From: Stephen Cohen
To: Betty Garrett
Date: 06/28/2007 7:24:15 AM
Subject: Fwd: RESEND - Catchment Basin excavation - Kminus3 Area Nnortheast Corner)

Please Docket in Kennecott.

>>> "Paulson, Oscar (RTEA)" <Oscar.Paulson@riotinto.com> 06/24/2007 3:36 PM >>>
Stephen Cohen: This is a resend of a message rejected by your server due to attachment size. It is being resent with one (1) attachment. The second attachment will be sent separately. Oscar PaulsonFacility Supervisor Stephen Cohen: The following information is being provided as documentation that the radium-226 and the associated organic materials found in the Kminus3 grid and the Northeast corner of the Catchment Basin Excavation are in fact naturally occurring and as such that area of the excavation is being backfilled and the excavation is being completed: Discovery of black organic material in the Northeast corner of the excavation While excavating radium-226 in excess of 15 picoCuries per gram above accepted background in the Northeast corner of the excavation in and around and east of the Kminus3 grid, sand containing black organic material was discovered as shown in the attached image (IMG_1468.JPG) which is also included below: Analysis of this material and the surrounding sand Analysis results for this material and the surrounding sand are included below: SampleUraniumThorium-230Radium-226Organic Characteristics ActivityPrecisionActivityPrecisionDROORHTHETOC (mg/kg)(pci/gr)(pci/gr)(pci/gr)(pci/gr)(mg/kg)(mg/kg)(mg/kg)(percent) Black material2550393173969226804100022 Sand with Black material2350708293266.42116508345This material exhibits high concentration of organics, 22 percent for the black material shown in the image and 5 percent for the surrounding sands. The material also contains high concentrations of uranium, thorium and radium-226 The black material was analyzed by Energy Laboratories, Inc who also had it examined by: Gareth D. Mitchell Consulting Geologist
He concluded his examination by stating: These observations demonstrate that the organic matter contained in sample #C07051289-001A were derived from terrestrial plants with secondary woody tissues that have gone through at least the initial stage of coalification. Depending upon stratigraphy and sample location in the field, the type and condition of organic matter and mineralization observed suggests that it is naturally occurring. His report is attached as the Microsoft word (*.doc) file ELI845.doc Based on the above report it is concluded that the anomalous radium-226 concentration discovered in the Kminus3 grid and in surrounding areas including some grids remaining in the excavation in this area at present, are natural and are derived from naturally occurring uranium in the sands concentrated by localized naturally occurring organic materials. The probability (pending receipt of analytical results) that the contamination in the Kminus3 area was natural was briefly discussed with you in a telephone conversation on Wednesday, May 23, 2007. If you have any questions please do not hesitate to contact me. Oscar

Paulson Facility Supervisor
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Sweetwater Uranium Project
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42 Miles Northwest of Rawlins
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Mail Envelope Properties (46839A54.E99 : 13 : 9724)

Subject: Fwd: RESEND - Catchment Basin excavation - Kminus3 Area Nnortheast Corner)
Creation Date 06/28/2007 7:24:04 AM
From: Stephen Cohen

Created By: SJC7@nrc.gov

Recipients
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Files	Size	Date & Time
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IMAGE.jpeg	31622	
IMG_1468.JPG	2247165	06/28/2007 7:23:25 AM
Mime.822	3161953	06/28/2007 7:24:03 AM

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PILOT Easytouch FINE

From: Stephen Cohen
To: Betty Garrett
Date: 06/28/2007 7:29:35 AM
Subject: Fwd: Second Attachment

Please Docket in Kennecott.

>>> "Paulson, Oscar (RTEA)" <Oscar.Paulson@riotinto.com> 06/24/2007 3:39 PM >>>
Stephen Cohen: The message contains the second attachment ELI1845.doc a Microsoft Word (*.doc) file.
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Subject:	Fwd: Second Attachment
Creation Date	06/28/2007 7:29:25 AM
From:	Stephen Cohen
Created By:	SJC7@nrc.gov

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Post Office	**Route**
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Files	**Size**	**Date & Time**
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ELI1845.doc	5794304	06/28/2007 7:24:59 AM

Options

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Return Notification:	None
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Security:	Standard

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Junk Mail handling disabled by User
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Gareth D. Mitchell
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June 13, 2007

Mr. Steve Dobos
Energy Laboratories, Inc.
2393 Salt Creek Hwy.
Casper, WY 82602

RE: **Petrographic Evaluation of Sample #C07051289-001A from P.O. # 1845**

Dear Mr. Dobos,

Work requested in your purchase order of 5-29-07 for sample #C07051289-001A to perform carbon identification using reflected-light optical microscopy has been completed and the final report is attached.

If there are any questions or concerns, please call or e-mail me directly.

Thank you.

Sincerely,

Gareth Mitchell

Enclosure: Report

Final Report

To: Mr. Steve Dobos
From: Gareth D. Mitchell
Date: June 13, 2007
Subject: **Petrographic Evaluation of Sample #C07051289-001A from P.O. # 1845**

Request

A sample identified as **#C07051289-001A** was received 6-7-07 for petrographic evaluation. The sample had been shipped in a cooler containing bags of ice and was still cold when received. Consequently, the specimen was placed under refrigeration until sample preparation was initiated. As established from our email conversation of 5-24-07, optical microscopy was to be employed to determine the nature of the organic matter found in the sample and specifically to determine if "any naturally-occurring organic matter" (such as lignin, kerogen, bitumen, etc. that might have precipitated uranium at this location) was present.

Procedures

The sample was found to be composed of three fairly large angular particles (~10 g) and a coarse powder (~11 g). These components were separated and allowed to come to room temperature before they were inspected. The largest particle was soft, organic matter which had prominent bedding and considerable surface moisture, whereas the particulate matter ranged in particle size (0.5 – 3.0 mm), appeared to be a mixture of light and dark colored materials and was agglomerated with surface moisture. To prepare an optical mount suitable for reflected-light microscopy, the moisture content had to be reduced. The large particle was placed in a drying pan and a one-quarter split of the particulate sample retrieved by riffling was placed in second pan. Both samples were placed in a vacuum oven between 30-50°C for about 18 hrs with the result that the large particle had become swollen, desiccated and broken into smaller segments, while the particulate sample was composed of individual loose particles.

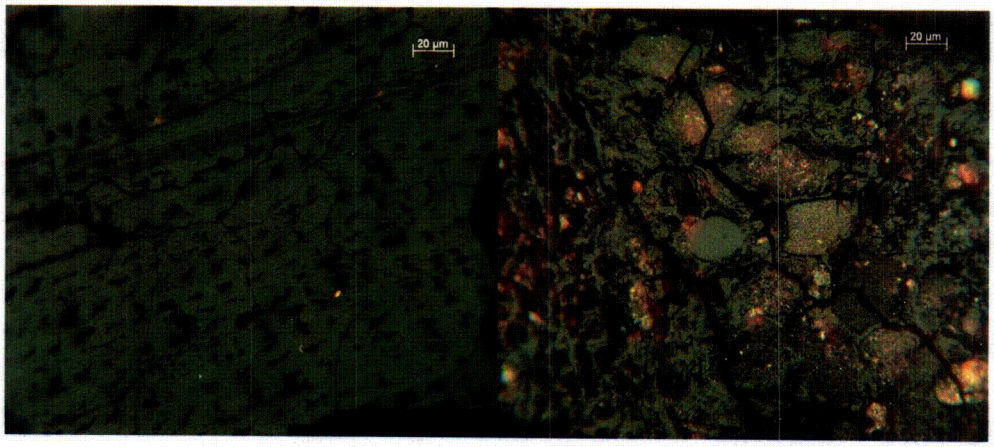
Remnants of the large particle were glued fast to the bottom of a 28 mm sample mold and embedded under vacuum with a cold-setting epoxy (EL01). The particulate sample (EL02) was vacuum impregnated in epoxy resin and placed in a centrifuge to establish a density/particle-size gradient. After hardening, the sample was cut longitudinally to expose the particle gradation and mounted 25 mm sample mold with additional epoxy. Both specimen surfaces were ground using 400 and 600 grit papers and polished using 0.3 and 0.05 micron alumina slurries on a high-nap cloth and silk, respectively. The sample was examined first in air using blue-light (436 nm) irradiation inspecting the 520 nm emission surface at 500X magnification and then using white

light employing an oil immersion objective at 625X magnification using Zeiss research microscopes. In addition, a few reflectance readings were taken from the main organic component identified in EL01. A Leitz MPV2 reflectance photometer system at 625 X magnification in oil immersion and polarized white-light was used to collect maximum reflectance values from 11 different areas and the mean value is provided below. Mean reflectance values are an acceptable procedure for determination of organic maturity.

Results

The organic matter observed in both specimens (EL01 and EL02) separated from sample #C07051289-001A is basically humified woody tissue of very low maturity (mean maximum reflectance in oil of 0.18 % ±0.01) that contains fluorescent and presumably resinous material within open cell lumens and along some open fractures. A few fluorescent bodies appearing to be amorphous organic matter were the only other organic matter observed in either sample.

As seen in the photomicrographs below, the regular alignment of cell wall and filled or open lumens taken from EL01 are compared with a fragment of humified and gelified woody tissue found in specimen EL02. The large particle separated as EL01 was composed entirely



EL01 **EL02**

of woody tissue that had gone through the biochemical stage of coalifiaction in which the cell walls were gelified and converted to humic matter. The tissue observed in the EL01 photograph exhibits little detail within the remnant cell walls and most of the lumens were filled with amorphous humic material or a fluorescing resin (dark areas), suggesting that the tissue has gone beyond the peat stage. However, the very low mean reflectance suggests that it may not have reached the rank of lignite in terms of coal maturity.

The photograph of the dominant organic matter in specimen EL02 shows many rounded bodies which in brown coal terminology are referred to as gelinite. As the name implies the humic matter from which they were derived were once gelatinous and have since formed into these amorphous bodies surrounded by the remnants of cell walls. In addition to organic matter, specimen EL02 contained mostly angular fragments of minerals and rocks composed of quartz, other silicates and carbonate. Furthermore, some of the organic material had been infilled and was in the early stage of being replaced by silica.

These observations demonstrate that the organic matter contained in sample #C07051289-001A were derived from terrestrial plants with secondary woody tissues that have gone through at least the initial stage of coalification. Depending upon stratigraphy and sample location in the field, the type and condition of organic matter and mineralization observed suggests that it is naturally occurring.