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**HANFORD ADVISORY BOARD
ENVIRONMENTAL RESTORATION COMMITTEE**

**Summary of Meeting
3 March 1995 8 - 2 pm
Best Western, Seattle**

Chairperson, Ralph Patt called the meeting to order, and initiated introductions. Those present were: Committee members, Denny Condotta, Greg deBruler, and Ralph Patt; ex-officio member John Erickson, Department of Health; contractor representative, Greg Eidam, Bechtel; Agency representatives Linda McClain, Mike Thompson, Nancy Werdel, DOE; Dib Goswami, Chuck Cline, Stan Leja, Ted Wooley, Ecology; Doug Sherwood, EPA; Unofficial member, Paige Knight, Hanford Watch; William Sanderson, WHC; and facilitator Naseem Rakha, Confluence Northwest

TOPIC: PUMP AND TREAT

Dib Goswami and Stan Leja, Ecology, gave a presentation about the cost and benefit of the pump and treat programs at 200 ZP 1 (Carbon Tetrachloride), 200 UP1 (Uranium), BP-5 (Cobalt, Technetium, and Strontium), and HR-3 (Chromium). Ecology is proposing preliminary ideas for reducing costs and maintaining the effectiveness of the pump and treat program. Mr. Goswami passed out a comparison of projected costs for each well (appendix item A). There was significant difference between Ecology and DOE estimates, due largely to lower operational and support estimates by Ecology, as well as a reduction in well monitoring and sampling.

200-ZP-1

Mr. Goswami indicated both the Carbon Tet. And Uranium plume were spreading, but at different rates. The Carbon Tet. plume has spread to 4.2 miles², and is continuing to spread. Modeling indicates that the plume could reach the C-18 crib within five years.

Because of the location and extent of the Carbon Tet. plume, Mr. Goswami questioned how the C-18 discharge program may effect groundwater flow. C-18 is being considered for discharge of water contaminated with tritium. He indicated that Ecology was concerned that the discharge program could be the driver for Carbon Tet reaching the river. Ecology would like the three agencies to look at other sites for this disposal project. Mike Thompson, DOE, indicated other sites have been considered but were dropped from the list for various reasons, including higher risk to the Columbia River. DOE-RL would, however, be willing to continue investigations with Ecology and EPA.

Mr. Goswami showed a graph of the Carbon Tet. plume, indicating that should the Interim Remedial Action (IRM) be successful in removing the Carbon Tet. hot spot, the plume could possibly be contained, meeting the goals of both the Hanford Future Sites Working Group and the Hanford Advisory Board. All agency representatives concurred that it was not likely the groundwater could be cleaned to the drinking water standard.

There was some discussion about the amount of time needed to remove the hot spot and contain the contamination. Mr. Thompson said that to justify pump and treat programs, it was important that an end point be both determined and planned for. Mr. Goswami indicated that should no DNAPL's be present, it was possible that results of the pump and treat program could be seen within five to seven years. He stressed, however, that an "end point" could not be calculated until after a DNAPL investigation. He also stressed that the 200-ZP 1 project is a mass removal process, not an attempt to remediate the site.



When asked for an approximation on the cost of the pump and treat program, Mr. Goswami indicated that after the capital investment the program should cost approximately 1 million per year. DOE's estimates are double that of Ecology's. Mr. Goswami indicated that much of the reduction in Ecology's cost comes from a reduction in well sampling and monitoring, as well as a 50% cut in operational management costs.

The costs of wells can be divided into the following categories:

- Treatability Tests
- Drilling Costs
- Sampling and Monitoring
- Project Management
- Use of Existing Resources

Stan Leja, Ecology, next gave a presentation about the potential savings to be found in well drilling. He gave several examples of Hanford wells that have cost upwards of 1200 to 1500 dollars per foot. Part of the problem, he felt, was that "support" costs were added into the drilling figure. Mr. Leja indicated that cost comparisons indicate that DOE is paying a minimum of 30% more per well than necessary. He also indicated that that gap is even greater if an off-site contractor was used for drilling.

Linda McClain, Nancy Werdel, and Mike Thompson all concurred that the current cost of drilling wells is far too high, and that as part of DOE efficiency measures, they are looking closely at ways to strip out excess cost.

BP-5

The three agencies are talking about shutting down the BP-5 project. The plume is small, and has migrated to the coarse gravel area of the Gabbel Gap, making it very difficult to locate. Additionally the extraction well is only pumping 4 gallons per minute, versus the hoped for 17. For the cost, the return on this project is very small, or non-existent. The possibility of the plume going through the gap and making it to the Future Sites Working Group Boundary is "almost nil".

Strontium 90 removal results on the BP-5 reverse well has been from 1200 to 1500 picocuries per liter. The proposed drinking water standard for Strontium 90 is 42 picocuries per liter.

Ralph Patt asked Mike Thompson if the BP-5 results can be extrapolated Strontium-90 removal at N-Springs. Mr. Thompson felt that the BP-5 project pumped at such minimal levels that it would be difficult to extrapolate the results to N-Springs. He felt, however, that the project clearly demonstrated that once pumped Strontium 90 can be treated. Thompson felt the big question at N-Springs was how the pumping would effect the aquifer. The BP-5 project did not give any indication how the aquifer was affected by pumping.

200-UP-1

The uranium plume is moving in a northerly direction. Because the project is getting significant results, both EPA and Ecology felt it should continue. Both agencies felt they could determine an end date for this project. The agencies said, however, that they do not know how the aquifer is affected by the pumping. The uranium plume is moving at a slower rate than the Carbon Tet. plume and if left untreated will not reach the river for 190 years. There could be a delay in this program, but the delay would mean that future action would cost more. Doug Sherwood felt that delays in this program should not be considered because, though moving slowly, the plume is approaching the Hanford Future Site Uses Working Group boundary.

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DOE Presentation

Mike Thompson outlined projected costs for the 200 Area Groundwater projects. Estimates include the cost of new equipment. Ecology and EPA strongly urged DOE to examine using already purchased equipment in order to reduce costs. They also suggested that there may be limited reason to go to the expense of decontaminating the equipment since it will be contaminated at the next site. Estimates for 1995 = 14 million, 1996 = 10 million, and 1997 = 6 million. All three agencies felt there was significant room for reduction of those numbers.

Linda McLain felt she could make a case for the projects listed by Thompson. She indicated it would be very useful to have a recommendation from the Hanford Advisory Board indicating their support for the pump and treat programs.

Thompson indicated that startup for the pump and treat programs could be staged they were not so high. The highest cost of the programs is capital investment. Thompson agreed that the BP-5 project should be dropped. Thompson would prioritize the other projects in the following order: 200 ZP-1, HR-3, and delay 200-UP-1.

The HR-3 project, chromium, would move forward to determine if the chromium levels entering the river are above the level toxic to fish. If studies show toxic levels to fish, DOE would consider making the HR-3 project the highest priority. DOE is preparing to send divers down to the salmon spawning areas to test chromium levels. This test will occur again in the autumn. Findings from these tests should indicate whether or not to invest more into the HR-3 project. Doug Sherwood indicated that they are looking at other chromium sites within the region so that they are applying regulations with a high degree of consistency.

There was disagreement among the agencies about whether or not 200-UP-1 should be held up. Any delay, Sherwood felt, would ultimately cost the taxpayers more. Additionally, current results with the project indicate a high rate of return from pump and treat, and therefore justify continuation of the project.

Ralph Pett asked Mike Thompson to elaborate on the N-Springs pump and treat program. Pett felt that N-Springs represented a "big hole" in the DOE's remediation projects.

Thompson indicated that the Strontium 90 plume at N-Springs did bring up significant regulatory and compliance issues. Strontium is entering the river at 3 orders above the levels set by the drinking water standard. The barrier wall would have bought time, and allowed the DOE to get a handle on the problem. The problem of pump and treat without the barrier wall is that Strontium absorbs strongly to soil. As such, pumping would need to occur at a low rate to maintain pull up. This would require a long pump time and many wells. DOE does not feel this particular project represents a good cost benefit.

Thompson indicated there were too many unknowns regarding Strontium pump and treat at N-Springs. It is not known, for example, if Strontium could be pumped consistently from the wells. Thompson suggested one method for determining whether Strontium could be pumped consistently would be to begin pumping without treating to see if consistent levels are pulled up.

Doug Sherwood, EPA, found the idea of pump without treatment "appalling", and suggested that DOE should move the treatment facilities from BP-5 to N-Springs to treat contaminated effluent.

Mr. Patt indicated that the conversation did not signal any adverse reasons for pursuing pump and treat at N-Springs. Patt said DOE had not demonstrated any "showstoppers" and he was bothered that DOE was not taking a more aggressive position at N-Springs.

Greg deBruler felt that the DOE was obligated to follow stakeholder values and aggressively follow their advise. He was in strong favor of pursuing pump and treat at N-Springs. Additionally, Mr. deBruler emphasized throughout the day that the overall budget for pump and treat at Hanford is negligible compared to other projects. Because the cost is relatively low, and the benefit to values stated by all public working groups so high, the projects should not be cut.

EPA and Ecology indicated they felt there was enough data from BP-5 pump and treat to go with and IRA on N-Springs. DOE disagrees. They currently are in negotiation. Ecology and EPA would like to see DOE move forward with N-Springs pump and treat milestones using equipment from BP-5 wells. Under the ER Refocusing the initial installation of the pump would occur by September 30, 1995, draft report on results in by February 28, 1996, and by November 30, 1996 there could be a clean up decision for N area groundwater.

Linda McClain suggested it may not be realistic to expect to know how the N-Springs aquifer will respond with just a six month experiment.

DECISION:

The ER Committee supported the position of the regulators, and decided to go to the Board with a recommendation to John Wagoner to cut the BP-5 and BY-Crib program, continue 220-ZP and UP-1 programs, continue HR-3 programs at existing capacity until chromium tests are completed, then revisit to re-prioritize, and begin pump and treat at N-Springs as per the ER Refocusing Agreement.

TOPIC: 100 AREA

Linda McClain indicated it was good that the agencies deferred the presentation to the Board for a month. The time allowed the three parties to iron out a majority of the details of the project. The remaining details to be worked out largely have to do with specific technical aspects of the three operable unit cleanup.

Ms. McClain wants the 100 Area project to get underway as soon as possible. She asked the ER Committee where they stood with the plan (appendix item B). Mr. deBruler indicated that the exposure levels as written, were unacceptable. He felt the number 10^{-4} was not accurate, and closer to 10^{-2} . deBruler also indicated that numbers for background radiation were still in dispute.

In response Nancy Werdel and Linda McClain noted that clean up levels will be to Model Toxics Control Act (MTCA) standards. That is, the MTCA standard of 10^{-4} reaches to 15 feet below soil surface. It was unclear from the discussion whether or not the exposure level increases as depth into the 15 foot level increased. DOE would check on this, and be prepared to respond to that question at the Board meeting. Ms. McClain also indicated that there were really only about 5 sites where the contamination level reached 40-50 feet.

The discussion turned to the 1301 and 1325 cribs. The 100 Area plans going out for public comment in April do not include any discussion on the N-Springs cribs, and are part of the N-Springs pilot project. Thompson indicated that because the 1301 and 1325 cribs are relatively new, there has been little opportunity for decay to play a role in reducing the exposure levels. Because many of the radio-nuclides in the cribs are short lived (perhaps as much of 60% of the radio-nuclides may be Cobalt 60), its may be wise to let decay play more

of a role at these sites before any remedial action. Both budget and worker exposure is constraining better characterization of the cribs.

Linda McClain also explained that the ER budget estimates have gone down, largely due to an acceptance of field data and testing versus lab tests. In prior budgets 40-50% of the cost was analysis in labs.

DECISION

The ER Committee agreed to write a letter in support of the 100 Area cleanup projects, and urging DOE to "get on with it." Denny Condotta will draft a letter for response by the committee at a March 10 Conference Call. The letter will be reviewed by the Board at its April meeting.

TOPIC: BOARD TOUR

The Board asked that the ER Committee consider 100 Area tour sites for the April meeting. The Board discussed various options, and determined the following schedule:

- K-Basin west
- 100 HR-3 pump and treat project
- 11B D1 Trench (source of chromium plume)
- D-Island
- N-Springs
- Barrier Wall
- N Reactor

DECISION:

Tour agenda will be submitted to Marilyn Reeves for her consideration. Mr. Patt will discuss the agenda with the Chairs at the Monday, March 6 agenda call.

TOPIC: CERE

Ralph Patt indicated that he had not yet received the CERE Report, and that he had heard that its distribution was delayed by a week. He expects to receive the report sometime after March 7. The HAB indicated they would like the ER Committee to review the report and bring recommendations to the April meeting. Mr. Patt asked who, among the ER Committee would be willing to help review the report. All understood that the report could be very lengthy.

DECISION:

The ER Committee will help Ralph Patt review the CERE Report. Copies of the report will be sent to Committee members. Once the report is received the members will distribute the review work, and submit review comments to Rosemary Guse (Westinghouse) for distribution to other all ER Committee members. Reviews should be submitted to Rosemary prior to March 22. The ER Committee will host a conference call on Friday, March 24 at 10 am to review CERE Comments, and draft a response letter to the Board. This letter will be handed out to the Board at its April meeting.

TOPIC: RISK ASSESSMENT WORKSHOP

The Public Involvement Committee joined the ER Committee to discuss the proposed Risk Assessment Workshop to be sponsored by the ER Committee. The concept of the workshop Arjun Makajani and Dr. Jim Ruttenberg regarding their facilitating a risk assessment workshop with Genevieve S. Roessler and Margrit von Braun from DOE. The workshop would help the Board understand the various risk assessment methodologies and their impact on cleanup at Hanford.

The ER Committee envisions the full day workshop taking place the day prior to the Board meeting. All Board members would be encouraged to attend. The evening (Wednesday night), would be an opportunity for the Board to hold a public forum and panel presentation on Risk Assessment. The following day, at the HAB meeting, the panel would give the Board a brief explanation of their various methods of risk assessment, and demonstrate how each individual would assess specific risks at Hanford, i.e. Carbon Tet, and Strontium 90. This will

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be an opportunity for the Board to hear different points of view and approaches to risk assessment.

The Public Involvement Committee expressed their interest in helping the ER Committee with the public workshop. To limit Board members time commitment, Marilyn Reeves suggested that the workshop take place on the Thursday of a one day Board meeting, leaving Thursday night for the public workshop and moving the Board meeting to Friday. Additionally, Reeves thought that either Spokane or Portland would be a better place for this kind of public information seminar.

Marilyn Reeves also asked that the ER Committee find a press contact in the Tri-cities (should this take place there), that would work with the committee to get the word out about the public workshop. The ER Committee noted that that was one of the things the ER Committee wanted to work with the Public Involvement Committee on.

Greg deBruler and Betty Tabbott are interested in participating in a conference call with the workshop (presenters to help them better understand what the Board's needs are.

DECISION:

Rakha will contact Makajani and Ruttenberg and arrange a conference call for them to speak with members of the ER and Public Involvement Committees'. Rakha will be in touch with Tabbott around March 13. Ralph Patt will contact Roessler

**HANFORD ADVISORY BOARD
ENVIRONMENTAL RESTORATION COMMITTEE
Summary of Meeting
10 March 1995 -3 - 4 pm
CONFERENCE CALL**

Chairperson. Ralph Patt called the meeting to order, and initiated introductions. Those present were: Committee members, Marty Benski, Denny Condotta, Greg deBruler, and Ralph Patt; ex-officio member John Erickson, Department of Health; contractor representative, Greg Eidam, Bechtel; Agency representatives, Mike Thompson, Nancy Werdel, DOE; William Sanderson, WIC; and facilitator Naseem Rakha, Confluence Northwest

TOPIC: PUMP AND TREAT

Draft ER Recommendations on DOE-RL Pump and Treat programs were faxed to committee members for review and comment. Because Mr. Benski does not have a fax, all future faxes should be sent to Marty Benski in care of Gordon Rogers, or to the Richland EPA office.

Mike Thompson indicated he would have the specific budget numbers for the ER Committee by Monday, March 13. Ralph indicated he asked for an hour and a half of the Board's agenda to review the pump and treat decisions. He thinks there may be some discussion around the N-Springs recommendation.

Greg deBruler asked that Mr. Patt be ready to discuss the difference between DOE and Ecology's budget figures.

Marty Benski felt that there was some level of inconsistency in the different recommendations given by the ER Committee. He felt, for example, that much of the Board's advise regarding the 100 Area and the CERE report indicate that we do not know specifically what is more important to take on. Yet the Pump and Treat advise is setting clear priorities. He asked when the CERE - 100 Area - and ground water clean up strategies get matched up.

Mr. deBruler responded by stating that he felt that the Board, as well as previous public advisory bodies have given clear priority to the DOE, that is, protect the Columbia River. Both he and Ralph Patt felt that the Pump and Treat advise were highly consistent with that advise.

Mike Thompson, DOE, indicated that the DOE would like ER to comment on specific reasons why they are recommending the N-Springs pilot project. DOE believes that because the pump and treat pilot project agreed to in the Tri-Party Agreement will only pump 50 gallons per minute, the overall impact of the project to the N Area aquifer will be inconclusive. Additionally, though a 50g/m pump will pull strontium, Thompson does not believe it will influence the plume no matter how long the area is pumped.

DOE's position is to drop the project. DOE has consulted with numerous independent experts about the pump and treat at N-Springs. All have indicated that the project would be a waste of money.

Additionally, Thompson indicated that recent studies indicate the amount of strontium entering the river is significantly less than first thought. The new numbers come from Bechtel. The regulators have not "blessed" the document. The document will be sent to all ER Committee members.

Denny Condotta indicated he would like to defer his recommendation until after he had a chance to review new data.

Ralph Patt asserted that one more study should not make a difference in the Board's commitment to protecting the river. Regulators have indicated that they want the project to proceed. Only the DOE wants to drop to the project. Greg deBruler felt that the DOE needs to listen to their advisory bodies.

Mike Thompson asked if the ER Committee would be willing to walk away from the project if, after six months, the study did not show any impact to the aquifer. Mr. Patt responded by indicating that they would be willing to look at and evaluate the results, but that the aquifer issue can not be the criteria.

Denny Condotta indicated that he would be abstaining from the N-Springs recommendation at this time.

DECISION:

The ER Committee will bring the recommendations drafted by Mr. Patt to the board meeting. DOE will send the ER Committee the Bechtel N-Springs report.

TOPIC: 100 AREA

Denny Condotta reviewed his draft ER recommendation on 100 Area cleanup. Mr. Condotta felt that it was important that the DOE get on with cleanup and rather than specifying specific cleanup levels, he suggested that DOE clean to the regulatory level. He felt this was a defensible position to both the public and to government officials.

John Erickson indicated that the Department of Health is currently working on developing rad level standards for soil and water.

Greg deBruler felt that the MTCA standard of 10^4 is the best standard to follow, particularly because there is little concurrence about EPA/NRC standards. Erickson indicated that MTCA was not written for red background.

DECISION:

The group had no changes for Mr. Condotta's report. The proposed advise will be included in the Board's April packet.