

Chicago, IL 60604  
312-886-0887

----- Forwarded by Christine Wagener/R5/USEPA/US on 05/07/2012 04:34 PM -----

From: Esteban Chiriboga <edchirib[REDACTED]>  
To: Margaret Watkins <watkins[REDACTED]>, Michael Sedlacek/R5/USEPA/US [REDACTED], Christine Wagener/R5/USEPA/US [REDACTED]  
Cc: Nancy Schuldt <NancySchuldt[REDACTED]>, John coleman <jcolema1[REDACTED]>, Rosemary Berens <rozeberens[REDACTED]>, Bill latady <blatady[REDACTED]>, Darren Vogt <DVogt[REDACTED]>, Ann McCammon-Soltis <amsoltis[REDACTED]>  
Date: 05/03/2012 12:47 PM  
Subject: Re: Fwd: RE: Email Regarding Wild Rice Surveys by Barr Engineering (UNCLASSIFIED)

---

Good afternoon Mike and Christine,

Margaret asked me to help answer a couple of the questions that you sent her regarding the errors in the wild rice data collected by Barr. I hope I can clarify a bit but please let me know if I am not clear enough in this email.

This issue came up while reviewing the 2011 Wild Rice and Water Quality Monitoring Report dated February 2011. As you know Barr is surveying the waters around mine sites and potential mine sites partially to set points of compliance for the wild rice sulfate standard. This data is reported as points, in other words, Barr takes a coordinate reading where they identify rice and those data are mapped as points on their maps. GLIFWC has also used these points in the maps we have prepared for our comment letters. So, when we say points, we mean wild rice locations identified by Barr.

In appendix F of this 2011 report, Barr engineering explains that they misidentified wild rice along the upper Partridge River (upstream of Colby Lake) during the 2009 sampling year. In a GIS system, I counted the total points (wild rice locations) on the upper Partridge River (67) and then counted the points that Barr says they misidentified (60) and that is where the numbers and error terms come from. They are sampling the right location but they are confusing Wild Rice with Mana grass.

We are concerned that such a high number of errors may be indicative of a systematic flaw in the Barr sampling plan, quality assurance, staff training, or a combination of problems. These errors in my mind cast doubt on the accuracy of the entire 2009 dataset and possibly the data for other years as well. These concerns are the basis for the data requests in Margaret's email.

I hope this helps. Please feel free to contact me if you have any questions.

Thanks,

esteban

On 5/3/2012 9:12 AM, Margaret Watkins wrote:

To: Margaret Watkins <[watkins\[REDACTED\]](mailto:watkins[REDACTED])>

Cc: Christine Wagener <[Wagener.Christine](mailto:Wagener.Christine)>  
Subject: RE: Email Regarding Wild Rice Surveys by Barr Engineering (UNCLASSIFIED)  
X-KeepSent: 3C17EBBC:10C8EB96-862579F3:004A71DA;  
type=4; name=\$KeepSent  
X-Mailer: Lotus Notes Release 8.5.2FP2 March 23, 2011  
From: Michael Sedlacek <[Sedlacek.Michael](mailto:Sedlacek.Michael)>  
Date: Thu, 3 May 2012 08:46:10 -0500  
X-MIMETrack: Serialize by Router on EPAHUB13/USEPA/US(Release 8.5.2FP2|March 22, 2011) at 05/03/2012 09:46:11 AM,  
Serialize complete at 05/03/2012 09:46:11 AM  
X-Spam-Boreal-Status: No, score=-1.9, required=6.0, tests=BAYES\_00, HTML\_MESSAGE, T\_RP\_MATCHES\_RCVD  
X-Spam-Level:  
X-Spam-Server: imap.boreal.org  
X-Scanned-By: MIMEDefang 2.72 on 216.70.16.14

Margaret,

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Sincerely,

Mike Sedlacek  
Environmental Scientist  
U.S. EPA Region 5  
NEPA Implementation Section  
Phone: [REDACTED]  
Fax: (312) 697-2689  
Email: [sedlacek.michael](mailto:sedlacek.michael) [REDACTED]

From: Margaret Watkins <[watkins](mailto:watkins)>  
To: Thomas Hingsberger <[thomas.j.hingsberger](mailto:thomas.j.hingsberger)>, Katie Koelfgen <[katie.koelfgen](mailto:katie.koelfgen)>  
Cc: Ann Foss <[ann.foss](mailto:ann.foss)>, Richard Clark <[richard.clark](mailto:richard.clark)>, Brad Johnson <[Brad.A.Johnson](mailto:Brad.A.Johnson)>, Michael Sedlacek/R5/USEPA/US@EPA, James Grimes/R5/USEPA/US, Tim Dabney <[tdabney](mailto:tdabney)>, Tom Hale <[thale](mailto:thale)>, Steve Colvin <[steve.colvin](mailto:steve.colvin)>, Bill Johnson <[bill.johnson](mailto:bill.johnson)>  
Date: 05/02/2012 03:45 PM  
Subject: RE: Email Regarding Wild Rice Surveys by Barr Engineering (UNCLASSIFIED)

Good afternoon:

Yes, thank-you Katie, I would like a copy of the supplemental information related to the wild rice farm and the uppermost Partridge River. You can send the CD to my mailing address listed below. I appreciate receiving responses from both the MPCA and the US ACE.

Tribal staff does not expect MPCA staff to direct Barr staff to provide us with the information requested, which is why we took Richard's suggestion to contact Barr directly. According to the Barr 2011 Wild Rice report for the Partridge River, 60 out of 238 points are wrong. And, there was a 25% error for the entire Embarrass River, Partridge River and St Louis River sampling area for 2009. In the upper Partridge River segment, 60 of 67 points are wrong, or an 89% error. In both upper and lower Partridge, 60 of 78 points are wrong, or a 77% error. Therefore, it seems that Barr would likely want to provide the quality assurance/quality control data that we are requesting, and also provide the US ACE and MPCA with the same quality assurance. By providing quality assurance/quality control data, MPCA could potentially use Barr's surveys to determine compliance points for the numerous mining operations that have paid for Barr's assistance to identify wild rice waters.

Tribes would like to request a face-to-face consultation meeting with MPCA regarding the wild rice survey's done by Barr. It would be very helpful if both the MPCA Special Projects staff and the Water Quality Standards staff could attend.

Sincerely,

Margaret Watkins  
Grand Portage Environmental Department  
PO Box 428  
Grand Portage, MN 55605

At 10:39 AM 5/2/2012, Hingsberger, Thomas J MVP wrote:

Classification: UNCLASSIFIED

Caveats: NONE

Margaret, I would add that we will rely on Steve Eggers to review Barr's/ERM's work on wild rice

Thanks, Tom

**From:** Koelfgen, Katie E (MPCA) [<mailto:katie.koelfgen>]  
**Sent:** Wednesday, May 02, 2012 10:28 AM  
**To:** Margaret Watkins  
**Cc:** Hingsberger, Thomas J MVP; Foss, Ann (MPCA); Clark, Richard (MPCA)  
**Subject:** Email Regarding Wild Rice Surveys by Barr Engineering

Margaret,

I am responding to your April 25<sup>th</sup> email regarding wild rice surveys conducted by Barr Engineering. The MPCA has previously provided you with all the information the MPCA has in regard to your request, with the exception of a February 2012 submittal from Barr/PolyMet, in which they provided the MPCA with supplemental information related to the wild rice farm and the uppermost Partridge River. The submittal is ~73 MB, and can be sent to you on a CD. Please let me know if you would like that information, and/or if you need us to resend any other information. Any further information that Barr may have that hasn't been supplied to the MPCA will have to be obtained directly from Barr, or from the company that hired Barr to conduct the surveys. It should be noted that the Data Practices Act only applies to state agencies, so Barr and the companies are not bound by that law, nor can the state agencies direct them to provide that information to you.

Please let me know if you have further questions.

Katie Koelfgen  
Supervisor, Metallic Mining Sector  
Industrial Division

Minnesota Pollution Control Agency  
520 Lafayette Road North  
St. Paul, MN 55155  
Office: [REDACTED]  
Cell: (651) 403-2678  
[katie.koelfgen](mailto:katie.koelfgen@[REDACTED]) [REDACTED]

Classification: UNCLASSIFIED  
Caveats: NONE

--

Esteban Chiriboga  
Great Lakes Indian Fish and Wildlife Commission  
550 Babcock Dr. Rm. B-102  
Madison, WI 53706  
Phone: 608-263-2873  
Fax: 608-262-2500

EPA-R5-2014-001593-36

**Christine  
Wagener/R5/USEPA/US**

05/07/2012 04:56 PM

To Krista McKim, Steven Padovani

cc

bcc

Subject Re: PolyMet underground mine

[Referenced document.](#)

Margaret Watkins

Yes. You can find it on SEDAR or E...

05/07/2012 04:33:08 PM

From: Margaret Watkins <watkins [REDACTED]>  
To: Christine Wagener/R5/USEPA/US [REDACTED]  
Cc: Krista McKim/R5/USEPA/US [REDACTED], Steven Padovani/R5/USEPA/US [REDACTED]  
Date: 05/07/2012 04:33 PM  
Subject: Re: PolyMet underground mine

---

Yes. You can find it on SEDAR or EDGAR. Simply do a search using the document name: POLYMET MINING CORP. TECHNICAL REPORT on the NorthMet Project Located in N-E Minnesota, USA, near the City of Hoyt Lakes *Technical Report on the Results of a Definitive Feasibility Study of the NorthMet Project* Report compiled from multiple sources under the guidance and supervision of D. J. Hunter C.Eng. CP (Mining) October 2006

Margaret

At 03:28 PM 5/7/2012, Christine Wagener wrote:

Hi Margaret,

Where did you find this document? Is it publically available?

From: Margaret Watkins <watkins [REDACTED]>  
To: John coleman <jcolemal [REDACTED]>, Esteban Chiriboga <edchirib [REDACTED]>, Nancy Schuldt <NancySchuldt [REDACTED]>  
Cc: Michael Sedlacek/R5/USEPA/US [REDACTED], James Grimes/R5/USEPA/US [REDACTED] Christine Wagener/R5/USEPA/US [REDACTED]  
Date: 05/07/2012 12:58 PM  
Subject: PolyMet underground mine

Excerpts from the Bateman Definitive Feasibility Study on page 27 (POLYMET MINING CORP. TECHNICAL REPORT on the NorthMet Project Located in N-E Minnesota, USA, near the City of Hoyt Lakes *Technical Report on the Results of a*

*Definitive Feasibility Study of the*

*NorthMet Project* Report compiled from multiple sources under the guidance and supervision of D. J. Hunter C.Eng. CP (Mining) October 2006) seem to contradict the most recent underground mining position paper that states that the mineral bearing unit in the proposed pit area is only approximately 100 feet thick:

"Unit 1: consists of a heterogeneous mixture of troctolitic to gabbroic rocks, with abundant inclusions of hornfelsed sedimentary footwall rocks and lesser discontinuous layers of ultramafic rock. **Unit 1 is the dominant sulphide-bearing member in the NorthMet deposit.** At least three Platinum group element ("PGE") enriched "stratabound" layers are present within Unit 1, the uppermost of which has the highest concentrations of PGE. **Unit 1 is 200 feet to 1000 feet thick, averaging 450 feet.**

Unit 2: consists of homogenous troctolitic rocks, with **minor sulphide mineralization**, and a fairly persistent basal ultramafic layer that separates Unit 2 from Unit 1. **Unit 2 averages about 200 feet thick.**

Unit 3: consists of a fine-grained, poikilitic, anorthositic troctolite. Unit 3 is the major marker bed within the deposit due to its fine-grained nature and the presence of distinctive olivine oikocrysts that give the rock a mottled appearance. Unit 3 contains little or no mineralization and averages 250 feet thick.

Unit 4: consists of homogenous ophitic augite troctolite with a local ultramafic layer at, or near, the base of the unit. There is little or no mineralization in this unit and it averages about 300 feet thick.

Units 5, 6, and 7: consist of homogenous anorthositic troctolite grading to ophitic augite troctolite; units 6 and 7 have persistent ultramafic bases. There is little or no economic sulphide mineralization except for a small horizon in six drill holes in Unit 6. These generally unmineralized units average about 1,200 feet in thickness, but because the top of Unit 7 has not been seen in drill core, this figure is probably a minimum. Preliminary assessment shows that PolyMet would intersect very little of these upper units in its pit development."

Page 29:

"Figure 9-2 shows a simplified geologic cross-section and illustrates the relationship between the various Units comprising the deposit. **Unit 1 is mineralised throughout the deposit and generally shows highest grades near its top.** Although current resource estimates have been limited to material within approximately 1,100 feet of surface that has a reasonable expectation of being mined (based on metal price and mining and processing cost assumptions) in the foreseeable future, **deep drilling**

has shown  
Unit 1 to be mineralised to depths of at least 2,500 feet below surface."

Page 37:

USX geologists logged the holes, and sampled those parts with visible mineralization, amounting to about one-sixth of the total USX drilling. Their sampling goal was development of an underground resource, rather than open pit, hence only the most continuous, high grade zones were sampled.

PolyMet has since sampled virtually all available USX core in the area of anticipated mining, as well as some outlying areas. Some deep holes outside the expected mining zone remain to be sampled and property wide, over 50% of the Duluth Complex intercept has been sampled.

Page 85:

#### **Mining Costs**

For purposes of the initial pit optimisation, AMDAD prepared a preliminary mining cost estimate of US\$1.30 per short ton of rock (ore and waste) at surface, with an increase of US\$0.02 per ton for each 20 feet of depth. An additional US\$0.05 per ton was added to the ore cost to cover grade control. Rail haulage operations from the pit to the concentrator were estimated at US\$0.25 per ton.

EPA-R5-2014-001593-37

**Michael  
Sedlacek/R5/USEPA/US**  
05/08/2012 07:08 AM

To Christine Wagener, Thomas Poleck, Krista McKim, Melanie  
Haveman, James Grimes  
cc  
bcc  
Subject Fw: Email Regarding Wild Rice Surveys by Barr Engineering  
(UNCLASSIFIED)

An interesting read.

----- Forwarded by Michael Sedlacek/R5/USEPA/US on 05/08/2012 07:07 AM -----

From: Esteban Chiriboga <edchirib[REDACTED]>  
To: Margaret Watkins <watkins[REDACTED]>, Michael Sedlacek/R5/USEPA/US [REDACTED], Christine  
Wagener/R5/USEPA/US [REDACTED]  
Cc: Nancy Schuldt <NancySchuldt[REDACTED]>, John coleman <jcolema1[REDACTED]>, Rosemary  
Berens <rozeberens[REDACTED]>, Bill latady <blatady[REDACTED]>, Darren Vogt  
<DVogt@1854treatyauthority.org>, Ann McCammon-Soltis <amsoltis[REDACTED]>  
Date: 05/03/2012 12:47 PM  
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Subject: RE: Email Regarding Wild Rice Surveys by Barr Engineering (UNCLASSIFIED)  
X-KeepSent: 3C17EBBC:10C8EB96-862579F3:004A71DA;  
type=4; name=\$KeepSent  
X-Mailer: Lotus Notes Release 8.5.2FP2 March 23, 2011  
From: Michael Sedlacek <[Sedlacek.Michael](mailto:Sedlacek.Michael)>  
Date: Thu, 3 May 2012 08:46:10 -0500  
X-MIMETrack: Serialize by Router on EPAHUB13/USEPA/US(Release 8.5.2FP2|March 22, 2011) at 05/03/2012 09:46:11 AM,  
Serialize complete at 05/03/2012 09:46:11 AM  
X-Spam-Boreal-Status: No, score=-1.9, required=6.0, tests=BAYES\_00, HTML\_MESSAGE, T\_RP\_MATCHES\_RCVD  
X-Spam-Level:  
X-Spam-Server: imap.boreal.org  
X-Scanned-By: MIMEDefang 2.72 on 216.70.16.14

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NEPA Implementation Section  
Phone: [REDACTED]  
Fax: (312) 697-2689

Email: [sedlacek.michael](mailto:sedlacek.michael)

From: Margaret Watkins <[watkins](mailto:watkins)>  
To: Thomas Hingsberger <[thomas.j.hingsberger](mailto:thomas.j.hingsberger)>, Katie Koelfgen <[katie.koelfgen](mailto:katie.koelfgen)>  
Cc: Ann Foss <[ann.foss](mailto:ann.foss)>, Richard Clark <[richard.clark](mailto:richard.clark)>, Brad Johnson <[Brad.A.Johnson](mailto:Brad.A.Johnson)>, Michael Sedlacek/R5/USEPA/US@EPA, James Grimes/R5/USEPA/US, Tim Dabney <[tdabney](mailto:tdabney)>, Tom Hale <[thale](mailto:thale)>, Steve Colvin <[steve.colvin](mailto:steve.colvin)>, Bill Johnson <[bill.johnson](mailto:bill.johnson)>  
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Katie Koelfgen  
Supervisor, Metallic Mining Sector  
Industrial Division  
Minnesota Pollution Control Agency  
520 Lafayette Road North  
St. Paul, MN 55155  
Office: (651) 757-2499  
Cell: (651) 403-2678  
[katie.koelfgen](mailto:katie.koelfgen) [REDACTED]

Classification: UNCLASSIFIED  
Caveats: NONE

--

Esteban Chiriboga  
Great Lakes Indian Fish and Wildlife Commission  
550 Babcock Dr. Rm. B-102  
Madison, WI 53706  
Phone: [REDACTED]  
Fax: 608-262-2500