



## HEAVY OIL CAPABILITIES







Equinox Engineering Ltd. is a world class provider of EPCM services to the global oil and gas marketplace.

Founded in 1997, Equinox has successfully executed over 6,000 significant projects around the world including North America, Europe, Asia, the Middle East and Australasia.

The Equinox Heavy Oil business unit has industry leading expertise in conceptual design, Front End Engineering Design (FEED), Engineering Design Specifications (EDS) and Detail Design of heavy oil and conventional/heavy oil production facilities, pilot plants, well pads and flowline projects.

We specialize in Cyclical Steam Stimulation (CSS) and Steam Assisted Gravity Drainage (SAGD) projects, having successfully executed numerous in Canada.

## CENTRAL PROCESSING FACILITIES

Equinox provides expertise, technical solutions and effective execution strategies for thermal in-situ projects. Our experience spans grassroots facilities, upgrades and optimizations, debottlenecking and sustaining capital projects.

Our experience includes inlet separation and oil treating, diluent recovery, produced water de-oiling, water

treatment and softening, wastewater treatment, sludge treating and disposal, and steam generation.

We provide innovative solutions for Central Processing Facilities (CPF) including Utilities and Offsites, as well as Field Facilities such as Pads and Flowlines. We also execute infrastructure work related to pipelines, power, water, roads and camp design.

# Central Processing Facilities



# Wellpads

Equinox's design philosophy regarding SAGD and CSS wellpads is to 'design one, build many'. We work with our clients to develop a sustainable design to incorporate all requirements of the reservoir and process conditions, balanced against the requirements of the production strategy, the facility design and operational preferences.

Within the scope of a large well pad program, we provide our clientele with opportunities to standardize the design allowing consistency and cost effectiveness going forward.

We also work closely with our clients to develop and optimize well pad design regarding:

- optimal number of well pairs per module;
- ideal number of modules per pad;
- use of proven or emerging technologies for production;
- wellhead control module design;
- test and group separation strategy and location;
- ES-SAGD technology implementation.



# Above Ground Pipelines

Equinox's experience in above ground pipeline design and implementation is unrivalled.

We have extensive project experience with steam, emulsion, production gas and fuel gas pipeline projects for SAGD and CSS applications. This includes tie-ins to pads as well as trunklines to and from the CPF.

We are specialists in design considerations and regulatory requirements for above ground pipelines. Our pipeline team including our mechanical

design and stress engineers are skilled in material selection requirements for pipeline, expansion loops, transitions and valve stations as well as road crossings.

Our civil and earthworks team are also experts in design and construction considerations for pipeline support and anchor design.





# Sustaining Capital

Equinox understands the importance of maintaining an efficient operation, and the costs of downtime.

We have a long history of executing small and midsize projects in live operating environments. Our project experience includes Sustaining Capital, Maintenance Capital as well as Management of Change (MOC) projects. This includes ongoing plant support, annual turnarounds, modifications, optimizations and debottlenecking.

Equinox understands that small operational projects have unique execution requirements and cannot be executed as though they are large Capital projects.

Our 'MOC Work Flow' program works efficiently to address the fast paced requirements of in-plant maintenance and MOC projects. If appropriate, Equinox will embed personnel onsite, to work as a team with our clients. Our program has been refined over the past several years for SAGD production facilities.



# Pilot Plants

Equinox has successfully executed numerous SAGD and CSS pilot plant projects, including conceptual studies, FEED and Detail Design.

We provide the consulting expertise to develop a fit-for-purpose design to meet specific piloting requirements, such as testing the reservoir to validate the size of a commercial facility, or to test a new technology in a field environment.

We have worked with clients to develop modular and/or portable pilots that are strictly designed to capture the characteristics of a reservoir. These facilities often have planned short operating life spans and Equinox provides cost effective design decisions where required.

Equinox also has substantial experience with new technology being adapted and piloted to demonstrate its effectiveness in a field environment. Our civil and earthworks team are experts in design and construction considerations for pipeline support and anchor design. The team are also experienced with access road and wellpad earthworks design.







Equinox delivers focused and experienced

## **Premium Teams**

customized with the best

## **Technical Expertise**

to align with

## **Client Culture**

to ensure repeatable and

## **Successful Projects**



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Canada | USA | Australia | India

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