



GROUNDWATER PROTECTION PROGRAM

Meeting Minutes Cover Sheet

Please find attached the Open Meeting Minutes from the Groundwater Protection Program of September 3, 2002.

If you have any comments or changes to these minutes, please reply to this email and your comments will be incorporated into the next meeting minutes.



GROUNDWATER PROTECTION PROGRAM

Meeting Minutes

SUBJECT GROUNDWATER PROTECTION PROGRAM MEETING - SEPTEMBER 3, 2002

TO Distribution

FROM Dick Wilde, Groundwater Protection Program Manager

DATE October 2, 2002

ATTENDEES
See Attached List

DISTRIBUTION
Attendees
Groundwater Protection Program Distribution List

NEXT GROUNDWATER PROTECTION PROGRAM OPEN MEETING:

Next Meeting: Monday, October 7, 2002 – 1-3 p.m.

Location: 1200 Jadwin, Conference Room 1C1

Local Call-In Number: (509) 376-7411

Toll Free Call-In Number: (800) 664-0771

MEETING MINUTES

A Groundwater Protection Program (GPP) Open Meeting was held on September 3, 2002, in Richland, Washington, in Conference Room 1C1 of 1200 Jadwin Avenue.

PROGRAM REPORT:

Welcome and overview of Program status (Dick Wilde)

Welcome to the Groundwater Program open meeting. Doug Sherwood has joined us this month as an interested participant—it's good to see him here.

A couple of things to go over before we get into the field presentations. In regards to the life-cycle master schedules, which cover all the way to 2035; we've completed the first draft. Comments are due and will generate a fair amount of interaction during the next few weeks. Tomorrow we will figure out how to download the files and send them to Doug Sherwood. Please note that it's a very rough draft. We expect to have it finalized by the end of September. Some changes will be made as budget guidance comes in over the next few weeks. I have examples of the master schedule, and after the meeting, anyone who is

interested can see it. By the October meeting we should have a final baseline. The schedules will be the basis for Fiscal Year 2003 (FY03) detailed planning; we don't have good budget guidance yet, but we will price out for FY03 to determine if we'll receive more or less funding.

Most of this meeting will be spent on the fieldwork. We have a series of working presentations, not highly polished, but simply created for us to kick things back and forth. We want to tell you what we're finding as we go.

ISRM/Pump-and-Treats (J. Borghese/B. Raidl)

All of the pump-and-treats are up and running. One was shut down over the weekend due to water levels. Three remaining ISRM injections are scheduled for 100-HR-3 by the end of the Calendar Year (CY).

(The following is the discussion that occurred during the Pump-and-Treat presentation, which is included in these minutes as Attachment 1).

We selected 100-D Area pump-and-treat because of the strong influence of river stage on chromium concentrations in well samples. The overhead slides are of extraction wells D8-53 and D8-54A, and compliance wells D8-68 and D8-69. The extraction wells are approximately 65 ft (200 m) from the river and the compliance wells are approximately 325 ft (100 m) from the river.

Transducer data from extraction well DA-53 shows hourly river stage elevations plotted with weekly chromium concentrations. You can see the correlation between river stage elevation and chromium-6 concentration.

QUESTION: What is allowable concentration?

ANSWER: 22 micrograms per liter.

Extraction well D8-54A has the same good inverse correlation between chromium-6 and river stage elevation. This is a plot of the river elevation, showing well D8-53 concentrations at different points in time. The trend line is showing that the closer the R-squared (R^2) number is to one, the closer the line fits the data. If a trend plot is not close to one, it could mean there is another variable we're not plotting that is affecting the relationship. Extraction well D8-53 is similar.

Compliance wells D8-68 and D8-69 are approximately 325 ft (100 m) to the river and also show good inverse correlation. On the trend plots for these two wells, we plotted water level in the well instead of concentration. The correlation (R^2) is about 0.75. As the water level in the well rises, the chromium-6 concentration goes down, which implies good communication between the river and the aquifer.

QUESTION: So, if my concern is fish in the river, what am I supposed to make of this data?

ANSWER: When the river is high, the fish see much less chromium-6 than when river is low because the river acts like a hydraulic barrier to groundwater flow. This data takes into consideration how the seasonal river stages affect the chromium concentrations.

Groundwater Strategy Update (B. Bryce)

Many of you saw discussion of the Groundwater Strategy Report at the C3T meeting early this summer. The Washington State Department of Ecology (Ecology) and the U.S. Environmental Protection Agency (EPA) have gone through the document and inserted regulatory language, but the structure and content haven't changed extensively. It will be back in Ecology and EPA's hands for one last look, and once they decide they're satisfied with the changes, we will schedule an open meeting to share the information, probably in late September or early October. We are writing an appendix summarizing what has happened and what is planned in relation to Initiatives 5 & 6 and how they relate to groundwater protection, remediation, etc. A quick overview of baseline plans and acceleration proposals are also included the appendix.

Carbon Tetrachloride (B. Ford)

Carbon tetrachloride in the vadose zone is being investigated under the PW-1 Operable Unit (OU). We are looking for locations other than the known disposal sites where carbon tetrachloride may have been leaked to the soil. One driver for doing this investigation is that the center of mass of carbon tetrachloride in groundwater is not located underneath the known disposal cribs. A phased investigation was started this year to evaluate locations where carbon tetrachloride may have leaked to provide information leading to clean up. The first step began this spring using three investigation techniques to sample carbon tetrachloride vapor. The first technique was to sample polyvinyl chloride (PVC) vent risers in three trenches in the 218-W-4C Burial Grounds in April. Detections from these risers helped guide later investigations. Two techniques, Geoprobe and cone penetrometer, followed the vent riser sampling to collect vapor samples from the soils. These techniques are being used not only at the burial ground but at other suspected leak locations, such as pipelines to cribs, as well. The Geoprobe is used to investigate soils down to 25 feet and the cone penetrometer, which is driven into the soil using heavier equipment, is used to attempt to go deeper.

In the burial grounds, which are located west of the Plutonium Finishing Plant (PFP), we looked at only trenches 1, 4, and 7 because of operational history, logistics, and accessibility. Guided by the concentrations of carbon tetrachloride in groundwater, we also investigated locations east of the trenches. We will be performing a Data Quality Objective (DQO) next year to examine the results.

QUESTION: Have the burial ground vent risers been sampled before?

ANSWER: Yes, the results will be in the report. Sampling was done back in 1997 by the burial grounds staff.

The results of the investigation are as follows: Trench 1 carbon tetrachloride values shows the highest was 7, 8, and 9 ppmv, which is considered extremely low. Trench 4 values were 6-8 ppmv on the west end and center portion, but towards the east end of the trench the values rise to as high 1760 ppmv. We are interested in following up on this hot spot along the trench. Remember, this is just the vapor in-between the drums not vapor in the soils. The general construction of these trenches is that they were dug and an asphalt "driveway" was installed along the bottom of the trench that has a slight slope. The drums were stacked four high on the asphalt with a sheet of plastic and soil on top and plywood between the drum layers. Trench 7 values were 7-8 ppm.

This information guided the next set of investigations to see if carbon tetrachloride had moved out of the

trench into the surrounding soil. At the beginning of this investigation, we went in with the Geoprobe to depths of 25 feet in and around the BG. Our technique was to drive a single GeoProbe tube to 25 feet and sample as we pull back—first 25, then 15, then 10 feet. As part of the investigation, we did two pushes, one north and one south, of the hot spot. We also moved to the east to check carbon tetrachloride between PFP and the burial grounds fence. We've seen the highest concentration (60 ppm) just south of the hot spot. We will continue the investigation and plan to meet with the regulators to select locations perform CPT investigations in order to sample deeper especially in the north and south areas. That campaign will kick off today and will continue for about three weeks.

QUESTION: Where did the 60 ppm show up?

ANSWER: Good question. The 60 ppm showed up at 13 ft. Close to bottom of trench in that location. The concentration drops off at 15 and 25 ft.

QUESTION: Any speculation as to what is there?

ANSWER: In the drums in the burial grounds there is probably transuranic (TRU) waste. The drums may have come from the PFP cribs, which means they will probably also contain plutonium and carbon tetrachloride. The drums have been degrading for over 40 years. Initiative #4 contains remediation plans to get them out of there. We're going deeper to find where the carbon tetrachloride went.

We're also doing Geoprobe and CPT sampling at PFP. When we've completed this work, we'll have put in over 100 GeoProbe pushes outside fence. We'll then do 50-60 pushes inside the fence line. We'll go as deep as CPT (60-80 ft) to look at specific locations where carbon tetrachloride is. When we finish this first phase of the carbon tetrachloride investigation, we'll put together a DQO to determine the cleanup/remediation strategy.

QUESTION: When will the investigation be done?

ANSWER: Outside the fence should be done by the end of September and inside the fence should be finished by the end of October.

COMMENT: When you see carbon tetrachloride master schedule, you'll see a systematic process showing the timeline for shallow probes, then the deep probes.

QUESTION: Have you accessed historical records for some guidance?

ANSWER: We know where the disposal sites are, but the records account for less than half of what we suspect is there.

QUESTION: Have you found any surprises?

ANSWER: No complete surprises since we've been looking in likely areas.

Other field activity includes the Hanford barrier prototype and finishing up FY03 monitoring.

Assessment Results Capability Presentation (B. Bryce).

(The following is the discussion that occurred during the Assessment Results Capability presentation, which is included in these minutes as Attachment 2).

This presentation is to status where we are, show a few example results, and give you a general overview of plans for the future. We are in the process of finishing a document on the initial assessment for public use.

The previous groundwater model was not quick enough and there were various other problems. During the past year we've incorporated the three-dimensional groundwater model, and it has resulted in a considerable improvement in the results. We purchased 125 processors and interlinked them, which both stabilized and streamlined the process. Virtually all runs now reach completion without problems.

We reran the initial assessment, which looks at remedies planned for remediation, and made some changes to the plan, but we haven't incorporated the accelerated actions--we still show completion in the year 2050 instead of 2035.

Around the Table

R. Yasek: Field work sampling at TX farm is down to 99 ft. Thirteen samples have been collected so far, and we have about 15 more feet to go. Three boreholes completed so far this year. Interim measures are being done at 200 East area Single Shell Tank Farms to prevent water from running into tank farms. Work continues and should be finished by the end of the month.

F. Mann: During the next two weeks, the annual summary of Immobilized Low Activity Waste will be released.

Ecology Update (D Goswami)

The master schedule presentation generated good discussions. Comments from Ecology will be available in a week or two.

The Hanford Public Issues Meeting (Ecology) occurs at the end of every month. The meeting last Wednesday included a discussion on the carbon tetrachloride areas and generated couple of questions we couldn't answer. For example, they wanted to know why you didn't you look at other trenches, which was answered during today's discussion. Another question was, when you open the risers (65 ppm carbon tetrachloride) do you have a Health and Safety Sampling procedure or process in place?

COMMENT: There must be a process; they open risers all the time.

ANSWER: We'll get together in the next couple of days to answer Dib's questions.

QUESTION: In the letter regarding the supplemental environmental impact statement (EIS) document, it was mentioned in letter that System Assessment Capability (SAC) had raised some concerns.

ANSWER: We've been asked to provide the information. One of the things included in report on October 1, 2002 are results from assessment capability. We plan to provide what we believe could be useful; the 1000 year prediction on uranium and technetium 1 km down gradient of east/west area. We

plan to extract data from those locations, compare results, and include them in the October deliverable. We will provide what we have now on uranium and technetium. We are focusing on two points where they showed results. Looking for ways to compare and contrast solid waste trenches.

COMMENT: There are two EIS documents, a solid waste burial ground, and a supplemental report.

The Interstate Technological and Regulatory Council is planning to give a 30-minute presentation on sampling and analyzing at the Hanford Site during the next monthly meeting (see October 7, 2002 meeting agenda). The Technology Innovation Office will also give a presentation.

QUESTION: Any new developments on the new expert panel?

ANSWER: The standing expert panel has been dissolved. DOE and other regulators determined that due to more technical issues, they require more technical experts.

NOTES:

Groundwater Protection Program Web Site location: <http://www.bhi-erc.com/vadose>

If you have questions or comments, please contact Barbara Howard (509-373-3871), Alison Bryan (509-373-4456), or Shelley Switzer (509) 373-3847.

ATTACHMENTS:

- 1) Pump-and-Treat presentation
- 2) Assessment Results Capability presentation
- 3) Groundwater Protection Program Four Month Look Ahead Calendar

ATTENDEES:

Marty Bensky – HAB
Jane Borghese – FH
Bob Bryce – PNNL
Carl Connell – FH
Bruce Ford – FH
Dib Goswami – Ecology
Jim Hansen –DOE-RL-SPO
Doug Hildebrand – DOE-RL
Jerry Isaacs – FH
Edye Jenkins – GPP
Charley Kincaid – PNNL
Sandra Lilligren – Nez Perce (by phone)
Fred Mann – CHG
Bob Raidl – FH
Ted Repasky – CTUIR
Gordon Rogers – HAB
Sue Safford – Oregon Office of Energy (by phone)
Doug Sherwood – River’s Edge Environmental (FH)
John Silko – DOE
Tom Stoops – Oregon Office of Energy (by phone)
Craig Swanson – FH
Shelley Tallent – FH
K. Michael Thompson – DOE-RL
Lisa Trichel – DOE-HQ (by phone)
Dick Wilde – FH
Robert Yasek – DOE/ORP

GROUNDWATER PROTECTION PROGRAM CALENDAR
September 2002 to December 2002
FOUR-MONTH LOOK AHEAD CALENDAR

October 7	Groundwater Protection Program Open Meeting (1-3 p.m., Richland, WA)
October 16	Ecology Groundwater Meeting (1:30 p.m., Kennewick, WA)
November 4	Groundwater Protection Program Open Meeting (1-3 p.m., Richland, WA)
November 7-8	HAB Meeting (Tri-Cities, WA)
November 20	Ecology Groundwater Meeting (1:30 p.m., Kennewick, WA)
December 2	Groundwater Protection Program Open Meeting (1-3 p.m., Richland, WA)
December 5-6	HAB Meeting (Radisson Hotel, Portland, OR)
December 18	Ecology Groundwater Meeting (1:30 p.m., Kennewick, WA)