

NGU Report 2010.027
Norway's coastal aggregates.
Export in 2009 and potential deposits.

Report no.: 2010.027		ISSN 0800-3416	Grading: Open
Title: Norway's coastal aggregates. Export in 2009 and potential deposits.			
Authors: Peer-Richard Neeb		Client: NGU	
County: South-Norway & Finnmark		Municipality:	
Map-sheet name (M=1:250.000)		Map-sheet no. and -name (M=1:50.000)	
Deposit name and grid-reference:		Number of pages: 30	Price (NOK): 140,- Map enclosures:
Fieldwork carried out:	Date of report: 03.05.2010	Project no.: 2680.20	Person responsible: <i>Jan J. Creamer</i>
<p>Summary:</p> <p>The Geological Survey of Norway has compiled an inventory of hard rock aggregate deposits in coastal Norway. This report contains a catalogue of Norwegian coastal quarries presently in production and exporting, as well as of potential production areas along the coast of South-Central Norway and Finnmark. In 2009 15 million tonnes of aggregates were exported to Europe, and about 2.6 million tonnes were used by the offshore oil and gas industry on the continental shelf.</p>			
Keywords:			
Coastal aggregates	Export	Los Angeles	
PSV	Density	Bedrock	

CONTENTS

	Page
Introduction	4
Bedrock map of Norway with location of important aggregate deposits	5
Norwegian aggregate export markets in 2009	6
Aggregate export 1989-2009	7
Norwegian quarries and potential areas along the coast of South-Central Norway and Finnmark	8
Maps of quarries and potential deposits of hard-rock aggregate and sand/gravel in South-Central Norway.	18
Link to updated maps from all counties: http://www.ngu.no/kart/grus_pukk/	

INTRODUCTION

The production of hard-rock aggregates in Norway amounted to about 51 million tonnes in 2009. In addition, 12 million tonnes of sand/gravel were produced.

A total of 15 million tonnes of hard-rock aggregates and 0.1 million tonnes of sand and gravel were exported, with an export value of 760 million NOK (or 95 mill EUR), from 23 hard-rock aggregates and 4 sand- and gravel producers (statistics compiled by NGU and the producers; see pages 5-7). Export of hard rock aggregate represents about 29 % of the total hard-rock production. Aggregates are used in the following ways: roads (50 %), concrete (27 %) and other use (23%). The majority of the quarrying companies are relatively small, catering essentially to local needs. There are, however, a number of major players including Norsk Stein A/S, Oster Pukk og Grus A/S, NorStone, Kolo-Veidekke AS, NCC Roads AS, Halsvik Aggregates A/S, Bremanger Quarry AS and Visnes Kalk A/S. These companies each have an annual production in the order of 1- 5.6 million tonnes. The largest individual aggregate quarry (gneiss) owned by Norsk Stein A/S had a production of approx. 5.2 million tonnes in 2009. Aggregates for use offshore, mostly in Norwegian sectors of the North Sea, was 2.6 million tonnes in 2009 from 10 producers. The exported sand and gravel came from six quarries in Rogaland and in Møre and Romsdal counties.

Norway is probably northern Europe's principal **hard-rock** country, being composed almost entirely of Precambrian and Palaeozoic igneous and metamorphic crystalline bedrock. Norway has a long, indented and rugged coastline where a considerable variety of rocks, suitable for aggregate production, are well exposed. Deep-water anchorage, low tidal range and a well-developed infrastructure allow for planning of harbour facilities for medium to large- size bulk carriers. Norway has an attractive investment and taxation climate, and overseas investment is encouraged. National and local authorities are aware of the potential for the development of large coastal quarries (super-quarries) designed for the production and export of rock aggregates. The Geological Survey of Norway (NGU) is undertaking a number of investigations of potential coastal sites for such quarries, in order that local government planners will be able to classify such sites for future development. In Bremanger municipality, Bremanger Quarry AS started export production to the Netherlands in 2001. A new sandstone quarry, Norwegian Sandstone Export AS, started export production in Flora municipality in 2007.

NGU, in cooperation with county and local authorities and industry, is planning to assess the potential for new coastal rock units for which environmental, topographic and transport criteria would favour quarrying.

This report and the Database for sand, gravel and hard-rock aggregates are accessible on the Internet, including digital maps on individual quarries:

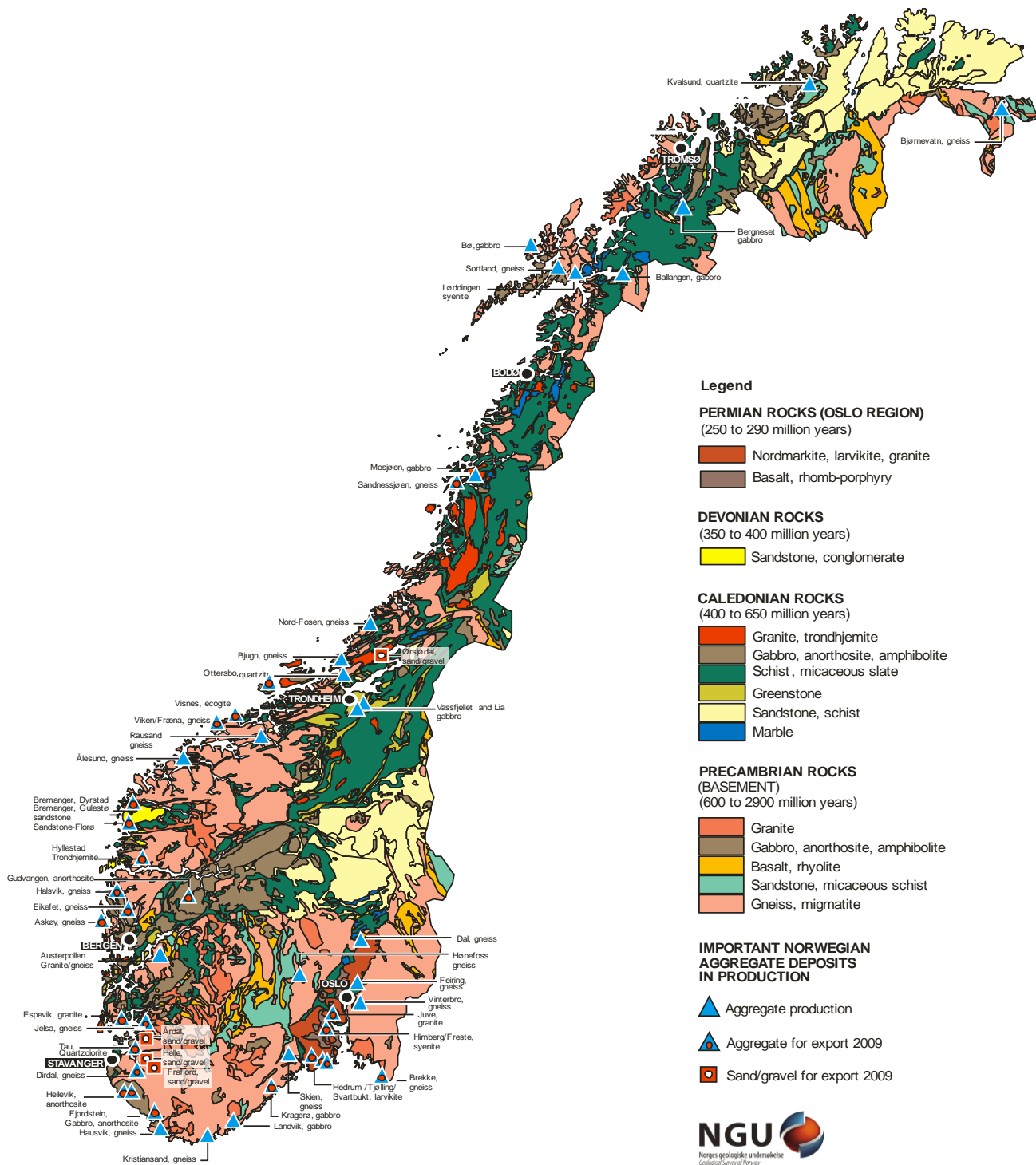
<http://www.ngu.no/grusogpukk> , http://www.ngu.no/kart/grus_pukk/ or <http://www.ngu.no>

Trondheim, 10th May 2010



Peer-Richard Neeb
Teamleader
Aggregates

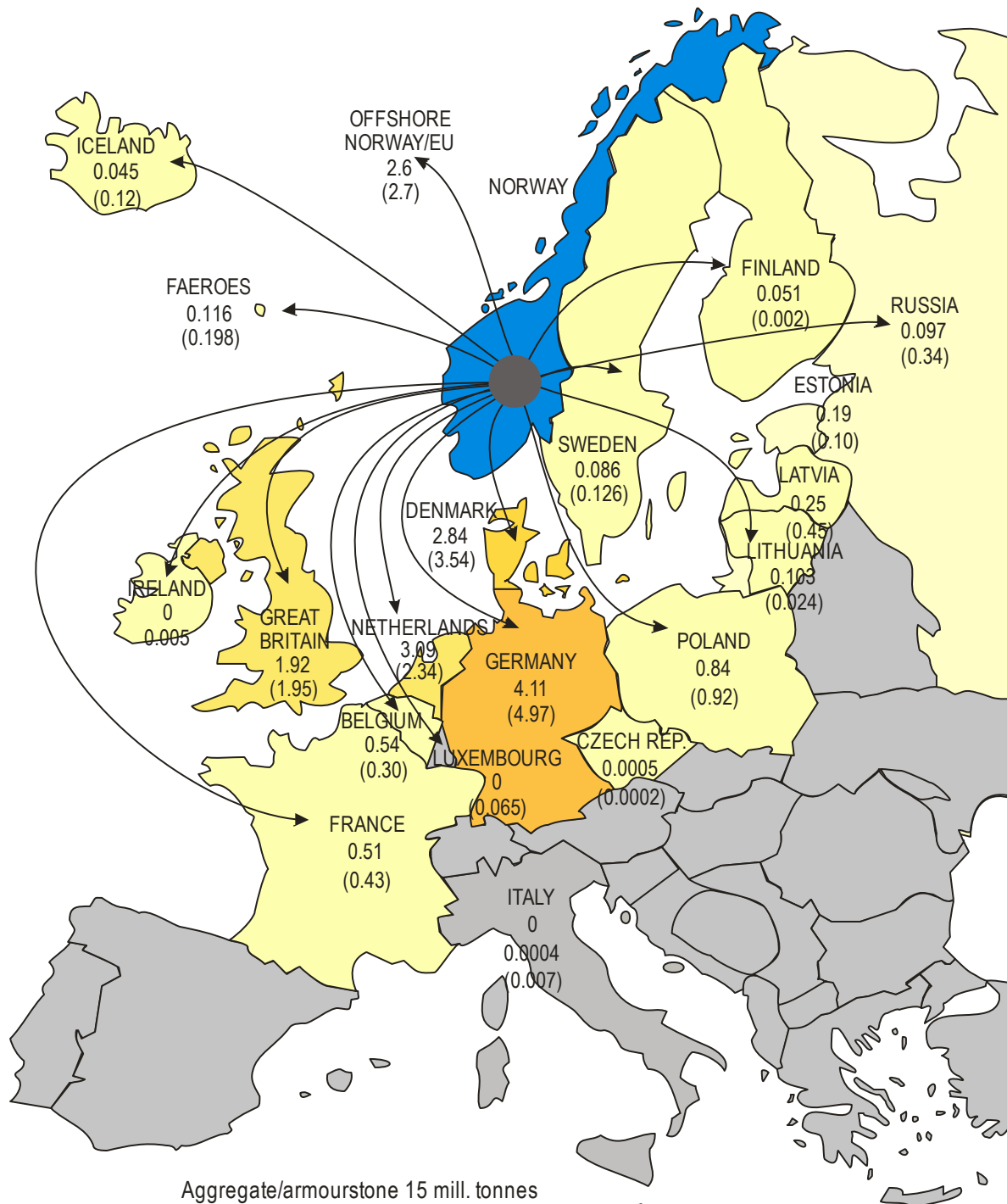
BEDROCK MAP OF NORWAY WITH IMPORTANT AGGREGATE DEPOSITS



NORWEGIAN AGGREGATE EXPORTED IN 2009

Total production export 15.1 mill. tonnes aggregate, armourstone, sand and gravel, plus 2.6 mill. tonnes aggregate for offshore use.

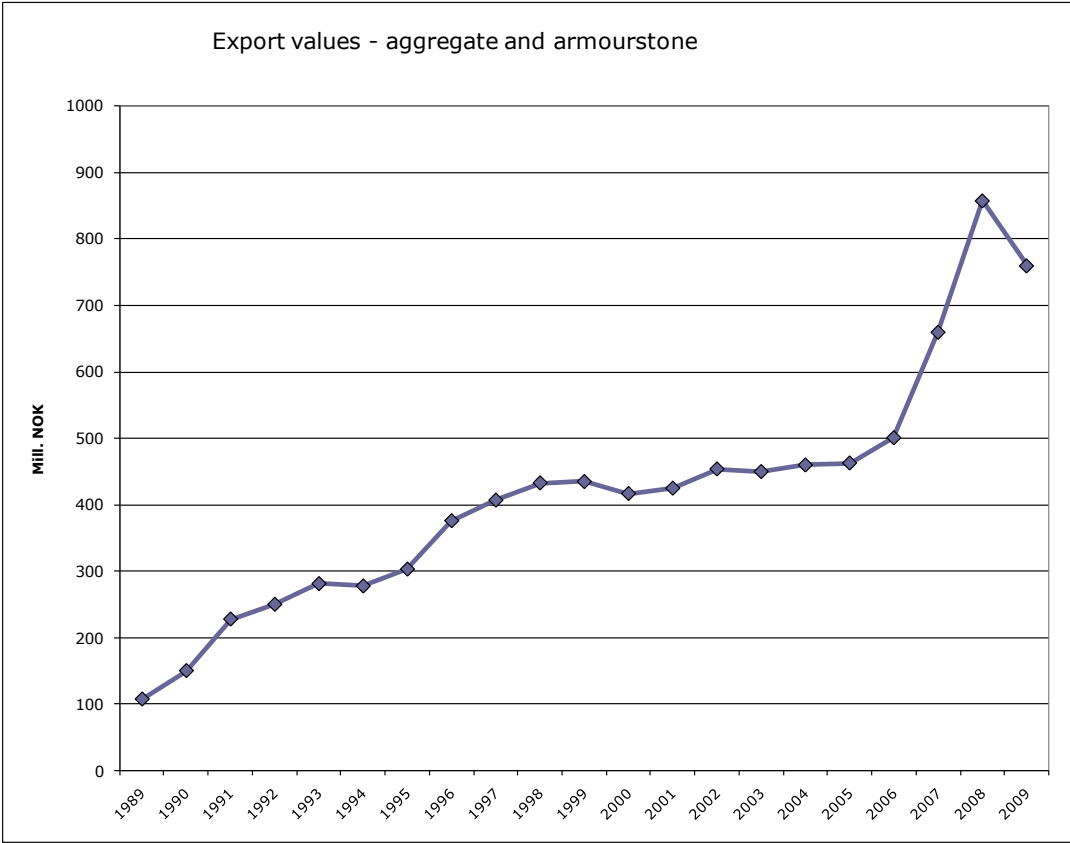
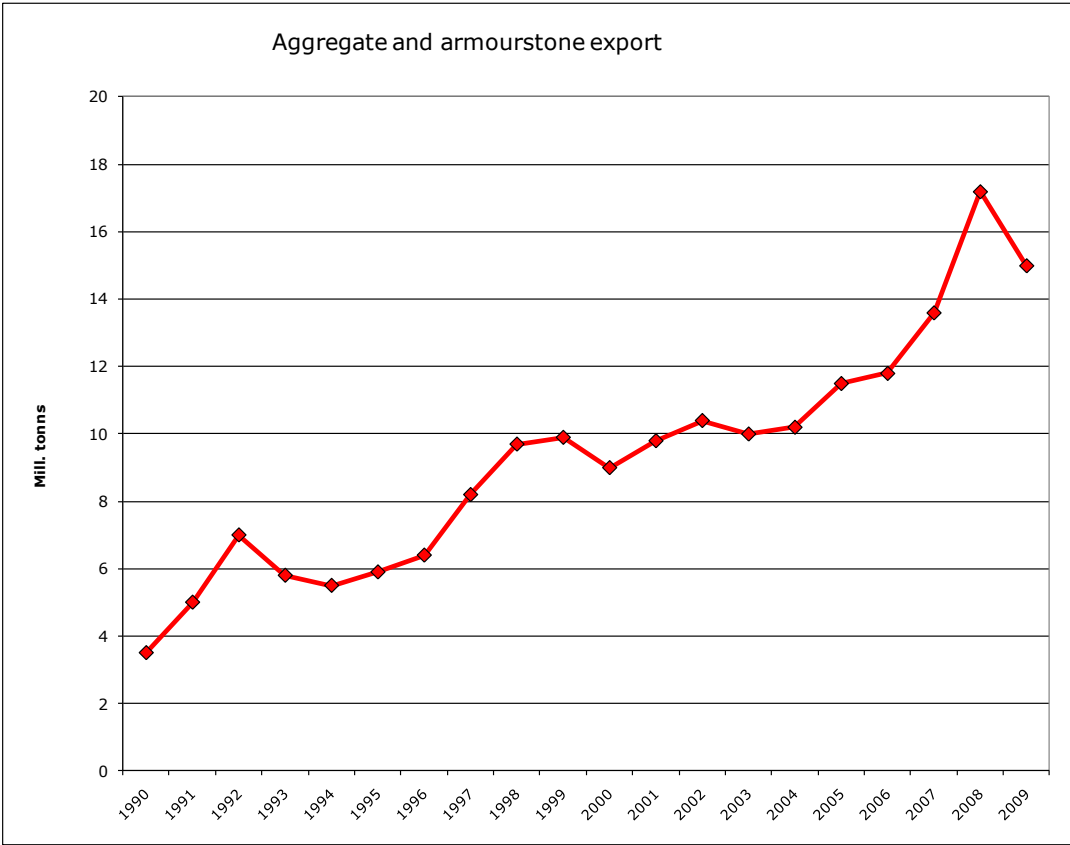
Export production values for 2008 in parentheses .



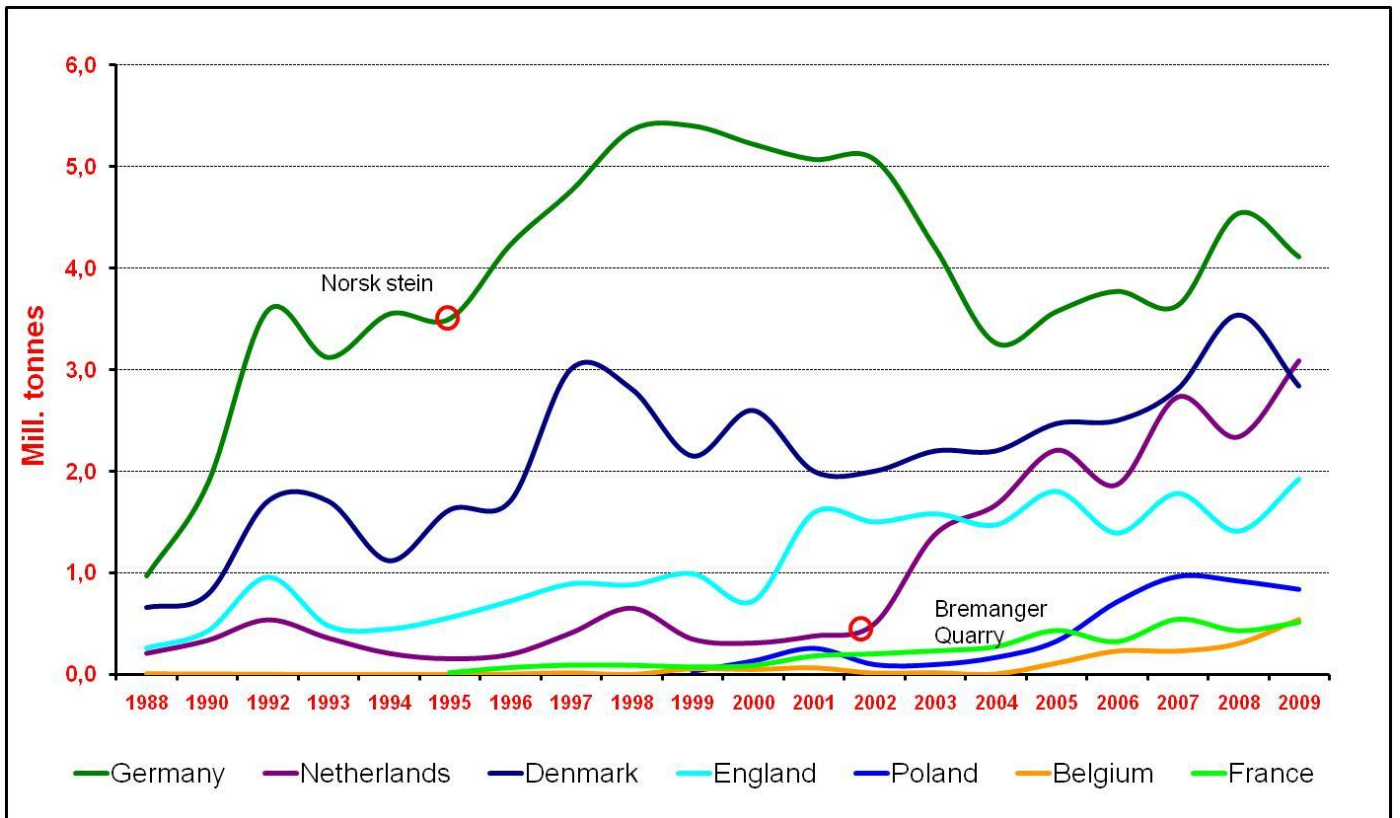
Aggregate/armourstone 15 mill. tonnes
 Sand/gravel 0.09 mill. tonnes
 Export value 750 mill. NOK/94 mill. EUR
 Offshore-aggregate 2.6 mill. tonnes



AGGREGATE EXPORT 1989-2009



Norwegian export of hard rock aggregate 1988 – 2009 from 7 countries in Europe



HARD ROCK AGGREGATES AND ARMOURSTONE: NORWEGIAN QUARRIES AND POTENTIAL AREAS ALONG THE COAST OF SOUTH-CENTRAL NORWAY AND FINNMARK. SITE NUMBER REFERENCED ON ENCLOSED MAPS

Østfold County

Site number Municipality	Production location	Export today	Contact person	Telephone	Fax-number	Bedrock/ colour	Quality parameters			Other
							Los Angeles	PSV	Density	
0101-514 Halden	Brekke Iddefjorden BG-Stone AS Bodalen 1, c/o BG Stone DK-8643 ANS. Danmark	x	Jan Pedersen	+45 40 15 02 80		Granite Grey	36	53	2.64	
0101-506 Halden	NorStone as, Svingen		Terje Holt	69 19 53 61	69 19 50 74	Gneiss/grey	15	51-54	2.79	

Vestfold County

Site number Municipality	Production location	Export today	Contact person	Telephone	Fax-number	Bedrock/ colour	Quality parameters			Other
							Los Angeles	PSV	Density	
0709-511 Larvik	NCC Roads AS avd Hedrum- og Tjølling	x	Ole Steinholt	33 13 69 60 91618603	33 13 69 79	Syenite/Larvikite Grey-black	30.9	48	2.72 – 2.73	Hedrum
0709-501 Larvik	Pukkverk, Landhjem 3270 Larvik						31.2	48	2.71	Tjølling
0709-xxx Larvik	Svartbukt/Larvik Helgeroa	x	Stig Axel Olsen	94172320		Syenite/Larvikite Grey-black	24.5	48	2.74	Armourstone
0718-503 Ramnes	Martin Haraldstad AS 3175 Ramnes	x	Steinar Frellumstad	33 39 65 54	33 39 51 95	Syenite – Grey Syenite	19.0 – 23.2 12	50 43	2.62 – 2.74 2.7	Avd. Himberg, Frete
0713-508 Sande	Sando Kalk og Pukk-servise AS		NGU			Carbonate White	19.4	57	2.78	Closed
0711-506 Svelvik	Juve pukkverk A/S, 3060 Svelvik	x	Guri Olsen	33 77 20 15		Granite Red	23.7 – 27.4		2.50 – 2.60	

0706-501 Sandefjord	ÅSMUND Berg, KOLO Veidekke AS, 3233 Sandefjord	x	Gunnar Topstad	33470171		Larvikite- Grey	33	45	2.71	
------------------------	--	---	----------------	----------	--	-----------------	----	----	------	--

Telemark County

Site number Municipality	Production location	Export today	Contact person	Telephone	Fax-number	Bedrock/ colour	Quality parameters			Other
							Los Angeles	PSV	Density	
0806-501 Skien	NCC Skien pukkverk AS, Voldsfjorden Havnevn. 22 3739 Skien		Kolbjørn Bach Hansen	35 90 04 44	35 90 04 41	Gneiss	21 - 23	50 - 51	2.65	Export before 2005
0815-509 Kragere	NCC ROADS Avd. Valberg 3770 Kragere	x	Frode Jørgensen	35 98 99 40	35 98 99 41	Gabbro Black	15 - 20	51	2.90 - 3.11	

Aust-Agder County

Site number Municipality	Production location	Export today	Contact person	Telephone	Fax-number	Bedrock/ colour	Quality parameters			Other
							Los Angeles	PSV	Density	
0901-506 Risør	Lemminkainen Norge A/S Ravneberget 4990 Søndeled		Eigil Runsag	37 15 61 87 90505342	37 15 62 73	Gabbro	14-16	48-52	2.99 - 3.05	
0904-516 Grimstad	Landvik pukkverk Postboks 481 4801 Arendal		Bjørn Berg	37097300		Gabbro	14 - 15	45 - 49	2.92 - 3.03	
0906-502 Arendal	Klodeborg pukkverk Postb. 1701, Myrene 4801 Arendal		Bjørn Berg	37097300		Gneiss	23 - 25	52	2.78 - 2.90	

Vest-Agder County

Site number Municipality	Production location	Export today	Contact person	Telephone	Fax-number	Bedrock/ colour	Quality parameters			Other
							Los Angeles	PSV	Density	
1001-508 Kristiansand	Ringknuten pukkverk A/S Postboks 1121 Lundsiden 4602 Kristiansand S		Karsten Reme	38 17 91 00	38 09 72 08	Gneiss	25	52	2.60 - 2.70	
1032-501 Lyngdal	Hausvik Pukkverk Rock trading AS, PB 1029 4884 Grimstad	x	Torhild Sundtoft	90077880		Gneiss/granite	21 - 24	50	2.73 - 2.80	New export in 2008

Rogaland County

Site number Municipality	Production location	Export today	Contact person	Telephone	Fax-number	Bedrock/ colour	Quality parameters			Other
							Los Angeles	PSV	Density	
1101-501 1101-502 Eigersund	K.S. Norwegian Edelsplit 4375 Hegrestad	x	Anders Hovland	51 46 11 80 / 51 49 68 77	51 49 66 54	Anorthosite White	11.9 - 17	51 - 55 42	2.69 – 2.77	
1101-503 Eigersund	Ramsland pukk A.S, Hellvik 4387 Bjerkreim		Paul Ramsland local marked	51 45 01 88 51 49 68 77	51 45 01 11	Anorthosite White	12.3	54	2.78	
1129-06/09/10 Forsand	NCC ROADS AS avd Helle	x	Arne Maudal	51703555		Sand/gravel				
1111-501 Sokndal	Rekefjord Stone AS 4380 Hauge i Dalane	x	Solveig Rek Olsen	51476050 91165456		Anorthosite/ Norite	14-33 23-35	46-53 55	2.75 3.16	Anorthosite Norite
1134-501 Suldal	Norsk Stein AS Berakvam 4234 Jelsa	x	Odd Hodtvedt	52 79 29 00	52 79 29 01	Gneiss	15.4 – 20	52 - 58	2.76 – 2.79	
1122-501 Gjesdal	NorStone a.s NorStone Dirdal 4335 Dirdal	x	Daniel Øvstebø	51 67 61 00	51 67 61 01	Gneiss	24.3	48	2.76 – 3.0	
1122 – 8 Gjesdal	NorStone a.s NorStone Fraffjord 4335 Dirdal	x	Daniel Øvstebø	51 67 61 00	51 67 61 01	Sand/gravel				
1130-501 Strand	NorStone a.s NorStoneTau 4120 Tau	x	Daniel Øvstebø	51 67 61 00	51 67 61 01	Mylonite Quartz diorite	10.5 – 10.8	52 – 57	2.76 – 2.80	
1146-506 Tysvær	Amrock J.V. A/S Espevik,5560 Hinderåvåg, Tysvær	x	Tore Jonny Wollertsen	52 75 42 30	52 77 89 33	Granite	12.1 - 27	50 - 58	2.63 – 2.93	
1154-502 Vindafjord	Knapphus knuseverk Toraneset Øvre Vats 5576		Svein Ove Tyssebotn	53 76 39 16		Granite			2.71	
1133-018 Hjelmeland	NorStone Årdal 4137 Årdal i Ryfylke	x	Daniel Øvstebø	51 67 61 00	51 67 61 01	Sand/gravel				

Rogaland County - Potential deposit of aggregate

Site number Municipality	Production location	Potential	Contact person	Telephone	Fax-number	Bedrock/ colour	Quality parameters			Other
							Los Angeles	PSV	Density	
1103-503	Ådnanesnuten Strand kommune	Possible				Augen gneiss			2.66	

1141-501	Sørevågen Finnøy kommune	Possible				Gneiss			2.75	
1145-501	Sønmland Bokn kommune	Possible				Gneiss			2.64	
1146-503	Ramsvika Tysvær kommune	Possible				Gneiss			2.67	
1134-503	Ersdal Suldal kmmune	Possible				Gneiss			2.73	
1154-505	Rafoss Invest AS, Vindafjord Rock Company AS,Raunes Vindafjord komm.	Possible		53 76 12 00 NGU	53 76 05 20	Gneiss	21.4 – 40.3	51 – 54	2.62 – 2.71	
1111-504	Sokndal-Jøssingfjord Noran A/S	Possible				Anorthosite				
1111-503	Hauge i Dalane, Sokndal Titania a/s	Possible	Knut Petter Netland	51 47 80 00 90911242	51 47 80 10	Anorthosite	24.1	48	2.88	Waste from ilmenite mine
1101-504	Lædre, Eigersund	Possible				Anorthosite	10.07 – 13.4	52 - 56	2.78	

Hordaland County

Site number Municipality	Production location	Export today	Contact person	Telephone	Fax-number	Bedrock/ colour	Quality parameters			Other
							Los Angeles	PSV	Density	
1247-501	NorStone a.s NorStone Askøy 5328 Herdla	x	Daniel Øvstebø	51 67 61 00	51 67 61 01	Mylonite	14.1		2.60	
1263-501 Lindås	Eikefet pukkverk Oster pukk og sand A/S Ø. Muralm. 1, 5012 Bergen	x	Magne Aunebakk	55 36 30 00	55 36 30 10	Granite-gneiss	15 - 18	53-54	2.65 – 2.70	
1224-xxx Kvinnherad	Johs Hjelmeland AS Austrepollen 5164 Dimmelsvik		Johannes Hjelmeland	53 48 30 70 41683070	56 55 60 57	Granite-gneiss	21	50 - 52	2.71	Waste from road tunnel

Hordaland County - Potential deposit of aggregate

Site number Municipality	Production location	Potential	Contact person	Telephone	Fax-number	Bedrock/ colour	Quality parameters			Other
							Los Angeles	PSV	Density	
1222-504	Svartasmoget, SIM, 5410 Sagvåg Fitjar kommune	Possible	Terje Gilje	53 45 78 50	53 45 78 60	Granite			2.76	
1222-xxx	Gabbro Stone, Rauholmen box 344, 546224 Varnersberg, Sverige	Possible	Arvid Andersen	467086640955		Gabbro				

Site number Municipality	Production location	Potential	Contact person	Telephone	Fax-number	Bedrock/ colour	Quality parameters			Other
							Los Angeles	PSV	Density	
1222-xxx	Landasåtane, 5419 Fitjar Fitjar kommune	Possible	Fitjar kommune	53 49 71 01	53 49 73 97	Amphibolite				
1245-502	Sund Granitt AS, Nova Maritime Service A/S Postboks 3703, 5845 Bergen, Lundaneset, Sund kommune	Possible	Jan Johnsen	55 12 35 50	novajohn@start.no	Gneiss-granite	10.6 – 15.2	50 - 56	2.64	
1266-505	Eikemo Steinbrot Masfjorden	Possible	Tore Svendsen	56 36 51 00	56 36 51 05	Gneiss	25.9 – 31.1	52 - 55	2.65	
1263-504	Hodna, 5110 Isdalsstø Lindås kommune	Possible		56 35 05 55	56 35 28 00	Gabbro				
1246-505	Vindenes, Aktivest, Postboks 244, 5353 Straume, Fjell kommune	Possible	Harald Smedal	56 32 0055	56 32 01 60	Gneiss			2.74	
1241-xxx	Matland, 5640 Eikelandsosen Fusa kommune	Possible	Fusa kommune	56 56 11 00	56 58 13 38	Gneiss				
1223-501	Steinåsen, 5685 Uggdal Tysnes kommune	Possible		53 42 22 22	53 43 21 81	Quartz diorite			3.03	
1216-xxx	Ålfjorden, 5520 Sveio, Sveio komm.	Possible	Sveio kommune	53 74 01 00	52 74 00 96	Gneiss-granite				
1216-xxx	Mjuk, 5520 Sveio Sveio kommune	Possible	Sveio kommune	53 74 01 00	52 74 00 96	Gneiss-granite				

Sogn og Fjordane County

Site number Municipality	Production location	Export today	Contact person	Telephone	Fax-number	Bedrock/ colour	Quality parameters			Other
							Los Angeles	PSV	Density	
1411-504 Gulen	Halsvik Aggregates A/S, Sløvåg, 5960 Dalsøyra	x	Torbjørn Wergeland	46 84 44 47 57 78 14 40	57 78 38 76	Gneiss	20 – 24	49 - 57	2.67 - 2.71	Micro Deval: 9
1421-539 Aurland	Gudvangen stein AS, Nordic Mining Munkedamsveien 45 0250 OSLO	x	Ottar Nakken	22947720 92891780		Anorthosite White	13 - 15	58 - 60	2.88 – 3.04	Mico Deval: 12
1424-501 Årdal	Årdalitt A/S Offerdal, 6146 Åheim		Henning Hansen	70 02 43 22		Trondhjemite	26	47	2.63	

Site number Municipality	Production location	Export today	Contact person	Telephone	Fax-number	Bedrock/ colour	Quality parameters			Other
							Los Angeles	PSV	Density	
1413-504 Hyllestad	Hyllestad Pukk KOLO Veidekke, Postboks 8043, Spjelkavik, 6022 Ålesund	x	Hallvard Søvik	90148192		Trondhjemite/- quartz diorite white granite	17	49 - 51	2.62	Micro Deval: 3
1433-504 Naustal	Fjordblokk A/S Engebø, Nausdal	Closed 99		NGU		Eclogite	9.5 – 12.6	51 – 53	3.31 - 3.38	
1420-501 Sogndal	Sogndal Pukkverk Fredheim Maskin og Betong A/S , 6856 Sogndal		Arvid Fredheim	57 67 84 46 90 51 33 66	57 67 88 14	Anorthosite	18	49	2.91-2.93	Micro Deval: 5.2
1401-514 Flora	Havrøy Pukkverk Flora	Closed				Anorthosite				
1416-046 Høyanger	Bjordal Maskin ANS 5962 Bjordal		Helge Bjordal	57 71 02 80 90193233	57 71 02 81	Sand/gravel/gneiss				Export 2007
1438-515 Bremanger	Bremanger Quarry A.S, Dyrstad 6721 Svelgen	x	Hans Kuyper/Rune Mo Postboks 93 6721 Svelgen	57 79 22 00	57 79 22 01	Sandstone Green	12 -19	60-62	2.69	NGU sample 09.2001 06.2008 Micro Deval: 17
1401-508 Flora	Seljestokken, Norwegian Sandstone Export AS. 6724 Svelgen	x	Ronny Sørås	577 477 30	577 477 31	Sandstone Green	12-14	59-61	2.72- 2.76	New company NGU sample 06.08 Micro Deval: 12

Sogn og Fjordane County - Potential deposit of aggregate

Site number Municipality	Production location	Potential	Contact person	Telephone	Fax-number	Bedrock/ colour	Quality parameters			Other
							Los Angeles	PSV	Density	
1438-514 Bremanger	Gulestø, Bremanger Quarry A.S, Dyrstad 6721 Svelgen	Possible	Hans Kuyper/Rune Mo Postboks 93 6721 Svelgen	57 79 22 00	57 79 22 01	Sandstone Green	13	57 – 58	2.74	Production of armourstone 2011/2012
1438-504 and 510 Bremanger	Gotraneset - Skipperdalen	Possible	NGU			Trondhjemite Grey/white	14.7 – 17.2	50 - 58	2.68 – 2.71	
1401-506 Flora	Beidvik, Durmålhornet	Possible	NGU			Sandstone Green	11.8	56	2.74	
1429-506, Fjaler	Lutelandet	Possible	NGU			Gneiss	17-21		2.75	New ind. area

Møre og Romsdal County

Site number Municipality	Production location	Export today	Contact person	Telephone	Fax-number	Bedrock/ colour	Quality parameters			Other
							Los Angeles	PSV	Density	
1554-xxx	Gunnar Holth Kristiansund AS – Averøy Bruhagen industripark, 6530 Averøy	x	Oddvar Soma	71516040 99581789	71516041	Gneiss				Offshore
1516-505 Ulstein	Kvalnes pukkverk Ulstein Betongindustri A/S 6072 Haddal			70 01 60 04		Gneiss/granite			2.67 – 2.70	
1504-501 Ålesund	Kolo -Veidekke AS Knuseverket As, Ålesund 6019 Ålesund		Magne Mørkedal	70 17 54 00 94 73 63 76	70 17 54 10	Gneiss			2.65 – 2.72	
1504-502 Ålesund	Ufo pukkverk Kolo- Veidekke AS 6022 Spjelkavik		Magne Mørkedal	70 17 54 00 94 73 63 76		Gneiss			2.69 – 2.71	
1523-501 Ørskog	Skjöholt pukkverk 6240 Sjøholt		Karl Vaksvik Vaksvik Maskin	70 27 30 52	70 27 31 02	Dioritic gneiss			2.77 – 2.85	
1543-522 Neset	Kolo-Veidekke A.S Raudsand 6462 Raudsand		Magne Mørkedal	71 23 31 00	71 23 31 02	Gneiss/granite			2.60 – 2.66	
1551-508 Eide	Visnes Eklogitt A.S 6493 Lyngstad	x	Karl Johan Eide	71 29 56 05	71 29 55 70	Eclogite	21.9 – 23.2	59 – 61	3.14	
1548-512 Fræna	Viken Pukkverk A/S 1548 Fræna	x	Gunder Viken/ Kjell Hvattum	71 26 93 78	71 26 93 76	Gneiss	19-20	52	2.9-3.1	

Møre og Romsdal County - Potential deposit of aggregate

Site number Municipality	Production location	Potential	Contact person	Telephone	Fax-number	Bedrock/ colour	Quality parameters			Other
							Los Angeles	PSV	Density	
1523-502 Ørskog kommune	Viset pukkverk A.S Jønningshagen 40, 4316 Sandnes	Possible	Alf Follo	51 62 43 18		Gabbro black	11.9	52	3.13	
1547-502	Hollingen Aukra kommune	Possible				Gneiss/granite			2.63	

Site number Municipality	Production location	Potential	Contact person	Telephone	Fax-number	Bedrock/ colour	Quality parameters			Other
							Los Angeles	PSV	Density	
1543-501 Neset kommune	Breidvik	Possible				Gabbro			3.20	
1560-503 Tingvoll	Hammaren	Possible				Gabbro			3.15	
1566-501 Tingvoll kommune	Durmålhaugen pukkverk A.S Jønningshagen 40, 4316 Sandnes	Possible	Alf Follo	51 62 43 18		Gneiss/granite	26	52	2.69	
1560-501 Surnadal	Settem	Possible				Amphibolite/- tonalite			2.85	

Sør-Trøndelag/ Nord-Trøndelag Counties

Site number Municipality	Production location	Export today	Contact person	Telephone	Fax-number	Bedrock/ colour	Quality parameters			Other
							Los Angeles	PSV	Density	
1621-501 Ørland	Kolo Veidekke A.S Ottersbo pukkverk 7140 Opphaug	x	Ketil Oksvold	73 82 35 00 72 52 27 80	72 52 10 80	Mylonite	10.3	48 - 52	2.75 – 2.77	Some Export
1627-505 Bjugn	Bjugn Pukkverk, Valsneset NCC Roads AS Trondheim					Gneiss	12.3		2.77 – 2.81	
1633-501 Osen	Nord-Fosen pukkverk 7740 Steinsdalen	Offshore stone	Jon E Høvik	72 57 78 90 72 57 78 62	72 57 78 68	Granodiorite	27.4 – 47.5	52 - 53	2.67 – 2.69	
1724.001.04 Rissa/Verran	Ørsjødalen Norwegian Aggregates AS Sluppenveien 12E, 7037 Trondheim	(x)	Asbjørn Fossum	73824100		Sand/gravel				Sand/gravel production

Sør-Trøndelag County - Potential deposit of aggregate

Site number Municipality	Production location	Potential	Contact person	Telephone	Fax-number	Bedrock/ colour	Quality parameters			Other
							Los Angeles	PSV	Density	
1617-515	Korskammen Hitra kommune	Possible				Granodiorite Grey/white			2.70 – 2.75	

Site number Municipality	Production location	Potential	Contact person	Telephone	Fax-number	Bedrock/ colour	Quality parameters			Other
							Los Angeles	PSV	Density	
1630-506	Raudhammaren Åfjord kommune	Possible	NGU			Granite/ amphibolite				
1633-502	Langstrandheia Osen kommune	Possible	NGU			Granite-gneiss	37.9 – 70.7	54 -61	2.62 – 2.78	
1612-506/507	Gjøbergsheia/ Kammen Hemne kommune	Possible	NGU			Gneiss	23.3 27.2	52 46	2.68 2.61	
1613-505	Stokkafjellet Snillfjord kommune	Possible	NGU Snillfjord kommune	72 45 55 55	72 45 55 97	Gneiss	19.6	53	2.64	

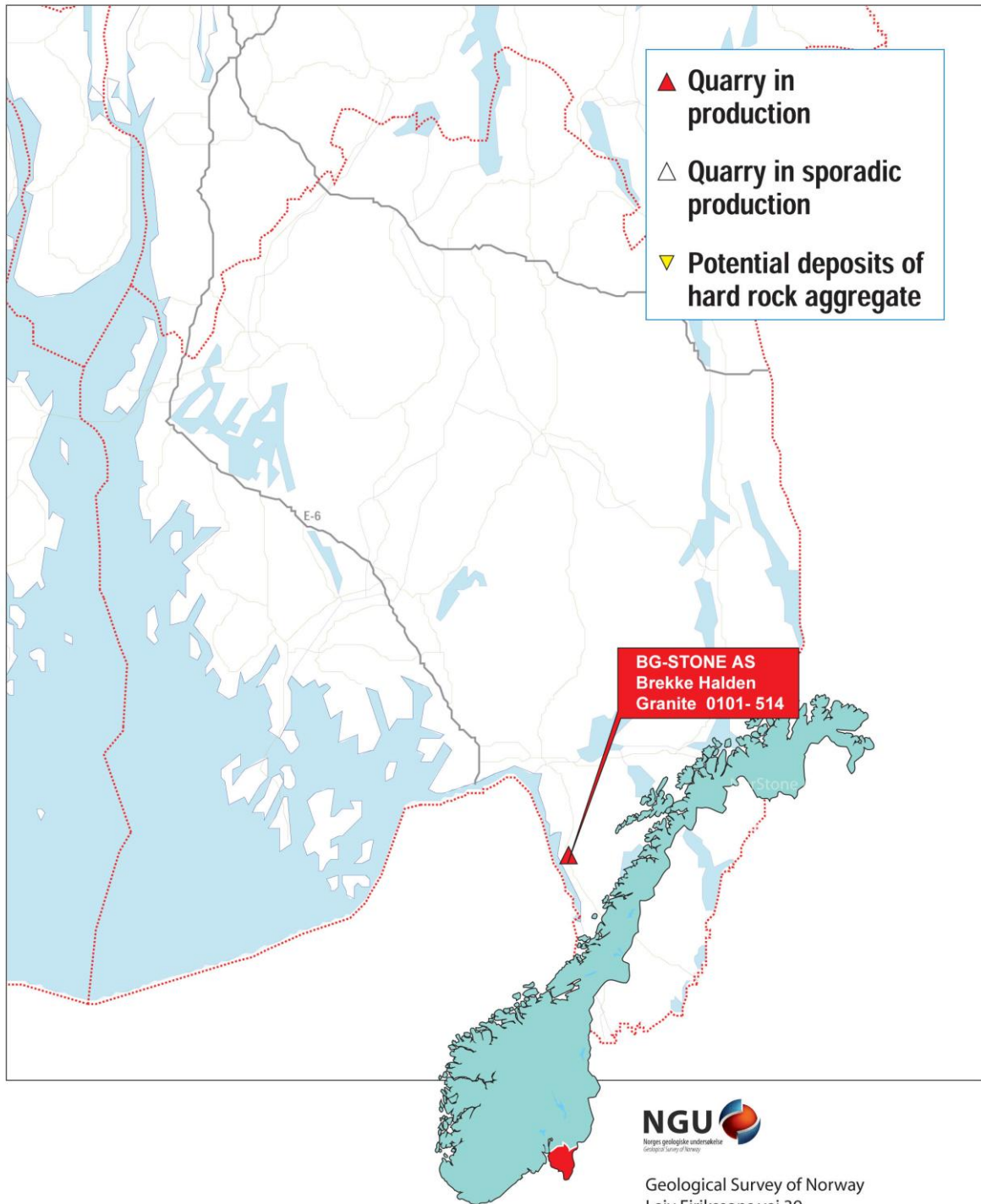
Nordland County

Site number Municipality	Production location	Export today	Contact person	Telephone	Fax-number	Bedrock/ colour	Quality parameters			Other
							Los Angeles	PSV	Density	
1854-510 Ballangen	Ballangen Aggregates AS . Boks 86 8546 Ballangen					Noritt Pyroxenite Black-green	25 - 29 9 - 10	60 55 -60	3.0	Closed Bankruptcy November 2008
1820-5xx	Aqua rock AS, 8800 Sandnessjøen	x	Bjørn Inge Aune	99011001		No information				New producer Offshore/export

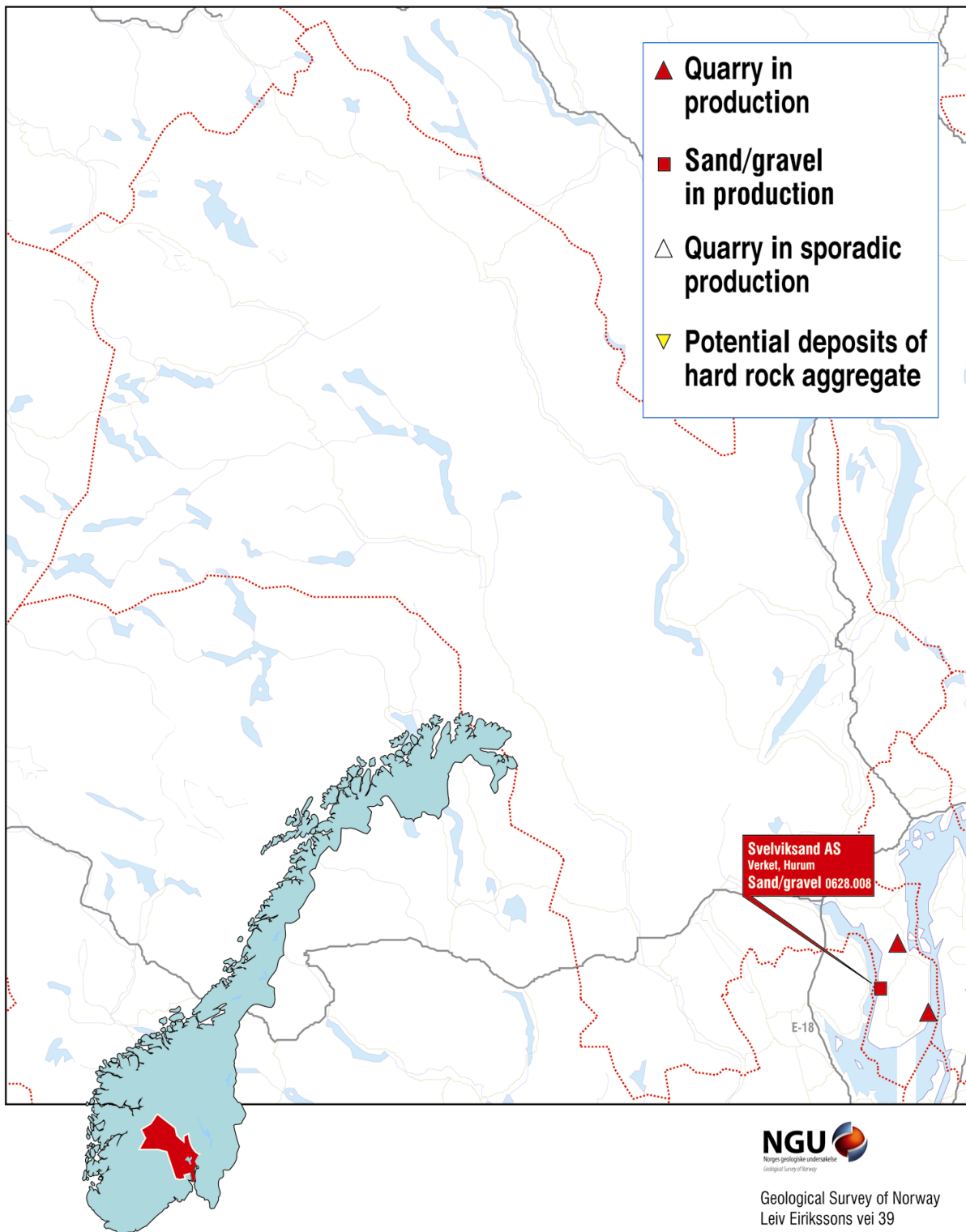
Finnmark County

Site number Municipality	Production location	Export today	Contact person	Telephone	Fax-number	Bedrock/ colour	Quality parameters			Other
							Los Angeles	PSV	Density	
2017-501 Kvalsund	Repparfjord-Kvalsund Kvalsund Aggregates AS	Offshore stone	Trorbjørn Wergeland	44844447 57 78 38 40	57 78 38 76	Quartzite/grey	15	58	2.68	New producer Offshore/export
2030-501 Sør - Varanger	Bjørnevatn Sydvaranger Aggregates A/S		Trond Dahlberg	78 97 03 00		Gneiss Grey	12 – 18	54 – 56	2.75-3.02	Waste from iron mine

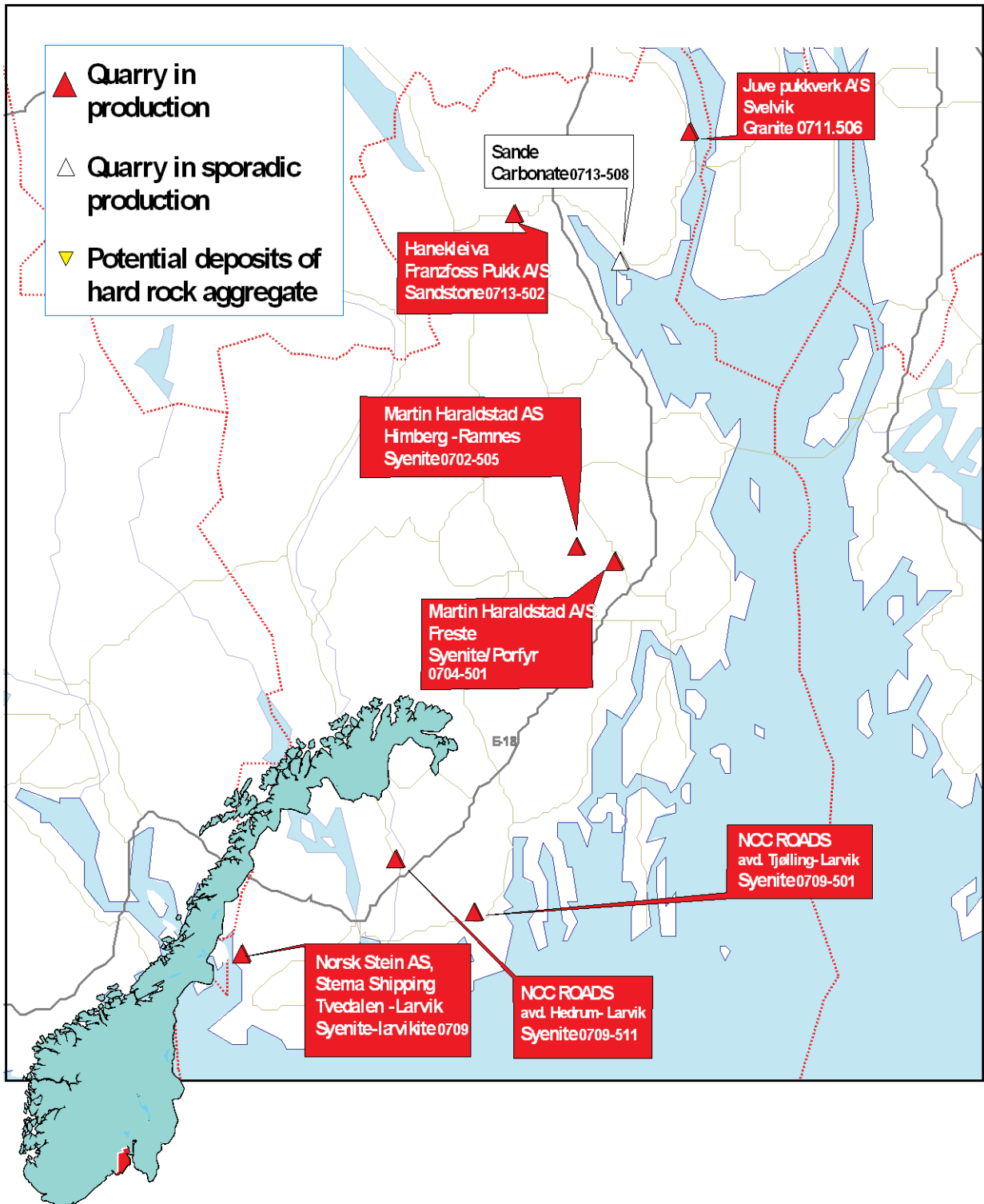
QUARRIES AND POTENTIAL DEPOSITS OF HARD ROCK AGGREGATE IN ØSTFOLD COUNTY



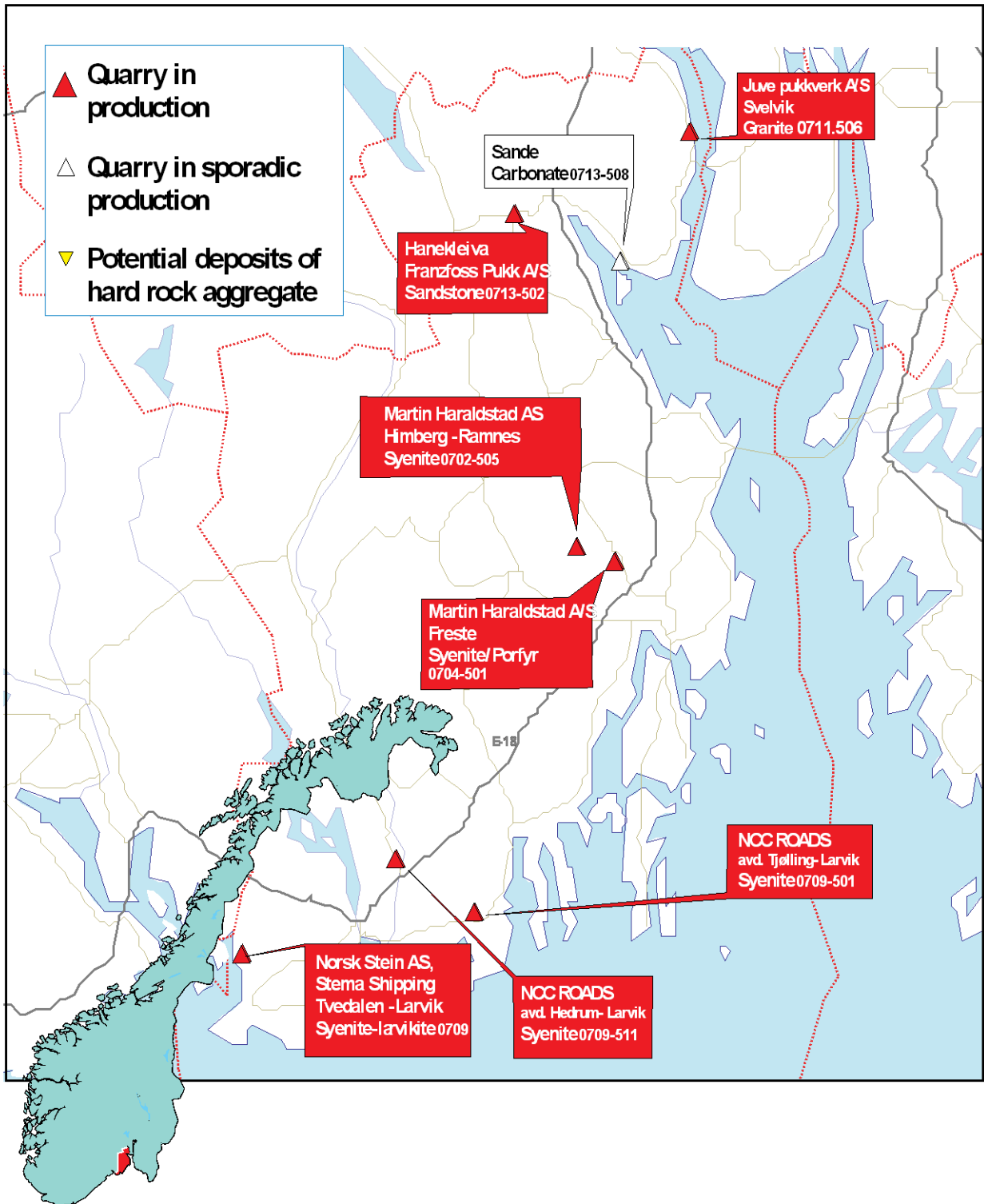
QUARRIES AND POTENTIAL DEPOSITS OF HARD ROCK AGGREGATE IN BUSKERUD COUNTY



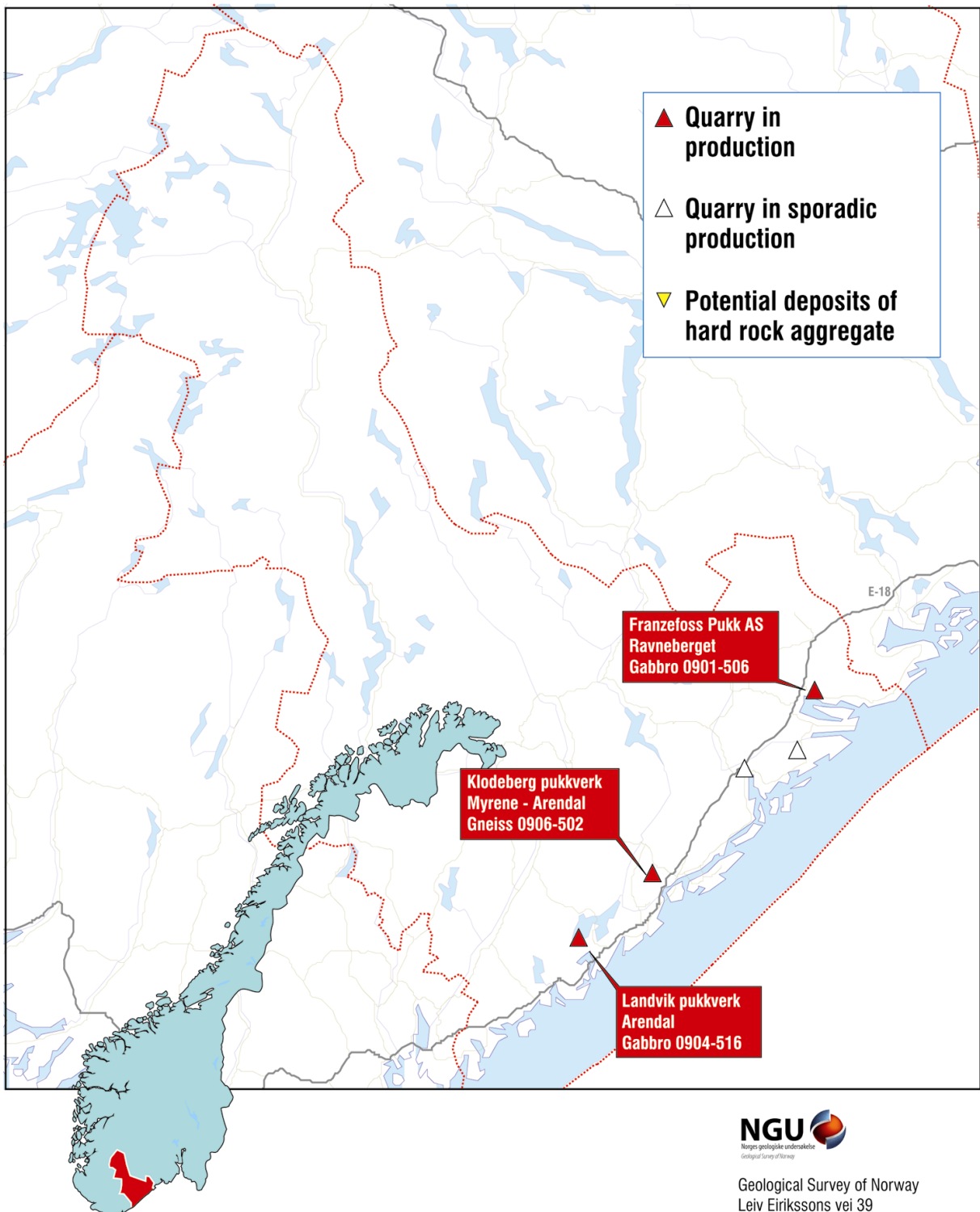
QUARRIES AND POTENTIAL DEPOSITS OF HARD ROCK AGGREGATE IN VESTFOLD COUNTY



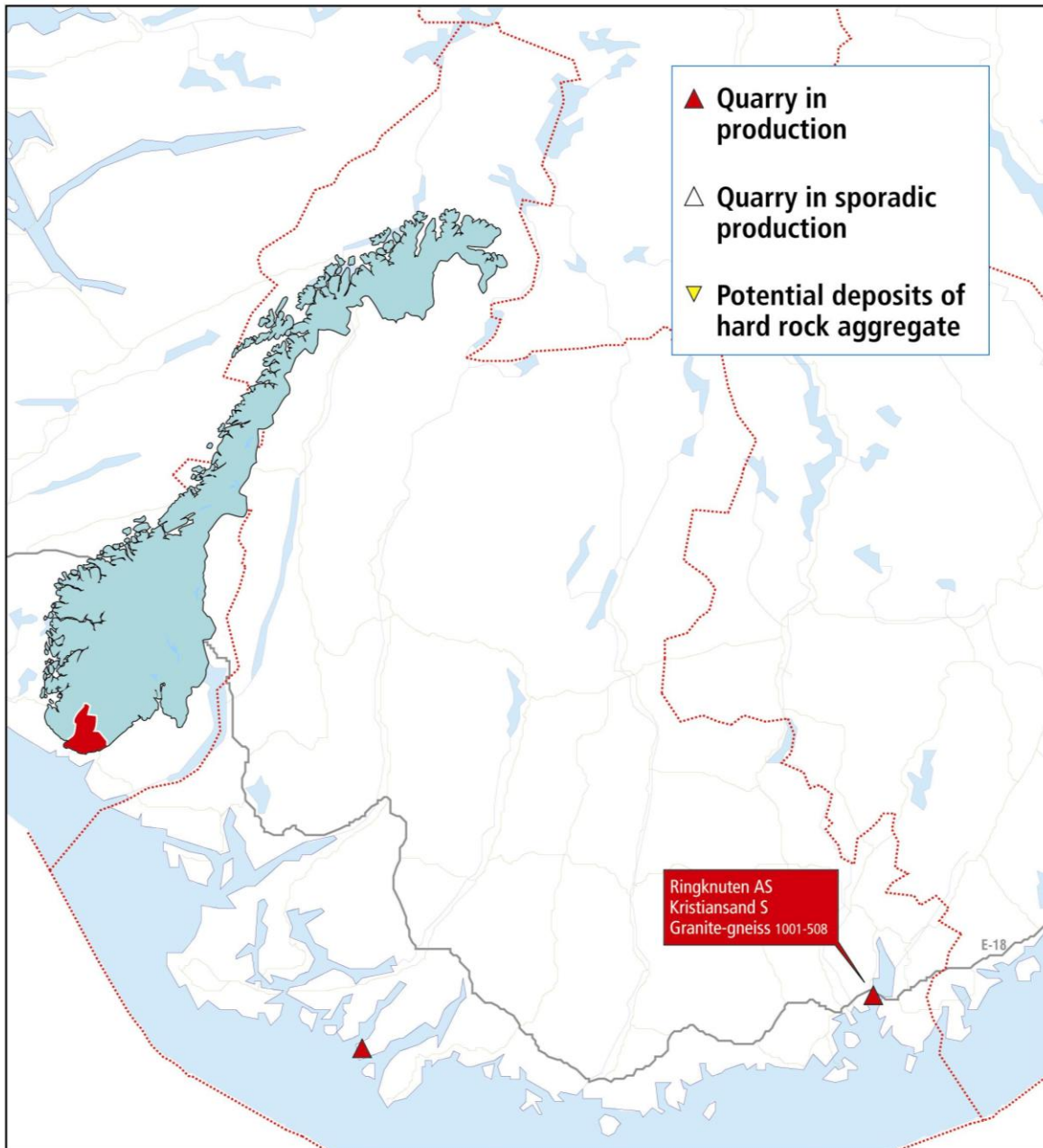
QUARRIES AND POTENTIAL DEPOSITS OF HARD ROCK AGGREGATE IN VESTFOLD COUNTY



QUARRIES AND POTENTIAL DEPOSITS OF HARD ROCK AGGREGATE IN AUST-AGDER COUNTY

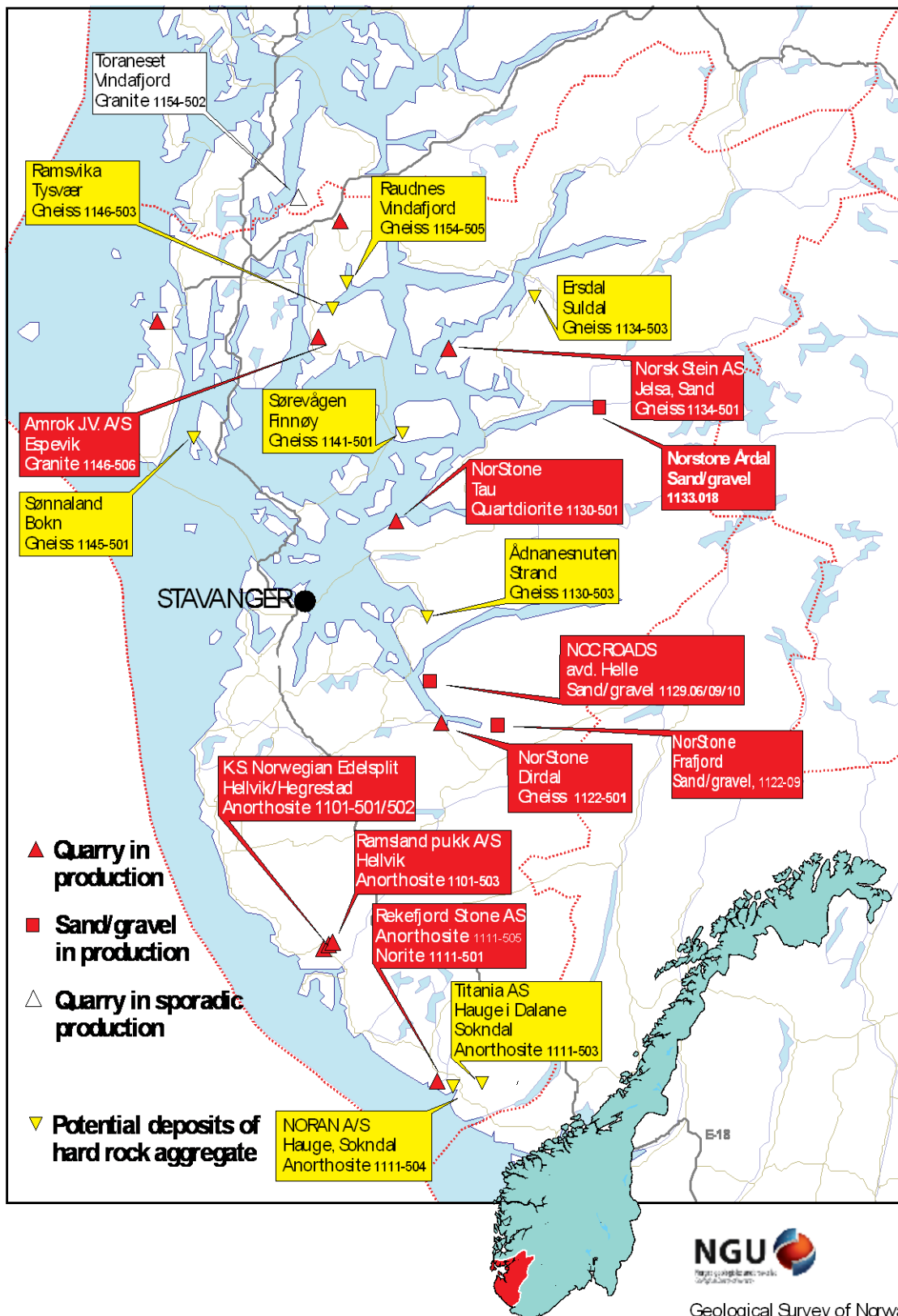


QUARRIES AND POTENTIAL DEPOSITS OF HARD ROCK AGGREGATE IN VEST-AGDER COUNTY

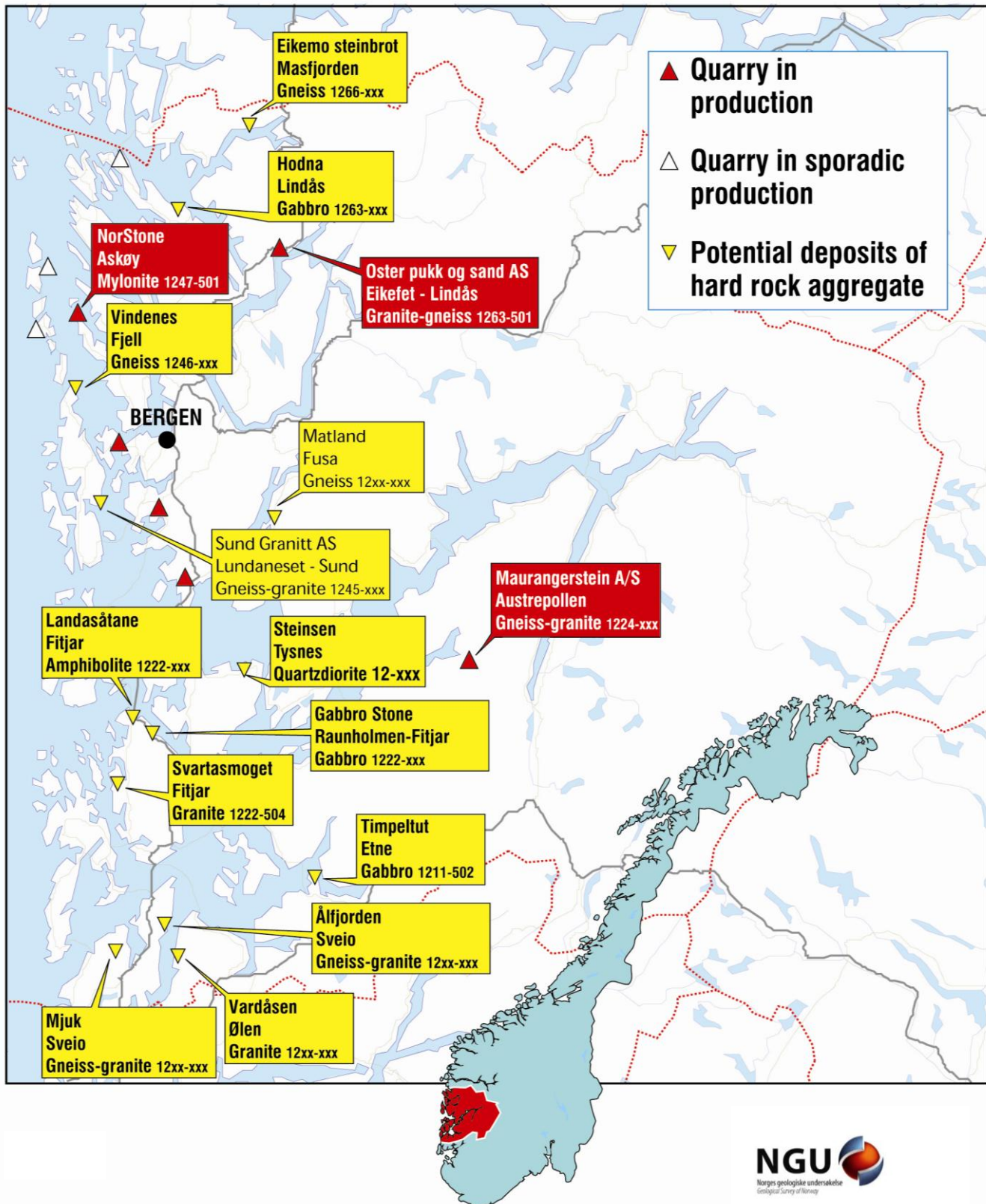


Geological Survey of Norway
Leiv Eirikssons vei 39
N-7491 Trondheim, Norway
Tel.: 47 73 90 40 00
Telefax: 47 73 92 16 20

QUARRIES AND POTENTIAL DEPOSITS OF HARD ROCK AGGREGATE IN ROGALAND COUNTY

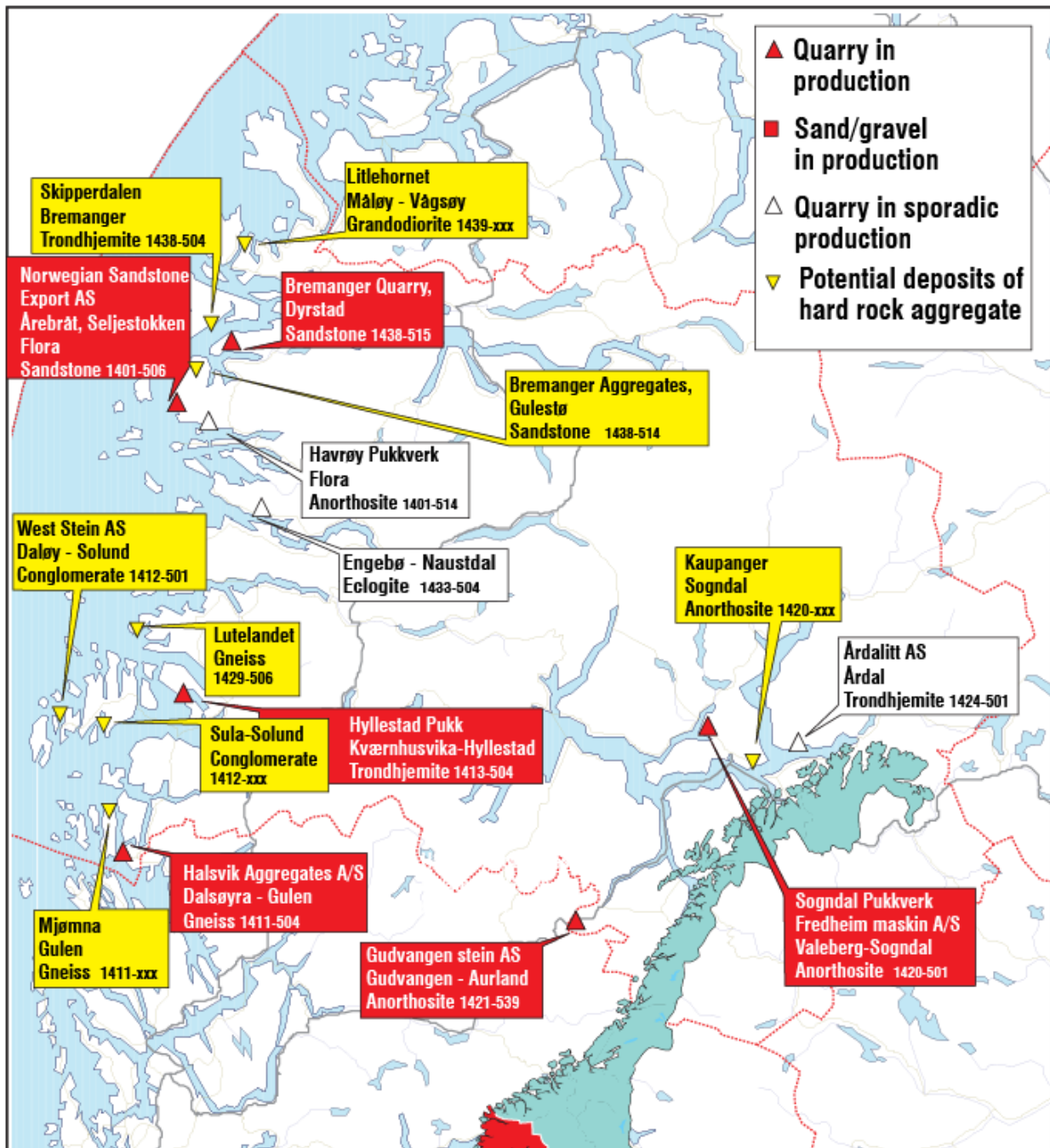


QUARRIES AND POTENTIAL DEPOSITS OF HARD ROCK AGGREGATE IN HORDALAND COUNTY



Geological Survey of Norway
N-7491 Trondheim, Norway
Tel.: 47 73 90 40 00
Telefax: 47 73 92 16 20

QUARRIES AND POTENTIAL DEPOSITS OF HARD ROCK AGGREGATE IN SOGN OG FJORDANE COUNTY



Geological Survey of Norway
Leiv Eirikssons vei 39
N-7491 Trondheim, Norway
Telephone.: 47 73 90 40 00
Telefax: 47 73 92 16 20

QUARRIES AND POTENTIAL DEPOSITS OF HARD ROCK AGGREGATE IN SØR-TRØNDELAG COUNTY

