Platform Holly Cable

- Installed in 1966 as part of original Platform
- Power Cable de-rated over years
- At times Cable has limited production
- Bundled communication cables had already failed
- Cable pre-dated modern design and codes
- Cable and Power Supply Reliability in question
Project Goals

- As Built Replacement of Power Cable
- Restore power supply to original load capability
- Update communications cable to fiber optics
- Minimize Environmental Impact
- No platform down time due to cable replacement project
- Complete during routine platform maintenance shutdown in 2014
- KEEP THE LIGHTS ON !
Platform Holly Cable Replacement

Project Phases:

- Preliminary Cable Routing
- Cable Design / Specification
- Order the Cable
- Finalize Design
- Permitting
- HDD bore
- Platform I-tube and routing
- Pipeline Crossing
- Construction
- Testing
- Power Cut Over
Platform Holly Cable Replacement

- Cable Selected:

![Diagram of Kerite Catalog Number 341G25-J4458 cable](image)
Platform Holly Cable Replacement

Final HDD Bore Design – Bennett Trenchless Engineers
Platform Holly Cable Replacement

Final HDD Bore Design – New Exit Point
California State Lands Commission – Lead Agency
California Coastal Commission
California Regional Water Quality Control Board
Department of the Army – Corps of Engineers
City of Goleta
Santa Barbara County Air Pollution Control District

Hundreds of Pages / Scores of Conditions
Months to Obtain
Platform Holly Cable Replacement
Platform Holly Cable Replacement

HDD Bore + Regulatory Monitoring - Every Operation - Every Day - Every Site

5 Monitors for 3 -4 ft Entry Hole
3 = EQAP Monitors in Blue Hats
1 = Cultural Resources in White Hat
1 = Native American Monitor in White
Contingency Dive Team – Ready on Standby All Day
Platform Holly Cable Replacement
Rhodamine Dye Requirement
Inadvertent Surface Release of Drilling Mud
- Material detected in water, no dye detected

New Plan
- Drill and Ream the last 300’ with Water Only (No Drilling Mud)
Platform Holly Cable Replacement
Platform Holly Cable Replacement
Platform Holly Cable Replacement

Pipeline Crossing Mats
Platform Holly Cable Replacement
Platform Holly Cable Replacement

Lay the Cable – First Pull Cable Into Ellwood Onshore Facility
Platform Holly Cable Replacement
Platform Holly Cable Replacement
Platform Holly Cable Replacement

Lay the Cable – Now to Holly – Tight Work Space Constraints
Platform Holly Cable Replacement

OOPS !
Platform Holly Cable Replacement

It Gets Worse - Twisted
Platform Holly Cable Replacement

Cut & Splice it Together
Platform Holly Cable Replacement

Splice Again, Rinse & Repeat
Platform Holly Cable Replacement
Platform Holly Cable Replacement
Platform Holly Cable Replacement
Platform Holly Cable Replacement
Platform Holly Cable Replacement

Up Through the I-Tube
Platform Holly Cable Replacement
Platform Holly Cable Replacement

Testing the Cable and Fiber Optics
Platform Holly Cable Replacement

Pipeline Crossing – Cable Cover
Platform Holly Power Cable Replacement

Resident Inspectors Ecstatically signed off project
Platform Holly Power Cable Replacement

What did this all cost?

- Planning, Engineering $ 357K
- Permitting, Monitoring $ 571K
- Cable Purchase $1,587K
- Installation $5,802K

- Total $ 8,317K

- Not a single accident of any kind