



## Permitted activities: Post-activity report Interim Report Year 1 of 10

*Form 4 of Schedule 5 of the Exclusive Economic Zone and Continental Shelf (Environmental Effects – Permitted Activities) Regulations 2013*

**How to use this form:** This form should be completed by people who have carried out a permitted activity (other than seismic surveying) in accordance with regulation 5, 6 or 8 of the Exclusive Economic Zone and Continental Shelf (Environmental Effects – Permitted Activities) Regulations 2013 (PA Regulations 2013). This form fulfils the post-activity report requirements of Schedule 4 of the PA Regulations 2013.

**Timeframe:** You must provide this form to the Environmental Protection Authority (EPA) within 60 working days of completing the activity.

**Note:** Items marked in *italics* are not compulsory; however, including this information will help the EPA process the form.

This completed form, once received and processed by the EPA, will be posted on the EPA website.

**Submitting in hard copy:** If you wish to provide the completed form in hard copy, post it to Environmental Protection Authority, Private Bag 63002, Wellington 6140 or fax it to +64 4 914 0433.

**Submitting electronically:** If you wish to provide the completed form electronically, email it to [permitted.compliance@epa.govt.nz](mailto:permitted.compliance@epa.govt.nz).

Any form submitted electronically should be attached to an email that sets out:

- the details of the person undertaking the permitted activity (the operator)
- the name of the person supplying the completed form
- a statement that the person is authorised to supply the form on behalf of the operator.

Note: The EPA has an 8 MB limit on electronic files submitted by email.

You can find and download all forms prescribed by the PA Regulations 2013, as well as suggested templates for providing other information, on our website at [www.epa.govt.nz](http://www.epa.govt.nz) or request them from us by contacting:

Environmental Protection Authority,  
Private Bag 63002, Wellington 6140  
Email [permitted.compliance@epa.govt.nz](mailto:permitted.compliance@epa.govt.nz)

Phone +64 4 916 2426  
Fax +64 4 914 0433

**Operation name:** Deep-ocean Assessment and Reporting of Tsunami (DART) Buoy network

**Name used by operator to reference the activity described in this form:** Deep-ocean Assessment and Reporting of Tsunami (DART) Buoy network

**Activity code:** NIWPA48

#### Details of the person undertaking the permitted activity

<b>Name of company, organisation or person:</b>	National Institute of Water and Atmospheric Research (NIWA)		
<b>Contact person:</b>	[REDACTED]		
<b>Phone number:</b>	[REDACTED]		
<b>Mobile number:</b>	[REDACTED]	<b>Fax number:</b>	[REDACTED]
<b>Physical address:</b>	[REDACTED]	<b>Postcode:</b>	[REDACTED]
<b>Postal address (if different):</b>	[REDACTED]	<b>Postcode:</b>	[REDACTED]
<b>Email address:</b>	[REDACTED]		

#### Description of permitted activity

##### Type of activity:

Marine scientific research	<input checked="" type="checkbox"/>	Alteration, extension or removal of a permitted marine structure	<input type="checkbox"/>
Prospecting	<input type="checkbox"/>	Discharge of sediments from iron sand prospecting and exploration	<input type="checkbox"/>
Exploration	<input type="checkbox"/>	Incidental discharge of sediments from phosphate nodule or placer gold prospecting and exploration	<input type="checkbox"/>
Placement or removal of submarine cables	<input type="checkbox"/>	Discharge of sediments from seafloor massive sulphide prospecting and exploration	<input type="checkbox"/>

##### Period during which activity was undertaken:

**This is an interim report, the activity is not completed.**

As email notification from Permitted Activities 20/9/2012 "NIWA will send the EPA annual reports regarding the DART buoy permitted activity. Each annual report will be called 'interim post-activity report' until the activity is complete and a final post-activity report will be sent through. Each annual report will build on the previous one to create a complete picture of the permitted activity until that point."

This report covers the first annual cycle of a 10 year permitted activity.

Year One deployments occurred between:  
 13/02/2019 – 22/12/2019, and  
 01/09/2020 – 19/09/2020.

**Location of the permitted activity**

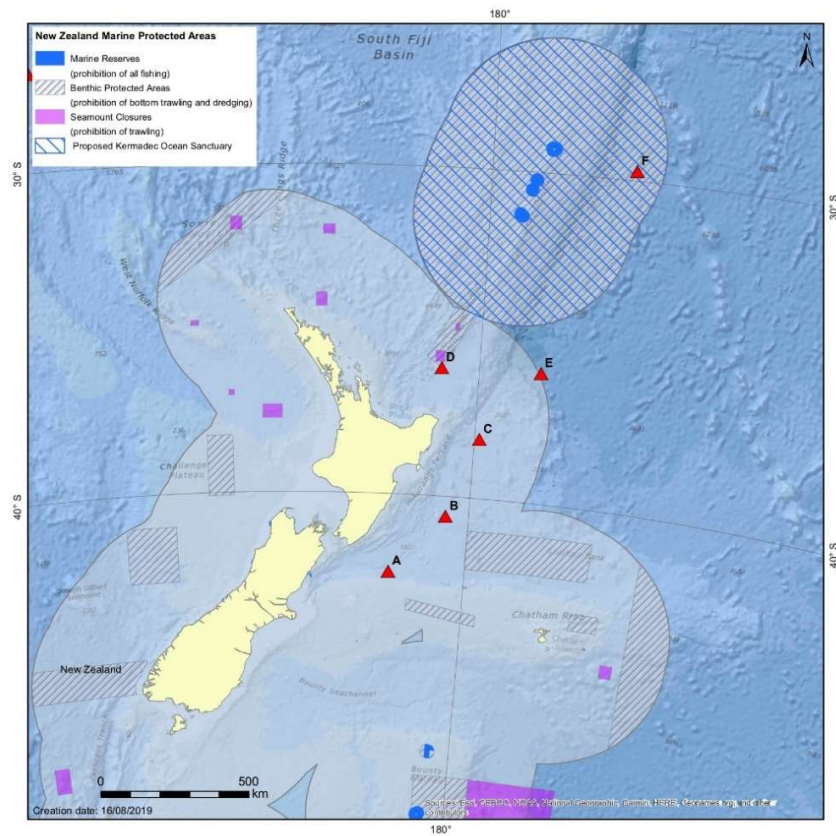
**Co-ordinates of area where the activity was undertaken:**

The deployments will be conducted offshore East Coast, North Island proximal to the locations below (Figure 1). Specific locations of the proposed DART installations are detailed in Table 1.

Set 1	See Table 1 below
Set 2	
Set 3	
Set 4	
<input type="checkbox"/> I have attached a shape or KML/KMZ file	

**Map**

(showing position of activity relative to the New Zealand coastline)



**Figure 1:** DART buoy network in the New Zealand EEZ (red triangles).

**Table 1.** Timing and position of DART buoys deployed in the Aotearoa-New Zealand EEZ.

	Date of deployment	Latitude	Longitude
<b>Phase 1</b>			
Bottom Pressure Recorder C	13/12/2019	38° 12.106' S	179° 47.867' W
Bottom-moored Surface buoy C	13/12/2019	38° 12.005' S	179° 47.817' W
Bottom Pressure Recorder F	16/12/2019	29° 41.056' S	175° 0.756' W
Bottom-moored Surface buoy F	17/12/2019	29° 40.918' S	175° 0.561' W
Bottom Pressure Recorder E	19/12/2019	36° 2.958' S	177° 42.482' W
Bottom-moored Surface buoy E	19/12/2019	36° 2.916' S	177° 42.192' W
Bottom Pressure Recorder A	22/12/2019	42° 22.240' S	176° 54.656' E
Bottom-moored Surface buoy A	22/12/2019	42° 22.248' S	176° 54.840' E
<b>Phase 2</b>			
Bottom Pressure Recorder F	1/09/2020	29°41.008'S	175°0.715'W
Bottom-moored Surface buoy B	19/09/2020	40°35.913'S	179°05.781'E
Bottom Pressure Recorder B	19/09/2020	40°36.018'S	179°05.978'E

## Details of the environment of the area where the activity was undertaken

### Describe the environment:

The locations of the DART buoy network are all deep-water sites (>1500m) on the seabed of the outer continental slope and abyssal plain. The seabed of these low gradient, flat regions is predominately muddy sand and mud. Bisecting, or outcropping on, these flat regions are channels and seamounts which usually are hard substrates including outcropping rock, discrete boulders, pebbles and biogenic substrates.

If environmental conditions are suitable benthic fauna, of which certain species may occur in densities that are considered 'sensitive environments', are commonly associated with the hard substrates of channels and seamounts. There have been very few biological samples taken from the deep-water outer continental slope and abyssal plain for scientific purposes. Of the few taxonomic records of invertebrates from stations proximal to the proposed locations, records indicate fauna present often comprise Cnidaria, Arthropoda, Echinodermata, Mollusca and Annelida.

Due to the above, as well as the need for the DART network locations to be conducive to longevity and protection of the buoys and appropriate for recording of tsunami generation by the BPR they are located as outlined below.

- Site A is located away from the Hikurangi Channel away from the associated hard substrates and the sediment movement and over bank deposits associated with the channel;
- Site B is located on flat abyssal seafloor offshore Hawke Bay;
- Site C is located on flat abyssal seafloor offshore East Cape;
- Site D (not deployed to date) is to be located on flat abyssal seafloor offshore Bay of Plenty;
- Site E is located on flat abyssal seafloor east of the Kermadec Trench;
- Site F is located on flat abyssal seafloor, avoiding rugged terrain and seamounts, east of the Kermadec Trench and west of the Louisville Ridge seamount chain.

The DART buoy sites are not located within Marine Reserves, seamount closure areas, or benthic protected areas (Figure 3), aside from Site F. Site F is located within the Kermadec Benthic Protected Area (area protected against dredging and bottom trawling) and the proposed Kermadec Ocean Sanctuary.

**Describe any sensitive environment that was encountered in the area where the activity was undertaken:**

DART buoy sites are located on flat seabed of the outer continental slope and abyssal plain and not on the hard substrates of channels and seamounts which, if environmental conditions are suitable, certain species may occur in densities that are considered 'sensitive environments'.

DART buoy sites are not located within Marine Reserves, seamount closure areas, or benthic protected areas (Figure 3), aside from Site F. Site F is located within the Kermadec Benthic Protected Area (area protected against dredging and bottom trawling) and the proposed Kermadec Ocean Sanctuary.

No sensitive environments were encountered during deployments.

**Environmental footprint of the activity**

<b>Estimate of the volume of material removed:</b>	No material removed
<b>Estimate of the areas of seabed affected by each component of, or sample taken as part of, the activity (m<sup>2</sup>):</b>	<p>The only long-term environmental impacts on the seabed are from the mooring weights and steel plates, which will remain on the seabed. Previous experience has suggested that mooring weights and hard substrates like the steel plates may provide settlement habitat for benthic invertebrates.</p> <p>The footprint of each steel Bottom Pressure Recording plate is ~1.1 m<sup>2</sup>, the combined footprint on the seabed in NZs EEZ is currently 6.6 m<sup>2</sup> (five deployments and one replacement).</p> <p>The footprint of each set of mooring anchors associated with the Bottom Moored Surface Buoys is ~1.04m<sup>2</sup>, the combined footprint on the seabed for these five moorings is 5.20 m<sup>2</sup>.</p>

In total the impact footprint on the seabed is currently 11.8 m<sup>2</sup>.

**Details of measures taken to avoid, mitigate or remedy adverse effects on the sensitive environment**

**Did you implement the contingency plan submitted to the EPA?**

Yes  No

**Explain:**

**Provide details of, and the reasons for, the measures taken to avoid, mitigate or remedy the effects of the activity:**

22/12/2020

**Signature of authorised contact person**

**Date**

**Name:** [REDACTED]

**Title:** [REDACTED]

*Note: A signature is not required for electronic (email) forms.*