CNR International Murchison Field Decommissioning Stakeholder Workshop, 14 March 2012

Transcript Report

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Note on the Transcript of Written Records

This transcript report was produced by The Environment Council, which designed and facilitated the workshop and is a summary record of the workshop discussion. The document is a transcript of the flip charts produced during the workshop and is intended as an aide memoir for all participants. Comments have been summarised without attribution, which was one of the working agreements of the workshop, except for explicit clarifications or responses provided by CNR International where this is helpful to the record and with the company's agreement.

The points here are reproduced as they were recorded by the facilitators, with the following exceptions:

- Further information has been provided by the CNR International decommissioning team to this report to expand their responses as summarised by the facilitation team on flip charts during the workshop. This is in order to add clarity and enhance the transcript's value as an information resource on the Murchison decommissioning for stakeholders. *These expanded or additional clarifications are shown in italic font.*

- Words or phrases in [square brackets] have been added by the facilitators to enhance clarity, or, where the original meaning is unclear but can be deduced.

- Spellings and grammar have been standardised, abbreviations spelled out and punctuation inserted where it may help to clarify meaning.

If you have any comments or queries regarding this transcript please contact Erica Sutton at The Environment Council on email erica@envcouncil.org.uk or direct dial 020 8144 6945.

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1. Background to Murchison Decommissioning

The 14 March 2012 Stakeholder Workshop forms part of the engagement approach for the decommissioning of the Murchison oil and gas platform, located in the Northern North Sea. Canadian Natural Resources International (CNRI) are currently evaluating various methods for decommissioning the facilities in the Murchison Field, namely the Murchison platform itself, the drill cuttings pile beneath it, the pipelines and associated sub-sea infrastructure. As part of the evaluation process, CNRI are seeking the views of stakeholders and interested parties to input into the environmental impact assessment and comparative assessment process. Further information can be found at the CNR International decommissioning web pages at: www.cnri-northsea-decom.com.

Those who were unable to attend the 14 March 2012 Workshop are invited to contact CNRI to share their views through other routes. Please contact Carol Barbone at CNRI. The contact details are as follows:

- Address: CNR International, St Magnus House, Guild Street, Aberdeen, AB11 6NJ
- Telephone number: 01224 303102.
- Email: Carol.Barbone@cnrinternational.com

2. Workshop Introduction

CNR International invited The Environment Council, an organisation which specialises in stakeholder engagement, to design the workshop and to independently facilitate the discussions.

The overall aim of the workshop was to:

- Provide an opportunity for stakeholders to hear and give feedback on the plans to date for the Murchison platform and to inform the decommissioning plans in the light of stakeholder reflections.

The objectives of the workshop were to:

- Brief participants on the Murchison platform context, decommissioning approach and plans.
- Brief participants on the progress of the decommissioning studies to date and indications of the decommissioning options and likely issues and challenges for the platform.
- Review the approach to decommissioning and engagement with stakeholders.
- Collectively discuss the issues and challenges faced by decommissioning the Murchison platform.
- Gain feedback from participants on the proposed decommissioning option(s) in particular any perceived gaps in technical studies to date and priority issues for further consideration.

A list of **stakeholder participants and invited organisations** can be found at appendix 1. A copy of the **workshop agenda and working agreements** can be found at appendix 2.

3. Overview of the Decommissioning Project

A background briefing document had been provided to participants in advance of the workshop to support their participation. A copy of this can be found at appendix 3. Three presentations were given by the CNR International decommissioning team at the start of the workshop to provide an overview of the platform and the decommissioning studies. These are set out below. Participants were invited to ask questions of clarification at the conclusion of each presentation and where questions were offered these are set out in the transcript.

3.1 Introduction to the Decommissioning Project

This presentation was provided by Roy Aspden, the Murchison Field decommissioning Project Manager. The slides used for the presentation can be found at appendix 4. The introduction included information on the following aspects of the project:

- Background information to CNRI and Murchison's previous owners
- Location of the Murchison platform; the scale and type of its construction
- Cessation of production
- The CNRI project mission, approach to the decommissioning studies and the decommissioning timeline.
- The role of the project's Independent Review Committee
- An overview of the stakeholder engagement to date.

No questions were offered by participants following this presentation.

3.2 Overview of the Decommissioning Studies: Findings to Date

This presentation was provided by Mike Corcoran, who is responsible for Strategy. The slides used for the presentation can be found at appendix 5. The introduction included the following areas:

- An overview of what studies have been done and what is planned for the future
- What the studies to date are showing in terms of likely way forwards
- Key issues and challenges arising
- What potential decommissioning approaches have been discounted so far
- The intended approach to topsides removal and well plug and abandonment.

No questions were offered by participants following this presentation.

3.3 Getting to the Decommissioning Plan: the Process

This presentation was provided by Liz Galley, who is responsible for Environment. The slides used for the presentation can be found at appendix 6. The introduction included the following areas:

- An overview of Environmental Impact Assessment process to date
- An overview of Comparative Assessment process (including societal and safety).

The following **questions and comments from participants and clarifications from CNRI** were provided following this presentation:

Question: What navigational hazards are there?
Answer: A study is about to commence on collision hazard and information on marine traffic will be updated.

Question: Has a risk and contingency procedure been identified?
Answer: Risk assessments have been done and a risk register created. More detailed work will be done once the option is identified.

CNR International: We will do a collision risk assessment once the preferred option has been selected, as we will not have the necessary information to do a collision risk assessment until that stage, in the meantime we are updating the information that we have on marine traffic in the area around Murchison.

Comment: Regarding the Hazard Identification process: The analysis to identify the hazards needs a good imagination in order to cover everything.
Answer: Each option has been reviewed by a one-day hazard identification session attended by a range of experts and technical authorities. A risk register is split into each decommissioning component. 190 risks and mitigations have been identified so far. It's an ongoing process and gets more detailed as options are identified and then again at the contract stage.

Question: What volumes of hazardous materials are there on the topsides and what work has been done to identify these?
Answer: The survey has involved a desktop study for topside hazards including NORM and put into a scope of work. Inspections will be done. These will be limited by operations, but these areas will be noted for future survey. All legislative guidelines will be followed for onshore materials and accounted for in the contracting process.

Comment: It's not enough to look at what is there; you should also look at what might be there. It's important to look at the 'what ifs'.

4. Tour of the Murchison Platform Model

As part of the workshop's activities, participants undertook a tour of a large scale model of the Murchison platform at the Aberdeen Maritime Museum, which was near to the workshop venue. The purpose of the tour was for stakeholders to better understand the scale and challenges of the decommissioning project. It also provided an opportunity for participants to ask questions on any aspect of platform and its decommissioning of the CNRI team one-to-one. A range of the different aspects of decommissioning expertise was represented by CNRI on the day, as listed in appendix 1. Further information about the museum can be viewed at http://www.museumsgalleriesscotland.org.uk/member/aberdeen-maritime-museum

On returning from the tour, there was an opportunity for discussion; to raise any comments questions or issues that had been highlighted by the tour and the presentations so far. The following points were made:

- There are a number of modules and equipment that are different to other platforms.
- There is not much to be gleaned from the model itself.
- The tour was useful for CNR International. We talked [with stakeholders] about safety cases in the operational and dismantling phases, and that the process in between needs to mature in some way.
- A member of the museum staff liked the model. He asked whether it would be decommissioned and said he would like to have an artefact from it. He was fond of the platform.
- We are conscious of the 'Murchison Family' and the need to pay tribute to the work contributed to it over the years.

5. Key Topic Discussions

Three decommissioning topics in particular were selected to focus on at the workshop. These were **steel jacket removal; pipelines, debris and subsea infrastructure; and drill cuttings**. These were aspects around which there was the widest range of potential options for the decommissioning approach and also where it was anticipated stakeholders would require most discussion time. The purpose of this session was for participants to identify any gaps in information or issues that might require further information provision or communication; or further work or studies by CNRI.

A member of the CNR International Murchison decommissioning team gave a briefing presentation on each of the three topics followed by an opportunity for questions and answers of clarification on the briefing. Stakeholders were then divided into three smaller discussion groups of mixed sectors of interest by the facilitation team. This was in order to give more time to each person to contribute and to fold in a range of views. These groups each discussed the three issues in turn, supported by a workshop facilitator and members of the CNR International team.

For each of the three topic stakeholders were asked to respond during their discussion to the following questions:

- **Given what you know, is anything missing in terms of information or studies?**
  - What else would you want to know?
  - What issues have not yet been addressed?

If there were any points that stakeholders wished to raise, about any decommissioning topic outside the three key areas being focused on, participants were also able to highlight these.

Note: The three small discussion groups were each identified by a given colour: blue, green or purple. For the reference of the workshop attendees, these groupings have been replicated in the transcript. The order in which each of the groups undertook the discussion on a particular topic is also replicated in this report.

5.1 Steel Jacket Removal

The briefing was provided by Mike Corcoran, CNR International, who is responsible for Strategy, on the decommissioning options for the jacket. A copy of the presentations slides used by Mike Corcoran can be found at appendix 7.

The following **questions from participants and clarifications from CNRI** were provided after this presentation:

Clarification: Operations are planned as diver-less.

Question: With partial removal of the jacket, is depth still an issue?
Answer: A 10 metre [clearance] tow route is required throughout. This applies only to the buoyancy tanks removal option.

Question: Are combinations of techniques being considered?
Answer: It's open at the moment and we will leave it to contractors to propose such options.

Question: Would you consider two separate options by two separate contractors?
Answer: This is likely to introduce more technical issues.

Question: Are there technical developments on the horizon that could change the situation?
Answer: We only look at what's available now as the history of technical development is not good; for example development companies going bust without proposals being realised. If [a technical development] is not committed to then we can't go for it. However it's not ruled out for future projects.

Question: Seasonal weather conditions are important and can impact [on the option].
Answer: We have "Waiting on Weather" criteria so we know how this affects operation of the option.

Information needs and issues highlighted by stakeholders on the steel jacket removal are as follows:

<u>Blue Group Discussion on Steel Jacket Removal</u>:

- Which of the decommissioning options are affected by the need for a 10 metre towing clearance?
  - CNR International: The four methods for removal being considered are not limited by the requirement of a 10 metre towing clearance below the structure except for the option which uses buoyancy tanks.

- Will you cut the steel jacket below sea level, for example, below -55 metres? Are potential navigational impacts anticipated?

- Is CNR International responsible for the field in perpetuity? Would there be an option to revisit the decommissioning approach, if technology moves on?
  - CNR International: Yes, the company will continue to hold responsibility and yes the option to revisit is possible.

- Will local stakeholders be involved in relation the use of a Norwegian fjord [as a dismantling site for the jacket] if the buoyancy tank option is used?

- Is there a partial blend of removal options that could be employed to include use of buoyancy tanks?
  - CNR International: The buoyancy tanks must remain above water during removal so this would limit their flexibility in this regard.

- Will there be recycling of the steel jacket?
  - CNR International: Yes, this is the intention.

- Would the cut to remove the jacket be made above the 13metre level of the [jacket] piles?
  - CNR International: The cut would be made at – 125 metres with jacket pile removal or -111 metres above the jacket pile if not removed.

- Is the technology available to cut through the main [tubular steel] members of the jacket?
  - CNR International: This has to be developed. The contracts for jacket removal will have a 2-year lead-in period for this purpose.

- What method of cutting will be used to remove the jacket, e.g. wire; internal torpedo?
  - CNR International: We cannot get inside the legs due to the baffle plates. Windows could possibly be cut into the legs and then we might be able to cut within the window.

- Would explosives be used to remove the jacket?
  - CNR International: We are keeping this option open. The UK Government's Department of Energy and Climate Change (DECC) has indicated that this can be considered.

- I am looking to see what the favoured option is: I cannot comment more at this stage.

<u>Green Group Discussion on Steel Jacket Removal</u>:

- Is the buoyancy tanks removal option constrained by depth? Can the jacket be toppled after cutting and transported in a different position?
  - CNR International: You would need a different buoyancy arrangement to achieve this.

- Regarding the socio-economic scenario: should you be thinking of the UK sector?
  - CNR International: The local context is one of the criteria that would be looked at in comparing the removal options.
- Could you flood the jacket and sink it?

- CNR International: The jacket would have to be cleaned up and that would therefore involve divers if the jacket were sunk.

- What risk assessment has been done per section and overall?
  - CNR International: Technical sections have been kept separate during assessment to avoid bias. Man hours and exposure will also be looked at. Some risk assessment covers removal procedures that have not been done before.

- The cutting technology is not quite there yet: is there a possibility down the line of a trade-off, i.e. waiting for technology to advance?
  - CNR International: Degradation over time is an issue in this regard. We have been engaging with the supply chain to establish this possibility and it is being considered within limits.

- Are you going out to a range of suppliers?

Purple Group Discussion on Steel Jacket Removal:

- Is there a calculation to establish the weight of marine growth on the jacket?
  - CNR International: This has been estimated with a contingency. The estimate is informed by other jackets removed in the vicinity.
- Is marine growth substantial?
  - CNR International: Yes, up to 1 metre thick.

- Have you identified situations where divers would be used?
  - CNR International: Diver back up information has to be supplied but primarily the removal approach will be diver-less.

- Will explosives be considered for removal?
  - CNR International: We are keeping that option open.

- How do we break the monopoly on single heavy lift vessels? Emergent technology carries risk and as long as that is the case the monopoly will continue. Competition would be good for industry.
  - CNR International: This is a question for investment providers.

- How will navigation issues be addressed and have these interests been engaged?

- Has the artificial reef option been considered?
  - CNR International: We are keeping our eyes and ears open to this possibility.
- Is there a parallel stream of investigation as to its viability?
  - CNR International: The option needs a business case otherwise the jacket needs to be recovered. There are global examples, for example in Japan, of this being done.

5.2 Pipelines, Debris and Subsea Infrastructure

The briefing on decommissioning options for the pipelines, debris and subsea infrastructure was provided by Steve Etherson, CNR International, who is responsible for Subsea & Pipelines. A copy of the presentation slides used by Steve Etherson can be viewed at appendix 8.

The following **questions from participants and clarifications from CNRI** were provided after this presentation:

Clarification: If they are welded, pipes have to be cut - you can't put a flange on it.

Question: Is there a concrete coating to the 16 inch oil export pipe?
Answer: It's a 2 inch coating

Clarification: The cutting approach will be subject to Comparative Assessment and discussions with relevant operators.

Question: Knowing that Dunlin is going through decommissioning, does this affect the approach to pipelines?
Answer: Yes we are in discussion with Fairfield about how they want the pipe left.

Information needs and issues highlighted by stakeholders on the Pipelines, Debris and Subsea Infrastructure are as follows:

Purple Group Discussion on Pipelines, Debris and Subsea Infrastructure:

- A question about the proposal for the isolation of pipelines: are we going to remove the gas pipeline at an early stage?
  - CNR International: This is an ongoing discussion. Safety is paramount.
- What is the timescale for this decision?

- I am surprised that Subsea UK isn't represented at this workshop.
  - *CNR International: We will make contact with them post-event.*

- What is the plan for future monitoring of what is left?
- It's a perpetual liability for CNR International.

Blue Group Discussion on Pipelines, Debris and Subsea Infrastructure:

- Would rock dumping be an option?
  - *CNR International: Yes – and over 50% is already rock dumped.*

- How wide are the spans?
  - *CNR International: All spans will conform to required standards – for 16" pipe this will mean spans of c3m.*

- If trenches are not properly back-filled then this is a difficult issue for fishing. The fishing nets are right on the sea-bed and clay can fill up nets as they trawl (for prawns).
  - *CNR International: This applies to trenching spoil and will be factored into the comparative assessment.*

- Are you going to plug the pipes?
  - *CNR International: This is subject to consideration within the comparative assessment.*

- Are you going to clean the pipes?
  - *CNR International: Yes.*

- How long will it be before the pipes begin to break up? Broken-up pipes could cause the snagging of fishing nets.
  - *CNR International: Approximately 300 years but will depend on whether pipes are left open which would mean faster corrosion.*

- Do you have any challenges in cleaning the pipes?
  - *CNR International: No – they are already cleaned on a regular basis.*

- Are you going to monitor pipes over the years for rock movement?
  - *CNR International: Yes.*

<u>Green Group Discussion on Pipelines, Debris and Subsea Infrastructure</u>:

- Is there any possibility of any of these pipes being re-used (e.g. for carbon capture)?
  - There is an opportunity for re-use but getting government agreement is difficult. The partial responsibility of CNR International for the pipes is an issue; as is the feasibility of reuse.

- How far will pipes degrade or corrode in the next 30 years?
  - *CNR International: c10% degradation might be expected.*

- Does weighting of the pipes present danger for fishing?
  - *CNR International: They are currently weighted and have not caused a problem to date. In future pipe degradation could leave concrete behind which could be an issue to fishermen if left exposed.*

- Has pipe corrosion been from the outside or inside?
  - CNR International: Pipe corrosion has taken place from the inside.

- What is risk of just leaving the pipe as it is?
  - *CNR International: We would need to bury the ends to avoid snagging risk (after removal of the spools).*

- Are CNR International obliged to come back and survey rock dumps?
  - *CNR International: Yes.*

- Is CNR International liable in perpetuity?
  - *CNR International: Yes.*

- Would an independent Scotland change [the requirements for] risk assessment?
  - *CNR International: No.*

- Is it influencing CNR International's plans that there may be big changes in the legislative environment?
  - *CNR International: No.*

- Is it the case that [CNRI are] not able to recover or remove everything (rock, etc.)?
  - Yes it's not feasible to remove everything.

- Is there an open chequebook best-case recovery scenario?
  - *CNR International: All options are being considered within the comparative assessment process.*

- Is safety a bigger influence than cost?
  - *CNR International: Yes.*

5.3 Drill Cuttings Pile

The briefing on the Murchison drill cuttings pile was provided by Liz Galley, CNR International, who is responsible for Environment. A copy of the presentations slides used by Liz Galley can be viewed at appendix 9.

The following **questions and comments from participants and clarifications from CNRI** were provided after this presentation:

Question: Are you treating all four feet [of the jacket] in the same way? You could get to the other three. The pile only encroaches on one leg. Isn't an assumption being made about the other three?
Answer: Partial removal could be considered if it comes up as an option.

Comment: With the three presentations on the jacket, pipelines and drill cuttings, everything seems to be very negative. This was not the attitude at installation and extraction. The differentiator is cost. That's disappointing.

Comment: The amount of rubbish down on the sea bed is also disappointing.

Information needs and issues highlighted by stakeholders on the Drill Cuttings are as follows:

<u>Green Group Discussion on Drill Cuttings</u>:

- What are the materials involved [in the drill cuttings pile]?
  - *CNR International: Primarily rock, drill cuttings, oil based muds and water based muds. There is also some debris associated with the pile.*

- Is there danger in dispersion [of the cuttings pile] other than just little bits of rock?
  - CNR International: Legislation has driven companies to use less dangerous materials. Materials lower down the in the pile are worse.

- Is there enough oxygen and material to support life and therefore natural regeneration / cuttings pile degradation?
  - *CNR International: There is an **anoxic** [NOTE: should read 'There is an oxic…' layer on the surface of the pile where biodegradation of contaminants will occur. This **anoxic** layer [NOTE: should read 'This oxic layer…] will work its way down through the pile as biodegradation takes place*

- Is it possible to get samples from lower in the drill cuttings pile?
  - *CNR International: The position of the pile which is directly underneath the jacket makes access difficult.*

- Is it possible to undertake horizontal drilling for samples?
  - *CNR International: Not at this time.*

- Have other drill cuttings been analysed in other areas or around other platforms?
  - *CNR International: As part of the UKOOA drill cuttings initiative in the early 2000's, various piles were examined to a depth of approximately 1.5m-2m. [NOTE: see UKOOA report at http://www.anp.gov.br/brnd/round5/round5/guias/perfuracao/5round/biblio/UKOOAcascalho.pdf - reference added at stakeholder request.]*

- Does the drill cuttings pile modelling take biological action or changes into account?
  - CNR International: Yes this is built into the modelling.

- Do you have information on what the difference is in the long term effect of leaving the cuttings against the short term effect of moving it?
  - *CNR International: Yes – CNRI are conduting specific modelling studies to examine both long and short term effects.*

- With regard to man hours/days to remove the cuttings pile: could costing be done to reflect partial removal?
  - *Yes – but partial removal only would not enable access to the jacket footings.*

- Is there enough expertise in the UK to help CNR International assess the work implications [of both potential solutions (both full and partial removal)].
  - *Yes.*

Purple Group Discussion on Drill Cuttings:

- Is there technology available to deal with any plume released from the cuttings pile if it is disturbed?
  - *CNR International: No.*

- Why would we want to take such a large amount of water and drill cuttings onshore as one of the options?
  - *CNR International: This would be as an alternative to offshore separation and will be considered as part of the comparative assessment process.*

- With regarding to the option of drill cuttings reinjection: It will be very difficult to install an injection facility. What technology is there available to use?
  - *CNR International: This will be looked at in more detail if comparative assessment shows it to be a recommended option.*

- Is there an option to transfer cuttings to another well?
  - *CNR International: This would involve a cuttings injection well on another field as we do not have any cuttings injection wells on Murchison. Such transfer is not currently legal.*

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- Has this been challenged?
  - *CNR International: Not as far as we are aware.*

- Is there a strong case for leaving the cuttings?
  - CNR International: The identified Best Management Practice is to leave it in place at present.

- What are the main disadvantages of leaving the drill cuttings pile in place?
  - *CNR International: Potential environmental impacts associated with the contaminants and associated long term liability.*

- Are there any projections for the future if drill cuttings were left, in terms of positive outcomes for biodiversity?
  - *CNR International: Future projections for biodiversity are unknown.*

- What level of future monitoring will there be of any drill cuttings pile left behind?
  - *CNR International: This would be subject to agreement with the regulator.*

Blue Group Discussion on Drill Cuttings:

- How will longer term monitoring be done and who will do it?
  - *CNR International: CNR International would undertake this in agreement with the regulator.*

- Are there any plans to undertake a survey of the drill cuttings pile core?
  - CNR International: It is difficult to access the core with current technology. *To try to build the most accurate picture possible in the absence of suitable technology we have used historic data to model the pile core and its long term fate as it degrades.*

- One of the most important issues is: What is in the heart of the drill cuttings pile? It may be difficult to survey but not impossible, for example by use of vibration coring?
  - *CNR International: The location of the pile under the main jacket structure creates serious access problems for large coring devices.*

- On the one hand, say that OSPAR regulations state that it's OK to leave the drill cuttings pile; on the other hand you can't move the legs in case it disturbs the cuttings.
  - *CNR International: The pile falls within the OSPAR recommendation that natural degradation is the best management option. However, we are investigating the options to remove the pile to gain access to the jacket footings as part of the examination of full removal options for the platform.*

- Stakeholder comment: Fishing trials have taken place over an old drill cuttings pile. This resulted in removal of debris. No oil was apparent [on the fishing nets]. Trials have show that fishing gear has little effect in [dispersing] the drill cuttings pile.

5.4 Plenary Feedback on Key Topic Discussions

At the conclusion of the small group discussions, the participants convened back together to review the output from each of the topic sessions. This plenary feedback was summarised by the workshop facilitators for each topic since they had been present throughout each group's discussion of it; with the opportunity given for participants to add any further comments.

Gaps that stakeholders had identified, in terms of information or studies that they wanted to know about or to be addressed include the following points set out below (see also the detail contained in sections 5.1-5.3 above).

Drill Cuttings Pile Summary:

- Longer-term monitoring plans: what are the methods and how long [will it be done].

- Core sampling: The importance of knowing what's in the heart of the pile and the possible technical options: what's available and what's been considered.

- Re-injection: including [information about] methods.

- Biological-action: what changes have there been in the pile to date and [what are they likely to be] in the future. Does the modelling take this into account?

Pipelines, Debris and Subsea Infrastructure Summary:

- Is CNR International liable for surveying and monitoring in perpetuity?

- The concern that there should be no danger from back-filling.

<u>Steel Jacket Removal Summary</u>:

- [Intentions regarding] recycling of the jacket
- The dynamic between cutting the legs and the [jacket] piles.
- Whether explosives would be used in cutting the legs.
- Would divers be used?
- How buoyancy solutions might be used
- Socio-economic considerations (UK impacts) [in the selection of the option]
- Should more time be given for potential new technology [to develop]?
- How can the jacket be marked for navigation?

6. Overview of Forward Engagement Plans

An overview of the forward engagement plans for Murchison Field decommissioning was provided by Carol Barbone of CNR International who is responsible for Stakeholder Communications. The key points from Carol's talk are summarised below.

- There will be no one size fits all solution. There's a need to balance issues and views raised by stakeholders.
- We want to ensure that we've addressed the issues you've raised. Following this workshop we will review the transcript, evaluation, and requests for one-to-ones. We are open to your input ongoing.
- Not all stakeholders were able to make today's workshop so we will continue to engage with other invitees. Please let me know if there's any organisation in particular we should follow up with.
- The aim is to be transparent. All information shared [at the workshop] will be posted on the website.
- If you need a follow up to today, please let us know sooner rather than later to inform the Comparative Assessment. Once the Comparative Assessment is produced, this does not limit engagement. We will continue to be in touch and report back.
- We hope that by the point of consultation you feel that we've done a good job.

The following **questions from participants and clarifications from CNRI** were provided after this presentation:

Question: There are no political representatives – have you been in touch with them?
Answer: Until we're able to focus down on the way forward [for the option] it would be premature to do so. We have been in touch with the Scottish Government informally and will make approaches once the Comparative Assessment has been done.

7. Stakeholders' Priority Issues for CNR International

The purpose of this session was to identify any issues that require further engagement or conversations with the company. Based on the information they had received and the discussions they had undertaken so far, stakeholders were asked to consider the following questions:

- What for you are the priority issues (for example, something unresolved, outstanding or important for you) in relation to Murchison decommissioning about which CNR International needs to further consider or engage with stakeholders about?
    - Bearing in mind what you have heard about the forward engagement plans, is there anything that should be addressed differently in the forward engagement plan in terms of who or how?

For the discussion, participants were divided into four self-selected small table groups, in order to better enable people to contribute by giving them more time and opportunity to do so. Each table group was supported by a workshop facilitator.
The summary record of each of the table discussions is set out below. For the ease of navigation within this report, table groups have each been ascribed an identifying number in the transcript.

7.1 Table Group Discussion One

Priority issues which stakeholders in Table Group One thought that CNR International should consider further were identified as follows:

- Ongoing dialogue with the fishing industry.

- Shell and BP pipelines consultation: Agreement with other owners on, for example the potential of the method choice and possible impacts on pipelines.

- Don't forget the media plan and reputation issue and also what are the question that you don't have the answers to.

- Taking a volume of drill cuttings onshore and where they end up, especially as there are possible landfill limitations in Scotland.

- Supply Chain Governance: making sure that there is traceability and accountability of material to its resting place.

- Fun: Strive for maximum sustainable solutions. A good principle; fun; a nice thing to do: a different dimension of PR!

- There's a potential issue that 'these guys have made a lot of money so why [is decommissioning] so difficult now?'

- What is the impact of Scottish independence; the political and economic uncertainties.

- Don't talk about "abandonment".

- As an industry you need to be more comfortable about using the term "decommissioning" so you can do better in the future (i.e. not in denial).

- Lack [of information], other than passing comment, on how wells will be decommissioned and residual liability issues. More knowledge [is required].

- [Information] gaps on future monitoring requirements.

Aspects to be addressed differently in the forward engagement plan were identified by Table Group One as follows**:**

[What will work well: The workshop] today and the other ongoing one-to-ones are good.

- [Information about] timescale length until decommissioning delivery.
- Engagement with supply chain through trade bodies [is needed]. This would get the message out quicker, for example, Subsea UK, wider supply chain industries.
- Engagement with more environmental groups [is needed].
- [Greater circulation or use of the] website: Some have seen it; though not many.

7.2 Table Group Discussion Two

Priority issues which stakeholders in Table Group Two thought that CNR International should consider further were identified as follows:

- [Share] outputs of some of the studies [with stakeholders and more widely]: people need to be made aware of the reasoning for why each decision is taken.

CNR International Question to Stakeholders: Do we have the capacity to deliver what needs to be done? What is the gap (if any?) And where does CNR International need outside help?

- The question of longer-term feedback: What can decommissioning teach us about building and running oil drilling? We need [to capture] long-term feedback and lessons learned.
- [You] haven't yet touched on emergency response capability running up to decommissioning. The most important thing is that people aren't harmed in the future. We will need specialist training for emergency response post-cessation of production and during execution.
- [We] consulted with people who lived through a decommissioning. [We asked] what additional skills and competencies are needed? We also looked at all decommissioning projects to see what lessons were learned.
- There is a danger that information and learning gets lost. You need something on paper (e.g. a close out report) to ensure that learning doesn't stay within informal networks (as tacit knowledge) and risk getting lost.

Aspects to be addressed differently in the forward engagement plan were identified by Table Group Two as follows**:**

- I don't feel I know enough about the process planned in order to be able to comment.
- A lot of discussion on the importance of engaging the workforce.
- For some people there are too many variables and options still to be able to meaningfully engage: CNR International need to communicate the outcomes of comparative assessments and studies and discuss them with people.
- There is a body of experience to draw on because it is essential a 'live' platform during deconstruction. However we must ensure that we don't run things down prematurely. We must prevent people getting distracted during the period running up to decommissioning.

- I want deeper consultation with existing workforce and information shared. Plus skills development will be crucial. Maintain a skilled workforce on the platform.

CNR International comment: We need to better explain the different factors in the decision. We need to say much more about Safety Health and Environment (SHE).

- There are only a very small number of people who have key knowledge and skills that [are critical to maintaining safety: so they] must be kept on.

- People on Murchison need to know when their pay cheque is going to stop.

- You need risk feedback to be fully fed back from the front line to decision-makers on decommissioning.

7.3 Table Group Discussion Three

Priority issues which stakeholders in Table Group Three thought that CNR International should consider further were identified as follows:

- The more that's taken out, the better. You need good reasons to leave anything in.

- Stakeholders are likely to be keen to know the likely final destinations for materials and any economic benefit. This will depend on the options finally chosen.

- You need to make sure that as far as possible the work stays local: in North East Scotland preferably and at least in the UK.

- What is in the interior of the pile cuttings? This is a critical question. It needs to be answered first before decisions are made.

- Can you use different solutions for each leg? Do they have to all be kept or all taken away?

- [There needs to be] recognition [by CNRI] that appraisal of different options is going to be difficult and needs to be thorough.

- You need to consider cumulative effects of decommissioning, especially for fishing interests: economic effects, and capacity onshore.

- What precedents will be set by Murchison?

- Where are the nearest facilities for various hazardous materials such as lead or asbestos? If brought onshore is there a consultation?

- Ensure that not one single lobby group has more influence.

- If the integrity of the jacket is 1000 years or so, when it eventually fails will this disturb the cuttings pile?

- Are there any plans to do sea bed disturbance or removal impacts on the sea bed? Will these be included in the Environmental Impact Assessment (EIA)? Noise too?

- What employee opportunities can be created by decommissioning? What skills shortages are there and what training or innovation technology can be developed?

Aspects to be addressed differently in the forward engagement plan were identified by Table Group Three as follows**:**

- Are there plans for further consultation once plans are firmer? [Is there] opportunity for non-statutory stakeholders to input at a later date?

- [It would be] useful to know the timescales for engagement.

- [We] need to understand the [engagement] process.

7.4 Table Group Discussion Four

Priority issues which stakeholders in Table Group Four thought that CNR International should consider further were identified as follows:

- Regarding Naturally Occurring Radioactive Material (NORM) and hazardous waste studies: The environmental interest onshore about how disposal will be done. This needs engagement with the Scottish Environment Protection Agency (SEPA). People onshore will be most concerned about what it is, where it will end up and who will do it.
  - CNR International: Meetings are arranged with SEPA, the Department for Energy and Climate Change (DECC) and Marine Scotland.

- The primacy of safety determining the options and thereafter how the work is executed. Safety should not just be part of the picture but stated up front. Some options increase exposure quite dramatically - this should be the prime consideration.
- Facilitator Note: There was a range of views from stakeholders about whether onshore or offshore dismantling was the safest approach.

- Mitigation was mentioned but emergency scenarios and their mitigation has not yet been set out, for example fire, etc. This would be useful [information]. It's hard to give comment because primary hazards are not yet identified, nor how they would be mitigated.

- Will the Independent Review Committee (IRC) audit and verification report be shared with stakeholders? This would give the reassurance that a wider audit is done that is not dependent on the company only.

- Safety not cost should be the driver. If the method costs less this should not drive its choice [as the option].
  - CNR International: The Comparative Assessment does include the criteria of cost, but DECC also states that cost should not be the driving choice.

- The As Low as Reasonably Practical (ALARP) principle can be used as a method to inform assessment of options.

- Information presentations on classification societies have not been done for example JNV, or DNV which deal with certifications and standards. They are not on the list of invitees.
  - CNR International: Studies from the Decommissioning Programme can be requested by stakeholders.
- I will expect to see [certification and standards] included in the Safety Case.

Aspects to be addressed differently in the forward engagement plan were identified by Table Group Four as follows**:**

- I would like to see key documents and key events on the website: For example, the Environmental Impact Assessment (EIA) the scoping document, the Decommissioning Programme and the IRC report.

Major pieces of work and milestones, as defined by CNR International, should go on the website, for example cessation of production; progress with DECC. [I would like] an indication of what might be [on the website] and when and progress against them.

- What consultation would be done with the local community in relation to material coming onshore? Who would take responsibility; whether the contract or CNR International? People will want to know where stuff is coming ashore.

- [Sharing] footage of marine growth would be of interest.

7.5 Plenary Feedback on Stakeholders' Priority Issues

At the conclusion of the table group discussions, the participants convened back together to review the output from each discussion. This plenary feedback was summarised by a stakeholder volunteer from each of the tables, with the opportunity given for other participants to add any further comments.

Priority issues for further consideration by CNR International and aspects to be addressed differently in the forward engagement plan which stakeholders identified include the following points set out below (see also the detail contained in sections 7.1-7.4 above).

Table Group One Priority Issues:

- Media plans [are needed]

- Traceability [is needed] for waste removal

- Why is it so difficult and costly to decommission?

- Reliance on the Government for money to decommission.

Table Group One Aspects to Address Differently:

- Plans for CNR International's engagement with the supply chain.

CNR International Response: We are engaging through Decom North Sea and also the Chamber of Commerce which has many members to draw on.

Table Group Two Priority Issues:

- We don't have enough information. We need the outputs of the Comparative Assessment, what requirements that indicates - and to inform the supply chain accordingly.

Table Group Two Aspects to Address Differently:

- Stronger engagement [is needed] with platform personnel, to look at safety and procedures in transition from operation to decommissioning.

Table Group Three Priority Issues:

- There needs to be a good reason to leave anything in place.

- What is in the interior of the Drill Cuttings pile?

- The large scale of Murchison [and any consequent precedents for decommissioning]

- Ensure that work from decommissioning stays local.

Table Group Four Priority Issues:

- Waste and disposal of Naturally Occurring Radioactive Material (NORM) and hazardous material onshore: how this would be done. Involvement of the Scottish Environment Protection Agency (SEPA). People onshore would be concerned about end points.

- Safety should determine options as an upfront factor.

- The exposure of employees [to risk] should be the primary consideration.

- Mitigation and emergency scenarios should be set out, especially where these could snowball.

- Not all primary hazards are yet identified so it's hard [for stakeholders] to comment.

- Verification of studies should be wider than [within] the company.

- Cost should not be a primary driver for the option.

Table Group Four Aspects to Address Differently:

- Classification authorities need to be involved. They are not on the list of invitees.

- The website should flag key events, milestones and key documents: CNR International should indicate what's going to be highlighted and when.

- What consultation would be done with local communities regarding materials coming onshore and who's responsible?

8. Key Messages and Final Advice from the Workshop

To complete the workshop discussions, CNRI International provided feedback on the key issues identified by stakeholders with a following opportunity for stakeholders to give any final advice to the company.

8.1 Key Messages from CNR International

Carol Barbone of CNR International reflected on what the company had heard in the preceding session on stakeholder priority issues and on how outstanding issues could be addressed or taken forward. A summary of the main points made by Carol is set out below.

- It is our intention to capture the points raised today and to respond to them.

- We're looking at ways to open up the conversation with the supply chain. We have also had many conversations to date. We are aware of the interest to work with the home market.

- The Comparative Assessment results will go into the Decommissioning Programme. We would like to know your issues up front to feed into its development.

- We are committed to release of information as soon as possible to employees so they know what is happening.

- It is right to remove as much [of the platform] as possible and the Comparative Assessment will inform that.

- Regarding the precedents set by Murchison due to its scale: Yes, we want to do this [decommissioning project] well because it will set the tone and standard.

- Regarding the website coverage to include key documents and milestones: That is what we'd like to see. There's not been much uptake [from stakeholders] so far. [The information] is there and more will be coming.

- [On reflection] it would have been helpful to explain the Comparative Assessment criteria up front and also Safety Health and Environment (SHE) and impact on local communities.

- I'd like to thank everyone for their input today.

8.2 Final Advice to CNR International from Stakeholders

Stakeholders responded to the reflections from CNRI with the comments set out below.

- [This workshop has been] a welcome opportunity. I would like to thank CNR International and The Environment Council for today, but the proof of the pudding is in the delivery of results.

- Bear ing mind the aging workforce and that labour will be needed going forward.

9. Next Steps

There were a number of other routes highlighted to participants for their information needs, questions and issues to be addressed in relation to the Murchison decommissioning project during the workshop. These were reviewed collectively at the conclusion of the event and are described in the sections below.

9.1 One to Ones

Participants at the workshop were offered the option of signing up for a further one-to-one call or meeting with CNR International if there was anything in particular that they wanted to discuss in more depth that could not be covered within the agenda of the workshop. A flip chart sheet was posted up at the beginning of the meeting for stakeholders to write up any such requests and was highlighted as being available to participants. No requests for a one-to-one were signed up for during the course of the workshop.

9.2 The Bike Rack

A flip chart sheet was posted up at the beginning of the meeting as a 'bike rack' for stakeholders to note any issues of interest to them that were not covered in the main agenda of the workshop. The following points were recorded. These are shown below without attribution in accordance with the working agreements for the workshop:

- Details of proposals for Normally Occurring Radioactive Material identification and disposal routes (onshore impacts and risks in transportation).

- Accounting methods for various Waste streams: characterisation and tonnages.

CNRI took an action to follow up with the participants who had raised these points through telephone calls after the workshop (see also the action list in section 9.4 below).

9.3 Document Requests

A flip chart was posted up at the meeting for participants for stakeholders to sign up their requests for a copy of any of the Murchison Decommissioning reference documents that were on display during the workshop. These documents are:

- Murchison Decommissioning EIA Scoping Report (revised February 2012 to incorporate initial stakeholder comment). Note: This document is also available via the CNR International decommissioning web pages at www.cnri-northsea-decom.com.
- Murchison Decommissioning Environmental Impact Assessment (EIA) Draft Project Description (work in progress, Feb 2012)
- Murchison Decommissioning Environmental Impact Assessment (EIA) - Draft Environmental Description (work in progress, Feb 2012)
- Murchison Pre-decommissioning Environmental Baseline Survey

A copy of the Baseline Survey Report was requested by one participant. If you would like to obtain a copy of any one of the above documents, please contact Carol Barbone at CNRI International. The contact details are:

- Address: CNR International, St Magnus House, Guild Street, Aberdeen, AB11 6NJ
- Telephone number: 01224 303102.
- Email: Carol.Barbone@cnrinternational.com

9.4 Actions

A number of action points were generated during the course of the workshop and these are set out in the table below.

What	Who	When
Produce a transcript report from the workshop flip chart record.	The Environment Council	End of March
Circulate the transcript report to stakeholders (via an emailed weblink if a large file size).	Carol Barbone, CNR International	First week of April
Follow up the Bike Rack points (see section 9.2) through telephone calls.	CNR International	End of March
Follow up any document requests from today (see section 9.3).	CNR International	End of March
Contact CNR International if you need a one-to-one (via Carol Barbone).	Stakeholders	Arrange as soon as possible

10. Evaluation

An evaluation of the workshop engagement process was undertaken through provision of a questionnaire which all stakeholder participants were asked to complete before leaving the workshop. The purpose of the evaluation was to assess the quality of the stakeholder engagement event as well as to inform the ongoing engagement for Murchison decommissioning.

The feedback from the questionnaires has been collated without attribution and a summary can be found at appendix 4 of this report.

11. Closing Remarks

To close the workshop, Roy Aspden, CNR International's Project Manager for the Murchison field decommissioning, provided some final thoughts on the day's discussions. A summary of the closing remarks is set out below.

- We've had useful feedback today.
- People wanted to hear about well plugging and abandonment; about onshore disposal and CNR International ownership of the waste accountancy process; and about ongoing liabilities.
- I'm proud of our professional team and their contribution today. Thank you to The Environment Council for structuring the day.
- There's been a great turn out today. Feedback from today will be shared and transparent.
- Safety is key for us: thank you for your cooperation. Although the Comparative Assessment weightings were not shared today, safety is of prime concern.
- With regard to environmental impacts, we need to think about future generations. Recycling targets are also important.
- With regard to society: I'm keen that my family have job opportunities in the future and there is great potential in the decommissioning programme for jobs in the future.
- We encourage emerging technology and give it a chance but won't take risks.
- Costs were not covered today. 75% of the project cost will be covered by the tax payer and therefore we are obliged to manage cost sensibly and take it into account.
- We've gathered a lot of input today. Thank you for participating.
- We hope you had fun today. Have a safe journey home.

Appendix 1: Workshop Attendees and Invitees, 14 March 2012 Workshop

Stakeholder Participants:

Name	Organisation
Elaine Robertson	Aberdeen City Council
George Yule	Aberdeen Grampian Chamber of Commerce
Danny Stroud	Aberdeen Harbour Board
Alistair Reid	Aberdeenshire Council
Alex Mateo	DECC (Offshore Decommissioning Unit)
Bill Cattanach	DECC (PILOT)
Erik Leslie	DECC (Offshore Inspectors)
Tracy Edwards	DECC (Offshore Inspectors)
Brian Nixon	Decom North Sea
Ben Zech	Dutch Ministry of Infrastructure and Environment
Scott McMillan	East of England Energy Group
Neil Mitchison	European Commission Scottish Rep
Katrina Wiseman	Highlands & Islands Enterprise
Gill Dubois	Health & Safety Executive
Pat Naylor	Health & Safety Executive
Sandy Stewart	Health & Safety Executive
Mike Taylor	Independent Review Consultancy
Cliff Johnston	Independent Review Consultancy
Jim Rae	Individual Member, Scottish Wildlife Trust
Anthony Onukwu	Industry Technology Facilitator
Harriet Bolt	KIMO
Tom Piper	KIMO
Calum Grains	Lerwick Port Authority
Derek Moore	Marine Scotland
Neaz Hyder	Maritime and Coastguard Agency
John Paterson	Murchison Platform
Peter Stuart	Murchison Platform
Alan Piggott	National Federation of Fishermen's Organisations
Alistair Corbett	BP Northern Leg Gas Pipeline
Archie Johnstone	Northern Lighthouse Board
Louise Ryan	Oil and Gas UK
Karen Craig	Scottish Enterprise
John Watt	Scottish Fishermen's Federation
Philip Gorvett	Shell UK
Elaine Ball	Shetland Oil Terminal Environmental Advisory Group
Alex Kemp	University of Aberdeen Business School
Kyrre Nese	Wintershall Norge ASA

CNR International Team:

Name	Role
Roy Aspden	Project Manager
John Allan	Developments Manager
Carol Barbone	Stakeholder Communications
Jan Bradshaw	SHE Manager
Mike Corcoran	Strategy (Steel Jacket Removal)
Steve Etherson	Subsea & Pipelines
Liz Galley	Environment (Drill cuttings pile, Comparative Assessment process)
David Haywood	Vice President - Development Operations International
David Millar	Decommissioning Operations Superintendent
Tony Yates	Safety Health & Environment (Fishing)

Facilitation Team:

Name	Organisation
Nicola Builder	The Environment Council
Suzannah Landsell	The Environment Council
Tim Morrell	The Environment Council
Erica Sutton	The Environment Council

Organisations Invited:

Aberdeen City Council
Aberdeen Grampian Chamber of Commerce
Aberdeen Harbour Board
Aberdeenshire Council
BP - NLGP
British Geological Survey
British Marine Federation
Capturing the Energy
CEFAS (Centre for Environment, Fisheries & Acquaculture Science)
Centre for Environmental and Marine Sciences
CNR International
DECC (Offshore Decommissioning Unit)
DECC (Offshore Inspectors)
DECC (PILOT)
Decom North Sea
DEFRA
Dutch Ministry of Infrastructure and Environment
East of England Energy Group
Energy Industries Council
European Commission Scottish Rep
Fairfield Energy
Friends of the Earth Scotland
Future Balance
Global Marine Systems
Greenpeace Research Laboratories
Health & Safety Executive

Highlands & Islands Enterprise
IMCA
Independent Review Consultancy
Individual Member, Scottish Wildlife Trust
Industry Technology Facilitator
International Maritime Organisation
JNCC
KIMO
Lerwick Port Authority
Marine Conservation Society
Marine Scotland
Maritime and Coastguard Agency
MSc Researcher (Marine Science) Georgia Baylis Brown
Murchison Platform (CNRI)
Murchison Platform (Contractor)
National Federation of Fishermen's Organisations
National Oceanography Centre, University of Southampton
NOF Energy
NOGEPA (Netherlands Oil and Gas E&P Association
North Sea Commission
North Sea Regional Advisory Council
Northern Ireland Fishermen's Federation
Northern Lighthouse Board
Norwegian Petroleum Directorate
Offshore Contractors Association
Oil and Gas Producers
Oil and Gas UK
OLF (Norwegian Oil Industry Association)
OPITO
Plymouth Marine Laboratory
RF-Rogaland Research / IRIS-Biomiljo International Research Institute of Stavanger
Royal Yachting Association
RSPB Scotland
Scottish Association for Marine Science
Scottish Enterprise
Scottish Environment LINK
Scottish Executive (Radioactive Waste)
Scottish Fishermen's Federation
Scottish Oceans Institute and NERC Sea Mammal Research Unit (St Andrews)
Sea Mammal Research Unit
SEPA (Marine Team)
SEPA (Radioactive Waste)
Shell UK
Shetland Oil Terminal Environmental Advisory Group
TAQA
The Crown Estate
TNO-MEP (Netherlands Organisation for Applied Scientific Research)
UK Fisheries Legacy Trust Fund

UK Hydrographic Office
University of Aberdeen - Royal Institute of Navigation
University of Aberdeen Business School
University of St Andrews - Sustainability Institute
Whale and Dolphin Conservation Society
Wintershall
WWF
WWF Scotland

Appendix 2: Workshop Agenda and Working Agreements, 14 March 2012

AGENDA

- The Environment Council will facilitate this workshop -

09:00	**Arrivals & Coffee**
09:30	**Welcome** - *John Allan, CNRI (Manager, Development Projects and Decommissioning, CNRI)* **Introductions and Process for the Day** – *The Environment Council* **Setting the Context for Murchison Platform Decommissioning:** Presentations and questions of clarification: • Overview of the Murchison platform – the story so far – *Roy Aspden, CNRI (Decommissioning Project Manager)* • Overview of decommissioning studies findings to date: issues, challenges and options – *Mike Corcoran, CNRI (Strategy)* • Getting to the decommissioning plan final recommendations – *Dr Liz Galley, CNRI* (*Environment)* **Transfer to the Aberdeen Maritime Museum (2 minutes walk)** • Tour of the Murchison platform model **Return to the Carmelite**
12:00	**Buffet lunch at the Carmelite (Library)** **Plenary discussion** • Comments, questions and issues from platform model tour **Topic-Specific Briefings** Presentations and questions: • Steel jacket removal/ footings - *Mike Corcoran, CNRI (Strategy)* • Pipelines/ debris/other subsea infrastructure – *Steve Etherson, CNRI (Subsea & Pipelines)* • Drill cuttings – *Dr Liz Galley, CNRI (Environment)* Breakout groups **identifying any gaps in terms of issues, studies and information, with a focus on steel jacket removal and footings, pipelines/debris and other sub-sea infrastructure, and drill cuttings** **Whole meeting feedback and discussion** Coffee break Plenary feedback of key gaps Overview of forward engagement plans ***– Carol Barbone, CNRI (Stakeholder Communication)*** **Review of priority issues for ongoing engagement** Small group works reviewing priority issues for ongoing consideration and engagement by CNRI, followed by whole meeting feedback and discussion **Plenary feedback of priority issues and discussion** **Plenary: key messages from today and way forward** – *Carol Barbone, CNRI (Stakeholder Communication)* **Actions and completion of evaluation forms**
16:00	**Closing remarks** – *Roy Aspden, CNRI (Project Manager)* **Workshop close**

WORKING AGREEMENTS

- Mobiles / bleepers off
- One person speaks at a time
- Keep to time and task
- Non-attribution
- Responsibility for the record

Appendix 3: Background Briefing Document

CNR International

DECOMMISSIONING PROJECT

Murchison Decommissioning Project Overview Stakeholder Engagement Workshop 14 March 2012

Contents

1. Murchison Decommissioning Stakeholder Engagement Workshop

Canadian Natural Resources International (CNRI) are currently evaluating various methods for decommissioning the facilities in the Murchison Field, namely the Murchison platform itself, the drill cuttings pile beneath it, the pipelines and associated sub-sea infrastructure.

As part of the evaluation process, CNRI are seeking the views of stakeholders and interested parties to input into the environmental impact assessment and comparative assessment process. This briefing document has been prepared by CNRI to provide stakeholders with a high level overview of the project in advance of the Stakeholder Engagement Workshop to be held on the 14th March 2012. Those who are unable to attend the workshop are invited to contact CNRI (see Section 7 for details) to share their views through other routes.

This document reflects the options being considered by CNRI at this stage of the project in February 2012.

2. Murchsion Field Overview

1.1 Murchison Field Layout and Infrastructure

The Murchison Field is located in UKCS Block 211/19 of the Northern North Sea, approximately 240 km northeast of the Shetland Islands and 2 km west of the UK/Norway median line (Figure 1). Water depth in the field is approximately 156m.

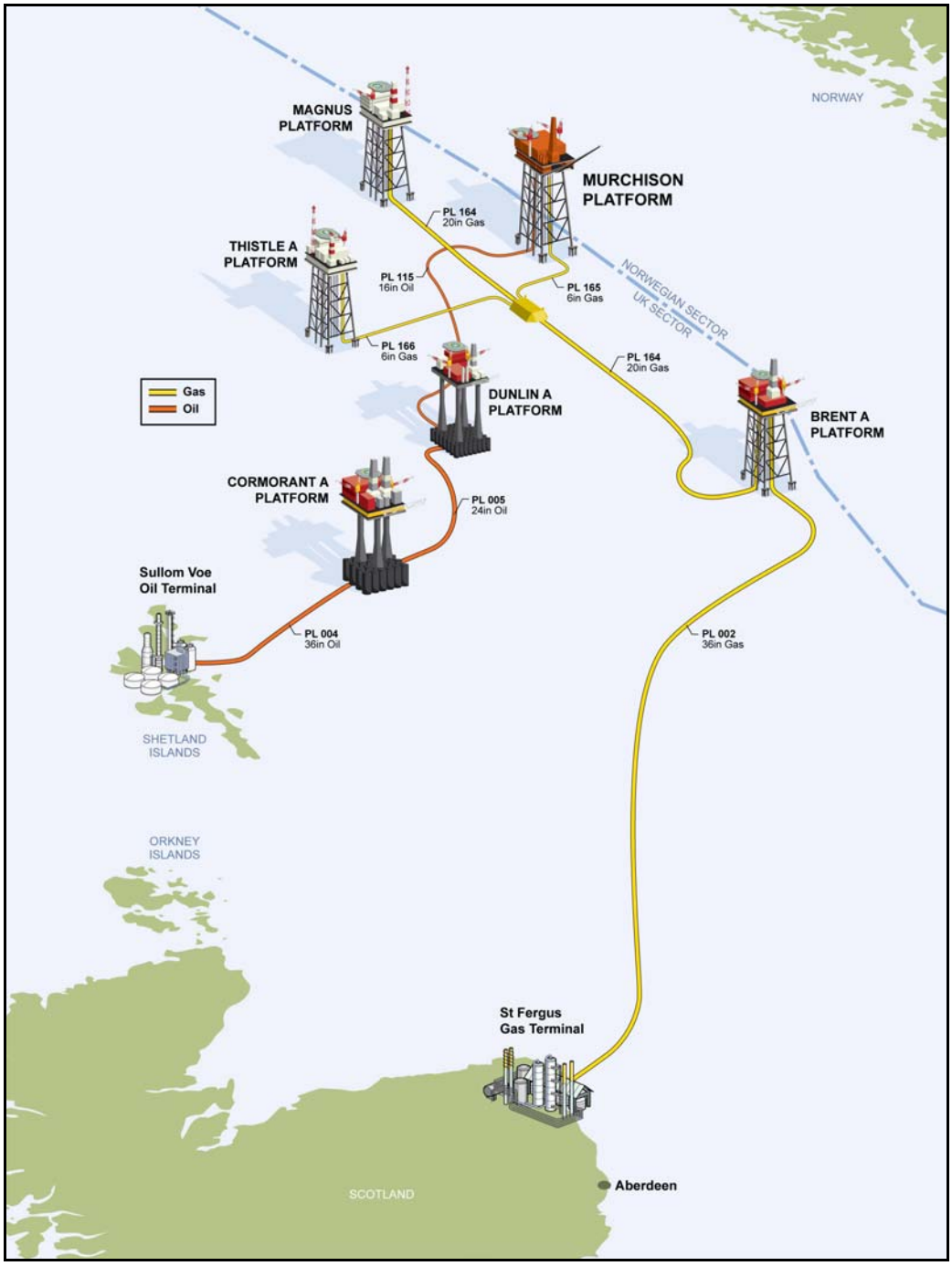


Figure 1: Location of the Murchison Field

1.2 Murchison Overview and History

Murchison is linked to the Dunlin Alpha platform (operated by Fairfield Energy Limited) by a 19 km, 16" oil export line (Figure 1). Produced oil from the Murchison Field is exported to the Sullom Voe Terminal in the Shetland Islands via the Dunlin Alpha platform, where Murchison oil combines with oil from Thistle and Dunlin Alpha and passes into a 24", pipeline to Cormorant Alpha. From Cormorant Alpha, the oil is transported to Sullom Voe via the 36" Brent System Main Oil Line.

Murchison is also linked to the Northern Leg Gas Pipeline (NLGP) via a 2.6km, 6" gas import / export spur pipeline which connects to the NLGP SSIV (sub-sea isolation valve) and crossover Tee and a control umbilical from Murchison to the NLGP SSIV. Both the gas pipeline and umbilical are owned by the NLGP partners.

The Murchison Field was discovered in 1976 by Conoco (UK) Ltd., who subsequently developed the field, installing a drilling, accommodation and production platform supported by an 8 legged steel jacket comprising 33 platform well slots. First oil was achieved in 1980 and during the Murchison drilling programme 53 platform wells and a further 3 sub-sea wells were drilled.

CNRI and their co-venturer Wintershall Norge ASA (22.2% ownership) acquired the Murchison field from Kerr-McGee in 2002. Gas export from the Murchison Field ceased in September 2000 as recovery rates fell below the level required for platform fuel gas, and Murchison subsequently commenced importing gas to meet platform fuel requirements. In 2009, production levels had become economically marginal at approximately 4.7% of peak annual production, and the decision was taken to commence planning for field decommissioning. Discussions are being held with the Department of Energy and Climate Change (DECC) to agree an appropriate date for Cessation of Production (CoP).

CNRI has commenced the pre-planning stages for the decommissioning of the field. The purpose of this phase is to investigate feasible alternative uses and conduct comparative assessments for the key removal and disposal options for the Murchison infrastructure.

An important aspect of this work is the assessment of the actual and potential environmental impacts that might arise as a result of decommissioning activities. These will be fully examined in an Environmental Impact Assessment (EIA) and reported in an Environmental Statement (ES).

1.3 Murchison Facilities to be Decommissioned

The main facilities included in the Murchison decommissioning project are the Murchison topsides and jacket (
Figure **2**) , the drill cuttings pile at Murchison, the oil export pipeline to Dunlin Alpha (PL115), four associated sub-sea wells, and tie-back pipeline bundles to the Murchison platform (Table 1 and Figure 1,
Figure **2**).

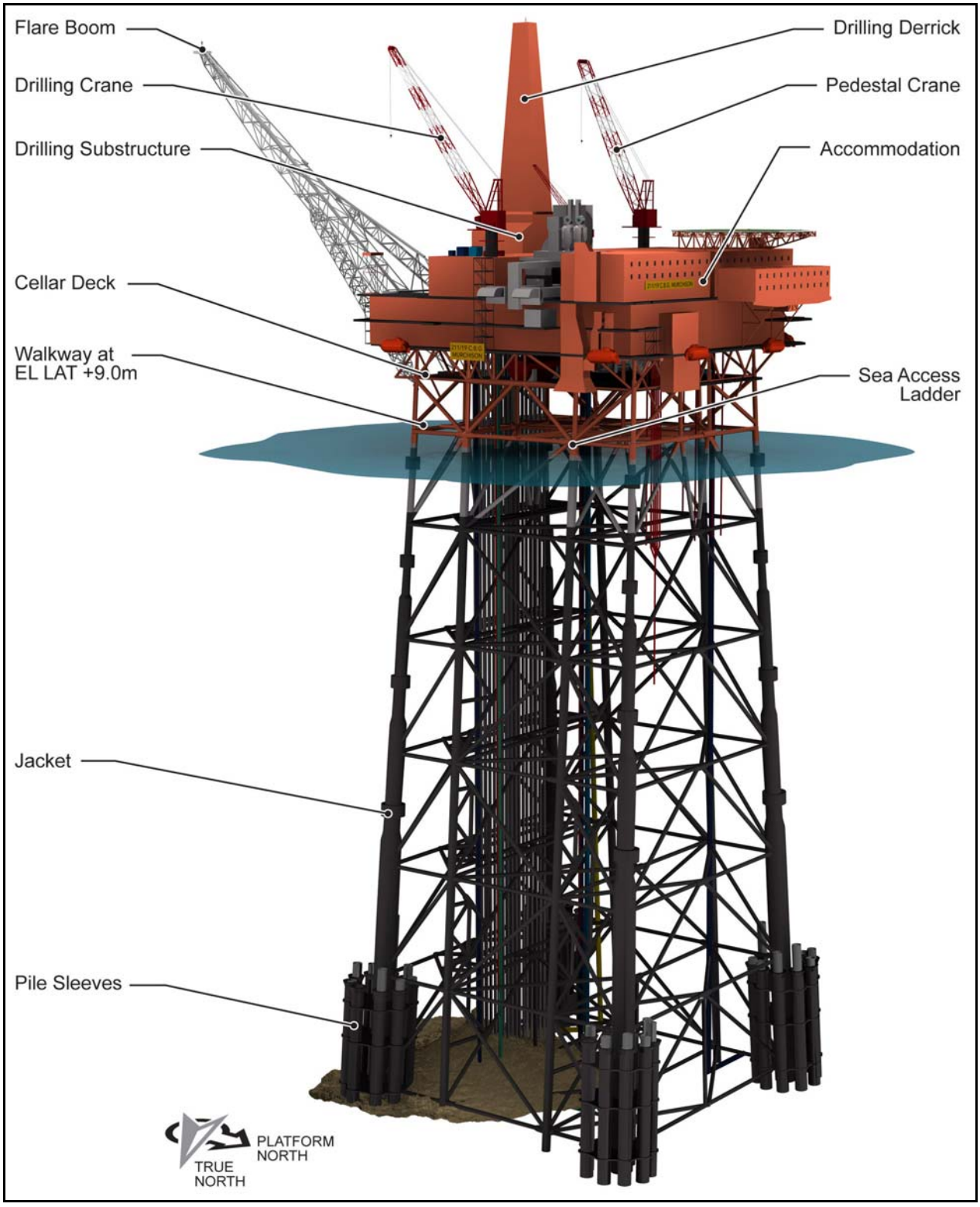


Figure 2: Overview of the Murchison Platform

Table 1: Overview of facilities to be decommissioned.

Facility	Components of the Facility to be Decommissioned
Topsides	Modules and associated topside equipment Module Support Frame (MSF)
Jacket and footings	188 m high steel jacket structure 33 conductors 32 piles
Pipelines	19.1 km 16" oil export pipeline and associated tie-in spools (PL115) 0.78 km pipeline bundle (PL123) 1.99 km pipeline bundle (PL124) 1.23 km pipeline bundle (PL125)
Subsea wells and protection structures	Well 211/19-2 – live well still to be abandoned - guide base, xmas tree, and protection structure in place. Well 211/19-3 – well abandoned - survey indicated no remaining infrastructure (Atkins, 2011) Well 211/19-4 – well abandoned - guide base and protection structure laid to side Well 211/19-6 – well abandoned - survey indicated no remaining infrastructure (ISS, 2011)
Other seabed materials	Drill cuttings pile at the base of the jacket Debris at the base of the jacket and in the surrounding 500 m zone, and along the routes of the pipelines and umbilical Other materials (e.g. pipeline protection mattresses, rock dump, grout mats, pipeline crossings, frond mattresses)

The main elements of the Murchison Field decommissioning project are:

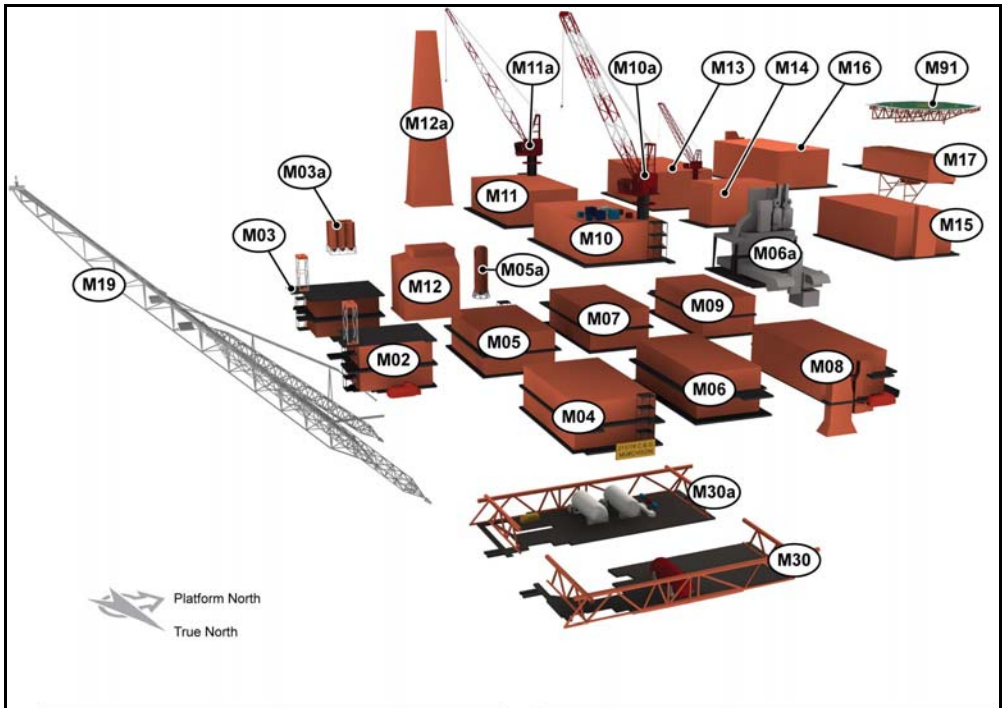
- the engineering down and cleaning of the Murchison topside facilities;
- the removal and subsequent recovery to shore of the topsides and jacket;
- the decommissioning of subsea pipelines and umbilicals;
- the management and consideration of the Murchison drill cuttings pile.

The 33 platform wells and four subsea wells will be plugged and abandoned in accordance with a well abandonment programme as Murchison nears the end of field life.

1.4 Murchison Topsides Facilities

The Murchison topside comprises 17 modules, arranged on two levels, with a combined weight of 24,584 tonnes. The modules provide facilities and equipment for drilling production, processing, power generation, export and accommodation. There is a cellar deck below the first module level and there are walkways at elevation LAT +9.0m below the cellar deck. A helicopter landing platform is located above the accommodation modules. A single drilling derrick and a 109 m long flare boom are located on the south face of the platform; one drilling and one pedestal crane are located on the roof level. Figure 3 shows the general arrangement of the modules and other facilities on the topsides.

The Murchison topsides were installed in the late 1970s using semi-submersible crane vessels (SSCV). The Module Support Frame (MSF) was installed first, in two sections, with each section having eight stabbing cones which acted as guides to locate the MSF sections, which were then welded in position.



MODULE	DESCRIPTION
M02	Wellbay East (WBE)
M03	Wellbay West (WBW)
M03a	Bulk Storage Tanks (BST)
M04	Separation Module (SEP)
M05	Metering Module (MET)
M05a	Deareator Column
M06	Gas Compression Module (GCM)
M06a	Rolls Royce Generators and Exhausts
M07	Gas Sales Module (GSM)
M08	Utilities Module East (UME)
M09	Utilities Module West (UMW)
M10	Drilling Power & Fabrication Workshop (DPF)
M10a	East Platform Crane (ECR)

MODULE	DESCRIPTION
M11	Mud Module (MUD)
M11a	West Platform Crane (WCR)
M12	Drilling Substructure (DRS)
M12a	Drilling Derrick (DRK)
M13	MCR and Workshop (MCR)
M14	Power Generation Module (PWR)
M15	Accommodation East (LQE)
M16	Accommodation West (LQW)
M17	Accommodation New (LQN)
M19	Flare Boom (FLB)
M30	Module Support Frame East (MSFE)
M30a	Module Support Frame West (MSFW)
M91	Helideck (HEL)

Figure 3: Arrangement of modules on the Murchison topsides

1.5 Murchison Jacket

The Murchison platform comprises a welded, tubular steel, eight-legged jacket structure (Figure 4). Each of the four main legs, situated one at each corner, is secured to the seabed with pile clusters. Each cluster comprises eight piles (2164 mm diameter x 66 mm wall thickness) approximately 80 m long of which 50 m is driven into the seabed. The pile clusters are attached to the jacket via a grout mix through pile sleeves which are approximately 25 m long. The steel jacket weighs a total of 24,640 tonnes (including the

steel jacket, piles, grout, anodes, hardwood and marine growth) and is 188 m high from the seabed to the top of the MSF.

The total weight of the Murchison jacket in air, excluding conductors, is >10,000 tonnes and as such it falls within the category of steel structures for which derogation may be sought from the general rule of "complete removal" under OSPAR 98/3. In such circumstances, OSPAR suggests that partial removal, leaving the "footings" of the jacket on the seabed, **may** be acceptable **if** a comparative assessment (Section 3) indicates that this would provide significant safety or environmental benefits in comparison with total removal **[our emphasis]**.

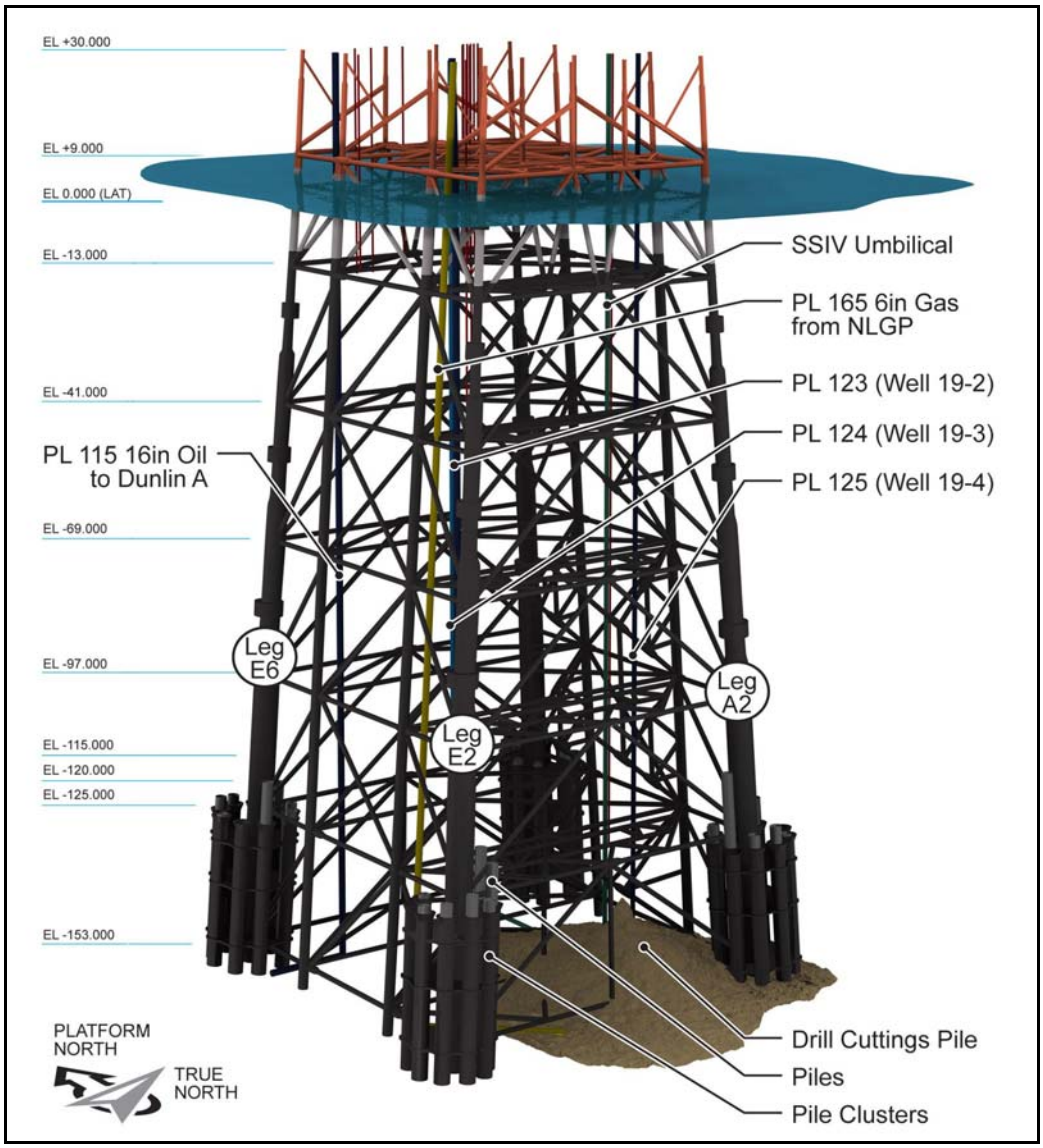


Figure 4: Murchison platform general arrangement

1.6 Well and Pipeline Facilities

The Murchison Field has four abandoned subsea tie-back wells, one of which is connected to the platform by a disused bundle (PL123) (Figure 5). There are also two disconnected

bundles (PL124 and PL125). Well 211/19-2 is located approximately 0.8 km west of the Murchison platform and was suspended in 1982; well 211/19-3 is located approximately 2 km north-northwest and was abandoned in 1982; and well 211/19-4 is located approximately 1.24 km north-northeast and was abandoned in 1984 (Figure 5). An exploration well (211/19-6) was drilled on the Playfair prospect and was subsequently suspended in January 1997. On two of the wells, the temporary guide-base and production guide-base remain in place with a corrosion cap installed on the wellhead. Removal of this equipment will form part of the Murchison decommissioning work scope.

Oil from the Murchison field is exported to the Sullom Voe Terminal in the Shetland Islands via a 16" diameter pipeline (PL115) to the Dunlin Alpha platform (Figure 5) which includes a riser to the Dunlin platform and topside facilities for transporting Murchison oil. Gas is imported or exported from the Northern Leg Gas Pipeline (NLGP) via a 6" pipeline (PL165) from Murchison to the NGLP (Figure 5). The gas export pipeline (PL165) and the sub-sea isolation valve (SSIV) control umbilical are owned by the NLGP partners (of which CNRI is a partner) and as such are not within the CNRI scope of work for Murchison decommissioning. CNRI will consider the potential environmental impacts of cutting the gas export pipeline and umbilical adjacent to the Murchison platform.

Pipeline decommissioning is governed by the Petroleum Act 1998 and the requirements are set out within the DECC Guidance Notes[1] ('Guidelines'). The Guidelines state that there are no prescribed options for pipeline decommissioning; all feasible options must be considered and a comparative assessment (Section 3) undertaken to determine which decommissioning option provides the most acceptable outcome on the basis of the criteria outlined in the Guidelines.

The options being considered by CNRI for the decommissioning of the Murchison pipelines and umbilicals are:

Full removal (base case). The pipelines would be completely removed, either by the reverse S-lay method or by cutting the lines with an underwater pipe cutter and lifting the cut pipeline sections onto a vessel for transportation to shore.

Left *in situ* – rock dump. Pipelines decommissioned *in situ* must be left in such a manner that they do not pose a risk to other users of the sea, e.g. fishermen. Pipelines may be covered by rock dump to a pre-determined height to avoid any risk of snagging by bottom-towed fishing gear. This option may involve selective cutting and recovery of pipeline sections.

Left *in situ* – trench and bury. The pipelines may be trenched to a pre-determined depth and back-filled to eliminate snagging risks for bottom towed fishing gear. This option may involve selective cutting and recovery of pipeline sections.

Minimal removal. Removal of the spool-pieces, wellhead guide base, protective structures, Dunlin Alpha platform approaches and protective mattresses. Some mattresses may have to be left *in situ* if it is unsafe to remove them. Remedial burial (rock dumping or re-trenching and burial) of spans and exposures along the buried section of the pipelines will occur.

[1] http://og.decc.gov.uk/en/olgs/cms/explorationpro/decommissionin/decommissionin.aspx

Removal of exposed sections: This option is similar to the minimal removal scheme, but only buried pipeline sections remain *in situ*.

The Murchison Field also contains well heads, protection structures, bridges and stabilisation features (e.g. mattresses, grout bags, concrete covers) and debris, all of which will fall within the scope of this EIA. It would be CNRI's intention to remove all of this material, as required by the Guidelines, unless there were significant safety or practical reasons why it would be preferable to leave them in place.

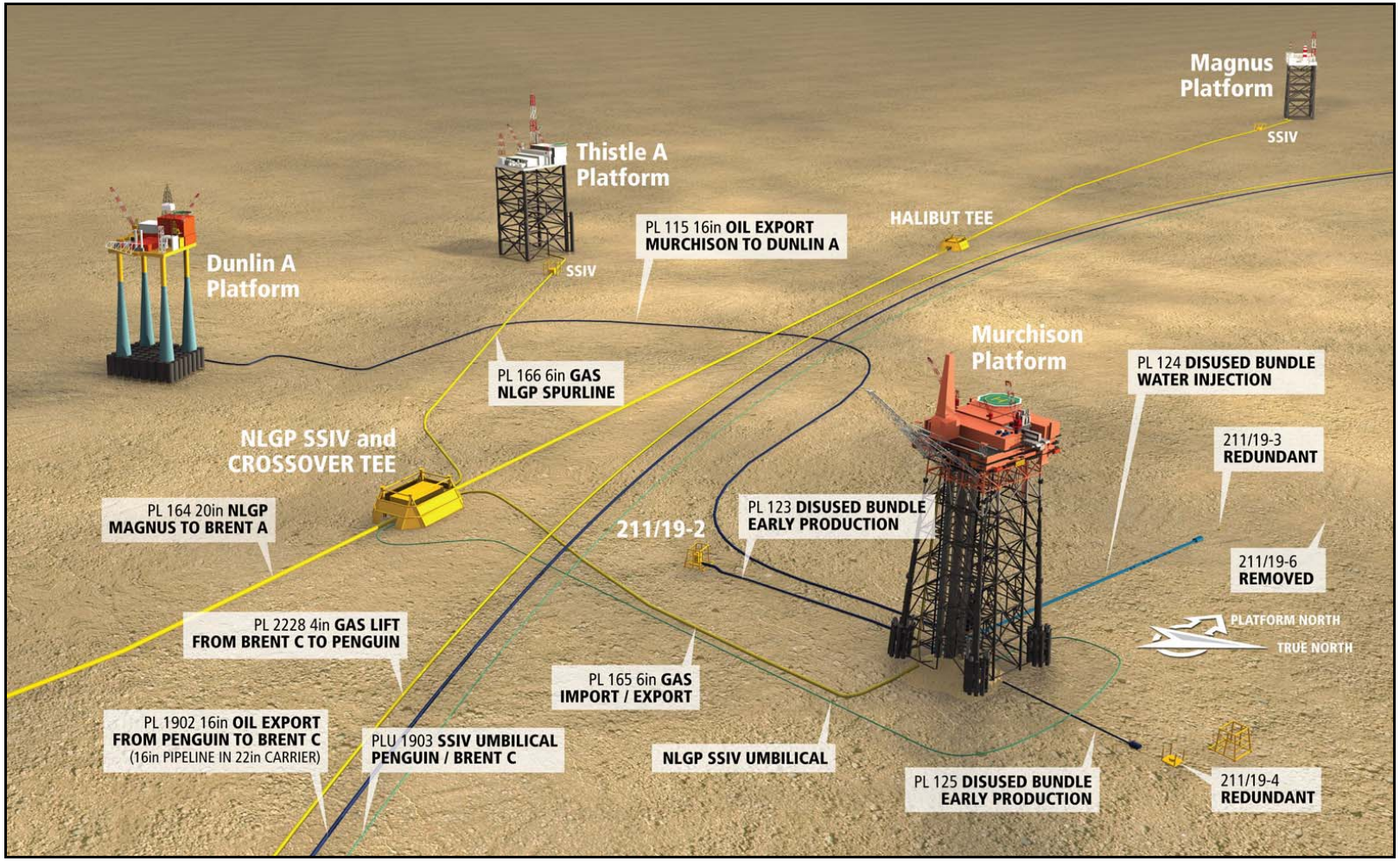
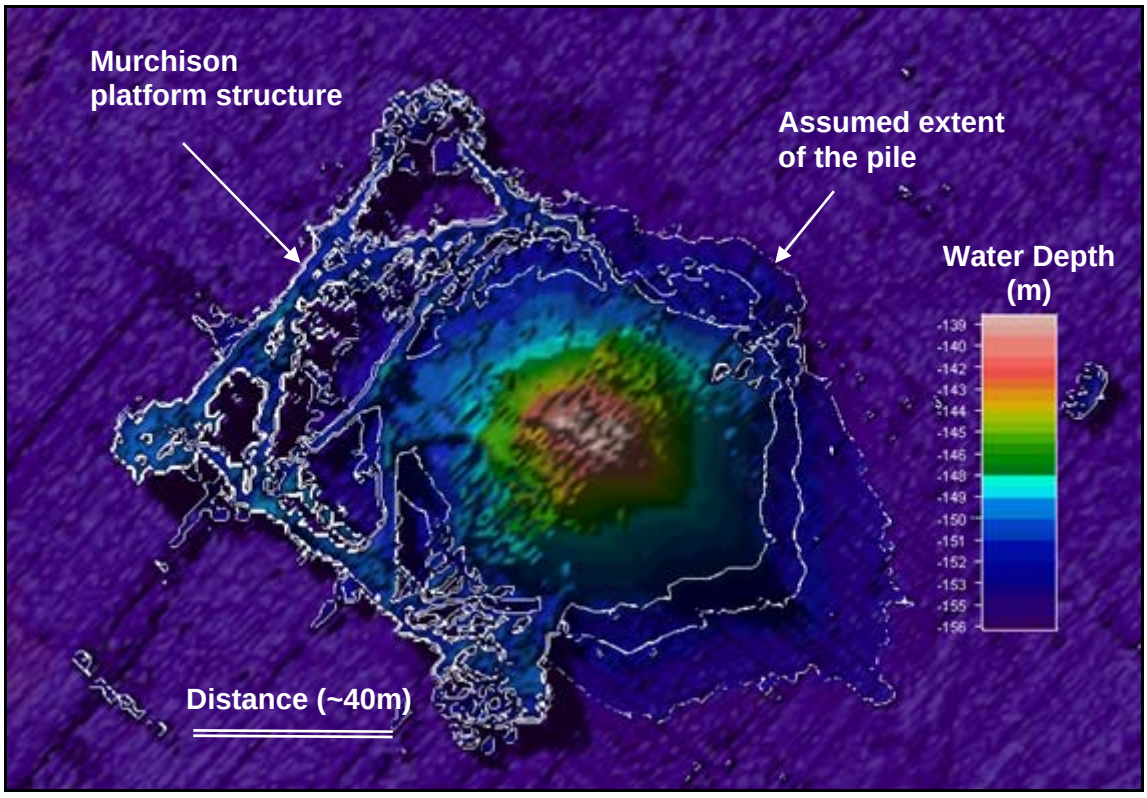


Figure 5: Murchison platform and Field layout schematic

1.7 Drill Cuttings Pile

During the life of the platform, approximately 21,234 m^3 of cuttings have been discharged to the sea (Fugro ERT, 2008[2]). Of the 98 wells drilled in this field oil based mud (OBM) was used and discharged with drill cuttings at 48 of the wells (ERT, 2008[3]). A proportion of these discharged drill cuttings and drilling mud now exist as a mound on the seabed immediately below the jacket, covering the bottom bracing level of the jacket.

Multi beam echo sounder (MBES) mapping of the cuttings mound (Fugro ERT, 2011) estimated that the pile has a volume of 22,545 m^3 (Figure 5) and footprint area of 6,840 m^2. This figure excludes the platform legs but includes other general platform debris that may be present (e.g. dropped objects such as scaffold poles, welding rods, tools and gratings). The drill cuttings pile has a maximum height of 15.34 m beneath the south-east edge of the platform (Fugro ERT, 2011). The edge of the pile extends approximately 40 m north-east, and 75 m south-east, and has a clear north-west/south-east orientation which is aligned with the direction of the seabed current.



Source: ISS, 2011

Figure 6: MBES survey data of the Murchison drill cuttings pile

[2] Fugro ERT, 2011. Murchison Pre-decommissioning Environmental Baseline Survey, April/May 2011. Project Number: J36037-Rev02

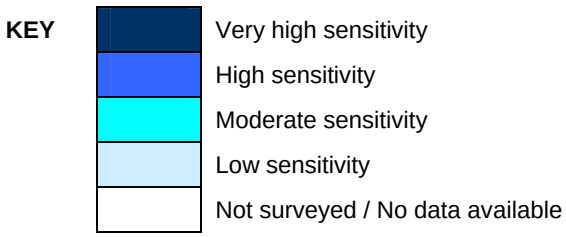
[3] ERT, 2008. Technical Review of Data from Around CNR's North Sea Assets with Regards to OSPAR Recommendation 2006/5. CNR079224

1.8 Summary of Seasonal Environmental Sensitivities

Table 2: Seasonal environmental sensitivities in the Murchison area *(key appears opposite)*

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Habitats Directive: Annex I Habitats There are no known Annex I habitats in the Murchison area. Although *Lophelia pertusa* has colonised the Murchison Platform, it would not have occurred without the presence of the platform and therefore does not constitute an Annex I habitat.											
Habitats Directive: Annex II Species Of the Annex II species, only the harbour porpoise has been sighted in the development area, with very high abundance in February and July and low numbers throughout the summer months (May, June, August and September).											
Benthic Fauna Benthic communities in the development area are similar to those found throughout a large surrounding area of the Northern North Sea. No rare species are known to occur in this area.											
Plankton The plankton in the Murchison area is typical of the Northern North Sea. Peak productivity occurs in spring and summer.											
Finfish and Shellfish The Murchison Field is located in spawning grounds for cod (January to April), whiting (February to June), haddock (February to May), Norway pout (January to April) and saithe (January to April) and nursery grounds for herring, ling, mackerel, spur dog, haddock, Norway pout and blue whiting (throughout the year).											
Marine Mammals Marine mammals sighted in and around the Murchison area include minke whale, long-finned pilot whale, killer whale, white-beaked dolphin, white-sided dolphin, harbour porpoise and sperm whale. Peak sightings generally occur from May to September.											
Seabirds Seabird vulnerability to oil pollution in the Murchison area is “high” in March, July, October and November and “moderate” to “low” for the rest of the year. The overall vulnerability in the Murchison area is “low”.											
Fisheries The Murchison area is of “low” to “very low” relative value. Fishing effort is “low” to “very low” and dominated by demersal gear types. However, pelagic species historically dominate the landings in the vicinity of the proposed development area.											
Shipping The Murchison Field is in an area of moderate to low shipping activity.											

Table 2 continued: Seasonal environmental sensitivities in the Murchison area



3. Overview Of The Comparative Assessment Process

Under the Petroleum Act 1998, and as described in the DECC Guidance Notes (DECC, 2011) detailed Comparative Assessments (CA) are required to identify the best overall option for decommissioning the:

(i) Murchison jacket, which falls within the category of structures that may be considered as a candidate for derogation from the general rule of "total removal" (OSPAR, 1998), and
(ii) all pipelines.

CNRI are following the DECC framework for CA's, which outlines five main criteria by which each decommissioning option should be assessed (Table 3). Where appropriate, these five main criteria have been further defined into sub-criteria (Table 3). The subcriteria were selected in light of:

- The "matters to be considered" listed in the OSPAR framework and the DECC Guidance notes.
- The range of safety, technical, environmental, societal and economic assessments and studies that CNRI decommissioning projects have undertaken or shall undertake.
- CNRI's SHE Policy, CNRI vision and mission statements.

Table 3: The criteria and sub-criteria to be used in CNRI Comparative Assessments

Criterion	Sub-criteria
Safety	Risk to project personnel offshore
	Risk to project personnel onshore
Environment	Impacts of operations
	Impacts of end-points
	Total energy consumption (Gj) and CO_2 emissions
Technical	Technical feasibility
	Ease of recovery from excursion
	Use of proven technology and equipment
Societal	Commercial impact on fisheries
	Socio-economic impacts – amenities
	Socio-economic impacts – communities
Economic	Total project cost

The assessment of the performance of each decommissioning option against each of the DECC criteria and sub-criteria shall be informed by appropriate engineering, environmental, societal, safety and economic studies, completed either by suitably experienced and qualified CNRI in-house personnel, or by suitably experienced and capable external organizations.

CNRI will use a structured approach to compare each of the decommissioning options and to balance their performance across the different assessment criteria and sub-criteria in order to identify the overall recommended option.

4. Overview Of The Options Available For Decommissioning

The viable options that CNRI are considering for the decommissioning of the Murchison Field and which therefore will be covered by the full EIA are summarised in Table 4.

Removal of the topsides and jacket in a single piece was studied but has been discounted: the top of the jacket is too wide to permit the Pieter Schelte (currently under construction and potentially the only vessel which would have the lifting capacity to remove the topsides in its entirety) to position itself under the topsides (Allseas, 2011).

Table 4: Overview of shortlisted decommissioning options for each facility.

Facility	Decommissioning Option	Sub-option
Wells	Plug & Abandonment (P&A) and conductor recovery	
Topsides	Full Removal	Reverse Installation
		Piece Small
Jacket	Full Removal	Cut and Lift
		Flotation in One Piece
	Partial Removal	Cut and Lift
		Flotation in One Piece
Pipelines	Full Removal	
	Removal leaving crossings *in situ*	
	Trench and bury	
	Removal of exposed sections	
	Minimal removal	
	Leave *in situ*	
Umbilical	Full Removal	
	Removal leaving crossings *in situ*	
	Leave *in situ*	
Bundles	Full Removal	
	Leave *in situ*	
Subsea Wellheads	Full Removal	
Cuttings Pile	Leave *in situ*	
	Full Removal	Separation, treatment of liquids offshore, transportation and treatment of solids onshore
		Transport slurry to shore, separation and treatment onshore for disposal
		Offshore injection of slurry
		Dispersion / redistribution offshore

5. Potential Impacts From The Murchison Decommissioning Project

The key issues identified during the Murchison decommissioning EIA scoping phase (BMT Cordah, 2011[4]) as having the potential to give rise to a significant environmental impact have been grouped into the following potential impacts:

1. Physical presence of vessels causing potential interference with other users of the sea;
2. Effects of seabed disturbance during decommissioning operations - vessel anchoring, trenching pipelines, rock placement;
3. Effects of drill cuttings disturbance;
4. Effects of energy use and atmospheric emissions;
5. Effects of underwater noise generated during decommissioning activities;
6. Effects associated with near-shore and onshore dismantling of structures – noise and dust;
7. Cleaning of marine growth from Murchison jacket;
8. Landfill disposal and associated impacts;
9. Safety risk to fishermen from derogated footings, pipelines, rock placement, dropped object;
10. Socio-economic impact to fishermen from the derogated footings and pipelines;
11. Non-routine events – spillage of hydrocarbons and other fluids;
12. Effects associated with Murchison cuttings pile management.

[4] BMT Cordah, 2011. • Murchison Decommissioning EIA Scoping Report. MURDECOM-BMT-EN-REP-00036

6. Studies Commissioned In Support Of Murchison Decommissioning

CNR have commissioned a number of studies to support the initial decommissioning planning process and option evaluation, in order to determine the preferred decommissioning option and engineering solution. These studies are detailed in Table 5.

Table 5: List of decommissioning studies

Decommissioning Aspect	Study Title
Inventory	Asset Inventory Study Report
	Materials Inventory and Residual Materials Study Report
Engineering	Platform Removal Technology Study
	Platform Shut-down Procedure
	Engineering and Clean Down
Topsides	Topside Offshore Deconstruction
	Topside Reverse Installation Removal
	Topsides Single Lift Removal
	Module Separation Study
	Topside Weight Review
	Topsides Comparative Assessment
	Topsides Process Study
	Idle Phase Requirements
	Utility and Life Support Systems
	Topside 3d Laser Survey
Jacket	Jacket Buoyancy Tank Assembly Removal Option
	Jacket Removal in Sections
	Jacket Single Lift Removal
	Jacket Weight Report
	Jacket Comparative Assessment
	Jacket Long Term Monitoring Requirements
	Murchison Preliminary Footings Life Assessment
	Murchison Jacket Structure Intelligent USFOS Modelling
	Subsea Cutting Techniques Study
	Evaluation of Removal Options for Jacket
Pipeline	Murchison Subsea and Pipeline Assets - Decommissioning Report

7. Further Information

Stakeholders can find additional and more detailed information in the following documents, available on request:

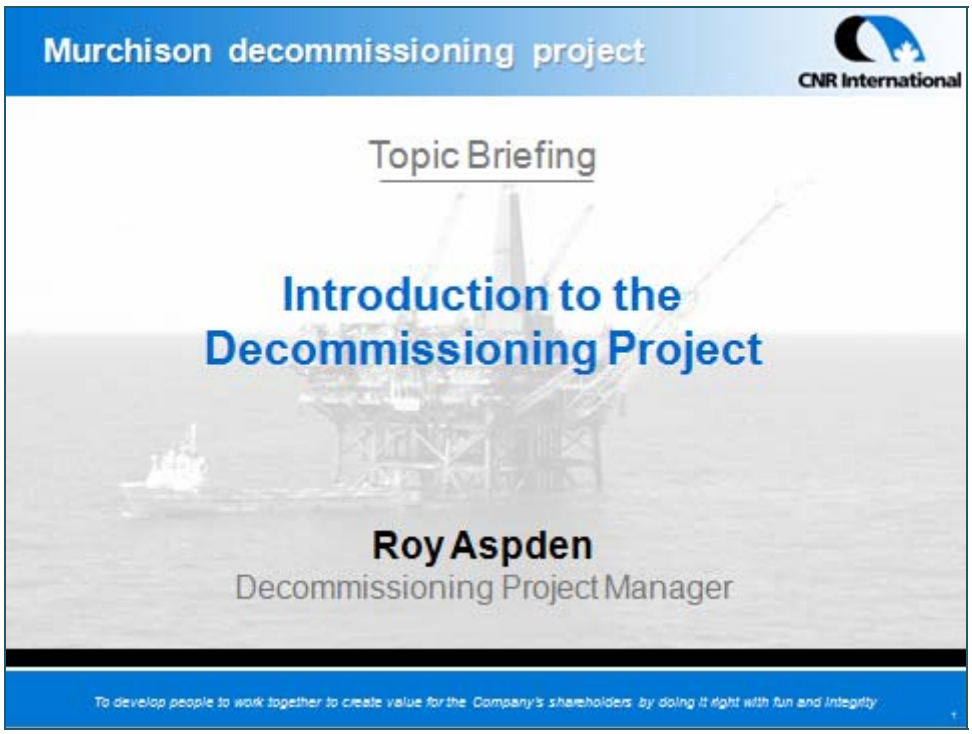
- Murchison Decommissioning EIA Scoping Report. MURDECOM-BMT-EN-REP-00036 (revised February 2012 to incorporate initial stakeholder comment).
- Murchison Decommissioning Environmental Impact Assessment (EIA) – Draft Project Description. MURDECOM-BMT-EN-REP-00124 (work in progress, Feb 2012).
- Murchison Decommissioning Environmental Impact Assessment (EIA) – Draft Environmental Description. MURDECOM-BMT-EN-REP-00126 (work in progress, Feb 2012).
- Murchison Pre-decommissioning Environmental Baseline Survey. MURDECOM-ERT-EN-REP-00056.

To request further information, documents and/or to make comments regarding the pre-planning for the Murchison decommissioning project, please contact:

Carol Barbone
CNR International
St Magnus House, Guild Street, Aberdeen AB11 6NJ
Tel: 01224 303102
Carol.Barbone@cnrinternational.com

See also www.cnri-northsea-decom.com.

Appendix 4: Introduction to the Decommissioning Project



Our UK North Sea operations

CNR International

- International offshore oil and gas production operations in UK North Sea and West Africa
- Operator of Murchison since 2002

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

Our mission statement

CNR International

"TO DEVELOP PEOPLE TO WORK TOGETHER TO CREATE VALUE FOR THE COMPANY'S SHAREHOLDERS BY DOING IT RIGHT WITH FUN AND INTEGRITY"

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

Murchison in facts and figures

CNR International

- Installed 1980
- Cross border field; 78% UK / 22% Norway
- Weight of steel jacket and piles 26,400 tonnes
- Weight of topsides 24,000 tonnes installed in 24 modular lifts
- Accommodation for 192 personnel
- Water depth 155m
- 33 platform wells 4 subsea wells
- Peak oil production in 1983 127,000 barrels oil per day
- Oil production in 2012 3,700 barrels oil per day

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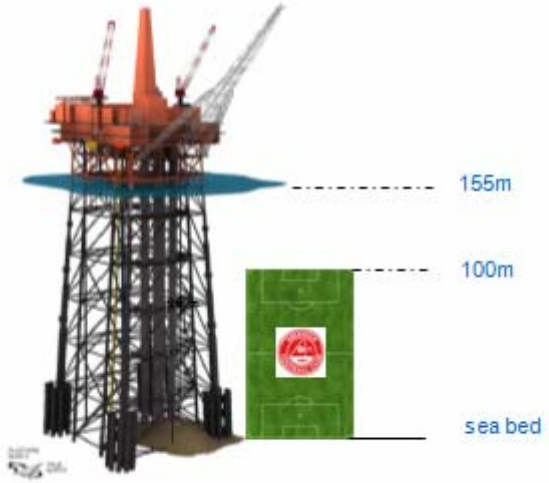
Murchison – an idea of size

CNR International



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Murchison modular topsides

CNR International

MODULE	DESCRIPTION
M02	Wellbay East (WBE)
M03	Wellbay West (WBW)
M03a	Bulk Storage Tanks (BST)
M04	Separation Module (SEP)
M05	Metering Module (MET)
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M10a	East Platform Crane (ECR)
M11	Mud Module (MUD)

MODULE	DESCRIPTION
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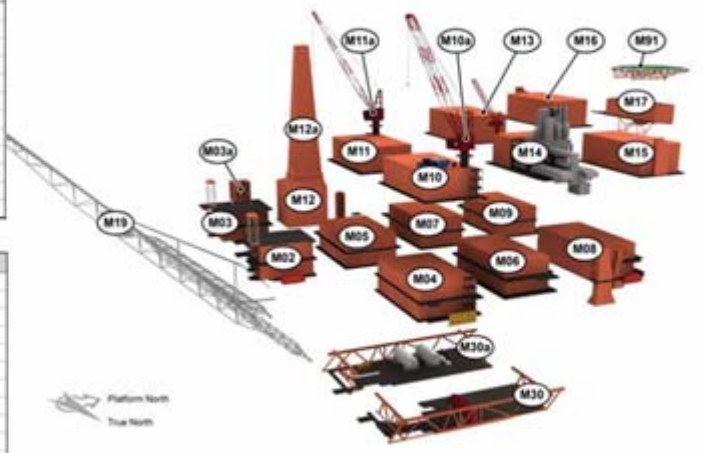

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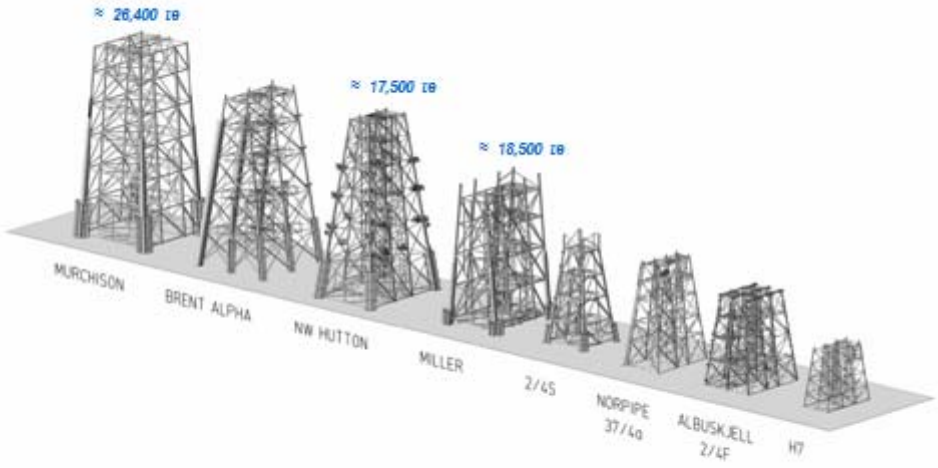
Murchison jacket comparative size

CNR International



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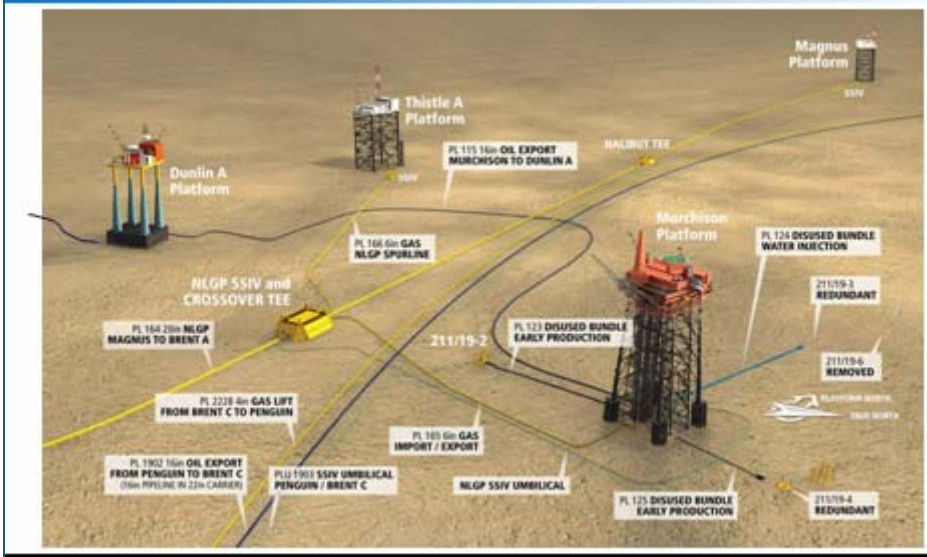
Murchison subsea infrastructure

CNR International



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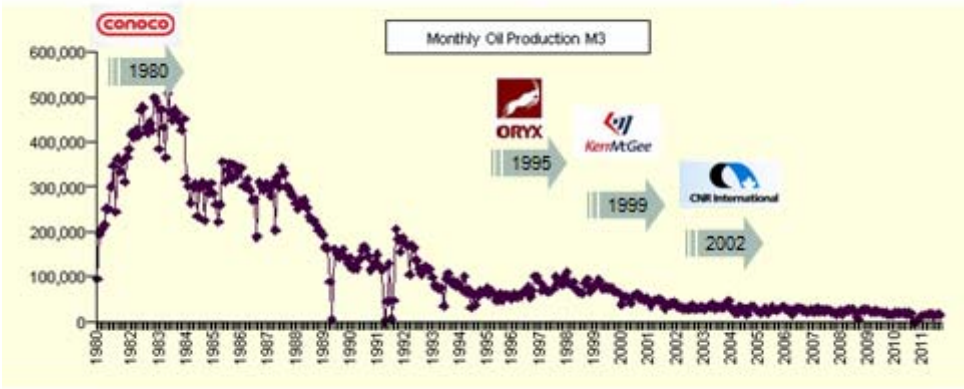
Murchison production history and ownership

CNR International

2010 production was 3% of 1983 peak and on a declining trend



Source DECC on-line database of field production histories
https://www.og.decc.gov.uk/pprs/full_production.htm

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Cessation of production

- Now reaching economic and technical End of Field Life (EoFL)
- EoFL occurs when operating costs relative to post-tax production revenues no longer makes an economic return
- EoFL can also occur when platform process systems cannot handle much smaller production rates than designed for
- CNRI has submitted its application to DECC licensing unit for Cessation of Production

Goals of decommissioning project

- HSE excellence
- Protect and enhance reputations of all involved
- Predictable outcomes
- Cost efficiency
- Continuous improvement

Approach to decommissioning

CNR International

- Do it right with integrity
- Commission expert studies and engage with stakeholders to base decisions on informed knowledge base
- Keep everyone informed – no surprises
- Learn from others
- Share our learning to benefit others
- Build a sustainable capability for our rolling programme

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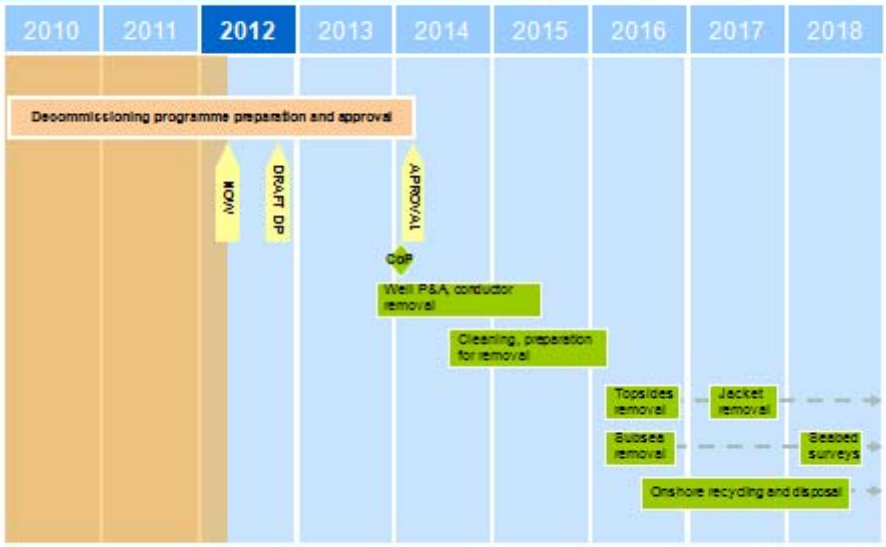
Murchison decommissioning baseline plan

CNR International



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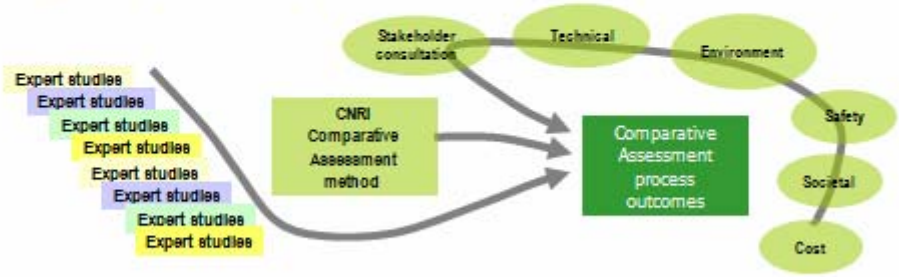
The role of the Independent Review Consultancy

CNR International

- Verify completeness of studies for CNRI's assurance
- Verify Comparative Assessment (CA) method
- Verify compliance with CA process and the outcomes



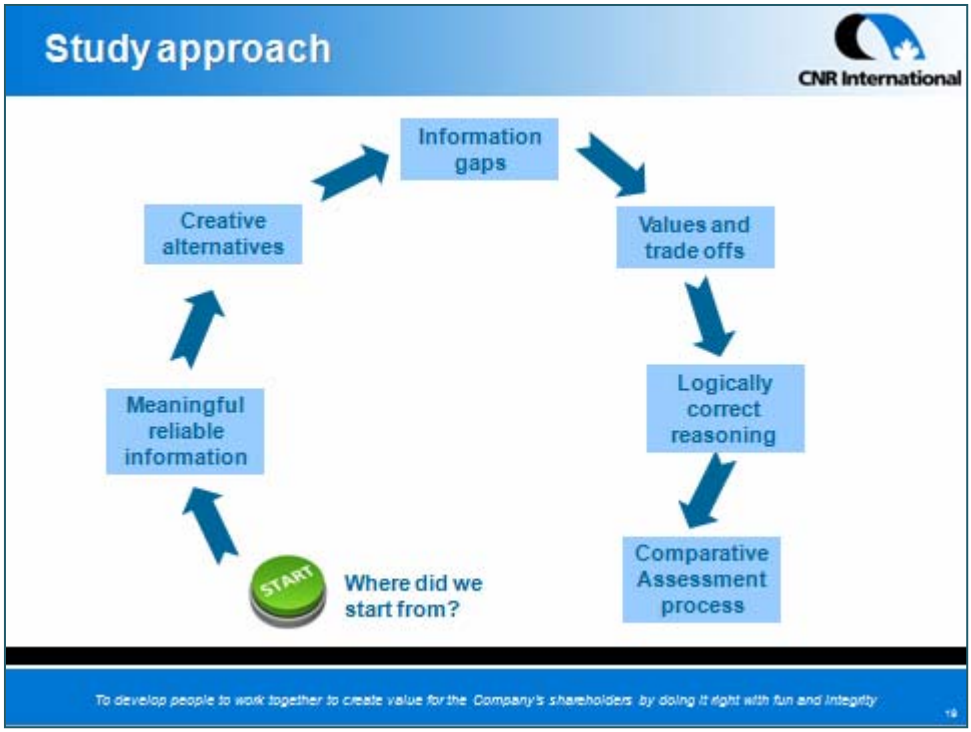
Importance of stakeholder engagement

CNR International

- To understand stakeholders issues and concerns
- To help stakeholders understand our challenges
- A continual process not a one-off
- To help us shape our Decommissioning Programme and make the right choices


Question and answer
CNR International
Any questions of clarification?
To develop people to work together to create value for the Company's shareholders by doing it right with fun and integrity

Appendix 5: Overview of the Decommissioning Studies: Findings to Date



The scale of the challenge…

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Reliable information

CNR International

- Platform condition surveys
- Process and weight surveys
- Jacket surveys
- Environmental baseline surveys
- Operating history / efficiencies
- Original construction history
- Platform integrity

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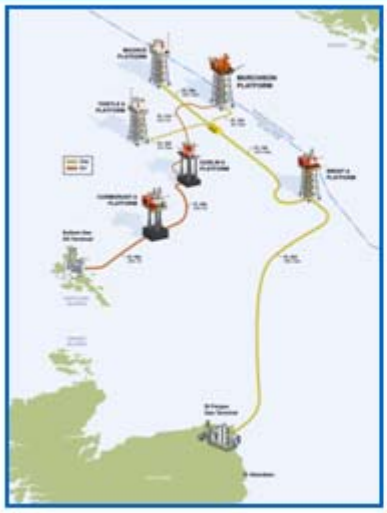
Creative alternatives for Murchison

CNR International



1. **Continue as a producing asset**
   - Improved operating efficiencies
   - Stranded reserves
   - Enhanced recovery
2. **Re-use/relocate**
   - Tie back to third party production
   - Carbon capture
   - Infrastructure hub
3. **New use**
   - Offshore wind energy
   - Wave/tidal energy generation
   - Enhanced recovery
4. **Future technology**
   - Store field records in National Hydrocarbons Data Archive

➔ ***After screening alternatives: decision to decommission***

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Decommissioning alternatives

CNR International

- North Sea experience
- Gulf of Mexico experience
- Supply chain – new technology/techniques
- Salvage industry experience
- Participation in industry work groups
- Nuclear decommissioning technology/crossover
- Engagement with stakeholders

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Decommissioning options

CNR International

34 wells will be plugged and abandoned in accordance with the Oil & Gas UK Guidelines on Well Abandonment

Topside structures will be removed, backloaded and transported to shore for re-use and recycling

Jacket removal options include full removal and partial removal

Various options are being considered for the drill cuttings pile

Various options are being considered for pipelines PL115, PL123, PL 124 & PL125

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Supporting studies

CNR International

Over 70 studies and activities were identified and grouped to be undertaken in-house or subcontracted over 20 contract packages:

- **Surveys:** information gathering/verification
- **Operations:** simultaneous operations (SIMOPs) between well P&A and continuing production
- **Decommissioning services contract (DSC):** shutdown, engineer down and clean (EDC), separation
- **Topside and jacket removal:** reverse lift, single lift, piece small
- **Pipeline:** cleaning, removal options
- **Environmental:** environmental impact assessment and support studies/documentation
- **Safety:** option safety assessment
- **Independent Review Consultancy:** independent review of studies and assessment procedures
- **Integrity:** checks against removal options, and long term degradation

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Drawing on excellence in the field

CNR International

ISS

ert

fugro

scopus

anatec

SCOTTISH FISHERMEN'S FEDERATION

CNR International

CNRI selected from best-in-class technical expertise to assist in developing and evaluating decommissioning options

xodus GROUP

Woodhill Frontier

ATKINS

GL Noble Denton

BMT Cordah

WOOD GROUP PSN

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Removal studies

CNR International

AkerSolutions

Allseas

MARINE CONTRACTORS

Seaway Heavy Lifting Engineering B.V.

Four detailed studies undertaken with specialist contractors covering conventional and new technologies for removal of topsides and jackets

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Safety Studies

CNR International

Major Accident Hazard Management

- Hazid studies of engineering down and clean and separation scopes
- Hazid studies of jacket, topside, pipeline options
- Identify major accidental events and consequences for each option
- Quantitative risk assessment (QRA) for each jacket option

Hazid meetings were attended by project personnel, CNRI technical authorities and specialist technical consultants

Technical assessment

CNR International

➔ Noble Denton review of all removal options by the different contractors

Environmental studies

- Environmental baseline survey
- Murchison EIA scoping report
- Decommissioning waste management strategy
- Permits and consents register
- Drill cuttings pile management study
- Energy and emissions study
- Noise assessments
- Assessment of the socioeconomic effects on fishermen
- Assessment of the safety risk to fishermen
- Environmental impact of all decommissioning options
- Material disposal register / permit requirements

Options selection process

➔ Comparative Assessment….

Question and answer

CNR International

Any questions of clarification?

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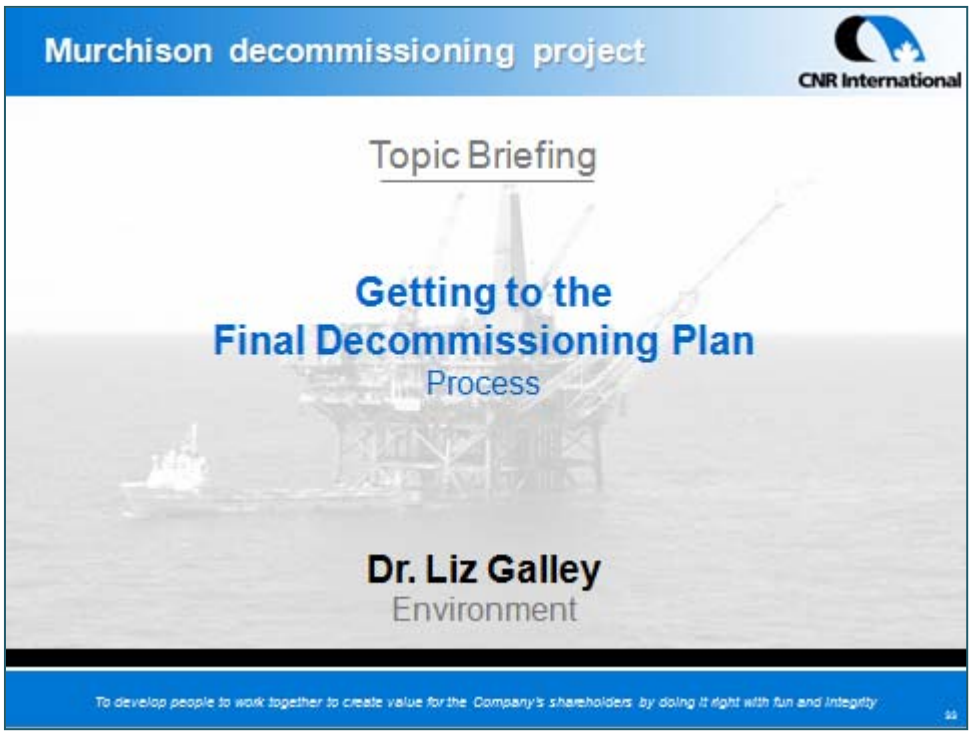
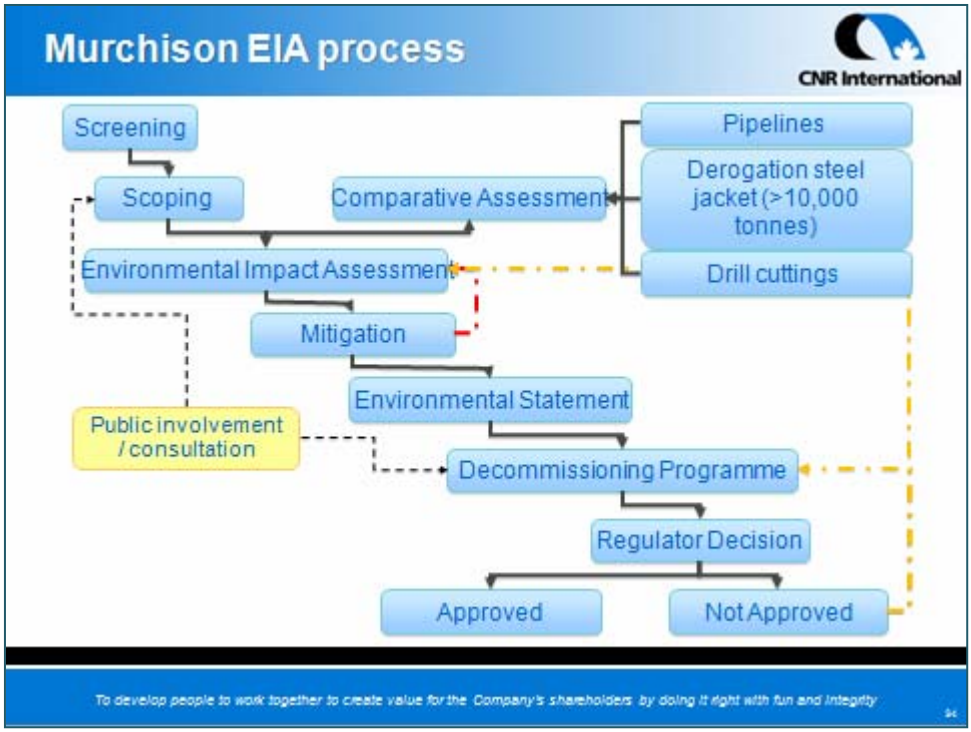
Appendix 6: Getting to the Final Decommissioning Plan: the Process





EIA scoping

CNR International

Murchison EIA scoping:

- High level report – June 2011
- Identified supporting studies:
  - Drill cuttings pile modelling: long term fate, OSPAR thresholds, human disturbance
  - Socio-economic impacts to commercial fishermen
  - Energy and emissions study
  - Underwater noise assessment
  - Safety risk to fishermen

EIA scoping

CNR International

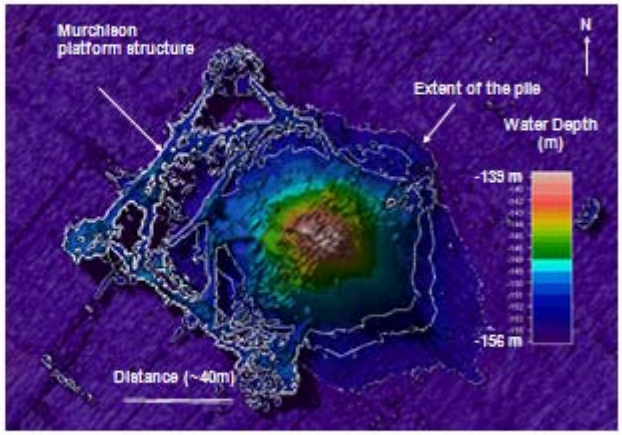
- Murchison EIA scoping report – June 2011
  - Feedback from stakeholders to date:
    - Contamination of the marine environment
    - Fishing activity of non-UK vessels
    - "Legacy" impacts
    - Marine growth
    - Artificial reef effect
    - Cumulative impacts pipelines decommissioning
    - Resource usage and atmospheric emissions
- Revised scoping report – February 2012

Environmental site survey

CNR International

Acoustic survey

- Map Murchison drill cuttings pile using multibeam echo sounder

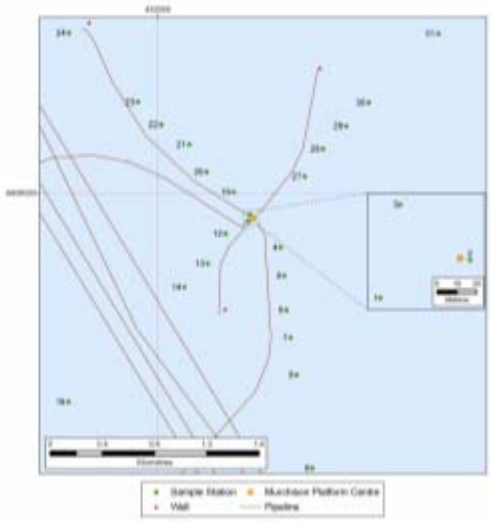


Environmental site survey

CNR International

Seabed sampling

- Chemical contaminants, biological analysis



Survey results (Fugro ERT, 2011)

CNR International

<500m from platform:
- Contaminant
  - Total hydrocarbon >50 µg /g
- Biological
  - Modified community structure in vicinity to platform
  - Opportunistic / pollutant tolerant species present, indicate organic enrichment
  - Reduced diversity

>500m from platform:
- Contaminant
  - Total hydrocarbon <50 ug /g
- Biological
  - Moderate to high biodiversity
  - Community typical of sediments at this depth in NNS
  - Considered as background sediments

EIA – sources of impact

CNR International

- Vessel use during ALL operations
- Well P&A
- Topsides decommissioning offshore
- Jacket decommissioning
- Pipeline decommissioning
- Drill cuttings pile
- Disposal of materials onshore

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Requirement for Comparative Assessment

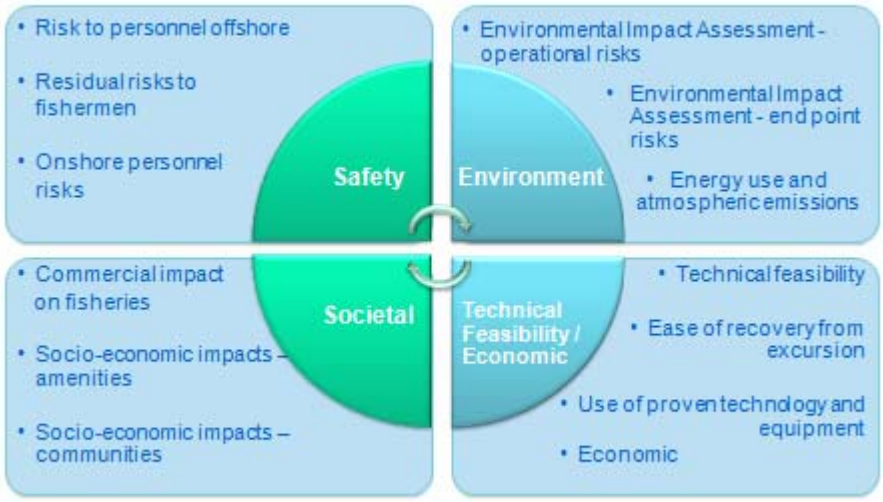
CNR International

- OSPAR Decision 98/3 on the Disposal of Disused Offshore Installations
  - Platform derogation cases (steel jacket >10,000 tonnes)
- Petroleum Act 1998
  - Platform derogation cases
  - Pipeline decommissioning
- OSPAR Recommendation 2006/5
  - Drill cuttings

Comparative Assessment framework

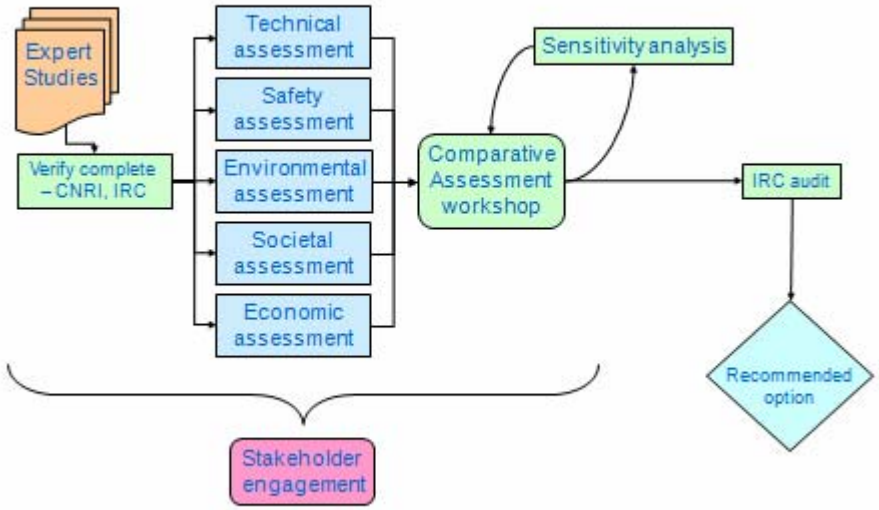
[Based on DECC Guidance Notes, V6 2011]

CNR International



Comparative Assessment process

CNR International



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Question and answer

CNR International

Any questions of clarification?

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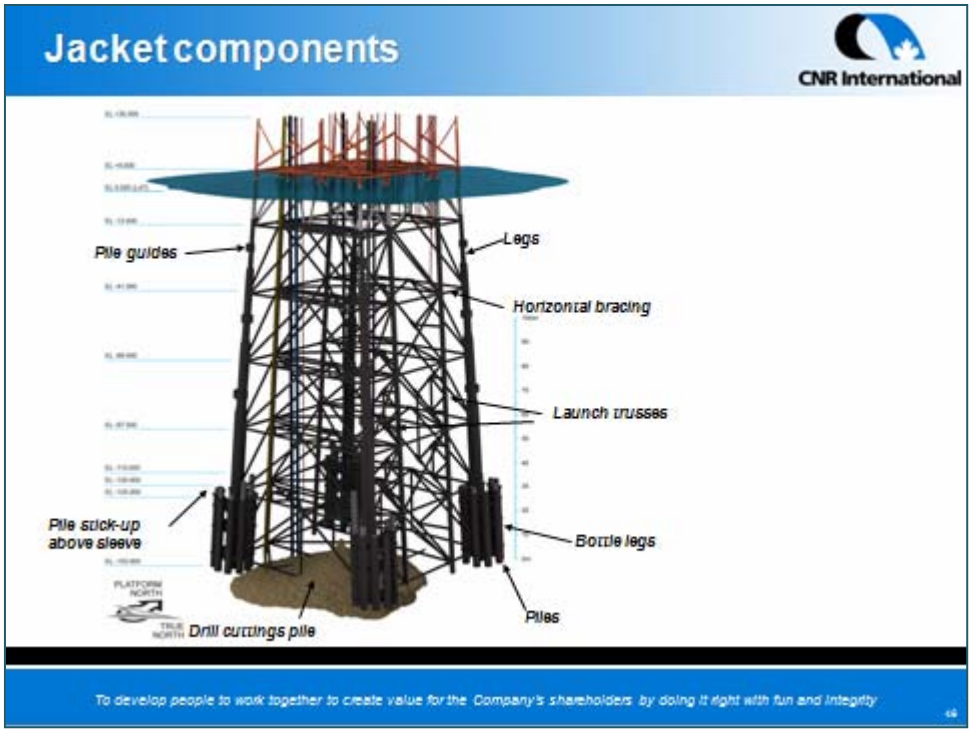
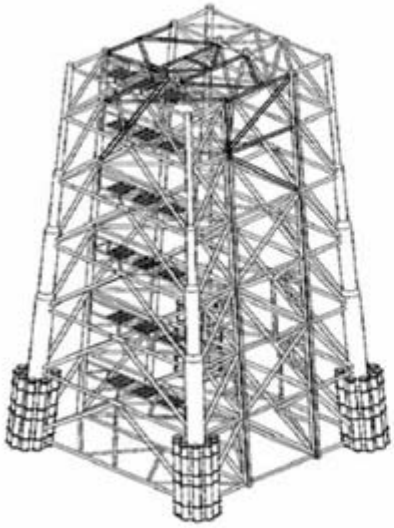
Appendix 7: Decommissioning Options for the Jacket



Jacket condition

CNR International



- General condition / structural integrity
- Flooded members / damage
- Ballast valves
- Pile stick up / densitometers
- Drill cuttings pile
- Marine growth

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Jacket removal options

CNR International

Refloat using buoyancy tanks

Remove using purpose built vessel

Remove in sections using large crane vessel

Remove in small sections using a crane vessel

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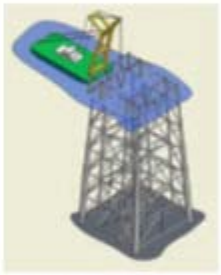
Full removal using buoyancy tank assemblies

CNR International

Wt jacket submerged = 23,700 te
Buoyancy = 23,600 te
(Buoyancy from braces, legs & BTA's)

Buoyancy tanks floated out, up-ended and attached to jacket



Jacket is grounded in Norwegian fjord and dismantled in-situ using sheer leg cranes

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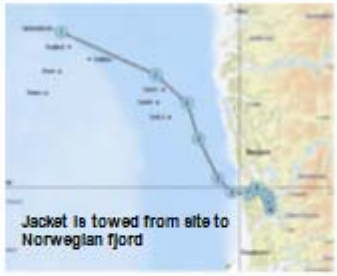
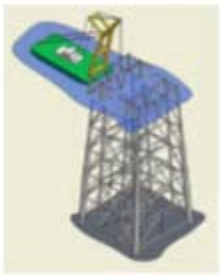
Partial removal using buoyancy tank assemblies

CNR International

Wt jacket submerged = 13,000 te
Buoyancy = 15,000 te
(Buoyancy from braces & BTA's)



Buoyancy tanks floated out, up-ended and attached to jacket



Jacket is grounded in Norwegian fjord and dismantled in-situ using sheer leg cranes

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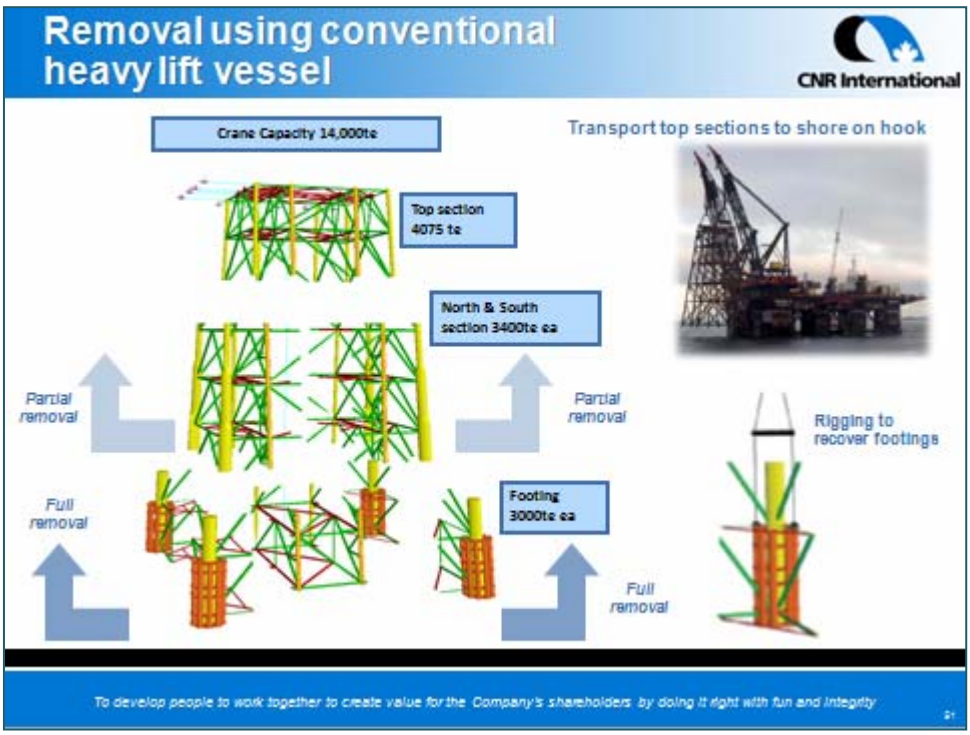
Removal using conventional heavy lift vessel
CNR International
Crane Capacity 14,000te
Top section 4075 te
North & South section 3400te ea
Footing 3000te ea
Partial removal
Partial removal
Full removal
Full removal
Transport top sections to shore on hook
Rigging to recover footings
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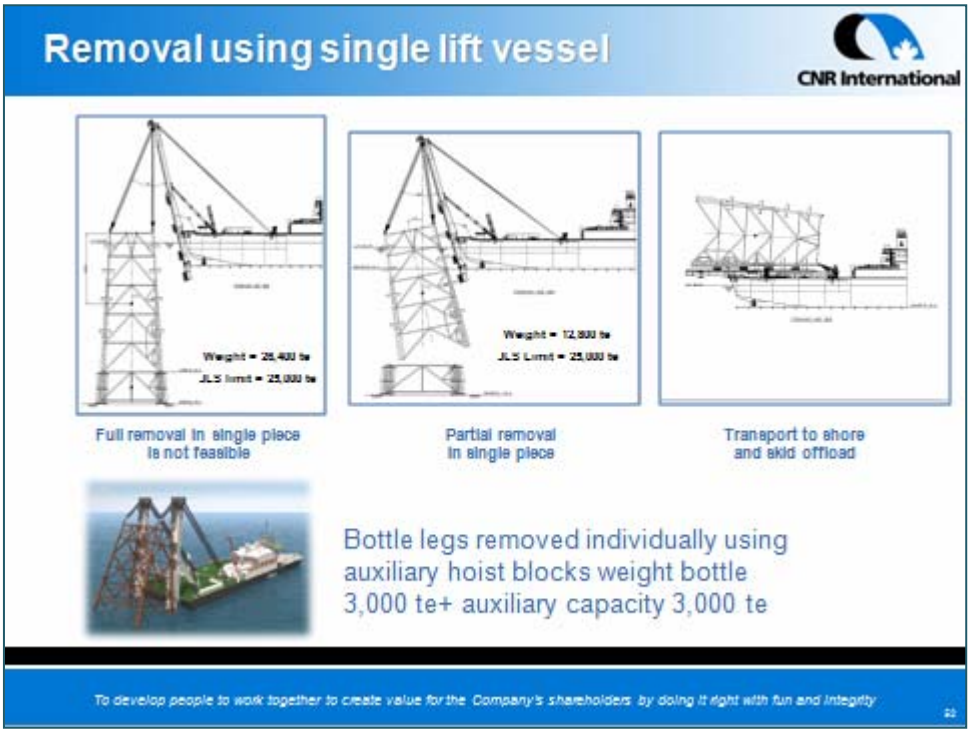
Removal using single lift vessel
CNR International
Full removal in single piece is not feasible
Partial removal in single piece
Tranaport to shore and skid offload
Bottle legs removed individually using auxiliary hoist blocks weight bottle 3,000 te+ auxiliary capacity 3,000 te
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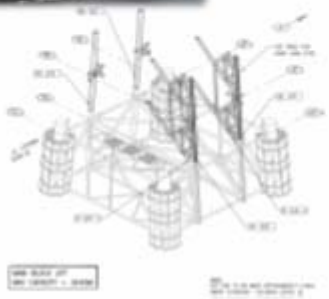
Removal using ship shape lift vessel

CNR International

Jacket removed in small sections down to footings, vessel does not have the capacity to lift the 3,000 te bottle legs with submerged block



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Murchison Decommissioning Project

CNR International

Jacket Removal Options - Summary

	Conventional heavy lift 	Single lift vessel 	Small crane vessel 	Buoyancy tank assembly 	Offshore man days
Full Removal	✓	✓ ?	✗	✓ ?	30,000
Partial Removal	✓	✓	✓	✓	17,000
Proven Technology	Yes	No	Yes	No (Frigg Jacket was 12,000te)	

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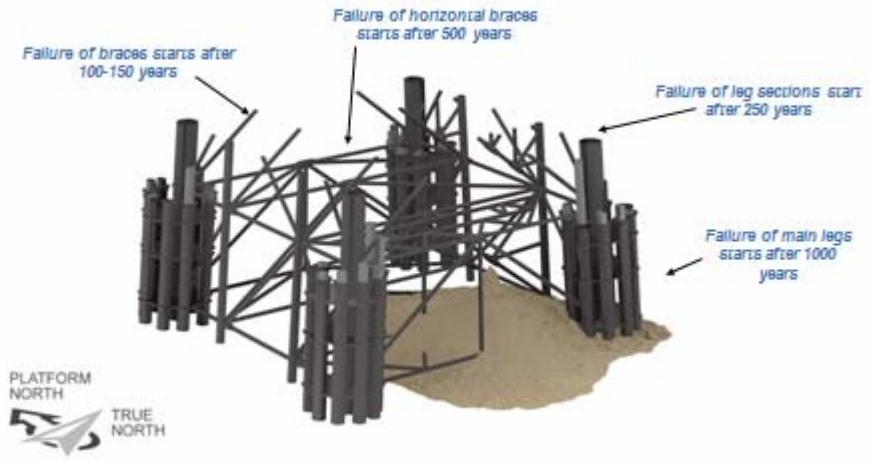
Jacket: full vs. partial removal - issues

CNR International

	Full removal (single piece or in sections)	Partial removal
Drill cuttings pile and debris	Relocate 22,000 te drill cuttings and debris, to expose lower jacket frame members Use ROV dredger: 150- 500+ days	Leave drill cuttings and debris within footings area
Foundation pile cutting	Remove debris inside piles Dredge out soil plugs to -4m Cut piles internally	Piles left insitu
On-bottom stability	Ensure on bottom stability of isolated bottle legs after cutting piles	Footings left in-situ and stable
Cutting jacket	New tooling required for 6m and 4m dia leg cuts	New tooling required for 6m and 4m dia leg cuts

Predicted degradation rate of footings

CNR International



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Question and answer

CNR International

Any questions of clarification?

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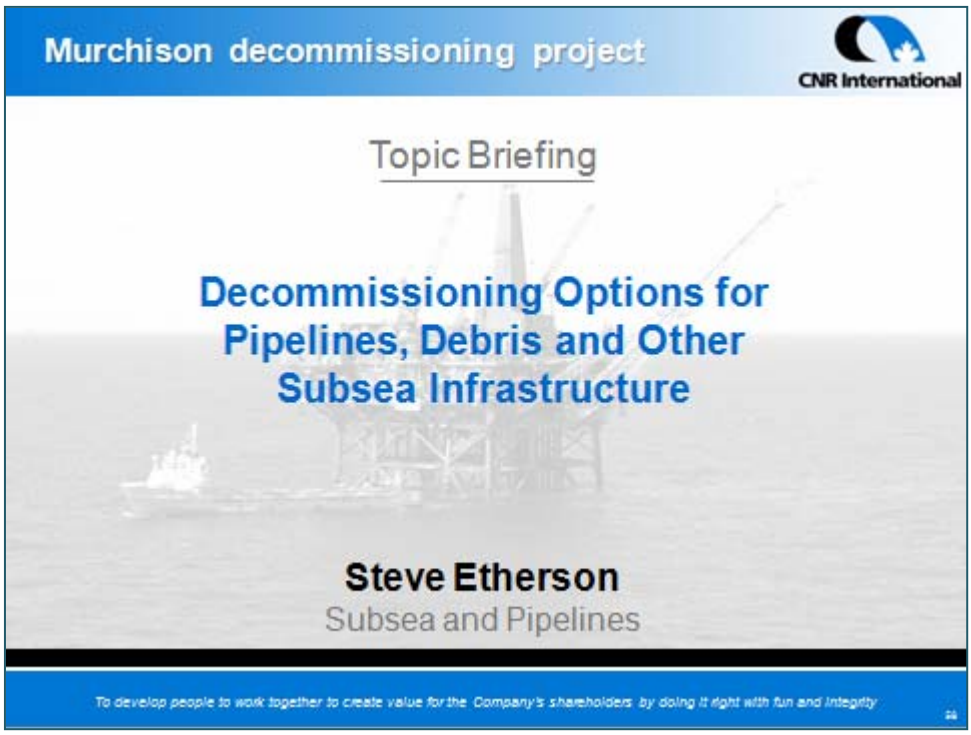
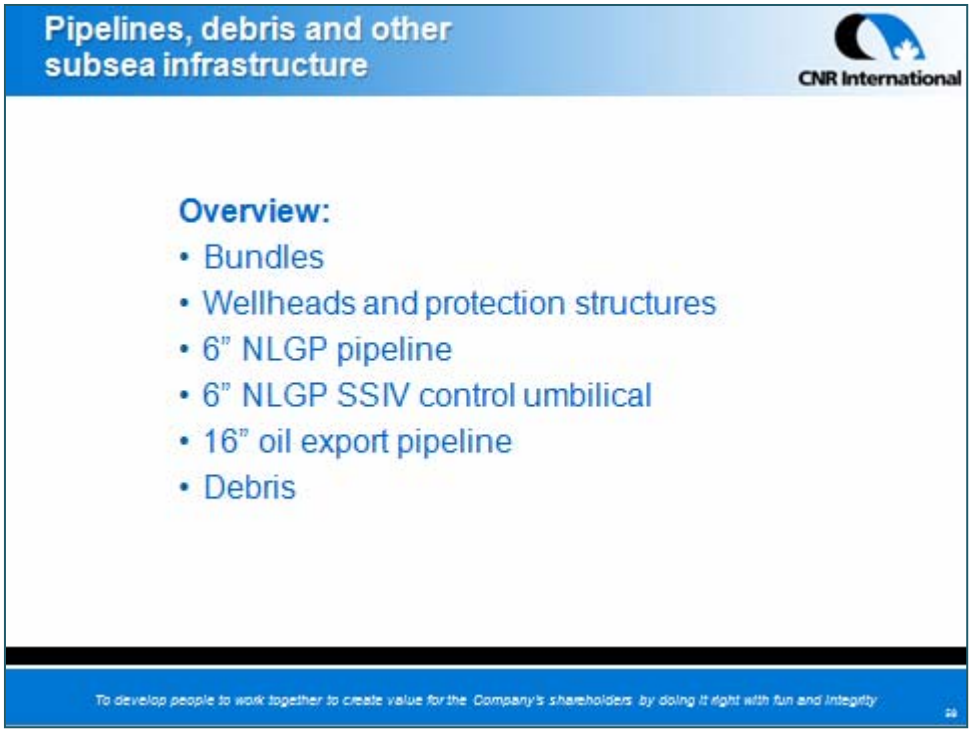
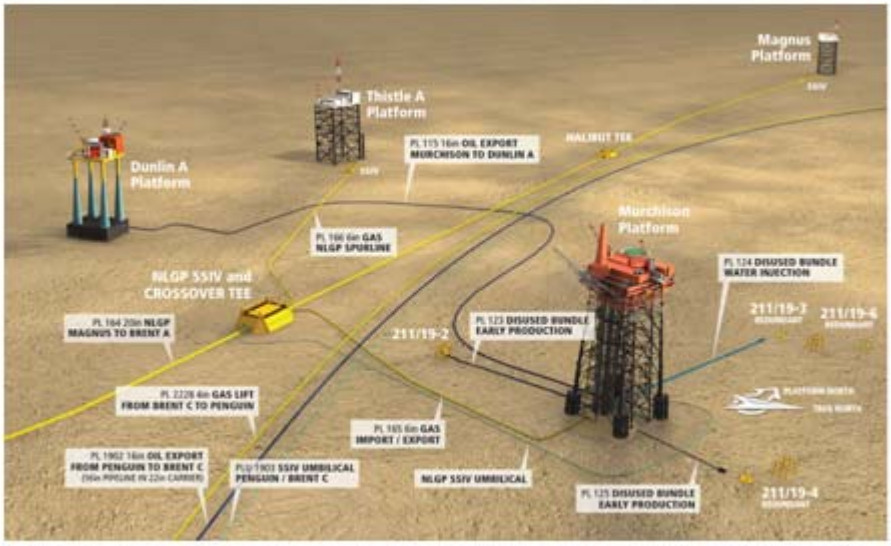
Appendix 8: Decommissioning Options for Pipelines, Debris and Other Subsea Infrastructure





Murchison subsea infrastructure layout

CNR International



Bundles: details

CNR International

- 3 x bundles of 12.75" dia x 6.35/10.32 mm wall thickness (w/t) PL123, PL124, & PL125
- 2 x 88.9mm dia x 6.35mm w/t pipes and 4 x 21.4mm dia control lines are inside the bundles
- PL123 is 800m long and 100% exposed with wellhead and protection structure still in place and bundle still connected to the well
- PL124 is 2km long and 100% exposed with pipeline bent in two places
- PL 125 is 1.3Km long, 100% exposed, disconnected from the wellhead, wellhead and protection structure still in place

Bundles: options

CNR International

Bundle pipeline PL123, PL124 & PL125:

- Leave in situ (span remediation)
- Minimal removal, i.e. remove mattresses, leave bundles in-situ (span remediation)
- Removal of exposed sections, cut and lift
- Burial of bundles and recover mattresses
- Total removal of bundles and mattresses

Remaining wellheads and protection structures are to be removed

Bundle cut from buoyancy tank

CNR International

Bundle with drag chain attached

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Buoyancy tank and bundle connected to well head pull-in frame

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Buoyancy tank and bundle connected to well head pull-in frame

CNR International

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Wellhead protection structure with fishing net

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Wellhead inside protection structure

CNR International

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Wellhead 211/19-4 protection structure laying on side

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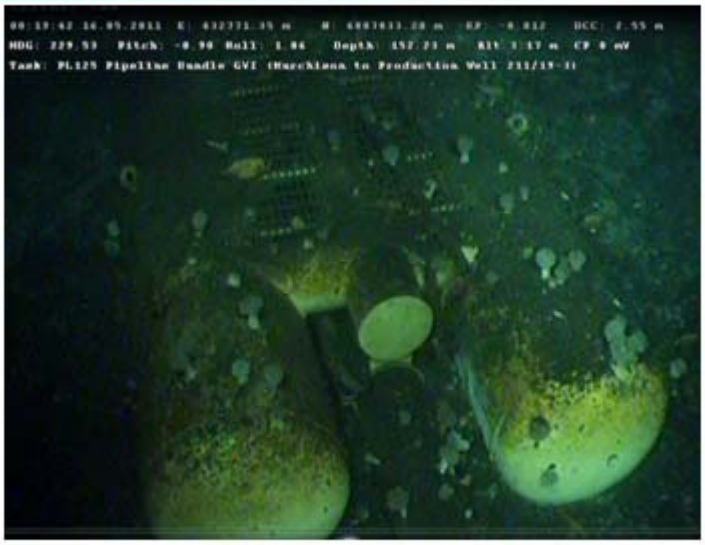
Buoyancy tank platform partially buried in drill cuttings

CNR International



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T0

Bundle disconnected from buoyancy module at platform

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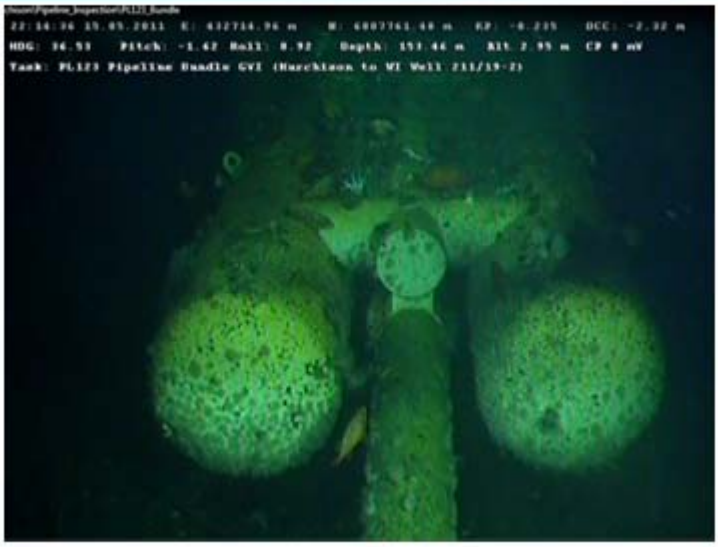
T1

Buoyancy and bundle connected

CNR International



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6" NLGP pipeline: overview (1)

CNR International

- 6" NLGP pipeline owned / operated by NLGP partnership (dialogue begun)
- 6" NLGP pipeline runs from Murchison Platform to the "T" tie-in on the 20" trunk line 2.6km away
- Hydraulic valves controlled by umbilical from the Murchison platform
- Pipeline is trenched and naturally backfilled for 70% of length
- The pipeline crosses under three pipelines
- Spool at Murchison platform is hyperbolically welded to riser and pipeline

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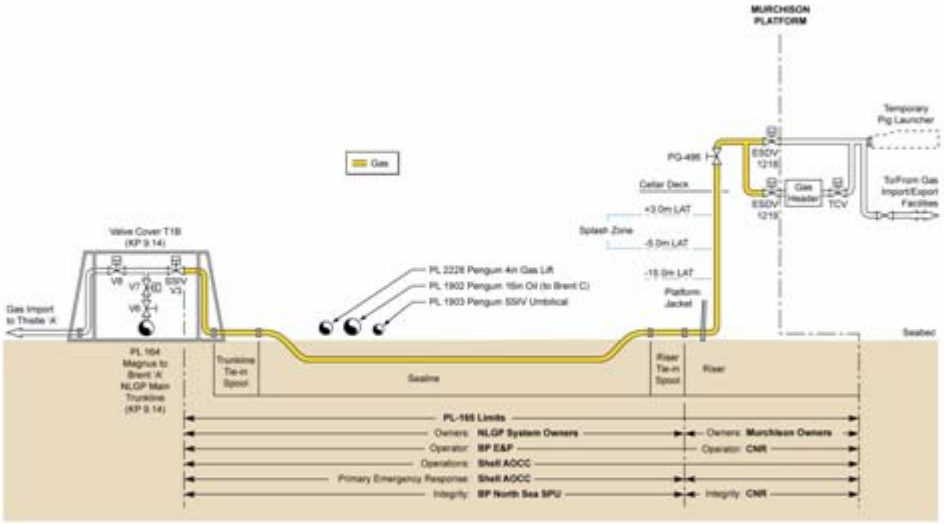
6” NLGP pipeline: overview (2)

CNR International



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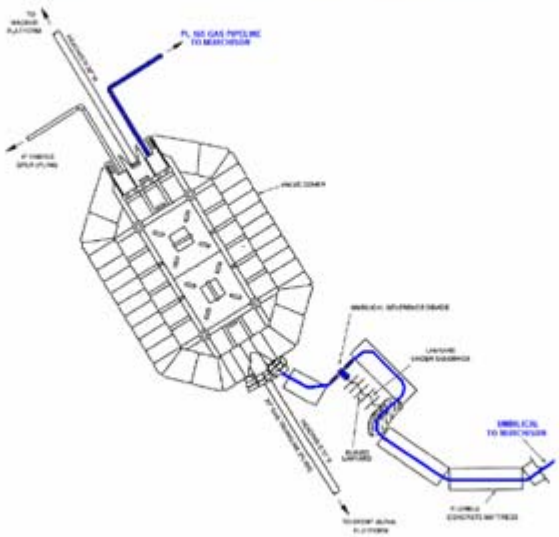
T4

NLGP SSIV and control umbilical: overview (1)

CNR International



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T5

NLGP SSIV control umbilical: overview (2)

CNR International

- 94 mm dia x 2.6km long
- 1.8km of rock dump on umbilical
- Two pipelines cross over the umbilical
- Umbilical controls three hydraulic valves in the SSIV on the 20" NLGP "T" tie-in point

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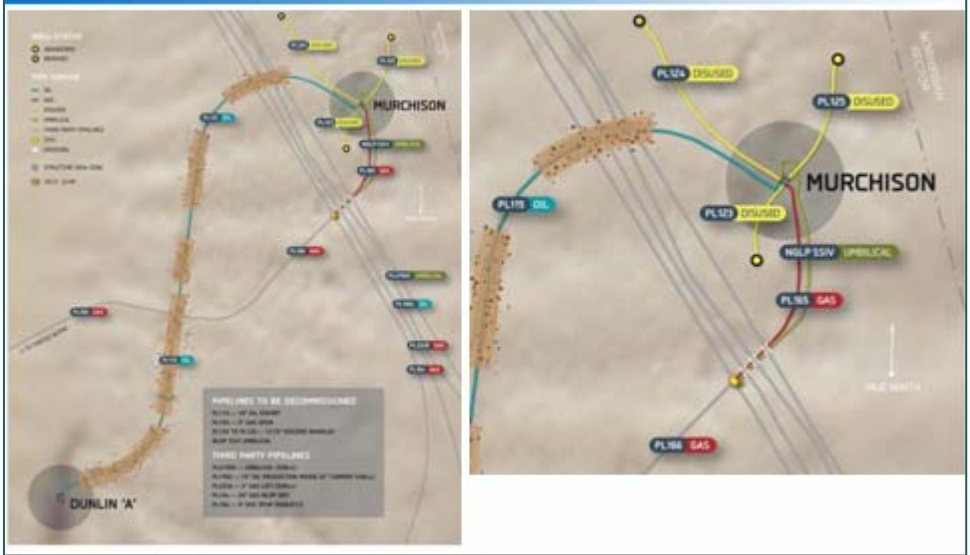
Seabed layout

CNR International



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16" oil export pipeline to Dunlin platform: details

CNR International

- 16" pipeline (PL 115) with weight coating of 57.2mm
- 15.9mm wall thickness X60 grade pipe
- Approximately 50% of original wall thickness at 6 o/c position in some areas of the pipeline
- 19.1km long between Murchison and Dunlin
- Crosses under 4 pipelines and 1 umbilical crossing
- 56% of pipeline rock dumped with 44% exposed in trench
- Murchison spoolpiece has been welded
- Dunlin spoolpiece is flanged on platform end and welded at pipeline end

16" oil export pipeline to Dunlin platform: options

CNR International

- Leave in-situ
- Minimal removal
- Removal of exposed sections
- Burial
- Selective removal and burial
- Total removal

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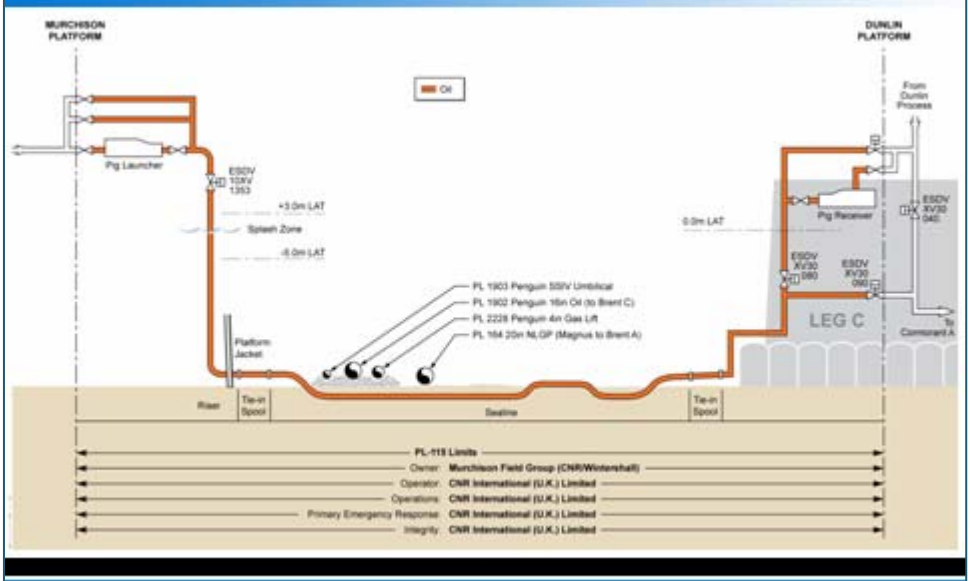
16" oil export pipeline to Dunlin platform

CNR International



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Debris

CNR International

- Debris to be removed on pipeline and bundle routes (**432** targets identified)
- Debris to possibly be removed inside Murchison 500m zone (**189** targets identified)
- See ISS 2011 survey report for target numbers and locations

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Debris: name that object!

CNR International

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Debris

CNR International

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

Debris

CNR International

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Question and answer

CNR International

Any questions of clarification?

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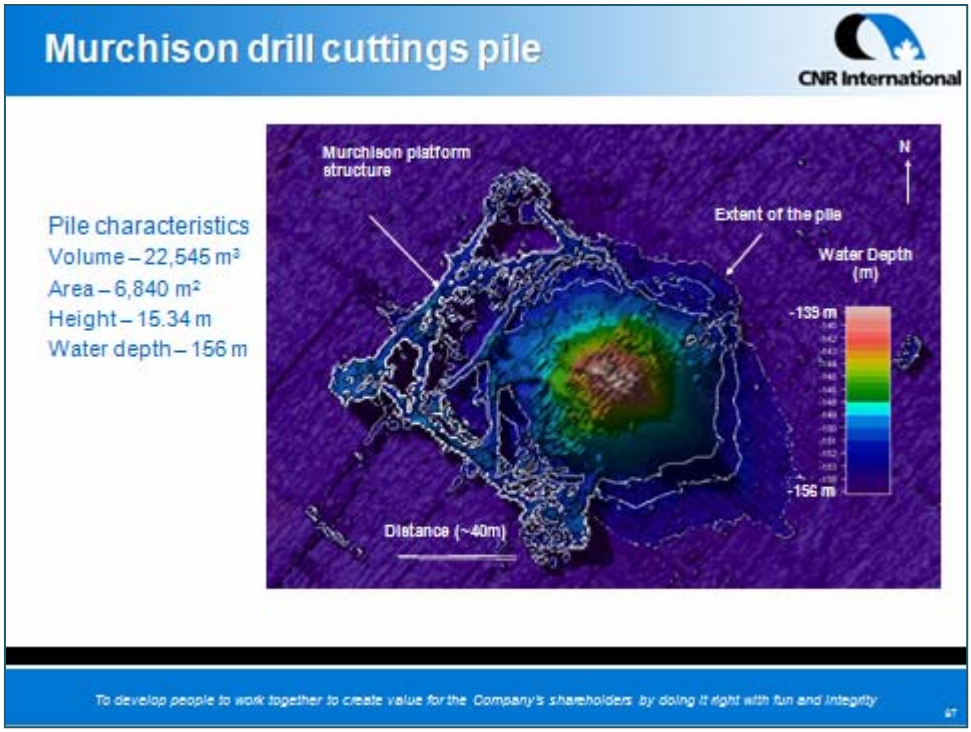
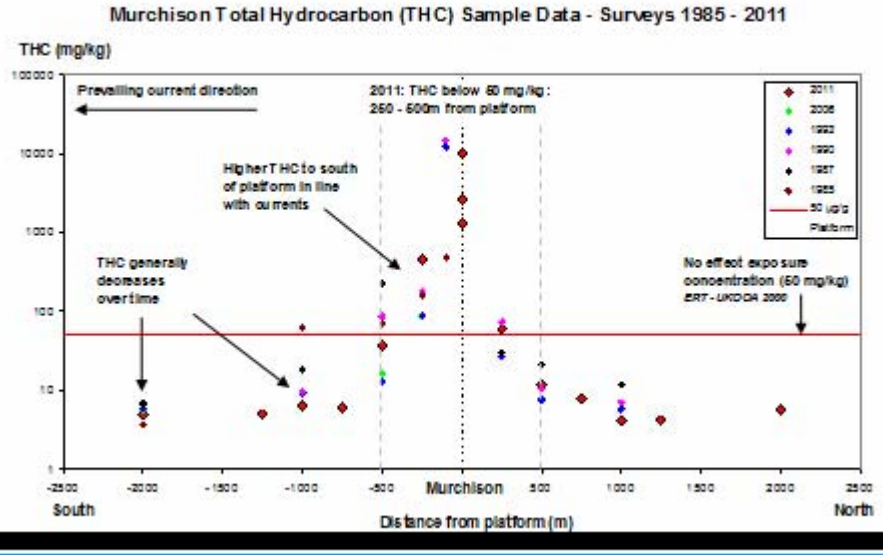
Appendix 9: Murchison Drill Cuttings Pile



Hydrocarbon content

CNR International



OSPAR recommendation 2006/5

CNR International

2008 desktop study:

- Below OSPAR Recommendation 2006/5 Stage 1 screening thresholds:
  - Rate of oil loss
  - Persistence

2011 survey results, preliminary 2012 modelling results:

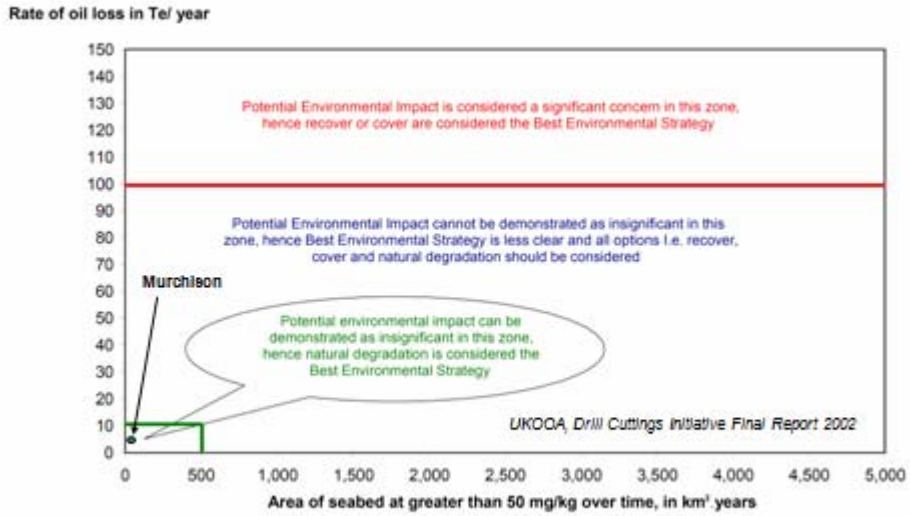
- Below OSPAR Recommendation 2006/5 Stage 1 screening thresholds

➢ OSPAR Recommendation 2006/5:

- No further action is necessary and the cuttings pile may be left in-situ to degrade naturally

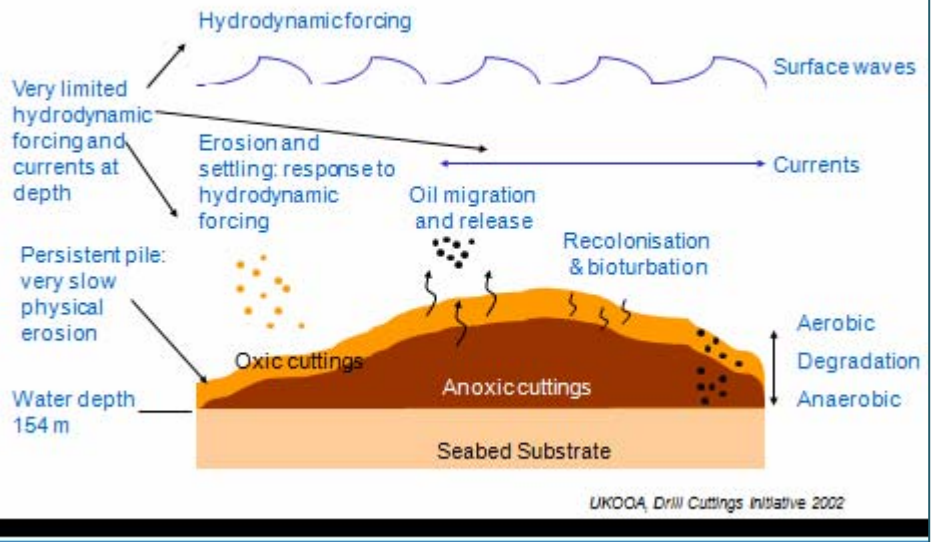
UKOOA best environmental strategy

CNR International



Cuttings pile degradation processes

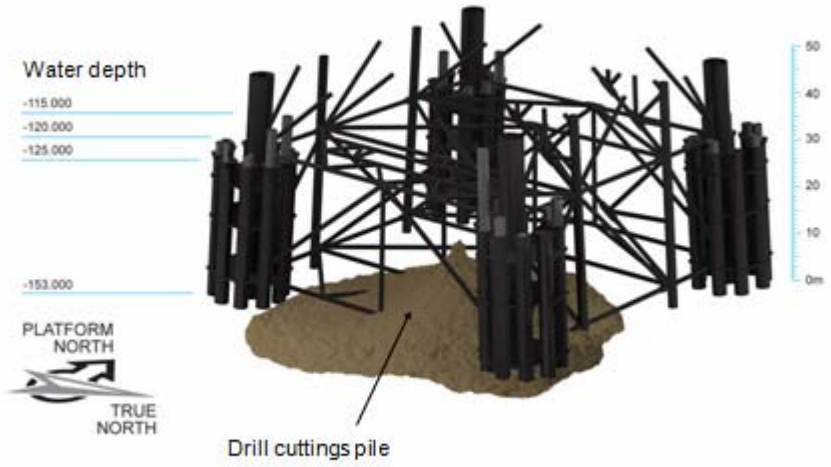
CNR International



UKOOA, Drill Cuttings Initiative 2002

Murchison jacket footings

CNR International



Drill cuttings pile removal

CNR International

Historical examples:

- NW Hutton – UKOOA Drill Cuttings JIP Trial:
  - Volume cuttings recovered – 14 m^3
  - Volume seawater recovered – 339 m^3
  - Average water : cuttings – 20:1
  - Duration of dredging – 3 days
- Ekofisk pile excavation:
  - Volume cuttings relocated – 8,400 m^3
  - Duration of dredging – 350 days
  - 10,000 tonnes CO_2 emitted

Murchison pile removal options

CNR International

Stage 1: Excavate the pile using suction dredge system

Stage 2: Relocation / disposal of cuttings

1. Treat liquids offshore, solids onshore for disposal
2. Treat liquids and solids onshore for disposal
3. Offshore injection of slurry
4. Dispersion / redistribution offshore

Drill cutting removal challenges

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- Limited access to pile within jacket legs and braces
- Debris within the pile - block dredge
- Back-flushing of cuttings to remove debris – resuspension of contaminants
- Large volumes of water recovered:
  - Storage of cuttings / water on recovery vessels
  - Treatment / separation of water
  - Discharge of treated water
- Disposal of 22,545 m^3 of treated drill cuttings
- Redistribution of the pile:
  - Release of contaminants into water column
  - Transfer of contaminants to new area of seabed
- CO_2 emissions from operations
- Long duration of operations offshore (~1-3 years)

Further work

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Drill cuttings pile modelling

- Long-term fate of the pile:
  - Physical presence
  - Concentration of main contaminants
- Effects of human disturbance of the pile:
  - Dispersion / redistribution drill cuttings offshore
  - Dispersion of drill cuttings from backflushing to remove blockages

Drill cuttings comparative assessment

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- Comparative Assessment (CA) of removal options:
  - Access Murchison jacket footings
- CA informed by:
  - Methods for pile removal – technical feasibility
  - Fugro ERT 2011 survey results
  - Drill cuttings pile modelling – effects of human disturbance
  - Environmental impact assessment of options
    - Offshore and onshore
      - Safety assessment
      - Cost estimation

Question and answer

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Any questions of clarification?

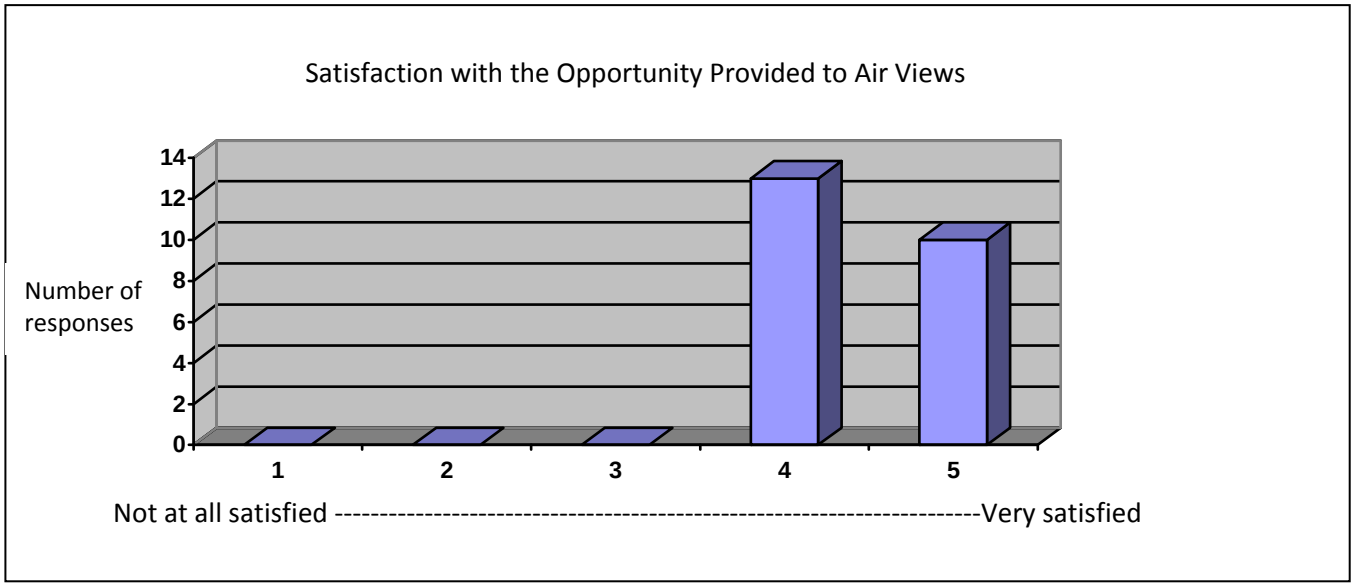
To develop people to work together to create value for the Company's shareholders by doing it right with fun and integrity

Appendix 10: Murchison Platform Decommissioning Stakeholder Workshop Evaluation Responses Summary

CONTEXT

- The following text sets out a compilation of responses to the evaluation questionnaires that were circulated to and completed by those who participated in the workshop.
- Twenty-three completed evaluation forms were returned in total by participants.
- Each set of responses is headed by the original question posed (which shown in bold text) and each is compiled without attribution.
- Both quantitative (on a scale of 1-5) and qualitative responses were requested through the questionnaire.
- Not everyone who returned a completed form provided a qualitative response to each question, while some respondents provided several comments in response to a single question.

1. How satisfied are you with the opportunity you have had today to air your views? *Please highlight a score from 1 to 5 where a score of 1 is "not at all" and a score of 5 is "very".*



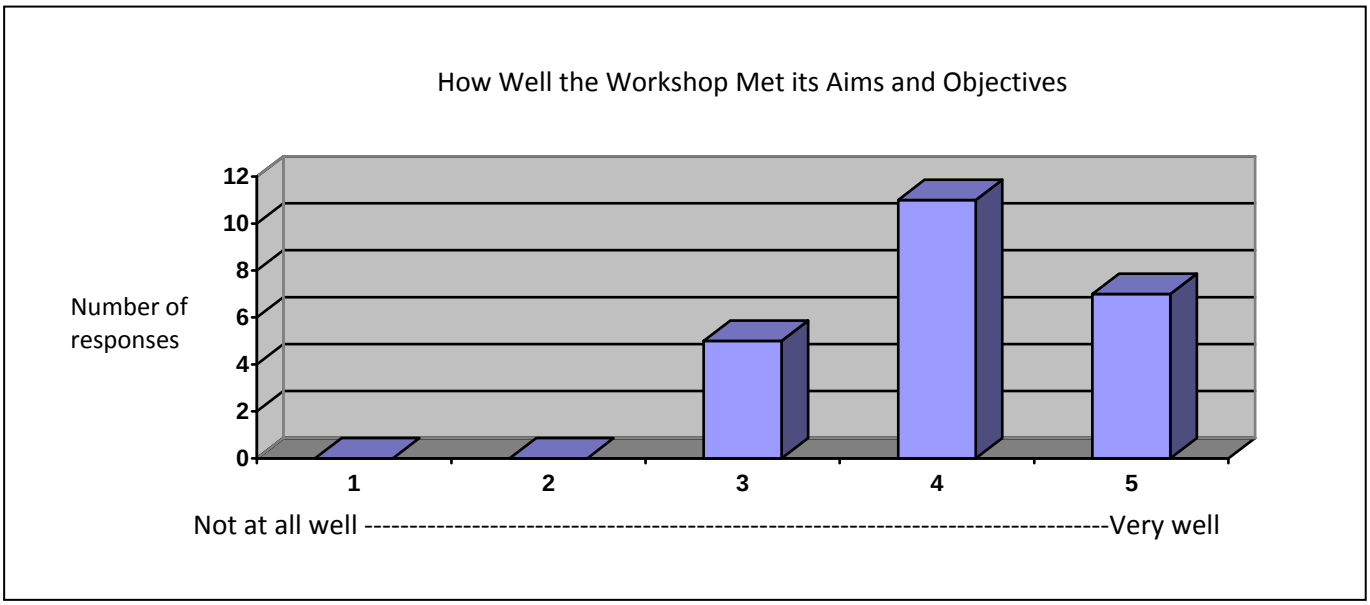
Comments from participants who gave a score of 4:

- Everything I wanted to know about was discussed.
- Every opportunity given.
- Plenty of opportunity in a variety of formats.
- Very open discussion. Environment conducive to good communication
- Very worthwhile day, well presented.
- Lots of opportunity to ask questions. An open forum made participants ask any questions.
- Open forum/ no restrictions.
- Good opportunities to air views, but needed more variety of ways to ask questions/ make a point. Although questions always asked, some people may not feel comfortable raising question/ point in front of everyone.

Comments from participants who gave a score of 5:

- Well planned and prepared event. Open dialogue and probably as much on timing and decisions as we can expect at this stage.
- Open and honest approach. Willingness to do follow-ups. Availability of reports and studies.
- The programme allows open discussion and plenty of opportunities to air views.
- Ample opportunity to speak in groups or with appropriate individuals.
- There was an open opportunity to air our views or ask any questions openly on a one-to-one basis.
- Well presented and all important issues discussed.
- Extremely well facilitated event with plenty of opportunity to voice and exchange views.
- Every opportunity was given for comment to be made.
- Plenty of opportunities to ask questions and put your point across.

2. How well has the workshop met its aims and objectives (see section 2 of this report)? *Please highlight a score from 1 to 5 where a score of 1 is "not at all" and a score of 5 is "very".*



Comments from participants who gave a score of 3:

- Don't think any gaps came out nor particular challenges in any detail.
- Hard to commit fully when a probable plan has not been identified.
- Lots done - plenty more to do!
- Not fully scoped so limited.

Comments from participants who gave a score of 4:

- Not in attendance for full day but what I did hear went well towards providing a chance to comment.
- All the topics were covered at various levels of detail. Willingness to make reports and studies available - good commitment!
- Good presentations, by a competent team.
- Need to know which option CNRI are interested to implement.
- Some issues or points were worthy of further discussion - although it is understood that the programme had to move onwards.
- Not many attendees from other operators which may have other relevant experience?

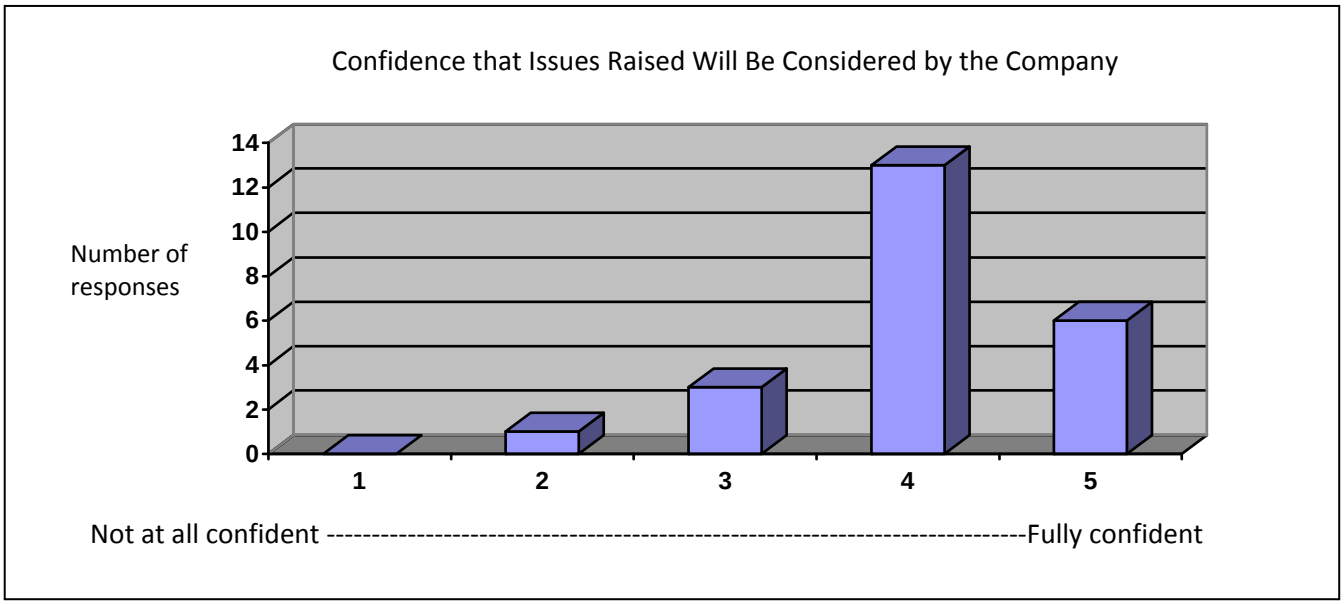
Comments from participants who gave a score of 5:

- All presentations well done with clear information.
- It was explained very clearly in all of the presentations given and an assurance has been given that all questions will be answered constructively.
- Very well pitched - to enable "lay people" to contribute, as well as those from a technical background. CNRI personnel were exceptionally helpful and approachable and responded very postively to comments and questions.

3. Who else, if anyone, needs to be involved in any ongoing stakeholder engagement on the Murchison platform decommissioning?

- Operational/offshore personnel. Supply chain Tiers 1/2/3. Research and development companies.
- Supply chain and contractors to let them bring forward innovation and solutions. Decom North Sea can help with this.
- SEPA. The supply chain. Communities and local environmental groups. Politicians: community/local/national/EU.
- Local metal/scrap recyclers/dispersal merchants. Drill cutting processing companies. Waste processors. Port facilities. Stevedores
- Good list up to those on it to attend.
- The workforce (obviously).
- I am satisfied that you already have a comprehensive list of stakeholders.
- Classification Society. Department of Transport. Experts in this field form overseas countries.
- Not known at present.
- Subsea UK. Greenpeace-type organisations. Public engagement. Media.
- The existing list is very comprehensive and does not appear to be missing anyone.
- Work force.
- Scottish Environment Protection Agency (SEPA). Scottish Government.
- Other operators.

4. How confident are you that the issues you have raised will be considered by the company? *Please highlight a score from 1 to 5 where a score of 1 is "not at all" and a score of 5 is "fully".*



Comments from participants who gave a score of 2:

- Risk averse - Proven technology will displace new ideas. SMEs versus multinational service companies. (See above). [Risk averse].

Comments from participants who gave a score of 3:

- Have not had any previous experience with the company to influence either way.

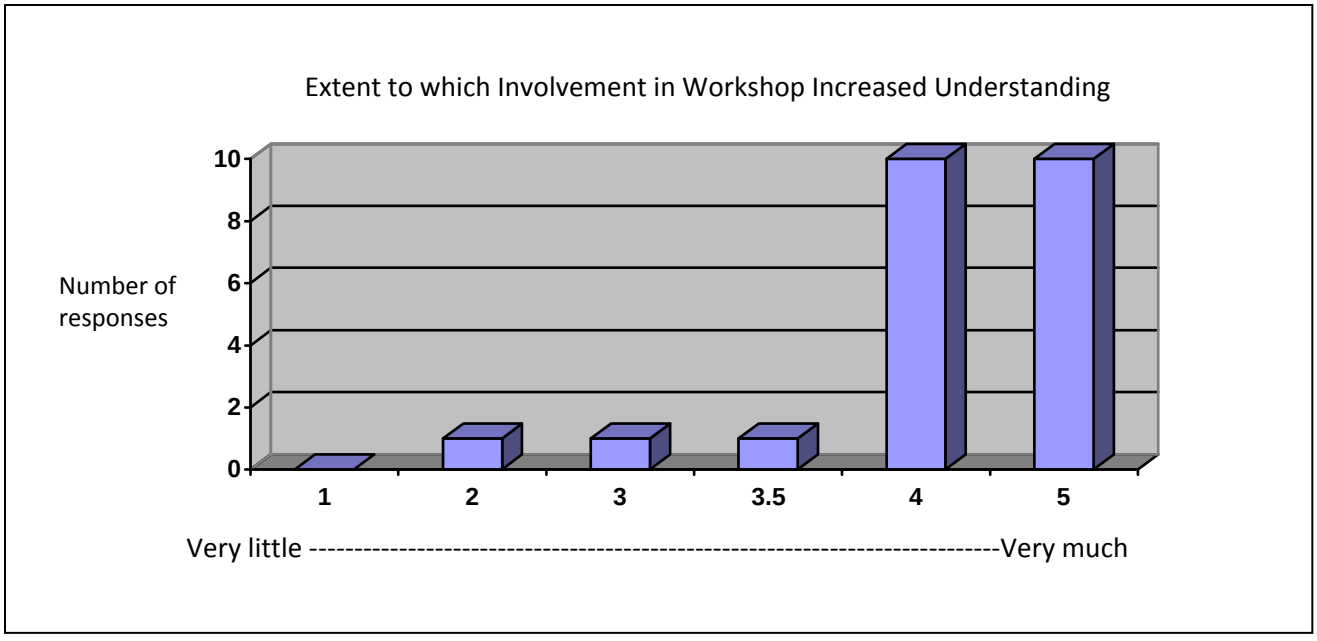
Comments from participants who gave a score of 4:

- I am gullible and believe CNRI is living up to its mission statement "with...integrity". DECC will enforce it!
- I'm sure they will. The key is how decisions are explained.
- Feel that concerns raised were listened to and addressed
- Communications will be ongoing.
- Hope 'cost' does not drive the decision.
- Issues will be considered as far as possible but there will have to be "concessions" on opposing issues.
- Relatively confident, although there will always be other factors which take precedence.

Comments from participants who gave a score of 5:

- CNRI convince me that they are committed to doing this correctly.
- All topics were discussed openly, with direction on the follow up actions.
- I have confidence in the integrity of the company
- I have seen nothing today to make me doubt that the company will make good use of the input from today.
- Very clear demonstration to listen to stakeholders.

5. **How much has your involvement in today's event increased your understanding of the Murchison platform decommissioning?** *Please highlight a score from 1 to 5 where a score of 1 is "very little" and a score of 5 is "very much".*



No comments were supplied by participants who gave a score of 2.

Comments from participants who gave a score of 3:

- Already fairly familiar. Only possible to deal with things at certain level of detail in a 'one-day catch-all' event.

Comments from participants who gave a score of 3.5:

- Most of the information is in the documents. Still very general.

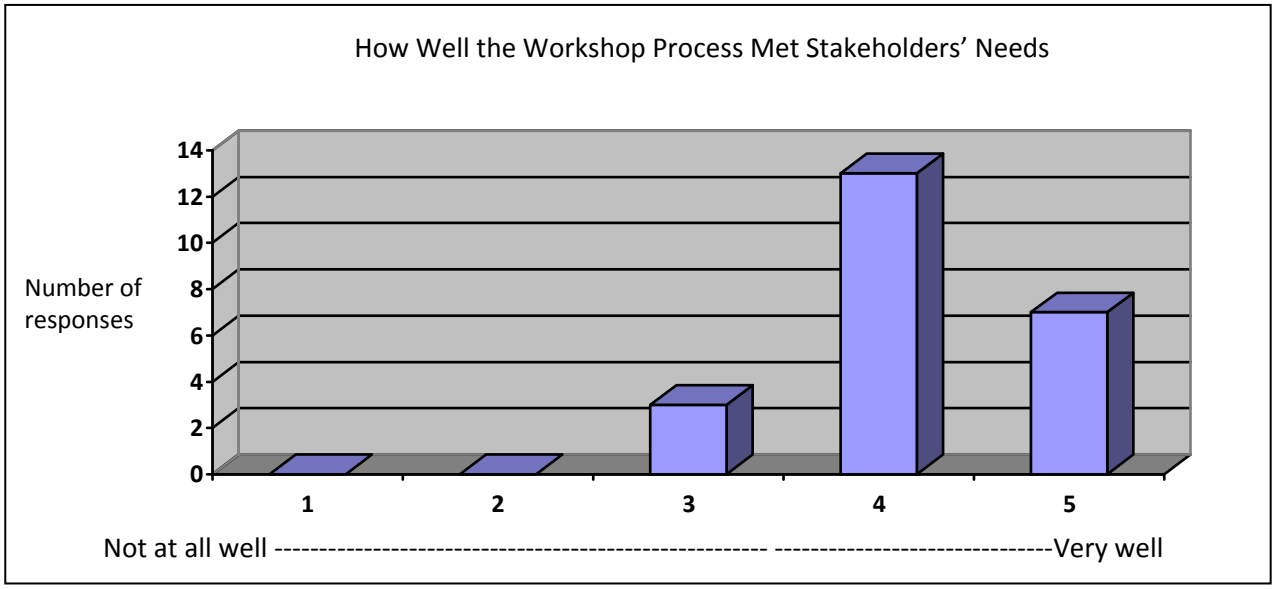
Comments from participants who gave a score of 4:

- I did know a bit already and found the pre-read useful but more detail from individual presentations.
- I knew a fair bit already.
- Good presentation. Knowledgeable sessions.
- Much more aware of CNRI's intentions and programme of events to reach eventual decommissioning procedures.

Comments from participants who gave a score of 5:

- Today's event clarified all current questions/concerns/views.
- Informative presentations and discussions.
- The posters were very helpful.
- I did not know that so much effort had been put in by the decommissioning team already!
- I was starting from virtually zero, so found it illuminating and very accessible - good balance of overview and detail without any "bamboozling" with technical detail. More technical aspects were explained openly and clearly.
- Good overview throughout.
- Knew very little regarding decommissioning before, so this has been very interesting and informative.
- Very informative. Very useful to hear other views and to reiterate about thinking "outside" of the box.

6. How well did the workshop process (the ways of working, the working environment) meet your needs?
Please highlight a score from 1 to 5 where a score of 1 is "not at all" and a score of 5 is "very".



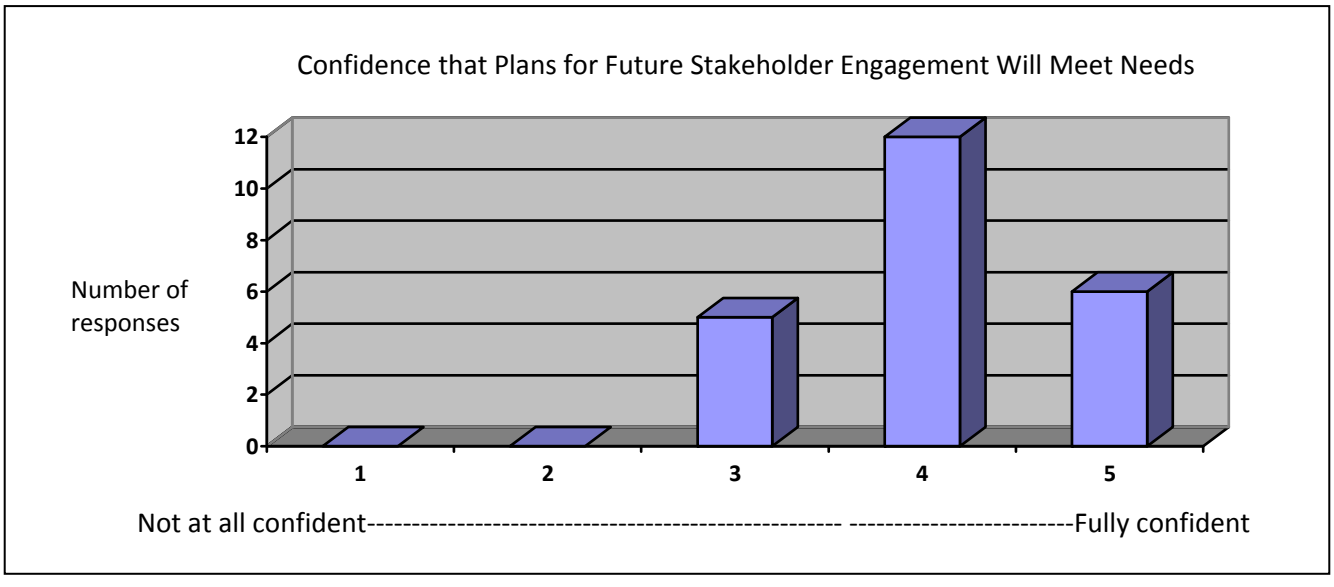
What worked well at today's workshop and why?

- Work in progress but good start.
- I was only able to attend the afternoon so can only assess on this time, but generally, very good.
- Mix of activities. The "cake on a stick". Environment Council's facilitation.
- Group workstation.
- Break out groups and opportunity for one to one discussions.
- Well thought out day.
- Well managed day with good structure.
- Small groups with three topics discussed and opportunity given to ask ANY questions.
- Exceptionally well facilitated and good CNRI representation
- The process allowed all parties to table their views/questions.
- The communication and enthusiasm of all the stakeholders with safety and the environment top of the priority list.
- Excellent structure - I certainly needed the context and presentations at the beginning, to enable me to contribute meaningfully during the interactive sessions.
- Congratulations to [the facilitator]! How she managed to jot down the spoken comments was amazing. This made the workshop very valuable.

What could be improved about today's workshop and how?

- More information on what the Comparative Assessment is meant to inform - us further versus decommissioning programme.
- Not much. Good effort. Presence of missing regulators and ENGOs.
- Not much. Keep the recipe the way it is, just a few small changes if required.
- Nothing to suggest.
- More specific groups - Navigation and Safety, Health and Safety, Environment etc
- More time e.g. 9-6pm?
- Could maybe have had more time on each topic - it was a bit rushed.
- Opportunity to add thoughts and considerations but some may think it was more "doing your job for you" approach. Therefore need to acknowledge the contribution is not meant in this way.

7. How confident are you that the plans for future stakeholder engagement will meet your needs?
Please score from 1 to 5 where a score of 1 is "not at all" and a score of 5 is "fully".



Comments from participants who gave a score of 3:

- Not much information given on what exactly future engagement will involve.
- Depends whether there is something like this again or if it is just the formal process.
- See answer [to question] 4 above. [Risk averse - Proven technology will displace new ideas. SMEs versus multinational service companies. Risk averse].

Comments from participants who gave a score of 4:

- The existence of a web-site (and company undertaking to use it!!) Carol's personal commitment. Statement on "open and honest". DECC's expectations.
- I am reasonably confident that, as far as reasonably possible, my "needs" will be taken into account i.e. that the supply chain benefit in Aberdeen /Scotland/UK will be a factor in the Comparative Assessment, recognising competition constraints!
- Specific areas relevant to my discipline were important for me. And I could do so.
- All CNRI staff were quite anxious to make sure all input was important.

Comments from participants who gave a score of 5:

- I think today has been of great value to all who managed to attend.
- Relationship established. Clear on when progress will be reported and how.

8. If you have any other comments you would like to make please write them here:

- Thank you.
- Well done to the team!
- Overall a good effort! Well assembled day with good options to provide follow up. Independent (The Environment Council) facilitation was key in keeping things moving and reporting events.
- CNRI should ensure the decommissioning project is done wholly in the UK.
- Hope all goes well with this project in the future.
- From an MCA point of view I would request when MCA related items/topics discussed the MCA participation would be more worthwhile. However, participation in today's workshop gave me an overall studying of Murchison.
- No comment to add.
- Welcome opportunity for communication / dialogue but I think more supply chain engagement is needed.
- The event was very well organised and professionally run.
- Room layout was effective. Mixing sessions worked well by pre-determining who goes where.