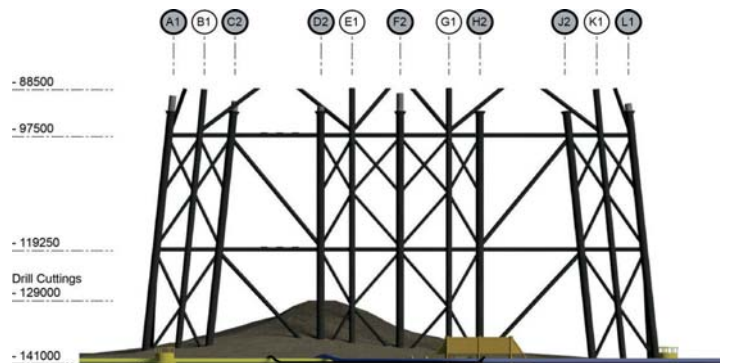
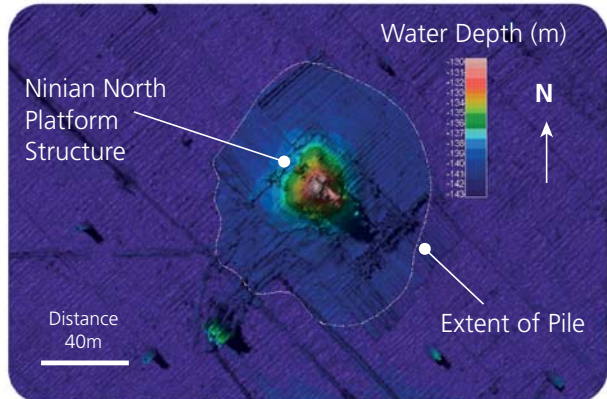
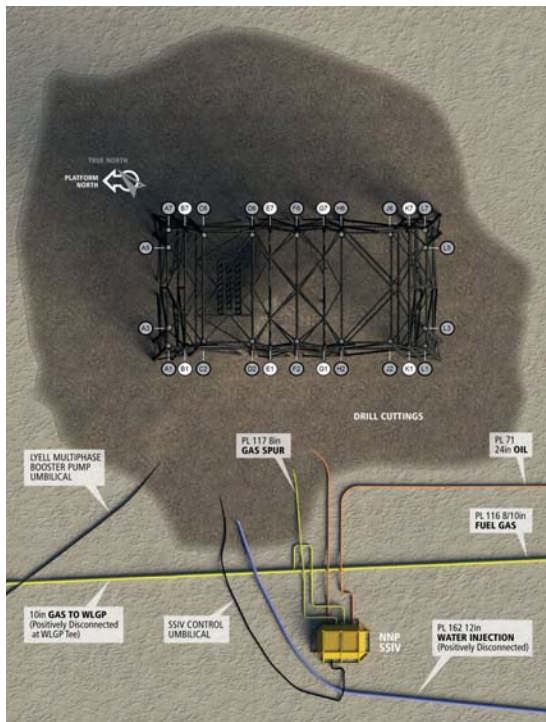


Ninian Northern Platform

Environmental Impacts



Operational Impacts

Disturbance due to anchoring mitigated by anchor planning and surveys.

Long-term presence

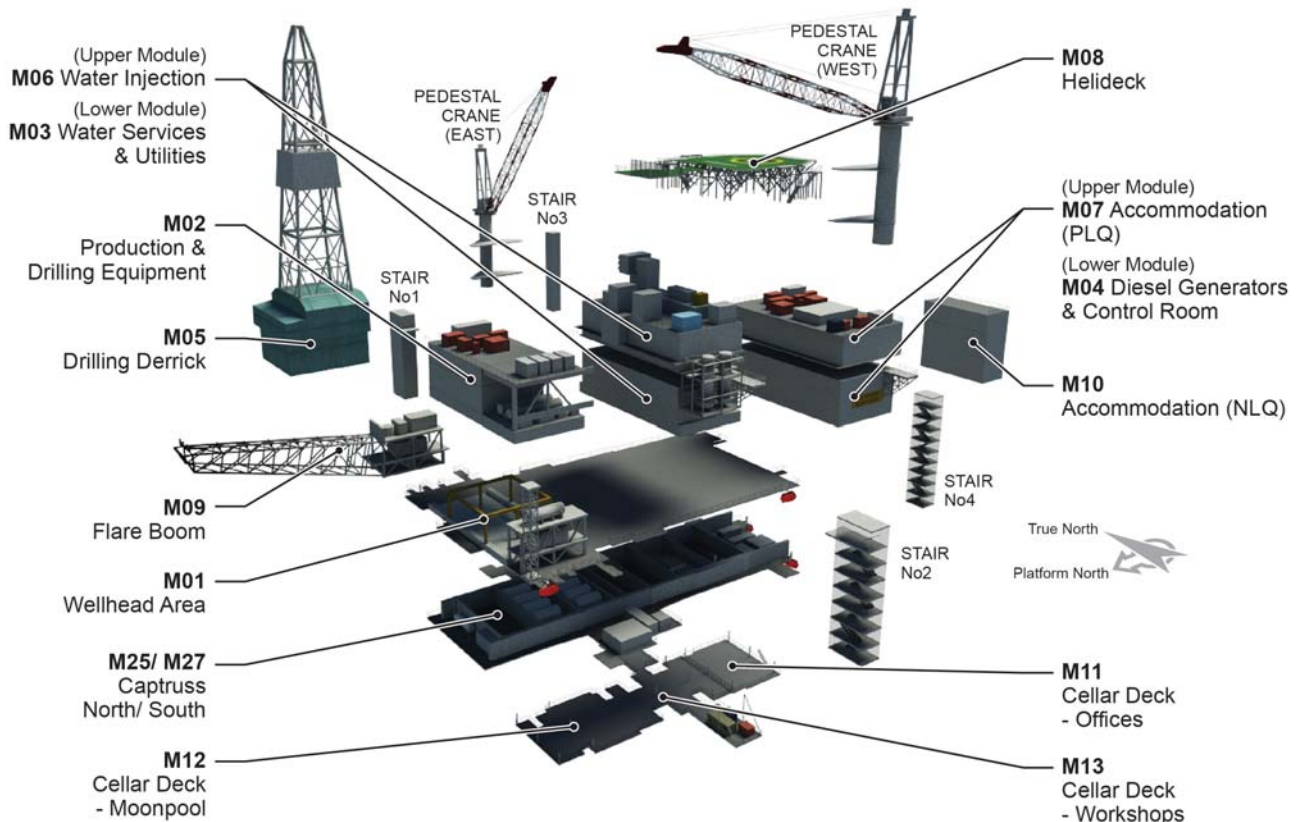
Leaching of Contaminants
Contaminant Persistence.

Cuttings Pile Environmental Impacts

Fast Facts

Volume : 33,144m³
Area : 23,620m³
Height : 11.93m
Water Depth : 141m

Ninian Northern Platform Topsides Modules



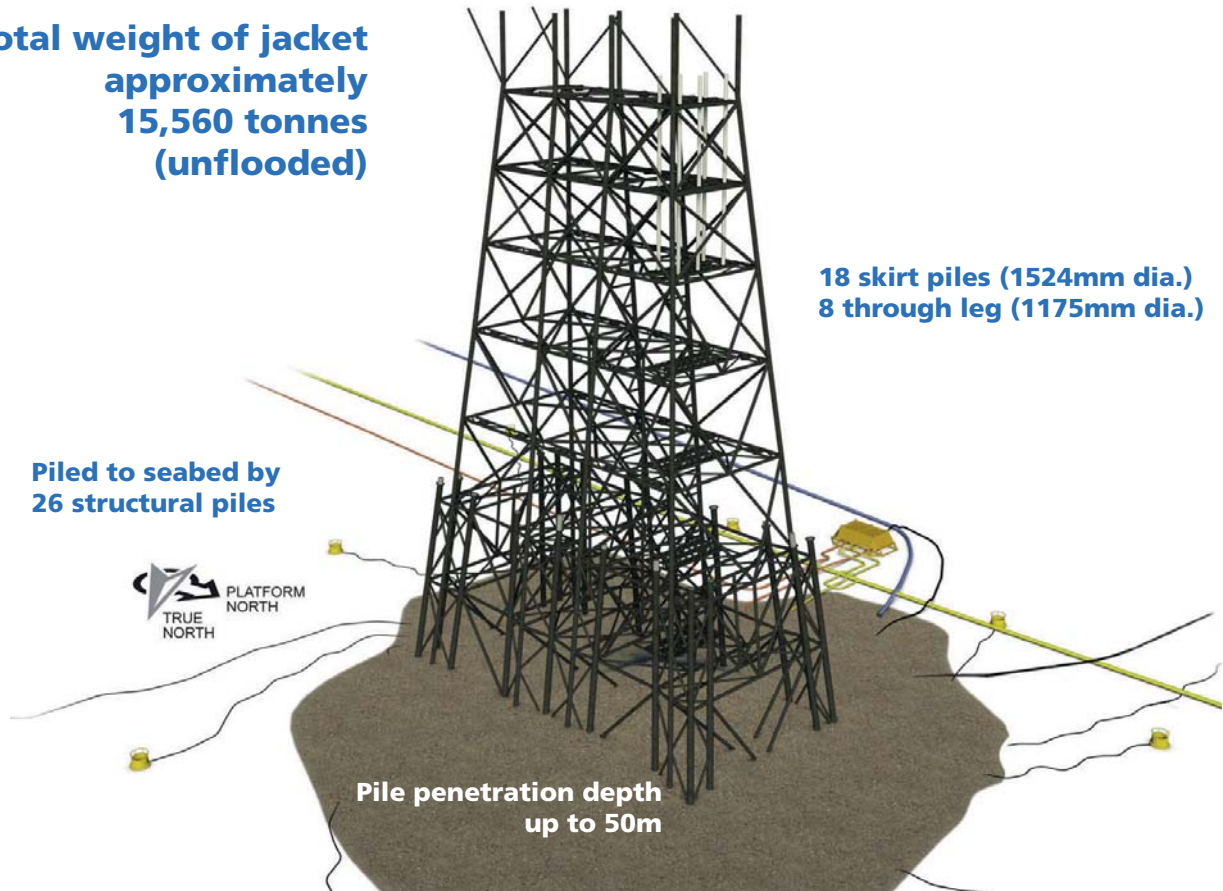
Ninian Northern Platform

Jacket

**Total weight of jacket
approximately
15,560 tonnes
(unflooded)**

**18 skirt piles (1524mm dia.)
8 through leg (1175mm dia.)**

**Piled to seabed by
26 structural piles**



**Pile penetration depth
up to 50m**

Ninian Northern Platform

Meet the Team



Murdo MacRitchie
Ninian North
Decommissioning Project Engineer



John Allan
Decommissioning / Developments
Manager



Ceri Wheaton
Safety, Health and Environmental Advisor



Gabriel Neves
Project Controls Engineer



Alan Minty
Offshore Installation Manager



Jonathan Hoare
Senior Pipeline Engineer



Caroline Lawford
Senior Structural & Marine Engineer



Roy Aspden
Decommissioning Project Manager



Christopher Doo
Technical Safety Team Leader



Peter Ronnie
Operational Safety,
Health and Environmental Team Leader



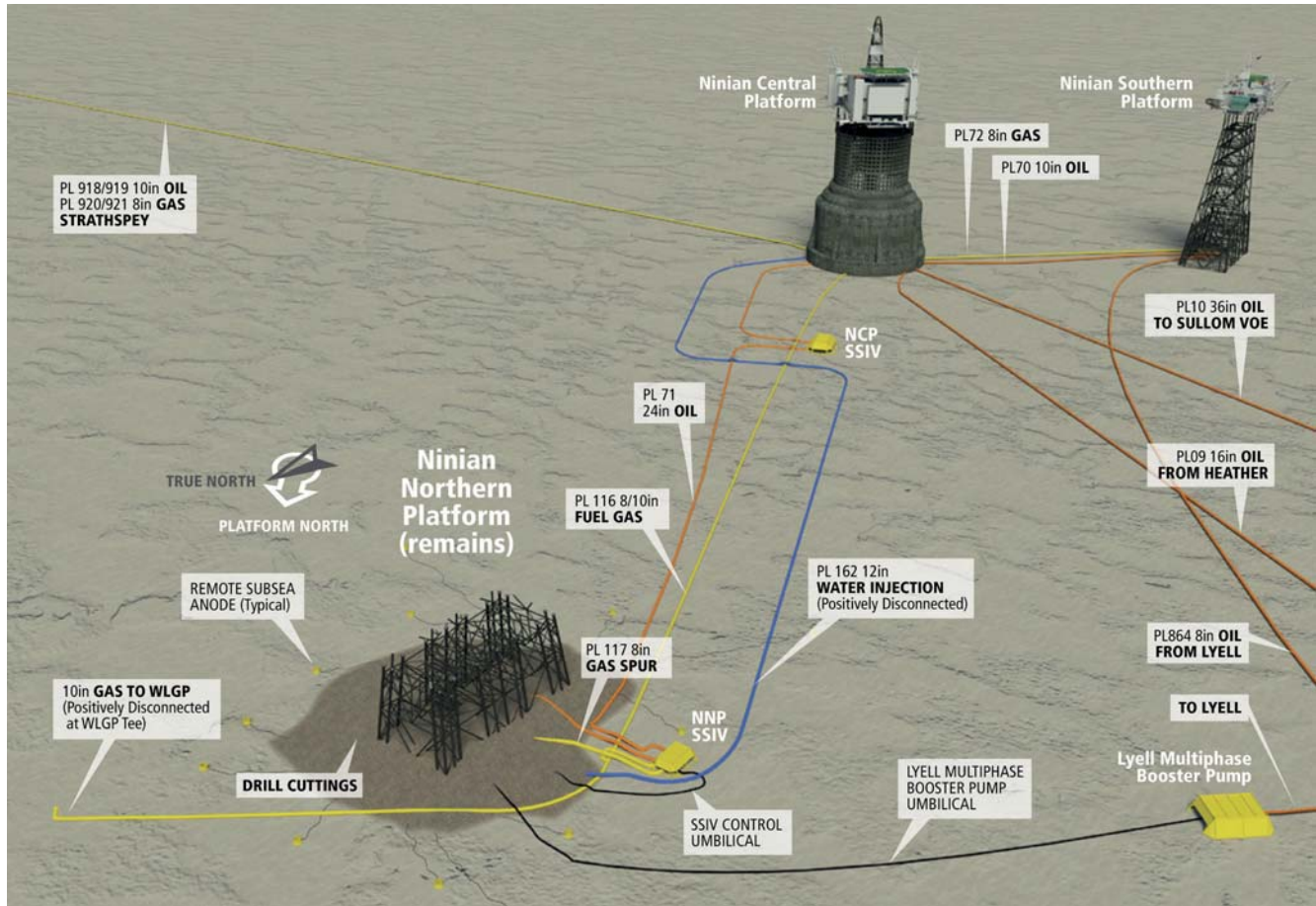
CNR International

www.cnri-northsea-decom.com

nnp.decom@cnrl.com

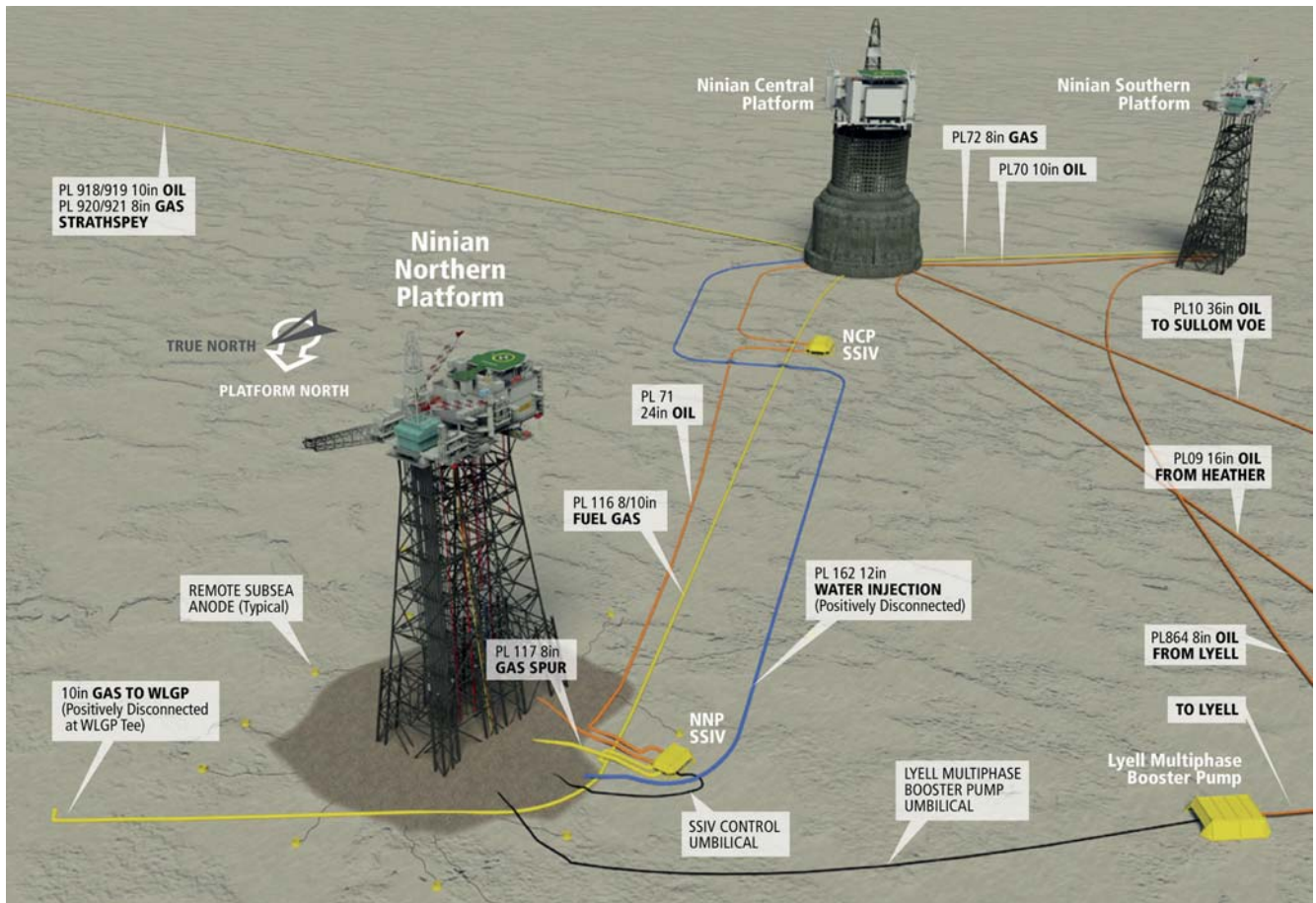
Ninian Northern Platform

Post Decommissioning



Ninian Northern Platform

Pre Decommissioning



Ninian Northern Platform

Safety

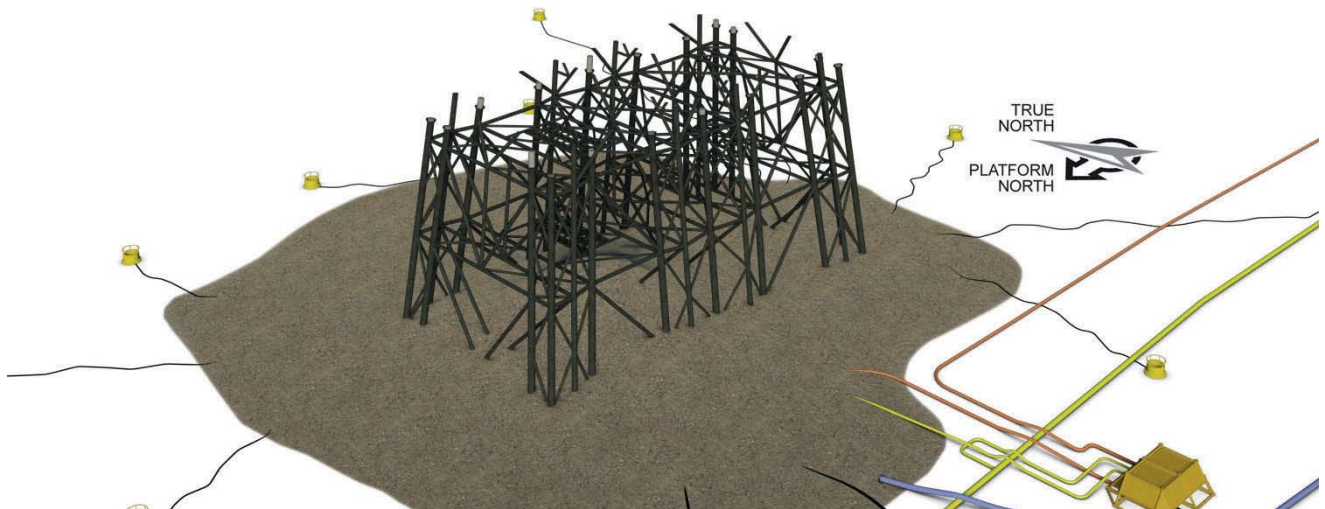
Risks to Project Personnel

Risk to project personnel offshore mitigated by hazard management and compliance with PFEER Onshore risk mitigated by contractor selection and management.



Risks to Other Users of the Sea

Mitigated through navigational marking during project phases, footings marked on Admiralty Charts and FishSafe System'.



Ninian Northern Platform

Environmental Impacts

Atmospheric emissions

Partial 36,133 tonnes CO₂
Full 24,277 tonnes CO₂
2015 Platform Emissions
100,642 tonnes CO₂;
mitigated by vessel
maintenance.

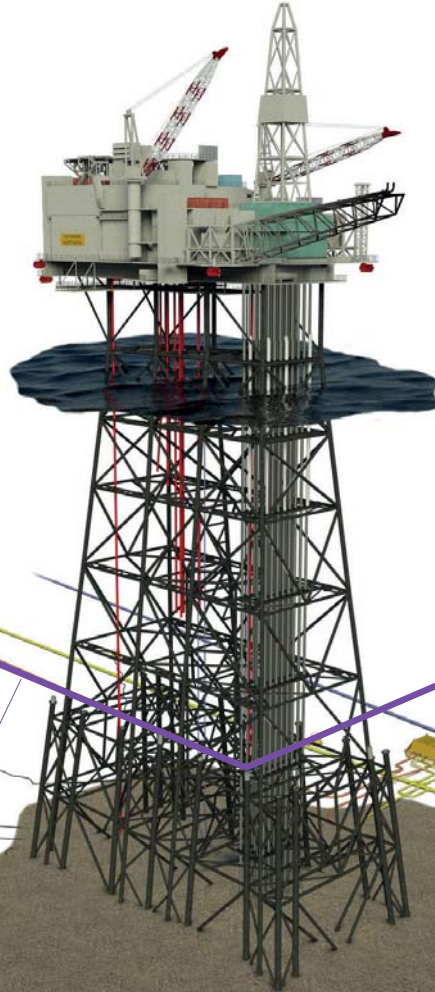
Sediment Disturbance

Due to anchoring
mitigated by anchor
planning and surveys

Derogation H: -88.5m

Accidental Events

Mitigated by an approved
OPEP and notifying
local shipping traffic.

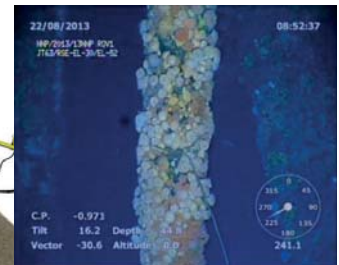


Underwater Noise

Mitigated by maintaining
machinery and equipment
and minimising number
of vessels.

Marine Growth

Marine Growth Handling
(2,009 te) Mitigated by
assessment of disposal
options and use of
specialist contractor(s).



Ninian Northern Platform

CNR International



CNR International

Canadian Natural Resources Limited

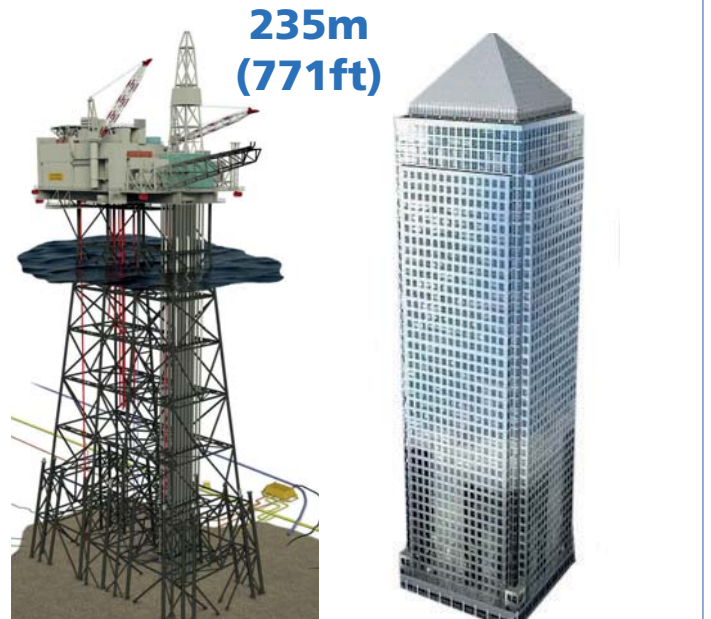
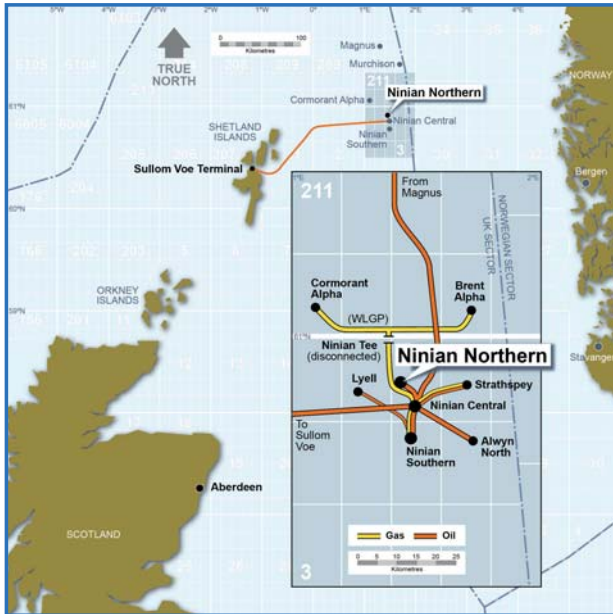
Corporate Mission Statement

" To develop people to work together to create value for the Company's shareholders by doing it right with fun and integrity. "

Ninian Northern Platform

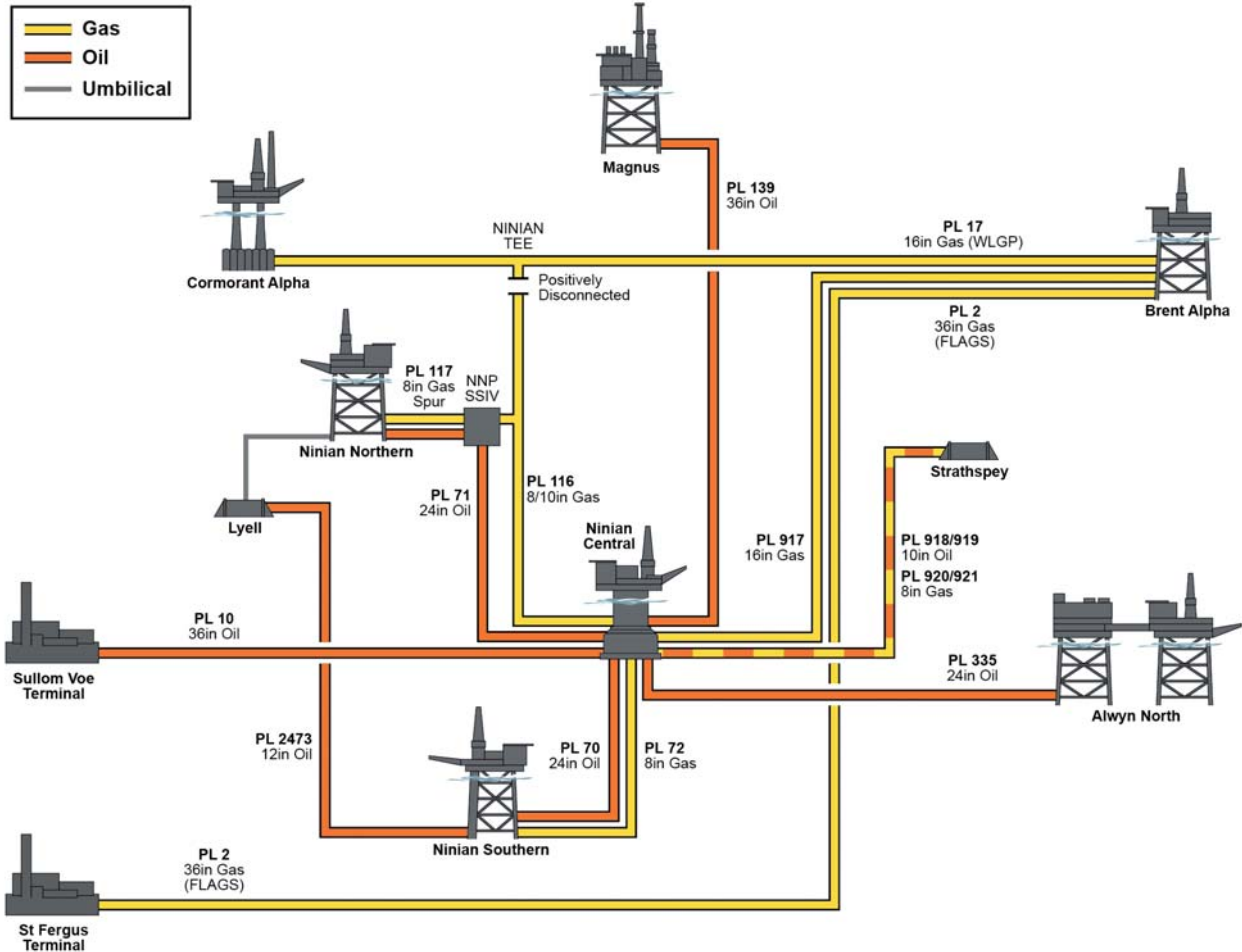
Fast Facts

Ninian Northern	Fast Facts
Region:	East Shetland Basin
Location:	100mils NE of Shetland Isles
Water Depth:	141m (463ft)
Discovered:	1974
Installed:	1978
First Oil:	1980
Platform Description:	Drilling, Production, 8 legged Steel Jacket
Topsides Weight:	12,453 tonnes
Jacket Weight:	15,560 tonnes (unflooded)

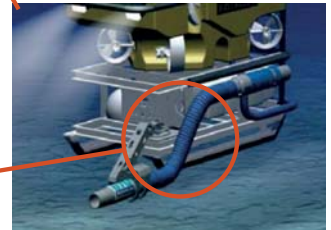
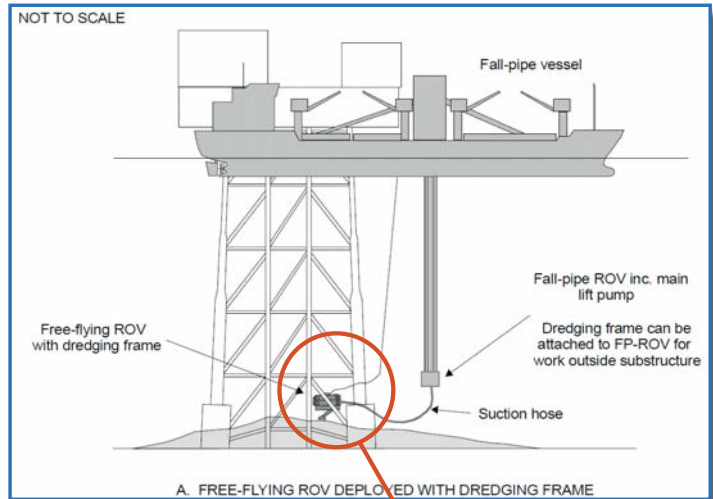
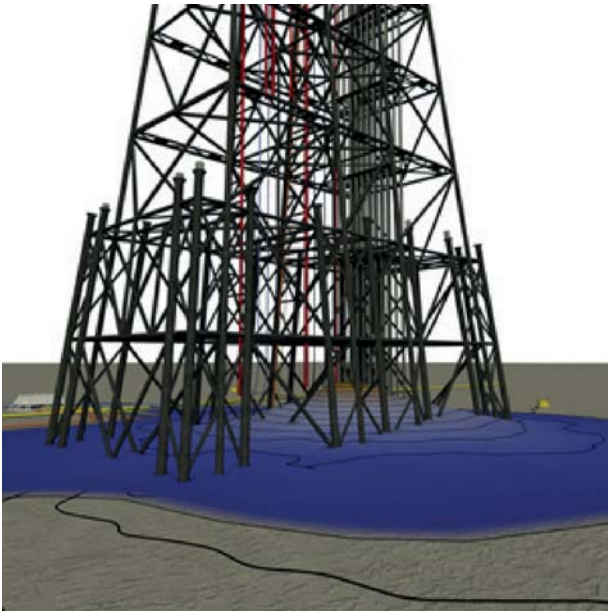


One Canada Square, Canary Wharf, London

Ninian Northern Platform Infrastructure



Ninian Northern Platform Cuttings Pile



Risks

Large volumes of water recovery when removing drill cuttings (ratio could be as high as 20:1)
NNP Cuttings Pile Volume: 33,14m³
Recovery Volume: 662,880m³

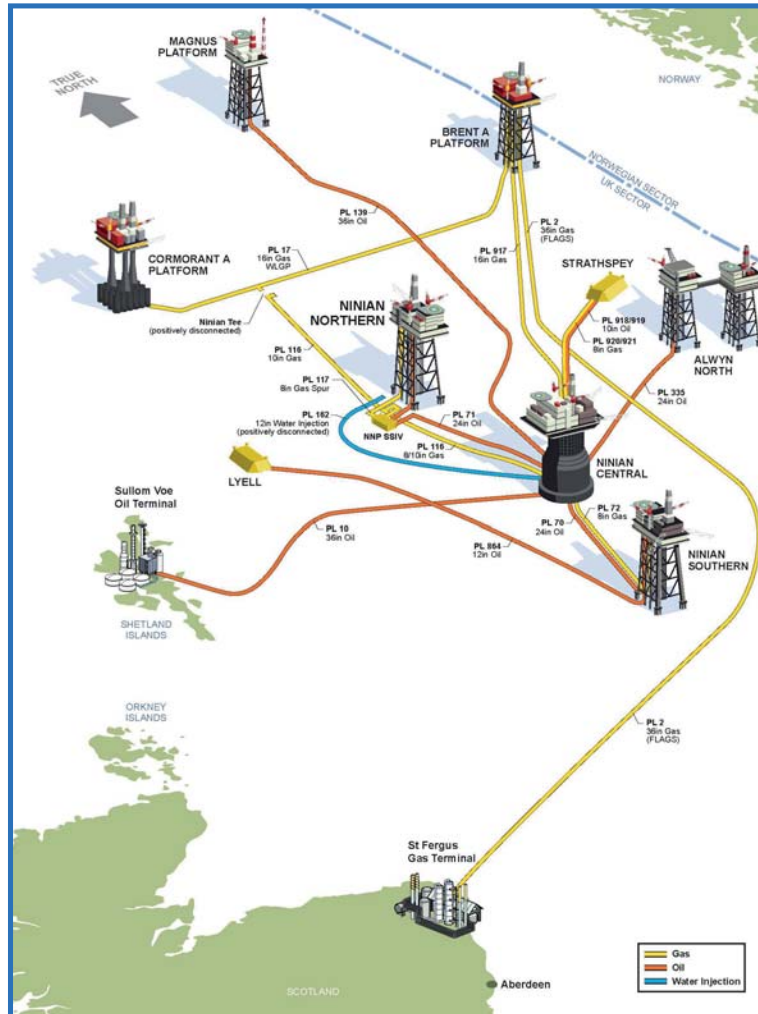
Risks

Blockages in equipment due to debris in cuttings pile.

Risks

Limited access to pile within the jacket footings.

Ninian Northern Platform Infrastructure



Ninian Northern Platform

Societal impacts

Impacts on Communities

Dust.
Odour from marine growth.
Mitigated through selection and management of key waste management contractors.

Use of landfill space

Mitigated by reducing the amount of waste sent to landfill and maximising recycling and reuse.

Murchison Modules at VATS Fjord



UK Demersal Trawler

K373 Aalskere



Fishing Activities

Interference with fishing activities mitigated through appropriate notifications and maritime notices (UK hydrographic office and Kingfisher)

UK Pelagic Trawler

FR380 Kings Cross



Loss of Fishing Gear

Damage or loss of fishing gear mitigated through the use of; Fish Safe system, Admiralty charts and Fisheries Legacy Trust (FLT).

Peterhead



Lerwick



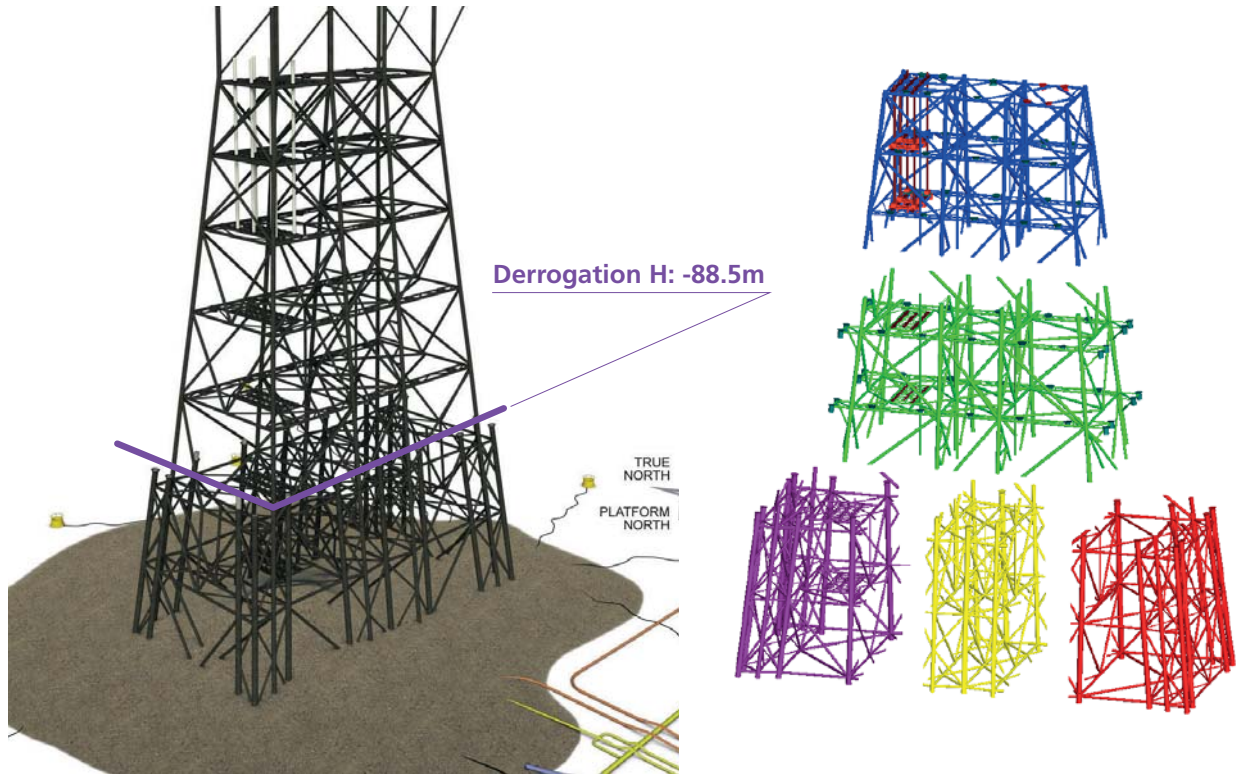
Lutelande, Norway



Seaton, Teeside



Ninian Northern Platform Jacket Challenges



Underwater Noise

Mitigated by maintaining machinery and equipment and minimising number of vessels.

Piles

Jacket Piles filled with grout.

Cuttings Pile

Disturbance of the cuttings pile.

Stability

Stability issues when removing the jacket footings.

