18-01	496.74	497.58	0.84	589197	A18-03918	0.91	0.12	3.19	0.463	2.35	49.18	0.08	0.09	0.025	3.06	38.15	97.61	5	< 1	28	670
PGH-18-01	497.58	498.43	0.85	589198	A18-03918	1.64	0.18	2.38	0.406	1.53	50.33	0.09	0.15	0.025	3.68	37.44	97.85	3	< 1	24	1678
PGH-18-01	498.43	499.36	0.93	589199	A18-03918	1.75	0.19	2.02	0.389	1.76	50.26	0.14	0.13	0.038	5.26	36.16	98.1	3	< 1	28	1041
PGH-18-01	499.36	499.93	0.57	589200	A18-03918	62.88	14.15	3.38	0.086	2.58	4.97	5.55	2.52	0.247	0.23	3.74	100.3	5	5	58	769

Assays

DDH	From	To	Width (m)	SampleID	Sr (ppm)	Y (ppm)	Zr (ppm)	Cr (ppm)	Co (ppm)	Ni (ppm)	Cu (ppm)	Zn (ppm)	Ga (ppm)	Ge (ppm)	As (ppm)	Rb (ppm)	Nb (ppm)	Mo (ppm)	Ag (ppm)	In (ppm)	Sn (ppm)	Sb (ppm)
PGH-18-01	246.34	247.3	0.96	589085	3295	214	30	< 20	10	< 20	20	50	9	1	11	12	737	< 2	< 0.5	< 0.2	< 1	< 0.5
PGH-18-01	247.3	248.68	1.38	1674611																		
PGH-18-01	248.68	249.93	1.25	1674612																		
PGH-18-01	249.93	251.07	1.14	1674613																		
PGH-18-01	251.07	252	0.93	1674614																		
PGH-18-01	252	253.24	1.24	1674615																		
PGH-18-01	253.24	254.32	1.08	589087	3213	181	57	< 20	17	30	20	120	12	2	22	24	520	5	< 0.5	< 0.2	3	< 0.5
PGH-18-01	254.32	255.22	0.9	589088	4802	81	40	< 20	12	20	30	90	12	< 1	12	36	534	4	< 0.5	< 0.2	2	< 0.5
PGH-18-01	255.22	255.8	0.58	1674616																		
PGH-18-01	255.8	257.06	1.26	589089	3251	90	17	< 20	5	< 20	30	130	25	3	14	16	436	23	< 0.5	< 0.2	< 1	< 0.5
PGH-18-01	257.06	258.3	1.24	1674617																		
PGH-18-01	258.3	259.32	1.02	1674618																		
PGH-18-01	259.32	260.32	1	1674619																		
PGH-18-01	260.32	261.42	1.1	1674620																		
PGH-18-01	261.42	262.4	0.98	1674621																		
PGH-18-01	262.4	263.38	0.98	1674622																		
PGH-18-01	263.38	264.32	0.94	1674623																		
PGH-18-01	264.32	264.78	0.46	589090	2832	62	70	30	6	< 20	< 10	90	15	< 1	< 5	69	359	< 2	< 0.5	< 0.2	2	< 0.5
PGH-18-01	264.78	265.82	1.04	589091	2282	161	53	30	5	< 20	30	130	18	2	7	62	468	3	< 0.5	< 0.2	2	< 0.5
PGH-18-01	265.82	266.76	0.94	589092	1744	44	106	40	6	< 20	< 10	180	20	< 1	< 5	122	410	7	< 0.5	< 0.2	3	< 0.5
PGH-18-01	266.76	267.23	0.47	589093	5421	25	5	< 20	< 1	< 20	20	430	38	5	20	< 2	8	44	< 0.5	< 0.2	< 1	< 0.5
PGH-18-01	267.23	268.02	0.79	589094	1902	23	73	50	6	20	< 10	190	19	< 1	< 5	88	149	14	< 0.5	< 0.2	3	< 0.5
PGH-18-01	268.02	269.2	1.18	1674624																		
PGH-18-01	269.2	270.3	1.1	1674625																		
PGH-18-01	270.3	271.5	1.2	1674626																		
PGH-18-01	271.5	272.89	1.39	1674627																		
PGH-18-01	272.89	273.92	1.03	1674628																		
PGH-18-01	273.92	275.04	1.12	589095	3055	232	162	30	11	30	30	120	10	2	19	10	> 1000	5	0.7	< 0.2	2	< 0.5
PGH-18-01	275.04	276	0.96	589096	3758	126	223	< 20	5	< 20	40	150	12	1	11	9	385	5	1	< 0.2	< 1	< 0.5
PGH-18-01	276	277.15	1.15	589097	4817	114	208	< 20	10	20	40	130	9	1	15	4	338	7	1	< 0.2	< 1	< 0.5
PGH-18-01	277.15	278.3	1.15	589098	7108	76	48	< 20	8	< 20	20	40	6	< 1	5	2	> 1000	4	< 0.5	< 0.2	2	< 0.5
PGH-18-01	287.52	288.8	1.28	589099	6696	79	17	< 20	2	< 20	< 10	40	4	< 1	< 5	19	554	< 2	< 0.5	< 0.2	< 1	< 0.5
PGH-18-01	288.8	290.1	1.3	589100	4356	74	9	< 20	< 1	< 20	< 10	130	4	< 1	< 5	< 2	46	9	< 0.5	0.3	< 1	< 0.5
PGH-18-01	290.1	291.33	1.23	589101	2932	176	38	< 20	< 1	< 20	20	230	16	2	10	4	145	9	< 0.5	< 0.2	< 1	< 0.5
PGH-18-01	291.33	292.27	0.94	1674629																		
PGH-18-01	292.27	293.05	0.78	1674630																		
PGH-18-01	293.05	294	0.95	1674631																		
PGH-18-01	294	295.09	1.09	1674632																		
PGH-18-01	295.09	295.9	0.81	1674633																		
PGH-18-01	295.9	296.7	0.8	589102	2953	206	13	< 20	4	< 20	10	60	16	3	15	6	> 1000	22	< 0.5	0.2	2	< 0.5
PGH-18-01	296.7	297.45	0.75	589103	2789	110	14	< 20	11	< 20	20	130	13	2	20	< 2	597	13	< 0.5	< 0.2	< 1	< 0.5

Assays

DDH	From	To	Width (m)	SampleID	Sr (ppm)	Y (ppm)	Zr (ppm)	Cr (ppm)	Co (ppm)	Ni (ppm)	Cu (ppm)	Zn (ppm)	Ga (ppm)	Ge (ppm)	As (ppm)	Rb (ppm)	Nb (ppm)	Mo (ppm)	Ag (ppm)	In (ppm)	Sn (ppm)	Sb (ppm)
PGH-18-01	495.85	496.74	0.89	589196	2343	92	7	< 20	< 1	< 20	< 10	40	4	< 1	< 5	< 2	56	< 2	< 0.5	< 0.2	< 1	< 0.5
PGH-18-01	496.74	497.58	0.84	589197	3217	128	7	< 20	3	< 20	< 10	90	6	< 1	5	< 2	177	2	< 0.5	< 0.2	< 1	< 0.5
PGH-18-01	497.58	498.43	0.85	589198	4249	111	9	< 20	< 1	< 20	< 10	100	7	< 1	< 5	< 2	236	< 2	< 0.5	< 0.2	< 1	< 0.5
PGH-18-01	498.43	499.36	0.93	589199	6354	157	20	< 20	< 1	< 20	< 10	60	5	< 1	< 5	2	590	< 2	< 0.5	< 0.2	< 1	< 0.5
PGH-18-01	499.36	499.93	0.57	589200	801	17	104	90	9	70	< 10	60	17	< 1	< 5	55	91	2	< 0.5	< 0.2	2	< 0.5

Assays

DDH	From	To	Width (m)	SampleID	Cs (ppm)	La (ppm)	Ce (ppm)	Pr (ppm)	Nd (ppm)	Sm (ppm)	Eu (ppm)	Gd (ppm)	Tb (ppm)	Dy (ppm)	Ho (ppm)	Er (ppm)	Tm (ppm)	Yb (ppm)	Lu (ppm)	Hf (ppm)	Ta (ppm)
PGH-18-01	246.34	247.3	0.96	589085	< 0.5	329	815	105	433	101	33.4	89.1	12.4	59.4	8.6	18.8	2.02	10.1	1.19	0.7	1.5
PGH-18-01	247.3	248.68	1.38	1674611																	
PGH-18-01	248.68	249.93	1.25	1674612																	
PGH-18-01	249.93	251.07	1.14	1674613																	
PGH-18-01	251.07	252	0.93	1674614																	
PGH-18-01	252	253.24	1.24	1674615																	
PGH-18-01	253.24	254.32	1.08	589087	< 0.5	363	898	116	508	125	39	96.7	11.8	51	6.9	15.2	1.68	8.1	0.98	1.1	0.2
PGH-18-01	254.32	255.22	0.9	589088	< 0.5	206	491	60.3	239	44.2	13	32.6	4.2	20.4	3.1	7.7	0.92	5.3	0.7	0.7	0.4
PGH-18-01	255.22	255.8	0.58	1674616																	
PGH-18-01	255.8	257.06	1.26	589089	< 0.5	2180	3220	273	874	116	29.1	58.2	5.9	25.4	3.4	7.3	0.86	4.8	0.64	0.5	0.5
PGH-18-01	257.06	258.3	1.24	1674617																	
PGH-18-01	258.3	259.32	1.02	1674618																	
PGH-18-01	259.32	260.32	1	1674619																	
PGH-18-01	260.32	261.42	1.1	1674620																	
PGH-18-01	261.42	262.4	0.98	1674621																	
PGH-18-01	262.4	263.38	0.98	1674622																	
PGH-18-01	263.38	264.32	0.94	1674623																	
PGH-18-01	264.32	264.78	0.46	589090	< 0.5	204	487	59.1	236	41.4	11.3	26.6	3.2	15.7	2.4	5.8	0.74	4	0.55	1.7	0.9
PGH-18-01	264.78	265.82	1.04	589091	< 0.5	617	1060	101	354	63.4	19.5	49.6	7.4	38	6	13.5	1.61	9.4	1.22	1.4	1.2
PGH-18-01	265.82	266.76	0.94	589092	0.7	679	1060	101	334	47.6	12.6	26.4	2.7	12.3	1.8	4.4	0.53	3	0.42	2.4	1.2
PGH-18-01	266.76	267.23	0.47	589093	< 0.5	3910	5750	530	1550	190	45.4	78.4	5	13.5	1.3	2.3	0.26	1.7	0.3	0.2	< 0.1
PGH-18-01	267.23	268.02	0.79	589094	< 0.5	1090	1710	156	490	56.4	13.3	24.7	2.1	7.3	0.9	2.1	0.26	1.7	0.27	2.3	0.5
PGH-18-01	268.02	269.2	1.18	1674624																	
PGH-18-01	269.2	270.3	1.1	1674625																	
PGH-18-01	270.3	271.5	1.2	1674626																	
PGH-18-01	271.5	272.89	1.39	1674627																	
PGH-18-01	272.89	273.92	1.03	1674628																	
PGH-18-01	273.92	275.04	1.12	589095	< 0.5	499	1100	120	467	86.5	25.6	62.3	9.2	50.5	8.4	21.5	2.56	13.8	1.74	2	4.2
PGH-18-01	275.04	276	0.96	589096	< 0.5	375	926	105	415	70.5	19.7	46	5.8	29.1	4.7	10.4	1.32	7.9	1.04	2.3	1.6
PGH-18-01	276	277.15	1.15	589097	< 0.5	304	828	94.9	387	78.1	23.3	53.9	6.6	29.8	4.4	9.6	1.15	6.4	0.78	1.8	1.6
PGH-18-01	277.15	278.3	1.15	589098	< 0.5	237	572	68.7	275	49.1	13.6	32.7	4.1	20	3.1	7.3	0.84	5	0.63	0.8	2.8
PGH-18-01	287.52	288.8	1.28	589099	< 0.5	204	496	60.5	242	45.1	13	29.9	3.7	18.1	2.9	6.6	0.82	4.8	0.59	0.3	0.6
PGH-18-01	288.8	290.1	1.3	589100	< 0.5	1060	1920	197	686	94.5	24.9	51.3	5.4	22	3	7.1	0.87	4.5	0.57	< 0.2	0.3
PGH-18-01	290.1	291.33	1.23	589101	< 0.5	1310	2260	212	732	104	28.4	62.3	8.1	41	6.5	14.9	1.62	8.6	1.04	0.8	0.2
PGH-18-01	291.33	292.27	0.94	1674629																	
PGH-18-01	292.27	293.05	0.78	1674630																	
PGH-18-01	293.05	294	0.95	1674631																	
PGH-18-01	294	295.09	1.09	1674632																	
PGH-18-01	295.09	295.9	0.81	1674633																	
PGH-18-01	295.9	296.7	0.8	589102	< 0.5	1090	2040	197	702	119	36.5	89.9	12.1	56.9	8.2	16.5	1.7	8.8	1.05	0.6	2.6
PGH-18-01	296.7	297.45	0.75	589103	< 0.5	921	1770	175	630	104	29.7	65.8	7.6	33.1	4.5	9.6	1.02	5.1	0.65	0.4	0.8

Assays

DDH	From	To	Width (m)	SampleID	Cs (ppm)	La (ppm)	Ce (ppm)	Pr (ppm)	Nd (ppm)	Sm (ppm)	Eu (ppm)	Gd (ppm)	Tb (ppm)	Dy (ppm)	Ho (ppm)	Er (ppm)	Tm (ppm)	Yb (ppm)	Lu (ppm)	Hf (ppm)	Ta (ppm)
PGH-18-01	495.85	496.74	0.89	589196	< 0.5	341	777	93.9	360	61.4	17.9	39.3	4.8	23.2	3.6	8.3	0.95	4.5	0.59	0.2	0.7
PGH-18-01	496.74	497.58	0.84	589197	< 0.5	362	824	99.8	387	73.6	22.4	52.6	6.6	31.6	4.9	10.9	1.18	5.6	0.7	0.2	0.4
PGH-18-01	497.58	498.43	0.85	589198	< 0.5	338	799	98.9	388	66.5	19.5	43.7	5.7	26.9	4.3	9.8	1.09	5.5	0.69	0.3	0.5
PGH-18-01	498.43	499.36	0.93	589199	< 0.5	314	743	90.9	347	64.6	19.6	48.1	6.9	36.4	6	13.8	1.63	8.1	0.96	0.4	1.8
PGH-18-01	499.36	499.93	0.57	589200	1.3	27.1	58.8	7.12	26.8	5.5	1.78	4.3	0.7	3.6	0.6	1.5	0.2	1.2	0.15	2.7	0.8

Assays

DDH	From	To	Width (m)	SampleID	W (ppm)	TI (ppm)	Pb (ppm)	Bi (ppm)	Th (ppm)	U (ppm)	Nb2O5 (%)	Description
PGH-18-01	11.85	12.1	0.25	589001	< 1	< 0.1	18	< 0.4	31.1	28.6	0.099	crbt
PGH-18-01	12.1	12.92	0.82	351542							0.01	syefen w/ xcut carb-blue amph veins
PGH-18-01	12.92	13.66	0.74	351543							0.049	syefen w/ x-cut amph-carb veins, epd alt'n
PGH-18-01	13.66	14.23	0.57	589002	3	< 0.1	16	< 0.4	40.4	18.3	0.017	crbt
PGH-18-01	14.23	15.64	1.41	351544							0.028	syefen w/ veining
PGH-18-01	15.64	16.31	0.67	589003	< 1	< 0.1	84	< 0.4	19.9	47.5	0.423	crbt
PGH-18-01	16.31	17.14	0.83	589004	15	< 0.1	20	< 0.4	41.5	25.2	0.157	crbt + alkali clasts
PGH-18-01	17.14	18	0.86	589005	< 1	< 0.1	43	< 0.4	43.6	11.6	0.044	crbt
PGH-18-01	18	18.91	0.91	589006	< 1	< 0.1	39	< 0.4	36.1	15.8	0.076	crbt-alkali bx
PGH-18-01	18.91	19.75	0.84	589007	1	< 0.1	41	< 0.4	53.1	20.4	0.231	crbt
PGH-18-01	19.75	20.46	0.71	589008	< 1	0.2	12	< 0.4	38.9	13.1	0.053	ijolite
PGH-18-01	20.46	21.72	1.26	351545							0.046	banded alt'd gran/syefen and mdyke (green-grey)
PGH-18-01	21.72	22.95	1.23	351546							0.037	same to massive syefen
PGH-18-01	22.95	24.15	1.2	351547							0.032	syefen w/ min carb+amph veining
PGH-18-01	24.15	25.2	1.05	351548							0.027	syefen, increasing carb veining
PGH-18-01	25.2	26.19	0.99	351549							0.024	syefen, increasing carb veining
PGH-18-01	26.19	26.79	0.6	589009	16	< 0.1	43	< 0.4	48.8	26	0.126	whispy crbt
PGH-18-01	26.79	27.77	0.98	351550							0.022	syefen, increasing carb veining
PGH-18-01	27.77	28.35	0.58	655377							0.047	syefen w/ low angle felsic/siliceous dyke
PGH-18-01	28.35	28.8	0.45	589010	28	< 0.1	16	< 0.4	19.2	13.6	0.08	unknown dyke
PGH-18-01	31.18	31.51	0.33	589011	< 1	< 0.1	29	< 0.4	43.4	29	0.043	crbt
PGH-18-01	32.28	33.05	0.77	589012	9	< 0.1	56	< 0.4	20	21.7	0.042	pink to mica banded silcarb
PGH-18-01	34.09	34.77	0.68	589013	< 1	0.2	46	< 0.4	25.7	9.9	0.08	carb bx'td alkali rock
PGH-18-01	41.76	42	0.24	589014	< 1	< 0.1	9	< 0.4	70.5	7.4	0.013	crbt, blebby sulph w/ black non-mag rims
PGH-18-01	46.49	46.78	0.29	589015	< 1	< 0.1	108	< 0.4	63.2	5.4	0.015	10cm + 2cm wide crbt veins in kspar rock
PGH-18-01	52.53	53.47	0.94	589016	< 1	0.1	13	< 0.4	44.2	7.2	0.078	similar bx w/ 20cm & 10cm wide crbt veins
PGH-18-01	53.47	54.64	1.17	589017	3	< 0.1	15	< 0.4	33.7	10.7	0.063	kspar rock w/ 37cm crbt vein + 1-2cm wide carb+py vein
PGH-18-01	60.61	61.8	1.19	589018	< 1	0.1	14	< 0.4	16.5	5	0.015	alkali breccia
PGH-18-01	61.8	63	1.2	589019	1	0.3	24	< 0.4	8	3.8	0.01	granite breccia
PGH-18-01	63	63.95	0.95	589021	< 1	0.1	12	< 0.4	19	7.2	0.018	gran w/ 25cm crbt vein
PGH-18-01	63.95	64.95	1	589022	2	< 0.1	8	< 0.4	5.4	1	0.005	gran
PGH-18-01	64.95	65.93	0.98	589023	< 1	0.1	8	< 0.4	8.9	6.7	0.057	gran
PGH-18-01	65.93	66.85	0.92	589024	< 1	< 0.1	63	< 0.4	15.4	71.9	0.106	crbt
PGH-18-01	66.85	67.85	1	589025	< 1	< 0.1	20	< 0.4	11.2	42.9	0.025	crbt
PGH-18-01	67.85	68.81	0.96	589026	< 1	< 0.1	45	< 0.4	6.9	39.4	0.085	crbt
PGH-18-01	68.81	69.8	0.99	589027	< 1	< 0.1	21	< 0.4	12	36	0.082	crbt
PGH-18-01	69.8	70.86	1.06	589028	< 1	< 0.1	26	< 0.4	7.5	25.9	0.062	crbt
PGH-18-01	70.86	72	1.14	589029	< 1	< 0.1	28	< 0.4	12.8	33	0.173	crbt
PGH-18-01	72	73	1	589030	3	< 0.1	63	< 0.4	27.3	58.3	0.191	crbt
PGH-18-01	73	74.05	1.05	589031	2	< 0.1	73	0.4	23.8	67.8	0.128	crbt
PGH-18-01	74.05	74.88	0.83	589032	< 1	< 0.1	30	< 0.4	15.9	42.3	0.104	crbt

Assays

DDH	From	To	Width (m)	SampleID	W (ppm)	TI (ppm)	Pb (ppm)	Bi (ppm)	Th (ppm)	U (ppm)	Nb2O5 (%)	Description
PGH-18-01	74.88	75.87	0.99	589033	< 1	< 0.1	112	< 0.4	14.1	102	0.226	crbt
PGH-18-01	75.87	76.87	1	589034	< 1	0.2	24	< 0.4	25.7	36.6	0.246	crbt
PGH-18-01	76.87	78	1.13	589035	< 1	0.1	54	< 0.4	34.3	53.4	0.202	crbt
PGH-18-01	78	79.11	1.11	589036	< 1	< 0.1	20	< 0.4	17.3	22.7	0.157	crbt w/ <10% rimmed kspar clasts
PGH-18-01	79.11	80.14	1.03	589037	< 1	< 0.1	15	< 0.4	13.5	19.9	0.07	crbt
PGH-18-01	80.14	81.25	1.11	589038	< 1	< 0.1	15	< 0.4	30.3	8.7	0.091	crbt w/ 30cm kspar rock
PGH-18-01	81.25	82.25	1	589039	< 1	0.2	6	< 0.4	9.7	4.2	0.019	gran w/ carb veining (weakly bx'td)
PGH-18-01	95.75	96.29	0.54	589040	< 1	< 0.1	55	< 0.4	16.2	21.4	0.045	crbt
PGH-18-01	96.29	97.28	0.99	589041	2	0.1	19	< 0.4	16.7	14.4	0.04	alkali breccia
PGH-18-01	97.28	98.14	0.86	589042	2	0.2	31	< 0.4	15.7	7.4	0.023	alkali breccia
PGH-18-01	98.14	99.2	1.06	589043	< 1	< 0.1	16	< 0.4	32.5	12.7	0.063	crbt
PGH-18-01	99.2	100.49	1.29	589044	2	< 0.1	11	< 0.4	15.1	2.6	0.013	alkali breccia
PGH-18-01	100.49	101.78	1.29	589045	< 1	0.1	12	< 0.4	11	3.5	0.021	alkali breccia
PGH-18-01	101.78	102.31	0.53	589046	< 1	< 0.1	13	< 0.4	58.3	5.7	0.008	crbt
PGH-18-01	112.5	113.62	1.12	589047	< 1	< 0.1	39	< 0.4	17.8	26	0.072	crbt
PGH-18-01	113.62	114.22	0.6	589048	< 1	< 0.1	11	< 0.4	22.3	10	0.038	breccia+sulphides
PGH-18-01	115.5	115.8	0.3	589074	4	0.2	123	< 0.4	66.9	9.3	0.021	20cm crbt (sample out of sequence)
PGH-18-01	123.21	124.36	1.15	589049	6	< 0.1	25	< 0.4	57.2	11.1	0.109	crbt
PGH-18-01	124.36	125.33	0.97	589051	8	0.1	15	< 0.4	22	16.8	0.08	crbt + clasts
PGH-18-01	130.24	130.93	0.69	589052	2	< 0.1	18	< 0.4	8	18.7	0.046	crbt
PGH-18-01	139.65	140.04	0.39	589053	5	0.2	51	< 0.4	73.6	9	0.041	bcrbt vein + sulfides
PGH-18-01	141.45	142.08	0.63	589054	2	< 0.1	16	< 0.4	26.6	12.3	0.142	crbt
PGH-18-01	142.08	143	0.92	589055	< 1	0.2	101	0.6	46.5	50.8	0.245	crbt
PGH-18-01	145.24	145.84	0.6	589056	< 1	0.1	35	< 0.4	46.5	22	0.048	crbt
PGH-18-01	163	164.33	1.33	589057	1	< 0.1	18	< 0.4	44.2	11.8	0.034	crbt
PGH-18-01	164.33	165.73	1.4	655378							0.015	syw w/ carb veins
PGH-18-01	165.73	167.05	1.32	655379							0.015	syw w/ carb veins
PGH-18-01	167.05	168.18	1.13	655380							0.015	syw w/ carb veins
PGH-18-01	168.18	169.37	1.19	655381							0.007	syw w/ carb veins
PGH-18-01	169.37	170.4	1.03	655382							0.061	syw w/ 20 & 10cm carb veins
PGH-18-01	170.4	171.36	0.96	589058	< 1	< 0.1	21	< 0.4	26.3	20.7	0.356	crbt
PGH-18-01	171.36	172.54	1.18	655383							0.013	gran
PGH-18-01	172.54	174	1.46	655384							0.012	gran
PGH-18-01	174	175.15	1.15	655385							0.007	gran, ap in carb-amph veins
PGH-18-01	175.15	176.43	1.28	655386							0.015	alkalic w/ crbt-amph-ap veins, 5cm diab dyke
PGH-18-01	176.43	177.37	0.94	655387							0.008	alkalic w/ crbt-amph-ap veins
PGH-18-01	177.37	178.5	1.13	655388							0.027	syw/fen w/ green bands (mdyke?)
PGH-18-01	178.5	179.83	1.33	655389							0.076	same + carb-amph veins
PGH-18-01	179.83	181.1	1.27	655390							0.056	same, ap in irreg carb veins
PGH-18-01	181.1	182.27	1.17	655391							0.046	ap in 18cm crbt vein
PGH-18-01	182.27	183.4	1.13	655392							0.035	gran, ap in purple-yellow vein near end

Assays

DDH	From	To	Width (m)	SampleID	W (ppm)	Tl (ppm)	Pb (ppm)	Bi (ppm)	Th (ppm)	U (ppm)	Nb2O5 (%)	Description
PGH-18-01	183.4	184.64	1.24	655393							0.094	gran w/ ap in x-cut carb veins up to 15cm
PGH-18-01	184.64	185.73	1.09	655394							0.058	gran w/ carb veins
PGH-18-01	185.73	187	1.27	655395							0.007	gran/sye - amph+/-carb veins
PGH-18-01	187	188.3	1.3	655396							0.021	gran/sye - amph+/-carb veins
PGH-18-01	188.3	189.4	1.1	655397							0.052	same, ~10cm carb veins
PGH-18-01	189.4	189.58	0.18	589059	13	0.9	13	< 0.4	7.5	5.2	0.004	crbt + multiple sulphide phases and magnetite in veins
PGH-18-01	198	199	1	589060	22	< 0.1	19	< 0.4	53.9	9.8	0.084	crbt
PGH-18-01	199	200.01	1.01	589061	< 1	< 0.1	25	< 0.4	19.7	31.6	0.543	crbt
PGH-18-01	200.01	201	0.99	589062	< 1	< 0.1	< 5	< 0.4	2.9	0.9	0.01	crbt
PGH-18-01	201	202	1	589063	< 1	< 0.1	7	< 0.4	6.1	7.7	0.211	crbt
PGH-18-01	202	203.58	1.58	589064	< 1	< 0.1	26	< 0.4	46.3	9.4	0.018	crbt
PGH-18-01	203.58	204.51	0.93	589065	< 1	0.2	10	< 0.4	7	10.1	0.169	crbt-bx
PGH-18-01	204.51	205.52	1.01	589066	8	0.4	18	< 0.4	29.9	15.4	0.094	crbt-bx
PGH-18-01	205.52	206.51	0.99	589067	2	0.6	26	< 0.4	38.4	16.3	0.144	crbt-bx
PGH-18-01	206.51	207.49	0.98	589068	3	0.3	11	< 0.4	10	2.3	0.021	granite breccia
PGH-18-01	207.49	208.67	1.18	589069	< 1	0.3	< 5	< 0.4	5.5	2.2	0.06	granite breccia
PGH-18-01	208.67	209.68	1.01	589070	1	< 0.1	7	< 0.4	3.2	3.6	0.144	crbt
PGH-18-01	209.68	210.88	1.2	589071	6	< 0.1	7	< 0.4	5.9	4.4	0.125	crbt
PGH-18-01	210.88	211.87	0.99	589072	13	0.3	10	< 0.4	11.2	10.6	0.132	crbt-bx
PGH-18-01	211.87	212.72	0.85	589073	< 1	0.3	7	< 0.4	28.8	8.7	0.073	crbt-bx
PGH-18-01	214.28	214.71	0.43	589075	3	0.2	11	< 0.4	21	2.9	0.025	crbt- 20% breccia
PGH-18-01	217.37	218.32	0.95	589076	< 1	< 0.1	18	< 0.4	17	6.9	0.21	crbt
PGH-18-01	222.63	223.88	1.25	589077	1	< 0.1	9	< 0.4	26.3	2.3	0.018	crbt
PGH-18-01	227.18	227.75	0.57	589078	< 1	< 0.1	13	< 0.4	42.2	15.4	0.22	crbt
PGH-18-01	227.75	229.14	1.39	655398							0.041	sye w/ x-cut carb, minor bx'tn txt
PGH-18-01	229.14	230.03	0.89	589079	6	0.2	19	< 0.4	33.1	7.9	0.086	crbt
PGH-18-01	229.82	231	1.18	655399							0.016	crbt at start to sye w/ x-cut veins
PGH-18-01	231	232.35	1.35	655400							0.019	sye w/ min carb veins
PGH-18-01	232.35	233.36	1.01	1674601							0.017	same, starts in bx'td zone
PGH-18-01	233.36	234.45	1.09	1674602							0.296	sye-bax, ap+/- fluorite in carb
PGH-18-01	234.47	235.47	1	589080	6	0.1	435	0.5	110	50.1	0.178	whispy crbt + breccia
PGH-18-01	235.47	236.66	1.19	1674604							0.16	sye-bx to sye w/ x-cut carb veins
PGH-18-01	236.66	237.8	1.14	1674605							0.164	sye-bx
PGH-18-01	237.8	239.05	1.25	1674606							0.031	same w/ 10cm peg vein
PGH-18-01	239.05	240.27	1.22	1674607							0.098	sye-x (ap in carb veins)
PGH-18-01	240.27	241.45	1.18	1674608							0.083	sye w/ lesser sye-bx
PGH-18-01	241.45	242.5	1.05	1674609							0.017	sye, min x-cut carb veins
PGH-18-01	242.5	243.49	0.99	589081	10	< 0.1	44	< 0.4	84.8	30.1	0.233	crbt
PGH-18-01	243.49	244.44	0.95	589082	1	0.1	34	< 0.4	46.7	35.6	0.531	crbt
PGH-18-01	244.44	245.26	0.82	589083	8	0.4	12	< 0.4	16	6.5	0.029	alkali breccia
PGH-18-01	245.26	246.34	1.08	589084	3	0.1	19	< 0.4	128	38.4	0.272	crbt + 50% breccia

Assays

DDH	From	To	Width (m)	SampleID	W (ppm)	Tl (ppm)	Pb (ppm)	Bi (ppm)	Th (ppm)	U (ppm)	Nb2O5 (%)	Description
PGH-18-01	246.34	247.3	0.96	589085	3	< 0.1	23	< 0.4	87.9	41.8	0.225	crbt
PGH-18-01	247.3	248.68	1.38	1674611							0.03	sy
PGH-18-01	248.68	249.93	1.25	1674612							0.013	sy
PGH-18-01	249.93	251.07	1.14	1674613							0.041	sy, incr carb veins and bx at end
PGH-18-01	251.07	252	0.93	1674614							0.067	sy-bx
PGH-18-01	252	253.24	1.24	1674615							0.079	sy-bx
PGH-18-01	253.24	254.32	1.08	589087	3	< 0.1	25	< 0.4	81	19.7	0.087	crbt
PGH-18-01	254.32	255.22	0.9	589088	11	0.1	21	< 0.4	20.4	14.1	0.164	crbt
PGH-18-01	255.22	255.8	0.58	1674616							0.054	sy
PGH-18-01	255.8	257.06	1.26	589089	3	< 0.1	22	< 0.4	56.5	46.7	0.167	crbt + 30% breccia
PGH-18-01	257.06	258.3	1.24	1674617							0.021	sy w/ carb veining
PGH-18-01	258.3	259.32	1.02	1674618							0.104	sy-bx
PGH-18-01	259.32	260.32	1	1674619							0.062	sy/sy-bx
PGH-18-01	260.32	261.42	1.1	1674620							0.022	sy w/ carb veining
PGH-18-01	261.42	262.4	0.98	1674621							0.054	sy, ap in carb veins
PGH-18-01	262.4	263.38	0.98	1674622							0.216	sy, ap in carb veins
PGH-18-01	263.38	264.32	0.94	1674623							0.11	sy-bx
PGH-18-01	264.32	264.78	0.46	589090	11	< 0.1	11	< 0.4	23.4	14.4	0.18	crbt with fluorite
PGH-18-01	264.78	265.82	1.04	589091	3	< 0.1	20	< 0.4	48.1	38.5	0.119	breccia
PGH-18-01	265.82	266.76	0.94	589092	4	0.1	10	< 0.4	27.4	12.6	0.083	breccia
PGH-18-01	266.76	267.23	0.47	589093	1	< 0.1	9	< 0.4	55.4	5.7	< 0.003	crbt with fluorite
PGH-18-01	267.23	268.02	0.79	589094	5	< 0.1	10	< 0.4	30.1	12	0.026	breccia
PGH-18-01	268.02	269.2	1.18	1674624							0.044	sy, bx at top
PGH-18-01	269.2	270.3	1.1	1674625							0.033	sy w/ carb veins
PGH-18-01	270.3	271.5	1.2	1674626							0.048	same, min blue amph
PGH-18-01	271.5	272.89	1.39	1674627							0.083	sy - sy/bx
PGH-18-01	272.89	273.92	1.03	1674628							0.055	sy w/ carb veins
PGH-18-01	273.92	275.04	1.12	589095	6	< 0.1	35	< 0.4	77	73	0.456	crbt
PGH-18-01	275.04	276	0.96	589096	2	< 0.1	32	< 0.4	43	34.8	0.155	crbt
PGH-18-01	276	277.15	1.15	589097	2	< 0.1	30	< 0.4	28.3	28.7	0.15	crbt
PGH-18-01	277.15	278.3	1.15	589098	2	< 0.1	15	< 0.4	15.2	14.8	0.665	crbt
PGH-18-01	287.52	288.8	1.28	589099	4	< 0.1	9	< 0.4	13.6	4.8	0.265	crbt (narrower core over 80cm due to drilling error)
PGH-18-01	288.8	290.1	1.3	589100	5	< 0.1	34	< 0.4	77.7	9.2	0.004	white crbt
PGH-18-01	290.1	291.33	1.23	589101	< 1	< 0.1	89	< 0.4	76.8	26.7	0.102	crbt grayish banding at uct
PGH-18-01	291.33	292.27	0.94	1674629							0.103	sy w/ low angle carb, x-cut amph veins
PGH-18-01	292.27	293.05	0.78	1674630							0.24	carb<amph+biot-phlog veins, silcarb or mdyke???
PGH-18-01	293.05	294	0.95	1674631							0.382	sy w/ 20cm carb+ap vein
PGH-18-01	294	295.09	1.09	1674632							0.04	fen/sy w/ 15cm cg crbt
PGH-18-01	295.09	295.9	0.81	1674633							0.03	sy, blue amph veins
PGH-18-01	295.9	296.7	0.8	589102	2	< 0.1	20	< 0.4	88.9	25.8	0.637	massive crbt
PGH-18-01	296.7	297.45	0.75	589103	< 1	< 0.1	65	< 0.4	66.8	13.6	0.239	crbt

Assays

DDH	From	To	Width (m)	SampleID	W (ppm)	Tl (ppm)	Pb (ppm)	Bi (ppm)	Th (ppm)	U (ppm)	Nb2O5 (%)	Description
PGH-18-01	297.45	298.44	0.99	589104	7	< 0.1	47	< 0.4	63.2	12.3	0.33	bx gran with up to 30 % crbt
PGH-18-01	298.44	299.1	0.66	589105	4	< 0.1	24	< 0.4	34.4	6.7	0.024	crbt
PGH-18-01	308.2	309.35	1.15	1674634							0.042	syw w/ bx at end
PGH-18-01	309.35	310.54	1.19	589106	3	< 0.1	50	< 0.4	14.7	4	0.171	interbedded crbt/gran with sulfide blebs
PGH-18-01	310.54	311.56	1.02	589107	< 1	< 0.1	22	< 0.4	16.7	31.3	0.558	crbt with gran clasts (60%)
PGH-18-01	311.56	312.73	1.17	1674635							0.027	syw w/ carb-amph veins
PGH-18-01	312.73	313.92	1.19	1674636							0.085	syw w/ carb-amph veins
PGH-18-01	313.92	315	1.08	589108	2	< 0.1	25	< 0.4	21.1	21.3	0.165	crbt
PGH-18-01	315	316	1	589109	4	< 0.1	15	< 0.4	8.9	9.3	0.207	crbt
PGH-18-01	316	317	1	589110	4	< 0.1	8	< 0.4	4.4	2.3	0.018	crbt
PGH-18-01	317	317.93	0.93	589112	5	< 0.1	10	< 0.4	10.3	7.5	0.133	crbt
PGH-18-01	317.93	318.96	1.03	589113	2	< 0.1	19	< 0.4	22.9	31.4	0.337	crbt
PGH-18-01	318.96	319.74	0.78	589114	2	< 0.1	15	< 0.4	14.8	14.3	0.242	crbt
PGH-18-01	319.74	320.55	0.81	589115	3	< 0.1	16	< 0.4	14.5	19.9	0.186	crbt
PGH-18-01	320.55	321.22	0.67	589116	< 1	< 0.1	13	< 0.4	12	28.6	0.144	mica rich crbt
PGH-18-01	321.22	322	0.78	589117	4	< 0.1	27	< 0.4	8.2	40.3	0.05	crbt
PGH-18-01	322	323	1	589118	7	< 0.1	16	< 0.4	48.5	31.8	0.037	crbt
PGH-18-01	323	324	1	589119	6	< 0.1	22	< 0.4	34.9	19.4	0.058	crbt
PGH-18-01	324	325	1	589120	7	< 0.1	19	< 0.4	9.4	14.6	0.201	crbt
PGH-18-01	325	326	1	589121	6	< 0.1	12	< 0.4	10.9	20	0.353	crbt
PGH-18-01	326	326.78	0.78	589122	5	< 0.1	23	< 0.4	14.7	34.5	0.27	crbt
PGH-18-01	326.78	327.08	0.3	589123	2	< 0.1	22	< 0.4	15.5	37	0.295	mica rich crbt
PGH-18-01	327.08	327.94	0.86	589124	3	< 0.1	13	< 0.4	10.1	22.4	0.173	crbt
PGH-18-01	327.94	328.75	0.81	589125	3	< 0.1	17	< 0.4	24.8	28.9	0.412	crbt
PGH-18-01	328.75	329.8	1.05	589126	3	< 0.1	35	< 0.4	53.4	15.8	0.243	crbt
PGH-18-01	329.8	330.81	1.01	589127	3	< 0.1	12	< 0.4	16.5	15.7	0.542	crbt
PGH-18-01	330.81	331.81	1	589128	4	< 0.1	9	< 0.4	15.5	12.7	0.361	crbt
PGH-18-01	331.81	332.85	1.04	589129	8	< 0.1	< 5	< 0.4	2.6	1.3	0.023	crbt
PGH-18-01	332.85	333.84	0.99	589130	4	< 0.1	< 5	< 0.4	4	4.7	0.054	crbt
PGH-18-01	333.84	334.99	1.15	589131	4	< 0.1	9	< 0.4	8.1	9.5	0.055	crbt
PGH-18-01	334.99	335.77	0.78	589132	1	< 0.1	31	< 0.4	23.4	92.9	0.458	crbt
PGH-18-01	335.77	336.96	1.19	589133	3	< 0.1	34	< 0.4	7.7	58	0.13	mgt rich crbt
PGH-18-01	336.96	337.64	0.68	589134	4	< 0.1	11	< 0.4	4.3	15.2	0.046	crbt with ap
PGH-18-01	337.64	338.52	0.88	589135	6	< 0.1	20	< 0.4	23.1	8.6	0.543	crbt with mica books and ap
PGH-18-01	338.52	339.44	0.92	589136	4	0.2	8	< 0.4	20	7.3	0.086	granite breccia
PGH-18-01	339.44	340.43	0.99	589137	< 1	0.9	25	< 0.4	16.2	27	0.131	crbt
PGH-18-01	340.43	340.9	0.47	589138	< 1	0.6	20	< 0.4	16.7	25.7	0.126	crbt + ~15cm mica-mt band
PGH-18-01	340.9	341.44	0.54	589139	2	0.8	13	< 0.4	9.8	7.2	0.115	gran, 10-15% carb veins
PGH-18-01	341.44	342.16	0.72	589140	1	0.4	30	< 0.4	34.5	23.9	0.355	crbt, whisby banding, lower half of sample with gran clasts
PGH-18-01	342.16	343.32	1.16	589141	5	0.6	15	< 0.4	19.3	7	0.03	bx'td alt'd gran
PGH-18-01	343.32	344.45	1.13	589142	3	< 0.1	18	< 0.4	46.5	26.2	0.144	mg massive pink crbt, 15cm bx'td gran clast

Assays

DDH	From	To	Width (m)	SampleID	W (ppm)	Tl (ppm)	Pb (ppm)	Bi (ppm)	Th (ppm)	U (ppm)	Nb2O5 (%)	Description
PGH-18-01	344.45	345.5	1.05	589143	5	0.5	6	< 0.4	7.1	2.5	0.016	cg gran, minor carb veining
PGH-18-01	345.5	345.76	0.26	589144	2	< 0.1	5	< 0.4	6.5	5.6	0.037	crbt w/ blue-grey wispy bands
PGH-18-01	345.76	346.36	0.6	589145	< 1	0.4	7	< 0.4	10.3	2	0.02	gran, chl-ep alt'n
PGH-18-01	346.36	347.03	0.67	589146	< 1	0.2	46	< 0.4	8.6	66	0.138	crbt w/ blue-grey wispy bands
PGH-18-01	347.03	347.85	0.82	589147	9	0.2	33	< 0.4	11.4	49.2	0.197	crbt w/ blue-grey wispy bands
PGH-18-01	347.85	348.53	0.68	589148	1	< 0.1	24	< 0.4	10.6	68.9	0.297	crbt (mt+ap?), 500cps
PGH-18-01	348.53	349.42	0.89	589150	< 1	0.4	31	< 0.4	13.3	35.9	0.133	gran w/ 20% carb bx'tn
PGH-18-01	349.42	350.15	0.73	589151	9	0.1	17	< 0.4	13.1	18.2	0.158	crbt, vcg at UCT
PGH-18-01	350.15	351.13	0.98	589152	< 1	0.3	14	< 0.4	12.8	12.4	0.051	gran w/ carb veining (cg qtz)
PGH-18-01	351.13	352.09	0.96	589153	< 1	< 0.1	53	< 0.4	50.8	172	0.852	gran bx w/ 40% carb veining (much //-to CA)
PGH-18-01	352.09	353	0.91	589154	< 1	0.1	55	< 0.4	26.9	39.2	0.363	vcg pink crbt, amph+sulph patches
PGH-18-01	353	353.4	0.4	589156	< 1	0.3	23	< 0.4	15.6	6.1	0.052	gran (mafic veining only)
PGH-18-01	353.4	353.65	0.25	589157	5	0.2	29	< 0.4	135	4.1	0.028	white crbt, 1-4% deep red to black hem (non-mag)
PGH-18-01	353.65	354.05	0.4	589158	1	0.3	19	< 0.4	12.7	2.5	0.013	cg gran
PGH-18-01	354.05	354.57	0.52	589159	4	< 0.1	24	< 0.4	42.3	45.8	0.536	crbt, irreg bands, minor kspar + mafic clasts
PGH-18-01	354.57	355.05	0.48	589160	6	0.3	36	< 0.4	31.4	16.5	0.06	mica rock
PGH-18-01	355.05	356.28	1.23	1674637							0.089	sy, abundant xcut carb w/ rxn rims
PGH-18-01	356.28	357.51	1.23	1674638							0.042	same --> sye/gran
PGH-18-01	357.51	358.51	1	1674639							0.054	sye/gran
PGH-18-01	358.51	359.6	1.09	1674640							0.073	gran w/ irreg green-grey mafic bands (ap in carb vein)
PGH-18-01	359.6	360.8	1.2	1674641							0.094	same to gran
PGH-18-01	360.8	361.92	1.12	1674642							0.018	gran x-cut carb veining w/ rxn rims
PGH-18-01	361.92	362.8	0.88	1674643							0.014	gran
PGH-18-01	362.8	363.55	0.75	589161	5	< 0.1	26	0.7	76.5	18.6	0.502	50:50 bx (obliterated textures)
PGH-18-01	363.55	364.77	1.22	589162	2	0.3	20	< 0.4	55.9	25.6	0.761	bx'td gran
PGH-18-01	364.77	366	1.23	589163	2	0.3	12	< 0.4	17.5	9.4	0.06	bx'td gran
PGH-18-01	366	366.58	0.58	589164	6	< 0.1	10	< 0.4	20.2	9.8	0.177	50:50 bx (more primary textures preserved)
PGH-18-01	366.58	367.75	1.17	1674644							0.024	gran w/ mdyke
PGH-18-01	367.75	369	1.25	1674645							0.025	gran w/ minor carb veins
PGH-18-01	369	370.1	1.1	1674646							0.013	gran
PGH-18-01	370.1	371.1	1	1674647							0.038	gran w/ x-cut carb veins
PGH-18-01	371.1	372.13	1.03	1674648							0.024	gran w/ x-cut carb veins
PGH-18-01	372.13	373.35	1.22	1674649							0.016	gran w/ single carb vein
PGH-18-01	373.35	374.02	0.67	589165	3	< 0.1	27	< 0.4	77.6	10.8	0.054	pitted crbt w/ sulphides
PGH-18-01	381.52	382.28	0.76	589166	< 1	0.2	15	< 0.4	13	8.7	0.056	vcg pink crbt & gran clasts
PGH-18-01	385.9	386.75	0.85	589167	6	< 0.1	50	0.8	43.6	6.9	0.061	assimilated gran/crbt bx
PGH-18-01	386.75	387.69	0.94	589168	6	< 0.1	25	< 0.4	77.6	30.9	0.157	sim to prev
PGH-18-01	387.69	388.86	1.17	1674650							0.08	sye - x-cut carb veins w/ ap
PGH-18-01	388.86	390	1.14	D08051							0.139	same
PGH-18-01	390	391.12	1.12	D08052							0.024	gran, min carb veining
PGH-18-01	391.12	392.29	1.17	D08053							0.023	grgn w/ 30cm carb (+sye-bx)

Assays

DDH	From	To	Width (m)	SampleID	W (ppm)	TI (ppm)	Pb (ppm)	Bi (ppm)	Th (ppm)	U (ppm)	Nb2O5 (%)	Description
PGH-18-01	392.29	393.28	0.99	D08054							0.121	sye/gran-bx w/ cg dark ap+amph in crbt
PGH-18-01	393.28	394.38	1.1	D08055							0.383	sy-bx/gran
PGH-18-01	394.38	395.39	1.01	D08056							0.117	sy-bx/gran
PGH-18-01	395.39	396.6	1.21	589169	< 1	0.2	12	< 0.4	6.9	11.5	0.073	crbt + 30cm gran clast + micaceous mafic dyke?
PGH-18-01	396.6	397.53	0.93	589170	2	< 0.1	11	< 0.4	8.5	18	0.172	crbt (poss cg apatite under UV)
PGH-18-01	397.53	398.47	0.94	D08058							0.067	gran w/ 30cm zone mafic (micaceous) + carb bands
PGH-18-01	398.47	399.44	0.97	D08059							0.02	gran - narrower mafic bands + blue amph
PGH-18-01	399.44	400.46	1.02	D08060							0.024	mixed gran/mafic bands w/ 25cm barren white carb vein
PGH-18-01	400.46	401.52	1.06	D08061							0.043	gran/sye w/ carb-amph veining
PGH-18-01	401.52	402.13	0.61	589171	4	< 0.1	20	< 0.4	21.5	6	0.117	crbt - bx'td from 402m
PGH-18-01	402.13	403.43	1.3	589172	4	0.3	15	< 0.4	34.1	14.1	0.255	mixed bx, micaceous + gran zones
PGH-18-01	403.43	404.14	0.71	589173	8	< 0.1	8	< 0.4	8	2.4	0.03	gran w/ <20% x-cutting carb veins, sulph+ap? In veins
PGH-18-01	404.14	404.7	0.56	589174	3	< 0.1	46	0.5	23.6	6.7	0.111	crbt
PGH-18-01	404.7	405.55	0.85	589176	8	0.4	10	< 0.4	6.8	1	0.009	massive cg micaceous grsn w/ carb patches
PGH-18-01	405.55	406.15	0.6	589177	< 1	0.2	24	< 0.4	23.2	9.6	0.097	crbt w/ 25cm alt'd gran, deep purple hem veins/patches
PGH-18-01	406.15	407.12	0.97	D08062							0.014	sy/gran w/ min carb veining
PGH-18-01	407.12	408.1	0.98	D08063							0.011	sy/gran
PGH-18-01	408.1	408.6	0.5	589178	2	< 0.1	42	< 0.4	21.3	10.8	0.484	banded crbt
PGH-18-01	408.6	409.62	1.02	D08064							0.014	cg gran, no carb
PGH-18-01	409.62	410.5	0.88	D08065							0.023	gran w/ amph+/-carb veins
PGH-18-01	410.5	411.66	1.16	D08066							0.032	cg gran, 15cm carb vein
PGH-18-01	411.66	412.71	1.05	D08067							0.018	cg gran <5cm carb vein
PGH-18-01	412.71	413.95	1.24	D08068							0.079	cg gran <15cm carb vein/bx
PGH-18-01	413.95	414.35	0.4	589179	1	0.2	22	< 0.4	46.7	14	0.137	crbt
PGH-18-01	414.35	415.74	1.39	D08069							0.009	chl fract'd sye, min carb
PGH-18-01	415.74	416.7	0.96	589180	4	< 0.1	8	< 0.4	112	5.2	0.015	crbt
PGH-18-01	429.2	429.68	0.48	589181	< 1	< 0.1	76	< 0.4	24.1	8.2	0.072	crbt
PGH-18-01	438.89	439.62	0.73	589182	< 1	0.2	86	< 0.4	22.4	41.7	0.062	fg crbt
PGH-18-01	442.47	442.75	0.28	589183	< 1	0.2	14	< 0.4	34.2	8.3	0.115	crbt, poss pych
PGH-18-01	445.59	446.79	1.2	589184	8	< 0.1	40	< 0.4	32.8	13.5	0.052	crbt + 'absorbed' gran clasts
PGH-18-01	446.79	447.2	0.41	589185	3	< 0.1	18	< 0.4	99.8	4.7	0.006	hem spotted crbt
PGH-18-01	447.2	447.7	0.5	589186	5	0.3	13	< 0.4	46.7	14.1	0.056	carb bx'td gran
PGH-18-01	449.6	450	0.4	589187	3	< 0.1	49	< 0.4	41	12.5	0.154	crbt
PGH-18-01	460.11	460.42	0.31	589188	1	0.4	100	< 0.4	53.2	16.8	0.112	crbt
PGH-18-01	466.63	466.83	0.2	589189	2	< 0.1	99	0.5	28	14.6	0.006	crbt
PGH-18-01	471.08	471.98	0.9	589190	< 1	0.3	75	< 0.4	51.2	40.9	0.122	pink crbt, ap bands under UV
PGH-18-01	473.96	474.44	0.48	589191	< 1	0.1	32	< 0.4	61.6	16.5	0.046	crbt
PGH-18-01	474.44	475.23	0.79	589192	4	0.3	17	< 0.4	34.1	9.6	0.087	gran w/ x-cutting carb veins (1 w/ cg hem?) + blue-grey amph veins
PGH-18-01	492.85	493.55	0.7	589193	4	0.3	17	< 0.4	47.7	4.1	0.018	gran
PGH-18-01	493.55	494.65	1.1	589194	< 1	< 0.1	9	< 0.4	9.3	1.7	0.021	crbt, ap in bands
PGH-18-01	494.65	495.85	1.2	589195	< 1	< 0.1	55	< 0.4	30.7	18.4	0.067	crbt, wispy ap+ksp+py bands

Assays

DDH	From	To	Width (m)	SampleID	W (ppm)	Tl (ppm)	Pb (ppm)	Bi (ppm)	Th (ppm)	U (ppm)	Nb2O5 (%)	Description
PGH-18-01	495.85	496.74	0.89	589196	< 1	< 0.1	15	< 0.4	35.6	4.6	0.007	crbt, banding only at end
PGH-18-01	496.74	497.58	0.84	589197	< 1	< 0.1	35	< 0.4	48	8.3	0.076	crbt, aggregated blebs py+drk grey hem? Or pych?
PGH-18-01	497.58	498.43	0.85	589198	< 1	< 0.1	26	< 0.4	35.4	5.6	0.081	crbt, cg ap under uv
PGH-18-01	498.43	499.36	0.93	589199	< 1	< 0.1	31	< 0.4	44.3	10.5	0.253	crbt
PGH-18-01	499.36	499.93	0.57	589200	< 1	0.3	9	< 0.4	5.9	2	0.016	gran (last sample PGH-18-01)

COMPANY QAQC DATA

DDH	From	To	Width (m)	SampleID	BatchID	QAQC Type	QAQC Description	P2O5 (%)	Nb2O5 (%)
PGH-18-01	63.0	63.0	0	589020	A18-03553	STANDARD	Oka 1	2.42	0.514
PGH-18-01	124.36	124.36	0	589050	A18-03553	STANDARD	Oka 1	2.4	0.5
PGH-18-01	234.45	234.45	0	I674603	A18-09217	STANDARD	Oka 1	2.43	0.542
PGH-18-01	242.5	242.5	0	I674610	A18-09217	BLANK	Marble	0.02	< 0.003
PGH-18-01	247.3	247.3	0	589086	A18-03553	STANDARD	Oka 1	2.46	0.492
PGH-18-01	317.0	317.0	0	589111	A18-03918	STANDARD	Oka 1	2.43	0.527
PGH-18-01	348.53	348.53	0	589149	A18-03918	BLANK	Marble	0.04	< 0.003
PGH-18-01	353.0	353.0	0	589155	A18-03918	STANDARD	Oka 1	2.36	0.519
PGH-18-01	395.39	395.39	0	D08057	A18-09217	STANDARD	Oka 1	2.39	0.527
PGH-18-01	404.7	404.7	0	589175	A18-03918	BLANK	Marble	0.03	< 0.003



Drilled by:	Chibougamau Diamond Drilling	Start Date:	21-Mar-2018
Township/Area:	Killala Lake Area	End Date:	25-Mar-2018
Claims (converted):	230752	Described by:	B. Clark, B.Sc.
Claims (legacy):	TB 4256251, TB 4256258	Log date:	26-Mar-2018

Collar

Azimuth: 338.00°		Easting: 519437		Core size: HQ		Cemented: No	
Plunge: -50.00°		Northing: 5432594		Casing: Pulled		Stored: Yes	
Length: 372.0 m		Elevation: 310.0m					

COORDINATES UTM (NAD83 zone 16)

Down hole surveys

Drill Hole	Type	Depth (m)	Azimuth Corrected (°)	Dip (°)	Mag
PGH-18-02	Reflex	42	334.2	-53.3	56555
PGH-18-02	Reflex	93	332.9	-53.4	56249
PGH-18-02	Reflex	144	334.1	-53.7	56447
PGH-18-02	Reflex	195	335.5	-53.1	56453
PGH-18-02	Reflex	249	335.1	-53.2	56450
PGH-18-02	Reflex	300	334.4	-53.2	56488
PGH-18-02	Reflex	354	334.2	-53.3	56391

Description

Rods stuck at 369m.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-02	0	27.6	OVB	Casing	Casing, no recovery
PGH-18-02	27.6	39.33	GRAN	Granite	<p>Medium to coarse grained (crystals up to 5mm), grain size increasing down, medium pink, 15-25% qtz. Local fg mafic dykes from 1-10cm, contacts are ~ perpendicular to core axis, green-dark green, non-magnetic.</p> <p>near contacts with carbonatite sharp increase in chlorite (blue green-green -dark grey) and mafics (amphibole?), chl replacing biotite/micas, locally up to 35%.</p> <p>29.55-30.8: carbonatite dyke, undulating contact at 10-15 TCA, pale pink to cream, massive, patchy hematite <2mm, 2% pyrite disseminated and local blebs up to 10mm. apatite clasts 5mm-30mm (white-blue under UV). 3m cross cutting calcite veins. mag sus 0.1, scint 200 c/s</p> <p>35.44-35.72: Carbonatite vein, sharp UC & LC, contact rimmed by blue-grey vfg-fg chlorite(?). pale pink to cream colour, trace pyrite (disseminated, blebs up to 20mm near contacts). Dominantly orange fluorescence (calcite), with trace blue (apatite <3mm) under UV. patchy hematite along discontinuous fractures/disseminated. Mag sus 0.35, scint 170c/s</p>
PGH-18-02	39.33	42	CRBT-BX	Carbonatite w/ Granite	<p>Multiple carbonatite veins from 20-50cm with granitic zones (clasts?) up to 50cm.</p> <p>39.33-40: Carbonatite; pale pink-cream, massive, trace disseminated pyrite. Apatite(white-blue UV light) fg, sub-rounded. Clasts of granite up to 10cm. Contacts with granite are commonly gradational with grading from carbonatite, to interstitial calcite w/biotite(+/- amph). Rims of granitic clasts show increased chlorite alteration. contact ~20d TCA</p> <p>40.28-40.5: Carbonatite, mottled texture, pale pink to green-blue, apatite (green blue [NL], white-blue[UV]) as discontinuous bands, crystals 3mm-30mm, sub-angular to sub-rounded, commonly rimmed by hematite. mag sus 0.12, scint 180c/s</p> <p>41.03-41.76: Carbonatite; pale pink to cream, discontinuous "bands" of blue green containing apatite up to 2cm. Trace fg pyrite up to 5mm. Brecciated lower contact zone 25cm, angular fractured clasts up to 7cm,fg, black-blue green, dominantly biotite/chlorite/amph?, dissolution reaction rims, patchy hematite alteration. mag sus 0.11 (carbonatite), mag sus 0.34 (clasts). scint 190c/s</p>
PGH-18-02	42	44.8	SYE-BX	Breccia Zone	<p>Clasts of Alkali feldspathic rock (syenite?), 10-15% qtz, fine to medium grained, medium pink to blue, crystals up to 5mm, numerous cross cutting carbonatite veins from 3mm to 20cm. Blueish mineral along contacts/fractures and disseminated through alkali rock, replacing biotite? (amphibole?, hardness 5-6, radiating crystals). Patchy hematitic alteration along fractures/grain boundaries.</p> <p>Carbonatite veins pale pink to light purple, mottled apatite up to 2cm (white-blue in UV), veins commonly rimmed by blue (amph?), clasts of ALK have dissolution boundaries.</p> <p>43.26-43.9: Carbonatite vein, pale pink to cream, hematite along fractures, mottled,</p>

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-02	44.8	47.4	CRBT	Carbonatite	Possibly two phases or zoned carbonatite with course grained core. Brecciated upper and lower contact 'zones' extend 10-15cm either side of carbonatite. 44.8-45.72: light purple to cream-pink, fg, weakly weathered, trace disseminated py, hematite along discontinuous 'bands' commonly rimming dolomite (light green-opaque, up to 2cm masses) and disseminated through groundmass. Under UV light discontinuous bands are whiteish blue (H4, reacts with HCL when powdered), surrounded by orange (calcite?). 30cm clast of alkali felspathic rock; 10-15% qtz, dissolution boundaries, patchy hematite along grain boundaries. Lower contact sharp @ 35dTCA. scint 240c/s 45.72-46.67: Coarse grain carbonatite, cream to pale pink, crystals up to 3cm, disseminated py 2% euhedral crystals up to 2mm, disseminated blue-grey mineral (H4-5, poorly formed crystals, batches up to 3mm, associated with py, possibly another sulphide?). Gradational lower contact. scint 220c/s 46.67-47.4: Similar to first carbonatite unit described in section. cross cut by veins up to 2cm. brecciated lower contact.
PGH-18-02	47.4	50.2	GRAN	Granite	Medium to coarse grained (crystals up to 5mm), medium to dark pink-cream, 10-15% qtz, fenitized (blue-green, radiating, H5, mineral selectively pervasive, occurring along/with carbonatite veins). Multiple carbonatite veins from 2-8cm, various orientations, vary from light purple-pink-cream, trace disseminated sulphides with higher concentrations along vein margins. irregular lower contact.
PGH-18-02	50.2	51.45	CRBT	Carbonatite	Fine to course grained, crystals up to 2cm, cream to light pink, trace disseminated pyrite(+sulphides), pods of apatite(? White under UV) up to 3cm. Blue-green mineral, H5, fg, elongated blades (actinolite?, or other amph?). Brecciated lower contact.
PGH-18-02	51.45	61.5	GRAN	Granite, phases of Carbonatite	Medium to coarse grained, crystals up to 7mm, 10-15% qtz, 15% mafics, biotite commonly being replaced by chlorite, blue amph?(described above) occurring along fractures and patchy in areas of increased carbonatite veining . 53.1-53.6: fg carbonatite vein, massive, light grey-green, patchy hematite, trace disseminated py, sharp lower contact. 55.90-56.04: cg carbonatite vein, crystals up to 2cm, cream to pale pink, rimmed by chl, patchy hematite 56.1-56.35: fg carbonatite vein, light purple to red (hematite), rimmed by vfg blue amph?
PGH-18-02	61.5	62.3	CRBT	Carbonatite	Medium to coarse grained , crystals up to 2cm, undulating to irregular contact, pale pink to cream-light purple, pods of apatite(?)[white under UV, pale green in normal light] up to 3cm with inclusions of blue-green fg mineral (amph?), disseminated hematite up to 3mm, 2% disseminated and blebs of fg pyrite (+other dark fg sulphides?)
PGH-18-02	62.3	64.38	GRAN	Granite	Fg to cg alkali, crystals from 1-15mm, red to grey-blue, 15% qtz, 15% mafics (biotite being replaced by chl, blue-grey mineral (amph?)). Carbonatite veins(3) up to 20cm; pale pink to cream, locally discontinuous bands of hematite+blue amph(?)+apatite?, patchy hematite,
PGH-18-02	64.38	65.65	CRBT	Carbonatite	Massive, fg, medium pink to cream, contacts are finer grained and grey-light purple, disseminated py 2%, patchy hematite, upper/lower contact are <10d TCA; brecciated. Under UV light vein is dominantly orange (calcite?) with 'pods' of white (apatite?, up to 2cm, in normal light is opaque, H: 3-4, concentrated throughout finer grained contact zones). scint up to 220c/s

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-02	65.65	66.9	GRAN	Granite	Fg to cg, crystals up to 5mm, red-pink, pervasive hematite alteration(?), 10-15% qtz, 15% mafic minerals (micas being replaced by chl). Minor carbonatite veins <3cm
PGH-18-02	66.9	67.94	CRBT	Carbonatite	Undulating upper contact at ~15d TCA. Pale pink to cream, brecciated lower contact. Massive, pods of opaque grey(H3-4, White under UV) up to 2cm. Patchy hematite, disseminated sulphides 2% (pyrite). Scint 180c/s
PGH-18-02	67.94	74.28	GRAN	Granite w/ Carbonatite	Fg to cg alkali, crystals up to 5mm; crystal size varies across section, qtz crystals up to 10-15%, mafics 15% (biotite/phlogopite? Being altered to chl, blue amph). Multiple carbonatite veins varying from 3cm to 20cm, commonly rimmed by blue amp/chl? 68.6-69.00: CRBT vein, cream to pink-green blue, weakly banded, disseminated blue sub-metallic sulphide(?), patchy hematite, undulating lower contact, rimmed by blue amph(?) 70.95-71.34: weakly banded, fg margins with coarse grain core. crystals up to 2cm, hematite along 'band' plains, opaque apatite?(white under UV) crystals/pods up to 2cm. sharp upper and lower contacts at 70 dTCA. 72.90-73.10: crbt vein, pink, fg, contacts rimmed by blue amph(?)/chl, LC @ 40dTCA
PGH-18-02	74.28	74.84	CRBT	Carbonatite	Cream-light grey to light purple, weakly possibly pseudo banding from alteration, disseminated hematite, trace disseminated py. Under UV light white apatite(?) along grain boundaries
PGH-18-02	74.84	81.3	GRAN	Granite	Fg to cg, xtals up to 2cm, 15% qtz, 10% mafics (bt being locally replaced by chl), chl along fractures, patchy potassic alteration(?). Minor phases of crbt vein up to 20cm.
PGH-18-02	81.3	81.9	CRBT	Carbonatite	Massive, brecciated upper/lower contact, cream-light pink-blue-green, apatite(? White under UV, opaque, rimmed with hematite) discontinuous band ~2cm wide at upper contact. Disseminated hematite, trace disseminated py
PGH-18-02	81.9	88.45	SYE	Alkali	Fg-cg, pink, fenitized (blue amph along fractures, near crbt veining, locally replacing bt?), chl also present along fractures and locally replacing bt, local zones up to 60% biotite. Phases of crbt veins from 2-20cm, large veins described below 89.90-85.10: cream to light pink-purple, coarse grain 'core', rimmed by fg crbt and vein envelope blue amph/chl, dark purple fluorite, patchy hematite, trace disseminated py.
PGH-18-02	88.45	89.8	CRBT	Carbonatite	Light purple-cream pink, fg to cg, open weathered fractures, mottled apatite 'bands/pods' concentrated around lower contact. Cross cut by late stage low angle crbt veins 2cm wide. Disseminated hematite and along fractures, trace py disseminated and blebs up to 2mm, brecciated contacts, LC ~25d TCA.
PGH-18-02	89.8	92.24	QTZ-SYE	Alkali (granite) and Carbonatite	Fg-mg granite, pink-red, 15% qtz, 10-15% mafics (bt, being replaced/partially by chl). 90.25-90.5: CRBT vein w\ alkali clasts, cream to light purple-pink, fg-cg locally xtals up to 3cm, pod of apatite up to 3cm across(? Red-opaque in normal, H4, white under UV) 91.7-92: crbt vein, cream-light pink, fg-cg xtals up to 1.5cm, fg phase near contacts, ~10% apatite, vein enveloped by chlorite/blue amph?, disseminated hem, trace disseminated py, UC @ 65/180 (α/β)

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-02	92.24	105.3	SYE	Alkali Feldspathic rock	Fg-cg, crystals from 1mm-10mm, reddish-pink to black, weakly defined alternating zones of finer grained and course grained, fg sections containing more bt (up to 20%), bt commonly has chl (blue-green) along rims and locally completely replaced. Veins/veinlets of qtz +/- qtz/carb up to 10mm wide, with potassic alteration envelope(? within envelope bt replaced by chl). 98.75-99.32: crbt vein, pale pink-cream, xtals up to 10mm, fg near contact, 'wisps' of apatite up to 3cm long, larger crystals concentrated near contacts. disseminated trace py, LC is brecciated.
PGH-18-02	105.3	106.45	CRBT	Carbonatite Vein	Pale pink-cream to light purple, fg near contacts, cg 'core' w/ crystals up to 25mm. Pods pf apatite xtals up to 5cm. Hematite along crystal boundaries/disseminated, trace disseminated sulfides. Lower contact planar at 45/290.
PGH-18-02	106.45	107.14	GRAN	Granite	Light-dark pink, fg-cg grain size varies in weak bands, 15% qtz, bt commonly alt to chl, brecciated upper and lower contact
PGH-18-02	107.14	107.89	CRBT	Carbonatite vein	Massive, poorly formed crystals up to 25mm, light pink-cream to purple, apatite ~10% (light green-opaque poorly formed crystals, H~5, dissolves in HCL when powdered). Trace disseminated py (locally visible euhedral crystals), disseminated hematite (locally black-submetallic vfg).
PGH-18-02	107.89	115	QTZ-SYE	Alkali	Fg-cg, crystals up to 10mm, 10-15% qtz, mafics (bt/pyx) commonly alt to chl (locally completely replaced) up to 20% locally. Minor crbt veins up to 8cm.
PGH-18-02	115	115.62	CRBT	CRBT(?)	Dominantly carbonatite, contains sub-rounded clasts of glimmerite(? Dominated by bt 70%, with fracture fill of carbonate, minor hematite, and disseminated sulphides), clasts are up to 4cm. Crbt is light pink-cream, contains weak bands/wisps defined blue-green vfg amph(?). Gradational lower contact with alteration halo.
PGH-18-02	115.62	118.03	QTZ-SYE	Alkali	Crystals from 1-7mm, 15% qtz, 15% mafics (bt +/- pyx), fractures filled with chl / blue bladey amph(?), potassic alteration(?) along grain boundaries. Sharp lower contact with alteration halo.
PGH-18-02	118.03	123	CRBT	Carbonatite	Massive, pale pink-cream to light purple, fracture fill of fg blue amph, apatite crystals up to 1cm, disseminated trace sulphides (py), disseminated hematite. Lower 0.5m brecciated alkali feldspathic rock.
PGH-18-02	123	134.96	MDYKE	Mafic Dyke	Magnetic, fg, vesicles filled with carb, fractures coated in chl. Undulating upper and lower contacts.
PGH-18-02	134.96	139.15	QTZ-SYE	Alkali Feldspathic rock	Fg-cg, pink-red, crystals up to 2cm, 15% qtz, fracture fill of chl, locally increased bt (replaced by chl) up to 15%.
PGH-18-02	139.15	150.2	CRBT	Carbonatite w/ Alkali Bx	Pale pink-cream to light purple, multiple phases of crbt, cg sections lighter in colour with crystals up to 3cm, fg phases grey-purple. Local well formed pyrochlore crystals from 1-4mm. Locally weathered fractures from 143-144.60. Disseminated trace pyrite, disseminated hematite along grain boundaries and fractures. local purple fluorite parallel to alternating bands of fg/cg crbt. 140-142: bx alkali with crbt veins
PGH-18-02	150.2	154.45	SYE-BX	Alkali bx w/ carbonatite infill	Brecciated Alkali as described above, Crbt veins up to 5cm.
PGH-18-02	154.45	157.3	CRBT	Carbonatite vein	Low angle TCA crbt vein, undulating upper/lower contact, cream to light purple, locally weakly banded alternating bands of calcite/apatite rich, apatite xtals up to 2cm, disseminated hem, patches of dark purple fluorite up to 2cm. Clasts of alkali within vein are nearly completely altered with only cores intact.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-02	157.3	181.2	SYE-BX	Alkali bx w/ Carbonatite veins	Fg-cg, pink-light red, crystals up to 7mm, locally brecciated with carbonatite infill, chl commonly replacing mafics (bt/pyx), 15-20% qtz. Carbonatite veins less than 10cm locally up to 0.5m. 163.4-164: Carbonatite vein, cream-light purple, local apatite xtals up to 5mm, disseminated hem, brecciated contacts, trace disseminated sulphides. 175.8-176.5: crbt vein, mottled, light pink to cream, green-blue. disseminated fg hematite and fluorite.
PGH-18-02	181.2	187.4	CRBT	Carbonatite w/ minor Granite	Carbonatite fg-cg, mottled texture, locally weakly banded, light pink-cream to light purple, light purple zones; colour may be attributed to increase in hematite. Local crystals of apatite up to 5cm (light green, H5, white under UV (mid-wave), possible 'pod' of ferro-columbite at 186.32m (dark red-grey, H5?) 184.6-184.95: Granite 185.60-185.90: Granitic bx
PGH-18-02	187.4	196.44	GRAN	Granite	Fg-cg, crystals up to 7mm, medium pink to light red, patchy hematite varying in intensity from weak to strong, 15% qtz, biotite (10-15%), mafics commonly altered by chl, upper contact near crbt vein is brecciated with infill of blue vfg amph(?) described above.
PGH-18-02	196.44	201.1	CRBT	Carbonatite	Fg-cg, crystals up to 3cm, light pink-cream to light purple to red, purple red colouration in fg zones with increased hematite. 196.44-197.40: fg, increased hematitic alteration, local gran clasts. 197.4-201: cg zone, massive, apatite(?) crystals/pods up to 3cm, commonly rimmed by hematite. Trace disseminated columbite(?) or tantalite(?) (fg, black, submetallic, H6). disseminated hematite. patchy fg fluorite. Brecciated lower contact Scint 220cps.
PGH-18-02	201.1	208.34	SYE-BX	Carbonatite veins and Alkali breccia	Dominated by alkali bx, crbt veins up to 0.55m. Alkali: fg-cg, xtals up to 5mm, moderate chl&hem alt'n selective pervasive & patchy, respectively. Contacts w/ crbt commonly bx. 202.68-203.43: Crbt vein, fg-cg, calcite xtals up to 3cm, weakly banded (discontinuous), light purple/red to cream; purple-red due to disseminated hem, dark "bands" containing more hem and apatite (possibly Fe-Nb oxide?). Scint 250c/s 204.10-204.65: crbt vein, fg-cg, light pink to cream - purple/red. Purple red zone (fg) have increased hem, possibly Fe-Nb Oxide(? fg, black). Trace disseminated py, hem. Scint 250c/s 207.48-207.44: CRBT vein, cream-light pink, massive, cg, trace disseminated py/hem. Scint 210 c/s
PGH-18-02	208.34	209.69	CRBT	Carbonatite dyke	Fg later phase crbt 208.72-208.78. light pink-cream-light purple, mg-cg xtals up to 3cm, crystals are poorly formed, massive, calcite dominated, "pods" of apatite commonly rimmed by hem, with possible inclusions/rimming of Fe-Nb oxides(?). Scint 170c/s

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-02	209.69	219.45	GRAN	Granite with Carbonatite Dykes	GRAN; fg-cg, pink-red(hem), bt commonly alt/replaced by chl, locally massive qtz infill, contacts with crbt undulating to locally brecciated. 212.94-214.10: crbt dyke, light pink-cream light purple, apatite (light green-blue, H5,vfg) pods up to 2cm increase near contacts. Trace disseminated py, hematite (also rimming xtals/fracture), fg blue amph(?) 216.35-216.6: light pink cream to purple, trace disseminated hem/py, + other fg, black (possibly Fe-Nb Oxide?)
PGH-18-02	219.45	224.44	CRBT	Carbonatite	Fg-cg, light pink-cream to light purple, weakly banded (banded zones defined by hem, apatite, possibly other fg Fe-Nb Oxides). Disseminated hematite. Light green to blue crystals of apatite(?), trace disseminated py, patchy flourite. Scint 280 cps.
PGH-18-02	224.44	237.37	SYE-BX	Granite BX w/ Carbonatite	Brecciated Alkali, infill of carbonatite, fracture fill of qtz-carb, 15% qtz, bt/pyx alternating to chl or locally blue amph. 231.72-232.46: CRBT, cg, light pink to cream purple, apatite 'pods' up to 1cm, trace disseminated py/hem.
PGH-18-02	237.37	241.88	CRBT	Carbonatite	Fg-cg, light purple to light pink-cream, weakly banded defined by hem+apt, disseminated hem, trace disseminated py, other possible Fe-Nb oxides (fg, black, metallic). 240.2-240.5: strongly weathered, dark purple-black-red. Brecciated lower contacts. Scint 320 c/s
PGH-18-02	241.88	250.28	SYE-BX	Granitic Breccia	Fenitized granite, fg-cg, 15-20% qtz, locally vcg fspar up to 5cm, carbonatite veins from 1-15cm, breccia infill qtz-carb with blue amph(?), chl replacing biot. Undulating lower contact (dissolution).
PGH-18-02	250.28	255.9	MIX ZONE	Mixed Carbonatite and Unknown(?)	Country rock, light green (pervasive chl alt'n?), however bt/pyx crystals intact (crystallized post alteration?), zones of crbt vein up to 35cm, zone dominated by fg light green rock. Disseminated hematite, trace disseminated py, patchy potassic alteration(? light pink, amorphous). Locally 'clasts' of granite distinguishable. Believe unit to be pre-carbonatite mafic dyke but it has been strongly to completely altered by qtz-carb fluid and pervasive chl? alteration.
PGH-18-02	255.9	257.8	GRAN	Granite with carbonatite veins	Fg-cg, pink-light red, 10% qtz, bt alt to chl, blue vfg amph(?) near contacts w/ crbt and along fracture. Disseminated hematite, trace disseminated py. 255.9-256.8: Carbonatite, light purple to cream, disseminated hematite, trace disseminated py (+ other dark, Fe-Nb Oxide?)
PGH-18-02	257.8	270.77	CRBT	Carbonatite	Fg-cg, massive to mottled, light pink-cream to light purple, disseminated hematite, trace disseminated py, trace disseminated Nb Oxide (columbite or tantalite?, fg bladed, black). Local 'bands'/pods of apatite (light green-cream) 260.75-262.09: Gran breccia with crbt infill, dissolution boundaries around clasts. Scint up to 550 c/s
PGH-18-02	270.77	282.8	SYE-BX	Granitic Breccia with Carbonatite	Granitic clasts are subangular to sub rounded, rounded having dissolved boundaries, clasts size 5mm - 20cm, clasts are pink-light red, bt/pyx commonly replaced by chl, containing 15-20% qtz. Carbonatite infill cream-grey, fg hematite, fg apatite. 280.40-282.80: Carbonatite and Granitic breccia; fg, light purple, disseminated patchy hematite, trace disseminated py, apatite fg light green.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-02	282.8	297.94	GRAN	Granite w/ breccia and minor carbonatite	Locally vcg, kspar crystals up to 4cm, dominated by kspar 70%, 10-15% qtz, 10% bt (alt to chl, mod-complete), plag <10%. Modal percentages vary slightly across section but overall similar composition. Minor carbonatite veins up to 30cm, near contacts blue vfg amph(?) & chl alteration increases. Patchy hematitic alteration, along grain boundaries, fractures, and over printing k-spar xtals. Local fg 'zones' of glimmerite(?) [zone defined by fg bt >50% of rock], commonly showing chl alt'n halos around fractures.
PGH-18-02	297.94	299	CRBT	Carbonatite + Glimmerite	Massive crbt, light green to light purple, hematitic alteration (disseminated, along fractures). Brecciated lower contact, strong hematitic alt'n near contacts.
PGH-18-02	299	300.6	MDYKE	Mixed GRAN, CRBT, and Mafic Dyke(?)	Dark green-black, locally magnetic, dominated by bt (70%), pyx (30%), interstitial qtz-carb, pervasive chl alteration. Zones of altered granite within 'mafic'. Contacts are gradational and obscured. Possibly early mafic dyke which has been undergone metasomatism from intruding carbonatite.
PGH-18-02	300.6	311.8	SYE-BX	Granitic breccia with Carbonatite infill	Medium pink to light pink, mg, k-spar 50%, qtz 30%, 20% bt, patchy weak hematitic alteration. Locally brecciated near crbt veining. Bt commonly altering to chl. Locally jointed at 40/070. Carbonatite veins commonly fg, mottled to massive, light purple to light grey (hematite). largest is 30cm, commonly disseminated py & hematite.
PGH-18-02	311.8	324.7	MIX ZONE	Granite + Carbonatite	Alkali (GRAN) ~70%, CRBT 30%. Gran in commonly pink to light pink, medium grained (Qtz 15%, fspar 70%, 15% bt). GRAN clasts commonly show dissolution around boundaries, local fg blue amph/chl rimming crbt veins. Multiple orientations for crbt dykes, up to 30cm. CRBT commonly light pink, fg, disseminated hem/trace py. Locally up to 640c/s in bx.
PGH-18-02	324.7	336.42	GRAN	Granite + minor Carbonatite veins	Medium pink to light pink, mg, 15% qtz, 65% fspar, bt 20%. Bt commonly alt to chl, locally ff and selectively pervasive blue chl?. 325.12-326.15: Largest crbt vein; light pink to purple to light green, massive, fg, wispy discontinuous bands, patchy purple fluorite.
PGH-18-02	336.42	337.6	CRBT	Carbonatite	Light purple to light green, fg, massive, very weakly banded, slightly undulating contacts (upper and lower). Upper contact has strong hematitic alteration. Vfg black mineral (Fe-Nb Oxide?)
PGH-18-02	337.6	348.9	SYE-BX	Granitic breccia	Pink to light red, moderate-strong patchy hematitic alt'n, mg xtals up to 3mm, 15% qtz, 70% k-fspar, 15% bt +/- pyx. Bt commonly alt to chl, partially or completely replaced. Veins/veinlets of crbt from 3mm-10cm. Outside of bx zone described below Scint up to 400c/s 342-344: zone of strong hematite alt, breccia with crbt infill, Scint between 800-850c/s. Clasts are sub-angular and show weak reaction rims, hydrothermal breccia(?). Two phases of crbt, first being more ferro-dolomitic rich (light khaki, fg, reacts with HCL when powdered), later being light purple fg, calcite rich. irregular contact but @ low angle TCA ~10 degrees
PGH-18-02	348.9	351.63	SYE-BX	Carbonatite veins and Alkali breccia	GRAN as above, crbt veins from 1-5cm, brecciated contacts to larger crbt vein. 350.3-351.63: Crbt vein, light grey to purple-pink, fg, weakly banded, apatite clusters up to 5mm, brecciated upper and lower contacts. Trace disseminated py. Scint up to 270 c/s

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-02	351.63	355.5	GRAN	Granite	As above, minor crbt veins <3cm, becoming brecciated ~ 1m before lower contact with CRBT vein
PGH-18-02	355.5	359.94	CRBT-BX	Carbonatite with minor Alkali BX	Crbt grey to light grey, fg, massive, locally brecciated veins, commonly brecciated contacts, patchy fluorite, apatite cumulates(?) up to 3mm. Scint up to 600cps.
PGH-18-02	359.94	365.25	GRAN	Granite	Fg-mg, Qtz (20%), k-spar(70%), Bt (10%), moderate hematitic alteration, crbt veins <10cm, sharp lower contact.
PGH-18-02	365.25	372	MDYKE	Mafic Dyke	Magnetic, massive, carb/chl infill of amygdales. 369-372: fault zone

ORIENTED STRUCTURES

DDH	Depth	Type	Alpha (°)	Beta (°)	Gamma (°)	Title	Description
PGH-18-02	35.72	CT	40	265		Carbonatite	carbonatite dyke, Lower contact
PGH-18-02	39.4	CT	20	180			upper contact zone between carbonatite / granite
PGH-18-02	43.9	CT	40	225		contact	lower contact between carbonatite vein and syenite(?)
PGH-18-02	45.72	CT	35	225		contact	upper contact of cg carbonatite
PGH-18-02	52.56	JNT	40	100		joint	planar, slightly rough, chl coating
PGH-18-02	71.34	CT	70	80		contact	lower contact btw crbt vein and gran
PGH-18-02	73.1	CT	40	225		contact	lower contact btw crbt vein and gran
PGH-18-02	92.7	CT	65	180		upper contact	btw crbt and alkali
PGH-18-02	106.45	CT	45	290		contact	lower contact of crbt w/ granite.
PGH-18-02	204.1	CT	35	340		upper contact of crbt to GRAN	
PGH-18-02	217.3	CT	65	285		upper contact	weakly undulating contact btw GRAN and CRBT
PGH-18-02	308.2	JNT	40	70		joint set	joint set in GRAN

ASSAYS

DDH	From	To	Width (m)	SampleID	BatchID	SiO2 (%)	Al2O3 (%)	Fe2O3(T) (%)	MnO (%)	MgO (%)	CaO (%)	Na2O (%)	K2O (%)	TiO2 (%)	P2O5 (%)	LOI (%)	Total (%)	Sc (ppm)	Be (ppm)	V (ppm)	Ba (ppm)
PGH-18-02	270.77	272.00	1.23	589335	A18-04296	33.24	7.11	7.09	0.3	7.09	16.02	0.88	5.14	0.238	1.35	20.06	98.52	10	3	139	1267
PGH-18-02	280.00	281.00	1.00	589336	A18-04296	11.83	2.79	3.98	0.454	4.46	38.49	0.22	2.16	0.078	1.22	33.57	99.25	10	1	50	3061
PGH-18-02	281.00	282.00	1.00	589338	A18-04296	20.01	4.12	5.16	0.505	4.45	32.01	0.33	3.34	0.129	5.44	23.82	99.31	10	1	73	2053
PGH-18-02	282.00	283.00	1.00	589339	A18-04296	39.85	7.17	5.97	0.386	4.68	16.29	1.17	5.39	0.232	0.43	17.9	99.48	14	3	148	1483
PGH-18-02	312.00	313.50	1.50	589340	A18-04296	33.38	6.88	6.88	0.655	5.81	19.29	1.51	3.98	0.268	2.03	19.02	99.71	11	2	115	2354
PGH-18-02	313.50	314.25	0.75	589341	A18-04296	33.41	5.65	6.3	0.71	5.74	21.26	1.49	3.17	0.16	1.27	20.71	99.88	18	3	157	1341
PGH-18-02	314.25	315.00	0.75	589342	A18-04296	17.19	2.12	6.24	0.913	5.23	34.36	0.29	1.44	0.219	4.57	25.23	97.81	10	2	64	5834
PGH-18-02	315.00	316.50	1.50	589344	A18-04296	37.22	7.44	5.91	0.505	4.42	18.09	2.07	4.71	0.227	1.01	18.01	99.62	15	4	147	1515
PGH-18-02	316.50	318.00	1.50	589345	A18-04296	43.87	8.46	5.82	0.602	4.08	13.81	2.98	3.91	0.153	0.77	14.36	98.8	14	4	129	3933
PGH-18-02	318.00	319.50	1.50	589346	A18-04296	48.65	9.73	7.23	0.431	3.55	10.65	4.68	3.82	0.178	0.86	9.93	99.71	14	5	110	1514
PGH-18-02	333.95	334.95	1.00	589347	A18-04296	37.22	6.9	4.68	0.438	3.54	20.94	2.22	3.45	0.224	1.68	18.73	100	9	3	102	1997
PGH-18-02	336.40	337.60	1.20	589348	A18-04296	2.71	0.39	3.92	0.644	3.53	46.78	0.08	0.25	0.015	0.48	40.28	99.09	10	1	42	1163
PGH-18-02	339.50	341.00	1.50	589349	A18-04296	55.28	11.19	3.84	0.219	3.14	7.37	4.25	3.82	0.27	0.06	9.5	98.94	9	7	145	2977
PGH-18-02	341.00	342.50	1.50	589350	A18-04296	59.13	13.27	3.8	0.141	2.36	4.99	4.2	3.96	0.233	0.02	6.55	98.66	8	3	68	3890
PGH-18-02	342.50	344.00	1.50	589351	A18-04296	37.03	9.92	3.64	0.232	5.92	14.61	2.03	5.41	0.204	0.02	18.58	97.6	9	2	60	7363
PGH-18-02	344.00	345.00	1.00	589353	A18-04296	49.93	9.39	3.59	0.326	2.92	12.06	2.53	3.76	0.244	2.86	10.15	97.77	11	3	85	4789
PGH-18-02	349.00	350.50	1.50	589354	A18-04296	34.9	6.74	5.41	0.642	6.21	18.1	1.48	3.72	0.206	0.68	20.62	98.71	15	5	137	2107
PGH-18-02	350.50	351.64	1.14	589355	A18-04296	6.82	1.02	6.61	1.522	8.05	36.44	0.2	0.76	0.076	1.65	35.25	98.4	7	2	51	687
PGH-18-02	351.64	352.14	0.50	589356	A18-04296	63.31	12.32	2.96	0.147	1.98	4.23	3.6	5.17	0.195	0.17	4.86	98.96	6	4	87	1520
PGH-18-02	355.00	355.50	0.50	589357	A18-04296	55.77	10.55	3.95	0.238	2.79	7.77	1.46	6.88	0.275	1.13	8.7	99.5	15	4	229	1134
PGH-18-02	355.50	356.75	1.25	589358	A18-04296	18.19	4.33	7.12	0.557	6.12	26.93	0.35	3.35	2.058	4.22	25.09	98.33	19	3	159	1470
PGH-18-02	356.75	358.25	1.50	589359	A18-04296	53.06	13.22	3.05	0.113	3.97	7.18	3.27	6.66	0.177	0.1	7.64	98.42	6	18	55	3933
PGH-18-02	358.25	359.00	0.75	589360	A18-04296	22.6	5.33	3.97	0.497	11.31	20.88	0.96	3.3	0.138	0.22	29.3	98.5	16	2	73	3495
PGH-18-02	359.00	359.94	0.94	589361	A18-04296	32.28	6.68	4.64	0.389	8.36	17.35	1.56	3.75	0.165	2.46	20.74	98.39	18	5	116	793
PGH-18-02	359.94	360.44	0.50	589363	A18-04296	61.58	13.62	3.04	0.118	2.28	3.69	5.24	4.09	0.214	0.15	4.36	98.38	9	7	101	704

ASSAYS

DDH	From	To	Width (m)	SampleID	Sr (ppm)	Y (ppm)	Zr (ppm)	Cr (ppm)	Co (ppm)	Ni (ppm)	Cu (ppm)	Zn (ppm)	Ga (ppm)	Ge (ppm)	As (ppm)	Rb (ppm)	Nb (ppm)	Mo (ppm)	Ag (ppm)	In (ppm)	Sn (ppm)	Sb (ppm)
PGH-18-02	270.77	272.00	1.23	589335	1306	83	79	30	6	< 20	< 10	130	17	1	< 5	106	502	< 2	< 0.5	< 0.2	4	< 0.5
PGH-18-02	280.00	281.00	1.00	589336	1532	98	39	< 20	6	< 20	< 10	90	11	2	9	35	125	< 2	< 0.5	< 0.2	2	< 0.5
PGH-18-02	281.00	282.00	1.00	589338	1816	257	78	< 20	7	< 20	20	110	14	2	12	51	343	< 2	< 0.5	< 0.2	1	< 0.5
PGH-18-02	282.00	283.00	1.00	589339	871	43	101	50	8	30	20	210	18	1	7	88	173	3	< 0.5	< 0.2	6	< 0.5
PGH-18-02	312.00	313.50	1.50	589340	1750	142	65	30	12	20	20	280	15	1	< 5	74	217	3	< 0.5	< 0.2	3	< 0.5
PGH-18-02	313.50	314.25	0.75	589341	1880	100	49	40	7	20	10	260	13	2	6	60	222	3	< 0.5	0.2	4	0.5
PGH-18-02	314.25	315.00	0.75	589342	2657	323	9	< 20	12	20	40	240	11	1	13	28	154	< 2	< 0.5	< 0.2	< 1	< 0.5
PGH-18-02	315.00	316.50	1.50	589344	2072	84	75	20	5	< 20	< 10	170	14	1	< 5	82	96	4	< 0.5	0.2	4	0.5
PGH-18-02	316.50	318.00	1.50	589345	1413	70	54	30	5	< 20	< 10	270	17	2	8	64	235	8	< 0.5	< 0.2	4	< 0.5
PGH-18-02	318.00	319.50	1.50	589346	1651	47	75	30	7	20	50	300	17	1	< 5	69	68	14	< 0.5	0.3	5	< 0.5
PGH-18-02	333.95	334.95	1.00	589347	1732	101	54	< 20	4	< 20	< 10	180	13	1	< 5	55	505	4	< 0.5	< 0.2	2	0.6
PGH-18-02	336.40	337.60	1.20	589348	1080	63	15	< 20	2	< 20	20	110	5	1	9	4	162	< 2	< 0.5	< 0.2	< 1	< 0.5
PGH-18-02	339.50	341.00	1.50	589349	1577	33	117	< 20	2	< 20	< 10	80	18	1	12	63	41	< 2	< 0.5	< 0.2	3	0.5
PGH-18-02	341.00	342.50	1.50	589350	1088	36	106	20	2	< 20	< 10	40	17	< 1	15	67	50	< 2	< 0.5	< 0.2	1	< 0.5
PGH-18-02	342.50	344.00	1.50	589351	2528	73	87	20	3	< 20	< 10	260	13	< 1	16	84	102	< 2	< 0.5	< 0.2	< 1	< 0.5
PGH-18-02	344.00	345.00	1.00	589353	1611	479	154	< 20	3	< 20	< 10	230	15	< 1	40	66	136	< 2	0.7	< 0.2	2	1.2
PGH-18-02	349.00	350.50	1.50	589354	1308	65	52	< 20	4	< 20	< 10	190	13	1	< 5	77	134	4	< 0.5	< 0.2	4	< 0.5
PGH-18-02	350.50	351.64	1.14	589355	3832	94	10	< 20	8	< 20	10	210	5	< 1	9	25	158	3	< 0.5	0.2	1	< 0.5
PGH-18-02	351.64	352.14	0.50	589356	801	16	52	< 20	2	< 20	< 10	70	17	1	< 5	96	40	4	< 0.5	< 0.2	3	< 0.5
PGH-18-02	355.00	355.50	0.50	589357	945	85	71	50	5	< 20	< 10	160	15	< 1	< 5	107	63	4	< 0.5	< 0.2	6	0.5
PGH-18-02	355.50	356.75	1.25	589358	2357	368	426	< 20	13	< 20	50	160	12	< 1	10	53	234	< 2	1.6	< 0.2	2	1
PGH-18-02	356.75	358.25	1.50	589359	858	18	76	20	4	< 20	10	110	18	< 1	< 5	165	58	< 2	< 0.5	< 0.2	2	< 0.5
PGH-18-02	358.25	359.00	0.75	589360	2854	42	27	30	6	< 20	< 10	210	9	< 1	7	52	83	< 2	< 0.5	< 0.2	2	< 0.5
PGH-18-02	359.00	359.94	0.94	589361	2580	157	42	50	5	20	< 10	210	12	1	< 5	68	110	< 2	< 0.5	< 0.2	3	0.6
PGH-18-02	359.94	360.44	0.50	589363	701	21	88	< 20	3	< 20	< 10	80	19	1	< 5	68	34	< 2	< 0.5	< 0.2	4	< 0.5

ASSAYS

DDH	From	To	Width (m)	SampleID	Cs (ppm)	La (ppm)	Ce (ppm)	Pr (ppm)	Nd (ppm)	Sm (ppm)	Eu (ppm)	Gd (ppm)	Tb (ppm)	Dy (ppm)	Ho (ppm)	Er (ppm)	Tm (ppm)	Yb (ppm)	Lu (ppm)	Hf (ppm)	Ta (ppm)
PGH-18-02	270.77	272.00	1.23	589335	< 0.5	284	638	76.4	292	47.8	14.1	34.2	4.9	24.9	3.9	8.5	0.83	3.8	0.43	1.6	4.6
PGH-18-02	280.00	281.00	1.00	589336	< 0.5	468	1160	151	621	114	32.6	74.4	8.3	34.6	4.5	9.3	1.04	5	0.65	0.9	< 0.1
PGH-18-02	281.00	282.00	1.00	589338	< 0.5	549	1330	170	690	140	46.4	124	17.6	86.1	12.4	25.3	2.55	11.2	1.33	1.5	1.6
PGH-18-02	282.00	283.00	1.00	589339	< 0.5	352	810	102	426	79.8	21.4	41.8	4	15.4	2	4.4	0.48	2.3	0.27	2.2	1
PGH-18-02	312.00	313.50	1.50	589340	< 0.5	436	884	99.5	365	70.7	22.6	57.5	8	40.7	6.3	13.4	1.46	6.6	0.77	1.5	3.4
PGH-18-02	313.50	314.25	0.75	589341	< 0.5	370	862	104	404	74.3	22.2	52.9	6.5	30.5	4.5	9.7	1.06	5.1	0.59	2.4	1.3
PGH-18-02	314.25	315.00	0.75	589342	< 0.5	580	1290	152	574	116	38.4	107	16.4	87.2	13.8	30.3	3.31	15.9	1.85	0.7	0.1
PGH-18-02	315.00	316.50	1.50	589344	< 0.5	636	1240	135	486	79.4	22.6	49.4	6.1	26.4	3.6	7.6	0.86	4.4	0.55	2.3	1.6
PGH-18-02	316.50	318.00	1.50	589345	< 0.5	1050	1880	189	609	72.6	18.9	38.8	4.6	22	3	6.3	0.68	3.1	0.4	1.6	1.2
PGH-18-02	318.00	319.50	1.50	589346	< 0.5	764	1400	144	469	55.1	14	28.2	3.3	15.9	2.1	4.7	0.47	2.1	0.24	1.8	0.3
PGH-18-02	333.95	334.95	1.00	589347	< 0.5	528	1100	125	464	82.2	23.8	53.4	6.8	29.5	4	9	1	4.8	0.56	1.2	2.5
PGH-18-02	336.40	337.60	1.20	589348	< 0.5	682	1670	211	852	128	30.5	55.7	5.4	22.7	3.2	6.3	0.74	4	0.55	0.3	1
PGH-18-02	339.50	341.00	1.50	589349	< 0.5	538	998	106	372	60.5	16.9	32.6	3.1	11.1	1.4	3.3	0.38	1.9	0.25	2.6	0.4
PGH-18-02	341.00	342.50	1.50	589350	< 0.5	167	346	38.7	141	24.6	7.3	17.5	2.5	11.7	1.5	2.9	0.33	1.7	0.22	2	0.7
PGH-18-02	342.50	344.00	1.50	589351	< 0.5	334	686	79	296	52.5	15.6	40.2	5.7	24.9	3.4	6.5	0.65	3.4	0.42	1.9	0.8
PGH-18-02	344.00	345.00	1.00	589353	< 0.5	234	499	60.8	253	74.8	30.2	95.8	19.5	118	19.5	43	4.77	23	2.58	2.9	1.8
PGH-18-02	349.00	350.50	1.50	589354	< 0.5	653	1260	139	502	90.8	26.5	55.2	5.5	22	2.8	6.4	0.72	3.5	0.4	1.9	1.1
PGH-18-02	350.50	351.64	1.14	589355	< 0.5	375	772	86.3	312	57.3	18.2	45.5	6.2	29.8	4.3	9.3	1.05	5.3	0.67	0.4	0.4
PGH-18-02	351.64	352.14	0.50	589356	0.9	161	312	34.6	126	23.3	6.78	14.1	1.5	5.6	0.7	1.5	0.16	0.8	0.11	1.4	0.8
PGH-18-02	355.00	355.50	0.50	589357	< 0.5	169	366	43.7	174	39.6	13	33.1	4.8	23.7	3.7	8.1	0.87	4.5	0.54	2.1	1
PGH-18-02	355.50	356.75	1.25	589358	< 0.5	481	1030	124	495	112	38.2	102	16	85.8	14.3	34.3	4.32	22.1	2.47	5.3	4.3
PGH-18-02	356.75	358.25	1.50	589359	0.6	165	340	40.2	156	28.6	8.22	16.7	1.6	6	0.8	1.9	0.26	1.3	0.16	1.6	0.7
PGH-18-02	358.25	359.00	0.75	589360	< 0.5	377	843	100	405	70.7	19	37.9	3.3	13	1.8	4.1	0.52	3.1	0.38	0.6	0.9
PGH-18-02	359.00	359.94	0.94	589361	< 0.5	715	1360	156	607	125	39.1	94.9	11.6	51.5	6.9	14.1	1.51	7.2	0.81	1.5	1
PGH-18-02	359.94	360.44	0.50	589363	< 0.5	120	242	27.4	103	21.7	6.82	14.9	1.6	6.4	0.8	1.8	0.2	1.1	0.14	2.4	0.5

ASSAYS

DDH	From	To	Width (m)	SampleID	W (ppm)	Tl (ppm)	Pb (ppm)	Bi (ppm)	Th (ppm)	U (ppm)	Nb2O5 (%)	Description
PGH-18-02	29.00	29.50	0.50	589201	5	0.2	12	< 0.4	21.5	1.5	0.011	granite w/ mnr carbonatite veins
PGH-18-02	29.50	30.70	1.20	589202	4	0.2	35	< 0.4	74.1	14.2	0.534	carbonatite
PGH-18-02	30.70	31.20	0.50	589203	2	0.3	15	< 0.4	28.4	3.6	0.044	granite, mnr carbonaitie
PGH-18-02	38.75	39.25	0.50	589204	9	0.2	10	< 0.4	13.4	2.4	0.024	granite (fenite)
PGH-18-02	39.25	40.00	0.75	589205	5	< 0.1	27	< 0.4	25.4	18.1	0.342	carbonatite w\ alkali clasts
PGH-18-02	40.00	40.50	0.50	589206	40	0.2	17	< 0.4	17.6	18	0.231	carbonatite w\ alkali clasts
PGH-18-02	40.50	41.00	0.50	589207	4	0.2	18	< 0.4	23.1	19.3	0.335	granite w\ minor carb veins
PGH-18-02	41.00	42.00	1.00	589208	3	0.1	37	< 0.4	23.3	20.9	0.572	carbonatite w/ breccia
PGH-18-02	42.00	43.00	1.00	589209	2	0.2	18	< 0.4	22	11.5	0.265	granite breccia w/ carbonatite
PGH-18-02	43.00	44.00	1.00	589210	4	0.1	16	< 0.4	38.7	10.6	0.214	carbonatite vein w/ minor alkali
PGH-18-02	44.00	44.50	0.50	589211	2	< 0.1	10	< 0.4	3.3	0.8	0.005	alkali w\ minor crbt veins
PGH-18-02	44.50	45.00	0.50	589212	2	< 0.1	8	< 0.4	21.7	4.8	0.027	crbt w/ alkali clast
PGH-18-02	45.00	45.75	0.75	589213	1	< 0.1	19	< 0.4	66.3	38.9	0.211	cg carbt
PGH-18-02	45.75	46.50	0.75	589214	< 1	< 0.1	12	< 0.4	25.9	1.8	0.006	carbt w breccia alkali
PGH-18-02	46.50	47.00	0.50	589215	4	< 0.1	126	< 0.4	83.2	22.2	0.384	cg/fg carbt
PGH-18-02	47.00	47.75	0.75	589216	< 1	< 0.1	31	< 0.4	78.5	7.8	0.278	fg carbt w/ minor brecciated alkali
PGH-18-02	47.75	48.25	0.50	589217	< 1	0.3	17	< 0.4	33.8	3.9	0.159	alkali w\ minor crbt veins
PGH-18-02	50.00	50.50	0.50	589218	3	< 0.1	24	< 0.4	86.5	10.6	0.236	contact akali w/ carbonatite
PGH-18-02	50.50	51.00	0.50	589219	< 1	< 0.1	16	< 0.4	18.8	1	< 0.003	carbonatite
PGH-18-02	51.00	51.50	0.50	589221	3	< 0.1	34	< 0.4	42.5	5.5	0.128	carbonatite w/alkali breccia
PGH-18-02	61.50	62.25	0.75	589222	< 1	< 0.1	29	< 0.4	37.6	5.8	0.21	crbt
PGH-18-02	63.85	64.40	0.55	589223	< 1	< 0.1	14	< 0.4	25.3	5.2	0.171	crbt w/alkali
PGH-18-02	64.40	65.50	1.10	589224	< 1	< 0.1	23	< 0.4	19.5	7.5	0.127	crbt
PGH-18-02	65.50	66.00	0.50	589225	9	0.3	29	< 0.4	16.6	6.5	0.039	alkali bx
PGH-18-02	66.90	68.00	1.10	589226	3	< 0.1	16	< 0.4	31.5	15.2	0.198	crbt + alkali bx
PGH-18-02	68.00	68.50	0.50	589227	4	0.5	9	< 0.4	47.4	7.9	0.032	alkali bx w/ crbt
PGH-18-02	68.50	69.00	0.50	589228	17	0.2	7	< 0.4	32.5	6	0.05	alkali bx w/ crbt
PGH-18-02	73.78	74.28	0.50	589229	4	0.2	11	< 0.4	11.9	4.6	0.015	alkali bx
PGH-18-02	74.28	74.84	0.56	589230	8	< 0.1	14	< 0.4	84.3	19.8	0.033	crbt vein
PGH-18-02	74.84	75.34	0.50	589231	3	< 0.1	9	< 0.4	13	2.4	0.016	alkali
PGH-18-02	80.80	81.30	0.50	589232	3	< 0.1	11	< 0.4	14.2	3	0.024	alkali w/ mnr crbt
PGH-18-02	81.30	82.00	0.70	589233	5	< 0.1	18	< 0.4	19.2	4.4	0.024	crbt
PGH-18-02	82.00	82.50	0.50	589234	4	0.3	10	< 0.4	9.4	2.3	0.008	alkali bx
PGH-18-02	87.75	88.45	0.70	589235	< 1	0.2	9	< 0.4	14.9	3.3	0.023	alkali bx
PGH-18-02	88.45	89.15	0.70	589236	< 1	< 0.1	22	< 0.4	74.1	26.3	0.082	crbt, apt xystals
PGH-18-02	89.15	89.80	0.65	589237	< 1	< 0.1	44	< 0.4	68.4	39.4	0.351	crbt
PGH-18-02	89.80	90.25	0.45	589238	< 1	0.2	10	< 0.4	10.5	3.1	0.018	alkali
PGH-18-02	90.25	90.75	0.50	589239	< 1	< 0.1	8	< 0.4	30.1	3.9	0.013	crbt, cg
PGH-18-02	91.60	92.10	0.50	589241	< 1	< 0.1	14	< 0.4	30.6	7.4	0.046	crbt + alkali bx
PGH-18-02	98.24	98.74	0.50	589242	4	0.5	17	< 0.4	16.9	2.2	0.015	alkali
PGH-18-02	98.74	99.36	0.62	589243	3	< 0.1	100	< 0.4	57.6	19.8	0.241	crbt

ASSAYS

DDH	From	To	Width (m)	SampleID	W (ppm)	Tl (ppm)	Pb (ppm)	Bi (ppm)	Th (ppm)	U (ppm)	Nb2O5 (%)	Description
PGH-18-02	99.36	99.86	0.50	589244	7	0.1	19	< 0.4	31.8	7.8	0.105	alkali w/ minor crbt
PGH-18-02	104.81	105.31	0.50	589245	6	0.1	12	< 0.4	10.5	5	0.02	alkali
PGH-18-02	105.31	106.45	1.14	589246	1	< 0.1	18	< 0.4	61.5	16.9	0.086	crbt
PGH-18-02	106.45	107.14	0.69	589247	8	0.1	19	< 0.4	16.9	4.9	0.031	alkali w/ minor crbt vein
PGH-18-02	107.14	107.89	0.75	589248	7	< 0.1	63	< 0.4	36.3	14.8	0.103	crbt
PGH-18-02	107.89	108.39	0.50	589249	9	0.2	16	< 0.4	8.7	3.4	0.028	alkali
PGH-18-02	114.50	115.00	0.50	589250	4	0.2	20	< 0.4	9.6	9.1	0.036	alkali w/ bx crbt
PGH-18-02	115.00	115.62	0.62	589251	4	< 0.1	23	< 0.4	14.4	17.2	0.137	crbt w/ glim clasts
PGH-18-02	115.62	116.12	0.50	589252	3	< 0.1	109	< 0.4	29.1	49.8	0.067	alkali
PGH-18-02	117.53	118.03	0.50	589253	7	< 0.1	37	< 0.4	34.8	4.4	0.057	crbt
PGH-18-02	118.03	119.00	0.97	589254	4	< 0.1	18	< 0.4	51.7	16.6	0.141	crbt
PGH-18-02	119.00	120.00	1.00	589255	5	< 0.1	38	< 0.4	5.1	3	< 0.003	crbt
PGH-18-02	120.00	121.00	1.00	589256	2	< 0.1	22	< 0.4	9.2	4.6	< 0.003	crbt
PGH-18-02	121.00	122.00	1.00	589258	< 1	< 0.1	16	< 0.4	5.2	2.1	< 0.003	crbt
PGH-18-02	122.00	122.46	0.46	589259	4	< 0.1	46	< 0.4	13.5	2.3	0.007	crbt + alkali bx
PGH-18-02	122.46	122.96	0.50	589261	5	< 0.1	38	< 0.4	26	17.5	0.185	alkali
PGH-18-02	139.15	140.00	0.85	589262	6	< 0.1	15	< 0.4	31.3	9.1	0.127	crbt, cg, apatite
PGH-18-02	140.00	141.00	1.00	589263	4	< 0.1	10	< 0.4	12.4	2.1	0.03	alkali bx with crbt
PGH-18-02	141.00	142.00	1.00	589264	7	< 0.1	21	< 0.4	57.9	20.5	0.081	alkali bx with crbt
PGH-18-02	142.00	143.00	1.00	589265	3	< 0.1	34	< 0.4	37.6	35	0.061	crbt
PGH-18-02	143.00	144.00	1.00	589266	4	< 0.1	13	< 0.4	53.3	13.1	0.09	crbt, pyrochlore(?)
PGH-18-02	144.00	145.00	1.00	589267	19	< 0.1	36	< 0.4	79.2	43.2	0.16	crbt
PGH-18-02	145.00	146.00	1.00	589268	13	< 0.1	42	0.4	51.5	29.2	0.069	crbt
PGH-18-02	146.00	147.00	1.00	589269	4	< 0.1	67	< 0.4	39.9	79	0.391	crbt w alkali clasts
PGH-18-02	147.00	148.00	1.00	589270	8	< 0.1	85	< 0.4	21.3	15.4	0.112	crbt, cg, apatite
PGH-18-02	148.00	149.00	1.00	589272	6	< 0.1	62	< 0.4	44.3	52.6	0.227	crbt, fg, alkali clsts
PGH-18-02	149.00	150.20	1.20	589273	6	< 0.1	54	< 0.4	29.7	27.7	0.125	alkali bx w\ crbt
PGH-18-02	155.45	156.35	0.90	589274	15	< 0.1	33	< 0.4	59.8	26.5	0.261	crbt w alkali clasts
PGH-18-02	156.35	157.30	0.95	589275	9	< 0.1	45	< 0.4	87.7	49.7	0.512	crbt
PGH-18-02	163.30	164.00	0.70	589277	5	< 0.1	129	0.5	84.3	25.7	0.202	GRAN bx w/ CRBT
PGH-18-02	164.00	165.00	1.00	589278	7	< 0.1	27	< 0.4	42.9	12	0.164	CRBT w/ GRAN
PGH-18-02	165.00	165.75	0.75	589279	15	< 0.1	23	< 0.4	24.5	3.6	0.12	CRBT w/ GRAN
PGH-18-02	180.70	181.20	0.50	589280	9	0.1	30	< 0.4	20.9	4.8	0.042	Gran
PGH-18-02	181.20	182.20	1.00	589281	5	< 0.1	15	< 0.4	70	12.8	0.054	CRBT
PGH-18-02	182.20	183.20	1.00	589282	5	< 0.1	13	< 0.4	50.9	12.1	0.055	CRBT
PGH-18-02	183.20	184.58	1.38	589283	5	< 0.1	20	< 0.4	47.2	27.4	0.133	CRBT
PGH-18-02	184.58	184.94	0.36	589284	3	< 0.1	10	< 0.4	20.8	6	0.07	Gran bx w/ CRBT
PGH-18-02	184.94	186.00	1.06	589285	7	< 0.1	19	< 0.4	49.2	18.2	0.203	CRBT
PGH-18-02	186.00	187.40	1.40	589287	7	< 0.1	22	< 0.4	106	11.8	0.097	CRBT
PGH-18-02	187.40	187.90	0.50	589288	4	< 0.1	9	< 0.4	15.3	2.4	0.023	Gran
PGH-18-02	195.90	196.40	0.50	589290	< 1	< 0.1	12	< 0.4	13.7	1.4	0.008	GRAN

ASSAYS

DDH	From	To	Width (m)	SampleID	W (ppm)	Tl (ppm)	Pb (ppm)	Bi (ppm)	Th (ppm)	U (ppm)	Nb2O5 (%)	Description
PGH-18-02	196.40	197.40	1.00	589291	22	< 0.1	19	< 0.4	50.4	16.2	0.113	CRBT fg
PGH-18-02	197.40	198.00	0.60	589292	4	< 0.1	27	< 0.4	49.2	6.5	0.036	CRBT cg, apt, trace columbite(?)
PGH-18-02	198.00	199.00	1.00	589293	2	< 0.1	31	< 0.4	32.6	1.7	< 0.003	CRBT cg, apt, trace columbite(?)
PGH-18-02	199.00	200.00	1.00	589294	5	< 0.1	17	< 0.4	63.8	2.1	< 0.003	CRBT cg, apt, trace columbite(?)
PGH-18-02	200.00	201.10	1.10	589295	5	< 0.1	21	< 0.4	99.6	10.8	0.102	CRBT, apt clsts +/- columbite w/mnr GRN bx
PGH-18-02	202.68	203.43	0.75	589296	2	< 0.1	24	< 0.4	83.6	27.6	0.362	
PGH-18-02	204.00	204.75	0.75	589297	3	< 0.1	19	< 0.4	55	20.2	0.272	
PGH-18-02	208.34	209.01	0.67	589298	4	< 0.1	32	< 0.4	39.3	9.8	0.072	
PGH-18-02	209.01	209.69	0.68	589299	2	< 0.1	22	< 0.4	38.9	17.6	0.135	
PGH-18-02	212.41	212.94	0.53	589300	5	< 0.1	20	< 0.4	9	1.3	0.013	GRAN
PGH-18-02	212.94	214.10	1.16	589301	3	< 0.1	55	< 0.4	50.1	12.3	0.143	CRBT
PGH-18-02	214.10	214.60	0.50	589302	5	< 0.1	13	< 0.4	9.2	5.3	0.062	GRAN
PGH-18-02	218.95	219.45	0.50	589303	6	< 0.1	14	< 0.4	50	8.1	0.053	CRBT wkly banded, apatite +/- columbite
PGH-18-02	219.45	220.00	0.55	589304	4	< 0.1	16	< 0.4	51.3	23.1	0.19	CRBT wkly banded, apatite +/- columbite
PGH-18-02	220.00	221.00	1.00	589305	< 1	< 0.1	11	< 0.4	48.6	6.8	< 0.003	CRBT wkly banded, apatite +/- columbite
PGH-18-02	221.00	222.00	1.00	589306	< 1	< 0.1	15	< 0.4	71.8	3.6	< 0.003	CRBT wkly banded, apatite +/- columbite
PGH-18-02	222.00	223.00	1.00	589307	3	< 0.1	39	< 0.4	92.8	38.7	0.119	CRBT wkly banded, apatite +/- columbite
PGH-18-02	223.00	223.75	0.75	589309	2	< 0.1	21	< 0.4	120	25.6	0.03	CRBT wkly banded, apatite +/- columbite
PGH-18-02	223.75	224.44	0.69	589310	< 1	< 0.1	17	< 0.4	98.8	11.7	0.071	crbt
PGH-18-02	224.44	224.94	0.50	589311	2	< 0.1	51	< 0.4	8.6	3.4	0.028	GRAN
PGH-18-02	231.72	232.56	0.84	589312	2	< 0.1	38	< 0.4	41.5	6.4	0.036	cg CRBT
PGH-18-02	236.85	237.35	0.50	589313	6	< 0.1	15	< 0.4	49.3	10.1	0.047	GRAN BX w/ minor CRBT
PGH-18-02	237.35	238.00	0.65	589314	2	< 0.1	16	< 0.4	62	15.1	0.068	CRBT
PGH-18-02	238.00	239.00	1.00	589315	1	< 0.1	8	< 0.4	104	7	0.01	CRBT
PGH-18-02	239.00	240.00	1.00	589316	< 1	< 0.1	8	< 0.4	135	7.5	0.005	CRBT
PGH-18-02	240.00	241.00	1.00	589318	3	< 0.1	13	< 0.4	171	14.6	0.003	Highly weathered CRBT
PGH-18-02	241.00	241.88	0.88	589319	49	< 0.1	16	< 0.4	54.7	30.7	0.167	CRBT w minor GRAN BX
PGH-18-02	241.88	242.38	0.50	589320	1	< 0.1	17	< 0.4	23.7	9	0.04	GRAN
PGH-18-02	257.80	259.00	1.20	589321	1	< 0.1	160	1.1	50.8	24	0.109	CRBT
PGH-18-02	259.00	260.00	1.00	589322	< 1	< 0.1	43	< 0.4	35.8	22.2	0.09	CRBT
PGH-18-02	260.00	260.75	0.75	589323	< 1	< 0.1	39	< 0.4	40.9	12.8	0.01	CRBT
PGH-18-02	260.75	262.09	1.34	589324	8	< 0.1	33	< 0.4	45	109	0.187	CRBT
PGH-18-02	262.09	263.00	0.91	589325	< 1	< 0.1	53	< 0.4	44.5	28.9	0.031	CRBT
PGH-18-02	263.00	264.00	1.00	589326	< 1	< 0.1	78	< 0.4	59.1	34	0.023	CRBT
PGH-18-02	264.00	265.00	1.00	589327	1	< 0.1	70	< 0.4	51.2	101	0.073	CRBT
PGH-18-02	265.00	266.00	1.00	589328	< 1	< 0.1	62	< 0.4	41.8	64	0.044	CRBT
PGH-18-02	266.00	267.00	1.00	589330	9	< 0.1	41	< 0.4	35.5	60.2	0.06	CRBT
PGH-18-02	267.00	268.00	1.00	589331	2	< 0.1	29	< 0.4	52.6	12	0.008	CRBT
PGH-18-02	268.00	269.00	1.00	589332	< 1	< 0.1	41	< 0.4	74.8	33.7	0.199	CRBT
PGH-18-02	269.00	270.00	1.00	589333	< 1	< 0.1	54	< 0.4	136	46.7	0.273	CRBT
PGH-18-02	270.00	270.77	0.77	589334	1	< 0.1	26	< 0.4	123	19.5	0.021	CRBT

ASSAYS

DDH	From	To	Width (m)	SampleID	W (ppm)	Tl (ppm)	Pb (ppm)	Bi (ppm)	Th (ppm)	U (ppm)	Nb2O5 (%)	Description
PGH-18-02	270.77	272.00	1.23	589335	7	< 0.1	14	< 0.4	45.6	14.9	0.093	Gran BX CRBT infill
PGH-18-02	280.00	281.00	1.00	589336	5	< 0.1	19	< 0.4	106	13.5	0.044	GRAN bx + CRBT
PGH-18-02	281.00	282.00	1.00	589338	3	< 0.1	30	< 0.4	121	36.5	0.151	GRAN bx + CRBT
PGH-18-02	282.00	283.00	1.00	589339	8	< 0.1	21	< 0.4	65.3	5.5	0.029	Gran bx + CRBT
PGH-18-02	312.00	313.50	1.50	589340	11	< 0.1	52	< 0.4	92.1	14.1	0.037	GRAN bx w/ crbt
PGH-18-02	313.50	314.25	0.75	589341	2	< 0.1	28	< 0.4	67.2	9.4	0.035	GRAN bx w/ crbt
PGH-18-02	314.25	315.00	0.75	589342	7	< 0.1	138	< 0.4	349	62.1	0.086	GRAN bx w/ crbt, scint 640 c/s
PGH-18-02	315.00	316.50	1.50	589344	8	0.3	40	< 0.4	71.1	6.6	0.019	GRAN bx w/ crbt
PGH-18-02	316.50	318.00	1.50	589345	3	0.2	30	< 0.4	54.9	9	0.042	GRAN bx w/ crbt
PGH-18-02	318.00	319.50	1.50	589346	1	0.2	21	< 0.4	29.7	3.8	0.013	GRAN bx w/ crbt
PGH-18-02	333.95	334.95	1.00	589347	5	0.2	34	< 0.4	68.8	10.9	0.086	GRAN bx / crbt
PGH-18-02	336.40	337.60	1.20	589348	3	< 0.1	35	< 0.4	106	18.8	0.052	CRBT
PGH-18-02	339.50	341.00	1.50	589349	20	0.2	65	< 0.4	58.1	14.2	0.007	GRAN BX
PGH-18-02	341.00	342.50	1.50	589350	7	0.3	24	< 0.4	294	25.5	0.013	GRAN BX
PGH-18-02	342.50	344.00	1.50	589351	13	0.3	159	< 0.4	806	32.5	0.013	GRAN BX Scint up to 850c/s
PGH-18-02	344.00	345.00	1.00	589353	6	0.2	81	< 0.4	494	83.2	0.031	ALKALI w/ CRBT
PGH-18-02	349.00	350.50	1.50	589354	4	0.2	32	< 0.4	104	9.4	0.024	ALKALI w/ CRBT
PGH-18-02	350.50	351.64	1.14	589355	3	< 0.1	60	< 0.4	73.4	5.4	0.023	CRBT
PGH-18-02	351.64	352.14	0.50	589356	7	0.3	18	< 0.4	22.8	1.3	0.009	ALKALI w/ CRBT
PGH-18-02	355.00	355.50	0.50	589357	5	0.3	24	< 0.4	49.9	26.6	0.013	AIKALI w/ minor CRBT
PGH-18-02	355.50	356.75	1.25	589358	17	0.1	69	< 0.4	172	72.3	0.07	CRBT, fg, bx
PGH-18-02	356.75	358.25	1.50	589359	6	0.5	12	< 0.4	32	4.4	0.009	ALKali BX, 600 c/s
PGH-18-02	358.25	359.00	0.75	589360	6	0.2	22	< 0.4	75.7	6.6	0.011	CRBT w/ minor alkali bx
PGH-18-02	359.00	359.94	0.94	589361	7	0.2	27	< 0.4	155	9.7	0.017	CRBT w/ minor alkali bx
PGH-18-02	359.94	360.44	0.50	589363	6	0.2	14	< 0.4	23.3	1.7	0.01	Alkali

COMPANY QAQC DATA

DDH	From	To	Width (m)	SampleID	BatchID	QAQC Type	QAQC Description	P2O5 (%)	Nb2O5 (%)
PGH-18-02	120.00	121.00	1.00	589256	A18-04296	N/A	ORIGINAL SAMPLE	0.12	< 0.003
PGH-18-02	120.00	121.00	1.00	589257	A18-04296	DUPLICATE	DUPLICATE (589256)	0.13	< 0.003
PGH-18-02	239.00	240.00	1.00	589316	A18-04296	N/A	ORIGINAL SAMPLE	2.86	0.005
PGH-18-02	239.00	240.00	1.00	589317	A18-04296	DUPLICATE	DUPLICATE (589316)	2.87	0.009
PGH-18-02	51.00	51.00	0.00	589220	A18-04296	BLANK	Marble	< 0.01	< 0.003
PGH-18-02	90.75	90.75	0.00	589240	A18-04296	STANDARD	Oka 1	2.37	0.553
PGH-18-02	122.46	122.46	0.00	589260	A18-04296	BLANK	Marble	0.04	< 0.003
PGH-18-02	148.00	148.00	0.00	589271	A18-04296	STANDARD	Oka 1	2.4	0.548
PGH-18-02	157.30	157.30	0.00	589276	A18-04296	BLANK	Marble	0.02	< 0.003
PGH-18-02	186.00	186.00	0.00	589286	A18-04296	BLANK	Marble	0.02	< 0.003
PGH-18-02	187.90	187.90	0.00	589289	A18-04296	STANDARD	Oka 1	2.39	0.542
PGH-18-02	223.00	223.00	0.00	589308	A18-04296	BLANK	Marble	0.02	< 0.003
PGH-18-02	266.00	266.00	0.00	589329	A18-04296	BLANK	Marble	0.02	< 0.003
PGH-18-02	281.00	281.00	0.00	589337	A18-04296	STANDARD	Oka 1	2.36	0.513
PGH-18-02	315.00	315.00	0.00	589343	A18-04296	STANDARD	Oka 1	2.39	0.541
PGH-18-02	344.00	344.00	0.00	589352	A18-04296	BLANK	Marble	0.04	< 0.003
PGH-18-02	359.94	359.94	0.00	589362	A18-04296	BLANK	Marble	0.02	< 0.003



Drilled by:	Chibougamau Diamond Drilling	Start Date:	28-Mar-2018
Township/Area:	Killala Lake Area	End Date:	4-Apr-2018
Claims (converted):	307858	Described by:	B. Clark, B.Sc.
Claims (legacy):	TB 4256251, TB 4256252	Log date:	5-Apr-2018

Collar

Azimuth: 290.00°		Easting: 519526		Core size: HQ		Cemented: No	
Plunge: -50.00°		Northing: 5432367		Casing: Pulled		Stored: Yes	
Length: 480.0 m		Elevation: 313.0m					

COORDINATES UTM (NAD83 zone 16)

Down hole surveys

Drill Hole	Type	Depth (m)	Azimuth Corrected (°)	Dip (°)	Mag
PGH-18-03B	Reflex	18	284.9	-50.6	58036
PGH-18-03B	Reflex	69	285.6	-50.8	56647
PGH-18-03B	Reflex	120	286.1	-50.8	56811
PGH-18-03B	Reflex	174	286	-51.4	56905
PGH-18-03B	Reflex	225	287.6	-51	56781
PGH-18-03B	Reflex	276	284.6	-50.3	55404
PGH-18-03B	Reflex	327	290.9	-49.6	56999
PGH-18-03B	Reflex	377	292.5	-49.3	56651
PGH-18-03B	Reflex	429	293.6	-48.5	56691
PGH-18-03B	Reflex	480	295.5	-47.6	56760

Description

Hole moved from 519435E, 5432302N after first attempt (PGH-18-03) failed to reach bedrock by 78m.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-03	0	78	OVB	Overburden	Overburden
PGH-18-03B	0	3	OVB	Overburden	Casing
PGH-18-03B	3	4.1	QTZ-SYE	Quartz Syenite	Medium pink, mg, 25% qtz, 55% k-fspar, 20% bt. Selectively pervasive hematite alteration.
PGH-18-03B	4.1	7.84	SYE-BX	Quartz syenite breccia with Carbonatite infill	Alkali as described above. Clasts are sub rounded, up to 10cm, diffuse boundaries (dissolution), fractures in clasts, infill is light green to pink to light purple fg carbonatite. Possible fg black Fe-Nb Oxides(?). Breccia zones up to 1m.
PGH-18-03B	7.84	13.3	SYE	Quartz Syenite	Med pink to red, mg, qtz 15%, 70% k-fspar, 15% bt (alt to chl). Bt commonly alt to chl, fracture fill fg blue chl(?). Small crbt veins up to 4cm. 9.41-9.85: CRBT dyke, fg, massive, light grey to light purple to light green, trace disseminated py/hem.
PGH-18-03B	13.3	15.1	CRBT	Carbonatite	Fg, light purple to grey green, 13.3-14.4: Possibly highly altered Alkali(?) contains abundant bt (alt to chl) with interstitial carbonate. Wispy bands of blue fg amph(?) and light green apatite cumulates <1cm. Brecciated contacts.
PGH-18-03B	15.1	19.85	SYE-BX	Quartz Syenite + Carbonatite	QTZ SYN as above. CRBT light purple to light pink to light green, fg, local wispy bands of blue-green (amph / apatite?). Apatite cumulates up to 6mm, disseminated hematite, breccias up to 0.6m. Syn clasts with diffuse boundaries.
PGH-18-03B	19.85	22	QTZ-SYE	Alkali syenite	Mg, light pink-red, qtz(20%), k-fspar(60%), bt (20%). Minor CRBT vein <3cm.
PGH-18-03B	22	23.85	CRBT	Carbonatite	Massive, fg-mg, light purple-pink-light green, local wispy bands of apatite cumulate up to 4cm. Trace disseminated py (possible other black sulphide), disseminated hem
PGH-18-03B	23.85	27.65	SYE	Alkali quartz syentie and Carbonatite veins	Modal percentages as above for Alkali. Bt being altered to green chl and vfg blue amph. Carbonatite veins are fg, light purple to grey, light pink-light green, locally very weakly banded to mottled, contacts are rimmed by blue amph. Local patchy fluorite.
PGH-18-03B	27.65	31.31	CRBT	Carbonatite Dyke	Upper contact undulating @ ~10d TCA. Light pink-light purple to cream, local wispy bands of blue (fluorapatite?), near contacts red-brown apatite cumulates (<4mm) forming wispy bands. 3% disseminated and blebs up to 5cm of py, trace disseminated (<1.5mm) bluish-black (possibly Fe-Nb Oxide?). lower contact planar @60/160
PGH-18-03B	31.31	34.7	QTZ-SYE	Alkali quartz syenite	As above, undulating diffuse lower contact
PGH-18-03B	34.7	40.1	MIX_ZONE	Alkali qtz syenite breccia with crbt infill	Alkali; 20% qtz, 70% k-fldsp, 10% bt, patchy hematite alteration, mg, breccia clasts are angular with diffuse boundaries. Breccia and CRBT zones are ~2.60m of interval. CRBT light pink-purple to light green, fg, locally weakly banded, trace disseminated py, disseminated hem.
PGH-18-03B	40.1	49.37	SYE	Alkali qtz syenite	As above, intermittent crbt dykes up to 30cm (makes up 10% of interval collectively). CRBT; fg, grey-light pink/purple-green, disseminated hem / py, blue fg wispy bands locally.
PGH-18-03B	49.37	50	DIAB	Diabase dyke	Vfg, black, strongly magnetic, sharp upper and lower contacts (lower contact has section of crbt between alkali. Amygdales filled with carb & veinlets, weak patchy chl/hem alteration
PGH-18-03B	50	50.95	SYE	Alkali qtz syentie	As above.
PGH-18-03B	50.95	52.45	MIX_ZONE	Alkali with Carbonatite dykes	Alkali as above; CRBT: 50.97-51.25: cream, mg-cg, irregular brecciated upper and lower contact, wispy bands defined by blue mineral (fluorapatite?) 51.50-51.80: brecciated, light purple to light green, mg, apatite cumulated up to 4mm, brown-reddish. Disseminated hem.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-03B	52.45	62.08	CRBT	Carbonatite	Light pink-purple to green-brown, fg-cg, apatite cumulates up to 6cm. Disseminated hematite, trace disseminated sulphides(py). 53.20-53.75: massive apatite(?) up to 25cm. Opaque, cream, H5-6, HCL; effervesces when powdered, sub-concoidal fracture, fg (sugary), minimal UV florescence (no impurities, pyrochlore?). Outside of massive apatite zones breccia(?) of light purple calco-rich carbonatite, disseminated hematite (15%), disseminated fg and euhedral py up to 3mm. 55.00-59.00: mottled, calco-rich and apatite(?)/fero-dolomite, light purple-light green less commonly light pink. Diss fg blue-blk, elongate blades <2mm, ~5%. 3% trace disseminated py/crystals up to 3mm. 59.00-60.5: Brecciated with alkali clasts up to 4cm, some completely altered to bt? reaction rims around alkali clasts up to 5mm, diffuse boundaries with angular to sub-angular clasts. However, near end of section there is an alkali clasts with much less alteration, sub - rounded, and diffuse boundaries. 61-61.5: banded, stylo-litic/wavy bands, alternating in colour red/light purple/grey, vfg 1% disseminated sulphide(?) blue-black
PGH-18-03B	62.08	70.1	QTZ-SYE	Alkali qtz syenite	15% qtz, 75% k-fldsp, 10% bt, red-pink, mg. Local breccia up to 15cm, diffuse clast boundaries, angular to sub. 67.50-68.16: CRBT dyke, light pink, light green cumulates of apatite up to 3cm, fg disseminated blue submetallic mineral.
PGH-18-03B	70.1	74.36	CRBT	Carbonatite	Light pink-purple to light green, mottled, disseminated hematite, light green apatite(?) cumulates up to 5mm. Trace disseminated sulphides (py). Contacts diffuse(dissolution).
PGH-18-03B	74.36	79.69	SYE	Alkali feldspathic rock	Mg-fg, moderate patchy hematite alteration, as above modal percentages. Fracture fill is blue-green chl/amph(?)(fentized?)
PGH-18-03B	79.69	81.14	SYE-BX	Alkali Breccia with carbonatite infill	CRBT; light pink-purple to light green, small rounded clasts of alkali up to 5mm, larger alkali clasts are angular with diffuse boundaries. Locally mottled, disseminated trace py + hem
PGH-18-03B	81.14	84.48	GRAN	Granite	Medium pink to light red, mg, 25% qtz, 60% k-fspar, 15% mafic. Moderate hematite alteration, crbt veins up to 5cm.
PGH-18-03B	84.48	87.88	SYE-BX	Carbonatite + Granite BX	Gran as above, up to 0.5m. CRBT; light pink-purple-grey-green, wispy bands, locally massive apatite(?), disseminated hem, trace disseminated py, fg black mineral (Fe-Nb Oxide?). Fg light grey bands contain vfg black mineral (pyrochlore)
PGH-18-03B	87.88	95.42	GRAN	Granite	Medium red-pink, fg, 30% qtz, 35% bt, 35% k-fspar. Abundance of bt changes across unit, commonly where bt is abundant k-fspar <15%. Minor crbt veining up to 3cm. Alteration halos around fractures of hem, infill is qtz, chl, blue amph(?)
PGH-18-03B	95.42	95.95	MDYKE	Mafic Dyke	Undulating upper contact, none magnetic, grey-green, hem/qtz/chl alteration
PGH-18-03B	95.95	101.1	GRAN	Granite	Gran pink-red, mg, chl/hem alt common, locally more abundant bt/qtz. CRBT veins up to 0.5m, bx contacts, light pink-purple, disseminated hem.
PGH-18-03B	101.1	116.5	GRAN	Granite	Light red to black green, qtz 20%, k-fspar 50%, mafics (bt/amph) 30%. Moderate selective pervasive chl alt (blue-green). Where more mafic minerals present there is less k-fspar. Minor CRBT veins up top 30cm
PGH-18-03B	116.5	117	SYE-BX	Granite breccia	Medium pink-red, sub-rounded clasts, CRBT infill, diffuse boundaries on some clasts. CRBT infill; massive, cream to light purple-pink-green, trace disseminated py + other fg black mineral.
PGH-18-03B	117	122.04	GRAN	Granite	Modal percentages as above. 120.9-121.15: massive infill of blue-green chl/amph(?fibrous to blades, fg, H5-6)

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-03B	122.04	157.83	GRAN/FZ	Fault Zone, Granite	122-126: Blocky heavily jointed GRAN, weakly weathered. 126-144.50: Strongly to completely weathered GRAN, Fe-stained, very weak material, massive core loss 144.50-157.83: Heavily jointed to locally strongly weathered GRAN. Massive core loss, locally cg GRAN, crystals up to 1cm, plag (30%), k-fspar (30%), Qtz(20%), Bt (20%). mafics alt to bright green clay (smectite?)
PGH-18-03B	157.83	161.15	CRBT-BX	Carbonatite with Alkali BX	Dominated by crbt, alkali clasts up to 15cm, diffuse boundaries. Crbt; light pink-purple-grey, massive, locally weakly weathered fracture (ferro-dolomite? Fe-ox staining), 5% disseminated hem, trace disseminated py + other fg, soft, black mineral (Fe-Nb OX?)
PGH-18-03B	161.15	169.95	GRAN	Granite	Mg-cg, crystals up to 2cm, qtz(20%), Kspar(40%), Plag(15%), bt/amp(25%), moderate to strong patchy hematite alteration, chl commonly replacing or rimming bt. Crbt veining up to 0.5m; light purple-pink, diss hem, massive Weakly weathered zones (encountered cavities while drilling) Core Loss 166.50-167.25m (0.75m)
PGH-18-03B	169.95	173.65	SYE-BX	Granitic breccia with Carbonatite	GRAN clasts up to 10cm, angular, diffuse boundaries/reaction rims altering to blue-grey fg amph? CRBT; fg, mottled to locally weakly banded, light purple-pink-green, diss hematite, diss py + fg black mineral strongly to completely weathered between 171.7-172.6 (0.3m Core Loss)
PGH-18-03B	173.65	187.25	GRAN	Granite	As above modal descriptions, rare crbt veins/bx up to 1m. Core loss: 175.5-176.00m (cavity) 177.00-177.55 (cavity) 181.30-182.60: CRBT BX; light purple-pink-green, apatite cumulates up to 2cm, locally massive, disseminated hem/py, trace disseminated other black mineral(?)
PGH-18-03B	187.25	196	CRBT	Carbonatite	Light pink-cream to grey, massive, local wispy bands defined by blue mineral fg mineral, apatite cumulates up to 1cm locally forming discontinuous bands. Moving towards lower contact apatite cumulates/bands become more continuous and uniform. Trace disseminated py. Disseminated other fg black mineral(Fe-Nb Ox?)
PGH-18-03B	196	198.06	GRAN	Granite	Mg-cg (up to 7mm), pink-cream, 30% qtz, 30% plag, 30% k-fspar, 10%bt. Minor crbt dykes up to 5cm
PGH-18-03B	198.06	198.75	CRBT	Carbonatite	Light pink-purple-green-cream, massive, locally wispy bands of blue mineral(chl?) also brimming veins. Apatite cumulate 'bands' nearing lower contact; bands ~3mm wide green-red. Trace disseminated py.
PGH-18-03B	198.75	202	SYE-BX	Granite breccia	Med red-pink, fg-mg, locally brecciated with clasts up to 5cm, sub-angular to sub rounded, patchy chl alteration, CRBT infill,
PGH-18-03B	202	209.3	PEG	Granitic Pegmatite	Vcg, xtals up to 6cm, 35% plag, 25% qtz, 25% k-fspar, 15% biot. Patchy weak-mod hematite alteration, green-blue chl replacing biot. Local crbt veins up to 10cm (light pink-cream, fg, massive, enveloped by vfg blue amph/chl?).
PGH-18-03B	209.3	209.9	CRBT	Carbonatite	Cg, cream-light pink, discontinuous wavy bands of blue mineral (amph?) near contacts. Trace disseminated py, disseminated hematite, vfg disseminated black mineral(?)
PGH-18-03B	209.9	218.85	GRAN	Granite	209.9-214.6: fg, 20% qtz, 30% bt, 40% k-fspar, 10% plag. 214.60-218.85: locally pegmatitic (described above)

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-03B	218.85	223.28	CRBT	Carbonatite	Fg-cg, locally weakly banded to mottled, light pink-purple-green-blue. apatite cumulates up to 5cm, forming weak bands, with fg black mineral inside cumulate (Fe-Nb Oxide, pyrochlore?). Trace disseminated py/hem. Brecciated lower contact for ~30cm.
PGH-18-03B	223.28	238.6	GRAN	Granite	Mg-cg, med pink-red, 25% qtz, 45% k-fspar, 15% plag, 15% bt. Bt commonly alt to chl. Minor crbt veins up to 10cm.
PGH-18-03B	238.6	243.33	CRBT	Carbonatite	Fg-cg, crystals up to 1cm, light pink-blue-purple-green, locally massive to mottled. Trace disseminated py, local apatite cumulates up to 4cm.
PGH-18-03B	243.33	246.5	GRAN	Granite	Mg-cg, 25% bt, 40% k-fspar, 25% qtz, 10% plag. Locally brecciated near crbt contacts, Bt alt to chl, locally up to 60% bt.
PGH-18-03B	246.5	247.93	CRBT	Carbonatite	Cg, light pink-cream-purple-green, elongate crystals up to 2cm (dolomite). Dark green apatite cumulated up to 5mm, form discontinuous bands. Brecciated upper contact, sharp lower contact
PGH-18-03B	247.93	255.5	SYE-BX	Granite breccia with carbonatite infill / carbonatite dykes	Gran pink-red (patchy hematite), mg, Qtz 30%, kspar (40%), 20% Bt, 10%plag Gran clasts up to 20cm, sub-angular, diffuse boundaries/reaction rims, commonly rimmed by blue fg chl/amph. CRBT; light pink-purple-green to cream, locally cg Dol (up to 3cm), locally massive, commonly diss hem, wispy discontinuous blue bands with apt cumulates <4mm. Locally fg black mineral (pyrochlore?)
PGH-18-03B	255.5	263.27	GRAN	Granite	Mg-vcg, locally crystals up to 3cm, 20%bt, 30%qtz, 40%kfldsp. BT commonly alt to blue-green chl. Local crbt veins up to 36cm, brecciated contacts.
PGH-18-03B	263.27	267	CRBT	Carbonatite	Carbonatite
PGH-18-03B	267	269.18	SYE-BX	Granite Breccia	Gran as above, sub-angular clasts up to 10cm with crbt infill. Breccia is only locally for zone up to 15cm and brecciated lower contact.
PGH-18-03B	269.18	277.55	CRBT	Carbonatite	Dominantly light pink-cream also light purple-green-blue/grey, fg-cg, dominantly massive, local fluorite. Trace disseminated py 274-276: mica rich, with up to 10% pyrochlore, xtals up to 3mm
PGH-18-03B	277.55	284.38	SYE-BX	Carbonatite and Granite	GRAN as above. CRBT: light pink-cream, grey, blue. Fg-cg, locally weakly banded(?), alternating between calcite rich and blue fg amph(?) +/- apatite. Locally fg (<2mm) black elongate crystals Trace disseminated hem. Largest crbt dyke 1.5m. Overall CRBT > GRAN
PGH-18-03B	284.38	286.37	MDYKE/CRBT	Mafic Dyke + Granite clasts.	Magnetic, fg, green-grey, minor clasts(?) of GRAN. Carbonate veins up to 3mm brecciated lower contact zone ~0.5m
PGH-18-03B	286.37	296.67	QTZ-SYE	Qtz Syenite with minor Carbonatite	Mg-cg, 20% qtz, 50% k-fldsp, 25% bt, 5% plag. Medium red-pink (Hem alteration), bt being replaced by chl. Local variation in abundances of plag & biot. Crbt dykes up to 1m (288.80-289.90: crbt, light pink to purple, trace apatite cumulates <7mm, disseminated hematite/pyrite, stylolitic veins of fg black mineral. Undulating contact with crbt @ 25/220.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-03B	296.67	300.22	CRBT	Carbonatite	Described as two distinct parts; 296.67-299.00: Light pink-cream with minor blue-green. Massive to locally diffuse banding defined by fg blue amph/chl(?) and apatite cumulates up to 4mm (sub-rounded, light green to opaque, H5, usually with light red alteration (hem?)) 299-300.22: Black to grey-blue, strongly magnetic, 10% po/py, steel grey to black mineral forming angular masses up to 1cm (up to 15%)(H 3.5-4, iridescent on freshly fractured surface, irregular to subconchoidal fracture), Cg calcite up to 3cm, fg slender elongate blue-green mineral (amph) xtals up to 2mm. Phlogopite crystals up to 5mm. Trace pyrochlore(?) Mag Sus up to 260
PGH-18-03B	300.22	311.25	QTZ-SYE	Quartz Syenite with minor crbt dykes	Qtz 15%, K-fspar 50%, plag 10%, 15% bt. Mg-cg xtals up to 1cm, plag commonly more cg. Fenitization around crbt dykes, rimmed by blue chl/amph. Crbt veins up to 25cm, cream to light pink-purple-grey. Apatite cumulates up to 1.5cm.
PGH-18-03B	311.25	311.76	CRBT	Carbonatite	Pink, fg, apatite cumulates (green-red/brown) up to 4cm, concentrated near contacts. Irregular lower contact, planar upper contact. Rimmed by fg blue chl(?) reaction rims in qtz syn.
PGH-18-03B	311.76	317.8	QTZ-SYE	Quartz Syenite	Med red to pink, qtz (15%), k-fspar (60%), Plag (10%), Bt(15%). Mg to locally cg (plag up to 1.5cm. Bt being replaced by chl, partially to completely. Minor crbt veins, rimmed with fg chl.
PGH-18-03B	317.8	319.77	CRBT-BX	Carbonatite with clasts of quartz syenite.	Fg-cg locally calcite crystals up to 1.5cm, cream to light pink-purple-grey, cg calcite crystals rimmed by fg blue & black minerals (pyrochlore, phlogopite, amph?). Locally apatite cumulates up to 2cm. Trace disseminated py, disseminated hematite. Qtz syn clasts up to 20cm
PGH-18-03B	319.77	322.6	SYE-BX	Quartz syenite and carbonatite veins	Qtz syn as above. Light pink-purple-green-blue, fg-cg, locally weakly banded, apatite cumulates 1cm, fg black pyrochlore(?), commonly rimmed by blue chl(?)
PGH-18-03B	322.6	331.28	QTZ-SYE	Quartz Syenite with crbt veins	Qtz Sye as above; 325.45-325.70: CRBT vein, light pk, rimmed by blue chl, trace py up to 1cm blebs. 329.90-330.36: CRBT; wispy blue bands, apatite cumulates (up to 1.5cm, brown-green) forming discontinuous bands, disseminated hematite, trace dis py.
PGH-18-03B	331.28	332.37	CRBT	Carbonatite	Brecciated upper and lower contact, pink-purple, disseminated hematite, dark-brown apatite accumulates up to 1cm, syn clasts up to 6cm diffuse margins. Fg blue mineral disseminated
PGH-18-03B	332.37	338	QTZ-SYE	Quartz syenite	As above; Crbt veins up to 22cm, commonly fg, blueish to light pink, disseminated hematite, Trace disseminated euhedral pyrite up to 2mm, calcite dominated.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-03B	338	347	SYE-BX	Quartz syenite breccia with carbonatite infill / carbonatite dykes	Qtz syn as above, bt being replaced by chl, blue chl/amph rimming crbt veins. Clasts are angular to sub-angular with reaction rims up to 5mm. Crbt is mottled to locally massive, fg, light pink-purple-green-blue, trace disseminated py, apatite cumulates green-red/brown up to 1cm, commonly concentrated near contacts as wispy discontinuous bands. Breccia zones up to 1.0m with syn between breccia zones.
PGH-18-03B	347	365	QTZ-SYE	Quartz syenite	Sye as above, local increase in plag, locally cg (commonly plag) up to 1cm. Patchy selectively pervasive hematitic alteration varying from moderate to strong. CRBT veins up to 1m, described below. 353.42-354.20: light purple, fg, apatite cumulates up to 6cm (light green, H4-5, weak reaction with HCL when powdered, fluorescence under UV absent) with fg hem. 345.89-356.18: crbt; light pink, discontinuous bands of red-brown (apt?), bands commonly near contacts ~4mm wide, diss fg hem, fractures filled with vfg black mineral. irregular upper contact, sharp Lower contact @ 65 TCA 360.55-361: Mottled light green to purple, 60% apt, diss hem within both dol(?) and apt(?), trace diss py and blebs up to 7mm. Undulating contacts rimmed by fg blue-green chl.
PGH-18-03B	365	369.74	QTZ-SYE	quartz syenite	Pink-red, qtz(15%), k-fspar (65%), plag (10%), 10% Bt. Locally weakly banded alternating bands of bt rich. Moderate-strong pervasive hematite alteration, chl replacing bt. Crbt veins up to 14cm; cream pink, disseminated py.
PGH-18-03B	369.74	371.46	MDYKE/CRBT	Mafic Dyke + Carbonatite	Carbonatite intruding mafic dyke, brecciated mafic dyke. Carbonatite veins have hematite alteration halos. Mafic dyke alternating to chl/clay. Carbonatite is cream-white, containing 10% fg hematite giving it grey appearance.
PGH-18-03B	371.46	374.8	QTZ-SYE	Quartz Syenite	Med pink-red, mg, bt alt to chl, weak patchy hem alt commonly halos around carb vein. Carb veins +/- blue amph(?), chl, hem up to 1.5cm. Sharp lower contact t@ 60dTCA.
PGH-18-03B	374.8	376.95	CRBT	Carbonatite	Light pink to blue-black, disseminated hem elongated blades, trace disseminated py, semi-metallic grey-blue sulphide (columbite?) 5%
PGH-18-03B	376.95	383.05	QTZ-SYE	Quartz Syenite	Qtz (15%), k-fspar(60%), Plag (10%), Bt (15%). Fg-cg crystals up to 3cm, weak-mod patchy hem. 379.87-380.20: brecciated, calcite clasts up to 2cm, light pink to cream, vfg blue, trace disseminated py & stringers up to 5cm. Apatite cumulates up to 5mm, surrounded by blue amph. 381.49-382.09: CRBT + SYN bx; light purple, diss hem, apt cumulates up to 10mm, patchy fluorite, disseminated py, mottled.
PGH-18-03B	383.05	383.9	CRBT	Carbonatite	Light pink-purple, apatite cumulates up to 1cm, disseminated columbite (5%) up to 1cm.
PGH-18-03B	383.9	395.15	QTZ-SYE	Quartz Syenite	Pink-red-opaque, qtz 15%, kspar 50%, plag 20%, bt, 15%. Mg-cg crystals up to 7mm, plag in commonly coarser grained when present. Modal percentage vary across unit. Fractures with green-blue chl common between 30-60 dTCA. Weak patchy hematite alteration. Bt commonly alt to chl. Minor crbt veins up to 0.53m. 393.20-393.70: light pink-purple, calcite dominant, apt cum up to 3mm forming wispy blue-green. Diss hem, minor ferro-dol. sharp contacts rimmed by chl.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-03B	395.15	397.68	SYE-BX	Syenite Breccia with Carbonatite infill	Syenite(?) breccia zones up to 0.5m, strong pervasive hematitic alteration. Cream to Light pink-purple-grey, fg-mg, calcite dominant. locally massive to banded. Locally apt cumulate forming wispy bands (green-red-brown), disseminated py. Fg black-green elongate mineral, amph? CRBT is moderately banded 395.64-396.00 @ 40/350. Bands are defined by alternating colours light pink-purple, darker bands containing hematite, fg apatite and vfg black pyrochlore(?).
PGH-18-03B	397.68	400.7	QTZ-SYE	Quartz Syenite	Fg-mg, pink-light red, minor crbt, chl replacing bt. Diffuse contact with dyke.
PGH-18-03B	400.7	401.54	MDYKE	Mafic Dyke	Magnetic, porphyritic crystals up to 2mm (amph/pyx), green-grey, carbonate veins with alteration halos, vein up to 2mm wide, halos are lighter in colour (carb/chl/hem?). Strong hematitic alteration above and below contact.
PGH-18-03B	401.54	411	QTZ-SYE	Quartz Syenite	As above. With bt locally up to 30% and crbt veins up to 12cm.
PGH-18-03B	411	418.55	CRBT	Carbonatite	Light pink-cream to blue-green, fg-mg, apt increasing downhole up to 10% locally. Forming wispy bands of blue-green (30/020). Darker bands contain magnetite crystals up to 5mm and 10% abundance locally. Hematite commonly rimming apt cumulates. Apt cumulates up to 4mm, grey-brown. Trace disseminated py. Scint up to 350 cps.
PGH-18-03B	418.55	445.79	QTZ-SYE	Quartz Syenite	Fg-mg, 1-4mm, red-pink, patchy weak-mod hem alt, chl replacing bt locally. Alt halos around fractures and veins. Trace disseminated py. Rare crbt up to 7cm.
PGH-18-03B	445.79	446.76	CRBT	Carbonatite	Light purple, massive, fg, brecciated upper contact. Trace diss py, diss hem. Fg apt red-brown wispy,
PGH-18-03B	446.76	461.05	QTZ-SYE	Quartz syenite	Fg-mg, weak to strong pervasive to patchy hematite alteration. Qtz 15%, K-fspar 60%, plag 10%, bt 15%. Alt halos around fractures of hem, locally chl replacing bt, chl is blue-green. Strong hem alt increases towards end of unit but there isn't a gradational increase.
PGH-18-03B	461.05	464.52	CRBT	Carbonatite	Light pink to purple, fg-cg, calcite dominant, later phases ferro-dol rich (beige-grey), local clasts of syn up to 10cm. Trace diss py/blebs up to 3mm, diss hem. Locally apt cumulates up to 10 (<2% overall)
PGH-18-03B	464.52	470.76	QTZ-SYE	Quartz Syenite	Light red-pink, qtz 15%, k-fspar 65%, plag 10%, bt 10%. Fractures with alt halos <2mm hem. Patchy weak hematite alteration. Locally bt being replaced by chl. Minor crbt veins <1cm.
PGH-18-03B	470.76	477.06	CRBT	Carbonatite	Vuggy, light purple-red, hematite along fractures and locally filling vugs, weakly weathered. Apatite cumulates up to 5cm, visible pyrochlore crystals up to 5mm in vugs, euhedral py up to 4mm (2%). Trace barite. Vugs vary in size from 2mm to 4cm and locally containing very soft black mud. disseminated fg black mineral as elongated blades (amph?). Scint up to 420 cps.
PGH-18-03B	477.06	480	QTZ-SYE	Quartz Syenite	Fg-mg, red-pink, moderate patchy hem alt. Bt alt to chl (blue-green).

ORIENTED STRUCTURES

DDH	Depth	Type	Alpha (°)	Beta (°)	Gamma (°)	Title	Description
PGH-18-03B	18.47	CT	70	70		Contact	Contact btw QTZ SYN and CRBT
PGH-18-03B	25.89	JNT	75	20		Joint	Joint in QTZ SYN
PGH-18-03B	26.23	CT	75	85		Contact	lower contact btw CRBT and SYN
PGH-18-03B	31.31	CT	60	160		Contact	lower contact btw CRBT and SYN
PGH-18-03B	76.85	JNT	40	10		Joint	planar, slightly rough, open, chl
PGH-18-03B	78.5	JNT	40	200		Joint	planar, smooth, open, chl,
PGH-18-03B	86.76	FRAC	55	175		Fracture	planar, open, slightly rough, chl(blue-green)
PGH-18-03B	95.42	CT	35	160		Contact btw mafic dyke and GRAN	undulating, closed
PGH-18-03B	99.04	JNT	15	25		Joint in GRAN	blue chl infill(?), planar, slightly rough
PGH-18-03B	101.05	CT	15	20		Contact btw CRBT & GRAN	undulating, open, slightly rough, fe-ox infill weakly weathered
PGH-18-03B	231.17	JNT	50	210		Joint in GRAN	rough, chl infill,
PGH-18-03B	243.31	CT	40	280		Contact Crbt / GRAN	undulating, intact,
PGH-18-03B	247.9	CT	40	50		Contact Crbt/GRAN	planar, closed
PGH-18-03B	280	CT	35	120		Contact Crbt/Alkali	closed, undulating
PGH-18-03B	283.67	JNT	50	300		Joint in Alkali	planar, rough, fresh, no fill,
PGH-18-03B	290.74	JNT	55	300		Joint in Alkali	planar, rough, carb/chl in fill <1mm
PGH-18-03B	292.8	JNT	55	160		Joint in Alkali	stepped, rough, infill chl <1mm,
PGH-18-03B	293.37	JNT	40	165		Joint in Alkali	planar, rough, infill blue chl <1mm
PGH-18-03B	296.7	CT	25	220		Contact btw gran and crbt	undulating, closed
PGH-18-03B	356.18	CT	65	272		Contact btw CRBT and SYN	planar, closed
PGH-18-03B	365.2	BND	30	210		weak banding in SYN	
PGH-18-03B	374.8	CT	60	185		upper contact between Syn and CRBT	planar, closed
PGH-18-03B	376.95	CT	55	140		lower contact of CRBT	planar, closed
PGH-18-03B	415.8	BND	30	20		banding in crbt	wavy bands of apt? mgt?, amph?
PGH-18-03B	470.75	CT	50	355		upper contact between CRBT and SYN	sharp, undulating, open, rough
PGH-18-03B	477.06	CT	80	165		lower contact of CRBT	spun (questionable), rough

ASSAYS

DDH	From	To	Width (m)	SampleID	BatchID	SiO2 (%)	Al2O3 (%)	Fe2O3(T) (%)	MnO (%)	MgO (%)	CaO (%)	Na2O (%)	K2O (%)	TiO2 (%)	P2O5 (%)	LOI (%)	Total (%)	Sc (ppm)	Be (ppm)	V (ppm)	Ba (ppm)
PGH-18-03B	461	462	1	589497	A18-04469	8.93	1.89	4.19	0.507	2.92	42.45	0.27	1.28	0.071	3.23	31.97	97.71	7	2	67	1418
PGH-18-03B	462	463.5	1.5	589498	A18-04469	1.27	0.13	3.31	0.607	3.24	47.2	0.1	0.1	0.08	4.41	36.83	97.29	5	< 1	31	1027
PGH-18-03B	463.5	464.5	1	589499	A18-04469	0.8	0.06	2.61	0.633	1.72	50.88	0.09	0.04	0.023	3.58	37.75	98.18	5	< 1	22	713
PGH-18-03B	470.25	470.75	0.5	589500	A18-04469	67.49	13.14	2.05	0.072	1.39	2.66	3.64	4.92	0.172	0.08	3.56	99.17	5	2	62	966
PGH-18-03B	470.75	472	1.25	589502	A18-04469	7.37	1.59	3.67	0.405	3.38	43.02	0.14	0.93	0.036	1.3	35.89	97.72	7	< 1	34	6170
PGH-18-03B	472	473	1	589503	A18-04469	0.71	0.24	3.22	0.422	2.94	48.57	0.04	0.12	0.033	0.58	41.15	98.03	5	< 1	16	4462
PGH-18-03B	473	474	1	589504	A18-04469	3.24	0.43	3.03	0.388	2.69	47.81	0.05	0.16	0.03	0.15	39.95	97.92	6	< 1	15	4312
PGH-18-03B	474	475	1	589505	A18-04469	4.56	0.29	2.45	0.324	2.14	48.86	0.06	0.07	0.023	0.73	38.96	98.46	5	< 1	9	3079
PGH-18-03B	475	476	1	589506	A18-04469	1.64	0.2	2.22	0.299	1.6	51.55	0.03	0.1	0.004	0.33	41.55	99.52	5	< 1	11	3225
PGH-18-03B	476	477.04	1.04	589507	A18-04469	1.46	0.64	3.24	0.306	2.54	48.88	0.04	0.05	0.011	< 0.01	40.85	98.01	5	< 1	17	4176
PGH-18-03B	477.04	477.54	0.5	589508	A18-04469	63.5	14.78	3.49	0.079	1.92	3.66	4.97	3.27	0.371	0.1	4.46	100.6	6	3	98	713

ASSAYS

DDH	From	To	Width (m)	SampleID	Sr (ppm)	Y (ppm)	Zr (ppm)	Cr (ppm)	Co (ppm)	Ni (ppm)	Cu (ppm)	Zn (ppm)	Ga (ppm)	Ge (ppm)	As (ppm)	Rb (ppm)	Nb (ppm)	Mo (ppm)	Ag (ppm)	In (ppm)	Sn (ppm)	Sb (ppm)
PGH-18-03B	461	462	1	589497	3168	113	47	< 20	10	< 20	< 10	110	7	< 1	11	17	372	14	< 0.5	< 0.2	2	< 0.5
PGH-18-03B	462	463.5	1.5	589498	5052	135	94	< 20	4	< 20	< 10	70	2	< 1	6	< 2	236	5	< 0.5	< 0.2	< 1	< 0.5
PGH-18-03B	463.5	464.5	1	589499	6106	113	16	< 20	5	< 20	< 10	100	2	< 1	5	< 2	220	5	< 0.5	< 0.2	< 1	< 0.5
PGH-18-03B	470.25	470.75	0.5	589500	670	7	122	< 20	2	< 20	< 10	60	17	< 1	< 5	92	48	< 2	< 0.5	< 0.2	2	< 0.5
PGH-18-03B	470.75	472	1.25	589502	968	154	27	< 20	4	< 20	< 10	50	11	2	15	14	394	< 2	< 0.5	< 0.2	3	< 0.5
PGH-18-03B	472	473	1	589503	846	116	34	< 20	2	< 20	< 10	< 30	5	1	7	< 2	227	< 2	< 0.5	< 0.2	< 1	< 0.5
PGH-18-03B	473	474	1	589504	791	76	12	< 20	2	< 20	< 10	< 30	6	2	10	2	409	< 2	< 0.5	< 0.2	< 1	< 0.5
PGH-18-03B	474	475	1	589505	912	92	11	< 20	2	< 20	10	< 30	8	2	12	< 2	> 1000	< 2	< 0.5	< 0.2	1	< 0.5
PGH-18-03B	475	476	1	589506	773	75	3	< 20	< 1	< 20	< 10	< 30	8	2	8	< 2	347	< 2	< 0.5	< 0.2	< 1	< 0.5
PGH-18-03B	476	477.04	1.04	589507	778	74	4	< 20	1	< 20	10	40	9	2	10	< 2	232	< 2	< 0.5	< 0.2	< 1	< 0.5
PGH-18-03B	477.04	477.54	0.5	589508	566	12	167	< 20	8	< 20	70	190	20	< 1	< 5	61	75	5	0.8	< 0.2	3	< 0.5

ASSAYS

DDH	From	To	Width (m)	SampleID	Cs (ppm)	La (ppm)	Ce (ppm)	Pr (ppm)	Nd (ppm)	Sm (ppm)	Eu (ppm)	Gd (ppm)	Tb (ppm)	Dy (ppm)	Ho (ppm)	Er (ppm)	Tm (ppm)	Yb (ppm)	Lu (ppm)	Hf (ppm)	Ta (ppm)
PGH-18-03B	461	462	1	589497	< 0.5	523	1220	158	639	121	34.7	81.2	9.3	40.1	5.3	11.6	1.24	6.1	0.73	1	0.7
PGH-18-03B	462	463.5	1.5	589498	< 0.5	358	814	98.8	380	67.8	20	48.7	6.6	34.2	5.7	11.8	1.34	7.1	0.89	1.3	1.4
PGH-18-03B	463.5	464.5	1	589499	< 0.5	338	789	95.9	373	65.9	19.9	48.3	6.3	31.1	4.6	9.7	1.19	6.8	0.89	0.3	0.3
PGH-18-03B	470.25	470.75	0.5	589500	0.8	40.8	88.2	10.5	40.3	8.8	2.68	5.9	0.8	3.5	0.5	1.2	0.15	0.9	0.14	2.9	0.2
PGH-18-03B	470.75	472	1.25	589502	< 0.5	922	2290	306	1300	280	81.3	174	17.6	62.9	7.3	14.4	1.41	6.8	0.86	0.8	0.1
PGH-18-03B	472	473	1	589503	< 0.5	923	2350	314	1360	273	74.8	149	12.8	44.3	5	9.1	0.94	4.9	0.61	0.7	0.6
PGH-18-03B	473	474	1	589504	< 0.5	968	2350	303	1280	251	66	120	9.2	31.1	3.5	6.4	0.63	3.2	0.47	0.4	< 0.1
PGH-18-03B	474	475	1	589505	< 0.5	926	2250	297	1260	255	65.5	125	11.2	38.1	4.6	9.3	0.87	4.5	0.56	0.3	0.4
PGH-18-03B	475	476	1	589506	< 0.5	875	2090	271	1130	225	58.1	113	9.9	33.3	4.1	7.7	0.77	3.9	0.54	< 0.2	1.1
PGH-18-03B	476	477.04	1.04	589507	< 0.5	941	2290	285	1180	241	66.9	130	10.7	32	3.7	7.2	0.72	3.5	0.43	0.2	0.9
PGH-18-03B	477.04	477.54	0.5	589508	< 0.5	53.8	116	13.9	51.9	9.7	2.88	7	0.8	3.6	0.6	1.5	0.19	1.1	0.15	4.2	0.6

ASSAYS

DDH	From	To	Width (m)	SampleID	W (ppm)	Tl (ppm)	Pb (ppm)	Bi (ppm)	Th (ppm)	U (ppm)	Nb2O5 (%)	Description
PGH-18-03B	21.5	22	0.5	589364	4	0.7	12	< 0.4	8.4	1.4	< 0.003	alkali
PGH-18-03B	22	23	1	589365	< 1	< 0.1	56	< 0.4	60.8	15.4	0.136	CRBT, apatite cummulates up to 2cm
PGH-18-03B	23	23.8	0.8	589366	2	0.1	41	< 0.4	48.1	24.7	0.384	CRBT, apatite cummulates up to 2cm
PGH-18-03B	27.02	27.67	0.65	589367	3	0.3	10	< 0.4	4.8	1.1	0.005	alkali
PGH-18-03B	27.67	28.5	0.83	589368	3	0.1	39	< 0.4	37.6	13.3	0.143	CRBT
PGH-18-03B	28.5	30	1.5	589370	4	< 0.1	57	< 0.4	20.4	9.7	0.093	CRBT
PGH-18-03B	30	31.32	1.32	589372	1	< 0.1	12	< 0.4	39	4.6	0.047	CRBT
PGH-18-03B	31.32	31.82	0.5	589373	4	0.3	9	< 0.4	7.5	1.4	0.011	ALKALI
PGH-18-03B	37	38.5	1.5	589374	5	< 0.1	28	< 0.4	56	17.3	0.032	CRBT with BX
PGH-18-03B	50.95	52.45	1.5	589375	5	0.2	39	< 0.4	19	8.9	0.054	CRBT with ALKALI BX
PGH-18-03B	52.45	53.5	1.05	589376	3	< 0.1	31	< 0.4	33.5	7.9	0.058	Alkali bx + crbt
PGH-18-03B	53.5	55	1.5	589377	2	< 0.1	35	< 0.4	36	17.8	0.07	CRBT
PGH-18-03B	55	56.5	1.5	589378	< 1	< 0.1	56	< 0.4	43.8	70.6	0.185	CRBT
PGH-18-03B	56.5	58	1.5	589379	5	< 0.1	103	< 0.4	49.1	27.2	0.229	CRBT
PGH-18-03B	58	59.5	1.5	589380	< 1	< 0.1	53	< 0.4	40.9	68.5	0.117	CRBT
PGH-18-03B	59.5	60.5	1	589381	4	< 0.1	42	< 0.4	23.8	34.4	0.091	CRBT
PGH-18-03B	60.5	61.5	1	589382	8	< 0.1	20	< 0.4	26.5	10.7	0.043	CRBT
PGH-18-03B	61.5	62.08	0.58	589383	3	< 0.1	40	< 0.4	81.9	15.6	0.046	CRBT
PGH-18-03B	67.48	68.23	0.75	589384	4	< 0.1	36	< 0.4	44.3	27.4	0.108	CRBT
PGH-18-03B	69.5	70.1	0.6	589385	3	0.3	44	< 0.4	12.9	6.9	0.021	CRBT
PGH-18-03B	70.1	71.5	1.4	589386	5	< 0.1	57	< 0.4	20.1	65	0.069	CRBT
PGH-18-03B	71.5	73	1.5	589387	24	< 0.1	33	< 0.4	21.1	83.7	0.093	crbt x
PGH-18-03B	73	74.36	1.36	589388	2	< 0.1	38	< 0.4	22.1	49.3	0.144	crbt, banded
PGH-18-03B	74.36	74.86	0.5	589389	4	0.2	16	< 0.4	19.6	4.8	0.02	ALKALI
PGH-18-03B	79.66	80.42	0.76	589390	9	< 0.1	23	< 0.4	41.4	18.4	0.056	Alkali bx with crbt
PGH-18-03B	80.42	81.16	0.74	589391	3	< 0.1	57	< 0.4	27.8	10.1	0.044	Alkali bx with crbt
PGH-18-03B	84.22	85.22	1	589392	7	< 0.1	19	< 0.4	13.6	13.2	0.03	even mix of alkali bx and crbt vein
PGH-18-03B	85.22	86.22	1	589393	7	< 0.1	24	< 0.4	18.3	9.6	0.048	crbt > alkali bx
PGH-18-03B	86.22	87.07	0.85	589394	< 1	< 0.1	13	< 0.4	19.9	5.1	0.036	alkali bx > crbt
PGH-18-03B	87.07	87.9	0.83	589395	6	< 0.1	18	< 0.4	52	22.2	0.162	CRBT vein
PGH-18-03B	157.83	158.71	0.88	589396	7	0.2	13	< 0.4	18.3	10	0.042	
PGH-18-03B	158.71	159.71	1	589397	8	< 0.1	39	0.6	75.8	19.1	0.039	
PGH-18-03B	159.71	160.67	0.96	589398	< 1	< 0.1	33	0.5	108	18.9	0.035	
PGH-18-03B	160.67	161.13	0.46	589399	3	0.4	15	< 0.4	16.5	4.8	0.019	
PGH-18-03B	170	171	1	589401	6	0.2	12	< 0.4	15.4	13.3	0.123	ALKALI BX CRBT
PGH-18-03B	171	172	1	589402	3	0.1	19	< 0.4	9.2	12.8	0.046	ALKALI BX CRBT
PGH-18-03B	172	173.4	1.4	589403	2	< 0.1	31	< 0.4	7.3	18	0.043	ALKALI BX CRBT
PGH-18-03B	181.31	182.61	1.3	589404	5	< 0.1	13	< 0.4	31.6	13.2	0.08	CRBT Alkali BX
PGH-18-03B	185	186	1	589405	6	0.2	23	< 0.4	20.2	10.8	0.046	CRBT Alkali BX
PGH-18-03B	186.74	187.24	0.5	589406	2	0.4	12	< 0.4	11.6	4.1	0.037	Alkali
PGH-18-03B	187.24	188.73	1.49	589407	3	< 0.1	8	< 0.4	3.3	5.4	0.086	CRBT

ASSAYS

DDH	From	To	Width (m)	SampleID	W (ppm)	Tl (ppm)	Pb (ppm)	Bi (ppm)	Th (ppm)	U (ppm)	Nb2O5 (%)	Description
PGH-18-03B	188.73	190.22	1.49	589408	1	< 0.1	21	< 0.4	7.5	21.8	0.337	CRBT
PGH-18-03B	190.22	191.72	1.5	589409	4	< 0.1	15	< 0.4	6.9	16.7	0.22	CRBT
PGH-18-03B	191.72	193.21	1.49	589410	4	< 0.1	16	< 0.4	4.1	14	0.228	CRBT
PGH-18-03B	193.21	194.7	1.49	589411	< 1	< 0.1	24	< 0.4	3.2	9.6	0.105	CRBT
PGH-18-03B	194.7	196	1.3	589412	7	< 0.1	17	< 0.4	19.3	20.8	0.357	CRBT bnd apt
PGH-18-03B	218.36	218.86	0.5	589413	2	0.7	14	< 0.4	20.3	0.9	0.008	GRAN PG
PGH-18-03B	218.86	220	1.14	589414	3	0.3	18	< 0.4	6.1	19.2	0.355	crbt
PGH-18-03B	220	221	1	589415	3	0.2	30	< 0.4	8.6	12.6	0.172	crbt
PGH-18-03B	221	222	1	589416	1	0.2	23	< 0.4	10.4	28.4	0.807	crbt
PGH-18-03B	222	222.7	0.7	589418	4	0.3	27	< 0.4	15.6	7.5	0.049	CRBT
PGH-18-03B	222.7	223.3	0.6	589419	6	0.4	23	< 0.4	25.2	27.9	0.454	GRAN BX
PGH-18-03B	223.3	223.8	0.5	589420	4	0.3	8	< 0.4	9.9	2.2	0.008	GRAN
PGH-18-03B	238.1	238.8	0.7	589421	9	0.3	13	< 0.4	36.3	9.2	0.056	GRAN
PGH-18-03B	238.8	240	1.2	589422	3	< 0.1	22	< 0.4	6.7	23.6	0.098	CRBT, cg,
PGH-18-03B	240	241	1	589423	4	< 0.1	29	< 0.4	14.3	37.6	0.224	CRBT, massive
PGH-18-03B	241	242	1	589425	3	< 0.1	7	< 0.4	8	3.8	0.006	CRBT
PGH-18-03B	242	242.75	0.75	589426	2	< 0.1	25	< 0.4	53.8	20.7	0.048	CRBT
PGH-18-03B	242.75	243.36	0.61	589427	4	< 0.1	14	< 0.4	19.7	5.1	0.019	CRBT
PGH-18-03B	246	246.5	0.5	589428	2	0.3	21	< 0.4	17.3	20.8	0.066	GRAN
PGH-18-03B	246.5	247	0.5	589429	2	< 0.1	14	< 0.4	4.9	14.7	0.055	CRBT
PGH-18-03B	247	248	1	589430	5	< 0.1	53	< 0.4	12.4	8.7	0.038	CRBT
PGH-18-03B	248	249	1	589431	7	0.2	16	< 0.4	15.1	8.2	0.038	GRAN minor CRBT
PGH-18-03B	249	250	1	589432	4	0.3	20	< 0.4	15	18.5	0.081	GRAN BX
PGH-18-03B	250	251	1	589433	6	0.2	16	< 0.4	11.8	11.5	0.056	GRAN BX + CRBT
PGH-18-03B	251	252	1	589434	1	< 0.1	41	< 0.4	5.1	24.6	0.106	CRBT
PGH-18-03B	252	253	1	589435	4	< 0.1	18	< 0.4	18.5	17.2	0.098	GRAN BX + CRBT
PGH-18-03B	253	254	1	589436	< 1	< 0.1	24	< 0.4	15.9	19.1	0.084	GRAN BX + CRBT
PGH-18-03B	254	255	1	589437	4	< 0.1	25	< 0.4	12.6	34.6	0.135	GRAN BX + CRBT
PGH-18-03B	255	255.5	0.5	589438	5	< 0.1	66	< 0.4	25.6	110	0.547	GRAN BX + CRBT
PGH-18-03B	256.82	257.63	0.81	589440	4	0.2	28	< 0.4	13.8	9.5	0.102	gran bx + crbt
PGH-18-03B	262.5	263.23	0.73	589441	9	0.3	15	< 0.4	21.3	2.3	0.009	Gran + crbt
PGH-18-03B	263.23	264	0.77	589442	3	< 0.1	27	< 0.4	19	5.9	0.053	crbt motted
PGH-18-03B	264	265	1	589443	4	< 0.1	11	< 0.4	5.6	2.2	0.027	CRBT, light pk
PGH-18-03B	265	266	1	589444	4	< 0.1	20	< 0.4	40.8	12.7	0.137	CRBT, light pk, diss py
PGH-18-03B	266	267	1	589445	3	< 0.1	11	< 0.4	17	8.5	0.024	CRBT, massive, pink
PGH-18-03B	267	268	1	589446	7	0.2	8	< 0.4	13	3.1	0.016	GRAN BX + CRBT
PGH-18-03B	269	270	1	589447	3	< 0.1	19	< 0.4	14.8	29.8	0.059	crbt, cg w/ gran bx
PGH-18-03B	270	271	1	589448	3	< 0.1	34	< 0.4	19.5	29.6	0.065	CRBT, minor gran
PGH-18-03B	271	272	1	589449	3	< 0.1	16	< 0.4	10.9	11.4	0.05	CRBT
PGH-18-03B	272	273	1	589450	4	< 0.1	8	< 0.4	13.3	3.4	< 0.003	CRBT
PGH-18-03B	273	274	1	589451	1	< 0.1	5	< 0.4	2.6	1	0.008	CRBT

ASSAYS

DDH	From	To	Width (m)	SampleID	W (ppm)	Tl (ppm)	Pb (ppm)	Bi (ppm)	Th (ppm)	U (ppm)	Nb2O5 (%)	Description
PGH-18-03B	274	275	1	589452	6	< 0.1	26	< 0.4	18.9	23.8	0.222	CRBT, bt, pyrochlore
PGH-18-03B	275	276	1	589454	6	< 0.1	19	< 0.4	11.7	36.5	0.1	CRBT, bt, pyrochlore
PGH-18-03B	276	277	1	589455	12	< 0.1	32	< 0.4	39.3	24.8	0.072	Gran + CRBT
PGH-18-03B	277	277.5	0.5	589456	5	< 0.1	26	< 0.4	98.5	84.4	0.044	CRBT
PGH-18-03B	277.5	278	0.5	589457	5	0.2	12	< 0.4	14.3	3.8	0.006	GRAN
PGH-18-03B	278	278.5	0.5	589458	2	0.2	61	< 0.4	19.7	7.4	0.043	CRBT w/ GRAN
PGH-18-03B	280	281	1	589459	5	0.3	17	< 0.4	12.6	7.6	0.07	CRBT + GRAN
PGH-18-03B	281	282	1	589460	7	0.2	16	< 0.4	10.8	15.9	0.068	GRAN + crbt (fg pyrochlore)
PGH-18-03B	282	283.2	1.2	589461	4	< 0.1	42	< 0.4	14.6	22	0.124	CRBT (fg, pyrochlore) + GRAN
PGH-18-03B	296.68	297.5	0.82	589462	3	< 0.1	47	< 0.4	45.9	46.7	0.209	CRBT, massive, apt cum
PGH-18-03B	297.5	299	1.5	589463	2	< 0.1	21	< 0.4	15.9	13.6	0.075	CRBT, massive, apt cum
PGH-18-03B	299	300.22	1.22	589464	< 1	< 0.1	15	< 0.4	12.1	15.1	0.132	crbt, cg, pyrochlore?
PGH-18-03B	317.79	318.45	0.66	589465	5	0.1	42	< 0.4	43.3	65.8	0.256	CRBT, + GRAN
PGH-18-03B	318.45	319.78	1.33	589466	3	< 0.1	24	< 0.4	15.6	41.1	0.148	CRBT, cg, fg pyrochlore?
PGH-18-03B	320.38	321.06	0.68	589468	5	< 0.1	31	< 0.4	154	26.1	0.063	CRBT, weakly bnd, apt cumulates
PGH-18-03B	331.27	332.53	1.26	589470	5	< 0.1	20	< 0.4	38.9	10.4	0.078	wkly bnd crbt, fg pyrochlore?
PGH-18-03B	337.97	339	1.03	589471	6	< 0.1	20	< 0.4	10.4	7.2	0.161	CRBT + Syn BX
PGH-18-03B	339	340.5	1.5	589472	5	< 0.1	11	< 0.4	12	4.2	0.053	qtz syn BX + crbt
PGH-18-03B	340.5	342	1.5	589473	5	< 0.1	61	< 0.4	29.9	46.6	0.194	qtz syn BX + crbt
PGH-18-03B	342	343.5	1.5	589474	4	0.1	21	< 0.4	16.5	11.9	0.061	qtz syn BX + crbt
PGH-18-03B	343.5	345	1.5	589475	5	0.2	11	< 0.4	12.5	9.2	0.039	qtz syn BX + crbt
PGH-18-03B	345	346.5	1.5	589476	5	0.2	22	< 0.4	13.4	18.8	0.093	qtz syn BX + crbt
PGH-18-03B	346.5	347.5	1	589477	5	0.1	17	< 0.4	23.4	5.5	0.02	qtz syn BX + crbt
PGH-18-03B	353.41	354.27	0.86	589478	10	< 0.1	12	< 0.4	91.8	13.5	0.06	CRBT, apt up to 6cm
PGH-18-03B	360.54	361.04	0.5	589479	2	< 0.1	23	< 0.4	53.5	4.4	0.029	CRBT, mottled apt
PGH-18-03B	374.8	376	1.2	589480	3	< 0.1	67	< 0.4	38.7	75.7	0.102	CRBT, apt, columbite(?)
PGH-18-03B	376	377	1	589481	4	< 0.1	51	< 0.4	32.1	59.2	0.125	CRBT, apt, columbite(?)
PGH-18-03B	381.49	382.12	0.63	589482	4	< 0.1	39	< 0.4	68.2	33.3	0.597	CRBT BX, APT
PGH-18-03B	383	384	1	589483	5	< 0.1	21	< 0.4	26.9	19.5	0.325	CRBT, 10% APT
PGH-18-03B	393.12	393.69	0.57	589484	3	< 0.1	39	< 0.4	20.4	4.3	0.042	CRBT mnr SYN
PGH-18-03B	395	395.5	0.5	589485	4	0.1	15	< 0.4	8.5	9.1	0.089	SYN BX CRBT infill
PGH-18-03B	395.5	396.5	1	589486	4	< 0.1	34	< 0.4	13	24.1	0.098	CRBT, bnd
PGH-18-03B	396.5	397.68	1.18	589488	9	< 0.1	30	< 0.4	46.2	44.2	0.253	SYN BX + CRBT, bnd, apt
PGH-18-03B	411	412.5	1.5	589489	< 1	< 0.1	55	< 0.4	28	34.7	0.226	CRBT
PGH-18-03B	412.5	414	1.5	589490	2	< 0.1	39	< 0.4	14.4	61.2	0.329	CRBT
PGH-18-03B	414	415.5	1.5	589491	4	< 0.1	24	< 0.4	10.3	30	0.151	CRBT, bnd
PGH-18-03B	415.5	417	1.5	589492	5	< 0.1	36	< 0.4	10.9	24.1	0.099	CRBT, bnd
PGH-18-03B	417	418.5	1.5	589493	8	< 0.1	55	< 0.4	32.7	25.1	0.34	CRBT, mag
PGH-18-03B	418.5	419	0.5	589494	6	0.1	19	< 0.4	16.7	3.2	0.029	SYN BX
PGH-18-03B	419	419.5	0.5	589495	6	< 0.1	22	< 0.4	112	22	0.051	SYN + CRBT
PGH-18-03B	445.79	446.74	0.95	589496	< 1	< 0.1	29	< 0.4	78.2	33.9	0.037	CRBT

ASSAYS

DDH	From	To	Width (m)	SampleID	W (ppm)	Tl (ppm)	Pb (ppm)	Bi (ppm)	Th (ppm)	U (ppm)	Nb2O5 (%)	Description
PGH-18-03B	461	462	1	589497	< 1	< 0.1	55	< 0.4	61.6	8.5	0.092	CRBT
PGH-18-03B	462	463.5	1.5	589498	3	< 0.1	23	< 0.4	34.1	12	0.054	CRBT
PGH-18-03B	463.5	464.5	1	589499	2	< 0.1	32	< 0.4	29.8	6.4	0.045	CRBT
PGH-18-03B	470.25	470.75	0.5	589500	5	< 0.1	27	< 0.4	10.1	2.6	0.01	QTZ SYN
PGH-18-03B	470.75	472	1.25	589502	4	< 0.1	22	< 0.4	280	20.8	0.09	CRBT, vuggy, pyc
PGH-18-03B	472	473	1	589503	8	< 0.1	9	< 0.4	232	11.3	0.032	CRBT, vuggy, pyc
PGH-18-03B	473	474	1	589504	3	< 0.1	14	< 0.4	180	9.3	0.1	CRBT, vuggy, pyc
PGH-18-03B	474	475	1	589505	< 1	< 0.1	31	< 0.4	176	21.7	0.253	CRBT, vuggy, pyc
PGH-18-03B	475	476	1	589506	2	< 0.1	24	< 0.4	169	12.5	0.053	CRBT, vuggy, pyc
PGH-18-03B	476	477.04	1.04	589507	4	< 0.1	13	< 0.4	197	14.7	0.045	CRBT, vuggy, pyc
PGH-18-03B	477.04	477.54	0.5	589508	3	0.2	14	< 0.4	10.9	2.5	0.012	QTZ SYN

COMPANY QAQC DATA

DDH	From	To	Width (m)	SampleID	BatchID	QAQC Type	QAQC Description	P2O5 (%)	Nb2O5 (%)
PGH-18-03B	28.5	28.5	0	589369	A18-04469	STANDARD	Oka 1	2.49	0.533
PGH-18-03B	28.5	30	1.5	589370	A18-04469	N/A	ORIGINAL SAMPLE	2.05	0.093
PGH-18-03B	28.5	30	1.5	589371	A18-04469	DUPLICATE	DUPLICATE (589370)	0.78	0.03
PGH-18-03B	161.13	161.13	0	589400	A18-04469	BLANK	Marble	0.02	< 0.003
PGH-18-03B	222	222	0	589417	A18-04469	BLANK	Marble	0.01	< 0.003
PGH-18-03B	241	241	0	589424	A18-04469	BLANK	Marble	0.03	< 0.003
PGH-18-03B	255	255	0	589439	A18-04469	STANDARD	Oka 1	2.47	0.536
PGH-18-03B	275	275	0	589453	A18-04469	BLANK	Marble	0.04	< 0.003
PGH-18-03B	319.78	319.78	0	589467	A18-04469	STANDARD	Oka 1	2.42	0.54
PGH-18-03B	321.06	321.06	0	589469	A18-04469	BLANK	Marble	0.01	< 0.003
PGH-18-03B	396.5	396.5	0	589487	A18-04469	BLANK	Marble	0.03	< 0.003
PGH-18-03B	470.75	470.75	0	589501	A18-04469	STANDARD	Oka 1	2.42	0.543



Drilled by:	Chibougamau Diamond Drilling	Start Date:	4-Apr-2018
Township/Area:	Killala Lake Area	End Date:	17-Apr-2018
Claims (converted):	262731, 332506, 230752	Described by:	B. Clark, B.Sc.
Claims (legacy):	TB 4256251	Log date:	17-Apr-2018

Collar

Azimuth: 337.00°		Easting: 519729		Core size: HQ		Cemented: No	
Plunge: -60.00°		Northing: 5432428		Casing: Pulled		Stored: Yes	
Length: 672.0 m		Elevation: 311.0m					

COORDINATES UTM (NAD83 zone 16)

Down hole surveys

Drill Hole	Type	Depth (m)	Azimuth Corrected (°)	Dip (°)	Mag
PGH-18-04	Reflex	39	335.8	-61	57017
PGH-18-04	Reflex	90	336.4	-60.7	56790
PGH-18-04	Reflex	141	336.1	-60.3	56839
PGH-18-04	Reflex	192	336.4	-60.3	56774
PGH-18-04	Reflex	243	337.2	-60.1	56749
PGH-18-04	Reflex	297	337.3	-60.1	57048
PGH-18-04	Reflex	348	338	-60.1	57087
PGH-18-04	Reflex	414	337.8	-59.9	57467
PGH-18-04	Reflex	468	340.2	-59.8	57237
PGH-18-04	Reflex	519	338.6	-59.8	57139
PGH-18-04	Reflex	570	339.1	-59.8	57157
PGH-18-04	Reflex	621	339.8	-59.6	57061

Description

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-04	0	24	OVB	Overburden	Overburden
PGH-18-04	24	26.59	SYE-BX	Syenite breccia with carbonatite infill	Pink-red, fg-mg, k-fspar 60%, bt 30%, qtz 5%, plag 5%. Crbt veining up to 2cm, erratic, stockwork(?). Syn clasts have reaction rims of black bt?, contacts are sharp to locally undulating. CRBT is fg-cg locally, light purple-pink, disseminated hem. Fg blue elongate crystals <1mm, amph(?). Upper contact approx. @ 15dTCA
PGH-18-04	26.59	43	SYE-BX	Carbonatite Breccia	26.59-39.75: Green-grey, fg, carbonate in groundmass, elongate green-black crystals (amph?) <1mm, mottled texture with carbonatite, noticeable zoning within more 'mafic' unit. Crbt; light green-red (hem), pale lighter coloured alteration halos around crbt (more carb in groundmass?). 3% sulphides disseminated and along contact. Brecciated contact (15/150) @ 39.75-40.15, low angle, undulating, maximum width of 2.5cm, pink-cream-black, calcite dominated, clasts up to 1.5cm (calcite clasts appear as two generations, different colours and textures). Pink and white calcite are infill with purple-red clasts are sub-angular with disseminated sulphides and patchy hem alt'n. 40.15-43.00: pink-red clasts, angular, bt>kspars>ep, dissolution along clast boundaries, hydrothermal breccia, infill crbt. Crbt massive 42.37-43.00, weakly banded (15/075), light blue-pink, fg blue amph(?) elongate crystals parallel to banding.
PGH-18-04	43	45.75	SYE-BX	Syenite breccia with carbonatite infill	Moving away from contact bt decreases, crbt in groundmass, bt being alt to chl. Minor crbt veins with bb contacts (35/110).
PGH-18-04	45.75	48.56	CRBT	Carbonatite	Two phases of CRBT, 1>2, 2 xc 1, 1) light blue-pink, undulating bands, pink-blue-cream, blue bands contain fg elongate blue mineral (amph?), pink is calc. Contain highly altered, angular, syn clasts(?). 80% bt with cc in groundmass, and diss sulphides. 2) light green-red, 5mm alt halo, radiating hem/cc from contact inwards, dol>calc (70/30). Diss sulphides. Two intersections, largest 10cm. Banding in 1 is between 10-25 / 045-020 (α/β)
PGH-18-04	48.56	54.96	SYE	Syenite with minor crbt veins	Fg, mod-strong hem selectively pervasive through groundmass. Fibrous blue amph(?) near contact with crbt, chl replacing bt. Crbt veins <5cm. Sphalerite(?) @~53m Sharp LC.
PGH-18-04	54.96	55.85	CRBT-BX	Carbonatite breccia SYN clasts	Light green-grey-red, dolomite>calcite>qtz, brecciated contacts, very weakly undulating diffuse banding, Upper 0.5m in bx 10% py. Clasts are highly altered syn, alt rims (bt, crbt groundmass, hem),
PGH-18-04	55.85	68.95	SYE	Syenite	Fg-mg, red-black-green, groundmass hem patchy hem alt, bt being alt to chl blue-green. Crbt veins up to 5cm.
PGH-18-04	68.95	74.35	CRBT-BX	Carbonatite veins/bx and Syenite	CRBT varies from 10-90cm, smaller (<20cm) are light blue-pink as described above. Veins >20cm are light green-red to grey-cream in colour, locally mottled to weakly banded. Disseminated hem in all veins.
PGH-18-04	74.35	74.96	SYE-BX	Brecciated Syenite + CRBT	Syn clasts are moderately altered with diffuse boundaries, k-spar dominant w/chl. CRBT infill; grey-blue-pink, fg, diss sulphides.
PGH-18-04	74.96	80	QTZ-SYE	Quartz Syenite	Fg-cg, xtals up to 4mm, Qtz 15%, k-fspar 60%, bt 15%, plag 10%. Bt being alt to chl (blue-green). Patchy moderate hematite alteration. Contact with BX 45/155. Crbt veins <2cm.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-04	80	80.87	SYE-BX	Syenite breccia with carbonatite infill	Clasts are tabular to irregular, sub angular, up to 5cm, dissolution boundaries and fractures with crbt infill, alt to 80% bt (locally near UC) with carb groundmass. Crbt infill rimmed by blue amph(?) and blue-green chl. Syn fenitized, bt being replaces partially to completely by blue, fibrous, radiating amph(?). CRBT; dol >calc, blue-grey-light green, fg sugary texture locally, diss hem in light-green. UC @ 45/155 LC @ 60/160
PGH-18-04	80.87	83.5	QTZ-SYE	Quartz Syenite	Med red-pink, 60% k-fspar, 15% plag, 15%qtz, 10% bt. 81.57-81.83: dark green, sharp contacts, carb in groundmass with crbt @ LC. Possibly section of MD? Non-magnetic, chl rich.
PGH-18-04	83.5	83.88	CRBT	Carbonatite	Light green-grey-blue, fg, diffuse wispy banding, dol>calc, bands defined by lighter colour (cream) are white under UV (apatite). Later stage as dol clasts within bands. Disseminated hem <1mm
PGH-18-04	83.88	84.6	SYE-BX	Syenite breccia	Moderately-highly altered SYN with crbt infill, crbt infill < 2cm. Syn being altered to ~80% bt (+ blue amph?/chl). Syn has reaction rims where in contact with crbt veining. Trace disseminated py.
PGH-18-04	84.6	91.65	QTZ-SYE	Quartz Syenite	15% qtz, 70% k-fspar, 15% bt. Fg-vcg (locally k-fspar up to 2.5cm), patchy weak-mod hem alt. Fg, grey crbt dykes up to 1.5cm multiple orientations. Trace diss sulphides. LC sharp @ 35/200.
PGH-18-04	91.65	93.69	CRBT-BX	Carbonatite + Syenite breccia	Syn clasts have heavily altered reaction rims to black-green chl, clasts are sub-angular, moderate patchy hem alt. Trace diss py/blebs up to 1cm. CRBT purple-grey, dark crbt has diffuse banding and fg weak bands of apt. light purple is penetrating contact with dark grey. Mafic clasts are dark green, fg, up to 4cm, rimmed by calcite.
PGH-18-04	93.69	95.7	SYE	Syenite	Numerous fractures with chl fill, multiple orientations up to 8mm wide, fg syn <2mm. Bt alt to chl. Minor intersections of CRBT up to 3cm. Sharp lower contact with BX.
PGH-18-04	95.7	96.9	SYE-BX	Brecciated contact w/ CRBT	Breccia zone ~0.5m wide, bt being replaced by chl, dissolution of clast boundaries and along contacts with crbt. CRBT cream fg-cg crystals up to 7mm, green-black (chl/bt rich?) zones with crbt in groundmass (altered MD?).
PGH-18-04	96.9	118.7	MDYKE	Dyke	Red-black-green, magnetic, carb in groundmass, chl rich, hem, vfg local carb veining up to 4mm. Core is blocky and broken up. Fractures coated in chl, greasy, slickenslides visible but no orientation. BX vein @ 97.40: CRBT (cg)+ clasts of MD and blue amph(?)/chl. LC at 15d TCA, nearing contact vesicles filled with carb, and clasts(?) of dark grey crbt zone similar to ~93.50m
PGH-18-04	118.7	120.46	MDYKE	Syenite + MD	Contact zone. Green-red, carbonate alt groundmass, locally unaltered neph syn, dominated by chl. Locally magnetic carb alt dyke.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-04	120.46	133.4	QTZ-SYE	Quartz Syenite	Locally up to 10% qtz, fg-mg, hem/chl alt along grain boundaries, chl replacing bt? And along fractures. Minor crbt veining <20cm. 125.65-125.85: blue-green, fg, wavy discontinuous banding, 3% py.
PGH-18-04	133.4	136.5	CRBT-BX	Carbonatite Breccia w/ Syenite clasts	CRBT light purple-blue-green, fg, containing amph?(1mm crystals, elongate, black, within blue-crbt), lighter purple crbt appears to be 'core' with blue crbt rimming/infilling smaller fractures (finitization). Light crbt contains diss hem / trace py. Syn clasts are highly altered with bt/chl+crb filling fractures/between fspar.
PGH-18-04	136.5	140.6	SYE-BX	Carbonatite Breccia	Clast dominant (syn), zones of crbt up to 40cm. Clasts are from 5mm-5cm, diffuse boundaries, fractured, mod-strongly altered. CRBT; light purple-cream-green-blue. Fg, rimmed by blue amph/chl. Locally wispy banding, fg apt, diss trace py/hem + other fg black mineral.
PGH-18-04	140.6	143.35	CRBT-BX	Carbonatite + Breccia	Dominated by massive CRBT, light blue-pink, weakly banded, 20% fg amph, trace diss py. Brecciated syn clast ~0.5m, angular clasts with rxn rims described above. Local small scale faulting at 140.80, normal antithetic faults, displacement 2cm LC brecciated
PGH-18-04	143.35	144.88	SYE	Syenite	Pink-green-blue, fg, fractures filled with crbt, chl/amph, bt alt to chl. Qtz 10%.
PGH-18-04	144.88	145.4	CRBT	Carbonatite	Light blue-purple fg CRBT, weak wavy banding defined by concentration of amph. BX UC, Sharp LC
PGH-18-04	145.4	148.2	SYE-BX	Syenite + Carbonatite infill	Heavily fractured, clasts are angular with dissolution boundaries and relatively unaltered cores (halos <4mm). CRBT blue-pink-purple, fg amph(?)/ hem, wispy bands locally.
PGH-18-04	148.2	160	SYE	Syenite	Modal % as above; minor CRBT veins <10cm, dissolution along boundaries.
PGH-18-04	160	160.7	SYE-BX	Syenite Breccia	Clasts are angular to sub-rounded, 7mm-9cm, diffuse boundaries, locally 60% alt to bt/chl/blue amph. CRBT; light blue-pink, fg, interstitial apatite
PGH-18-04	160.7	163.3	SYE	Syenite	Fg-cg, med red-pink, crystals 1-10mm, carb/chl/hem/amph alt. Locally blebs of py up to 1cm (Trace 2%) multiple crbt veins from 3mm-10mm
PGH-18-04	163.3	164.4	CRBT	Carbonatite	BX upper contact with slickensides, silic-cal veins, grey-green, undulating to sharp planar contacts. Diss fg hem. Cross cut by small crbt vein (7mm)
PGH-18-04	164.4	166	SYE-BX	Syenite Breccia	Fg-cg xtals up to 8mm, mod-str hem alt, multiple <3mm crbt veins (erratic). Bt being alt to chl (blue-green), blue amph(?). Lower contact bx.
PGH-18-04	166	167	CRBT	Carbonatite	Wavy diffuse banding @ ~10-15d TCA, pink-blue, fg, bands defined by colour and % blue amph. Brecciated lower contact at ~10/255
PGH-18-04	167	174	SYE-BX	Syenite breccia with CRBT infill	SYE; med red-pink, fg-cg crystals up to 2cm, bt replaced by chl/blue amph. In bx clasts up to 10cm locally. CRBT; fg, blue-pink-light green, cores are pink rims are blue chl/amph. Locally weakly banded. Diss hem. CRBT zones up to 30cm.
PGH-18-04	174	177.91	SYE	Syenite	As above; minor crbt bx 175.46-175.80

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-04	177.91	182.7	SYE-BX	Syenite Breccia	Intermittent crbt dykes up to 30cm enclosed by syn bx zones up to 1.4m. 5-10% Qtz, 10% plag, 15% chl/amph (alt bt), 50% k-fspar, 20% neph. CRBT; diffuse undulating banding defined by abundance of 3mm amph, trace diss py, diss hem.
PGH-18-04	182.7	202.05	SYE	Syenite	SYE; med red-pink, fg-cg, Qtz 10%, plag 15%, bt, 10%, Neph 15% k-fspar 45%. Bt alt to chl/amph, fenitization near contacts with CRBT veins. 183.50-184.456: CRBT; light green-grey to purple, trace diss py, diss 5% hem. Sharp contacts. LC with 15/120.
PGH-18-04	202.05	206.55	CRBT	Carbonatite with minor Mafic Dyke(?)	CRBT; light pink-blue-green, wavy wispy banding (x of amph?), two phases of CRBT 2xc1, 1) near upper contact, weakly banded pink-blue,-purple, fg trace diss py, trace hem. 2) unbanded, light green, 15% dis hem, dol>calc MD; xc phase 2 CRBT, bt/chl(70%), amph (15%), carb in groundmass, locally magnetic. Diffuse gradational contacts.
PGH-18-04	206.55	211	SYE-BX	Syenite Breccia	SYE clasts up to 15cm, reaction rims 3mm-7mm (bt/chl), clasts are angular, core composed up 70% k-fspar, 10%Qtz, 10% bt, 10% plag. Infill is CRBT; cream-light blue-pink, trace fluorite/bt/hem 210-211: crbt, light green-blue-pink, fg, undulating discontinuous banding, trace diss py/hem. Clasts as above, locally sub-rounded.
PGH-18-04	211	216.8	SYE	Syenite	Med red-pink, mg-cg, Qtz 10%, bt alt to chl/blue amph. 2 intersections of MD 211.40-211.90, 213.70-214; magnetic, grey-green, bt/chl dominated, carb in groundmass.
PGH-18-04	216.8	222.66	CRBT	Carbonatite	Minor 0.5m Clast up SYN BX near upper contact. CRBT; locally mottled-weakly banded, mostly massive. Colour change progressing down hole, dependant on min(?), bottom m containing diss vfg black-blue metallic mineral. 217.3-218.70: brecciated UC, contact within crbt (2 phases bx contact). light pink-green, lg fg apt cum(?) up to 3mm locally forming weak bands. Rimmed by pale beige mineral REE-fluorocarbon? vfg along grain boundaries. Trace diss anhedral py. 218.70-219.17: dark green-grey, fg-mg, chl, pyx/amph, carb in groundmass. non-magnetic, bx LC w/ CRBT, diffuse planar UC. 219.17-220.00: light green-purple, diss red mineral (hem), pale beige vfg mineral along grain boundaries, wispy bands of black-red hem. 220-222.30: light pink-purple-green-blue, fg, massive, diss fg black-red(hem), pale beige mineral rimming crystals. trace diss py 222.30-222.60: grey-green, increase in hem, and 5% vfg black metallic mineral.
PGH-18-04	222.66	227	SYE	Syenite	As above; 223.15-223.55: grey-green, crbt alt, non-magnetic, irregular contact. Crbt veins <10cm.
PGH-18-04	227	228.2	CRBT	Carbonatite	Cream to light pink-green-purple-blue, calc/dol, massive, trace diss py, wispy bands of blue mineral, locally weakly banded brecciated UC sharp LC

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-04	228.2	230	SYE	Syenite	As above. Sharp LC @ 55/075.
PGH-18-04	230	232.67	CRBT	Carbonatite	Light pink-green, massive to weak irregular banding (colour change), trace diss anhedral py up to 8mm, diss hem. Pale beige/cream mineral along crystals. Apt cumulates up to 3cm, diffuse boundaries.
PGH-18-04	232.67	233.91	SYE	Syenite	As above. Irregular LC with carbs.
PGH-18-04	233.91	234.45	CRBT	Carbonatite	Cream to light green-pink-blue, wavy weak banding, trace diss py anh <3mm stringers, brecciated LC
PGH-18-04	234.45	235.9	SYE	Syenite	As above. Undulating dissolution along contact.
PGH-18-04	235.9	237.85	CRBT	Carbonatite	Two phases: Rims: light purple, fg, very diffuse banding, trace anh py up to 3mm, beige-red vfg mineral along weak bands. Core: light green-purple, light salmon-beige vfg mineral along weakly formed bands. Increased hem up to 10mm, brown staining (REE fluorocarb?). Apt cumulates up to 10mm
PGH-18-04	237.85	240.48	SYE-BX	Syenite breccia w/ Carbonatite infill	Syenite as above. Breccia beginning at ~239m, syn clasts angular, mm displacement, strong reactions rims up to 7mm blue-green chl/bt? CRBT infill light pink-cream, diss red min (hem), calc>dol, patchy fluorite.
PGH-18-04	240.48	241.44	CRBT	Carbonatite	Brecciated upper contact. Light pink-blue-green-grey, wispy bands, fg black mineral, diss hem up to 5mm, trace diss py, brown vfg mineral along grains (REE fluorocarb?), local 'bands' with apt (green-brown-red)
PGH-18-04	241.44	243.37	SYE	Syenite	Brecciated locally, strongly chl/bt/carb alt, crbt infill in bx zones. CRBT cream to light pink-blue, fg, diss hem, clasts syn completely alt to bt?
PGH-18-04	243.37	244.9	CRBT	Carbonatite	Brecciated upper contact Light green-red-pink-blue, fg, massive diss hem, fg trace diss black-blue metallic mineral, vfg salmon-beige along grain boundaries creating very weak wispy bands.
PGH-18-04	244.9	249.33	SYE-BX	Syenite breccia w/ Carbonatite infill	Clasts up to 10cm, angular, reaction rims to completely altered clasts to bt/chl/amph. CRBT infill from 2mm-15cm, minimal movement of clasts (hydrothermal bx). CRBT; pink-cream, fg, locally weakly banded,
PGH-18-04	249.33	261.6	MIX ZONE	Syenite with minor phases of Mafic Dyke and Carbonatite	SYE; light red-pink, bt up to 50%, qtz 10%, neph 20%, k-fspar 20%. Fg, bt alt to chl, patchy weak hem alt. MDYKE; 250.41-250.64; non-magnetic, light green, carb alt groundmass. & 255-255.78; magnetic, black, fg, amygdales filled with carb. CRBT; 252.28-252.96; cream-pink-blue, fg, wispy brown discontinuous pods near contacts (apt), trace diss py, interstitial REE fluorocarb(?), diss hem 256.40-256.67: cream to pink, massive, wispy bands of blue mineral + apt, diss hem, gradational contacts.
PGH-18-04	261.6	265.2	CRBT	Carbonatite	Light blue-grey to cream-pink, massive, fg, local highly alt clasts of syn. 10% diss py (<2mm) + fg black mineral. Diss hem, elongate blue mineral (amph?).

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-04	265.2	279	SYE	Syenite	Pink-red-black, fg-mg, chl/amph replacing bt up to 60% locally, qtz 20%. Minor crbt veins/bx up to 15cm, between 30-60 dtca.
PGH-18-04	279	281.2	SYE-BX	Syenite breccia with carbonatite infill	Clasts up to 5cm, angular to sub-rounded, reactions rims up to 8mm, mosaic bx. Intruding low angle CRBT dyke; light green-pink-cream, fg, locally weakly banded, fg diss trace py, trace other fg black-blue metallic mineral.
PGH-18-04	281.2	283.1	SYE-BX	Carbonatite with syenite breccia	Syenite as above. Crbt as multiple dykes increasing in size moving down hole.
PGH-18-04	283.1	286	SYE	Syenite	SYE; pink to black-green, locally 40% bt/chl, fg to locally cg, bt alt to chl.
PGH-18-04	286	289.35	SYE-BX	Syenite breccia with carbonatite infill	SYE black-green-red, clasts sub-angular to sub-rounded, rxn rims, clasts alt to bt qtz/carb. CRBT; cream to light pink-blue, fg, diss red hem.
PGH-18-04	289.35	290.5	SYE	Syenite	As above.
PGH-18-04	290.5	291.7	CRBT-BX	Carbonatite with syenite breccia	0.5m CRBT; cream with patchy pink-blue, massive, calc>dol BX; syn clasts rxn rims, angular-sub, alt to bt,
PGH-18-04	291.7	294.8	SYE	Syenite	Bt/chl 50%, qtz 15%, fspar 35%, crbt veining <1cm.
PGH-18-04	294.8	295.8	SYE-BX	Syenite breccia with carbonatite infill	Clasts are sub-angular, rxn rims, from 5mm-4cm. CRBT; weak internal colour zonation, into 1cm fractures crbt is rimmed by blue-green amph/chl. X-cut qtz vein up to 6mm.
PGH-18-04	295.8	297	SYE	Syenite	As above.
PGH-18-04	297	298.15	CRBT-BX	Carbonatite breccia	Light green to cream-blue-pink, fg, mottled, locally massive hem, syn clasts have dissolution rims. Undulating lower contact.
PGH-18-04	298.15	307	UNKN	Unknown / Glimmerite	60-70% bt/chl, qtz 10%, fspar 10%, local batches of blue amph?, highly alt syenite? Minor crbt veins up to 15cm.
PGH-18-04	307	314.2	SYE	Syenite	Patchy mod-strong hem alt, weakly fenitized, qtz 15%, k-fspar 60%, plag 10%, bt 15%. CRBT veins up to 40cm; light pink to green, fg, diss hem. Diffuse contacts.
PGH-18-04	314.2	315.8	SYE-BX	Syenite Breccia with Carbonatite infill	Brecciated syn with crbt infill up to 90cm. Sye; red-black, patchy hem alt, 50% bt/chl, 40% fspar, 10%qtz. Clasts of syn are angular to sub with rxn rims of blk/green chl/bt? CRBT; light green-blue-grey-pink, fg, vfg wispy light beige along diffuse bands (REE Fluorocarb?), trace diss fg black mineral. diss fg hem, locally bright pink calc>dol.
PGH-18-04	315.8	318.35	SYE	Syenite	Highly altered syn, bt/chl up to 60%, kspar 25%, qtz 10%, 5%plag. Pink-red-black-green, crystals up to 5mm. Multiple xc crbt veins <4mm locally up to 10cm. LC planar, sharp @ 50/235.
PGH-18-04	318.35	319.65	SYE-BX	Syenite breccia with carbonatite infill	Clasts are black, moderately to completely altered, clast dominated, angular-sub, clasts are also fractured, mosaic bx. CRBT; infilling, locally massive, cream to light pink, diss hem, calc>dol, local wispy bands of fg apt (distinguishable under UV as white blue). 3% py as diss and stringers. LC gradational.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-04	319.65	331.1	UNKN	Unknown / Glimmerite	Highly altered qtz syn(?), locally 70% bt/chl, locally vcg up to 2.5cm (plag with pink albite(?) rims), locally zones are qtz fspar rich with only trace bt/chl forming weak banding(?). Small crbt veins <5cm. Pervasive bt/chl/albite alteration
PGH-18-04	331.1	333.7	SYE	Syenite (highly altered) + Carbonatite dykes	Syn(?) alt as above. CRBT as small veins<5cm and two larger described below. 331.10-331.42: cg, cream-light green, hem patches up to 2cm (10%). Diss trace py. Sharp UC/LC. 333.13-333.65: sharp UC undulating bx LC. Cream to light green, mg-cg, massive, trace patchy fluorite, diss hem w/ patches up to 1cm near LC.
PGH-18-04	333.7	342.75	UNKN	Unknown / Glimmerite	Mod-completely alt syn(?), bt/chl/amph dominant >60%-80%. Locally cg sections original mineralogy, unit completely whipped out by alteration. Minor crbt intersections <20cm, local bx. Irregular LC.
PGH-18-04	342.75	346.5	SYE	Syenite	Light pink-cream, neph syn. Patchy chl/bt alt as seen above/below. Fg-cg, crystals up to 3cm (plag, striated xtals, commonly rimed by pink (albite?)). Very weak patchy hem alt. LC gradational.
PGH-18-04	346.5	348.7	UNKN	Unknown / Glimmerite	60-70% bt/chl/amph, black to green, mg, 10% neph(?), <10% qtz. Minor crbt veins <5cm, cream-pink, 2-5% apt. Gradational contacts
PGH-18-04	348.7	353.9	CRBT-BX	Carbonatite + Syenite	Weak-mod hem / albite alt(?), locally fractures with blue-green chl/amph. BX contact w/ CRBT, CRBT 349.0-353.70: inclusions of SYN up to 30cm. CRBT; light green-pink-purple, massive, locally wispy bands of apt cumulates, vfg pale pink mineral along bands/xtals (REE fluorocarb?). Trace diss euhedral-anhedral py + other black fg metallic sulphide(?). LC undulating/sharp, closed.
PGH-18-04	353.9	362.48	SYE-BX	Altered Syenite/Glimmerite + Carbonatite	Highly alt syenite? as above (50-60% bt/chl). Intersections of Crbt up to 60cm with associated BX. CRBT; cream-white, patchy blue mineral along fractures, diss hem/py.
PGH-18-04	362.48	364.05	CRBT	Carbonatite	Massive, mg, cream-white-blue, fg diss blue mineral, Trace diss py. UC bx, LC gradational
PGH-18-04	364.05	372.37	SYE	Glimmerite(?)	50% bt/chl, fenitized SYN? Sharp UC / LC Local intersections of crbt dyke with ass bx up to 40cm.
PGH-18-04	372.37	379.65	MDYKE/CRBT	Mixed zone of multiple dykes, CRBT, Mafic, and Xeno dyke	UC is sharp 372.37-373.35: MD? fg, green-blue, carb alt groundmass, clasts of syn(?), amygdales filled with carb 373.35-374.15: ?, vfg groundmass, polymictic (syn, glim, patches of mgt up to 5mm, fg black mafic?), irregular wavy contacts xc crbt veins. 374.15-376.05: Altered syn @ upper and lower contact. CRBT; cream to light pink-purple, massive, 3% diss fg py + other fg black sulfide(?). vfg pale salmon REE fluorocarb?, Brecciated LC 376.05-379.65: MD?, carb alt, locally magnetic, bt up to 3mm, grey-green, fg-mg
PGH-18-04	379.65	380.7	SYE	Syenite	Pink-red, cg-peg, xtals up to 3cm, kspar (60%), Plag (20%), qtz (10%), bt (10%). Bt alt to chl, patchy hem alt.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-04	380.7	381.8	CRBT	Carbonatite	Light purple-pink to blue, fg, massive. Vfg diss black mineral (Fe-Nb Ox?), wispy banding(?). Local clasts of syn. LC sharp, planar
PGH-18-04	381.8	383.5	SYE	SYN	Mg, red-pink, bt alt to chl/amph.
PGH-18-04	383.5	389.2	SYE-BX	Syenite Breccia + Carbonatite	Breccia zones up to 0.4m, strongly-completely altered syn clasts to bt(?), clasts are rimmed by black fg bt. CRBT infill from <5mm - 0.5m. CRBT; light blue-purple-pink, fg, vfg pale beige mineral along weakly defined bands (REE fluorocarb?). Trace diss hem. fg bt/amph (blue). Bands defined by xc of bt/amph/py/fg black mineral (pyrochlore?). Locally weakly banded @25/335.
PGH-18-04	389.2	398.5	QTZ-SYE	Syenite w/ minor Carbonatite	Fg-cg, xtals up to 3cm, light pink-red, chl alt bt, K-fspar (50%), plag (25%), qtz (15%), bt (10%), plag rimmed by hem? CRBT up to 0.5m; light green-grey, fg.
PGH-18-04	398.5	417.3	SYE	Syenite?	Fg to locally cg zones xtals up to 3cm, pink-red to blue-green, patchy moderate to strong bt/chl/amph 60% of rock (alt). Locally unaltered neph syn (fg, pink, neph 40%, qtz 10%, k-fspar 40%, bt/chl 10%). Intersections of crbt <5cm, fenitization halos around veins.
PGH-18-04	417.3	418.33	MDYKE/CRBT	Carbonatite + Mafic Dyke	Outer zones possibly carb alt mafic dyke?; bt/chl, carb throughout groundmass and filling amygdales, locally magnetic, gradational contact with CRBT. CRBT; pink-green-grey, fg, bt, diss hem, gradational contacts.
PGH-18-04	418.33	424	SYE	Syenite	Fg -cg, k-fspar (40%), qtz (10%), plag (10%), neph (20%), bt (20%). Bt alt to chl, blue amph rimming crbt veins. 421.63-421.80: CRBT, fg, grey-green, patchy hem, sharp UC / LC.
PGH-18-04	424	424.98	CRBT-BX	Carbonatite breccia	First 0.5m syn bx. 424.5-425: CRBT; cream to pink, trace blebs of py up to 1cm, local fg blue amph?
PGH-18-04	424.98	427.43	PEG	Pegmatitic Alkali	Xtals up to 3cm, patchy albite alt?, chl along fractures, neph (60%), qtz(10%). Lower contact with fg SYN runs parallel TCA.
PGH-18-04	427.43	427.6	CRBT	Carbonatite	Weakly banded, fg, light purple-grey-green, wispy bands of blue mineral. Sharp UC (50/120)/LC(60/115)
PGH-18-04	427.6	429.05	SYE	Syenite	Fenitized syenite, as above. LC sharp @ 45/80.
PGH-18-04	429.05	432	SYE-BX	Syenite Breccia + Carbonatite	Peg sye + sye clasts, rxn rims, angular to sub, from 5mm-5cm, rxn rims blk-blue (bt/amph/chl?). CRBT infill; light pink-blue-grey, fg, local wispy 'bands' defined by x of amph?. Trace fg diss black mineral pyrochlore?
PGH-18-04	432	435	SYE	Syenite	Fenitized syn as above. Alt w/ blue amph/chl, patchy hem.
PGH-18-04	435	436.95	CRBT-BX	Carbonatite + Breccia	Fg, light pink-blue-cream-purple, wispy ropy banding, fg black metallic mineral, trace diss py. Syn clasts up to 10cm, rxn rims as above. Ap concentrated around clasts. Gradational contact @ 45/40
PGH-18-04	436.95	441.54	SYE	Syenite	Fg, qtz 15%, k-fspar 40%, plag 30%, bt 15%. Bt alt to chl/amph, patchy ham alt along fractures. CRBT intersections <10cm. Chl/amph alt patchy and along fractures. White plag rimmed by pink albite(?). LC undulating @ 50/340.

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DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-04	441.54	443.04	CRBT	Carbonatite	Light purple-pink to cream, fg, massive, masses of fg py up to 5mm, vfg salmon apt(?) along fractures. Diss hem. Trace diss fg blk mineral. UC 50/340, undulating LC 50/315 gradational
PGH-18-04	443.04	449.65	SYE	Syenite and Granite	Fg-mg syenite, cg granite, contact undulating sub-parallel TCA. SYE; red-pink, 40% amph/bt, 40% kspar, 5% plag, 15% neph. local CRBT bx/vein up to 40cm, frequency ~1 every 2m. Light pink-purple, cream, fg, patchy red (hem), wispy vfg apt? 447.10-447.70: MD?, light green, fg, carb alt, non-magnetic.
PGH-18-04	449.65	451	CRBT-BX	Carbonatite Breccia	SYN clasts up to 20cm, sub-rounded, rxn rims of chl, clasts are chl/amph alt. 449.65-449.5: SYN BX 449.5-451: CRBT; light pink-cream-blue, wispy blue banding, massive, last 20cm 10% sulphides (py, po?) + wispy bands of apt.
PGH-18-04	451	454	QTZ-SYE	Alkali Feldspathic	Fg-cg, 20% qtz, 40% kfldsp, 20% plag, 20% bt/amph. Patchy hem alt / along fractures. Green-blue chl/amph.
PGH-18-04	454	458	CRBT-BX	Carbonatite + Alkali Feldspathic	CRBT sub-parallel TCA, undulating bx contact; fg light red-purple-grey, wispy bands, trace hem. Dissolution along clasts. SYN; clasts <1cm, chl/+ blue amph alt, fg,
PGH-18-04	458	470	SYE	Alkali Feldspathic	Chl/bt/amph 40-60%, qtz 5-10%, k-fldsp 30%. Fg, local crbt <10cm; cream-light green-pink, fg, patchy hem, fg diss black mineral, apt cumulates up to 2cm
PGH-18-04	470	475.1	CRBT-BX	Carbonatite + Alkali Breccia	SYE fg, red, rxn rims of bt, clasts up to 10cm, angular to sub-rounded, pink alt halos around fractures. Local masses of unknown orange mineral in syn clasts. CRBT; cream to light pink-green-grey, fg-cg up to 1cm. Massive to locally wispy bands. Patchy fluorite, trace diss py.
PGH-18-04	475.1	481	SYE	Alkali Feldspathic	Locally up to 40% chl/bt/amph, 5% qtz. Syn fg-mg, pink-red, fractures with chl/amph (blue-green). Pink-red alt halos around fractures.
PGH-18-04	481	481.6	SYE-BX	Alkali breccia with Carbonatite infill	0.5m of BX, clasts with rxn rims up to 7mm. Clasts are fg, pink, weak chl alt of bt. CRBT infill; light pink-cream-green, fg, patchy hem up to 2mm. Trace fg black-blue metallic mineral.
PGH-18-04	481.6	484.1	SYE	Alkali Feldspathic	As above.
PGH-18-04	484.1	485.4	CRBT	Carbonatite	Cream to light pink-grey-green-blue, fg with cg calcite up to 2cm elongate xtals. Local alkali clasts up to 4cm, angular/tabular, no rxn rims. 3% py diss, up to 3mm. Patchy fg fluorite. Diss hem and along fractures. Locally wispy bands. UC (60/095)/LC (65/120) rimmed up 5mm black bt/amph?.
PGH-18-04	485.4	486.31	SYE	Alkali Feldspathic	Neph syn?, fg-mg, qtz 5-10%, pink-red, patchy hem/chl (green-blue), UC/LC sharp.
PGH-18-04	486.31	487.6	CRBT	Carbonatite	Light pink-green-grey-purple, greenish veins cross cutting ~3mm thick containing apt with inclusions of py/fg black mineral. Hematite disseminated and along fractures. Vfg light orange mineral along wispy bands. Calc>Dol. BX lower contact.
PGH-18-04	487.6	489.35	QTZ-SYE	Alkali Feldspathic	Qtz 5-10%, bt 30%, k-fldsp 40%, neph 20%. Fg-mg, bt alt chl. Crbt veins <3cm

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DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-04	489.35	489.83	CRBT	Carbonatite	Light pink-purple, massive, red-brown mineral forming wispy band, apt cumulates at UC and LC green-grey up to 2cm. Disseminated hem, trace diss py BX UC/LC
PGH-18-04	489.83	490.95	QTZ-SYE	Alkali Feldspathic	As above.
PGH-18-04	490.95	492.25	CRBT	Carbonatite	Light pink-blue-cream-grey, massive, concentrations of blue elongate mineral (amph?) increase near UC/LC. Trace disseminated anhedral py.
PGH-18-04	492.25	493.15	QTZ-SYE	Alkali Feldspathic	As above, becoming cg in last 0.5m.
PGH-18-04	493.15	508.34	CRBT-BX	Carbonatite + Breccia	Cream to light-pink-blue-green-grey-purple, fg-cg, massive to locally wispy bands. Local sections of alkali bx up to 1.5m. Wispy bands of apt, local cumulates up to 2cm, commonly near alkali clasts / rimming clasts. Blue fg amph(?) up to 3mm. trace diss py w/ local euohedral cubes up to 2mm. diss hem. trace fg black-blue metallic mineral. Patchy trace fluorite. Cal>Dol local bt/black amph, unknown white mineral <1mm in dark blue bands @ ~508m 496.30-500.30: BX zone, Clasts have rxn rims up to 7mm (bt/chl) Scint avg 300, locally up to 475 cps.
PGH-18-04	508.34	510.27	QTZ-SYE	Alkali Feldspathic	Syenite?, fg-mg, 40% bt/chl, locally weakly banded? 5-10% qtz. <2mm veinlets of crbt.
PGH-18-04	510.27	510.9	CRBT-BX	Carbonatite Breccia	Clasts are fractured, sub-rounded with diffuse boundaries, clasts from 1-10cm, completely replaced by bt. CRBT; light pink-purple-cream-blue, fg, apt cum rimming clasts/forming wispy bands. Diss hem. Local fg bt <1mm
PGH-18-04	510.9	513.75	QTZ-SYE	Alkali Feldspathic	Fg to locally cg (up to 2cm), 40% chl/bt/amph, 10% qtz, 45% k-fldsp, 5% other. Minor crbt veins <2cm.
PGH-18-04	513.75	516.7	CRBT-BX	Carbonatite Breccia	Angular clasts with rxn rims of black/brown up to 1cm, or if small enough completely altered to bt. Clasts are angular to sub, mosaic breccia, zones of massive crbt up to 0.5m. Unit dominated by breccia. CRBT; pink-blue, fg, local wispy bands of blue mineral (amph?), trace diss py UC @ 35/240, LC @ 35/250
PGH-18-04	516.7	523.4	QTZ-SYE	Alkali Feldspathic	Pink-red-brown-green, locally 10% qtz, fg-mg, bt being alt to chl. Locally fenitized (blue amph/chl in fractures and surrounding crbt veins). CRBT veins <3cm; pink-cream-blue-green-grey, local patchy fluorite
PGH-18-04	523.4	524.8	CRBT	Carbonatite	Cream to light pink-blue, fg-cg, wispy bands of blue (amph?), bands up to 8cm. Clasts of syn, completely altered to bt. Trace diss py. Apt cumulates forming wispy bands. UC/LC sharp
PGH-18-04	524.8	527.5	QTZ-SYE	Alkali Feldspathic	Locally 30-50% bt/chl/amph, fg to locally cg up to 2.5cm, qtz 5-10%, pink-orange-black/green.
PGH-18-04	527.5	537.75	SYE-BX	Carbonatite Breccia + Alkali Feldspathic	Alkali as above, multiple breccia zones up to 0.5m, multiple crbt veins from 20-60cm. Clasts from 5mm-10cm angular to sub, rxn rims up to 7mm to completely altered clasts. Within clasts infill is crbt and blue amph/chl. CRBT; cream to light-blue-pink-green, fg-mg, massive to locally weakly banded / wispy bands of blue mineral (amph), patchy fluorite, local bt/amph.

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DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-04	537.75	555.17	CRBT	Carbonatite	Massive, fg-cg, cream to light pink-blue-green-purple, locally wispy bands. Blue/green amph up to 5mm, trace diss/stringer py/pyrrhotite (xtals up to 4mm), bt locally up to 5% (3mm). Apt cumulate up to 1cm as blobs and wispy bands. Patchy fg black-brown pyrochlore(?). Within blue patches is fg white (poorly formed, replacing?) mineral locally tetrahedral. Trace disseminated hematite. Weak association with apt occurring near zones with increase amph/bt. UC @ 50/110, LC @
PGH-18-04	555.17	563.9	QTZ-SYE	Alkali Feldspathic	Light grey-pink to black-brown, fg-mg (locally cg up to 2cm), locally weakly banded, local parasitic folding (tight, asymmetrical), lighter 'bands' qtz/ fldsp, darker are chl/bt. Qtz (15%), kfldsp (25%), Neph (25%), bt(30%), 5% other Minor CRBT <5cm. LC @40/40
PGH-18-04	563.9	565.4	CRBT	Carbonatite	Cream to light blue-pink to green, fg-cg, calcite up to 4cm (elongate crystals), locally up to 15% bt (up to 3mm), trace fg disseminated py. 564.4-564.75: 15% bt, apt 20% (green cumulates up to 5cm), fg black pyrochlore. LC @ 30/100, diffuse contact, undulating to irregular.
PGH-18-04	565.4	580.5	QTZ-SYE	Alkali Feldspathic	Light grey-pink to black-brown, fg-mg (locally cg up to 2cm), locally weakly banded,, lighter 'bands' qtz/ fldsp, darker are chl/bt. Qtz (15%), kfldsp (25%), Neph (25%), bt(30%), 5% other. 568-568.80: CRBT; light purple-green-cream, massive, cross cutting undulating band of apt/dol rich crbt. diss hem fg, dissolution along UC/LC, vfg grey-grn crbt 10cm from LC. fg black pyrochlore. 575.70-576.76: CRBT; light purple-pink-green-blue, mottled, fg, diss hem, blue batches contain bt/amph, light green weak bands w/ apt,
PGH-18-04	580.5	592	CRBT-BX	Carbonatite + Alkali Feldspathic Breccia	Mixed zone dominated by CRBT and breccia with minor sections of Alkali. Alkali; pink-red, fg-cg (locally), qtz 5-10%, k-fspar 40%, neph(20%), mafics 30% (bt/chl/pyx?). Clasts are angular to sub angular, minor rxn rims locally (dissolution, not like previous bx where rxn rims were black and bt/chl dominated). Locally blue fg, fibrous amph infilling fractures and along contacts with crbt. CRBT; light pink-blue-green-cream to grey, fg-cg, massive, local wispy bands of blue amph(?), trace diss anhedral masses up to 3mm of blue/black metallic sulphide?, trace disseminated pyrite. 582.75-584.10: cg, apt cumulates up to 5mm forming weak bands. fractures filled with vfg orange-brown mineral Local flow banding(?) near contacts and around larger clasts of Alkali. Locally increase in sulphides py/po up to 5% masses up to 5cm.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-04	592	608	SYE	Alkali Feldspathic with minor Carbonatite	Pink-red to black-green-grey, fg-cg(locally up to 15mm), qtz 15%, 20% bt, k-fldsp 40%, chl 5%, amph 10% (blue), plag 10%. Minor crbt veins < 2cm, local fenitization (blue fg amph, fibrous), chl rimming/replacing bt. Patchy weak to moderate pink-red alt (potassic?), rimming fldsp/penetrating xtals, seems to waxy/wane, areas where bt is more abundant alteration is very weak to non-existent. 596.88-597.86: CRBT; light purple-green, hem along fractures and patchy. trace diss py. diss fg metallic, blue mineral <1mm in proximity to hem. Light green -brown apt cumulate near contacts and surrounding clasts 605.3-606.10: CRBT + Minor Alkali; CRBT; light pink-blue, wispy bands of apt cumulate <4mm wide
PGH-18-04	608	611	CRBT-BX	Carbonatite with Alkali	Light purple-pink, fg, massive, local wispy bands of blue amph and of br-grn apt(?) near UC/LC. Trace diss py + blk anhedral sulphide. Hematite along fractures. Dissolution along UC/LC, rimmed by blue amph(?). Locally bx alkali clasts? Up to 15cm, undulating low angle TCA contacts.
PGH-18-04	611	617	CRBT-BX	Carbonatite + Alkali Feldspathic	Alkali; dark grey-green (611-613.5) more bt/chl rich, fg-cg locally, qtz 10%, k-fspar 50%, bt 20%, neph (10%), amph (10%). Multiple veins of CRBT from 1-50cm and local breccia zones and fenitized alkali. CRBT; light pink-purple-green-blue, fg, diss hem, apt cumulates locally green-brown, trace diss py local euhedral xtals up to 3mm, masses of grey-black metallic sulphide up to 4mm across (hem?)
PGH-18-04	617	620.7	CRBT	Carbonatite	Light pink-purple-green, blue, fg, massive, local wispy bands of apt cumulate/amph (blue mineral), hem along fractures/diss, trace diss py up to 2mm. UC BX, LC BX w/ rxn rims
PGH-18-04	620.7	634.5	QTZ-SYE	Alkali Feldspathic	Fenitized black-green-blue to grey, qtz 10%, bt/chl 30-40%, k-fldsp 30%, neph (20%), fg-mg, <5mm, veins of CRBT <5mm with alt halos of chl/amph. 622.35-622.65: light green-grey, fg, crbt alt MD?, non-magnetic 630.58-630.78: CRBT, green-purple-grey, fg, diss hem, planar UC/LC LC gradational (alteration decreasing).
PGH-18-04	634.5	650.1	QTZ-SYE	Alkali Feldspathic	Fg-locally vcg, Qtz 15%, k-fldsp 40%, plag 25%, bt/chl 20% 636.80-640.84: Pegmatitic, fldsp crystals up to 8cm with perthitic texture 645.65-646.35: CRBT /BX zone, mottled, pink-green-blue, apt cumulate forming wispy bands
PGH-18-04	650.1	656.65	MDYKE	Dyke	UC obscured by broken core fg, aphanitic at margins, grey-green, magnetic, patchy hem/chl alt. LC 40/335
PGH-18-04	656.65	660.8	QTZ-SYE	Alkali Feldspathic	30% bt/chl, qtz 10%, k-fldsp 40%, neph (20%). Fg-cg locally, fenitized (blue amph rimming crbt veins). CRBT undulating veins up to 10cm, grey-cream to light purple, locally cg, black-blue rims on veins.
PGH-18-04	660.8	661.8	CRBT	Carbonatite	Cream to light blue, massive, cg, LC crbt is pink-light green and fg, elongate xtals of calcite up to 3cm rimmed by blue amph(?). Trace diss py. Local diss hem near contacts. UC euhedral py up to 5mm. UC @ 70/50, undulating. LC undulating 80/90
PGH-18-04	661.8	662.74	SYE-BX	Alkali Feldspathic and breccia zone	Alkali fspar as above. BX 662.20-662.72: highly chl/bt/crbt altered, polymictic, angular crbt clasts, altered alkali clasts, 5% diss py

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-04	662.74	672	QTZ-SYE	Alkali Feldspathic + minor Carbonatite	Alkali as above. CRBT veins/bx up to 30cm. Light green-grey to purple, diss hem, trace diss py, fg,

ORIENTED STRUCTURES

DDH	Depth	Type	Alpha (°)	Beta (°)	Gamma (°)	Title	Description
PGH-18-04	40	CT	15	150			undulating brecciated contact btw crbt+MD / crbt+Syn
PGH-18-04	43.86	CT	35	110			brecciated crbt vein
PGH-18-04	47.36	CT	25	180			phase 2 dolo rich dyke, 10cm think
PGH-18-04	47.75	CT	45	140			phase 2 dolo rich dyke, 3cm think
PGH-18-04	80	CT	45	155			contact between SYN and BX
PGH-18-04	80.89	CT	60	160		CCT BX; lower contact between CRBT BX and SYN	sharp, rough, undulating, open,
PGH-18-04	81.83	CT	70	50		LC CRBT dyke and SYN	minor dissolution, planar, closed, chl
PGH-18-04	83.49	CT	70	130		UC btw CRBT/SYN	closed, undulating, dissolution/alt to chl
PGH-18-04	84.84	BND	60	70		diffuse banding in CRBT	
PGH-18-04	84.87	CT	75	55		LC CRBT dyke and SYN	undulating, closed
PGH-18-04	91.5	JNT	65	125		Joint in SYN	planar, slightly rough, chl infill
PGH-18-04	91.67	CT	35	200		Contact btw SYN/CRBT	planar, closed
PGH-18-04	119.57	JNT	45	20		joint in MD	undulating, chl, smooth
PGH-18-04	145.4	CT	40	55		LC CRBT dyke and SYN	planar, slightly rough, chl/amph infill
PGH-18-04	145.62	JNT	75	245		jnt in syn	planar, slightly rough, chl/amph infill
PGH-18-04	166.63	CT	10	255		lower contact of CRBT	undulating, closed
PGH-18-04	182.85	JNT	40	200		jnt in syn	planar, slightly rough, chl
PGH-18-04	184.36	CT	15	120		lower contact of CRBT and SYN	undulating, closed
PGH-18-04	184.7	JNT	75	320		jnt in syn	planar, slightly rough, chl
PGH-18-04	201.82	JNT	55	55		jnt in syn	planar, rough, chl infill
PGH-18-04	202.05	CT	50	300		Contact btw SYN/CRBT	planar, sharp, closed
PGH-18-04	202.4	BND	45	325		weak banding in CRBT	defined by amph x
PGH-18-04	214	CT	25	335		LC MD w/ SYN	undulating, closed
PGH-18-04	216.78	CT	70	220		LC SYN w/ CRBT BX	sharp, open, slightly roungh
PGH-18-04	230.05	CT	55	75		UC btw CRBT/SYN	shapr, planar, closed
PGH-18-04	235.9	CT	55	85		UC of cRBT w/ SYN	undulating
PGH-18-04	245	CT	25	30		LC CRBT BX	slickenslides, chl, unudlating
PGH-18-04	250.42	CT	50	270		UC MDYKE w/ SYN	sharp, planar, rough, open
PGH-18-04	250.64	CT	75	330		LC MDYKE w/ SYN	shap, planar, open
PGH-18-04	255.3	CT	30	55		UC MDYKE w/ SYN	sharp, undulating, closed
PGH-18-04	255.78	CT	40	60		LC MDYKE w/ SYN	sharp planar, closed
PGH-18-04	283.1	CT	20	55		LC CRBT w/ SYN	sharp planar, closed
PGH-18-04	285.05	CT	30	195		UC CRBT w/SYN	sharp, planar, closed
PGH-18-04	285.5	CT	35	265		LC CRBT w/ SYN	sharp, planar, closed
PGH-18-04	290.5	CT	60	160		UC CRBT w/SYN	shapr, planar, closed

ORIENTED STRUCTURES

DDH	Depth	Type	Alpha (°)	Beta (°)	Gamma (°)	Title	Description
PGH-18-04	318.35	CT	50	235		UC BX with SYN	sharp, planar, closed
PGH-18-04	364.1	CT	75	140		LC CRBT w/ SYN	undulating, closed
PGH-18-04	372.35	CT	40	65		LC SYN w/ MD	sharp, planar, closed
PGH-18-04	373.35	CT	15	330		MDYKE w/ Xeno dyke	irregular, closed
PGH-18-04	374.1	CT	20	345		Xeno Dyke w/ MDYKE	irregular, closed
PGH-18-04	387.4	BND	25	335		weak banding in CRBT	wavy bands defined by xc of fg black/blue mineral
PGH-18-04	412.7	VN	35	55		small CRBT vein	rough, crbt, chl, planar
PGH-18-04	417.3	CT	55	280		UC of MD? With SYN	undulating, closed
PGH-18-04	418.28	CT	55	290		LC of MD? w/ SYN	undulating
PGH-18-04	418.35	CT	40	290		CRBT vein below MD cct	planar, closed
PGH-18-04	421.62	CT	40	120		UC of CRBT w/ SYN	planar, closed
PGH-18-04	421.8	CT	40	40		LC CRBT w/ SYN	planar, closed
PGH-18-04	427.43	CT	50	120		UC CRBT w/SYN	planar, closed
PGH-18-04	427.55	CT	60	115		LC CRBT w/ SYN	planar, closed
PGH-18-04	429.05	CT	45	80		UC CRBT w/SYN	planar, closed
PGH-18-04	436.95	CT	45	40		LC CRBT w/ SYN	undulating, closed
PGH-18-04	441.45	JNT	30	325		jnt in syn	planar, rough, chl infill
PGH-18-04	441.55	CT	50	340		UC CRBT w/SYN	undulating, closed
PGH-18-04	443.05	CT	50	315		LC CRBT w/ SYN	gradational
PGH-18-04	458.6	JNT	70	270		jnt in syn	undulating, rough,
PGH-18-04	459.86	JNT	50	340		jnt in syn	planar, rough, chl infill
PGH-18-04	461.7	JNT	85	320		jnt in syn	planar, very rough, amph infil;
PGH-18-04	462.68	CT	40	190		LC CRBT w/ SYN	gradational
PGH-18-04	466.2	VN	35	220		CRBT vein LC	undulating, closed
PGH-18-04	466.65	VN	70	30		CRBT vein UC	planar, sharp, closed
PGH-18-04	466.8	VN	75	40		CRBT vein LC	planar, sharp, closed
PGH-18-04	470	CT	45	280		CRBT BX	planar, closed
PGH-18-04	478	JNT	50	10		jnt in syn	planar, rough, chl infill
PGH-18-04	481.45	CT	20	240		LC BX	planar, closed
PGH-18-04	484.1	CT	60	95		UC CRBT	planar, closed
PGH-18-04	485.4	CT	65	120		LC CRBT	planar, closed
PGH-18-04	492.25	CT	85	175		LC CRBT	undulating, open, cc/bt
PGH-18-04	493.13	CT	45	135		UC CRBT	irregular, closed
PGH-18-04	508.34	CT	75	140		LC CRBT	planar, rxn rim, closed
PGH-18-04	513.75	CT	35	240		UC CRBT BX	planar, closed

ORIENTED STRUCTURES

DDH	Depth	Type	Alpha (°)	Beta (°)	Gamma (°)	Title	Description
PGH-18-04	516.7	CT	35	250		LC CRBT BX	gradational, closed
PGH-18-04	523.4	CT	65	240		UC CRBT	planar, closed
PGH-18-04	524.75	CT	45	75		LC CRBT	planar, closed
PGH-18-04	528.3	CT	30	240		UC CRBT BX	planar, closed
PGH-18-04	533.28	CT	35	320		BX within CRBT	planar, BX zone 2cm wide.
PGH-18-04	534.76	CT	25	125		UC CRBT	planar, closed
PGH-18-04	535.3	CT	25	130		LC CRBT	planar, closed
PGH-18-04	536.6	CT	35	140		LC CRBT BX	planar, diffuse cct
PGH-18-04	537.78	CT	50	110		UC CRBT	planar, closed.
PGH-18-04	554.85	CT	15	280		LC CRBT BX	planar, bx, closed
PGH-18-04	562.3	BND	20	260		BND in ALKALI?	weak band?
PGH-18-04	562.86	CT	55	40		LC CRBT	undulating, closed
PGH-18-04	563.9	CT	40	40		UC CRBT w/ Alkali	undulating, gradational (rxn rim)
PGH-18-04	565.35	CT	30	100		LC CRBT w/ Alkali	undulating, gradational (rxn rim)
PGH-18-04	568.16	CT	55	100		UC CRBT w/ Alkali	planar, closed
PGH-18-04	575.67	CT	65	100		UC CRBT w/ Alkali	undulating, closed
PGH-18-04	576.75	CT	70	120		LC CRBT w/ Alkali	undulating, closed
PGH-18-04	580.25	CT	50	180		UC CRBT w/ Alkali	planar, closed
PGH-18-04	585.67	CT	55	135		LC CRBT w/ Alkali	planar, closed
PGH-18-04	588.67	CT	80	80		LC CRBT w/ Alkali	undulating, closed
PGH-18-04	589.1	CT	20	230		UC CRBT w/ Alkali	undulating, closed
PGH-18-04	591.15	CT	25	240		LC CRBT w/ Alkali	planar, closed
PGH-18-04	597.85	CT	50	150		LC CRBT w/ Alkali	planar, closed
PGH-18-04	605.42	CT	25	230		LC CRBT w/ Alkali	planar, closed
PGH-18-04	605.78	CT	70	255		UC CRBT w/ Alkali	planar, closed
PGH-18-04	608	CT	70	330		UC CRBT w/ Alkali	undulating, closed
PGH-18-04	616.4	CT	60	180		UC CRBT w/ Alkali	planar, bx
PGH-18-04	620.55	CT	55	140		LC CRBT w/ Alkali	planar, closed
PGH-18-04	622.35	CT	25	265		UC Dyke	planar, closed
PGH-18-04	622.66	CT	35	280		LC Dyke	planar, closed
PGH-18-04	656.55	CT	40	335		LC DYKE	irregular, closed
PGH-18-04	657.9	CT	50	45		LC CRBT	undulating, closed
PGH-18-04	658.8	CT	25	100		LC CRBT	irregular, closed
PGH-18-04	660.8	CT	70	50		UC CRBT	planar, open, rough, py/amph

ASSAYS

DDH	From	To	Width (m)	SampleID	BatchID	Nb2O5 (%)	Ta2O5 (%)	U3O8 (%)	ThO2 (%)	ZrO2 (%)	Fe2O3(T) (%)	P2O5 (%)	SnO2 (%)	Y2O3 (%)	WO3 (%)
PGH-18-04	620.7	621.7	1	589732	A18-05281	0.024	< 0.003	< 0.005	< 0.005	0.04	5.83	0.56	0.011	0.005	< 0.003
PGH-18-04	657	658.5	1.5	589733	A18-05281	0.034	< 0.003	< 0.005	0.005	0.018	5.23	1.07	< 0.003	0.007	< 0.003
PGH-18-04	658.5	660	1.5	589734	A18-05281	0.031	< 0.003	< 0.005	< 0.005	0.016	6.3	0.85	< 0.003	0.007	< 0.003
PGH-18-04	660	660.82	0.82	589736	A18-05281	0.02	< 0.003	< 0.005	< 0.005	0.02	6.1	0.39	< 0.003	0.004	< 0.003
PGH-18-04	660.82	661.81	0.99	589737	A18-05281	0.025	< 0.003	0.006	0.005	< 0.003	2.4	1.16	< 0.003	0.013	< 0.003
PGH-18-04	661.81	663	1.19	589738	A18-05281	0.037	< 0.003	< 0.005	< 0.005	0.008	9.23	0.82	< 0.003	0.005	< 0.003
PGH-18-04	663	664	1	589739	A18-05281	0.022	< 0.003	< 0.005	0.005	0.011	6.66	0.9	< 0.003	0.006	0.003
PGH-18-04	664	665.5	1.5	589740	A18-05281	0.024	< 0.003	< 0.005	< 0.005	0.009	7.69	0.81	0.003	0.005	< 0.003
PGH-18-04	665.5	667	1.5	589742	A18-05281	0.022	< 0.003	< 0.005	0.006	0.008	6.65	0.74	< 0.003	0.007	< 0.003

ASSAYS

DDH	From	To	Width (m)	SampleID	Description
PGH-18-04	26	26.5	0.5	589509	SYN BX
PGH-18-04	26.5	28	1.5	589510	CRBT + MD?
PGH-18-04	28	29.5	1.5	589511	CRBT + MD?
PGH-18-04	29.5	31	1.5	589513	CRBT + MD?
PGH-18-04	31	32.5	1.5	589514	CRBT + MD?
PGH-18-04	32.5	34	1.5	589515	CRBT + MD?
PGH-18-04	34	35.5	1.5	589516	CRBT + MD?
PGH-18-04	35.5	37	1.5	589517	CRBT + MD?
PGH-18-04	37	38.5	1.5	589518	CRBT + MD?
PGH-18-04	38.5	40	1.5	589519	CRBT + MD?
PGH-18-04	40	41.5	1.5	589520	CRBT SYN BX
PGH-18-04	41.5	42.25	0.75	589521	SYN BX
PGH-18-04	42.25	43	0.75	589522	CRNT + minor SYN BX
PGH-18-04	43	44.5	1.5	589523	SYN bx, minor CRBT
PGH-18-04	44.5	46	1.5	589524	SYN bx, minor CRBT
PGH-18-04	46	47	1	589525	CRBT , BX/bnd
PGH-18-04	47	48	1	589526	CRB, bnd
PGH-18-04	48	48.56	0.56	589527	CRBT, bnd
PGH-18-04	48.56	49	0.44	589528	SYN
PGH-18-04	54.64	55.03	0.39	589529	SYN BX CRBT
PGH-18-04	55.03	55.4	0.37	589530	CRBT, bnd
PGH-18-04	55.4	56	0.6	589531	SYN BX
PGH-18-04	56	56.5	0.5	589532	SYN BX + CRBT
PGH-18-04	57.55	57.85	0.3	589533	CRBT bnd
PGH-18-04	65.45	66	0.55	589534	alt qtz syn + crbt
PGH-18-04	68.96	69.53	0.57	589536	CRBT + SYN
PGH-18-04	69.53	70.72	1.19	589537	CRBT bnd + SYN
PGH-18-04	70.72	71.65	0.93	589538	CRBT bnd > SYN
PGH-18-04	73	74	1	589539	CRBT bx + SYN
PGH-18-04	74	75	1	589541	SYN BX + CRBT
PGH-18-04	75	75.5	0.5	589542	SYN
PGH-18-04	80	81	1	589543	CRBT bx + SYN
PGH-18-04	83.48	84	0.52	589544	CRbt bnd
PGH-18-04	84	85	1	589545	SYN BX
PGH-18-04	91	91.5	0.5	589546	SYN BX
PGH-18-04	91.5	93	1.5	589547	SYN BX + CRBT
PGH-18-04	93	94	1	589548	CRBT bx + SYN
PGH-18-04	132.9	133.4	0.5	589549	SYN minor CRBT
PGH-18-04	133.4	134.9	1.5	589550	SYN bx + CRBT + MD?
PGH-18-04	134.9	136.4	1.5	589551	SYN BX
PGH-18-04	136.4	137.9	1.5	589552	CRBT + SYN BX

ASSAYS

DDH	From	To	Width (m)	SampleID	Description
PGH-18-04	137.9	139.4	1.5	589553	CRNT + minor SYN BX
PGH-18-04	139.4	140.64	1.24	589554	SYN BX
PGH-18-04	140.64	141.63	0.99	589555	CRBT
PGH-18-04	141.63	142.17	0.54	589556	SYN BX
PGH-18-04	142.17	143.32	1.15	589558	CRBT
PGH-18-04	144.87	145.47	0.6	589559	CRBT
PGH-18-04	150.2	150.76	0.56	589560	CRBT, lg, wkly bnd
PGH-18-04	159.94	160.81	0.87	589561	CRBT
PGH-18-04	163.27	164.43	1.16	589562	crbt, grey, fg
PGH-18-04	165.21	166	0.79	589563	SYN BX + CRBT
PGH-18-04	166	167	1	589564	CRBT blu-pink, bnd
PGH-18-04	167	167.5	0.5	589565	SYN
PGH-18-04	170.25	171	0.75	589566	SYN BX CRBT
PGH-18-04	171	172.5	1.5	589569	SYN + CRBT BX
PGH-18-04	172.5	174	1.5	589570	SYN BX
PGH-18-04	178.45	179.62	1.17	589571	CRBT SYN BX
PGH-18-04	179.62	180.78	1.16	589572	CRBT SYN BX
PGH-18-04	182.14	182.64	0.5	589573	CRBT
PGH-18-04	202	203.5	1.5	589574	CRBt
PGH-18-04	203.5	205	1.5	589575	CRBT + MD?
PGH-18-04	205	206.5	1.5	589576	CRBT + MD?
PGH-18-04	206.5	207.5	1	589577	CRBT SYN BX
PGH-18-04	209.75	211.05	1.3	589578	CRBT bx + SYN
PGH-18-04	216.71	217.3	0.59	589579	CRBT SYN BX
PGH-18-04	217.3	218.69	1.39	589580	CRBT
PGH-18-04	218.69	219.16	0.47	589581	MD (?)
PGH-18-04	219.16	220.64	1.48	589582	CRBT
PGH-18-04	220.64	222	1.36	589583	CRBT
PGH-18-04	222	222.65	0.65	589584	CRBT
PGH-18-04	227	228.19	1.19	589585	CRBT
PGH-18-04	230	231	1	589586	CRBT
PGH-18-04	231	232	1	589588	CRBT
PGH-18-04	232	232.67	0.67	589589	CRBT SYN BX
PGH-18-04	235.9	236.89	0.99	589590	CRBT, lt gn-pk, REE-flcrb?
PGH-18-04	236.89	237.87	0.98	589591	CRBT, lt gn-pk, REE-flcrb?
PGH-18-04	240.48	241.45	0.97	589592	CRBT, wk bnd, green-blue
PGH-18-04	243.35	244.1	0.75	589593	CRBT, wk bnd, green-blue
PGH-18-04	244.1	244.9	0.8	589594	CRBT, wk bnd, green-blue
PGH-18-04	244.9	246	1.1	589595	syn bx w/ crbt infill, locl mssv crbt
PGH-18-04	247.5	249	1.5	589596	CRBT bx + SYN
PGH-18-04	252.35	252.97	0.62	589597	CRBT, weakly bnd

ASSAYS

DDH	From	To	Width (m)	SampleID	Description
PGH-18-04	256.3	256.8	0.5	589598	CRBT, abdnt apt near UC?
PGH-18-04	258.19	258.69	0.5	589599	CRBT bx + SYN
PGH-18-04	261.5	262	0.5	589600	SYN BX w/ cRBT
PGH-18-04	262	263.5	1.5	589601	msv CRBT
PGH-18-04	263.5	264.38	0.88	589602	msv CRBT
PGH-18-04	264.38	265.25	0.87	589603	msv CRBT
PGH-18-04	279	280.5	1.5	589604	syn bx + CRBT
PGH-18-04	280.5	282	1.5	589605	SYN bx + CRBT
PGH-18-04	282	283.1	1.1	589606	CRBT, wkly bnd
PGH-18-04	285	285.54	0.54	589608	CRBT
PGH-18-04	286.62	287.22	0.6	589609	BX + CRBT
PGH-18-04	288	289.5	1.5	589610	CRBT bx + SYN
PGH-18-04	290.5	291.68	1.18	589611	CRBT
PGH-18-04	296.91	298.12	1.21	589612	CRBT
PGH-18-04	314.53	315.43	0.9	589614	CRBT
PGH-18-04	318.4	319.65	1.25	589615	CRBT BX
PGH-18-04	333.12	333.72	0.6	589616	CRBT
PGH-18-04	349.75	351.25	1.5	589617	CRBT minor SYN BX
PGH-18-04	351.25	352.75	1.5	589618	CRBT
PGH-18-04	352.75	353.75	1	589619	CRBT
PGH-18-04	353.75	354.33	0.58	589620	CRBT + SYN BX
PGH-18-04	360	361	1	589622	CRBT + SYN BX
PGH-18-04	362.65	364.05	1.4	589623	CRBT
PGH-18-04	374.55	376.05	1.5	589624	CRBT
PGH-18-04	380.58	381.82	1.24	589625	CRBT + BX SYN
PGH-18-04	385	386	1	589626	CRBT + BX SYN
PGH-18-04	387	388	1	589627	CRBT + BX SYN
PGH-18-04	389.73	391.23	1.5	589628	CRBT + BX SYN
PGH-18-04	417.1	418.39	0.5	589629	
PGH-18-04	423.84	424.5	1.5	589630	
PGH-18-04	424.5	425	1.5	589631	
PGH-18-04	429	430.5	1	589632	
PGH-18-04	430.5	432	1.5	589633	
PGH-18-04	435	436	1.15	589634	
PGH-18-04	436	437	1.14	589635	
PGH-18-04	441.54	443.04	1.47	589636	
PGH-18-04	444.46	445.03	0.57	589637	
PGH-18-04	449.65	450.41	0.76	589638	
PGH-18-04	450.41	451	0.59	589639	
PGH-18-04	453.5	454	0.5	589640	SYN BX + CRBT
PGH-18-04	454	455.5	1.5	589641	SYN BX + CRBT

ASSAYS

DDH	From	To	Width (m)	SampleID	Description
PGH-18-04	455.5	457	1.5	589642	SYN BX + CRBT
PGH-18-04	457	458	1	589643	SYN BX + CRBT
PGH-18-04	462.34	462.84	0.5	589644	BX + CRBT
PGH-18-04	470.28	471.43	1.15	589645	CRBT + BX
PGH-18-04	471.43	472.58	1.14	589646	CRBT + BX
PGH-18-04	472.58	473.72	1.47	589647	BX + CRBT
PGH-18-04	473.72	475.19	1.33	589648	
PGH-18-04	484.1	485.43	1.5	589649	crbt
PGH-18-04	486.3	487.8	0.52	589650	CRBT
PGH-18-04	489.34	489.86	1.31	589651	CRBT
PGH-18-04	489.86	490.94	1.08	351501	deep purplish gran, min carb veins
PGH-18-04	490.94	492.25	0.93	589652	CRBT
PGH-18-04	492.25	493.18	0.93	589653	ALKALI
PGH-18-04	493.18	494	0.82	589654	CRBT + BX
PGH-18-04	494	495.5	1.5	589655	CRBT
PGH-18-04	495.5	496.25	0.75	589656	CRBT
PGH-18-04	496.25	497.34	1.09	589657	CRBT + BX
PGH-18-04	497.34	498.84	1.5	589659	CRBT + BX
PGH-18-04	498.84	500.34	1.5	589660	CRBT + BX
PGH-18-04	500.34	501.84	1.5	589661	CRBT
PGH-18-04	501.84	503.34	1.5	589662	CRBT
PGH-18-04	503.34	504.84	1.5	589663	CRBT
PGH-18-04	504.84	506.34	1.5	589664	CRBT
PGH-18-04	506.34	507.59	1.25	589665	CRBT
PGH-18-04	507.59	508.4	0.81	589666	CRBT
PGH-18-04	508.4	509.29	0.89	351502	gran gneiss (biot faric), carb micro veinlets
PGH-18-04	509.29	510.25	0.96	351503	gran gneiss (biot faric), carb micro veinlets
PGH-18-04	510.25	510.98	0.73	589667	CRBT BX
PGH-18-04	510.98	511.91	0.93	351504	grgn, anastomising very fine (<mm) ribbonary carb veins
PGH-18-04	511.91	512.88	0.97	351505	grgn, 2cm carb at end
PGH-18-04	512.88	513.77	0.89	351506	grgn, <10cm wide bx zone + 3cm wide carb vein
PGH-18-04	513.77	515.27	1.5	589668	BX CRBT
PGH-18-04	515.27	516.77	1.5	589669	BX CRBT
PGH-18-04	516.77	517.8	1.03	351507	grgn, <1% carb veins
PGH-18-04	517.8	519	1.2	351508	grgn, <1% carb veins
PGH-18-04	519	520.19	1.19	351509	grgn
PGH-18-04	520.19	521.37	1.18	351510	grgn, 7cm carb vein
PGH-18-04	521.37	522.4	1.03	351511	grgn, 2x5cm carb veins
PGH-18-04	522.4	523.62	1.22	351512	grgn, tr carb
PGH-18-04	523.62	524.8	1.18	589670	CRBT
PGH-18-04	524.8	525.98	1.18	351513	grgn, 8cm carb vein

ASSAYS

DDH	From	To	Width (m)	SampleID	Description
PGH-18-04	525.98	527.22	1.24	351514	grgn w/ 30cm pegmatite
PGH-18-04	527.22	528.24	1.02	589671	ALKALI + CRBT
PGH-18-04	528.24	529.49	1.25	589673	CRBT BX
PGH-18-04	529.49	530.59	1.1	589674	ALKALI
PGH-18-04	530.59	531.39	0.8	589675	ALKALI
PGH-18-04	531.39	532.89	1.5	589676	CRBT BX
PGH-18-04	532.89	534	1.11	589677	ALKALI + CRBT]
PGH-18-04	534	534.75	0.75	589679	ALKALI
PGH-18-04	534.75	535.45	0.7	589680	CRBT
PGH-18-04	535.45	536.25	0.8	589681	ALKALI
PGH-18-04	536.25	537.75	1.5	589682	CRBT
PGH-18-04	537.75	539.25	1.5	589683	CRBT
PGH-18-04	539.25	540.75	1.5	589684	CRBT
PGH-18-04	540.75	542.25	1.5	589685	CRBT
PGH-18-04	542.25	543.75	1.5	589686	CRBT
PGH-18-04	543.75	545.25	1.5	589687	CRBT
PGH-18-04	545.25	546.75	1.5	589688	CRBT
PGH-18-04	546.75	548.25	1.5	589689	CRBT
PGH-18-04	548.25	549.75	1.5	589690	CRBT
PGH-18-04	549.75	551.25	1.5	589692	CRBT
PGH-18-04	551.25	552.75	1.5	589693	CRBT
PGH-18-04	552.75	554.25	1.5	589694	CRBT
PGH-18-04	554.25	555.19	0.94	589695	CRBT
PGH-18-04	555.19	556	0.81	589696	ALKALI
PGH-18-04	556	557.25	1.25	351515	grgn
PGH-18-04	557.25	558.45	1.2	351516	grgn
PGH-18-04	558.45	559.49	1.04	351517	grgn w/ 2x5cm carb
PGH-18-04	559.49	560.49	1	351518	grgn, very min carb veining
PGH-18-04	560.49	561.5	1.01	351519	grgn , no carb
PGH-18-04	561.5	562.48	0.98	351520	grgn, 2x <1cm carb veins
PGH-18-04	562.48	563.68	1.2	351521	grgn w/ 6cm pink carb vein w/ ap
PGH-18-04	563.68	563.85	0.17	351522	pegmatite (up to 3cm xtals w/ ep alt'n & py blebs)
PGH-18-04	563.85	564.86	1.01	589698	CRBT
PGH-18-04	564.86	565.46	0.6	589699	CRBT w/bt+pyrochlore?
PGH-18-04	565.46	566	0.54	589700	CRBT
PGH-18-04	566	567.04	1.04	351523	grgn, no carb
PGH-18-04	567.04	567.91	0.87	351524	grgn, 4cm carb vein
PGH-18-04	567.91	568.8	0.89	589701	CRBT
PGH-18-04	568.8	569.87	1.07	351525	grgn
PGH-18-04	569.87	570.92	1.05	351526	grgn, 1-5cm carb veins
PGH-18-04	570.92	572	1.08	351527	grgn, 3cm wide carb vein w/ mica rims

ASSAYS

DDH	From	To	Width (m)	SampleID	Description
PGH-18-04	572	573.07	1.07	351528	grgn, min x-cut carb veins (<1cm)
PGH-18-04	573.07	574.1	1.03	351529	grgn, 6cm carb-bx vein + min mm-cm carb veins
PGH-18-04	574.1	575.1	1	351530	grgn
PGH-18-04	575.1	575.66	0.56	589702	ALKALI
PGH-18-04	575.66	576.76	1.1	589704	CRBT
PGH-18-04	576.76	578.1	1.34	351531	grgn w/ multiple <1.5cm carb veins (<<5% overall)
PGH-18-04	578.1	579.39	1.29	351532	same, increasing at end of sample
PGH-18-04	579.39	580.24	0.85	589705	Alkali, trace crbt
PGH-18-04	580.24	581.75	1.51	589706	crbt + bx
PGH-18-04	581.75	583.25	1.5	589707	crbt, cg + bx
PGH-18-04	583.25	584.75	1.5	589709	crbt, cg + bx
PGH-18-04	584.75	585.7	0.95	589710	crbt bx + alkali
PGH-18-04	585.7	586.62	0.92	589711	Alkali
PGH-18-04	586.62	588.12	1.5	589712	bx + crbt
PGH-18-04	588.12	589.62	1.5	589713	crbt + bx
PGH-18-04	589.62	591.15	1.53	589714	crbt
PGH-18-04	591.15	592.66	1.51	589715	alkali + crbt
PGH-18-04	592.66	593.41	0.75	589716	alkali + crbt
PGH-18-04	593.92	594.8	0.88	351533	grgn
PGH-18-04	594.8	595.85	1.05	351534	grgn, carb veins increasing
PGH-18-04	595.85	596.88	1.03	351535	grgn w/ <10% x-cut carb veins (w/ deep pink kspar alt'n envl)
PGH-18-04	596.88	597.88	1	589717	CRBT, minro alkali
PGH-18-04	597.88	599.06	1.18	351536	grgn (pale pink)
PGH-18-04	599.06	600.25	1.19	351537	grgn (deep pink-red kspar alt'n over last 30cm), min calc
PGH-18-04	600.25	601.47	1.22	351538	kspar/fen alt'd top 20cm to grgn w/ min carb
PGH-18-04	601.47	602.68	1.21	351539	grgn, no carb, locally pegmatitic
PGH-18-04	602.68	603.91	1.23	351540	grgn, 1.5cm carb vein
PGH-18-04	603.91	605	1.09	351541	grgn, vvcg over 50cm
PGH-18-04	605	606.13	1.13	589718	Alkali + minor CRBT
PGH-18-04	606.13	607	0.87	589719	Alkali
PGH-18-04	607	607.97	0.97	589720	Alkali + minor CRBT
PGH-18-04	607.97	609.35	1.38	589721	CRBT
PGH-18-04	609.35	610.85	1.5	589722	Alkali BX + CRBT
PGH-18-04	610.85	612.35	1.5	589723	CRBT + Alkali
PGH-18-04	612.35	613.67	1.32	589724	CRBT + Alkali
PGH-18-04	613.67	615	1.33	589725	CRBT + Alkali
PGH-18-04	615	616	1	589726	Alkali + CRBT
PGH-18-04	616	617	1	589727	Alkali + minor CRBT
PGH-18-04	617	618.5	1.5	589729	CRBT
PGH-18-04	618.5	620	1.5	589730	CRBT
PGH-18-04	620	620.7	0.7	589731	CRBT

ASSAYS

DDH	From	To	Width (m)	SampleID	Description
PGH-18-04	620.7	621.7	1	589732	Alkali
PGH-18-04	657	658.5	1.5	589733	Alkali + minor CRBT
PGH-18-04	658.5	660	1.5	589734	Alkali + minor CRBT
PGH-18-04	660	660.82	0.82	589736	Alkali + minor CRBT
PGH-18-04	660.82	661.81	0.99	589737	CRBT
PGH-18-04	661.81	663	1.19	589738	alklai + minor crbt
PGH-18-04	663	664	1	589739	alklai + minor crbt
PGH-18-04	664	665.5	1.5	589740	alklai + minor crbt
PGH-18-04	665.5	667	1.5	589742	

COMPANY QAQC DATA

DDH	From	To	Width (m)	SampleID	BatchID	QAQC Type	QAQC Description	P2O5 (%)	Nb2O5 (%)
PGH-18-04	29.5	29.5	0	589512	A18-05281	BLANK	Marble	0.02	< 0.003
PGH-18-04	66	66	0	589535	A18-05281	BLANK	Marble	0.01	< 0.003
PGH-18-04	74	74	0	589540	A18-05281	STANDARD	Oka 1	2.48	0.524
PGH-18-04	142.17	142.17	0	589557	A18-05281	BLANK	Marble	0.01	< 0.003
PGH-18-04	171	171	0	589567	A18-05281	STANDARD	Oka 1	2.49	0.532
PGH-18-04	171	171	0	589568	A18-05281	BLANK	Marble	0.01	< 0.003
PGH-18-04	231	231	0	589587	A18-05281	BLANK	Marble	0.01	< 0.003
PGH-18-04	283.1	283.1	0	589607	A18-05281	BLANK	Marble	0.02	0.007
PGH-18-04	298.12	298.12	0	589613	A18-05281	STANDARD	Oka 1	2.51	0.539
PGH-18-04	354.33	354.33	0	589621	A18-05281	BLANK	Marble	0.02	0.006
PGH-18-04	497.34	497.34	0	589658	A18-05281	BLANK	Marble	0.02	< 0.003
PGH-18-04	528.24	528.24	0	589672	A18-05281	STANDARD	Oka 1	2.51	0.536
PGH-18-04	534	534	0	589678	A18-05281	BLANK	Marble	0.03	< 0.003
PGH-18-04	548.25	549.75	1.5	589690	A18-05281	N/A	ORIGINAL SAMPLE	7.27	0.678
PGH-18-04	548.25	549.75	1.5	589691	A18-05281	DUPLICATE	DUPLICATE of 589690	6.34	0.516
PGH-18-04	556	556	0	589697	A18-05281	BLANK	Marble	0.03	< 0.003
PGH-18-04	575.66	575.66	0	589703	A18-05281	BLANK	Marble	0.01	< 0.003
PGH-18-04	583.25	583.25	0	589708	A18-05281	STANDARD	Oka 1	2.51	0.544
PGH-18-04	617	617	0	589728	A18-05281	BLANK	Marble	0.02	< 0.003
PGH-18-04	660	660	0	589735	A18-05281	STANDARD	Oka 1	2.5	0.538
PGH-18-04	665.5	665.5	0	589741	A18-05281	BLANK	Marble	0.02	< 0.003



Drilled by:	Chibougamau Diamond Drilling	Start Date:	17-Apr-2018
Township/Area:	Killala Lake Area	End Date:	18-Apr-2018
Claims (converted):	307858	Described by:	B. Clark, B.Sc.
Claims (legacy):	TB 4256251	Log date:	21-Apr-2018

Collar

Azimuth: 337.00°		Easting: 519618		Core size: HQ		Cemented: No	
Plunge: -60.00°		Northing: 5432342		Casing: Pulled		Stored: Yes	
Length: 60.0 m		Elevation: 308.0m					

COORDINATES UTM (NAD83 zone 16)

Down hole surveys

Drill Hole	Type	Depth (m)	Azimuth Corrected (°)	Dip (°)	Mag
PGH-18-05	Reflex	21	326.5	-62.4	57420

Description

Hole abandoned at 60m to correct azimuth after the drill shifted when casing reamed.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-05	0	3	OVB	Overburden	Overburden
PGH-18-05	3	4.4	CRBT	Carbonatite	Cream to light pink-blue, massive, slightly weathered with Fe-Ox along fractures. Wispy bands of blue amph, 2% pyrrhotite blebs up to 5cm, trace fg black mineral (pyrochlore?). LC obscured by broken core
PGH-18-05	4.4	6.75	CRBT-BX	Carbonatite with Alkali Breccia	Mosaic breccia, clasts are angular to sub, rxn rims from 3mm to completely altered small clasts <3cm. Clasts red-pink, chl alt bt, k-fspar dominated CRBT infill; cream to light blue-grey, patchy fg fluorite, rimmed by blue amph, diss hem, local anhedral py up to 5mm.
PGH-18-05	6.75	16.1	QTZ-SYE	Alkali Feldspathic with minor Carbonatite	Alkali; red-pink, qtz 10%, k-fspars 50%, bt 20%, neph 20%. Fg-cg (locally cg up to 1.5cm), patchy moderate hematite alteration, bt being alt to chl, fracture fill CRBT, veins up to 40cm locally BX. CRBT; light pink-green-blue-purple, fg, massive, local wispy banding of fg apt(? light orange), veins rimmed by blue amph(?), trace diss hem, Contacts are locally bx, commonly undulating with dissolution. Apt more concentrated near contacts/clasts.
PGH-18-05	16.1	24.5	CRBT-BX	Carbonatite with Alkali Breccia	CRBT; light pink-grey-green to cream, fg, massive, contacts are undulating to brecciated, commonly rimmed with blue amph. Trace diss py/hem. Apt(?) vfg forming wispy bands near contacts (light orange), also cumulates up to 5mm. crbt zones up to 1.5m Alkali clasts; as above modal percentages, rxn rims up to 7mm, angular to sub.
PGH-18-05	24.5	29.1	SYE	Alkali Feldspathic	Modal percentages as above; CRBT; cream to light grey-green-pink, rimmed by black-blue amph, patchy light orange apt, trace diss hem
PGH-18-05	29.1	34.8	CRBT-BX	Carbonatite with Alkali Breccia	Alkali; red-pink, modal % as above. Rxn rims of clasts to locally completely altered (black bt), clasts from 5mm-5cm, sub-angular to sub rounded, diffuse clast boundaries. CRBT; light pink-blue-green-cream, fg, wispy bands of apt cumulates and amph in higher concentration near clasts and contacts, trace diss py/hem
PGH-18-05	34.8	38.8	SYE	Alkali Feldspathic	Modal as above; 35.80-36.50: crbt alt MD(?) light green, fg, highly alt clasts of alkali up to 4cm, trace diss py, weakly carb alt groundmass
PGH-18-05	38.8	39.8	CRBT	Carbonatite	Cream to light pink-blue-grey, fg, massive, wispy bands/masses of blue amph, wavy 'bands' of apt near contacts and cumulate up to 5mm. Trace diss py / hem. UC undulating, diffuse LC brecciated, obscured
PGH-18-05	39.8	50.6	SYE-BX	Alkali Feldspathic Breccia with Carbonatite	Alkali; pervasive hem alt (weak-mod), chl alt bt. Clasts locally have rxn rims up to 5mm and completely alt. crbt veins from 5mm - 40cm, veins are sub-parallel, tension veins(?). CRBT; light pink-blue-green-grey, fg, massive, trace diss py local euohedral crystals up to 7mm. fg blue-black sulphide trace diss, fg apt light orange(?) and to light green along wispy bands and near contacts. Locally bt rich (up to 30%)

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-05	50.6	53.9	CRBT-BX	Carbonatite with Alkali Breccia	Alkali as above 50.60-51.30: light pink-cream, fg apt light green-brn near contacts. UC/LC bx clasts rimmed by bt. Diss hem, trace diss py. 53.00-53.75: CRBT + bx, light pink-blue-cream-green, fg, rxn rims around clasts <7mm, clasts are sub-angular, apt brn-green up to 7mm as wispy masses, bx UC/LC
PGH-18-05	53.9	54.4	MDYKE	Mafic Dyke	Aphanitic, black, magnetic, amygdales filled with carb.
PGH-18-05	54.4	55	SYE-BX	Alkali Feldspathic	Alkali as above, with minor crbt veins up to 2cm, clasts/veins with rxn rims of black bt. CRBT; cream to light pink-blue, fg, diss hem, trace py diss.
PGH-18-05	55	56.35	SYE	Alkali Feldspathic	As above.
PGH-18-05	56.35	57.7	CRBT	Carbonatite	Cream to light purple to light brown, slightly weathered, diss hem, trace diss py, very weakly weathered/staining along fractures. Weak wispy bands with more hem(?) light purple in colour.
PGH-18-05	57.7	60	QTZ-SYE	Alkali Feldspathic	fg-cg, qtz 15%, k-fldsp 40%, plag 15%, bt 20%, 10% plag

ORIENTED STRUCTURES

DDH	Depth	Type	Alpha (°)	Beta (°)	Gamma (°)	Title	Description
PGH-18-05	16.15	CT	55	70		UC CRBT w/ Alkali	undulating, closed, amph
PGH-18-05	18.73	CT	65	100		LC CRBT w/ alkali	planar, closed
PGH-18-05	21.65	JNT	40	250		JNT in alkali	amph fill, planar, rough
PGH-18-05	29.07	CT	20	220		UC BX w/ alkali	undulating, closed
PGH-18-05	34.82	CT	65	100		LC crbt w/ alkali	planar, closed
PGH-18-05	38.8	CT	70	70		UC CRBT w/ Alkali	undulating, dissolution,
PGH-18-05	46.44	JNT	30	275		JNT in alkali	rough, amph infill
PGH-18-05	53.1	CT	45	190		BX CRBT	planar, closed
PGH-18-05	53.9	CT	40	110		UC MDYKE	planar, closed
PGH-18-05	54.4	CT	40	120		LC MDYKE	planar, rough, open, no fill
PGH-18-05	56.34	CT	70	30		UC CRBT w/ Alkali	undulating, closed
PGH-18-05	57.67	CT	75	75		LC CRBT w/ alkali	undulating, closed
PGH-18-05	58.28	JNT	60	90		JNT in alkali	planar, open

COMPANY QAQC DATA

DDH	From	To	Width (m)	SampleID	BatchID	QAQC Type	QAQC Description	P2O5 (%)	Nb2O5 (%)
PGH-18-05	40.3	40.3	0	589768	A18-06091	BLANK	Marble	0.03	< 0.003
PGH-18-05	48	48	0	589775	A18-06091	STANDARD	Oka 1	2.44	0.53



Drilled by:	Chibougamau Diamond Drilling	Start Date:	18-Apr-2018
Township/Area:	Killala Lake Area	End Date:	19-Apr-2018
Claims (converted):	307858	Described by:	B. Clark, B.Sc.
Claims (legacy):	TB 4256251	Log date:	21-Apr-2018

Collar

Azimuth: 337.00°		Easting: 519618		Core size: HQ		Cemented: No	
Plunge: -60.00°		Northing: 5432342		Casing: Pulled		Stored: Yes	
Length: 72.0 m		Elevation: 308.0m					

COORDINATES UTM (NAD83 zone 16)

Down hole surveys

Drill Hole	Type	Depth (m)	Azimuth Corrected (°)	Dip (°)	Mag
PGH-18-05B	Reflex	21	325.7	-60.3	57571
PGH-18-05B	Reflex	72	326.1	-60.5	57067

Description

Second attempt a hole #5. Hole abandoned again due to issues with azimuth/shifting of drill. Hole moved ~30m and drilled as PGH-18-06.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-05B	0	3.38	OVB	Overburden	Casing / Overburden
PGH-18-05B	3.38	6.7	SYE-BX	Alkali Feldspathic Breccia with Carbonatite Infill	Mosaic breccia, clasts are angular to sub, rxn rims from 3mm to completely altered small clasts <3cm. Clasts red-pink, chl alt bt, k-fspar dominated CRBT infill; cream to light blue-grey, patchy fg fluorite, rimmed by blue amph, diss hem, local anhedral py up to 5mm. Trace pyrrhotite
PGH-18-05B	6.7	7.25	CRBT	Carbonatite	Light green-grey-pink, fg, massive, patchy fluorite (2%), trace diss hem/py, UC/LC bx, Fe-Ox staining along fractures.
PGH-18-05B	7.25	11.7	QTZ-SYE	Alkali Feldspathic	Pink-med red, fg- peg locally up to 3.5cm. Qtz (10%), k-fldsp (40%), plag (30%), 20% bt/amph. Bt being alt to chl, blue fg radiating amph filling fractures and patchy. Weak to moderate selectively pervasive hematite alt,
PGH-18-05B	11.7	24.5	SYE-BX	Alkali Feldspathic breccia with Carbonatite	Multiple crbt veins from 5cm-175cm, contacts are rimmed by black bt/amph and are undulating to brecciated. Alkali clasts are sub-angular and locally have rxn rims up to 1cm. Alkali; fg, modal % as above, higher degree of fenitization (more prominent blue amph) CRBT; cream to light gre-pink-purple-blue, fg-cg locally, massive to weakly banded(?), patchy trace fluorite, calc>dol, locally Calc>Sil>Dol. Trace diss py fg to anhedral. Apt cumulates up to 4mm forming weak bands
PGH-18-05B	24.5	32	SYE	Alkali Feldspathic	Alkali as above, clasts sub angular 5mm-8cm, rxn rims of bt/blue amph from 5mm to completely alt. CRBT; light pink-green-grey-blue, rimmed by blue amph/infilling smaller fractures. Massive with wispy bands of blue-green, 2% pyrrhotite as masses up to 3cm across surrounded by blue amph, trace diss py local crystals up to 3mm. Trace diss hematite. Local bt within CRBT xtals <3mm Contacts are commonly brecciated
PGH-18-05B	32	33.8	CRBT-BX	Carbonatite Breccia with Alkali Clasts	Alkali as above, clasts sub angular, rxn rims from 5mm to locally completely alt, clasts from 5mm-
PGH-18-05B	33.8	36	SYE	Alkali Feldspathic	As above, minor CRBT 34.8-35:light pink-purple-green, fg, massive, vfg apt (light orange-cream) forming wispy bands. UC/LC undulating & rimmed by blue amph
PGH-18-05B	36	36.5	MDYKE	Carbonate altered Mafic Dyke	Light green-grey, non-magnetic, carb alt groundmass, trace diss py, brecciated UC/LC
PGH-18-05B	36.5	50.8	QTZ-SYE	Alkali Feldspathic with Carbonatite	Alkali is jointed with crbt infilling joints @ ~ 10cm spacing, veins range from 1mm to 60cm, not all veins along same orientation but there is dominant joint set at 35/300. Alkali light red-pink, moderate-strong selectively pervasive hematite alteration, mg, Qtz 10%, K-fldsp 70%, bt 20%. Locally clasts/veins have rxn rims up to 1cm CRBT; cream to light grey-pink-green-blue-purple, fg, massive, calc-silicate > Dol, local apt cumulates commonly rimming veins and clasts of alkali. Trace diss/blebs of py/pyrrhotite with cubes up to 7mm locally. Trace diss hem, trace patchy fluorite.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-05B	50.8	53.9	CRBT-BX	Carbonatite breccia with Alkali clasts	Alkali as above with CRBT breccia zones, and veining throughout. 50.8-51.4: CRBT; cream to light pink-purple-blue, massive, wispy blue mineral (amph), trace diss anhedral py/po, vfg beige mineral <1mm. UC @ 50/130, planar. LC brecciated 51.8-52: alkali breccia, crbt in fill, angular clasts 5mm-5cm, rxn rims of bt up to 5mm. 53.50-53.9: Breccia, clasts sub-angular, 5mm-5cm, rxn rims <7mm, some clasts completely replaced. CRBT; light pink-purple, mottled, diss hem, fg, stringers of py/po 2%
PGH-18-05B	53.9	54.46	MDYKE	Mafic Dyke	Green-grey, fg margins, core has amygdales <1mm filled with carb, magnetic, chl masses <3mm, planar closed UC& LC @ 30/130
PGH-18-05B	54.46	55.92	SYE	Alkali Feldspathic	Intermittent crbt veins <1cm, green-grey-red/pink, mg. Qtz 10%, k-fldsp 50%, bt 20%, neph 20%.
PGH-18-05B	55.92	57	CRBT	Carbonatite	Cream to light purple-grey, massive, fg, diss hem within light purple patches, vfg light orange mineral forming wispy bands, trace diss py. LC bx
PGH-18-05B	57	65	SYE-BX	Alkali breccia with carbonatite infill	Alkali as above; locally pegmatitic xtals up to 2.5cm, highly fenitized (masses of fibrous blue amph up to 2cm) breccia zones up to 40cm, between zones evenly spaced crbt veins <2cm wide. CRBT in fill is light pink-purple-grey-cream, massive, fg, diss hem, local stringers of py/pyrrhotite, patchy fluorite, apt cumulates near contacts/clasts. Veins / clasts commonly rxn rims of bt/blue amph
PGH-18-05B	65	66	CRBT-BX	Carbonatite with breccia	Cream-blue to light pink, fg, massive, wispy bands of fg blue mineral (amph?) + diss py, apt cumulates up to 5mm near contacts, irregular blebs of py/po up to 2cm brecciated LC
PGH-18-05B	66	66.85	SYE	Alkali Feldspathic	Alkali as above, mod-strong selectively pervasive hem alt, crbt veining <5mm, patchy blue amph, bt being alt the chl
PGH-18-05B	66.85	72	CRBT-BX	Carbonatite Breccia	CRBT; light pink-purple-blue-green, fg massive, local discontinuous wavy bands with apt cumulates occurring near contacts and surrounding clasts. 5% po/py irregular masses up to 4cm.

ORIENTED STRUCTURES

DDH	Depth	Type	Alpha (°)	Beta (°)	Gamma (°)	Title	Description
PGH-18-05B	11.68	VN	55	35		UC CRBT w/ Alkali	undulating, closed
PGH-18-05B	19.73	VN	60	65		LC CRBT w/ Alkali	undulating, closed
PGH-18-05B	19.81	JNT	60	250		JNT in Alkali	open, rough, amph fill
PGH-18-05B	19.93	JNT	70	60		JNT in Alkali	open, rough, amph fill
PGH-18-05B	20.82	VN	50	60		UC CRBT w/ Alkali	planar, closed
PGH-18-05B	23.95	VN	60	85		LC CRBT w/ Alkali	planar, closed
PGH-18-05B	24.64	JNT	50	110		JNT in Alkali	planar, open, rough, amph infill
PGH-18-05B	25.4	VN	60	105		LC CRBT w/ Alkali	undulating, closed
PGH-18-05B	25.76	JNT	70	285		JNT in Alkali	rough, open, amph infill
PGH-18-05B	29.46	CT	55	120		UC CRBT w/ Alkali	undulating, closed
PGH-18-05B	34.95	CT	65	60		LC CRBT w/ Alkali	undulating, closed
PGH-18-05B	42.1	VN	35	310		CRBT vein	planar, closed
PGH-18-05B	42.4	VN	35	300		CRBT vein	planar, closed
PGH-18-05B	50	VN	23	290		LC CRBT vein	planar, closed
PGH-18-05B	50.4	JNT	20	220		JNT in Alkali	undulating, rough, open, chl infill
PGH-18-05B	50.8	CT	50	130		UC CRBT w/ Alkali	undulating, planar, rxn rim
PGH-18-05B	53.5	CT	40	265		UC crbt bx	irregular, closed
PGH-18-05B	54.43	CT	30	130		LC MDYKE w/ Alkali	undulating, closed
PGH-18-05B	58	CT	50	45		UC crbt bx	planar, closed



Drilled by:	Chibougamau Diamond Drilling	Start Date:	19-Apr-2018
Township/Area:	Killala Lake Area	End Date:	30-Apr-2018
Claims (converted):	262731, 307858, 230752	Described by:	L.A. Giroux, MSc, PGeo, B. Clark, BSc
Claims (legacy):	TB 4256251	Log date:	4-May-2018

Collar

Azimuth: 338.00°		Easting: 519644		Core size:	HQ	Cemented:	No
Plunge: -60.00°		Northing: 5432360		Casing:	Pulled	Stored:	Yes
Length: 633.0 m		Elevation: 311.0m					

COORDINATES UTM (NAD83 zone 16)

Down hole surveys

Drill Hole	Type	Depth (m)	Azimuth Corrected (°)	Dip (°)	Mag
PGH-18-06	Reflex	24	336.5	-59.3	57351
PGH-18-06	Reflex	72	337.4	-59.3	57706
PGH-18-06	Reflex	126	337.4	-59.3	57202
PGH-18-06	Reflex	180	338.1	-59.1	57064
PGH-18-06	Reflex	231	338.2	-59.2	57080
PGH-18-06	Reflex	288	339.1	-59.2	57005
PGH-18-06	Reflex	339	339.5	-59.3	57275
PGH-18-06	Reflex	387	339.6	-59.3	57007
PGH-18-06	Reflex	441	339.5	-59.3	57210
PGH-18-06	Reflex	489	339.8	-59.3	57153
PGH-18-06	Reflex	552	341.2	-59.2	56787
PGH-18-06	Reflex	603	340.1	-59.3	57039

Description

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-06	0	7.75	OVB	Overburden	Overburden / CASING
PGH-18-06	7.75	8.33	QTZ-SYE	Alkali Feldspathic	Med red to pink, slightly weathered, mg, qtz 10%, k-fldsp 50%, bt 20%, 20% neph (20%). Moderate selective pervasive hematite alteration.
PGH-18-06	8.33	9.15	CRBT	Carbonatite	Light grey to brown-green, fg, massive, brecciated LC, vfg beige mineral forming weak wispy bands, trace fg diss hem.
PGH-18-06	9.15	12.75	SYE	Alkali Feldspathic	As above. 9.15-9.85: pegmatitic, xtals up to 3cm
PGH-18-06	12.75	15.4	SYE	Polymictic Dyke	Matrix supported, clasts from 1mm-50mm, polymictic, clasts are sub-rounded to sub-angular, clasts of fg alkali (pink, minor chl alt), cg alkali (finitized, blue amph), some clasts pure fspar. UC/LC @ low angle TCA <10, undulating, brecciated contacts.
PGH-18-06	15.4	16.43	CRBT	Carbonatite	Pink to cream to light green-blue, fg, massive, local wispy bands of blue-green (amph + apt + py), trace diss py, diss hem. BX UC & LC
PGH-18-06	16.43	25.9	SYE	Alkali Feldspathic + Carbonatite veining	Alkali as above, local blue amph near contact & rimming CRBT CRBT; up to 20cm, locally bx contact, light pink-cream-blue, fg, massive, trace diss py, apt cumulates forming wispy bands near contacts. Fg black mineral, diss hem.
PGH-18-06	25.9	30.1	CRBT	Carbonatite	Cream to light pink-blue-green-purple, fg, massive, wispy bands of blue amph and apt cum (dark br-grn) up to 2cm, local alkali clasts up to 4cm and commonly completely altered. Cross cut but lighter coloured dyke (later phase, more dol rich). Apt near clasts & contacts. LC undulating
PGH-18-06	30.1	41.5	CRBT-BX	Carbonatite + Alkali Feldspathic	Alkali as above, CRBT bx zones up to 1.5m CRBT; light purple-grey-cream, fg, massive, locally weakly vuggy, patchy fg fluorite, apt cumulates up to 2cm along contacts/clasts, diss hem, trace diss py. Contacts are planar-undulating, locally brecciated, commonly with dissolution/rxn rims along contacts.
PGH-18-06	41.5	48.18	SYE	Alkali Feldspathic	Med red to pink, qtz 10%, k-fldsp 50%, bt 10%, amph 10%, chl 10%, plag 10%. Fg-mg, selectively pervasive chl/hem/amph alt. Thin crbt veins <1cm (3per m)
PGH-18-06	48.18	48.65	CRBT	Carbonatite	Light pink-cream, cg, massive, trace diss/blebs of py, diss hem, apt cumulate near LC (green-brown, <4mm)
PGH-18-06	48.65	52.32	SYE	Alkali Feldspathic minor CRBT BX	Alkali as above. CBRT veins up to 3cm, light pink-blue, fg, wispy blue, diss hem.
PGH-18-06	52.32	53.56	CRBT	Carbonatite	Light pink-blue to green-grey, locally 25% bt/chl (2mm), fg, massive, diss hem, trace diss py
PGH-18-06	53.56	58.1	SYE	Alkali Feldspathic + Carbonatite	Alkali as above. CRBT up to 0.5m; light pink-purple-cream, patchy fg blue amph, forming wispy bands and rimming crbt vein/clasts locally. Diss hem, trace diss py up to 5mm, apt cumulates up to 5mm locally near contacts.
PGH-18-06	58.1	80.3	SYE	Alkali Feldspathic	Alkali; med red-grey-pink, fg-cg, pegmatitic locally (2cm), qtz 10-15%, k-fldsp 60%, bt/chl 10-30% locally), amph 10%. 65.5-67: CRBT BX; grey to green-beige-purple, fg, diss/blebs py, 69.80-70: low angle crbt veining containing 3cm bx with clasts of crbt.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-06	80.3	86.3	CRBT	Carbonatite	Light pink-green-beige to grey-green locally, fg, massive. 80.3-82.3: fg, local vugs, patchy fluorite, trace diss py, apt cumulates up to 4cm, fg light beige mineral, 82.3-85: grey-green-blue, magnetic, locally mottled, mafic dyke that has been intensely altered?, amph up to 3mm 85-86.3: light pink-purple, fg diss black mineral, planar LC, patchy fluorite, diss hem
PGH-18-06	86.3	90.5	SYE-BX	Alkali Feldspathic Breccia with Carbonatite infill	Alkali as above. Clasts from 5mm-80mm, rxn rims up to 8mm, smaller clasts being completely altered to bt, crbt/local qtz infill. CRBT; light pink-purple-green, fg, mottled, patchy fluorite locally, blue amph rimming clasts, local apt cum up to 3mm (brn-red, wispy)
PGH-18-06	90.5	91.25	MDYKE	Mafic Dyke	Black, fg, magnetic planar UC@45/275& LC 10/310
PGH-18-06	91.25	97.9	QTZ-SYE	Alkali Feldspathic	Grey-green-pink, bt 30% (being replaced by chl), local veins with alt halos up to 1cm (albite?, pink halo). Qtz 10%, k-fldsp 40%, amph 15%, albite? (5%).
PGH-18-06	97.9	108	SYE-BX	Alkali Feldspathic Breccia with Carbonatite infill	Breccia zones up to 0.5, massive CRBT up to 1.5m. Alkali as above, clasts up to 8cm, angular to sub-angular, local rxn rims up to 1cm (bt/amph), clasts are fractured (mosaic) CRBT; light pink-cream-blue-green-purple, locally weakly banded, wispy bands of apt cum surround clasts/contacts, diss hem with apt, trace diss py & masses up to 1cm. Locally weakly vuggy, vugs up to 5mm, staining around vugs, hem infill. 102.4-105: Unbrecciated
PGH-18-06	108	109.55	SYE-BX	Alkali Feldspathic + minor breccia	Alkali; med red-pink, fg-mg, selective pervasive chl/hem alt (moderate). Qtz 10%, bt/chl 15%, k-fldsp 50%, amph 15%, neph 10%. LC sharp, planar @20/122
PGH-18-06	109.55	110.8	MDYKE	Mafic Dyke	Black, fg, magnetic, amygdales filled with carb/chl <3mm. UC & LC sharp, planar, chilled margins ~5cm.
PGH-18-06	110.8	117.2	SYE	Alkali Fekldspathic	Alkali as above, locally cg up to 1cm. Crbt veins <5cm rimmed by blue amph.
PGH-18-06	117.2	124.85	SYE-BX	Alkali Feldspathic Breccia with Carbonatite infill	Alkali as above, clasts up to 8cm, angular to sub-angular, local rxn rims of bt/amph. CRBT; light pink-cream-blue-green-purple, fg, mottled, fg diss py, diss hem, apt cum forming wispy bands near contact/clasts, local fg bt <2mm. Fg black diss mineral pyrochlore(?)
PGH-18-06	124.85	134	MIX ZONE	Quartz-Syenite + Carbonatite Breccia	Mixed zone of Carbonatite-Breccia and Quartz-Syenite to Syenite with Carbonatite veining. Carbonatite breccia subsections up to 70cm consisting of densely packed angular syenitic clasts with reaction rims up to 5mm of brownish-black mica/amph. Occasional fluorite patches 0.5-3cm wide noted in carbonatite matrix from ~126.5-132m. Locally up to 10-20% fg pale yellow-green epidote (replacing pyx?) in syenite as well as matrix of breccia. Up to 10-15% quartz only locally. 132.2-132.4m: CRBT vein banded with cumulates of rounded deep red hematized clasts (1-5mm). Banding at 50/180. Contacts sharp & brecciated, ~// to banding.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-06	134	141.44	QTZ-SYE	Quartz-Syenite	Mg to cg massive quartz-syenite to granite with minor carbonate veining and up to 30% qtz locally (typically <10%). Locally somewhat gneissic in appearance (where faintly banded by up to 20% cg dark brown to green mica/amph/chl). <5% carb veining, typically <0.5cm. Wide veins have biot/amph rxn rims. Single 6cm wide white vein at 135.5m (UCT at 60/210, LCT highly irregular ~perp to CA) spotted by 1% blebby sulph + hem. 30+% ep/chl or blue amph patches and veins locally.
PGH-18-06	141.44	149.32	MIX ZONE	Quartz-Syenite + Carbonatite Breccia	Similar to interval from 124.85-134m. Approximately 40% Carbonatite Breccia, 60% Quartz-Syenite. Thick mica/amph rxn rims typically associated with crbt veining. Occasional fg purple fluorite patches in carbonatite veins. From 142.92-143.1m: Massive fg white Carbonatite vein spotted by vfg hematite. Bands of fg apatite (UV) and coarse blebs of py+/-pyrochlore. Contacts at 55-60/240, near planar, sharp. No reaction rim. From 148.56-149.3m: Micaceous interval with 80% fg to cg dark brown to black mica + fg amph? ribboned w/ 20% carbonate. Single 4cm wide syenite clast.
PGH-18-06	149.32	156	CRBT	Carbonatite	Carbonatite with minor brecciated syenite. Massive typically fg-mg light grey to pink CRBT. Ip to 10% fg apatite under UV locally. UCT at ~70/(beta couldn't be determined due to bx'tn), sharp, irregular, bx'td. LCT bx'td and gradational. From ~150.7-151.4m: Crosscutting irregular bands up to 3cm wide of later yellowish-brown Fe-carbonate? At 151.25m: ~15cm zone with 10-15% mm-sized blebs of py + black pyrochlore (or pyroxene???) From 152.2-153.1m: Subinterval of mg pink syenite. Brecciated at contacts. From ~154-154.4m, wispy bands of blueish-grey amph in Crbt. From 155.3m to LCT, inclusions of chl-mica-amph? altered material. Some <1cm wide rounded 'cores' of syenitic material preserved within.
PGH-18-06	156	165	SYE	Syenite to Qtz-Syenite	Typical syenite with micaceous rich zones. X-cut by 5-10% carbonate veining (up to 6cm wide, typically <1cm) with patches of hematite and fluorite and occasionally blebby pyrite. From 162.6m to end of interval, vcg near pegmatitic QTZ-SYE interval with upwards of 30% cg white feldspar plus qtz locally. With crosscutting dark blue-black amph veins and up to 20% patches of fg dark green acicular secondary mineral (+/-ep,chl).
PGH-18-06	165	165.95	CRBT	Carbonatite	From 165.0-165.3m: Vfg med green micaceous mafic dyke? At transition into Carbonatite. Abundant fluorite (+kspar and possible neph) in carbonate veins. From 165.3m: Cg light pink carbonatite cut by later stage yellowish-brown carbonate veining (65/080). <1% blebs py a/o pych, 10-20% fg kspar (absorbed clasts). LCT at 65/230 (sharp, planar, open).

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-06	165.95	181.77	SYE	Syenite to Qtz-Syenite w/ lesser CRBT	A medium to coarse grained syenitic interval. Mafic rich zones (>60%, mica-rich). Local ep-chl and sodic (blue amph) alteration. From 174.7-175.0m: Massive vfg white CRBT. Fine apatite under UV. Otherwise barren. At 50/010. From 178.12-178.5m: CRBT. With abundant vfg kspar throughout. At 15/210. From 178.5-179.1m: Coarsely brecciated syenite (angular clasts) w/ weakly developed reaction rims. From 179.1-179.72m: CRBT. At 60/020. Slightly coarser grained. Spotted by few % deep red hematite. <1% disseminated py.
PGH-18-06	181.77	184.4	CRBT	Carbonatite	Pale pinkish Carbonatite. Faint to moderate banding defined by fine red-purple spotting. UCT at 50-55/310, near planar, bx'td. LCT in breccia. Banding at 50-60/320. Tr-1% disseminated to blebby py+/- pych. 7cm wide mafic band spotted with up to 1mm plag grains starting at 182.8m (50/315) - DIAB dyke?.
PGH-18-06	184.4	193.13	SYE	Syenite	Med to coarse grained med pink spotted with green, blue and black (amph/pyx). <5% faint ribbonary carbonate veins producing a faint zebra like extensional feature in spots. From 185.18-185.23m: Mica-chl rich CRBT zone. Irregular bx'td contacts. Broken on chlorite coated fractures. Weakly developed slickensides on fract. From 188.2-~188.7m: Heavily bx'td. Brittle FZ. Chl coated slickensides fract. 07/360 (uncertain if angle representative). From 191.2-191.4m: CRBT vein. Bx'td contacts, primary banding overprinted - no angle determined. Spotted by rusty red alt'n. No sulph/pych observed.
PGH-18-06	193.13	195.97	CRBT-BX	Carbonatite Breccia	Coarsely brecciated angular purplish-pink syenite clasts up to 20cm wide (typically <5-10cm). Well developed biot-chl reaction rims and chlorite coated slickensides fractures. Fluorite patches noted in carbonate veins. Upper ~40cm contains semi-massive py+mt+/-po (strongly magnetic) with carbonate in matrix around SYE clasts. Mag susc up to 14. Fg sugary apatite noted on fracture surfaces (with and without UV). More sulphides in breccia matrix immediately below dyke. From 194.13-194.53m: Fg medium blueish-grey dyke. Ijolite? Chl-coated fract. Spotted with fine biotite, green and black pyx?, 10% pale pink neph? + carb? Very fine ribbonary carb veins. UCT at 70/340. LCT at 55/320
PGH-18-06	195.97	206.08	CRBT	Carbonatite	Light grey to pink, medium to very coarse grained CRBT. Moderately banded except where vcg. Wispy dark blue-black chl-amph bandings. Patches and bands of apatite noted under UV. Blebs of pyrrhotite+magnetite (strongly magnetic) in up to 2cm wide bands ~perp to CA. Pych possibly associated with sulphides. Banding at 196.0m (60/180), 199.1m (40/160), 204.8m (40/260). UCT bx'td, LCT at 35/280 (sharp, planar).
PGH-18-06	206.08	209	SYE	Syenite w/ lesser CRBT veining	Unbrecciated syenitic interval with <10% carbonate veining. Clay alt'n noted on open fractures. From 206.1-206.7m: Banded by up to 6cm wide fg dark green-grey mafic (or ijolitic) veins with up to 1.5cm wide reactions envelopes (carb+clay+chl?) From 206.77-206.96m: Carbonatite vein at 50/325. Similar to upper CRBT unit.
PGH-18-06	209	210	CRBT	Carbonatite	Light pink, mg carbonatite. Spotted by deep orangy red kspar. 1-2% disseminated to blebby sulph (+pych?).
PGH-18-06	210	211.3	DIAB	Diabase Dyke	Very fined grained dark grey-black diabase dyke. 5% light grey plag phenocrysts/laths. Chlorite coated slickensided fractures. UCT at 20/160, undulating, sharp, chlorite slickensides. LCT at 15/060, similar to UCT.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-06	211.3	212.05	CRBT	Carbonatite	Similar to unit above DIAB dyke.
PGH-18-06	212.05	220.42	SYE	Syenite	A typical syenitic unit with more mafic rich zones. ~10% crosscutting carbonate veins define a weak extensional brecciation (strengthening slightly downhole). 30-40% po+mt in 7cm wide carbonate vein from 216.76m (30/150). Lower contact open, chloritic.
PGH-18-06	220.42	221.5	CRBT	Carbonatite	Fine grained carbonatite with light yellowish-green tint. Colour due to irregular undulating later stage Fe-carb veins? Up to 5cm wide patches and bands of vfg purplish-red alteration mineral with apatite(?) (fluoresces light blue to white). Single fine ribbon of fluorite.
PGH-18-06	221.5	230.1	SYE	Syenite/Syenite Breccia	Similar to previous SYE interval but with increasing carbonate (20-25%) and more strongly brecciated locally. Extensional fracturing results in zebra-like stripes in places. Apatite patches and bands noted in carbonate veins under UV.
PGH-18-06	230.1	231.34	CRBT	Carbonatite	Fg, sugary, massive, light grey Carbonatite. Up to 1% py (cubic), <0.5% pych? UCT at 50/340, sharp, stepped, open. LCT at 65/360, sharp, near planar, open, clay coated.
PGH-18-06	231.34	237.8	SYE	Syenite	Generally unbrecciated syenitic interval. Typically medium grained and deep pink in colour. Some banding defined by cg biotite plates. From 236.0-236.2m: Mg Carbonatite spotted by deep red hem at 30/300.
PGH-18-06	237.8	247.4	SYE-BX	Syenite/Syenite Breccia	Mix of unbrecciated and brecciated syenite. Syenite similar to previous intervals. <20% Crbt overall. Fluorite noted in veins. Occasional blueish-amph and greenish-chl-ep veins in unbx'td sections. From 240.7-241.9m: Carbonatite. Fg, yellowish brown to grey. UCT bx'td. LCT at 30/310 (irregular, sharp).
PGH-18-06	247.4	250.9	DIAB	Diabase Dyke	Massive, vfg dark grey dyke. Up to 1cm long plag laths and coarse magnetite grains (up to 2mm). UCT at 15/065, sharp, planar. LCT at 20/050, sharp, planar, closed.
PGH-18-06	250.9	252.6	QTZ-SYE	Syenite/Quartz-Syenite	Massive, unbrecciated, mg, deep pink alkalic interval w/ <10% mafic component. Locally only (towards centre of interval) 20-30% quartz. From 241.1 to 241.44m, vfg greenish-grey mafic dyke(?) banded by very fine carb stringers. Non magnetic.
PGH-18-06	252.6	254.2	CRBT	Carbonatite	Massive, unbanded, white to light yellowish coloured, fg sugary Carbonatite. Spotted by 1-2% fg disseminated hem, sulph +/-pych? UCT at 20/330 (sharp, irregular, 7cm syenite at top of interval). LCT at 90/000 (banded).
PGH-18-06	254.2	257.5	SYE-BX	Syenite Breccia	Typical Syenite Breccia where syenite >> carbonatite. Mafic reaction rims around sub rounded sye clasts. Fluorite noted in carb veining.
PGH-18-06	257.5	276.33	QTZ-SYE	Syenite/Quartz-Syenite	A med to coarse grained (locally vcg) Syenite to Quartz-Syenite with only minimal carbonate veining. Banded by 20-40cm wide mafic zones (40-50% dark green to black biot+pyx). Mafic minerals define weak gneissic texture locally (generally subparallel to CA). Fractures filled by blue amph +/- carb and bright green ep+/-chl. Both also occur as patches replacing pyx?

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-06	276.33	296.6	SYE-BX	Syenite/Syenite Breccia	To 281.7m, pinkish red alkali feldspar is moderately brecciated by 30-40% white carbonate veining. Angular to sub rounded kspar clasts have dark brown micaceous rxn rims up to 1cm thick. All mafics have been replaced by secondary sodic amph, ep, chl. Tr sulph +/- pych noted in carb veining. Clasts are ~80% kspar. 281.7-287.8m, includes intervals up to 1m long of unbx'td syenite with only minor carb veining. 287.8-289.0m, back to syenite-breccia (sy>carb). 289.0-292.6m, only minor brecciation & lesser carb veining. 292.6-293.9m, Sye-Bx with 30cm banded CRBT vein at 65/230. 293.9-296.6m, unbrecciated syenite. 0.5-10cm wide crbt veins.
PGH-18-06	296.6	298.26	CRBT	Carbonatite	Blueish-grey low angle fg Carbonatite to Silicocarbonatite vein (fine mica). Irregular, undulating banding at ~10/080. 2cm wide cg pink carbonate vein near parallel to banding. Minor syenitic clasts with thick (0.5-1cm) reaction rims at contacts. Both contacts strongly brecciated (angle undeterminable).
PGH-18-06	298.26	311.3	SYE	Syenite	A medium to coarse grained massive syenite w/ <5% qtz. Predominantly pink kspar with up to 40% mafics variable altered to epidote/chlorite. Generally devoid of fabric. Common x-cutting carb veins, typically <3mm wide. 301.55-302.0m: Fg salt & pepper textured Silicocarbonatite (carb+biot+1-3% fine sulphides). 302.0-~304.2m: Unusual breccia zone with patches of silicocarbonatite, mg to vcg kspar, pistachio green ep+/-chl in a dark brown-black micaceous matrix with only minor carb. Matrix is moderately magnetic. 307.66-308.1m: Zebra striped zone (micaceous bands with fine ribbony carb veining) ending with 4cm wide carbonatite vein at 50/310 with 5-10% hematite patches.
PGH-18-06	311.3	317.47	SYE-BX	Syenite Breccia	Continuation of upper unit but variably brecciated by up to 30% carbonatite. Reaction rims up to equivalent thickness of sye clasts.
PGH-18-06	317.47	323.69	SYE	Syenite	Transitions back to unbrecciated syenite. Mafics define a faint gneissic fabric ~// to CA. Carbonate veining up to ~2cm thick also runs parallel to CA from 320.1-323m.
PGH-18-06	323.69	325.34	MDYKE/CRBT	Carbonatite/Mafic Dyke?	Mixed zone with alternating bands of greyish Carbonatite and green to black Mafic Dyke? Banded at 10-50cm intervals. Mafic zones exhibit undulating banding at ~35/280. Locally moderately magnetic. Mafic bands consist of coarser grained biot+pyx?+orangy pink neph?+<10% carb - ljolite? Crbt contains up to 30% mafics locally. Possible apatite bands at LCT.
PGH-18-06	325.34	328.08	QTZ-SYE	Quartz-Syenite	Coarse grained Quartz-Syenite to Granite (>30% qtz locally). Minor carb veining (<5%). At 327.4m, 3cm wide patch of blue amph and ep+/-chl in veins. Weak gneissic fabric //-to CA developed over top ~1m of interval (defined by biot+green pyx).
PGH-18-06	328.08	329.12	DIAB	Diabase Dyke	Very fine grained, massive dark grey to black dyke with 3-5% white plag? phenocrysts. UCT at 45/220 (sharp, irregular, chilled). LCT at 45/220 (sharp, planar, chilled).
PGH-18-06	329.12	331.35	CRBT	Carbonatite	Light grey to pink (wet) fg-mg Carbonatite. mm-sized pych aligned in band at 329.36m. Otherwise <1% fine disseminated pych? With lesser sulph (py). Spotted by vfg deep orangy red hem+carb alt'n? 15cm wide gran clast from 330.23m. UCT at 45/220. LCT highly irregular (could not get angle).
PGH-18-06	331.35	355.2	SYE-BX	Quartz-Syenite/Syenite Breccia	Mixed zone, variably brecciated with up to 3m unbrecciated intervals. Syenite>>Carbonatite. 336.8-337.5m: Cg light pink granite transitioning into vcg pegmatite. 30-40% quartz+plag with lesser kspar, <10% mafics. X-cut by fine epidote+/-chl and blue amph+carb veins (10-20%).

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DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-06	355.2	357.08	CRBT	Carbonatite	Light greyish-pink Carbonatite. Typically cg-vfg. Irregular wispy blueish-grey banding at 35/220 (amph?). UCT is brecciated. Top 40cm contains clasts and patches of syenitic material and is highly irregularly banded by up to 30-40% apatite. LCT is sharper and near planar (w/ typical alt'n rim) at 65/230. Fine to coarse blebs (1cm) of py+po.
PGH-18-06	357.08	360.9	SYE	Syenite/Carbonatite	Fine to medium grained, ranging from spotted purple-green-blue mafic rich (qtz-sye to sye to deep reddish-pink (mafic poor) syenite. Banded by ~30% Carbonatite veins up to 35cm wide. Crbts all at moderate to high angles to CA. Sye also ribboned by fine carb veining (mod CA).
PGH-18-06	360.9	362	CRBT	Carbonatite	Mg-cg pink Carbonatite. UCT bx'td, irregular. LCT at ~75/190 (near planar, bx'td). Locally up to 10% blebs 1-20mm wide of py+po+mt.
PGH-18-06	362	364.9	UNKN	Mafic/ljolite???	Fine grained dark blueish-green micaceous interval with dark brown mica (biot/phlogopite) + blue amph?, green pyx?, neph+kspar?. Very fine ribbony carb veining //-CA.
PGH-18-06	364.9	372.56	SYE-BX	Syenite/Syenite Breccia	Typical fine to medium grained syenite. Occasional 1-2cm carb veins. Typical sodic amph and epidote veining. From 369.0-369.69m: Syenite-Breccia (30-40% Crbt matrix) 369.69-370.16m: Carbonatite. LCT at 80/080 (planar). From 370.16m to end, increasing carb veining, weakly bx'td, increasingly cg, increasing blue amph veining. LCT at 25-35/130 (banded, bx'td), fluorite noted in carb veining.
PGH-18-06	372.56	377.63	CRBT	Carbonatite	White to light pink Carbonatite. Barren white from top to ~374.5m. From 374.6-375.3m, remnant texture of radiating tabular vcg xtals (replaced by finer grained carbonates?) with interstitial vfg reddish brown hem? LCT at 75-80/040 (sharp, near planar).
PGH-18-06	377.63	381.85	SYE	Syenite	From 377.63-378.24m: Medium pink fg-mg alkalic rocks weakly brecciated by x-cutting carbonate veins up to 2cm wide. From 378.24-378.53m: Carbonatite. Light grey to pink, wispy blue (amph) and brown (carb?) veins ~// to contacts. Apatite bands and elongated py-po blebs both // to banding. UCT at ~80/350 (irregular/bx'td, sharp, rxn rim on sye). LCT at ~75/230 (banded, near planar, alt'n of sye). Below is typical of more mafic-rich syenitic/quartz-syenite intervals. Variably grain size (fg-cg). Biot+pyx? (up to 30% locally) defines a weak foliation ~// to CA. ~5% x-cutting carb veining up to 2cm wide.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-06	381.85	407.47	CRBT	Carbonatite	<p>A light pink Carbonatite varying from fg to vcg. Locally banded by apatite +/- wispy blue amphiboles. Py blebs and cubes often associated with patches of blue amph.</p> <p>UCT at ~70/110, bx'td and irregular, banded with apatite. CPS <200.</p> <p>At 387.65m, 4cm wide bx/fz at 45/010. Angular crbt clasts (up to 2.5cm) in black chloritic matrix. Open chlorite coated contacts.</p> <p>From ~389-389.68m, ~50% carb : 50% wispy blue-grey bands of acicular blue amph + apatite w/ lesser mica. Fluorite noted in carbonate.</p> <p>At 392.3m, pych + cubic py+ po (brownish coloured sulph) in faint bands with fg apatite.</p> <p>From 395.6 to ~398m, cg light yellowish-green apatite crystals up to 2cm (also visible without UV). Up to 20% locally. Also bands of vfg apatite with very fine disseminated pych? and coarse sulphide blebs.</p> <p>From 399.31-400.2 and 402.67-53m: Micaceous bands up to 40cm wide. Fg with coarser 'books' of micas. Greenish-grey to dark brownish-grey. Pyroxenite??</p> <p>From 400.2-400.5: Very coarse grained, pegmatitic elongated bladed white carbonate xtals up to 6cm long. Xtals unaligned.</p> <p>From 401.33-401.9m: Up to 20% pyrrhotite+magnetite (strong magnetic, somewhat net textured) in vcg carb.</p> <p>LCT strongly irregular, brecciated. Approx. 45dtca.</p>
PGH-18-06	407.47	414.4	DIAB	Diabase Dyke	<p>Very dark grey aphanitic Diabase dyke. Strongly magnetic. Core frequently broken up, with greasy slickensided chlorite coated fractures.</p> <p>Single 2.5x2.5cm 'clast' with light grey carb?+mt at 410.07m. From 411-412m, 1-2% plag laths. LCT at 30/340 (sharp, planar).</p>
PGH-18-06	414.4	441.13	CRBT	Carbonatite	<p>Continuation of Carbonatite interval above Diabase Dyke. Wispy apatite (+/- blue-grey acicular amph) bands 20-30% overall of unit.</p> <p>From 416.77-417.1m: Orbicules developed up to 6mm in size in a carbonatite matrix within a low angle irregular band. Orbicules are strongly magnetic (loose ones can be picked up with magnet). Typically elongated oval/egg shape. Cores resemble matrix (carb spotted with black mineral), 1st rim green, 2nd rim black/micaceous.</p> <p>From 429.4-430.4m: Cumulates of fine to coarse grained magnetites associated with vfg green apatite-rich bands. 2-4% mt, <1% sulph blebs.</p> <p>From 437.8-438.34m and 439.88-440.17m: Inclusions of strongly fenitized syenitic material x-cut by amph+carb veins.</p> <p>Banding at 418m (60dtca), 430m (50/300), 431.3m (55/270).</p> <p>At 428.15m, open fracture coated with well formed white carb xtals with brownish coating at 15/270.</p> <p>Very coarse grained bladed carb xtals again 432.5-437m.</p> <p>LCT at 55/200 (banded, planar).</p>

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-06	441.13	465.8	SYE	Syenite to Granite	Massive, unbrecciated light to medium pink rock generally dominated by alkali feldspar. Carbonate veining decreases downhole, with almost no carbonate veining occurring below ~453m. Mafic component also increases downhole from 5 to 20% (biot+green pyx). Below ~455m, white feldspar (plag) & quartz become more dominant with kspar absent in places, magnetite noted (mag susc - up to 7.69). From ~445-445.6m: Low angle carbonatite vein at 20/250 (UCT). UCT banded with coarse py. LCT at ~10dtca (truncated by amph-carb vein). From 446.6-447.25m: Carbonatite vein with 2x15cm wide dark green-black micaceous bands (biot+pyx+carb w/ chlorite coated fractures). UCT at 50/240 (sharp, planar). LCT at 50/200 (sharp, planar). Banding // to contacts. Single mm-wide magnetite vein in 2nd band. From 456.79-457.0m: Fg massive yellow-green epidotized mafic dyke? From 465.57-465.95m: Pegmatite. Orangy kspar + white plag (up to 6cm) with biotite 'books'. Finer interstitial dark green pyx + blue amph
PGH-18-06	465.8	468.7	SYE-BX	Syenite/Syenite Breccia	Zones of weakly developed breccia with carb+apatite+blue amph veining x-cutting the syenite. Micaceous reacting enveloped to carb veins. Breccia zones 30-40cm wide. Otherwise continuation of unit above.
PGH-18-06	468.7	488.8	QTZ-SYE	Quartz-Syenite to Granite	Massive unbrecciated medium to dark pink mg alkalic rich interval with 20-30% quartz locally. <10% mafic component. Minor carb veining up to 2cm wide. Dark blue amph+carb veins and coating on fractures. From 479.75-480m: 7cm wide carbonatite vein with 2cm fluorite patch. 5cm wide reaction envelopes (vfg). Brecciated, irregular contacts. From 480.7-481.0m: White, fg Carbonatite vein. UCT at ~60/080 - apatite banded. LCT at 25/120, near planar.
PGH-18-06	488.8	510.4	SYE-BX	Syenite to Granite Breccia	Mixed zone of Quartz-Sye/Gran and altered alkalic clasts (>80% kspar) brecciated by Carbonatite veins up to 80cm wide (typically <20cm). Alkalic clasts range from angular to sub rounded and are variable enveloped by fg dark brown-black reaction rims. Occasional coarser grained clasts include white feldspars. Abundant fg apatite veining in carbonatite sections under UV. Unit includes unbrecciated alkalic sections up to 1.5m wide (30% of unit overall). Bands of fg magnetite noted at 490m. From 494.4-494.75m: FZ/Breccia Zone at 25/070. 2cm wide zone of heavily chloritized material followed by a 20cm wide breccia dyke. Mixed litho angular clasts in a very bright orange fg alkalic matrix From 497.26-497.42m: Dark grey to black fg mafic band/dyke. With coarser grained biot 'books' - Pyroxenite? From 497.7-498.15m: Vfg greyish breccia dyke with <0.5cm mixed clasts incl alkalic. UCT at 25/090, planar, sharp. LCT at 25/030, bx'td. From 500.95-501.66m: Cg white to light pink Carbonatite. Wispy banding at contacts. From 502.95-503.8m: Carbonatite vein. From 504.2-504.4m: Carbonatite vein with 1cm wide pyrite band // to contacts. At 50/170. From 510.1-510.37m: Fg aphanitic bright greenish-grey dyke? Sugary. At 50/130.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-06	510.4	530.62	GRAN	Granite	A medium pink coarse grained Granite with kspar, up to 30% quartz, < 10% mafics, and 10% white plagioclase locally. Massive and unbrecciated. Typically only minor carbonate veining (<1cm wide). Moderate epidote + blue amph veining throughout. From 513.4-513.67m and 516.0-517.3m: Dark grey sections of >90 fg mafics (predominantly biot) plus <10% carb. From 515.0-515.64m: Carbonatite dyke. Coarse grained, light pink. Minor wispy amph+ap banding. UCT at 55/280 (sharp, planar). LCT approx. perp to CA, highly irregular, sharp. From 524.6-524.75m: Banded Carbonatite vein at 30/240.
PGH-18-06	530.62	533	CRBT	Carbonatite	A strongly banded fg Carbonatite changing from light pink to med grey at 531.2m. Wispy ap+amph banding at ~35/300. UCT at 70/210 (banded, near planar). LCT approx. perp to CA, bx'td
PGH-18-06	533	542.3	GRAN	Granite	Similar to upper GRAN unit. Deep reddish-pink colour over top few metres immediately below upper CRBT and again over last 3m above lower CRBT - more intensely fenitized (alkalic plus sodic -(blue amphis)).
PGH-18-06	542.3	543.95	CRBT	Carbonatite	grading from cream to pink-blue moving down hole. Fg crbt with wispy ap+ blue amph, trace diss py/pyrrhotite, diss hem. LCT @ 60/160
PGH-18-06	543.95	546	GRAN	Granite	Pink to opaque-green-brown, altered granite (fenitized))15% qtz, 30% bt, alkali fspar 50%, 5% neph. Local very weak foliation(?) with pods of massive qtz. Fractures have pink-red alt halo and filled with blue vfg amph/chl.
PGH-18-06	546	547.5	CRBT-BX	Carbonatite + Granite Breccia	546-546.3: fg, light pink, weakly banded hem +/- ap 546.3-546.7: cg, purple to cream, diss hem 5%, vugs up to 2mm filled with hem/cc, vfg ap rimming xtals. 546.7-547.5: crbt bx, light pink-purple-green-cream, trace diss py up to 2mm, diss hem, vfg apt(?). Gran; light pink, gradational clasts boundaries, rxn rims up to 5mm, clasts are sub rounded.
PGH-18-06	547.5	556.56	GRAN	Granite	10-20% qtz, bt 10-20%, kspar 40%, plag, 10%, amph 10%, chl 10%. Light pink-red to cream-brown (where bt more abundant). Locally veins filled with blue amph, wall rock fenitized. Local crbt veins up to 20cm, typically <5cm. CRBT; grey-pink-purple, fg to cg locally, darker zones have more abundant amph up to 2mm elongate xtals. steel blue fg submetallic mineral, H4, anhedral masses up to 4mm.
PGH-18-06	556.56	557.45	CRBT	Carbonatite	Light pink-purple-green, fg, undulating UC & LC, fg diss hem, apt cumulates up to 1cm. Trace diss py
PGH-18-06	557.45	565.2	GRAN	Granite + minor Carbonatite	Light pink to med red, fg-peg locally, qtz 20%, k-fspar 40%, plag 20%, bt/chl/amph 20%. Light pink alt halos around fractures, commonly filled with blue amph. Chl replacing biot. 559.5-560: CRBT bx; light green, cg, silo-calc, by gran clasts, sub rounded, no rxn rims. Moving down hole crbt veins sub-parallel TCA up to 2cm. light purple-pink to blue, fg, diss py.
PGH-18-06	565.2	569.3	CRBT-BX	Carbonatite with Granite clasts	GRAN; mg-cg, fenitized, red-pink, 15% qtz, kspar 60%, plag 10%, bt/chl/amph 15%. Gran clasts rounded-sub, no rxn rims, from 5mm-10cm CRBT; light olive green-pink-grey, at low angle TCA, contacts undulating, fg, weakly banded sub-parallel to contacts with GRAN. fg diss hem.
PGH-18-06	569.3	577	GRAN	Granite	Qtz 20%, k-fspar 60%, plag 20%. pink-red-cream, fg, fenitized granite, veins of crbt + amph up to 3cm, alt halos of red hem(?), chl replacing bt locally.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-06	577	578.15	CRBT	Carbonatite	Light pink-cream-blue-green, fg magnetite increasing down hole. Wispy blue amph, ap cum surrounding gran clasts and concentrated above LC forming discontinuous band. Trace diss py, patchy fluorite
PGH-18-06	578.15	582	GRAN	Granite + minor Carbonatite	Pink-red, fg-mg, qtz 15%, kspar 60%, hem/chl alt crbt veins up to 35cm, commonly <1cm, crbt light green to pink, patchy fluorite, trace diss py,
PGH-18-06	582	587.3	GRAN	Granite(?)	Highly fenitized granite? Dominated by qtz / bt, fractures filled with amph/chl with light pink-red alt halos. Fg-mg, silica flooded wiping out originals grains. Trace diss sulphides, local white plag up to 3mm.
PGH-18-06	587.3	589.3	CRBT	Carbonatite with minor Granite	UC brecciated, fg-cg, fg zones are grey-olive green, cg zones light purple-olive green, both have diss hem. Cg zone has ap up to 3mm, trace diss py up to 3mm anhedral. Cg zones appears weakly banded b/c fg py along wavy discontinuous planes. Planar LC @ 75/340
PGH-18-06	589.3	595.3	GRAN	Granite	Qtz 50%, bt, 20%, kspar 20%, plag 10%,fg-cg, bt locally being replaced by blue amph or chl. Trace diss py and moly(?). Unit cross cut by multiple <5mm veins of silico-carb + amph, with alt halo (pink-green). LC is gradational
PGH-18-06	595.3	597.5	CRBT-BX	Carbonatite + Granite	Three different CRBT veins, 12-33cm intruding fg-locally pegmatitic (up to 5cm) granite. Contacts are planar to brecciated commonly with alt halo <7mm giving the appearance of an undulating contact. 595.30-595.67: light pink-purple to cream, diss hem, wispy bands of brown-green apt near contacts and in middle of vein, trace diss py, calc>dol. LC @ 70/160 595.9-569.10: fg-cg, light green to brown, pyrochlore <2mm(?), brown staining possibly REE fluorocarbonate. LC @ 60/110 596.28-956.46: cg, light purple-grey-brown, fg light green-brown apt surrounding carb, with diss hem. LC @ 40/195
PGH-18-06	597.5	603	GRAN	Granite	Pink-red to white, qtz 40%, bt 25%, kspar 35%, fg-mg, intersecting crbt veins <3cm with fractures/veins having rxn rims pink/green (hem/chl) with blue amph.
PGH-18-06	603	608.3	GRAN	Granite + minor Carbonatite	CRBT veins <30cm, fg-cg, light purple-olive green-pink, in cg purple crbt <3mm patches of beige mineral, diss hem. Contacts undulating to planar with minor rxn rims. GRAN; fg-cg, pink-red, 40% qtz, kspar 30%, bt 20%, 10% plag. LC is crbt vein ~18 cm with planar contacts UC @ 20/140, LC @ 40/180
PGH-18-06	608.3	609.2	UNKN	Unknown	Strongly to complete selective pervasive hem alt, sharp UC/LC, plag xtals up to 3mm, vfg green-grey mafic (?)groundmass, non-magnetic. Trace diss py up to 4mm. Possibly mafic dyke that has been strongly hem alt? also appears further down hole with CRBT at upper contact. UC@ 40/180, LC @ 30/125.
PGH-18-06	609.2	611.5	GRAN	Granite + minor Carbonatite	Qtz 20%, kspar 40%, plag 20%, bt 20%, fg-cg, pink-red, intersecting crbt veins rimmed with blue amph, moving down becoming more brecciated. CCt end in CRBT with UC @ 35/180 CRBT; grey to light purple-pink-green, fg, diss py, diss hem
PGH-18-06	611.5	612.1	UNKN	Unknown	Similar to UK unit described above. Strongly to complete selective pervasive hem alt, sharp UC/LC, plag xtals up to 3mm, vfg green-grey mafic (?)groundmass, non-magnetic. Trace diss py up to 4mm. Possibly mafic dyke that has been strongly hem alt? UC@ ~ 60/180, LC @ 20/145
PGH-18-06	612.1	618.6	GRAN	Granite	Qtz 20%, kspar 40%, bt 20%, chl 5%, plag 15%, fg-mg, bt/chl abundances vary across unit. Locally fenitized halos around crbt veins <10cm. Locally cg plag. LC sharp, closed, planar.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-06	618.6	619.83	CRBT	Carbonatite	Cream to light pink-purple-green, cg, blue amph near UC/LC, green-brown apt wispy bands near UC and irregularly through dyke. Diss trace py and blebs up to 5mm. Fg blue amph riming calcite
PGH-18-06	619.83	623.75	GRAN	Granite + minor Carbonatite	Mg-cg, pink-red, bt alt to chl modal percentages as above, trace diss py, blue amph/chl rimming crbt veins <15cm. Selective pervasive moderate to strong hem alt. CRBT; cream to light pink-purple-green, rimmed by blue amph, with diss hem, wispy bands amph, local fg ap cumulate.
PGH-18-06	623.75	625.4	SYE-BX	Carbonatite + Granite breccia	Gran as above; fenitized surrounding crbt. CRBT at ~10 TCA, undulating contact, forest green-purple, fg, over ~1m before massive CRBT with Gran clasts. Cg light purple-blue-pink, fg, blue amph, trace diss py, gran clasts sub rounded with minor rxn rims. LC planar and along consecutive joints (similar orientation).
PGH-18-06	625.4	631	GRAN	Granite + minor Carbonatite	Med red-pink, fg-mg, qtz 20%, kspar 40%, bt 15%, amph 5%, chl 5%, plag 15%. Green-blue crbt veins 1cm wide running ~ parallel TCA. Fractures filled with blue amph or green chl, bt partially to completely alt to chl or amph. locally cg/peg zones with crystals up to 4cm. 627.20-627.30: CRBT; cream to light pink, cg, rimmed by blue amph, diffuse boundaries, trace diss py. Cross cut by low angle crbt vein mentioned above. 629-629.24: chl/bt dominated, neph syenite?
PGH-18-06	631	632.5	CRBT	Carbonatite	UC low angle ~ 10 TCA, undulating/brecciated, closed. Light pink-cream to grey-green, fg-cg, local clasts of granite 3cm, completely alt to bt. Brown-green apt cum as wispy blebs and forming weak bands near contacts. Trace diss py. Fg patches of blue amph. Locally disseminated hematite and fracture fill. Top of CRBT unit cross cut by low angle fg green-grey crbt with more hem. LC irregular, closed
PGH-18-06	632.5	633	GRAN	Granite	Qtz 20%, kspar 40%, plag 10%, chl 10%, amph 10%, bt 10%. med red to pink, mg-cg, chl/hem alt, fractures filled with blue amph and alt halos of red (hem?), bt being replaced bt chl/amph.

ORIENTED STRUCTURES

DDH	Depth	Type	Alpha (°)	Beta (°)	Gamma (°)	Title	Description
PGH-18-06	13	CT	10	110		UC polymictic dyke	undulating, closed, bx
PGH-18-06	16.4	CT	50	130		LC CRBT w/ Alklai	bx, closed
PGH-18-06	16.87	JNT	50	70		JNT in ALKALI	planar, rough, blue amph infill
PGH-18-06	17.47	CT	60	150		LC CRBT w/ Alklai	bx, closed
PGH-18-06	19.42	CT	45	140		LC CRBT w/ Alklai	bx, closed
PGH-18-06	21.96	CT	85	160		LC CRBT w/ Alklai	undulating, open, slightly rough
PGH-18-06	23.68	CT	45	260		LC CRBT w/ Alklai	undulating, closed
PGH-18-06	23.85	CT	45	250		LC CRBT w/ Alklai	bx, closed
PGH-18-06	25.9	CT	55	320		UC CRBT w/ Alkali	planar, closed, rxn rim blue amph
PGH-18-06	30.08	CT	55			LC CRBT w/ Alklai	no orientation
PGH-18-06	38.4	JNT	45	280		JNT in ALKALI	rough, open, chl/amph infill
PGH-18-06	38.73	JNT	55	180		JNT in ALKALI	rough, open, chl/amph infill
PGH-18-06	38.83	CT	45	80		UC CRBT w/ Alkali	undulating, closed
PGH-18-06	41.72	JNT	40	200		JNT in ALKALI	slightly rough, slightly weathered, open, chl infill
PGH-18-06	42.43	JNT	30	210		JNT in ALKALI	slightly rough, open, chl infill
PGH-18-06	44.87	JNT	45	290		JNT in ALKALI	undulating, rough, amph/chl infill
PGH-18-06	45.05	VN	30	25		CRBT vein	open, slightly weathered, crbt infill 3cm
PGH-18-06	46.5	JNT	50	280		JNT in ALKALI	open, planar, slightly rough, chl/amph infill
PGH-18-06	48.2	CT	50	70		UC CRBT w/ Alkali	open, planar, very rough, bt/crbt
PGH-18-06	49.62	JNT	40	225		JNT in ALKALI	open, slightly rough, chl/amph infill
PGH-18-06	66.6	JNT	52	260		JNT in ALKALI	opne, slightly rough, amph infill 3mm
PGH-18-06	70	VN	25	5		CRBT vein	LC crbt vein, 20cm wide
PGH-18-06	70.36	JNT	30	340		JNT in ALKALI	planar, slightly rough, chl infill
PGH-18-06	74.85	CT	20	100		LC CRBT w/ Alklai	undulating, closed
PGH-18-06	75.58	CT	50	260		LC CRBT w/ Alklai	planar, closed
PGH-18-06	77.5	JNT	65	240		JNT in ALKALI	planar, slightly rough, chl infill
PGH-18-06	79.5	JNT	50	50		JNT in ALKALI	planar, slightly rough, chl infill
PGH-18-06	80.04	JNT	65	220		JNT in ALKALI	planar, rough, chl infill
PGH-18-06	80.3	CT	70	230		UC CRBT w/ Alkali	undulating, gradational, closed
PGH-18-06	86.3	CT	80	10		LC CRBT w/ Alklai	planar, closed
PGH-18-06	88.9	CT	25	260		UC CRBT bx w/ alkali	undulating, closed
PGH-18-06	89.3	CT	60	150		UC CRBT bc w/ alkali	planar, closed
PGH-18-06	90.49	CT	42	275		UC MDYKE	planar, closed
PGH-18-06	91.2	CT	10	310		LC MDYKE	planar, closed
PGH-18-06	97.9	CT	55	200		UC CRBT bx w/ alkali	closed, planar

ORIENTED STRUCTURES

DDH	Depth	Type	Alpha (°)	Beta (°)	Gamma (°)	Title	Description
PGH-18-06	98.2	CT	30	180		UC CRBT bx w/ alkali	closed, planar
PGH-18-06	100.25	VN	35	180		UC CRBT w/ Alkali	closed, planar
PGH-18-06	103	VN	35	310		LC crbt vn	closed, planar
PGH-18-06	109.6	CT	20	122		UC MDYKE w/alkali	planar, closed
PGH-18-06	110.7	CT	20	130		LC MDYKE w/ alkali	planar, closed
PGH-18-06	111.38	JNT	65	65		JNT in ALKALI	planar, rough, chl/amph infill
PGH-18-06	115.88	JNT	65	180		JNT in ALKALI	planar, slightly rough, chl infill
PGH-18-06	124.85	CT	45	180		LCT w/ SYE (UCT into CRBT-BX)	undulating, closed, bx
PGH-18-06	550.15	CT	30	80		LC bx crbt w/ alkali	bx, closed
PGH-18-06	550.54	JNT	50	65		JNT in ALKALI	slightly rough, blue amph fill, planar
PGH-18-06	595.67	CT	70	160		LC crbt	planar
PGH-18-06	596.06	CT	30	110		LC CRBT	planar
PGH-18-06	596.46	CT	40	195		LC CRBT	planar
PGH-18-06	608.15	CT	20	140		UC CRBT	planar
PGH-18-06	608.29	CT	40	180		UC IJO(?)	undulating
PGH-18-06	611.4	CT	35	180		UC CRBT with GRAN	planar, closed
PGH-18-06	612.1	CT	20	145		LC IJO with GRAN	undulating, closed
PGH-18-06	625.05	CT	40	260		LC CRBT	planar, open, blue amph
PGH-18-06	6219.8	CT	55	60		LC CRBT with GRAN	diffuse

ASSAYS

DDH	From	To	Width (m)	SampleID	BatchID	Nb2O5 (%)	Ta2O5 (%)	U3O8 (%)	ThO2 (%)	ZrO2 (%)	Fe2O3(T) (%)	P2O5 (%)	SnO2 (%)	Y2O3 (%)	WO3 (%)
PGH-18-06	496	497.25	1.25	590053	A18-06091	0.32	0.003	< 0.005	0.008	0.008	6.26	3.22	< 0.003	0.018	< 0.003
PGH-18-06	497.25	498.45	1.2	590054	A18-06091	0.117	0.004	< 0.005	0.008	0.041	8.62	0.79	< 0.003	0.007	0.004
PGH-18-06	498.45	499.67	1.22	590055	A18-06091	0.114	0.003	< 0.005	0.006	0.009	6.86	0.61	0.008	0.008	< 0.003
PGH-18-06	499.67	500.94	1.27	590056	A18-06091	0.095	0.004	< 0.005	0.005	0.016	6.7	0.98	< 0.003	0.006	0.005
PGH-18-06	500.94	501.67	0.73	590058	A18-06091	0.066	< 0.003	0.007	0.009	< 0.003	1.71	1.9	< 0.003	0.013	< 0.003
PGH-18-06	501.67	502.93	1.26	590059	A18-06091	0.024	< 0.003	< 0.005	< 0.005	0.014	5.15	0.31	< 0.003	0.004	< 0.003
PGH-18-06	502.93	503.79	0.86	590060	A18-06091	0.126	< 0.003	0.008	0.01	< 0.003	2.49	2.36	< 0.003	0.018	< 0.003
PGH-18-06	503.79	504.86	1.07	590061	A18-06091	0.036	< 0.003	< 0.005	< 0.005	0.008	5.33	0.63	< 0.003	0.007	< 0.003
PGH-18-06	504.86	506.1	1.24	590062	A18-06091	0.058	0.005	< 0.005	0.005	0.024	7.23	0.94	< 0.003	0.006	0.005
PGH-18-06	506.1	507.33	1.23	590063	A18-06091	0.056	< 0.003	< 0.005	0.007	0.016	6.35	2.6	< 0.003	0.016	0.003
PGH-18-06	507.33	508.56	1.23	590065	A18-06091	0.079	0.005	< 0.005	0.006	0.009	7.86	0.69	< 0.003	0.005	0.003
PGH-18-06	508.56	509.78	1.22	590066	A18-06091	0.069	< 0.003	< 0.005	0.006	0.007	8.08	1.02	< 0.003	0.006	0.004
PGH-18-06	509.78	510.54	0.76	590067	A18-06091	0.067	< 0.003	< 0.005	0.005	0.042	9.78	1.04	< 0.003	0.006	< 0.003
PGH-18-06	515	515.64	0.64	590068	A18-06091	0.01	< 0.003	0.005	0.007	< 0.003	2.46	1.27	0.003	0.013	0.004
PGH-18-06	530.6	531.75	1.15	590069	A18-06091	0.232	0.004	0.005	0.008	< 0.003	2.03	2.73	0.004	0.014	< 0.003
PGH-18-06	531.75	533	1.25	590070	A18-06091	0.226	0.004	0.009	0.009	< 0.003	1.41	2.48	< 0.003	0.014	0.003
PGH-18-06	542.3	543.3	1	590071	A18-06091	0.066	< 0.003	0.009	0.006	< 0.003	1.96	1.41	< 0.003	0.012	0.005
PGH-18-06	543.3	544.1	0.8	590073	A18-06091	0.193	< 0.003	0.005	0.008	< 0.003	4.3	3.2	< 0.003	0.015	0.003
PGH-18-06	546	547.5	1.5	590074	A18-06091	0.099	< 0.003	0.005	0.011	0.028	5.46	3.55	< 0.003	0.019	0.005
PGH-18-06	549.6	550.7	1.1	590075	A18-06091	0.038	< 0.003	< 0.005	< 0.005	0.01	6.12	1.16	0.004	0.008	< 0.003
PGH-18-06	552.07	553	0.93	590076	A18-06091	0.066	0.003	0.005	0.014	0.024	6.35	4.3	< 0.003	0.034	0.004
PGH-18-06	556.54	557.48	0.94	590077	A18-06091	0.1	0.004	< 0.005	0.014	< 0.003	3.59	2.38	< 0.003	0.018	0.003
PGH-18-06	559.39	560.3	0.91	590078	A18-06091	0.033	0.003	< 0.005	0.009	0.004	9.37	0.27	< 0.003	0.004	0.003
PGH-18-06	565.2	566.7	1.5	590079	A18-06091	0.04	< 0.003	< 0.005	0.014	< 0.003	5.94	2.68	< 0.003	0.014	< 0.003
PGH-18-06	566.7	568.2	1.5	590080	A18-06091	0.04	0.004	< 0.005	0.012	< 0.003	6.23	2.75	< 0.003	0.016	0.003
PGH-18-06	568.2	569.33	1.13	590081	A18-06091	0.017	< 0.003	< 0.005	0.009	< 0.003	6.44	1.51	< 0.003	0.011	0.003
PGH-18-06	576.84	578.12	1.28	590082	A18-06091	0.279	< 0.003	0.006	0.007	< 0.003	5.52	2.54	< 0.003	0.012	0.01
PGH-18-06	587.31	588	0.69	590083	A18-06091	0.067	< 0.003	< 0.005	0.008	< 0.003	7.07	1.18	< 0.003	0.009	0.003
PGH-18-06	588	589.32	1.32	590084	A18-06091	0.202	0.004	0.007	0.017	0.036	5.24	1.13	< 0.003	0.015	0.004
PGH-18-06	595.29	596.64	1.35	590085	A18-06091	0.07	< 0.003	< 0.005	0.013	< 0.003	5.55	1.61	< 0.003	0.017	< 0.003
PGH-18-06	618.58	620	1.42	590086	A18-06091	0.118	< 0.003	0.009	0.008	< 0.003	2.43	1.37	< 0.003	0.012	0.004
PGH-18-06	623.96	625.45	1.49	590087	A18-06091	0.041	< 0.003	< 0.005	0.005	0.027	5.93	2.07	< 0.003	0.01	0.004
PGH-18-06	630.9	631.65	0.75	590088	A18-06091	0.272	0.003	< 0.005	0.012	0.018	5.35	2.66	< 0.003	0.018	0.004
PGH-18-06	631.65	632.5	0.85	590090	A18-06091	0.272	0.003	< 0.005	0.011	< 0.003	2.42	2.85	< 0.003	0.015	0.003

ASSAYS

DDH	From	To	Width (m)	SampleID	Description
PGH-18-06	15.27	16.5	1.23	589785	CRBT BX
PGH-18-06	16.5	17	0.5	589786	ALKALI
PGH-18-06	17	18	1	589787	Alkali + CRBT
PGH-18-06	25.9	27.4	1.5	589788	CRBT
PGH-18-06	27.4	28.9	1.5	589789	CRBT
PGH-18-06	28.9	30.1	1.2	589790	CRBT
PGH-18-06	30.1	31	0.9	589791	Alkali + crbt bx
PGH-18-06	31	32.5	1.5	589793	Alkali + crbt bx
PGH-18-06	32.5	34	1.5	589794	Alkali + crbt bx
PGH-18-06	34	35.5	1.5	589795	Alkali + crbt bx
PGH-18-06	35.5	37	1.5	589796	Alkali + crbt bx
PGH-18-06	37	38.5	1.5	589797	Alkali + crbt bx
PGH-18-06	38.5	40	1.5	589798	Alkali + crbt bx
PGH-18-06	40	41.5	1.5	589799	Alkali + crbt bx
PGH-18-06	48.2	48.7	0.5	589800	CRBT
PGH-18-06	49.63	50.34	0.71	589801	alkali bx crbt
PGH-18-06	51.52	52.68	1.16	589802	alklai bx
PGH-18-06	52.68	53.56	0.88	589803	crbt
PGH-18-06	53.56	54.32	0.76	589804	alkali + crbt
PGH-18-06	54.32	55.38	1.06	589805	alkali
PGH-18-06	55.38	55.9	0.52	589806	crbt
PGH-18-06	55.9	57.32	1.42	589807	cg alkali
PGH-18-06	57.32	58.09	0.77	589808	crbt
PGH-18-06	73.83	74.88	1.05	589809	CRBT
PGH-18-06	80.28	81.78	1.5	589811	CRBT
PGH-18-06	81.78	83.28	1.5	589812	CRBT
PGH-18-06	83.28	84.78	1.5	589813	CRBT dark grey-green, bt
PGH-18-06	84.78	86.3	1.52	589814	CRBT
PGH-18-06	86.3	87.8	1.5	589815	Alkali bx w/ CRBT
PGH-18-06	87.8	89.2	1.4	589816	Alkali bx w/ CRBT
PGH-18-06	89.2	90.26	1.06	589817	Alkali bx w/ CRBT
PGH-18-06	97.56	98.26	0.7	589819	alkali + crbt bx
PGH-18-06	98.26	99.76	1.5	589820	bx + crbt
PGH-18-06	99.76	100.26	0.5	589821	alkali
PGH-18-06	100.26	101.76	1.5	589822	crbt
PGH-18-06	101.76	103.17	1.41	589823	alklai bx
PGH-18-06	103.17	104.65	1.48	589824	alklai bx
PGH-18-06	104.65	105.86	1.21	589825	crbt
PGH-18-06	105.86	106.84	0.98	589826	crbt bx
PGH-18-06	106.84	107.85	1.01	589827	crbt
PGH-18-06	107.85	109.3	1.45	589828	alklai bx

ASSAYS

DDH	From	To	Width (m)	SampleID	Description
PGH-18-06	117	118	1	589829	crbt bx + alk lai
PGH-18-06	118	119.34	1.34	589831	alk lai bx + crbt
PGH-18-06	119.34	120.82	1.48	589832	crbt bx
PGH-18-06	120.82	122.29	1.47	589833	crbt bx
PGH-18-06	122.29	123.53	1.24	589834	CRBT BX
PGH-18-06	123.53	124.2	0.67	589835	alk lai
PGH-18-06	124.2	124.9	0.7	589837	CRBT BX
PGH-18-06	126.44	127.54	1.1	589838	SYE W/ CRBT VEIN HEM+MICA/AMPH
PGH-18-06	127.54	128.65	1.11	589839	SYE, CRBT VEINING W/ FLUORITE
PGH-18-06	128.65	129.63	0.98	589840	CRBT BX, FLUORITE IN MATRIX
PGH-18-06	129.63	130.82	1.19	589841	MASSIVE SYE, OCCASSIONAL MM-SCALE CRBT VEINS, NO RXN RIMS
PGH-18-06	130.82	132	1.18	589842	SYE W/ 30CM CRBT-BX
PGH-18-06	132	133	1	589843	VCG GRAN W/ MULTIPLE 10-20CM CRBT VEINS
PGH-18-06	133	134	1	589844	CG SYE/QTZ-SYE W/ UP TO 6CM CRBT VEINS
PGH-18-06	141.44	142.68	1.24	589845	SYE/CRBT-BX (MICA/AMPH BANDS)
PGH-18-06	142.68	144	1.32	589846	SAME W/ 16CM CRBT VEIN
PGH-18-06	144	145.2	1.2	589847	SYE W/ LESSER CRBT VEINS/BX
PGH-18-06	145.2	146.43	1.23	589848	SYE W/ 20CM CRBT-BX
PGH-18-06	146.43	147.57	1.14	589849	MIXED SYE/CRBT-BX
PGH-18-06	147.57	148.55	0.98	589850	SAME, VCG AT END
PGH-18-06	148.55	149.32	0.77	589851	mica-carb-rock +amph?
PGH-18-06	149.32	150.4	1.08	589852	crbt
PGH-18-06	150.4	151.54	1.14	589853	crbt, 10cm zone py+pych??
PGH-18-06	151.54	152.15	0.61	589855	crbt
PGH-18-06	152.15	153.14	0.99	589856	sy, bx at UCT
PGH-18-06	153.14	154.24	1.1	589857	crbt, wispy blue amph over last 30cm
PGH-18-06	154.24	155.28	1.04	589858	crbt, blebs py+/-pych
PGH-18-06	155.28	156.1	0.82	589859	bx lower contact of zone
PGH-18-06	156.1	157.55	1.45	589860	sy, fluorite in carb vein
PGH-18-06	157.55	159	1.45	589861	sy, minimal carb veining
PGH-18-06	159	159.94	0.94	589862	sy, py + poss pych in carb veins
PGH-18-06	165	165.94	0.94	589863	mica-rock/dyke w/ fluorite in crbt vein near end
PGH-18-06	178.1	179.1	1	589864	crbt + crbt-bx
PGH-18-06	179.1	179.73	0.63	589865	crbt
PGH-18-06	179.73	180.6	0.87	589866	sy w/ 10cm crbt
PGH-18-06	180.6	181.77	1.17	589867	cg sye
PGH-18-06	181.77	183	1.23	589868	crbt
PGH-18-06	183	184.23	1.23	589869	crbt
PGH-18-06	184.23	185.34	1.11	589870	sy w/ crbt-bx zones
PGH-18-06	185.34	186.8	1.46	589871	sy, fine ribbony carb veins
PGH-18-06	186.8	188.18	1.38	589872	sy, very little carb

ASSAYS

DDH	From	To	Width (m)	SampleID	Description
PGH-18-06	188.18	188.89	0.71	589873	fz
PGH-18-06	188.89	190.34	1.45	589874	sy, very fine ribboney carb stringers only
PGH-18-06	190.34	191.8	1.46	589875	sy w/ ~15cm crbt
PGH-18-06	191.8	193.13	1.33	589876	sy
PGH-18-06	193.13	193.6	0.47	589877	10cm crbt to smss+mt+carb matrix to strongly reacted sy clasts
PGH-18-06	193.6	194.63	1.03	589878	sy w/ carb veins then ijo??? Dyke, fluorite in carb vein
PGH-18-06	194.63	195.95	1.32	589879	sy > crbt-bx
PGH-18-06	195.95	197.2	1.25	589881	crbt, po+mt bands
PGH-18-06	197.2	198.46	1.26	589882	crbt
PGH-18-06	198.46	199.7	1.24	589883	crbt, wispy blue amph bands, bands of sulph blebs
PGH-18-06	199.7	200.93	1.23	589884	crbt
PGH-18-06	200.93	202.18	1.25	589885	crbt w/ 6cm ap-rich patch
PGH-18-06	202.18	203.42	1.24	589886	crbt, 15cm vfg sy clast
PGH-18-06	203.42	204.58	1.16	589888	sy-bx w/ rxn rims
PGH-18-06	204.58	206.05	1.47	589889	crbt, ap-sulph bands, yellowish fe-carb? Bands
PGH-18-06	206.05	207.47	1.42	589890	sy w/ mafic-chl bands
PGH-18-06	207.47	209	1.53	589891	sy w/ 6cm carb vein, clay-chl alt'n
PGH-18-06	209	210	1	589892	crbt, diab dyke below not sampled
PGH-18-06	211.3	212.05	0.75	589893	crbt
PGH-18-06	212.05	213.44	1.39	589894	sy w/ carb veining, sulph+pych? In veins
PGH-18-06	213.44	214.86	1.42	589895	sy w/ mafic biot-chl rich zones
PGH-18-06	214.86	216.26	1.4	589896	sy w/ carb veining (rxn rims)
PGH-18-06	216.26	217.66	1.4	589897	sy w/ mafic banding, 6cm carb w/ po+mt
PGH-18-06	217.66	219.06	1.4	589898	sy w/ mafic (biot+chl) zones, carb veining
PGH-18-06	219.06	220.4	1.34	589899	sy w/ carb veining
PGH-18-06	220.4	221.55	1.15	589900	crbt w/ ap+reddish-purple(?) patches/bands
PGH-18-06	221.55	223.05	1.5	589901	sy w/zebra striped, 16cm crbt w/ sulph
PGH-18-06	223.05	224.25	1.2	589902	sy-bx, ap masses
PGH-18-06	224.25	225.44	1.19	589903	sy-bx, ap masses
PGH-18-06	225.44	226.65	1.21	589904	sy, extensional carb veining (less bx'td)
PGH-18-06	226.65	227.84	1.19	589905	similar w/ 17cm crbt vein, py+poss vfg pych cumulates
PGH-18-06	227.84	228.9	1.06	589906	similar w/ 25cm crbt
PGH-18-06	228.9	230.1	1.2	589907	sy, 20cm crbt at start (w/ fluorite)
PGH-18-06	230.1	231.35	1.25	589908	crbt only
PGH-18-06	231.35	232.3	0.95	589909	massive sy (amph veins, very little carb veining)
PGH-18-06	237.8	238.7	0.9	589910	sy bx
PGH-18-06	238.7	239.7	1	589911	sy --> sy-bx
PGH-18-06	239.7	240.7	1	589913	sy, v. little carb veining
PGH-18-06	240.7	241.97	1.27	589914	crbt
PGH-18-06	241.97	243.14	1.17	589915	sy-bx, fluo in carb veins, 30cm mafic dyke? (vfg grey-green)
PGH-18-06	243.14	244.38	1.24	589916	sy, weakly bx'td by carb (rxn rims), single sulph band perp to CA

ASSAYS

DDH	From	To	Width (m)	SampleID	Description
PGH-18-06	252.6	253.4	0.8	589917	crbt
PGH-18-06	253.4	254.2	0.8	589918	crbt w/ 4cm ap-rich band perp to CA
PGH-18-06	254.2	255.3	1.1	589919	sy
PGH-18-06	255.3	256.4	1.1	589921	sy transitions into sye-bx
PGH-18-06	256.4	257.5	1.1	589922	sye-bx
PGH-18-06	276.34	277.66	1.32	589924	sye-bx
PGH-18-06	277.6	279	1.4	589925	sye-bx
PGH-18-06	279	280.25	1.25	589926	sye-bx
PGH-18-06	280.25	281.74	1.49	589927	sye-bx
PGH-18-06	284.8	286.24	1.44	589928	sye-bx
PGH-18-06	286.24	287.62	1.38	589929	sye w/ crbt veins (fluorite patches)
PGH-18-06	287.62	288.87	1.25	589930	sye-bx
PGH-18-06	288.87	290.22	1.35	589931	sye, weakly bx'td, 2x15cm crbt veins
PGH-18-06	292.6	293.9	1.3	589932	sye bx w/ 30cm crbt
PGH-18-06	296.6	297.42	0.82	589933	crbt --> silcarb
PGH-18-06	297.42	298.26	0.84	589934	crbt --> silcarb
PGH-18-06	301.51	302.05	0.54	589935	silcarb
PGH-18-06	302.05	303.21	1.16	589936	bx w/ mica+mt matrix
PGH-18-06	303.21	304.2	0.99	589937	bx w/ mica+mt matrix
PGH-18-06	313.75	315	1.25	589938	sye-bx
PGH-18-06	315	316.24	1.24	589939	sye-bx
PGH-18-06	316.24	317.45	1.21	589940	sye-bx
PGH-18-06	323.69	324.64	0.95	589941	crbt/ mdyke or ijo
PGH-18-06	324.64	325.32	0.68	589942	same w/ mt bands
PGH-18-06	329.13	330.11	0.98	589943	crbt
PGH-18-06	330.11	331.37	1.26	589944	crbt w/ 15cm gran
PGH-18-06	331.37	332.76	1.39	589946	sye, unbx'td w/ carb veining
PGH-18-06	332.76	334.06	1.3	589947	sye, bx'td over last 50cm
PGH-18-06	334.06	335.4	1.34	589948	sye-bx/sye
PGH-18-06	338.88	340.32	1.44	589949	sye-bx/sye
PGH-18-06	340.32	341.73	1.41	589950	same, ap in carb veins
PGH-18-06	341.73	343.16	1.43	589951	sye/sye-bx
PGH-18-06	343.16	344.54	1.38	589952	cg sye to gran w/ carb veining (no bx)
PGH-18-06	344.54	345.98	1.44	589953	weakly bx'td sye, abundant blue amph-carb veins
PGH-18-06	345.98	347.38	1.4	589954	sye (unbx'td) w/ 2-10cm carb veins w/ ap
PGH-18-06	347.38	348.83	1.45	589955	mostly unbx'td sye
PGH-18-06	348.83	350.28	1.45	589956	sye/sye-bx
PGH-18-06	354.18	355.22	1.04	589957	sye w/ carb veins (typically //-CA w/ rxn rims)
PGH-18-06	355.22	356.12	0.9	589958	CRBT (ap rich at UCT)
PGH-18-06	356.12	357.09	0.97	589959	CRBT wispy blue bands, blebs py+po
PGH-18-06	357.09	358.44	1.35	589960	SYE (mafic) w/ 20 & 15cm CRBT

ASSAYS

DDH	From	To	Width (m)	SampleID	Description
PGH-18-06	358.44	359.8	1.36	589961	SYE (mafic) to SYE, 30cm CRBT
PGH-18-06	359.8	360.92	1.12	589962	SYE, 12cm CRBT
PGH-18-06	360.92	362	1.08	589963	CRBT
PGH-18-06	369	369.69	0.69	589964	SYE-BX, 40-50% carbonates
PGH-18-06	369.69	370.16	0.47	589965	CRBT
PGH-18-06	370.16	371.34	1.18	589966	SYE (increasing carb veins downhole)
PGH-18-06	371.34	372.56	1.22	589968	SYE becoming vcg w/ more amph (+ep) alt'n
PGH-18-06	372.56	373.83	1.27	589969	CRBT, white massive
PGH-18-06	373.83	375	1.17	589970	CRBT, transition from white massive to pink w/ radiating pseudos
PGH-18-06	375	376.31	1.31	589971	CRBT, vcg, mottled brwn, grn, grey, grain size decrease downhole
PGH-18-06	376.31	377.63	1.32	589972	CRBT w/ ap bands, po/py+/-pych
PGH-18-06	377.63	378.24	0.61	589973	SYE
PGH-18-06	378.24	378.53	0.29	589974	CRBT, wispy amph, ap @ LCT
PGH-18-06	378.53	379.64	1.11	589975	SYE
PGH-18-06	379.64	380.8	1.16	589976	SYE
PGH-18-06	380.8	381.85	1.05	589977	SYE
PGH-18-06	381.85	382.94	1.09	589978	Massive white to light pink CRBT, ap band at UCT
PGH-18-06	382.94	384.04	1.1	589980	CRBT, wispy blue-grn ap+amph bands
PGH-18-06	384.04	385.15	1.11	589981	CRBT, pych+py in ap+amph patches/bands
PGH-18-06	385.15	386.24	1.09	589982	CRBT, py cubes in amph+ap? Patches
PGH-18-06	386.24	387.37	1.13	589983	CRBT, dissem to blebby sulph+pych?
PGH-18-06	387.37	388.55	1.18	589984	CRBT, very fine partly open fract w/ sulph, calc, pych? Xtals
PGH-18-06	388.55	389.68	1.13	589985	50% blue-grey amph+ap? Bands
PGH-18-06	389.68	390.84	1.16	589987	CRBT
PGH-18-06	390.84	392	1.16	589989	CRBT
PGH-18-06	392	393.1	1.1	589990	CRBT, patch pych-sulp-ap-amph?
PGH-18-06	393.1	394.4	1.3	589991	CRBT
PGH-18-06	394.4	395.6	1.2	589992	CRBT, cg
PGH-18-06	395.6	396.5	0.9	589993	pink CRBT w/ cg apatites
PGH-18-06	396.5	397.45	0.95	589995	Pink CRBT, cg, amph+sulph patches
PGH-18-06	397.45	398.4	0.95	589996	CRBT, wispy blue bands
PGH-18-06	398.4	399.31	0.91	589997	CRBT, wispy blue bands
PGH-18-06	399.31	400.2	0.89	589998	Pyroxenite? Bands in CRBT
PGH-18-06	400.2	401.33	1.13	589999	Very very coarse grained CRBT
PGH-18-06	401.33	401.9	0.57	590000	20% po+mt in vvcg CRBT
PGH-18-06	401.9	402.67	0.77	590001	vvcg CRBT
PGH-18-06	402.67	403.85	1.18	590002	Pyroxenite? Bands in fg CRBT
PGH-18-06	403.85	405.02	1.17	590003	Pyroxenite? Bands in fg CRBT
PGH-18-06	405.02	406.23	1.21	590004	same, then massive white CRBT
PGH-18-06	406.23	407.48	1.25	590005	CRBT, local vf cumulates pych-py-ap
PGH-18-06	407.48	407.98	0.5	590006	DIAB dyke

ASSAYS

DDH	From	To	Width (m)	SampleID	Description
PGH-18-06	414	414.38	0.38	590008	DIAB dyke
PGH-18-06	414.38	415.48	1.1	590009	CRBT 30% amph+ap
PGH-18-06	415.48	416.68	1.2	590010	CRBT 30% amph+ap
PGH-18-06	416.68	417.1	0.42	590011	CRBT - orb vein/band
PGH-18-06	417.1	418.28	1.18	590012	CRBT, 30cm mica+ap+mt band
PGH-18-06	418.28	419.47	1.19	590014	CRBT, wispy amph-ap bands (<10%)
PGH-18-06	419.47	420.66	1.19	590015	CRBT, similar bands + py-po blebs
PGH-18-06	420.66	421.87	1.21	590016	CRBT, pinker colour
PGH-18-06	421.87	422.98	1.11	590017	CRBT, cg bladed carb xtals
PGH-18-06	422.98	424.18	1.2	590018	CRBT, highly variable
PGH-18-06	424.18	425.3	1.12	590019	very pink CRBT w/ 30cm drk grn band
PGH-18-06	425.3	426.45	1.15	590020	CRBT, lighter pink, wispy blue amph+ap bands & patches
PGH-18-06	426.45	427.75	1.3	590021	Massive cg white CRBT, minor sulph blebs
PGH-18-06	427.75	429.1	1.35	590022	Massive light pink CRBT, open fract, wispy bands at end
PGH-18-06	429.1	430.25	1.15	590023	Ap+mt (grn) bands in CRBT
PGH-18-06	430.25	431.4	1.15	590025	Banded CRBT
PGH-18-06	431.4	432.45	1.05	590026	Banded CRBT
PGH-18-06	432.45	433.5	1.05	590027	CRBT, wispy - 20-40% blue-grey colour
PGH-18-06	433.5	434.58	1.08	590028	similar w/ vvcg bladed xtals - carb?
PGH-18-06	434.58	435.66	1.08	590029	similar, vvcg
PGH-18-06	435.66	436.73	1.07	590030	Up to 10cm masses acicular amph+ap+paler pych(?)
PGH-18-06	436.73	437.78	1.05	590031	sim to prev
PGH-18-06	437.78	438.33	0.55	590033	SYE clast cut by blue amph-carb veins
PGH-18-06	438.33	439.77	1.44	590034	Massive white cg CRBT
PGH-18-06	439.77	440.18	0.41	590035	SYE w/ mica alt'n rims
PGH-18-06	440.18	441.14	0.96	590036	CRBT
PGH-18-06	441.14	441.9	0.76	590037	SYE
PGH-18-06	441.9	442.45	0.55	590038	CRBT
PGH-18-06	442.45	443.59	1.14	590039	SYE
PGH-18-06	443.59	444.8	1.21	590040	SYE
PGH-18-06	444.8	445.68	0.88	590041	CRBT vein
PGH-18-06	445.68	446.6	0.92	590042	SYE
PGH-18-06	446.6	447.26	0.66	590043	CRBT w/ mafic bands
PGH-18-06	468.34	468.7	0.36	590045	BX zone w/ ap+amph
PGH-18-06	479.8	481.07	1.27	590046	Sye/Crbt veins up to 30cm wide
PGH-18-06	488.77	490.04	1.27	590047	Mixed sy-bx/crbt. Mt bands.
PGH-18-06	490.04	491.25	1.21	590048	Sye-bx
PGH-18-06	491.25	492.46	1.21	590049	Sye-->Sye-Bx w/ 15cm CRBT vein
PGH-18-06	492.46	493.66	1.2	590050	Sye w/ carb veins/rxn rims
PGH-18-06	493.66	494.76	1.1	590051	Crbt-Bx/FZ-BX
PGH-18-06	494.76	496	1.24	590052	Crbt-BX

ASSAYS

DDH	From	To	Width (m)	SampleID	Description
PGH-18-06	496	497.25	1.25	590053	Crbt/Sye Bx
PGH-18-06	497.25	498.45	1.2	590054	Sye-Bx w/ Pyroxenite + Unkn Bx dyke
PGH-18-06	498.45	499.67	1.22	590055	BX w/ cg plag+kspars clasts changing to massive Sye
PGH-18-06	499.67	500.94	1.27	590056	Massive Sye, carb+amph-chl veins
PGH-18-06	500.94	501.67	0.73	590058	cg CRBT
PGH-18-06	501.67	502.93	1.26	590059	massive SYE
PGH-18-06	502.93	503.79	0.86	590060	massive CRBT
PGH-18-06	503.79	504.86	1.07	590061	massive sye w/ 20cm crbt
PGH-18-06	504.86	506.1	1.24	590062	massive sye w/ cg white fspar
PGH-18-06	506.1	507.33	1.23	590063	sye/crbt bx
PGH-18-06	507.33	508.56	1.23	590065	Sye-Bx
PGH-18-06	508.56	509.78	1.22	590066	Sye-Bx
PGH-18-06	509.78	510.54	0.76	590067	Sye-Bx w/ 30cm green dyke
PGH-18-06	515	515.64	0.64	590068	CRBT dyke
PGH-18-06	530.6	531.75	1.15	590069	CRBT
PGH-18-06	531.75	533	1.25	590070	CRBT
PGH-18-06	542.3	543.3	1	590071	CRBT
PGH-18-06	543.3	544.1	0.8	590073	CRBT + gran bx
PGH-18-06	546	547.5	1.5	590074	
PGH-18-06	549.6	550.7	1.1	590075	GRAN BX + CRBT
PGH-18-06	552.07	553	0.93	590076	GRAN + MINOR CRBT
PGH-18-06	556.54	557.48	0.94	590077	CRBT
PGH-18-06	559.39	560.3	0.91	590078	CRBT, lt grn, cg,
PGH-18-06	565.2	566.7	1.5	590079	GRAN + MINOR CRBT
PGH-18-06	566.7	568.2	1.5	590080	CRBT + gran
PGH-18-06	568.2	569.33	1.13	590081	CRBT + gran
PGH-18-06	576.84	578.12	1.28	590082	CRBT
PGH-18-06	587.31	588	0.69	590083	GRAN + CRBT
PGH-18-06	588	589.32	1.32	590084	CRBT
PGH-18-06	595.29	596.64	1.35	590085	3 CRbt veins + GRAN
PGH-18-06	618.58	620	1.42	590086	CRBT
PGH-18-06	623.96	625.45	1.49	590087	CRBT + gran bx
PGH-18-06	630.9	631.65	0.75	590088	CRbt
PGH-18-06	631.65	632.5	0.85	590090	CRBT

COMPANY QAQC DATA

DDH	From	To	Width (m)	SampleID	BatchID	QAQC Type	QAQC Description	P2O5 (%)	Nb2O5 (%)
PGH-18-06	31	31	0	589792	A18-06091	BLANK	Marble	0.02	< 0.003
PGH-18-06	74.88	74.88	0	589810	A18-06091	STANDARD	Oka 1	2.46	0.531
PGH-18-06	90.26	90.26	0	589818	A18-06091	BLANK	Marble	0.02	< 0.003
PGH-18-06	118	118	0	589830	A18-06091	STANDARD	Oka 1	2.58	0.535
PGH-18-06	124.2	124.2	0	589836	A18-06091	BLANK	Marble	0.02	< 0.003
PGH-18-06	151.54	151.54	0	589854	A18-06091	BLANK	Marble	0.02	< 0.003
PGH-18-06	195.95	195.95	0	589880	A18-06091	BLANK	Marble	0.02	< 0.003
PGH-18-06	203.42	203.42	0	589887	A18-06091	BLANK	Marble	0.01	< 0.003
PGH-18-06	239.7	239.7	0	589912	A18-06091	BLANK	Marble	0.01	< 0.003
PGH-18-06	255.3	255.3	0	589920	A18-06091	STANDARD	Oka 1	2.47	0.531
PGH-18-06	257.5	257.5	0	589923	A18-06091	BLANK	Marble	0.02	< 0.003
PGH-18-06	331.37	331.37	0	589945	A18-06091	BLANK	Marble	0.02	< 0.003
PGH-18-06	371.34	371.34	0	589967	A18-06091	BLANK	Marble	0.02	< 0.003
PGH-18-06	382.94	382.94	0	589979	A18-06091	STANDARD	Oka 1	2.47	0.529
PGH-18-06	389.68	389.68	0	589986	A18-06091	STANDARD	Oka 1	2.48	0.527
PGH-18-06	390.84	390.84	0	589988	A18-06091	BLANK	Marble	0.02	< 0.003
PGH-18-06	395.6	396.5	0.9	589993	A18-06091	N/A	ORIGINAL SAMPLE	5.56	0.699
PGH-18-06	395.6	396.5	0.9	589994	A18-06091	DUPLICATE	DUPLICATE - 589993	5.36	0.615
PGH-18-06	407.98	407.98	0	590007	A18-06091	BLANK	Marble	0.02	< 0.003
PGH-18-06	417.1	418.28	1.18	590012	A18-06091	N/A	ORIGINAL SAMPLE	3.75	0.038
PGH-18-06	417.1	418.28	1.18	590013	A18-06091	DUPLICATE	DUPLICATE - 590012	4.1	0.046
PGH-18-06	417.1	418.28	1.15	590024	A18-06091	DUPLICATE	DUPLICATE - 590023	6.53	0.394
PGH-18-06	429.1	430.25	1.15	590023	A18-06091	N/A	ORIGINAL SAMPLE	6.24	0.422
PGH-18-06	437.78	437.78	0	590032	A18-06091	BLANK	Marble	0.02	< 0.003
PGH-18-06	447.26	447.26	0	590044	A18-06091	STANDARD	Oka 1	2.44	0.534
PGH-18-06	500.94	500.94	0	590057	A18-06091	BLANK	Marble	0.02	< 0.003
PGH-18-06	507.33	507.33	0	590064	A18-06091	STANDARD	Oka 1	2.47	0.538
PGH-18-06	543.3	543.3	0	590072	A18-06091	BLANK	Marble	0.02	< 0.003
PGH-18-06	631.65	631.65	0	590089	A18-06091	BLANK	Marble	0.03	< 0.003



Drilled by:	Chibougamau Diamond Drilling	Start Date:	8-May-2018
Township/Area:	Killala Lake Area	End Date:	30-Apr-2018
Claims (converted):	262731, 332506	Described by:	B. Clark, BSc
Claims (legacy):	TB 4256251	Log date:	17-May-2018

Collar

Azimuth: 344.00°		Easting: 519787		Core size: HQ		Cemented: No	
Plunge: -60.00°		Northing: 5432542		Casing: Pulled		Stored: Yes	
Length: 669.0 m		Elevation: 315.0m					

Down hole surveys

Drill Hole	Type	Depth (m)	Azimuth Corrected (°)	Dip (°)	Mag
PGH-18-07	Reflex	18	344.2	-59	57515
PGH-18-07	Reflex	69	344.6	-59.7	57255
PGH-18-07	Reflex	120	345.6	-59.7	57151
PGH-18-07	Reflex	225	345.9	-59.9	57264
PGH-18-07	Reflex	279	346.6	-60.1	57146
PGH-18-07	Reflex	330	346.9	-60.4	57172
PGH-18-07	Reflex	381	347.3	-60.8	57239
PGH-18-07	Reflex	432	339.9	-60.9	57811
PGH-18-07	Reflex	483	347.2	-61	56871
PGH-18-07	Reflex	534	349	-60.8	57668
PGH-18-07	Reflex	597	349.1	-60.8	57931
PGH-18-07	Reflex	648	349	-61.3	57813
PGH-18-07	Reflex	669	349.6	-61.3	57573

Description

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-07	0	3.2	OVB	Overburden	Overburden
PGH-18-07	3.2	6.6	GRAN	Granite	Fenitized granite(?), 70% mafics locally (bt, chl, amph, pyx) with 'bands' of mg-cg granite (qtz 20%, plag 30%, kspar 50%), slightly to moderately weathered. Minor crbt <5cm cream to brown (weathered), diss hem, patchy fluorite
PGH-18-07	6.6	7.7	SYE-BX	Carbonatite + Granite	Multiple intersections of CRBT up to 25cm; cream to green-purple, 10% fluorite (patchy, locally), trace diss py, fg, local <3mm vugs, contacts undulating. GRAN; mg-cg up to 1cm, pink-red, fenitized, blue amph patches up to 1cm, fractures have clay infill, slightly weathered.
PGH-18-07	7.7	9.4	QTZ-SYE	Quartz Syenite / Granite	Fg-mg, red-pink, locally up to 20% bt/chl, fenitized (blue amph + crbt filling fractures, amph replacing bt). Veins/veinlets of crbt <5mm. Weak-mod selectively pervasive hem/chl alt. LC planar, weak dissolution along contact.
PGH-18-07	9.4	9.87	SYE-BX	Carbonatite + Syenite?	Light green alt'n halo around crbt vein ~7cm wide. Undulating diffuse contact between light green halo and crbt vein. Green zone on either side contains kspar <2mm with carb in groundmass. Alt'n halo is 15-20cm in width, UC planar to undulating, LC is irregular. Fractures have fe-ox staining. CRBT; light pink-cream, fg, trace diss hem & blue amph.
PGH-18-07	9.87	11.1	QTZ-SYE	Quartz Syenite	15% qtz, kspar 60%, amph 10%, chl 10%, 5% plag. Fg-mg, blue fg amph / chl replacing bt, multiple crbt veins @ moderate angle TCA commonly <1cm locally up to 10cm. Fractures have fe-ox staining, trace diss py.
PGH-18-07	11.1	14.6	SYE-BX	Quartz Syenite + Carbonatite Breccia	Carbonatite < 0.5m, syenite between crbt zones is weakly fractured with crbt infill. Intersections decrease downhole. SYE; red-pink, fenitized, blue amph/chl replacing mafics. Clasts are from 5mm-5cm, sub rounded, no rxn rims, fractures in clasts and surrounding crbt infilled with crbt/fg blue amph. CRBT; grey to light blue, fg, syn clasts rimmed by blue/green amph/chl, diss hem, clasts have no-minimal rxn rims.
PGH-18-07	14.6	17.5	CRBT-BX	Carbonatite + Syenite Breccia	Overall 60% Syn clasts, 40% Crbt Syenite clasts up to 20cm, rxn rims <5mm, clasts are rounded to sub rounded, clasts also have fractures <4mm with crbt infill. CRBT; light pink-blue-grey, locally amph up to 4mm, patchy hem, fg, wispy bands of blue-brown (amph +/- ap), trace diss py, slightly weathered (fe-ox on fractures, local vugs <3mm, locally massive infill of blue fibrous amph. 16.60-17: pegmatitic syn
PGH-18-07	17.5	24.7	SYE	Syenite	Sye; pink-med red to green-blue, weak-mod selectively pervasive hem/chl alt, fractures fill blue amph <4mm and as patches (replacing bt?). Zone varies in gran size (described below), moving down hole bt/chl abundance increases but is patchy. 17.5-18.8: cg xtals up to 1cm, 10% qtz, plag 30%, k-spar 40%, 10% chl, 10% amph/ 18.8-20.3: fg-mg. 20.3-21: Pegmatitic. 22.80-23.20: 50% bt/chl, fg.

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DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-07	24.7	30.7	GRAN	Granite	Unit is brown-green to opaque, locally pink-red, Bt > Fspar > Qtz > Amph > Chl. Locally up to 35% bt (being replaced by chl, locally by blue fibrous amph). Fg-mg xtals up to 5mm. Overall unit is dominated by Bt with nonuniform "bands" or zones which are barren or have significantly less Bt and an increase in qtz/fspar. These bands are at moderate angles TCA and are sporadically distributed across unit, up to 35cm in width but generally <3cm. Where unit becomes coarser grained generally bt decreases. Locally fractures/veins filled with blue amph and have alt halos of red-pink (hem?). 29.3-29.65: CRBT + bx; light khaki to cream, patchy fluorite, diss hem, contacts have rxn rim <3mm and are planar to undulating. Local clasts of gran up to 5cm, sub angular to angular and are fractured. LC is gradational into cg granite.
PGH-18-07	30.7	32.38	SYE	Syenite	Fg-cg (locally), med red-pink, bt being alt to chl/blue fibrous amph, qtz 10-15%, kspar 50%, chl 10%, amph 10%, plag 10%, bt 10%. Minor crbt/amph veins <8mm. LC planar @ 30/300.
PGH-18-07	32.38	33.14	MDYKE	Mafic Dyke	Carb/chl alt mafic dyke, non-magnetic, chilled margins <5mm, vfg, Carbonatite 5cm veins along lower contact. CRBT; cream to light green-purple, fg, diss hem, fg blue mineral (amph?) <1mm, trace diss py.
PGH-18-07	33.14	35.3	SYE	Syenite	Pink-med red, xtals <4mm, qtz 10%, kspar 45%, plag 25%, chl 10%, amph 10%. Amph/chl replacing bt, weak-mod pervasive hem alt. Minor intersections of crbt <3cm; light purple-red, fg, diss hem, mottled.
PGH-18-07	35.3	39.5	SYE	Syenite	Med red-pink to brown-opaque, fg-mg up to 4mm, local zones dominated by bt (up to 35%) with qtz/fspar/chl/amph. Small zones <20cm where bt is less dominant corresponding with colour change to med red-pink. CRBT veins <4cm, fg, pink-cream to light green, disseminated hem, patchy brown, commonly rimmed by blue amph, contacts are planar to undulating and at moderate angle to core axis.
PGH-18-07	39.5	41	SYE-BX	Syenite + Carbonatite	SYE; med red to pink, xtals up to 3mm, 15% qtz, kspar 50%, plag 15%, chl/amph/bt 20% (bt completely to partially replaced by chl/amph). Fractures filled with vfg blue mineral (amph). CRBT veins/bx up to 70cm. Veins <5cm; fg, massive, diss hem, vfg blue mineral, patchy fg fluorite. 40.24-40.93: BX, syn clasts up to 3cm, sub angular to rounded, clasts are highly fractured, milled bx?, zone varies from clast dominated to massive crbt zone ~10cm. CRBT; light purple-orange-green, mottled, vfg.
PGH-18-07	41	51.7	QTZ-SYE	Quartz Syenite	Fg-cg (locally pegmatitic with fspar up to 5cm), med red-pink to dark grey-green (zones dominated by bt/chl). Fenitized, chl/blue amph replacing bt and filling fractures. Bt rich zones have gradational contacts. Weak-mod pervasive hem alt (not as prevalent in bt rich zones). Trace CRBT intersections <15cm; light grey-cream-brown, banded to massive, patchy fg fluorite, diss hem, wavy banding is ~ parallel to contacts. Contacts are brecciated, syn clasts have rxn rims <3mm, veins rimmed by blue amph.

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DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-07	51.7	58.55	SYE-BX	Quartz Syenite + Minor Carbonatite	SYE; med red-pink, fg to locally cg up to 20mm, locally zones of more abundant bt up to 30%. Bt being replaced partially to locally completely by chl/blue amph. Cross cut by moderate 30-60 dTCA crbt veins <1cm with either crbt infill or blue amph+crbt. CRBT zones up to 0.5m. 51.70-51.96: CRBT; light grey-red-purple, fg, wispy bands defined by hem, patches of blue-green, undulating UC ~ parallel TCA, LC brecciated 55.38-55.8: CRBT; light pink-blue, syn clasts up to 3cm, agglomerates of clasts are rimmed by fg blue fibrous amph, clasts are sub-rounded with rxn rims up to 5mm. diss hem, trace diss py anhedral masses up to 3mm. UC curved 45/110, LC brecciated.
PGH-18-07	58.55	59.24	CRBT-BX	Carbonatite Breccia w/ Syenite Clasts	Silico-carb, light pink-purple-green, syn clasts(?) up to 3cm, clasts are highly fractured/carb alt. mottled, apt cum up to 2cm, trace diss py up to 3mm, diss hem, fg diss blue mineral (amph). Fg patchy fluorite near LC. LC @ 18/215, UC irregular
PGH-18-07	59.24	64.3	QTZ-SYE	Quartz Syenite	Med red-pink, fg-mg, locally 35% bt (being replaced by chl/amph), qtz 15%, kspar 40%. CRBT veins <5cm silico-carb, light grey-cream, diss hem, patchy fluorite, veins @ moderate angles TCA.
PGH-18-07	64.3	65	CRBT-BX	Carbonatite Breccia	Clast supported, syn clasts are angular to sub-rounded, rxn rims up to 1cm alt to bt, clasts up to 5cm, light grey-cream, fg, patchy hem, trace diss py, higher concentration of hem near LC. CCTs are bx/irregular.
PGH-18-07	65	66.8	SYE	Syenite	Fg-mg, red-pink, locally 40% bt, crbt veins <5cm, smaller veins have rxn rims of blue/green/red (amph/chl/albite(?)). CRBT veins are silico-carb, massive, fg fluorite, diss hem, trace diss py.
PGH-18-07	66.8	69.8	SYE-BX	Syenite + Carbonatite	SYE cross cut by multiple Carb veins from 5mm-1.5m. Syenite red-pink, 25% bt, kspar 50%, qtz 10%. Selectively pervasive weak-strong hem alt. Locally CRBT veins are brecciated. Colour of crbt becomes lighter moving down hole (decrease in hem?) 67.6-69.4: CRBT; light pink to dark purple-mauve, fg-mg, fg fluorite <1mm, diss hem, syn clasts up to 5cm some with 5mm rxn rims of bt. locally wispy bands of blue-green.
PGH-18-07	69.8	74.7	SYE	Syenite	Red-pink-black, qtz 10-15% qtz eyes up to 2mm, kspar 50%, bt 30%, 5-10% plag. Fg-mg, bt alt to chl/amph locally, patchy mod-strong hem alt. CRBT veins at moderate angle TCA commonly < 3cm wide, locally up to 7cm. Frequency is 1-3 per metre increasing in the last meter. Crbt veinlets <1mm throughout locally intense.
PGH-18-07	74.7	76	CRBT-BX	Carbonatite Breccia	74.7-75.2: two phases of crbt(?), breccia infill is black vfg with 3%py, clasts of light grey-cream silico-carb, angular which contain clasts of syn(? Possibly just hem alt or highly altered clasts?), later phase or crbt is light pink to grey-green, fg, clasts of syn have black rxn rims up to 1cm, clasts are angular to sub. 75.2-76: clasts have diffuse boundaries and moderately fractured, crbt infill is light green to cream, mg, fg diss hem, moving towards contacts smaller fractures are filled with fg blue fibrous amph. LC gradational

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-07	76	82.2	SYE	Syenite + Minor Carbonatite	SYE; med red-pink to black, mg, locally bt up to 30%, bt being replaced by blue amph/chl. Alt halos around crbt veins locally in more bt dominated zones pink-cream halos. CRBT up to 0.5m 77-77.28: CRBT; fg, elongate fibrous mineral amph?, secondary carb alt along fractures from second phase of CRBT. contacts are irregular, diss hem. 78.7-79: BX zone, clast supported, crbt infill cream to light green, fg, diss red fg mineral, syn clasts are angular with rxn rims of bt up to 5mm. 79.30-79.70: external margins 5-7cm are purple-light green (apt cumulates up to 5mm), diss hem. Core of crbt is light pink and massive. Trace diss py anhedral masses up to 2cm, fg diss hem(?). UC/LC planar with dissolution along contact. LC 70/125 81.06-81.35: CRBT; grey-green to light purple, mottled, brecciated LC.
PGH-18-07	82.2	86.2	CRBT-BX	Carbonatite Breccia + Syenite	Two breccia zones 0.5m and 1m respectively, outside of bx zones sporadic crbt veins <7cm. SYN; med red -pink, fg-mg, bt being replaced by chl/amph locally. 83-84: crbt purple-mauve, fg, massive, syn clasts up to 8cm, angular to sub with moderate fractures, 85.25-86.2: crbt grey-green, clast supported, clasts up to 18cm, angular to sub, pink alt halos on clasts up to 7mm. CRBT has vfg orange mineral, diss hem. Silic-carb
PGH-18-07	86.2	97	GRAN	Granite	Med red-pink, mg-cg locally pegmatitic plag up to 3cm, 20% qtz, 40% ksp, plag 20%, 20% amph/chl/biot. Moderate potassic alteration, striations in plag stained pink-red, masses of ksp, hem alt. bt being replaced by chl. Near contacts with crbt veins blue amphib present within gran replacing bt(?). trace diss/stringers of py. Minor crbt veins <10cm. CRBT; light grey-mauve to purple, fg, weakly banded, between 30-60 TCA, patchy fluorite, hem masses up to 4mm, trace diss py, euhedral xtals up to 2mm. fg blue (amph?) 94-94.5: broken core zone, partially due to mechanical breaks but evidence for small scale fault. undulating, smooth fractures with striations and fg chl infill w/rock fragments. Nearing LC gran becoming weakly more fractured up to contact with CRBT @ 25/305
PGH-18-07	97	97.8	CRBT	Carbonatite	Light grey-green to mauve-purple, brecciated contacts, clasts of gran up to 20cm sub-rounded with minor dissolution along boundaries. Wispy undulating bands defined by grey-br-rd ap, trace diss py. Dol>sil>calc
PGH-18-07	97.8	99.75	GRAN	Granite	Med red-pink, xtals <4mm, 30% bt/chl/amph, 20% qtz, ksp 40%, plag 10%. Bt being replaced by amph/chl partially to completely. Veins <5mm of blue amphib(?) +/- crbt and low angles <40 TCA.
PGH-18-07	99.75	103.15	GRAN	Granite + Carbonatite	GRAN; med red-pink, xtals up to 5mm, locally 30% bt/chl/amph (increasing near contacts with crbt), qtz 20%, ksp 40%, plag 10%. Overall zone is Gran 70% CRBT 30% CRBT zones up to 0.7m, veins mostly between 30-60dTCA CRBT; light to dark grey, Dol>sil>calc, fg, locally wispy bands (near contacts), trace diss py locally up to 5% along contact margins. patchy fg fluorite, diss hem, under UV very minor calcite.

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DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-07	103.15	104.2	CRBT	Carbonatite	Light purple-blue-green to grey, local wispy bands, fg-cg, bands defined by colour and abundance of hem(?), fg black mineral (pyrochlore?), nearing LC apt cum up to 1cm across, trace diss py and blebs up to 1cm. Moving downhole there is a weak correlation with increase in grain size. LC @ 20/200 Gran clasts up to 10cm, sub rounded, weakly fractured, clast boundaries are undulating (dissolution),
PGH-18-07	104.2	108.7	GRAN	Granite	Med red-pink to grey-green, potassic alt(?) locally up to 20% bt, bt being replaced locally by chl/amph, mg, qtz 25%, kspar 40%, plag 15%, bt 20%. Minor crbt veins <5mm with pink-green alt halos.
PGH-18-07	108.7	109.1	CRBT	Carbonatite	Light grey-green-purple, weakly banded, fg, diss hem, fg orange mineral along "bands", gran clasts angular <3cm. UC undulating @ 25/85, LC @ 25/90
PGH-18-07	109.1	109.45	PEG	Pegmatitic Granite	Pink-light orange, fspar xtals up to 10cm, masses of blue fibrous amph(?) and chl up to 5cm sharp LC @ 30/70
PGH-18-07	109.45	110.8	GRAN	Granite	Pink to opaque, qtz 30%, bt 20%, kspar 40%, plag 10%. Pink-green vfg alt halos around crbt veins <3mm.
PGH-18-07	110.8	111.55	CRBT	Carbonatite	Light pink to blue, diss fg py + nondistinct black mineral, diss hem, patchy fluorite. UC undulating @ 20/200, LC @ 65/180
PGH-18-07	111.55	111.96	PEG	Pegmatitic Granite	Kspar up to 4cm, massive qtz ~10cm, locally massive amph(?)/chl, qtz replacing fspar(?).
PGH-18-07	111.96	126.5	QTZ-SYE	Quartz Syenite	Med red to pink locally blue-green-brown, xtals < 5mm, patchy mod-str potassic alt (k, hem, chl), locally blue amph (finitized). Qtz 15%, kspar 40%, plag 10%, bt 20%, chl 10%, amph 10%. CRBT veins <5cm; light grey, diss hem, fg, trace diss py, between 30-60 dTCA, contacts are planar to undulating. 122.7-122.9: CRBT; cg, massive, light green, diss hem, trace diss euhedral py, Dol>Calc, UC undulating @ 55/075, LC brecciated @ 40/110.
PGH-18-07	126.5	128.15	PEG	Quartz Syenite Pegmatite	Plag xtals up to 10cm, Finitized, xtals being replaced by qtz/blue fibrous amph(?), chl, light pink vfg (kspar?) along grain boundaries and permeating xtals along striations. 127.3-127.5: CRBT; light green-pink-grey-purple, fg, patchy fluorite, clasts of peg fractured carb alt w/ blue mineral infill.
PGH-18-07	128.15	130.82	QTZ-SYE	Quartz Syenite	Qtz 15-20%, bt 25%, kspar 40%, plag 15%. moderate-strong patchy hem/chl/amph alt. Where alt stronger bt being replaced by chl/blue amph, alt seems to be halos around crbt veins (4cm), extent of alt has diffuse margins.
PGH-18-07	130.82	133.45	GRAN	Granite	20% qtz, bt 10%, plag 30%, kspar 40%, med red, mod selectively pervasive hem/chl, patchy blue amph replacing bt. 132.35-133.20: Pegmatitic
PGH-18-07	133.45	137.13	GRAN	Granite + Carbonatite	GRAN; med red-pink, selectively pervasive moderate hem alt'n, weak potassic alt'n(?), locally bt replaced by blue fibrous amph/chl. CRBT; vein up to 20cm, light grey-cream-green-blue, fg, massive to locally wispy bands defined by x of hem, trace diss py + other fg blue-grey submetallic mineral (H<5).
PGH-18-07	137.13	139	GRAN	Granite	Light red to opaque becoming more orange cream to red moving down hole, mg-cg locally up to 1cm, moderate patchy hem alt. qtz 20%, bt, 15%, kspar 40%, plag 20%, chl 5%.

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DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-07	139	139.5	CRBT	Carbonatite	Light grey-purple-orange cream, fg, massive, diss hem, trace diss py + other vfg black mineral, Dol> Calc, contacts are diffuse (dissolution) UC @ 80/120
PGH-18-07	139.5	141	GRAN	Granite + Carbonatite	Gran; jointed, Qtz 20%, kspar 40%, plag 20%, bt, 15%, 5% other. Orange cream to med red, orange mineral is altering kspar (clay mineral?, H<2, overprinting kspar), orange mineral is patchy mod intensity, intensity varies with proximity to fractures/crbt veins. Fractures filled with fg black-green chl. CRBT; light grey-purple, fg, massive, dissolution along contacts.
PGH-18-07	141	141.8	CRBT	Carbonatite	CRBT; light purple-green-pink, mg, Calc>Dol, fg chl in fractures and diss, contacts are gradational/highly altered, diss hem,
PGH-18-07	141.8	143	GRAN	Granite + Carbonatite	GRAN; med red to light orange (increasing down hole), mg, qtz 20%, bt 10%, kspar 50%, 20% plag. With increase in orange clay(?) increase in chl along fractures and replacing bt(?)
PGH-18-07	143	144.8	SYE-BX	Granite + Breccia	Qtz 25% light orange with patchy red, locally brecciated, numerous <1mm fractures, ff chl/calc +/- hem/qtz. Fspar being completely alt to orange clay mineral.
PGH-18-07	144.8	146	SYE-BX	BX / Granite	Cream orange to red, clay/chl altered, fault breccia(?), angular clasts up to 4cm of altered granite with chl/clay infill, patchy strong hem alt, highly fractured outside of bx zone, clasts are angular/fractured.
PGH-18-07	146	151.35	QTZ-SYE	Quartz Syenite	Med red, qtz 15%, kspar 50%, 15% plag, 20% bt, fg-mg, rare peg zone (15cm). CRBT veins <30cm; light pink-green-grey-purple, fg, mottled, diss hem, trace diss py euhedral xtals up to 1cm locally, fg light orange mineral rimming mottled colours. Contacts are bx to planar/undulating.
PGH-18-07	151.35	152.9	CRBT-BX	Carbonatite Breccia	Light pink-purple-green-grey, syn clasts sub-angular to sub rounded up to 20cm, clasts have diffuse boundaries and are weakly fractured. Diss hem, trace diss py up to 3mm. 152.65-152.9: mauve to purple, fg black pyrochlore(?)
PGH-18-07	152.9	161.4	QTZ-SYE	Quartz Syenite	Med red to pink, qtz 15%, kspar 50%, bt 20%, 15% plag. Mod-str selectively pervasive hem alt. Bt being alt to chl/amph locally. Fractures/veins <1cm filled with blue fg amph(?) /chl. Mg to locally cg up to 1cm plag. Weak potassic alteration. CRBT intersections <30cm dominantly at moderate angles TCA. fg, red to light purple-green, diss hem, rimmed by blue mineral (amph) Dol>Calc, trace diss py.
PGH-18-07	161.4	161.7	MDYKE	Mafic Dyke	Green-grey, fg margins, black crystals <1mm bt?, carbonate/chlorite altered groundmass, non-magnetic. UC @ 80/100, LC @ 70/330
PGH-18-07	161.7	167.45	SYE	Syenite	Qtz 10%, kspar 60%, chl 10%, plag 5%, bt 15%. Mg to locally pegmatitic, in peg zones fspar has inclusions of qtz and potassic alt, patchy mod hem alt, bt being replaced by chl/blue fibrous amph. Locally brecciated zones, clast supported, clasts up to 5cm w/ diffuse boundaries, sub rounded to sub angular. Infill blue fg amph(?) /crbt.
PGH-18-07	167.45	167.81	MDYKE	Mafic Dyke	Light to dark green-grey, fg margins, fg black amph(?) <1mm, vfg yellow mineral diss (dol?), groundmass chl alt, weak carbonate alteration. UC @ 60/030, LC@ 70/075
PGH-18-07	167.81	169.85	GRAN	Granite	25% qtz, kspar 40%, plag 10%, bt 10%, chl 10%, 5% other. Mg locally peg zone <10cm. Patchy mod potassic alt. Nearing lower contact blue amph(?) replacing bt.

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DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-07	169.85	182	CRBT-BX	Carbonatite Breccia + Syenite	<p>Multiple breccia zones up to 0.5m and massive crbt zones up to 1.8m 169.85-170.56: BX; upper 0.4m syn(?) fenitized highly alt to blue fg amph(?) local bt, carb in fractures, massive fg fspar <2mm, diss hem. Syn clasts up to 6cm, angular to sub angular, rxn rims <3mm-6mm, larger rxn rims on smaller clasts, of black bt, clasts are weakly fractured. CRBT; cream to light blue-green to purple, fg, patchy fluorite, diss hem, wispy blue. Locally clasts are completely altered, trace diss py, local fg chl(?) black H<2.</p> <p>171.65-172.24: BX; mosaic breccia, syn clasts up to 9cm, angular to sub, rxn rims up to 1cm, clasts <3cm are completely altered. CRBT; light pink-purple local light green, fg, diss hem, patchy fluorite. LC @ 25/230</p> <p>173.20-173.85: BX; UC undulating, rimmed by ~ 3cm blue fibrous amph, syn clasts angular to sub, up to 4cm, black rxn rims up to 5mm, smaller clasts completely altered. CRBT; light pink, fg, wispy bands near contacts and surrounding clasts, diss hem, fg <1mm blue amph(?), trace diss py, vfg diss ap forming wispy bands.</p> <p>174.30-174.70: CRBT BX; light pink-green-grey, fg blue mineral (amph?) forming wispy bands/masses. trace diss py diss hem. sye clasts angular to sub angular, dominantly completely altered to black fg mica (phlogopite?), some syn clasts appear to be pegmatitic plag with weak potassic alteration permeating along twinning striations of xtals.</p> <p>175.10-175.4: light pink, angular to sub angular 'masses' of higher hem concentration. trace py as anhedral masses up to 1cm. Local 1cm mass of iron black sub-metallic anhedral mineral, H ~6 Columbite/tantalite?. angular fragments of fspar <5mm within crbt. Dissolution along contacts making them diffuse.</p> <p>176.50-176.85: CRBT; light grey-blue, fg, wispy mottled bands of darker to grey, fine discontinuous stringers of hem, trace diss py masses <3mm, vfg orange cream mineral along weak bands and fractures.</p> <p>1787.78-180.05: CRBT; cream to light green-red, cg apatite(?) up to 1cm (65%) under UV no fluorescence, fg groundmass white-blue under UV (purple-red with vfg cream orange in normal light), fg diss hem, fg black metallic mineral <1mm. local trace py</p> <p>181.40-181.95: CRBT BX; 25cm massive crbt, crbt light purple-mauve, vfg, clasts of alkali <8cm, angular/moderately fractured, with diffuse boundaries,</p>
PGH-18-07	182	184.67	GRAN	Granite	Salmon pink to red, mg-cg up to 3cm, 30% qtz, 25% plag, 35% kspar, 10% bt/chl/amph. Weak-mod potassic alt, vfg pink along twinning striations in plag. Fractures filled with blue amph and spatially associated. LC gradational and marked by sharp increase in bt abundance and absence of plag.

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DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-07	184.67	187	GRAN	Granite	Increase in bt from previous unit, decrease in fspar, pale grey to pink-red, mg, patchy bt 10-20% locally, veinlets <3mm of blue fg sodic amph(?) also as masses up to 5cm more commonly replacing bt(?) and spatially associated to fractures/crvt veins/veinlets <4mm. 185.5-185.7: CRBT; cream to light blue, wispy bands pf fg blue sodic amph & weakly rimming. fg diss py, diss hem. Contacts are planar to undulating with weak dissolution. UC @ 20/70, LC@ 50/50
PGH-18-07	187	189.6	SYE	Syenite + Carbonatite	Low angle TCA ~10-15 fractures with blue sodic amph + crbt fill, veins are undulating and sub-parallel TCA, maximum width of 5cm, composes ~15% of unit and becoming brecciated 188.40-188.80. SYN; pink-red, mg-cg locally, fenitized, blue sodic amph replacing mafics(? bt/pyx))and filling fractures, bt being alt the chl. 188.4-188.8: CRBT; light blue-grey, fg, massive, dol>calc, fg stringers hem subparallel to contacts, in areas with increased sodic amph fg black-grey submetallic mineral present (Nb Ox?)
PGH-18-07	189.6	195.1	SYE	Syenite	Blue-grey to red-pink, patchy increases in bt/amph with decrease in kspar and local qtz-fspar "band"/"pods" up to 5cm, fenitized, chl replacing bt, blue sodic amph fg masses <2mm. Fractures/veins filled with sodic amph +/- crbt, with red alt halos (hem?). Rare crbt veins <3cm, locally brecciated, cream-light blue-grey, silicic-calc, diss hem, trace diss py. LC is gradational.
PGH-18-07	195.1	196.05	SYE-BX	Carbonatite + Syenite	At top of unit 25cm brecciated zone with sub-angular to angular syn clasts up to 6cm. Clasts becoming progressively more altered moving downhole towards crbt vein ~5cm. 195.52-196.05: CRBT; light grey-blue to cream, fg, massive, Dol>Calc, vfg soft (H<3) black mineral <1mm chl? partially coating fractures and disseminated. trace diss py, diss hem decreasing down hole. LC @ 75/115.
PGH-18-07	196.05	201.17	SYE	Syenite	Red-pink, fg-pegmatitic locally. Multiple intersections of CRBT as veins and local breccias <30cm, commonly veins <5cm making up <10% of unit. Patchy weak-str potassic alt, local zones with up to 20% bt and vfg fspar(?). Rock mass is fenitized, presence of blue sodic amph within fractures/veins and replacing bt/pyx(?). Bt being replacing partially to completely by green chl. CRBT: grey-blue to light pink, fg, local slender blades of amph up to 2mm, diss hem, trace diss py, contacts are planar to brecciated(locally) and between 30-60dTCA.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-07	201.17	206.25	SYE-BX	Syenite Breccia + Carbonatite	<p>201.17-210.45: bx zone w/ angular to sub syn clasts, black rxn rims up to 4mm, crbt infill light pink to grey-green, patches of fg diss hem up to 7mm, trace diss py.</p> <p>202.2-203.6: CRBT BX; light grey-green to purple-mauve, fg, diss hem & filling fractures, masses of brown-grey apt up to 8cm concentrated near clasts, patchy trace fluorite, local vfg orange cream mineral along fractures, syn clasts up to 11cm sub angular to angular, rxn rims up to 1cm, brown-red-pink-black (chl dominant, hem, +/- albite?). Lower 20cm 'clasts' of peg fspar with concentrically zoned alt, moving outwards (brown->light green), increase in sodic amph infilling fractures.</p> <p>203.85-204.40: BX, syn clasts up to 12 cm commonly <5cm, typically completely alt to bt if <4cm, larger clasts have rxn rims up to 1cm. Diffuse boundaries on clasts appear sub-rounded to rounded with minor fracturing. CRBT infill cream to light grey, fg, diss hem, patchy fluorite, fg <1mm slender blades sodic amph(?)</p> <p>204.62-205.20: CRBT BX, becoming clast dominated moving downhole first 30cm crbt + syn clasts. CRBT cream to light purple-mauve, fg, darker purple-red crbt concentrated near clasts/contacts (increase in hem). trace diss py</p> <p>205.64-206.55: Brecciated pegmatitic syn, clasts of plag xtals that have pervasive potassic alteration(?), crimson in colour, rarely cores of xtals preserved. clasts are highly fractured / angular. CRBT; light grey to cream to purple/mauve, massive to locally banded (alt bands of dark/light). Darker bands have more hem and are ~2cm in width. trace py, also blue wispy bands (fg sodic amph?). LC planar @ 50/215</p>
PGH-18-07	206.25	214.05	QTZ-SYE	Quartz Syenite / Granite	<p>Bimodal crystal sized zones, fg-mg, mg-pegmatitic locally (up to 4cm), peg xtals have inclusions(?) of qtz/chl/sodic amph. Unit varies from red-pink to green-blue. Green-blue zones are bt/chl/amph dominated and locally up to 60% @ 209.9 ~parallel contact btw cg slightly alt gran and highly fenitized(chl/amph/bt rich) gran(?). Fractures/veinlets of blue amph(?)/crtb increasing in frequency 210-213 ~ 25/m.</p> <p>213-214: strong decrease in sodic amph/bt/chl.</p> <p>LC undulating @ 50/095</p>
PGH-18-07	214.05	220.32	CRBT	Carbonatite	<p>Light green-purple-grey-cream-pink, fg-mg, weakly banded to locally massive. Rare syn clasts up to 10cm sub-rounded to sub angular, intensely alt to black-brn bt rich. Diss fg hem, Calc >/ Dol, trace diss anhedral/euhedral py up to 2mm, locally vfg cream orange mineral. vfg white mineral appears salt/pepper white under UV (apatite)</p> <p>217.5-219.04 moving down hole there are patches of fg mauve-light orange up to 7cm and an increase in py size up to 1cm, and increase in light green ap(?) up to 1cm 10%. LC sharp undulating</p> <p>219.04-220.32: SYN 50% CRBT BX 50%</p> <p>CRBT BX 60cm zone, light pink to grey-blue, fg, diss fg hem, euhedral cubic py up to 1cm locally poorly formed cubic shape up to 1cm with inclusions of crbt and fg blue-black metallic sulphide(?). LC curved, open, sharp @70/215. SYN clasts angular to sub-angular, weakly fractured, with wk dissolution/rxn rims <3mm.</p>

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-07	220.32	226	QTZ-SYE	Quartz Syenite / Granite	15-20% qtz, 10% bt, 40% kspar, 5% chl, 5% sodic amph, 20% plag. Medium red to pink, xtals 1-7mm, weak-mod selectively pervasive chl/ sodic amph, patchy weak-mod hem/potassic alteration. Fractures/veins of sodic amph <5mm with pink-red alt halos up to 1cm. CRBT up to 10cm (224.35-224.45m). LC brecciated @ 50/050.
PGH-18-07	226	230	CRBT-BX	Carbonatite Breccia	226-227.5: Clast dominated 65% of unit, clasts up to 20cm, commonly <10cm and intensely altered to bt/sodic amph with less altered cores, sub-angular to sub-rounded. CRBT light pink-cream wispy bands of brown-green fg ap(?), diss hem, patches of blue sodic amph up to 3cm close proximity to clasts. Trace diss/stringer s of py/po. 227.5-229: first 0.5m bx angular to sub sun clasts < 5cm, mod-intensely altered bt/sodic amph, strongly hem alt near UC. CRBT; light purple grading into light pink moving downhole, fg, massive, wispy hem forming very weak bands, trace diss py, vfg orange cream mineral diss and along undulating <1mm veinlets(?), br-grn wispy bands of ap (2%) 229-230: Alkali; strongly altered to bt/chl/hem/ trace ep, bx zone 30cm clasts up to 7cm angular to sub. CRBT; light grey-cream to purple
PGH-18-07	230	232.7	CRBT	Carbonatite	Light purple-green with light orange, mg xtals <4mm, diss hem, vfg cream orange interstitial ap, trace diss py. Upper portion light purple to light green mg, 231-232 onward fg light grey-pink, <1mm fractures of blue/black (amph?). 232-232.7: Clasts(?) 10cm, of hem rich mauve coloured crbt, <1mm fractures throughout LC planar @ 65/075
PGH-18-07	232.7	234.58	SYE	Syenite	Fg-mg, med light red-pink, selectively pervasive chl/sodic blue amph alt (replacing bt/pyx?), qtz 10%, kspar 60%, plag 10%, 20% chl/amph. Minor crbt bx ~20cm. Moderately fenitized clasts (sodic amph), crbt infill light pink, fg, hem patches up to 1cm (fg).
PGH-18-07	234.58	236.35	CRBT-BX	Carbonatite Breccia	234.58-235.7: clast dominated, syn clasts up to 7cm typically sub-angular to sub rounded and completely altered, larger clasts >3cm still have unaltered to weakly altered cores, clasts have diffuse boundaries. CRBT infill light pink-grey with blue sodic amph infilling veins <1cm. Dol/Si > Calc, diss he, local <3mm wispy discontinuous ribbons of ap. 235.7-236.35: CRBT; light pink-purple, fg, massive, blotchy patches of vfg hem/crbt masses up to 5cm, trace diss/blebs of py up to 1cm. LC brecciated w/ dissolution, planar @ 25/200
PGH-18-07	236.35	240	QTZ-SYE	Syenite / Quartz Syenite	Med red-pink, mg, locally cg, qtz 10-15%, kspar 60%, plag 10%. Moderate-strong hem/chl alt, multiple fractures/veins filled with crbt/chl/hem with local bx up to 7cm. At LC massive qtz up to 10cm with kspar. LC at low angle, undulating to irregular.
PGH-18-07	240	242.25	SYE-BX	Syenite / Fault Zone Breccia	UC appears to be carb alt mdyke(?) chl rich with fg ribbons of carb, multiple low angle fault planes filled with chl and angular clasts of crbt/syenite/mdyke?. Wall rock heavily fractured, carb infill, Sye being alt'd to black chl/bt rimed by hem/albite(?). Local ep. 241.30: Syn pegmatitic, cg fspar potassic alt/ fractured from faulting, crbt infill hem rich (mauve in colour) FZ 241.2-241.8 UC @ 10/330 coated in chl. CRBT clasts up to 10cm, infilled with light pink crbt massive chl, LC @ 15/320. 241.8-242.25: 10% fg ep near UC, visible small scale fault blocks in syn with 3cm displacement. LC gradational and marked by decrease in fracturing and crbt/hem veinlets.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-07	242.25	260	QTZ-SYE	Syenite / Quartz Syenite	Light red to pink locally blue-green, weak-strongly fenitized (proximity to veins), moderate selectively pervasive chl/sodic amph/hem/potassic alt. fg-cg (locally) qtz 10-15%, kspar 50%, plag 10%, bt/chl/amph. Local bx zones from 3-15cm @ ~50-65/180, local crbt veins commonly <3cm locally up to 60cm. 248.13-248.8: CRBT BX; light blue amph(?) rich in first 30cm (clast rich), clasts angular to sub, up to 7cm, locally clasts completely altered to black-brown (bt/hem/amph), crbt infill light blue-light pink, fg, hem patches up to 1cm. Downhole crbt is light pink- green to cream, fg, massive, trace fg fluorite, vfg cream orange ap(?). LC 30/310 along 1cm crbt vein.
PGH-18-07	260	265.95	SYE	Syenite w/ minor Carbonatite	Syenite fenitized, fg sodic amph, moderate hem/potassic alt, fg-mg, bt being replaced by chl. Locally pegmatitic xtals up to 5cm.minor CRBT veins/bx making up 10% of unit. CRBT light grey-red, fg, mottled to massive, commonly rimmed by sodic amph, trace diss py.
PGH-18-07	265.95	288	CRBT-BX	Carbonatite Breccia	266-266.50: light green-grey, fg, massive, trace diss py and masses up 2cm, Dol>Si>Cal, diss hem. 266.5-267: zones of dark grey-green, chl alt with bt up to 3mm, carb veins <2mm light pink to cream, non-magnetic, carb alt mafic dyke. 267-268.70: light pink in upper section and grading into cream-light blue, masses of diss hem up to 5cm that have small vugs <2mm, cross cut by dol rich vein 2cm wide. wispy bands of light green-brown ap. Last 0.5m increase in light blue fg sodic amph, trace diss pyrrhotite/py. 268.70-271.30: zones up to 0.5m black-green, bt/pyx crystals <5mm, diss sulphides (py/po), carb alt with carb veins <4mm. CRBT infill light blue-cream grading into pink-light green downhole. fg, massive to locally undulating non-uniform 'bands' defined by sodic amph x. Clasts of Syn up to 4cm, locally peg fspar clasts, clasts are commonly completely altered to black-green bt/chl/amph, sub-angular to sub-rounded. patchy fluorite. LC perpendicular TCA @ 80/135. 271.3-274.3: dominated by fenitized syn(?) with local bx zones up to 1m. Unit is moderately fractured with crbt veining. Syn is pale grey and made up of qtz>bt>pyx>amph/chl. crbt veins have multiple orientations but are at moderate angles TCA. CRBT veins cream to light grey, fg, massive, local zones within bx with up to 15% py/po, diss hem, patchy fluorite. 274.3-282.5: CRBT BX; syn clasts up to 10cm sub-rounded to sub-angular, commonly highly fractured with rxn rims up to 1cm or completely altered to bt/pyx/amph/chl, local semi massive py/po overall all <5% of unit. CRBT fill is cream to light pink-grey-blue-green to light red, fg, patches of fluorite up to 1cm, diss hem, wispy bands of br-grn ap <3mm wide. Scint <200c/s @ 281 330 c/s 282.5-288: massive CRBT, light purple-pink-green-orange, fg, massive, 10% vfg interstitial cream orange ap(?). diss hem <1mm, locally clasts(?) of light grey dol/sil>calc crbt up to 5cm, rimmed by fg dol, with irregular undulating clast boundaries, trace fg diss py, weakly vuggy locally <1mm. LC brecciated
PGH-18-07	288	289	SYE-BX	Syenite Breccia + Carbonatite	SYE 90% CRBT 10%, bx zone 28cm Syn; light red-pink, fenitized (sodic blue amph/chl replacing bt/pyx?, fg. CRBT; light grey-pink, in bx zone clasts have diffuse margins (dissolution), diss hem, rimmed by blue vfg amph(?).

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-07	289	293.5	SYE	Syenite	Blue-green to pink, fenitized syn, mod-str selectively pervasive sodic amph/chl, fg-mg, qtz 10%, kspar 50%, trace diss by. CRBT veins up to 10cm wide, commonly light grey-green, fg to cg locally (peg fspar up to 4cm), massive. LC brecciated, obscured by alteration/dissolution.
PGH-18-07	293.5	297.63	SYE-BX	Syenite Breccia + Carbonatite	Sye clasts up to 10cm, angular to sub-rounded, rxn rims up to 5mm, clasts <3cm are commonly completely altered to bt/pyx/chl/amph. Locally clasts of peg fspar. CRBT; light pink-cream to cream orange, fg, massive, diss hem, wispy fine(<2mm) bands of sodic amph. 295.5-296: 15% py/po as coliform anhedral masses LC planar @ 40/220.
PGH-18-07	297.63	299.25	GRAN	Granite	Light pink to light red, mg, 20% qtz, patchy chl/sodic amph/hem alt. <1mm fractures with pink alt halos <2mm, veins of blue sodic amph with alt halos of chl/potassic? LC planar @ 35/210
PGH-18-07	299.25	307.4	CRBT	Carbonatite	Massive, fg, light pink-grey to light blue-green, local zones of semi massive py/po overall <5%, wispy bands of blue amph, vfg cream orange ap locally, Calc>Dol, syn clasts present between 304.5-306; clasts up to 10cm rxn rims from 1cm to completely altered if clasts <5cm, angular to sub rounded. LC @ 35/215, planar, closed
PGH-18-07	307.4	313.1	QTZ-SYE	Quartz Syenite / Granite	Med red to light pink, mg to locally peg up to 3.5cm, qtz 15-20%, kspar 40%, plag 10%, bt 15%, 15% chl/amph. Mod selectively pervasive chl/amph/hem alt. Qtz abundance varies across unit. Minor intersections of crbt up to 20cm commonly <3cm veins. Making up <8% of unit. light purple-pink-grey, fg to locally cg, commonly rimmed by blue sodic amph, trace diss py, local fg black sub-metallic sulphide(?). LC perpendicular TCA.
PGH-18-07	313.1	315.87	SYE-BX	Brecciated Alkali with Carbonatite	Alkali clasts up to 10cm, angular to sub angular, strongly altered, rxn rims bt/pyx/chl, potassic/fenitized cores. CRBT; light purple to grey-cream, fg-mg, massive, cross cut but <1cm dol rich fg veins, diss fg hem, fg masses of blue-grey sulphide? Up to 1cm locally.
PGH-18-07	315.87	319.95	SYE	Syenite	Med red-pink, mg-cg <5mm, qtz 10-15%, kspar 50%, chl/amph/carb replacing mafics (bt/pyx?). Locally brecciated with crbt infill <30cm. Unit is mod-str fenitized, fractures filled with amph +/- crbt/chl. CRBT; Si/Dol > Calc, fg-cg, massive, diss hem. 319.4-319.95: CRBT; light pink, UC irregular, massive, fractures filled with fg py, @ UC/LC ap cum up to 1cm forming wispy bands subparallel to contact, diss hem. LC diffuse.
PGH-18-07	319.95	321.7	SYE	Fenite	Kspar>amph/chl/bt + carb, mg, completely altered syenite(?), carb veins <3mm at moderate angle TCA with white alt halos. UC & LC brecciated
PGH-18-07	321.7	326.6	SYE-BX	Fenite Breccia with Carbonatite infill	Clasts angular to sub rounded, commonly completely alt (bt/pyx/amph/chl) or with rxn rims and strongly altered cores, clasts up to 10cm with moderate fracturing of clasts. CRBT infill light grey-green to red-green, fg, massive to weak coliform banding around clasts. trace diss py, patchy fg fluorite, vfg diss galena(?) around 323.5, H<3. 325.7-326.30 massive crbt, light grey-green w/ qtz lenses up to 1cm, vfg orange cream ap subparallel bands to contacts @55/265.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-07	326.6	331.25	SYE	Fenite	Mg, locally cg plag up to 2cm, unit is blue-green to grey, with patchy kspar, bt/chl/amph > kspar/neph, fenitized ljiolite(?), veinlets of crbt throughout unit <2mm at moderate angles TCA, local crbt veins up to 2cm.
PGH-18-07	331.25	344.85	SYE-BX	Brecciated Fenite with Carbonatite infill	Wall rock and clasts blue-green to grey altered to sodic amph/chl/bt with patchy k-spar?, fg-mg. Local breccia, and massive CRBT up to 0.5m. Moving downhole wall rock is completely altered and dark grey to black with intense fracturing/infill of CRBT. Locally clasts are moderately altered and cores of alkali are distinguishable. 332.56-333: CRBT; light pink-purple, fg massive, fg blue sodic amph, vfg wisps of grn-brn ap? 4mm wide, trace diss py. 334-334.50: CRBT BX; light pink grading into light grey-green, fg, massive, LC brecciated, diss hem 341.3-341.6: CRBT; light blue-green to pink, fg bt, fg blue sodic amph
PGH-18-07	344.85	345.4	GRAN	Granite	Qtz 20%, kspar 60%, mg-cg, pink, blue amph/chl alt bt(?) UC & LC CRBT.
PGH-18-07	345.4	347.2	CRBT	Carbonatite	Grading from light pink-green into light blue-grey moving down hole. Moving down hole crbt becomes weakly banded (40/350) with increase in bt and sodic blue amph, trace diss & stringers of py/po. Darker bands mgt/bt/amph
PGH-18-07	347.2	356.7	SYE	Fenite / Granite	Blue-green, strongly to completely altered alkali feldspathic rock, qtz 10-15%, 10-15% kspar, bt/pyx/chl/sodic amph/hem + interstitial carb locally. Fg to locally cg,.Cg zones are typically weakly fenitized with xtals up to 1cm and composed of qtz 30%, kspar 40%, chl 15%, plag 5%, sodic amph 10%. Breccia zones up to 1m, close proximity to bx zones are zones of mod-strong <4mm veining of crbt and local massive veins up to 10cm. CRBT is light pink-purple-blue-grey to green, fg, massive, trace diss py, local crbt have up to 15% sodic blue amph as wispy bands. wall rock clasts are commonly sub-rounded, fractured, with dissolution along clast boundaries.
PGH-18-07	356.7	357.06	MDYKE	Mafic Dyke	Light green -grey, aphanitic margins, core is fg, with amygdales <3mm filled with carb, <1mm sub parallel veinlets of carb, elongated blades <1mm of pyx(?), non-magnetic. UC @ 40/280
PGH-18-07	357.06	358.1	GRAN	Granite	Med pink to light red, mc-cg, qtz 25%, kspar 60%, chl 15%, weak-mod patchy hem alt, chl replacing bt(?). LC marked by strong increase in bt/chl/amph
PGH-18-07	358.1	372.8	SYE	Fenite	Dominantly qtz 15%, bt/amph/pyx(?)/chl 70&, kspar 15%. Unit is dominantly massive to locally banded(? bands up to 10cm,light grey qtz/fspar rich between 50-60 dTCA), locally less altered granite distinguishable. Minor crbt bx zone 30cm and veins <10cm. 358-359.5: trace vfg tiger orange to yellow, waxy, light green in UV Bastnaesite?
PGH-18-07	372.8	375.35	CRBT-BX	Carbonatite Breccia + Alkali Feldspathic	CRBT up to 90cm with alkali zones in between. Alkali Feldspathic fg-cg up to 3cm, med red to pink, qtz 15%, kspar 55%, 15% amph, 15% chl. CRBT; light purple-green to grey, fg, massive, wispy bands <2mm of brown-green ap concentrating sub-parallel to contacts and concentrically around clasts. Clasts up to 4cm, strongly to completely altered and surrounded by masses of blue sodic amph(?).
PGH-18-07	375.35	379.87	GRAN	Granite + Carbonatite	GRAN 95% CRBT 5%. GRAN; light pink to med red, fg-cg locally, qtz 20%, kspar 45%, plag 10%, 25% chl/bt/amph, fenitized (chl/sodic amph? Replacing bt?), local crbt bx up to 30cm. CRBT; light purple-green-grey-blue, fg, massive, commonly rimmed by fg blue amph(?), trace diss py, diss hem

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-07	379.87	387.72	SYE	Fenite	Grey-green locally pink, qtz 50%, neph(?) 15%, bt 20%, 5% amph 5% pyx, 5% chl. Dominantly fg locally cg, alt halos of potassic alt around crbt veins and along fractures. Halos 2mm-3cm. Locally cg plag/kspar. Rare crbt veins <4cm. Last 70cm cg alkali <2cm, qtz 30%, kspar 40%, bt 10%, chl 10%, 5% amph 5% other. vfg orange mineral replacing chl(?) green under UV bastnaesite(?) LC in brecciated @ 20/30
PGH-18-07	387.72	388.2	CRBT	Carbonatite	Bx contacts, clasts of fg alkali up to 9cm commonly < 2cm, sub-angular to sub rounded, moderately fractured, clast completely altered to black bt/pyx. Blue sodic amph(?) discontinuously rimming contacts of crbt. CRBT; light pink-purple to cream, fg, massive, <1mm veinlets & diss hem, discontinuous bands rimming clasts and contacts of light green-red ap(?). fg diss pyx/blue sodic amph. Trace diss py. UC@ 20/30, LC @ 20/20
PGH-18-07	388.2	389.14	SYE	Fenite	Qtz 40%, bt, 20%, chl 15%, fspar 25%?, grey-green, mm pink alt halos around fractures. LC sharp, planar @ 35/110
PGH-18-07	389.14	390.4	MDYKE	Mafic Dyke	Black, aphanitic, chilled margins, amygdales filled with plag/qtz, rimmed by hem, magnetic. UC 35/110, LC @ 35/105
PGH-18-07	390.4	391	CRBT	Carbonatite + Alkali Feldspathic	40cm of CRBT after contact with dyke, grading from blue to cream (cg) to light pink with wispy bands of green-blue. Nearing LC mottled blue-green surrounding clasts up to 10cm. Trace diss py, diss hem. Alkali is fg-cg, orange-pink to green-grey, pink-orange alt halos around crbt.
PGH-18-07	391	393.5	SYE	Fenite	Qtz 40%, bt 20%, chl 15%, fspar 25%. Fg-mg, pink alt halos <4mm around fractures & crbt veins. Locally cg up to 1cm fspar xtals. LC BX 20/205
PGH-18-07	393.5	395.1	QTZ-SYE	Quartz Syenite / Syenite	Frst 50cm CRBT BX with undulating LC; light pink to cream, clasts <4cm, angular to sub, rxn rims up to 5mm, diss py, fg blue amph(?). Sye; fg-peg locally up to 3cm plag, light pink to cream, masses of bt/chl up to 2cm, 15% qtz, plag 25%, kspar/neph 30%, bt/cl 20%, 10% amph.
PGH-18-07	395.1	402.2	SYE	Fenite	Light pink to green-blue, fg, dominated by qtz/bt/chl/amph with selectively pervasive potassic alt. Locally cg zone of qtz/syn described above (near crbt contact). Fractures and veins have light pink alt halos. Rare crbt veins <5cm, commonly rimmed by black bt/pyx, fg, massive, cream to light grey
PGH-18-07	402.2	404.4	CRBT-BX	Fenite + Carbonatite breccia	Crbt bx up to 75cm with multiple 15cm zones up hole from larger zone. Wall rock in fenite described above with local 404-404.4 cg syenite-qtz-sye which has been moderately fenitized. CRBT; light blue-pink-purple to green, fg, massive with wispy bands of blue-green (ap) near contacts and surrounding clasts. wall rock clasts up to 10cm commonly <5cm and completely altered to bt/pyx/amph. Calc>Dol, trace diss py, trace diss blue-grey fg galena(?), diss hem, vfg white-orange ap(?) within blue-green wispy bands.
PGH-18-07	404.4	405.5	CRBT	Carbonatite	Med blue-grey to light pink, mottled, fg-mg, locally magnetic (magnetite) rich zones and pods from 2cm to 16cm also rich in bt. Wispy dark bands of blue fg sodic amph(?), trace diss py with local masses 4cm across. LC @ 70/160

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-07	405.5	416	QTZ-SYE	Quartz Syenite / Fenite	Fenitized mod-str patchy, fg to locally pegmatitic (<3cm), blue-green to light pink-red, local 'bands' of qtz/fspar rich bands surrounded by bt/chl/amph rich fg fenitized alkali. Rare CRBT veins <13cm; light pink-purple, massive, wispy blue-green amph/ap, diss hem, trace py.
PGH-18-07	416	416.6	MDYKE	Mafic Dyke	Light green, crbt altered groundmass and veins <2mm throughout. Non-magnetic, aphanitic. UC @ 20/235 , LC@ 25/240
PGH-18-07	416.6	426.7	QTZ-SYE	Quartz Syenite / Fenite	Fenitized mod-str patchy, fg to locally pegmatitic (<3cm), blue-green to light pink-red, local 'bands' of qtz/fspar rich bands surrounded by bt/chl/amph rich fg-mg fenitized alkali. multiple fracture <2mm fill of blue amph(?) between 30-60 dTCA. Rare CRBT veins <10cm; light pink-purple, massive, wispy blue-green amph/ap, diss hem, trace py. 424.9-425.25: MD; black, magnetic, aphanitic, planar, contacts. Last 1.5m light orange-pink fg-cg (1cm)neph syn with minor fg chl alt.
PGH-18-07	426.7	427.1	CRBT	Carbonatite	Light purple with masses of forest green ap cumulates up to 10cm, fg, massive, trace diss py. dissolution along UC, LC sharp @ 30/000.
PGH-18-07	427.1	439.65	MDYKE	Mafic Dyke	Dark green-grey, aphanitic, jointed, magnetic, fractures chl covered, locally carb altered, minor patchy hem.
PGH-18-07	439.65	441.6	GRAN	Fenite(?) / Granite	Local 'bands' up to 8cm, but not always continuous of qtz/fspar rich, unit is dominantly bt/chl/amph. Bands maybe pseudo-banding from alteration due to discontinuous nature. Lighter bands are light pink, darker bands are dark green-grey with 40% bt/chl/amph (fenitized?). Dominantly fg with rare fspar up to 1cm. Weak potassic alteration rimming xtals. Light bands 60% qtz, 30% kspars, 10% other (bt).
PGH-18-07	441.6	442.4	CRBT	Carbonatite	Brecciated UC/LC, light pink with wispy bands of blue-green from 1-4mm grading into blue nearing LC, fg, with local chl(?) 1mm along band with py/po stringer, wispy bands are sub-parallel to contacts with variations where clasts are present. 5% py/po as stringers (within wispy bands of blue-green) <1mm and anhedral masses up to 4cm (masses near LC surrounding clasts). Clasts up to 6cm angular to sub (square), rxn rims <5mm with local clasts <2c being completely altered to bt/pyx +/- chl/amph. UC@ 10/180, LC @ 15/200
PGH-18-07	442.4	444.4	SYE	Fenite(?) / Granite	Fg-locally peg (up to 2cm), dominantly green-blue to light orange, 35% chl/amph, qtz 15%, fspar 50% (cream to grey k-spar). Fractures / veins <4mm with blue amph/crbt infill. Weakly potassic (pink) alteration rimming fspar
PGH-18-07	444.4	445	CRBT	Carbonatite	Light pink to blue, wispy bands of blue-green sub-parallel to contact, fg diss py, rare fg sphalerite(? Honey brown), clasts <2cm rxn rims <4mm, trace diss py/po
PGH-18-07	445	448.56	GRAN	Fenite(?) / Granite	Green-grey to light pink/cream, fg with local cg, weak discontinuous bands of qtz/fspar rich and bt/chl/pyx/amph up to 1cm. Qtz 30%, fspar 30%, bt/chl/amph/pyx 40%. Fractures/veinlets <4mm of blue amph/crbt. Weak potassic alt rimming fspar, weak patchy hem.
PGH-18-07	448.56	449.1	MDYKE/CRBT	Carbonatite / Mafic Dyke	Carbonatite/Mafic Dyke (20cm)/Carbonatite. CRBT; cream/pink with blue wispy bands and also rimmed by blue-green fg amph/py/ap(?). Trace diss/stringers of py/po. Vfg light beige <1mm ap diss through blue, diss hem MD; black, aphanitic, magnetic, amygdales filled with chl. CCT @ 50/160

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-07	449.1	459.3	GRAN	Fenite(?) / Granite	Forest green to cream-pink, fg to locally cg zones plag up to 2cm qtz 30%, plag 30%, 40% chl/bt/amph. Weak potassic alt rimming fspar, with light orange alt(?). Weak discontinuous 'bands' of qtz/fspar rich material with local zones with up to 70% bt/chl/amph/pyx(?). Fractures filled with amph <5mm at various angles TCA. LC @ 75/125
PGH-18-07	459.3	459.85	CRBT	Carbonatite	Cream to light purple (locally), massive, fg, wispy bands <2mm near UC/LC with diss/str py. UC @ 75/125, LC @ 75/120
PGH-18-07	459.85	468.16	GRAN	Fenite(?) / Granite	Forest green-blue to cream-pink, fg to locally cg zones plag up to 2cm qtz 30%, plag 30%, 40% chl/bt/amph. Weak potassic alt rimming fspar, with light orange alt(?). Weak discontinuous 'bands' of qtz/fspar rich material with local zones with up to 70% bt/chl/amph/pyx(?). Fractures filled with amph <5mm at various angles TCA. LC bx @ 70/120
PGH-18-07	468.16	474.35	CRBT	Carbonatite	Light pink to cream-blue to light green, local zones of black-blue (20cm), fg, massive, with wispy bands of blue green (ap/amph) usually sub-parallel TCA and clast boundaries, diss/stringers of py/po, local clasts of alkali up to 10cm sub-rounded, with rxn rims <3mm, locally clasts <3cm are completely altered.
PGH-18-07	474.35	477.8	CRBT-BX	Carbonatite Breccia	Clasts of syn up to 15cm, rxn rims <5mm, sub angular to sub rounded, crbt; light blue-cream to light purple, fg, wispy bands of amph, diss hem, trace diss/stringers of py, rxn rims <4mm Syn; fg-cg locally, fenitized (chl/amph alt), med red-pink, xtals up to 1cm locally. strongly fractured with crbt/amph infill.
PGH-18-07	477.8	483.15	GRAN	Granite	Light pink-orange-red to forest green-blue, fg to locally cg up to 1cm, diffuse 'banding' qtz/fspar and bt/chl/amph. Fractures/veins <10mm infilled with blue amph. Minor crbt infill <15cm. Mod-strongly fenitized (chl/amph), weakly potassic alt (replacing fspar). qtz 25%, kspar 30%, plag 15%, bt/chl/amph 30%.
PGH-18-07	483.15	486.8	CRBT-BX	Carbonatite Breccia	Cream to light green-blue locally black-dark blue, fg to cg (<3cm), massive, wispy bands of blue green (amph/chl/bt) with diss/stringers of py/po, veins rimmed by blue amph/chl. GRAN clasts up to 10cm, rxn rims <5mm, fractured. Locally magnetic (po), patchy fluorite. BX contacts @ 20/180, LC @ 45/225
PGH-18-07	486.8	492.55	SYE	Syenite	Red-pink to blue-green, weak-mod potassic/fenitized alt, fg-mg (<4mm), qtz 10%, kspar 40%, plag 10% chl/bt/amph 40%. <1mm veinlets with light pink-red halos, fractures filled with blue amph. Minor CRBT veins<5cm, cream to light grey, fg, diss py, diss hem.
PGH-18-07	492.55	495	SYE-BX	Syenite + Carbonatite Breccia	CRBT zones up to 70cm 492.55-492.80: dark grey to light purple, fg, mottled, diss hem, trace diss py and masses up to 2cm 492.80-493.05: dark green-blue, 5% diss hem, amph up to 3mm, chl/amph/hem 493.05-493.26: light grey-green to red-purple, diss hem, patchy fluorite 493.55-75: CRBT; light green-grey, fg, 10% py, Si/Dol>Calc, diss hem. 494.64-484.85: CRBT; light pink-cream to green-grey, cg calc, diss hem, wispy bands of amph with fg py and ap? Between zones are light pink to med red, selectively pervasive chl/amph alt with weak potassic alt. Qtz 10%, kspar 40%, plag 15%, 35% chl/bt/amph
PGH-18-07	495	497.05	GRAN	Granite	Pink, mg, qtz 25%, kspar 40%, 35% plag. Fractures filled with chl, fractured with light pink-red halos <3mm.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-07	497.05	497.8	MDYKE	Mafic Dyke	Light green, aphanitic, fg, carb/chl alt, local bt up to 1mm UC @ 25/130, LC @ 25/110
PGH-18-07	497.8	498.95	GRAN	Granite	Pink, mg, qtz 25%, kspar 40%, 35% plag. Fractures filled with chl, fractured with light pink-red halos <3mm. LC @ 35/010
PGH-18-07	498.95	499.56	MDYKE	Mafic Dyke	Aphanitic, dark grey-green, sharp UC @ 35/010, LC @ 55/020, magnetic.
PGH-18-07	499.56	501.2	GRAN	Granite	Pink, mg, qtz 25%, kspar 40%, 35% plag. Fractures filled with chl/amph up to 1cm, fractured with light pink-red halos <3mm. Local CRBT up to 3cm (cream, fg, rimed by blue amph?) LC @ 30/140 brecciated
PGH-18-07	501.2	506.45	CRBT-BX	Carbonatite Breccia	501.2-501.95: GRAN BX; strongly altered (chl/amph/diss py), syn clasts up to 3cm, rxn rims up to 5mm with smaller clasts completely altered. CRBT infill blue-green to cream, fg, wispy bands sub-parallel to contacts. 10% bt up to 1mm, ap cumulates up to 5mm. 501.95-502.3: CRBT; banded, wispy bands (@ 60/080) up to ~1cm, alternating bands of blue/cream/light green, diss hem, fg diss py 502.3-502.8: moderate veining with amph fill, GRAN 502.8-504: med green-blue to light purple-cream, local magnetite, diss fg py, 2mm amph xtals, rare gran clasts strongly altered to black bt/pyx(?)/chl/amph. weakly banded with alternating concentrations of amph/bt 504-506.45: BX; gran clasts up to 14cm sub-rounded to sub-angular, rxn rims <1cm, clasts smaller than 4cm completely altered. CRBT; light green-purple to light blue, fg, wispy bands of blue-green, diss py, patchy fluorite, diss hem, infill between clasts is higher concentrations of blue amph/chl.
PGH-18-07	506.45	512.15	GRAN	Granite	Med red to blue, fg to pegmatitic locally up to 5cm, moderately fractured with fill of blue amph +/- crbt <10cm. Weak-mod selectively pervasive chl/amph alt, weak potassic alt rimming fspar. Locally weakly banded similar to above. CRBT; fg (larger crbt cg), light blue-grey to light green, diss hem, with local clasts of plag.
PGH-18-07	512.15	512.75	CRBT	Carbonatite	512.2-512.75: CRBT; light pink-purple with blue near UC/LC, diss hem, fg, wispy masses up to ~3cm blue/brown amph with diss py and vfg ap(?).
PGH-18-07	512.75	512.98	GRAN	Granite	512.75-512.98: GRAN; light pink-green, parallel fractures with crbt infill, chl/kspar alt UC @ 45/70, LC @ 40/100
PGH-18-07	512.98	514.2	MDYKE	Mafic Dyke	Carb alt mafic dyke, light green-grey, chl alt groundmass, crbt/hem filling fractures and vesicles. Amygdales <1cm, 2mm xtals of pyx(?), locally weakly magnetic LC @ 40/90
PGH-18-07	514.2	519.5	GRAN	Granite / Fenite	Med red-pink to grey-green/blue, mod-strongly fenitized (blue sodic amph/chl) with veins and fractures filled with crbt/amph that have pink-red alt halos. Selectively pervasive chl/amph alt with patchy hem/potassic. K-spar rimming/replacing plag. Local bx zones up to 20cm crbt/amph infill. 516.23-516.53: light purple to green with diss fg hem, vfg light orange ap(?)

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-07	519.5	532.91	CRBT-BX	Carbonatite Breccia	<p>Zones of breccia up to 1.80m /alkali up to 1m /massive crbt up to 3m Clasts of SYN up to 20cm, sub angular to sub rounded, rxn rims of bt/pyx/amph commonly ~5mm, locally smaller clasts are completely altered. Clasts are fenitized, blue amphib/chl + kspars, pink-medium red, fg to locally cg.</p> <p>CRBT in breccia is commonly fg, cream to light blue-green, wispy bands sub-parallel to contacts/clast boundaries of amphib(?) +/- bt/ap, locally magnetic</p> <p>522.12-523.3: Dominantly cream to light pink, 'bands' of blue-green (amph +/- ap, bt, mgt, diss py), magnetic (Mag SUS 92.4) moving downhole more green (chl?) present and defining 'bands'</p> <p>523.6-524.45: medium blue to light purple locally cream, wispy bands of blue fg amphib(?), fg, bt <1mm, trace diss py.</p> <p>527.75-529.3: cream to light purple-pink to blue-green, fg, massive, wispy bands of blue-green ap cumulates <2cm, trace diss py, darker areas amphib/mgt/bt, magnetic (MagSUS 99.1)</p> <p>529.83-532.91: CRBT; light purple to green grey with alternating zones of dominantly dark grey-black-green up to 35cm and locally magnetic. Darker zones amphib(?) +/- mgt, bt, chl(?), hem. lighter purple zones cg with diss hem and fg trace py. Locally crbt appears to be infilling amygdalites(?) possibly part of unit is highly carb alt MD?</p> <p>LC @ 70/080, planar</p>
PGH-18-07	532.91	534.65	GRAN	Granite	<p>Qtz 25%, kspars 40%, plag 15%, 10% bt, 10% chl/amph, weak potassic alt. fg to cg locally, selectively pervasive amphib/chl. Fractures <2mm with amphib infill.</p> <p>LC @ 85/100</p>
PGH-18-07	534.65	534.9	CRBT	Carbonatite	<p>Cream to light pink with wispy bands <5mm of amphib, diss/masses of py up to 3cm.</p> <p>LC 70/085</p>
PGH-18-07	534.9	544.75	GRAN	Granite / Fenite	<p>Green-blue to pink-red opaque, locally 70% bt/chl, fg-mg with local peg. Weak discontinuous 'bands' of qtz/fspars rich. Minor crbt vein <10cm.</p> <p>CRBT; cream, cg, wispy bands of amphib, diss py and masses up to 1cm.</p> <p>539-341.5: Pegmatitic, xtals up to 7cm, massive qtz 40%, plag 50%, kspars 10%.</p>
PGH-18-07	544.75	545.5	CRBT	Carbonatite	<p>Light pink-purple to green-grey, fg, massive, locally wisps of blue amphib, Calc>Dol, within light purple zone is vfg orange ap(?). nearing LC 10cm mass with high x of blue amphib/bt/diss py.</p> <p>LC @ 70/150</p>

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-07	545.5	547.7	QTZ-SYE	Quartz Syenite / Syenite	Med red-pink to light green-blue, fenitized (selectively pervasive chl/amph replacing bt?), fg-cg (locally), fractures <5mm fill with amph. Qtz 10-15%, kspar 40%, plag 25%, 20% chl/amph/bt. Minor CRBT veins <2cm; light pink-green, fg, massive, rimmed by amph.
PGH-18-07	547.7	556.1	CRBT-BX	Carbonatite Breccia	Zones between breccias is fenitized SYN/QTZ SYN; med red-pink with green-blue, fg-mg, weak potassic alt, moderate selectively pervasive chl/amph. 547.10-550.2: CRBT BX; light blue to pink-purple, weak bands subparallel to clasts/contacts up to 3cm thick. syn clasts up to 10cm (rxn rims up to 5mm), light green ap cum surrounding clasts. darker bands amph/bt/ diss py. 551.15-552.63: CRBT BX; light pink-purple to light green-blue, fg-mg, massive, with syn clasts up to 7cm (rxn rims up to 5mm, cores fenitized (chl/amph/light orange-pink) 554.75-556.15: CRBT BX; dominated by wispy blue-green, local light pink-cream-purple, wispy bands concentrically around clasts and sub-parallel to contacts. darker zones rich in bt/amph. LC @ 20/200
PGH-18-07	556.1	570.5	QTZ-SYE	Quartz Syenite / Fenite	Qtz 15-20%, kspar 40%, plag 10%, bt/chl/amp 30%, fg to locally cg <1cm locally, light pink-red to green-blue, darker areas more rich in bt/chl/amph. Fractures <1mm with pink alt halos. Fractures filled with blue amph(?) < 4mm at moderate angles TCA. Minor crbt veins <20cm; light pink-purple, fg, massive. LC is diffuse and obscured by chl alt but defined by colour change/magnetism.
PGH-18-07	570.5	573.15	MDYKE/CRBT	Carbonatite / Mafic Dyke	Dark grey-green, fg, magnetic, carb filled fractures and amygdales <1cm, fractures also have elongated blades of amph/pyx <3mm. Zones are locally more magnetic than others, near the top of zone weak flow banding(?). Trace diss py. Sharp LC with xenoliths(?) <2cm of mafic material (chl alt, black rxn rims)

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-07	573.15	586.42	CRBT	Carbonatite	<p>Light pink-green-blue-grey to cream, syn zones 45cm-1.5m, CRBT massive to mottled, fg-cg, locally magnetic.</p> <p>573.2-578: light purple-grey-green-pink, ap cumulates up to 3cm, diss hem, trace diss py, local zones up to 35cm dark grey-blue, magnetic, wispy bands <3mm of blue-green</p> <p>578-580.7: dominated by zones up to 0.5m and clast of highly altered syn, clasts are highly fractured/altered to bt/pyx/amph with trace pink zones, sub-rounded/sub-angular. CRBT is light pink-green, fg, massive, trace diss py, vfg <1mm black mineral (pyrochlore?)</p> <p>580.7-582.45: light pink green syn, cg crbt fill up to 2cm, diss hem</p> <p>582.45-586.4: CRBT light pink-green grading into cream-pink cg crbt with wispy bands of blue-green ap up to 2cm . Syn clasts up to 30cm, commonly <10cm, rxn rims up to 7mm with clasts smaller than 4cm being completely altered to bt/pyx/amph. trace diss py and masses up to 2cm. Blue amph up to 2mm.</p>
PGH-18-07	586.42	590.9	MDYKE/CRBT	Carbonatite / Mafic Dyke	<p>Green to dark grey-black, masses of crbt light pink, sub-parallel fractures with crbt infill <2cm, locally strongly magnetic, trace diss py/po, fibrous masses of blades black mineral pyx/amph?. Moving down hole unit grades into light green-grey with rare crbt veins ~10cm.</p> <p>Possibly crbt alt mafic dyke as above CRBT zone?</p>
PGH-18-07	590.9	598.3	QTZ-SYE	Quartz Syenite / Fenite	<p>Dark in colour blue-green with minor pink-red, locally 30% bt/chl/amph, qtz 10-15%, kspar 40%, plag 10%, fg to locally peg up to 2cm, local breccia/crbt zones up to 60cm. <1mm veinlets/fractures with light pink <3mm halos. CRBT veins with amph rimming and red-pink alt halos <5mm.</p> <p>594.5-595.10: crbt; light blue-pink-green, weakly banded, masses of blue amph and clasts of syn completely altered.</p>
PGH-18-07	598.3	600.1	CRBT	Carbonatite	<p>Syn clasts up to 15cm, fg, rxn rims <3mm, cores pink-green potassic/chl/amph.</p> <p>CRBT; light purple-pink to cream, trace diss py and masses up to 2cm, diss hem and along fractures, br-grn ap cumulates up to 5mm as wispy bands, trace qtz, vfg light orange ap(?). trace galena(?)</p>
PGH-18-07	600.1	608	QTZ-SYE	Fenite / Quartz Syenite	<p>Up to 40% bt/chl/amph (fg) with local cg zones/'bands' of qtz/fspar with xtals up to 2cm. Plag with potassic rims/penetrating xtals, <1mm veinlets/fractures with light green-grey alt halos.</p>

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-07	608	615.1	SYE-BX	Syenite Breccia + Carbonatite	<p>608-610.60: Upper 1m dominated by syn with fractures filling with CRBT. Qtz syn, fenitized with variability in grain size similar to above unit (patches of cg-pegmatitic plag xtals with potassic(pink-red alteration rimming/along striations). surrounded by chl/bt/amph (blue) 30%, qtz 15% , kspar 30%, plag 25%. Becoming more brecciated toward 609. From there 10% clasts (<7cm, rxn rims and mod-comp alt to bt/pyx), 90% CRBT; light purple to blue-green, gentle diffuse waves (weakly defined bands) running sub-parallel to UC/LC & clast boundaries. Clasts commonly rimmed by light green crbt, Calc>Dol, trace diss vfg orange-red minerals (LREE?), 2% vfg black, metallic mineral (pyrochlore?)</p> <p>Local veins up to 10cm perpendicular TCA cross cutting wavy crbt described above (2nd Phase?, P2). Cross cutting vein light-med grey-green, fg, wispy 'bands' parallel to contacts <2cm alternating opaque-grey and med grey. vfg trace diss orange/red diss mineral (bastnaesite?/LREE?) <1mm, Dol > Calc rare Si, vfg trace <1mm black mineral (Fe-Nb Ox?)</p> <p>Cg crbt vein xc, sub-p TCA (orientation as P2), 3cm cream xtals <5mm with rims/interstitial red-orange (LREE?)</p> <p>610.6-615.2: Dominated by qtz syn with breccia and low angle crbt, fracture vary from perpendicular TCA and at low angle (major crbt), Syn med-red-pink with rxn rims 1cm-5mm, alt halos of light pink and rxn rims of black (bt/pyx?). Clasts within crbt are sub-rounded/fractured), multiple fractures <2mm with dark blue infill(?). Local veins <1cm with sphalerite up to 2cm then rimmed by fg galena. Sphalerite zoned, inner light brown, outer 1mm med brown. Masses of anhedral blue/black mineral up to 1cm and diss (galena?), forest green wisps of ap cum with darker masses up to 1cm. locally magnetic, trace diss and stringers of py.</p>
PGH-18-07	615.1	625	CRBT	Carbonatite	<p>CRBT 80%, SYN Clasts 20%, Clasts <25cm, fg to locally cg qtz syn, common rxn rims <5mm, clasts <5cm commonly completely altered, commonly moderately fractured (<3mm). CRBT light pink cream to blue-green-brown. Vfg diss red/orange minerals 2% LREE?, local wispy bands/masses of med grey-brown up to 5cm with <1mm vugs, fg black diss trace mineral (pyrochlore).</p>
PGH-18-07	625	626.8	SYE-BX	Quartz Syenite Breccia + Carbonatite	<p>30% CRBT, 70% QTZ SYE QTZ-SYE; med red-pink with blue amph/chl carb alt, qtz 15%, kspar 45%, plag 10%, amph 15%, chl 10%, 5% other. Clasts are angular to sub, rxn rims up to 1cm locally completely altered. Trace diss/masses up to 5mm py. CRBT infill; smaller fractures <1cm more massive zones light green-purple-pink to cream, rimming/weakly banded(?). Disseminated anhedral pyrochlore(?) masses up to 1cm.</p>
PGH-18-07	626.8	631.84	QTZ-SYE	Quartz Syenite	<p>Fenitized, mod-str selectively pervasive chl/amph, patchy potassic alt(?), fg-cg locally, qtz 10-15%, kspar 40%, plag 10%, chl/amph 35%. Multiple fractures <2mm with blue amph infill, at moderate angles TCA.</p>
PGH-18-07	631.84	634.3	CRBT-BX	Carbonatite Breccia	<p>Dominated by SYN/Clasts, CRBT bx up to 60m. SYN; clasts angular to sub, light rxn rims, CRBT; light pink, fg, wispy bands, 2% py euhedral up to 5mm, light green bands, fg black-blue metallic (pyrochlore) anhedral masses <5mm, diss hem, vfg light orange mineral trace.</p>

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-07	634.3	639	CRBT-BX	Carbonatite Breccia	<p>Syn clasts are strongly to completely altered, sub rounded to sub angular and elongated, rxn rims <8mm, smaller clasts are completely altered. Clast are alt to amph/bt with patches of remnant kspar(? pink).</p> <p>CRBT; light grey-green-beige/orange surrounding and in close proximity to clasts/contacts to light pink-purple in areas less densely populated by clasts, fg to locally cg, within zones dominated by CRBT clasts are diffuse 'blobs', 3% diss py euhedral xtals <4mm, trace diss fg anhedral grey-blue sub metallic sulphide(?) H<4, wispy bands and masses of blue amph up to 4mm, trace diss hem,</p>
PGH-18-07	639	647.3	CRBT	Carbonatite	<p>Colour and grain size vary across unit (described below), crbt dominantly massive with xc veins of grey-brown crbt <10cm sub-perpendicular TCA occurring near top and bottom of unit. Overall light pink to cream in colour. Trace diss py <3mm.</p> <p>639-643.5: light pink, fg, xc veins of grey-beige up to 5cm, masses/wispy bands of blue amph(?) up to 9cm, trace fg diss pyrochlore(?), vfg trace orange/red mineral bastnaesite(or other LREE?), local sparse vugs <1mm with hem infill.</p> <p>643.5-644.25: cream, cg, with blue amph diffuse masses up to 10cm with xtals <5mm, Calc>Dol.</p> <p>644.25-646: cream-pink with local vfg red/orange LREE?, cg, areas with 5% phlogopite (bt) / 5% blue-green arfvedsonite (amph).</p> <p>646-647.3: 30% wispy bands/masses of grey-br-blue (amph/bt/ap?), interstitial hem / vfg diss red-orange LREE(?).</p> <p>LC sharp (gran clast?) @ 65/110.</p>
PGH-18-07	647.3	650.75	MIX ZONE	Carbonatite / Fenite	<p>Alternating zones of alkali and carbonatite described below. First zone of alkali could be large clast as lower contact is perpendicular TCA and has diffuse boundaries.</p> <p>647.3-647.87: FEN: 45% qtz, 10% kspar, 35 % chl/bt/amph, 10% plag, mg, veinlets/fractures <1mm with pink alt halos.</p> <p>647.87-648.60: CRBT; two phases, multiple xc veins <13cm perpendicular TCA. Phase 1 light pink to cream, Calc>Dol mg-cg, with masses of red-brown-orange 2-10cm (locally xc by phase 2), masses ap +/- hem/LREE?, trace diss py. Phase 2; grey-green, fg, diss hem, Dol >Calc, wavy contacts and veins non-uniform thickness. LC @ 50/90.</p> <p>649.10-649.50:CRBT; light pink, fg, wispy bands <4mm of light green-brn with euhedral py up to 2mm 5%. LC @ 35/220</p> <p>650.10-650.75: CRBT; light pink to purple-cream, cg, massive, diss hem (interstitial) more abundant near contacts (trace), light green ap cumulates <4mm 2%, vfg diss light orange mineral, near LC mass of red-brown 1cm wide. LC planar @ 60/045.</p>
PGH-18-07	650.75	657	SYE	Fenite	<p>Forest green with light red-pink patches, qtz 25%, fspar 35%, chl/bt/amph 40%. Mg, veinlets/fractures <1mm with light pink to green alt halos <5mm at moderate angles TCA, occasional crbt veins commonly <2cm locally up to 23cm.</p> <p>652.80-653.03: CRBT; light purple-pink, massive, wispy bands of green-brn <1cm wide, trace diss py, diss hem, ap cum masses up to 2cm,</p>

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-07	657	662.7	SYE	Syenite / Fenite	Light pink to green, mg, fenitized (selectively pervasive chl/amph (blue)), amph infilling fractures, minor crbt veins <2cm at moderate angles TCA, 659.80 onward crbt veining increases (low angle TCA). CRBT light grey-cream to purple, massive, diss py, diss hem.
PGH-18-07	662.7	663.93	CRBT	Carbonatite	Moving downhole; light pink grading into forest green-grey (bt/chl?/amph rich, xtals <3mm), in darker crbt under UV bright orange-yellow fluorescent mineral <1mm ap?, grading into pink-green at lower contact. Trace diss py, diss hem, vfg red-orange mineral (LREE?)
PGH-18-07	663.93	669	SYE	Syenite / Fenite	Patchy pink-red to green-grey, fractures/veins have light pink alt halos, mg, local intense <2mm fractures filled with crbt.

ORIENTED STRUCTURES

DDH	Depth	Type	Alpha (°)	Beta (°)	Gamma (°)	Title	Description
PGH-18-07	19.1	JNT	40	135		JNT in SYN	curved, slightly rough, no fill
PGH-18-07	21.93	JNT	65	275		JNT in SYN	planar, chl infill, fe-ox, slightly rough
PGH-18-07	22.04	JNT	60	200		JNT in SYN	undulating, slightly weathered, slightly rough, chl infill <1mm
PGH-18-07	23.36	JNT	50	85		JNT in SYN	curved, slightly weathered, slightly rough, chl/fe-ox infill.
PGH-18-07	27.35	JNT	30	320		JNT in SYN	planar, open, slightly rough, no fill.
PGH-18-07	28.12	BND	30	150		bnd in GRAN	band of qtz/fldsp in GRAN
PGH-18-07	28.55	JNT	50	115		JNT in GRAN	planar, amph infill <4mm, slightly rough
PGH-18-07	29.65	VN	70	320		LC CRBT vn	undulating, closed]
PGH-18-07	33.13	CT	50	70		LC MD	planar, closed
PGH-18-07	37.3	VN	60	150		CRBT vn	planar, open, slightly rough, amph fill <3mm
PGH-18-07	40.02	VN	65	130		LC CRBT vein	planar, closed
PGH-18-07	40.24	CT	65	130		CRBT BX	undulating, closed]
PGH-18-07	43.2	VN	50	180		LC CRBT	irregular, bx contact, closed
PGH-18-07	44.3	JNT	60	170		JNT in SYN	planar, slightly rough, chl infill <2mm
PGH-18-07	45.2	JNT	40	15		JNT in SYN	curved, slightly rough, chl/amph infill <2mm
PGH-18-07	48.16	CT	50	60		UC CRBT	planar, closed
PGH-18-07	57.6	VN	45	285		crbt vein 3mm, along joint set	planar, closed, crb fill
PGH-18-07	59.2	CT	18	215		LC crbt with syn	planar, closed
PGH-18-07	65.9	VN	45	80		UC CRBT vein	planar, closed
PGH-18-07	66.65	JNT	20	215		JNT in SYN	planar, open, slightly rough, fe-ox staining
PGH-18-07	67.3	VN	35	315		BX crbt vein 2cm wide	planar, closed
PGH-18-07	69.65	VN	20	310		crbt vein, 3cm,	planar, closed
PGH-18-07	79.7	CT	70	125		LC crbt	planar, closed
PGH-18-07	81.06	VN	85	320		UC CRBT vein	planar, closed
PGH-18-07	81.65	JNT	60	70		JNT in syn	planar, smooth, no fill
PGH-18-07	81.85	VN	20	330		CRBT vn in syn	undulating, closed
PGH-18-07	90.78	VN	35	290		fracture in gran	planar, chl infill 2mm, slightly rough
PGH-18-07	95.3	JNT	70	180		JNT in GRAN	planar, slightly rough, no fill
PGH-18-07	95.7	VN	45	105		crbt vein 2cm	planar, closed
PGH-18-07	96.17	VN	20	310		3cm crbt vein	planar, closed
PGH-18-07	97	CT	25	305		UC CRBT	planar, open, fg black chl(?) infill <2mm
PGH-18-07	97.75	CT	30	50		LC CRBT	brecciated, planar, closed
PGH-18-07	97.9	JNT	55	320		jnt in gran	planar, slightly rough, no fill
PGH-18-07	101.15	CT	20	275		LC CRBT	planar, closed
PGH-18-07	120.65	CT	45	280		LC CRBT	undulating

ORIENTED STRUCTURES

DDH	Depth	Type	Alpha (°)	Beta (°)	Gamma (°)	Title	Description
PGH-18-07	121.6	CT	60	280		LC CRBT	curved, closed
PGH-18-07	122.7	CT	55	75		UC CRBT	planar, closed
PGH-18-07	122.9	CT	40	110		LC CRBT	curved, closed
PGH-18-07	124.84	JNT	40	240		JNT	blue-green amph/chl/hem infill, planar, slightly rough
PGH-18-07	127.31	CT	50	285		UC crbt	planar, closed
PGH-18-07	127.45	CT	50	290		LC crbt	planar, closed
PGH-18-07	135.47	CT	25	100		UC CRBT	undulating, closed
PGH-18-07	136.9	CT	50	120		UC CRBT	planar, closed
PGH-18-07	137.1	CT	50	40		LC CRBT	irregular, closed
PGH-18-07	138.8	JNT	70	140		JNT in Gran	slightly rough, planar, chl infill
PGH-18-07	139.05	CT	80	120		UC CRBT	planar, closed
PGH-18-07	142.75	CT	30	235		LC CRBT	planar, closed
PGH-18-07	146.75	CT	50	125		UC CRBT	planar, closed
PGH-18-07	147	CT	45	135		LC CRBT	irregular
PGH-18-07	147.75	CT	70	60		LC CRBT	planar, closed
PGH-18-07	148.2	CT	60	80		LC CRBT	undulating, closed
PGH-18-07	148.73	CT	50	60		LC CRBT	planar, closed
PGH-18-07	151.13	JNT	35	80		JNT in GRAN	planar, slightly rough, no fill
PGH-18-07	151.22	JNT	40	300		JNT in GRAN	planar, chl fill <2mm, slightly rough
PGH-18-07	151.38	CT	45	110		UC CRBT	planar, closed
PGH-18-07	152.85	CT	30	280		LC CRBT	planar, closed
PGH-18-07	153.9	JNT	45	50		JNT	slightly rough, planar, chl infill
PGH-18-07	154.17	JNT	75	320		JNT in GRAN	curved, slightly rough, chl infill
PGH-18-07	154.5	CT	40	320		LC CRBT	undulating, closed
PGH-18-07	158.9	CT	75	340		LC CRBT	planar, closed
PGH-18-07	161.4	CT	80	100		UC MD	planar, closed
PGH-18-07	161.7	CT	70	330		LC MD	irregular, closed
PGH-18-07	162.47	JNT	45	180		JNT in syn	curved, rough, amph infill
PGH-18-07	165.22	JNT	60	195		JNT in syn	undulating, slightly rough, chl/amph infill
PGH-18-07	165.46	JNT	45	70		JNT in Syn	planar, rough, blue amph infill
PGH-18-07	166.6	JNT	70	150		JNT in Syn	planar, slightly rough, amph infill <1mm
PGH-18-07	167.1	JNT	75	140		JNT in Syn	undulating, slightly rough, blue amph infill <4mm
PGH-18-07	167.45	CT	60	30		UC MD	planar, closed
PGH-18-07	167.82	CT	70	75		LC MD	planar, closed
PGH-18-07	168.95	VN	45	150		crbt vein <3mm	planar, rough, crbt/chl infill <2mm

ORIENTED STRUCTURES

DDH	Depth	Type	Alpha (°)	Beta (°)	Gamma (°)	Title	Description
PGH-18-07	169.07	JNT	80	290		jnt in syn	planar, slightly rough, chl indill
PGH-18-07	169.73	CT	60	270		UC BX CRBT	planar, closed
PGH-18-07	173.8	CT	35	210		LC CRBT	planar, closed
PGH-18-07	174.3	CT	50	90		UC BX CRBT	planar, closed
PGH-18-07	175.38	CT	20	100		LC CRBT	undulating, closed
PGH-18-07	175.5	CT	40	130		UC CRBT	undulating, closed
PGH-18-07	175.8	CT	60	90		LC CRBT	questionable ORI, planar, closed
PGH-18-07	180.5	CT	40	320		LC CRBT	planar, closed
PGH-18-07	180.85	CT	30	290		LC CRBT	planar, closed
PGH-18-07	185.5	CT	20	70		UC CRBT	undulating, closed
PGH-18-07	185.7	CT	50	50		LC CRBT	planar, closed
PGH-18-07	187	JNT	60	60		JNT in syn	planar, slightly roughl, blue amph infill <2mm
PGH-18-07	196.04	CT	75	115		LC CRBT	curved, open, bt fill.
PGH-18-07	196.87	CT	75	320		LC CRBT	planar, closed
PGH-18-07	197.08	JNT	70	310		JNT in SYN	planar, open, sodic blu amph infill <2mm, slightly rough
PGH-18-07	197.4	CT	60	180		LC CRBT	planar, closed
PGH-18-07	199.75	CT	60	100		UC CRBT	planar, open, rough, no fill
PGH-18-07	201.17	CT	70	125		UC CRBT BX	planar, closed
PGH-18-07	201.45	CT	60	130		LC BX	planar, closed
PGH-18-07	206.3	BND	60	45		BND in CRBT	planar, hem, closed
PGH-18-07	206.54	CT	50	215		LC BX	planar, closed
PGH-18-07	208.5	JNT	75	150		JNT in syn	planar, slightly rough, sodic amph in fill <2mm
PGH-18-07	209.5	JNT	60	160		JNT in syn	planar, slightly rough, sodic amph, fill <1mm
PGH-18-07	214.05	CT	50	95		UC CRBT	undulating, diffuse, open, bt
PGH-18-07	215.4	BND	85	75		BND in CRBT	planar, closed
PGH-18-07	216.25	BND	60	30		BND in CRBT	planar, closed
PGH-18-07	232.74	CT	65	75		LC CRBT	planar, closed
PGH-18-07	236.3	CT	25	200		LC BX	planar, closed
PGH-18-07	237.5	JNT	40	325		jnt in syn	planar, chl infill <2mm
PGH-18-07	238.9	JNT	35	180		jnt in syn	planar, smooth, chl <2mm
PGH-18-07	239.55	JNT	70	330		JNT in syn	planar, open, chl infill <1
PGH-18-07	241.72	FZ	15	320		LC fz	planar, chl fill, smooth
PGH-18-07	243.3	CT	60	20		UC crbt	planar, cloed
PGH-18-07	243.43	CT	60	15		LC crbt	planar, closed
PGH-18-07	245.5	CT	65	185		LC BX	planar, closed

ORIENTED STRUCTURES

DDH	Depth	Type	Alpha (°)	Beta (°)	Gamma (°)	Title	Description
PGH-18-07	245.93	CT	50	180		LC BX	planar, closed
PGH-18-07	247.15	JNT	40	300		JNT in syn	planar, blue amph fg <1mm
PGH-18-07	248.1	CT	75	205			planar, open, slightly rough, amph fill <1mm
PGH-18-07	249.25	CT	40	190		LC CRBT	planar, closed
PGH-18-07	250.27	CT	65	180		UC CRBT BX	planar, closed
PGH-18-07	253.8	CT	30	300		UC CRBT VN	planar, closed
PGH-18-07	258.95	CT	35	295		LC CRBT VN	planar, closed
PGH-18-07	260	VN	30	340		crbt vn	planar, closed
PGH-18-07	318.2	CT	18	295		MDYKE	planar, closed
PGH-18-07	319.7	CT	25	200		UC CRBT	undulating, closed, dissolution along cct
PGH-18-07	326.05	CT	55	265		UC crbt	planar, closed
PGH-18-07	329.8	VN	60	180		CRBT vn	planar, closed
PGH-18-07	331.25	CT	60	125		UC CRBT	planar, open,
PGH-18-07	347.75	CT	10	235		LC CRBT	planar, closed
PGH-18-07	352.15	CT	75	290		jnt in gran	cct btw gran-fen
PGH-18-07	356	JNT	45	230		jnt in gran	slightly rough, planar, sodic amph infill <1mm + py
PGH-18-07	356.7	CT	40	280		UC md	planar, closed
PGH-18-07	360.4	CT	75	125		LC bx	open, crb <2mm infill, slightly rough
PGH-18-07	360.75	CT	40	180		LC CRBT	planar, closed
PGH-18-07	383.75	CT	15	310		LC CRBT	planar, closed
PGH-18-07	387.85	CT	20	30		UC CRBT BX	planar, closed
PGH-18-07	388.15	CT	20	20		LC CRBT BX	planar, closed
PGH-18-07	389.2	CT	30	110		UC MD	planar, closed]
PGH-18-07	390.35	CT	30	105		LC MD	planar, open, chl/amph, slightly rough
PGH-18-07	390.75	CT	35	35		LC CRBT	planar, closed
PGH-18-07	393.55	CT	20	205		UC CRBT BX	planar, closed
PGH-18-07	399.1	JNT	30	290		JNT in FEN	planar, amph infill <1mm
PGH-18-07	402.4	CT	50	25		LC CRBT	planar, closed
PGH-18-07	402.74	CT	80	35		UC CRBT	planar, closed
PGH-18-07	405.5	CT	70	160		LC CRBT	planar, closed
PGH-18-07	406.54	JNT	40	180		JNT in syn	planar, slightly rough, amph infill <1mm
PGH-18-07	407	CT	45	225		UC CRBT	planar, closed
PGH-18-07	409	VN	10	315		LC VN	planar, closed
PGH-18-07	413.85	CT	30	220		bnd in syn	planar, closed
PGH-18-07	416.05	CT	20	235		UC MD	planar, closed

ORIENTED STRUCTURES

DDH	Depth	Type	Alpha (°)	Beta (°)	Gamma (°)	Title	Description
PGH-18-07	416.6	CT	25	240		LC MD	planar, closed
PGH-18-07	418.35	CT	25	250		cct btw fg/cg syn	planar, closed
PGH-18-07	419.7	JNT	75	300		JNT in syn	planar, closed,slightly rough, sodic amph <1mm
PGH-18-07	424.93	CT	50	325		UC MD	planar, closed
PGH-18-07	425.25	CT	40	320		LC MD	planar, closed
PGH-18-07	425.5	JNT	25	290		JNT in alkali	planar, open, chl infill <1mm
PGH-18-07	425.73	JNT	20	210		JNT in Alkali	planar, open, chl infill <1mm
PGH-18-07	427.1	CT	30	0		UC MD	planar, open, no fill
PGH-18-07	432.36	JNT	30	45		JNT in MD	planar, smooth, chl infill
PGH-18-07	442	CT	10	180		crbt bx UC	bx, closed
PGH-18-07	442.3	CT	15	200		crbt bx LC	bx, closed
PGH-18-07	444.45	CT	30	180		UC CRBT	planar, closed
PGH-18-07	448.9	CT	50	160		UC MD	planar, open, chl infill
PGH-18-07	449.1	CT	70	260		LC CRBT	undulating, closed
PGH-18-07	455.15	JNT	80	180		JNT syn	planar, open, slightly rough, amph infill
PGH-18-07	455.85	JNT	25	240		JNT syn	planar, open, chl/amph infill, slightly rough
PGH-18-07	456.5	BND	15	140		BND in fenite	planar, closed, qtz/fldsp rich bands
PGH-18-07	457.5	JNT	55	180		JNT in syn	planar, open, amph/chl fill <1mm, slightly rough
PGH-18-07	459.85	CT	75	120		LC CRBT	planar, open, amph fill <1mm, slightly rough
PGH-18-07	460.73	JNT	75	180		JNT in syn	planar, slightly rough, amph/chl fill <1mm
PGH-18-07	468.16	CT	70	180		UC CRBT	planar, closed
PGH-18-07	469.05	CT	70	180		LC CRBT	planar, closed
PGH-18-07	469.23	JNT	75	290		JNT	planar, open, chl/amph fill, slightly rough
PGH-18-07	479.4	JNT	75	50		JNT	planar, crbt <5mm fill, slightly rough
PGH-18-07	480.23	JNT	40	330		JNT	planar, opn, slightly rough, chl/amph fill
PGH-18-07	485.4	JNT	45	60		JNT in SYN	planar, open, chl/amph/crbt fill
PGH-18-07	485.57	CT	20	180		UC CRBT	planar, closed, amph fill
PGH-18-07	486.57	CT	20	180		LC CRBT	planar, closed
PGH-18-07	486.77	CT	45	225		LC CRBT	planar, open, slightly rough, amph fill <5mm
PGH-18-07	492	CT	60	280		UC CRBT VN	planar, closed
PGH-18-07	493.75	CT	25	240		LC CRBT	planar, closed
PGH-18-07	494.82	CT	85	340		LC CRBT	planar, closed
PGH-18-07	497.22	CT	25	130		LC CRBT	planar, closed
PGH-18-07	497.75	CT	25	110		UC CRBT	planar, closed
PGH-18-07	499	CT	35	10		UC MD	planar, closed

ORIENTED STRUCTURES

DDH	Depth	Type	Alpha (°)	Beta (°)	Gamma (°)	Title	Description
PGH-18-07	499.55	CT	55	20		LC MD	planar, closed
PGH-18-07	501.25	CT	30	190		UC BX CRBT	brecciated, planar, closed
PGH-18-07	502.05	BND	60	80		BND in CRBT	Planar, closed, blue amph(?)
PGH-18-07	506.45	CT	60	45		LC CRBT BX	planar, open, slightly rough, amph infill
PGH-18-07	507.75	CT	35	225		LC CRBT	planar, closed
PGH-18-07	508.33	CT	30	280		LC CRBT	planar, closed
PGH-18-07	512.15	CT	65	30		UC CRBT	planar, closed
PGH-18-07	512.75	CT	45	70		LC CRBT	planar, closed
PGH-18-07	512.93	CT	40	100		UC MD	planar, closed
PGH-18-07	514.24	CT	40	90		LC MD	planar, closed
PGH-18-07	514.82	JNT	45	180		JNT	planar, slightly rough, amph infill 3mm
PGH-18-07	515.15	CT	40	210		LC CRBT	planar, closed
PGH-18-07	517	JNT	40	210		JNT	planar, slightly rough, amph infill <3mm
PGH-18-07	519.5	CT	70	140		UC CRBT	planar, closed
PGH-18-07	521	VN	40	310		amph vn	planar, open, slightly rough, amph fill <4mm
PGH-18-07	521.82	VN	45	225		crbt vn	planar, open, crbt/amph fill <4mm, slightly rough
PGH-18-07	529.33	CT	60	180		LC CRBT	planar, closed
PGH-18-07	529.71	JNT	65	55		JNT in alkali	planar, open, amph fill <1mm, slightly rough
PGH-18-07	547.55	JNT	60	310		JNT in syn	planar, open, slightly rough, chl/amph fill <1mm
PGH-18-07	547.75	CT	35	140		UC CRBT BX	planar, closed
PGH-18-07	550.5	JNT	45	160		Jnt in syn	planar, open, amph fill <1mm, slightly rough
PGH-18-07	551.15	CT	45	60		UC CRBT BX	planar, closed
PGH-18-07	556.15	CT	20	200		LC CRBT BX	planar, closed
PGH-18-07	557.27	VN	65	35		CRBT VN <3cm	planar, closed
PGH-18-07	559.9	CT	40	160		LC CRBT	planar, closed
PGH-18-07	593.67	JNT	55	220		JNT in SYN	planar, open, slightly rough, amph fill <1mm
PGH-18-07	595.1	CT	65	180		LC CBRT	planar, closed, dissolution
PGH-18-07	598.17	VN	75	70		CRBT VN <1cm	planar, open, crbt fill 7mm
PGH-18-07	598.3	CT	35	240		UC CRBT	planar, closed
PGH-18-07	608.05	CT	30	145		UC CRBT BX	planar, closed
PGH-18-07	611.4	CT	50	110		UC CRBT	planar, closed
PGH-18-07	626.9	CT	50	20		LC CRBT BX	undulating, closed
PGH-18-07	35717	CT	55	40		LC CRBT	undulating, open, slightly rough, sodic amph
PGH-18-07	100.45	CT	35	290		UC CBRT	planar, closed

ASSAYS

DDH	From	To	Width (m)	SampleID	BatchID	Fe2O3T (%)	Nb2O5 (%)	P2O5 (%)	SnO2 (%)	Ta2O5 (%)	ThO2 (%)	U3O8 (%)	WO3 (%)	Y2O3 (%)	ZrO2 (%)	Description
PGH-18-07	11.15	12.63	1.48	590091	A18-06697	4.92	0.031	2.36	< 0.003	< 0.003	0.007	0.005	0.003	0.011	< 0.003	CRBT + Syn bx
PGH-18-07	12.63	13.44	0.81	590092	A18-06697	5.76	0.018	0.59	< 0.003	< 0.003	< 0.005	< 0.005	0.003	0.005	0.005	Syn
PGH-18-07	13.44	14.33	0.89	590093	A18-06697	5.14	0.019	1	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.006	0.009	syn w/ minor crbt
PGH-18-07	14.33	15.32	0.99	590094	A18-06697	4.23	0.029	1.2	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.009	< 0.003	CRBT bx
PGH-18-07	15.32	16.51	1.19	590095	A18-06697	3.63	0.032	1.45	< 0.003	< 0.003	0.012	0.01	0.003	0.013	< 0.003	CRBT bx
PGH-18-07	16.51	17.8	1.29	590096	A18-06697	6.5	0.03	0.85	< 0.003	0.004	< 0.005	< 0.005	0.005	0.006	< 0.003	CRBT bx
PGH-18-07	39	40.22	1.22	590097	A18-06697	5.72	0.011	0.64	0.003	< 0.003	< 0.005	< 0.005	0.004	0.005	0.018	SYN + crbt
PGH-18-07	40.22	41	0.78	590098	A18-06697	6.6	0.051	2.18	< 0.003	< 0.003	0.007	< 0.005	0.003	0.015	0.009	CRBT bx
PGH-18-07	51.7	53	1.3	590099	A18-06697	5.16	0.018	2.43	< 0.003	< 0.003	0.007	< 0.005	0.006	0.015	0.012	CRBT + syn
PGH-18-07	53	54	1	590100	A18-06697	6.47	0.01	0.39	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.005	0.017	syn + CRBT
PGH-18-07	55.1	55.96	0.86	590101	A18-06697	8.13	0.034	0.99	< 0.003	0.003	0.005	< 0.005	0.003	0.008	0.007	CRBT bx
PGH-18-07	58.47	59.25	0.78	590102	A18-06697	7.12	0.049	1.64	< 0.003	< 0.003	0.009	< 0.005	0.005	0.012	< 0.003	CRBT BX
PGH-18-07	66.76	67.38	0.62	590103	A18-06697	6.24	0.013	0.19	< 0.003	< 0.003	0.005	< 0.005	< 0.003	0.005	0.011	CRBT + SYN
PGH-18-07	67.38	68.36	0.98	590104	A18-06697	6.78	0.026	5.31	< 0.003	< 0.003	0.008	0.005	0.004	0.017	0.049	CRBT
PGH-18-07	68.36	69.36	1	590105	A18-06697	6.77	0.016	1.81	< 0.003	< 0.003	0.011	< 0.005	0.003	0.012	0.011	CRBT
PGH-18-07	74	74.73	0.73	590106	A18-06697	6.48	0.024	0.81	< 0.003	0.003	0.005	< 0.005	< 0.003	0.006	0.02	SYN + crbt
PGH-18-07	74.73	76	1.27	590107	A18-06697	7.74	0.081	1.49	< 0.003	< 0.003	0.007	< 0.005	< 0.003	0.006	0.003	CRBT BX
PGH-18-07	82	83	1	590108	A18-06697	6.4	0.011	0.13	< 0.003	0.003	0.007	< 0.005	0.004	0.005	0.012	syn + crbt
PGH-18-07	83	84	1	590109	A18-06697	7.09	0.026	0.98	0.003	< 0.003	0.008	< 0.005	0.004	0.009	0.024	syn + crbt bx
PGH-18-07	84	85	1	590110	A18-06697	6.64	0.015	0.13	0.003	< 0.003	0.006	< 0.005	0.004	0.003	0.006	syn + crbt veins
PGH-18-07	85	86.3	1.3	590111	A18-06697	7.23	0.026	1.39	0.003	0.003	0.008	< 0.005	0.003	0.009	0.006	crbt bx
PGH-18-07	96.93	97.86	0.93	590112	A18-06697	8.62	0.063	0.11	< 0.003	< 0.003	0.019	< 0.005	0.004	0.005	< 0.003	CRBT
PGH-18-07	99.4	100.42	1.02	590113	A18-06697	7.43	0.056	0.74	< 0.003	0.005	0.011	< 0.005	0.003	0.006	0.005	Gran + CRBT
PGH-18-07	100.42	101.25	0.83	590115	A18-06697	9.8	0.333	0.05	0.015	0.005	0.009	0.011	0.004	< 0.003	0.006	CRBT + Gran
PGH-18-07	103	104.3	1.3	590116	A18-06697	6.54	0.048	3	< 0.003	< 0.003	0.01	< 0.005	0.004	0.015	0.006	CRBT
PGH-18-07	108.34	109.2	0.86	590117	A18-06697	7.05	0.027	1.14	< 0.003	< 0.003	0.008	< 0.005	0.003	0.01	0.01	CRBT + minor Gran peg
PGH-18-07	110.83	111.61	0.78	590118	A18-06697	6.15	0.033	1.03	< 0.003	< 0.003	0.005	< 0.005	0.006	0.008	< 0.003	CRBT + Minor gran peg
PGH-18-07	134.23	135.73	1.5	590119	A18-06697	5.08	0.016	0.76	0.005	< 0.003	< 0.005	< 0.005	0.003	0.004	0.013	Gran + CRBT
PGH-18-07	139	140	1	590120	A18-06697	4.7	0.032	3.66	< 0.003	< 0.003	0.005	< 0.005	0.005	0.013	0.025	CRBT + GRAN
PGH-18-07	140	141	1	590121	A18-06697	3.76	0.006	0.21	< 0.003	< 0.003	< 0.005	< 0.005	0.004	< 0.003	< 0.003	Gran + CRBT
PGH-18-07	141	142	1	590122	A18-06697	5.92	0.029	1.74	< 0.003	< 0.003	0.005	< 0.005	0.004	0.01	< 0.003	CRBT
PGH-18-07	142	143.5	1.5	590123	A18-06697	5.09	0.041	1.71	< 0.003	< 0.003	< 0.005	< 0.005	0.004	0.008	0.003	Gran + CRBT
PGH-18-07	146.67	147.63	0.96	590124	A18-06697	5.53	0.029	0.81	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.005	0.035	Gran + CRBT
PGH-18-07	147.63	149	1.37	590125	A18-06697	5.59	0.03	2.35	< 0.003	< 0.003	0.005	< 0.005	0.004	0.008	0.014	CRBT + GRAN
PGH-18-07	151.31	152.12	0.81	590126	A18-06697	3.97	0.034	2.96	< 0.003	0.003	0.007	< 0.005	0.006	0.014	0.052	CRBT
PGH-18-07	152.12	152.93	0.81	590127	A18-06697	5.29	0.031	3.01	< 0.003	< 0.003	0.007	< 0.005	0.003	0.011	0.052	CRBT
PGH-18-07	169.85	170.58	0.73	590128	A18-06697	8.27	0.035	1.49	0.005	< 0.003	< 0.005	< 0.005	0.003	0.007	0.01	BX CRBT
PGH-18-07	170.58	171.63	1.05	590130	A18-06697	8.22	0.016	0.39	0.004	0.004	< 0.005	< 0.005	0.004	< 0.003	0.025	SYN
PGH-18-07	171.63	172.37	0.74	590131	A18-06697	8.06	0.031	1.17	< 0.003	0.005	< 0.005	< 0.005	0.009	0.004	< 0.003	BX CRBT
PGH-18-07	172.37	173.13	0.76	590132	A18-06697	8.67	0.018	0.27	< 0.003	0.006	< 0.005	< 0.005	0.013	< 0.003	0.009	SYN
PGH-18-07	173.13	174	0.87	590133	A18-06697	6.78	0.042	3.4	< 0.003	< 0.003	< 0.005	0.005	0.003	0.009	0.036	BX CRBT + SYN

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DDH	From	To	Width (m)	SampleID	BatchID	Fe2O3T (%)	Nb2O5 (%)	P2O5 (%)	SnO2 (%)	Ta2O5 (%)	ThO2 (%)	U3O8 (%)	WO3 (%)	Y2O3 (%)	ZrO2 (%)	Description
PGH-18-07	174	175	1	590134	A18-06697	6.65	0.025	1.46	0.003	< 0.003	< 0.005	< 0.005	0.004	0.005	0.015	SYN + CRBT BX
PGH-18-07	175	176	1	590135	A18-06697	6.13	0.012	1.12	0.004	0.003	0.008	< 0.005	0.003	0.008	0.005	CRBT + SYN
PGH-18-07	176	177	1	590136	A18-06697	7.97	0.023	0.91	< 0.003	0.004	< 0.005	< 0.005	0.004	0.006	0.014	BX CRBT
PGH-18-07	177	177.91	0.91	590137	A18-06697	7.19	0.014	0.83	< 0.003	0.004	< 0.005	< 0.005	0.003	0.007	0.018	SYN + minor CRBT
PGH-18-07	177.91	178.78	0.87	590138	A18-06697	7.21	0.012	0.68	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.005	0.015	SYN + minor CRBT
PGH-18-07	178.78	180.18	1.4	590139	A18-06697	6.17	< 0.003	4.34	< 0.003	< 0.003	0.012	< 0.005	0.003	0.027	< 0.003	CRBT
PGH-18-07	180.18	181	0.82	590141	A18-06697	6.6	0.013	0.25	< 0.003	< 0.003	0.005	< 0.005	< 0.003	0.004	0.007	SYN + CRBT
PGH-18-07	181	182	1	590142	A18-06697	5.76	0.039	2.73	< 0.003	0.003	0.006	< 0.005	0.003	0.015	0.015	SYN + CRBT
PGH-18-07	195	196.05	1.05	590143	A18-06697	6.61	0.022	0.13	< 0.003	< 0.003	0.005	< 0.005	0.004	< 0.003	< 0.003	CRBT + SYN
PGH-18-07	201	202.22	1.22	590144	A18-06697	6.4	0.016	0.61	< 0.003	0.003	< 0.005	< 0.005	< 0.003	0.005	0.023	SYN + minor crbt bx
PGH-18-07	202.22	203.61	1.39	590145	A18-06697	7.54	0.7	3.94	0.006	0.003	0.008	0.012	0.005	0.011	0.011	CRBT BX
PGH-18-07	203.61	204.6	0.99	590146	A18-06697	7.6	0.113	0.26	< 0.003	< 0.003	0.005	< 0.005	< 0.003	0.005	0.011	SYN BX + CRBT
PGH-18-07	204.6	205.63	1.03	590147	A18-06697	5.63	0.022	1.55	< 0.003	< 0.003	< 0.005	< 0.005	0.004	0.009	0.005	SYN BX + CRBT
PGH-18-07	205.63	206.59	0.96	590148	A18-06697	5.76	0.024	1.35	< 0.003	< 0.003	0.007	< 0.005	< 0.003	0.008	< 0.003	SYN
PGH-18-07	214.06	215	0.94	590149	A18-06697	5.53	0.032	1.94	0.007	0.003	0.007	< 0.005	0.003	0.01	0.02	CRBT
PGH-18-07	215	216.5	1.5	590151	A18-06697	5.42	0.071	3.79	< 0.003	< 0.003	0.007	< 0.005	< 0.003	0.015	0.018	CRBT
PGH-18-07	216.5	218	1.5	590152	A18-06697	3.93	0.13	5.88	< 0.003	< 0.003	0.009	0.009	< 0.003	0.022	0.004	CRBT
PGH-18-07	218	219.05	1.05	590154	A18-06697	3.27	0.073	3.51	< 0.003	< 0.003	0.007	< 0.005	0.004	0.013	0.01	CRBT
PGH-18-07	219.05	219.7	0.65	590155	A18-06697	4.24	0.014	0.76	< 0.003	< 0.003	< 0.005	< 0.005	0.006	0.005	0.018	CRBT + SYN
PGH-18-07	219.7	220.32	0.62	590156	A18-06697	4.1	0.058	2.82	< 0.003	0.003	0.005	< 0.005	0.005	0.012	< 0.003	CRBT / SYN
PGH-18-07	226	226.9	0.9	590157	A18-06697	7.87	0.1	1.43	< 0.003	< 0.003	0.005	< 0.005	0.005	0.006	0.006	CRBT BX
PGH-18-07	226.9	227.6	0.7	590158	A18-06697	8.59	0.03	0.56	< 0.003	0.004	0.005	< 0.005	0.003	0.004	0.011	SYN BX
PGH-18-07	227.6	228.95	1.35	590160	A18-06697	5.31	0.211	2.93	< 0.003	0.003	0.008	0.009	< 0.003	0.012	< 0.003	CRBT
PGH-18-07	228.95	229.95	1	590161	A18-06697	7.32	0.053	1.08	< 0.003	< 0.003	0.005	< 0.005	< 0.003	0.005	0.024	SYN BX
PGH-18-07	229.95	231	1.05	590162	A18-06697	4.38	0.068	5.67	< 0.003	0.003	0.013	0.007	0.003	0.025	< 0.003	CRBT
PGH-18-07	231	232	1	590163	A18-06697	4.75	0.101	4.29	< 0.003	0.004	0.007	0.006	0.003	0.013	0.019	CRBT
PGH-18-07	232	232.7	0.7	590164	A18-06697	8.52	0.108	4.12	< 0.003	0.003	0.007	< 0.005	0.005	0.013	0.038	CRBT
PGH-18-07	232.7	233.7	1	590165	A18-06697	5.11	0.015	0.24	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.003	0.012	SYN
PGH-18-07	233.7	234.58	0.88	590166	A18-06697	6.72	0.025	0.42	0.006	< 0.003	< 0.005	< 0.005	0.004	0.004	0.009	SYN + CRBT
PGH-18-07	234.58	235.48	0.9	590167	A18-06697	9.81	0.064	2.15	< 0.003	0.003	0.005	< 0.005	0.003	0.008	0.004	BX CRBT
PGH-18-07	235.48	236.37	0.89	590168	A18-06697	7.51	0.158	1.96	< 0.003	< 0.003	0.007	0.007	0.004	0.011	0.005	BX CRBT
PGH-18-07	248.1	249.3	1.2	590169	A18-06697	7.64	0.06	1.55	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.007	0.004	CRBT BX
PGH-18-07	265.95	267	1.05	590170	A18-06697	12.53	0.079	2.06	< 0.003	< 0.003	0.01	< 0.005	0.003	0.011	0.022	
PGH-18-07	267	268	1	590171	A18-06697	2.91	0.055	2	< 0.003	< 0.003	0.011	0.005	0.003	0.014	< 0.003	CRBT
PGH-18-07	268	268.7	0.7	590172	A18-06697	2.15	0.237	3.51	< 0.003	0.004	0.007	0.011	< 0.003	0.012	< 0.003	CRBT
PGH-18-07	268.7	269.6	0.9	590173	A18-06697	14.32	0.085	1.86	< 0.003	0.003	0.005	< 0.005	0.005	0.006	0.03	CRBT BX
PGH-18-07	269.6	270.5	0.9	590174	A18-06697	6.69	0.115	2.46	0.004	0.003	0.006	0.007	0.003	0.008	< 0.003	CRBT + BX
PGH-18-07	270.5	271.4	0.9	590176	A18-06697	8.54	0.082	2.03	< 0.003	< 0.003	0.007	0.009	< 0.003	0.008	< 0.003	CRBT + BX
PGH-18-07	271.4	272.9	1.5	590177	A18-06697	8.83	0.024	0.8	< 0.003	< 0.003	0.005	< 0.005	0.004	0.005	0.015	SYN BX + CRBT
PGH-18-07	272.9	274.3	1.4	590178	A18-06697	7.24	0.065	0.92	< 0.003	0.004	< 0.005	< 0.005	0.003	0.005	0.02	SYN BX + CRBT
PGH-18-07	274.3	275.8	1.5	590179	A18-06697	7.47	0.042	1.34	< 0.003	< 0.003	0.005	< 0.005	0.003	0.008	0.016	CRBT

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DDH	From	To	Width (m)	SampleID	BatchID	Fe2O3T (%)	Nb2O5 (%)	P2O5 (%)	SnO2 (%)	Ta2O5 (%)	ThO2 (%)	U3O8 (%)	WO3 (%)	Y2O3 (%)	ZrO2 (%)	Description
PGH-18-07	275.8	277.3	1.5	590180	A18-06697	8.26	0.169	0.25	< 0.003	< 0.003	0.007	< 0.005	0.005	0.004	< 0.003	CRBT BX
PGH-18-07	277.3	278.8	1.5	590181	A18-06697	8.33	0.339	0.97	< 0.003	0.004	0.005	0.005	< 0.003	0.005	0.003	CRBT BX
PGH-18-07	278.8	280.3	1.5	590182	A18-06697	10.53	0.267	2.38	< 0.003	< 0.003	0.006	0.005	< 0.003	0.01	< 0.003	CRBT BX
PGH-18-07	280.3	281.8	1.5	590183	A18-06697	9.99	0.053	1.37	< 0.003	< 0.003	< 0.005	< 0.005	0.003	0.006	0.008	CRBT BX
PGH-18-07	281.8	283	1.2	590185	A18-06697	5.21	0.082	7.78	< 0.003	< 0.003	0.008	0.006	0.004	0.033	0.009	CRBT
PGH-18-07	283	284.5	1.5	590186	A18-06697	3.91	0.039	7.2	< 0.003	< 0.003	0.014	0.006	< 0.003	0.044	< 0.003	CRBT
PGH-18-07	284.5	286	1.5	590187	A18-06697	4.57	0.072	6.49	< 0.003	0.003	0.013	0.005	0.003	0.04	0.003	CRBT
PGH-18-07	286	287	1	590188	A18-06697	4	0.112	5.02	< 0.003	0.004	0.009	0.005	0.003	0.023	0.01	CRBT
PGH-18-07	287	288	1	590189	A18-06697	6.47	0.075	1.74	< 0.003	< 0.003	0.008	< 0.005	0.003	0.014	0.016	CRBT
PGH-18-07	288	289	1	590190	A18-06697	7.25	0.11	0.67	< 0.003	< 0.003	0.005	< 0.005	0.004	0.004	0.015	SYN BX + CRBT
PGH-18-07	293.35	294.85	1.5	590192	A18-06697	7.93	0.132	2.1	< 0.003	< 0.003	0.005	< 0.005	0.003	0.007	0.018	CRBT BX + SYN
PGH-18-07	294.85	296.35	1.5	590193	A18-06697	15	0.063	1.07	< 0.003	< 0.003	0.005	< 0.005	< 0.003	0.007	0.011	CRBT BX + SYN
PGH-18-07	296.35	297.85	1.5	590194	A18-06697	7.59	0.125	1.12	< 0.003	0.003	0.005	< 0.005	0.004	0.008	0.024	CRBT BX + SYN
PGH-18-07	297.85	299.2	1.35	590195	A18-06697	4.71	0.01	0.28	0.005	< 0.003	< 0.005	< 0.005	0.005	0.003	0.015	SYN
PGH-18-07	299.2	300.7	1.5	590196	A18-06697	6.26	0.05	0.47	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.011	< 0.003	CRBT
PGH-18-07	300.7	302.2	1.5	590197	A18-06697	9.67	0.029	0.65	< 0.003	< 0.003	0.006	0.008	0.003	0.013	< 0.003	CRBT
PGH-18-07	302.2	303.7	1.5	590198	A18-06697	19.87	0.012	0.74	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.008	< 0.003	CRBT
PGH-18-07	303.7	305.2	1.5	590199	A18-06697	15.09	0.024	0.88	< 0.003	0.003	0.006	< 0.005	0.003	0.01	< 0.003	CRBT
PGH-18-07	305.2	306.5	1.3	590200	A18-06697	8.04	0.127	2.05	< 0.003	< 0.003	0.006	< 0.005	0.003	0.01	0.005	CRBT
PGH-18-07	306.5	307.5	1	590201	A18-06697	3.32	0.01	0.59	< 0.003	< 0.003	0.007	< 0.005	0.005	0.01	< 0.003	CRBT + SYN
PGH-18-07	313.1	314.5	1.4	590204	A18-06697	6.06	0.035	0.68	< 0.003	< 0.003	0.007	< 0.005	< 0.003	0.006	0.014	CRBT SYN BX
PGH-18-07	314.5	315.92	1.42	590205	A18-06697	6.8	0.06	2.72	< 0.003	< 0.003	0.007	< 0.005	0.003	0.016	0.016	CRBT SYN BX
PGH-18-07	321.85	323.35	1.5	590206	A18-06697	8.01	0.067	1.02	< 0.003	< 0.003	0.005	< 0.005	0.004	0.008	0.013	CRBT SYN BX
PGH-18-07	323.35	324.85	1.5	590207	A18-06697	6.88	0.087	1.15	< 0.003	< 0.003	0.011	< 0.005	0.004	0.01	0.006	CRBT SYN BX
PGH-18-07	324.85	326.35	1.5	590208	A18-06697	9.59	0.096	2.77	< 0.003	< 0.003	0.01	< 0.005	< 0.003	0.015	0.012	CRBT SYN BX
PGH-18-07	332.54	333.04	0.5	590209	A18-06697	4.32	0.021	2.68	< 0.003	< 0.003	0.009	0.007	0.003	0.015	< 0.003	CRBT
PGH-18-07	333.04	333.78	0.74	590210	A18-06697	7.25	0.034	0.75	< 0.003	< 0.003	0.005	< 0.005	< 0.003	0.005	0.012	BX + minor CBRT
PGH-18-07	333.78	335.39	1.61	590211	A18-06697	7.45	0.05	2.24	< 0.003	0.004	0.007	0.006	0.004	0.011	< 0.003	CRBT BX
PGH-18-07	338.7	339.61	0.91	590212	A18-06697	8.28	0.05	1.98	< 0.003	0.003	0.006	< 0.005	< 0.003	0.007	0.006	CRBT BX
PGH-18-07	341.25	342	0.75	590213	A18-06697	8.01	0.1	1.74	< 0.003	< 0.003	0.005	< 0.005	0.003	0.007	0.016	CRBT + BX
PGH-18-07	345.34	346.24	0.9	590214	A18-06697	8.05	0.03	4.81	< 0.003	< 0.003	0.007	0.005	0.003	0.013	0.102	CRBT
PGH-18-07	346.24	347.2	0.96	590215	A18-06697	7.99	0.033	4.8	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.012	0.074	CRBT
PGH-18-07	347.2	348	0.8	590216	A18-06697	8.26	0.055	1.31	0.003	0.004	0.005	< 0.005	< 0.003	0.006	0.028	BX + CRBT
PGH-18-07	359.56	361	1.44	590217	A18-06697	6.62	0.028	0.85	< 0.003	0.003	0.005	< 0.005	< 0.003	0.006	0.015	CRBT vn + bx
PGH-18-07	372.75	373.75	1	590218	A18-06697	3.98	0.216	2.88	< 0.003	0.003	0.008	0.014	0.003	0.015	< 0.003	CRBT
PGH-18-07	373.75	374.52	0.77	590219	A18-06697	5.12	0.01	0.36	< 0.003	< 0.003	< 0.005	< 0.005	0.003	0.003	0.007	SYN
PGH-18-07	374.52	375.37	0.85	590220	A18-06697	5.68	0.036	4.42	< 0.003	< 0.003	0.008	0.008	0.003	0.018	0.019	CRBT BX
PGH-18-07	378.9	379.9	1	590221	A18-06697	6.9	0.035	2.44	< 0.003	< 0.003	0.008	< 0.005	0.006	0.016	< 0.003	CRT BX
PGH-18-07	387	387.72	0.72	590222	A18-06697	4.78	0.006	0.4	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	< 0.003	0.017	FEN
PGH-18-07	387.72	388.26	0.54	590223	A18-06697	5.36	0.021	1.01	< 0.003	< 0.003	0.005	< 0.005	0.004	0.006	< 0.003	CRBT
PGH-18-07	390.3	391.05	0.75	590224	A18-06697	4.28	0.022	1.33	< 0.003	< 0.003	0.005	0.005	0.003	0.005	< 0.003	CRBT + FEN

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DDH	From	To	Width (m)	SampleID	BatchID	Fe2O3T (%)	Nb2O5 (%)	P2O5 (%)	SnO2 (%)	Ta2O5 (%)	ThO2 (%)	U3O8 (%)	WO3 (%)	Y2O3 (%)	ZrO2 (%)	Description
PGH-18-07	402.2	403.25	1.05	590225	A18-06697	6.17	0.116	2.02	< 0.003	< 0.003	< 0.005	< 0.005	0.004	0.005	0.027	CRBT + Alkali
PGH-18-07	403.25	404.4	1.15	590226	A18-06697	6.87	0.118	1.83	< 0.003	< 0.003	< 0.005	< 0.005	0.003	0.005	0.024	CRBT + Alkali
PGH-18-07	404.4	405.53	1.13	590227	A18-06697	11.71	0.08	4.77	< 0.003	< 0.003	0.006	< 0.005	0.003	0.012	0.101	Dark CRBT - bt, mag, py, pyrochlore(?)
PGH-18-07	426.56	427.14	0.58	590228	A18-06697	2.34	0.007	6.73	< 0.003	< 0.003	0.008	0.007	0.004	0.018	< 0.003	CRBT, ap up to 10cm
PGH-18-07	441.6	442.4	0.8	590229	A18-06697	6.42	0.097	1.23	< 0.003	< 0.003	< 0.005	0.005	0.003	0.006	< 0.003	CRBT BX
PGH-18-07	444.36	445.04	0.68	590230	A18-06697	3.7	0.223	2.27	< 0.003	< 0.003	0.005	0.005	0.003	0.007	< 0.003	CRBT BX
PGH-18-07	468.15	469.08	0.93	590231	A18-06697	6.98	0.044	2.45	< 0.003	0.004	0.007	0.006	0.004	0.008	< 0.003	CRBT
PGH-18-07	469.08	469.83	0.75	590232	A18-06697	5.58	0.015	0.47	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.004	0.018	GRAN
PGH-18-07	469.83	471	1.17	590233	A18-06697	1.77	0.088	1.05	< 0.003	< 0.003	0.007	0.009	0.003	0.011	< 0.003	CRBT
PGH-18-07	471	472	1	590234	A18-06697	2.44	0.094	1.14	< 0.003	< 0.003	0.01	0.008	< 0.003	0.013	< 0.003	CRBT
PGH-18-07	472	473	1	590235	A18-06697	2.65	0.21	2.96	< 0.003	0.003	0.009	0.008	0.003	0.012	< 0.003	CRBT
PGH-18-07	473	474.37	1.37	590236	A18-06697	5.3	0.133	1.9	< 0.003	< 0.003	0.007	0.01	< 0.003	0.007	< 0.003	CRBT
PGH-18-07	474.37	475.85	1.48	590237	A18-06697	5.79	0.033	0.88	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	< 0.003	0.007	ALKALI + CRBT
PGH-18-07	475.85	477.35	1.5	590238	A18-06697	5.75	0.081	1.78	< 0.003	< 0.003	< 0.005	0.006	0.005	0.006	< 0.003	ALKALI + CRBT
PGH-18-07	477.35	478.4	1.05	590239	A18-06697	4.22	0.031	0.88	< 0.003	0.004	< 0.005	< 0.005	0.008	0.003	0.003	ALKALI + CRBT
PGH-18-07	483.13	484.04	0.91	590241	A18-06697	4.94	0.023	2.28	< 0.003	< 0.003	0.007	0.01	0.003	0.01	< 0.003	CRBT
PGH-18-07	484.04	484.75	0.71	590242	A18-06697	5.87	0.017	2.95	< 0.003	< 0.003	0.007	0.006	< 0.003	0.011	< 0.003	CRBT , dark
PGH-18-07	484.75	485.5	0.75	590243	A18-06697	5.27	0.008	0.5	< 0.003	< 0.003	< 0.005	< 0.005	0.003	0.003	0.016	ALKLAI
PGH-18-07	485.5	486.82	1.32	590244	A18-06697	6.47	0.05	1.47	< 0.003	< 0.003	0.005	< 0.005	0.003	0.007	< 0.003	CRBT BX
PGH-18-07	492.5	493.84	1.34	590245	A18-06697	9.84	0.054	1.22	< 0.003	0.003	0.007	< 0.005	< 0.003	0.009	0.06	CRBT + GRAN
PGH-18-07	493.84	494.9	1.06	590247	A18-06697	5.77	0.029	0.63	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.007	< 0.003	GRAN + CRBT
PGH-18-07	501	501.95	0.95	590248	A18-06697	8.3	0.078	1.63	< 0.003	< 0.003	0.005	< 0.005	0.004	0.005	0.003	GRAN + CRBT
PGH-18-07	501.95	502.8	0.85	590249	A18-06697	5.83	0.09	1.35	< 0.003	0.003	0.005	< 0.005	< 0.003	0.006	0.012	CRBT + BX
PGH-18-07	502.8	504	1.2	590250	A18-06697	10.21	0.052	5.29	< 0.003	< 0.003	0.006	0.005	0.003	0.011	0.105	CRBT
PGH-18-07	504	505.5	1.5	590251	A18-06697	6.52	0.038	2.35	< 0.003	< 0.003	0.006	0.006	< 0.003	0.01	0.004	CRBT BX
PGH-18-07	505.5	506.45	0.95	590252	A18-06697	6.21	0.038	2.44	< 0.003	0.003	0.007	0.006	< 0.003	0.008	< 0.003	CRBT BX
PGH-18-07	512.15	513.2	1.05	590253	A18-06697	4.3	0.072	1.8	< 0.003	< 0.003	0.007	0.007	< 0.003	0.01	0.013	CRBT + GRAN + MD
PGH-18-07	513.2	514.23	1.03	590254	A18-06697	10.83	0.047	2.23	< 0.003	< 0.003	0.007	< 0.005	0.005	0.008	0.11	CRB alt MD
PGH-18-07	514.23	515.73	1.5	590256	A18-06697	4.74	0.074	1.48	< 0.003	0.003	< 0.005	0.005	< 0.003	0.004	0.013	GRAN + minor CRBT
PGH-18-07	515.73	517.16	1.43	590257	A18-06697	5.66	0.037	0.63	< 0.003	< 0.003	0.011	0.006	< 0.003	0.006	< 0.003	GRAN + minor CRBT
PGH-18-07	517.16	518.32	1.16	590258	A18-06697	3.61	0.009	0.31	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.003	0.007	GRAN
PGH-18-07	518.32	519.5	1.18	590259	A18-06697	5.17	0.015	0.41	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.003	0.013	GRAN
PGH-18-07	519.5	520.4	0.9	590260	A18-06697	4.69	0.159	3.21	< 0.003	< 0.003	0.011	0.01	0.003	0.011	< 0.003	CRBT
PGH-18-07	520.4	521.2	0.8	590261	A18-06697	4.19	0.017	0.26	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.003	0.018	ALKLAI
PGH-18-07	521.2	522.12	0.92	590262	A18-06697	4.23	0.112	1.7	< 0.003	< 0.003	< 0.005	0.006	0.003	0.006	0.006	CRBT + ALKALI
PGH-18-07	522.12	523.61	1.49	590263	A18-06697	5.39	0.119	2.71	< 0.003	0.004	0.006	0.009	0.004	0.009	< 0.003	CRBT + BX
PGH-18-07	523.61	525.09	1.48	590264	A18-06697	4.24	0.07	1.95	< 0.003	0.003	0.005	0.008	0.003	0.007	< 0.003	CRBT + BX
PGH-18-07	525.09	526.24	1.15	590265	A18-06697	5.46	0.04	1.59	< 0.003	< 0.003	0.005	< 0.005	< 0.003	0.006	0.004	CRBT + BX
PGH-18-07	526.24	527.14	0.9	590266	A18-06697	6.73	0.055	3.05	< 0.003	< 0.003	0.007	0.007	< 0.003	0.011	0.012	CRBT
PGH-18-07	527.14	527.89	0.75	590267	A18-06697	6.07	0.054	2.16	< 0.003	0.003	0.005	0.006	< 0.003	0.008	0.013	CRBT BX
PGH-18-07	527.89	529.33	1.44	590268	A18-06697	5.25	0.106	2.29	< 0.003	0.003	0.007	0.006	0.003	0.011	0.008	CRBT, dark

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DDH	From	To	Width (m)	SampleID	BatchID	Fe2O3T (%)	Nb2O5 (%)	P2O5 (%)	SnO2 (%)	Ta2O5 (%)	ThO2 (%)	U3O8 (%)	WO3 (%)	Y2O3 (%)	ZrO2 (%)	Description
PGH-18-07	529.33	529.83	0.5	590269	A18-06697	4.88	0.019	0.31	< 0.003	< 0.003	< 0.005	< 0.005	0.003	0.003	0.009	ALKALI
PGH-18-07	529.83	530.65	0.82	590270	A18-06697	10.68	0.118	3.07	< 0.003	< 0.003	0.008	0.005	0.004	0.012	0.087	CRBT
PGH-18-07	530.65	531.8	1.15	590271	A18-06697	7.34	0.102	1.04	< 0.003	< 0.003	0.012	0.011	0.004	0.007	0.008	CRBT
PGH-18-07	531.8	532.91	1.11	590273	A18-06697	9.36	0.092	3.33	< 0.003	0.003	0.007	0.006	0.004	0.009	0.031	CRBT
PGH-18-07	534.6	535.05	0.45	590275	A18-06697	3.46	0.045	1.51	< 0.003	< 0.003	0.006	0.005	< 0.003	0.008	< 0.003	CRBT
PGH-18-07	535.86	536.58	0.72	590276	A18-06697	3.52	0.005	0.75	< 0.003	< 0.003	0.006	0.005	0.003	0.009	< 0.003	CRBT +PEG
PGH-18-07	544.17	544.75	0.58	590277	A18-06697	4.53	0.015	0.34	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.004	0.007	SYN + CRBT
PGH-18-07	544.75	545.53	0.78	590279	A18-06697	4.08	0.062	2.12	< 0.003	< 0.003	0.009	0.008	< 0.003	0.011	< 0.003	CRBT
PGH-18-07	545.53	546.68	1.15	590280	A18-06697	5.38	0.013	0.35	< 0.003	0.003	< 0.005	< 0.005	0.004	< 0.003	0.013	SYN
PGH-18-07	546.68	547.67	0.99	590281	A18-06697	4.78	0.017	0.59	< 0.003	< 0.003	< 0.005	0.005	< 0.003	< 0.003	0.006	SYN
PGH-18-07	547.67	549.16	1.49	590282	A18-06697	3.92	0.04	2.77	< 0.003	< 0.003	0.006	0.01	0.004	0.008	< 0.003	CRBT BX
PGH-18-07	549.16	550.15	0.99	590283	A18-06697	6.05	0.041	1.26	< 0.003	0.003	0.006	< 0.005	0.005	0.005	< 0.003	CRBT BX
PGH-18-07	550.15	551.15	1	590285	A18-06697	6.2	0.018	0.25	0.003	< 0.003	< 0.005	< 0.005	0.003	< 0.003	0.012	SYN
PGH-18-07	551.15	552.64	1.49	590286	A18-06697	6.07	0.141	2.08	< 0.003	< 0.003	0.007	< 0.005	0.004	0.011	< 0.003	CRBT BX
PGH-18-07	552.64	553.74	1.1	590287	A18-06697	5.24	0.056	0.24	< 0.003	< 0.003	< 0.005	< 0.005	0.003	0.004	0.009	SYN + CRBT
PGH-18-07	553.74	554.75	1.01	590288	A18-06697	5.23	0.027	0.14	< 0.003	0.003	< 0.005	< 0.005	< 0.003	< 0.003	0.014	SYN + CRBT
PGH-18-07	554.75	556.13	1.38	590289	A18-06697	6.1	0.153	2.7	< 0.003	< 0.003	0.007	0.006	0.003	0.011	< 0.003	CRBT BX
PGH-18-07	570.55	571.87	1.32	590290	A18-06697	14.4	0.045	1.61	< 0.003	0.003	0.005	< 0.005	0.003	0.006	0.054	MD + CRBT
PGH-18-07	571.87	573.14	1.27	590291	A18-06697	15.28	0.041	2.29	< 0.003	0.004	0.005	< 0.005	0.004	0.005	0.072	MD + CRBT
PGH-18-07	573.14	573.88	0.74	590292	A18-06697	6.81	0.381	5.24	< 0.003	< 0.003	0.013	0.007	< 0.003	0.016	0.01	CRBT
PGH-18-07	573.88	574.81	0.93	590293	A18-06697	9.28	0.15	0.71	< 0.003	< 0.003	0.007	< 0.005	0.003	0.004	0.006	CRBT
PGH-18-07	574.81	576.35	1.54	590294	A18-06697	5.99	0.268	2.53	< 0.003	0.003	0.011	0.009	0.004	0.013	< 0.003	CRBT
PGH-18-07	576.35	577.18	0.83	590295	A18-06697	3.52	0.355	4.27	< 0.003	0.005	0.012	0.015	0.003	0.021	< 0.003	CRBT
PGH-18-07	577.18	578	0.82	590296	A18-06697	4.01	0.162	3.26	< 0.003	0.003	0.01	0.007	0.003	0.019	0.02	CRBT
PGH-18-07	578	579.02	1.02	590297	A18-06697	7.86	0.171	1.92	< 0.003	< 0.003	0.007	0.005	< 0.003	0.007	< 0.003	CRBT BX
PGH-18-07	579.02	579.72	0.7	590299	A18-06697	6.88	0.273	4.29	< 0.003	0.003	0.008	0.007	0.005	0.015	< 0.003	CRBT
PGH-18-07	579.72	580.72	1	590300	A18-06697	7.22	0.125	2.57	< 0.003	< 0.003	0.008	< 0.005	0.006	0.013	0.011	CRBT BX
PGH-18-07	580.72	582.15	1.43	590301	A18-06697	7.12	0.324	1.43	< 0.003	< 0.003	0.007	< 0.005	0.004	0.006	0.011	SYN
PGH-18-07	582.15	583.46	1.31	590302	A18-06697	7.38	0.2	1.99	< 0.003	0.004	0.005	< 0.005	0.005	0.008	< 0.003	CRBT BX
PGH-18-07	583.46	584.95	1.49	590303	A18-06697	3.14	0.885	4.59	< 0.003	< 0.003	0.01	0.005	0.003	0.01	< 0.003	CRBT BX
PGH-18-07	584.95	585.37	0.42	590304	A18-06697	7.19	0.149	0.93	< 0.003	0.003	< 0.005	< 0.005	< 0.003	0.003	0.013	SYN
PGH-18-07	585.37	586.42	1.05	590305	A18-06697	2.56	0.114	2.33	< 0.003	0.004	0.009	0.011	< 0.003	0.013	< 0.003	CRBT
PGH-18-07	586.42	587	0.58	590306	A18-06697	11.53	0.066	3.37	< 0.003	0.004	0.007	< 0.005	< 0.003	0.009	0.041	MD + CRBT
PGH-18-07	587	588.5	1.5	590307	A18-06697	14.92	0.054	2.1	< 0.003	0.003	0.007	< 0.005	< 0.003	0.007	0.052	MD + CRBT
PGH-18-07	588.5	590	1.5	590308	A18-06697	10.2	0.034	1.95	< 0.003	< 0.003	0.006	< 0.005	0.005	0.007	0.051	MD + CRBT
PGH-18-07	590	591.5	1.5	590309	A18-06697	8.44	0.062	1.94	< 0.003	0.006	0.006	< 0.005	0.004	0.01	0.055	MD + CRBT
PGH-18-07	598.13	599.23	1.1	590312	A18-06697	5.34	0.114	0.92	< 0.003	0.003	0.008	0.006	0.005	0.009	< 0.003	CRBT +SYN
PGH-18-07	599.23	600.23	1	590313	A18-06697	3.97	0.042	2.01	< 0.003	0.003	0.007	0.007	0.006	0.014	0.007	CRBT + SYN
PGH-18-07	608	609	1	590314	A18-06697	6.88	0.023	0.52	< 0.003	0.003	0.007	< 0.005	0.003	0.008	0.006	CRBT BX
PGH-18-07	609	610.5	1.5	590315	A18-06697	5.42	0.123	3.14	< 0.003	0.005	0.01	0.012	0.003	0.016	< 0.003	CRBT BX
PGH-18-07	610.5	611.4	0.9	590316	A18-06697	7.25	0.011	0.38	< 0.003	< 0.003	< 0.005	< 0.005	0.003	0.004	0.016	CRBT BX

ASSAYS

DDH	From	To	Width (m)	SampleID	BatchID	Fe2O3T (%)	Nb2O5 (%)	P2O5 (%)	SnO2 (%)	Ta2O5 (%)	ThO2 (%)	U3O8 (%)	WO3 (%)	Y2O3 (%)	ZrO2 (%)	Description
PGH-18-07	611.4	612.3	0.9	590317	A18-06697	8.15	0.059	0.67	< 0.003	< 0.003	0.005	< 0.005	< 0.003	0.005	0.017	CRBT BX
PGH-18-07	612.3	613	0.7	590318	A18-06697	8.07	0.038	0.95	0.004	< 0.003	0.007	< 0.005	0.003	0.005	0.005	CRBT BX, sphalerite
PGH-18-07	613	614.25	1.25	590319	A18-06697	7.96	0.041	0.81	< 0.003	0.003	< 0.005	< 0.005	0.003	0.006	0.004	CRBT BX
PGH-18-07	614.25	615.22	0.97	590320	A18-06697	6.21	0.015	0.69	< 0.003	0.003	< 0.005	< 0.005	< 0.003	0.003	0.011	CRBT BX
PGH-18-07	615.22	616.7	1.48	590321	A18-06697	1.48	0.037	1.67	< 0.003	< 0.003	0.007	0.006	0.003	0.013	< 0.003	CRBT BX
PGH-18-07	616.7	617.7	1	590322	A18-06697	2.9	0.161	5.14	< 0.003	0.005	0.011	0.011	0.006	0.02	0.003	CRBT BX
PGH-18-07	617.7	618.7	1	590323	A18-06697	5.07	0.078	2.4	< 0.003	0.004	0.009	0.007	< 0.003	0.01	< 0.003	CRBT BX
PGH-18-07	618.7	620.19	1.49	590324	A18-06697	4.62	0.133	1.58	< 0.003	0.003	0.008	0.007	< 0.003	0.008	< 0.003	CRBT BX
PGH-18-07	620.19	621.69	1.5	590326	A18-06697	6.34	0.068	0.96	< 0.003	0.003	0.006	0.005	0.004	0.007	0.006	CRBT BX
PGH-18-07	621.69	623.19	1.5	590327	A18-06697	5.16	0.187	2.09	< 0.003	0.005	0.01	0.01	0.006	0.008	< 0.003	CRBT BX
PGH-18-07	623.19	624.69	1.5	590328	A18-06697	5.47	0.14	4.53	< 0.003	0.003	0.008	0.012	< 0.003	0.013	< 0.003	CRBT BX
PGH-18-07	624.69	626	1.31	590329	A18-06697	6.45	0.045	0.89	< 0.003	< 0.003	0.005	< 0.005	< 0.003	0.005	0.003	CRBT BX
PGH-18-07	626	626.9	0.9	590331	A18-06697	7.77	0.052	1.64	< 0.003	0.004	0.007	< 0.005	0.004	0.009	< 0.003	CRBT BX
PGH-18-07	626.9	628.4	1.5	590332	A18-06697	5.96	0.013	0.22	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.003	0.007	QTZ SYN
PGH-18-07	628.4	629.6	1.2	590333	A18-06697	5.67	0.006	0.52	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.006	0.009	QTZ SYN
PGH-18-07	629.6	630.75	1.15	590334	A18-06697	6.26	0.009	0.49	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.004	0.008	QTZ SYN
PGH-18-07	630.75	631.84	1.09	590335	A18-06697	5.85	0.015	0.22	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.003	0.008	CRBT BX
PGH-18-07	631.84	633.3	1.46	590336	A18-06697	7.13	0.028	0.24	< 0.003	0.003	< 0.005	< 0.005	0.004	0.003	0.003	CRBT BX
PGH-18-07	633.3	634.3	1	590337	A18-06697	7.71	0.022	0.45	< 0.003	< 0.003	0.008	< 0.005	< 0.003	0.006	< 0.003	CRBT BX
PGH-18-07	634.3	635.78	1.48	590338	A18-06697	9.3	0.07	6.59	< 0.003	< 0.003	0.017	0.005	0.004	0.044	< 0.003	CRBT BX
PGH-18-07	635.78	637.28	1.5	590339	A18-06697	8.69	0.027	0.46	< 0.003	< 0.003	0.007	< 0.005	< 0.003	0.004	< 0.003	CRBT BX
PGH-18-07	637.28	638.78	1.5	590340	A18-06697	8.37	0.054	0.82	< 0.003	< 0.003	0.007	< 0.005	< 0.003	0.008	0.01	CRBT BX
PGH-18-07	638.78	640.28	1.5	590341	A18-06697	4.14	0.089	4.74	< 0.003	0.004	0.015	0.006	0.004	0.022	0.035	CRBT
PGH-18-07	640.28	641	0.72	590343	A18-06697	3.72	0.064	6.18	< 0.003	< 0.003	0.015	0.005	0.004	0.025	0.032	CRBT
PGH-18-07	641	642	1	590344	A18-06697	2.4	0.067	3.71	< 0.003	0.004	0.008	0.008	< 0.003	0.011	0.022	CRBT
PGH-18-07	642	643	1	590345	A18-06697	2.15	0.042	3.59	< 0.003	< 0.003	0.009	0.009	< 0.003	0.015	0.037	CRBT
PGH-18-07	643	643.5	0.5	590347	A18-06697	2.66	0.118	4.15	< 0.003	< 0.003	0.011	0.007	0.003	0.015	0.037	CRBT
PGH-18-07	643.5	644.5	1	590348	A18-06697	1.65	0.043	0.93	< 0.003	< 0.003	0.008	< 0.005	0.005	0.012	< 0.003	CRBT
PGH-18-07	644.5	645	0.5	590349	A18-06697	2.86	0.01	0.13	< 0.003	< 0.003	0.01	< 0.005	0.006	0.006	< 0.003	CRBT
PGH-18-07	645	646	1	590350	A18-06697	3.86	0.091	3.03	< 0.003	< 0.003	0.013	0.006	0.004	0.014	0.041	CRBT
PGH-18-07	646	647.3	1.3	590351	A18-06697	4.61	0.888	6.14	< 0.003	0.012	0.019	0.025	0.005	0.016	0.245	CRBT
PGH-18-07	647.3	647.87	0.57	590353	A18-06697	6.74	0.013	0.33	< 0.003	0.003	< 0.005	< 0.005	0.004	0.004	0.013	ALKLAI
PGH-18-07	647.87	648.57	0.7	590354	A18-06697	4.57	0.479	5.46	< 0.003	0.006	0.013	0.011	0.003	0.017	0.076	CRBT BX
PGH-18-07	648.57	649.08	0.51	590355	A18-06697	5.44	0.008	0.15	< 0.003	< 0.003	< 0.005	< 0.005	0.006	0.003	0.013	ALKLAI
PGH-18-07	649.08	649.59	0.51	590356	A18-06697	12.37	0.029	1.12	< 0.003	0.003	0.005	< 0.005	0.003	0.008	0.004	CRBT + ALKALI
PGH-18-07	649.59	650.1	0.51	590357	A18-06697	8.08	0.138	1.23	< 0.003	0.005	< 0.005	0.005	0.003	0.006	0.036	CRBT
PGH-18-07	650.1	650.75	0.65	590358	A18-06697	2	0.088	1.03	< 0.003	< 0.003	0.009	0.005	0.003	0.011	0.013	CRBT
PGH-18-07	650.75	651.91	1.16	590359	A18-06697	7.95	0.009	0.58	< 0.003	< 0.003	< 0.005	< 0.005	0.003	0.005	0.029	FEN
PGH-18-07	651.91	652.53	0.62	590360	A18-06697	8.75	0.018	0.81	< 0.003	< 0.003	< 0.005	< 0.005	0.004	0.005	0.029	FEN + MD
PGH-18-07	652.53	653.02	0.49	590361	A18-06697	7.27	0.248	2.26	< 0.003	0.004	0.011	0.006	0.003	0.011	0.004	CRBT
PGH-18-07	662.7	663.93	1.23	590362	A18-06697	9.77	0.072	3.43	< 0.003	< 0.003	0.008	< 0.005	0.005	0.014	0.063	CRBT

ASSAYS

DDH	From	To	Width (m)	SampleID	BatchID	Fe2O3T (%)	Nb2O5 (%)	P2O5 (%)	SnO2 (%)	Ta2O5 (%)	ThO2 (%)	U3O8 (%)	WO3 (%)	Y2O3 (%)	ZrO2 (%)	Description
PGH-18-07	663.93	665	1.07	590363	A18-06697	4.44	0.009	0.21	< 0.003	0.003	< 0.005	< 0.005	< 0.003	0.003	0.006	FEN
PGH-18-07	665	666	1	590364	A18-06697	6.21	0.055	4.85	< 0.003	< 0.003	0.008	< 0.005	0.003	0.017	< 0.003	CRBT

COMPANY QAQC DATA

DDH	From	To	Width (m)	SampleID	BatchID	QAQC Type	QAQC Description	P2O5 (%)	Nb2O5 (%)
PGH-18-07	100.42	100.42	0	590114	A18-06697	BLANK	Marble	0.02	< 0.003
PGH-18-07	170.58	170.58	0	590129	A18-06697	STANDARD	Oka 1	2.48	0.552
PGH-18-07	180.18	180.18	0	590140	A18-06697	BLANK	Marble	0.05	< 0.003
PGH-18-07	215	215	0	590150	A18-06697	STANDARD	Oka 1	2.49	0.539
PGH-18-07	216.5	218	1.5	590152	A18-06697	N/A	ORIGINAL SAMPLE	5.88	0.13
PGH-18-07	216.5	218	1.5	590153	A18-06697	DUPLICATE	DUPLICATE 590152	5.6	0.117
PGH-18-07	227.6	227.6	0	590159	A18-06697	BLANK	Marble	0.03	< 0.003
PGH-18-07	270.5	270.5	0	590175	A18-06697	BLANK	Marble	0.02	< 0.003
PGH-18-07	281.8	281.8	0	590184	A18-06697	BLANK	Marble	0.04	< 0.003
PGH-18-07	289	289	0	590191	A18-06697	STANDARD	Oka 1	2.51	0.548
PGH-18-07	307.5	307.5	0	590202	A18-06697	STANDARD	Oka 1	2.57	0.552
PGH-18-07	307.5	307.5	0	590203	A18-06697	BLANK	Marble	0.02	< 0.003
PGH-18-07	478.4	478.4	0	590240	A18-06697	BLANK	Marble	0.02	< 0.003
PGH-18-07	493.84	493.84	0	590246	A18-06697	BLANK	Marble	0.05	< 0.003
PGH-18-07	514.23	514.23	0	590255	A18-06697	STANDARD	Oka 1	2.45	0.534
PGH-18-07	531.8	531.8	0	590272	A18-06697	STANDARD	Oka 1	2.47	0.537
PGH-18-07	531.8	532.91	1.11	590273	A18-06697	N/A	ORIGINAL SAMPLE	3.33	0.092
PGH-18-07	531.8	532.91	1.11	590274	A18-06697	DUPLICATE	DUPLICATE 590273	3.18	0.094
PGH-18-07	544.75	544.75	0	590278	A18-06697	BLANK	Marble	0.02	< 0.003
PGH-18-07	550.15	550.15	0	590284	A18-06697	BLANK	Marble	0.02	< 0.003
PGH-18-07	579.02	579.02	0	590298	A18-06697	STANDARD	Oka 1	2.49	0.538
PGH-18-07	591.5	591.5	0	590310	A18-06697	BLANK	Marble	0.03	< 0.003
PGH-18-07	591.5	591.5	0	590311	A18-06697	STANDARD	Oka 1	2.45	0.532
PGH-18-07	620.19	620.19	0	590325	A18-06697	BLANK	Marble	0.02	< 0.003
PGH-18-07	626	626	0	590330	A18-06697	STANDARD	Oka 1	2.47	0.536
PGH-18-07	640.28	640.28	0	590342	A18-06697	STANDARD	Oka 1	2.41	0.525
PGH-18-07	643	643	0	590346	A18-06697	BLANK	Marble	0.02	< 0.003
PGH-18-07	646	647.3	1.3	590351	A18-06697	N/A	ORIGINAL SAMPLE	6.14	0.888
PGH-18-07	646	647.3	1.3	590352	A18-06697	DUPLICATE	DUPLICATE 590351	4.58	0.724



Drilled by:	Chibougamau Diamond Drilling	Start Date:	9-May-2018
Township/Area:	Killala Lake Area	End Date:	14-May-2018
Claims (converted):	332506	Described by:	B. Clark, BSc
Claims (legacy):	TB 4256251	Log date:	25-May-2018

Collar

Azimuth: 344.00°		Easting: 519731		Core size:	HQ	Cemented:	No
Plunge: -50.00°		Northing: 5432724		Casing:	Pulled	Stored:	Yes
Length: 498.0 m		Elevation: 318.0m					

COORDINATES UTM (NAD83 zone 16)

Down hole surveys

Drill Hole	Type	Depth (m)	Azimuth Corrected (°)	Dip (°)	Mag
PGH-18-08	Reflex	24	344.7	-51	58487
PGH-18-08	Reflex	75	345.4	-51	57417
PGH-18-08	Reflex	126	345.4	-51.1	57436
PGH-18-08	Reflex	177	345.3	-51	57474
PGH-18-08	Reflex	228	345.7	-50.8	57467
PGH-18-08	Reflex	279	346.9	-50.5	57483
PGH-18-08	Reflex	330	347.1	-50.6	57568
PGH-18-08	Reflex	381	347.3	-50.4	57668
PGH-18-08	Reflex	432	347.8	-50.4	57722
PGH-18-08	Reflex	498	348.1	-49.8	57713

Description

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-08	0	8.6	OVB	Overburden / Casing	Overburden / Casing
PGH-18-08	8.6	9.4	CRBT	Carbonatite	Purple to brown-red, fg, massive, slightly weathered, patches of orange-red, wispy bands of green-cream with ap cumulates up to 5mm, trace diss py, masses up to 7mm of black anhedral Nb Ox?
PGH-18-08	9.4	12.5	SYE	Syenite	Light pink-red, fg-mg, qtz 10-15%, kspar 50%, plag 20%, bt 10%, 5% other. Weakly to moderately altered to clay minerals. Diss hem and along fractures, local breccias <30cm. Minor crbt veins <3cm at high angles TCA. CCT @ 55/040, brecciated.
PGH-18-08	12.5	13.25	CRBT	Carbonatite	Light grey-green-red-orange-pink, fg, locally vuggy <2mm, trace fg diss grey-black metallic mineral, trace dis py
PGH-18-08	13.25	13.4	SYE	Syenite	Light pink-red to orange-green, mod-strongly altered to clay (fspar degrading), mg, fractures with clay fill/alt. <2mm crbt veining at various angles.
PGH-18-08	13.4	15.64	CRBT	Carbonatite	Light grey-brown, fractures filled with brown, diss hem, syn clasts up to 5cm which are fractured and carb altered, vfg light pink mineral, slightly weathered
PGH-18-08	15.64	28.2	QTZ-SYE	Quartz Syenite / Syenite + minor Carbonatite	Light pink-orange to green-yellow to red, fspar mod alt'd to illite(?clays), mg, fractures with pink alt halos, diss hem, moderately fractured as various angle TCA. Alteration is patchy and concentrated in areas where more fractures present. Crbt veins <30cm; purple-red, fg, massive, diss hem, vfg light pink-orange mineral, local light grey-green, patchy fluorite. LC brecciated.
PGH-18-08	28.2	29.55	CRBT-BX	Carbonatite + Breccia	First 60cm brecciated syn; dark-fluorescent green to red-orange, mod-strongly weathered clasts up to 5cm, diffuse boundaries, crbt fill CRBT; light purple patchy pink, fg, massive, locally vuggy up to 1cm filled with fg grey-black metallic mineral (hem + pyrochlore?), vfg diss trace orange mineral. At LC brown-red masses with ap cum <1cm LC @ 60/180
PGH-18-08	29.55	40.5	QTZ-SYE	Quartz Syenite / Syenite + minor Carbonatite	12% CRBT, 78% SYN SYN; light pink-red to orange-green, mod-str clay altered fspar, mg, fractures and veins with light alt halos, patchy mod chl alt. qtz 10-15%, kspar 50%, plag 20%, chl/amph 15%. CRBT; dark-light purple to grey-cream, fg-cg, diss hem, patchy fluorite, vfg diss orange/red minerals (LREE?), locally fg ap <1mm light green, commonly rimmed with hem.
PGH-18-08	40.5	43.25	CRBT-BX	Carbonatite Breccia + Syenite	Syn clast dominated 65%, crbt 35% SYN; light pink-red, chl (replacing bt?), clasts <10cm moderately fractured, with local rxn rims of brown-black (bt/pyx?/amph), clasts have diffuse boundaries, sub-rounded to sub-angular. MD: 40.9-41.4: crbt alt MD with sub parallel (perpendicular TCA) veins from 2mm-15mm, light green-grey, bt xtals <3m locally. Sharp contacts with syn ~ perp TCA CRBT; light grey-pink, fg-cg, breccia appears blobby with diffuse clasts of syn and patchy kspar? within crbt. br-red wispy bands of ap(?), diss hem. LC obscured by breccia.
PGH-18-08	43.25	45.9	QTZ-SYE	Quartz Syenite	Light pink-red, mg-fg, qtz 20%, kspar 50%, plag, 10%, bt 10%, 10% crbt. Fspar cores red-orange rimmed with cream-pink. Xtals <3mm, rare crbt +/- amph veins <5mm, locally chl replacing bt

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-08	45.9	53	CRBT-BX	Carbonatite Breccia	<p>Syn clasts up to 15cm, diffuse boundaries, clasts are locally mod-strongly weathered to clays (black-green-orange), rimmed by light pink.</p> <p>45.9-48.5 CRBT; light grey-purple-pink, fg, massive, diss hem up to 3mm, trace diss py.</p> <p>48.5-49.3: light pink-purple, cg, patches of mauve and orange masses LREE? with vfg native copper(?), up to 1.5cm with fg black diss mineral within (weak vugs). qtz xtals up to 5mm near LC.</p> <p>49.6-50.10: light cream-pink-purple, fg, massive, wispy bands of mauve with patches of orange from<1mm-2cm, fluorescent white under UV, with diss vfg red mineral.</p>
PGH-18-08	53	72.2	CRBT-BX	Carbonatite Breccia + Syenite	<p>SYN; light red-pink, weak potassic/hem alt, light grey/green crbt fill, clasts have diffuse boundaries, clasts up to 15cm, patchy chl alt (black)</p> <p>CRBT; grey-green to mauve-purple, locally vuggy, fg, massive, trace vfg orange mineral</p> <p>59.5-62.6: light-dark purple-grey, fg, wispy bands of mauve, vfg orange diss mineral long bands, diss hem, locally weakly vuggy, diss vfg black metallic mineral (pyrochlore?)</p> <p>64.5-66.20: purple-mauve, fg, 10% diss fg red mineral, minor clasts of syn with diffuse boundaries, LC @ 25/220</p> <p>67-69: light purple-cream-pink, fg, ap cumulates up to 4cm lenses, locally strongly weathered syn clasts (green-orange), vfg orange mineral diss/interstitial</p> <p>69-72.2: BX ; local vugs/weathered and filled with pyrochlore up to 4mm, cream-purple-mauve, clasts have light alt rims, to completely altered (black-green clays?).</p>
PGH-18-08	72.2	89.7	QTZ-SYE	Quartz Syenite / Fenite(?)	<p>Mg light pink-red, patches of bt/chl/amph up to 70% with undulating/diffuse contacts to syn, <2mm fractures/veins with light pink-red halos. Qtz 15%, kspar 50%, plag 15%, bt/chl 10-70%.</p> <p>Crbt veins <30cm; light purple-mauve to cream, fg, massive, diss hem, diss py, , patchy diss light green fg mineral.</p>
PGH-18-08	89.7	102.5	SYE-BX	Carbonatite Breccia with Granite	<p>GRAN; light orange-red to pink, weak-mod clay alt(?) fspar being replaced, disseminated hem, qtz 10-25%, kspar 50%, plag 10%, 15% chl/bt locally weakly vuggy, veinlets <1mm with pink-orange light alt halos</p> <p>CRBT up to 1.3m:</p> <p>89.7-90: light pink to purple mauve, wispy bands of mauve-red, disseminated hem, clasts with diffuse boundaries, wispy bands massing around clasts and contacts, vfg light orange mineral, LC undulating and irregular</p> <p>91.2-92.2: light green-grey to purple, fg, massive to very weakly banded, diss hem, Calc>Dol, bands defined by pink pink-light green</p> <p>95.30-99.5: light pink-purple-green to cream, weakly oxidized fe-ox staining, very weakly vuggy, diss hem, local wispy patches of amph</p> <p>101.7-102.5: purple, diss hem, br-grey wispy masses, light orange vfg diss mineral.</p>

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-08	102.5	108.75	GRAN	Granite	<p>Mg, light pink-red, qtz 25%, kspar 50%, plag 15%, 10% bt. Fractures/veinlets with light pink-orange alt halos, weak potassic alt, diss hem, patchy chl replacing bt. CRBT veins <4cm moderate to perpendicular TCA. Patchy light orange alt to fspar.</p> <p>Local crbt bx 106.41-107.05: light pink-purple-cream, diss hem, light green ap cumulated <2mm rimmed by hem, 2% fg black-grey metallic pyrochlore(?). Gran clasts are vuggy and clay altered(?) <10cm, diffuse boundaries, sun-angular to sub-rounded.</p>
PGH-18-08	108.75	123.5	CRBT-BX	Carbonatite + Breccia	<p>CRBT 85%, ALKALI 15% zones of fractured alkali and clasts within crbt. ALKALI; red-pink to cream orange, mg, clasts have diffuse boundaries, locally weakly vuggy and patchy clay alteration (lime green-grey-orange). Cores of clasts commonly clay altered and fractured.</p> <p>CRBT; dominantly purple-mauve, fg, massive, locally cg cream-pink to purple 109.15-111.40: UC brecciated, purple-mauve with locally light pink, diss hem as irregular masses <3mm, fg black diss mineral (pyrochlore?), irregular kspar xtals within crbt. Grading into cg light pink-purple, with wispy discontinuous bands of hem, vfg light orange-pink mineral (LREE?), masses of dark ap(?) up to 1cm. Brecciated 40cm towards LC</p> <p>113-122.50: dominantly fg purple-mauve, locally vuggy, diss hem, light pink-orange interstitial vfg mineral, locally light green-cream crbt cg, diss py, Calc>Dol</p>
PGH-18-08	123.5	138.2	GRAN	Granite	<p>Red-orange-pink to green locally, mg, locally mod fenitized (patches of 40% bt/chl/amph), fractures/veins with light pink potassic alt halos, crbt veins rimmed by hem also veins <4mm with blue amph +/- crbt fill. Local blobby breccia(?) with amph fill, Locally qtz up to 40%.</p> <p>CRBT veins <20cm, light purple-mauve to grey, fg, diss hem, vfg light orange mineral, local qtz within veins.</p>
PGH-18-08	138.2	140.1	CRBT-BX	Carbonatite Breccia + Granite	<p>Massive crbt up to 38cm, BX zone 1m. CRBT; purple-mauve-grey, vfg, weakly vuggy <1mm, contacts planar, UC @ 65/115 BX; alkali clasts up to 13cm, black to pink-med red, weak-mod fractured, diffuse boundaries, rxn rims increase in size as class size decreases, clasts < 4cm str-completely altered, sub rounded to sub angular. CRBT; light grey-purple to blue, with local 1cm xc fg vein, clasts discontinuously rimmed by light green and red-brown masses/wisps with ap(?). Fill becoming light blue-green to mauve moving downhole, increase in amph/chl/hem?</p>
PGH-18-08	140.1	144.2	GRAN	Granite / Fenite	<p>Mg gran med red-pink with zones up 35% bt/chl/amph blue-green. Fractures with chl, amph, hem <2mm with alt halos pink-red. Local patches of fspar light orange-yellow with med red cores (close proximity to crbt), CRBT up to 30cm; purple-mauve to light grey-green, fg, rimmed by hem, stringers of hem, brown-red ap cum up to 5mm UC @ 23/280</p>

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-08	144.2	149.95	GRAN	Granite	Light pink to opaque to light red, mg, veins/fractures with alt halos of light pink, veins 2mm-50mm at moderate angles TCA and larger veins >1cm perpendicular TCA. Moving downhole alt changes to clays(?) weakly-strongly weathered light orange-green moving close to LC with CRBT.
PGH-18-08	149.95	156.2	CRBT-BX	Carbonatite / Granite	Granite 25%, CRBT 75% 149.95-150.70: CRBT; purple to mauve, diss hem and angular masses of hem rich crbt up to 1cm. Vfg light pink-orange mineral interstitial. 150.7-152.6: GRAN; light pink, mg, weak-mod weathered local patches completely altered. Moving downhole crbt veining increases in frequency commonly <5mm and at high angles TCA. LC strongly hematite altered and obscured by degree of alteration. 152.6-156.2: CRBT + MD?; 0.5m of carb alt MD (green-grey, magnetic, pyx/bt up to 4mm, hem alt, carb filling amygdales <5mm). CRBT; purple-mauve, fg, hem rich, brn-red ap whips, diss fg orange-pink fspar? slightly weathered (fe-ox staining)
PGH-18-08	156.2	170.95	SYE-BX	Granite Breccia + Carbonatite	First 2m massive GRAN, Zones of CRBT up to 1.7m but commonly just intense CRBT veining. CRBT 60%, GRAN 40%. GRAN; light orange-pink-red, mg, locally mod-str clay alt(fspar being replaced), mod selectively pervasive to patchy hem alt, locally clasts within crbt have vugs up to 1cm, clasts have diffuse boundaries and commonly mod-highly fractured. Vugs caused by weathering out of clay(? alt bt?) CRBT; in zones >10cm crbt is purple to mauve, fg, weak ox, clasts gran highly altered with local vugs. in smaller zones CRBT is light grey-cream in colour with diss hem to locally completely hem.
PGH-18-08	170.95	174	GRAN	Granite	170.95-171.15: CRBT; light pink with rimmed by light green fg CRBT, wispy br-red fg hem rich, diss hem. GRAN with significant decrease in number of fractures/veins with crbt fill, possibly larger gran clast which isn't strongly fractured(?). selectively pervasive chl/amph alt replacing bt(?). Veins crbt +/- amph fill < 5mm at 3 veins/metre. LC @ 80/340
PGH-18-08	174	183	CRBT	Carbonatite	Light pink-blue-green, with wispy bands of light green-brown ap cum(?) < 5mm wide, trace diss local bt <2mm concentrated in darker coloured areas, massive, low angle light green veins(?) xc light pink crbt. Vfg light orange-cream mineral diss <1mm, Calc >Dol LC 60cm brecciated zone @ 55/70
PGH-18-08	183	207.1	SYE	Alkali Feldspathic	Modal % variations across unit due to alteration (potassic alteration along fractures/veins and pervasively locally, pink-cream halos with recrystallized fldsp(?) pink-cream rims with red cores), unit varies from med red-pink to locally grey. Fractures/veins of blue amph/chl commonly <5mm 2-4/m at moderate to low angles TCA. moderate patchy selectively pervasive fenitization (chl/blue amph replacing bt/mafic?). Fg-cg rare pegmatitic plag up to 4cm, dominantly xtals <4mm, sub parallel veins with alt halos >5mm at mod angles TCA. Locally zones of glimmerite(?) bt/chl 65%, patchy with diffuse boundaries. CRBT veins commonly <10cm locally up to 50cm. light pink-purple, diss hem, wispy brown-red near contacts, rimmed by blue-green amph. 201.10-201.7: CRBT; purple to brown-mauve, wispy bands of brown-mauve hem rich, fg, contacts are planar and sharp. vfg light orange mineral along bands. under UV 'bands' are white (ap) 30/130

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-08	207.1	208	CRBT	Carbonatite	Light purple-grey, fg, massive, diss fg pink-red hem(?), Calc>Dol, trace diss py, UC & LC planar @ 35/150. wispy bands of br-red along / sub-parallel to contacts.
PGH-18-08	208	222.35	SYE	Alkali Feldspathic	Light orange-cream to light red, mg, fractures/veins <5cm filled with hem/crbt, fe-ox staining/hem halos around fractures, locally within veins hem xtals are concentrically zoned (hem/crbt), slightly weathered(?), locally sodic blue amph within crbt, rimming and replacing bt(?). Local crbt veins weakly vuggy. 2 dominant sets of fractures, 1; sub parallel TCA, 2; at moderate angles TCA. kfldsp 50%, plag 25%, qtz 10%, 15% hem/crbt/chl/bt.
PGH-18-08	222.35	224.2	CRBT	Carbonatite	Purple-mauve, fg-mg, wispy discontinuous bands/masses of br-red hem+/- ap, masses up to 10cm, bands <1cm, fg diss pink-red (kspar??, poorly formed <2mm), diss hem, Calc>Dol. UC @ 80/30
PGH-18-08	224.2	230.4	SYE	Alkali Feldspathic	Similar to described above; mg to locally cg, in cg zones fldsp xtals have diffuse to irregular crystal boundaries and locally fractured with hem/crbt infill. Up to 15% qtz locally, patchy forest green w/ light orange cream, to red-brown. Two phases of alt(?), green (chl/clay?)-orange (replaced fldsp, clay?) are at core and halos from veins and fractures are brown-red (hem), locally there are zones of unaltered to weakly altered syenite. moderate fracturing with hem/crbt fill at low-mod angle TCA, veins up to 5cm locally, commonly <2cm and planar. LC gradational due to alt overprint
PGH-18-08	230.4	232.2	CRBT-BX	Carbonatite + Alkali	40% Alkali, 60% CRBT CRBT purple-mauve, multiple veins <0.5m at moderate angles TCA, fg, mottled, locally vuggy/clay altered near UC, UC brecciated, trace diss patchy fg fluorite, vfg white-orange mineral (ap?), abundant hem. Clasts of alkali sub rounded to sub angular, diffuse boundaries. LC @ 30/170
PGH-18-08	232.2	235.73	GRAN	Granite	Qtz 30%, kspar 40%, plag 10%, bt 10%, 10% chl/amph. Fg-mg, local peg (20cm @ LC), dominantly opaque to med red, <1mm fractures/veinlets with red alt halos <2mm, minor veins of blue fg amph/crbt <1cm. Chl replacing bt locally (proximity to veins/fractures). Last 20cm contains peg plag up to 4cm with potassic alt rims/penetrating along striations, crystals have irregular to diffuse boundaries and are being replaced by qtz. moving towards LC crbt increasing and strongly fractured.
PGH-18-08	235.73	240.4	CRBT-BX	Carbonatite + Granite	20% Gran, 80% CRBT 235.9-236.8: GRAN; light orange-green, mg, fractures/veinlets <5mm filled with crbt/hem and mod angles TCA with alt halos of hem(?), qtz 15-20%, kspar 50%, plag 10%. Weakly clay altered(?) 236.8-240.4: CRBT; light pink-cream to purple-mauve, wispy discontinuous bands/masses up to 2cm, fg, 2% light green ap cum up to 5mm (sub rounded), vfg light orange mineral (LREE?). LC irregular at ~45d TCA

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-08	240.4	250.5	GRAN	Granite	Top 1m mod-strongly altered light orange-pink to green (potassic/chl alt?) with gradational lower boundary. Unit dominantly light red-pink to opaque, weakly fenitized (weakly selectively pervasive chl/blue sodic amph replacing bt(?), with higher concentrations near fractures and crbt veins). mg to rarely vcg (up to 3cm plag xtals). Fractures/veinlets have red-pink alt halos <4mm, where multiple veins/fractures intersect halos are larger. Veins filled with amph/crbt +/- hem. CRBT veins up to 10cm but commonly <1cm. Larger veins are pink-purple-cream, fg, massive, wisps of hem, wispy bands of grn-brn near / sub parallel to contact, diffuse contacts, trace diss py. LC gradational and marked by increase in alteration.
PGH-18-08	250.5	251.85	GRAN	Granite & Carbonatite	250.5-251.4: GRAN w/ crbt veining; fspar alt light orange cream, H<3, mod chl/hem/crbt in between fspar xtals, increasing in alt with increase in crbt veins becoming mottled (blobby breccia). Contact with massive CRBT gradational. 251.4-251.85: CRBT; light pink-purple, fg, massive, highly altered clasts of gran up to 5cm, wispy band of light brown-green along LC (ap). diss trace py, hem rimming altered clasts/along fractures/discontinuous "bands". LC @ 50/240
PGH-18-08	251.85	255.85	GRAN	Granite & Carbonatite	75% GRAN, 25% CRBT GRAN; light red-pink, mg-cg locally (1cm plag), bt % varies across unit (up to 10% but commonly <5%), fractures/veins have light pink-orange to red alt halos, where halos are red (hem) gran weakly fenitized. LC gran becoming pegmatitic CRBT veins/local bx up to 60cm; dominantly light pink-purple, fg, massive 253.95-254.53: BX CRBT; gran clasts up to 7cm, locally mod weathered and weakly vuggy, sub angular to sub rounded, diffuse clast boundaries, crbt is mottled pink-grey-green, fg, discontinuous bands of hem +/- ap(?) parallel to contacts. LC clay altered, planar, @ 60/140
PGH-18-08	255.85	259.6	MDYKE/CRBT	Carbonatite / Mafic Dyke with minor Granite	Multiple CRBT veins, cross cutting MD and with associated GRAN BX. 255.85-256.6: mottled crbt bx, strongly altered gran/plag clasts with fg light grey crbt fill. 256.6-258: MD; forest green- dark grey, magnetic, chl alt, carb filling amygdales, and near contacts with CRBT light grey carb/red hem alt, trace diss py. CRBT/bx zones up to 25cm, light pink-cream to purple, fg-cg, massive, diss hem, trace diss py. LC @ 50/115, lc of crbt vein

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-08	259.6	279.2	GRAN	Granite	<p>Light grey to pink-red, fg-cg locally, locally weakly fenitized (selectively pervasive chl/blue amph), fractures/veinlets have red to pink alt halos <4mm and commonly filled with crbt/amph/chl, CRBT veins up to 80cm but commonly <10cm. Dominantly fractures are at moderate angles TCA, minor veins at low angles TCA.</p> <p>268.45-270: CRBT; light pink, massive, cg, Calc>Dol, wispy bands of light green with ap cum (light green up to 5mm), bands are sub parallel to and concentrated near contacts. diss hem, trace diss py.</p> <p>276.27-276.5: CRBT; light pink-purple, rimmed by light green-brown with wispy bands. light green ap cumulates up to 2cm masses at UC/LC (increase at LC), trace diss py, trace diss hem. Near LC 5mm 'band' of lighter pink calcite with perpendicular fractures at 1cm intervals with infill vfg light purple. UC @ 60/160, LC @ 75/140</p> <p>278.3-278.8: CRBT; light pink-purple locally light green-grey-orange with vfg black mineral, fg, wispy bands of blue (sodic amph) 2-10mm in width, with diss py. UC bx with clasts of gran <2cm, sub angular, diffuse clast boundaries, lighter cream orange colouration rimming clasts (dissolution), clasts have darker br-black rims with pink cores.</p> <p>LC ; wispy light green 5-7mm, with cores of light orange red, sub parallel to LC, 1cm patch fluorite with calc growths. Contact @ 45/255 (multiple veins, dominant)</p>
PGH-18-08	279.2	279.72	MIX ZONE	mixed zone of three phases of dykes	<p>Order of occurrence: 1) CRBT 2) altered 3) diabase</p> <p>1) CRBT; light grey-green to mauve-purple, fg, mottled, rimmed by light green (ap cum?), vfg light orange mineral along fractures of red-brown (hem/pych?) @ 40/170</p> <p>2) 2cm rxn rims of light red-green, plag 25% with vfg diss ap alt(?), local olivine, crbt alt, UC @ 80/20, LC @ 75/50</p> <p>3) Porphyritic, xtals <2mm of bt/plag, brown-red, sharp contacts UC @ 75/50, LC @ 85/50</p>
PGH-18-08	279.72	280.78	GRAN	Granite	Med orange-red, mg, <5mm crbt veins of light green-grey, weak potassic alt, kspar 60%, qtz 25%, 10% bt, 5% plag.
PGH-18-08	280.78	283.58	GRAN	Granite / Fenite	<p>Zones up to 50cm of fenitized gran; 50-60% bt/chl/amph. Zones have cross cutting veinlets of blue amph with light pink halos up to 5mm.</p> <p>CRBT <15cm; light purple-grey, light green-red, fg mottled, rimmed by light green-brown.</p>
PGH-18-08	283.58	286.03	GRAN	Granite	Qtz 25%, kspar 40%, 10%, bt, 10% chl, plag 15%. Mg, veinlets/fractures with 5mm alt halos red-pink. Weakly fenitized (chl/amph) LC brecciated
PGH-18-08	286.03	286.9	CRBT	Carbonatite	UC brecciated, gran clasts up to 8cm with diffuse boundaries, sub rounded to sub angular, rimmed by light green-grey crbt. Light purple-cream, cg, ap cum up to 2cm 5% of unit, diss hem. LC purple-blue mottled diffuse contact 50/180
PGH-18-08	286.9	287.5	GRAN	Granite	As above.
PGH-18-08	287.5	287.9	CRBT	Carbonatite	UC planar @ 25/290, light pink-purple with wispy bands <3mm of blue/black, local clasts rimmed by light green, sub rounded, wispy bands of ap/hem <4mm along LC. LC planar 55/150

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-08	287.9	290.8	GRAN	Granite	Med red -pink, mg, 25% qtz, 50% kspar, 10% bt, plag 10%, 5% hem. Minor CRBT <4cm 2% of unit at mod angle TCA, weakly fenitized.
PGH-18-08	290.8	315.25	CRBT-BX	Carbonatite Breccia / Granite	<p>GRAN clasts within crbt and zones of fractured gran. qtz 25%, kspar 45%, plag 15%, bt 10%, 5% hem. mg-cg locally peg, Locally strongly altered (light green-orange clays(?)), commonly clasts/contacts are more strongly alt. Locally fenitized (blue sodic amph, chl) patchy moderately strong selectively pervasive. Contacts are diffuse, undulating to planar. Clasts are sub-angular to sub-rounded, < 15cm, locally clasts are of pegmatitic gran. Zones of massive GRAN up to 2m between crbt zones.</p> <p>291.2-291.5: CRBT; light purple-orange-grey-green, fg, mottled, clasts <3cm strongly to completely altered, vfg light orange diss mineral, diss hem, trace diss py.</p> <p>293-294.5 : light grey-green, fg, grading into light pink crbt, trace diss hem, vfg black mineral, light pink-purple is massive crbt, diss py, discontinuous wispy band of br-grn w/ ap cumulates, LC brecciated</p> <p>299.50-301.3: light purple-grey-green, fg, diss wispy bands/masses of red-brn concentrated near clasts and contacts (hem, vfg orange mineral, light green. Minor clasts of gran <5cm commonly completely altered black-pink (bt/amph/pyx?), locally clasts are pegmatitic fspar that are heavily fractured. trace diss py, hem along fractures <1mm, LC is brecciated.</p> <p>301.85-303.25: CRBT; light purple-grey down hole grey-brown, cg, with light green rims, wispy bands of light green-red ap cumulates up to 3mm commonly near contacts/clasts. diss hem, trace diss py.</p> <p>306.3-306.85: CRBT; light grey-green to light purple, fg-cg, diss hem, 5% ap cum up to 4mm, core of vein more cg up to 7mm.</p> <p>309.25-312.5: purple-mauve to light pink with wispy bands of light green-blue , sub parallel to contacts/clasts, bands up to <2cm, <1mm fractures/veinlets with hem fill. vfg diss light orange mineral. mauve vfg rimmed calcite xtals in masses up to 5cm. Local clasts of gran, completely altered black-pink (chl/amph/bt with pink rims). Locally (312.15) semi-massive sulphide (py).</p>

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-08	315.25	337.8	CRBT	Carbonatite	<p>Dominantly CRBT with zones of highly fenitized GRAN from 80-150cm, local BX zones 20-40cm. CRBT; light pink-purple with light green-grey wispy bands/rimming clasts/at contacts. Bands are <7mm in width, trace diss py, locally trace vfg light brown-beige mineral. fractures/veinlets filled with hem/or blue amph(?), locally wispy masses of light ap up to cm.</p> <p>GRAN clasts are sub-angular to sub-rounded < 10cm, grey-black patchy cores (chl/bt) with diffuse boundaries</p> <p>320.72-320.92: dyke, clasts <8cm, sub-rounded, green-grey, polymictic LC @ 60/145</p> <p>321.05-321.85 & 232-324 & 325-327:m strongly fenitized GRAN, blue sodic amph/chl/bt masses up to 20cm, clasts are diffuse and locally completely altered black cores and pink-red rims.</p> <p>336.6-337.8: CRBT; light pink-red, fg, trace diss py, masses of crbt <2cm blobby, clast of highly altered gran up to 3cm, moving into crbt for last 20cm.</p>
PGH-18-08	337.8	342.83	GRAN	Granite / Fenite	<p>Light red to green-blue, mg, alt halos around crbt veins <5mm, crbt veins <2cm at moderate angles TCA. Qtz 20%, kspar 50%, bt 10% chl/amph 10%, 10 plag%.</p> <p>CRBT veins light grey-green, with diss hem, blue sodic amph within/rimming veins. LC @ 30/250</p>
PGH-18-08	342.83	344.62	CRBT-BX	Carbonatite + Breccia	<p>Purple-mauve to light orange cream-grey, vfg light orange mineral (interstitial), salt n pepper red purple (hem), trace diss py, local clasts of gran highly fractured, diffuse boundaries. last 85cm breccia which is clast dominated, mosaic breccia, clasts 2mm-150mm, sharp boundaries.</p>
PGH-18-08	344.62	347.08	GRAN	Granite + Carbonatite	<p>20% CRBT, 80% GRAN GRAN; light salmon pink-red, mg, crbt veining <2cm with patchy chl/amph (replacing bt?), light pink alt halos <3mm around veins. 346.57-347.08: CRBT BX, light purple-cream with wispy bands of green-red-brown (fg hem /ap?) up to 2cm (25% of unit) sub parallel to contacts and clasts., trace diss py,</p>
PGH-18-08	347.08	349.15	GRAN	Granite	<p>30% bt, kspar 40%, qtz 20%, 10% plag. Xtals <2mm, bt cont'n patchy with diss red-pink. Local strong crbt veining <2mm with light grey-pink alt halos <5mm, mod patchy chl/amph alt LC is gradational and marked by decrease in bt</p>
PGH-18-08	349.15	357.2	SYE-BX	Granite + Carbonatite Breccia	<p>Qtz 20%, kspar 50%, plag 10%, chl/amph/bt 20%. Light red-pink, moderate amount of crbt veining <4cm, commonly with light pink halos <4mm. Moderately fenitized with blue sodic amph/chl within and in proximity to veins/fractures. Local crbt bx (blobby bx) up to 20cm. CRBT; light grey-green to purple, fg</p>

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-08	357.2	368	CRBT-BX	Carbonatite Breccia	357.2-359: BX + CRBT; clasts up to 10cm, angular to sub-rounded, mg, fenitized cores with light pink alt rims, crbt light grey-green, fg, diss hem, light green wispy bands. Weakly banded light green-brown up to 1cm with vfg black diss mineral. 359-360.15: carb alt MD(?) green-grey, fg, strongly carb alt, masses up to 5mm, bt <3mm locally, chl alt. LC @ 50/120 360.15-368: CRBT BX; mosaic breccia, gran clasts up to 13cm, sub-rounded to sub-angular, diffuse boundaries, green-black-orange cores (clay alt). CRBT light grey-pink to cream-green, trace diss py, br-red masses up to 6mm of ap, Wispy bands of light green <2cm sub-parallel to contacts.
PGH-18-08	368	372.25	GRAN	Granite	Med red-pink, mg, qtz 20%, kspar 50%, plag 10%, bt 5%, amph 5%, weak fenitized (amph/chl along fractures and in proximity), xtals <1cm. Fractures/veinlets have light pink alt halos and are at mod-low angles TCA. LC is gradational and obscured by carb alt bx gran.
PGH-18-08	372.25	376.7	CRBT	Carbonatite	Light pink-purple, fg, massive, wispy bands/masses of light green-red ap cum up to 4cm in width, local bands of magnetite up to 2cm and at low angle. Trace diss py, fractures <2mm with hem fill at low angle TCA. Diss hem,
PGH-18-08	376.7	383.3	CRBT-BX	Carbonatite Breccia	376.7-377.85: GRAN/FEN; med red red-pink, moving down increase in bt/chl/amph up to 30%. Mod fenitized with selectively pervasive chl/blue sodic amph. LC in diffuse and intensely crbt alt. Fractures/veins of crbt <4cm at mod angles TCA. 377.85-382: CRBT BX; light pink to green-brown, clasts of alkali up to 13cm, sub-rounded to sub-angular, diffuse clast boundaries, and cores mod-str chl/amph alt. rimming clasts is light green crbt. trace diss py, trace hem, wispy bands and masses of br-red ap up to 2cm in width (in proximity to clasts/contacts and sub-parallel). vfg diss black mineral pyrochlore? within wispy bands.
PGH-18-08	383.3	386.55	CRBT	Carbonatite	Light pink, fg, massive, locally wispy band of light green-red up to 4cm wide (ap/hem), diss hem, trace diss py, fg blue sodic amph, local clasts of gran up to 4cm with diffuse boundaries, sub-rounded, light green rimming clasts. LC @ 50/130
PGH-18-08	386.55	387.34	MDYKE	Mafic Dyke	Black, magnetic, chilled margins 3cm, amygdales up to 1cm filled with carb and are elongate to circular, trace diss py.
PGH-18-08	387.34	393.2	CRBT-BX	Carbonatite Breccia	Light pink-purple to grey, massive, fg, bands of light green up to 35cm, wispy bands with ap cum up to 1cm, clasts of gran sub-rounded to sub-angular, diffuse boundaries, fractured and mod alt cores of orange-green locally. Patchy fluorite, diss hem, trace diss py. 392-392.63: dyke with angular clasts if gran, pegmatitic/fg, light grey-green, polymictic
PGH-18-08	393.2	394.16	SYE	Syenite	Mg, med red-pink, qtz 20%, kspar 50%, plag 15%, bt 10%, 5% amph/chl. Mod fenitized bt being replaced by chl/amph.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-08	394.16	396.32	CRBT-BX	Carbonatite Breccia	80% CRBT, 20% Clasts GRAN clasts up to 10cm, commonly moderately fractured, sub-angular to sub rounded with diffuse boundaries, locally str-completely crbt alt. CRBT; light grey-green to light purple, Calc>Dol, massive, mg, wispy bands/masses of light green-red-brn <5mm, commonly near clasts and contacts. trace diss hem/py, trace patchy fluorite, locally within 'bands' vfg black mineral
PGH-18-08	396.32	398.8	SYE	Syenite	Moderately fenitized with veins of crbt +/- amph/chl <7mm, veins have light pink alt halos <4mm. Qtz 10%, kspar 60%, plag 10%, 20% chl/bt/amph. Local crbt veins <10cm. LC at 70/075, undulating.
PGH-18-08	398.8	402.15	CRBT-BX	Carbonatite + Breccia Zones	30% massive CRBT, 65% BX, 5% SYN CRBT; light pink-purple with olive green bands/wisps, rd-brn wispy bands <4mm commonly sub/p to contacts, trace diss hem, trace diss py, locally bt <2mm xtals BX; clasts up to 10cm, diffuse boundaries, moderately fractured, sub-rounded to sub-angular.
PGH-18-08	402.15	404.5	QTZ-SYE	Quartz Syenite	Med red -pink, mg, 15% qtz, kspar 60%, plag 10%, 10% chl/amph. Weak pink alt halos along veinlets, LC obscured by alteration. 403.63-403.92: CRBT; light pink-purple with patchy light green, trace diss hem, trace diss py. LC undulating @ 36/265.
PGH-18-08	404.5	408.2	MIX ZONE	Carbonatite, Mafic Dyke?, Syenite	Mixed zone with multiple dykes (CRBT/mafic) with fenitized syn between. Dykes are generally < 55cm but up to 1m. There are distinct CRBT dykes and indistinct carb altered mafic dykes 404.5-404.95: Carbonatite altered mafic dyke; light green-grey in colour, aphanitic, xtals of bt <2mm, acicular masses of crbt up to 7mm, weakly undulating bands perp TCA of crbt/fg MD/mg MD w chl/bt. Contacts are diffuse 405.65-406.2: CRBT; grading from grey-brown into brown green to light pink-purple moving downhole. locally weakly banded <4mm of actuating colours, fg red-orange mineral, diss hem, trace diss py, LC @ 70/30 407.17-408: CRBT; massive crbt for first 30cm grading into crbt alt MD(?), from light pink-purple into green-grey. With cross cutting crbt veins up to 5cm, mottled chl alt through MD, non-magnetic, diss hem. CRBT BX with ap cum up to 5mm along LC.
PGH-18-08	408.2	409	QTZ-SYE	Quartz Syenite	20% qtz, 60% kspar, 15% plag, 5% bt, mg <3mm, minor crbt veins <4mm rimmed by blue sodic amph with light pink alt halos <3mm.
PGH-18-08	409	412	CRBT-BX	Carbonatite + Breccia	CRBT; light pink-purple with discontinuous bands (subparallel to contacts, UC@ 55/40) of light green-brown to blue with fg elongate xtals <2mm of amph(?). Trace diss hem, trace diss py, wispy bands/masses 2cm wide of ap cum +/- sph/pych. LC 30/000 brecciated for last meter with crbt decreasing downhole.
PGH-18-08	412	417	QTZ-SYE	Quartz Syenite	20% qtz, 60% kspar, 15% plag, 5% bt, bt being replaced by chl/amph, mg <3mm, minor crbt veins <4mm (locally up to 2cm) rimmed by blue sodic amph with light pink-green alt halos <3mm. Moving towards LC light orange-pink alt more pronounced.
PGH-18-08	417	420	CRBT	Carbonatite	Local BX at UC , light orange colouration to clasts, clasts fractured and strongly altered. CRBT light green-cream, massive, locally weakly vuggy, diss hem, trace diss/ stringers <5mm py

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-08	420	422.2	MIX_ZONE	Syenite / Carbonatite	CRBT 45%, SYN 55% SYE; med red-pink to light orange locally, mg, patchy chl alt, fractures filled with crbt up to 3cm, locally diffuse contacts with crbt veins. CRBT; light purple to light green-grey, wispy bands <2mm, trace diss hem, traced diss py, wispy bands at sub parallel to contacts/clasts, vfg diss light orange mineral, fg light green ap 5%?
PGH-18-08	422.2	441.7	SYE	Syenite	Med red-pink to light grey, qtz 15-20%, kspar 50%, plag 10%, 20% bt/chl/amph. Mg, fractures/vein <5mm with blue vfg amph(?) fill at moderate to low angle TCA, with light pink to green alt halos <4mm. Local crbt veins up to 15cm.
PGH-18-08	441.7	443	CRBT	Carbonatite	Grading from bands of blue-grey-green into mottled light pink-green-blue moving downhole. Darker bands contain magnetite, trace diss py/po up to 4mm, blue amph(?) / chl. Mottled masses of similar composition moving down hole. UC diffuse @ 25/40, LC @ 45/50
PGH-18-08	443	446.23	QTZ-SYE	Quartz Syenite	Qtz 15%, kspar 50%, plag 15%, bt 10%, 10%chl/amph. Local patches of chl/amph up to 15cm. Crbt veins/fractures <3mm with light pink halos.
PGH-18-08	446.23	448.75	CRBT-BX	Carbonatite + Syenite	CRBT 70%, SYN 30% 446.23-447.2: CRBT; light purple to olive green, fg, massive, wispy bands of light green with light orange mineral, diss hem, trace diss py. 448.2-448.76: CRBT; light grey, vfg, massive, vfg light orange mineral, patches of vfg chl (dark green).
PGH-18-08	448.75	464	GRAN	Granite	Med red -pink to cream-grey, mg, 35% qtz, kspar 50%, plag 5%, bt 10%. Bt being alt to chl/blue amph locally. Fractures/veinlets filled with chl/amph with light pink halos <2mm. CRBT veins < 25cm locally; light grey-green, fg, massive, diss hem. Fenitization increasing moving downhole towards contact LC @ 50/000, planar, closed
PGH-18-08	464	464.75	CRBT	Carbonatite	Dominantly dark blue with bands of light purple-pink, rimmed by blue sodic amph, massive, cg, trace diss py within blue crbt. Vfg diss black mineral (pyrochlore?), local trace diss magnetite, . UC @ 50/000, LC planar @ 60/50
PGH-18-08	464.75	470.5	GRAN	Granite	20% qtz, kspar 60%, 10% chl/amph, 5% plag, 5% biot. light pink-red to grey-opaque, Mg, locally moderately fenitized (amph/chl replacing bt), carb alt MD <20cm light green-grey. Fractures/veinlets with chl/amph infill and alt halos of light pink <3mm. Bt abundance varies across unit (locally up to 10%). LC is gradational and marked by increase in bt/chl/amph.
PGH-18-08	470.5	498	GRAN	Granite / Fenite	Med red-pink to green-blue-black, mg, selectively pervasive chl/amph throughout unit locally up to 50%. Qtz 15-20%, kspar 40%, bt/chl/amph 10-50%, plag 10%. CRBT veins <35cm, commonly with sharp contacts, light purple to green-grey, fg, wispy bands of light green-brown ap(?) <3mm, diss hem, trace diss py. Veins are at moderate angles TCA.

ORIENTED STRUCTURES

DDH	Depth	Type	Alpha (°)	Beta (°)	Gamma (°)	Title	Description
PGH-18-08	12.46	CT	55	40		UC CRBT	planar, closed
PGH-18-08	14.4	CT	20	10		U CRBT	planar, closed
PGH-18-08	22	JNT	55	200		JNT in syn	planar, slightly rough, clay
PGH-18-08	24.56	VN	15	200		crbt vein	planar, open, slightly rough, moderately weathered
PGH-18-08	29.55	CT	60	180		LC CRBT	planar, closed
PGH-18-08	30.28	JNT	55	300		JNT in syn	planar, slightly rough, no fill
PGH-18-08	30.77	CT	50	260		UC CRBT	planar, closed
PGH-18-08	30.95	CT	50	295		LC CRBT	planar, closed
PGH-18-08	66.1	CT	25	220		LC CRBT	planar, open, slightly rough, moderately weathered
PGH-18-08	72.8	JNT	20	15		JNT in syn	undulating, slightly weathered
PGH-18-08	74.1	VN	35	20		JNT in syn	planar, crbt fill <2mm
PGH-18-08	76.2	JNT	25	305		JNT in syn	planar, slightly rough, no fill
PGH-18-08	77.77	CT	65	60		UC CRBT	planar, closed
PGH-18-08	79.22	CT	60	70		UC CRBT	planar, closed
PGH-18-08	82	VN	25	240		VN 5mm	planar, open, slightly rough, amph fill <4mm
PGH-18-08	85.16	JNT	70	115		JNT in syn	planar, open, no fill
PGH-18-08	85.45	JNT	70	125		JNT in syn	planar, open, no fill
PGH-18-08	88.52	JNT	65	70		JNT in syn	curved, chl infill <1mm
PGH-18-08	89.67	CT	65	125		UC CRBT BX	planar, open, slightly rough, no fill
PGH-18-08	96.37	JNT	25	60		fracture in crbt	planar, open, slightly rough, no fill
PGH-18-08	98.75	VN	10	300		<2mm vein	undulating, slightly weathered
PGH-18-08	99.5	CT	20	200		LC CRBT	planar, closed
PGH-18-08	99.8	JNT	60	270		JNT in syn	planar, open, slightly rough, no fill
PGH-18-08	99.95	VN	25	180		crbt vein	undulating, slightly weathered, crbt infill <4mm
PGH-18-08	102.3	CT	15	290		LC CRBT	planar, open, slightly weathered, slightly rough
PGH-18-08	102.48	JNT	20	285		JNT in syn	planar, open, slightly rough, <2mm crb filll
PGH-18-08	104.52	CT	30	290		LC CRBT	planar, closed
PGH-18-08	107.25	VN	15	270		VN 5mm	
PGH-18-08	126.38	VN	70	220		crbt vein <5mm	planar, open, rough, crbt fill
PGH-18-08	128.5	JNT	15	0		JNT in syn	planar, open, no fill
PGH-18-08	130.91	JNT	70	275		JNT in syn	planar, open, grey-green, chl fill <1mm
PGH-18-08	132.28	JNT	75	70		JNT in syn	planar, crbt fill
PGH-18-08	132.6	JNT	20	225		JNT in syn	planar, slightly rough, chl
PGH-18-08	132.8	VN	25	20		undulating	undulating cct
PGH-18-08	134.55	CT	60	105		UC CRBT	undulating

ORIENTED STRUCTURES

DDH	Depth	Type	Alpha (°)	Beta (°)	Gamma (°)	Title	Description
PGH-18-08	138.15	CT	65	115		UC CRBT	planar, open, crbt fill
PGH-18-08	143.45	CT	35	280		UC CRBT	planar, closed
PGH-18-08	156.73	JNT	30	135		JNT in syn	planar, chl fill, slightly rough
PGH-18-08	157.5	JNT	60	240		JNT in syn	planar, open, no fill
PGH-18-08	160.65	CT	60	90		UC CRBT	planar, closed
PGH-18-08	167.4	CT	60	80		LC CRBT	planar, closed
PGH-18-08	167.45	JNT	75	120		JNT in syn	planar, chl fill, slightly rough
PGH-18-08	171.75	VN	30	30		3mm blue amph vein	planar, slightly rough,
PGH-18-08	172.45	JNT	50	180		jnt in gran	planar, slightly rough, no fill
PGH-18-08	174	CT	80	340		UC CRBT	undulating, closed
PGH-18-08	182.75	CT	55	70		LC CRBT BX	planar, very rough, open, no fill
PGH-18-08	183	VN	25	145		Amph vein <4mm	planar, closed
PGH-18-08	183.95	JNT	60	205		jnt in alkali	planar, slightly rough, infill <1mm amph
PGH-18-08	188.05	JNT	50	200		jnt in alkali	planar, slightly rough, amph fill
PGH-18-08	189	CT	25	180		LC CRBT	planar, closed
PGH-18-08	190	JNT	60	125		jnt in alkali	planar, slightly rough, chl/amph fill <1mm
PGH-18-08	191.68	CT	60	110		UC CRBT	planar, slightly rough, crbt/amph fill <5mm
PGH-18-08	197.33	JNT	60	150		jnt in alkali	planar, slightly rough, chl/amph fill <1mm
PGH-18-08	197.38	JNT	30	190		jnt in	planar, slightly rough, chl/amph fill <1mm
PGH-18-08	198.1	JNT	35	170		jnt in alakli	planar, slightly rough, chl/amph fill <1mm
PGH-18-08	198.5	CT	40	40		UC CRBT	planar, closed
PGH-18-08	201.15	CT	25	150		UC CRBT	planar, closed
PGH-18-08	201.7	CT	30	150		LC CRBT	planar, closed
PGH-18-08	202.2	VN	25	140		Amph vein <4mm	planar, closed
PGH-18-08	203.4	JNT	60	290		jnt in alkali	planar, slightly rough, chl fill <1mm
PGH-18-08	203.7	CT	15	200		weak cct btw bt rich and grab	planar, diffuse, closed
PGH-18-08	206.5	JNT	40	320		jnti in alkali	planar, rough, chl/cly fill, alt halo
PGH-18-08	207.4	CT	35	150		UC CRBT	planar, closed
PGH-18-08	207.85	CT	35	150		LC CRBT	planar, closed
PGH-18-08	209.25	CT	35	120		LC CRBT	planar, closed
PGH-18-08	212.1	JNT	25	230		JNT in Alkali	planar, hem/crbt, infill <1mm, slightly rough
PGH-18-08	213.2	JNT	20	245		JNT in Alkalio	planar, slightly rough, chl/crbt/hem <1mm
PGH-18-08	214	JNT	35	240		JNT in Alkali	planar, slightly rough,
PGH-18-08	215.28	JNT	45	295		JNT in Alkali	planar, slightly rough
PGH-18-08	222.35	CT	80	30		UC CRBT	planar, closed

ORIENTED STRUCTURES

DDH	Depth	Type	Alpha (°)	Beta (°)	Gamma (°)	Title	Description
PGH-18-08	226.7	JNT	30	295		JNT in Alkali	planar, open, slightly rough, hemchl fill <2mm
PGH-18-08	230.83	JNT	50	200		JNT in alkali	planar, slighly rough, hem <1mm
PGH-18-08	232.2	CT	30	170		LC CRBT	planar, closed
PGH-18-08	235.93	CT	30	160		LC CRBT	planar, closed
PGH-18-08	243.35	VN	20	290		crbt vn <1cm	planar, closed
PGH-18-08	244.1	VN	70	135		LC CRBT	planar, closed
PGH-18-08	245.45	CT	20	205		LC CRBT	planar, closed
PGH-18-08	246.15	BND	45	210		BND in alkali	planar, closed
PGH-18-08	247.95	CT	65	150		LC CRBT	planar, closed
PGH-18-08	248.75	VN	20	305		VN 5mm	planar, closed
PGH-18-08	249.1	CT	70	60		LC CRBT	planar, closed
PGH-18-08	251.8	CT	50	240		LC CRBT	planar, closed
PGH-18-08	254.55	CT	60	140		LC CRBT	planar, closed
PGH-18-08	256.45	CT	80	310		LC CRBT	planar, closed
PGH-18-08	259.58	CT	50	165		LC CRBT	planar, closed
PGH-18-08	261.18	JNT	65	295		JNT in alkali	planar, slightly rough, chl fill <1mm
PGH-18-08	261.36	JNT	75	290		JNT in alkali	planar, closed, amph fill <4mm
PGH-18-08	262.7	JNT	60	165		JNT	planar, amph fill <2mm
PGH-18-08	262.85	CT	55	150		LC CRBT	planar
PGH-18-08	263.55	CT	55	100		LC CRBT	planar
PGH-18-08	264.12	VN	20	280		VN < 1cm	planar, closed
PGH-18-08	265.1	VN	30	280		VN < 4mm	planar, closed
PGH-18-08	266.2	CT	50	170		LC CRBT	planar, closed
PGH-18-08	267.2	CT	25	270		LC CRBT	planar, closed
PGH-18-08	269.75	CT	60	65		LC CRBT	planar, closed
PGH-18-08	272.04	VN	75	140		VN <4mm	planar, closed
PGH-18-08	272.45	JNT	25	40		jnt in alkali	planar, slightly rough,
PGH-18-08	273.35	JNT	25	40		JNT in alkali	planar, slightly rough, chl <1mm
PGH-18-08	274.6	JNT	25	40		JNT in alkali	planar, slightly rough, chl <1mm
PGH-18-08	276.3	CT	60	160		UC CRBT	planar, cloed
PGH-18-08	276.48	CT	75	140		LC CRBT	planar, closed
PGH-18-08	278.3	CT	35	180		UC CRBT	planar, closed
PGH-18-08	279.25	CT	40	170		UC CRBT	planar, closed
PGH-18-08	281.55	CT	70	0		UC CRBT	planar, closed
PGH-18-08	282.23	VN	60	85		1cm vn amph fill	planar, closed, amph/crbt fill 1cm, alt halo hem <4mm

ORIENTED STRUCTURES

DDH	Depth	Type	Alpha (°)	Beta (°)	Gamma (°)	Title	Description
PGH-18-08	284.26	CT	65	320		LC CRBT	planar, closed
PGH-18-08	285.7	JNT	45	350		JNT in alkali	planar, slightly rough, no fill
PGH-18-08	286.9	CT	50	180		LC CRBT	planar, closed
PGH-18-08	287.5	CT	25	290		UC CRBT	planar, closed
PGH-18-08	287.9	CT	55	150		LC CRBT	planar, closed
PGH-18-08	288.25	CT	35	220		UC CRBT	planar, closed
PGH-18-08	291	CT	25	140		UC CRBT	planar, closed
PGH-18-08	293	CT	25	140		UC CRBT	planar, closed
PGH-18-08	337.8	CT	80	250		LC CRBT BX	diffuse
PGH-18-08	338.75	JNT	75	220		JTN in alkali	planar, blue amph, slightly rough
PGH-18-08	342.85	CT	30	250		UC CRBT	curved, closed
PGH-18-08	347.09	CT	65	60		LC CRBT	planar, closed
PGH-18-08	348.4	CT	40	290		LC CRBT	planar, slightly rough, hem fill <1mm
PGH-18-08	351.1	CT	65	290		LC CRBT	planar, diffuse, closed
PGH-18-08	355.38	JNT	50	160		JNT in GRAN	planar, slightly rough, amph fill <2mm
PGH-18-08	359.55	BND	40	110		BND in CRBT	planar, closed
PGH-18-08	360.1	CT	50	120		LC crbt	planar, closed
PGH-18-08	360.9	JNT	70	180		jnt in syn	planar, slightly rough
PGH-18-08	369.42	JNT	80	320		JNT in GRAN	planar, slightly rough, amph fill <2mm
PGH-18-08	369.48	JNT	75	150		JNT in GRAN	planar, slightly rough, amph fill <2mm
PGH-18-08	369.9	VN	50	120		VN <4mm, blue sodic amph fill, slightly rough	
PGH-18-08	370.51	JNT	70	310		JNT in GRAN	planar, slightly rough, chl/amph fill <1mm
PGH-18-08	371.72	JNT	70	150		jnt in gran	planar, slightly rough, chl/amph fill <1mm
PGH-18-08	386.55	CT	50	130		UC MD	planar, closed
PGH-18-08	387.34	CT	55	150		LC MD	planar, closed
PGH-18-08	392.68	CT	45	65		UC CRBT	planar, closed
PGH-18-08	392.85	CT	45	55		LC CRBT	planar, closed
PGH-18-08	398.86	CT	70	75		UC CBRT	undulating, clsoed
PGH-18-08	399.1	CT	65	60		LC CRBT	planar, closed
PGH-18-08	399.42	CT	75	40		UC CRBT	planar, closed
PGH-18-08	401.2	CT	55	40		UC CRBT	planar, closed
PGH-18-08	402.1	CT	70	60		LC CRBT	planar, closed
PGH-18-08	403.92	CT	55	265		LC CRBT	planar, closed
PGH-18-08	404.95	CT	55	140		LC CRBT	planar, closed
PGH-18-08	406.18	CT	70	30		LC CRBT	planar, closed

ORIENTED STRUCTURES

DDH	Depth	Type	Alpha (°)	Beta (°)	Gamma (°)	Title	Description
PGH-18-08	407.45	CT	55	100		LC CRBT	planar, closed
PGH-18-08	408.4	CT	80	140		UC CRBT	planar, closed
PGH-18-08	408.5	CT	50	120		LC CRBT	planar, closed
PGH-18-08	409.05	CT	55	40		U CRBT	planar, closed
PGH-18-08	411.2	CT	30	0		UC CRBT	planar, closed
PGH-18-08	413.65	JNT	65	260		JNT in Alkali	planar, slightly rough, amph fill <1mm
PGH-18-08	414.65	JNT	40	110		JNT in Alkali	planar, slightly rough, chl/amph fill <1mm
PGH-18-08	415.65	JNT	40	335		JNT in Alkali	planar, slightly rough, chl/amph fill <1mm
PGH-18-08	416.03	JNT	40	315		JNT in Alkali	planar, slightly rough, chl/amph fill <1mm
PGH-18-08	416.7	JNT	25	240		JNT in Alkali	planar, slightly rough, chl fill <1mm
PGH-18-08	420.15	JNT	55	20		JNT in Alkali	slightly rough, planar, chl fill <1mm
PGH-18-08	420.18	JNT	35	260		JNT in Alkali	slightly rough, planar, chl fill <1mm
PGH-18-08	422.3	JNT	65	130		JNT in Alkali	slightly rough, planar, chl fill <1mm
PGH-18-08	425.73	JNT	60	100		JNT in Alkali	slightly rough, planar, chl fill <1mm
PGH-18-08	426.1	JNT	60	190		JNT in Alkali	slightly rough, planar, chl fill <1mm
PGH-18-08	426.3	CT	55	190		UC CRBT	planar, closed
PGH-18-08	426.46	CT	50	180		LC CRBT	planar, closed
PGH-18-08	428.27	JNT	50	200		JNT in Alkali	planar, open, amph fill <2mm
PGH-18-08	428.52	JNT	60	180		JNT in Alkali	planar, slightly rough, chl/amph fill <1mm
PGH-18-08	431.12	JNT	45	180		JNT in Alkali	stepped, open, slightly rough, chl fill
PGH-18-08	432.55	JNT	55	200		JNT in Alkali	planar, slightly rough, amph fill <1mm
PGH-18-08	433.63	JNT	65	205		JNT in Alkali	planar, slightly rough, chl/amph fill <1mm
PGH-18-08	436.3	VN	15	85		VN 7mm amph fill	planar, closed
PGH-18-08	436.75	JNT	30	100		JNT in Alkali	planar, slightly rough, amph/chl fill
PGH-18-08	437.65	JNT	60	30		JNT in Alkali	planar, slightly rough, amph/chl fill <1mm
PGH-18-08	437.9	CT	50	95		UC CRBT	planar, closed
PGH-18-08	439.2	JNT	60	205		JNT in Alkali	planar, slightly rough, chl/amph fill <1mm
PGH-18-08	439.75	JNT	60	200		JNT in Alkali	planar, slightly rough, chl/amph fill <1mm
PGH-18-08	440.35	JNT	45	310		JNT in Alkali	planar, slightly rough, amph fill <1mm
PGH-18-08	440.6	VN	45	320		JNT in Alkali	planar, slightly rough, amph/chl <4mm
PGH-18-08	441.75	CT	25	40		UC CRBT	planar, diffuse, closed
PGH-18-08	442.7	CT	45	50		LC CRBT	planar, closed
PGH-18-08	442.9	CT	65	180		LC CRBT	planar, closed
PGH-18-08	445.3	JNT	25	130		JNT in Alkali	undulating, slightly rough, chl/amph fill <2mm
PGH-18-08	446.65	JNT	50	140		JNT in Alkali	planar, slightly rough, chl/cb fill <1mm

ORIENTED STRUCTURES

DDH	Depth	Type	Alpha (°)	Beta (°)	Gamma (°)	Title	Description
PGH-18-08	446.8	CT	50	280		UC CRBT	planar, closed
PGH-18-08	447.25	JNT	30	200		JNT in Alkali	planar, slightly rough, chl fill <1mm
PGH-18-08	448.8	JNT	65	60		JNT in Alkali	planar, slightly rough, chl/cb fill <1mm
PGH-18-08	452.88	JNT	70	210		JNT in Alklai	planar, slightly rough, crbt fill
PGH-18-08	454.6	JNT	50	40		JNT in Alkali	planar, slightly rough, chl fill <1mm
PGH-18-08	454.95	JNT	45	295		JNT in Alkali	planar, slightly rough, chl/amph fill <1mm
PGH-18-08	455.35	JNT	65	270		JNT in Alkali	planar, slightly rough, chl/amph fill <1mm
PGH-18-08	455.76	JNT	55	160		JNT in Alkali	planar, slightly rough, chl/amph fill <1mm
PGH-18-08	458.7	JNT	70	230		JNT in Alkali	planar, slightly rough, chl fill <1mm
PGH-18-08	462.75	VN	25	20		Amph vein <4mm	planar, slightly rough, amph fill <2mm
PGH-18-08	463.95	CT	50	0		UC CRBT	planar, closed
PGH-18-08	464.75	CT	60	50		LC CRBT	planar, slightly rough, amph fill <3mm
PGH-18-08	466.12	JNT	35	75		JNT in Alkali	Planar, slightly rough, amph fill <1mm
PGH-18-08	466.72	JNT	65	40		JNT in Alkali	Planar, slightly rough, amph/chl fill <1mm
PGH-18-08	471.6	JNT	15	40		JTN in alkali	undulating, slightly rough, chl/amph fill <2mm
PGH-18-08	472.13	JNT	60	190		JNT in alkali	planar, slightly rough, blue amph <1mm
PGH-18-08	472.25	JNT	60	200		JNT in Alkali	planar, slightly rough, blue amph <1mm
PGH-18-08	472.55	JNT	60	140		JNT in Alkali	planar, slightly rough, blue amph/chl <1mm
PGH-18-08	472.67	JNT	55	170		JNT in Alkali	planar, slightly rough, blue amph, <2mm
PGH-18-08	472.87	JNT	40	150		JNT in Alkali	planar, slightly rough, blue amph/chl <2mm
PGH-18-08	473.7	CT	60	170		UC CRBT	planar, closed
PGH-18-08	476.25	JNT	50	160		JNT in Alkali	planar, slightly rough, blue amph/chl <2mm
PGH-18-08	476.5	JNT	50	55		JNT Alkali	planar, slightly rough, blue amph/chl <2mm
PGH-18-08	478.05	CT	50	55		UC CRBT	planar, closed
PGH-18-08	479.75	CT	70	130		LC CRBT	planar, closed
PGH-18-08	480.45	JNT	30	270		JNT in Alkali	undulating, slightly rough, chl/amph fill <2mm
PGH-18-08	483.1	JNT	70	250		JNT in Alkali	planar, slightly rough, chl/amph fill <1mm
PGH-18-08	483.2	JNT	70	130		JNT in Alkali	planar, slightly rough, chl/amph fill <1mm
PGH-18-08	484	CT	45	125		UC CRBT	planar, closed
PGH-18-08	484.4	JNT	40	160		JNT in Alkali	planar, slightly rough, chl/amph fill <1mm
PGH-18-08	485.75	JNT	70	40		JNT in Alkali	planar, slightly rough, amph fill <2mm
PGH-18-08	487.15	JNT	45	55		JNT in Alkali	planar, slightly rough, amph fill <2mm
PGH-18-08	487.6	JNT	70	215		JNT in Alkali	planar, slightly rough, amph fill <2mm
PGH-18-08	491.5	JNT	55	50		JNT in Alkali	planar, slightly rough, amph fil <2mm
PGH-18-08	491.68	JNT	75	215		JNT in Alkali	planar, slightly rough, amph/chl fill <1mm

ASSAYS

DDH	From	To	Width (m)	SampleID	BatchID	Fe2O3T (%)	Nb2O5 (%)	P2O5 (%)	SnO2 (%)	Ta2O5 (%)	ThO2 (%)	U3O8 (%)	WO3 (%)	Y2O3 (%)	ZrO2 (%)	Description
PGH-18-08	12.4	13.3	0.9	590365	A18-08116	5.84	0.02	4.82	< 0.003	< 0.003	0.017	< 0.005	0.003	0.038	< 0.003	CRBT
PGH-18-08	13.3	14.4	1.1	590366	A18-08116	2.56	0.011	0.08	0.004	< 0.003	< 0.005	< 0.005	< 0.003	< 0.003	0.012	SYN
PGH-18-08	14.4	15.55	1.15	590367	A18-08116	6.68	0.019	1.85	< 0.003	< 0.003	0.012	< 0.005	< 0.003	0.013	< 0.003	CRBT
PGH-18-08	15.55	16.3	0.75	590368	A18-08116	4.58	0.205	1.27	< 0.003	0.003	0.006	< 0.005	0.003	0.011	0.015	SYN + CRBT
PGH-18-08	28.21	29.57	1.36	590370	A18-08116	4.46	0.014	0.49	< 0.003	< 0.003	0.011	< 0.005	< 0.003	0.008	0.006	BX + CRBT
PGH-18-08	32	33.5	1.5	590371	A18-08116	5.82	0.034	1.47	< 0.003	< 0.003	0.008	< 0.005	< 0.003	0.012	0.029	CRBT + SYN
PGH-18-08	35.97	36.75	0.78	590372	A18-08116	4.13	0.02	0.09	< 0.003	< 0.003	0.01	< 0.005	< 0.003	0.004	0.011	CRBT
PGH-18-08	36.75	38	1.25	590373	A18-08116	2.64	0.006	0.08	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.003	0.015	SYN
PGH-18-08	38	39	1	590374	A18-08116	3.85	0.099	0.54	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.007	0.009	SYN + CRBT
PGH-18-08	39	40	1	590375	A18-08116	3.95	0.013	0.48	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.006	0.01	SYN
PGH-18-08	40	40.9	0.9	590376	A18-08116	4.67	0.014	0.29	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.005	0.008	SYN + CRBT
PGH-18-08	40.9	42	1.1	590377	A18-08116	9.45	0.051	0.18	< 0.003	< 0.003	0.006	< 0.005	0.003	0.003	0.03	CRBT BX
PGH-18-08	42	43.26	1.26	590378	A18-08116	6.94	0.086	0.12	< 0.003	< 0.003	0.008	< 0.005	0.013	0.004	0.005	CRBT BX
PGH-18-08	43.26	44.56	1.3	590379	A18-08116	3.33	0.009	0.25	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.004	0.009	SYN
PGH-18-08	44.56	45.9	1.34	590381	A18-08116	3.47	0.011	0.47	0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.005	0.011	SYN
PGH-18-08	45.9	47	1.1	590382	A18-08116	5.71	0.091	0.73	< 0.003	< 0.003	0.009	< 0.005	< 0.003	0.008	< 0.003	CRBT
PGH-18-08	47	48.5	1.5	590383	A18-08116	5.52	0.086	0.36	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.005	0.011	CRBT BX
PGH-18-08	48.5	50	1.5	590384	A18-08116	3.96	0.01	1.81	< 0.003	< 0.003	0.01	< 0.005	< 0.003	0.011	0.003	CRBT + SYN
PGH-18-08	50	51.2	1.2	590385	A18-08116	5.44	0.019	2.03	< 0.003	< 0.003	0.007	< 0.005	< 0.003	0.013	< 0.003	CRBT BX
PGH-18-08	51.2	52	0.8	590386	A18-08116	3.06	0.005	0.22	< 0.003	< 0.003	0.006	< 0.005	0.003	0.004	0.01	SYN
PGH-18-08	52	52.93	0.93	590387	A18-08116	3.92	0.017	1.42	0.003	0.003	< 0.005	< 0.005	< 0.003	0.008	0.035	SYN
PGH-18-08	52.93	54.43	1.5	590388	A18-08116	5.26	0.035	1.33	< 0.003	< 0.003	0.009	< 0.005	< 0.003	0.012	0.003	SYN + CRBT
PGH-18-08	54.43	55.91	1.48	590389	A18-08116	5.17	0.014	0.27	0.003	< 0.003	0.006	< 0.005	< 0.003	0.005	0.007	CRBT BX
PGH-18-08	55.91	57	1.09	590390	A18-08116	7.39	0.073	1.83	< 0.003	< 0.003	0.011	< 0.005	0.003	0.019	0.022	CRBT + SYN
PGH-18-08	57	58.5	1.5	590391	A18-08116	4.52	0.015	0.06	< 0.003	< 0.003	0.007	< 0.005	< 0.003	0.004	0.008	CRBT BX
PGH-18-08	58.5	60	1.5	590392	A18-08116	6.01	0.029	0.83	< 0.003	< 0.003	0.01	< 0.005	< 0.003	0.01	0.01	CRBT BX
PGH-18-08	60	61	1	590394	A18-08116	6.93	0.124	2.28	< 0.003	< 0.003	0.012	< 0.005	< 0.003	0.021	0.007	CRBT
PGH-18-08	61	62	1	590395	A18-08116	5.97	0.101	2.94	< 0.003	< 0.003	0.014	< 0.005	< 0.003	0.024	< 0.003	CRBT
PGH-18-08	62	63	1	590396	A18-08116	3.71	0.14	1.14	< 0.003	0.003	0.007	< 0.005	< 0.003	0.011	0.005	CRBT
PGH-18-08	63	64.5	1.5	590397	A18-08116	4.09	0.021	1.71	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.013	0.009	SYN + CRBT
PGH-18-08	64.5	66	1.5	590398	A18-08116	5.21	0.147	2.11	< 0.003	< 0.003	0.009	< 0.005	< 0.003	0.014	0.003	CRBT
PGH-18-08	66	67.5	1.5	590399	A18-08116	4.36	0.063	0.87	< 0.003	< 0.003	0.005	< 0.005	0.003	0.007	0.006	BX + CRBT
PGH-18-08	67.5	69	1.5	590400	A18-08116	4.32	0.04	0.12	< 0.003	< 0.003	0.007	< 0.005	< 0.003	0.004	0.006	CRBT
PGH-18-08	69	70	1	590401	A18-08116	7.9	0.21	1.51	< 0.003	< 0.003	0.01	0.005	0.003	0.012	0.011	BX + CRBT
PGH-18-08	70	71	1	590402	A18-08116	6.22	0.089	0.04	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.003	0.007	BX
PGH-18-08	71	72	1	590403	A18-08116	5.34	0.092	0.37	0.003	0.003	0.008	< 0.005	< 0.003	0.005	0.007	BX CRBT + pyrochlore
PGH-18-08	72	73	1	590404	A18-08116	6.12	0.029	0.25	< 0.003	< 0.003	0.011	< 0.005	< 0.003	0.004	0.026	bx + syn
PGH-18-08	89.67	91.15	1.48	590405	A18-08116	6.63	0.207	1.03	< 0.003	< 0.003	0.008	< 0.005	< 0.003	0.007	0.015	CRBT BX + SYN
PGH-18-08	91.15	92.5	1.35	590406	A18-08116	5.01	0.107	5.6	< 0.003	< 0.003	0.011	< 0.005	< 0.003	0.025	0.013	CRBT
PGH-18-08	92.5	94	1.5	590407	A18-08116	3.23	0.181	0.49	< 0.003	< 0.003	< 0.005	< 0.005	0.005	0.005	0.011	BX SYN + CRBT
PGH-18-08	94	95.25	1.25	590409	A18-08116	3.04	0.008	0.27	< 0.003	< 0.003	0.005	< 0.005	< 0.003	0.004	0.008	CRBT + SYN

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DDH	From	To	Width (m)	SampleID	BatchID	Fe2O3T (%)	Nb2O5 (%)	P2O5 (%)	SnO2 (%)	Ta2O5 (%)	ThO2 (%)	U3O8 (%)	WO3 (%)	Y2O3 (%)	ZrO2 (%)	Description
PGH-18-08	95.25	96.2	0.95	590410	A18-08116	7.48	0.006	2.12	< 0.003	0.003	0.018	< 0.005	0.003	0.022	< 0.003	CRBT
PGH-18-08	96.2	97.09	0.89	590411	A18-08116	6.4	0.008	0.02	< 0.003	< 0.003	0.01	< 0.005	< 0.003	0.004	< 0.003	CRBT
PGH-18-08	97.09	98.33	1.24	590412	A18-08116	9.84	0.195	5.1	< 0.003	0.003	0.015	0.008	0.004	0.04	0.013	CRBT
PGH-18-08	98.33	99.57	1.24	590413	A18-08116	3.36	0.145	1.32	< 0.003	< 0.003	0.009	0.005	0.003	0.013	< 0.003	CRBT
PGH-18-08	99.57	101.05	1.48	590414	A18-08116	6.08	0.033	0.59	< 0.003	< 0.003	0.005	< 0.005	0.005	0.005	0.008	SYN + CRBT
PGH-18-08	101.05	102.54	1.49	590415	A18-08116	6.52	0.036	0.36	< 0.003	0.003	0.011	< 0.005	< 0.003	0.007	0.005	CRBT
PGH-18-08	108.75	110.14	1.39	590416	A18-08116	7.9	0.042	1.84	< 0.003	< 0.003	0.009	< 0.005	0.004	0.013	0.036	dark crbt
PGH-18-08	110.14	111.39	1.25	590417	A18-08116	5.69	0.052	0.93	< 0.003	< 0.003	0.01	< 0.005	< 0.003	0.01	0.004	CRBT
PGH-18-08	111.39	112.9	1.51	590418	A18-08116	5.87	0.104	0.36	< 0.003	< 0.003	0.007	< 0.005	< 0.003	0.004	0.012	ALKALI + CRBT
PGH-18-08	112.9	114	1.1	590419	A18-08116	7.43	0.034	10.47	< 0.003	0.004	0.016	< 0.005	0.004	0.066	0.027	CRBT, purple
PGH-18-08	114	115	1	590420	A18-08116	7.48	0.015	5.03	< 0.003	< 0.003	0.016	< 0.005	0.003	0.029	0.009	CRBT, purple
PGH-18-08	115	116.5	1.5	590421	A18-08116	8.42	0.026	8.5	< 0.003	< 0.003	0.022	< 0.005	0.004	0.05	0.009	CRBT, purple
PGH-18-08	116.5	118	1.5	590422	A18-08116	7.1	0.019	2.25	< 0.003	0.003	0.012	< 0.005	< 0.003	0.015	< 0.003	CRBT, cg, light green
PGH-18-08	118	119.5	1.5	590423	A18-08116	5.33	0.044	4.07	< 0.003	0.004	0.01	< 0.005	0.003	0.021	0.029	BX CRT
PGH-18-08	119.5	121	1.5	590425	A18-08116	6	0.05	1.37	< 0.003	< 0.003	0.01	< 0.005	< 0.003	0.012	0.003	CRBT
PGH-18-08	121	122.5	1.5	590426	A18-08116	5.62	0.056	1.22	< 0.003	< 0.003	0.01	< 0.005	0.003	0.011	0.004	CRBT
PGH-18-08	122.5	123.58	1.08	590427	A18-08116	7.4	0.054	0.49	< 0.003	< 0.003	0.009	< 0.005	< 0.003	0.006	< 0.003	CRBT
PGH-18-08	138.16	139	0.84	590428	A18-08116	8.05	0.068	7.44	< 0.003	< 0.003	0.017	0.005	0.005	0.054	< 0.003	CRBT BX
PGH-18-08	139	140	1	590429	A18-08116	6.8	0.179	1.03	< 0.003	0.003	0.006	< 0.005	< 0.003	0.009	0.007	CRBT BX
PGH-18-08	140	140.7	0.7	590430	A18-08116	6.45	0.067	1.76	< 0.003	0.004	0.006	< 0.005	< 0.003	0.012	< 0.003	CRBT BX
PGH-18-08	148.26	149	0.74	590431	A18-08116	6	0.024	1.64	< 0.003	< 0.003	0.01	< 0.005	< 0.003	0.015	0.007	BX CRBT
PGH-18-08	149	149.95	0.95	590432	A18-08116	5.52	0.018	1.16	< 0.003	0.003	0.009	< 0.005	< 0.003	0.013	0.004	BX CRBT
PGH-18-08	149.95	150.6	0.65	590433	A18-08116	3.82	< 0.003	0.04	< 0.003	< 0.003	0.02	< 0.005	< 0.003	0.008	0.004	CRBT
PGH-18-08	150.6	151.6	1	590434	A18-08116	4.79	0.023	0.03	< 0.003	< 0.003	0.01	< 0.005	< 0.003	0.003	0.011	ALKALI + CRBT
PGH-18-08	151.6	152.5	0.9	590435	A18-08116	6.3	0.015	0.15	0.003	< 0.003	< 0.005	< 0.005	< 0.003	< 0.003	0.009	ALKALI + CRBT
PGH-18-08	152.5	154	1.5	590436	A18-08116	13.63	0.151	0.98	< 0.003	0.004	0.007	< 0.005	< 0.003	0.006	0.066	CRBT
PGH-18-08	154	155.5	1.5	590437	A18-08116	10.77	0.136	0.42	< 0.003	< 0.003	0.012	< 0.005	0.003	0.007	0.079	CRBT
PGH-18-08	155.5	156.3	0.8	590438	A18-08116	8.84	0.032	2.82	< 0.003	< 0.003	0.025	< 0.005	0.003	0.025	0.006	CRBT
PGH-18-08	156.3	157.8	1.5	590439	A18-08116	2.63	0.006	0.24	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.003	0.006	ALKLAI
PGH-18-08	157.8	159	1.2	590440	A18-08116	4.39	0.016	0.08	< 0.003	0.003	< 0.005	< 0.005	0.008	< 0.003	0.004	ALKLAI
PGH-18-08	159	160.5	1.5	590441	A18-08116	7.54	0.058	0.04	< 0.003	< 0.003	0.008	< 0.005	< 0.003	0.003	0.014	ALKLAI + CRBT
PGH-18-08	160.5	162	1.5	590442	A18-08116	5.06	0.036	2.04	< 0.003	< 0.003	0.009	< 0.005	< 0.003	0.011	0.011	CRBT
PGH-18-08	162	163.5	1.5	590443	A18-08116	5.57	0.052	2.53	< 0.003	0.005	0.01	< 0.005	< 0.003	0.017	0.01	CRBT BX
PGH-18-08	163.5	165	1.5	590444	A18-08116	4.66	0.064	0.46	< 0.003	0.003	0.006	< 0.005	< 0.003	0.006	0.008	CRBT BX
PGH-18-08	165	166	1	590445	A18-08116	6.42	0.101	0.37	< 0.003	0.004	0.008	< 0.005	< 0.003	0.005	0.018	CRT BX
PGH-18-08	166	167	1	590446	A18-08116	7.27	0.065	0.5	< 0.003	0.003	0.009	< 0.005	< 0.003	0.007	0.031	CRT BX
PGH-18-08	167	168.5	1.5	590448	A18-08116	3.81	0.015	0.48	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.004	0.004	ALKLAI + CRBT
PGH-18-08	168.5	170	1.5	590450	A18-08116	5.07	0.019	0.32	< 0.003	< 0.003	0.007	< 0.005	< 0.003	0.004	0.004	ALKLAI + CRBT
PGH-18-08	170	171.5	1.5	590451	A18-08116	4.49	0.007	1.21	< 0.003	< 0.003	0.008	< 0.005	0.004	0.01	< 0.003	ALKLAI + CRBT
PGH-18-08	171.5	173	1.5	590452	A18-08116	3.73	0.008	0.27	0.006	< 0.003	< 0.005	< 0.005	< 0.003	0.003	0.004	ALKALI + CRBT
PGH-18-08	173	174	1	590453	A18-08116	2.22	0.005	0.16	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.003	0.006	ALKALI + CRBT

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DDH	From	To	Width (m)	SampleID	BatchID	Fe2O3T (%)	Nb2O5 (%)	P2O5 (%)	SnO2 (%)	Ta2O5 (%)	ThO2 (%)	U3O8 (%)	WO3 (%)	Y2O3 (%)	ZrO2 (%)	Description
PGH-18-08	174	175	1	590454	A18-08116	2.74	0.294	2.81	< 0.003	< 0.003	0.01	0.005	0.005	0.016	< 0.003	CRBT
PGH-18-08	175	176.5	1.5	590455	A18-08116	2.87	0.12	3	< 0.003	< 0.003	0.01	< 0.005	0.003	0.012	0.02	CRBT
PGH-18-08	176.5	178	1.5	590456	A18-08116	3.13	0.119	4.35	< 0.003	< 0.003	0.009	0.006	0.004	0.015	0.064	CRBT
PGH-18-08	178	179.5	1.5	590457	A18-08116	4.3	0.182	5.32	< 0.003	< 0.003	0.01	0.005	0.004	0.023	0.032	CRBT
PGH-18-08	179.5	181	1.5	590458	A18-08116	3.05	0.085	3.22	< 0.003	< 0.003	0.01	< 0.005	0.004	0.02	0.004	CRBT
PGH-18-08	181	182	1	590459	A18-08116	1.71	< 0.003	0.32	< 0.003	< 0.003	0.008	< 0.005	< 0.003	0.008	< 0.003	CRBT
PGH-18-08	182	183	1	590460	A18-08116	3.58	0.063	2.06	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.012	< 0.003	CRT BX
PGH-18-08	222.35	223.3	0.95	590461	A18-08116	5.71	0.12	8.75	< 0.003	0.005	0.024	< 0.005	0.005	0.062	0.013	CRBT
PGH-18-08	223.3	224.23	0.93	590462	A18-08116	5.35	0.099	5.4	< 0.003	0.004	0.02	< 0.005	0.003	0.04	0.011	CRBT
PGH-18-08	230.38	231.29	0.91	590463	A18-08116	7.38	0.071	2.13	< 0.003	< 0.003	0.013	< 0.005	0.004	0.017	< 0.003	CRBT
PGH-18-08	231.29	232.28	0.99	590464	A18-08116	6.86	0.09	2.34	< 0.003	0.004	0.012	< 0.005	0.003	0.016	0.014	CRBT
PGH-18-08	236.77	237.86	1.09	590465	A18-08116	1.68	0.088	2.26	< 0.003	0.003	0.008	< 0.005	0.005	0.013	0.01	CRBT
PGH-18-08	237.86	239.36	1.5	590466	A18-08116	3.01	0.209	3.84	< 0.003	0.003	0.011	0.009	0.003	0.02	0.015	CRBT
PGH-18-08	239.36	240.38	1.02	590468	A18-08116	3.04	0.182	4.4	< 0.003	0.005	0.011	0.009	0.004	0.019	0.011	CRBT
PGH-18-08	251.36	251.89	0.53	590469	A18-08116	4.51	0.038	1.95	< 0.003	< 0.003	0.009	< 0.005	0.003	0.018	< 0.003	CRBT
PGH-18-08	269.44	270	0.56	590470	A18-08116	2.53	0.063	1.22	< 0.003	< 0.003	0.01	< 0.005	< 0.003	0.011	< 0.003	CRBT
PGH-18-08	278.28	278.87	0.59	590471	A18-08116	3.32	0.213	1.97	< 0.003	< 0.003	0.009	< 0.005	< 0.003	0.012	< 0.003	CRBT
PGH-18-08	286.03	286.93	0.9	590472	A18-08116	3.33	0.181	1.87	< 0.003	0.006	0.009	< 0.005	< 0.003	0.009	0.005	BX + CBT
PGH-18-08	290.76	292.26	1.5	590473	A18-08116	5.31	0.153	1.96	< 0.003	< 0.003	0.008	< 0.005	< 0.003	0.012	0.046	BX CRBT
PGH-18-08	292.26	293.62	1.36	590474	A18-08116	5.02	0.027	2.11	< 0.003	< 0.003	0.009	< 0.005	0.003	0.016	0.003	BX CRBT
PGH-18-08	293.62	294.43	0.81	590476	A18-08116	3.88	0.305	2.09	< 0.003	0.003	0.011	0.005	0.004	0.013	0.011	CRBT
PGH-18-08	294.43	295.79	1.36	590477	A18-08116	3.58	0.019	1.31	< 0.003	< 0.003	0.005	< 0.005	0.003	0.01	0.006	GRAN + CRBT
PGH-18-08	295.79	296.64	0.85	590478	A18-08116	5	0.064	0.84	< 0.003	< 0.003	0.01	< 0.005	0.004	0.008	0.003	CRBT + GRAN
PGH-18-08	296.64	297.52	0.88	590479	A18-08116	5.9	0.024	0.12	< 0.003	< 0.003	0.006	< 0.005	0.003	0.003	0.004	GRAN
PGH-18-08	297.52	298.47	0.95	590480	A18-08116	6.54	0.033	0.71	< 0.003	< 0.003	0.007	< 0.005	< 0.003	0.005	0.006	GRAN
PGH-18-08	298.47	299.46	0.99	590481	A18-08116	4.64	0.017	0.25	< 0.003	< 0.003	< 0.005	< 0.005	0.003	< 0.003	0.004	GRAN + crbt
PGH-18-08	299.46	300.52	1.06	590482	A18-08116	6.44	0.05	4.09	< 0.003	< 0.003	0.012	< 0.005	0.004	0.027	< 0.003	CRBT
PGH-18-08	300.52	301.77	1.25	590483	A18-08116	5.57	0.139	2.27	< 0.003	< 0.003	0.01	< 0.005	0.003	0.014	0.012	CRBT
PGH-18-08	301.77	303.28	1.51	590486	A18-08116	4.42	0.053	0.46	< 0.003	< 0.003	0.014	< 0.005	0.003	0.008	0.004	BX
PGH-18-08	303.28	304.13	0.85	590487	A18-08116	4.74	0.031	1.01	< 0.003	0.003	0.005	< 0.005	0.004	0.008	0.013	CRBT + GRABN
PGH-18-08	304.13	305.12	0.99	590489	A18-08116	4.35	0.009	0.13	< 0.003	< 0.003	< 0.005	< 0.005	0.004	0.003	0.012	GRAN
PGH-18-08	305.12	306.13	1.01	590490	A18-08116	3.24	0.012	0.11	< 0.003	< 0.003	< 0.005	< 0.005	0.004	< 0.003	0.006	GRAN
PGH-18-08	306.13	306.85	0.72	590491	A18-08116	3.7	0.086	2.88	< 0.003	< 0.003	0.023	< 0.005	0.005	0.028	0.017	CRBT
PGH-18-08	306.85	307.36	0.51	590492	A18-08116	4.2	0.028	0.52	< 0.003	< 0.003	0.01	< 0.005	0.004	0.008	0.009	GRAN BX
PGH-18-08	307.36	308.44	1.08	590493	A18-08116	5.43	0.057	1.54	< 0.003	< 0.003	0.018	< 0.005	0.003	0.016	0.014	CRBT
PGH-18-08	308.44	309.25	0.81	590494	A18-08116	4.07	0.009	0.2	< 0.003	0.004	< 0.005	< 0.005	0.005	0.003	0.011	GRAN
PGH-18-08	309.25	310.56	1.31	590495	A18-08116	2.6	0.081	2.61	< 0.003	0.004	0.012	0.007	< 0.003	0.013	0.025	CRBT
PGH-18-08	310.56	312	1.44	590496	A18-08116	3.73	0.099	2.43	< 0.003	0.003	0.01	0.008	0.003	0.011	0.021	CRBT BX
PGH-18-08	312	313	1	590497	A18-08116	11.52	0.033	0.37	< 0.003	< 0.003	0.007	< 0.005	0.003	0.007	0.017	BX CRBT
PGH-18-08	313	314	1	590498	A18-08116	6.87	0.045	0.85	< 0.003	< 0.003	0.006	< 0.005	0.003	0.01	0.021	BX CRBT
PGH-18-08	314	315.28	1.28	590499	A18-08116	5.88	0.051	1	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.01	0.011	GRAN + CRBT

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DDH	From	To	Width (m)	SampleID	BatchID	Fe2O3T (%)	Nb2O5 (%)	P2O5 (%)	SnO2 (%)	Ta2O5 (%)	ThO2 (%)	U3O8 (%)	WO3 (%)	Y2O3 (%)	ZrO2 (%)	Description
PGH-18-08	315.28	316.32	1.04	590500	A18-08116	2.09	0.045	2.01	< 0.003	< 0.003	0.01	< 0.005	0.005	0.013	0.022	CRBT
PGH-18-08	316.32	316.82	0.5	590501	A18-08116	6.17	0.094	0.09	< 0.003	< 0.003	0.012	< 0.005	< 0.003	0.004	0.022	CRBT
PGH-18-08	316.82	317.32	0.5	590502	A18-08116	2.72	0.237	2.06	< 0.003	< 0.003	0.013	0.007	0.005	0.014	< 0.003	CRBT
PGH-18-08	317.32	318.26	0.94	590503	A18-08116	5.82	0.148	2.14	< 0.003	< 0.003	0.011	0.005	0.003	0.019	0.005	CRBT
PGH-18-08	318.26	319.75	1.49	590504	A18-08116	2.07	0.158	2.82	< 0.003	< 0.003	0.014	0.007	0.004	0.02	0.003	GRAN + BX CRBT
PGH-18-08	319.75	320.71	0.96	590505	A18-08116	1.33	0.041	1.48	< 0.003	0.003	0.01	0.005	< 0.003	0.012	< 0.003	crbt
PGH-18-08	320.71	321.87	1.16	590507	A18-08116	6.65	0.062	2.41	< 0.003	0.005	0.011	< 0.005	0.003	0.016	0.014	bx crbt
PGH-18-08	321.87	323	1.13	590508	A18-08116	1.66	0.075	2.19	< 0.003	0.003	0.011	0.008	< 0.003	0.02	< 0.003	CRBT
PGH-18-08	323	324.5	1.5	590509	A18-08116	7	0.058	0.43	< 0.003	< 0.003	0.017	< 0.005	0.005	0.009	0.016	CRBT
PGH-18-08	324.5	326	1.5	590510	A18-08116	7.51	0.044	0.5	< 0.003	0.004	0.009	< 0.005	< 0.003	0.008	0.008	CRBT + FEN
PGH-18-08	326	327	1	590511	A18-08116	7.48	0.019	0.11	< 0.003	< 0.003	0.006	< 0.005	0.005	0.004	0.007	FEN + CRBT
PGH-18-08	327	328	1	590512	A18-08116	3.43	0.069	0.83	< 0.003	< 0.003	0.015	< 0.005	0.004	0.01	0.006	CRBT
PGH-18-08	328	329	1	590513	A18-08116	3.14	0.692	5.39	< 0.003	0.004	0.016	0.008	0.007	0.021	0.029	CRBT
PGH-18-08	329	330.5	1.5	590514	A18-08116	2.93	0.141	2.13	< 0.003	< 0.003	0.015	< 0.005	0.004	0.013	0.028	CRBT
PGH-18-08	330.5	332	1.5	590515	A18-08116	2.9	0.227	3.61	< 0.003	< 0.003	0.014	0.008	0.003	0.016	0.051	CRBT
PGH-18-08	332	333.5	1.5	590516	A18-08116	3.12	0.1	1.64	< 0.003	0.003	0.014	< 0.005	< 0.003	0.016	0.028	CRBT
PGH-18-08	333.5	335	1.5	590517	A18-08116	5.4	0.182	2.13	< 0.003	0.003	0.016	< 0.005	< 0.003	0.015	0.021	CRBT
PGH-18-08	335	336	1	590518	A18-08116	5.9	0.059	2.59	< 0.003	< 0.003	0.021	< 0.005	0.003	0.02	0.018	CRBT
PGH-18-08	336	337	1	590520	A18-08116	8.96	0.047	1.2	< 0.003	< 0.003	0.011	< 0.005	0.005	0.011	0.011	CRBT
PGH-18-08	337	338	1	590521	A18-08116	5.84	0.069	1.21	< 0.003	0.004	0.01	< 0.005	0.003	0.011	0.009	CRBT
PGH-18-08	342.83	343.84	1.01	590522	A18-08116	6.49	0.08	4.15	< 0.003	< 0.003	0.015	< 0.005	0.004	0.027	0.064	CRBT
PGH-18-08	343.84	344.62	0.78	590523	A18-08116	4.43	0.03	0.53	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.006	0.005	CRBT BX
PGH-18-08	344.62	346	1.38	590524	A18-08116	4.61	0.007	0.09	< 0.003	< 0.003	< 0.005	< 0.005	0.004	0.003	0.005	GRAN
PGH-18-08	346	346.56	0.56	590525	A18-08116	4.92	0.05	0.17	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.003	0.014	CRBT BX
PGH-18-08	346.56	347.09	0.53	590527	A18-08116	4.82	0.614	4.95	< 0.003	< 0.003	0.022	0.006	0.005	0.041	0.006	CRBT
PGH-18-08	357.17	358	0.83	590528	A18-08116	5.43	0.038	0.24	< 0.003	0.004	0.005	< 0.005	0.003	0.003	< 0.003	GRAN BX + CRBT
PGH-18-08	358	359	1	590529	A18-08116	6.14	0.127	2.97	< 0.003	< 0.003	0.011	< 0.005	0.005	0.02	0.016	CRBT BX
PGH-18-08	359	360.1	1.1	590530	A18-08116	10.52	0.073	2.24	< 0.003	0.003	0.008	0.005	0.004	0.011	0.13	CRBT ? MD
PGH-18-08	360.1	361.25	1.15	590531	A18-08116	5.09	0.014	0.16	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.003	0.011	GRAN
PGH-18-08	361.25	362	0.75	590532	A18-08116	7.45	0.1	0.9	< 0.003	< 0.003	0.01	< 0.005	0.004	0.009	0.011	CRBT BX
PGH-18-08	362	363	1	590533	A18-08116	6.59	0.051	0.46	< 0.003	< 0.003	0.007	< 0.005	< 0.003	0.006	< 0.003	CRBT BX
PGH-18-08	363	364.5	1.5	590534	A18-08116	6.58	0.085	0.8	< 0.003	< 0.003	0.009	< 0.005	< 0.003	0.006	0.011	CRBT BX
PGH-18-08	364.5	365.46	0.96	590535	A18-08116	7.67	0.07	0.98	< 0.003	0.004	0.007	< 0.005	0.003	0.008	0.009	CRBT BX
PGH-18-08	365.46	367	1.54	590537	A18-08116	5.26	0.016	0.1	0.004	< 0.003	< 0.005	< 0.005	< 0.003	0.003	0.006	GRAN BX
PGH-18-08	367	368.5	1.5	590538	A18-08116	4.8	0.012	0.49	0.004	< 0.003	0.005	< 0.005	0.003	0.006	0.007	GRAN
PGH-18-08	368.5	370	1.5	590539	A18-08116	3.54	0.006	0.33	< 0.003	0.004	< 0.005	< 0.005	0.003	0.004	0.007	GRAN
PGH-18-08	370	371	1	590540	A18-08116	3.21	0.006	0.19	< 0.003	< 0.003	< 0.005	< 0.005	0.004	0.004	0.007	GRAN
PGH-18-08	371	372.25	1.25	590542	A18-08116	4.1	0.023	0.65	< 0.003	< 0.003	< 0.005	< 0.005	0.003	0.005	0.006	GRAN + BX CRBT
PGH-18-08	372.25	373	0.75	590543	A18-08116	3.96	0.238	2.89	< 0.003	< 0.003	0.01	< 0.005	< 0.003	0.014	< 0.003	CRBT
PGH-18-08	373	374	1	590544	A18-08116	2.71	0.074	2.96	< 0.003	< 0.003	0.008	< 0.005	< 0.003	0.013	0.014	CRBT
PGH-18-08	374	375	1	590545	A18-08116	4.64	0.092	5.38	< 0.003	< 0.003	0.013	< 0.005	0.004	0.023	0.047	CRBT

ASSAYS

DDH	From	To	Width (m)	SampleID	BatchID	Fe2O3T (%)	Nb2O5 (%)	P2O5 (%)	SnO2 (%)	Ta2O5 (%)	ThO2 (%)	U3O8 (%)	WO3 (%)	Y2O3 (%)	ZrO2 (%)	Description
PGH-18-08	375	376	1	590547	A18-08116	2.97	0.044	2.08	< 0.003	< 0.003	0.013	< 0.005	0.006	0.013	< 0.003	CRBT
PGH-18-08	376	376.7	0.7	590548	A18-08116	2.64	0.355	5.79	< 0.003	< 0.003	0.012	< 0.005	< 0.003	0.019	< 0.003	GRAN
PGH-18-08	376.7	377.85	1.15	590549	A18-08116	5.91	0.049	0.18	< 0.003	0.003	< 0.005	< 0.005	< 0.003	0.003	0.009	CRBT BX
PGH-18-08	377.85	379.11	1.26	590550	A18-08116	6.49	0.214	1.75	< 0.003	< 0.003	0.009	< 0.005	0.003	0.01	0.008	CRBT BX
PGH-18-08	379.11	380.24	1.13	590551	A18-08116	6.79	0.245	1.87	< 0.003	0.003	0.012	< 0.005	0.003	0.014	< 0.003	CRBT BX
PGH-18-08	380.24	381	0.76	590552	A18-08116	4.98	0.063	0.59	< 0.003	< 0.003	0.006	< 0.005	0.003	0.006	0.005	GRAN + CRBT BX
PGH-18-08	381	382	1	590553	A18-08116	5.13	0.023	0.37	< 0.003	< 0.003	0.007	< 0.005	0.004	0.005	< 0.003	GRAN BX
PGH-18-08	382	383.18	1.18	590554	A18-08116	3.03	0.009	0.1	< 0.003	< 0.003	< 0.005	< 0.005	0.004	< 0.003	0.011	GRAN BX
PGH-18-08	383.18	384.2	1.02	590555	A18-08116	1.96	0.182	2.24	< 0.003	< 0.003	0.008	0.005	0.004	0.01	< 0.003	CRBT
PGH-18-08	384.2	385	0.8	590556	A18-08116	2.24	0.04	0.34	< 0.003	0.003	0.01	< 0.005	0.004	0.008	< 0.003	CRBT
PGH-18-08	385	386	1	590557	A18-08116	2.82	0.099	0.49	< 0.003	< 0.003	0.01	< 0.005	0.003	0.008	< 0.003	CRBT
PGH-18-08	386	386.53	0.53	590558	A18-08116	3.35	0.035	2.02	< 0.003	< 0.003	0.012	< 0.005	0.004	0.014	0.015	CRBT
PGH-18-08	386.53	387.35	0.82	590559	A18-08116	13.15	0.01	0.7	< 0.003	< 0.003	< 0.005	< 0.005	0.003	0.003	0.026	MD
PGH-18-08	387.35	388	0.65	590560	A18-08116	4.29	0.04	0.44	< 0.003	< 0.003	0.011	< 0.005	< 0.003	0.007	< 0.003	CRBT
PGH-18-08	388	389.5	1.5	590561	A18-08116	4.52	0.071	1.11	< 0.003	0.003	0.01	< 0.005	< 0.003	0.009	0.016	CRBT BX
PGH-18-08	389.5	391	1.5	590562	A18-08116	4.12	0.066	0.29	< 0.003	< 0.003	0.01	< 0.005	< 0.003	0.006	0.018	CRBT BX
PGH-18-08	391	392	1	590563	A18-08116	5.5	0.134	8.51	< 0.003	0.004	0.023	0.005	0.003	0.057	< 0.003	CRBT
PGH-18-08	392	393.2	1.2	590564	A18-08116	8.58	0.067	2.96	< 0.003	< 0.003	0.008	< 0.005	< 0.003	0.008	0.04	DYKE
PGH-18-08	393.2	394.16	0.96	590565	A18-08116	4.43	0.009	0.06	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	< 0.003	0.009	GRAN
PGH-18-08	394.16	395	0.84	590566	A18-08116	6.06	0.067	0.03	< 0.003	< 0.003	0.008	< 0.005	< 0.003	0.003	< 0.003	CRBT BX
PGH-18-08	395	396.35	1.35	590567	A18-08116	6.04	0.039	0.07	< 0.003	< 0.003	0.006	< 0.005	< 0.003	< 0.003	< 0.003	CRBT BX
PGH-18-08	396.35	397.08	0.73	590568	A18-08116	7.11	0.023	0.4	< 0.003	< 0.003	0.005	< 0.005	< 0.003	0.005	< 0.003	GRN + CRBT
PGH-18-08	397.08	398	0.92	590569	A18-08116	5.11	0.014	0.31	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.005	< 0.003	GRN
PGH-18-08	398	398.85	0.85	590570	A18-08116	5.55	0.011	0.69	< 0.003	< 0.003	0.005	< 0.005	< 0.003	0.006	0.005	GRN
PGH-18-08	398.85	399.85	1	590571	A18-08116	5.14	0.041	1.24	< 0.003	0.004	0.005	< 0.005	0.003	0.007	0.021	CRBT + BX
PGH-18-08	399.85	400.63	0.78	590573	A18-08116	4.1	0.022	0.76	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.008	0.003	BX + CRBT
PGH-18-08	400.63	402.11	1.48	590574	A18-08116	3.37	0.015	1.3	< 0.003	< 0.003	0.009	< 0.005	< 0.003	0.012	< 0.003	CRBT + GRAN
PGH-18-08	402.11	403.63	1.52	590575	A18-08116	3.5	0.013	0.28	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.003	0.005	GRAN
PGH-18-08	403.63	404.95	1.32	590576	A18-08116	5.4	0.039	1.65	< 0.003	< 0.003	0.005	< 0.005	< 0.003	0.006	0.043	CRBT + GRAN
PGH-18-08	404.95	405.55	0.6	590577	A18-08116	4.37	0.007	0.42	< 0.003	< 0.003	< 0.005	< 0.005	0.003	0.003	0.01	GRAN
PGH-18-08	405.55	406.2	0.65	590578	A18-08116	6.53	0.095	2.15	< 0.003	< 0.003	0.009	< 0.005	0.003	0.013	0.063	CRBT + GRAN
PGH-18-08	406.2	407.18	0.98	590579	A18-08116	6.64	0.04	1.59	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.008	0.042	GRAN + CRBT
PGH-18-08	407.18	408.09	0.91	590580	A18-08116	7.79	0.071	2.92	< 0.003	< 0.003	0.01	< 0.005	< 0.003	0.016	0.086	CRBT
PGH-18-08	408.09	409	0.91	590581	A18-08116	2.93	0.033	1.14	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.007	0.013	GRAN
PGH-18-08	409	410	1	590582	A18-08116	4.5	0.133	2	< 0.003	< 0.003	0.018	< 0.005	< 0.003	0.015	0.029	CRBT
PGH-18-08	410	411	1	590583	A18-08116	3.03	0.075	2.09	< 0.003	< 0.003	0.017	0.006	0.004	0.014	0.011	CRBT
PGH-18-08	411	412	1	590584	A18-08116	5.22	0.052	0.98	0.003	< 0.003	0.006	< 0.005	< 0.003	0.008	0.003	CRBT BX
PGH-18-08	417	418.5	1.5	590585	A18-08116	4.52	0.056	1.32	< 0.003	< 0.003	0.014	< 0.005	< 0.003	0.014	< 0.003	CRBT
PGH-18-08	418.5	420	1.5	590586	A18-08116	3.69	0.108	0.22	< 0.003	< 0.003	0.012	< 0.005	< 0.003	0.006	0.004	CRBT
PGH-18-08	441.6	443	1.4	590587	A18-08116	7.24	0.053	3.03	< 0.003	0.004	< 0.005	< 0.005	0.004	0.008	0.066	CRBT
PGH-18-08	446.22	447.2	0.98	590588	A18-08116	3.44	0.077	4.91	< 0.003	0.003	0.013	< 0.005	0.003	0.025	< 0.003	CRBT

ASSAYS

DDH	From	To	Width (m)	SampleID	BatchID	Fe2O3T (%)	Nb2O5 (%)	P2O5 (%)	SnO2 (%)	Ta2O5 (%)	ThO2 (%)	U3O8 (%)	WO3 (%)	Y2O3 (%)	ZrO2 (%)	Description
PGH-18-08	447.2	448.15	0.95	590589	A18-08116	1.77	0.007	0.22	< 0.003	< 0.003	< 0.005	< 0.005	0.003	< 0.003	0.006	GRAN
PGH-18-08	448.15	449.45	1.3	590590	A18-08116	6.52	0.034	4.33	< 0.003	< 0.003	0.006	< 0.005	0.003	0.019	0.059	CRBT + GRAN
PGH-18-08	463.94	464.75	0.81	590591	A18-08116	3.88	0.048	4.83	< 0.003	0.004	0.008	0.01	< 0.003	0.012	0.027	CRBT
PGH-18-08	477.08	478.5	1.42	590593	A18-08116	7.74	0.034	2.15	< 0.003	< 0.003	0.01	< 0.005	< 0.003	0.011	0.05	CRBT + FEN
PGH-18-08	478.5	479.35	0.85	590594	A18-08116	7.15	0.009	0.24	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	< 0.003	0.012	GRAN / FEN
PGH-18-08	479.35	480.5	1.15	590595	A18-08116	6.27	0.022	4.24	< 0.003	< 0.003	0.01	< 0.005	0.003	0.017	0.016	CRBT / FEN

COMPANY QAQC DATA

DDH	From	To	Width (m)	SampleID	BatchID	QAQC Type	QAQC Description	P2O5 (%)	Nb2O5 (%)
PGH-18-08	16.3	16.3	0	590369	A18-08116	STANDARD	Oka 1	2.5	0.554
PGH-18-08	44.56	44.56	0	590380	A18-08116	BLANK	Marble	0.02	< 0.003
PGH-18-08	60	60	0	590393	A18-08116	BLANK	Marble	0.02	< 0.003
PGH-18-08	94	94	0	590408	A18-08116	BLANK	Marble	0.03	< 0.003
PGH-18-08	119.5	119.5	0	590424	A18-08116	BLANK	Marble	0.05	< 0.003
PGH-18-08	167	167	0	590447	A18-08116	BLANK	Marble	0.02	< 0.003
PGH-18-08	168.5	168.5	0	590449	A18-08116	STANDARD	Oka 1	2.47	0.548
PGH-18-08	239.36	239.36	0	590467	A18-08116	STANDARD	Oka 1	2.51	0.552
PGH-18-08	293.62	293.62	0	590475	A18-08116	BLANK	Marble	0.02	< 0.003
PGH-18-08	300.52	301.77	1.25	590483	A18-08116	N/A	ORIGINAL SAMPLE	2.27	0.139
PGH-18-08	300.52	301.77	1.25	590484	A18-08116	DUPLICATE	DUPLICATE 590483	1.75	0.121
PGH-18-08	301.77	301.77	0	590485	A18-08116	STANDARD	Oka 1	2.5	0.549
PGH-18-08	304.13	304.13	0	590488	A18-08116	BLANK	Marble	0.02	< 0.003
PGH-18-08	320.71	320.71	0	590506	A18-08116	BLANK	Marble	0.03	< 0.003
PGH-18-08	336	336	0	590519	A18-08116	STANDARD	Oka 1	2.48	0.532
PGH-18-08	346.56	346.56	0	590526	A18-08116	BLANK	Marble	0.02	< 0.003
PGH-18-08	365.46	365.46	0	590536	A18-08116	STANDARD	Oka 1	2.52	0.552
PGH-18-08	371	371	0	590541	A18-08116	BLANK	Marble	0.02	< 0.003
PGH-18-08	374	375	1	590545	A18-08116	N/A	ORIGINAL SAMPLE	5.38	0.092
PGH-18-08	374	375	1	590546	A18-08116	DUPLICATE	DUP 590545	3.82	0.075
PGH-18-08	399.85	399.85	0	590572	A18-08116	BLANK	Marble	0.02	< 0.003
PGH-18-08	464.75	464.75	0	590592	A18-08116	BLANK	Marble	0.21	< 0.003



Drilled by:	Chibougamau Diamond Drilling	Start Date:	14-May-2018
Township/Area:	Killala Lake Area	End Date:	20-May-2018
Claims (converted):	262731, 332506, 230752	Described by:	B. Clark, BSc
Claims (legacy):	TB 4256251	Log date:	6-Jun-2018

Collar

Azimuth: 337.00°		Easting: 519664		Core size:	HQ	Cemented:	No
Plunge: -50.00°		Northing: 5432567		Casing:	Pulled	Stored:	Yes
Length: 510.0 m		Elevation: 316.0m					

COORDINATES UTM (NAD83 zone 16)

Down hole surveys

Drill Hole	Type	Depth (m)	Azimuth Corrected (°)	Dip (°)	Mag
PGH-18-09	Reflex	18	337.5	-49.9	59642
PGH-18-09	Reflex	69	338.3	-50.1	58054
PGH-18-09	Reflex	120	338.9	-50	57984
PGH-18-09	Reflex	171	340	-50.2	57925
PGH-18-09	Reflex	222	338.2	-50.3	57700
PGH-18-09	Reflex	270	339.5	-50.3	57598
PGH-18-09	Reflex	321	339.3	-50.4	57546
PGH-18-09	Reflex	372	339.9	-50.1	57634
PGH-18-09	Reflex	423	340.2	-50.1	57616
PGH-18-09	Reflex	474	340.5	-50	57654
PGH-18-09	Reflex	510	341.6	-49.8	57585

Description

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-09	0	1.82	OVB	Overburden	
PGH-18-09	1.82	13	SYE	Fenite / Syenite	Moderately to completely fenitized syenite, strong disking and mechanical fracturing of core near top of hole. Med red-pink to blue-green <15% qtz, fenitization is patchy to selectively pervasive, patches 'zones' of >50% amph/chl up to 15 cm and locally completely altered zones 1.5m. Selectively pervasive chl/amph replacing bt(?). CRBT veins/veinlets up to 24cm and as vein/fracture networks with veins <1cm. CRBT light grey-green to light pink-purple, fg, massive, wispy bands of light green-brown commonly rimming clasts and subparallel to contacts <5mm. LC is gradational and marked by decrease in zones of chl/amph replacement.
PGH-18-09	13	23.25	SYE	Syenite	Med red-pink to blue-green, moderate selectively pervasive chl/blue sodic amph replacing bt(?), interstitial crbt infill and veinlets/fractures. Multiple low angle (sub-parallel TCA) fractures with amph/crbt fill <5mm. Zones of crbt fill have light pink-cream alt halo. Local CRBT veins up to 20cm at low angles <30 TCA. CRBT; light grey-green, fg, massive, patchy fluorite, diss hem, trace diss py, wispy bands up to 5mm of blue-olive green, contacts are locally brecciated to planar.
PGH-18-09	23.25	28.15	PEG	Fenite / Pegmatite	Moderate to completely fenitized zones up to 1m, these zones contain >60% chl/amph/bt, outside of completely alt zones is alkali pegmatite with fspar xtals >2cm, moderately fractured at multiple orientations (sub-parallel TCA and perpendicular TCA), fractures filled with chl/amph +/- hem/crbt. weak light pink alt to fspar along striations, trace diss py. Xtals are being broken down and have irregular xstal boundaries. qtz 15%, kspar 60%, plag 10%, 15% crbt/chl/amph. LC is gradational and marked by change in grain size
PGH-18-09	28.15	32.25	SYE	Syenite	Light red-pink to blue, mg, qtz 10%, kspar 50%,25% crbt/hem/amph. Moderate selectively pervasive amph/hem/crbt in fractures/veins/veinlets and patchy through out syn. Common red to light pink alt halos up to 5mm. CRBT veins <3cm, fg, light green-grey, massive. Gradational LC obscured by broken core.
PGH-18-09	32.25	52.9	SYE-BX	Fenite / Carbonatite Breccia	Moderate to strong fenitization of syenite, local weakly altered syenite but dominantly strongly fenitized with up to 70% amph/chl/bt. Alteration is selectively pervasive to pervasive in irregularly shaped patches. In strongly altered zones common to have numerous crbt veins <5mm sub-parallel to one another at various angle TCA. Local crbt veins and breccia zones up to 2m 38.4-40.6: CRBT BX; mod-str fen, clasts locally have diffuse boundaries, sub-rounded to sub-angular, <10cm. CRBT infill is light pink-purple to grey-green, fg, massive, trace diss py, wispy bands/rimmed by blue amph, diss hem. 43-52.9: CRBT BX; zones of massive crbt up to 1m locally, dominantly breccia. clasts are <35cm, and of fenite or mod-str alt syn, clasts are sub-angular to sub rounded, locally with diffuse boundaries and fractured (if surrounded dom by crbt), strong hem alteration locally. CRBT light green-grey to pink with local light purple-cream, fg, massive, commonly rimmed by blue amph, diss hem, trace dis py, local wispy bands/masses <1cm in width of light green-red-brown commonly sub-parallel to contact or clasts. LC is irregular/brecciated

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-09	52.9	57.5	SYE	Syenite	Med red, weak-mod selectively pervasive chl/amph +/- crbt. Weakly fractured with infill of crbt +/- hem/amph, fluorite, increasing downhole. Fractures are irregular and <1cm.
PGH-18-09	57.5	63.53	SYE-BX	Syenite Breccia	Med red, selectively pervasive hem/amph/crbt alt, crbt infill, intensity varies from weak to moderate, clasts up to 10cm, sub-angular to sub-rounded, within crbt clasts have diffuse boundaries and are rimmed up to 5mm with vfg blue sodic amph(?) with masses of black fg metallic mineral (pyrochlore?) up to 2mm. CRBT; light grey-green to light purple-pink, fg, wispy bands of blue to red-brown from 1-5mm, commonly sub parallel to contact/clast boundary. Locally massive CRBT up to 0.5m. trace diss py, diss hem.
PGH-18-09	63.53	65.45	FZ	Fault Zone / Breccia	Dark grey to pink-red with local lime green, mod ep alt, angular fragments/clasts of syn and crbt <4cm with rock flour infill, fault breccia, locally mod clay alt. moving down hole becomes more rock fill dominated with smaller clasts that are more rounded at greater spacing and strongly clay altered at LC.
PGH-18-09	65.45	80.43	GRAN	Granite / Fenite	Med red to blue-green, mg-cg up to 5mm, locally, locally >15% qtz, mod-str selectively pervasive chl/amph +/- carb alt. bt abundance from 5-15%, local CRBT veins up to 22cm commonly <5cm, at moderate angles TCA. CRBT; light green-grey to light purple-mauve, fg, massive, diss hem, wispy ap cumulated up to 5mm (locally).
PGH-18-09	80.43	81	CRBT	Carbonatite	Light pink-cream to opaque, fg, massive, local clasts of gran up to 4cm with diffuse boundaries, sub rounded, Si>Calc > DOL, wispy mauve bands up to 1cm (white in UV ap?) locally having appearance of a fold hinge. Trace fg diss black metallic mineral. Trace diss hem, trace diss py. UC @ 65/50
PGH-18-09	81	87.1	GRAN	Granite / Fenite	Med red-pink locally green-grey to blue, mg with local cg sections, mod-str selectively pervasive chl/amph alt replacing bt(?). qtz locally <15%, crbt veins /bx up to 15cm, commonly <2cm and at moderate to low angles TCA. CRBT; light grey to pink-purple, partially rimmed by blue sodic amph <3mm along clast boundaries and contacts, trace diss hem, clasts and contacts have diffuse boundaries, trace diss py.
PGH-18-09	87.1	91.85	GRAN	Granite	Med red-pink, fg-locally cg, jointed rock mass, qtz up to 1cm, qtz <20%, kspar 60%, 10% plag, 10% biot. Fractures/veinlets at mod angles TCA, light pink alt halos <3mm, locally filled with blue amph/crbt +/- hem, weakly selectively pervasive chl/amph.
PGH-18-09	91.85	97.15	SYE-BX	Granite + Carbonatite Breccia	40% CRBT/BX, 60% GRAN GRAN; med red-pink to light orange, mg, qtz 15%, kspar 60%, plag 10%, bt 10%. Moderate patchy hem alt, clasts of gran up to 10cm, angular to sub rounded, diffuse boundaries. CRBT; light purple to light green, fg, massive, wispy bands of red-brown <2mm, bands sub-parallel to contacts / clast boundaries, light green fg crbt rimming clasts <5mm, diss hem, fg black metallic mineral (pyrochlore)
PGH-18-09	97.15	98	SYE	Fenite	Selectively pervasive chl/amph/bt up to 55%, boundaries are gradational, fractures/veins <5mm amph/crbt,

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-09	98	104.8	GRAN	Granite / Carbonatite	Qtz 15-20%, kspar 50%, plag 10%, bt 10%, amph/chl 10%. Fractures/veinlets with light pink alt halos 3mm filled with amph/crbt +/- hem. 100.36-101.41: CRBT; light grey-purple to light green-cream, fg, massive, Dol>Calc, diss hem, diffuse masses of kspar <4mm, trace diss py. 102.60-103: purple-grey to light orange, fg, massive, wispy bands of brown-red <5mm, trace diss py
PGH-18-09	104.8	106.85	GRAN	Fenite / Granite	Chl/amph/bt 55%, fg-cg gran <1cm, patches of cg gran up to 10cm, with selectively pervasive blue sodic amph, fractures/veinlets of crbt sub-angular to sub-rounded, with crbt fg fill.
PGH-18-09	106.85	112	GRAN	Granite	Qtz 20%, kspar 50%, plag 15%, 5% bt, 10% amph/crbt, fg-mg, plag xtals rimmed by pink kspar, weak-mod selectively pervasive amph/chl alt, fractures/veins of crbt <5mm at low-mod angles TCA. CRBT light grey-cream to light purple, rimmed by blue amph, diss hem.
PGH-18-09	112	116.78	CRBT	Carbonatite	Light grey-cream to light purple-blue, massive, fg, zones of alkali clasts up to 30cm, angular to sub rounded, locally mod-str clay altered (light green-orange), diss fg kspar clasts <3mm with diffuse boundaries, diss hem, patchy trace fluorite, trace diss py, local blue-grey bands with fg diss steel blue metallic mineral, within blue-grey bands fluorite along fractures. Locally vfg light orange-red mineral rimming vugs <3mm.
PGH-18-09	116.78	139	CRBT-BX	Fenite Breccia / Carbonatite	Green-blue to red, mod-completely fenitized alkali feldspathic rock, locally intensely brecciated with crbt veins at multiple orientations from perpendicular to sub parallel TCA, dominant sets @ ~50 & @~ 15 dTCA. 70% chl/amph/bt with local patches of cg remnant alkali feldspathic rock (kspar with mod-str selectively pervasive chl/amph/bt). CRBT; light purple-mauve to light green-grey-cream, fg, massive, with wispy band sod mauve up to 5mm and masses up to 4cm locally, sub-parallel to contacts/clasts with fg diss black mineral (pych?), vfg diss light orange mineral, diffuse kspar clasts throughout crbt <3mm, trace diss hem, trace diss euhedral py up to 3mm, clasts/contacts have diffuse boundaries, Dol>Calc,
PGH-18-09	139.1	139.5	MDYKE	Mafic Dyke	Green-grey, fg, trace diss py, non-magnetic, diss hem, mod carb alt and infill of amygdales(?) up to 1cm LC @ 75/115
PGH-18-09	139.5	141	SYE	Syenite	Med red-pink, patchy weak-mod chl/amph alt replacing bt(?), Qtz <10%, kspar 60%, plag 10%, veins up to 1cm with amph/crbt fill at moderate angle TCA, light pink-cream alt halos <5mm.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-09	141	149.7	CRBT-BX	Carbonatite / Fenite Breccia	<p>141-142.08: CRBT BX; clasts of alt syn at top, lower clasts of Fenite (60% blue sodic amph, chl, bt). Upper clasts are sub-rounded with diffuse boundaries, alt to blue-green with locally red (hem) cores. LC clasts sub-angular to elongate rectangles, weakly fractured and <15cm. CRBT; light purple-green to cream-grey, mottled, ap cum up to 2cm, diffuse, diss hem, wispy bands of light green-brown.</p> <p>142.08-143.26: CRBT; light purple-green to olive brown, massive, fg, wispy bands locally, local clasts of syn <5cm diffuse boundaries, fractured, wispy bands of red-olive brown ap cum(?) <5mm. diss red-pink kspar(?) 2%</p> <p>143.26-143.65: BX CRBT; elongate clasts of syn <5cm, from completely altered to black rxn rims <5mm, clasts are sub-angular to sub-rounded, diffuse boundaries, CRBT infill light green-pink to blue, fg, wispy bands of blue-green surrounding clasts.</p> <p>146.65-143.85: carb alt MD?, green-grey, chl/bt/pyx(?) non-magnetic, weak carb/chl altered.</p> <p>143.85-145.9: CRBT BX; clasts of syn up to 10cm, sub-rounded to sub angular, diffuse boundaries, locally smaller clasts <4cm completely altered. CRBT fill light green-grey with locally 25% ap as wispy bands of olive brown-mauve. Clasts are lower contact are completely altered. LC brecciated.</p> <p>145.9-149.7: CRBT 25%, FEN 75% ; FEN is strongly to completely alt to amph/chl/bt blue-green with "bands" of cg syn. moderately fractured ~ perp TCA more intense near crbt contacts. CRBT; light grey-green to olive brown, light purple, local 5% fluorite, , diss fg hem,</p>
PGH-18-09	149.7	161.1	SYE-BX	Quartz Syenite + Breccia	<p>BX 155.20-157: clasts of syn <12cm, smaller than 5cm clasts are strongly to completely altered, sub-rounded to sub angular, diffuse boundaries, CRBT; light grey-green-purple-pink, mottled, wispy mauve bands <2mm rimming clasts/contacts.</p> <p>Med red-pink with moderate selectively pervasive chl/amph/carb, fractures/ veins <2cm with blue sodic amph/crbt fill. Local zones of massive crbt <35cm.</p> <p>159.5-160.15: UC is brecciated, clasts <10cm, sub-angular, with local rims of black bt(?), crbt light pink-purple, massive, LC with wispy bands of light green-olive brown, trace diss hem.</p>

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-09	161.1	172.38	SYE-BX	Fenite Breccia / Carbonatite	Dominated by Fenite and fenite clasts, locally remnant kspar (Syenite pre alt'n), clasts are <15cm, angular to sub rounded, locally with diffuse boundaries, clasts are mosaic breccias 161.32-163.20: CRBT BX; light purple-mauve, mottled with wispy bands of mauve <5mm sub-parallel to contacts/clasts, local masses up to 3cm. trace diss, py/hem. Clasts are completely altered (bt/chl/amph), clasts moderately fractured with diffuse boundaries. 167.15-167.75: olive brown, fg, clasts from 1-5mm, sub-rounded, alternating 'beds/bands' of diff grain size, clasts are red-cream (syn?). 169.05-169.72: CRBT; light purple-pink, cg, massive, local clasts of strongly hematite altered syn(?), ap cumulates up to 5mm, trace diss hem/py. 170.20-171.50: crbt bx; light green-blue to light pink-purple, clasts rimmed by olive brown-green and massive crbt more blue-green on colour. wispy bands/masses of mauve-green up to 5mm, patchy fluorite, clasts strongly-completely alt to amph/bt.
PGH-18-09	172.38	175.75	CRBT	Carbonatite	Cream to like pink, massive, patchy fg blue sodic amph, trace diss py, fractures filled with blue sodic amph <2mm, local masses of irregularly shaped hem rich alt clasts(?).
PGH-18-09	175.75	177.45	CRBT-BX	Carbonatite Breccia	Med blue-green to pink green, more strongly altered clasts are blue-black. strongly fenitized syenite with sub angular to sub-rounded clasts up to 30cm with multiple parallel fractures with carb infill. CRBT; light purple-green to cream-grey, diss hem, blue sodic amph fill, trace diss py 177-177.45: CRBT; cream with patchy purple. mottled, trace diss hem, ap cumulates up to 7mm, trace diss py.
PGH-18-09	177.45	180.45	MDYKE/CRBT	Mafic Dyke / Carbonatite	Green-grey, porphyritic, xtals <2mm, bt/chl/carb/pyx?, trace diss py, locally brecciated MD /SYN clasts, and crbt veins <10cm. Patchy hem alt. CRBT; light grey-cream to light pink-purple, massive, fg, hem LC @ 40/030
PGH-18-09	180.45	180.85	CRBT	Carbonatite	Light pink to cream-green, masses and wispy bands of blue-green up to 5cm ap cumulates 10%, trace diss py, trace diss hem, irregularly shaped masses of red fg hem(?). LC @ 40/030
PGH-18-09	180.85	182.1	SYE	Syenite	Med red, mg, qtz <15%, kspar 60%, plag 10%, chl/amph/carb 15%. Jointed with amph fill <1mm at mod angles TCA. Brecciated LC.
PGH-18-09	182.1	184.5	MDYKE/CRBT	Mafic Dyke / Carbonatite	Green-grey to mauve, mottled, porphyritic, xtals of bt <4mm, selectively pervasive chl alt, mod patchy hem alt, locally carb infill in vesicles?. LC diffuse @ 65/40

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-09	184.5	187.83	CRBT	Carbonatite	184.5-186.10: light grey-green, vfg light orange-cream mineral diss, dol>calc, trace diss hem, trace diss py, near UC light green-red ap cum 'bands' up to 1cm. Local zones of MD that carb alt as described above. 186.10-186.50: light purple-green with diss red, am cum as wispy bands and masses up to 5mm 15%. 186.5-187.10: Cg oxidized/weakly vuggy, brecciated crbt with hem infill, vfg light orange mineral diss. 187.10-187.83: light purple -grey to light green, fg, massive, LC 20cm cream to light green, cg, with diss hem, trace diss py.
PGH-18-09	187.83	203.25	MDYKE	Mafic Dyke	Green-grey, carbonate altered mafic dyke, magnetic, porphyritic, bt/chl/pyx <5mm, bt 30%, diopside 15%, plag 30%, mgt 5%, carb 20%. carb veins <1cm locally up to 5cm, trace diss py, Fractures commonly filled with fibrous blue amph coating. crbt veining increasing in frequency moving towards LC and becoming mottled breccia.
PGH-18-09	203.25	204.67	SYE-BX	Breccia / Syenite	203.25-204: crbt bx with highly altered clasts of MD & Syn up to 15cm, sub rounded to sub-angular, diffuse boundaries, rxn rims from 3-15mm. CRBT fill light green-grey to purple-mauve w/ wispy bands <2mm sub parallel to clast boundaries. 204-204.67: SYN; med red-pink, mod selectively pervasive amph/chl/carb alt, fractures at low and mod angles TCA ~ 3/5cm filled with amph/crbt <5mm.
PGH-18-09	204.67	208.25	CRBT	Carbonatite	Light purple-green, moderately vuggy near UC up to 1cm vugs filled with hem/pyrochlore up to 7mm, light green ap cumulates up to 2cm across, locally weakly vuggy with diss py/fg black mineral (pyrochlore?), ap cum are sub rounded blobby masses, irregular shaped masses of hem/carb/pych?/amph up to 10cm wide.. Locally trace diss galena(?) <2mm along fracture. LC @ 45/305, planar closed
PGH-18-09	208.25	210.25	QTZ-SYE	Quartz Syenite	Med red-light pink, mg, patchy chl alt, selectively pervasive amph & fracture infill, veinlets and fractures <7mm with light pink-blue alt halos up to 1cm. 15% qtz, kspar 60%, plag 10%, 15% chl/amph/carb. LC diffuse @ 60/000.
PGH-18-09	210.25	212	CRBT	Carbonatite	Light purple-pink to cream, massive, UC diffuse with 'bands' parallel to contact from syn to crbt ; light pink, green, beige all are ~3mm wide and undulating. Fg diss trace py, hem along fractures and trace diss. 211.5-212: mottled with local bands of olive brown crbt + orange cream vfg mineral. ap cum up to 1cm 20%, diss hem, traced diss py, LC is diffuse and perpendicular TCA.
PGH-18-09	212	217.15	QTZ-SYE	Quartz Syenite + Breccia	35% BX 65% QTZ SYN QTZ SYN; med red-light pink, mod-str selectively pervasive chl/amph/carb alt. Mg, qtz 15%, kspar 60%, plag 10%, 15% chl/amph/carb. Crbt veins/bx commonly rimmed by blue fg sodic amph. CRBT; light grey-cream to green-blue, fg, weakly banded sub parallel to contacts, fg, blue amph(?), diss hem, local ap cum <3mm.

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DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-09	217.15	225.23	QTZ-SYE	Quartz Syenite	Med red-light pink to weak grey-blue. Fg-mg, ,qtz 15%, kspar 60%, plag 5%, 20% bt/chl/amph. Fractures/veinlets <4mm with blue amph fill and light pink halos. Selectively pervasive mod chl/amph/carb alt. Local crbt up to 30cm. 221.72-222.10: light green to grey-blue, fg, massive, dis hem. 223.70-224: CRBT, massive, cream, rimmed by light blue-green ap cum as wispy bands up to 3cm wide, also bands od red with hem. traced diss py. LC brecciated
PGH-18-09	225.23	227.15	CRBT	Carbonatite	Light green to light pink-purple to cream, massive, cross cutting veins <4cm olive brown, wispy ap cumulates <2cm of light blue-brown. Rimmed by bands of light green-blue to pink <4mm. Trace diss py
PGH-18-09	227.15	234.5	QTZ-SYE	Quartz Syenite	Light brown-grey to pink-red, mg-cg locally, qtz 15%, plag 15%, kspar 50%, 20% chl/amph. Fractures/veins of blue amph <8mm at mod angles TCA. LC planar.
PGH-18-09	234.5	239	CRBT-BX	Carbonatite Breccia	Qtz clasts up to 15cm,sub-rounded to sub-angular, rxn rims up to 7mm of blue-black, cores of pink-red with selectively pervasive blue sodic amph. CRBT; light pink-blue-purple to light green, fg, wispy bands of brown-green <5mm subparallel to clasts and contacts. ap cum up to 5mm. Dol>Calc, local vfg bands of light orange-pink mineral. Last 0.5m light green carb alt MD?
PGH-18-09	239	243.67	GRAN	Granite	Qtz 30%, kspar 50%, bt, 5%, chl/amph 15%. Light pink-grey, mg, minor fractures with light pink halos <3mm. Larger near crbt veins. LC planar @ 70/110
PGH-18-09	243.67	246.15	CRBT	Carbonatite	Cream to light pink-purple with patchy blue, bleu is fg sodic amph as masses surrounding calc xtals. Local ap cum along contacts up to 1.5cm, trace diss hem, local masses of py/po up to 7cm.
PGH-18-09	246.15	249.4	QTZ-SYE	Quartz Syenite	244.9-246: fenite, 70% chl/amph/bt/pyx QTZ SYN; med red to light pink, selectively pervasive chl/amph/carb, fractures have light pink-red halos and are filled with carb/amph up to 3mm. Qtz 15-20%, kspar 60%, plag 10%, 15% chl/amph/bt.
PGH-18-09	249.4	252.5	CRBT-BX	Carbonatite Breccia	UC @ ~10/075 moving down hole becomes sub parallel TCA, alkali clasts are from 1-15cm, either cream-pink in colour (clasts <5cm) or zoned (clasts >5cm, pink rims from 3-15mm, black-grey chl/bt (alt?) with trace diss py, cores of light pink-red qtz syn). Rxn rim along contacts is light pink and up to 3cm, within wall rock selectively pervasive carb/amph alt & rimming rxn zone <1cm. CRBT; brown-mauve to light purple-green to grey, wispy masses of mauve-brown-orange up to 5cm across following sub-parallel to contacts and clasts. vfg 'fiamme' of ap <2mm in width contained within 'masses' of darker material. Local massive qtz up to 2cm, Cal>Dol 15% Si, trace diss hem, trace diss py, trace fg black mineral anhedral masses <5mm, trace patchy fluorite. LC bx and irregular

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DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-09	252.5	256.7	SYE-BX	Quartz Syenite + Carbonatite Breccia	45% QTZ SYN, 55% CRBT BX Alternating zones of alkali/crbt bx up to 60cm & 80cm respectively. QTZ SYN; red light pink, mg, weak-mod selectively pervasive amph (blue) alt & infilling fractures/veins w/ crbt. Qtz 15%, kspar 60%, bt 10%, amph 15%. CRBT; light grey to light pink-purple, fg, locally weakly banded, clasts of qtz within crbt <7cm, completely alt to light pink pervasive carb, wispy bands and masses of ap up to 2cm, masses concentrating near contacts and surrounding clasts. Contacts are planar to brecciated.
PGH-18-09	256.7	263.25	GRAN	Granite	Qtz >20%, kspar 60%, amph/chl/bt 15%,mg, mod-weak selectively pervasive chl/amph alt, med red to light pink, fractures/veins subparallel ~50dTCA filled with amph+/- crbt, hem (mauve) <4mm, locally crbt dyke 20cm. Local <2cm MD, weakly joints rock mass LC @ 60/290
PGH-18-09	263.25	263.75	MDYKE/CRBT	Mafic Dyke / Carbonatite	Green-grey, aphanitic, non-magnetic, amygdales <5mm filled with chl/crbt, rimmed by crbt & 1cm xc crbt dyke. Contact btw MD/CRBT sharp with local clasts of MD. UC @ 60/290, LC @ 25/280
PGH-18-09	263.75	273.2	MIX ZONE	Mixed zone of carbonate altered mafic dyke, alkali feldspathic, and carbonatite breccia	QTZ SYN 50%, CRBT BX 40%, 10% MD qtz syn with mod selectively pervasive amph/carb +/- hem alt, qtz 15%, plag 10%, 60% kspar, 15% amph/carb, mg. CRBT BX: light green-grey to pink-purple to cream, fg, wispy bands/masses of mauve ap cum up to 5cm, commonly in 'bands' sub-parallel to contacts and clasts, bands are discontinuous and <1cm wide, silicio-calc carbonatite, trace diss hem, traced sis py. MD is surrounded by crbt and crbt altered (crtb later than MD). Crbt contacts are cnlr rimmed by blue fg amph and light pink alt halos <1cm. MD: light green-grey, strong carb alt along fractures sub-parallel to contacts with masses of chl <3mm. LC @ 50/000 271.18-127.8: CRBT; cream grading into light pink, cg, massive, trace diss py, masses of ap cum up to 3cm. 272.57-273.2: CRBT; cream, cg, massive, fg wispy blue amph, trace diss py.
PGH-18-09	273.2	276.95	GRAN	Granite	Qtz 30%, kspar 40%, plag 15%, 15% amph/chl/bt, mg, fractures filled with amph <2mm at ~45 dTCA. Mod selectively pervasive chl/amph. LC @ 40/340
PGH-18-09	276.95	292.85	MDYKE	Mafic Dyke	Chilled margin, magnetic, green-grey, fg, chl along fractures, 25% plag, jointed. Mag sus 23.8 LC @ 25/340
PGH-18-09	292.85	297.35	CRBT	Carbonatite	Light blue to cream, cg, massive with wispy bands of blue-green, trace diss py, patches of dark blue, fg, with bt, trace py/po and magnetite. Masses/wispy bands of ap cum +/- mgt, masses up to 3cm, 'bands' up to 4cm. LC irregular 50/000

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-09	297.35	300.2	GRAN	Granite	Qtz 30%, kspar 30%, plag 30%, chl/amph 10%, fg-cg up to 1.5cm, light brown to cream-pink, moderately fractured with infills of amph/crbt <5mm. LC @25/150
PGH-18-09	300.2	303.95	SYE-BX	Granite Breccia	Blobby clasts of gran described above up to 15cm, clasts highly fractured with diffuse boundaries, CRBT fill <3cm, fractures are locally numerous 2 per cm, at high angles ~70dTCA. Strongly selectively pervasive amph alt. LC sharp @ 50/100
PGH-18-09	303.95	305.55	MDYKE/CRBT	Mafic Dyke / Carbonatite	Forest green-grey with mottled chl/carb alt, fg, amygdales <5mm filled with chl/carb, magnetic bands of black <4mm, elongate pyx up to 5mm, trace diss py, at UC cross cutting CRBT dyke. Mottled near LC with ap cumulates up to 1cm UC @ 50/100, LC @ 30/180
PGH-18-09	305.55	313.2	QTZ-SYE	Quartz Syenite	Light pink-red, fg-cg <5mm, selectively pervasive chl/amph/bt alt, qtz 15%, kspar 50%, plag 15%, 20% chl/amph, cross cutting crbt dyke of olive brown ~30 dTCA. CRBT; olive brown, fg, massive, to light pink-purple, diss hem, wispy bands of ap cum local qtz near contacts, light orange mineral in wispy bands. LC @ 20/235
PGH-18-09	313.2	317	CRBT-BX	Carbonatite Breccia	CRBT 50%, BX 50% CRBT; light pink-purple to light green-grey, massive, diss hem, wispy bands of olive brown-red, trace diss py/po locally SMS infill in breccia, surrounding clasts light green with wispy brn-red ap cum, Calc>Dol BX; syn clasts <20cm sub-rounded to sub-angular with rxn rims <5mm an selectively pervasive alt cores amph/bt. patchy trace fluorite,
PGH-18-09	317	320.6	SYE-BX	Quartz Syenite Breccia	Med red-light pink, fg - cg up to 7mm, mod selectively pervasive chl/amph/crbt alt and infill of fractures/veins up to 3cm, with light pink alt halos. Contacts are diffuse becoming more so where veins are larger. Strong hem alt moving towards LC. Patchy strong chl alt'n. LC irregular.
PGH-18-09	320.6	325.3	CRBT-BX	Carbonatite Breccia	BX 20%, CRBT 80% BX diffuse, blobby clasts of strongly to completely altered syn, up to 20cm, sub-angular to sub-rounded, highly fractured with strongly chl alt cores with pink rxn rims. CRBT; light purple-grey to light pink-blue-green, massive to locally weakly banded, fg, weak bands of blue containing sodic amph +/- bt, ap (beige, H<5, sub angular, <4mm), py, hem. Wispy light green-brown bands up to 7mm of ap cum. Trace diss py, trace diss hem.
PGH-18-09	325.3	332.5	QTZ-SYE	Quartz Syenite	Qtz 15-20%, kspar 50%, plag 15%, bt/chl/amph 15%, fg-cg up to 8mm, med red-pink to green-blue, moderate selectively pervasive fenitization (chl/amph) alt. Veins of crbt at mod angle TCA <2cm, light grey-brown, fg massive with diss hem and fg sodic amph. LC planar @ 50/55.

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DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-09	332.5	335.3	CRBT	Carbonatite	Light pink-purple, massive, cg, trace diss hem, wispy bands of olive brown dol rich crbt cross cutting as veins up to 8cm locally vuggy with hem/pych(?) infill. Wisps of red-brown hem/ap cum <3mm in width, trace patchy fluorite, local clasts of light brown weakly vuggy <2mm vuggy vfg crbt, clasts are sub-rounded to sub-angular. bands of ap cum/hem rimming clasts/contacts <7mm.
PGH-18-09	335.3	340.2	SYE-BX	Syenite Breccia + Carbonatite	Clasts <20cm, angular to sub-rounded, clast moderately fenitized with selectively pervasive chl/amph alt, locally clasts have diffuse boundaries. CRBT fill light grey-blue to light pink, clasts are highly fractured, fill with fg light blue amph. Trace diss py, trace diss hem.
PGH-18-09	340.2	341.2	CRBT	Carbonatite	Mauve to light green-grey, fg, massive, trace diss hem, 2% fg diss black mineral (pyrochlore), weakly vuggy, masses of chl <3cm, trace diss py. LC @ 55-310
PGH-18-09	341.2	345.6	QTZ-SYE	Quartz Syenite / Granite	15-25% qtz, mod fenitized (selectively pervasive chl/amph/crbt), fractures/veins <4mm with blue sodic amph fill +/- crbt. Med red-pink to blue-green, mg, Crbt veins have red-pink alt halos <5mm. Increase in frequency/size of Crbt veining moving towards LC with veins up to 1cm.
PGH-18-09	345.6	347	CRBT	Carbonatite	CCTs at low angle TCA ~10-15. light brown, pink-purple to cream, trace diss hem, trace fg anhedral masses of py up to 2cm concentrating near clasts and rimming LC. LC @ 15/180, undulating, closed

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DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-09	347	368.6	GRAN	Granite	<p>Light grey with patchy med red-pink, opaque to light grey kspar 50%, qtz 25%, 5% plag, 20% bt/chl/amph. Veins filled with blue fg sodic amph have light pink potassic alteration halos, this alteration is also visible along fractures and increases in intensity near CRBT veins/dykes. mg-cg locally pegmatitic <2cm xtals. CRBT veins and commonly rimmed by chl/amph (blue-green) rims and smaller veins. 352.14-352.40: CRBT; light pink to cream purple, cg, massive, cg band 2cm wide near LC (blue amph?, hem, crbt). ap cum up to 1.5cm near UC/LC. Wispy discontinuous bands of altered gran boarding contacts. LC @ 40/080</p> <p>352.75: FZ; healed, small scale normal faulting <1cm visible is crbt vein. brittle deformation of vein with plane ~ @ 35/275</p> <p>353.07-354.24: CRBT; brecciated UC @ 15/125, clasts of altered gran up to 5cm, sub-angular to sub rounded, clasts <1cm are commonly completely altered to biot. CRBT is light pink-cream to light green-blue, massive, trace diss py, local wispy bands of blue-green to olive brown amph/ap/py <6mm. LC rimmed by massive chl/amph</p> <p>359.5-360.15: Mafic Dyke; black, magnetic, aphanitic, sharp contacts, chilled margin, amygdales filled with carb/chl <3mm. CU @ ~55/190 (irregular), LC @ 50/140</p> <p>364.3-365: CRBT BX; pink-red alt mg granite, CRBT; light pink-purple, massive, ap cum up to 1cm near contacts, rimmed by blue amph/mauve hem.</p>
PGH-18-09	368.6	371.9	CRBT-BX	Carbonatite Breccia + Granite	<p>CRBT 40%, BX/GRAN 60%</p> <p>UC @ 15/085, undulating contact.</p> <p>Clasts of gran up to 40cm, commonly rimmed with blue/black and rxn rims of bt/amph, clasts <15cm are commonly completely altered with occasional unaltered cores.</p> <p>CRBT; cream to light blue-pink, lower section with wispy bands of blue amph/diss py, clasts are rimmed by light green ap cum, and wispy bands of hem/ap cumulate</p>
PGH-18-09	371.9	375.36	GRAN	Granite	<p>Qtz 20-30%, kspar 40%, plag 10%, bt/amph/chl 20%. Zones of blobby breccia with crbt fill over 1m zone. Outside of this weak veining filled with crbt/amph <5mm</p>
PGH-18-09	375.36	380.15	CRBT	Carbonatite	<p>Light pink to cream, with wispy bands of green-blue with amph/trace diss py/trace beige ap(?) <1mm, fg, dominantly massive, trace diss hem, rimmed by blue sodic amph.</p> <p>378.85-379.7: 5% magnetite, 10% bt, light green within zones of bt/mag, crbt cream to light pink, trace diss py</p>
PGH-18-09	380.15	381.93	GRAN	Granite	<p>Med red-pink, mg, selectively pervasive chl/amph/crbt, fractures filled with amph/crbt <4mm,</p> <p>380.69-380.84: 15cm of chl/carb alt MD, non-magnetic</p>

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DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-09	381.93	383.5	MIX_ZONE	Mafic Dyke, Carbonatite, Granite	CRBT 25%, MD 55%, 20% GRAN CRBT; light purple-cream, trace diss hem/py, light green fg ap cum(?) MD; green-grey, xtals <3mm, bt/chl/pyx(?) crbt altered, carb masses <4mm, diss py, is on either side of CRBT dyke GRAN; grey to blue-green, fenitized, mg,
PGH-18-09	383.5	390.6	GRAN	Granite	Light pink -grey, 35% qtz, 50% kspar, 5% plag, 10% bt/chl/amph. Fg-mg, fractures/veins filled with chl/amph/crbt <4mm, commonly with light pink potassic(?) alt halos <4mm. LC @40/175
PGH-18-09	390.6	408.2	GRAN	Granite + Carbonatite	GRAN >> CRBT GRAN; light pink -grey, 35% qtz, 50% kspar, 5% plag, 10% bt/chl/amph. Fg-mg, fractures/veins filled with chl/amph/crbt <4mm, commonly with light pink potassic(?) alt halos <4mm. locally pegmatitic near LC up to 3cm xtals with weak-str potassic overprinting. CRBT; multiple bx zones and veins < 1m, commonly <20cm. 390.6-391.1: CRBT; cream to light pink, massive, rimmed by blue fg sodic amph, trace diss py. 391.45-391.9: CRBT; light pink to cream with blue-green wispy bands along contacts, massive, fg, 395-396: light grey-green, fg, massive, crbt(?) or intensely alt dyke(?) local diffuse clasts light green with bt xtals. 399.9-401.3: CRBT BX; light pink-olive brown, massive, with wispy bands of mauve-light orange <1cm, diss hem, mottled light green-brown.
PGH-18-09	408.2	413	SYE	Fenite / Granite	Green-grey, strong to complete alteration to bt/chl/amph up to 70%, irregular patches of weakly altered fg-mg granite (grey-pink, 30% qtz, kspar 40%, 15% plag, 15% bt/chl/amph), trace diss py.
PGH-18-09	413	415.15	GRAN	Granite / Fenite	Light pink-red, fg-cg up to 5mm, mod-str fenitized with selectively pervasive amph/chl. Qtz 25%, kspar 45%, plag 10%, 20% amph/chl. Moderately fractured with crbt fill <3mm moving downhole/closer to contact with crbt. Locally >50% amph/chl/bt
PGH-18-09	415.15	416.05	CRBT	Carbonatite	Light purple-pink with light green, UC @ ~ 30dTCA, LC irregular and ~perpendicular TCA. Massive, trace diss py/hem, light green ap cum up to 5mm, and as wispy bands of green-brown with light orange cream vfg mineral.
PGH-18-09	416.05	426	GRAN	Fenite / Granite	Irregular patches of chl/amph/bt strongly to completely altered granite. Outside of highly altered masses gran is still mod alt with selectively pervasive chl/amph/carb alteration. GRAN; light pink-red, mg-cg <2cm locally, bimodal grain size distribution, qtz 25%, kspar 40%, plag 10%, amph/chl/bt 15-60%. moderate veining/fractures filled with crbt <5cm and at mod angles TCA. LC is gradational and marked by increase in CRBT veining/bx

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DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-09	426	437.4	SYE-BX	Carbonatite Breccia + Fenite/Granite	<p>FEN/GRAN 65%, CRBT/BX 35%</p> <p>FEN/GRAN; dominantly completely alt to chl/amph/bt with local 'cores' of clasts/zones of moderately altered granite. Strong-completely altered granite in close proximity to crbt bx. Clasts are up to 20cm, sub angular to sub-rounded, moderately fractured, and commonly completely altered. Veins/joints commonly filled with amph/crbt and have light pink to red hem alt halos.</p> <p>CRBT; light grey-cream to light blue-green, massive, wispy bands surrounding clasts/contacts, commonly rimmed by blue sodic amph</p> <p>427-428: CRBT; fg diss magnetite, crbt is blue-green to light pink, diss fg bt/mgt/diss py, light green chl(?)</p> <p>435-437.4: CRBT; light pink-cream, wispy bands/masses of light green-blue, fg, with patchy disseminated hem. commonly concentrically zoned from contact in blue amph - light green-red and red-brown, trace diss py bands are from 2-20mm</p> <p>LC @ 60/200</p>
PGH-18-09	437.4	441.45	GRAN	Granite / Carbonatite	<p>GRAN 75%, CRBT 25%</p> <p>GRAN; light pink-red to orange with green-blue, fg-pegmatitic, moderately to strongly fenitized (masses and selectively pervasive chl/amph/carb), qtz 25%, kspar 45%, plag 10%, 20% chl/amph. Gran has weak potassic alt(?) light pink rimming white kspar and penetrating xtals to varying degrees. Approaching contacts with crbt is coarser grained gran and larger masses of amph/chl up to 10cm.</p> <p>439.35-440: CRBT; light grey-green to light pink, massive, stringers/diss py with euhedral xtals <3mm, running sub-parallel to contact. gran clasts within crbt and completely alt to bt/amph. contacts are diffuse and undulating UC @ 20/275, LC @15/270</p>
PGH-18-09	441.45	445	GRAN	Granite / Glimmerite	<p>Alternating 'bands' (only locally are bands from 2-10cm clearly distinguishable) of mod alt gran and glimmerite (<70% bt/chl/pyx(?)). Moving downhole beyond 444m strongly pervasive glimm alt.</p> <p>green-blue to grey, gran fg-mg, patches and zones <5cm of only mod alt gran with selectively pervasive chl/amph/bt and trace diss py.</p> <p>443.25-443.5: crbt cream to light purple with wispy bands of blue sodic amph/py/hem(?) +/- ap? <8mm in width. cg,</p> <p>LC @ 75/210</p>

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-09	445	459.65	CRBT-BX	Carbonatite / Breccia	<p>445-447.67: CRBT BX; clasts of mod fenitized alt gran, <25cm clasts, sub-angular to sub-rounded with black rxn rims <2cm, and cores of grey-light pink-green. Clasts smaller than 5cm and completely contained within crbt are completely altered to black-blue-green (bt/chl/amph). 40cm of CRBT; cream to light pink with wispy bands <5mm of blue-green to olive brown with fg sodic amph +/- hem, ap cumulates, trace diss py.</p> <p>447.67-449.55: CRBT; cream to light pink-blue, cg, vfg blue sodic amph intercrystalline, wispy blue-grey bands <1cm with diss py/amph/ap? (light beige xtals <1mm), Calc>Dol, LC in irregular and marked by sharp drop in sodic amph</p> <p>449.55-451: CRBT/GRAN?; light grey-green with bt xtals <2mm and patch chl(?) possibly crbt alt section of GRAN?, non-magnetic, spheres of qtz/kspar/bt <3mm surrounded by crbt. CRBT is light purple-green, massive, diss hem,</p> <p>451-454.4: CRBT; light pink-purple, massive, with wispy bands/masses of blue-green <1cm with diss py and ap cum <1cm. locally olive brown 'bands' <2cm with diss hem and fg ap(?). Trace diss py, and increase in wispy bands near LC.</p> <p>454.4-456.1: MD/CRBT; green-grey, vfg chl and bt/pyx xtals <3mm, cross cut by crbt and carb alt, contacts are irregular to brecciated, non-magnetic, LC perpendicular TCA and undulating.</p> <p>456.1-459.65: CRBT; light pink-purple to cream, massive, with local wispy bands of blue <3cm (amph/diss py/ap?), interstitial and wispy masses throughout of green-olive brown (white under UV) ap +/- diss hem, pyrochlore <2mm (black, within masses). Near LC ap cum up to 5cm (light green masses), LC is irregular and wall rock is completely fenitized</p>
PGH-18-09	459.65	470.1	CRBT-BX	Carbonatite + Fenite	<p>Blue-green, strongly to completely fenitized (sodic amph/bt/chl) with locally less altered patches of GRAN(?) mg-cg, light orange-green. Multiple zones of crbt bx and en echelon crbt veining <1cm.</p> <p>CRBT; light purple-pink to cream, massive, rimmed by light green and locally blue fg blue amph. contacts are commonly planar, and locally diffuse, diss hem, trace diss py. locally ap cum near contacts <5mm. Wispy bands/masses of red-brown<2cm (hem/ap?).</p>
PGH-18-09	470.1	474.6	GRAN	Granite	Light pink-red with weak-mod selectively pervasive chl. Qtz 25%, kspar 45%, plag 15%, bt 10%, 5% chl
PGH-18-09	474.6	477.25	CRBT-BX	Carbonatite Breccia	<p>Low angle undulating upper contact.</p> <p>Clasts of granite <20cm, within bx zone clasts are commonly rimmed with black-blue <7mm, locally clasts are completely altered. Clasts diminishing in size moving downhole into massive crbt.</p> <p>CRBT; light grey-green, mottled, diss hem, trace diss py, fg diss ap, Calc> Dol/Si, vfg light orange mineral, local fg black <1mm pyrochlore(?)</p>
PGH-18-09	477.25	484	GRAN	Carbonatite / Granite	<p>CRBT 30%, GRAN 70%</p> <p>GRAN; light pink, mg, <2mm fractures filled with crbt/amph, qtz 25% kspar 50%, 15% plag, chl/amph 10%</p> <p>CRBT; light purple-pink to light green-cream, massive, locally wispy bands <5mm, diss hem, local patches with bt/amph, trace diss py and masses up to 5mm near bx LC</p>

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-09	484	487.15	GRAN	Fenite / Granite	Very weakly foliated with mod-str selectively pervasive bt/chl/amph with zones of light grey mg granite. Fractures/veins with light pink-red alt halos <5mm. Bt/chl/amph up to 35%. Local crbt up to 25cm; light purple to blue, cg, massive, diss hem UC of CRBT 40/0353
PGH-18-09	487.15	495	CRBT	Carbonatite + Breccia	Cream to light purple-pink with blue-green wispy masses and bands, fibrous masses are rimming clasts and are up to 4cm and contain amph xtals <4mm, diss fg py, vfg ap(?) . Clasts of gran up to 30cm with bt rxn rims <7mm, sub-angular to sub-rounded. Local trace qtz within bands, trace fg <1mm metallic blue-black mineral (pyrochlore?) 493.6-495: altered MD, light grey-green with xtals of bt <2mm, with sub-rounded spheres of qtz/kspar <3mm, non-magnetic.
PGH-18-09	495	503.7	GRAN	Granite	Light pink-red, selectively pervasive chl/amph/crbt, mg-locally pegmatitic, fractures/veinlets filled with chl/amph/crbt <4mm, qtz 25%, kspar 45%, plag 10%, 20% bt/chl/amph. 500.20-501.35: CRBT; light purple to purple to cream, zoning at contacts, light grey-blue outer (sodic amph) - beige to green (dol) - wispy red-pink with ap masses <4mm. LC at ~10dtca
PGH-18-09	503.7	505.56	CRBT	Carbonatite	Light purple-pink to light green, massive, wispy masses/bands of light green-brown <1cm with diss hem/ap, bands of blue vfg sodic amph <1cm, trace diss py/hem
PGH-18-09	505.56	510	GRAN	Granite / Fenite	Light pink, mg-cg, mod to strongly altered to amph/chl with veins/fractures <1cm filled with crbt/amph with light pink alt halos <5mm. Qtz 25%, kspar 45%, plag 10%, 20% amph/chl. Locally CRBT veins <15cm; cream to light pink with patchy blue, massive.

ORIENTED STRUCTURES

DDH	Depth	Type	Alpha (°)	Beta (°)	Gamma (°)	Title	Description
PGH-18-09	11.35	JNT	40	35		JNT in alkali	undulating, rough, fe-ox chl fill <3mm
PGH-18-09	11.68	JNT	50	95		JNT in alkali	planar, slightly rough, Fe-Ox
PGH-18-09	11.75	CT	60	140		UC CRBT	planar, slightly rough, weak Fe-ox
PGH-18-09	12.58	VN	60	155		CRBT VN	planar, moderatley weatherd, slightly rough
PGH-18-09	13.77	JNT	60	240		JNT in alkali	planar, slightly rough, partial fill chl <1mm
PGH-18-09	16.35	CT	30	110		LC CRBT	planar, closed
PGH-18-09	17.45	CT	65	120		UC CRBT	planar, slightly rough, slightly weathered, fe-ox, crbt fill <2mm
PGH-18-09	22.4	JNT	60	130		JNT in alkali	planar, slightly rough, chl fill <1mm
PGH-18-09	42.8	JNT	45	220		JNT in alkali	planar, slightly rough, chl fill <1mm
PGH-18-09	43	CT	55	80		UC CRBT	planar, closed
PGH-18-09	65.5	CT	45	295		LC FZ BX	planar, closed
PGH-18-09	66.63	JNT	60	320		JNT in alkali	planar, slightly rough, amph fill <1mm
PGH-18-09	67.03	JNT	60	300		JNT in alkali	planar, slightly rough, amph fill <1mm
PGH-18-09	67.35	JNT	50	255		JNT in alkali	planar, slightly rough, amph fill <1mm
PGH-18-09	68.1	CT	45	330		LC CRBT VN	planar, closed
PGH-18-09	68.32	JNT	50	250		JNT in alkali	stepped, rough, no fill
PGH-18-09	68.62	JNT	50	230		JNT in alkali	planar, slightly rough, wk staining no fill
PGH-18-09	69.1	JNT	50	235		JNT in alkali	planar, slightly rough, crb/chl fill <1mm, minor staining
PGH-18-09	69.7	JNT	45	130		JNT in alkali	planar, slightly rough, no fill
PGH-18-09	70.4	JNT	50	220		JNT in alkali	planar, slightly rough, no fill
PGH-18-09	71.18	JNT	45	220		JNT in alkali	planar, slightly rough, chl fill <1mm
PGH-18-09	71.45	JNT	30	90		JNT in alkali	planar, slightly rough, chl fill <1mm
PGH-18-09	71.55	JNT	45	250		JNT in alkali	planar, slightly rough, chl fill <1mm
PGH-18-09	72.25	JNT	60	230		JNT in alkali	planar, slightly rough, chl fill <1mm
PGH-18-09	72.48	JNT	55	230		JNT in alkali	planar, slightly rough, cbr/chl fill <1mm
PGH-18-09	73.45	JNT	50	200		JNT in alkali	planar, slightly rough, chl fill <1mm
PGH-18-09	75.57	JNT	40	240		JNT in alkali	planar, slightly rough, chl fill <1mm
PGH-18-09	76.4	JNT	35	225		JNT in alkali	planar, slightly rough, chl fill <1mm
PGH-18-09	77.26	JNT	55	130		JNT in alkali	planar, slightly rough, amph fill <1mm
PGH-18-09	80.05	JNT	30	85		JNT in alkali	planar, slightly rough, chl fill <1mm
PGH-18-09	82.4	JNT	75	120		JNT in alkali	planar, slightly rough, amph fill <1mm
PGH-18-09	83.8	JNT	50	75		JNT in alkali	planar, slightly rough, amph fill <1mm
PGH-18-09	85	CT	50	275		UC CRBT	planar, closed
PGH-18-09	89.5	JNT	40	160		JNT in alkali	planar, slightly rough, amph fill <1mm
PGH-18-09	90.25	JNT	55	170		JNT in alkali	curved, slightly rough, no fill

ORIENTED STRUCTURES

DDH	Depth	Type	Alpha (°)	Beta (°)	Gamma (°)	Title	Description
PGH-18-09	90.48	JNT	70	170		JNT in alkali	planar, slightly rough, amph fill <1mm
PGH-18-09	90.98	JNT	70	260		JNT in alkali	planar, slightly rough, amph fill <1mm
PGH-18-09	91.25	JNT	25	315		JNT in alkali	planar, slightly rough, chl/amph fill <1mm
PGH-18-09	91.5	JNT	55	165		JNT in alkali	planar, slightly rough, amph fill <1mm
PGH-18-09	91.85	CT	30	250		UC CRBT	planar, rough, amph fill <1mm
PGH-18-09	96.75	JNT	30	320	80	JNT in alkali	planar, smooth/slickenslides, chl fill 2mm
PGH-18-09	97	CT	50	310	80	CCT w/ CRBT	planar, smooth/slickenslides, chl fill 2mm
PGH-18-09	97.15	JNT	30	320		JNT in alkali	undulating, slightly rough, chl fill <1mm
PGH-18-09	99.5	JNT	25	210		JNT in alkali	planar, slightly rough, chl fill <1mm
PGH-18-09	100.36	CT	70	195		CRBT UC	planar, rough, amph fill <1mm
PGH-18-09	100.67	CT	80	225		LC CRBT	planar, closed
PGH-18-09	102.6	CT	70	180		UC CRBT	planar, closed
PGH-18-09	102.96	CT	70	165		LC CRBT	planar, closed
PGH-18-09	103.05	JNT	40	220		JNT in alkali	planar, slightly rough, chl fill <1mm
PGH-18-09	106.35	CT	55	105		UC CRBT	planar, closed
PGH-18-09	106.95	JNT	80	200		JNT in alkali	planar, slightly rough, chl/amph fill <1mm
PGH-18-09	107.1	CT	55	100		UC CRBT	undulating, rough, amph fill <1mm
PGH-18-09	107.35	CT	60	105		LC CRBT	planar, closed
PGH-18-09	108.36	JNT	45	170		JNT in alkali	undulating, slightly rough, amph fill <1mm
PGH-18-09	108.65	JNT	75	300		JNT in alkali	planar, slightly rough, chl/amph fill <1mm
PGH-18-09	109.05	JNT	65	80		JNT in alkali	planar, slightly rough, amph fill <1mm
PGH-18-09	111.25	JNT	70	50		JNT in alkali	planar, slightly rough, amph fill <1mm
PGH-18-09	111.6	VN	50	60		CRBT VN	planar, closed
PGH-18-09	112	CT	60	65		UC CRBT	planar, rough, no fill
PGH-18-09	115.12	CT	60	95		LC CRBT	planar, closed
PGH-18-09	115.9	CT	70	80		UC CRBT	planar, closed
PGH-18-09	116.65	CT	60	120		LC CRBT	undulating, rough, no fill
PGH-18-09	116.85	JNT	65	105		JNT in alkali	planar, slightly rough, amph/crbt fill <1mm
PGH-18-09	119.56	CT	55	140		LC CRBT	planar, closed
PGH-18-09	119.9	JNT	60	115		JNT in alkali	planar, slightly rough, crbt/amph fill <1mm
PGH-18-09	121.33	CT	50	120		LC CRBT	planar, closed
PGH-18-09	128.87	CT	60	140		LC CRBT	planar, closed
PGH-18-09	130.05	CT	45	280		LC CRBT BX	planar, closed
PGH-18-09	137.23	CT	55	270		LC CRBT VN 1cm	planar, closed
PGH-18-09	138.8	JNT	30	150		JNT in alkali	undulating, slightly rough, amph fill <1mm

ORIENTED STRUCTURES

DDH	Depth	Type	Alpha (°)	Beta (°)	Gamma (°)	Title	Description
PGH-18-09	139.45	CT	75	115		LC of MD?	planar, closed
PGH-18-09	139.56	JNT	50	185		JNT in alkali	planar, slightly rough, amph fill <1mm
PGH-18-09	139.85	JNT	50	170		JNT in alkali	planar, slightly rough, amph fill <1mm
PGH-18-09	147.98	CT	75	120		LC CRBT	planar, slightly rough, no fill
PGH-18-09	148.08	CT	75	190		UC CRBT	planar, closed
PGH-18-09	150.7	JNT	45	130		JNT in alkali	planar, slightly rough, amph fill <1mm
PGH-18-09	152.48	JNT	50	170		JNT in alkali	planar, slightly rough, amph fill <1mm
PGH-18-09	154.43	JNT	65	140		JNT in alkali	planar, slightly rough, amph fill <1mm
PGH-18-09	158.2	CT	75	330		UC CRBT	planar, closed
PGH-18-09	158.38	CT	70	280		LC CRBT	planar, closed
PGH-18-09	158.75	JNT	55	180		JNT in alkali	planar, slightly rough, amph fill <1mm
PGH-18-09	159.55	CT	30	130		UC CRBT BX	planar, closed
PGH-18-09	160.1	CT	30	110		LC CRBT BX	planar, closed
PGH-18-09	160.9	CT	55	115		UC CRBT	planar, rough, no fill
PGH-18-09	165.1	CT	25	100		LC CRBT	planar, closed
PGH-18-09	166.43	CT	55	140		UC CRBT	planar, closed
PGH-18-09	175.75	CT	75	120		LC CRBT BX	diffuse, closed
PGH-18-09	176.3	JNT	30	100		JNT in CRBT BX	planar, slightly rough, crb fill
PGH-18-09	177.88	CT	70	280		UC CRBT	planar, closed
PGH-18-09	178.47	JNT	50	290		JNT in CRBT BX	planar, no fill, slightly rough
PGH-18-09	180.46	CT	40	30		UC CRBT	planar, closed
PGH-18-09	180.8	CT	40	35		LC CRBT	planar, closed, diffuse
PGH-18-09	181.25	CT	55	115		LC CRBT	planar, closed
PGH-18-09	182.4	VN	60	50		crb vein in MD?	planar, crb fill <1mm, slightly rough
PGH-18-09	184.5	CT	65	40		UC CRBT	planar, closed
PGH-18-09	185.7	CT	50	55		UC MD/CRBT	planar, closed
PGH-18-09	187.83	CT	35	70		LC CRBT	planar, slightly rough, chl/crb fill <1mm
PGH-18-09	190.15	CT	50	270		LC CRBT	planar, closed
PGH-18-09	196.55	VN	45	110		CRBT VN 2mm	planar, slightly rough, crb fill <1mm
PGH-18-09	197.28	JNT	40	100		JNT in MD?	planar, slightly rough, chl/amph fill <1mm
PGH-18-09	199.05	CT	75	110		LC CRBT	planar, closed
PGH-18-09	208.22	CT	50	305		LC CRBT	planar, closed, diffuse
PGH-18-09	208.33	CT	60	20		UC CRBT	planar, closed, diffuse
PGH-18-09	208.8	JNT	65	180		JNT in SYN	planar, slightly rough, amph fill <1mm
PGH-18-09	209.8	JNT	35	40		JNT in SYN	planar, slightly rough, amph fill <1mm

ORIENTED STRUCTURES

DDH	Depth	Type	Alpha (°)	Beta (°)	Gamma (°)	Title	Description
PGH-18-09	210.1	JNT	60	105		JNT in SYN	planar, slightly rough, amph fill <1mm
PGH-18-09	210.25	CT	60	0		UC CRBT	diffuse, closed
PGH-18-09	213.85	JNT	30	180		JNT in SYN	planar, slightly rough
PGH-18-09	217	CT	20	190		LC CRBT BX	diffuse, closed
PGH-18-09	218.3	VN	40	170		LC CRBT/AMPH VN	planar, slightly rough amph fill 4mm
PGH-18-09	220.5	JNT	40	170		JNT in SYN	planar, slightly rough, amph/chl fill
PGH-18-09	221.25	JNT	55	250		JNT in SYN	planar, slightly rough, amph fill <1mm
PGH-18-09	221.65	JNT	40	150		JNT	planar, slightly rough, amph fill <1mm
PGH-18-09	225.3	JNT	45	80		JNT in SYN	planar, slightly rough, amph fill <1mm
PGH-18-09	225.6	JNT	55	255		JNT in SYN	planar, slightly rough, amph fill <1mm
PGH-18-09	229.9	JNT	65	50		JNT in SYN	planar, slightly rough, amph fill <1mm
PGH-18-09	230.13	JNT	60	300		JNT in SYN	planar, slightly rough, amph fill <1mm
PGH-18-09	231.2	JNT	20	290		JNT in SYN	planar, slightly rough, amph fill <1mm
PGH-18-09	231.65	JNT	65	290		JN1t in SYN	planar, slightly rough, amph <1mm
PGH-18-09	233.1	VN	45	210		VN filled with CRBT/amph	planar, slightly rough, crbt/amph fill <1mm
PGH-18-09	233.84	JNT	70	240		JNT in SYN	planar, slightly rough, infill amph <1mm
PGH-18-09	234.4	CT	25	210		UC CRBT	planar, closed
PGH-18-09	239.22	JNT	65	170		JNT in SYN	planar, slightly rough, infill amph <1mm
PGH-18-09	239.45	JNT	70	0		JNT in SYN	planar, slightly rough, in fill amph <1mm
PGH-18-09	243.65	CT	70	110		UC CRBT	planar, closed, diffuse
PGH-18-09	245.95	CT	50	120		UC CRBT	planar, closed
PGH-18-09	246.1	CT	55	100		LC CRBT	planar, diffuse, closed
PGH-18-09	246.4	JNT	60	190		JNT in SYN	planar, slightly rough, infill amph <2mm
PGH-18-09	247.55	JNT	35	170		JNT in SYN	planar, slightly rough, infill amph <2mm
PGH-18-09	257.9	JNT	45	290		JNT in SYN	planar, slightly rough, infill amph <2mm
PGH-18-09	261.45	JNT	45	120		JNT in SYN	planar, slightly rough, infill amph <2mm
PGH-18-09	261.85	JNT	50	190		JNT in SYN	planar, slightly rough, chl fill <2mm
PGH-18-09	262.28	JNT	40	150		JNT in SYN	planar, slightly rough, amph fill <1mm
PGH-18-09	262.5	JNT	50	160		JNT in SYN	planar, slightly rough, amph fill <1mm
PGH-18-09	263.72	CT	25	280		LC of MD?	undulating, closed
PGH-18-09	271.15	JNT	55	60		JNT in SYN	planar, slightly rough, amph fill <1mm
PGH-18-09	271.8	JNT	30	170		JNT in SYN	planar, slightly rough, amph fill <1mm
PGH-18-09	273.6	JNT	55	200		JNT in SYN	planar, rough, amph/chl fill <2mm
PGH-18-09	276.5	JNT	35	280		JNT in SYN	planar, slightly rough, chl <2mm
PGH-18-09	276.95	CT	40	350		cct btw sy & md	irregular, rough

ORIENTED STRUCTURES

DDH	Depth	Type	Alpha (°)	Beta (°)	Gamma (°)	Title	Description
PGH-18-09	278.28	JNT	70	345		JNT in MD	planar, smooth/slickenslides, chl fill 2mm
PGH-18-09	279.8	JNT	25	270		JNT in MD	planar, smooth/slickenslides, chl fill 2mm
PGH-18-09	280.05	JNT	30	80		JNT in MD	planar, smooth/slickenslides, chl fill 2mm
PGH-18-09	284.45	JNT	50	210		JNT in MD	planar, smooth/slickenslides, chl fill 2mm
PGH-18-09	292.88	CT	25	340		LC MD	planar, closed
PGH-18-09	297.34	CT	50	0		LC CRBT	planar, closed
PGH-18-09	298.06	JNT	70	170		JNT in SYN	planar, slightly rough, amph fill <1mm
PGH-18-09	299.25	JNT	45	80		JNT in SYN	planar, slightly rough, amph fill <1mm
PGH-18-09	299.34	JNT	65	190		JNT in SYN	planar, slightly rough, amph fill <1mm
PGH-18-09	301.95	CT	60	120		UC CRBT	planar, closed
PGH-18-09	302.22	CT	35	295		UC CRBT	planar, closed
PGH-18-09	308.2	CT	25	270		LC CRBT	planar, closed
PGH-18-09	309.05	CT	70	200		LC CRBT	planar, closed
PGH-18-09	309.2	CT	35	320		UC CRBT	planar, closed
PGH-18-09	309.55	CT	25	300		LC CRBT	planar, closed
PGH-18-09	310.25	CT	30	190		LC CRBT	planar, closed
PGH-18-09	311.7	CT	50	0		LC CRBT VN	planar, closed
PGH-18-09	313.2	VN	20	235		UC CRBT VN	planar, closed, amph fill <5mm
PGH-18-09	314.5	CT	65	325		UC CRT BX	bx closed
PGH-18-09	324.7	JNT	40	215		JNT in SYN	planar, slightly rough, amph fill <1mm
PGH-18-09	325.57	CT	65	0		LC CRBT	planar, closed
PGH-18-09	327.05	CT	50	0		UC CRBT	planar, closed
PGH-18-09	327.65	JNT	55	105		JNT in SYN	planar, slightly rough, amph fill <1mm
PGH-18-09	329.45	VN	65	150		VN 4mm wide	planar, closed, 3mm amph with light pink <1mm alt halo
PGH-18-09	335.12	CT	55	180		UC CRT BX	planar, closed
PGH-18-09	335.3	CT	60	180		LC CRBT	planar, closed
PGH-18-09	341.2	CT	55	310		LC CRBT	planar, closed
PGH-18-09	346.9	CT	15	180		LC CRBT undulating, closed	
PGH-18-09	349.95	JNT	65	225		JNT in SYN	planar, slightly rough, chl fill <1mm
PGH-18-09	350.78	CT	45	50		LC CRBT	planar/diffuse, closed
PGH-18-09	351.6	VN	25	140		CRBT VN 2cm	planar, closed
PGH-18-09	352.35	CT	40	80		LC CRBT	planar, closewd
PGH-18-09	352.9	CT	35	275		LC cct btw alt gran and gran	planar, sharp, closed
PGH-18-09	353.3	CT	15	125		BX UC CRBT	brecciated, closed
PGH-18-09	355.83	CT	65	240		UC CRBT	undulating, closed

ORIENTED STRUCTURES

DDH	Depth	Type	Alpha (°)	Beta (°)	Gamma (°)	Title	Description
PGH-18-09	357.25	CT	55	130		5mm MD	planar, sharp, MD fill
PGH-18-09	358.3	JNT	50	125		JNT in alkali	planar, slightly rough, no fill
PGH-18-09	359.2	JNT	35	110		JNT in alkali	planar, slightly rough, no fill
PGH-18-09	359.55	CT	55	190		UC MD	irregular, closed
PGH-18-09	360.12	CT	50	140		LC MD	planar, closed
PGH-18-09	362.48	JNT	55	150		JNT in alkali	planar, slightly rough, amph fill <1mm
PGH-18-09	364.9	CT	50	10		LC CRBT	planar, closed
PGH-18-09	365.4	JNT	60	265		JNT in Alkali	planar, slightly rough, amph fill <1mm
PGH-18-09	365.5	CT	25	85		CRBT VN 3m	planar, closed, rimmed by blue amph <3mm
PGH-18-09	366.75	JNT	50	250		JNT in Alkali	planar, slightly rough, amph fill <1mm
PGH-18-09	368.7	CT	15	85		UC CRBT BX	planar, closed
PGH-18-09	371.35	CT	55	20		UC CRBT	planar, closed
PGH-18-09	371.88	CT	50	325		LC CRBT	planar, closed
PGH-18-09	372.38	CT	70	240		cct btw fg/cg alkali	slightly rough, cc fill 5mm
PGH-18-09	375.35	CT	60	290		UC CRBT	planar, closed
PGH-18-09	378.18	CT	45	50		LC CRBT	planar, closed
PGH-18-09	383.5	CT	70	115		LC CRBT	planar, closed
PGH-18-09	384.17	CT	70	240		LC CRBT	planar, closed
PGH-18-09	385.65	JNT	65	150		JNT in Alkali	planar, slightly rough, amph fill <1mm
PGH-18-09	386.24	JNT	70	180		JNT in Alkali	planar, slightly rough, amph fill <1mm
PGH-18-09	388.1	JNT	30	200		JNT in Alkali	planar, slightly rough, amph fill <1mm
PGH-18-09	388.35	CT	75	155		LC CRBT	planar, closed
PGH-18-09	390.45	JNT	75	130		JNT in Alkali	planar, slightly rough, chl fill <1mm
PGH-18-09	390.65	CT	40	175		UC CRBT	planar, closed
PGH-18-09	391	CT	35	180		LC CRBT	planar, slightly rough, amph fill 1cm
PGH-18-09	391.8	CT	35	170		LC CRBT	planar, closed
PGH-18-09	394.25	CT	70	250		UC CRBT	planar, closed
PGH-18-09	394.55	CT	35	310		LC CRBT	planar, closed
PGH-18-09	395.95	CT	45	180		LC CRBT	planar, closed
PGH-18-09	397.1	VN	50	210		CRBT vn 1cm	planar, slightly rough, amph fill <5mm
PGH-18-09	398	CT	30	210		UC CRBT	planar, slightly rough, amph fill <5mm
PGH-18-09	398.18	CT	40	180		LC CRBT	planar, closed
PGH-18-09	398.38	JNT	40	180		Jnt in Alkali	planar, slightly rough, amph fill <3mm
PGH-18-09	398.85	JNT	40	180		JNT in Alkali	planar, slightly rough, amph fill <2mm
PGH-18-09	403.05	JNT	30	80		JNT in Alkali	Planar, slightly rough, no fill

ORIENTED STRUCTURES

DDH	Depth	Type	Alpha (°)	Beta (°)	Gamma (°)	Title	Description
PGH-18-09	406.38	CT	40	170		LC CRBT	planar, slightly rough, crbt fill <1l
PGH-18-09	407.05	JNT	60	60		JNT in Alkali	planar, slightly rough, amph fill <1mm
PGH-18-09	409.15	JNT	60	270		JNT in Alkali	planar, slightly rough, fill chl/amph <1mm
PGH-18-09	419.35	JNT	35	85		JNT in FEN	planar, slightly rough, amph fill <1mm
PGH-18-09	428.85	CT	45	165		LC CRBT	planar, closed
PGH-18-09	429.15	JNT	30	180		jnt in alkali	planar, slightly rough, amph <1mm
PGH-18-09	429.5	CT	55	335		UC CRBT	planar, closed
PGH-18-09	430.25	CT	30	200		CRBT LC	planar, closed
PGH-18-09	432.65	JNT	40	210		JNT in Alkali	planar, slightly rough, amph fill <1mm
PGH-18-09	434.6	CT	20	285		LC CRBT	undulating, closed
PGH-18-09	437.38	CT	60	200		LC CRBT	planar, closed
PGH-18-09	439	CT	40	45		CRBT LC	planar, closed
PGH-18-09	439.3	JNT	45	180		JNT in Alklai	planar, slightly rough, infill amph <1mm
PGH-18-09	439.4	CT	20	275		UC CRBT	planar, closed
PGH-18-09	443.5	CT	75	210		LC CRBT	planar, closed
PGH-18-09	446.4	CT	45	40		UC CRBT	planar, closed
PGH-18-09	463	CT	55	180		LC CRBT	planar, closed
PGH-18-09	463.15	CT	35	200		LC CRBT	planar, closed
PGH-18-09	463.73	CT	55	70		LC CRBT	planar, closed
PGH-18-09	464.25	CT	45	20		LC CRBT	planar, closed
PGH-18-09	465.7	CT	60	315		LC CRBT	planar, closed
PGH-18-09	470.05	CT	50	240		LC CRBT	planar, closed
PGH-18-09	470.75	VN	40	170		LC CRBT	planar, closed
PGH-18-09	472.2	JNT	55	185		JNT in Alkali	planar, slightly rough, amph fill <1mm
PGH-18-09	478.52	CT	45	175		UC CRBT	planar, closed
PGH-18-09	481.15	CT	70	10		UC CRBT	planar, closed
PGH-18-09	482.65	CT	40	160		LC CRBT	brecciated, closed
PGH-18-09	484.23	JNT	55	175		JNT in Alkali	planar, slightly rough, crb fill
PGH-18-09	485.5	VN	45	100		VN on crbt 1cm	planar, closed
PGH-18-09	486.4	CT	55	85		UC CRBT	planar, mechanically open, rough
PGH-18-09	486.65	CT	60	145		LC CRBT	planar, closed
PGH-18-09	486.9	VN	35	255		VN <3mm	planar, amph fill <3mm
PGH-18-09	487.1	CT	40	35		UC CRBT	planar, closed
PGH-18-09	489.1	VN	35	160		LC CRBT	planar, closed
PGH-18-09	492.95	CT	60	25		LC CRBT	planar, closed

ORIENTED STRUCTURES

DDH	Depth	Type	Alpha (°)	Beta (°)	Gamma (°)	Title	Description
PGH-18-09	493.5	VN	65	245		LC CRBT	planar, closed
PGH-18-09	493.6	CT	70	240		UC CRBT	planar, closed
PGH-18-09	494.85	CT	20	170		LC CRBT	undulating, closed
PGH-18-09	497.4	VN	25	180		LC CRBT VN 5cm	planar, closed
PGH-18-09	500.2	CT	70	340		UC CRBT	undulating, closed
PGH-18-09	503.23	JNT	60	275		JNT in Alkali	planar, slightly rough, amph/chl fill <1mm
PGH-18-09	504.6	CT	55	155		UC CRBT	planar, closed
PGH-18-09	505.35	CT	70	130		UC CRBT	planar, closed
PGH-18-09	508.75	CT	65	165		UC CRBT	planar, slightly rough, amph fill <2mm
PGH-18-09	509.8	JNT	60	190		JNT in Alkali	planar, slightly rough, amph fill <1mm
PGH-18-09	509.93	CT	40	180		LC CRBT	planar, closed

ASSAYS

DDH	From	To	Width (m)	SampleID	BatchID	Fe2O3T (%)	Nb2O5 (%)	P2O5 (%)	SnO2 (%)	Ta2O5 (%)	ThO2 (%)	U3O8 (%)	WO3 (%)	Y2O3 (%)	ZrO2 (%)	Description
PGH-18-09	42.95	44	1.05	590596	A18-08115	9.87	0.083	5.21	< 0.003	0.004	0.01	0.007	0.004	0.027	0.01	CRBT BX
PGH-18-09	44	44.75	0.75	590597	A18-08115	9.92	0.051	1.08	< 0.003	< 0.003	0.006	0.005	< 0.003	0.007	0.005	CRBT BX
PGH-18-09	44.75	46.25	1.5	590598	A18-08115	9.56	0.016	0.39	< 0.003	< 0.003	0.005	< 0.005	< 0.003	0.003	0.007	FEN BX
PGH-18-09	46.25	47.8	1.55	590599	A18-08115	11.19	0.018	0.08	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.003	0.009	FEN
PGH-18-09	47.8	48.55	0.75	590600	A18-08115	7.84	0.028	6.74	< 0.003	0.003	0.016	0.005	< 0.003	0.049	< 0.003	CRBT
PGH-18-09	48.55	49.18	0.63	590601	A18-08115	9.29	0.017	0.07	< 0.003	0.004	0.008	< 0.005	< 0.003	0.005	0.006	FEN + CRBT BX
PGH-18-09	49.18	50.43	1.25	590602	A18-08115	6.42	0.055	3.04	< 0.003	< 0.003	0.01	< 0.005	< 0.003	0.018	< 0.003	CRBT BX
PGH-18-09	50.43	51.68	1.25	590603	A18-08115	8.07	0.058	0.66	< 0.003	< 0.003	0.007	< 0.005	0.003	0.008	0.006	FEN BX
PGH-18-09	51.68	52.86	1.18	590604	A18-08115	5.74	0.059	4.75	< 0.003	< 0.003	0.016	< 0.005	0.003	0.038	< 0.003	CRBT
PGH-18-09	58.76	59.5	0.74	590605	A18-08115	5.52	0.025	0.13	< 0.003	< 0.003	0.007	< 0.005	< 0.003	0.005	0.006	BX SYN
PGH-18-09	59.5	61	1.5	590606	A18-08115	6.11	0.017	0.59	< 0.003	< 0.003	0.007	< 0.005	< 0.003	0.007	0.009	BX SYN
PGH-18-09	61	62.5	1.5	590608	A18-08115	6.41	0.028	0.76	< 0.003	< 0.003	0.007	< 0.005	< 0.003	0.01	0.004	BX SYN + CRBT
PGH-18-09	62.5	63	0.5	590609	A18-08115	4.02	0.034	0.81	< 0.003	0.003	0.012	< 0.005	0.003	0.018	< 0.003	CRBT
PGH-18-09	63	63.5	0.5	590610	A18-08115	7.42	0.028	0.35	< 0.003	< 0.003	0.005	< 0.005	< 0.003	0.005	0.015	CRBT BX
PGH-18-09	63.5	64	0.5	590611	A18-08115	6.79	0.035	0.65	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.006	0.007	CRBT BX / FZ BX
PGH-18-09	64	65.5	1.5	590612	A18-08115	5.36	0.023	0.31	< 0.003	0.003	0.005	< 0.005	< 0.003	0.003	0.01	FZ BX
PGH-18-09	80.35	81	0.65	590613	A18-08115	6.36	0.02	2.55	< 0.003	< 0.003	0.009	< 0.005	0.003	0.016	< 0.003	CRBT BX
PGH-18-09	94.68	96	1.32	590614	A18-08115	4.2	0.062	1.85	< 0.003	< 0.003	0.01	< 0.005	0.004	0.012	0.005	CRBT BX
PGH-18-09	96	97	1	590615	A18-08115	5.06	0.065	1.95	0.003	< 0.003	0.007	< 0.005	0.003	0.013	< 0.003	CRBT BX
PGH-18-09	100.36	101.43	1.07	590616	A18-08115	7.53	0.032	2.69	< 0.003	0.003	0.013	< 0.005	0.003	0.018	0.052	CRBT
PGH-18-09	101.43	102.57	1.14	590617	A18-08115	3.68	0.013	0.51	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.005	0.005	GRAN + CRBT
PGH-18-09	102.57	103	0.43	590618	A18-08115	5.09	0.044	5.13	< 0.003	0.004	0.012	0.005	< 0.003	0.018	0.059	CRBT
PGH-18-09	103	104	1	590619	A18-08115	4.84	0.03	1.39	< 0.003	0.004	0.007	< 0.005	0.003	0.009	0.005	CRBT BX
PGH-18-09	112	113	1	590620	A18-08115	4.93	0.061	3.58	< 0.003	< 0.003	0.012	0.005	0.003	0.026	< 0.003	CRBT
PGH-18-09	113	114	1	590621	A18-08115	5.34	0.039	0.33	< 0.003	< 0.003	0.009	< 0.005	< 0.003	0.004	< 0.003	CRBT
PGH-18-09	114	115	1	590622	A18-08115	6.24	0.081	0.33	< 0.003	< 0.003	0.01	< 0.005	0.003	0.005	0.017	CRBT
PGH-18-09	115	115.87	0.87	590623	A18-08115	4.53	0.057	0.39	< 0.003	0.004	0.006	< 0.005	< 0.003	0.006	0.003	CRBT + GRAN
PGH-18-09	115.87	116.78	0.91	590624	A18-08115	4.7	0.099	6.83	< 0.003	0.005	0.01	0.006	0.004	0.026	0.019	CRBT
PGH-18-09	122.35	123.58	1.23	590625	A18-08115	8.57	0.029	0.2	< 0.003	< 0.003	0.005	< 0.005	< 0.003	0.005	0.009	FEN BX + CRBT
PGH-18-09	123.58	125	1.42	590626	A18-08115	7.1	0.054	3.64	< 0.003	0.004	0.009	< 0.005	< 0.003	0.024	0.005	FEN BX + CRBT
PGH-18-09	125	126.08	1.08	590627	A18-08115	6.9	0.024	0.48	< 0.003	< 0.003	0.007	< 0.005	< 0.003	0.006	0.004	FEN BX + CRBT
PGH-18-09	126.08	127.35	1.27	590629	A18-08115	7.92	0.01	0.19	< 0.003	0.004	< 0.005	< 0.005	< 0.003	0.004	0.012	FEN BX CRBT
PGH-18-09	127.35	128.85	1.5	590630	A18-08115	7.83	0.038	0.29	< 0.003	< 0.003	0.009	< 0.005	< 0.003	0.005	0.004	FEN BX CRBT
PGH-18-09	128.85	130.38	1.53	590631	A18-08115	7.62	0.052	1.22	< 0.003	< 0.003	0.007	< 0.005	0.003	0.008	0.003	FEN BX CRBT
PGH-18-09	130.38	131.58	1.2	590632	A18-08115	8.12	0.022	0.1	< 0.003	0.003	0.005	< 0.005	< 0.003	< 0.003	0.005	FEN BX CRBT
PGH-18-09	131.58	132.65	1.07	590633	A18-08115	8.34	0.038	0.42	< 0.003	< 0.003	0.012	< 0.005	< 0.003	0.007	< 0.003	FEN BX CRBT
PGH-18-09	132.65	133.28	0.63	590634	A18-08115	7.4	0.017	0.97	0.004	< 0.003	0.006	< 0.005	< 0.003	0.008	0.006	GRAN / FEN
PGH-18-09	133.28	134.6	1.32	590635	A18-08115	5.59	0.006	0.1	< 0.003	0.004	< 0.005	< 0.005	< 0.003	0.003	0.011	GRAN / FEN
PGH-18-09	134.6	135.15	0.55	590636	A18-08115	5.8	0.096	5.37	< 0.003	0.003	0.01	< 0.005	< 0.003	0.016	< 0.003	CRBT
PGH-18-09	141	142.07	1.07	590637	A18-08115	8.47	0.247	1.06	< 0.003	< 0.003	0.01	< 0.005	< 0.003	0.008	0.007	CRBT BX
PGH-18-09	142.07	143.25	1.18	590639	A18-08115	4.29	0.045	5.8	< 0.003	0.003	0.016	0.006	0.003	0.034	0.004	CRBT

ASSAYS

DDH	From	To	Width (m)	SampleID	BatchID	Fe2O3T (%)	Nb2O5 (%)	P2O5 (%)	SnO2 (%)	Ta2O5 (%)	ThO2 (%)	U3O8 (%)	WO3 (%)	Y2O3 (%)	ZrO2 (%)	Description
PGH-18-09	143.25	144.5	1.25	590640	A18-08115	8.81	0.041	2.27	< 0.003	< 0.003	0.007	< 0.005	0.003	0.009	0.025	CRBT BX
PGH-18-09	144.5	145.9	1.4	590641	A18-08115	6.89	0.237	4.28	< 0.003	0.004	0.011	0.005	0.003	0.023	0.004	CRBT BX
PGH-18-09	145.9	146.38	0.48	590642	A18-08115	9.36	0.015	0.24	0.003	< 0.003	0.008	< 0.005	0.003	0.006	0.01	FEN
PGH-18-09	146.38	147.82	1.44	590643	A18-08115	9.36	0.016	0.18	< 0.003	< 0.003	0.009	< 0.005	< 0.003	0.005	0.005	FEN + CRBT
PGH-18-09	147.82	148.75	0.93	590644	A18-08115	7.38	0.009	0.02	< 0.003	< 0.003	0.019	< 0.005	< 0.003	0.005	< 0.003	CRBT
PGH-18-09	159.48	160.38	0.9	590645	A18-08115	4.89	0.398	0.54	< 0.003	< 0.003	0.011	< 0.005	0.003	0.008	0.004	CRBT
PGH-18-09	160.38	161.3	0.92	590646	A18-08115	5.66	0.015	0.08	< 0.003	< 0.003	0.005	< 0.005	< 0.003	0.003	0.012	SYN
PGH-18-09	161.3	162.33	1.03	590647	A18-08115	6.76	0.187	2.29	< 0.003	< 0.003	0.007	< 0.005	< 0.003	0.008	< 0.003	CRBT BX
PGH-18-09	162.33	163.22	0.89	590648	A18-08115	8.83	0.12	2.56	< 0.003	< 0.003	0.011	< 0.005	< 0.003	0.015	< 0.003	CRBT BX
PGH-18-09	163.22	164.7	1.48	590649	A18-08115	9.83	0.021	0.46	< 0.003	0.003	0.006	< 0.005	< 0.003	0.006	0.01	FEN
PGH-18-09	164.7	165.2	0.5	590650	A18-08115	9.07	0.094	1.22	< 0.003	< 0.003	0.009	< 0.005	0.003	0.012	< 0.003	CRBT
PGH-18-09	165.2	166.4	1.2	590651	A18-08115	10.81	0.044	0.86	< 0.003	< 0.003	0.007	< 0.005	< 0.003	0.006	0.006	BX CRBT
PGH-18-09	166.4	167.75	1.35	590652	A18-08115	9.57	0.06	0.92	< 0.003	0.003	0.009	< 0.005	< 0.003	0.006	0.011	CRBT + BX
PGH-18-09	167.75	169.04	1.29	590653	A18-08115	10.41	0.037	0.77	< 0.003	0.003	0.006	< 0.005	< 0.003	0.008	0.007	FEN
PGH-18-09	169.04	169.72	0.68	590654	A18-08115	2.74	0.008	0.73	< 0.003	< 0.003	0.014	< 0.005	< 0.003	0.019	< 0.003	CRBT + BX
PGH-18-09	169.72	170.18	0.46	590655	A18-08115	10.3	0.335	1.39	< 0.003	< 0.003	0.008	< 0.005	< 0.003	0.008	0.008	CRBT
PGH-18-09	170.18	171.63	1.45	590656	A18-08115	3.89	0.274	7.58	< 0.003	0.004	0.013	0.007	0.003	0.016	0.045	SYN BX
PGH-18-09	171.63	172.37	0.74	590658	A18-08115	7.26	0.019	1.54	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.006	0.009	SYN BX
PGH-18-09	172.37	173.5	1.13	590659	A18-08115	1.7	< 0.003	0.09	< 0.003	< 0.003	0.012	0.008	0.003	0.014		CRBT
PGH-18-09	173.5	175	1.5	590660	A18-08115	2.21	< 0.003	0.2	< 0.003	0.003	0.017	< 0.005	0.003	0.018	< 0.003	CRBT
PGH-18-09	175	175.75	0.75	590661	A18-08115	1.56	< 0.003	0.03	< 0.003	< 0.003	0.012	0.005	< 0.003	0.013	< 0.003	CRBT
PGH-18-09	175.75	176.8	1.05	590662	A18-08115	10.65	0.048	0.65	< 0.003	0.003	0.008	< 0.005	< 0.003	0.007	0.01	BX SYN + CRBT
PGH-18-09	176.8	177.48	0.68	590663	A18-08115	6.9	0.04	0.51	< 0.003	< 0.003	0.013	< 0.005	0.003	0.009	0.015	CRBT
PGH-18-09	177.48	178.56	1.08	590664	A18-08115	10.7	0.128	1.54	< 0.003	< 0.003	0.013	< 0.005	0.003	0.011	0.092	BX + CRBT
PGH-18-09	178.56	179.5	0.94	590665	A18-08115	13.76	0.088	0.57	< 0.003	0.004	0.009	< 0.005	< 0.003	0.008	0.059	FEN
PGH-18-09	179.5	180.4	0.9	590666	A18-08115	13.01	0.135	0.48	0.005	< 0.003	0.01	< 0.005	< 0.003	0.007	0.022	FEN + CRBT
PGH-18-09	180.4	180.88	0.48	590667	A18-08115	4.29	0.203	4.43	< 0.003	< 0.003	0.013	< 0.005	0.004	0.02	< 0.003	FEN + CRBT
PGH-18-09	180.88	182	1.12	590668	A18-08115	3.48	0.006	0.43	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.006	0.01	CRBT
PGH-18-09	182	183	1	590669	A18-08115	13.8	0.084	0.86	0.003	0.003	0.007	< 0.005	< 0.003	0.008	0.056	SYN
PGH-18-09	183	184.5	1.5	590670	A18-08115	13.8	0.139	0.66	0.004	0.005	0.008	< 0.005	< 0.003	0.007	0.089	MD crb alt
PGH-18-09	184.5	186	1.5	590671	A18-08115	7.32	0.128	4.66	< 0.003	< 0.003	0.016	0.009	< 0.003	0.028	0.028	MD crb alt
PGH-18-09	186	186.5	0.5	590672	A18-08115	6.87	0.043	0.9	< 0.003	0.004	0.018	< 0.005	< 0.003	0.015	< 0.003	CRBT
PGH-18-09	186.5	187.08	0.58	590673	A18-08115	7.28	0.011	4.46	< 0.003	< 0.003	0.024	< 0.005	< 0.003	0.044	< 0.003	CRBT
PGH-18-09	187.08	187.83	0.75	590674	A18-08115	5.56	0.058	5.91	< 0.003	< 0.003	0.017	0.009	0.003	0.038	< 0.003	CRBT
PGH-18-09	187.83	189	1.17	590676	A18-08115	14.32	0.045	1.69	< 0.003	0.004	0.012	< 0.005	< 0.003	0.011	0.079	CRBT
PGH-18-09	201.08	202	0.92	590677	A18-08115	13.24	0.104	0.88	< 0.003	0.003	0.008	< 0.005	< 0.003	0.007	0.025	MD
PGH-18-09	202	203.15	1.15	590678	A18-08115	14.76	0.091	1.77	< 0.003	0.003	0.011	< 0.005	< 0.003	0.01	0.064	MD
PGH-18-09	203.15	204	0.85	590679	A18-08115	9.46	0.152	3.14	< 0.003	< 0.003	0.008	< 0.005	< 0.003	0.012	0.034	mott bx + MD
PGH-18-09	204	204.65	0.65	590680	A18-08115	5.44	0.066	0.38	< 0.003	< 0.003	0.006	< 0.005	0.003	0.005	0.007	CRBT BX + MD
PGH-18-09	204.65	206	1.35	590681	A18-08115	5.08	< 0.003	0.39	< 0.003	< 0.003	0.033	< 0.005	< 0.003	0.016	0.012	SYN
PGH-18-09	206	207	1	590682	A18-08115	4.92	< 0.003	0.22	< 0.003	< 0.003	0.019	< 0.005	< 0.003	0.009	< 0.003	CRBT

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DDH	From	To	Width (m)	SampleID	BatchID	Fe2O3T (%)	Nb2O5 (%)	P2O5 (%)	SnO2 (%)	Ta2O5 (%)	ThO2 (%)	U3O8 (%)	WO3 (%)	Y2O3 (%)	ZrO2 (%)	Description
PGH-18-09	207	207.7	0.7	590683	A18-08115	4.83	< 0.003	0.22	< 0.003	< 0.003	0.022	< 0.005	< 0.003	0.012	0.006	CRBT
PGH-18-09	207.7	208.27	0.57	590684	A18-08115	3.88	0.015	0.58	< 0.003	0.004	0.017	< 0.005	< 0.003	0.014	< 0.003	CRBT
PGH-18-09	208.27	208.91	0.64	590686	A18-08115	5.84	0.036	0.26	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.004	0.01	CRBT
PGH-18-09	208.91	210.25	1.34	590687	A18-08115	3.67	0.021	0.43	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.005	0.013	SYN
PGH-18-09	210.25	211.47	1.22	590688	A18-08115	1.56	< 0.003	0.23	< 0.003	< 0.003	0.013	< 0.005	< 0.003	0.013	< 0.003	SYN
PGH-18-09	211.47	212	0.53	590689	A18-08115	5.66	0.03	6.36	< 0.003	< 0.003	0.026	< 0.005	< 0.003	0.039	0.008	CRBT
PGH-18-09	216.5	217.08	0.58	590690	A18-08115	7.2	0.579	6.39	< 0.003	< 0.003	0.011	0.007	0.003	0.015	0.004	CRBT BX
PGH-18-09	223.63	224.03	0.4	590691	A18-08115	2.78	0.867	3.34	< 0.003	< 0.003	0.011	0.007	< 0.003	0.012	< 0.003	CRBT
PGH-18-09	225.72	227.17	1.45	590692	A18-08115	3.56	0.031	2.33	< 0.003	< 0.003	0.011	0.007	< 0.003	0.02	< 0.003	CRBT
PGH-18-09	234.35	235.85	1.5	590693	A18-08115	4.19	0.083	3.86	< 0.003	< 0.003	0.007	0.005	0.004	0.012	< 0.003	CRBT
PGH-18-09	235.85	237.3	1.45	590694	A18-08115	6.04	0.034	0.99	< 0.003	0.003	0.005	< 0.005	< 0.003	0.006	0.003	CRBT BX
PGH-18-09	237.3	238.2	0.9	590695	A18-08115	6.4	0.032	4.78	< 0.003	0.003	0.021	< 0.005	0.003	0.025	< 0.003	CRBT BX
PGH-18-09	238.2	238.94	0.74	590696	A18-08115	8.31	0.059	1.81	< 0.003	< 0.003	0.009	< 0.005	< 0.003	0.009	0.022	CRBT
PGH-18-09	243.63	244.58	0.95	590697	A18-08115	2.47	0.008	1.02	< 0.003	< 0.003	0.013	0.006	< 0.003	0.013	< 0.003	CRBT
PGH-18-09	249.4	250.9	1.5	590698	A18-08115	6.01	0.223	3.2	< 0.003	< 0.003	0.014	0.005	0.004	0.018	< 0.003	CRBT BX
PGH-18-09	250.9	252.4	1.5	590700	A18-08115	5.86	0.157	3.75	< 0.003	< 0.003	0.016	0.005	0.003	0.024	< 0.003	CRBT BX
PGH-18-09	252.4	253.13	0.73	590701	A18-08115	2.4	0.007	0.13	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.003	0.008	SYN
PGH-18-09	253.13	254	0.87	590702	A18-08115	6.82	0.122	4.75	< 0.003	0.004	0.021	0.006	< 0.003	0.026	0.011	CRBT BX
PGH-18-09	254	254.63	0.63	590703	A18-08115	4.87	0.017	0.29	< 0.003	< 0.003	0.008	< 0.005	< 0.003	0.005	0.006	SYN
PGH-18-09	254.63	255.23	0.6	590704	A18-08115	8.6	0.023	0.63	< 0.003	< 0.003	0.044	< 0.005	< 0.003	0.016	< 0.003	CRBT BX
PGH-18-09	255.23	256	0.77	590705	A18-08115	4.92	0.011	0.04	< 0.003	< 0.003	0.008	< 0.005	< 0.003	0.003	0.01	SYN
PGH-18-09	256	256.7	0.7	590706	A18-08115	4.67	0.085	1.68	< 0.003	< 0.003	0.013	< 0.005	0.003	0.018	< 0.003	CRBT BX
PGH-18-09	266.27	267.76	1.49	590707	A18-08115	6.08	0.066	2.68	0.004	0.003	0.013	< 0.005	< 0.003	0.015	0.005	CRT BX + SYN
PGH-18-09	267.76	268.56	0.8	590708	A18-08115	11.98	0.109	0.31	< 0.003	0.005	0.008	< 0.005	0.004	0.005	0.061	MD ? CRBT
PGH-18-09	268.56	269.85	1.29	590709	A18-08115	4.6	0.067	0.88	< 0.003	< 0.003	0.008	< 0.005	< 0.003	0.006	0.003	CRBT BX
PGH-18-09	269.85	270.36	0.51	590710	A18-08115	4.11	0.081	1.83	< 0.003	< 0.003	0.007	< 0.005	< 0.003	0.008	0.003	CRBT BX
PGH-18-09	270.36	271.15	0.79	590711	A18-08115	4.3	0.009	0.92	0.004	0.003	0.005	< 0.005	< 0.003	0.006	0.024	SYN
PGH-18-09	271.15	271.8	0.65	590712	A18-08115	1.65	< 0.003	0.51	< 0.003	0.004	0.009	0.01	0.003	0.012		CRBT
PGH-18-09	271.8	272.56	0.76	590713	A18-08115	4.07	0.014	0.67	< 0.003	< 0.003	0.005	< 0.005	< 0.003	0.006	< 0.003	SYN
PGH-18-09	272.56	273.2	0.64	590715	A18-08115	1.6	0.007	0.22	< 0.003	< 0.003	0.012	0.008	< 0.003	0.013		CRBT
PGH-18-09	273.2	274	0.8	590716	A18-08115	5.29	0.04	1.45	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.006	0.012	SYN BX + CRBT
PGH-18-09	292.81	294	1.19	590717	A18-08115	7.39	0.118	1.34	< 0.003	< 0.003	0.009	< 0.005	0.003	0.011	0.003	CRBT
PGH-18-09	294	294.95	0.95	590718	A18-08115	12.94	0.036	0.56	< 0.003	< 0.003	0.005	< 0.005	< 0.003	0.005	0.015	CRBT
PGH-18-09	294.95	295.45	0.5	590720	A18-08115	6.25	0.485	4.16	< 0.003	0.003	0.011	0.01	< 0.003	0.011	0.088	CRBT
PGH-18-09	295.45	296.51	1.06	590721	A18-08115	2.75	0.059	1.59	< 0.003	0.003	0.014	0.005	< 0.003	0.014	< 0.003	CRBT
PGH-18-09	296.51	297.35	0.84	590723	A18-08115	3.24	0.352	4.24	< 0.003	0.004	0.012	0.016	< 0.003	0.015	< 0.003	CRBT
PGH-18-09	309	310.3	1.3	590724	A18-08115	6.18	0.043	0.27	< 0.003	< 0.003	0.024	< 0.005	< 0.003	0.007	0.004	CRBT
PGH-18-09	313.2	313.85	0.65	590725	A18-08115	1.93	< 0.003	0.53	< 0.003	< 0.003	0.012	0.006	< 0.003	0.014	< 0.003	CRBT
PGH-18-09	313.85	314.52	0.67	590727	A18-08115	10.87	0.033	0.53	< 0.003	< 0.003	< 0.005	< 0.005	0.003	0.005	0.016	SYN BX + CRBT
PGH-18-09	314.52	315.82	1.3	590728	A18-08115	2.87	0.256	2.16	< 0.003	< 0.003	0.012	0.008	0.003	0.014	< 0.003	CRBT
PGH-18-09	315.82	317	1.18	590729	A18-08115	8.64	0.021	0.13	< 0.003	< 0.003	0.013	< 0.005	< 0.003	0.005	0.01	BX CRBT

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DDH	From	To	Width (m)	SampleID	BatchID	Fe2O3T (%)	Nb2O5 (%)	P2O5 (%)	SnO2 (%)	Ta2O5 (%)	ThO2 (%)	U3O8 (%)	WO3 (%)	Y2O3 (%)	ZrO2 (%)	Description
PGH-18-09	317	318.5	1.5	590730	A18-08115	7.74	0.02	0.17	< 0.003	0.003	0.008	< 0.005	< 0.003	0.005	0.013	QTZ SYN
PGH-18-09	318.5	320	1.5	590731	A18-08115	7.92	0.025	0.17	< 0.003	< 0.003	0.011	< 0.005	< 0.003	0.005	0.028	SYN BX
PGH-18-09	320	320.65	0.65	590732	A18-08115	7.69	0.055	1.92	< 0.003	< 0.003	0.014	< 0.005	< 0.003	0.022	0.022	BX + CRBT
PGH-18-09	320.65	322	1.35	590733	A18-08115	7.98	0.045	0.17	< 0.003	< 0.003	0.017	< 0.005	< 0.003	0.007	0.008	CRBT
PGH-18-09	322	323	1	590734	A18-08115	7.82	0.158	0.47	< 0.003	< 0.003	0.034	0.005	< 0.003	0.017	0.01	CRBT
PGH-18-09	323	323.83	0.83	590735	A18-08115	4.7	0.155	3	< 0.003	< 0.003	0.025	0.006	< 0.003	0.022	0.009	CRBT
PGH-18-09	323.83	324.7	0.87	590736	A18-08115	2.96	0.04	4.08	< 0.003	0.004	0.013	0.006	0.003	0.018	0.043	CRBT
PGH-18-09	324.7	325.37	0.67	590737	A18-08115	6.62	0.059	0.05	0.003	< 0.003	0.007	< 0.005	< 0.003	0.004	0.015	SYN BX
PGH-18-09	331.5	332.78	1.28	590738	A18-08115	2.33	0.059	1.52	< 0.003	< 0.003	0.018	0.005	0.003	0.017	< 0.003	CRBT
PGH-18-09	332.78	334.22	1.44	590739	A18-08115	2.85	0.057	1.18	< 0.003	< 0.003	0.024	< 0.005	< 0.003	0.018	0.006	CRBT
PGH-18-09	334.22	335.3	1.08	590740	A18-08115	3.44	0.084	3.62	< 0.003	0.003	0.025	0.005	< 0.003	0.034	0.02	CRBT
PGH-18-09	335.3	336.2	0.9	590741	A18-08115	6.21	0.022	0.23	< 0.003	< 0.003	0.008	< 0.005	< 0.003	0.005	0.012	QTZ SYN
PGH-18-09	336.2	336.8	0.6	590742	A18-08115	8.79	0.023	0.03	< 0.003	< 0.003	0.051	< 0.005	< 0.003	0.007	0.006	CRBT
PGH-18-09	336.8	338	1.2	590743	A18-08115	7.21	0.065	0.54	< 0.003	< 0.003	0.009	< 0.005	< 0.003	0.006	0.004	QTZ SYN BX + CRBT
PGH-18-09	338	339.5	1.5	590744	A18-08115	7.14	0.03	0.04	< 0.003	< 0.003	0.016	< 0.005	< 0.003	0.004	< 0.003	QTZ SYN BX
PGH-18-09	339.5	340.2	0.7	590745	A18-08115	6.64	0.03	0.45	< 0.003	< 0.003	0.011	< 0.005	0.003	0.004	0.008	QTZ SYN BX
PGH-18-09	340.2	341.2	1	590746	A18-08115	11	0.04	0.88	< 0.003	< 0.003	0.072	0.005	0.003	0.014	0.028	CRBT
PGH-18-09	341.2	342	0.8	590747	A18-08115	6.95	0.013	0.94	< 0.003	< 0.003	0.019	< 0.005	0.003	0.01	< 0.003	QTZ SYN / CRBT
PGH-18-09	345	345.75	0.75	590748	A18-08115	7.03	0.06	0.56	< 0.003	< 0.003	0.012	< 0.005	< 0.003	0.005	0.006	GRAN + CRBT
PGH-18-09	345.75	346.77	1.02	590749	A18-08115	4.51	0.028	2.1	< 0.003	< 0.003	0.016	< 0.005	0.003	0.032	< 0.003	CRBT
PGH-18-09	346.77	347.21	0.44	590751	A18-08115	4.85	0.103	0.85	< 0.003	< 0.003	0.01	0.006	< 0.003	0.02	< 0.003	GRAN + CRBT
PGH-18-09	352	352.45	0.45	590752	A18-08115	5.69	0.013	1.67	< 0.003	< 0.003	0.012	< 0.005	< 0.003	0.01	0.004	CRBT + GRAN
PGH-18-09	352.45	353.06	0.61	590753	A18-08115	6.67	0.008	0.52	< 0.003	0.004	0.008	< 0.005	< 0.003	0.005	0.023	GRAN
PGH-18-09	353.06	354.26	1.2	590754	A18-08115	4.29	0.084	1.57	< 0.003	< 0.003	0.011	0.005	< 0.003	0.014	< 0.003	CRBT
PGH-18-09	364.3	365	0.7	590755	A18-08115	3.64	0.016	3.6	< 0.003	< 0.003	0.007	< 0.005	< 0.003	0.013	< 0.003	GRAN BX + CRBT
PGH-18-09	368.55	370.05	1.5	590756	A18-08115	6.88	0.259	3.43	< 0.003	< 0.003	0.009	0.005	< 0.003	0.015	0.005	GRAN BX + CRBT
PGH-18-09	370.05	370.82	0.77	590757	A18-08115	4.06	0.171	3.98	< 0.003	0.004	0.012	0.011	0.003	0.018	0.009	CRBT
PGH-18-09	370.82	371.35	0.53	590758	A18-08115	6.7	0.038	0.81	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.005	0.003	GRAN
PGH-18-09	371.35	371.94	0.59	590760	A18-08115	3.27	0.095	3.06	< 0.003	0.004	0.01	0.013	< 0.003	0.013	0.023	CRBT
PGH-18-09	375.36	376	0.64	590761	A18-08115	5.38	0.158	1.46	< 0.003	< 0.003	0.013	0.005	0.003	0.013	< 0.003	CRBT
PGH-18-09	376	376.84	0.84	590762	A18-08115	2.95	0.121	2.32	< 0.003	0.003	0.011	0.009	0.003	0.015	< 0.003	CRBT
PGH-18-09	376.84	378.2	1.36	590763	A18-08115	2.67	0.136	1.91	< 0.003	< 0.003	0.015	0.009	0.003	0.017		CRBT
PGH-18-09	378.2	378.7	0.5	590764	A18-08115	3.92	0.009	0.27	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.004	0.009	CRBT
PGH-18-09	378.7	380.15	1.45	590765	A18-08115	6.59	0.047	3.03	< 0.003	0.004	0.008	0.007	0.003	0.012	0.039	CRBT
PGH-18-09	380.15	381	0.85	590766	A18-08115	5.81	0.022	0.65	< 0.003	0.004	< 0.005	< 0.005	< 0.003	0.005	0.016	GRAN
PGH-18-09	381	381.93	0.93	590767	A18-08115	5.32	0.024	0.09	< 0.003	< 0.003	0.005	< 0.005	< 0.003	< 0.003	< 0.003	GRAN
PGH-18-09	381.93	382.52	0.59	590768	A18-08115	6.29	0.088	1.89	< 0.003	< 0.003	0.017	0.008	0.003	0.017	0.018	MD / CRBT
PGH-18-09	382.52	383.2	0.68	590769	A18-08115	11.74	0.068	2.42	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.011	0.184	MD?
PGH-18-09	390.62	391.87	1.25	590770	A18-08115	3.47	0.068	1.25	< 0.003	< 0.003	0.008	0.005	< 0.003	0.009	< 0.003	CRBT / GRAN
PGH-18-09	393.87	395	1.13	590772	A18-08115	4.97	0.041	1.78	< 0.003	0.003	0.007	0.005	0.013	0.008	< 0.003	CRBT + GRAN
PGH-18-09	395	396	1	590773	A18-08115	10.09	0.096	3.24	< 0.003	< 0.003	0.011	< 0.005	0.005	0.013	0.112	CRBT

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DDH	From	To	Width (m)	SampleID	BatchID	Fe2O3T (%)	Nb2O5 (%)	P2O5 (%)	SnO2 (%)	Ta2O5 (%)	ThO2 (%)	U3O8 (%)	WO3 (%)	Y2O3 (%)	ZrO2 (%)	Description
PGH-18-09	396	397	1	590774	A18-08115	7.09	0.048	1.77	< 0.003	< 0.003	0.005	< 0.005	0.004	0.008	0.066	GRAN + CRBT
PGH-18-09	399.8	401.3	1.5	590775	A18-08115	5.81	0.082	2.43	< 0.003	< 0.003	0.013	0.009	0.003	0.016	< 0.003	CRBT BX
PGH-18-09	426.77	428.23	1.46	590777	A18-08115	10.3	0.042	1.38	< 0.003	0.004	0.008	< 0.005	0.003	0.008	< 0.003	CRBT BX
PGH-18-09	428.23	429.44	1.21	590778	A18-08115	7.78	0.018	0.52	< 0.003	0.003	< 0.005	< 0.005	< 0.003	0.005	0.009	FEN
PGH-18-09	429.44	430.5	1.06	590779	A18-08115	7.12	0.064	1.12	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.005	< 0.003	CRBT BX
PGH-18-09	430.5	432	1.5	590780	A18-08115	8.29	0.042	1.23	< 0.003	< 0.003	0.008	< 0.005	< 0.003	0.008	< 0.003	FEN BX + CRBT
PGH-18-09	432	433	1	590781	A18-08115	5.79	0.021	0.15	< 0.003	< 0.003	< 0.005	< 0.005	0.003	0.003	0.007	GRAN CRBT
PGH-18-09	433	434.5	1.5	590782	A18-08115	6.5	0.044	1.84	< 0.003	< 0.003	0.01	< 0.005	< 0.003	0.011	< 0.003	GRAN + CRBT
PGH-18-09	434.5	436	1.5	590783	A18-08115	5.33	0.1	2.1	< 0.003	< 0.003	0.01	0.007	0.004	0.011	< 0.003	CRBT BX
PGH-18-09	436	437.4	1.4	590784	A18-08115	3.67	0.222	2.87	< 0.003	0.005	0.014	0.008	< 0.003	0.016	< 0.003	CRBT
PGH-18-09	445	446.17	1.17	590785	A18-08115	4.61	0.066	1.19	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.006	< 0.003	CRBT BX
PGH-18-09	446.17	447.67	1.5	590787	A18-08115	4.49	0.111	1.45	< 0.003	< 0.003	0.008	< 0.005	< 0.003	0.007	< 0.003	CRBT BX
PGH-18-09	447.67	449	1.33	590788	A18-08115	1.93	0.2	3.46	< 0.003	0.003	0.011	0.008	< 0.003	0.015	< 0.003	CRBT
PGH-18-09	449	449.9	0.9	590790	A18-08115	2.1	0.119	2.17	< 0.003	0.004	0.011	0.011	< 0.003	0.014		CRBT
PGH-18-09	449.9	451	1.1	590791	A18-08115	7.3	0.115	3.5	< 0.003	< 0.003	0.018	0.01	0.003	0.021		CRBT
PGH-18-09	451	452	1	590792	A18-08115	2.85	0.099	2.39	< 0.003	< 0.003	0.013	0.011	< 0.003	0.015		CRBT
PGH-18-09	452	453	1	590793	A18-08115	2.62	0.12	2.99	< 0.003	< 0.003	0.012	0.01	< 0.003	0.015	< 0.003	CRBT
PGH-18-09	453	454.4	1.4	590794	A18-08115	3.17	0.306	3.73	< 0.003	0.004	0.018	0.009	< 0.003	0.02	< 0.003	CRBT
PGH-18-09	454.4	455.4	1	590796	A18-08115	13.06	0.065	0.78	< 0.003	0.005	0.006	< 0.005	0.004	0.003	0.078	CRBT / MD?
PGH-18-09	455.4	456.13	0.73	590797	A18-08115	11.53	0.066	1.47	< 0.003	0.004	0.01	< 0.005	0.003	0.007	0.054	CRBT / MD?
PGH-18-09	456.13	457	0.87	590798	A18-08115	2.69	0.306	3.72	< 0.003	0.004	0.015	0.011	< 0.003	0.017	0.016	CRBT
PGH-18-09	457	458.25	1.25	590799	A18-08115	2.03	0.211	4.4	< 0.003	0.006	0.017	0.025	< 0.003	0.018	0.062	CRBT
PGH-18-09	458.25	459.15	0.9	590800	A18-08115	1.73	0.2	3.66	< 0.003	0.007	0.016	0.018	< 0.003	0.015	0.016	CRBT
PGH-18-09	459.15	459.65	0.5	590801	A18-08115	4.22	0.162	1.65	< 0.003	< 0.003	0.011	0.009	< 0.003	0.012	< 0.003	CRBT + cct ap cum
PGH-18-09	459.65	460.81	1.16	590802	A18-08115	7.58	0.05	0.25	< 0.003	< 0.003	0.008	0.006	0.003	0.005	0.003	FEN + CRBT
PGH-18-09	465.5	466.65	1.15	590803	A18-08115	8.03	0.127	0.94	< 0.003	0.003	0.012	< 0.005	< 0.003	0.008	< 0.003	CRBT + FEN
PGH-18-09	466.65	467.45	0.8	590804	A18-08115	9.58	0.07	0.37	< 0.003	0.003	0.011	< 0.005	< 0.003	0.006	< 0.003	CRBT + FEN
PGH-18-09	467.45	468.65	1.2	590805	A18-08115	11.67	0.036	0.17	< 0.003	< 0.003	0.009	< 0.005	0.003	< 0.003	< 0.003	FEN + CRBT
PGH-18-09	474.62	475.48	0.86	590806	A18-08115	5.45	0.024	1.2	< 0.003	< 0.003	0.013	< 0.005	< 0.003	0.01	< 0.003	CRBT + GRAN
PGH-18-09	475.48	476.52	1.04	590807	A18-08115	7.32	0.06	0.09	< 0.003	< 0.003	0.01	< 0.005	0.003	0.004	0.013	CRBT BX + GRAN
PGH-18-09	476.52	477.26	0.74	590809	A18-08115	8.49	0.087	0.42	< 0.003	< 0.003	0.016	0.008	0.003	0.004	< 0.003	CRBT
PGH-18-09	477.26	478.5	1.24	590810	A18-08115	2.19	0.009	0.19	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.003	0.003	GRAN
PGH-18-09	478.5	479.14	0.64	590811	A18-08115	4.14	0.159	3.76	< 0.003	0.003	0.018	0.008	< 0.003	0.02	< 0.003	CRBT
PGH-18-09	479.14	479.95	0.81	590812	A18-08115	3.29	0.018	0.13	< 0.003	< 0.003	0.007	< 0.005	< 0.003	0.004	0.029	GRAN
PGH-18-09	479.95	480.42	0.47	590813	A18-08115	4.92	0.064	3.35	< 0.003	< 0.003	0.015	< 0.005	< 0.003	0.019	0.027	CRBT
PGH-18-09	480.42	481.14	0.72	590814	A18-08115	3.47	0.013	0.26	< 0.003	< 0.003	0.006	< 0.005	0.003	0.003	< 0.003	GRAN
PGH-18-09	481.14	482.33	1.19	590815	A18-08115	1.78	0.026	3.25	< 0.003	0.003	0.01	0.006	< 0.003	0.012	< 0.003	CRBT
PGH-18-09	482.33	482.89	0.56	590816	A18-08115	8.85	0.142	1.39	< 0.003	< 0.003	0.008	0.005	< 0.003	0.009	< 0.003	CRBT BX
PGH-18-09	487.1	488	0.9	590817	A18-08115	3	0.063	1.48	< 0.003	0.003	0.011	0.008	< 0.003	0.011	< 0.003	CRBT
PGH-18-09	488	488.75	0.75	590818	A18-08115	5.55	0.338	5.04	< 0.003	0.005	0.013	0.015	0.003	0.013	< 0.003	CRBT
PGH-18-09	488.75	489.5	0.75	590819	A18-08115	6.73	0.029	0.59	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.003	0.012	GRAN BX + CRBT

ASSAYS

DDH	From	To	Width (m)	SampleID	BatchID	Fe2O3T (%)	Nb2O5 (%)	P2O5 (%)	SnO2 (%)	Ta2O5 (%)	ThO2 (%)	U3O8 (%)	WO3 (%)	Y2O3 (%)	ZrO2 (%)	Description
PGH-18-09	489.5	490.25	0.75	590820	A18-08115	2.84	0.275	2.8	< 0.003	0.004	0.014	0.016	0.003	0.014	< 0.003	CRBT
PGH-18-09	490.25	490.86	0.61	590821	A18-08115	4.84	0.155	3.2	< 0.003	0.004	0.011	0.012	< 0.003	0.012	< 0.003	CRBT
PGH-18-09	490.86	491.6	0.74	590822	A18-08115	3.45	0.121	2.82	< 0.003	< 0.003	0.01	0.011	< 0.003	0.014	< 0.003	CRBT
PGH-18-09	491.6	492.39	0.79	590823	A18-08115	2.1	0.149	3.69	< 0.003	0.004	0.013	0.017	< 0.003	0.016	< 0.003	CRBT
PGH-18-09	492.39	492.96	0.57	590824	A18-08115	3.53	0.191	4.11	< 0.003	0.003	0.021	0.015	0.004	0.025	< 0.003	CRBT
PGH-18-09	492.96	493.62	0.66	590825	A18-08115	6.1	0.036	0.13	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.003	0.013	GRAN BX + CRBT
PGH-18-09	493.62	495	1.38	590826	A18-08115	9.89	0.053	2.06	< 0.003	0.003	0.01	< 0.005	< 0.003	0.013	0.126	CRBT + MD?
PGH-18-09	500.18	501.35	1.17	590827	A18-08115	4.7	0.14	2.55	< 0.003	0.004	0.015	0.005	< 0.003	0.019	< 0.003	CRBT BX
PGH-18-09	503.72	504.7	0.98	590828	A18-08115	4.7	0.14	1.86	< 0.003	< 0.003	0.013	0.007	0.005	0.013	< 0.003	CRBT
PGH-18-09	504.7	505.56	0.86	590830	A18-08115	5.68	0.042	1.63	< 0.003	0.004	0.017	0.007	< 0.003	0.012	< 0.003	CRBT

COMPANY QAQC DATA

DDH	From	To	Width (m)	SampleID	BatchID	QAQC Type	QAQC Description	P2O5 (%)	Nb2O5 (%)
PGH-18-09	61	61	0	590607	A18-08115	BLANK	Marble	0.01	< 0.003
PGH-18-09	125	126.08	1.08	590627	A18-08115	N/A	ORIGINAL SAMPLE	0.48	0.024
PGH-18-09	125	126.08	1.08	590628	A18-08115	DUPLICATE	DUP 590627	0.15	0.019
PGH-18-09	142.07	142.07	0	590638	A18-08115	BLANK	Marble	0.02	< 0.003
PGH-18-09	171.63	171.63	0	590657	A18-08115	BLANK	Marble	0.01	< 0.003
PGH-18-09	187.83	187.83	0	590675	A18-08115	BLANK	Marble	0.02	< 0.003
PGH-18-09	208.27	208.27	0	590685	A18-08115	BLANK	Marble	0.02	< 0.003
PGH-18-09	250.9	250.9	0	590699	A18-08115	STANDARD	Oka 1	2.41	0.524
PGH-18-09	272.56	272.56	0	590714	A18-08115	BLANK	Marble	0.02	< 0.003
PGH-18-09	294.95	294.95	0	590719	A18-08115	STANDARD	Oka 1	2.48	0.528
PGH-18-09	296.51	296.51	0	590722	A18-08115	BLANK	Marble	0.03	< 0.003
PGH-18-09	313.85	313.85	0	590726	A18-08115	STANDARD	Oka 1	1.3	0.02
PGH-18-09	346.77	346.77	0	590750	A18-08115	STANDARD	Oka 1	2.5	0.554
PGH-18-09	371.35	371.35	0	590759	A18-08115	BLANK	Marble	0.02	< 0.003
PGH-18-09	391.87	391.87	0	590771	A18-08115	STANDARD	Oka 1	2.48	0.533
PGH-18-09	401.3	401.3	0	590776	A18-08115	BLANK	Marble	0.01	< 0.003
PGH-18-09	446.17	446.17	0	590786	A18-08115	BLANK	Marble	0.01	< 0.003
PGH-18-09	449	449	0	590789	A18-08115	STANDARD	Oka 1	2.45	0.523
PGH-18-09	453	454.4	1.4	590794	A18-08115	N/A	ORIGINAL SAMPLE	3.73	0.306
PGH-18-09	453	454.4	1.4	590795	A18-08115	DUPLICATE	DUP 590794	3.51	0.278
PGH-18-09	476.52	476.52	0	590808	A18-08115	BLANK	Marble	0.02	< 0.003
PGH-18-09	504.7	504.7	0	590829	A18-08115	BLANK	Marble	0.01	< 0.003



Drilled by:	Chibougamau Diamond Drilling	Start Date:	20-May-2018
Township/Area:	Killala Lake Area	End Date:	21-May-2018
Claims (converted):	307858	Described by:	n/a
Claims (legacy):	TB 4256251	Log date:	n/a

Collar

Azimuth: 341.00°
 Plunge: -60.00°
 Length: 60.0 m

COORDINATES UTM (NAD83 zone 16)

Easting: 519604
 Northing: 5432445
 Elevation: 319.0m

Core size: HQ Cemented: No
 Casing: Pulled Stored: Yes

Down hole surveys

Description

Hole abandoned at 60m to adjust azimuth.



Drilled by:	Chibougamau Diamond Drilling	Start Date:	21-May-2018
Township/Area:	Killala Lake Area	End Date:	25-May-2018
Claims (converted):	307858, 230752	Described by:	L.A. Giroux, MSc, PGeo
Claims (legacy):	TB 4256251	Log date:	4-Jun-2018

Collar

Azimuth: 341.00°		Easting: 519604		Core size: HQ		Cemented: No	
Plunge: -60.00°		Northing: 5432445		Casing: Pulled		Stored: Yes	
Length: 435.0 m		Elevation: 319.0m					

COORDINATES UTM (NAD83 zone 16)

Down hole surveys

Drill Hole	Type	Depth (m)	Azimuth Corrected (°)	Dip (°)	Mag
PGH-18-10A	Reflex	18	340.8	-60.8	58398
PGH-18-10A	Reflex	69	340.5	-60.9	57961
PGH-18-10A	Reflex	120	341.4	-61	57856
PGH-18-10A	Reflex	174	341.8	-61.3	57914
PGH-18-10A	Reflex	225	341.9	-61.3	57635
PGH-18-10A	Reflex	279	341.1	-61	58111
PGH-18-10A	Reflex	327	338.6	-61	57163
PGH-18-10A	Reflex	378	344.3	-61.3	58222
PGH-18-10A	Reflex	435	343.7	-61.4	57810

Description

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-10A	0	3	OVB	Casing	
PGH-18-10A	3	25.7	SYE	Syenite	<p>Medium pink Syenite to Granite (white fspar + qtz increasing below ~15m). Abundant patched & veins of bright green epidote alt'n and blue-grey amph. Carb veining ~10-20%. Locally weakly to moderately bx'td. Mg-Cg. Moderate micaceous fabric developed locally below 18m (gneissic). Lesser carb veining downhole.</p> <p>4.6-4.97m: Vfg spotted unknown grey dykes/veins ribboned w/ vfg carb veinlets (extensional fract). UCT at 15/?, LCT ~35/? (irregular, banded).</p> <p>7.72-7.86m: Same unknown dyke. UCT at 55/270, LCT at 70/250 (sharp, irregular).</p> <p>10.08-10.75m: Diabase Dyke. Vfg aphanitic dark grey matrix. Plag phenocrysts up to 3mm (typically). UCT at 45/090, LCT at 25/090 (sharp, chilled).</p> <p>14.26-14.49m: Diabase Dyke. Similar. UCT at 35/050, LCT at 45/050 (broken).</p>
PGH-18-10A	25.7	29.77	CRBT	Carbonatite	<p>Fg purplish-grey massive carbonatite. Multiple carbonate phases. ~1% blebby to cubic pyrite. Locally core is pitted. Bands of vfg apatite under UV. No obvious pyrochlore. UCT at 65deg (irreg, bx'td), LCT gradational, banded w/ Mdyke.</p> <p>29.32-29.5m: hematite coated fract + pitting</p>
PGH-18-10A	29.77	31.54	MDYKE	Mafic Dyke	Vfg, med blueish-grey to brownish-grey mafic dyke? Irregularly banded. Fg biotite (locally cg).
PGH-18-10A	31.54	45	GRAN	Granite	<p>Granite to Quartz-Syenite. Med to coarse grained, med pink to blueish-grey colour. Weak foliation defined by biotite + black/green pyx? <5% carbonate veining. Very weak bx'tn texture only locally.</p> <p>32.1-32.28m, 32.54-32.73m = Vfg zones/dykes perpendicular to CA. Grey spotted with white (carb) & green. Fine blebs sulph.</p>
PGH-18-10A	45	45.95	SYE-BX	Syenite-Breccia	Amalgamated' bx. Orangy-pink rubbly breccia, local pitted. Only minor ap noted under UV. Kspar is deep reddish (hematized) colour. With fine grained carb+biot. Rare fluorite patches. Bx'td irregular contacts. Orangy-brown limonite(?) coating on fractures.
PGH-18-10A	45.95	55.26	GRAN	Granite	Mg to cg, locally white fspar >> kspar where coarser grained (w/ biot+green pyx?). Lesser quartz. Weakly foliated. <<5% carb veining overall, typically very fine ribbony veins, absent where cg. Carb banding perpendicular to CA at gradual lower contact.
PGH-18-10A	55.26	56.1	CRBT	Carbonatite	Fg yellowish-grey, banded (irreg) by fg ap (UV). Spotted by fg kspar + <1% blebs/cubes py. Banding ~// to LCT. LCT at 52/230. No pych noted.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-10A	56.1	89.13	GRAN	Granite	<p>Granite to Qtz-Syenite. Mg to vcg, med pink to spotted blue-grey/pink/green-black in colour. Qtz content variable (<5%-30%). Generally minor carb veining (<1cm wide x-cutting veins) with the exception of:</p> <p>63.4-64.05m: low angle irregular vein w/ 10-15% py+hem, possible pych.</p> <p>65.72-66.0m: at ~65/300, fg, yellowish, bands of fine deep red kspar xtals?</p> <p>68.55-68.72, 70.4-70.5m and 72.07-72.18m: Minor veins ~perp to CA, greyish-purple, fg.</p> <p>Carb veining increasing downhole, veins up to 5-10cm wide (below ~75m).</p> <p>82.32-83.07m: Bx Crbt vein spotted w/ 10-20% deep red hem? alt'n. At ~15dtca (UCT bx'td, LCT highly irregular).</p> <p>86.07-86.17m: Fg white Crbt w/ coarse (1cm) blebs py at contacts (~60dtca, irregular, bx'td).</p> <p>86.57-86.75m: Bx zone w/ micaceous alt'n at contacts.</p> <p>At 76.84m, Minor FZ at 25/115. Core is weakly bx'td & chloritic (along fract's) from ~76.5-79m.</p> <p>Apatite noted (UV) from ~77.5-77.8m in low angle irregular banded carb vein.</p>
PGH-18-10A	89.13	91.67	DIAB	Diabase Dyke	<p>Strongly magnetic. Vfg, dark grey, 5% up to 0.5cm white plag phenocrysts. Includes 2 'clasts' up to 18cm wide of granitic material. UCT at 25/240 (sharp, near planar, open). LCT at 30-35/030 (sharp, slightly irreg, closed).</p>

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-10A	91.67	135	MIX ZONE	Syenite-Breccia/Granite/Carbonatite	<p>Heavily mixed interval of syenite-breccia, unbx'td sye/gran and massive crbt veins/dykes. Bx'tn texture only locally (w/ micaceous reaction alteration rims around kspar clasts) w/ patches & veins of blue-black amphibole alt'n locally. Banded by change in rock type at metre-scale.</p> <p>Apatite & fluorite in bands/patches associated w/ CRBT. Crbt veins vary from massive white to pink, banded.</p> <p>100.58-100.8m and 110.7-110.89m: Fg, banded MDYKE?. Non magnetic. Upper is greenish-grey, lower is darker-grey. 20-30% carb + green-black pyx + mica? Sulph and fluorite noted on fractcs.</p> <p>At 111.5m: Purple to red banding at 35/280.</p> <p>At 111.75m: 2 x 4cm fluorite patches.</p> <p>112.8-113.0m: PEGMATITE/SYE. Very vcg (up to 2cm) pinky-orange kspar + white fspar (plag or kspar? - no obvious striations) + lesser black pyx. Minor epidote.</p> <p>117.0-118.6m: CRBT/BX. Low angle (~// to CA) carbonatite breccia vein. Orangy pink strongly deformed/undulating section w/ low angle carb veining containing highly irregular, mixed orange-red syenitic clasts & deep purple hematized clasts. Fluorite present. Chloritic vuggy fractures at top of interval.</p> <p>118.6-118.9m: CRBT. Light grey w/ vfg deep purple alt'd patches & veinlets. Sharp, bx'td contacts.</p> <p>121.3-121.65m: GRAN. Massive, cg, white to light pink granite spotted w/ ~10% biot + dark green pyx, 30-40% qtz, 30% white to pale peach fspar.</p> <p>125.14-125.67m: CRBT w/ 10cm cg SYE clast. Fg, grey. UCT at 55/080 (sharp, minor rxn rim).</p> <p>125.67-126.54m: DIABASE dyke. Typical, 1-2% fg white phenocrysts. UCT at ~50/220. LCT at 30/240. Both broken, near-planar, greasy chloritic coating.</p> <p>126.54-127.0m: CRBT/ Massive, light grey to beige, faintly banded perpendicular to CA. LCT at 55/070 (somewhat bx'td).</p>
PGH-18-10A	135	150.1	GRAN	Granite	<p>With <10% x-cutting carbonatite veins typically <1cm thick. Granite is mg-cg, spotted blue-pink-dark green. Upwards of 30% quartz (>40% locally) with pink & white (locally) kspar, black mica and dark green pyx. Where coarse grained, mica + pyx define a weak foliation (gneissocity) sub-parallel to CA.</p> <p>From ~144.4m, carbonate veining increasing along with associated alteration (micaceous brownish alteration envelopes flanking veins and increased alkalic alteration).</p> <p>Brecciation texture developed at LCT. Fluorite noted in carbonate veining.</p>
PGH-18-10A	150.1	152	CRBT	Carbonatite	Low angle CRBT vein (~// to CA). Highly variable from light blue-grey to pinkish-purple in colour. Fg. Apatite bands noted under UV.
PGH-18-10A	152	155.51	GRAN	Granite	<p>Granite as above except:</p> <p>154.81-155.12m: MAFIC DYKE. Fg, med-grey spotted by black, green & white (carb?), possible neph. Non mag (mag susc - 0.45). UCT at 75/100. LCT at 75/180. Both sharp, sub-planar.</p>
PGH-18-10A	155.51	157.04	CRBT	Carbonatite	Medium grained, strongly pitted, moderately banded carbonatite. ~25-20% deep purple fluorite over 10cm near UCT. Apatite-rich banding (UV). UCT and banding at 55-60/240-250. LCT bx'td, sharp, ~perpendicular to CA.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-10A	157.04	162.45	CRBT-BX	Carbonatite/Syenite-Bx	Mixed zone w/ 50% massive carbonatite zone, 50% breccia with syenitic clasts up to 30cm wide. Carbonatite intervals up to 1m long w/ common bands of apatite, lesser patches of fluorite (within bands). Syenite variable from fg to cg. Banding (typically parallel to contacts) is 65/260 at 158.5m. From 157.37-157.66m: Vfg light to med greenish-grey MAFIC DYKE w/ minor carbonate veinlets. Contacts approx. perpendicular to core axis, sharp, irregular/non-planar, banded.
PGH-18-10A	162.45	170.06	SYE	Syenite/Carbonatite	Mixed zone w/ ~85% Syenite + 15% Carbonatite. CRBT sections up to 40cm wide, highly variable. Fg, banded (apatite) to cg massive. Often bands of py+po+ap at contacts. SYE is cg and comprised predominantly of kspar w/ lesser mafic component. Qtz noted only locally. Pervasive (20-30%) sodic (blue amph) & lesser epidote alteration.
PGH-18-10A	170.06	174.35	GRAN	Granite	Relatively unaltered cg granite (~30% qtz) w/ qtz+kspar+biot+pyx. Faint gneissic banding. Deep mottled pink & blue-grey colour.
PGH-18-10A	174.35	177.5	SYE-BX	Fenite/Carbonatite	174.35-175.4m: Deep orangy-red cg fenite (alkalic+sodic metasomatism) - essentially kspar + blue amph w/ << epidote locally. 145.4-175.95m: Extensional CRBT vein. Very fine ribbony veining/banding // to contacts. Highly variable colouration from pale grey to green to red to dark purple. UCT at 75/330 (sodic alt'n, planar). LCT at 45/340 (sodic alt'n, highly irregular). 175.95-177.5m: Fenitized granite as before CRBT interval.
PGH-18-10A	177.5	178.9	CRBT-BX	Carbonatite/Breccia	~75cm cg massive pink Carbonatite flanked by breccia zones. Apatite noted in bx zones and bands at contact w/ CRBT but not in massive CRBT section. Coarse blebs py (<1%).
PGH-18-10A	178.9	181.73	GRAN	Granite	Granite as above. Weak foliation defined by mafics. Minor carb veining.
PGH-18-10A	181.73	182.63	CRBT	Carbonatite	Light grey, cg at start, sharp transition to fg at 182.1m at open fracture. 'Dalmatian' spotting by fine black mineral (pyx?). Fine disseminated pyrite. UCT at 65/310 (sharp, sub planar). LCT at 45-50/290 (sharp, undulating).
PGH-18-10A	182.63	188	GRAN	Granite	Granite w/ ~5% CRBT veining. Typically coarse grained, variably fenitized. Weakly brecciated locally by carb veining. Apatite noted in carb veins.
PGH-18-10A	188	190.45	GRAN	Granite	Coarse grained, whiter in colour. Qtz (30-40%), 10-20% kspar + white fsp? + mafics. Weakly foliated. Minimal carb veining. Relatively unaltered.
PGH-18-10A	190.45	204.8	GRAN	Granite/Syenite	Variable quartz content w/ variable degrees of fenitization. Typically coarse grained. 185.43-188.0m: Crosscutting apatite bearing carb veins including 30cm massive CRBT. 188.0-190.5m: 'White' granite w/ pale coloured/white fspar. Wavy gneissic fabric sub-parallel to CA. 191.43-193.75m: Breccia/Fault Zone. Rubbly looking, variably chloritized (slickensided fractures) w/ deep purple to red alteration. Apatite noted in carbonate matrix. 197-199.56m: Low angle (~// to CA) carb vein. No apatite under UV. Blue amphibole associated with vein. Chloritic alteration throughout (interstitial to fspar grains) gives rock granular texture. Mixed pale pink to dark pink kspars.
PGH-18-10A	204.8	205.65	PEG	Pegmatite	Granitic Pegmatite. Possible dyke. Up to 5cm quartz crystals plus pale pink feldspars with interstitial pistachio green epidote alt'd mineral. Pyrite along fractures. UCT (w/ GRAN) at 30/270 (sharp, planar, closed). LCT less well defined w/ abundant blue-grey amph alt'n.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-10A	205.65	210.4	SYE-BX	Syenite-Breccia	Variably assimilated breccia. Abundant qtz locally. Deep orange (alkalized) colour. Apatite-carbonate veining/matrix. 207.6-208.05m: Massive fg purplish-grey carbonatite w/ apatite banding at contacts + bands of py/po.
PGH-18-10A	210.4	237	GRAN	Granite	Predominantly massive cg granite to granitic gneiss w/ lesser zones of carbonatite and breccia. More blueish in colour due to qtz + paler coloured fspars. 30% dark green to black mica defined foliation/banding. Weakly developed breccia locally where crosscut by wispy white carb veins. At 210.5m: 2cm wide chl-carb bx vein at 55/020. 214.75-214.9m: Apatite in carb veining. 215.58-215.9m: CRBT. Pale beige, ap at contacts. 219.13-219.22m: DIABASE DYKE. Vfg, dark green, aphanitic, mod magnetic. Chilled, sharp, planar. At 45/215. 221.44-221.6m: Mafic Dyke? Fg, green, chloritic interval with biotite books. Ribbony very fine carb veining. Non mag. At ~25-30dtca. 227.0-227.6m: CRBT. UCT at 15/220, sharp, irregular, banded by ap+amph. LCT at 20/270, irregular, alt'd. 230.58-230.73m: Fg, banded Mafic Dyke? Perpendicular to CA. Greenish to grey colour. Sugary texture. Wavy banding & contacts. Fg carb + kspar?, neph?, chl? 231.2-231.5m: CRBT. Fg, yellowish-beige colour. Mod banded by ap at 70/230 (irregular). Banding // to contacts. 235.67-236.0m: CRBT. Massive, generally cg, white w/ coarse blebs & bands of po+py+/-mt (strongly magnetic) (~10% overall). UCT at 25/180 (near planar, amph-chl banding). LCT at 40/180.
PGH-18-10A	237	239.5	CRBT-BX	Carbonatite-Breccia	Carbonatite w/ up to 20cm clast of altered granite. Crbt is white to pink. SMSS locally (10-20% overall). Strongly developed micaceous alteration haloes around clasts. Apatite band noted at LCT. UCT at 20/180. LCT at 20/170 (bx'td, irreg, amph alt'n).
PGH-18-10A	239.5	245.5	GRAN	Granite	Cg granite to granitic gneiss w/ minor epidote alteration locally. Occasional 1-4cm wide carb veins (+/- apatite) w/ sodic alt'n envelopes. At 241.77m: 1cm wide vein w/ 1cm thick envelopes is flanked by 2-3cm of vcg pegmatitic granite.
PGH-18-10A	245.5	252.7	GRAN	Granite	Typical. With increasing carbonate veining and brecciation. Generally strongly developed alt'n envelopes around clasts and flanking carb veins (up to 3cm wide). Variable kspar alt'n. Lesser blue amph-carb veining (sodic alt'n). 245.57-245.8m: CRBT banded w/ fluorite and py at centre, finer grained towards contacts. 252-252.7m: Well developed BX due to x-cutting carb veins.
PGH-18-10A	252.7	254.1	CRBT	Carbonatite	Mg, purplish grey. Includes 7cm & 13cm wide bands of vfg kspar-rich clasts/bands subparallel to contacts (faint red, green & blue-grey spotted). Trace to 1% cubic to subhedral pyrite disseminated and in masses weakly aligned w/ banding. Fine (<1mm) pych? in weakly defined bands (<<1% overall). UCT at 55/180 (sharp, irreg, blue amph alt'n). LCT at 60/190 (banded, sub planar).
PGH-18-10A	254.1	256.35	SYE	Granite to Syenite	Typically cg, orangy pink in colour, spotted by up to 30% dark green-black pyx+mica, variable quartz. Minor carb veining (w/ alt'n rims).

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-10A	256.35	256.82	CRBT	Carbonatite	Carbonatite w/ alkalic clasts w/ chloritic alteration haloes and chloritic slickensided fractures. CRBT is cg and deep pink in colour. UCT at 45/170 (planar, banded). LCT at 50/180 (near planar). Several cm-scale bands perpendicular to core axis, vfg greenish-grey. Flanked by purple fluorite and apatite.
PGH-18-10A	256.82	269.6	MIX_ZONE	Mixed Zone	Mixed zone of ~40% granite/syenite (variably fenitized/alkalized), 50% breccia (syenite clasts in crbt matrix) and 10% massive carbonatite. Carbonatite is typically yellowish-grey in colour w/ apatite and abundant fluorite. Patchy/interstitial an veins of epidote and/or blue-grey amphibole alteration. Dark brown to black alt'n rims common around alkalic clasts in breccia. Breccia is locally assimilated. 262.74-263.19m: CRBT, Cg, white w/ 1-2% fluorite. UCT at 55/340 (open, chloritic). LCT at 80/330 (closed, sharp, sub planar). 263.88-264.88m: CRBT. Banded, yellowish-grey to reddish-purple (hem?). Ap bands under UV. UCT bx'td, angle difficult to determine. LCT at 55/330 (closed, sharp, planar). At 264.5m: 2-3cm wide irregular bands of near massive fluorite.
PGH-18-10A	269.6	271	UNKN	Unknown Dyke	Fg, greenish-grey dyke w/ zoned cm-scale wispy banding. Up to 20% carbonate in matrix. Slightly coarser biotite books. Plus includes up to 20cm wide CRBT zones/bands (banding // to contacts). Non mag. Zones by gran size. Wispy extensional carb veins.
PGH-18-10A	271	289.5	MIX_ZONE	Mixed Zone	Mixed zone as above w/ 5% massive CRBT, 40% un-brecciated granite/syenite and 45% breccia.
PGH-18-10A	289.5	291.08	MDYKE	Mafic Dyke	Very strongly magnetic (mag susc up to 200 where cg mag present). Vfg, dark grey, slightly coarser biotite. Interbanded w/ green & reddish spotted carbonate rich sections. LCT at 70/030 (sharp, planar). UCT irregular, gradual. 290.85-291.08m: Cg (0.5cm) magnetite's 7-10%.
PGH-18-10A	291.08	292.45	SYE	Syenite/Carbonatite	291.08-292.45m: 18cm CRBT (grey, fg) followed by massive syenite.
PGH-18-10A	292.45	294.8	MDYKE	Mafic Dyke	Strongly magnetic (mag susc up to 165, typically <100). Single 1.5cm ring of magnetite noted at 293.4m. Fg matrix w/ coarser biotite books up to 1cm. Occasional up to 3cm wide rounded micaceous 'clasts'. Very fine carb veining/ribbons - 5-7% white carbonate. Pyroxenite? UCT at 35/100 (sharp, chilled). LCT bx'td, broken.
PGH-18-10A	294.8	298.73	SYE	Syenite	Syenite to Syenite-Breccia locally. Typically bright pink alkalic interval w/ x-cutting carb veining. Carb associated w/ thick black alteration envelopes/rims.
PGH-18-10A	298.73	302.37	CRBT	Carbonatite	Massive, light greyish-pink, fg apatite throughout. Faintly banded. <<1% blebby to cubic pyrite. UCT at 55/350 (bx'td, banded w/ ap). LCT at 45/290 (sharp, wavy, banded).
PGH-18-10A	302.37	306.29	SYE	Syenite	Medium pink alkalic interval. Very minimal carb veining (sub perpendicular to CA, up to 2cm wide). Moderately chloritized. Weak foliation/gneissosity.
PGH-18-10A	306.29	308.86	MDYKE	Mafic Dyke	Mafic Dyke or Pyroxenite as above. Strongly magnetic. Increasing carbonate and breccia texture downhole. Cg magnetite up to 1cm. From 307.5m: Breccia Dyke. Rounded mafic (biotite-rich, variably magnetic) clasts up to 5cm wide.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-10A	308.86	313.55	SYE	Syenite	Lighter pink w/ lighter coloured feldspars. Pervasive blue amph +/- chl alteration. Lesser epidote. Cg, massive with very minor carb veining.
PGH-18-10A	313.55	316.5	SYE-BX	Syenite-Breccia	As above Sye w/ weak to moderate bx'tn by x-cutting carb veins (+/- alt'n envelopes). 314.65-315.27m: CRBT. Near massive w/ wispy blue amph. 10cm mafic band associated w/ sulph masses towards centre.
PGH-18-10A	316.5	321.77	SYE	Syenite	Syenite to Quartz-Syenite. Med pink, mg to cg. Minor carb veining - generally <0.5cm wide. Weak foliation defined by mafics (biot-pyx up to 30% locally).
PGH-18-10A	321.77	327.68	MDYKE/CRBT	Mafic Dyke/Carbonatite	Interbanded intervals of Carbonatite to Silicocarbonatite and medium greenish-grey to dark-grey Mafic Dyke. Mdyke variably magnetic (non to strongly mag). Cut by fine stacked ribbony carbonate veins (extensional). Coarser mica/biotite books locally. Carbonatite is fg, spotted purplish-grey colour. Ap noted in carb. Upper 40cm bx'td by carb.
PGH-18-10A	327.68	330.52	CRBT-BX	Carbonatite/Syenite-Bx	Top 1 metre is 'assimilated' breccia or carbonatized syenite. Remnant alkalic clast shape preserved only faintly. Includes up to 20cm CRBT (w/ ap) bands.
PGH-18-10A	330.52	333	DIAB	Diabase Dyke	Fg, dark grey to black, strongly magnetic mafic dyke. UCT at 30-35/270 (sharp, stepped, chilled). LCT at 20/260 (open, chlorite coated, 1cm wide carb vein // to contact). Up to 5-10% light grey to black 'phenocrysts' up to 0.5cm in size - no xtal habit on broken surfaces - pyx?
PGH-18-10A	333	334.36	SYE-BX	Syenite-Breccia	Typical. Coarsely bx'td by x-cutting carb veins w/ rxn envelopes. Carb veins generally <1cm wide. 333.46-333.6m: CRBT vein. Banded // to contacts (60-65/180) (near planar, irregular, banded). Banded at mm- to cm-scale by wispy blue amph + apatite (UV).
PGH-18-10A	334.36	335.95	MDYKE	Mafic Dyke	Mafic Dyke or Pyroxenite. Dark grey, fg mafic unit w/ 1-2% coarser biotite books (up to 4mm). Generally non-magnetic w/ exception of sulphide patch/vein at ~334.65m. ~10% fine ribbony carb veins. UCT near planar, wavy, more micaceous at 35/280.
PGH-18-10A	335.95	337.85	MIX_ZONE	Mixed Zone	Mixed interval w/ 'Pyroxenite' bx'td by carbonatite; zones of banded 'PYX' and unknown light vfg greenish-grey sugary textures silicate-rich dykes? (very minimal carb) finely spotted by pale pink neph(?) flanked by PYX.
PGH-18-10A	337.85	341	SYE	Fenite/Syenite	Abundant blue amph (sodic alt'n). Carb veining w/ associated blue amph + brown mica/chl alt'n. Unbrecciated.
PGH-18-10A	341	345.56	MDYKE	Mafic Dyke	Mafic Dyke or Pyroxenite. As above, vfg, dark grey, fine ribbony carb veining (typically perpendicular to CA) with some coarser patches and veins up to 1cm thick. Non magnetic. Apatite in carb near lower contact. Coarser biotite books from ~345m. Bx'td more micaceous lower contact.

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-10A	345.56	364.24	MIX ZONE	Mixed Zone	<p>Mixed zone comprised of ~15% Carbonatite, 50% unbrecciated Syenite/Fenitized Granite and 35% Breccia (weak to moderately developed).</p> <p>Syenite is med to dark pink in colour, mg-cg, spotted by up to 25% mica (black) + pyx (green). Predominantly pinkish kspar w/ lesser white fspar. Quartz locally. Locally very coarse grained. Alteration consists of dark blue sodic amph in veins & replacing pyx? Only minor patches epidotization locally.</p> <p>In Breccia sections the Syenite is x-cut by carb veining w/ micaceous reaction rims defining weak to moderate bx texture.</p> <p>Carbonatite==></p> <p>349.94-350.57m: Bx'td UCT & LCT. Cg, white, some wispy blue amph veins, cg ap under UV.</p> <p>353.44-353.95m: UCT at 40/220 (sharp, stepped/bx'td). LCT at 15-20/290 (banded, irregular, near planar). Coarse grained, tr-1% sulph, apatite associated w/ wispy blue amph bands.</p> <p>360.58-361.6m: Cg, light grey to purple. UCT at 60/290 (near planar). LCT bx'td, irregular. Only minor ap/amph bands.</p>
PGH-18-10A	364.24	391.91	CRBT	Carbonatite	<p>A carbonatite ranging from fg to cg, white/light grey to pink. Wispy bands of fg blue amph common (often associated w/ apatite). Apatite typically fg. Cg xtals (up to 1cm) noted at ~368.5m, 378m and 387m (darker apple green colour). Tr-1% pyrite +/- pyrrhotite, fine magnetite only locally (mag susc up to 60). UCT at 30/030 (sub planar, banded, sharp).</p> <p>365.92-369.07m: Sye clast w/ rxn rims.</p> <p>367.13m: At 35/075. 3cm wide chloritic zone (+kspar). Minor slippage along clast. Minor FZ?</p> <p>367.9-368.12m: Fg, dark grey MAFIC DYKE. Non mag. Very wavy irregular UCT sub perpendicular to CA. LCT at 55/170 (irreg, micaceous).</p> <p>366.7m: 1cm wide reddish-brown bx-vein in pink Crbt (<1mm carb clasts).</p> <p>378.9-379.6m: Finely banded by fg apatite, amph at 50-55 dtca (not oriented).</p> <p>387.24-387.34m: Cg, darker apple green apatite on open powdery white surface, w/ fg euhedral pyrochlores. Silvery + pyritic sulphides n cavities/pitting on outer core surface.</p>
PGH-18-10A	391.91	419.04	MIX ZONE	Mixed Zone	<p>Predominantly GRAN/SYE (variably fenitized) w/ much lesser massive CRBT (<5%) and Alkalic Breccia (15%). Brecciation decreases downhole. Apatite in massive carbonatite/veins. Blue amph often associated w/ carb veining.</p>
PGH-18-10A	419.04	424.54	CRBT	Carbonatite	<p>Massive, white to blueish (amph-rich). UCT bx'td at 25-30/220-230. UCT includes 5cm wide SYE clasts // to contacts. LCT bx'td at ~35/200-240. SYE very strongly fenitized over ~60cm below.</p> <p>Banding at 55-60/200 (419.75m), 45-50/180 (421.3m). 1-2% fine blebby sulphides often aligned in banding (w/ wispy blue amph +/- dark brown mica, apatite).</p>

LITHOLOGY

DDH	From	To	Litho_Code	Litho_Title	Description
PGH-18-10A	424.54	435	SYE	Granite/Carbonatite	<p>Massive to weakly foliated (by mafics) GRAN to SYE (abundant qtz locally ~30%).</p> <p>424.54-425.92m: Fenitized (sodic) gran/sye, bx'td at contacts.</p> <p>425.92-428.5m: Massive white to light grey cg CRBT w/ rimmed sye clasts up to 15-20cm in top third of section. Otherwise unbx'td.</p> <p>428.5-431.3m: SYE w/ minor carb-amph veining.</p> <p>431.3-433.23m: Low angle CRBT vein & associated bx.</p> <p>431.7-432.0m: BX vein. Stacked low angle bx-veins. White angular carbonate clasts in black chloritic matrix.</p> <p>432.43-432.77m: Bx vein. Within greater bx zone from 432.0-433.24m. Coarse to small angular carbonatite and alkalic clasts in chloritic matrix. Angle difficult to determine.</p> <p>433.24-435.0m: Well foliated mafic rich Syenite. 50-60% kspar, 40-50% biot+pyx (black). Chlorite commonly coating fractures. Single zoned blue amph vein w/ green epidote (blue at centre, green edges).</p> <p>EOH at 435.0m.</p>

ASSAYS

DDH	From	To	Width (m)	SampleID	BatchID	Fe2O3T (%)	Nb2O5 (%)	P2O5 (%)	SnO2 (%)	Ta2O5 (%)	ThO2 (%)	U3O8 (%)	WO3 (%)	Y2O3 (%)	ZrO2 (%)
PGH-18-10A	4.36	5.44	1.08	590851	A18-08117	7.93	0.069	2.73	< 0.003	< 0.003	0.009	< 0.005	0.003	0.012	0.021
PGH-18-10A	5.44	6.76	1.32	590852	A18-08117	6.48	0.03	1.11	< 0.003	< 0.003	0.005	< 0.005	< 0.003	0.006	0.021
PGH-18-10A	6.76	7.88	1.12	590853	A18-08117	7.65	0.025	1.1	0.005	0.003	0.006	< 0.005	< 0.003	0.007	0.005
PGH-18-10A	7.88	9	1.12	590854	A18-08117	5.47	0.017	0.5	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.004	0.012
PGH-18-10A	9	10.07	1.07	590855	A18-08117	6.25	0.04	1.18	< 0.003	0.005	0.006	< 0.005	0.003	0.005	0.004
PGH-18-10A	10.07	10.75	0.68	590856	A18-08117	15.23	0.02	1.38	0.004	0.003	< 0.005	< 0.005	< 0.003	0.005	0.037
PGH-18-10A	10.75	12	1.25	590857	A18-08117	7.08	0.053	2	< 0.003	< 0.003	0.007	< 0.005	< 0.003	0.009	0.011
PGH-18-10A	12	13.22	1.22	590858	A18-08117	6.71	0.028	0.56	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.004	0.014
PGH-18-10A	13.22	14.52	1.3	590860	A18-08117	7.66	0.03	0.48	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.004	0.013
PGH-18-10A	14.52	15.62	1.1	590861	A18-08117	7.38	0.024	0.3	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.003	0.014
PGH-18-10A	15.62	16.49	0.87	590863	A18-08117	6.89	0.089	1.83	< 0.003	0.004	0.01	< 0.005	< 0.003	0.009	0.011
PGH-18-10A	16.49	17.75	1.26	590864	A18-08117	7.99	0.033	0.2	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.003	0.021
PGH-18-10A	17.75	19	1.25	590865	A18-08117	6.93	0.069	0.47	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.005	0.004
PGH-18-10A	19	20.2	1.2	590866	A18-08117	6.74	0.026	0.37	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.004	0.011
PGH-18-10A	20.2	21.48	1.28	590867	A18-08117	6.22	0.041	0.58	< 0.003	< 0.003	0.005	< 0.005	< 0.003	0.005	< 0.003
PGH-18-10A	21.48	22.26	0.78	590868	A18-08117	6.77	0.032	0.15	< 0.003	0.003	0.006	< 0.005	< 0.003	0.004	0.009
PGH-18-10A	22.26	23.4	1.14	590870	A18-08117	6.43	0.013	0.45	< 0.003	0.003	< 0.005	< 0.005	< 0.003	0.004	0.013
PGH-18-10A	23.4	24.55	1.15	590871	A18-08117	5.15	0.008	0.31	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.004	0.031
PGH-18-10A	24.55	25.72	1.17	590872	A18-08117	5.61	0.017	0.4	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.005	0.019
PGH-18-10A	25.72	26.87	1.15	590873	A18-08117	4.88	0.107	1.27	< 0.003	< 0.003	0.011	< 0.005	< 0.003	0.01	< 0.003
PGH-18-10A	26.87	27.9	1.03	590874	A18-08117	4.16	0.058	1.41	< 0.003	< 0.003	0.01	< 0.005	< 0.003	0.008	< 0.003
PGH-18-10A	27.9	28.86	0.96	590875	A18-08117	5.57	0.058	11.23	< 0.003	0.003	0.011	< 0.005	0.003	0.03	0.02
PGH-18-10A	28.86	30	1.14	590876	A18-08117	8.18	0.072	5.14	< 0.003	0.006	0.009	0.009	0.003	0.013	0.117
PGH-18-10A	45	45.95	0.95	590877	A18-08117	8.58	0.049	1.65	< 0.003	< 0.003	0.012	< 0.005	< 0.003	0.016	0.007
PGH-18-10A	53.9	55.07	1.17	590878	A18-08117	7.04	0.013	0.33	< 0.003	< 0.003	0.006	< 0.005	0.003	0.003	0.013
PGH-18-10A	55.07	56.09	1.02	590879	A18-08117	7.03	0.037	1.89	< 0.003	0.003	0.013	0.007	0.003	0.011	< 0.003
PGH-18-10A	63.38	64.04	0.66	590880	A18-08117	9.37	0.102	1.73	< 0.003	< 0.003	0.009	< 0.005	< 0.003	0.011	< 0.003
PGH-18-10A	65.7	66	0.3	590881	A18-08117	6.83	0.047	1.6	< 0.003	0.004	0.009	0.005	< 0.003	0.01	< 0.003
PGH-18-10A	77.35	77.85	0.5	590882	A18-08117	8.4	0.037	1.77	< 0.003	0.003	0.006	0.006	< 0.003	0.007	0.01
PGH-18-10A	82.21	83.23	1.02	590883	A18-08117	6.8	0.036	1.52	< 0.003	< 0.003	0.053	0.007	< 0.003	0.022	< 0.003
PGH-18-10A	86.05	87.14	1.09	590884	A18-08117	6.83	0.021	0.29	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.004	0.017
PGH-18-10A	92.36	93.55	1.19	590885	A18-08117	3.5	0.096	2.4	< 0.003	< 0.003	0.011	0.007	< 0.003	0.012	< 0.003
PGH-18-10A	93.55	94.79	1.24	590886	A18-08117	6.96	0.015	0.6	< 0.003	0.003	0.006	< 0.005	< 0.003	0.005	0.01
PGH-18-10A	94.79	96.06	1.27	590887	A18-08117	7.75	0.027	0.43	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.004	0.011
PGH-18-10A	96.06	97.36	1.3	590888	A18-08117	8.87	0.106	1	< 0.003	0.004	0.007	< 0.005	0.004	0.005	0.009
PGH-18-10A	97.36	98.64	1.28	590889	A18-08117	6.02	0.021	0.45	< 0.003	0.003	< 0.005	< 0.005	< 0.003	0.003	0.036
PGH-18-10A	98.64	100	1.36	590890	A18-08117	6.57	0.018	0.47	< 0.003	< 0.003	0.006	< 0.005	0.018	0.005	0.021
PGH-18-10A	100	100.84	0.84	590891	A18-08117	8.37	0.021	0.14	< 0.003	< 0.003	0.005	< 0.005	0.003	0.004	0.029
PGH-18-10A	100.84	101.88	1.04	590892	A18-08117	6.44	0.043	1.47	< 0.003	< 0.003	0.01	0.005	0.003	0.009	0.008
PGH-18-10A	101.88	103.06	1.18	590893	A18-08117	6.99	0.018	0.27	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.005	0.012
PGH-18-10A	103.06	104.31	1.25	590894	A18-08117	6.03	0.012	0.2	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.004	0.015

ASSAYS

DDH	From	To	Width (m)	SampleID	BatchID	Fe2O3T (%)	Nb2O5 (%)	P2O5 (%)	SnO2 (%)	Ta2O5 (%)	ThO2 (%)	U3O8 (%)	WO3 (%)	Y2O3 (%)	ZrO2 (%)
PGH-18-10A	104.31	105.56	1.25	590895	A18-08117	5.98	0.014	0.14	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.005	0.005
PGH-18-10A	105.56	106.8	1.24	590896	A18-08117	4.12	0.004	0.62	< 0.003	0.003	0.006	< 0.005	< 0.003	0.006	0.003
PGH-18-10A	106.8	107.33	0.53	590897	A18-08117	5.71	0.004	0.36	< 0.003	< 0.003	0.017	0.01	< 0.003	0.008	
PGH-18-10A	107.33	108.12	0.79	590898	A18-08117	5.38	0.011	0.32	0.005	0.003	< 0.005	< 0.005	< 0.003	0.005	0.03
PGH-18-10A	108.12	108.59	0.47	590899	A18-08117	5.05	0.03	0.02	< 0.003	< 0.003	0.012	0.009	< 0.003	0.005	< 0.003
PGH-18-10A	108.59	109.45	0.86	590901	A18-08117	5.51	0.011	0.14	< 0.003	< 0.003	< 0.005	< 0.005	0.003	< 0.003	0.007
PGH-18-10A	109.45	110.23	0.78	590902	A18-08117	8.1	0.182	3.51	< 0.003	0.003	0.01	0.006	< 0.003	0.013	< 0.003
PGH-18-10A	110.23	110.71	0.48	590903	A18-08117	6.13	0.044	6.22	< 0.003	< 0.003	0.018	0.017	0.003	0.03	
PGH-18-10A	110.71	111.18	0.47	590904	A18-08117	8.89	0.045	4.43	< 0.003	0.003	0.009	< 0.005	< 0.003	0.019	0.03
PGH-18-10A	111.18	111.91	0.73	590905	A18-08117	5.62	0.017	3.96	< 0.003	< 0.003	0.02	0.014	< 0.003	0.034	
PGH-18-10A	111.91	113.18	1.27	590906	A18-08117	6.22	0.015	0.63	< 0.003	< 0.003	0.005	< 0.005	0.003	0.006	0.017
PGH-18-10A	113.18	114.45	1.27	590907	A18-08117	6.24	0.019	0.27	< 0.003	< 0.003	0.01	0.008	0.003	0.006	< 0.003
PGH-18-10A	114.45	115.85	1.4	590908	A18-08117	6.18	0.053	0.16	< 0.003	< 0.003	0.005	< 0.005	< 0.003	0.005	0.022
PGH-18-10A	115.85	117	1.15	590909	A18-08117	6.03	0.009	0.29	< 0.003	< 0.003	0.012	< 0.005	< 0.003	0.008	0.029
PGH-18-10A	117	117.85	0.85	590910	A18-08117	5.56	0.015	0.49	< 0.003	0.004	0.012	< 0.005	< 0.003	0.008	0.015
PGH-18-10A	117.85	118.9	1.05	590911	A18-08117	7	0.047	3.28	< 0.003	0.003	0.021	0.007	0.004	0.023	0.013
PGH-18-10A	125.13	125.65	0.52	590912	A18-08117	4.44	0.021	3.45	< 0.003	< 0.003	0.01	0.005	< 0.003	0.011	0.027
PGH-18-10A	126.54	127	0.46	590913	A18-08117	5.71	0.067	4.87	< 0.003	0.003	0.012	0.009	< 0.003	0.018	< 0.003
PGH-18-10A	128.59	129.55	0.96	590914	A18-08117	7.52	0.026	0.91	< 0.003	< 0.003	0.008	0.006	< 0.003	0.007	< 0.003
PGH-18-10A	129.55	130.78	1.23	590915	A18-08117	6.59	0.016	0.66	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.005	0.011
PGH-18-10A	130.78	131.3	0.52	590916	A18-08117	5.91	0.036	0.71	< 0.003	< 0.003	0.014	0.022	< 0.003	0.004	
PGH-18-10A	131.3	132.35	1.05	590918	A18-08117	2.57	0.014	1.59	< 0.003	< 0.003	0.005	0.007	< 0.003	0.011	< 0.003
PGH-18-10A	139.85	140.45	0.6	590919	A18-08117	7.01	0.036	1.25	< 0.003	< 0.003	0.007	0.005	< 0.003	0.01	0.013
PGH-18-10A	146	147.32	1.32	590920	A18-08117	6.84	0.071	0.34	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.005	0.011
PGH-18-10A	147.32	148.9	1.58	590922	A18-08117	6.01	0.009	0.42	< 0.003	0.007	< 0.005	< 0.005	0.006	0.005	0.035
PGH-18-10A	148.9	150.08	1.18	590923	A18-08117	6.51	0.053	1.03	< 0.003	0.004	< 0.005	< 0.005	< 0.003	0.007	0.01
PGH-18-10A	150.08	151.01	0.93	590924	A18-08117	7.52	0.055	5.04	< 0.003	< 0.003	0.01	0.005	< 0.003	0.017	< 0.003
PGH-18-10A	151.01	152	0.99	590925	A18-08117	7.06	0.003	0.57	< 0.003	< 0.003	0.008	0.005	< 0.003	0.006	< 0.003
PGH-18-10A	155.53	156	0.47	590926	A18-08117	6.13	0.048	3.84	< 0.003	0.003	0.01	0.005	0.003	0.016	0.005
PGH-18-10A	156	157.04	1.04	590927	A18-08117	6.3	< 0.003	4.21	< 0.003	< 0.003	0.014	< 0.005	< 0.003	0.017	< 0.003
PGH-18-10A	157.04	157.83	0.79	590928	A18-08117	9.75	0.025	0.29	< 0.003	0.003	0.005	< 0.005	< 0.003	0.005	0.035
PGH-18-10A	157.83	158.95	1.12	590929	A18-08117	4.75	0.042	3.3	< 0.003	0.003	0.009	< 0.005	< 0.003	0.014	0.01
PGH-18-10A	158.95	159.75	0.8	590930	A18-08117	5.48	0.214	2.8	< 0.003	< 0.003	0.01	< 0.005	< 0.003	0.011	0.008
PGH-18-10A	159.75	160.44	0.69	590931	A18-08117	4.89	0.096	1.75	< 0.003	< 0.003	0.01	0.008	< 0.003	0.012	< 0.003
PGH-18-10A	160.44	160.92	0.48	590932	A18-08117	7.61	0.11	0.28	< 0.003	< 0.003	0.01	0.005	< 0.003	0.006	< 0.003
PGH-18-10A	160.92	161.87	0.95	590933	A18-08117	7.3	0.085	0.77	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.004	0.018
PGH-18-10A	161.87	162.48	0.61	590934	A18-08117	4.71	0.414	4.86	< 0.003	0.003	0.01	0.011	< 0.003	0.017	< 0.003
PGH-18-10A	162.48	163.78	1.3	590935	A18-08117	7.67	0.031	0.51	< 0.003	< 0.003	< 0.005	< 0.005	0.005	0.004	0.021
PGH-18-10A	163.78	165.08	1.3	590936	A18-08117	7.11	0.017	0.48	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.005	0.012
PGH-18-10A	165.08	166.37	1.29	590937	A18-08117	6.48	0.031	0.87	< 0.003	0.003	0.005	0.006	0.021	0.005	< 0.003
PGH-18-10A	166.37	167.49	1.12	590938	A18-08117	6.57	0.025	1.27	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.006	0.005

ASSAYS

DDH	From	To	Width (m)	SampleID	BatchID	Fe2O3T (%)	Nb2O5 (%)	P2O5 (%)	SnO2 (%)	Ta2O5 (%)	ThO2 (%)	U3O8 (%)	WO3 (%)	Y2O3 (%)	ZrO2 (%)
PGH-18-10A	167.49	168.72	1.23	590940	A18-08117	7.2	0.016	0.25	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.004	0.02
PGH-18-10A	168.72	168.94	0.22	590941	A18-08117	4.05	0.401	2.18	< 0.003	< 0.003	0.011	0.007	0.004	0.014	< 0.003
PGH-18-10A	168.94	169.58	0.64	590942	A18-08117	7.23	0.076	0.91	< 0.003	0.003	0.007	0.006	< 0.003	0.006	< 0.003
PGH-18-10A	169.58	170.06	0.48	590943	A18-08117	6.93	0.032	0.37	< 0.003	< 0.003	0.008	0.006	< 0.003	0.008	< 0.003
PGH-18-10A	170.06	171.08	1.02	590944	A18-08117	6.72	0.016	0.4	< 0.003	< 0.003	< 0.005	< 0.005	0.003	0.004	0.015
PGH-18-10A	174.35	175.42	1.07	590945	A18-08117	6.43	0.02	0.47	< 0.003	< 0.003	0.006	0.005	0.016	0.004	< 0.003
PGH-18-10A	175.42	175.95	0.53	590946	A18-08117	11.93	0.088	1.74	< 0.003	< 0.003	0.007	0.005	< 0.003	0.008	0.067
PGH-18-10A	175.95	176.77	0.82	590947	A18-08117	4.41	0.013	0.51	< 0.003	0.003	0.007	< 0.005	< 0.003	0.004	< 0.003
PGH-18-10A	176.77	177.5	0.73	590948	A18-08117	4.46	0.008	0.44	< 0.003	0.003	< 0.005	< 0.005	< 0.003	< 0.003	0.012
PGH-18-10A	177.5	177.77	0.27	590949	A18-08117	7.19	0.328	1.51	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.006	0.011
PGH-18-10A	177.77	178.52	0.75	590950	A18-08117	1.79	0.081	0.4	< 0.003	< 0.003	0.009	0.006	0.003	0.01	< 0.003
PGH-18-10A	178.52	178.91	0.39	590951	A18-08117	7.31	0.279	1.23	< 0.003	0.003	0.009	< 0.005	0.003	0.007	0.003
PGH-18-10A	178.91	180	1.09	590952	A18-08117	6.59	0.025	0.45	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.005	0.014
PGH-18-10A	181.73	182.63	0.9	590953	A18-08117	7.53	< 0.003	0.01	< 0.003	< 0.003	0.011	< 0.005	0.003	0.005	< 0.003
PGH-18-10A	185.43	186.58	1.15	590954	A18-08117	6.72	0.056	0.38	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.003	0.007
PGH-18-10A	186.58	187	0.42	590955	A18-08117	4.73	0.011	0.8	< 0.003	< 0.003	0.008	< 0.005	< 0.003	0.007	< 0.003
PGH-18-10A	187	187.9	0.9	590956	A18-08117	6.75	0.183	0.61	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.005	0.013
PGH-18-10A	191.4	192.66	1.26	590957	A18-08117	6.46	0.02	0.62	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.004	0.035
PGH-18-10A	192.66	193.76	1.1	590958	A18-08117	6.97	0.036	1.16	< 0.003	< 0.003	0.006	< 0.005	0.003	0.006	0.015
PGH-18-10A	200.74	202.06	1.32	590959	A18-08117	6.8	0.083	2.34	< 0.003	< 0.003	0.008	< 0.005	< 0.003	0.013	0.005
PGH-18-10A	205.94	206.77	0.83	590960	A18-08117	6.8	0.038	0.8	< 0.003	< 0.003	0.007	< 0.005	< 0.003	0.007	0.009
PGH-18-10A	206.77	207.65	0.88	590961	A18-08117	4.72	0.032	0.62	< 0.003	< 0.003	0.005	< 0.005	< 0.003	0.004	0.019
PGH-18-10A	207.65	208.04	0.39	590962	A18-08117	4.85	0.041	1.1	< 0.003	< 0.003	0.01	< 0.005	< 0.003	0.011	< 0.003
PGH-18-10A	208.04	209.18	1.14	590963	A18-08117	5.16	0.04	0.52	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.005	0.018
PGH-18-10A	209.18	210.3	1.12	590964	A18-08117	4.46	0.02	0.61	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.006	0.01
PGH-18-10A	214	215	1	590965	A18-08117	6.59	0.124	2.33	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.013	0.006
PGH-18-10A	215	216	1	590966	A18-08117	5	0.043	0.59	< 0.003	< 0.003	0.007	< 0.005	0.003	0.007	0.017
PGH-18-10A	219.54	220.63	1.09	590968	A18-08117	6.87	0.044	0.72	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.005	0.01
PGH-18-10A	220.63	221.74	1.11	590970	A18-08117	7.8	0.102	1.28	< 0.003	< 0.003	0.005	< 0.005	< 0.003	0.006	0.023
PGH-18-10A	225.14	225.98	0.84	590971	A18-08117	6.26	0.032	0.95	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.004	0.014
PGH-18-10A	225.98	226.85	0.87	590972	A18-08117	7.42	0.061	1.08	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.006	0.009
PGH-18-10A	226.85	227.77	0.92	590973	A18-08117	4.11	0.205	0.8	< 0.003	< 0.003	0.008	0.006	< 0.003	0.009	< 0.003
PGH-18-10A	231.17	231.51	0.34	590974	A18-08117	7.41	0.036	2.33	< 0.003	< 0.003	0.01	0.005	< 0.003	0.013	< 0.003
PGH-18-10A	235.67	236.06	0.39	590975	A18-08117	9.3	0.018	0.81	< 0.003	< 0.003	0.006	0.008	0.003	0.007	< 0.003
PGH-18-10A	236.06	236.94	0.88	590976	A18-08117	8.37	0.015	0.68	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.003	0.02
PGH-18-10A	236.94	237.76	0.82	590977	A18-08117	15.71	0.015	1.02	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.005	0.012
PGH-18-10A	237.76	238.78	1.02	590978	A18-08117	14.62	0.016	1.4	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.007	< 0.003
PGH-18-10A	238.78	239.65	0.87	590979	A18-08117	6.66	0.157	2.11	< 0.003	< 0.003	0.007	0.005	0.004	0.011	< 0.003
PGH-18-10A	245.5	245.8	0.3	590980	A18-08117	8.01	0.008	1.33	< 0.003	< 0.003	0.013	0.01	< 0.003	0.009	< 0.003
PGH-18-10A	245.8	246.88	1.08	590981	A18-08117	6.29	0.01	0.48	< 0.003	< 0.003	< 0.005	< 0.005	0.003	0.005	0.017
PGH-18-10A	246.88	247.85	0.97	590982	A18-08117	7.32	0.081	2.22	< 0.003	0.003	0.005	< 0.005	< 0.003	0.008	0.009

ASSAYS

DDH	From	To	Width (m)	SampleID	BatchID	Fe2O3T (%)	Nb2O5 (%)	P2O5 (%)	SnO2 (%)	Ta2O5 (%)	ThO2 (%)	U3O8 (%)	WO3 (%)	Y2O3 (%)	ZrO2 (%)
PGH-18-10A	247.85	249	1.15	590983	A18-08117	8.89	0.041	0.73	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.004	0.004
PGH-18-10A	249	250	1	590984	A18-08117	5.8	0.059	2.45	< 0.003	< 0.003	0.007	< 0.005	< 0.003	0.01	< 0.003
PGH-18-10A	250	251.15	1.15	590985	A18-08117	6.97	0.03	0.35	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.003	0.016
PGH-18-10A	251.15	252	0.85	590986	A18-08117	7.21	0.093	0.66	< 0.003	< 0.003	0.005	< 0.005	0.003	0.005	0.012
PGH-18-10A	252	252.71	0.71	590987	A18-08117	7.93	0.431	2.45	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.007	0.015
PGH-18-10A	252.71	254.13	1.42	590988	A18-08117	3.81	0.263	3.67	< 0.003	< 0.003	0.009	0.005	< 0.003	0.018	0.024
PGH-18-10A	256.32	256.83	0.51	590989	A18-08117	4.3	0.087	0.82	< 0.003	< 0.003	0.01	0.005	< 0.003	0.012	< 0.003
PGH-18-10A	259.75	260.89	1.14	590990	A18-08117	6.83	0.067	0.98	< 0.003	< 0.003	0.006	< 0.005	0.003	0.007	0.015
PGH-18-10A	260.89	261.56	0.67	590991	A18-08117	5.69	0.006	0.38	< 0.003	< 0.003	< 0.005	< 0.005	0.003	0.006	0.035
PGH-18-10A	261.56	262.94	1.38	590992	A18-08117	5.82	0.018	1.39	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.009	0.028
PGH-18-10A	262.94	263.22	0.28	590993	A18-08117	7.92	< 0.003	0.04	< 0.003	0.003	0.008	< 0.005	< 0.003	0.006	< 0.003
PGH-18-10A	263.22	263.89	0.67	590994	A18-08117	5.84	0.016	0.26	< 0.003	0.005	0.005	< 0.005	0.003	0.004	0.014
PGH-18-10A	263.89	264.83	0.94	590995	A18-08117	6.21	0.021	2.85	< 0.003	0.003	0.014	< 0.005	0.003	0.02	< 0.003
PGH-18-10A	264.83	265.95	1.12	590996	A18-08117	7.73	0.072	0.46	< 0.003	< 0.003	0.007	< 0.005	< 0.003	0.006	0.013
PGH-18-10A	265.95	267	1.05	590997	A18-08117	6.53	0.223	1.32	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.007	0.005
PGH-18-10A	267	268.08	1.08	590998	A18-08117	7.63	0.759	0.76	< 0.003	0.004	0.01	0.005	0.003	0.005	0.02
PGH-18-10A	268.08	269.55	1.47	590999	A18-08117	5.85	0.129	0.5	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.004	0.015
PGH-18-10A	269.55	271	1.45	591000	A18-08117	9.95	0.049	2.48	< 0.003	0.004	0.006	< 0.005	< 0.003	0.007	0.107
PGH-18-10A	271	272.15	1.15	655401	A18-08117	6.51	0.048	1.12	0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.005	0.023
PGH-18-10A	272.15	273.47	1.32	655402	A18-08117	7.17	0.08	1.16	< 0.003	< 0.003	0.005	< 0.005	< 0.003	0.006	0.011
PGH-18-10A	275.85	276.78	0.93	655403	A18-08117	8.79	0.168	2.13	< 0.003	0.003	0.006	< 0.005	< 0.003	0.009	0.011
PGH-18-10A	276.78	277.83	1.05	655404	A18-08117	7.42	0.064	0.85	< 0.003	< 0.003	< 0.005	< 0.005	0.003	0.004	0.004
PGH-18-10A	277.83	279	1.17	655405	A18-08117	8.01	0.059	1.38	< 0.003	< 0.003	0.005	< 0.005	0.003	0.003	< 0.003
PGH-18-10A	279	280.15	1.15	655406	A18-08117	6.05	0.104	1.22	< 0.003	< 0.003	< 0.005	< 0.005	0.003	0.005	< 0.003
PGH-18-10A	280.15	281.24	1.09	655407	A18-08117	8	0.124	3.12	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.007	0.022
PGH-18-10A	281.24	282.38	1.14	655408	A18-08117	7.96	0.162	2.27	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.006	0.01
PGH-18-10A	282.38	283.43	1.05	655409	A18-08117	5.09	0.185	1.21	< 0.003	< 0.003	0.009	< 0.005	< 0.003	0.012	< 0.003
PGH-18-10A	286.14	287.39	1.25	655411	A18-08117	7.25	0.096	1.02	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.005	0.011
PGH-18-10A	287.39	288.5	1.11	655412	A18-08117	6.76	0.035	0.65	< 0.003	< 0.003	0.007	< 0.005	0.003	0.006	0.006
PGH-18-10A	288.5	289.5	1	655413	A18-08117	7.48	0.035	1.47	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.008	0.023
PGH-18-10A	289.5	290.31	0.81	655414	A18-08117	10.07	0.04	4.15	< 0.003	< 0.003	0.007	< 0.005	< 0.003	0.012	0.106
PGH-18-10A	290.31	291.26	0.95	655415	A18-08117	15.5	0.053	3.12	< 0.003	0.003	0.009	< 0.005	< 0.003	0.008	0.086
PGH-18-10A	294.8	296.23	1.43	655416	A18-08117	8.1	0.076	1.93	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.008	0.01
PGH-18-10A	296.23	297.49	1.26	655417	A18-08117	8.3	0.211	1.72	0.003	< 0.003	0.006	0.006	< 0.003	0.007	0.015
PGH-18-10A	297.49	298.7	1.21	655418	A18-08117	7.99	0.048	0.18	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.003	0.007
PGH-18-10A	298.7	300	1.3	655419	A18-08117	2.79	0.076	2.15	< 0.003	< 0.003	0.009	0.005	< 0.003	0.013	< 0.003
PGH-18-10A	300	301	1	655420	A18-08117	2.74	0.115	3.61	< 0.003	< 0.003	0.011	< 0.005	0.003	0.013	< 0.003
PGH-18-10A	301	302	1	655421	A18-08117	1.71	0.056	1.98	< 0.003	< 0.003	0.008	< 0.005	< 0.003	0.011	< 0.003
PGH-18-10A	302	303	1	655423	A18-08117	5.22	0.012	2.3	< 0.003	< 0.003	0.005	< 0.005	< 0.003	0.011	0.019
PGH-18-10A	307.88	308.88	1	655424	A18-08117	16.43	0.03	2.22	< 0.003	0.003	0.006	< 0.005	< 0.003	0.007	0.072
PGH-18-10A	313.55	314.64	1.09	655425	A18-08117	8.17	0.077	1.61	< 0.003	< 0.003	0.005	< 0.005	< 0.003	0.006	0.027

ASSAYS

DDH	From	To	Width (m)	SampleID	BatchID	Fe2O3T (%)	Nb2O5 (%)	P2O5 (%)	SnO2 (%)	Ta2O5 (%)	ThO2 (%)	U3O8 (%)	WO3 (%)	Y2O3 (%)	ZrO2 (%)
PGH-18-10A	314.64	315.27	0.63	655426	A18-08117	7.74	0.061	1.58	< 0.003	< 0.003	0.006	< 0.005	0.005	0.01	< 0.003
PGH-18-10A	315.27	316.52	1.25	655427	A18-08117	8.72	0.04	1.38	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.005	0.017
PGH-18-10A	321.77	322.9	1.13	655428	A18-08117	11.13	0.523	4.37	< 0.003	0.005	0.012	< 0.005	< 0.003	0.008	0.039
PGH-18-10A	322.9	324.04	1.14	655429	A18-08117	12.1	0.196	0.48	< 0.003	0.004	0.011	< 0.005	0.003	0.003	0.057
PGH-18-10A	324.04	325.23	1.19	655430	A18-08117	13.94	0.094	0.75	< 0.003	0.005	0.007	< 0.005	< 0.003	0.005	0.064
PGH-18-10A	325.23	326.45	1.22	655431	A18-08117	14.66	0.151	2.28	< 0.003	0.004	0.006	< 0.005	< 0.003	0.007	0.08
PGH-18-10A	326.45	327.69	1.24	655432	A18-08117	13.86	0.073	2.57	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.01	0.112
PGH-18-10A	327.69	328.78	1.09	655433	A18-08117	7.55	0.032	1.7	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.008	0.016
PGH-18-10A	328.78	329.55	0.77	655434	A18-08117	7.26	0.039	1.04	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.007	0.016
PGH-18-10A	329.55	330.5	0.95	655435	A18-08117	9.25	0.075	0.92	< 0.003	< 0.003	0.007	< 0.005	< 0.003	0.006	0.056
PGH-18-10A	333.07	334.34	1.27	655436	A18-08117	7.98	0.158	1.48	< 0.003	0.003	0.005	< 0.005	< 0.003	0.006	0.029
PGH-18-10A	334.34	335.56	1.22	655437	A18-08117	14.43	0.108	0.84	< 0.003	0.004	0.006	< 0.005	0.003	0.004	0.051
PGH-18-10A	335.56	336.78	1.22	655438	A18-08117	11.36	0.064	1.19	< 0.003	0.003	0.008	< 0.005	< 0.003	0.007	0.057
PGH-18-10A	336.78	337.85	1.07	655439	A18-08117	12.17	0.096	1.3	< 0.003	0.003	0.007	< 0.005	0.003	0.007	0.063
PGH-18-10A	345	346.26	1.26	655440	A18-08117	10.96	0.306	3.88	< 0.003	0.003	0.006	< 0.005	< 0.003	0.008	0.079
PGH-18-10A	346.26	347.57	1.31	655441	A18-08117	7.14	0.077	1.1	< 0.003	0.003	0.005	< 0.005	< 0.003	0.008	0.039
PGH-18-10A	347.57	348.81	1.24	655442	A18-08117	6.8	0.046	1.3	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.008	0.016
PGH-18-10A	348.81	349.94	1.13	655443	A18-08117	6.52	0.019	0.59	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.005	0.036
PGH-18-10A	349.94	350.68	0.74	655444	A18-08117	3.74	0.143	1.08	< 0.003	< 0.003	0.008	0.005	< 0.003	0.01	< 0.003
PGH-18-10A	350.68	351.61	0.93	655445	A18-08117	6.1	0.028	0.33	< 0.003	0.003	< 0.005	< 0.005	< 0.003	0.004	0.021
PGH-18-10A	351.61	352.54	0.93	655446	A18-08117	7.11	0.041	0.66	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.004	0.027
PGH-18-10A	352.54	353.44	0.9	655447	A18-08117	7.85	0.066	0.59	< 0.003	< 0.003	0.005	< 0.005	< 0.003	0.003	0.018
PGH-18-10A	353.44	354	0.56	655448	A18-08117	3.53	0.044	2.04	< 0.003	< 0.003	0.01	< 0.005	0.003	0.017	< 0.003
PGH-18-10A	354	355.17	1.17	655449	A18-08117	5.36	0.024	0.4	< 0.003	< 0.003	< 0.005	< 0.005	0.003	0.004	0.027
PGH-18-10A	355.17	356.4	1.23	655450	A18-08117	5.5	0.018	0.57	0.003	< 0.003	< 0.005	< 0.005	0.003	0.004	0.025
PGH-18-10A	356.4	357.61	1.21	655451	A18-08117	5.91	0.055	1.18	< 0.003	0.003	< 0.005	< 0.005	< 0.003	0.005	0.016
PGH-18-10A	357.61	358.82	1.21	655452	A18-08117	5	0.203	1.64	< 0.003	0.004	< 0.005	< 0.005	< 0.003	0.004	0.015
PGH-18-10A	358.82	360.08	1.26	655453	A18-08117	5.72	0.428	4.76	< 0.003	0.004	0.006	< 0.005	0.003	0.009	0.015
PGH-18-10A	360.08	360.58	0.5	655454	A18-08117	5.08	0.035	0.26	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.003	0.009
PGH-18-10A	360.58	361.64	1.06	655455	A18-08117	2.11	0.022	0.75	< 0.003	< 0.003	0.01	0.007	< 0.003	0.013	< 0.003
PGH-18-10A	361.64	363	1.36	655456	A18-08117	6.12	0.024	0.39	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.003	0.065
PGH-18-10A	363	364.24	1.24	655457	A18-08117	6.35	0.033	0.56	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.005	0.03
PGH-18-10A	364.24	365.26	1.02	655458	A18-08117	5.39	0.325	3.05	< 0.003	< 0.003	0.008	0.005	0.004	0.012	< 0.003
PGH-18-10A	365.26	366.44	1.18	655459	A18-08117	2.34	0.454	3.35	< 0.003	< 0.003	0.01	0.005	0.005	0.012	< 0.003
PGH-18-10A	366.44	367.66	1.22	655461	A18-08117	2.64	0.633	3.96	< 0.003	< 0.003	0.011	< 0.005	0.005	0.013	0.011
PGH-18-10A	367.66	368.85	1.19	655462	A18-08117	4.63	0.509	6.6	< 0.003	0.003	0.009	< 0.005	< 0.003	0.012	0.039
PGH-18-10A	368.85	370.11	1.26	655463	A18-08117	1.21	0.211	0.57	< 0.003	< 0.003	0.008	0.007	< 0.003	0.012	< 0.003
PGH-18-10A	370.11	371.32	1.21	655465	A18-08117	2.98	0.184	3.21	< 0.003	< 0.003	0.007	0.007	< 0.003	0.013	< 0.003
PGH-18-10A	371.32	372.54	1.22	655466	A18-08117	3.11	0.383	3.14	< 0.003	< 0.003	0.008	0.005	< 0.003	0.014	< 0.003
PGH-18-10A	372.54	373.74	1.2	655467	A18-08117	3	0.481	3.86	< 0.003	0.003	0.01	0.008	0.003	0.015	0.013
PGH-18-10A	373.74	374.95	1.21	655468	A18-08117	2.03	0.384	3.43	< 0.003	0.004	0.01	0.01	0.003	0.013	< 0.003

ASSAYS

DDH	From	To	Width (m)	SampleID	BatchID	Fe2O3T (%)	Nb2O5 (%)	P2O5 (%)	SnO2 (%)	Ta2O5 (%)	ThO2 (%)	U3O8 (%)	WO3 (%)	Y2O3 (%)	ZrO2 (%)
PGH-18-10A	374.95	376.1	1.15	655470	A18-08117	3.79	0.198	3.18	< 0.003	0.004	0.009	0.007	< 0.003	0.012	0.022
PGH-18-10A	376.1	377.3	1.2	655471	A18-08117	3.75	0.545	3.52	< 0.003	0.006	0.009	0.01	< 0.003	0.012	0.036
PGH-18-10A	377.3	378.57	1.27	655472	A18-08117	2.53	0.209	5.11	< 0.003	< 0.003	0.008	0.007	< 0.003	0.017	< 0.003
PGH-18-10A	378.57	379.76	1.19	655473	A18-08117	3.97	0.222	4.61	< 0.003	0.004	0.007	0.005	< 0.003	0.015	0.037
PGH-18-10A	379.76	381	1.24	655475	A18-08117	1.88	0.076	2.28	< 0.003	< 0.003	0.01	0.006	< 0.003	0.014	0.008
PGH-18-10A	381	382.2	1.2	655476	A18-08117	2.09	0.161	2.94	< 0.003	0.003	0.009	0.008	< 0.003	0.013	< 0.003
PGH-18-10A	382.2	383.42	1.22	655477	A18-08117	2.72	0.263	3.43	< 0.003	0.004	0.01	0.01	< 0.003	0.016	0.006
PGH-18-10A	383.42	384.65	1.23	655478	A18-08117	2.31	0.137	1.56	< 0.003	0.003	0.01	< 0.005	0.004	0.014	< 0.003
PGH-18-10A	384.65	385.85	1.2	655479	A18-08117	1.71	0.113	1.65	< 0.003	0.003	0.007	0.005	< 0.003	0.012	< 0.003
PGH-18-10A	385.85	387	1.15	655480	A18-08117	2.14	0.215	3.43	< 0.003	< 0.003	0.01	< 0.005	0.003	0.015	0.003
PGH-18-10A	387	387.71	0.71	655481	A18-08117	5.06	0.747	5.51	< 0.003	0.003	0.016	0.009	< 0.003	0.03	0.019
PGH-18-10A	387.71	388.81	1.1	655482	A18-08117	2.55	0.599	4.18	< 0.003	0.004	0.013	0.007	< 0.003	0.017	0.003
PGH-18-10A	388.81	390	1.19	655483	A18-08117	1.89	0.155	1.96	< 0.003	< 0.003	0.009	0.006	0.003	0.012	< 0.003
PGH-18-10A	390	391.05	1.05	655485	A18-08117	5.12	0.268	0.69	< 0.003	< 0.003	0.014	0.005	< 0.003	0.009	0.008
PGH-18-10A	391.05	391.92	0.87	655486	A18-08117	2.65	0.387	3.47	< 0.003	0.003	0.011	0.005	< 0.003	0.015	< 0.003
PGH-18-10A	391.92	393	1.08	655487	A18-08117	5.52	0.185	1.59	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.006	0.006
PGH-18-10A	393	393.81	0.81	655488	A18-08117	6.55	0.068	0.6	< 0.003	0.003	< 0.005	< 0.005	< 0.003	0.005	0.028
PGH-18-10A	393.81	394.63	0.82	655489	A18-08117	5.71	0.009	0.28	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.004	0.036
PGH-18-10A	394.63	395.51	0.88	655490	A18-08117	4.21	0.618	4.11	< 0.003	< 0.003	0.011	0.005	< 0.003	0.015	0.004
PGH-18-10A	395.51	396.24	0.73	655491	A18-08117	5.66	0.283	2.38	< 0.003	< 0.003	0.01	0.005	0.003	0.012	< 0.003
PGH-18-10A	396.24	397.4	1.16	655492	A18-08117	7.33	0.072	0.85	< 0.003	0.003	< 0.005	< 0.005	0.003	0.004	0.018
PGH-18-10A	397.4	398.61	1.21	655493	A18-08117	5.68	0.025	0.51	0.007	< 0.003	< 0.005	< 0.005	< 0.003	0.004	0.027
PGH-18-10A	398.61	399.83	1.22	655494	A18-08117	5.29	0.011	0.74	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.007	0.023
PGH-18-10A	399.83	400.83	1	655495	A18-08117	6.11	0.027	0.54	0.005	< 0.003	< 0.005	< 0.005	< 0.003	0.004	0.019
PGH-18-10A	402.9	403.59	0.69	655496	A18-08117	7.8	0.061	0.29	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.003	0.022
PGH-18-10A	403.59	404.59	1	655497	A18-08117	5.74	0.326	4.22	< 0.003	< 0.003	0.01	0.006	< 0.003	0.013	< 0.003
PGH-18-10A	404.59	405.71	1.12	655498	A18-08117	6.48	0.317	5.21	< 0.003	0.003	0.011	0.006	< 0.003	0.018	< 0.003
PGH-18-10A	405.71	406.91	1.2	655499	A18-08117	4.75	0.316	3.94	< 0.003	0.003	0.007	< 0.005	< 0.003	0.009	< 0.003
PGH-18-10A	406.91	408.02	1.11	655500	A18-08117	5.96	0.126	2.05	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.005	0.012
PGH-18-10A	408.02	409.08	1.06	655351	A18-08117	4.36	0.044	1.42	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.006	0.017
PGH-18-10A	409.08	410.26	1.18	655352	A18-08117	5.51	0.015	0.52	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.004	0.027
PGH-18-10A	410.26	411.34	1.08	655353	A18-08117	6.28	0.075	1.69	< 0.003	0.004	0.005	< 0.005	0.003	0.006	0.022
PGH-18-10A	411.34	412.42	1.08	655354	A18-08117	6.27	0.017	0.38	0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.004	0.036
PGH-18-10A	412.42	413.51	1.09	655355	A18-08117	4.82	0.014	0.35	< 0.003	< 0.003	0.006	< 0.005	< 0.003	0.007	0.013
PGH-18-10A	413.51	414.83	1.32	655356	A18-08117	7.14	0.033	0.93	< 0.003	0.003	< 0.005	< 0.005	< 0.003	0.007	0.036
PGH-18-10A	414.83	416	1.17	655357	A18-08117	6.43	0.111	2.49	< 0.003	0.003	0.005	< 0.005	< 0.003	0.01	0.012
PGH-18-10A	418.05	418.78	0.73	655358	A18-08117	5.22	0.068	0.86	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.005	0.022
PGH-18-10A	418.78	419.95	1.17	655359	A18-08117	2.68	0.25	2.34	< 0.003	< 0.003	0.008	0.009	0.003	0.012	< 0.003
PGH-18-10A	419.95	420.97	1.02	655361	A18-08117	1.92	0.196	2.02	< 0.003	< 0.003	0.008	0.008	< 0.003	0.01	< 0.003
PGH-18-10A	420.97	421.96	0.99	655362	A18-08117	2.16	0.062	1.32	< 0.003	< 0.003	0.006	0.008	0.003	0.011	< 0.003
PGH-18-10A	421.96	423.02	1.06	655364	A18-08117	1.96	0.07	1.01	< 0.003	< 0.003	0.007	0.006	< 0.003	0.01	< 0.003

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DDH	From	To	Width (m)	SampleID	BatchID	Fe2O3T (%)	Nb2O5 (%)	P2O5 (%)	SnO2 (%)	Ta2O5 (%)	ThO2 (%)	U3O8 (%)	WO3 (%)	Y2O3 (%)	ZrO2 (%)
PGH-18-10A	423.02	423.83	0.81	655365	A18-08117	1.92	0.117	2.11	< 0.003	< 0.003	0.007	0.006	< 0.003	0.01	< 0.003
PGH-18-10A	423.83	424.6	0.77	655366	A18-08117	2.67	0.148	1.3	< 0.003	< 0.003	0.008	0.005	< 0.003	0.011	< 0.003
PGH-18-10A	424.6	425.7	1.1	655367	A18-08117	5.91	0.039	0.71	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.005	0.011
PGH-18-10A	425.7	426.7	1	655368	A18-08117	5.67	0.215	1.5	< 0.003	< 0.003	< 0.005	< 0.005	0.004	0.005	0.004
PGH-18-10A	426.7	427.62	0.92	655369	A18-08117	2.85	0.077	2.95	< 0.003	0.003	0.007	< 0.005	< 0.003	0.013	< 0.003
PGH-18-10A	427.62	428.5	0.88	655370	A18-08117	2.1	0.211	4.8	< 0.003	< 0.003	0.009	0.005	< 0.003	0.017	< 0.003
PGH-18-10A	428.5	429.56	1.06	655371	A18-08117	6.03	0.104	0.62	< 0.003	< 0.003	0.005	< 0.005	< 0.003	0.004	0.016
PGH-18-10A	429.56	430.67	1.11	655372	A18-08117	5.1	0.048	1.39	< 0.003	0.003	< 0.005	< 0.005	0.003	0.008	0.005
PGH-18-10A	430.67	431.57	0.9	655373	A18-08117	4.62	0.128	2.25	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	0.01	0.005
PGH-18-10A	431.57	432.43	0.86	655374	A18-08117	3.46	0.124	1.39	< 0.003	0.004	0.007	< 0.005	0.004	0.009	< 0.003
PGH-18-10A	432.43	433.24	0.81	655375	A18-08117	4.36	0.402	4.12	< 0.003	< 0.003	0.011	< 0.005	0.003	0.016	0.004
PGH-18-10A	433.24	434.24	1	655376	A18-08117	8.14	0.069	0.76	0.004	< 0.003	< 0.005	< 0.005	< 0.003	0.004	0.02

ASSAYS

DDH	From	To	Width (m)	SampleID	Description
PGH-18-10A	4.36	5.44	1.08	590851	sy + unkn dyke, crbt veining
PGH-18-10A	5.44	6.76	1.32	590852	sy (kspar) w/ minor carb veining
PGH-18-10A	6.76	7.88	1.12	590853	crbt --> sy w/ 14cm unkn dyke
PGH-18-10A	7.88	9	1.12	590854	sy w/ carb + blue amph veining
PGH-18-10A	9	10.07	1.07	590855	sy to carb at lct
PGH-18-10A	10.07	10.75	0.68	590856	diab dyke
PGH-18-10A	10.75	12	1.25	590857	low angle crbt-bx vein (~// to CA), ap in crbt
PGH-18-10A	12	13.22	1.22	590858	qtz-sye/gran, cg, carb + blue amph veins/patches
PGH-18-10A	13.22	14.52	1.3	590860	same, weakly bx'td, 25cm diab at end
PGH-18-10A	14.52	15.62	1.1	590861	cg-vcg qrt-sye to gran, variably bx'td by crbt
PGH-18-10A	15.62	16.49	0.87	590863	banded crbt (pitted), <1% blebby py
PGH-18-10A	16.49	17.75	1.26	590864	sy to gran, 2x <15cm wide green-grey mafic dyke, min carb veining
PGH-18-10A	17.75	19	1.25	590865	gran w/ ~30cm 'assimilated' bx
PGH-18-10A	19	20.2	1.2	590866	gran, min carb
PGH-18-10A	20.2	21.48	1.28	590867	gran to sy
PGH-18-10A	21.48	22.26	0.78	590868	~40cm bx zone, cg pych? (non mag)
PGH-18-10A	22.26	23.4	1.14	590870	cg gran
PGH-18-10A	23.4	24.55	1.15	590871	cg gran
PGH-18-10A	24.55	25.72	1.17	590872	cg gran w/ 15cm crbt vein
PGH-18-10A	25.72	26.87	1.15	590873	crbt
PGH-18-10A	26.87	27.9	1.03	590874	crbt
PGH-18-10A	27.9	28.86	0.96	590875	crbt
PGH-18-10A	28.86	30	1.14	590876	crbt, banded MD at lct
PGH-18-10A	45	45.95	0.95	590877	assimilated' bx
PGH-18-10A	53.9	55.07	1.17	590878	sy/gran w/ carb bands perp to CA
PGH-18-10A	55.07	56.09	1.02	590879	massive crbt (ap bands)
PGH-18-10A	63.38	64.04	0.66	590880	low angle crbt + py vein
PGH-18-10A	65.7	66	0.3	590881	bnd crbt vein
PGH-18-10A	77.35	77.85	0.5	590882	low angle carb-ap vein in sy
PGH-18-10A	82.21	83.23	1.02	590883	hem spotted bx'td carb vein
PGH-18-10A	86.05	87.14	1.09	590884	carb veining + bx zone in sy (minor ap+py n carb)
PGH-18-10A	92.36	93.55	1.19	590885	massive crbt (faint banding, yellowish-grey)
PGH-18-10A	93.55	94.79	1.24	590886	sy w/ carb veining, coarsely bx'td from ~94.25m
PGH-18-10A	94.79	96.06	1.27	590887	sy, minor carb veins w/ rxn rims, chl at lct
PGH-18-10A	96.06	97.36	1.3	590888	sy-bx w/ rxn rims, ap in carb matrix
PGH-18-10A	97.36	98.64	1.28	590889	massive sy w/ x-cut carb veins
PGH-18-10A	98.64	100	1.36	590890	same w/ cg white fsp
PGH-18-10A	100	100.84	0.84	590891	sy to unkn dyke
PGH-18-10A	100.84	101.88	1.04	590892	sy w/ up to 20cm wide crbt+sulph veins
PGH-18-10A	101.88	103.06	1.18	590893	sy to sy-bx w/ rxn rims
PGH-18-10A	103.06	104.31	1.25	590894	sy w/ crbt veins (low angle)

ASSAYS

DDH	From	To	Width (m)	SampleID	Description
PGH-18-10A	104.31	105.56	1.25	590895	same
PGH-18-10A	105.56	106.8	1.24	590896	same (irreg low angle crbt vein)
PGH-18-10A	106.8	107.33	0.53	590897	crbt vein w/ sulph masses (purple at contacts)
PGH-18-10A	107.33	108.12	0.79	590898	cg sye (un bx'td)
PGH-18-10A	108.12	108.59	0.47	590899	fg grey crbt w/ clasts of sye (fen) (low angle vein)
PGH-18-10A	108.59	109.45	0.86	590901	fen/sye bx'td by low angle crbt vein
PGH-18-10A	109.45	110.23	0.78	590902	fen/sye w/ ap in crbt matrix
PGH-18-10A	110.23	110.71	0.48	590903	purple banded crbt
PGH-18-10A	110.71	111.18	0.47	590904	unkn dyke
PGH-18-10A	111.18	111.91	0.73	590905	banded crbt (reddish) w/ fluorite patches
PGH-18-10A	111.91	113.18	1.27	590906	sye, <1cm carb veining w/ rxn rims + pegmatite zone
PGH-18-10A	113.18	114.45	1.27	590907	mixed sye-crbt-bx
PGH-18-10A	114.45	115.85	1.4	590908	sye w/ decreasing carb veining
PGH-18-10A	115.85	117	1.15	590909	sye, chl-bx'td at lct
PGH-18-10A	117	117.85	0.85	590910	low angle carb bx'tn (fz?)
PGH-18-10A	117.85	118.9	1.05	590911	same as last w/ 25cm crbt at end
PGH-18-10A	125.13	125.65	0.52	590912	crbt above diab
PGH-18-10A	126.54	127	0.46	590913	crbt below diab
PGH-18-10A	128.59	129.55	0.96	590914	sye w/ 20m crbt + 10-20% carb veins (w/ rxn rims)
PGH-18-10A	129.55	130.78	1.23	590915	sye w/ carb veining
PGH-18-10A	130.78	131.3	0.52	590916	crbt w/ reddish purple patches, sulph. 14cm sye clast (mostly kspar)
PGH-18-10A	131.3	132.35	1.05	590918	sye (mostly kspar) w/ 20cm crbt
PGH-18-10A	139.85	140.45	0.6	590919	~60% crbt, 40% sye
PGH-18-10A	146	147.32	1.32	590920	sye w/ x-cut carb veining (alt'n envelopes), ~20cm crbt at end
PGH-18-10A	147.32	148.9	1.58	590922	gran, minimal carb veins
PGH-18-10A	148.9	150.08	1.18	590923	gran to sye, bx'td at lct
PGH-18-10A	150.08	151.01	0.93	590924	bx'td low angle crbt veins, cg and bands ap
PGH-18-10A	151.01	152	0.99	590925	sye + low angle crbt veins (fg blue-grey)
PGH-18-10A	155.53	156	0.47	590926	crbt w/ 10cm 30% fluorite (pitted)
PGH-18-10A	156	157.04	1.04	590927	crbt, banded, pitted
PGH-18-10A	157.04	157.83	0.79	590928	sye + md
PGH-18-10A	157.83	158.95	1.12	590929	crbt
PGH-18-10A	158.95	159.75	0.8	590930	crbt + bx
PGH-18-10A	159.75	160.44	0.69	590931	crbt
PGH-18-10A	160.44	160.92	0.48	590932	bx
PGH-18-10A	160.92	161.87	0.95	590933	sye
PGH-18-10A	161.87	162.48	0.61	590934	crbt w/ irreg ap bands
PGH-18-10A	162.48	163.78	1.3	590935	sye
PGH-18-10A	163.78	165.08	1.3	590936	sye (x-cut carb veins)
PGH-18-10A	165.08	166.37	1.29	590937	sye w/ up to 20cm crbt veins
PGH-18-10A	166.37	167.49	1.12	590938	sye w/ carb veins

ASSAYS

DDH	From	To	Width (m)	SampleID	Description
PGH-18-10A	167.49	168.72	1.23	590940	sy
PGH-18-10A	168.72	168.94	0.22	590941	crbt
PGH-18-10A	168.94	169.58	0.64	590942	sy
PGH-18-10A	169.58	170.06	0.48	590943	crbt w/ smss at uct in bx
PGH-18-10A	170.06	171.08	1.02	590944	sy
PGH-18-10A	174.35	175.42	1.07	590945	sy, 8cm carb+ap
PGH-18-10A	175.42	175.95	0.53	590946	ext. crbt zone
PGH-18-10A	175.95	176.77	0.82	590947	fen/sy
PGH-18-10A	176.77	177.5	0.73	590948	sy
PGH-18-10A	177.5	177.77	0.27	590949	bx zone, partly assimilated
PGH-18-10A	177.77	178.52	0.75	590950	crbt, ap only at contacts
PGH-18-10A	178.52	178.91	0.39	590951	bx zone w/ ap
PGH-18-10A	178.91	180	1.09	590952	sy/fen, carb vein w/ rxn zone near lct
PGH-18-10A	181.73	182.63	0.9	590953	grey crbt
PGH-18-10A	185.43	186.58	1.15	590954	sy w/ low ang carb vein (ap noted)
PGH-18-10A	186.58	187	0.42	590955	30cm crbt + lower bx'td contact
PGH-18-10A	187	187.9	0.9	590956	sy/fen w/ x-cut carb-ap veins
PGH-18-10A	191.4	192.66	1.26	590957	bx/fz
PGH-18-10A	192.66	193.76	1.1	590958	bx/fz w/ ap in carb veins
PGH-18-10A	200.74	202.06	1.32	590959	sy-bx', ap noted UV
PGH-18-10A	205.94	206.77	0.83	590960	assimilated' bx w/ ap
PGH-18-10A	206.77	207.65	0.88	590961	sy-bx w/ ap-carb veins
PGH-18-10A	207.65	208.04	0.39	590962	massive crbt
PGH-18-10A	208.04	209.18	1.14	590963	sy-bx locally 'assimilated'
PGH-18-10A	209.18	210.3	1.12	590964	same
PGH-18-10A	214	215	1	590965	carb-ap veining
PGH-18-10A	215	216	1	590966	33cm crbt w/ ap at contacts in sy
PGH-18-10A	219.54	220.63	1.09	590968	sy-bx (weak)
PGH-18-10A	220.63	221.74	1.11	590970	same w/ 15cm mafic? dyke
PGH-18-10A	225.14	225.98	0.84	590971	sy w/ carb-ap veins (un bx'td)
PGH-18-10A	225.98	226.85	0.87	590972	same, low angle carb vein
PGH-18-10A	226.85	227.77	0.92	590973	crbt, massive
PGH-18-10A	231.17	231.51	0.34	590974	crbt (ap bands)
PGH-18-10A	235.67	236.06	0.39	590975	massive crbt w/ sulphides
PGH-18-10A	236.06	236.94	0.88	590976	sy w/ min x-cut carb veins
PGH-18-10A	236.94	237.76	0.82	590977	crbt w/ smass + micaceous alt'd clasts
PGH-18-10A	237.76	238.78	1.02	590978	same
PGH-18-10A	238.78	239.65	0.87	590979	crbt w/ abund sulph (less clasts)
PGH-18-10A	245.5	245.8	0.3	590980	crbt
PGH-18-10A	245.8	246.88	1.08	590981	gran/sy
PGH-18-10A	246.88	247.85	0.97	590982	sy w/ x-cut carb veins

ASSAYS

DDH	From	To	Width (m)	SampleID	Description
PGH-18-10A	247.85	249	1.15	590983	same --> bx
PGH-18-10A	249	250	1	590984	gran w/ carb veining
PGH-18-10A	250	251.15	1.15	590985	gran w/ min carb veins
PGH-18-10A	251.15	252	0.85	590986	gran/sye --> bx (weak)
PGH-18-10A	252	252.71	0.71	590987	sye-bx
PGH-18-10A	252.71	254.13	1.42	590988	crbt
PGH-18-10A	256.32	256.83	0.51	590989	crbt w/ min sye-bx
PGH-18-10A	259.75	260.89	1.14	590990	gran/sye w/ carb veining
PGH-18-10A	260.89	261.56	0.67	590991	gran
PGH-18-10A	261.56	262.94	1.38	590992	gran/sye w/ carb veining
PGH-18-10A	262.94	263.22	0.28	590993	crbt w/ fluorite
PGH-18-10A	263.22	263.89	0.67	590994	sye/alk
PGH-18-10A	263.89	264.83	0.94	590995	crbt w/ fluorite
PGH-18-10A	264.83	265.95	1.12	590996	sye-bx w/ fluorite
PGH-18-10A	265.95	267	1.05	590997	sye - crbt - sye-bx
PGH-18-10A	267	268.08	1.08	590998	bx w/ ap, mod 'assimilation'
PGH-18-10A	268.08	269.55	1.47	590999	gran/sye w/ carb veining
PGH-18-10A	269.55	271	1.45	591000	unkn dyke
PGH-18-10A	271	272.15	1.15	655401	gran w/ carb veining
PGH-18-10A	272.15	273.47	1.32	655402	sye/alk w/ carb veins --> bx
PGH-18-10A	275.85	276.78	0.93	655403	sye-bx
PGH-18-10A	276.78	277.83	1.05	655404	gran/sye - x-cut carb veins common
PGH-18-10A	277.83	279	1.17	655405	gran/sye w/ x-cut carb veining
PGH-18-10A	279	280.15	1.15	655406	gran/sye w/ x-cut carb veining
PGH-18-10A	280.15	281.24	1.09	655407	gran --> bx, x-cut carb
PGH-18-10A	281.24	282.38	1.14	655408	sye-bx
PGH-18-10A	282.38	283.43	1.05	655409	crbt w/ lesser alt'd alk clasts
PGH-18-10A	286.14	287.39	1.25	655411	sye to sye-bx
PGH-18-10A	287.39	288.5	1.11	655412	sye-bx to sye w/ 15-20cm crbt veins
PGH-18-10A	288.5	289.5	1	655413	sye w/ x-cut carb veins
PGH-18-10A	289.5	290.31	0.81	655414	mixed MD/CRBT
PGH-18-10A	290.31	291.26	0.95	655415	MD - mt rich zone, 18cm crbt at end
PGH-18-10A	294.8	296.23	1.43	655416	sye w/ carb veining
PGH-18-10A	296.23	297.49	1.26	655417	sye w/ carb veining
PGH-18-10A	297.49	298.7	1.21	655418	sye w/ carb veining
PGH-18-10A	298.7	300	1.3	655419	massive crbt
PGH-18-10A	300	301	1	655420	massive crbt
PGH-18-10A	301	302	1	655421	massive crbt
PGH-18-10A	302	303	1	655423	sye w/ crbt veins (bx'td UCT)
PGH-18-10A	307.88	308.88	1	655424	mafic/mag bx dyke w/ carb in matrix
PGH-18-10A	313.55	314.64	1.09	655425	sye-bx

ASSAYS

DDH	From	To	Width (m)	SampleID	Description
PGH-18-10A	314.64	315.27	0.63	655426	crbt
PGH-18-10A	315.27	316.52	1.25	655427	sy-bx, ap in carb veins
PGH-18-10A	321.77	322.9	1.13	655428	bx to crbt / unkn dyke
PGH-18-10A	322.9	324.04	1.14	655429	crbt / unkn mafic dyke
PGH-18-10A	324.04	325.23	1.19	655430	mafic dyke w/ carb veining
PGH-18-10A	325.23	326.45	1.22	655431	same w/ ap patches
PGH-18-10A	326.45	327.69	1.24	655432	crbt/ap over ~17cm then mdyke
PGH-18-10A	327.69	328.78	1.09	655433	18c crbt+ap and other ap bands in assimilated bx
PGH-18-10A	328.78	329.55	0.77	655434	sy w/ carb veins
PGH-18-10A	329.55	330.5	0.95	655435	coarsely bx'td sye
PGH-18-10A	333.07	334.34	1.27	655436	sy-bx w/ ap+amph banded crbt vein
PGH-18-10A	334.34	335.56	1.22	655437	pyx
PGH-18-10A	335.56	336.78	1.22	655438	crbt/bx pyx
PGH-18-10A	336.78	337.85	1.07	655439	silic dyke?
PGH-18-10A	345	346.26	1.26	655440	pyroxenite' to crbt(+ap) w/ sye+pyx clasts
PGH-18-10A	346.26	347.57	1.31	655441	sye to bx (last 15cm)
PGH-18-10A	347.57	348.81	1.24	655442	sye-bx
PGH-18-10A	348.81	349.94	1.13	655443	sye w/ x-cut carb veins (+ rxn rims)
PGH-18-10A	349.94	350.68	0.74	655444	crbt w/ minor sye clasts
PGH-18-10A	350.68	351.61	0.93	655445	sye w/ minor carb veins
PGH-18-10A	351.61	352.54	0.93	655446	same
PGH-18-10A	352.54	353.44	0.9	655447	sye, bx at uct
PGH-18-10A	353.44	354	0.56	655448	crbt
PGH-18-10A	354	355.17	1.17	655449	sye w/ 12cm crbt
PGH-18-10A	355.17	356.4	1.23	655450	sye w/ repeating/stacked crbt veins
PGH-18-10A	356.4	357.61	1.21	655451	sye w/ crbt veins (minor bx'tn)
PGH-18-10A	357.61	358.82	1.21	655452	sye w/ carb veins
PGH-18-10A	358.82	360.08	1.26	655453	sye w/ carb veins, crbt w/ sulph last 30cm
PGH-18-10A	360.08	360.58	0.5	655454	sye
PGH-18-10A	360.58	361.64	1.06	655455	crbt
PGH-18-10A	361.64	363	1.36	655456	sye
PGH-18-10A	363	364.24	1.24	655457	sye
PGH-18-10A	364.24	365.26	1.02	655458	crbt w/ sye clast
PGH-18-10A	365.26	366.44	1.18	655459	crbt
PGH-18-10A	366.44	367.66	1.22	655461	crbt
PGH-18-10A	367.66	368.85	1.19	655462	crbt w/ mdyke
PGH-18-10A	368.85	370.11	1.26	655463	crbt
PGH-18-10A	370.11	371.32	1.21	655465	crbt, wispy amph
PGH-18-10A	371.32	372.54	1.22	655466	crbt
PGH-18-10A	372.54	373.74	1.2	655467	crbt, wispy blue amph
PGH-18-10A	373.74	374.95	1.21	655468	crbt

ASSAYS

DDH	From	To	Width (m)	SampleID	Description
PGH-18-10A	374.95	376.1	1.15	655470	crbt
PGH-18-10A	376.1	377.3	1.2	655471	crbt
PGH-18-10A	377.3	378.57	1.27	655472	crbt, cg ap
PGH-18-10A	378.57	379.76	1.19	655473	crbt, ap-amph-mt bands
PGH-18-10A	379.76	381	1.24	655475	crbt
PGH-18-10A	381	382.2	1.2	655476	crbt
PGH-18-10A	382.2	383.42	1.22	655477	crbt
PGH-18-10A	383.42	384.65	1.23	655478	crbt
PGH-18-10A	384.65	385.85	1.2	655479	crbt
PGH-18-10A	385.85	387	1.15	655480	crbt
PGH-18-10A	387	387.71	0.71	655481	cg ap on break/cavity w/ fg pych
PGH-18-10A	387.71	388.81	1.1	655482	crbt
PGH-18-10A	388.81	390	1.19	655483	crbt
PGH-18-10A	390	391.05	1.05	655485	crbt
PGH-18-10A	391.05	391.92	0.87	655486	crbt, bx at lct
PGH-18-10A	391.92	393	1.08	655487	sy/sye-bx
PGH-18-10A	393	393.81	0.81	655488	sy w/ carb veins
PGH-18-10A	393.81	394.63	0.82	655489	sy w/ carb veins
PGH-18-10A	394.63	395.51	0.88	655490	crbt
PGH-18-10A	395.51	396.24	0.73	655491	crbt w/ sye-bx
PGH-18-10A	396.24	397.4	1.16	655492	sy w/ x-cut carb veins (rxn rims)
PGH-18-10A	397.4	398.61	1.21	655493	sy w/ min carb veins
PGH-18-10A	398.61	399.83	1.22	655494	sy w/ slightly more carb veining
PGH-18-10A	399.83	400.83	1	655495	same, minor bx
PGH-18-10A	402.9	403.59	0.69	655496	sye-bx
PGH-18-10A	403.59	404.59	1	655497	crbt w/ sye/micaceous clasts
PGH-18-10A	404.59	405.71	1.12	655498	same, crbt>alk
PGH-18-10A	405.71	406.91	1.2	655499	same, crbt>sye-bx
PGH-18-10A	406.91	408.02	1.11	655500	sy w/ carb (+alt'n) veins
PGH-18-10A	408.02	409.08	1.06	655351	light pink sye w/ 29cm crbt
PGH-18-10A	409.08	410.26	1.18	655352	sy w/ min carb veins
PGH-18-10A	410.26	411.34	1.08	655353	sy w/ carb veins (+ap)
PGH-18-10A	411.34	412.42	1.08	655354	sy w/ carb veins (+ap)
PGH-18-10A	412.42	413.51	1.09	655355	sy w/ 30cm crbt
PGH-18-10A	413.51	414.83	1.32	655356	sy w/ <10cm crbt
PGH-18-10A	414.83	416	1.17	655357	sye-bx
PGH-18-10A	418.05	418.78	0.73	655358	sye
PGH-18-10A	418.78	419.95	1.17	655359	crbt w/ bx'td uct
PGH-18-10A	419.95	420.97	1.02	655361	crbt
PGH-18-10A	420.97	421.96	0.99	655362	crbt
PGH-18-10A	421.96	423.02	1.06	655364	crbt

ASSAYS

DDH	From	To	Width (m)	SampleID	Description
PGH-18-10A	423.02	423.83	0.81	655365	crbt
PGH-18-10A	423.83	424.6	0.77	655366	crbt, sye clast at lct
PGH-18-10A	424.6	425.7	1.1	655367	sye/fen
PGH-18-10A	425.7	426.7	1	655368	crbt w/ ~50% large sye clasts
PGH-18-10A	426.7	427.62	0.92	655369	crbt
PGH-18-10A	427.62	428.5	0.88	655370	crbt
PGH-18-10A	428.5	429.56	1.06	655371	sye/gran
PGH-18-10A	429.56	430.67	1.11	655372	sye/gran
PGH-18-10A	430.67	431.57	0.9	655373	gran/sye, bx at lct
PGH-18-10A	431.57	432.43	0.86	655374	bx
PGH-18-10A	432.43	433.24	0.81	655375	bx
PGH-18-10A	433.24	434.24	1	655376	sye w/ chl frags, sulph in carb veins

COMPANY QAQC DATA

DDH	From	To	Width (m)	SampleID	BatchID	QAQC Type	QAQC Description	P2O5 (%)	Nb2O5 (%)
PGH-18-10A	13.22	13.22	0	590859	A18-08117	BLANK	Marble	0.02	< 0.003
PGH-18-10A	15.62	15.62	0	590862	A18-08117	BLANK	Marble	0.03	< 0.003
PGH-18-10A	22.26	22.26	0	590869	A18-08117	STANDARD	Oka 1	2.52	0.531
PGH-18-10A	108.59	108.59	0	590900	A18-08117	BLANK	Marble	0.02	< 0.003
PGH-18-10A	131.3	131.3	0	590917	A18-08117	BLANK	Marble	0.02	< 0.003
PGH-18-10A	147.32	147.32	0	590921	A18-08117	BLANK	Marble	0.02	< 0.003
PGH-18-10A	167.49	167.49	0	590939	A18-08117	STANDARD	Oka 1	2.48	0.55
PGH-18-10A	216	216	0	590967	A18-08117	STANDARD	Oka 1	2.41	0.53
PGH-18-10A	220.63	220.63	0	590969	A18-08117	BLANK	Marble	0.02	< 0.003
PGH-18-10A	283.43	283.43	0	655410	A18-08117	STANDARD	Oka 1	2.49	0.536
PGH-18-10A	302	302	0	655422	A18-08117	BLANK	Marble	0.03	< 0.003
PGH-18-10A	366.44	366.44	0	655460	A18-08117	STANDARD	Oka 1	2.45	0.556
PGH-18-10A	368.85	370.11	1.26	655463	A18-08117	N/A	ORIGINAL SAMPLE	0.57	0.211
PGH-18-10A	368.85	370.11	1.26	655464	A18-08117	DUPLICATE	DUPLICATE (655463)	0.77	0.33
PGH-18-10A	368.85	370.11	1.26	655474	A18-08117	DUPLICATE	DUPLICATE (655473)	4.4	0.205
PGH-18-10A	374.95	374.95	0	655469	A18-08117	BLANK	Marble	0.03	< 0.003
PGH-18-10A	378.57	379.76	1.19	655473	A18-08117	N/A	ORIGINAL SAMPLE	4.61	0.222
PGH-18-10A	390	390	0	655484	A18-08117	STANDARD	Oka 1	2.48	0.55
PGH-18-10A	419.95	419.95	0	655360	A18-08117	STANDARD	Oka 1	2.37	0.525
PGH-18-10A	421.96	421.96	0	655363	A18-08117	BLANK	Marble	0.03	< 0.003

**APPENDIX IV
DIAMOND DRILL PLAN MAP**

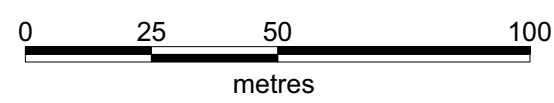


GOOD HOPE NIOBIUM PROJECT

Killala Lake & Cairngorm Lake Area, NW Ontario
Thunder Bay Mining District, NTS 42E02

2018 Diamond Drilling Program

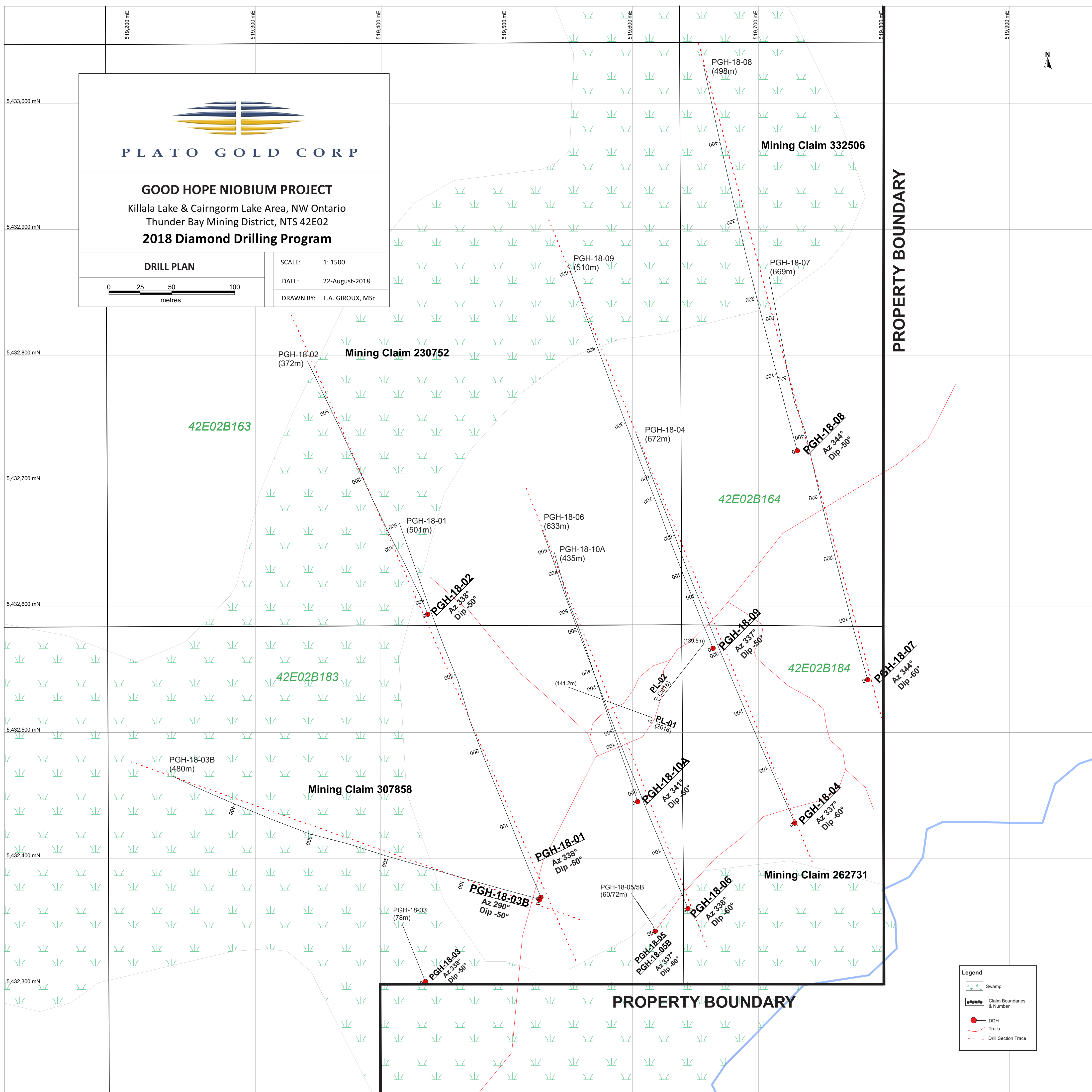
DRILL PLAN



SCALE: 1: 1500

DATE: 22-August-2018

DRAWN BY: L.A. GIROUX, MSc



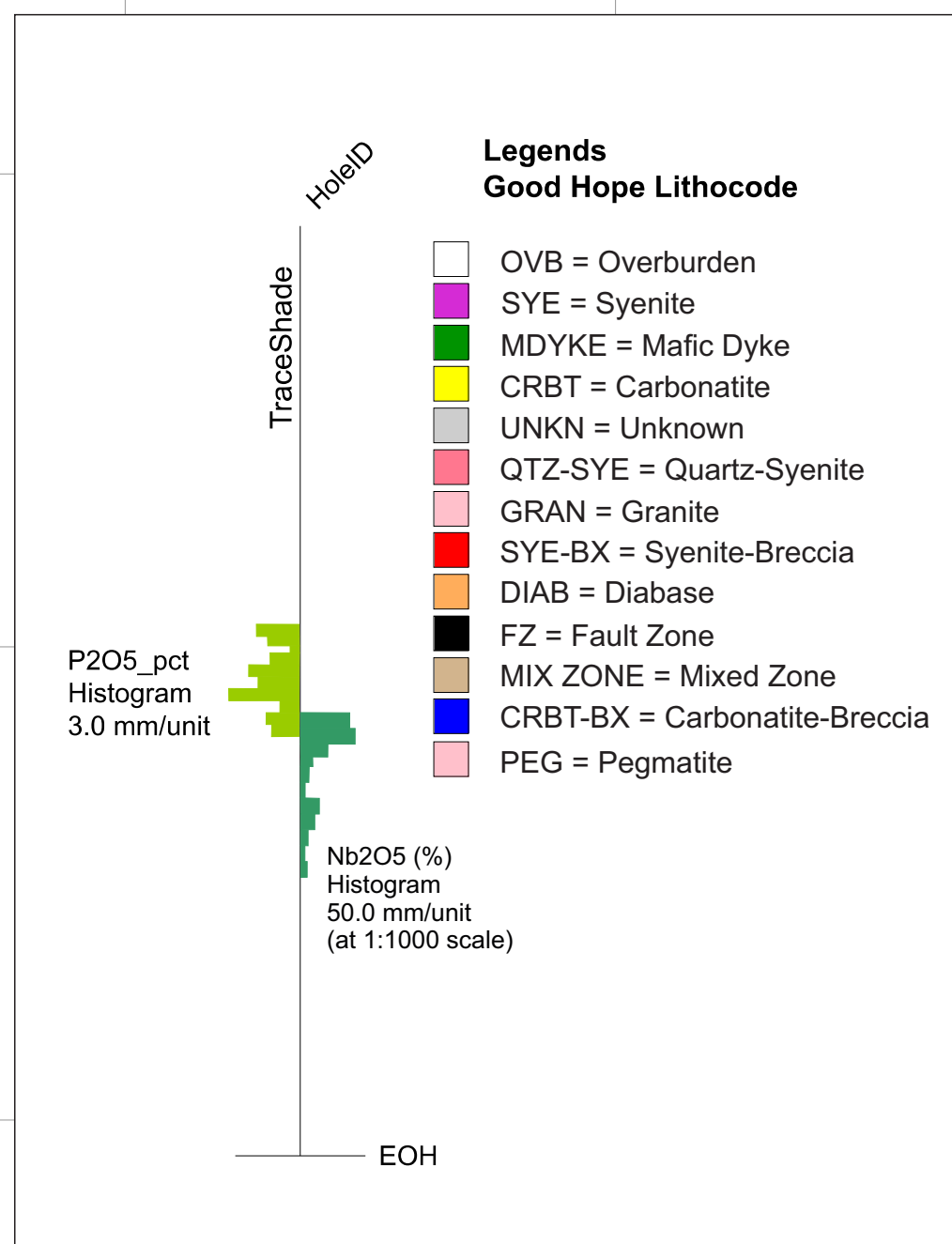
PROPERTY BOUNDARY

PROPERTY BOUNDARY

Legend

- Swamp
- Claim Boundaries & Number
- DDH
- Trails
- Drill Section Trace

APPENDIX V
VERTICAL DRILL SECTIONS



PGH-18-08
EOH = 498m

PGH-18-07
EOH = 669m

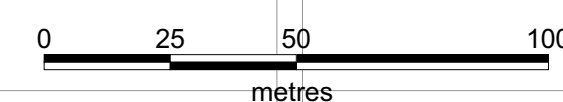
PGH-18-08
Az = 344°
Dip = -50°

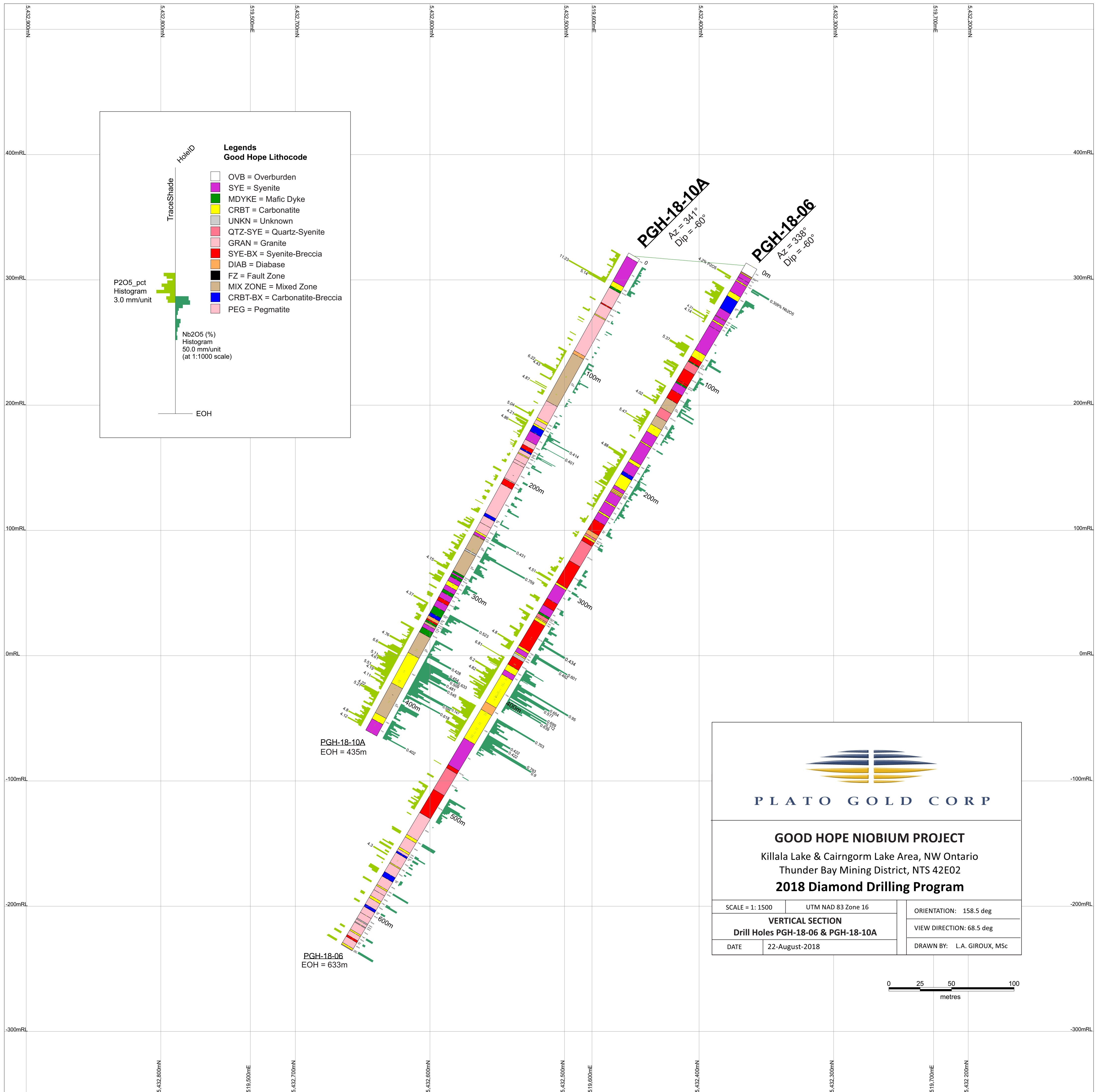
PGH-18-07
Az = 344°
Dip = -60°

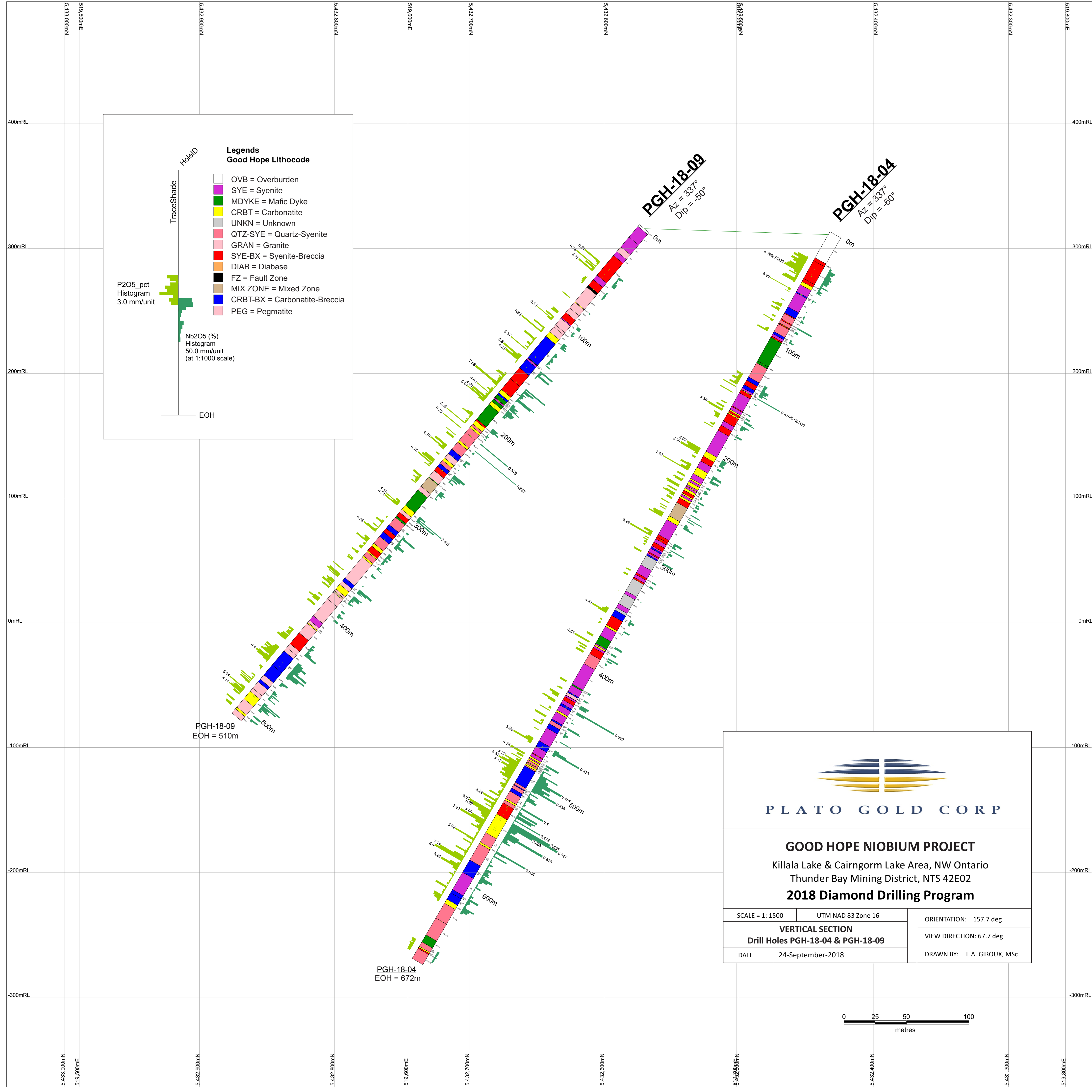
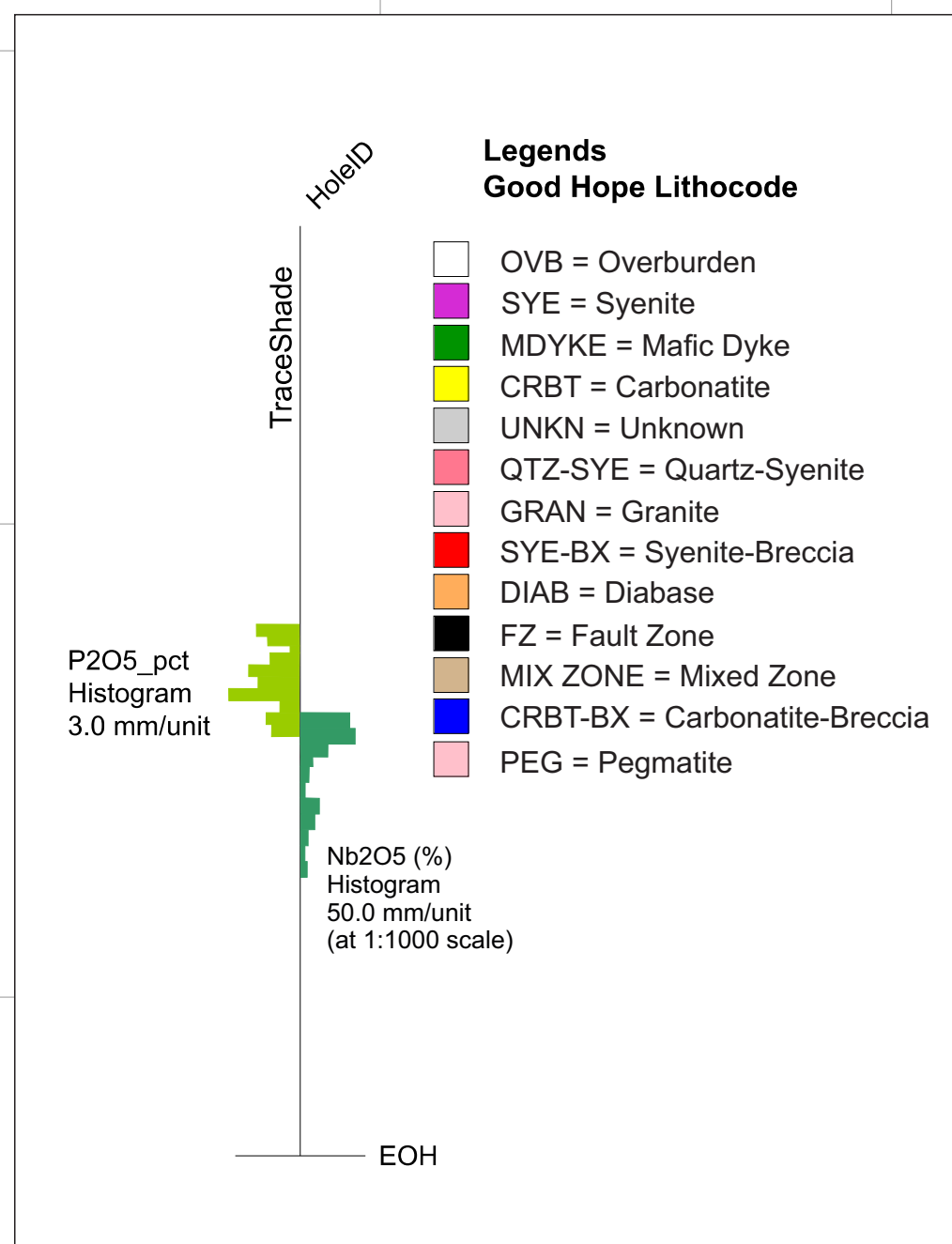
PLATO GOLD CORP

GOOD HOPE NIOBIUM PROJECT
Killala Lake & Cairngorm Lake Area, NW Ontario
Thunder Bay Mining District, NTS 42E02
2018 Diamond Drilling Program

SCALE = 1: 1500	UTM NAD 83 Zone 16	ORIENTATION: 164.8 deg
VERTICAL SECTION Drill Holes PGH-18-07 & PGH-18-08		VIEW DIRECTION: 74.8 deg
		DRAWN BY: L.A. GIROUX, MSc
DATE	24-September-2018	



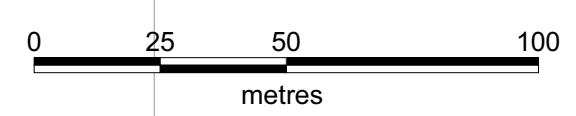


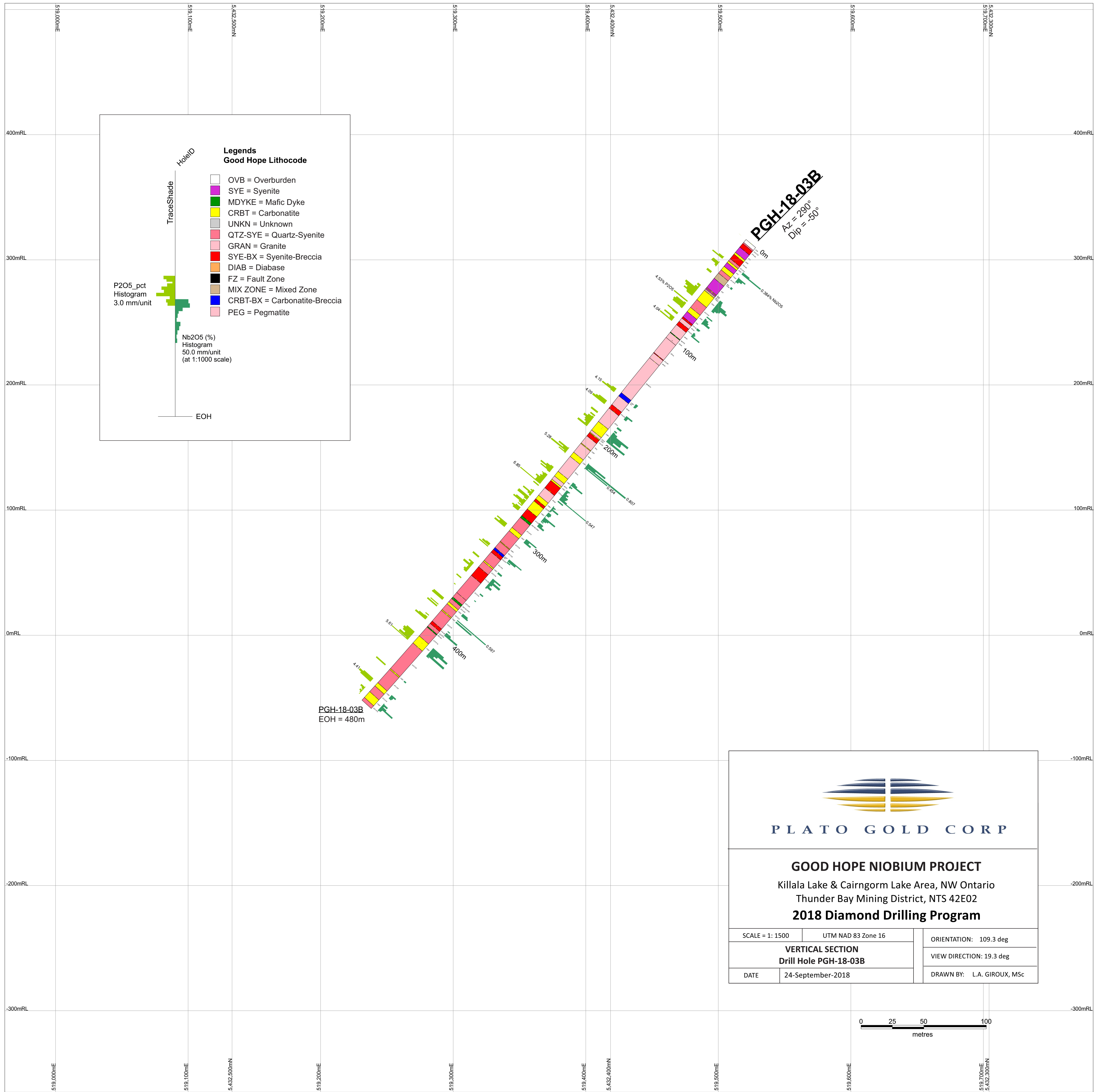


PLATO GOLD CORP

GOOD HOPE NIOBIUM PROJECT
Killala Lake & Cairngorm Lake Area, NW Ontario
Thunder Bay Mining District, NTS 42E02
2018 Diamond Drilling Program

SCALE = 1: 1500	UTM NAD 83 Zone 16	ORIENTATION: 157.7 deg
VERTICAL SECTION Drill Holes PGH-18-04 & PGH-18-09		VIEW DIRECTION: 67.7 deg
DATE	24-September-2018	DRAWN BY: L.A. GIROUX, MSc





Legends
Good Hope Lithocode


- OVB = Overburden
- SYE = Syenite
- MDYKE = Mafic Dyke
- CRBT = Carbonatite
- UNKN = Unknown
- QTZ-SYE = Quartz-Syenite
- GRAN = Granite
- SYE-BX = Syenite-Breccia
- DIAB = Diabase
- FZ = Fault Zone
- MIX_ZONE = Mixed Zone
- CRBT-BX = Carbonatite-Breccia
- PEG = Pegmatite

TraceShade
HoleID

P2O5_pct
Histogram
3.0 mm/unit

Nb2O5 (%)
Histogram
50.0 mm/unit
(at 1:1000 scale)

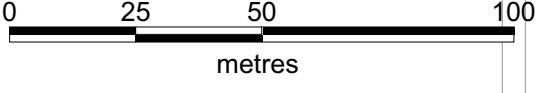
EOH

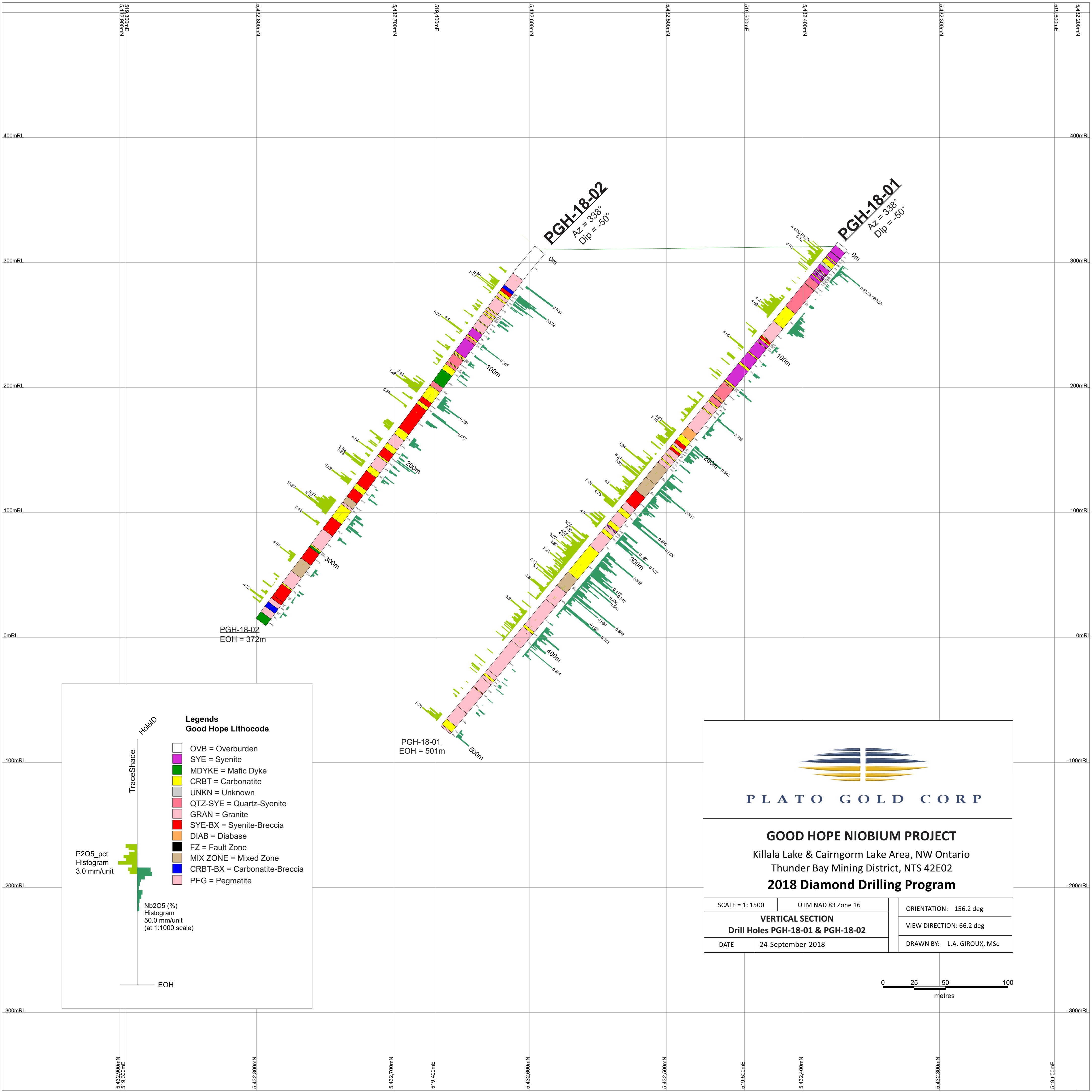


PLATO GOLD CORP

GOOD HOPE NIOBIUM PROJECT
Killala Lake & Cairngorm Lake Area, NW Ontario
Thunder Bay Mining District, NTS 42E02
2018 Diamond Drilling Program

SCALE = 1: 1500	UTM NAD 83 Zone 16	ORIENTATION: 109.3 deg
VERTICAL SECTION Drill Hole PGH-18-03B		VIEW DIRECTION: 19.3 deg
DATE	24-September-2018	DRAWN BY: L.A. GIROUX, MSc





PGH-18-02
 Az = 338°
 Dip = -50°

PGH-18-01
 Az = 338°
 Dip = -50°

PGH-18-02
 EOH = 372m

PGH-18-01
 EOH = 501m

Legends
Good Hope Lithocode


- OVB = Overburden
- SYE = Syenite
- MDYKE = Mafic Dyke
- CRBT = Carbonatite
- UNKN = Unknown
- QTZ-SYE = Quartz-Syenite
- GRAN = Granite
- SYE-BX = Syenite-Breccia
- DIAB = Diabase
- FZ = Fault Zone
- MIX_ZONE = Mixed Zone
- CRBT-BX = Carbonatite-Breccia
- PEG = Pegmatite

TraceShade
 HoleID

P2O5_pct
 Histogram
 3.0 mm/unit

Nb2O5 (%)
 Histogram
 50.0 mm/unit
 (at 1:1000 scale)

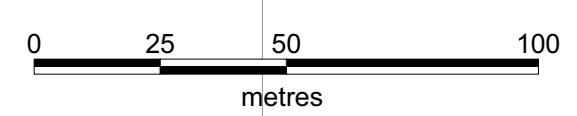
EOH



PLATO GOLD CORP

GOOD HOPE NIOBIUM PROJECT
 Killala Lake & Cairngorm Lake Area, NW Ontario
 Thunder Bay Mining District, NTS 42E02
2018 Diamond Drilling Program

SCALE = 1: 1500	UTM NAD 83 Zone 16	ORIENTATION: 156.2 deg
VERTICAL SECTION		VIEW DIRECTION: 66.2 deg
Drill Holes PGH-18-01 & PGH-18-02		DRAWN BY: L.A. GIROUX, MSc
DATE	24-September-2018	



APPENDIX VI
LABORITORY CERTIFICATE OF ANALYSIS



Report No.: A21-14490
Report Date: 06-Oct-21
Date Submitted: 30-Jul-21
Your Reference:

Plato Gold Corp.
1240 Bay Street , Suite 800
Toronto ON N5R 2A7

ATTN: Anthony Cohen

CERTIFICATE OF ANALYSIS

200 Core samples were submitted for analysis.

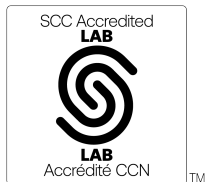
Table with 2 columns: The following analytical package(s) were requested: and Testing Date:
4C1* LOT (Press Pellet) | QOP ProTrace XRF (XRF Pressed Pellet) | 2021-08-19 08:20:28

REPORT A21-14490

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Notes:

Values which exceed the upper limit should be assayed.



LabID: 266

ACTIVATION LABORATORIES LTD.
41 Bittern Street, Ancaster, Ontario, Canada, L9G 4V5
TELEPHONE +905 648-9611 or +1.888.228.5227 FAX +1.905.648.9613
E-MAIL Ancaster@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

CERTIFIED BY:

Handwritten signature of Emmanuel Eseme

Emmanuel Eseme , Ph.D.
Quality Control Coordinator

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
918001	33
918002	208
918003	135
918004	393
918005	630
918006	38
918007	126
918008	70
918009	82
918010	75
918011	445
918012	915
918013	420
918014	432
918015	338
918016	1280
918017	1410
918018	26
918019	21
918020	84
918021	1720
918022	156
918023	22
918024	27
918025	253
918026	382
918027	427
918028	25
918029	213
918030	80
918031	61
918032	39
918033	137
918034	42
918035	127
918036	26
918037	71
918038	23
918039	21
918040	41
918041	285
918042	147
918043	593
918044	129
918045	55
918046	113
918047	79
918048	44
918049	26
918050	25
918051	28

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
918052	112
918053	64
918054	55
918055	39
918056	48
918057	142
918058	151
918059	922
918060	48
918061	297
918062	245
918063	328
918064	200
918065	29
918066	36
918067	34
918068	127
918069	356
918070	104
918071	171
918072	259
918073	117
918074	158
918075	92
918076	341
918077	53
918078	62
918079	101
918080	762
918081	85
918082	331
918083	1160
918084	105
918085	356
918086	118
918087	190
918088	145
918089	613
918090	46
918091	198
918092	56
918093	32
918094	198
918095	242
918096	212
918097	343
918098	428
918099	30
918100	54
918101	71
918102	100

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
918103	47
918104	105
918105	75
918106	239
918107	29
918108	33
918109	37
918110	35
918111	17
918112	25
918113	40
918114	179
918115	178
918116	68
918117	191
918118	416
918119	1510
918120	1270
918121	88
918122	86
918123	147
918124	300
918125	95
918126	573
918127	79
918128	41
918129	563
918130	217
918131	35
918132	109
918133	126
918134	145
918135	142
918136	313
918137	136
918138	1260
918139	875
918140	403
918141	547
918142	2250
918143	120
918144	78
918145	183
918146	32
918147	50
918148	19
918149	116
918150	94
918151	27
918152	56
918153	80

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
918154	158
918155	40
918156	138
918157	80
918158	47
918159	20
918160	108
918161	134
918162	217
918163	47
918164	29
918165	347
918166	725
918167	538
918168	84
918169	108
918170	42
918171	74
918172	200
918173	32
918174	206
918175	80
918176	594
918177	78
918178	62
918179	236
918180	31
918181	44
918182	105
918183	57
918184	98
918185	62
918186	48
918187	84
918188	324
918189	314
918190	759
918191	150
918192	53
918193	437
918194	19
918195	21
918196	484
918197	325
918198	151
918199	526
918200	320

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
BX-N Meas	52
BX-N Cert	52
DR-N Meas	9
DR-N Cert	7
OKA-1 Meas	3790
OKA-1 Cert	3700
MICA-Mg Meas	117
MICA-Mg Cert	116
NCS DC73303 (GBW 07105) Meas	62
NCS DC73303 (GBW 07105) Cert	68
OREAS 147 (4 Acid) Meas	1100
OREAS 147 (4 Acid) Cert	1110
OREAS 148 (4 Acid) Meas	1580
OREAS 148 (4 Acid) Cert	1690
918030 Orig	80
918030 Dup	79
918050 Orig	25
918050 Split PREP DUP	23
918060 Orig	48
918060 Dup	48
918090 Orig	46
918090 Dup	45
918100 Orig	54
918100 Split PREP DUP	54
918120 Orig	1270
918120 Dup	1280
918150 Orig	94
918150 Split PREP DUP	90
918180 Orig	31
918180 Dup	30
918200 Orig	320
918200 Split PREP DUP	296



Report No.: A21-14492
Report Date: 01-Nov-21
Date Submitted: 30-Jul-21
Your Reference:

Plato Gold Corp.
1240 Bay Street , Suite 800
Toronto ON N5R 2A7

ATTN: Anthony Cohen

CERTIFICATE OF ANALYSIS

259 Core samples were submitted for analysis.

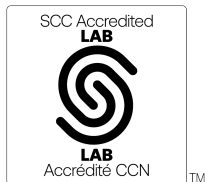
Table with 2 columns: The following analytical package(s) were requested: and Testing Date:
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REPORT A21-14492

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Notes:

Values which exceed the upper limit should be assayed.



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E-MAIL Ancaster@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

CERTIFIED BY:

Handwritten signature of Emmanuel Eseme

Emmanuel Eseme , Ph.D.
Quality Control Coordinator

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
918201	115
918202	92
918203	259
918204	131
918205	146
918206	373
918207	70
918208	69
918209	462
918210	100
918211	32
918212	423
918213	190
918214	22
918215	22
918216	84
918217	145
918218	504
918219	129
918220	124
918221	137
918222	29
918223	29
918224	15
918225	98
918226	673
918227	108
918228	302
918229	148
918230	45
918231	24
918232	341
918233	84
918234	146
918235	86
918236	288
918237	133
918238	54
918239	133
918240	77
918241	309
918242	132
918243	65
918244	86
918245	10
918246	42
918247	106
918248	24
918249	33
918250	121
918251	179

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
918252	224
918253	309
918254	163
918255	400
918256	299
918257	334
918258	23
918259	31
918260	24
918261	37
918262	164
918263	197
918264	109
918265	57
918266	40
918267	283
918268	62
918269	34
918270	99
918271	169
918272	32
918273	22
918274	72
918275	23
918276	98
918277	49
918278	177
918279	121
918280	430
918281	300
918282	206
918283	80
918284	90
918285	52
918286	29
918287	19
918288	126
918289	342
918290	36
918291	56
918292	33
918293	50
918294	65
918295	40
918296	75
918297	63
918298	71
918299	63
918300	48
918301	43
918302	63

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
918303	148
918304	26
918305	52
918306	44
918307	70
918308	51
918309	53
918310	28
918311	50
918312	15
918313	21
918314	30
918315	87
918316	42
918317	168
918318	68
918319	24
918320	27
918321	34
918322	80
918323	93
918324	72
918325	191
918326	115
918327	569
918328	245
918329	80
918330	55
918331	41
918332	40
918333	82
918334	78
918335	17
918336	48
918337	79
918338	34
918339	76
918340	30
918341	56
918342	120
918343	28
918344	34
918345	32
918346	25
918347	55
918348	60
918349	613
918350	78
918351	64
918352	63
918353	72

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
918354	92
918355	58
918356	71
918357	203
918358	90
918359	181
918360	116
918361	204
918362	135
918363	131
918364	98
918365	46
918366	50
918367	64
918368	95
918369	120
918370	72
918371	107
918372	141
918373	131
918374	141
918375	170
918376	94
918377	85
918378	81
918379	232
918380	150
918381	68
918382	450
918383	119
918384	92
918385	105
918386	78
918387	65
918388	36
918389	38
918390	72
918391	53
918392	47
918393	62
918394	55
918395	127
918396	82
918397	59
918398	59
918399	77
918400	57
918401	32
918402	184
918403	75
918404	270

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
918405	263
918406	111
918407	44
918408	99
918409	54
918410	62
918411	70
918412	35
918413	62
918414	34
918415	51
918416	82
918417	58
918418	21
918419	108
918420	46
918421	18
918422	34
918423	81
918424	74
918425	54
918426	57
918427	45
918428	44
918429	61
918430	19
918431	29
918432	33
918433	320
918434	179
918435	43
918436	29
918437	89
918438	59
918439	44
918440	58
918441	80
918442	49
918443	44
918444	52
918445	68
918446	48
918447	51
918448	169
918449	63
918450	119
918451	66
918452	42
918453	48
918454	55
918455	85

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
918456	101
918457	38
918458	50
918459	43

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
MICA-FE Meas	256
MICA-FE Cert	270
BE-N Meas	96
BE-N Cert	105
AC-E Meas	103
AC-E Cert	110
BX-N Meas	53
BX-N Cert	52
DR-N Meas	8
DR-N Cert	7
NCS DC73303 (GBW 07105) Meas	62
NCS DC73303 (GBW 07105) Cert	68
AMIS 0449 Meas	1100
AMIS 0449 Cert	1100
918230 Orig	45
918230 Dup	45
918250 Orig	121
918250 Split PREP DUP	103
918260 Orig	23
918260 Dup	24
918290 Orig	36
918290 Dup	36
918299 Orig	63
918299 Split PREP DUP	64
918320 Orig	26
918320 Dup	27
918348 Orig	60
918348 Split PREP DUP	67
918350 Orig	78
918350 Dup	77
918380 Orig	150
918380 Dup	150
918397 Orig	59
918397 Split PREP DUP	60
918410 Orig	62
918410 Dup	62
918440 Orig	57
918440 Dup	58
918446 Orig	48
918446 Split PREP DUP	46



Report No.: A21-14670
Report Date: 15-Nov-21
Date Submitted: 04-Aug-21
Your Reference: Good Hope

Plato Gold Corp.
1240 Bay Street , Suite 800
Toronto ON N5R 2A7

ATTN: Anthony Cohen

CERTIFICATE OF ANALYSIS

350 Core samples were submitted for analysis.

Table with 2 columns: The following analytical package(s) were requested: and Testing Date:
4C1* LOT (Press Pellet) | QOP ProTrace XRF (XRF Pressed Pellet) | 2021-09-29 08:20:16

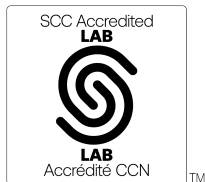
REPORT A21-14670

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Notes:

Values which exceed the upper limit should be assayed.

Footnote: Nb could not be reported by XRF due to interferences for the samples 918651 and 918668.



LabID: 266

ACTIVATION LABORATORIES LTD.
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CERTIFIED BY:

Handwritten signature of Emmanuel Esemé

Emmanuel Esemé , Ph.D.
Quality Control Coordinator

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
918460	155
918461	155
918462	112
918463	131
918464	109
918465	87
918466	181
918467	105
918468	99
918469	109
918470	108
918471	103
918472	84
918473	45
918474	44
918475	25
918476	51
918477	43
918478	42
918479	114
918480	120
918481	74
918482	28
918483	28
918484	58
918485	66
918486	149
918487	38
918488	75
918489	62
918490	85
918491	183
918492	144
918493	63
918494	114
918495	242
918496	128
918497	52
918498	43
918499	88
918500	176
918501	133
918502	188
918503	61
918504	94
918505	106
918506	204
918507	136
918508	53
918509	53
918510	52

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
918511	221
918512	167
918513	78
918514	78
918515	98
918516	77
918517	706
918518	499
918519	83
918520	108
918521	90
918522	82
918523	150
918524	115
918525	45
918526	91
918527	73
918528	41
918529	22
918530	26
918531	86
918532	109
918533	115
918534	569
918535	345
918536	88
918537	172
918538	84
918539	61
918540	90
918541	188
918542	268
918543	145
918544	65
918545	60
918546	86
918547	32
918548	49
918549	74
918550	61
918551	30
918552	32
918553	37
918554	50
918555	170
918556	133
918557	41
918558	101
918559	39
918560	99
918561	199

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
918562	246
918563	480
918564	221
918565	236
918566	102
918567	78
918568	116
918569	76
918570	244
918571	107
918572	95
918573	93
918574	85
918575	58
918576	245
918577	315
918578	121
918579	117
918580	309
918581	178
918582	199
918583	42
918584	218
918585	107
918586	95
918587	105
918588	86
918589	63
918590	349
918591	81
918592	49
918593	244
918594	58
918595	24
918596	183
918597	106
918598	71
918599	53
918600	82
918601	41
918602	86
918603	236
918604	118
918605	72
918606	32
918607	76
918608	896
918609	81
918610	68
918611	47
918612	187

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
918613	112
918614	38
918615	83
918616	39
918617	101
918618	359
918619	81
918620	87
918621	148
918622	146
918623	34
918624	97
918625	41
918626	124
918627	88
918628	56
918629	12
918630	150
918631	231
918632	62
918633	100
918634	142
918635	234
918636	160
918637	166
918638	256
918639	62
918640	77
918641	230
918642	216
918643	25
918644	37
918645	53
918646	57
918647	32
918648	74
918649	128
918650	85
918651	
918652	26
918653	28
918654	156
918655	1980
918656	426
918657	467
918658	94
918659	151
918660	151
918661	170
918662	208
918663	17

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
918664	29
918665	434
918666	358
918667	17
918668	
918669	346
918670	227
918671	104
918672	113
918673	119
918674	205
918675	291
918676	219
918677	78
918678	121
918679	16
918680	146
918681	158
918682	125
918683	186
918684	579
918685	273
918686	379
918687	174
918688	349
918689	456
918690	403
918691	534
918692	128
918693	78
918694	153
918695	833
918696	552
918697	127
918698	93
918699	144
918700	187
918701	265
918702	112
918703	216
918704	106
918705	64
918706	133
918707	84
918708	127
918709	85
918710	51
918711	68
918712	80
918713	87
918714	39

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
918715	80
918716	184
918717	173
918718	29
918719	154
918720	28
918721	44
918722	225
918723	45
918724	27
918725	190
918726	523
918727	104
918728	234
918729	43
918730	55
918731	95
918732	22
918733	141
918734	128
918735	74
918736	80
918737	87
918738	26
918739	250
918740	14
918741	156
918742	78
918743	111
918744	78
918745	202
918746	379
918747	456
918748	437
918749	140
918750	566
918751	147
918752	127
918753	53
918754	67
918755	502
918756	26
918757	110
918758	38
918759	443
918760	23
918761	230
918762	1610
918763	238
918764	387
918765	95

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
918766	50
918767	174
918768	89
918769	70
918770	91
918771	611
918772	140
918773	116
918774	294
918775	641
918776	16
918777	161
918778	71
918779	101
918780	53
918781	27
918782	17
918783	14
918784	121
918785	226
918786	30
918787	126
918788	70
918789	160
918790	351
918791	184
918792	19
918793	40
918794	8
918795	77
918796	522
918797	63
918798	29
918799	33
918800	1100
918801	342
918802	39
918803	25
918804	1060
918805	556
918806	134
918807	442
918808	625
918809	115

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
BX-N Meas	53
BX-N Cert	52
DR-N Meas	5
DR-N Cert	7
OKA-1 Meas	> 3000
OKA-1 Cert	3700
ZW-C Meas	237
ZW-C Cert	198
MICA-Mg Meas	122
MICA-Mg Cert	116
NCS DC73303 (GBW 07105) Meas	62
NCS DC73303 (GBW 07105) Cert	68
OREAS 147 (4 Acid) Meas	1100
OREAS 147 (4 Acid) Cert	1110
AMIS 0449 Meas	1100
AMIS 0449 Cert	1100
918489 Orig	62
918489 Dup	62
918509 Orig	53
918509 Split PREP DUP	54
918519 Orig	82
918519 Dup	83
918549 Orig	72
918549 Dup	76
918559 Orig	39
918559 Split PREP DUP	38
918579 Orig	117
918579 Dup	117
918609 Orig	81
918609 Split PREP DUP	82
918639 Orig	62
918639 Dup	62
918659 Orig	151
918659 Split PREP DUP	163
918669 Orig	350
918669 Dup	341
918699 Orig	145
918699 Dup	143
918709 Orig	85
918709 Split PREP DUP	85
918729 Orig	43
918729 Dup	43
918759 Orig	443

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
918759 Split PREP DUP	452
918789 Orig	160
918789 Dup	159
918808 Orig	625
918808 Split PREP DUP	592



Plato Gold Corp.
 1240 Bay Street , Suite 800
 Toronto ON N5R 2A7

Report No.: A21-14733
 Report Date: 08-Dec-21
 Date Submitted: 05-Aug-21
 Your Reference: Good Hope

ATTN: Anthony Cohen

CERTIFICATE OF ANALYSIS

77 Core samples were submitted for analysis.

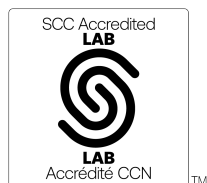
The following analytical package(s) were requested:		Testing Date:
4C1* LOT (Press Pellet)	QOP ProTrace XRF (XRF Pressed Pellet)	2021-12-07 19:57:45

REPORT **A21-14733**

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Notes:

Values which exceed the upper limit should be assayed.



LabID: 266

ACTIVATION LABORATORIES LTD.
 41 Bittern Street, Ancaster, Ontario, Canada, L9G 4V5
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 E-MAIL Ancaster@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

CERTIFIED BY:

Emmanuel Eseme , Ph.D.
 Quality Control Coordinator

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
918810	69
918811	78
918812	71
918813	54
918814	78
918815	78
918816	166
918817	255
918818	960
918819	424
918820	327
918821	1050
918822	309
918823	243
918824	120
918825	108
918826	94
918827	281
918828	139
918829	530
918830	171
918831	329
918832	1320
918833	213
918834	557
918835	351
918836	280
918837	319
918838	549
918839	92
918840	127
918841	44
918842	77
918843	139
918844	1080
918845	63
918846	64
918847	465
918848	504
918849	185
918850	58
918851	540
918852	329
918853	211
918854	842
918855	401
918856	153
918857	227
918858	266
918859	143
918860	498

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
918861	226
918862	284
918863	442
918864	144
918865	332
918866	889
918867	321
918868	381
918869	91
918870	96
918871	178
918872	283
918873	580
918874	354
918875	141
918876	126
918877	199
918878	254
918879	2040
918880	1440
918881	213
918882	759
918883	1190
918884	2700
918885	1620
918886	3160

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
BE-N Meas	96
BE-N Cert	105
GH Meas	78
GH Cert	85
OKA-1 Meas	3830
OKA-1 Cert	3700
MICA-Mg Meas	122
MICA-Mg Cert	116
SARM 3 Meas	994
SARM 3 Cert	978
AMIS 0449 Meas	1120
AMIS 0449 Cert	1100
918839 Orig	92
918839 Dup	91
918859 Orig	143
918859 Split PREP DUP	142
918869 Orig	92
918869 Dup	89
918886 Orig	3160
918886 Split PREP DUP	3290



Report No.: A21-15070
Report Date: 15-Dec-21
Date Submitted: 11-Aug-21
Your Reference: Good Hope

Plato Gold Corp.
1240 Bay Street , Suite 800
Toronto ON N5R 2A7

ATTN: Anthony Cohen

CERTIFICATE OF ANALYSIS

303 Core samples were submitted for analysis.

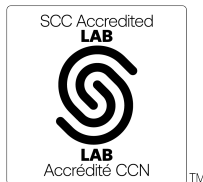
Table with 2 columns: The following analytical package(s) were requested: and Testing Date:
Row 1: 4C1* LOT (Press Pellet) | QOP ProTrace XRF (XRF Pressed Pellet) | 2021-10-12 18:26:30

REPORT A21-15070

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Notes:

Values which exceed the upper limit should be assayed.



LabID: 266

CERTIFIED BY:

Handwritten signature of Emmanuel Eseme

Emmanuel Eseme , Ph.D.
Quality Control Coordinator

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Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
918887	273
918888	84
918889	113
918890	228
918891	314
918892	992
918893	410
918894	100
918895	468
918896	593
918897	204
918898	521
918899	181
918900	92
918901	54
918902	89
918903	69
918904	114
918905	99
918906	82
918907	106
918908	85
918909	101
918910	111
918911	61
918912	93
918913	47
918914	42
918915	89
918916	61
918917	55
918918	403
918919	382
918920	185
918921	161
918922	164
918923	98
918924	176
918925	106
918926	181
918927	158
918928	84
918929	132
918930	165
918931	111
918932	388
918933	90
918934	121
918935	403
918936	221
918937	152

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
918938	92
918939	100
918940	147
918941	295
918942	229
918943	119
918944	319
918945	173
918946	207
918947	113
918948	192
918949	203
918950	284
918951	172
918952	223
918953	195
918954	262
918955	402
918956	269
918957	248
918958	170
918959	202
918960	169
918961	139
918962	225
918963	154
918964	142
918965	155
918966	92
918967	255
918968	187
918969	251
918970	94
918971	138
918972	124
918973	224
918974	187
918975	226
918976	125
918977	108
918978	279
918979	186
918980	166
918981	90
918982	112
918983	105
918984	116
918985	187
918986	156
918987	113
918988	253

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
918989	108
918990	374
918991	196
918992	230
918993	131
918994	113
918995	63
918996	91
918997	80
918998	205
918999	135
919000	279
919001	116
919002	104
919003	263
919004	194
919005	217
919006	99
919007	102
919008	107
919009	54
919010	275
919011	104
919012	97
919013	136
919014	193
919015	122
919016	124
919017	156
919018	212
919019	150
919020	461
919021	487
919022	288
919023	301
919024	268
919025	106
919026	72
919027	234
919028	221
919029	98
919030	83
919031	72
919032	135
919033	22
919034	207
919035	34
919036	134
919037	98
919038	552
919039	47

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
919040	49
919041	47
919042	129
919043	87
919044	88
919045	81
919046	67
919047	51
919048	98
919049	96
919050	144
919051	61
919052	145
919053	224
919054	91
919055	73
919056	36
919057	70
919058	21
919059	114
919060	16
919061	13
919062	19
919063	25
919064	98
919065	19
919066	10
919067	20
919068	95
919069	461
919070	80
919071	239
919072	136
919073	70
919074	49
919075	69
919076	232
919077	65
919078	86
919079	71
919080	194
919081	129
919082	88
919083	68
919084	67
919085	173
919086	104
919087	54
919088	92
919089	488
919090	227

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
919091	85
919092	423
919093	316
919094	57
919095	63
919096	65
919097	20
919098	39
919099	62
919100	60
919101	101
919102	183
919103	125
919104	309
919105	110
919106	572
919107	236
919108	44
919109	104
919110	89
919111	75
919112	128
919113	140
919114	60
919115	32
919116	80
919117	83
919118	40
919119	101
919120	75
919121	50
919122	87
919123	74
919124	64
919125	76
919126	75
919127	32
919128	189
919129	683
919130	78
919131	357
919132	74
919133	147
919134	101
919135	59
919136	66
919137	71
919138	255
919139	94
919140	56
919141	66

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
919142	136
919143	70
919144	166
919145	156
919146	229
919147	35
919148	38
919149	42
919150	109
919151	63
919152	129
919153	47
919154	72
919155	30
919156	36
919157	35
919158	25
919159	63
919160	140
919161	81
919162	60
919163	133
919164	465
919165	160
919166	38
919167	117
919168	77
919169	878
919170	482
919171	884
919172	925
919173	144
919174	49
919175	198
919176	35
919177	36
919178	35
919179	80
919180	224
919181	359
919182	1530
919183	93
919184	76
919185	103
919186	173
919187	256
919188	28
919189	38

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
AC-E Meas	100
AC-E Cert	110
DR-N Meas	6
DR-N Cert	7
DR-N Meas	5
DR-N Cert	7
GH Meas	82
GH Cert	85
NCS DC73303 (GBW 07105) Meas	83
NCS DC73303 (GBW 07105) Cert	68
AMIS 0449 Meas	1180
AMIS 0449 Cert	1100
918916 Orig	60
918916 Dup	62
918936 Orig	221
918936 Split PREP DUP	213
918946 Orig	207
918946 Dup	207
918976 Orig	125
918976 Dup	124
918986 Orig	156
918986 Split PREP DUP	156
919006 Orig	98
919006 Dup	100
919036 Orig	134
919036 Split PREP DUP	141
919037 Orig	97
919037 Dup	98
919066 Orig	11
919066 Dup	9
919086 Orig	104
919086 Split PREP DUP	110
919096 Orig	66
919096 Dup	64
919126 Orig	70
919126 Dup	79
919136 Orig	66
919136 Split PREP DUP	68
919156 Orig	36
919156 Dup	36
919186 Orig	173
919186 Split PREP DUP	171
919187 Orig	255

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
919187 Dup	256



Report No.: A21-15330
Report Date: 16-Dec-21
Date Submitted: 13-Aug-21
Your Reference: Good Hope

Plato Gold Corp.
1240 Bay Street , Suite 800
Toronto ON N5R 2A7

ATTN: Anthony Cohen

CERTIFICATE OF ANALYSIS

396 Core samples were submitted for analysis.

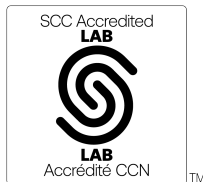
Table with 2 columns: The following analytical package(s) were requested: and Testing Date:
Row 1: 4C1* LOT (Press Pellet) | QOP ProTrace XRF (XRF Pressed Pellet) | 2021-11-15 17:35:44

REPORT A21-15330

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Notes:

Values which exceed the upper limit should be assayed.
Report footnote: Nb cannot be reported for sample 919193 due to interferences.



LabID: 266

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CERTIFIED BY:

[Handwritten signature]

Emmanuel Eseme , Ph.D.
Quality Control Coordinator

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
919190	40
919191	48
919192	22
919193	
919194	160
919195	70
919196	313
919197	167
919198	134
919199	77
919200	30
919201	43
919202	52
919203	52
919204	14
919205	25
919206	15
919207	43
919208	23
919209	141
919210	54
919211	101
919212	878
919213	115
919214	123
919215	68
919216	38
919217	127
919218	66
919219	57
919220	165
919221	130
919222	61
919223	53
919224	50
919225	89
919226	32
919227	26
919228	39
919229	32
919230	74
919231	208
919232	251
919233	189
919234	121
919235	166
919236	320
919237	96
919238	128
919239	279
919240	174

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
919241	154
919242	108
919243	147
919244	143
919245	153
919246	243
919247	221
919248	49
919249	120
919250	208
919251	104
919252	57
919253	57
919254	79
919255	45
919256	135
919257	71
919258	401
919259	218
919260	137
919261	640
919262	273
919263	361
919264	1170
919265	437
919266	253
919267	104
919268	106
919269	97
919270	43
919271	164
919272	122
919273	72
919274	138
919275	134
919276	131
919277	102
919278	150
919279	125
919280	151
919281	240
919282	289
919283	188
919284	312
919285	125
919286	143
919287	340
919288	116
919289	139
919290	102
919291	96

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
919292	65
919293	53
919294	63
919295	86
919296	119
919297	52
919298	108
919299	73
919300	54
919301	99
919302	143
919303	59
919304	37
919305	64
919306	86
919307	42
919308	146
919309	80
919310	121
919311	51
919312	65
919313	178
919314	120
919315	75
919316	632
919317	368
919318	23
919319	137
919320	38
919321	49
919322	105
919323	142
919324	60
919325	80
919326	77
919327	264
919328	526
919329	261
919330	37
919331	38
919332	146
919333	187
919334	27
919335	403
919336	158
919337	166
919338	113
919339	140
919340	66
919341	62
919342	68

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
919343	87
919344	131
919345	65
919346	32
919347	38
919348	65
919349	90
919350	109
919351	234
919352	104
919353	112
919354	145
919355	181
919356	98
919357	193
919358	134
919359	71
919360	54
919361	50
919362	368
919363	57
919364	109
919365	78
919366	423
919367	230
919368	89
919369	111
919370	94
919371	92
919372	191
919373	78
919374	93
919375	169
919376	283
919377	681
919378	341
919379	316
919380	156
919381	165
919382	134
919383	175
919384	2500
919385	248
919386	229
919387	490
919388	113
919389	86
919390	457
919391	76
919392	240
919393	201

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
919394	155
919395	649
919396	243
919397	597
919398	266
919399	197
919400	118
919401	109
919402	101
919403	278
919404	99
919405	112
919406	256
919407	168
919408	164
919409	95
919410	583
919411	95
919412	55
919413	83
919414	166
919415	271
919416	108
919417	49
919418	308
919419	257
919420	774
919421	343
919422	234
919423	172
919424	80
919425	123
919426	39
919427	87
919428	41
919429	34
919430	144
919431	17
919432	84
919433	131
919434	23
919435	68
919436	23
919437	98
919438	120
919439	220
919440	106
919441	71
919442	55
919443	44
919444	380

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
919445	410
919446	47
919447	27
919448	161
919449	21
919450	40
919451	40
919452	80
919453	84
919454	64
919455	71
919456	189
919457	94
919458	72
919459	66
919460	150
919461	66
919462	28
919463	106
919464	15
919465	52
919466	38
919467	53
919468	164
919469	312
919470	51
919471	65
919472	435
919473	35
919474	50
919475	64
919476	77
919477	198
919478	262
919479	79
919480	158
919481	48
919482	82
919483	47
919484	318
919485	437
919486	110
919487	99
919488	56
919489	34
919490	875
919491	275
919492	70
919493	25
919494	209
919495	25

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
919496	58
919497	30
919498	59
919499	31
919500	33
919501	62
919502	106
919503	135
919504	378
919505	224
919506	105
919507	138
919508	151
919509	57
919510	60
919511	146
919512	84
919513	280
919514	74
919515	201
919516	102
919517	119
919518	263
919519	157
919520	211
919521	102
919522	232
919523	410
919524	60
919525	75
919526	52
919527	74
919528	504
919529	151
919530	122
919531	550
919532	294
919533	155
919534	50
919535	21
919536	22
919537	26
919538	45
919539	34
919540	28
919541	18
919542	29
919543	59
919544	104
919545	22
919546	402

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
919547	311
919548	183
919549	46
919550	94
919551	965
919552	187
919553	280
919554	108
919555	73
919556	132
919557	98
919558	131
919559	121
919560	143
919561	347
919562	56
919563	91
919564	639
919565	57
919566	34
919567	53
919568	54
919569	202
919570	71
919571	185
919572	37
919573	152
919574	147
919575	107
919576	125
919577	477
919578	109
919579	147
919580	196
919581	220
919582	96
919583	331
919584	88
919585	62

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
BE-N Meas	101
BE-N Cert	105
DR-N Meas	5
DR-N Cert	7
GH Meas	83
GH Cert	85
OKA-1 Meas	3690
OKA-1 Cert	3700
OKA-1 Meas	3700
OKA-1 Cert	3700
MICA-Mg Meas	129
MICA-Mg Cert	116
AMIS 0449 Meas	1080
AMIS 0449 Cert	1100
919219 Orig	58
919219 Dup	56
919239 Orig	279
919239 Split PREP DUP	278
919249 Orig	120
919249 Dup	120
919279 Orig	123
919279 Dup	126
919289 Orig	139
919289 Split PREP DUP	141
919309 Orig	80
919309 Dup	80
919339 Orig	140
919339 Split PREP DUP	152
919340 Orig	67
919340 Dup	65
919369 Orig	112
919369 Dup	110
919389 Orig	86
919389 Split PREP DUP	85
919399 Orig	197
919399 Dup	197
919429 Orig	34
919429 Dup	33
919439 Orig	220
919439 Split PREP DUP	218
919459 Orig	66
919459 Dup	66
919489 Orig	34
919489 Split PREP DUP	31
919490 Orig	868
919490 Dup	881

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
919519 Orig	157
919519 Dup	156
919539 Orig	34
919539 Split PREP DUP	36
919549 Orig	46
919549 Dup	46
919579 Orig	148
919579 Dup	146
919585 Orig	62
919585 Split PREP DUP	67



Report No.: A21-15611
Report Date: 17-Dec-21
Date Submitted: 18-Aug-21
Your Reference: Good Hope

Plato Gold Corp.
1240 Bay Street , Suite 800
Toronto ON N5R 2A7

ATTN: Anthony Cohen

CERTIFICATE OF ANALYSIS

250 Core samples were submitted for analysis.

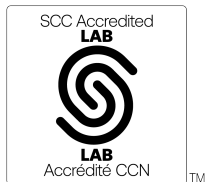
Table with 2 columns: The following analytical package(s) were requested: and Testing Date:
4C1* LOT (Press Pellet) | QOP ProTrace XRF (XRF Pressed Pellet) | 2021-11-23 20:20:28

REPORT A21-15611

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Notes:

Values which exceed the upper limit should be assayed.



LabID: 266

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CERTIFIED BY:

Handwritten signature of Emmanuel Eseme

Emmanuel Eseme , Ph.D.
Quality Control Coordinator

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
919586	4780
919587	928
919588	205
919589	39
919590	76
919591	449
919592	44
919593	81
919594	53
919595	74
919596	261
919597	96
919598	580
919599	683
919600	60
919601	340
919602	640
919603	211
919604	246
919605	90
919606	70
919607	56
919608	89
919609	409
919610	26
919611	97
919612	355
919613	81
919614	29
919615	136
919616	129
919617	44
919618	123
919619	64
919620	164
919621	128
919622	163
919623	53
919624	125
919625	103
919626	133
919627	103
919628	67
919629	102
919630	143
919631	169
919632	358
919633	303
919634	83
919635	523
919636	45

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
919637	171
919638	155
919639	81
919640	57
919641	139
919642	74
919643	102
919644	197
919645	273
919646	111
919647	214
919648	158
919649	82
919650	108
919651	110
919652	44
919653	192
919654	73
919655	51
919656	165
919657	82
919658	104
919659	83
919660	34
919661	150
919662	49
919663	637
919664	184
919665	51
919666	60
919667	157
919668	642
919669	59
919670	50
919671	63
919672	77
919673	55
919674	679
919675	79
919676	170
919677	132
919678	100
919679	168
919680	264
919681	179
919682	216
919683	574
919684	159
919685	153
919686	156
919687	145

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
919688	107
919689	148
919690	54
919691	132
919692	102
919693	90
919694	96
919695	42
919696	26
919697	11
919698	201
919699	86
919700	268
919701	282
919702	61
919703	75
919704	88
919705	339
919706	26
919707	33
919708	26
919709	233
919710	127
919711	62
919712	126
919713	450
919714	101
919715	374
919716	792
919717	450
919718	109
919719	16
919720	16
919721	226
919722	40
919723	31
919724	252
919725	391
919726	534
919727	365
919728	63
919729	48
919730	24
919731	24
919732	40
919733	25
919734	508
919735	52
919736	547
919737	71
919738	62

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
919739	152
919740	234
919741	490
919742	51
919743	342
919744	194
919745	41
919746	294
919747	91
919748	47
919749	94
919750	48
919751	47
919752	35
919753	132
919754	80
919755	92
919756	58
919757	49
919758	62
919759	314
919760	172
919761	61
919762	64
919763	97
919764	76
919765	51
919766	44
919767	179
919768	421
919769	314
919770	372
919771	75
919772	292
919773	229
919774	30
919775	36
919776	33
919777	37
919778	85
919779	162
919780	34
919781	35
919782	223
919783	67
919784	41
919785	55
919786	119
919787	118
919788	93
919789	77

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
919790	98
919791	49
919792	17
919793	21
919794	31
919795	384
919796	202
919797	231
919798	67
919799	66
919800	300
919801	58
919802	24
919803	122
919804	205
919805	43
919806	120
919807	123
919808	103
919809	37
919810	163
919811	222
919812	46
919813	27
919814	25
919815	274
919816	145
919817	51
919818	85
919819	166
919820	85
919821	240
919822	287
919823	48
919824	39
919825	28
919826	141
919827	117
919828	56
919829	70
919830	153
919831	243
919832	81
919833	51
919834	72
919835	41

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
BE-N Meas	109
BE-N Cert	105
DR-N Meas	7
DR-N Cert	7
GH Meas	84
GH Cert	85
OKA-1 Meas	3690
OKA-1 Cert	3700
SX18-01 Meas	4860
SX18-01 Cert	4860.0 00
OREAS 147 (4 Acid) Meas	1150
OREAS 147 (4 Acid) Cert	1110
AMIS 0449 Meas	1080
AMIS 0449 Cert	1100
919615 Orig	125
919615 Dup	147
919635 Orig	523
919635 Split PREP DUP	484
919645 Orig	272
919645 Dup	273
919675 Orig	80
919675 Dup	78
919685 Orig	153
919685 Split PREP DUP	151
919705 Orig	338
919705 Dup	339
919735 Orig	52
919735 Split PREP DUP	53
919736 Orig	548
919736 Dup	545
919765 Orig	57
919765 Dup	45
919785 Orig	55
919785 Split PREP DUP	60
919795 Orig	390
919795 Dup	377
919825 Orig	24
919825 Dup	31
919835 Orig	41
919835 Split PREP DUP	42



Report No.: A21-15977
Report Date: 20-Dec-21
Date Submitted: 23-Aug-21
Your Reference: Good Hope

Plato Gold Corp.
1240 Bay Street , Suite 800
Toronto ON N5R 2A7

ATTN: Anthony Cohen

CERTIFICATE OF ANALYSIS

280 Core samples were submitted for analysis.

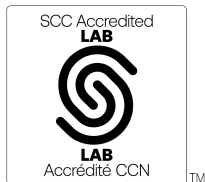
Table with 2 columns: The following analytical package(s) were requested: and Testing Date:
4C1* LOT (Press Pellet) | QOP ProTrace XRF (XRF Pressed Pellet) | 2021-12-03 14:45:16

REPORT A21-15977

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Notes:

Values which exceed the upper limit should be assayed.



LabID: 266

ACTIVATION LABORATORIES LTD.
41 Bittern Street, Ancaster, Ontario, Canada, L9G 4V5
TELEPHONE +905 648-9611 or +1.888.228.5227 FAX +1.905.648.9613
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CERTIFIED BY:

Handwritten signature of Emmanuel Eseme

Emmanuel Eseme , Ph.D.
Quality Control Coordinator

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
919836	464
919837	75
919838	44
919839	63
919840	116
919841	338
919842	283
919843	144
919844	264
919845	211
919846	118
919847	68
919848	84
919849	323
919850	198
919851	86
919852	103
919853	55
919854	29
919855	41
919856	101
919857	244
919858	770
919859	131
919860	66
919861	72
919862	113
919863	102
919864	170
919865	123
919866	172
919867	227
919868	72
919869	66
919870	97
919871	113
919872	145
919873	138
919874	100
919875	281
919876	115
919877	77
919878	89
919879	210
919880	189
919881	189
919882	112
919883	61
919884	132
919885	76
919886	57

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
919887	58
919888	151
919889	31
919890	42
919891	30
919892	73
919893	50
919894	78
919895	35
919896	17
919897	59
919898	52
919899	116
919900	254
919901	334
919902	84
919903	112
919904	58
919905	42
919906	67
919907	97
919908	789
919909	205
919910	243
919911	69
919912	205
919913	82
919914	79
919915	176
919916	134
919917	81
919918	93
919919	73
919920	56
919921	13
919922	27
919923	86
919924	40
919925	702
919926	107
919927	165
919928	69
919929	124
919930	229
919931	127
919932	516
919933	553
919934	113
919935	124
919936	74
919937	54

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
919938	74
919939	124
919940	186
919941	780
919942	766
919943	111
919944	207
919945	580
919946	852
919947	612
919948	779
919949	198
919950	227
919951	415
919952	641
919953	612
919954	735
919955	782
919956	884
919957	160
919958	287
919959	781
919960	990
919961	139
919962	360
919963	50
919964	53
919965	205
919966	154
919967	128
919968	26
919969	42
919970	157
919971	171
919972	65
919973	17
919974	91
919975	38
919976	60
919977	92
919978	85
919979	82
919980	80
919981	35
919982	99
919983	782
919984	45
919985	63
919986	253
919987	493
919988	206

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
919989	43
919990	31
919991	135
919992	418
919993	145
919994	249
919995	107
919996	54
919997	66
919998	359
919999	62
920000	83
912551	340
912552	427
912553	188
912554	384
912555	373
912556	1860
912557	230
912558	226
912559	170
912560	162
912561	41
912562	55
912563	185
912564	74
912565	329
912566	182
912567	331
912568	172
912569	146
912570	89
912571	242
912572	213
912573	42
912574	40
912575	65
912576	171
912577	41
912578	297
912579	175
912580	151
912581	102
912582	51
912583	94
912584	71
912585	85
912586	209
912587	34
912588	136
912589	73

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
912590	612
912591	485
912592	262
912593	298
912594	221
912595	31
912596	41
912597	133
912598	65
912599	44
912600	102
912601	334
912602	406
912603	256
912604	71
912605	184
912606	678
912607	190
912608	57
912609	425
912610	801
912611	51
912612	56
912613	69
912614	17
912615	39
912616	40
912617	316
912618	189
912619	964
912620	393
912621	416
912622	307
912623	192
912624	185
912625	70
912626	140
912627	105
912628	149
912629	194
912630	705
912631	238
912632	94
912633	284
912634	601
912635	79
912636	60
912637	530
912638	197
912639	405
912640	676

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
912641	364
912642	637
912643	307
912644	442
912645	234
912646	51
912647	101
912648	50
912649	56
912650	349
912651	39
912652	77
912653	435
912654	68
912655	98
912656	142
912657	66
912658	84
912659	737
912660	782
912661	289
912662	257
912663	106
912664	544
912665	62

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
AC-E Meas	103
AC-E Cert	110
BX-N Meas	61
BX-N Cert	52
DR-N Meas	6
DR-N Cert	7
GH Meas	86
GH Cert	85
OKA-1 Meas	3690
OKA-1 Cert	3700
AMIS 0449 Meas	1080
AMIS 0449 Cert	1100
919865 Orig	124
919865 Dup	122
919885 Orig	76
919885 Split PREP DUP	77
919895 Orig	35
919895 Dup	35
919925 Orig	703
919925 Dup	700
919935 Orig	124
919935 Split PREP DUP	126
919955 Orig	784
919955 Dup	779
919985 Orig	63
919985 Split PREP DUP	62
919986 Orig	253
919986 Dup	253
912565 Orig	326
912565 Dup	332
912585 Orig	85
912585 Split PREP DUP	83
912595 Orig	31
912595 Dup	31
912625 Orig	69
912625 Dup	70
912635 Orig	79
912635 Split PREP DUP	80
912655 Orig	96
912655 Dup	99
912665 Orig	62
912665 Split PREP DUP	63



Plato Gold Corp.
1240 Bay Street , Suite 800
Toronto ON N5R 2A7

Report No.: A21-16096
Report Date: 21-Dec-21
Date Submitted: 25-Aug-21
Your Reference: Good Hope

ATTN: Anthony Cohen

CERTIFICATE OF ANALYSIS

199 Core samples were submitted for analysis.

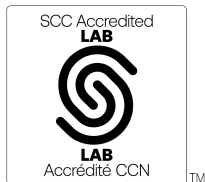
The following analytical package(s) were requested:		Testing Date:
4C1* LOT (Press Pellet)	QOP ProTrace XRF (XRF Pressed Pellet)	2021-12-20 17:27:39

REPORT **A21-16096**

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Notes:

Values which exceed the upper limit should be assayed.



LabID: 266

CERTIFIED BY:

Emmanuel Eseme , Ph.D.
Quality Control Coordinator

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Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
912666	493
912667	277
912668	311
912669	470
912670	119
912671	115
912672	112
912673	50
912674	83
912675	44
912676	92
912677	104
912678	298
912679	227
912680	232
912681	190
912682	136
912683	65
912684	116
912685	67
912686	41
912687	13
912688	55
912689	101
912690	80
912691	393
912692	170
912693	52
912694	44
912695	93
912696	174
912697	152
912698	85
912699	63
912700	132
912701	93
912702	116
912703	80
912704	207
912705	101
912706	147
912707	135
912708	89
912709	380
912710	203
912711	110
912712	529
912713	299
912714	203
912715	112
912716	272

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
912717	207
912718	168
912719	306
912720	716
912721	113
912722	147
912723	820
912724	82
912725	110
912726	158
912727	458
912728	219
912729	238
912730	148
912731	114
912732	58
912733	130
912734	282
912735	117
912736	118
912737	275
912738	184
912739	461
912740	99
912741	188
912742	59
912743	87
912744	54
912745	65
912746	78
912747	47
912748	276
912749	162
912750	60
912751	189
912752	201
912753	54
912754	70
912755	86
912756	44
912757	75
912758	130
912759	152
912760	101
912761	139
912762	73
912763	173
912764	127
912765	147
912766	86
912767	141

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
912768	279
912769	57
912770	107
912771	245
912772	156
912773	159
912774	23
912775	66
912776	57
912777	142
912778	125
912779	291
912780	88
912781	28
912782	100
912783	59
912784	493
912785	104
912786	133
912787	65
912788	90
912789	114
912790	95
912791	257
912792	711
912793	305
912794	134
912795	191
912796	373
912797	1120
912798	118
912799	130
912800	352
912801	277
912802	498
912803	745
912804	66
912805	182
912806	66
912807	329
912808	534
912809	76
912810	378
912811	110
912812	137
912813	113
912814	105
912815	136
912816	143
912817	94
912818	200

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
912819	122
912820	401
912821	380
912822	581
912823	912
912824	626
912825	526
912826	631
912827	164
912828	232
912829	75
912830	29
912831	22
912832	149
912833	348
912834	721
912835	328
912836	406
912837	83
912838	257
912839	235
912840	103
912841	154
912842	170
912843	2360
912844	589
912845	756
912846	645
912847	368
912848	324
912849	166
912850	369
912851	69
912852	227
912853	204
912854	240
912855	193
912856	1050
912857	954
912858	555
912859	392
912860	270
912861	482
912862	289
912863	164
912864	73

Analyte Symbol	Nb
Unit Symbol	ppm
Lower Limit	1
Method Code	PPXRF
AC-E Meas	103
AC-E Cert	110
BX-N Meas	61
BX-N Cert	52
DR-N Meas	6
DR-N Cert	7
GH Meas	91
GH Cert	85
OKA-1 Meas	3680
OKA-1 Cert	3700
SARM 3 Meas	972
SARM 3 Cert	978
OREAS 147 (4 Acid) Meas	1150
OREAS 147 (4 Acid) Cert	1110
912695 Orig	92
912695 Dup	93
912715 Orig	112
912715 Split PREP DUP	111
912725 Orig	108
912725 Dup	112
912755 Orig	86
912755 Dup	86
912765 Orig	147
912765 Split PREP DUP	139
912785 Orig	102
912785 Dup	105
912815 Orig	136
912815 Split PREP DUP	132
912816 Orig	144
912816 Dup	141
912845 Orig	755
912845 Dup	756
912864 Orig	73
912864 Split PREP DUP	78