Repository PFT Meeting Notes

Date of Meeting:	July 27, 2004 9am – 12pm
Call Location:	Idaho Fish and Game Building, Coeur d'Alene, Idaho
Commissioners Present:	John Lawson, IDEQ Ed Moreen, EPA Mike McCurdy, TerraGraphics Cheryl Kohtz, TerraGraphics Robbin Simmons, IDEQ John Roland, WDOE Dave George, WDOE John Allen, Formation Chemical Shireene Hale, Kootenai County Planning & Zoning Dave LePard, IDWR W.C. Rust, Shoshone County Tom Bourque, TerraGraphics Rob Spafford, Ridolfi Randy Connolly, Spokane Tribe Scott Peterson, IDEQ

John Lawson summarized agenda.

John Lawson talked about the history and other basic information about the Big Creek Repository (BCR).

Ed Moreen gave an overview of the preliminary engineering and design of the BCR. This included information about siting requirements, the Basin ROD, location and meeting needs.

W.C. Rust said that the repository would fill in 3-5 years, according to the Tech Memo. He pointed out a conflict as to how long it would take to fill according to the Memo and the projected end date of the yard remediations. He also spoke about moving power poles to increase the capacity.

Moreen moved on to speak about BCR technical design alternatives including overhead power lines, cover design, slope configurations and the stability of the tailings pond. He also spoke about the hydrologic monitoring and the use of the HEC-RAS model at BCR. He went on to give an overview of the critical reach.

Connolly inquired about trees on the site. Moreen responded that the trees and vegetation would be accommodated because it will increase evapotranspiration. Roland said that the 2-ft. cover was not enough for trees. Rust questioned the permeability. Moreen said that the permeability

would actually be 10^{-5}, for a depth much greater than two feet, because all the soil in the repository is compacted. Lawson talked about trees and root balls and that they can be a problem. He said what we are proposing is a minimum standard for the cap. He acknowledged that the science of evapotranspiration caps is developing rapidly due to the use of these types of store and release caps on RCRA Subtitle D landfills. The industry is looking toward natural caps more closely than synthetic caps due to the longevity of the natural caps as well as their reduced O&M. He said we would look into many different areas such as capillary breaks and even partial synthetics. He indicated that adjustments could be made as the project develops.

Rust inquired about what was used for the water quality coming out of the model when doing the evaluation? Lawson said that the model uses a configuration of total metals in soil and formulates to water perking through. Moreen added that it is based on yard soils coming in. Rust, Lawson and Moreen discuss water quality issues with regard to the model. It was offered to supply Bill Rust with a copy of the Design Analysis Report that the USACE completed for the BCR. Moreen said a final cover was still being discussed and that the issue would be dealt with down the road.

Moreen spoke about slope configuration, cover design, liner and the leachate collection system. He indicated that there were many reasons for no liner and leachate collection system. Moreen also talked about storm water collections systems, detention ponds, keys to success and the next steps to take.

Roland had questions about stormwater management. Lawson discussed that the whole concept of the management of stormwater was to use BMP's as much as possible. The DEQ and their contractor, Washington Group International (WGI), will evaluate BMP's at each stage of this project. The goal is to keep the amount of stormwater in the detention pond to a minimum. This will reduce the need to discharge stormwater to Big Creek. The DEQ staff scientists also have looked into using land application of stormwater to reduce the amount of water in the retention dam. A land application disposal (LAD) would be used only during the times when the soil water content was low and plant water needs high (July, August and possibly September).

Roland asked about slope gradient. Moreen responded that the design called for a minimum 3% slope on the top of the repository. Roland indicated that that wasn't much slope. He thought the slope should be increased to increase infiltration as long as there are no stormwater problems. Moreen said that evapotranspiration has to be considered to encourage the storage of surface water for the vegetation. Lawson indicated that a goal of the field part of the design would be to keep the slope such that we encourage as much runoff on to vegetated areas as possible. This will allow non-impacted stormwater to leave the system without becoming contaminated and eventually converted to an inventory problem. Lawson went on to say that the DEQ and their contractors will design a water balance scenario for the Big Creek Repository when it goes into the O&M stage.

Roland asked if monitoring wells are on the site now? How is the area impacted? Moreen responded that there are many monitoring wells and that groundwater is impacted both at the site as well as up gradient from the BCR. The model did not address groundwater contamination in the area around the BCR for those reasons.

Rust asked where the monitoring well is located and asked what material the bank is composed of? Lawson suggested that to answer that specific question we would all have to look at DAR, Section 2.5.

Lawson discussed the BCR and the plan of operation including waste acceptance criteria. He indicated that a yearly report on activities would be generated.

Rust says that jig tailings could be put in the BCR according to the criteria outlined.

Lawson indicated that the design is not set in stone. It can be adjusted along the way depending on what needs to be reposited. He re-emphasized that what is going into the repository will be identified and that there will be an annual report.

Moreen discussed compliance with the OU3 ROD. He also spoke about human health, ecological impacts and exposure. Moreen had said the van Genuchten and Alves (1982) equation was used to model contaminant transport through the tailings pond. Moreen displayed Table 5 Model Calibration Results (Path C), based on an infiltration rate = 10 in/yr. (existing conditions) showing contaminant transport modeling results for the contaminants of concern: antimony, lead, arsenic, cadmium and zinc. The projected length of time for contaminant breakthrough to down gradient well is 5 and 10.5 years for antimony and arsenic. Breakthrough for 4 in/yr suggests temporal breakthrough to alluvium at greater than 100 years. Antimony and arsenic are projected to be detected first at 900 and 280 years as displayed in Table 9 of the Design Analysis Report.

Moreen spoke about integration with cleanups, compliance with ARARS, and waste appropriateness. He also spoke about cost effectiveness, indicating the cost is approx. $3.2 million. Present value of long-term O&M at $33k/year is projected to be $602k. He also talked about minimization of O&M costs and transportation impacts minimization, the latter of which is proximal to Big Creek Repository as approximately 80% of yard waste is coming from the upper basin. And finally, Moreen spoke about future use and community acceptance.

<u>Concerns Raised by PFT Members</u>

Lawson wanted concerns of the PFT recorded in the notes. He indicated that the model has gone through internal review by USACE and further evaluated by DEQ. He indicated that some members have concerns about permeability of the cover.

Roland said he wanted additional information on the cap and cover design. He also questioned whether adequate considerations have been taken with regards to ARAR Big Creek water quality standards. He felt that drinking water standards were too lax and not representative of the actual need, which is surface water quality, especially as it pertains to zinc and the overall TMDL for the South Fork

Rust asked about a contingency plan. If the repository leaks metals to Big Creek, what would the contingency plan be? He talked of liners for ERT. He also had questions about zinc. He would like more people to know about this.

Lawson indicated that liners can eliminate risk as well as compound risk, it depends on the liner and the location where the liner would be used. He went on to say that there is not enough funding from the Superfund to put a bottom liner on all repositories and then provide perpetual care of those liners and other long term O&M issues that arise that would have to be cared for by the State. He also indicated that pumping and treatment in perpetuity is not what the State wants with repositories, as they just can't afford it.

Dave George (Washington DOE) had concerns about liner and cap maintenance issues. For example, animals may burrow into it. He also asked about slope design. Lawson agreed. He said it would be best to store and release as much as possible. Lawson said the model assumed no cap, so that the figures we are considering were all without a cap. He indicated that with the addition of a cap we would get it closer to the performance goals established in the DAR. He asked the PFT to look at the end result. He wants the PFT to look at how we can achieve the best result and minimize long term O&M?

Roland inquired about upstream trustees and design specs. Rust/Roland/Lawson discuss.

Rust indicated that Canyon Creek still has monitoring wells that are high. He said the material is mainly composed of jig tailing. He indicated that the yard remediation materials are generally better quality but some yard wastes in the lower basin are very dirty/poor quality. Roland spoke of the design for BCR and Canyon Creek's design. Rust suggested Mark Stromberg get a hold of the design specifications for Canyon Creek. It went through an Engineering Evaluation Cost Analysis (EECA), EPA and State. Rust said that Canyon Creek should be getting better. He indicated that if the soil cap did not work, a cover could be put on it. Discussion ensued. Rust asked who was making the commitments to do these things.

Connolly asked if the cover design supported the different types of vegetation in the area and gave the Ponderosa Pine as an example. He believes that cover needs to be greater than 13 ft. to do that. He felt that an 18" to 24" cover seems trivial. Lawson responded that the problem is finding enough material. Connolly said he has experience with mines and fill. Lawson indicated that they could also do capillary breaks. Connolly said on the remediations at the Sherwood Mine site in Washington, they planted trees on tailings ponds and also wet lands with 13 feet of fill. Lawson asked where they found the 13-ft of fill? Connolly indicated that DOE found it and that the site was a radioactive site. Lawson acknowledged that the depth of cap was a concern for those working on the design – he will incorporate these comments into the records and make sure they are noted for the final design. Lawson also said that the DEQ anticipated that the final design for the BCR cover and cap would be rehashed by this group in a couple of years as the entire group will know more about the final specs for the repository. The issues that Connolly, Rust, Roland and others have raised were all issues that the USACE, EPA and DEQ specialists have been wrestling with over the last couple years of the process.

Dave LePard asked about bank armoring. He asked if there was a reason that they weren't doing the SE corner. He said it looks like armoring on the 2nd turn. Moreen said that while the radius at the SE corner is tight, it's much gentler than the SW corner which is the area that was identified as the critical stretch in the hydrologic modeling conducted by the USACE using the HEC-RAS program. LePard said armoring was added after the '97 flood. Lawson discussed armoring and said the armoring project was also modeled by the USACE. They found that the area that LePard was questioning was in fact not a concern in the model due to a much larger flood plain in this area. Lawson also agreed that this should be looked at again

Break at 10:30 a.m.

Meeting started again at approximately 10:45.

Cheryl Kohtz of TerraGraphics presented the Mission Flats Initial Repository Evaluation.

Lawson introduced the Mission Flats Repository (MFR) tentative plan. He noted that this site is in Tier 1 Evaluation and the fact that the land is owned by a private landowner.

Kohtz presented an overview of the agenda including the site description, flood plain evaluation, site investigation and potential repository volumes. She emphasized that all this information is preliminary. The proposed MFR site is located north of I-90 and south of Hwy 10 (Canyon Road). Cataldo is 2 miles to the east, off exit 39. The Cataldo Mission is across the Highway. There are 2 culverts that are plugged. The South Fork of the Coeur d'Alene River is located south if I-90. Kohtz gave an overview as to why this site was chosen. She indicated that the soil is contaminated in the top 18" with zinc, lead and arsenic. According to the 2004 FEMA Floodplain maps, the site was inundated with water in the 1996 rain on snow event.

Hale asked if the site was in the floodway or floodplain. Kohtz answered, "Floodplain."

Kohtz said the south side of the highway has flooded. She described different flood models that were applied to the area.

Rust noted that the area north of I-90 had trouble with swan mortality. He said there were other culverts that controlled the water level. He indicated that Fish and Game used to be involved. He said the culvert on the east end raises the water level 2-ft.

Roland said the area is perpetually wet.

Kohtz spoke about the site investigation.

Roland asked for clarification about the location of the site.

Kohtz went over data such as test pits, soil evaluation and groundwater depth. Four test pits were dug, 3 of which hit groundwater. She discussed soil test reports and found that contamination was confined to the top 18" of soil. Roland asked about the composition of the upper and lower layers. Kohtz replied that the lower was more clay-like and the upper was sandy

and silty. Roland asked if the groundwater was excavated and if samples were taken. Kohtz replied that the groundwater was excavated but that no groundwater samples were taken. Kohtz stated that the project is in Tier 1 right now and asked the question, "Do we want to go any further with this project?" She summarized the problems with finding other sites.

Hale asked what could be done to reduce flooding or at least not make it worse?

Connolly asked about the mine waste layer. He said it had flooded in the past so could the layer have been due to the tailings dam failing? Roland said it was probably due to dredging. Lawson added that the layer is 6-12" consistently. He felt it was pretty clear that it was due to dredging. Rust agreed.

Rust asked if there are power lines on the site. Kohtz replied that there were and that was why the site was cut off.

Rust doesn't think there is a problem with the Coeur d'Alene River flooding where it backs up behind the interstate. He indicated that there aren't many culverts that run through the Interstate. Lawson said we could engineer around that.

Roland said that lower flood plain modeling would fit right into this concept.

Rust, Roland and Connolly discussed USGS mapping and flood plain/river modeling.

Rust asked if the Interstate flooded in the FEMA map. Kohtz replied that it did. Lawson added that ITD information indicated that the Interstate did not flood. Rust reported that it did not flood west of the river either.

Lawson asked how everyone felt about this plan.

Hale said that the project (placing fill in the flood zone) might increase flood levels. To meet the requirements of our Flood Damage Prevention Ordinance, some sort of mitigation might be necessary to offset the resulting decrease in flood storage capacity (or some other action to ensure that flood levels do not increase as a result of the project). She indicated that the site might fit into a County exemption from the permitting requirements of the County Site Disturbance Ordinance.

Roland/Lawson/Stafford discussed the need for various sized sites closer to where the need is. There is a need for larger sites but they are difficult to find. Discussion continued about site and flooding issues. Roland suggested designing with the idea of someday getting access to mining company land nearby with the vision of expanding the facility. Lawson indicated that the site can't be expanded to the north because of water. He said there were other problems with power lines and hills.

Connolly reported that there are low wildlife populations in the area due to contamination.

Lawson said the next step is to decide if we are going forward with this or not.

Connolly said he thought we should move forward.

Roland stated that we should proceed with the purpose of linking with larger needs and not restricting data gathering on the site. He thought we should go to the west and dredge spoils to get a baseline and to get a sense of what is going on. He continued that the site had good access off of I-90 so that an off ramp could go directly to the repository and not cause problems with tourism and traffic flow.

Rust indicated that it was a good idea but that we should look at the entire Mission Flats area.

Roland/ Kohtz discussed a previous wetlands filling violation on the Whiteland property.

Roland said that there are lead issues in regard to the tailings but the larger concern with regard to surface water is zinc and its mobility. He suggested that when doing evaluations, take zinc into consideration. He stated that we can't dig below the water table but we certainly could look at a repository above the groundwater level. He also commented about fish and wildlife and that the overall utility of the area is low for fish and wildlife due to the contamination beneath the water. Roland asked about the rest of the area that is now wet. He suggested there might be a way to bring it back into the fold. Discussion ensued about who owns properties around the site. Rust asked that we look at groundwater at the site. If the groundwater is clean then rethink the idea. If it has high levels already, there would be no additional impact.

Lawson summarized the suggestions as 1) increase investigation of groundwater and soils; 2) look at areas west and north and don't rule out the whole 90 acres.

Rust suggested we talk to ASARCO as they are trying to sell their nearby property that is located west of the road and higher than the proposed area. He said it is not wetlands and that there are 18" of tailings on it.

Lawson reported that Mark Stromberg of the DEQ has presented some long-term ideas about building in this area. He stated that Mark's idea included a repository, wildlife areas and possible future development.

Lawson indicated that in response to the PFT recommendations, IDEQ would move forward.

Roland/Rust discussed ownership of surrounding properties. Roland suggested doing a big package of wetland mitigation and the repository site. He thinks we can remove contaminants and address the culvert issues.

Lawson talked about where DEQ is going with repositories in 2004.

He said they are working with other agencies, focusing on private landowners and hiring private realtors to help locate potential sites. Rust asked where DEQ was looking for sites. He said the yards have ICP now but there is nothing in the 5-yr plan. Rust/Lawson/Connolly discuss finding sites.

Bourque of TerraGraphics spoke about securing funding for infrastructure improvements in the Box and Basin. He said that the transport of material greatly impacts costs. Rust/Bourque discuss infrastructure and funding issues for several towns.

Rust/Moreen discuss ICP repository capacity. Rust inquired that the ROD planned for ICP in the Basin but the EPA isn't allowing ICP waste to go to the BCR. He pointed out that this is a contradiction. Rust also indicated that the concern of locals is how much responsibility gets placed on locals. He stated that they do not want to get stuck with maintenance. Moreen replied that this is an area that is being investigated. He further stated that the concept of the ICP hasn't been finalized yet so that it is not appropriate for the ICP type wastes to go to a landfill like the BCR which is set up for wastes that support work being conducted per specific parts of the remedy.

Lawson asked if the group had any other issues to discuss.

Connolly stated that small repositories in the upper basin could be at closed or abandoned mine sites. He said there was an EPA study to put tailings back into the mines. Bourque pointed out the CTP sludge in the Bunker Hill mine.

Meeting adjourned at approximately 12:00.