WRD Review Comments on the May 7, 2007 groundwater data from the South Sprint Facility, Locin Oil, Sent to PAIS in June 2007 by the Southern Ecology Management Inc.

The following notes and comments from Roy Irwin and Pete Penoyer of WRD are based on the assumption that years ago the values were much higher and that there are no endangered species or other "special-value" natural resources being impacted. Let us know if that assumption is wrong.

In a comparison between December 04 and May 2007, 17 months:

Well ow-6 had a good decrease in BTEX, but a slight increase in TPH
Well ow-8 had a good decrease in BTEX, but also a slight increase in TPH

Overall, the above two are not too concerning, some of the BTEX might be breaking down into fractions that could change the TPH values. Whether this is true or not, overall we don't have too much concern about the above. Increases in BTEX values would be more concerning.

Potentially a bit more concerning is the fact that well RW-4 in the old pit area had an increase in both BTEX and TPH. However, this may be due to the plume moving around a bit and some natural noise in the long term attenuation resulting from rise and fall of the water table through any residual hydrocarbon smear zone. It might be instructive to see a 20 year plot of values for this well and a few of the other wells. Short term fluctuations, even over 17-18 months would not be to surprising as smear zones or nearby clays become re-hydrated and re-mobilize adsorbed hydrocarbon contaminants. If one sampled more frequently, one might see even more variability, but the key thing is to establish that long term attenuation is continuing, and the results from this one well are not concerning enough to change our overall assessment that mostly things seem to be going in the right direction.

Overall the QA/QC results looked ok, and the detection limits were probably fine for this phase of the remediation. When we get closer to total cleanup, we might want some additional sampling at lower detection limits, including the expanded scan for PAHs and alkyl PAHs, rather than just BTEX and PAHs. But this would be down the road when it looks like remediation is close to complete.

Historical spill and remediation records should possibly also be reviewed for this site. You probably have the more complete records there, so this task should probably be done there. Our records may be incomplete, and we are in the middle of a move, so many older records are not available to us at the moment. One goal of reviewing past records and corresponds would be to document how much original free product was measured on the surface of the water table and how much free product was removed from the recovery wells. Thus, we could establish some context, including a the starting point and progress being made toward site cleanup. Is the plan to use only natural attenuation (MNA

We are not jumping to the following conclusion from this from this very limited (single) data set, but if it were to prove true that ground water cleanup is progressing too slowly toward levels acceptable to the Park or state cleanup standards (have such site specific standards been established), some enhanced bioremediation measures might be considered for this site.

Roy Irwin and Pete Penoyer, NPS, WRD NRPC, Fort Collins, July 26, 2007