

Conversation Contents

FW: 1996 USGS Report Identifying Erionite Locations in Arizona

Attachments:

/54. FW: 1996 USGS Report Identifying Erionite Locations in Arizona/2.1 BLM 2016 Kirkland AZ Area Erionite and Asbestos Sample Locations.pdf
/54. FW: 1996 USGS Report Identifying Erionite Locations in Arizona/2.2 BLM 2016 Kirkland AZ Area Erionite and Asbestos SEM report.pdf
/54. FW: 1996 USGS Report Identifying Erionite Locations in Arizona/2.3 BLM 2016 Kirkland AZ Area Erionite and Asbestos XRD report.pdf
/54. FW: 1996 USGS Report Identifying Erionite Locations in Arizona/3.1 BLM 2016 Kirkland AZ Area Erionite and Asbestos Sample Locations.pdf
/54. FW: 1996 USGS Report Identifying Erionite Locations in Arizona/3.2 BLM 2016 Kirkland AZ Area Erionite and Asbestos SEM report.pdf
/54. FW: 1996 USGS Report Identifying Erionite Locations in Arizona/3.3 BLM 2016 Kirkland AZ Area Erionite and Asbestos XRD report.pdf
/54. FW: 1996 USGS Report Identifying Erionite Locations in Arizona/4.1 BLM 2016 Kirkland AZ Area Erionite and Asbestos Sample Locations.pdf
/54. FW: 1996 USGS Report Identifying Erionite Locations in Arizona/4.2 BLM 2016 Kirkland AZ Area Erionite and Asbestos SEM report.pdf
/54. FW: 1996 USGS Report Identifying Erionite Locations in Arizona/4.3 BLM 2016 Kirkland AZ Area Erionite and Asbestos XRD report.pdf

"Steven A. Rose" <Rose.Steven@azdeq.gov>

From: "Steven A. Rose" <Rose.Steven@azdeq.gov>
Sent: Thu May 25 2017 11:38:39 GMT-0600 (MDT)
To: "scave@blm.gov" <scave@blm.gov>
Subject: FW: 1996 USGS Report Identifying Erionite Locations in Arizona

Hello Shelby, As requested, Below is the link to the USGS paper referenced by NIOSH that identified erionite deposit locations in Arizona with references.

<https://pubs.usgs.gov/of/1996/0018/report.pdf> Steve Rose Air Quality Inspections & Enforcement Unit Air Quality Facilities Emissions Control Section Arizona Department of Environmental Quality 1110 West Washington Street Phoenix, Arizona 85007 602-771-2280 602-771-2299 (fax)

"Cave, Shelby" <scave@blm.gov>

From: "Cave, Shelby" <scave@blm.gov>
Sent: Wed May 31 2017 13:38:51 GMT-0600 (MDT)
To: "Steven A. Rose" <Rose.Steven@azdeq.gov>
Subject: Re: FW: 1996 USGS Report Identifying Erionite Locations in Arizona
BLM 2016 Kirkland AZ Area Erionite and Asbestos Sample

Attachments:

Locations.pdf BLM 2016 Kirkland AZ Area Erionite and Asbestos
SEM report.pdf BLM 2016 Kirkland AZ Area Erionite and Asbestos
XRD report.pdf

Thank you for that report! Thinly bedded water-lain ash fall is exactly how I would have interpreted the location south of Kirkland. It looks like erionite in Arizona has been identified in a marker bed, which means it could be compositionally influenced, or influenced by a certain depositional setting, but since erionite is a secondary alteration product, I do think all similar Mid-Tertiary rhyolites still need to be tested to some extent before being disturbed to rule out its presence, as well as any other sites or units with identified zeolite alteration.

I have talked to my field manager about establishing a best practice for erionite testing at BLM Arizona and I would love your input on this matter in order to make something that is consistent across state and federal guidelines. I'm a little concerned about the turn-around time for our internal lab, so we may use an outside lab. It will probably be one of the ones from the North Dakota report, but I will check with our state mineral examiners to verify which labs they think are the highest quality.

I did follow up with Areta, and she agreed to do annual testing for erionite specifically, and that initial testing should include a grid across the footprint of the pit which would be informed by Al Burch's mapping. I convinced her that it was in everyone's best interest (... and also required :) but I agreed to keep the exact geochemical reports confidential among the regulatory agencies if that was what she wanted, since geological composition is proprietary information. The NEPA analysis would still report annual testing for airborne carcinogens just without listing erionite specifically in the public forum. She reacted to the first round of testing the same way. Just FYI, I always keep the operator informed of all major communications and requirements because she is ultimately responsible and liable, but for some internal incremental steps related to the geology I do go through Al Burch first.

I have attached our preliminary spot testing for erionite and asbestos minerals at the Kirkland Quarry site and stockpiles as it was reported.

Talk to you soon,

-Shelby

On Thu, May 25, 2017 at 10:38 AM, Steven A. Rose <Rose.Steven@azdeq.gov> wrote:
Hello Shelby,

As requested,

Below is the link to the USGS paper referenced by NIOSH that identified erionite deposit locations in Arizona with references.

<https://pubs.usgs.gov/of/1996/0018/report.pdf>

Steve Rose
Air Quality Inspections & Enforcement Unit
Air Quality Facilities Emissions Control Section
Arizona Department of Environmental Quality
1110 West Washington Street
Phoenix, Arizona 85007
602-771-2280
602-771-2299 (fax)

--

Shelby R. Cave, PhD
Geologist | Hassayampa Field Office
Phoenix District | Bureau of Land Management
[office] 623.580.5639
[fax] 623.580.5580

"Cave, Shelby" <scave@blm.gov>

From: "Cave, Shelby" <scave@blm.gov>
Sent: Thu Jun 01 2017 12:23:56 GMT-0600 (MDT)
Areta Zouvas <aretazouvas@kirklandmining.com>, Al Burch <burchservices1@aol.com>, "Amanda L. Best" <abest@westlandresources.com>, "Hawes, David (Rem)" <rhawes@blm.gov>, "Buttazoni, Brian" <bbuttazoni@blm.gov>, "savarirayan.naveen" <savarirayan.naveen@azdeq.gov>, vaidyanathan.balaji@azdeq.gov
To:
Subject: Fwd: FW: 1996 USGS Report Identifying Erionite Locations in Arizona
BLM 2016 Kirkland AZ Area Erionite and Asbestos Sample Locations.pdf BLM 2016 Kirkland AZ Area Erionite and Asbestos SEM report.pdf BLM 2016 Kirkland AZ Area Erionite and Asbestos XRD report.pdf
Attachments:

FYI: This message was sent previously to ADEQ and I mistakenly left off the carbon copy recipients.

----- Forwarded message -----

From: **Cave, Shelby** <scave@blm.gov>
Date: Wed, May 31, 2017 at 12:38 PM
Subject: Re: FW: 1996 USGS Report Identifying Erionite Locations in Arizona
To: "Steven A. Rose" <Rose.Steven@azdeq.gov>

Thank you for that report! Thinly bedded water-lain ash fall is exactly how I would have interpreted the location south of Kirkland. It looks like erionite in Arizona has been identified in a marker bed, which means it could be compositionally influenced, or influenced by a certain depositional setting, but since erionite is a secondary alteration product, I do think all similar Mid-Tertiary rhyolites still need to be tested to some extent before being disturbed to rule out its presence, as well as any other sites or units with identified zeolite alteration.

I have talked to my field manager about establishing a best practice for erionite testing at BLM Arizona and I would love your input on this matter in order to make something that is consistent across state and federal guidelines. I'm a little concerned about the turn-around time for our internal lab, so we may use an outside lab. It will probably be one of the ones from the North Dakota report, but I will check with our state mineral examiners to verify which labs they think are the highest quality.

I did follow up with Areta, and she agreed to do annual testing for erionite specifically, and that initial testing should include a grid across the footprint of the pit which would be informed by Al

Burch's mapping. I agreed to keep the exact geochemical reports confidential among the regulatory agencies if that was what she wanted, since geological composition is proprietary information. The NEPA analysis would still report annual testing for airborne carcinogens just without listing erionite specifically in the public forum.

As per Areta's request I have attached our preliminary spot testing for erionite and asbestos minerals at the Kirkland Quarry site and stockpiles as it was reported

Talk to you soon,
-Shelby

On Thu, May 25, 2017 at 10:38 AM, Steven A. Rose <Rose.Steven@azdeq.gov> wrote:
Hello Shelby,

As requested,

Below is the link to the USGS paper referenced by NIOSH that identified erionite deposit locations in Arizona with references.

<https://pubs.usgs.gov/of/1996/0018/report.pdf>

Steve Rose
Air Quality Inspections & Enforcement Unit
Air Quality Facilities Emissions Control Section
Arizona Department of Environmental Quality
1110 West Washington Street
Phoenix, Arizona 85007
602-771-2280
602-771-2299 (fax)

--

Shelby R. Cave, PhD
Geologist | Hassayampa Field Office
Phoenix District | Bureau of Land Management
[office] 623.580.5639
[fax] 623.580.5580

--

Shelby R. Cave, PhD
Geologist | Hassayampa Field Office
Phoenix District | Bureau of Land Management
[office] 623.580.5639
[fax] 623.580.5580

"Steven A. Rose" <Rose.Steven@azdeq.gov>

From:

"Steven A. Rose" <Rose.Steven@azdeq.gov>

Sent: Thu Jun 01 2017 12:53:05 GMT-0600 (MDT)
To: "areta@kirklandmining.com" <areta@kirklandmining.com>
"scave@blm.gov" <scave@blm.gov>,
"burchservices1@aol.com" <burchservices1@aol.com>, Balaji
CC: Vaidyanathan <Vaidyanathan.Balaji@azdeq.gov>, "Naveen D.
Savarirayan" <Savarirayan.Naveen@azdeq.gov>, Dennis Turner
<Turner.Dennis@azdeq.gov>
Subject: FW: 1996 USGS Report Identifying Erionite Locations in Arizona
BLM 2016 Kirkland AZ Area Erionite and Asbestos Sample
Attachments: Locations.pdf BLM 2016 Kirkland AZ Area Erionite and Asbestos
SEM report.pdf BLM 2016 Kirkland AZ Area Erionite and Asbestos
XRD report.pdf

Dear Ms. Zouvas:

As you requested yesterday during our teleconference, below please find an E-Mailed from Ms. Shelby Cave of BLM, in reply to an E-Mail from me on May 25, 2017.

Thank you for all your and Mr. Burch's recent communications with ADEQ and for your and Kirkland Mining Co.'s efforts to comply with Arizona's air quality requirements.

Sincerely,

Steve Rose
Air Quality Inspections & Enforcement Unit
Air Quality Facilities Emissions Control Section
Arizona Department of Environmental Quality
1110 West Washington Street
Phoenix, Arizona 85007
602-771-2280
602-771-2299 (fax)

From: Cave, Shelby [mailto:scave@blm.gov]
Sent: Wednesday, May 31, 2017 12:39 PM
To: Steven A. Rose <Rose.Steven@azdeq.gov>
Subject: Re: FW: 1996 USGS Report Identifying Erionite Locations in Arizona

Thank you for that report! Thinly bedded water-lain ash fall is exactly how I would have interpreted the location south of Kirkland. It looks like erionite in Arizona has been identified in a marker bed, which means it could be compositionally influenced, or influenced by a certain depositional setting, but since erionite is a secondary alteration product, I do think all similar Mid-Tertiary rhyolites still need to be tested to some extent before being disturbed to rule out its presence, as well as any other sites or units with identified zeolite alteration.

I have talked to my field manager about establishing a best practice for erionite testing at BLM Arizona and I would love your input on this matter in order to make something that is consistent across state and federal guidelines. I'm a little concerned about the turn-around time for our internal lab, so we may use an outside lab. It will probably be one of the ones from the North Dakota report, but I will check with our state mineral examiners to verify which labs they think are the highest quality.

I did follow up with Areta, and she agreed to do annual testing for erionite specifically, and that initial testing should include a grid across the footprint of the pit which would be informed by Al Burch's mapping. I convinced her that it was in everyone's best interest (... and also required :) but I agreed to keep the exact geochemical reports confidential among the regulatory agencies if that was what she wanted, since geological composition is proprietary information. The NEPA analysis would still report annual testing for airborne carcinogens just without listing erionite specifically in the public forum. She reacted to the first round of testing the same way. Just FYI, I always keep the operator informed of all

major communications and requirements because she is ultimately responsible and liable, but for some internal incremental steps related to the geology I do go through Al Burch first.

I have attached our preliminary spot testing for erionite and asbestos minerals at the Kirkland Quarry site and stockpiles as it was reported.

Talk to you soon,

-Shelby

On Thu, May 25, 2017 at 10:38 AM, Steven A. Rose <Rose.Steven@azdeq.gov> wrote:

Hello Shelby,

As requested,

Below is the link to the USGS paper referenced by NIOSH that identified erionite deposit locations in Arizona with references.

<https://pubs.usgs.gov/of/1996/0018/report.pdf>

Steve Rose
Air Quality Inspections & Enforcement Unit
Air Quality Facilities Emissions Control Section
Arizona Department of Environmental Quality
1110 West Washington Street
Phoenix, Arizona 85007
602-771-2280
602-771-2299 (fax)

--

Shelby R. Cave, PhD
Geologist | Hassayampa Field Office
Phoenix District | Bureau of Land Management
[office] 623.580.5639
[fax] 623.580.5580