

## Appendix

Date of Inspection	Region	Farm	Company	Issues
06/01/2009	Shetland	Foreholm	Scottish Sea Farms	"CMS ongoing, sea lice since 2007....some losses during bath treatments for lice (Excis). Slice and Excis treatment from lice also Alphamax and Salmosan. Also hydrogen peroxide treatments. Some success initially but latterly effect not so good - 30/40 lice per fish and remaining up to 50% of this post-treatment.....No consistent clinical signs other than lice damage on all moribunds (severe). Also some lice damage on 'healthy' fish caught using box net and feed..... ". 3 - 5,000 morts/site/week for last 6 weeks - sea lice/ PD / CMS. 17,083 mortalities /site / week 47 - sealice / PD / CMS
07/01/2009	Shetland	Papa	Hjaltland Seafarms Limited	" 'Runtly' fish which have not been feeding therefore not been getting Slice treatments resulting in large number of lice on each fish...." "Total mortality since input 22%, put down to IPN and recently PD". Ten sampled moribund fish lice burden ranges from >20 to >50 lice.
07/01/2009	Shetland	Lea Trondra (east of Trondra)	NAFC Marine Centre	"Some fish showing signs of lice damage - greying around head and dorsal area. Counts showing 3 - 4 adults average per fish. Lice treatments carried out 30/10/08 Slice, 25/11/08 Alphamax, 03/12/08 Salmosan, 19/12/08 Slice. Counts showing 3 - 4 adults average per fish but not really dropping after treatments".
07/01/2009	Shetland	East Kallee Ness	NAFC Marine Centre	"Morts generally high due to high sea lice count on input fish and high grilising (maturing) rate"
07/01/2009	Shetland	Flotta	Scottish Sea Farms	"IPN post input and some PD . Sea lice issues since autumn 2007..... Peroxide wellboat treatment in spring and when split down from 4 cages to 6....Mortalities high across site. 30-50 moribunds (mostly with sea lice damage) seen in each cage." Ten sampled fish lice burdens all given as 30+ per fish.
07/01/2009	Shetland	Setter Voe	Skelda Salmon Farms Limited	"Net in cage 3 had dropped to waterline for c. 2m length on arrival at site. Notification to be sent to SG [Scottish Government].... 10 moribund fish were observed, all fish had sealice damage". 10 sampled fish - all fish moribund with lice damage to the head and lice burden of 30+ per fish.
08/01/2009	Shetland	Langa Isle East	Hjaltland Seafarms Limited	"10 to 20 sea lice damaged fish observed, but unable to catch..... 114,540 morts since input (27.7% of initial input)...area manager unavailable during visit. Another area manager was providing cover but was unable to provide reasons / causes of mortalities"
08/01/2009	Shetland	West of Burwick	Hjaltland Seafarms Limited	"Site not physically inspected conditions deemed too dangerous to travel to site. Site has experienced problems with PD (total morts for site since input 194,683 - 37.8% of stock).....circa. 5 - 10 sea lice damaged fish per cage". Four fish sampled lice burdens >20 to >30, "fish 1 heavy lice damage to head"
08/01/2009	Shetland	East of Merry Holm	Hjaltland Seafarms Limited	"Super smolt input. Virtually all died out - only 14,000 left when moved...." 14% mortality in a cage in Feb 08 "thought to be due to IPN and lice damage"
08/01/2009	Shetland	Brunaness	Scottish Sea Farms	"Sea lice, PD and CMS prior to fallowing.....Site fallow since 01/07/08" Mortalities cage 5/week 12 "16.25% lost due to post sealice treatment"

08/01/2009	Shetland	Teisti Geo	Scottish Sea Farms	"PD and sea lice problems prior to harvest. Excis and Slice for sea lice, and hydrogen peroxide. Were suffering from sealice problems then had increased morts post treatment".
08/01/2009	Shetland	Holms Geo	Scottish Sea Farms	"Sealice and CMS problems prior to harvest. Slice (07) and Excis (08) for sea lice"
08/01/2009	Shetland	North of Hoy	Scottish Sea Farms	"Site fallow...Morts due to PD and sea lice. Large numbers of morts means that couldn't always remove all so accumulated..."
08/01/2009	Shetland	Sound of Hoy	Scottish Sea Farms	"Sea lice and PD problems.... Sea lice from late 2007. Various treatments tried but none particularly effective. Peroxide treatment when moved from North of Hoy on to site in wellboat on 28th Feb to 3rd March. Had Excis, Salmosan, azamethiphos, Slice and peroxide. Around 10-15 white head / lice damaged and moribund fish seen per cage..... Mortalities "up to 2700/cage/week in cage 4 and % - sea lice and CMS". Eight out of ten sampled fish had sea lice damage to head
08/01/2009	Shetland	East of Hildasay	Scottish Sea Farms	"Sea lice, PD and CMS prior to fallowing. Slice, Excis, Salmosan and hydrogen peroxide. Wellboat hydrogen peroxide treatment in Feb 08."
08/01/2009	Shetland	Selivoe	Scottish Sea Farms	"Sea lice, PD and CMS prior to fallowing. Excis and Slice for sealice."
08/01/2009	Shetland	Breigeo offshore	Scottish Sea Farms	"Sea lice, PD and CMS prior to fallowing, Excis, Salmosan and Slice treatments by tarpaulin. Site fallow....up to 9.95% mortality in cage 7 / week 40 post treatment with salmosan"
14/01/2009	Shetland	North Havra	Hjaltland Seafarms Limited	"Disease problems - sea lice.... Several per cage with sea lice damage to head (whiteheads) with cages 5 and 10 the worst". Ten fish sampled, all have lice load 5+.
17/01/2009	Shetland	Flotta	Scottish Sea Farms	"Unable to inspect site due to storms. Statutory test carried out in factory. A lot of lice observed on fish, reported to be a lot of moribund fish on site"
27/01/2009	Shetland	Langa Isle East	Hjaltland Seafarms Limited	"High numbers of lice of fish sampled...several/cage with apparent lice damage. Slice to be fed in next day or two. "
04/02/2009	Shetland	Brandy Ayre	Hoganess Salmon	"Site use as trial, but very exposed so not stocking again. No of fish seen on site with sea lice damage but not moribund. Sampled 150 fish at Scalloway processing plant. High lice numbers and high percentage fish downgraded for filleting" Confirmed Infectious Salmon Anaemia (ISA)
16/02/2009	Shetland	Papa	Hjaltland Seafarms Limited	
24/02/2009	Shetland	Boatstroom Voe	Hjaltland Seafarms Limited	"Site suffered high losses..... reportedly down to failed smolts, sea lice and low levels of oxygen, although definite reason could not be given as site manager was unavailable during visit, usual site staff also unavailable".
25/02/2009	Shetland	Lee of Burrafirth	Mainstream Scotland Limited	"High lice levels reported.... Lice became a problem within two weeks of transfer". Treated with Slice (x 2), Salmosan (x2). "None of the treatments have worked particularly well. Slice had practically no clearance - lice looked weaker but did not clear the lice - levels remained the same for a few days then increased again. Salmosan had better clearance, but only lasted for a day before lice came back on". c 162,000 recent increased / atypical mortality "all sea lice". "Site to culled tomorrow due to losses and sea lice problems". Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. Sea lice audit conducted

26/02/2009	Shetland	Lee of Burrafirth	Mainstream Scotland Limited	"Site being culled due to lice..... High morts since stock input in Oct (>40% of stock lost). Morts have been attributed to sea lice". Treated with Slice, salmosan
04/03/2009	Shetland	Setter Voe	Skelda Salmon Farms Limited	"Site records did not distinguish between adult male and female lice - gravid females should be recorded".
11/03/2009	Shetland	Linga	Westside Salmon	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. "Lice counts indicate c. 3 gravid females on average per fish on fish counted". "Due to start Slice treatment which would finish next month April 2009".
18/03/2009	Shetland	North Papa	Hjaltland Seafarms Limited	"Pancreatic disease and sea lice and CMS ?...100s whiteheads.... Gross path consistent with ISA"
24/03/2009	Western Isles	Bagh Chlann Neill	North Uist Fisheries Limited	Sea trout and salmon. "Sea lice levels noted to be at approx 1/fish/adult female in worst affected cage. Manager stated that levels rarely go above this year round and the site has not has lice treatment since 1995. No count for sea lice carried out and no records maintained. Manager informed that weekly counts should be carried out. No records of sea lice levels kept on site. Lice numbers over or at the threshold limits (approx 1 adult female /fish in worst cages) estimated visually."
26/03/2009	Shetland	North Papa	Hjaltland Seafarms Limited	"PD, sea lice and ISA"
06/04/2009	Shetland	North Papa	Hjaltland Seafarms Limited	"Harvest of fish overseen for biosecurity purposes as site confirmed with ISA"
08/04/2009	Shetland	Lea Trondra (east of Trondra)	NAFC Marine Centre	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. "0.6 adult females on last count". "Sea lice project requiring levels of lice to sustain wrasse [cleaner fish]". Treated with Slice 2, Salmosan and Alphamax Oct / Nov and Dec.
29/04/2009	Mainland	Loch Spelve A	Scottish Sea Farms	"Site manager away and rep unable to find treatment records". "Visual inspection carried out during swim through. Not always 25 fish from 5 cages - often 10 fish each from 2 or 3 cages". Peak in mortality Nov 674/site/lice treatment
12/05/2009	Western Isles	Groatay	Marine Harvest Scotland Limited	Records do not adequately reflect the required standard specified in the SSI and the CoGP. "Lice counts not recorded weekly last year, now manager recording weekly counts reflecting CoGP. Lice treatment 18-24 Feb (Slice) due to increasing lice nos."
12/05/2009	Western Isles	Vaccasay	Marine Harvest Scotland Limited	Records do not adequately reflect the required standard specified in the SSI and the CoGP. "Lice counts not recorded weekly last year, now manager recording weekly counts. Slice treatment 18 - 24 Feb (Slice) due to increasing lice nos".
13/05/2009	Western Isles	Marulaig Bay	Marine Harvest Scotland Limited	1 hole noted in 1 net at the waterline. "Some weekly [sea lice] records missing". Records do not adequately reflect the required standard specified in the SSI and the CoGP
13/05/2009	Western Isles	Loch Boisdale(An Camus Calvay)	Marine Harvest Scotland Limited	Records do not adequately reflect the required standard specified in the SSI and the CoGP. "Counts done weekly generally. Where counts not done no records of why. Manager asked to do this."

19/05/2009	Western Isles	Rossay by Isle of Scalpay	Marine Harvest Scotland Limited	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. Records do not adequately reflect the required standard specified in the SSI and the CoGP. "Counts not weekly, lice levels higher than threshold". "Lice load high. Treating every 4/5 weeks - bath treatments - keeping on top of problem but not getting rid of it. Fish were being treated with Salmosan during visit. Cages crowded, difficult to identify any moribunds"
19/05/2009	Western Isles	Scotasay	Marine Harvest Scotland Limited	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. Records do not adequately reflect the required standard specified in the SSI and the CoGP. "Heavy lice load on site - c 5 fish with a lot of lice (30-50 in total) observed in each cage..... Regular sea lice bath treatments administered every 4/5 weeks, lice levels still above threshold". "Counts not weekly. Lice levels above threshold levels. April - 3 gravid females/fish".
19/05/2009	Western Isles	Ob Meavag	Marine Harvest Scotland Limited	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. Records do not adequately reflect the required standard specified in the SSI and the CoGP. "High levels of lice on site - treating every 4/5 weeks. Bath treatment of salmosan and alphamax used - numbers reduce post treatment but still above threshold and climb again until next treatment.... Counts not weekly. Lice levels above threshold levels. 3 gravid females / fish. "
19/05/2009	Shetland	Lea Trondra (east of Trondra)	NAFC Marine Centre	Infectious salmon anaemia (ISA) suspect reported by vet
26/05/2009	Mainland	Rubha Stillaig	Lighthouse Caledonia Limited	"Polar circles are buckled, could implode in adverse weather conditions, site being harvested". Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. "Only above level in week 13/05/09". Salmosan treatment 22/05, not all cages. No lice count since treatment.
26/05/2009	Mainland	Glenan Bay	Lighthouse Caledonia Limited	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. "10/04/09 only sheet available for 2009 gravids - 2.44 average per fish. Unable to verify as no records available". Records do not adequately reflect the required standard specified in the SSI and the CoGP
26/05/2009	Shetland	Lea Trondra (east of Trondra)	NAFC Marine Centre	Site harvested following confirmation of ISA
27/05/2009	Mainland	Strondoir Bay	Lighthouse Caledonia Limited	Lice levels below threshold. "Short term effect - lice levels up again soon after treatment". Treatments with Alphamax, Excis and Salmosan.
27/05/2009	Mainland	Meall Mhor Loch Fyne	Lighthouse Caledonia Limited	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. "Slice treatment not effective in February. Salmosan treatment effective."
27/05/2009	Western Isles	Trilleachan Mor	Lighthouse Caledonia Limited	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. "FVG [Fish Vet Group] contacted and treatment undertaken of Alphamax and salmosan"
02/06/2009	Mainland	Kerrera B	Scottish Sea Farms	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected; 1.3 female gravids on 28/11/2008 down to 0.6 per fish on 14/12/2008.
02/06/2009	Mainland	Kerrera A	Scottish Sea Farms	Lice records do not adequately reflect the required standard specified in the SSI and the CoGP. "Only 20 fish per sample Not

weekly up until 1st February".

02/06/2009	Mainland	Aird	Lighthouse Caledonia Limited	"Containment audit and escape investigation following loss of 17,766 fish on 17 May 2009 from a hole in cage 8. Discovered during grading and repaired..... approx 0.5m diameter hole.... Company would like to increase diver inspection to fortnightly, but this will be a significant cost increase". Containment audit records that available records do not reflect the requirements of SSI and CoGP.
07/06/2009	Shetland	Langa Isle East	Hjaltland Seafarms Limited	Site being harvested following confirmation of ISA
08/06/2009	Mainland	Shuna	Scottish Sea Farms	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. "Treating with Excis during visit".
09/06/2009	Mainland	Lismore A	Scottish Sea Farms	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected
10/06/2009	Western Isles	Eilean Dubh Chollaim	West Minch Salmon Limited	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. Av 1.2 gravids / fish. "Applied for Excis treatment to Soil Association 2.5 weeks ago - still waiting on reply. Last Slice treatment in mid Feb (2nd to 8th)..... Slice treated in Feb when lice levels were below threshold limits now above limits - done to keep within withdrawal limits 600 days for organic cert body"
10/06/2009	Western Isles	Loch Stocknish	West Minch Salmon Limited	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. "Av 3 gravids per fish /site. Now much higher". "10 - 15 lethargic sealice/grading damaged fish per pen". "Site waiting on consent from Soil Association for Excis treatment. 1 Slice treatment per cycle permitted and 1 Excis per year. Excis Jan 09 Slice treatment March. Lice appeared high on site >5 gravids /fish est....Many fish on site badly damaged by sea lice and grading damage". 5 fish sampled have lice damage to heads and between 40 and 70 lice per fish.
13/06/2009	Shetland	Langa Isle East	Hjaltland Seafarms Limited	Infectious salmon anaemia harvesting
25/06/2009	Mainland	Ardintoul	Marine Harvest Scotland Limited	Lice records do not adequately reflect the required standard specified in the SSI and the CoGP.
25/06/2009	Mainland	Loch Duich	Marine Harvest Scotland Limited	"During a lice treatment when dropping net the tide caught the net which resulted in catching on a cow-horn hook and tore the net"
28/06/2009	Shetland	Langa Isle East	Hjaltland Seafarms Limited	Infectious salmon anaemia. Total number removed from site since confirmation 174,480. Site had an unaccountable loss of 109,289.
29/06/2009	Mainland	Ardgadden	Lighthouse Caledonia Limited	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. "Peak in morts post input - IPN... c10k per month....Grumbling suspect PD also..... Sea lice variable levels but controlled with treatments....Lice levels currently below CoGP - when have been above historically treatments have brought back down below again"
30/06/2009	Shetland	Swining Voe 3	Hjaltland Seafarms	"Moribund fish with heavy lice load (c 20 lice per fish)"

			Limited	
30/06/2009	Mainland	Poll Na Gille	Lakeland Marine Farm Limited	"Asked to conduct sea lice counts from 5 cages instead of 4."
30/06/2009	Mainland	Port Na Cro	Lakeland Marine Farm Limited	"Poor biosecurity between sites. Asked to do lice counts from 5 cages instead of 4 and record name of person conducting counts."
30/06/2009	Mainland	Ardmaddy	Lakeland Marine Farm Limited	"A lack of biosecurity from shorebase and on site.... Asked site to change sea lice counts to method in line with Code of Good Practice from 4 cages , ten fish to five cages, five fish."
30/06/2009	Mainland	Bagh Dail Nan Cean	Lakeland Marine Farm Limited	"Poor biosecurity between sites. Same staff gear and minimal disinfection. Sea lice; advised to do random counts from 5 cages and record personnel doing count"
30/06/2009	Mainland	Nevis B	Scottish Sea Farms	"Some small holes noted where the feed pipes were entering the cage. Manager asked to repair ASAP and strengthen to ensure ripping of net does not occur". Records do not adequately reflect the required standard specified in the SSI and the CoGP. "Records are for Chalimus (juveniles), Lep mobiles non gravid, adult female gravid, adult female (non gravid), Caligus. Manager told to record reason for not doing count on all 5 pens. Also to record who does count."
30/06/2009	Mainland	Nevis A	Scottish Sea Farms	"Feed pipes are placed through net and over time (as seen at Nevis B) the pipe is tearing the net. Manager asked to strengthen areas where ripping may occur." Records do not adequately reflect the required standard specified in the SSI and the CoGP." Records are for juveniles (Chalimus), lep mobiles non gravid, adult female gravid, adult female (non gravid), Caligus . Manager told to record reason for not doing 5 pens (unable to catch) and who does count"
01/07/2009	Shetland	East Voe Laxfirth	Hjaltland Seafarms Limited	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. "Site being harvested and due to be empty within 3 weeks therefore treatment not carried out."
01/07/2009	Mainland	Kingairloch	Marine Harvest Scotland Limited	Records do not adequately reflect the required standard specified in the SSI and the CoGP. "When only 3 cages stocked only five fish sampled from each cage - manager informed 25 fish minimum should be sampled." "Last week (1/7/09) we visited a Marine Harvest site (Kingairloch, FSo241) . The manager told us they treated for sea lice with Alphamax in a well boat (The Pioneer) in November 2008. The manager was unsure if a FEPA licence was granted for a discharge at sea"....."as far as I am aware we have not issued a Well Boat Discharge licence as of yet". "Fish on site from L. Leven and Gorsten, Gorsten movement necessary due to overstock at Gorsten. No written risk assessment for sw to sw movements was in place". "Escaped fish (1) whilst getting EC sample. Manager asked to report."
02/07/2009	Shetland	Inner Mangaster	Scottish Sea Farms	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. "Just finished Slice treatment (22/6/09) also treated with salmosan (6/6/09). Reported to be having an effect on lice nos."

02/07/2009	Mainland	Linnhe	Marine Harvest Scotland Limited	Containment audit. 200-300 fish escaped 19 June 2009. During swim through operation. Audit records: records available do not reflect the requirements of SSI and CoGP; risk assessment has not been conducted for all fish transfer and handling activities.
07/07/2009	Shetland	Baltasound Harbour	Balta Island Seafare Limited	Records do not adequately reflect the required standard specified in the SSI and the CoGP. "Total attached and adult females only recorded. Not counted weekly. Site fallow". "Some cages present are misshapen".
07/07/2009	Shetland	Swarta Skerry	Balta Island Seafare Limited	Records do not adequately reflect the required standard specified in the SSI and the CoGP. "Lice recorded as total attached and adult females only. Not counted weekly".
21/07/2009	Mainland	Lunga East Side	Lakeland Marine Farm Limited	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. Sea lice records from 11/06/09 to 09/07/09 - none available before. Sea Lice levels not below threshold last two weeks but there are no plans to treat.
28/07/2009	Shetland	Coleness	Hjaltland Seafarms Limited	"Vet visited during high lice last Nov. Vet advised to move fish off site early. Week 43 1.2 gravids per fish."
28/07/2009	Shetland	Olna South	Hjaltland Seafarms Limited	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. "Lice problem last year....High losses to sea lice end '08..... Slice treatment 1/10/08, 21/11/08, 04/02/09, 11/5/09.... Lost c 80% since input all related to sea lice.....week 14 1.2 - 1.6 gravid per fish".
28/07/2009	Shetland	Snaranness	Scottish Sea Farms	Significant numbers of moribunds lately. "Before Slice 0.5 lice per fish. After Slice 0 lice per fish. Lice records available on FishTalk but there is no signal on site so records unavailable before 16/06/2009"
30/07/2009	Shetland	Setter Voe	Skelda Salmon Farms Limited	Records do not adequately reflect the required standard specified in the SSI and the CoGP. "All adults recorded and not differentiated between stages at all". 24 June 2009 samples show emamectin above relevant maximum residue limit.
05/08/2009	Shetland	Brindister Crossroads	Hjaltland Seafarms Limited	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. Records do not adequately reflect the required standard specified in the SSI and the CoGP.
05/08/2009	Shetland	Brindister	Westside Salmon	"Site experiencing increased mortality. This is expected to be due to high sea lice burdens. Latest lice numbers c 50 per fish (total). Skim of heavily burdened fish and moribunds done during week prior to visit. Many fish were observed to have white heads due to lice. Site treated with Slice in July and previously on other site (fish recently moved onto site in May from Crossroads)". 6 fish sampled all have head damage from lice and lice burden of over 100 lice per fish. Records do not adequately reflect the required standard specified in the SSI and the CoGP. "25 fish not sampled only about 10 on average and fish not sampled at random. If not recorded no entry as to reason why. Significant sea lice burden on site over at least 5 gravids per fish".
11/08/2009	Western Isles	Marulaig Bay	Marine Harvest Scotland Limited	Containment audit following escape. Boat "crashed into cage 1 on 28 June. Cage deformed and net ripped almost from top to bottom. Net lifted immediately but lost 12,200 fish". Wellboat crew not Marine Harvest staff. "Claim on wellboat insurance could be £250k". Audit records no propeller guards fitted, no assessment of need for guards and no risk assessment of escape of fish.

26/08/2009	Shetland	Inner Mangaster	Scottish Sea Farms	"Lice problems, due to treat next week, not sure what with yet, treatment delayed due to algal bloom.... problem with resistance to salmosan,...lice levels above recommended trigger levels...."suggest sla [sea lice audit] be carried out next month to monitor situation"
26/08/2009	Shetland	South Sound	Scottish Sea Farms	"Lice levels above recommended trigger levels but had to delay treatment due to algal blooms. Suggest further visit next month to carry out sla [sea lice audit] and assess treatment effectiveness".
14/09/2009	Shetland	Lee of Burrafirth	Mainstream Scotland Limited	Site culled due to sea lice Feb 2009.
15/09/2009	Mainland	Shuna Castle	Kames Fish Farming Limited	"Caligus levels quite high- ave 0.5 to 1 gravid. Leps increasing. Planned Slice treatment n delayed due to Pancreatic Disease on site. Should be monitored over next few weeks"
16/09/2009	Shetland	Geo of Valladale	Green Island Organics Ltd	Sea lice audit "conducted due to MA issues on sea lice and proximity to sites with increased levels and increased levels on inspected site. High number of lice observed on /during counts..... Numbers high avg 6+ animals / fish c 0.6 females average. Slice being administered.
17/09/2009	Shetland	Sandwick	Thompson Bros Salmon Limited	Records do not adequately reflect the required standard specified in the SSI and the CoGP. "Discussed amendments to form for lice counts to record individuals against stages NOT totals. Company sells to Wholefoods (US) and NO treatments permitted"
30/09/2009	Shetland	Wick of Belmont	Lakeland Unst Seawater	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. "Sea lice levels have been above 2 gravids on weeks 23, 26, 30, 36. No treatments administered as fish harvested go for wholesale".
06/10/2009	Western Isles	Loch Stockinish	West Minch Salmon Limited	"Due to get a Slice treatment. Have waited 1 month for Soil Association approval as this will be second treatment (usually only allowed one). Lice levels high on fish samples for VMD. 15 gravids and 30+ adults. Number of fish in each cage with white liced heads". Audit [sea lice audit] recommended.
08/10/2009	Mainland	Shuna Castle	Kames Fish Farming Limited	Problems with Pancreatic Disease so delayed sea lice treatments on advice of vets. 20,000 morts over last 4 weeks to PD. Sea lice numbers above threshold levels. Sea lice audit conducted.
20/10/2009	Mainland	Nedd	Loch Duart Limited	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. "Stocked for less than one year. Sea lice treatments 3 x Excis and 5 x Alphamax treatments....Lice levels rose very quickly post treatment (within 2 weeks). Vet consultation on bioassay to find out which treatment to use. Generally had lice treatment once per month - Excis and Alphamax. Harvested early due to sea lice."
27/10/2009	Shetland	Inner Mangaster	Scottish Sea Farms	"Site experiencing problems with PD/ sleeping disease, sea lice and seal predation. Since Jan 09, 4 Salmosan, 4 Alphamax, 2 Slice and 1 Excis (3 previous Slice) treatments". "6 fish removed and examined, large numbers of lice but not many gravid females observed....c. 5-15 whiteheads per cage."

27/10/2009	Shetland	South Sound	Scottish Sea Farms	"Site experiencing problems with PD/sleeping disease and sea lice. Lost approx 33% since input". Since Jan 2009, 3 Alphamax, 3 Salmosan, 2 Slice and 1 Excis plus further 3 Slice treatments. "1 seal observed in cage 9 during visit, divers were operating at neighbouring site (inner Mangaster) and site manager called them immediately to inspect net in cage 9. Divers confirmed seal had left cage and were going to repair hole....site has seal scarers although these are still waiting to be installed. No predator nets fitted..... 5 - 15 whiteheads per cage". 5 fish sampled all fish exhibiting varying degrees of lice damage to head and all with lice burden of >20.
28/10/2009	Western Isles	Arbhair	Lewis Salmon Limited	Sea lice audit conducted...counts of sea lice not in compliance with CoGP as only 20 fish/week counted. Manager thought that as he had four cages stocked only five fish from each cage was required. The name or the person conducting the count was not being recorded.... No records of formal training of lice counts are maintained on site. The site manager is to look into formal training from the Fish Vet Group"
29/10/2009	Shetland	Cloudin	Hoganess Salmon	"Site had experienced problems with sea lice, but believe they are on top of it now.... Morts on site beginning to return to 'normal' after sea lice problems."
29/10/2009	Shetland	Hogan	Hoganess Salmon	"Severe sea lice problems reported during August 2009. Now sea lice reported to be 'under control'. 7 treatments since Feb 2009 (Slice, Salmosan, Alphamax, Alphamax, Slice, Salmosan and Salmosan). Bioassy work completed by Westside vets and Fish Vet Group. Results suggested poor response or efficacy to Excis with better effects being obtained (?) using Alphamax and Slice. Best response report to be salmosan. Treatments administered using skirts. Tarpaulins being purchased for next cycle of fish... several lethargic dark fish with lice damage and/or physical damage to the eyes were observed."
29/10/2009	Shetland	Holm of Gruting	Hoganess Salmon	"Site was stocked with larger grade fish from Hogan and reportedly worst affected along with Mid Taing with sea lice..... Lost c 50,000 up to following attributed to sea lice "
10/11/2009	Shetland	Bastavoe North	Mainstream Scotland Limited	Records do not adequately reflect the required standard specified in the SSI and the CoGP. 30 fish sampled from 3 cages advised on 5 from 5 cages to be checked
10/11/2009	Mainland	Ardmair	Wester Ross Fisheries Limited	Sea lice audit. Four weeks lice counts over threshold levels. Counts not recorded one week.
11/11/2009	Mainland	Kishorn B North	Scottish Sea Farms	Records do not adequately reflect the required standard specified in the SSI and the CoGP. Not recording who did count and also sampling regime not 5 x 5 doing 3 cages 10 fish.
11/11/2009	Mainland	Kishorn A South	Scottish Sea Farms	"Some holes below waterline where feed pipes go into cages through nets". Records do not adequately reflect the required standard specified in the SSI and the CoGP. 3 cages sampled 10 fish per cage and not 5 x 5 sampling regime. Not recording who did count.
12/11/2009	Mainland	Loch Creran B	Scottish Sea Farms	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. "Exceeded trigger level for treatment in week 43" [Despite this, inspectors record compliance with CoGP] "A hole has been cut in all nets onsite for food pipes going into cages. Some of these holes are below waterline". Site inspected is not satisfactory with regards to containment.

23/11/2009	Mainland	Tanera	Scottish Sea Farms	"Small holes noted in cages where Storvik feed pipes enter cage. Manager asked to repair these immediately... done using cable ties". Site not satisfactory with regards to containment.
25/11/2009	Mainland	Ardyne	Lighthouse Caledonia Limited	60 fish counted (10 from each cage). Average 1 gravid female per fish. [Yet inspector records this as sea lice being below suggested threshold]. Unable to inspect stock due to bad weather.
25/11/2009	Western Isles	Seaforth	Marine Harvest Scotland Limited	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. Records do not adequately reflect the required standard specified in the SSI and the CoGP. "Incorrect no of fish sampled. Lots weeks not done. Missing. Over trigger 23rd June 2008 and 5th Jan 2009 to 9th April 2009. Treatments 5th-12th May 08 Excis, Dec/Nov 08 Excis, 25th-31st March 2008 Emamectin + Slice, May 7th-10th 2008 Azamethiphos, Alphamax Aug 08 to Nov 08 and Jan - April 2009. Slice treatment in two weeks. Peak mortality in Nov 2008 lice (majority), treatment losses, hypoxia and grading
09/12/2009	Shetland	Hogan	Hoganess Salmon	Sea lice infestation. Mortalities on site are attributed to sea lice damage following heavy infestation during summer months. Cage 7 had large number of 'whiteheads'. No recent treatment, site due to fallow next week.
09/12/2009	Shetland	Cloudin	Hoganess Salmon	Sea lice. Fish treated with Salmosan from 21st - 28th November by wellboat. Sea lice problem has reportedly dropped off and numbers on site are low. Seals are reportedly beginning to be a problem.
26/01/2010	Western Isles	Bagh Chlann Neill	North Uist Fisheries Limited	Records do not adequately reflect the required standard specified in the SSI and the CoGP. No sea lice records are being maintained and counts are not being completed. Manager instructed to do counts with immediate effect.
27/01/2010	Western Isles	Ferramus	Loch Duart Limited	Sea lice number elevated. High load of Caligus. Lep gravids and adults are below trigger level. Slice treatment to begin 29/01/10.
27/01/2010	Western Isles	Caolas Loch Portain	Loch Duart Limited	High Caligus lice load on some of the fish not thought to be causing any welfare issues
01/02/2010	Shetland	Burrastow	Hoganess Salmon	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. Lice levels dropped following treatments but not below threshold levels. Wellboat may be used for future treatments. Reminded of need to get FEPA licence.
01/02/2010	Shetland	Cloudin	Hoganess Salmon	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. Lice levels above threshold but dropping following Slice and Salmosan treatments. Levels drop after treatment but not below threshold levels.
04/02/2010	Shetland	Vidlin North	Scottish Sea Farms	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. Evidence of lice damage on heads and high numbers of lice (mostly juveniles) on some fish. Others had v low lice on them. Counts show lice above threshold levels. Currently harvesting and will be finished in a month. Asked to record member of staff performing counts. Treatments having some effect but not reducing below threshold.

08/02/2010	Mainland	Bagh Dail Nan Cean	Lakeland Marine Farm Limited	Records do not adequately reflect the required standard specified in the SSI and the CoGP. Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. Follow-up investigation of positive samples above the MRL for emamectin benzoate. Report dated 18th February 2010 for VMD concluded that "a higher dosage of active ingredient [emamectin benzoate] was administered with the likely result being that the substance tested for being above the MRL [Maximum Residue Limit]".
16/02/2010	Western Isles	Loch Odhairn	Lighthouse Caledonia Limited	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. Slice week 39 (2009) Alphamax weeks 43, 45, 47, 52 (2009) and 4 (2010). Outer - numbers increased since Dec. Slice finished 29/1/2010. Alphamax to be administered w/b 22/2/2010
16/02/2010	Shetland	Bight of Bellister, Dury Voe	Scottish Sea Farms	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. Last week sea lice count Juv 1.25, Mobile 4.55, A gravid 1.05, A non gravid 1.80, Caligus -, Adult females at 2.85 nearly 6 x CoGP threshold. Last treatment with salmosan end Nov 09. Next treatment planned for next few weeks. Waiting for prescription. [FHI recorded site as appearing "satisfactory in relation to sea lice level and sea lice count data"]
17/02/2010	Western Isles	Arbhair	Lewis Salmon Limited	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. Sea lice infestation started in November. 6,300 wrasse on site (4% of stock). Slice reported not to work. May go conventional as finding it difficult to keep on top of lice numbers. Treatments given on advice of Fish Vet Group. Wrasse being used. Slice 14/11/09 to 20/11/09. Alphamax cages 1&3 2/2/10, cages 2&4 4/2/10, cages 5&6 3/2/10. Seen 70% effectiveness. [FHI recorded site as appearing "satisfactory in relation to sea lice level"]
03/03/2010	Western Isles	Loch Odhairn	Lighthouse Caledonia Limited	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. 7 sea lice treatments since week 39('09)- Slice and alphamax. To begin with Oct / Nov treatments had a significant impact but they no longer are. Since mid Dec numbers started going up.
03/03/2010	Western Isles	Loch Harport	Marine Harvest Scotland Limited	50% clearance with Slice so follow up with Alphamax. Algal bloom in September. Sea lice counts were not conducted for three weeks as fish handling kept to a minimum.
09/03/2010	Mainland	Camas Glas	Marine Harvest Scotland Limited	Slice treatment administered in Feb and Alphamax in Jan after lice levels increased. Supposed to have AMA with SSF sea sites around Mull but they did treatment without telling MH
09/03/2010	Mainland	Loch Spelva A	Scottish Sea Farms	Records do not adequately reflect the required standard specified in the SSI and the CoGP. Advised to count five cages - has been counting 4 cages. Previous two weeks counted all cages. Advised to record reason if count not undertaken. Advised to record person undertaking count
16/03/2010	Mainland	Calva Bay (Calbha Beag)	Loch Duart Limited	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. Sea lice Nov Dec. Slice Oct. Excis Oct. AMX Jan 2010. Salmosan Feb . V successful. Over 90% clearance with salmosan. Slice treatment negligible. Excis 50% clearance. Gravids left. AMX [Alphamax] 70 - 80% clearance. Gravids left.

16/03/2010	Mainland	Rientraid	Loch Duart Limited	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. Sea lice. Spike in sea lice numbers Nov/Dec. Slice treatment in October negligible effect. Excis Oct 50% reduction. AMX Dec/Jan 70-80% reduction. AMX late Feb 50-60% reduction. Hydrogen peroxide treatment to begin next week. Vets on site for bioassay.
16/03/2010	Mainland	Torgawn	Loch Duart Limited	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. Sea lice numbers spiked in Nov/Dec. Slice treatment Oct negligible reduction. Excis Oct 50%v reduction. AMX Dec/Jan 70-80% reduction. AMX late Feb - 50-60% reduction. Hydrogen peroxide treatment to begin next week.
23/03/2010	Shetland	Bastavoe North	Hjaltland Seafarms Limited	Records do not adequately reflect the required standard specified in the SSI and the CoGP. Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. Recent 0.6 adult female.
23/03/2010	Shetland	Bastavoe South	Mainstream Scotland Limited	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. Records do not adequately reflect the required standard specified in the SSI and the CoGP. At present only counting 30 fish (3 x 10) during sea lice counts. Does not comply with CoGP. Recent count 0.8 adult female.
23/03/2010	Mainland	Scallastle	Scottish Sea Farms	Problems post lice treatment due to gill problem. Fish don't cope with treatments. High mobiles. 2 to 2.1. Adult levels below threshold
24/03/2010	Shetland	Coleness	Hjaltland Seafarms Limited	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. Site has lost c 42,000 since input in Dec 2009, the majority are attributed to seal predation. Fish underwent salmosan treatment 2nd-7th February 2010. Gravid numbers are beginning to creep up and are just above the CoGP threshold (0.64 at last count). As with other Hjaltland sites the recording of sea lice stages does not match A National Strategy for the Control of Sea Lice on Scottish Salmon Farms. Sea lice treatment , likely to be Slice, planned for next couple of weeks
24/03/2010	Mainland	Fishnish B	Scottish Sea Farms	Increased / atypical mortality 251 Cage 4 Week 30 2009 post treatment. Lice numbers have reached 2.75 (week 48 2009) for adult female gravid/ non-gravid
24/03/2010	Mainland	Fishnish A	Scottish Sea Farms	Lice count c 2.0 for adult females in Jan 10. [but FHI recorded sea lice levels as below the suggested threshold in the CoGP during the period that records are inspected] Treating once a month. Lice levels below threshold at present.
24/03/2010	Shetland	Olna South	Hjaltland Seafarms Limited	Site fallowed. Site has experienced losses of 87% approx 410,335 fish since input. In one week in October 2008, site had recorded loss of 96,000 with c 94,000 attributed to sea lice. Sea lice treatments - Oct 08 Slice, Nov 08 Slice, Feb 09 Slice, May 09 Slice, Aug 09 Slice, Nov 09 Salmosan, Dec 09 Slice, Jan 10 Salmosan
25/03/2010	Shetland	Snaranness	Scottish Sea Farms	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. Slice on order. Adult female number 0.74 slightly above threshold
13/04/2010	Mainland	North Moine	Lakeland Marine Farm Limited	Only gravids, adult, pre-adult recorded, not gravid, non-gravid females. Records do not adequately reflect the required standard specified in the SSI and the CoGP

13/04/2010	Mainland	Port Bheachan	Lakeland Marine Farm Limited	Lice level above threshold 24/3/10. Only adult and gravid counted, not gravid, non gravid. Records do not adequately reflect the required standard specified in the SSI and the CoGP
14/04/2010	Orkney	Kirk Noust	Mainstream Scotland Limited	Records do not adequately reflect the required standard specified in the SSI and the CoGP. Currently count 30 fish (10 from 3 cages) rather than 5 from 5 cages. This is a company policy. Site had ave L. salmonis adult female level of 5 in Sept 2009, this followed PD problem, when there were a lot of runts / PD type fish. Recent numbers are 0.1 adults female LS. 6,980 morts for week attributed to PD.
14/04/2010	Orkney	Bay of Vady	Mainstream Scotland Limited	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. Lice levels were above the suggested CoGP threshold in August 2009. A Slice treatment was administered. Records do not adequately reflect the required standard specified in the SSI and the CoGP. Company policy currently to count 30 fish (10 from 3 cages) rather than 25 (5 from 5 cages). 2,182 morts reported week 10 due to seal predation
10/05/2010	Shetland	Geo of Valladale	Hjaltland Seafarms Limited	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. Not all records on site due to recent sale of site to Hjaltland, records with new owners. Slice administered on take over 15/3/10. Lice levels not high when treated.
11/05/2010	Shetland	Wick of Garth	Lakeland Unst Seawater	Lice levels above the suggested threshold in the CoGP during the period that records are inspected. Brood site. Usually fish look fine and records kept with counts fortnightly. Discussed reqs of CoGP. Biologist and vet aware of lice levels weekly. 10 gravids per fish.
11/05/2010	Shetland	Wick of Belmont	Lakeland Unst Seawater	Discussed need to add name of counter to spreadsheet and discussed recording of different stages as no way of differentiating adult females from adults, In every wk gravids above 0.5/fish, therefore definitely above due to adults not included
12/05/2010		Hole Bay	Hebridean Smolts	Records do not adequately reflect the required standard specified in the SSI and the CoGP.
01/06/2010	Mainland	Camas an Eilean	Lighthouse Caledonia Limited	Records do not adequately reflect the required standard specified in the SSI and the CoGP
01/06/2010	Mainland	Kenmore Loch Torridon	Lighthouse Caledonia Limited	Records do not adequately reflect the required standard specified in the SSI and the CoGP
02/06/2010	Mainland	Creag an T'Sagairt Loch Hourn	Marine Harvest Scotland Limited	During a net change net was tight. As it was coming up the net had rolled up. Manager was trying to unroll the net but a site member decided to untie the top section to allow the net to move into position. However the net was too heavy and it dropped resulting in a loss of fish. 1500 morts were removed from the pen due to the bagging of the fish. Lice records do not adequately reflect the required standard specified in the SSI and the CoGP
08/06/2010	Skye	Cairidh	Marine Harvest Scotland Limited	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. Sea lice levels staring to rise so will treat soon with alphamax. Over trigger levels one or two weeks during period checked.
08/06/2010	Skye	Maol Ban	Marine Harvest Scotland	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. One or two weeks above trigger levels. Treated with Slice and alphamax in April.

			Limited	Took a while for levels to reduce.
08/06/2010	Skye	Sconser	Marine Harvest Scotland Limited	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. Recent levels are low, but over once or twice.
09/06/2010	Skye	Gob na Hoe Fish Farm	Kames Fish Farming Limited	Records do not adequately reflect the required standard specified in the SSI and the CoGP. Not enough cages counted each week for sea lice but this has been due to bad weather (most weeks OK)
15/06/2010	Mainland	Ardyne	Lighthouse Caledonia Limited	Records do not adequately reflect the required standard specified in the SSI and the CoGP
15/06/2010	Mainland	Strone Point	Lighthouse Caledonia Limited	Records do not adequately reflect the required standard specified in the SSI and the CoGP
15/06/2010	Mainland	Ardmair	Wester Ross Fisheries Limited	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. AMX (alphamax) seeing better results than salmosan. In general manager reports that treatments not as effective as in past
16/06/2010	Mainland	Poll Na Gille	Lakeland Marine Farm Limited	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. Records do not adequately reflect the required standard specified in the SSI and the CoGP.
16/06/2010	Mainland	Ardmaddy	Lighthouse Caledonia Limited	Week 41/42 lice treatment went wrong due to lack of oxygen, 18,000 fish dead. Records do not adequately reflect the required standard specified in the SSI and the CoGP. Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. All above 0.5. Trials to find out best treatment.
16/06/2010	Mainland	Nevis A	Scottish Sea Farms	Lice levels just over trigger at 0.55 females/fish. Alphamax treatment planned first week July. Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. Mortality Aug 2009 13,000 net bagged in bad weather
21/06/2010	Shetland	Balta Island	Balta Island Seafare Limited	Records do not adequately reflect the required standard specified in the SSI and the CoGP. No lice seen since input. To start following requirements of CoGP and Record Keeping Order. No counts yet done on new fish.
22/06/2010	Shetland	Bight of Foraness	Hjaltland Seafarms Limited	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. Lice levels briefly above threshold in February. Dropped below post-treatment. Some synchronous treatments aim to make synchronous once single yearclass area. 21,192 morts / site since Sept 2009.
22/06/2010	Shetland	Djubawick	Mainstream Scotland Limited	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. March 2010 slightly above and then fell back below. PD October 2009 on site, morts c. 5k in Sept, c. 8k in Oct.
22/06/2010	Shetland	Bow of Hascosay	Mainstream Scotland Limited	Lice counts 30 fish from three cages weekly - discussed CoGP requirements. Lice levels not below the suggested threshold in the CoGP during the period that records are inspected.
22/06/2010	Shetland	Wick of Vatsetter	Mainstream Scotland Limited	Lice counts 10 fish from 3 cages weekly checked. Discussed requirements of CoGP for 25 from 5.

24/06/2010	Shetland	Dales Voe	Dales Voe Salmon Limited	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. "Only above for short period with NO reported issues".
24/06/2010	Shetland	Hamar Sound	Hjaltland Seafarms Limited	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected. Records do not adequately reflect the required standard specified in the SSI and the CoGP. Only 15 fish (5 from 3 cages) being counted weekly. Manager informed of req to check 25 (5 from 5).
28/07/2010	Shetland	Taing of Railsbrough Catfirth	Hjaltland Seafarms Limited	Lice levels above the suggested threshold in the CoGP during the period that records are inspected.
23/08/2010	Shetland	Burrastow	Hoganess Salmon	"6 fish submitted by SSPCA following alleged Illegal treatment with sheep dip and Deosect (cypermethrin) which led to approx 100 tonnes of fish dying on site. SSPCA looking for evidence of cruelty / welfare issues /suffering in the fish".
14/09/2010	Mainland	Fishnish B	Scottish Sea Farms	Sea lice levels not below threshold, waiting to treat held back due to adverse weather conditions. Average 7 gravids per fish. Lice levels not below the suggested threshold in the CoGP during the period that records are inspected.
05/10/2010	Shetland	Uyeasound 3 (West site)	Uyeasound Salmon Co	Lice levels not below the suggested threshold in the CoGP during the period that records are inspected
06/10/2010	Western Isles	Ornish Island	Marine Harvest Scotland Limited	"Slice treatment carried out but not as effective as predicted so bath treatment with Alphamax carried out - good result"
20/10/2010	Mainland	Loch Alsh (Sron)	Marine Harvest Scotland Limited	"When lifting net splice failed. Fish crowded at other side of net so unlikely that many fish escaped. Hole size c. 2 m2. "Tear was above water in minutes and luckily losses were small". Notified to Scottish Government 06/10/10
06/10/2010	Shetland	Wick of Vatsetter	Mainstream Scotland Limited	Records do not adequately reflect the required standard specified in the SSI and the CoGP.
13/12/2010	Mainland	Lismore A	Scottish Sea Farms	Escapes investigation. Divers spotted net resting on sea bed and tie-wrapped holes./ No fish thought to have escaped.
22/11/2010	Mainland	Loch Laxford	Loch Duart Limited	"Noticed fish swimming around cages post wellboat grading and found hole at base of net. Surmise that damage done by propeller during crowding for grading. Estimated 4,000 lost from rough count done during swim through....boats at Loch Laxford do not have prop [propeller] guards."