Heavy Oil Thermal Recovery Technologies

- Comprehensive Design Technology for Heavy Oil Development Program
  - Steam Injection Technology
    - Mechanical sand control technology
    - Uplifting technology
  - Sand Control Technology
    - Composite sand control technology
    - Well bore series sand dumping technology
  - High-temperature Testing and Tracing Monitoring Technology
    - Surface dryness distribution and steam injection parameter monitoring technology
    - High-temperature steam injection well steam profile testing technology
    - Random downhole steam dryness sampling and testing technology
    - Testing technologies for pressure reduction in capillary well shut-in
    - High-temperature dual point testing technology for elementary error well temperature
    - Testing technology for profile of produced fluids during venting of high-temperature steam injection
    - High-temperature durable test technology
    - Cross-pump direct-reading monitoring technology for oil wells
    - Capillary delaminated pressure & temperature dynamic monitoring technology
    - SAGD multi-point temperature & pressure dynamic monitoring technology

- Associated Steam Flooding Technology
  - Delaminated steam flooding technology
  - Steam flooding high-temperature lifting pump
  - High-temperature snubbing operation technology

Recovery Logy for High Oil Development
Enhancement of steam stimulation performances for heavy oil development
Thermal Recovery Method

Steam Assisted Gravity Drainage (SAGD) Matching Technology
- High-efficient gas-water separation technology
- SAGD intermittent steam injection technology
- SAGD high-temperature high-duty pump uplifting technology
- Heat-exchanging and metering technologies for produced fluids

Horizontal Well/High-inclination Well Development Technologies
- Horizontal well/high-inclination well uplifting technology
- Horizontal well sand control technology
- Horizontal well sand flushing technology

Software Technology
- Design of heavy oil steam stimulation optimization
- Design of settling and production engineering pro

Associated Technologies for Heavy Oil Surface Works
- Horizontal Well/High-inclination Well Development Technologies
- Software Technology

HSE Related Technologies