

Native Species and Revegetating Oil and Gas Disturbances in the Sandy Soils of the Parkland EcoRegion of Alberta

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In 2001, Talisman Energy Inc was interested in developing their lease holdings in the Ribstone Creek Ecological Reserve. Located in the Central Parkland Subregion of the Parkland Natural Region, the Ribstone Creek Ecological Reserve is composed of some very unique topographic features and is designated a "Protected Area" under the Wilderness Areas, Ecological Reserves and Natural Areas Act. Topographic features included are: important wetland/riparian areas, well-developed dune formations as well as stabilized or less developed dune formations, and some rare plant communities. The key concerns to regulatory agencies such as SRD, AENV and oil and gas industries, like Talisman Energy, are the disturbance or loss of native vegetation and habitat and the introduction of weedy/invasive species into native habitat (Tera Environmental Consultants, 2001). The Knowledge gained from this study will allow oil & gas industries to

apply similar strategies to other areas (example, sand hills of Saskatchewan) where oil and gas activities raised concern from environmental groups and regulators. Promising plant varieties will allow resource extraction companies to reclaim environmentally sensitive areas to sound ecological function, provide important wildlife habitats and allowed for good stewardship of our land.

Past revegetation efforts were based on general adaptability of introduced grasses and their availability. Because of their competitive nature and persistence, these introduced species have out competed the native species in places where they have been seeded (Adam et al., 2003), resulting in landscape fragmentation, reduced soil quality (Dormaar et al. 1995), reduced range productivity and decreased ecosystem diversity and functioning. The importance of using native species in reclaiming disturbed sites has been emphasized by government guidelines and regulations (Environmental Protection and Enhancement Act, Native Plant Revegetation Guidelines) and by the public's concern to protect the natural environment and conserve biodiversity. The regulations and guidelines define the expectations associated with achieving reclamation success. However, systems (know how) and tools (plant materials) are required to achieve and to measure or determine reclamation success in these sensitive ecosystems such as the sandy soils. Achieving reclamation success requires

appropriate soil treatments and reintroduction of native plant species (Bradshaw 1987). Therefore, to meet regulatory requirements, oil and gas companies must have access to native seeds indigenous to the area in which they are operating. They must also have the knowledge to use these species that will allow them to return the land to a state comparable to its pre-disturbed condition within an acceptable time period.

Final Report