To: JAMES D WALKER[jameswalker5@msn.com]
Cc: Rao, Kate[Rao.kate@epa.gov]
From: Rumrill, Nancy
Sent: Wed 3/1/2017 6:40:17 PM
Subject: FW: Question regarding step rate testing
r5-deepwell-guidance7-determination-maximum-injection-pressure-class1-199401-9pp[1].pdf
INFO-StepRateTest[1].pdf

Hi Jim,

Ex. 5 - Deliberative Process

Thanks, Nancy

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United States Environmental Protection Agency

Nancy Rumrill (rumrill.nancy@epa.gov)

Drinking Water Protection Section (WTR-3-2)

US EPA, Region IX

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San Francisco, CA 94105

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From: Doug Bartlett [mailto:DBartlett@clearcreekassociates.com]
Sent: Wednesday, March 01, 2017 7:40 AM
To: Rumrill, Nancy <Rumrill.Nancy@epa.gov>
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Cc: Rebecca Sawyer <rsawyer@excelsiormining.com>; Alison Jones <ajones@clearcreekassociates.com>; Roland Goodgame <rgoodgame@excelsiormining.com>
Subject: Question regarding step rate testing

Nancy – in our meeting last week, you may recall we had a discussion about step rate testing to verify the fracture gradient proposed for the Gunnison project. I have attached two papers that I found online from EPA regarding the methodology for step rate testing. Are there any other papers that I should be reviewing? The step rate methodology that is described seems to match with what Excelsior did to obtain the fracture gradient value proposed in the UIC application.

Any guidance you can give me on this would be greatly appreciated!

Thank you,

Doug Bartlett

R. Douglas Bartlett, RG, CHG

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