

US EPA ARCHIVE DOCUMENT

**Letter of Agreement between
TechniSand, Inc.
and
Michigan DNR, Parks and Recreation Bureau, State Park Stewardship Program (SPSP)**

At the Gulliver-Peters sand mine (Peters pit) at Grand Mere State Park, TechniSand agrees to do the following:

Steep Slopes (19.8 acres)

- ❑ Purchase and install native beach grass (*Ammophila breviligulata*) at 18" centers (12" centers where necessary to stabilize very steep slopes) on a maximum of 15.0 acres (includes all steep slope areas not already densely vegetated) and at 5-foot centers on approx. 1.5 acres (the steep vegetated north-facing slope) from a source agreed to by SPSP. Beach grass (marram) is a temporary crop used to stabilize slopes and provide protection for establishment of oaks, shrubs, and wildflowers characteristic of a natural dune forest.

Estimated Cost – \$80,000

- ❑ Purchase the following plant material from a source agreed to by SPSP:
2,025 black oak (*Quercus velutina*) seedlings (1-0 bare root stock), 945 red oak (*Quercus rubra*) seedlings (1-0 bare root stock), 1,485 white oak (*Quercus alba*) seedlings (1-0 bare root stock), 1,980 sand cherry (*Prunus pumila*) seedlings, 1,600 red-osier dogwood (*Cornus stolonifera*) plants (seedlings or cuttings), 10.0 ounces of Horse-mint (*Monarda punctata*) seed, and 20 white pine (*Pinus strobus*) seedlings (2-0 bare root stock)

Estimated Cost – \$9,000

- ❑ If deemed necessary by SPSP, hydroseed a mixture of native grasses and forbs (with a cover crop of oats) provided by SPSP.

Gentle Slopes (5.4 acres)

- ❑ Purchase the following plant material from a source agreed to by SPSP:
675 red oak (*Quercus rubra*) seedlings (1-0 bare root stock) and 405 white oak (*Quercus alba*) seedlings (1-0 bare root stock)

Estimated Cost – \$1,500

- ❑ If deemed necessary by SPSP, hydroseed a mixture of native grasses and forbs (with a cover crop of oats) provided by SPSP.

Prairie (1.2 acres)

- ❑ If deemed necessary by SPSP, hydroseed a mixture of native grasses and forbs (with a cover crop of oats) provided by SPSP.

Wetpanne (2.9 acres)

- ❑ Purchase the following plant material from a source agreed to by SPSP:
3600 common rush (*Juncus effusus*) seedlings, 300 southern blue flag (*Iris virginica*) seedlings, 600 white boneset (*Eupatorium perfoliatum*) seedlings, 600 hardstem bulrush (*Schoenoplectus acutus*) seedlings, 600 arrow-arum (*Peltandra virginica*) seedlings, 600 common arrowhead (*Sagittaria latifolia*) seedlings, 600 pickerel-weed (*Pontederia cordata*) seedlings, and 600 black-eyed susan (*Rudbeckia hirta*) seedlings

Estimated Cost – \$5,000

- ❑ If deemed necessary by SPSP, hydroseed a mixture of native grasses and forbs (with a cover crop of oats) provided by SPSP

TechniSand will complete all grading and other tasks specified in the current (1999) PCUMRP. Contouring of the upland slopes (including the steep slope, gentle slope, and prairie areas) will be as specified in the PCUMRP. The wetpanne will be graded at approximately the elevation of the mean water table. Contouring of the below-water-table features will be as follows: 40-foot wide band at 1 foot depth or less, followed by 20-foot wide band at 2 feet depth or less, followed by 40-foot wide band at 1:10 slope (down to 6 feet depth), followed by angle of repose to maximum depth of mining.

TechniSand also agrees to position scattered logs on the steep slopes to create microhabitats for plant establishment and animal shelter. Density of logs could be up to 1 log per 2 acres. On-site logs should be used, and if any off-site material is available it may also be used with approval of SPSP.

The SPSP will install all species purchased by TechniSand, except marram (as indicated below) using accepted proper planting techniques. It is understood that TechniSand is responsible for the survival (or replacement, if necessary) of the above revegetation to meet DEQ standards for reclamation.

The total cost obligation by TechniSand for reclamation planting is estimated to be \$95,500.00.

SPSP agrees to do the following:

- ❑ Install all plants purchased by TechniSand, except beach grass (marram), for the steep slope, gentle slope, and wetpanne areas
(will likely use MCCC labor)
- ❑ Acquire seed to be hydroseeded by TechniSand in the steep slope, gentle slope, prairie, and wetpanne areas (if SPSP decides to use hydroseeding as a planting technique)
(will likely use volunteers and staff)
- ❑ Purchase and install all remaining plants not purchased by TechniSand for all zones described in the planting plan section of the *Sand Mine Restoration Plan: Grand Mere State Park*
Estimated Cost – \$105,000 (from EPA grant and internal program funding)
- ❑ SPSP also intends to conduct monitoring and other restoration activities at the site pursuant to the *Sand Mine Restoration Plan* and our EPA grant. Future revisions may be made to the restoration plan due to changes in site conditions and progress as reclamation proceeds.

The signatures below indicate that the parties agree to carry out the tasks specified in this letter.

Signature
Bob Ledyard
TechniSand, Inc.

Date

Signature
Rodney A. Stokes, Chief
Parks & Recreation Bureau, Michigan DNR

Date