

$\gamma_b \Delta^c \dot{\gamma} \cap \sigma^b \quad \wedge c_n \nabla^{\gamma_b} \gamma \sigma \nabla^n \nabla^a l^a \sigma^b$

Who: A collaborative collaboration between Professor D. Graham Pearson of the University of Alberta and Dr. Jesse Reimink of Penn State University in the United States. Additional personnel involved include a PhD student from Penn State, and possibly regional geoscience experts from: the University of Alberta, Laurentian University, or the Nunavut Geoscience Office, as well as a float plane pilot.

What: We will conduct field sampling of ancient basement rocks exposed on the surface. We will be residing at the Plummer's Tree River Lodge and Kugluktuk for the duration of our project and will be flying a Bush Hawk float plane up to 80 km from this location during the day. We will land the Bush Hawk on small lakes, and hike to outcrops near the lakes. Once at outcrops of scientific interest, we will use small hand hammers to take geological samples for research (~1 kg samples) of the rocks of scientific interest. We will be sampling for 8-10 days and expect to collect ~100 samples of rocks in this time period. The sampling will be spread out and will largely be focused on going back to sample locations that have been described by previous Geological Survey of Canada bedrock mappers, projects that took place in the 1980's. Our crew will consist of three to five geologists and a float plane pilot.

Why: Sedimentary rocks exposed in this region contain mineral grains that are extremely old. With the advanced scientific laboratories currently in use at the University of Alberta, we are able to learn a lot about how the very ancient Earth operated by analyzing tiny mineral grains that are found in these sediments. We will be collecting rock samples that contain these tiny mineral grains, extracting the grains, and analyzing their chemical signatures. Our results will be published in peer-reviewed scientific journals. Hopefully, we will learn a lot about how the ancient Earth operated by analyzing these ancient mineral grains.

▷ ΔΑΝΟ^c: NA

$\Delta \mathcal{L}^b \cap \mathcal{D}^c$: NA

Inuinnaqtun: • Kina: Naunaiyaut havaqatiriigunmi uumanga D. Graham Pearson-mit Ilihaqvikiyuamit Alberta-mi, Dr. Jesse Reimink-milu Penn State-mi Ilihaqvikiyuamit Amialigat Nunagiyaanit. Ilagiarutit havaktuni ilauyuni ilaqaqtuq PhD-nigiamini ilihatuq Penn State-mit, nunamilu nunamiutaliqiyit ayugitut uvanga, Ilihaqvikiyuamit Alberta-mit, Laurentian-mit Ilihaqvikiyuamit, uvaluniit Nunavumi Nunamiutanik Naunaiyainit Titiraqvianik, unalu qayalikmik. • Hunauk: Maniqami naunaiyainiaqtugut igilraat tungaviuyunik uyaqaik takuukhaultunik qaagani nunap. Hiniktaqvikaqniaqtugut Plummer-p Qugluaqtualukmi Aguniaqtitiviani Kugluktumilu atuqhimaqtulugu havaariyaqt tikminiaqtugulu Bush Hawk-mi qayalikmi tikmiaqmi 80-kilaamitanik umanga inigiyauyumit ubluani. Miniaqtugut mikiyuni tahiqli, pihuklutalu uyaraqtuniqnut haniani tattit. Uyaraktuniqmugarupta naunaiyaivikhamut, atuqniaqtugut mikiyunik kautauyanik nunami naunaiyagakhanik ilituqhaqtakhanik (~1-kilogram-guyut naunaiyagakhat) uyaqanik naunaiyagakhanik. Naunaiyainiaqtugut 8-mit qulinut ubluni nahuriyugulu katitiriami ~100-nik naunaiyagakhanik uyaqanik talvuuna. Naunaiyainiq hiamayaktauniaqtugut ihumagiyaaulaqaqniaqtulu utiriami naunaiyariagani inigiyauyut uqautauyut kiguliqmi Nunaliqijutunik Naunaiyautimi Kanatami qaiqtunik nunauiyuqtinit, havaat atuqhimayut 1980 ukiut atuqtilugit. Havaktivut pigahunit talimanut nunamiutaliqiyit ilauniaqtut qayalikmiklu tikmialikmik. • Huuq: Qaliriiktuuyaaqtut uyaqat hatqiqitut uvani nunami piquaqtut uyaraktaakhanik utuqaqyuaguyunik. Ihuahivaaliqtuni naunaiyautimi ilituqhautit taja atuqtauyuuq Ilihaqvikiyuami Alberta-mi, ilitpaliahimayugut amihunik qanuq igilraat Hilaqyuuaq aulaniganik ilituqhaqhugit mikanuit uyaraktaakhani ilagiyait naniyauhmayut ukunai hiuraliani. Katitiriniaqtugut uyaqanik naunaiyagakhanik piquaqtunik mikanuanik uyaraktaakhanik avugiinik, ahivaqtiqlugit avugiiknigit, ilituqhaqlugilu hunavaluqaqniginik nalunairutininik. Naluhuiqtavut takuupkaqtitauniqtut havaqatinit ihivriuniginik

naunaiyautinik uqauhiini. Ihumami, iliniaqtugut amihunik qanuq taimaniraaluk
Nunaqyuaq aulaniqaqmagaa ilituqhaqniginik ukua igilraat uyaraktaakhani ilaliutihimayut.

Personnel

Personnel on site: 4

Days on site: 12

Total Person days: 48

Operations Phase: from 2022-07-15 to 2022-07-25

$$\Lambda \subset \mathbb{N} \triangleleft \mathbb{N} \xrightarrow{\sigma} \mathbb{N} \xrightarrow{\sigma^b} \mathbb{N}^c$$

ᐱ ᑭ	ᖃᓄᐃᑦᑐᒥᑦ ᐱᑦᐸᐊᖃᖅᑎᐊᖃᑦ<	ᑭᑲᑕᑦ ᓄᐳᖅᑕᑦ	ᑐᔨᑎᑭᑲᖅᑕᑦ ᓄᐳᑦᑦ ᖃᓄᖃᑦ ᐊᑐᑭᑎᑦᑎᐊᖃᑦᑭᑭᑲᑦᐸᑭᑲᑦᐸᑭᑲᑦᐸᑭᑲᑦ	ᐃᑦᔨᖅᑎᑦᑕᖃᖅᐸᐃᑎᑦᑎᐊᑦᑎᐊᑦᑎᐊᑦ ᐃᓄᓄᓄᑦ ᐳᐊᖃᑕᑎᐊᖃᑦᑕᑦᑎᐊᑦᑎᐊᑦ ᑕᐃᑦᑭᑭᑭᑎᐊᖃᑎᑦᑎᐊᑦᑎᐊᑦ	ᖃᓂᓄᓂᖃᑦᑕᑦᑎᐊᑦ ᓄᐳᑦᑎᑭᑎᐊᑦᑎᐊᑦ ᐊᑭᑭᑎᐊᑦ ᔨᑎᑭᑎᐊᑦᐊᐃᑎᑦᑎᐊᑦ ᑭᐳᓄᑦ
Sampling Region of Interest #1	Researching	Crown	NA	NA	NA
Sampling Region of Interest #2	Researching	Crown	NA	NA	NA
Tree River Lodge Base Camp #4	Camp	Crown	NA	NA	NA
Sampling Region of Interest #3	Researching	Inuit Owned Surface Lands	NA	NA	NA
Sampling Region of Interest #5	Researching	Inuit Owned Surface Lands	NA	NA	NA
Sampling Region of Interest #6	Researching	Inuit Owned Sub-Surface Lands	NA	NA	NA

[illegible]

መደብረኛፊ	ፈሰሰፍ	ጋንጥፈኛፊፈሰሰኛፊ	ኛፊፊፊ ጋንጥፈኛፆፈሰሰፆፆ
Information is not available			

ᄒᄆᅃᆫ ᄇᄊᅃᄂᆺ ᄈᅃᆯᅃᄌᄆᄂᄆᅃ

$a^b r^c \Delta \sigma^d \gamma^e$ $\Lambda c_n d_n^e \Delta \sigma^f \gamma^g$ $n n f^g r^h$:

Kitikmeot

$\epsilon \Delta^{\alpha} j^c \wedge J^{\omega} e_D \dot{n} \lrcorner R^{ab} C D F L \downarrow^c$

<p> ሲገባ ለጥያቄው ማስፈጸም ለሚችሉ ሰዎች/ዎች ለሚገኙበት ሰዓት ለሚገኝበት ቦታ ለሚገኝበት ሰዓት ለሚገኝበት ቦታ ለሚገኝበት ሰዓት ለሚገኝበት ቦታ </p>	<p> ለሚገኙበት ሰዓት ለሚገኝበት ቦታ ለሚገኝበት ሰዓት ለሚገኝበት ቦታ ለሚገኝበት ሰዓት ለሚገኝበት ቦታ </p>	<p> ለሚገኙበት ሰዓት ለሚገኝበት ቦታ ለሚገኝበት ሰዓት ለሚገኝበት ቦታ ለሚገኝበት ሰዓት ለሚገኝበት ቦታ </p>	<p> ለሚገኙበት ሰዓት ለሚገኝበት ቦታ ለሚገኝበት ሰዓት ለሚገኝበት ቦታ ለሚገኝበት ሰዓት ለሚገኝበት ቦታ </p>	<p> ለሚገኙበት ሰዓት ለሚገኝበት ቦታ ለሚገኝበት ሰዓት ለሚገኝበት ቦታ ለሚገኝበት ሰዓት ለሚገኝበት ቦታ </p>
<p> የሚገኙበት ሰዓት ለሚገኝበት ቦታ ለሚገኝበት ሰዓት ለሚገኝበት ቦታ ለሚገኝበት ሰዓት ለሚገኝበት ቦታ </p>	<p> Have applied - awaiting decision </p>	<p> Applied, Decision Pending </p>		
<p> ለሚገኙበት ሰዓት ለሚገኝበት ቦታ ለሚገኝበት ሰዓት ለሚገኝበት ቦታ ለሚገኝበት ሰዓት ለሚገኝበት ቦታ </p>	<p> Have applied - awaiting decision </p>	<p> Active </p>		

Project transportation types

Transportation Type	Transportation Mode	Length of Use
Air	Float Plane	

Project accomodation types

Permanent Camp

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◁▷↳σ◁⁹⁶▷⁹⁶

Λ⁹D^c Δ^aR^d⁵⁶ ΔD⁵⁶CΔσD⁵⁶H^d Δ^ebPΔN^dr^c ΔjCΔ^c, Γ^cΔPΔ^c, ⁵⁶bLCr^j⁵⁶, μεPΔ^c ΔP^aR^cΔ

ᐃᓕᑦᑲ ᐱᓂᑦ ᐃᑐᒪᐅᓂᐳᓂᑦ ᓕᓄᐃᑦᑐᓂᓴ	ᓕᑲᑦᑲᑦ	ᐃᓕᑦᑲ - ᓂᑦᑐᓂᓴ	ᑲᓴᑦ ᐃᑐᒪᐅᓂᐳᓂᑦ
Hand hammers	3	1x10x3	We will use handheld rock hammers to sample basement rocks
Bush Hawk on floats	1	1	We will utilize a BushHawk on floats for transport to and from field areas.

[illegible][illegible]

ΔL^{9b} ΔD^{9b} CD^{9b} ΔL^{9b} ΔD^{9b}

[illegible]

Additional Information

SECTION A1: Project Info

SECTION A2: Allweather Road

SECTION A3: Winter Road

SECTION B1: Project Info

SECTION B2: Exploration Activity

SECTION B3: Geosciences

SECTION B4: Drilling

SECTION B5: Stripping

SECTION B6: Underground Activity

SECTION B7: Waste Rock

SECTION B8: Stockpiles

SECTION B9: Mine Development

SECTION B10: Geology

SECTION B11: Mine

SECTION B12: Mill

SECTION C1: Pits

SECTION D1: Facility

SECTION D2: Facility Construction

SECTION D3: Facility Operation

SECTION D4: Vessel Use

SECTION E1: Offshore Survey

SECTION E2: Nearshore Survey

SECTION E3: Vessel Use

SECTION F1: Site Cleanup

SECTION G1: Well Authorization

SECTION G2: Onland Exploration

SECTION G3: Offshore Exploration

SECTION G4: Rig

SECTION H1: Vessel Use

SECTION H2: Disposal At Sea

SECTION 11: Municipal Development

[illegible]

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[illegible]

Miscellaneous Project Information

$\alpha \rightarrow \Delta^{\text{fb}} \text{CD} \sigma^{\text{fb}} \Gamma^{\text{C}} \quad \Delta^{\text{b}} \text{fb} \text{CD} \Gamma^{\text{L}} \Gamma^{\text{C}} \quad \text{fb} \Delta^{\text{C}} \sigma^{\text{fb}} \Gamma^{\text{C}} \quad \langle \text{CD} \Gamma^{\text{L}} \Gamma^{\text{L}} \text{fb} \text{CD} \sigma^{\text{fb}} \Gamma^{\text{C}} \rangle$

Cumulative Effects

Impacts

$\Delta^{\text{qb}}CD\sigma^{\text{qb}}r^C \quad d^n n r C \dot{\sigma}^C \quad d^b \Delta^{\text{qb}}CD r L \dot{r}^C$

[illegible]
$$(P = \langle b \rangle \Delta_P \cap \langle \Delta^a \rangle^C, N = \langle b \rangle \Delta_P \langle \Delta \rangle \langle \Delta^a \rangle^C \langle \Delta \Gamma \rangle \langle \Delta^b \rangle^C \langle \Delta \rangle \langle \Delta^a \rangle^C, M = \langle b \rangle \Delta_P \langle \Delta \rangle \langle \Delta^a \rangle^C \langle \Delta \Gamma \rangle \langle \Delta^b \rangle^C \langle \Delta \rangle \langle \Delta^a \rangle^C, U = \langle b \rangle \Delta_P \langle \Delta^a \rangle^C \langle \Delta \Gamma \rangle \langle \Delta^b \rangle^C)$$

1	polygon	Sampling Region of Interest #1
2	polygon	Sampling Region of Interest #2
3	polygon	Sampling Region of Interest #3
4	point	Tree River Lodge Base Camp #4
5	point	Sampling Region of Interest #5
6	point	Sampling Region of Interest #6

1	polygon	Sampling Region of Interest #1
2	polygon	Sampling Region of Interest #2
3	polygon	Sampling Region of Interest #3
4	point	Tree River Lodge Base Camp #4
5	point	Sampling Region of Interest #5
6	point	Sampling Region of Interest #6