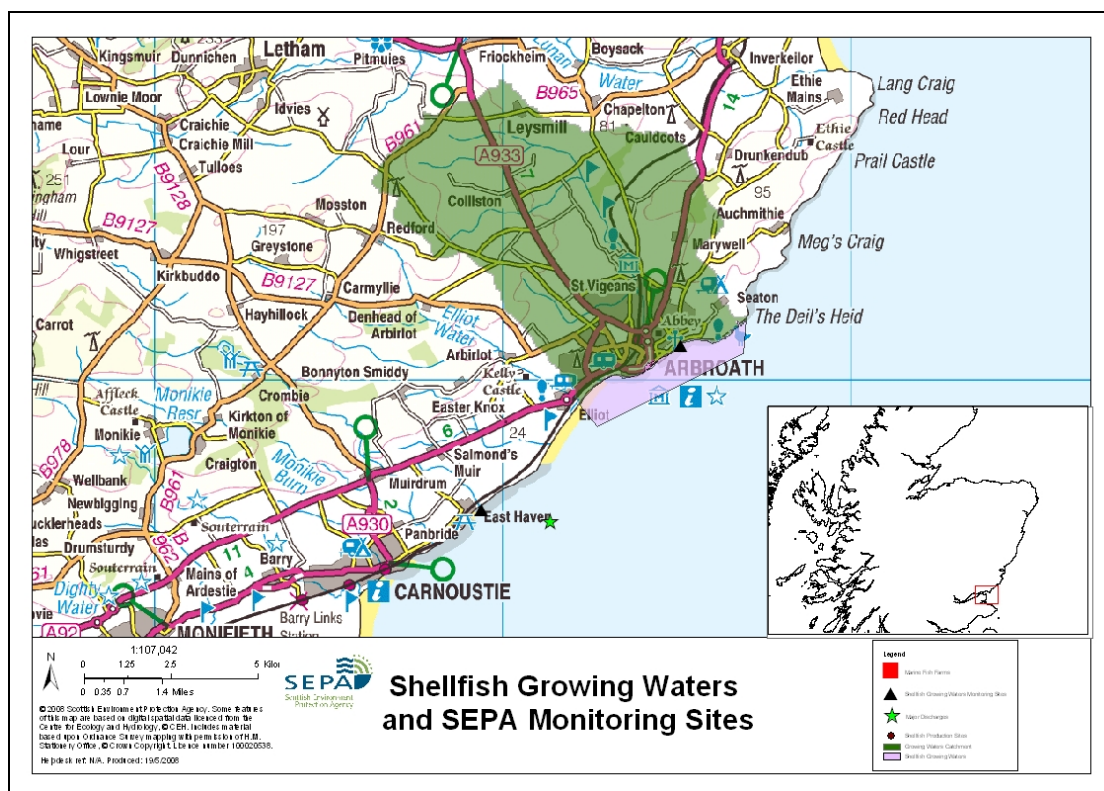


2 Arbroath



Name	Arbroath	
Report reference no.	2	
WFD Code	UKS799232	
Location Information	That area bounded by the coast and a line from Deil's Head (NO 670 418) generally S to a point NO 669 408, thence generally SW to a point NO627387 and then NW to meet the coast at mouth of Elliot Water (NO 622 393)	
Designated area (km²)	4.5	
Year of designation	1998	
Sampling points¹	Arbroath	NO 65900 41000
Commencement of monitoring	1986	

¹mussels

2.1 Commercial Shellfish Interests

No Crown Estates Commission (CEC) leases have been granted, although there is a casual collection of whelks in the area. The area is not classified by the Food Standards Agency for commercial shellfish production.

2.2 Bathymetric Information

The growing water has a SE facing aspect and a length of 5.1 km. The shore is gently shelving and has a maximum depth of 9 m. It is moderately exposed to wave action. There are morphological pressures from commercial fishing in the area.

2.3 Conservation Designations

The shellfish waters at Arbroath cover an area at Arbroath (West Links) designated EC bathing water. There is also a SSSI at Whiting Ness, Ethie Haven Coast http://gateway.snh.gov.uk/portal/page?_pageid=53,854555,53_854604&_dad=portal&_schema=PORTAL&PA_CODE=1634.

2.4 Topography and Land Use – Potential Diffuse Pollution Sources

Beyond the town of Arbroath, land use is mainly agricultural (arable) with some patches of woodland. There is a disused airfield on the outskirts of the town.

The Brothock Water flows southeast through Arbroath and receives diffuse inputs from the surrounding land. The Elliot Water is of better quality and reaches the coast just south of Arbroath. Arbroath is the biggest settlement in the area, and is surrounded by a number of farms and agricultural premises.

2.5 Point Source Discharges

Type	Name	Consent No.	Treatment	NGR	PE	Additional information
Scottish Water Asset	Letham Grange STW	CAR/L/1001133	Secondary	NO 6244 4542	600	
	Arbirlot STW	CAR/L/1001161	Secondary	NO 6020 4045	62	
	Hatton STW	CAR/L/1001449	Secondary	NO 6138 3596	250000	Commissioned 2001
	Cliffburn CSO short outfall	CAR/L/1001366	Screening 6 mm	NO 6548 4144		
	Dangerpoint CSO	CAR/L/1001308	Screening 6 mm	NO 6447 4060		
	Inchcape CSO Short o/f	CAR/L/1003108	Screening 6 mm	NO 6435 4015		
	Inchcape CSO Long o/f	CAR/L/1003108	Screening 6 mm	NO 6400 3949		
Other	Elliot Septic Tanks – discharges to Elliot Water at Elliot			NO 623 393	< 250	
Industrial	Name	Consent No.	Treatment	NGR	Additional information	
	Arbroath Harbour			NO 6435 6555	Seal tank system installed to intercept TBT contaminated washings.	

- There are no marine cage fish farms within the designated shellfish water

2.6 Compliance Monitoring Regime

Year	Monitoring Regime
1997-2007	<ul style="list-style-type: none"> Annually for metals and organohalogenes in mussels Quarterly for faecal coliforms in mussels

An assessment of data showed that there was no risk of failure so the level of monitoring was reduced (in accordance with Article 7) in 1997 to annual monitoring of contaminants and quarterly monitoring of faecal coliforms in shellfish flesh.

2.7 Compliance History

Year	Compliance history for Waters and Biota, excluding faecal coliforms data			Compliance history for faecal coliforms
	Overall Result	Imperative	Guideline	Guideline
1998	Pass	Pass	Pass	No Data
1999	Pass	Pass	Pass	Fail
2000	Pass	Pass	Pass	Fail
2001	Pass	Pass	Pass	Fail
2002	Pass	Pass	Pass	Pass
2003	Pass	Pass	Pass	Pass
2004	Pass	Pass	Pass	Pass
2005	Pass	Pass	Pass	Pass
2006	Pass	Pass	Pass	Fail
2007	Pass	Pass	Pass	Fail

This growing water has remained consistently compliant with all physico-chemical imperative and guideline environmental quality standards since 1998.

The waters have passed and failed the guideline standard for faecal coliforms over the years. Unfortunately, the standard was not met in 2007 and this may have been due to the wet weather experienced during the year which can lead to increased CSO and storm overflow operations as well as increased run-off from land.

2.8 Future Monitoring Recommendations

Annual sampling of mussels for organohalogenes and metals will continue.

In the event of any chemistry parameter EQS failure, the site will be revisited and re-sampled for the failed parameter. Samplers are asked to identify any evidence of visible harm to the shellfish population at the site.

Arbroath ECSGW will be monitored quarterly for faecal coliforms in mussels.

2.9 Future Monitoring Recommendations

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Arbroath ECSGW will be monitored quarterly for faecal coliforms in mussels.

2.10 Improvement Actions

Previously the most likely cause of failure for Arbroath has been sewage contamination from Arbroath sewage scheme, the total population equivalent of which was 38000. However, since 2001 sewage has been pumped to the new Hatton STW where it receives secondary treatment. This STW, with 250,000 population equivalent, discharges 2 km beyond the shellfish waters. The results for 2002 suggest that the new treatment works has had a positive effect on the quality of this shellfish water. Consents will continue to be reviewed as necessary to continue to ensure necessary protection.

There are a number of septic tanks using the old Elliot Outfall (NO 6230 3930) for disposal of effluent. This remains from when this outfall received primary treated effluent from the western half of Arbroath. In August 2004 these septic tank discharges were taken off to a soakaway.

A Bathing Waters Environmental Improvement Plan was completed in 2005, and as part of this, investigations into bacterial loadings from watercourses discharging near to the designated beach at West Links were undertaken. This bathing water abuts the northwestern edge of the shellfish waters. The watercourses are the Brothock Water (NO 6443 4060), the Geordies Burn (NO 6266 3985) and the Elliot Water (NO 6215 3932). This allowed an assessment to be made of the faecal organism indicator loadings from surface water inputs in the vicinity of the beach.

Traces of TBT have been identified in paints washed off during boat maintenance at the Boat Yard in Arbroath Harbour. A sealed tank system has been installed to intercept contaminated washings and the slipway has been adjusted to reduce the size of vessels that can be accommodated to <25m to ensure necessary protection.

2.11 Summary of Actions

Action	Deadline
New sewage treatment facility at Hatton installed 2001	Done
Septic tank discharges to Elliot Outfall diverted to soakaway, 2004.	Done
Bathing Waters Environmental Improvement Plan, completed 2005	Done
Installation of sealed tank system at the Boat Yard, Arbroath Harbour	Done