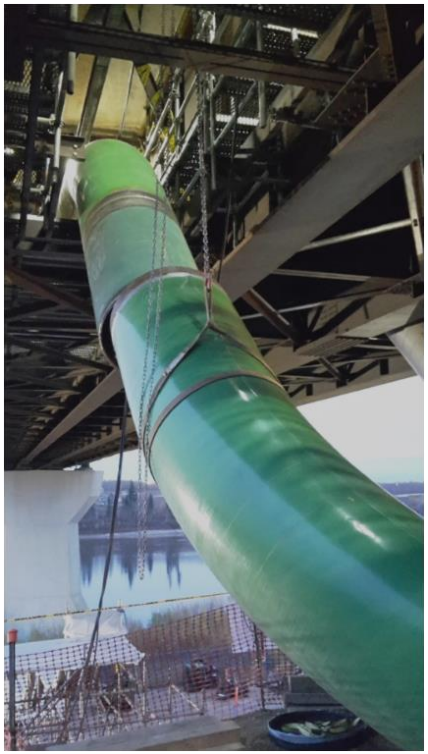
# ICRFLR – Bridge Piping Replacement

| Client | Location | Project | Value |
|---|---|---|---|
| **Syncrude Canada Ltd.** | **Peter Lougheed Bridge** | **ICRFLR - Bridge Piping Replacement** | **$21M** |
| **Start Date:** June 2016 | | **Finish Date:** September 2017 | |

**Project Description:**

Syncrude Canada Limited's (SCL) Intersite Corridor Relocation and Froth Line Replacement (ICRFLR) project was created to replace approximately 800m of 30" waterline and 1000m of 36" froth line located around and under the Peter Lougheed Bridge. The pipe is underground with the exception of the pipe located under the Peter Lougheed Bridge where it sits in external bays. Scope split over 2016 and 2017.

- Installed structural pipe supports and guides under Alberta Transportation Bridge
- Automated welding of 36" and 30" piping under bridge
- Bent and installed 12 field bends
- Installed two 36" valves
- Installed 1000m of underground piping
- Procured and installed an Aqua Dam to work in environmentally sensitive area
- Pigging activities (cleaning pig, gauge pig, fill pig, etc.)
- Hydrotested 450m of above ground 36" in restricted work space to 1800psi (CSA Z662)
- Hydrotested 1000m of underground 36" (CSA Z662)
- Dewatered and completed post hydrotest drying requirements



# ICRFLR – Bridge Piping Replacement - Continued

| Client | Location | Project | Value |
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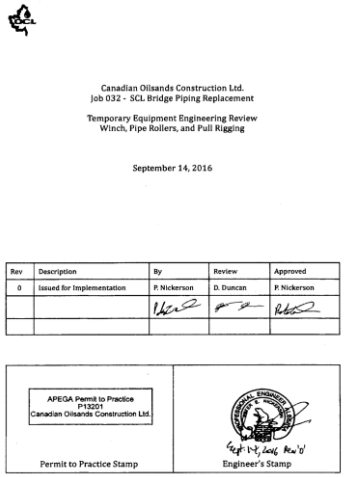
**Welding in tight area under bridge 2016**

**Lowering in 36” pipeline at Beaver Pond 2016**

# SYNCRUDE BRIDGE INNOVATIONS

- Multiple challenges had to be overcome to accomplish this project:
  - Schedule constraint for pipeline outage window
  - Approval from Alberta Transportation (bridge owner) on the detailed/engineered construction execution plan
  - Adaptation of existing owner supplied equipment used on 30 inch pipeline install to accommodate 36 inch pipeline installation

- OCL implemented several innovations in order to achieve the project objectives.
  1. Automated Welding
  2. Construction Engineering
  3. Execution Optimization



Canadian Oilsands Construction Ltd.
Job 032 - SCL Bridge Piping Replacement

Temporary Equipment Engineering Review
Winch, Pipe Rollers, and Pull Rigging

September 14, 2016

| Rev | Description | By | Review | Approved |
|---|---|---|---|---|
| 0 | Issued for Implementation | P. Nickerson | D. Duncan | P. Nickerson |
| | | | | |
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APEGA Permit to Practice
P13201
Canadian Oilsands Construction Ltd.

Permit to Practice Stamp

Engineer's Stamp