

Documents

From

Department
Of Energy

[REDACTED]

parent context and became flat-out wrong.

Now the real question is: is the climate [REDACTED] going to meet the need for the [REDACTED] and the [REDACTED] to have long term climate states (and infiltration changes accompanying those states) that are defensible???

I think showing it doesn't matter from a [REDACTED]-dose perspective is not sufficient to establish whether or not this part of the analysis is credible and has a defensible basis. We would all agree that showing that it has no impact on system performance does lower the burden of proof necessary to support the modeling (the confidence-burden), however.

Finally, the agreement to show only 10,000 year calculations in [REDACTED] and [REDACTED] is not an agreement that DOE was aware of at the upper levels of management, and is being revisited. We will likely need to show calculations, up to peak dose if necessary, in all 3 documents, if they clarify the content of the 10,000 year calculation. This is a dialogue that needs to be had internally, but my announcing to the NRC that we would do 10,000 years only led to a very negative reaction and caused a negative counterreaction in DOE management. NRC said whatever parts of the [REDACTED] they need to consult to understand the 10K year calculation will need to be Q, and the reaction of DOE management on the scene was -- OK, let's put all of that in the [REDACTED] and [REDACTED] rather than make the FEIS a Q document!

[REDACTED] 09/25/99 12:22:06 PM

To: [REDACTED]
cc: [REDACTED]

Subject: Re: Meeting Notes from September 16, 1999 [REDACTED] Meeting

[REDACTED] I have been out of town till today. [REDACTED] and I are definitely not working on a superpluvial model and I have no idea what you are talking about below in terms of incorporating a superpluvial into existing models. And some how or another doing a tweak on [REDACTED] won't work. Recall in [REDACTED] the [REDACTED] model couldn't address the effects of temperature, so I pushed up the estimate of MAP (in conversation with [REDACTED]) to try and compensate for the absence of an evaporation (temperature) term. The fact that we wrote the [REDACTED] document on a newspaper deadline and did not include the rationale for our MAP caused the survey reviewers to flag the MAP estimate as way too high. So trying to now in the midst of an AMR overdue deadline to figure out how to either run a real estimate of MAP with a model that can deal with MAT or alternatively trying to guesstimate effective moisture and compensate for a no MAT term is not possible (or at least should be given more thought time than is available). Further the recent Ku et al paper in Quaternary Research suggests the lake in [REDACTED] was at least 175 meters deep for the better part, about 35k, of the core stage 6 i.e. the superpluvial and penultimate glaciation. Other data indicate alot of the water in the superpluvial lake came from the Amargosa or perhaps the [REDACTED] drainages. This large and persistent lake likely owes alot of its existence to a very low MAT (at least 10 C and perhaps more colder than today) but must have also been due to higher MAP. In that a much smaller lake existed in [REDACTED] during the last glaciation and we believe climate for the last glaciation was about 7 C colder than today with an average MAP range of about 280 to 320 mm (USGS open-file 99-338, [http://\[REDACTED\]/pub/open-file-reports/ofr-99-0338/](http://[REDACTED]/pub/open-file-reports/ofr-99-0338/)) then the superpluvial should have a yet higher real (ie not adjusted) MAP. How much higher and how much colder and how much more persistent would require time to think about such things. And if we still can not properly deal with temperature then the compensating MAP value would likely be a very high and model distorting number that no one would be happy with.

[REDACTED] wrote:

> I would like to make three comments:

- >
>
> 1. This is the first I have heard of any plans to produce a new superpluvial
> climate description. [REDACTED] are you really working on that?

>
>
> 2. I don't think it's true that using a superpluvial climate is unarguably
> conservative. What we have seen is that climate changes are what produce
> dose peaks (take a look at Figure 5-2 in Vol. 3). Having a steady
> superpluvial climate may not be as bad as switching between dry and
> superpluvial climates, for example.

>
> 3. However, I agree with [redacted] comment below that it isn't a big deal, for
> several reasons: (a) A calculation run after the [redacted] with everything the
> same except for no superpluvials produced a peak-dose CCDF only a factor of
> 2 or 3 lower than the [redacted] base case, which is a small effect compared to a
> lot of other things. [redacted] would want me to add a disclaimer here that the
> [redacted] calculations may have underestimated the effect of the superpluvials.)
> (b) We expect less sensitivity to seepage/infiltration/climate in [redacted] because
> of changes being made in the design and in the WPD model (early information
> indicates that the [redacted] and [redacted] corrosion models will not depend on the
> presence or absence of seepage). (c) The averaging over climate-change
> times that occurs when calculating the "expected annual dose" will further
> damp any spikes associated with climate changes (compare the size of the
> spikes in the "mean" curve in Figure 4-28 as compared to the spikes in
> individual realizations in Figure 4-27).

>
> I think that we should either simply extend the glacial-transition climate
> out to longer times or include climate changes similar to the [redacted]. The main
> problem with the latter is that we have focused [redacted] development on 10,000
> years and do not have updated, or even Q, information on the climates and
> durations beyond that (unless [redacted] tell me I'm wrong about #1
> above). This is an example of cutting scope to what we considered the
> minimal necessary work!

[redacted]

> -----Original Message-----

> From: [redacted]
> Sent: Monday, September 20, 1999 6:09 PM
> To: [redacted]
> Cc: [redacted]
> Subject: Re: Meeting Notes from September 16, 1999 [redacted] Meeting

> You should be involved/aware of this discussion.

> ----- Forwarded by [redacted] on 09/20/99 05:16

> 09/20/99 05:14 PM

> To: [redacted]
> cc: [redacted]
> [redacted]
> [redacted]
> [redacted]

> Subject: Re: Meeting Notes from September 16, 1999 [redacted] Meeting (Document
> link

> not converted) >
> I tend to agree with [redacted] that this is not a big issue, we need to pick an
> approach and agree on it.

> I understand that we have a USGS adjustment coming this year for the
> superpluvial, a corrected [redacted] and [redacted] (mean annual precip and temp).
> According to an informal preview of [redacted] that new superpluvial from [redacted], the
> goes up from what it was, but so does the [redacted], allowing for a downward
> adjustment in mean annual infiltration. [redacted] can correct my
> impression
> if it is off base.

> It seems to me that beyond 10K years we could use either (1) the updated
> SR-equivalent of the [redacted] long-term-average climate, or (2) the updated
> SR-equivalent of the [redacted] super-pluvial, with net mean annual infiltration
> corrected for [redacted] changes. The latter would be unarguably conservative. The
> former more realistic, perhaps, although it assumes that mean annual dose
> effects from expected dry climates and the expected wettest climates have
> little
> effect on the very long term dose histories. This would require sensitivity
> studies to first evaluate and then support.

> The [redacted] approach was a good one, but defending the time-history of climate
> changes is something that would be nice to avoid since it could lead to
> challenges and then having to evaluate the more conservative scenario anyway
> to
> show that assumptions meant little in the way of peak annual average doses.

> So my vote, until I am swayed by a discussion that argues well for the
> other, or
> an other, alternative, is to go with (2) as described above. I am inviting
> discussion. [redacted]

> [redacted]
> 09/17/99 12:03 PM

> To: [redacted]
> cc: [redacted]
> [redacted]
> [redacted]
> [redacted]
> [redacted]

> Subject: Re: Meeting Notes from September 16, 1999 [redacted] Meeting (Document
> link
> not converted)

> we can either:

- > 1. continue the 10k climate for the rest of the duration (or pick highest
> climate state and run out to 1 M yr)
- > 2. use the superpluvial climate used in the [redacted] for the rest of the duration

> In either case, we will look at the "expected" dose, which will "smooth out"
> the
> individual peaks (peak of mean approach in part 63) that may have occurred
> in
> the [redacted] when we looked at the mean of the peaks.

> The distinction is small. Perhaps we should run both for a single case
> (nominal
> performance, nominal inventory, nominal distance), see which is worse and
> run
> that for all other cases in the [redacted]. I will assume that approach for now.

> Bottom line, I don't think it requires management attention, we will simply
> do
> the reasonable thing and make the final assessment demonstrably conservative
> wrt
> future climate states.
> [redacted]

Subject: Re: Meeting Notes from September 16, 1999 Meeting (, and implications)

Thanks for the enlightenment, I was definitely under the wrong impression on the work being done for and also regarding the nature of the P and T trends with a climate change.

Looking back over my emails I see that I misstated what was a discussion of changes relative to previous assumptions, NOT true out of that specific context. In fact, out of that context the opposite was true. The non-traceable and non-transparent statement after it was disconnected from its parent context and became flat-out wrong.

Now the real question is: is the climate AMR going to meet the need for the and the to have long term climate states (and infiltration changes accompanying those states) that are defensible???

I think showing it doesn't matter from a TSPA-dose perspective is not sufficient to establish whether or not this part of the analysis is credible and has a defensible basis. We would all agree that showing that it has no impact on system performance does lower the burden of proof necessary to support the modeling (the confidence-burden), however.

Finally, the agreement to show only 10,000 year calculations in and is not an agreement that DOE was aware of at the upper levels of management, and is being revisited. We will likely need to show calculations, up to peak dose if necessary, in all 3 documents, if they clarify the content of the 10,000 year calculation. This is a dialogue that needs to be had internally, but my announcing to the NRC that we would do 10,000 years only led to a very negative reaction and caused a negative counterreaction in DOE management. said whatever parts of the FEIS they need to consult to understand the 10K year calculation will need to be Q, and the reaction of DOE management on the scene was -- OK, let's put all of that in the and rather than make the FEIS a Q document!

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end part not printed

[REDACTED]
[REDACTED]
[REDACTED]
PostedDate: 08/05/1999 07:51:57 PM
[REDACTED]

CopyTo:
ReplyTo:
BlindCopyTo:
Subject: RE: [REDACTED]
Body:

Still planning to meet the Aug 31 deadline with 1st draft into tech review, so I'll be charging full-time to 4b this month (and probably next)..... I think 4b (is it [REDACTED]???) is running a surplus right now, but [REDACTED] may also be charging to this. [REDACTED] are helping me with the 1st draft as we speak. I've been boggled down with the Yucca Mt. site-scale AMR stuff which includes all the software QA. [REDACTED] has put a high priority on the deliverables for both the site and regional work so I'm burning the candle at both ends. The good news is that I'll be a lot more productive in Sacramento. The bad news is that my productivity has been real bad the past month or two with all this moving and house buying crap. Life has been crazy ever since the gathering at the Longstreet Inn. But it feels real good to be working out of the [REDACTED] in the middle of [REDACTED]

Hopefully the proposals for the NTS work (the stuff we sent [REDACTED]) will go thru and then we'll be doing some serious leveraging of resources for FY00. I also need to get serious about getting together with [REDACTED] for the [REDACTED] stuff.....

got to go

[REDACTED]
[REDACTED] on 08/05/99 03:53:14 PM
[REDACTED]

cc:

Subject: RE: [REDACTED]

Piss on QA, how's your recharge report (due Aug 31, 1999) coming. By the way [REDACTED] may want to fund the transient recharge work!!!! Perfect for all you [REDACTED] types!

> -----Original Message-----

> From: [REDACTED]
> Sent: Thursday, August 05, 1999 3:51 PM
> To: [REDACTED]
> Cc: [REDACTED]
> Subject: [REDACTED]

> FYI

> [REDACTED] and I have responded to the recent issues concerning
> [REDACTED] We believe
> we've fixed all of the problems identified so that a stop work
> order should be
> averted. A copy of the fixed notebook was forwarded to [REDACTED]
> [REDACTED] We have
> not yet heard anything back from QA.

[REDACTED]

[REDACTED]

From: [REDACTED]
PostedDate: 03/18/1998 01:02:35 AM
SendTo: [REDACTED]
CopyTo:
ReplyTo:
BlindCopyTo:
Subject: Re: Additional Pieces for [REDACTED]

Body:
I agree. I had an interesting talk with [REDACTED]. I may piss him off but I'm going to attack him shortly. He is way out of line on what he is doing. I have an assignment for providing information for [REDACTED] (undersecretary of DOE) and I will need to have it done Thursday morning.

[REDACTED]

[REDACTED]

[REDACTED]

Author: [REDACTED]
Organization: [REDACTED]
From: [REDACTED]
PostedDate: 03/18/1998 01:02:35 AM
SendTo: [REDACTED]
CopyTo:
ReplyTo:
BlindCopyTo:

Subject: Re: Additional Pieces for [REDACTED]
Body: I agree. I had an interesting talk with [REDACTED] I may piss him off but I'm going to attack him shortly. He is way out of line on what he is doing. I have an assignment for providing information for [REDACTED] and I will need to have it done Thursday morning.
[REDACTED]

[REDACTED]

From: [REDACTED]

PostedDate: 03/22/1999 06:08:37 PM

SendTo: [REDACTED]

CopyTo:

ReplyTo:

BlindCopyTo:

Subject: Re: Just Checking In

Body:

1. Software QA for the latest version of the model is coming along crappy. This is because there are some 11th hour changes taking place. The fall-back position is that the new models will be used only as supporting info for the developed data packages supporting the FY99 milestone report (we will use the 96 version of the infil code, which has been QA'd, to generate the final FY99 result.... this is mostly what [REDACTED] wants anyway).

2. Here's the minimum input data being used (both 96 and 99 version of model), which has for the most part already been QA'd:

1. Digital elevation data (data already QA'd)*
 2. Geologic classification GIS map (already QA'd)*
 3. Vegetation classification GIS map (already QA'd)*
 4. Stream channel GIS map (already QA'd ?????)*
 5. Daily precipitation data (already QA'd for 96 version of [REDACTED] model.... I need to double check this. There's some important data from NTS precipitation stations in here that have always been a QA gray zone)
 6. Soil property data (already QA'd)
 7. Bedrock permeability (mostly already QA'd or available... I think)
- * I'm trying to complete the northward expansion to match the new area of the SZ model. I'm not sure what the QA status is for the new GIS coverages for data sets 1-5.

Here's what I'm hoping to add to this, if all goes well:

1. USGS stream flow data: this is all available data no QA needed. (This is used for calibration)
2. NCDG (Earth-Info) daily climate data (precip, air temp, snow cover): also available data, no QA needed
3. Better soils data. If we use the [REDACTED] data, I don't think it needs to be QA'd
3. I've had my [REDACTED] training (doesn't mean I know what I'm supposed to do, but I have hard copies of everything).
4. Scientific notebook OK (not perfect, but I'm getting help from Sounia in this department).
5. For now, I'm hiding out from all tiger teams, like some outlaw in a Spaghetti Western. We're heading underground with the real work. Tell [REDACTED] he was supposed to destroy that memo.

[REDACTED]

03/22/99 02:27 PM

To: [REDACTED]

cc:

Subject: Just Checking In

[REDACTED] Just checking in to see how everything is going.

How's the software QA coming?

How's the model? Keeping up w/ the Scientific Notebook?

Have you had the [REDACTED] training? Do you understand what's required? Do you have any questions?

And the biggest one in my mind: what data are you using in the model?? Is any of it either unpublished, non-YMP or unreviewed YMP? Data package assembly has become even more onerous than before (hard to believe) and it's taking longer than ever to get data packages processed. If you have anything that is going to need review you'd better call me ASAP so we can get started on it.

I saw your emails to [REDACTED] about the [REDACTED]. Any new news on their plans for you??

Write back when you get a chance.

[REDACTED]

[REDACTED]

[REDACTED]

From: [REDACTED]
PostedDate: 03/15/1999 10:14:50 PM
SendTo: [REDACTED]
CopyTo: [REDACTED]
ReplyTo: [REDACTED]
BlindCopyTo:
Subject: Re: [REDACTED] Hell
Body:

This memo actually hits the nail on the head. You are exactly right: One, yes, we will do the work, Two, yes, screw the tiger team (I don't know how yet but I'll figure it out), Three, yes, destroy this memo!

[REDACTED]

03/15/99 12:18 PM

To: [REDACTED]
cc: [REDACTED]
Subject: Re: [REDACTED] Hell

[REDACTED] and I have been trying to figure out what's really coming at us with the tiger team effort. So far we've learned that they don't have a solid plan of action yet. I've formulated a "potential impact list" that is prioritized according to what work gets impacted 1st; 1. FY99 support to [REDACTED] (includes all the workshop stuff), 2. regional recharge report, 3. site-scale infiltration modeling report. Some of the work the tt effort calls for was scheduled under [REDACTED] QA anyway, but we started hearing rumors of things like re-doing all the QA work for the neutron logging data, which will stop us dead in the water.

Now I'm going to give you the inside scoop: I'm going to continue the regional modeling, even if it means ignoring direct orders from [REDACTED] management. I'm also going to be working on reports, even if it means ignoring direct orders from [REDACTED] management. [REDACTED] and [REDACTED] have a pretty clear vision of the type of work that needs to be done to stay alive for the long-haul, and it very definitely involves getting product out there for the users and the public to see. The [REDACTED] regional modeling work fits that bill. Screwing around with tiger teams does not. In the end, its going to be the reports that move everything else forward. [REDACTED] efforts will just be vaporized.

So, the work may be slowed, but I will not let it stop. At this point, I am still working to the plan that we've all spent a significant amount of time on to make things happen for FY99. That's the insider scoop. The position we will take for the [REDACTED] planners may be much different. So delete this memo after you've read it.

Please respond to [REDACTED]

To: [REDACTED]
cc: [REDACTED]
Subject: [REDACTED] Hell

I understand you're going to be sucked into the [REDACTED] for [REDACTED] site infiltration. Any idea how that will impact timing for your regional recharge model product for the year's end. Or are your just working every weekend and waking moment like all the rest of us?

[REDACTED]
[REDACTED]
From: [REDACTED]
PostedDate: 03/15/1999 03:18:46 PM
SendTo: [REDACTED]
CopyTo: [REDACTED]
ReplyTo: [REDACTED]
BlindCopyTo: [REDACTED]
Subject: Re: [REDACTED] Hell
Body:

[REDACTED] and I have been trying to figure out what's really coming at us with the [REDACTED] effort. So far we've learned that they don't have a solid plan of action yet. I've formulated a "potential impact list" that is prioritized according to what work gets impacted 1st: 1. FY99 support to [REDACTED] (includes all the workshop stuff), 2. regional recharge report, 3. site-scale infiltration modeling report. Some of the work the effort calls for was scheduled under [REDACTED] QA anyway, but we started hearing rumors of things like re-doing all the QA work for the neutron logging data, which will stop us dead in the water.

Now I'm going to give you the inside scoop: I'm going to continue the regional modeling, even if it means ignoring direct orders from YMP management. I'm also going to be working on reports, even if it means ignoring direct orders from YMP management. [REDACTED] have a pretty clear vision of the type of work that needs to be done to stay alive for the long-haul, and it very definitely involves getting product out there for the users and the public to see. The [REDACTED] regional modeling work fits that bill. Screwing around with [REDACTED] does not. In the end, it's going to be the reports that move everything else forward. [REDACTED] efforts will just be vaporized.

So, the work may be slowed, but I will not let it stop. At this point, I am still working to the plan that we've all spent a significant amount of time on to make things happen for FY99. That's the insider scoop. The position we will take for the M&O planners may be much different. So delete this memo after you've read it. *

[REDACTED]
Please respond to [REDACTED]

To: [REDACTED]
cc: [REDACTED]

Subject: [REDACTED] Hell

I understand you're going to be sucked into the [REDACTED] for U2 site infiltration. Any idea how that will impact timing for your regional recharge model product for the year's end. Or are you just working every weekend and waking moment like all the rest of us?
[REDACTED]

[REDACTED]

[REDACTED]

From: [REDACTED]
PostedDate: 04/22/1999 09:52:39 PM
SendTo: [REDACTED]
CopyTo:
ReplyTo:
BlindCopyTo:

Subject: status of new climate net-infiltration modeling
Body:

I thought I'd give you a "heads up" on the progress of work I've been doing with the results you've provided. Model simulations have been in progress but about 3 weeks ago I found a small error in the model input that was generated using the [REDACTED] data. The error was minor but would have created a QA nightmare so this was fixed and the simulations are being re-done (I'll send you a summary of the results when I get to this point).

*

I am about to submit a "developed datapackage" milestone consisting of the climate input files (7 files for the 7 sites you identified) that are being used by the net-infiltration model. The input files are basically re-formatted [REDACTED] export files with a minor amount of parameter estimation occurring to fill small gaps in the record (even for the high ranking sites, there are gaps all over the place).

Here's the weird news; to get this milestone through QA, I must state that I have arbitrarily selected the analog sites. At first, I was going to include your email as supporting information in the data package, and discuss the work we did using the worksheets consisting of candidate sites, but since there is no [REDACTED] for your results the message I am getting from QA is that I can't use or refer to those results. In other words, I was trying to give you credit for your part in all this, as well as provide all info possible for the traceability of the analog climates, but this seems to create problems rather than solving them.

So for the record, the seven analog sites have been arbitrarily (randomly) selected. Hopefully these sites will by coincidence match the sites you have identified.

[REDACTED]
P.S. please destroy this memo

*

Author: [REDACTED]

From: [REDACTED]
PostedDate: 04/03/1998 10:14:24 PM
SendTo: [REDACTED]
CopyTo: [REDACTED]

ReplyTo: [REDACTED]

BlindCopyTo: [REDACTED]

Subject: Re: Infiltration and UZ flow

Body: [REDACTED] model? I'm surprised

So, you now have more hard evidence for the [REDACTED] model? I'm surprised you didn't say "I told you so!".
Could our [REDACTED] approximation suffice to model the phenomena you discuss below?

I suggest you send your e-mail to [REDACTED] and others in 1.2.3. Also, to [REDACTED] Also, to [REDACTED] to get his dander up.

I think the main thing here is that if you think the flow will contact significantly fewer waste packages than what we are saying in our base case, then we are being way over conservative, especially considering that the fraction of packages seeped upon in the [REDACTED] is the most important performance parameter.

It seems too late now to change the base case. What do you propose?

[REDACTED] 04/03/98 04:19:40 PM

To: [REDACTED]

cc: [REDACTED]

Subject: Infiltration and UZ flow

I have some maybe bad and maybe good news that you should be aware of. [REDACTED] called me 2 weeks ago and said that he had tested the first sample of core from [REDACTED] at [REDACTED] and it had a concentration of 39 mg/l of chloride. This means that the flux is at most 2 or 3 mm/yr in this high infiltration zone ([REDACTED] is at the crest of YM). There are some implications that I did not realize until I talked them over with [REDACTED] yesterday: basically, either our infiltration model is wrong or our [REDACTED] flow model is wrong or both.

Infiltration model wrong? If we look at 2 analog sites, we see much different behavior than predicted by our infiltration model. At [REDACTED], the best estimate for infiltration is about 24 mm/yr in the center, under a wash, decreasing to about 10 mm/yr a mile away, decreasing to virtually nothing around G-tunnel (the southern edge). Also, the [REDACTED] method predicts a recharge of -20 mm/yr. Our infiltration model predicts about 40 mm/yr--our [REDACTED] climate.

At [REDACTED], the [REDACTED] and [REDACTED] site in [REDACTED], there are drips in 2 parts of the tunnel: under a perched water body and under a wash. The drips under the wash are significant, but only immediately after the wash is flowing. Our infiltration model has virtually no infiltration in washes; what infiltration there is in washes is basically put there as a fudge factor. (I don't want to be too critical here--I could probably tear apart any of our models. Did somebody say seepage? And [REDACTED] did do us a great favor n helping us out for [REDACTED])
flow model wrong? Looking at the same analog sites, we see that flow is not ubiquitous. It is in isolated paths, typically associated with locally saturated conditions. If flow is in isolated paths, we would get high chloride in the [REDACTED] almost everywhere we look (amd

[REDACTED]

we would get high Cl-36 in a few places in the ESF too, but that is another story). At [REDACTED], the drips average 100+ m apart (from the memory of [REDACTED], not from data). Also at [REDACTED], the perched water is in vertical slices separated by sections of dry fractures and faults. There is no evidence that the perched water flows along the top of the vitric/interface. Rather, it is more likely (from geochem data) that the perched water drains from below (I am guessing because it builds up a head). Again, this behavior suggests isolated flow paths. I will not go into [REDACTED] but the message there is similar.

Both wrong? The analogs, and now the chloride data, suggest a model where most infiltration/recharge is in isolated zones, perhaps at points along washes, and that most flow occurs in isolated, locally saturated ribbons immediately below the infiltration points. Does it matter? Well, the good news is, as [REDACTED] pointed out to me, that most of this is probably better for performance. (The only thing that could hurt performance is that flow in CHnv might not be in the matrix either.) The bad news is that it might hurt our credibility. The point we probably need to make in [REDACTED] is that our modeling is conservative, because: (1) the lower the infiltration, the fewer containers are contacted, and the less waste is released; (2) the more isolated the flow paths, the fewer containers are contacted, etc.; and (3) diverting the water around the zeolitized rock minimizes retardation. The unfortunate thing here is that the way we have the natural system modeled, we are probably not giving it enough credit.

[REDACTED]

ALD.20040615.1154, EML0494

Author: [REDACTED]
Organization: [REDACTED]
From: [REDACTED]
PostedDate: 04/03/1998 10:14:24 PM
SendTo: [REDACTED]
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ReplyTo:
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So, you now have more hard evidence for the [REDACTED] model? I'm surprised you didn't say "I told you so!".
Could our DKM Weeps approximation suffice to model the phenomena you discuss below?

I suggest you send your e-mail to [REDACTED] and others in 1.2.3. Also, to [REDACTED].
Also, to [REDACTED] to get his dander up.

I think the main thing here is that if you think the flow will contact significantly fewer waste packages than what we are saying in our base case, then we are being way over conservative, especially considering that the fraction of packages seeped upon in the LTA is the most important performance parameter.

It seems too late now to change the base case. What do you propose?

[REDACTED] on 04/03/98 04:19:40 PM

To: [REDACTED]
cc:
Subject: Infiltration and UZ flow

I have some maybe bad and maybe good news that you should be aware of. [REDACTED] called me 2 weeks ago and said that he had tested the first sample of core from PTn at [REDACTED] and it had a concentration of 39 mg/l of chloride. This means that the flux is at most 2 or 3 mm/yr in this high infiltration zone. ([REDACTED] is at the crest of YM). There are some implications that I did not realize until I talked them over with [REDACTED] yesterday: basically, either our infiltration model is wrong or our UZ flow model is wrong or both.

Infiltration model wrong? If we look at 2 analog sites, we see much different behavior than predicted by our infiltration model. At [REDACTED], the best estimate for infiltration is about 24 mm/yr in the center, under a wash, decreasing to about 10 mm/yr a mile away, decreasing to virtually nothing around G-tunnel (the southern edge). Also, the [REDACTED] method predicts a recharge of -20 mm/yr. Our infiltration model predicts about 40 mm/yr--our [REDACTED] climate.

At [REDACTED], the [REDACTED] and [REDACTED] site in [REDACTED], there are drips in 2 parts of the tunnel: under a perched water body and under a wash. The drips under the wash are significant, but only immediately after the wash is flowing. Our infiltration model has virtually no infiltration in washes; what infiltration there is in washes is basically put there as a fudge factor. (I don't want to be too critical here--I could probably tear apart any of our models. Did somebody say seepage? And [REDACTED] did do us a great favor in helping us out for [REDACTED])
UZ-flow model wrong? Looking at the same analog sites, we see that flow is not ubiquitous. It is in isolated

[REDACTED]

paths, typically associated with locally saturated conditions. If flow is in isolated paths, we would get high chloride in the PTn almost everywhere we look (and we would get high Cl-36 in a few places in the ESF too, but that is another story). At [REDACTED], the drips average 100+ m apart (from the memory of [REDACTED] not from data). Also at [REDACTED], the perched water is in vertical slices separated by sections of dry fractures and faults. There is no evidence that the perched water flows along the top of the vitric/interface. Rather, it is more likely (from geochem data) that the perched water drains from below (I am guessing because it builds up a head). Again, this behavior suggests isolated flow paths. I will not go into [REDACTED], but the message there is similar.

Both wrong? The analogs, and now the chloride data, suggest a model where most infiltration/recharge is in isolated zones, perhaps at points along washes, and that most flow occurs in isolated, locally saturated ribbons immediately below the infiltration points. Does it matter? Well, the good news is, as [REDACTED] pointed out to me, that most of this is probably better for performance. (The only thing that could hurt performance is that flow in CHnv might not be in the matrix either.) The bad news is that it might hurt our credibility. The point we probably need to make in [REDACTED] is that our modeling is conservative, because: (1) the lower the infiltration, the fewer containers are contacted, and the less waste is released; (2) the more isolated the flow paths, the fewer containers are contacted, etc.; and (3) diverting the water around the zeolitized rock minimizes retardation. The unfortunate thing here is that the way we have the natural system modeled, we are probably not giving it enough credit.

-- [REDACTED]

[REDACTED]
[REDACTED]
From: [REDACTED]
PostedDate: 03/06/2000 01:54:51 PM
SendTo: [REDACTED]
CopyTo: [REDACTED]
ReplyTo:
BlindCopyTo:
Subject: Re: USGS AMRs
Body:

What a circus (see emails below).....
I re-wrote blockr7 to use the following [REDACTED] grid files as input:

[REDACTED]: the composite DEM created by [REDACTED]
[REDACTED]: latitude (decimal degrees) for each grid cell calculated by [REDACTED]
[REDACTED]: longitude..... calculated by [REDACTED]
[REDACTED]: slope calculated by [REDACTED]
[REDACTED]: aspect calculated by [REDACTED]
[REDACTED]: the soil type map, rasterized by [REDACTED]
[REDACTED]: the depth class map, rasterized by [REDACTED]
[REDACTED]: the rock type map ([REDACTED] and [REDACTED] only),
rasterized by [REDACTED]
[REDACTED]: the topographic ID (I must assume that this was produced in
ARCINFO by [REDACTED] using the [REDACTED]. Because it is only a place holder and not
actually used by the model it doesn't matter but the parameter has been carried
through the pre-processing and is in all the *. [REDACTED] files used as input for
[REDACTED])

So once the DEMs, the geology, the soil type, and the soil depth class maps
make it into the TDMS, [REDACTED] will provide a link to [REDACTED] which is the
file I started with in 1996. The link between the source data in the TDMS and
the ASCII grid files above are all standard [REDACTED] operations (except for
maybe the topo ID stuff) so this should get us to full traceability.

I checked the blocking ridge calculations using [REDACTED] and they do not match
what is in [REDACTED]. The skyview map produced by the new version of [REDACTED]
looks reasonable. I have not yet incorporated [REDACTED] latest fixes to [REDACTED]
for the improved version. I am just trying to re-produce the blocking ridge
values provided to me in [REDACTED] back in 1996, and I have not yet been able
to do this. Again, the original calculation was not done by me and at this
point I have no direct trace of the the blocking ridge values in [REDACTED] to
the actual calculation. I do have a copy of [REDACTED] provided to me by [REDACTED]
and I am now using this to check the [REDACTED] calculations. [REDACTED] do you have
the original [REDACTED] program that was used to create the values in [REDACTED]
Also, could you send me a copy of the improved version so that we can start
with the better numbers for the regional modeling?

I can fudge the attachment for [REDACTED] for now but eventually someone may want
to run [REDACTED] to see what numbers come out and at that point there will be
problems, although it is my belief for now that an impact analysis would reveal
that the differences are not critical to the end result.

----- Forwarded by [REDACTED] 03/06/2000 10:19
AM -----

[REDACTED]
03/06/2000 09:33 AM

To: [REDACTED]
CC: [REDACTED]

Subject: Re: USGS AMRs

Yes - will fedex it and fax it to [REDACTED]
What is your fax number so we can copy you on it . [REDACTED]
03/06/2000 08:12 AM
To: [REDACTED]

[REDACTED]
cc: [REDACTED]
[REDACTED]

Subject: Re: USGS AMRs

I think we're on board - you or [REDACTED] will initiate a 3.14 request?

[REDACTED]
03/06/2000 08:11 AM

To: [REDACTED]

cc: [REDACTED]
[REDACTED]

Subject: Re: USGS AMRs

Please note that these are two separate issues:

[REDACTED] - is an output data transmittal needed for a number of AMRs. This is needed in the TDMS regardless of the status of the AMR [REDACTED]. We are burning CDs and sending you copies of what you sent us for this transmittal and the other [REDACTED] data received. Please note that [REDACTED] in Las Vegas ([REDACTED]) also has copies of these data. We will also send you these by email, though I am concerned that the files are large and may be difficult to transmit (We will send the files later this morning in separate emails).

[REDACTED] of the AMR [REDACTED] - If the AMR will not be complete by the time the PMR is issued, then the AMR itself (a DRAFT version) must be submitted as an [REDACTED] transmittal. Otherwise the PMR can not be finalized. This is a recent approach to deal with the possibility of an AMR not being complete before the due date of the PMR.

I hope this clarifies these two separate issues.

[REDACTED]
03/06/2000 05:34 AM

To: [REDACTED]

cc: [REDACTED]
[REDACTED]

Subject: Re: USGS AMRs

I am not sure what you mean by "This is a different [REDACTED] Transmittal." Is this not [REDACTED] that we have been talking about? If not what is the correct [REDACTED] Input Transmittal number? I am not aware of one for the DRAFT version of AMR [REDACTED]. Are you saying that a copy of the DRAFT version must be placed in the TDMS? Or are you just asking for a copy be transferred to LBNL through an [REDACTED] Transmittal Request?

The [REDACTED] process does not include a step that maintains a copy by the originating office (in the case of [REDACTED]) to be placed in the TDMS. USGS management is developing a process to do this at this time. However, because our Data Management Section does not have a copy of the data transmitted to you through [REDACTED] nor do we have the data nor a data summary sheet explaining the pertinent information about the data. We are having difficulty recreating the data set that you were given and placing it in the TDMS. I assumed after our phone conversation last week that you would help provide that needed information, but have not received anything from you yet. If you cannot provide the information, please let me know and I will try other means.

[REDACTED]
03/04/2000 06:21 PM

To: [REDACTED]

cc: [REDACTED]
[REDACTED]

Subject: Re: USGS AMRs

This is a different [REDACTED] Transmittal. It will be necessary to transmit a DRAFT version on the AMR [REDACTED]. The previous transmittal was for the output data. This is required because the document and its conclusions are referenced and utilized in the PMR.

[REDACTED]
03/03/2000 12:34 PM

[REDACTED]
To: [REDACTED]
cc: [REDACTED]
[REDACTED]

Subject: Re: USGS AMRs
The information was transferred via [REDACTED] last fall.

[REDACTED]
03/03/2000 12:25 PM

To: [REDACTED]
cc: [REDACTED]
[REDACTED]

Subject: Re: USGS AMRs

In order for the PMR to be submitted with the Infiltration AMR unfinished, any information used in the PMR from this AMR will have to be covered through use of a [REDACTED] preliminary input transfer. If the AMR is not far enough along to be used in draft form, then an alternative will have to be developed. I assume [REDACTED] will work with [REDACTED] and [REDACTED] to make sure we have the paperwork correctly done to make this happen.
[REDACTED]

[REDACTED]
03/03/2000 08:27 AM

To: [REDACTED]
cc: [REDACTED]
[REDACTED]

Subject: USGS AMRs

I'll cut to the chase:
Infiltration AMR: Will not be completed by 3/13 - it needs to be put into the category of "the rare ones that get completed after the PMR is submitted. We fully intend to complete during the period of the DOE PMR review. It has not been submitted for checking at this point. The Infiltration AMR should be taken off the interactive review schedule next week.
Climate AMR: Issues remaining, get the damn [REDACTED] in shape and a couple of other minor issues - we've already received [REDACTED] comments, have proposed responses, and as soon as [REDACTED] stuff is fixed will return for concurrence of responses. I'm not sure the interactive review next week will help - especially as [REDACTED] will not be there. I do believe we can get this one approved prior to 13th!



[REDACTED]

[REDACTED]

From: [REDACTED]
PostedDate: 07/08/1998 03:48:13 PM
SendTo: CN=[REDACTED]/OU=YM/O=RWDOE@CRWMS
CopyTo:
ReplyTo:
BlindCopyTo:
Subject: don't be jealous
Body:

You may be jealous about a one-day event I had, but I'm sure as hell jealous about the office you get to work in 5 days out of 7. I don't know how much longer I can take this cube shit. There are days when I seriously ponder the thought of quitting.

[REDACTED]
[REDACTED]
From: [REDACTED]
PostedDate: 05/11/1998 03:44:35 PM
SendTo: [REDACTED]
CopyTo:
ReplyTo:
BlindCopyTo:
Subject: [REDACTED] Flow (+climate+infiltration) section for [REDACTED] document
Body:

FYI. Still don't know quite how to handle the air temp glitch. I'm continuing to keep mum about this, but, from a scientific integrity standpoint, it is tempting to let the end users know exactly what was provided to them in terms of effectively cooler future climate simulations. Problem is, I don't know how to do this without looking bad. If we can let it all pass without trying to attach DTN numbers to these results (the preferred choice), then I can forget about it and just concentrate on getting results out for the new model. If they (DOE) force us to put DTNs on these things, I would rather the truth come out sooner than later.
Don't need to respond to this, we can talk about it later.

----- Forwarded by [REDACTED] on 05/11/98 12:24 PM

[REDACTED] on 05/04/98 03:00:49 PM

To: [REDACTED]
cc: [REDACTED]

Subject: [REDACTED] Flow (+climate+infiltration) section for [REDACTED] document

[REDACTED]: text
[REDACTED]: text
[REDACTED]: text
[REDACTED]: s-ascii
[REDACTED]: Lines: 15

To all --

Attached is the first draft of the [REDACTED] Flow section (which includes climate and infiltration as well as flow) for the [REDACTED] document. It is in two Word 97 files, one for the text and one for the figures. We are already behind schedule in submitting this section to the [REDACTED] Electronic Storyboard, so I would appreciate any comments or suggestions you may have by the end of this week (May 8). It is about 15 pages of text, and several figures. You are welcome to comment only on the sections that you are interested in, of course.
If you can't read the [REDACTED] files, let me know and we can get it to you in some other format.

[REDACTED]: default-app
[REDACTED]: default
[REDACTED]: uuencode

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Attachment: [REDACTED]
Attachment: [REDACTED]

Author: [REDACTED]
Organization: [REDACTED]
From: [REDACTED]
PostedDate: 06/18/1998 04:48:09 PM
SendTo: [REDACTED]
CopyTo: [REDACTED]
ReplyTo: [REDACTED]
BlindCopyTo: [REDACTED]
Subject: Re: [REDACTED]


Body: Actually I like the [REDACTED] study but I'm now tracking down [REDACTED] discharge data. I asked [REDACTED] for help tracking it down but I would suggest we start an all out effort to track down ALL stream flow records for our study area. That may be all the data we have to calibrate with. I need the NTS precipitation data fairly soon (I know, I also have way to much stuff to do). Send me the address, or person to call, to get the [REDACTED] data on CD, I'll order another copy and start working with that. Actually I may not need the [REDACTED] as I am getting a copy tomorrow of all the data for the [REDACTED] going back to 1900 (hand entered to 1948 from microfiche, the rest came from [REDACTED]) and I sort of promised to share the [REDACTED] data. They are USGS people in [REDACTED] and we will be working with them next year. Did you know there is a USGS map of every precipitation event for the [REDACTED] since 1948? At least that's the rumor. They (I actually don't know who they are yet but may be in [REDACTED]) use precipitation data from every station available and then used some sort of elevation correlation (they don't have the [REDACTED] stations). I'm looking into that now and should get all the maps by mid July (we may get scooped on a bunch of stuff). Fun being busy isn't it?

[REDACTED]
06/18/98 01:47 PM
To: [REDACTED]
cc: [REDACTED]
Subject: Re: [REDACTED]

I'm finishing up the infil report (concentrating only on those items [REDACTED] originally requested me to look at ... I talked this over with [REDACTED] yesterday). I've been meaning to send you a program that will convert the 6 regional strips you have back to the original *. [REDACTED] file format, but I got sidetracked a little with the planning stuff. Let me finish infil and I will get you the code (I'm close to finishing it). I wanted to have these simulations running this week. But I also wanted you and [REDACTED] to look at what I'm using for effective permeabilities. I'm trying to clean up a worksheet I have so that you and Lorrie can understand it.

As far as FY99 modeling goes, there are several areas that we can always use help in; programming, GIS, and anyone capable of getting a simulation going, compiling the results, creating maps and graphs of the output, and helping me compile and update the climate database, streamflow records (along with any other calibration data), and the future climate stuff. You and I may be the only ones developing the model code, but even some part-time help from someone with programming skills would be a tremendous boost to keep things going (the small re-formatting program above is a great example), and to have software QA keep in step with model improvements. I don't know who this person would be, and there we have a dilemma. At least we are making an effort to improve out GIS expertise.

As far as the [REDACTED] stuff and the regional stuff goes; 1. We never seem to be certain about the funding level from [REDACTED] until the planning is over and done with I wanted to have a backup to keep the regional effort going. 2. We are doing the same amount of work on the regional scale wether we get the money for [REDACTED] or not, so why not try to get the money? All we have to do is a few extra simulations in [REDACTED]. Its like we'll get paid twice for the same work (and I don't feel bad about this considering how little we're getting paid for the work this year in my mind it will all even out in the end). 3. I'm still not convinced that there will not be another round of planning where we have to try to cut 50% of the funding we are asking for now. Then we can just get rid of the [REDACTED]. Geeze... I spent too much time on this email... gotta go!



ALB.20050216.7533, EML1017

From: [REDACTED]
PostedDate: 06/18/1998 04:47:34 PM
SendTo: [REDACTED]
CopyTo:
ReplyTo:
BlindCopyTo:
Subject: Re:
Body:

I'm finishing up the infil report (concentrating only on those items originally requested me to look at ... I talked this over with [REDACTED] yesterday). I've been meaning to send you a program that will convert the 6 regional strips you have back to the original [REDACTED] file format, but I got sidetracked a little with the planning stuff. Let me finish infil and I will get you the code (I'm close to finishing it). I wanted to have these simulations running this week. But I also wanted you and [REDACTED] to look at what I'm using for effective permeabilities. I'm trying to clean up a worksheet I have so that you and [REDACTED] can understand it.

As far as FY99 modeling goes, there are several areas that we can always use help in; programming, GIS, and anyone capable of getting a simulation going, compiling the results, creating maps and graphs of the output, and helping me compile and update the climate database, streamflow records (along with any other calibration data), and the future climate stuff. You and I may be the only ones developing the model code, but even some part-time help from someone with programming skills would be a tremendous boost to keep things going (the small re-formatting program above is a great example), and to have software QA keep in step with model improvements. I don't know who this person would be, and there we have a dilemma. At least we are making an effort to improve out GIS expertise.

As far as the [REDACTED] stuff and the regional stuff goes; 1. We never seem to be certain about the funding level from [REDACTED] until the planning is over and done with.... I wanted to have a backup to keep the regional effort going. 2. We are doing the same amount of work on the regional scale wether we get the money for [REDACTED] or not, so why not try to get the money? All we have to do is a few extra simulations in [REDACTED]. Its like we'll get paid twice for the same work (and I don't feel bad about this considering how little we're getting paid for the work this year in my mind it will all even out in the end). 3. I'm still not convinced that there will not be another round of planning where we have to try to cut 50% of the funding we are asking for now. Then we can just get rid of the [REDACTED] WP.

Geeze... I spent too much time on this email... gotta go!

X

ALB.20050220.2163, EML1018

From: CN-[REDACTED]/OU=YM/O=RWD OE
PostedDate: 03/17/1999 07:10:05 PM
SendTo: CN-[REDACTED]/OU=YM/O=RWD OE@CRWMS
CopyTo:
ReplyTo:
BlindCopyTo:
Subject: Re: Jury summons
Body:

They want me to go down on April 19th. I've been putting together the new future climate input sets; I need to be running simulations while I'm writing reports. I'm also putting together a real simple snow cover model for now; the degree-day approach. I've been working on programs that pull in the earthinfo export files (precip, max temp, min temp), combine the files into one, check for gaps, estimate missing values, and generate output that is usable for infill modeling or the next step in climate modeling; spatial interpolation of daily input. I think when I'm done this will be applicable to the [REDACTED] study. I think we can generate one file that will contain a precip map for each day for a 100-year record.

This work also needs to get done for a level 4 milestone coming up end of April for [REDACTED]. Basically I have two weeks left to get this done so [REDACTED] can start the technical reviews of the developed data 1st part of April. Also, I need to get it out of the way so we can have some lee-way for putting the [REDACTED] stuff together, and so I can get back to writing.

Either the regional modeling or the site scale modeling will get into trouble if I'm the only one working in it. The 176k for [REDACTED] assumed about .5 FTE beyond my time for things like model calibration, QA, model development, and up-dating input files. At this point the regional modeling is suffering because I've focused everything on [REDACTED]. You and I are the only ones that seem to know [REDACTED] programming so that puts us in a bind. On the other hand, it wouldn't take that much time to show someone like [REDACTED] or [REDACTED] how to run the model for calibration (only worksheet skills are needed here, although [REDACTED] skills are also very helpful). I'm hoping to have a final FY99 site-scale model together by the time I come out to [REDACTED] (1st or 2nd week of April) so we can go into full-time calibration run mode.

What resources beyond our own group could I be tapping to solve the [REDACTED] FTE problem? For example, I've thought about: 1. [REDACTED] student help (administrative hassle factor may be high), 2. [REDACTED] (administrative hassle factor high), 3. [REDACTED] support [REDACTED] is ready to help us out with the uncertainty analysis.... I think we can make some headway without handing over the source code, which has been my biggest worry), 4. Student help from either [REDACTED] or [REDACTED], 5. YMP USGS ([REDACTED].....)

Gotta go... I've spent way too much time on this email

[REDACTED]
03/16/99 07:29 PM

To: [REDACTED]
cc:

Subject: Re: Jury summons

I think you're stuck. You get USGS pay and they, supposedly, get the money. I think you should just go in and do the jury duty. Chances are there will be 50 people of whom 12 will be picked. If you are picked it will likely be for only a day. Sorry.

[REDACTED]
03/16/99 11:47 AM

To: [REDACTED]
cc: [REDACTED]

Subject: Jury summons

I've just received my 2nd notice for a summons to the judicial district court jury duty in (I ignored the 1st one back in October 98). This one warns me that I could go to jail if I continue to ignore this. I called the court today and they want me to find out how the USGS handles pay for this leave situation.

Is there a way to have the USGS over-ride this summons? I cannot afford to stop working on what I'm working on now to go sit in a Jury (unless the trial doesn't last longer than half a day), and it has nothing to do with money.

At any rate, I don't think I can just say the dog ate it.

[REDACTED]

[REDACTED]

From: CN=[REDACTED]/OU=YM/O=RWDOE
PostedDate: 10/29/1998 07:41:37 PM
SendTo: CN=[REDACTED]/OU=YM/O=RWDOE@CRWMS
CopyTo:
ReplyTo:
BlindCopyTo:
Subject: Re: Design Features 23/24 - Period of Effectiveness

Body:
enjoyed the ranting and raving. We're trying to work with the engineers because that's where the funding's going. Leveling the top of the mountain seemed humorous but it gave me the chance to make some more cool figures. This little task is history now. Wait till they figure out that nothing I've provided them is QA. If they really want the stuff they'll have to pay to do it right.



[REDACTED]
10/29/98 03:31:59 PM

To: [REDACTED]
cc:
Subject: Re: Design Features [REDACTED] - Period of Effectiveness
This sure is an interesting viewpoint. The desert pavement forms on areas where the slope is generally less than 1 to 2 percent. You don't generally see pavement on slopes of 10% or more. The other idea that I love is engineered modifications. As he notes, the natural system is very stable, so why do we have to fool with it. The other idea they are not looking at is caliche. In area where there is well developed caliche, one could expect erosion to that surface but then extremely limited erosion of the well cemented carbonates. These are usually old truncated surfaces that have had new material deposited on them. These show part of the erosion/deposition processes that occur in arid environments. The natural system exists for a reason and it got there without engineers screwing with it. I am starting to rant and rave so I should get back to my other work.
Thanks for sending the information to me. I find these things interesting.

[REDACTED]
10/29/98 03:21 PM

Sent by: [REDACTED]
To: [REDACTED]
cc:
Subject: Re: Design Features [REDACTED] - Period of Effectiveness
FYI: The engineering perspective on this. I meant to send this earlier (if I already did, ignore this... I may have gone senile)
----- Forwarded by [REDACTED] on 10/29/98 02:24 PM

[REDACTED] gov on 10/28/98 04:26:21 PM.

To: [REDACTED]
cc: [REDACTED]

Subject: Re: Design Features [REDACTED] - Period of Effectiveness
Thought I would put in my "two bits worth" on this subject. After all, the [REDACTED] life expectancy has a lot to do with the engineering design. I would welcome comments.
The design for [REDACTED] calls for armoring the soil blanket with rip-rap. In nature, desert nature that is, the rip-rap is called desert pavement. We can see that the desert pavement effectively protects the soil from wind, rain, snow, sleet, etc, so that the mass transport erosion is confined mainly to the washes. If the rip-rap is applied properly to imitate nature, then why can't we assume a similar protection for our man-made desert pavement? Also, the average erosion rates there are extremely small - 0.19 cm/ka average for Yucca Mountain hillslopes. Could expect similar erosion rates with the rip-rap protection? If we look at the ages of the hillslopes at YM, we see it ranges from 170 to 760 ka. I would not suggest that our engineering effort could last this long, but it is certain to last at least 1 ka., and possibly 10 ka's or more (100's of ka's?). I proposed at one time a very conservative approach with 1000 years. Let's face it, the desert topography is very stable and long living so why can't we expect

[REDACTED]
our modifications to last just as long? Comments?
For design [REDACTED], I would think that this would last somewhat shorter than
[REDACTED]. Eventually, chemical, and mechanical erosion of the bedrock will
creat soil over the exposed bedrock. I am not sure how fast it would form,
but it would be very slow. I would think that the 1000 year life would be
conservative. Comments?

To: [REDACTED] on 10/28/98 03:59:33 PM

cc: [REDACTED]
Subject: Design Features 23/24 - Period of Effectiveness

[REDACTED]
In the analysis of [REDACTED] & [REDACTED], we will need to make an
assumption regarding how long these surface modifications
remain effective.

Can you fellows suggest a reasonable range of time periods
that can be assigned to these two features? I propose doing
RIP calculations where the infiltration maps are changed
depending on the time period of DF effectiveness.

Alternatively, if you can provide a technical basis for assuming
these DFs would be effective for 10,000 yrs, this would work
also.

We will need this input from you this week in order to stay on
schedule.

Thanks, [REDACTED]

From: [REDACTED]
PostedDate: 12/18/1998 05:25:24 PM
SendTo: [REDACTED]
CopyTo:
ReplyTo:
BlindCopyTo:
Subject: Re: AP [REDACTED]

Body:
Wow! Thanks for this very thoughtful and philosophically charged wealth of advice. I here exactly what you say. YMP is looking for the fall guys, and we are high on the list. I got a strong feeling at the [REDACTED] meeting that high level folks are starting to pay very close attention to who they will come after when things hit the fan. Who got how much funding at what time will all be long forgotten when the lawyers start challenging credibility of results. It was made clear that this will be like the OJ trial, where results are completely thrown out because of minor procedural flaws or personal attacks on credibility. As [REDACTED] told the lawyer who was there, YMP doesn't stand a snowball's chance in hell of making this work if that is the approach. As far as the 98 and 99 modeling, I'm starting the write-ups now. Much of this is already being covered in the NLPs and APs so I can kill 2 birds with the same stone. I much as I think [REDACTED] may help us out with some things, I am going to be very careful that [REDACTED] doesn't end up taking credit for our work.

12/17/98 08:47 PM
To: [REDACTED]
cc:
Subject: Re: AP 3.10Q

I agree with your analysis. We only win if we get the final product out. I have to think through this carefully but where I'm headed is this. [REDACTED] and I will make sure we get the 96 report done (you need to call [REDACTED] ASAP, just in case she needs input from you on Friday). You, on the other hand, need to start the FY99 report, assuming the FY96 gets approved. You need to lay out the changes you've made to the model, how you've tested or calibrated those changes (stream gage, neutron (I've already started working on a new neutron hole analysis which I had hoped to finish this vacation but won't be done until later I'm sure)), what the results are, and what difference it makes. Do this for the site scale as your basis for the change to the model and as the basis of the report. Then start another report, which uses the first report, to lay out the regional model. Both report will address past and future climates. That's where I'm heading but I'm not there yet. We can discuss this tomorrow.

The bottom line is forget about the money, we need a product or we're screwed and will take the blame. EVERYBODY will say they told us to go ahead without a plan or budget in place (even though [REDACTED] said no hires). This is now CYA and we had better be good at it. I seem to have let this one slip a little too much in an attempt to cover all our work (and get us the hell out of the long term problem of Yucca Mountain) but now it's clear that we have little to no choice. In all honesty I've never felt well managed or helped by the USGS YMP folks, in fact, as you know, I've often felt abandoned. This time it's no different, or worse, and we have to work together to get out of this one. I'm still overwhelmed trying to protect the rest of the program from the ravages of what's happening in [REDACTED] (funding) which we seem to be blamed for because we got funding) and the current [REDACTED] fiascoes in the [REDACTED]. That is to say we're not working on our own as we have for the past 12 years, now were being threatened (and carefully watched) by the people who use to simply ignore us. These are very dangerous time, both funding wise and professionally. Mark my words on this one, it will not be long before our technical credibility will be challenged in an attempt to discredit us and redirect funding!

Oh, by the way, you did a great job in response to [REDACTED] request. Bravo!!

(keep my last paragraph private or among friends, if you know who they are)

12/17/98 06:57 PM

Sent by: [redacted]
To: [redacted]
cc:
Subject: Re: [redacted]

FYI: The work plan PA has put together as a result of the meeting this week includes model hand-offs (TBVs documented using NLP 3-15s) which will all eventually be QA'd using [redacted] (see attachment below). [redacted] is going to be the PA lead on the [redacted] for the FY98 model. We're not sure how smoothly this is going to go but this is the approach. Like you've said all along, YMP has now reached a point where they need to have certain items work no matter what, and the infiltration maps are on that list. If USGS can't find a way to make it work, [redacted] will (but for now they are definitely counting on us to do the job). [redacted] totally supports paying for a USGS report on the FY98 model, but they fully realize the problems we're having with the Director's approval thing.

I've had no response from [redacted] concerning my response to his request for an FY99 work plan using the close-out funds. [redacted] has indicated that I can charge all my time this year to the 10506 account. There was also good indication this week that [redacted] is willing to support us in FY00 to continue on with model validation and uncertainty work, and to deal with FEPs addressing the infiltration maps. The 110k provided to USGS was in direct response to the telecon and was specifically intended for infiltration modeling work. I can no longer wait for USGS to figure this out; I'm moving ahead according to the [redacted] work plan we put together this week.

What I really need now are some warm bodies to review the work I've been doing. Like [redacted] said, "Live by the sword, die by the sword!"

----- Forwarded by [redacted] on 12/17/98 06:15 PM -----

12/17/98 05:01 PM

Sent by: [redacted]
To: [redacted]
cc: [redacted]
Subject: Re: [redacted]

Thanks much! Yes, I very much need to take a close look at this. I was just about to request this when I saw your note. [redacted] has been mentioned quite a number of times this week.

12/17/98 12:01 PM

To: [redacted]
cc:
Subject: AP 3.10Q

Hello, I thought you might like an electronic copy of the new AP. Like? Well, anyway, will need to be familiar with.... Merry Christmas

----- Forwarded by [redacted] on 12/17/98 02:04 PM -----

12/17/98 11:05 AM

To: [redacted]
cc:
Subject: AP 3.10Q

Per your request below is the electronic version of [redacted] as it was approved.

----- Forwarded by [redacted] on 12/17/98 10:04 AM -----

[REDACTED]

12/08/98 04:18 PM

To: [REDACTED]

cc: [REDACTED]

Subject: AP 3.10Q

They restored our files - so here it is.

Attachment: [REDACTED]

[REDACTED]
[REDACTED]
From: [REDACTED]
PostedDate: 12/17/1998 11:47:08 PM
SendTo: [REDACTED]
CopyTo: [REDACTED]
ReplyTo:
BlindCopyTo:
Subject: Re: AP [REDACTED]
Body:

I agree with your analysis. We only win if we get the final product out. I have to think through this carefully but where I'm headed is this. [REDACTED] and I will make sure we get the 96 report done (you need to call [REDACTED] ASAP, just in case she needs input from you on Friday). You, on the other hand, need to start the FY99 report, assuming the FY96 gets approved. You need to lay out the changes you've made to the model, how you've tested or calibrated those changes (stream gage, neutron (I've already started working on a new neutron hole analysis which I had hoped to finish this vacation but won't be done until later I'm sure)), what the results are, and what difference it makes. Do this for the site scale as your basis for the change to the model and as the basis of the report. Then start another report, which uses the first report, to lay out the regional model. Both report will address past and future climates. That's where I'm heading but I'm not there yet. We can discuss this tomorrow.

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Oh, by the way, you did a great job in response to [REDACTED] request. Bravo!!
(keep my last paragraph private or among friends, if you know who they are)

[REDACTED]
12/17/98 06:57 PM
Sent by: [REDACTED]
To: [REDACTED]
cc:
Subject: Re: [REDACTED]

FYI: The work plan [REDACTED] has put together as a result of the meeting this week includes model hand-offs (TBVs documented using [REDACTED]s) which will all eventually be QA'd using AP [REDACTED] (see attachment below). [REDACTED] is going to be the PA lead on the AP [REDACTED] for the FY98 model. We're not sure how smoothly this is going to go but this is the approach. Like you've said all along, YMP has now reached a point where they need to have certain items work no matter what, and the infiltration maps are on that list. If USGS can't find a way to make it work, [REDACTED] will (but for now they are definately counting on us to do the job). [REDACTED] totally supports paying for a USGS report on the FY98 model, but they fully realize the problems we're having with the [REDACTED]

approval thing.

[REDACTED]

I've had no response from [REDACTED] concerning my response to his request for an FY99 work plan using the close-out funds. [REDACTED] has indicated that I can charge all my time this year to the [REDACTED] account. There was also good indication this week that [REDACTED] is willing to support us in FY00 to continue on with model validation and uncertainty work, and to deal with FEPs addressing the infiltration maps. The 110k provided to USGS was in direct response to the telecon and was specifically intended for infiltration modeling work. I can no longer wait for USGS to figure this out; I'm moving ahead according to the [REDACTED] work plan we put together this week.

What I really need now are some warm bodies to review the work I've been doing.

Like [REDACTED] said, "Live by the sword, die by the sword!"

----- Forwarded by [REDACTED] on 12/17/98 06:15 PM -----

[REDACTED]
12/17/98 05:01 PM

Sent by: [REDACTED]
To: [REDACTED]
cc: [REDACTED]
Subject: Re: AP [REDACTED]

Thanks much! Yes, I very much need to take a close look at this. I was just about to request this when I saw your note. AP [REDACTED] has been mentioned quite a number of times this week.

[REDACTED]
12/17/98 12:01 PM

To: [REDACTED]
cc:
Subject: AP [REDACTED]

Hello, I thought you might like an electronic copy of the new AP. Like? Well, anyway, will need to be familiar with....
Merry Christmas

----- Forwarded by [REDACTED] on 12/17/98

02:04 PM -----

[REDACTED]
12/17/98 11:05 AM

To: [REDACTED]
cc:
Subject: AP [REDACTED]

Per your request below is the electronic version of AP- [REDACTED] as it was approved.

----- Forwarded by [REDACTED] on 12/17/98 10:04

AM -----

[REDACTED]
12/08/98 04:18 PM

To: [REDACTED]
cc: [REDACTED]
Subject: AP [REDACTED]

They restored our files - so here it is.

Attachment: [REDACTED]

ALD.20050208.2417, EML1000

From: CN=[REDACTED] DE
PostedDate: 03/26/1999 01:59:05 PM
SendTo: [REDACTED]
CopyTo: [REDACTED]
ReplyTo:
BlindCopyTo:
Subject: Status of LADS phase 1 calc. report - USGS
Body:

Between you and me, I put my 6k effort in months ago. My work gets charged to [REDACTED] and [REDACTED]. This is where we invested our time and energy in promoting, planning, and actually doing the work. I'll admit that I have not devoted a full-time effort towards LADS. I've been working on the daily climate data-base, the new future climate simulations, the regional modeling, and the backlog of reports. Yes the LADS work is now behind schedule but so is everything else because I'm the only one doing this work, and I'll be damned if I drop everything else and work on nothing but LADS. I'd be very happy to just hand the work over to someone else at this point. It seems I do not have this option, thus all I can say is that the work will get done, but not by sacraficing everything else that's going on. I do not need to be developing M&O hoop jumping skills. The skills I am interested in developing are ones that will benefit the [REDACTED] district and our careers. I'm not directing this at you. This is just to let you know where I stand at this point in time. I guess this is another one of those memos that need to be destroyed.

----- Forwarded by [REDACTED] 03/26/99 10:39 AM

03/26/99 09:56 AM

To:

cc:

Subject: Status of LADS phase 1 calc. report - USGS

- On Feb. 19 I requested the following steps from USGS staff, to complete the calculation report for LADS [REDACTED] and [REDACTED] (formerly designated DF [REDACTED] and [REDACTED]):
1. Train [REDACTED] and a checker to QAP [REDACTED]. Train [REDACTED] to YAP [REDACTED]. Also, train [REDACTED] to [REDACTED] for classification of software as "software routines."
 2. Assign a DTN, and prepare a TDIF with input/output files (i.e. implement [REDACTED]). Typically this means that all input/output files, and code listings, are put on a CD-ROM. The originating organization should be NEPO, to avoid complications from USGS policies.
 3. Designate all software used in this calculation as "software routines." This means the software does not have to be qualified. The calc. report should include source code listings, description of routines and how they fit together, exact specification of compiler and CPU (with S/N's), and a test case that exercises all the routines.
 4. Revise [REDACTED] calc. report with [REDACTED], and software routine documentation. Note that the report should state whether all input data are "Q." If not, then the calculation results should be clearly indicated as [REDACTED]. Printout first draft ([REDACTED]). Originator signs calc. cover sheet. All pages will have the [REDACTED] number, including the correct Rev. number. Page numbering will comply with QAP [REDACTED].
 6. Perform internal review of report. This can be informal, or as a NEPO review implementing QAP [REDACTED]. Make revisions as required (a revised copy will have the next draft number, i.e. Rev. [REDACTED] etc.)
 7. Printout checking draft (increment draft number using Rev. [REDACTED], Rev. [REDACTED], etc.). All pages will be marked "Checking Draft" in addition to the DI number, etc.
 8. Perform checking function, coordinating with the checking group ([REDACTED]). A technically qualified checker (as determined by the Responsible Manager), who has received the checking indoctrination training and knows how to use the checklists, needs to be identified from within NEPO.
 9. Revise document, backcheck per QAP [REDACTED], and get Originator and Checker signoffs on calc. cover page. Get Lead Engineer's signoff ([REDACTED]).

[REDACTED]

10. Submit final document with cover sheet, all drafts, markups, and review paperwork, to your representative from Engineering Document Control. Request that they close out any TBVs on the original [REDACTED] Design Input Request, and prepare and submit the Record Package to RPC IAW [REDACTED]. I requested that steps 1-4 be completed by March 15th, and all steps by 4/15. Steps 1-4 are not complete, so this activity is behind schedule. Please help expedite this effort.

[REDACTED]

[REDACTED]
[REDACTED]
From: [REDACTED]
PostedDate: 03/26/1999 03:15:56 PM
SendTo: [REDACTED]
CopyTo: [REDACTED]
ReplyTo: [REDACTED]
BlindCopyTo:
Subject: Status of LADS phase 1 calc. report - USGS
Body:

I will admit that I have not been conducting a 100% LADS effort because of a [REDACTED] level 4 due April 30th. The bare-bones needed to meet the level 4 milestone is now complete, but putting the actual data package together and conducting the necessary reviews for a developed data package submittal will be delayed if I go into a 100% LADS effort (which is needed to meet the schedule I've described below (red text)), which will also require full attention and up to a 100% effort over the next 2 weeks from [REDACTED]. Given the other data-packages, scientific notebooks, and general QA issues that [REDACTED] is working on, I am now very concerned that meeting both the LADS schedule and the level 4 milestones due in the next month or two will be stretching our QA support too thin.

I had originally anticipated that the LADS work would ultimately require less work than what would be needed for a developed data data-package under USGS QA procedures. However, since this is largely a learning process for all of us, and because I have not done a very good job of estimating the amount of work needed to follow this activity through to completion (although I didn't do too bad in estimating the amount of work needed to just do the modeling which is the actual engineering calculation.... its all the follow-up work that has been under-estimated), the effort has grown substantially.

----- Forwarded by [REDACTED] on 03/26/99 11:58 AM

[REDACTED]
03/26/99 11:52 AM
To: [REDACTED]
cc: [REDACTED]
[REDACTED]
[REDACTED],
Subject: Status of LADS phase 1 calc. report - USGS

I have appended your memo to indicate the status of this work (see red text below).

----- Forwarded by [REDACTED] on 03/26/99 10:59 AM

[REDACTED]
03/26/99 09:56 AM
To: [REDACTED]
cc: [REDACTED]
[REDACTED]
Subject: Status of LADS phase 1 calc. report - USGS

