March 21, 2005
J. Dixon's Comments re: McGrath Restoration

- In the Impact Sciences report, P6: "Groundwater sampling was conducted in September 2002 and a piezometer was installed in June 2003 to determine the depths of groundwater and saturated sediments. Water depth with the piezometer was measured on most site visits since installation." and P6: "Groundwater sampling was conducted beginning in September 2002 and continuing to the present…."

  In the Integrated Water Resources Hydrology report, P5: "IWR attempted to obtain any existing historical monitoring data for shallow groundwater levels on the McGrath parcel, however, no such data could be located."

  Why weren't the data referenced in the Impact Sciences report made available and used for the hydrology report? See also comments on hydrology in my 11/17/04 memo.

- Should have maps with isopleths of depth to water for spring and late summer overlaid on existing elevations. This would allow one to assess directly the grading plan. The grading plan shows the bottom of most created wetland areas to be at 8 feet elevation, one area is at 7 ft, and several at 9 or 10 ft. The report says (p27) that at the race track the soil moisture is deepest from the surface, but grading is least (bottom at a 10 ft). There is little explanation of the details of the grading plan. The requested maps would be very useful in analyzing the grading plan.

- P32 under "Existing Wetlands and Dunes," 2nd paragraph, 2nd sentence: Change to read "If purchased from a nursery, the seeds or propagules **from which the plants were grown** must have been collected from plants ~~indigenous~~ **growing in native habitats between** point Conception and Point Mugu…."

  P41 under "Plant Palette" add after "…the immediate vicinity of the mitigation site." **Any nursery materials used in the restoration must have been grown from seeds or vegetative materials obtained from plants growing in native habitats between Point Conception and Point Mugu.**

  As written, the restoration materials need only be species that are native to the area between Pt Conception and Pt Mugu, but the seeds or cuttings could have originated elsewhere, say San Diego. The intent of the condition is to get the materials close enough to McGrath that a different genetic makeup would not be introduced.

- Performance standards under "Survivorship Percentage" on p55. Calls for 80% survival the first year and "similar survival percentages" thereafter. If there were 80% survival each year, of each 100 individuals planted only 11 would remain after 10 years. Actual survival should be specified. There should be hydrological performance criteria.

- Piezometers should be installed at each of the wetland sites, not at "several" of them. There aren't that many sites and knowledge of hydrology is necessary to understand potential problems in the growth of wetland plants.

- "Statistical Analysis from Field Data" (p58). What does "to ten percent sensitivity" mean? It is pointless to do an after-the-fact power analysis. The power analysis should be done now as part of the restoration plan in order to determine the number of replicate samples needed for final performance monitoring. This requires specifying alpha, beta (or power), the sample standard deviation, and the minimum difference to be detected (effect size).

- As recommended earlier, the plan should include the statement, "Final monitoring for success shall take place after at least three years with no remediation or maintenance activities other than weeding." The intent is to insure that the restoration is self-sustaining.

- See other comments in my 11/17/04 memo.