

East Manson Unit No. 7

Waterflood Project

Planned Corrosion Control Program**

Source Well

- Downhole corrosion inhibition program
- Downhole scale inhibition program
- Corrosion resistant valves and internally coated surface piping

Pipelines

- Source well to 16-4-13-28W1 water plant – fiberglass
- New high pressure pipeline to injection wells – 2500 psi high pressure fiberglass

Facilities

- 16-4-13-28W1 water plant and new injection pump station
 - Plant piping – 600 ANSI 80 pipe, internally coated or 2500 series fiberglass
 - Filtration – stainless steel bodies and PVC piping
 - Pumping – ceramic plungers, stainless steel disc valves
 - Tanks – internally coated Devoe 253, corrosion resistant valves

Injection Wellhead / Surface Piping

- Corrosion resistant valves and stainless steel and/or internally coated steel surface piping

Injection Wells

- Casing cathodic protection where required
- Wetted surfaces coated downhole packer
- Corrosion inhibited water in the annulus between tubing and casing
- Internally coated tubing surface to packer
- Corrosion resistant master valve
- Corrosion resistant pipeline valve

Producing Wells

- Casing cathodic protection where required
- Downhole corrosion inhibition program
- Downhole scale inhibition program

**subject to final design and engineering