

Nov 1, 1988

Dear Oz:

I planned to xerox my notes from INEL to send to you, but didn't get the opportunity. I have summarized here the important parts of our INEL visit.

The INEL (EG&G Center for Environmental Monitoring) - UofI Taylor Ranch Res. Station Agreement:

INEL will provide solar powered air monitoring equipment, filters, specimen containers, postage (probably), sample analysis, and some data analysis.

U of I will provide (through \$14,000 budget from INEL) a <sup>solar powered</sup> meteorological station (\$8838), manpower for data management <sup>(\$5257)</sup> collection, transfer, equipment maintenance, travel for training, and someone to calibrate equipment (from U of I Engineering?), and possibly postage.   
Clark Lemman

Meteorological Station

To be ordered thru Campbell Scientific (Rusty Munn). UI budget for station includes travel & salary for Rusty Munn to install the station at TR. & train us. C.S. will set up the software for data collection (data logger). Dale was going to call C.S. to see if they could/would set up the Lotus macros for data display & analysis. Randy Johnson (NOAA, Idaho Falls) has the same CR10 met. station as we will get. He set up the Lotus macros for Dale (INEL). He suggested to Dale to send the INEL formatted datalogger to C.S. so our datalogger program would be same as theirs, so we could use the INEL Lotus macros OR C.S. can set up the datalogger on its own program and it would take 2-3

days for NOAA/INEL or UofI to reformat the INEL Lotus macros for our datalogger.

One problem noticed in the rain gage specifications was that it only measured liquid precipitation, not snow, etc. Need to ask Rusty Munn if there are other rain gages in the same price range that measure snow too; or how do we manually measure snow & add it to the other weather data on the computer.

### Jim & Holly's Responsibilities

- 1) Learn to use equipment; help set up station
- 2) Change air filters every 2 weeks & mail to INEL
- 3) Download weather data from met. station datalogger to computer weekly & send copy to INEL
- 4) Display & analyze met. data for consistency & accurate readings weekly (quality assurance)
- 5) Establish and collect data annually from a.) permanent plots on biomass, % cover, litter fall and b.) destructive plots from soil, litter, moss and lichen samples. Send samples to INEL for trace metals analysis.
- 6.) Collect monthly water samples for trace metals; send to INEL for analysis.
- 7) Schedule sampling, data collection & equipment calibration; responsible for data management and a field log; maintain instruments; coordinate monitoring program between UofI and INEL

### Questions for Oz

Has the Forest Service okayed the use of a portable meteorological & atmospheric monitoring station? Met station tower is ~15' high; atmos. equipment is in a "suitcase" with attached solar panels. Call Dale if Payette NF wants more details about station specs. or use of a similar station in Bridger Teton Nat. Forest (USFS Hydrologist, Al Galbraith).

Has some of INEL budget already been spent? Dale said he noticed charges already billed to INEL, but did not know what they were for.

### Atmospheric Monitoring Education & Presentations

Dale has slides on pollution/emissions sources in west US, sensitive areas in west US, monitoring equipment, schematic diagrams of pollution → acid deposition & pollution → heavy metals cycles, and need for global baseline monitoring. We can get copies of these slides for our own presentations.

### Other Contacts

Several people at INEL expressed interest in the FWR/INEL Environmental PhD program & doing research at Taylor Ranch; Marilyn Case.

Others interested in doing research at Taylor Ranch or working on coop. research with UofI at Taylor Ranch: Bob Breckenridge, Gail Olson, Chris Daley - mostly interested in water quality, sedimentation, cyanide/water, anadromous spawning gravels.

Wayne Minshall, ISU aquatic ecologist, interested in macroinvertebrates & relationship of macroin. heterogeneity to stream order and also in fire's effect on abiotic & biotic stream conditions. We will collect inverts. this fall for him to tie in with last summer's

pre-fire data.

### Ideas from other INEL Scientists for T.R. Research

Anadromous fisheries; spawning beds, scouring & sedimentation; macroinvertebrates

Water quality: basic measurements of water properties, pH, temperature, sedimentation, trace metals, cyanide, E. coli, Giardia

Stream sedimentation & embeddedness (esp. in spawning areas). Dave Burns, Payette NF is doing some of this near TR (Jim & I were unaware of this).

Develop contaminant monitoring system with USFWS (INEL is active in this now), Develop standard methods.

Coordinate with state too (Al VanVorn IDF & G Fisheries research); Taylor Rch as a control / un-impacted area.

Evaluate existing impacts to Big Cr, a "pristine" stream - roads, mining, recreation, sedimentation, water quality - also baseline information for future changes - fire, mining, new roads, recreation.

### Future Funding / Project Continuation

Only available from INEL for 1<sup>st</sup> year

INEL can archive soil samples til later \$ for analysis

INEL will continue to analyze & store met. data, but no new money to pay for data collection.

INEL should be able to provide at least several months per year of filters for trace metals monitoring.

U of I should look for alternative funding sources (USFS?); INEL will too, or scrounge from other projects.

Potential end of year R&D funds for short prototype projects - maybe could be used at Taylor Ranch.

LONG TERM POTENTIAL for TAYLOR RANCH PROGRAM  
 Equipment & data are available for other projects  
 Tie in with global monitoring - as one of the station  
 INEL may become DOE's environmental / air quality  
 monitoring coordinator

Taylor Ranch could become a satellite monitoring  
 location (baseline) for impacted DOE primary  
 sites.

Taylor Ranch as a DOE monitoring site would be  
 good DOE public relations.

### DALE'S Address

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BRUCE'S / DALE'S Ideas for Multiple Weather Stations  
 Good idea. First run all units side by side  
 to calibrate. Then one at met. station, canyon  
 bottom, north aspect, south aspect, burned /  
 unburned.

This 5 pages is the most important INEL information,  
 Give us a call if you have any questions or comments.

Holley