

The importance of genetic analyses of hunter-killed brown bears for management and research in Scandinavia



Photo: Sven Brunberg

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Skandinaviska
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Introduction

The Swedish Environmental Protection Agency (Naturvårdsverket) has asked the Scandinavian Brown Bear Research Project (SBBRP) to report on the status of the available genetic analyses that have been conducted on hunter-killed brown bears and compare them with data from the scat-based bear censuses. They also asked us to give our evaluation of the value of genetic analyses of hunter-killed bears for management and research.

Present status

The SBBRP has used research funds for genetic analyses of samples from research bears and hunter-killed bears since 1987, but the project did not analyze samples from all hunter-killed bears in all years. In some years, it only analyzed hunter-killed bears from in and around the project's study areas. Since 2006, the SBBRP has only paid for the analysis of samples from research bears. In addition to this, Länsstyrelsen i Västerbotten financed the analysis of genetics samples collected from hunter-killed bears in Västerbotten in 2004 through 2007 and Länsstyrelsen i Västernorrland did the same for bears killed there in 2004. The Norwegian Directorate for Nature Management has financed the creation of a Scandinavian brown bear DNA database, which contains all of the available analyses in a compatible form (Aarnes et al. 2009), in addition to financing the analyses of all samples from Norway, samples from Jämtlands län in 2008 and 2009, and all of the Swedish samples of hunter-killed bears in 2008. We understand that samples from bears killed during the 2009 and 2010 hunting seasons, which have been sent for analysis, will be paid for by Naturvårdsverket.

The number of available genetically analyzed samples of killed bears in Sweden for each year from the Scandinavian brown bear DNA database is presented in Table 1. In Table 2, we present data on killed bears broken down by län and year from the SVA database. Note that there are some inconsistencies between these two tables, which means that more work is required to be sure that all the data are present in both databases. Eva Bellemain has extracted a list of 108 hunter-killed bears that had been identified previously in a scat-based population estimate in either Sweden or Norway from the Scandinavian brown bear DNA database (Table 3). Note that this database does not include bears killed after 2007.

The importance of genetic data for research and management to date

Research

Genetic analyses of both research and hunter-killed bears have been of major importance in increasing our knowledge about the Scandinavian brown bear and brown bears generally. The first genetic results documented that there was a sharp border between the two mitochondrial DNA lineages in Scandinavia (Taberlet et al. 1995). These results contributed to our knowledge about the brown bear's colonization of Europe following the last glacial maximum. In fact, the brown bear has become a model species to understand this phenomenon generally (Swenson et al. 2011). Our next results, based on nuclear DNA, documented the genetic diversity and genetic spatial structure of the Scandinavian brown bear (Waits et al. 2000, Manel et al. 2004) and the limited gene flow between the southern and central subpopulations (Tallmon et al. 2004). None of these studies would have been possible without samples from hunter-killed bears.

Later research focused on behavioral ecology, also requiring genetic data from hunter-killed bears. We documented spatial patterns of relatedness, and especially the existence of matrilineal assemblages that suggest that related females exclude nonkin females (Støen et al. 2005). Genetic analyses were a central part of our documentation of mate selection in bears, sexually selected infanticide, the avoidance of inbreeding, dispersal, and factors influencing

male and male reproductive performance (Bellemain et al. 2006a, 2006b, Støen et al. 2006a, 2006b, Ordiz et al. 2008, Zedrosser et al. 2007, 2009).

An important byproduct of this genetic-based research on European brown bears has been the development of genetic methods that are now used generally in research on the conservation of wildlife (Swenson et al. 2011). Here are some examples from the SBBRP's research. Working with low-grade DNA in scats led to the insight that a method to describe the quality of the results was necessary and to propose a method that is commonly used now (Bonin et al. 2004, Piggott et al. 2004, Miquel et al. 2006). It also led to new methods to determine genotypes and sex from low-grade DNA (Bellemain and Taberlet 2004, Pagès et al. 2009) and to determine the vegetative diet composition by barcoding DNA in scats (Valentini et al. 2009). At the landscape level, the SBBRP dataset, including hunter-killed bears, was used to develop methods to identify discontinuities in natural populations (Manel et al. 2007) and cryptic spatial patterns in genetic variability (Jombart et al. 2008). In addition, we developed a new program to determine parentage (Cercueil et al. 2002).

Management

The SBBRP has contributed to brown bear management by developing and testing a method to estimate population size based on noninvasively collected DNA from bear scats (Bellemain et al. 2005, Solberg et al. 2006). We also tested this method in a brown bear population in the Himalayas (Bellemain et al. 2007). This method is now used routinely to estimate the size of brown bear populations in Sweden (Kindberg et al. 2011) and a model based on it is used to estimate the minimum number of annual reproductions in Norway (Bischof and Swenson 2012). This method also is being used to estimate sizes of populations of bears and other species in many countries, primarily in Europe. The genetically based census results in Sweden have been used to verify the reliability of the method of population monitoring, based on effort-corrected hunter observations of bears, which is used routinely in Sweden (Kindberg et al. 2009).

The importance of genetic data for future research and management

Research

Probably the most important future direction of genetics-based research will be the exploitation of the data in our pedigrees, many of which now cover 5 generations or more. This will allow us to document the heritability of life-history parameters, including physical size, growth, survival, reproduction, behavioral attributes, etc. Preliminary results suggest a huge variation in the importance of individuals' contributions to population growth. It is important for researchers and managers to understand why. Our pedigrees are female-based, but it is important to have data on the fathers to make many of these calculations. Because the SBBRP prioritizes the capture and marking of females, most of the data on fathers must come from hunter-killed bears. Hunters will kill most fathers eventually, so the samples will become available. However, the samples must be analyzed genetically to identify the fathers of research bears. Very few large-carnivore research projects have pedigree data of this quality. We expect that studies based on this database will yield results that have wide general and management importance beyond what we foresee today. Research on mating, mate selection, sexual selected infanticide, etc. also will benefit from these pedigree data.

Landscape-wide genetic data can also be used to document bears' dispersal distances and directions in relation to landscape features, human settlements, bear density, sites with high stress levels (from hair cortisol), etc, by comparing a bear's birthplace (from a scat survey) and place of being killed. This would help document gene flow from the central to the

southern subpopulations, where gene flow is limited today. Landscape-wide data also can help us understand source and sink population dynamics over large scales and why some areas are suitable for bear survival and reproduction and others are not.

Management

Results from genetic-based research have already yielded knowledge that is being used today by managers in both Sweden and Norway. A continuation of this type of research certainly will yield more important knowledge for management, although some of these results are difficult to foresee today. Nevertheless, there are several obvious lines of management-based research that are based on the analysis of hunter-killed bears. Some examples are: 1) Genetic identification of hunter-killed bears following a DNA-based population estimate would allow managers to obtain an evaluation of the level of hunting that is independent of that obtained by comparing the number killed in relation to the scat-based population estimate. This would also be an independent test of the accuracy of the scat-based population estimate. 2) The rate of appearance (or nonappearance) of bears that are identified genetically in scat surveys in subsequent hunter harvests can allow one to estimate rates of mortality that are not caused by legal hunting. Richard Bischof will develop a model to conduct this type of estimation in his ongoing postdoctorate project. This should allow the estimation of rates of illegal and other nonhunting mortality throughout the country and not only where radioed bears occur. 3) Managers would be able to identify areas with regular movement over län and national borders, which might be important knowledge for setting hunting quotas in some areas. 4) Over time, we should be able to document the occurrence of matrilineal assemblages throughout the country. Given the variable harvest rates the bear population has experienced, we should be able to determine whether these assemblages are affected by variations in hunter harvest. 5) A Scandinavia-wide genetic database might help solve some cases of illegal harvest, using genetic methods for forensics.

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Table 1. Genetically analyzed samples from killed brown bears from Sweden that are in the Scandinavian brown bear DNA database, by year of kill, with the number of hunter-killed bears for each year for comparison. The data have been extracted by Eva Bellemain.

Year	Number hunter-killed bears	Number of analyzed samples from hunter-killed bears
1981	16	1
1985	27	1
1986	35	8
1987	41	2
1988	45	10
1989	49	13
1990	42	5
1991	46	25
1992	34	30
1993	34	32
1994	30	31
1995	36	39
1996	30	25
1997	48	40
1998	49	44
1999	51	50
2000	57	32
2001	63	43
2002	62	64
2003	75	69
2004	101	103
2005	112	78
2006	129	136
2007	181	201

Table 2. DNA samples of all killed bears at SVA, by län and year, 2000-2007. Bears that were captured for research are not included until they were killed. "S" indicates the number of samples and, for comparison, "K" indicates the number of bears killed during the hunting season that year. The samples from 2008-2010 (shown in italics) have been sent to LECA, but no results have been received at the time of writing. Not shown in the table is 1 sample from Kalmar län, 2000. The data have been extracted by Arne Söderberg.

Year	Norrbotten		Västerbotten		Jämtland		Västernorrland		Dalarna		Gävleborg		Värmland	
	S	K	S	K	S	K	S	K	S	K	S	K	S	K
2000	12	11	9	8	18	15	0	-	24	17	9	6	1	-
2001	13	13	9	8	26	16	3	3	18	15	6	6	1	1
2002	13	10	10	9	19	17	3	3	22	15	13	6	2	2
2003	20	15	15	11	25	19	5	4	21	19	7	7	0	0
2004	17	20	11	14	32	27	6	5	26	25	12	10	0	0
2005	14	25	10	10	15	31	0	9	19	22	12	14	2	2
2006	7	26	20	19	15	33	4	5	19	27	14	18	1	1
2007	59	46	27	22	48	40	16	15	36	31	27	25	2	2
<i>2008</i>	<i>42</i>	<i>21</i>	<i>30</i>	<i>24</i>	<i>79</i>	<i>70</i>	<i>14</i>	<i>13</i>	<i>42</i>	<i>35</i>	<i>33</i>	<i>30</i>	<i>2</i>	<i>2</i>
<i>2009</i>	<i>72</i>	<i>55</i>	<i>25</i>	<i>25</i>	<i>77</i>	<i>61</i>	<i>22</i>	<i>21</i>	<i>41</i>	<i>35</i>	<i>40</i>	<i>37</i>	<i>1</i>	<i>1</i>
<i>2010</i>	<i>89</i>	<i>72</i>	<i>28</i>	<i>25</i>	<i>100</i>	<i>91</i>	<i>18</i>	<i>17</i>	<i>39</i>	<i>35</i>	<i>41</i>	<i>40</i>	<i>1</i>	<i>1</i>

Table 3. A summary of the 108 hunter-killed brown bears in Scandinavia that had been identified genetically previously in a scat-based population estimate. The data base is up-to-date through 2007. The headings are: Ind. Id = an id number that identifies an individual in the table; sample id = either the scat sample id number (uncolored) or the id number of the killed bear (yellow); sample type = 1 is scat sample, 5 is hunter-killed sample; Sample date; Sex = 1 for male, 2 for female, X and Y coordinates in the Swedish national grid system "Rikets nät"; XW-ID indicates bears that were identified in the scat survey in Dalarna and Gävleborg in 2001 and 2002; Y-ID indicates bears that were identified in the scat survey in Västernorrland in 200; Z-ID indicates bears that were identified in the scat survey in Jämtland in 2006; and AC-ID indicates bears that were identified in the scat survey in Västerbotten in 2004. The data have been extracted from the Scandinavian brown bear DNA database by Eva Bellemain.

Ind id	sample id	sample type	sample date	sex	X coordinate	Y coordinate	XW-ID	Y-ID	Z-ID	AC-ID
1	15230	1	None	1	1446648	7080540	0	0	1	0
1	344	1	20.09.2006	1	1401300	7086692	0	0	1	0
1	4298	1	21.08.2006	1	1450457	7045254	0	0	1	0
1	V111407	5	03.09.2007	1	1411020	7085600	0	0	0	0
2	1143	1	18.10.2006	1	1357758	6967401	0	0	1	0
2	744	1	04.09.2006	1	1340826	6955931	0	0	1	0
2	V119907	5	19.09.2007	1	1355715	6965805	0	0	0	0
3	11150	1	08.10.2006	1	1353876	6969729	0	0	1	0
3	1131	1	21.09.2006	1	1376810	6975857	0	0	1	0
3	13568	1	01.10.2006	1	1390808	7020763	0	0	1	0
3	13591	1	13.10.2006	1	1380128	7021549	0	0	1	0
3	5635	1	13.10.2006	1	1377735	7023771	0	0	1	0
3	793	1	07.09.2006	1	1339750	6941742	0	0	1	0
3	8586	1	28.08.2006	1	1363940	6964520	0	0	1	0
3	8873	1	09.09.2006	1	1366680	6963149	0	0	1	0
3	8883	1	27.08.2006	1	1363400	6963678	0	0	1	0
3	8912	1	15.09.2006	1	1373103	6970900	0	0	1	0
3	8935	1	22.09.2006	1	1359554	6973985	0	0	1	0
3	V147507	5	04.09.2007	1	1361809	6935680	0	0	0	0
4	1147	1	30.08.2006	1	1402670	6948353	0	0	1	0
4	11725	1	17.09.2006	1	1414059	6914018	0	0	1	0
4	V169506	5	30.08.2006	1	1405300	6949700	0	0	0	0
5	1774	1	09.10.2006	2	1442799	7142542	0	0	1	0
5	V153707	5	03.11.2007	2	1430150	7145880	0	0	0	0
6	1798	1	04.09.2006	2	1457041	7133069	0	0	1	0
6	V093307	5	07.07.2007	2	1452070	7136660	0	0	0	0
7	15879	1	10.09.2006	2	1464250	7123840	0	0	1	0
7	1813	1	22.08.2006	2	1458607	7127839	0	0	1	0
7	1863	1	05.09.2006	2	1461011	7123582	0	0	1	0
7	15917	1	26.08.2006	3	1457656	7117500	0	0	1	0
7	V169206	5	05.09.2006	2	1469527	7122893	0	0	0	0
8	2628	1	15.09.2006	2	1488401	7139101	0	0	1	0
8	V198906	5	05.10.2006	2	1496050	7175080	0	0	0	0
9	2970	1	15.09.2006	2	1471969	7139823	0	0	1	0
9	V178206	5	15.09.2006	2	1471632	7139878	0	0	0	0
10	3064	1	20.09.2006	1	1475838	7160080	0	0	1	0
10	3382	1	21.09.2006	1	1482396	7168481	0	0	1	0
10	V199006	5	04.10.2006	1	1482700	7172400	0	0	0	0
11	3237	1	27.08.2006	1	1507520	7064290	0	0	1	0

11	3239	1	21.08.2006	1	1507940	7065350	0	0	1	0
11	3275	1	07.09.2006	1	1499403	7077016	0	0	1	0
11	3276	1	07.09.2006	1	1498338	7074972	0	0	1	0
11	3282	1	03.10.2006	1	1492181	7075491	0	0	1	0
11	3550	1	03.09.2006	1	1498895	7074521	0	0	1	0
11	3554	1	03.09.2006	1	1499452	7075516	0	0	1	0
11	3555	1	03.09.2006	1	1502588	7070819	0	0	1	0
11	3782	1	02.09.2006	1	1480092	7076618	0	0	1	0
11	3842	1	24.09.2006	1	1486814	7071274	0	0	1	0
11	3900	1	24.09.2006	1	1491349	7065148	0	0	1	0
11	3904	1	16.09.2006	1	1488815	7067542	0	0	1	0
11	3912	1	06.09.2006	1	1480705	7069291	0	0	1	0
11	3923	1	23.09.2006	1	1478742	7068649	0	0	1	0
11	4357	1	05.09.2006	1	1497590	7062455	0	0	1	0
11	4360	1	04.09.2006	1	1501075	7065320	0	0	1	0
11	4361	1	07.09.2006	1	1498010	7066161	0	0	1	0
11	4362	1	10.09.2006	1	1497382	7062303	0	0	1	0
11	4363	1	26.09.2006	1	1497769	7062190	0	0	1	0
11	4365	1	01.10.2006	1	1497127	7066254	0	0	1	0
11	4366	1	None	1	1497653	7066051	0	0	1	0
11	Ech673	1	06.09.2004	1	1499748	7061003	0	1	0	0
11	V111707	5	04.09.2007	1	1499500	7072500	0	0	0	0
12	3633	1	None	2	1460261	7139660	0	0	1	0
12	3634	1	05.09.2006	2	1456932	7143443	0	0	1	0
12	3636	1	16.09.2006	2	1457872	7139023	0	0	1	0
12	3639	1	18.09.2006	2	1459833	7138842	0	0	1	0
12	3685	1	16.09.2006	2	1454989	7138737	0	0	1	0
12	3687	1	18.09.2006	2	1460177	7139085	0	0	1	0
12	V105707	5	26.08.2007	2	1461843	7136514	0	0	0	0
13	15820	1	08.09.2006	1	1464410	7112709	0	0	1	0
13	3969	1	24.09.2006	1	1469011	7115989	0	0	1	0
13	3974	1	24.09.2006	1	1468013	7116997	0	0	1	0
13	3975	1	24.09.2006	1	1468303	7116492	0	0	1	0
13	3978	1	25.09.2006	1	1467197	7116803	0	0	1	0
13	4013	1	02.09.2006	1	1466347	7109165	0	0	1	0
13	V105407	5	23.08.2007	1	1466721	7107500	0	0	0	0
14	4184	1	12.09.2006	1	1449969	7058418	0	0	1	0
14	5079	1	11.09.2006	1	1458432	7068136	0	0	1	0
14	5991	1	11.09.2006	1	1434030	7065979	0	0	1	0
14	6173	1	03.10.2006	1	1446836	7036020	0	0	1	0
14	V111307	5	03.09.2007	1	1461278	7086721	0	0	0	0
15	4669	1	03.10.2006	2	1455012	7098178	0	0	1	0
15	4732	1	09.09.2006	2	1442751	7083465	0	0	1	0
15	4794	1	07.09.2006	2	1457935	7095238	0	0	1	0
15	V107607	5	31.08.2007	2	1453430	7097893	0	0	0	0
16	6633	1	24.09.2006	1	1496792	6986942	0	0	1	0
16	6795	1	10.09.2006	2	1518535	6971719	0	0	1	0
16	6988	1	11.10.2006	1	1498007	6980317	0	0	1	0
16	6991	1	13.10.2006	1	1498612	6977435	0	0	1	0
16	7000	1	14.10.2006	1	1499990	6995621	0	0	1	0
16	V119307	5	15.09.2007	1	1376519	6846684	0	0	0	0
17	7155	1	13.10.2006	2	1488844	7029813	0	0	1	0
17	V111607	5	03.09.2007	2	1490081	7033974	0	0	0	0
18	7422	1	21.08.2006	2	1511997	7020000	0	0	1	0

18	V161606	5	21.08.2006	2	1510700	7021600	0	0	0	0
19	14179	1	07.10.2006	1	1434497	6961097	0	0	1	0
19	14190	1	07.10.2006	1	1430723	6947072	0	0	1	0
19	14191	1	07.10.2006	1	1432209	6947301	0	0	1	0
19	7843	1	07.10.2006	1	1438154	6947722	0	0	1	0
19	7860	1	15.09.2006	1	1436310	6953760	0	0	1	0
19	7864	1	23.09.2006	1	1439323	6951400	0	0	1	0
19	7892	1	17.10.2006	1	1431085	6954324	0	0	1	0
19	8197	1	05.09.2006	1	1436810	6936620	0	0	1	0
19	8241	1	24.09.2006	1	1432597	6927219	0	0	1	0
19	8242	1	15.10.2006	1	1432649	6925855	0	0	1	0
19	8257	1	06.09.2006	1	1435424	6937936	0	0	1	0
19	8261	1	09.09.2006	1	1437529	6942405	0	0	1	0
19	8274	1	07.09.2006	1	1435518	6934594	0	0	1	0
19	8289	1	05.09.2006	1	1439964	6938516	0	0	1	0
19	8291	1	03.09.2006	1	1441300	6937110	0	0	1	0
19	8300	1	15.10.2006	1	1441298	6934335	0	0	1	0
19	8304	1	05.09.2006	1	1435450	6931436	0	0	1	0
19	8306	1	13.10.2006	1	1440788	6936309	0	0	1	0
19	8411	1	07.09.2006	1	1431749	6922624	0	0	1	0
19	8435	1	08.09.2006	1	1424618	6916197	0	0	1	0
19	8441	1	07.09.2006	1	1427351	6920366	0	0	1	0
19	8502	1	14.10.2006	1	1439328	6934010	0	0	1	0
19	V119607	5	15.09.2007	1	1441200	6935400	0	0	0	0
20	8333	1	15.09.2006	2	1447226	6925092	0	0	1	0
20	V104707	5	22.08.2007	2	1445661	6932672	0	0	0	0
21	9314	1	13.09.2006	2	1330330	6939291	0	0	1	0
21	V069107	5	21.05.2007	2	1313000	6936000	0	0	0	0
22	10601	1	02.09.2006	1	1451550	6887270	0	0	1	0
22	10727	1	24.08.2006	1	1439018	6893070	0	0	1	0
22	12284	1	15.10.2006	1	1449951	6889157	0	0	1	0
22	12292	1	30.09.2006	1	1450334	6886425	0	0	1	0
22	12317	1	24.09.2006	1	1460063	6883937	0	0	1	0
22	12318	1	23.09.2006	1	1460788	6884046	0	0	1	0
22	12376	1	14.10.2006	1	1460014	6885018	0	0	1	0
22	12378	1	09.10.2006	1	1459081	6886617	0	0	1	0
22	12379	1	09.10.2006	1	1457295	6885784	0	0	1	0
22	12381	1	15.10.2006	1	1461277	6887273	0	0	1	0
22	12417	1	15.10.2006	1	1454157	6880706	0	0	1	0
22	13176	1	10.09.2006	1	1446524	6877613	0	0	1	0
22	9798	1	14.10.2006	1	1447212	6872747	0	0	1	0
22	9855	1	11.09.2006	1	1452760	6883273	0	0	1	0
22	9856	1	11.09.2006	1	1452627	6883462	0	0	1	0
22	9871	1	15.10.2006	1	1449309	6883576	0	0	1	0
22	9938	1	11.09.2006	1	1464786	6877943	0	0	1	0
22	Ech219	1	11.10.2004	1	1470168	6936359	0	1	0	0
22	Ech259	1	18.10.2004	1	1469205	6941005	0	1	0	0
22	V104907	5	25.08.2007	1	1451294	6889996	0	0	0	0
23	12410	1	06.09.2006	1	1462860	6892501	0	0	1	0
23	9866	1	11.09.2006	1	1447200	6885893	0	0	1	0
23	V112907	5	04.09.2007	1	1499617	6874221	0	0	0	0
24	10159	1	06.09.2006	1	1388990	6901304	0	0	1	0
24	V119107	5	12.09.2007	1	1334578	6888793	0	0	0	0
25	10501	1	04.09.2006	2	1392089	6907858	0	0	1	0

25	10502	1	07.09.2006	2	1391214	6909560	0	0	1	0
25	11434	1	15.10.2006	2	1382709	6915963	0	0	1	0
25	16645	1	01.10.2006	2	1385437	6910775	0	0	1	0
25	16659	1	01.10.2006	2	1385272	6910337	0	0	1	0
25	16669	1	01.10.2006	2	1385762	6911237	0	0	1	0
25	16693	1	01.10.2006	2	1385550	6911045	0	0	1	0
25	V115907	5	03.09.2007	2	1377179	6903711	0	0	0	0
25	16771	1	01.10.2006	3	1385601	6911155	0	0	1	0
26	10637	1	27.09.2006	2	1386150	6878204	0	0	1	0
26	10805	1	12.09.2006	2	1383438	6860257	0	0	1	0
26	12856	1	22.09.2006	2	1392511	6864789	0	0	1	0
26	V106907	5	24.08.2007	2	1386000	6859900	0	0	0	0
27	10657	1	22.09.2006	2	1422952	6864519	0	0	1	0
27	10658	1	04.09.2006	2	1425451	6867172	0	0	1	0
27	10668	1	09.09.2006	2	1425322	6865132	0	0	1	0
27	10660	1	23.09.2006	2	1421863	6868822	0	0	1	0
27	10681	1	06.09.2006	1	1385011	6886547	0	0	1	0
27	10703	1	01.10.2006	2	1404618	6874146	0	0	1	0
27	13290	1	04.09.2006	2	1411602	6873203	0	0	1	0
27	10721	1	11.09.2006	2	1394055	6874095	0	0	1	0
27	02ZZ06	5	02.09.2002	2	1405500	6921500	0	0	0	0
28	12929	1	16.09.2006	1	1427585	6865703	0	0	1	0
28	V120607	5	19.09.2007	1	1361196	6861949	0	0	0	0
29	12939	1	04.09.2006	1	1433805	6876113	0	0	1	0
29	13067	1	20.09.2006	1	1423882	6894736	0	0	1	0
29	V115607	5	06.09.2007	1	1423050	6897170	0	0	0	0
30	15745	1	06.09.2006	2	1348578	6922454	0	0	1	0
30	V126507	5	08.09.2007	2	1463200	6824900	0	0	0	0
31	9215	1	20.09.2006	3	1349149	6921198	0	0	1	0
31	00BD05	5	06.09.2000	1	1580700	7437900	0	0	0	0
32	BD088	5	14.05.1999	1	1580700	7437900	0	0	0	0
32	01X01	5	21.08.2001	2	1484135	6815465	0	0	0	0
33	B758	1	12.10.2001	2	1485000	6822000	1	0	0	0
33	01X05	5	08.09.2001	1	1565300	6757500	0	0	0	0
34	B227	1	15.09.2001	1	1465100	6842900	1	0	0	0
34	B225	1	01.08.2001	3	1565500	6754500	1	0	0	0
34	02BD99	5	16.05.2002	1	1614100	7373300	0	0	0	0
35	B524	1	08.10.2001	2	1420000	6810400	1	0	0	0
35	B528	1	30.09.2001	2	1420200	6808500	1	0	0	0
35	02XX02	5	21.08.2002	1	1530000	6730750	0	0	0	0
36	E014	1	26.03.2002	1	1432500	6688000	1	0	0	0
36	02XX98	5	03.05.2002	1	1530660	6718800	0	0	0	0
37	B577	1	27.09.2001	1	1537600	6726700	1	0	0	0
37	03WW12	5	04.09.2003	2	1484122	6751790	0	0	0	0
38	E530	1	17.10.2002	2	1480300	6740000	1	0	0	0
38	03WW13	5	04.09.2003	2	1503500	6751000	0	0	0	0
39	B279	1	01.09.2001	2	1499100	6762800	1	0	0	0
39	B862	1	20.09.2001	2	1500600	6744700	1	0	0	0
39	C026	1	14.06.2001	2	1491000	6766000	1	0	0	0
39	E166	1	14.09.2002	2	1500600	6748600	1	0	0	0
39	E168	1	13.09.2002	2	1500900	6747800	1	0	0	0
39	E174	1	15.09.2002	2	1500000	6746000	1	0	0	0
39	E175	1	15.09.2002	2	1499000	6747000	1	0	0	0
39	E178	1	21.09.2002	2	1493000	6748100	1	0	0	0

39	E422	1	06.10.2002	2	1495000	6755000	1	0	0	0
39	E430	1	26.09.2002	2	1501900	6749000	1	0	0	0
39	E431	1	06.10.2002	2	1500600	6749500	1	0	0	0
39	E432	1	05.10.2002	2	1493000	6755000	1	0	0	0
39	03WW14	5	05.09.2003	1	1482200	6761200	0	0	0	0
40	B300	1	16.08.2001	1	1487700	6759800	1	0	0	0
40	B501	1	18.10.2001	1	1471100	6781900	1	0	0	0
40	C180	1	04.10.2001	1	1474000	6782100	1	0	0	0
40	E163	1	18.09.2002	1	1501800	6748700	1	0	0	0
40	E176	1	17.09.2002	1	1500000	6751000	1	0	0	0
40	E177	1	19.09.2002	1	1500000	6751000	1	0	0	0
40	E345	1	08.10.2002	1	1480300	6777700	1	0	0	0
40	E346	1	07.10.2002	1	1486000	6765800	1	0	0	0
40	E425	1	28.09.2002	1	1501000	6757000	1	0	0	0
40	E429	1	06.10.2002	1	1501000	6763000	1	0	0	0
40	E477	1	None	1	1491100	6766900	1	0	0	0
40	E478	1	None	1	1491100	6766900	1	0	0	0
40	E479	1	None	1	1491100	6766900	1	0	0	0
40	E500	1	None	1	1490700	6765900	1	0	0	0
40	E501	1	None	1	1490000	6768000	1	0	0	0
40	E504	1	16.10.2002	1	1490100	6765600	1	0	0	0
40	E517	1	19.10.2002	1	1501100	6752000	1	0	0	0
40	E520	1	21.10.2002	1	1498000	6751000	1	0	0	0
40	E625	1	09.09.2002	1	1477200	6766500	1	0	0	0
40	E666	1	12.10.2002	1	1491600	6766400	1	0	0	0
40	E668	1	12.10.2002	1	1491600	6766200	1	0	0	0
40	E669	1	12.10.2002	1	1491600	6766300	1	0	0	0
40	E750	1	02.10.2002	1	1424000	6763000	1	0	0	0
40	E752	1	05.10.2002	1	1481300	6774000	1	0	0	0
41	03WW16	5	06.09.2003	2	1470253	6768108	0	0	0	0
41	E635	1	15.10.2002	2	1472700	6768400	1	0	0	0
42	03XX04	5	30.08.2003	2	1497731	6821547	0	0	0	0
42	B630	1	09.10.2001	2	1485000	6837500	1	0	0	0
42	E580	1	21.09.2002	2	1486000	6831000	1	0	0	0
43	03YY01	5	03.09.2003	1	1593490	6983564	0	0	0	0
43	B195	1	15.09.2001	1	1487000	6853000	1	0	0	0
43	B197	1	None	1	1486500	6853000	1	0	0	0
43	B606	1	09.10.2001	1	1488500	6852500	1	0	0	0
43	B609	1	26.09.2001	1	1485500	6851500	1	0	0	0
43	E272	1	25.09.2002	1	1518300	6885800	1	0	0	0
43	E273	1	26.09.2002	1	1519200	6884900	1	0	0	0
43	E258	1	25.09.2002	1	1518900	6885100	1	0	0	0
44	04XX99	5	None	3	0	0	0	0	0	0
44	E012	1	16.04.2002	1	1495800	6755000	1	0	0	0
44	E013	1	23.04.2002	1	1495800	6756500	1	0	0	0
44	E470	1	03.10.2002	1	1553500	6727800	1	0	0	0
44	E490	1	29.09.2002	1	1548600	6728700	1	0	0	0
44	E493	1	29.09.2002	1	1548600	6728700	1	0	0	0
44	E498	1	02.10.2002	1	1554100	6733700	1	0	0	0
44	E705	1	26.09.2002	1	1549700	6745900	1	0	0	0
44	E783	1	02.08.2002	1	1556800	6751300	1	0	0	0
44	E790	1	29.10.2002	1	1549800	6746000	1	0	0	0
45	92ZZ06	5	09.09.1992	1	1508500	7102000	0	0	0	0
45	Ech415	1	12.09.2004	1	1560000	7090500	0	1	0	0

45	Ech421	1	15.09.2004	1	1548291	7081078	0	1	0	0
45	Ech689	1	12.09.2004	1	1545386	7100000	0	1	0	0
46	Ech202	1	11.10.2004	1	1628985	7097714	0	1	0	0
46	Ech548	1	08.09.2004	1	1615573	7091346	0	1	0	0
46	V127407	5	15.09.2007	1	1611700	7106200	0	0	0	0
47	B462	1	04.10.2001	1	1466500	6847500	1	0	0	0
47	B466	1	05.10.2001	1	1466600	6847500	1	0	0	0
47	B477	1	08.10.2001	1	1445300	6842200	1	0	0	0
47	V190706	5	05.09.2006	1	1468460	6828025	0	0	0	0
48	98SS18	5	14.09.1998	2	1408600	6769700	0	0	0	0
48	B154	1	24.09.2001	2	1457000	6816300	1	0	0	0
48	C092	1	02.09.2001	2	1458700	6812800	1	0	0	0
48	ASE043	1	16.09.2004	2	1561979	7106335	0	0	0	1
48	ASE137	1	19.10.2004	2	1555749	7106556	0	0	0	1
48	ASE056	1	10.09.2004	2	1562405	7103179	0	0	0	1
48	ASE088	1	19.09.2004	2	1560591	7108060	0	0	0	1
48	ASE089	1	19.09.2004	2	1564619	7103090	0	0	0	1
48	ASE114	1	12.09.2004	2	1561643	7107518	0	0	0	1
48	ASE130	1	14.10.2004	2	1564835	7105825	0	0	0	1
48	ASE138	1	19.10.2004	2	1556776	7108317	0	0	0	1
48	ASE140	1	19.10.2004	2	1556469	7104192	0	0	0	1
48	ASE158	1	04.10.2004	2	1548369	7114593	0	0	0	1
48	ASE177	1	24.09.2004	2	1552554	7114132	0	0	0	1
48	ASE178	1	08.10.2004	2	1553475	7114487	0	0	0	1
48	DOR013	1	04.09.2004	2	1546944	7115690	0	0	0	1
48	V071005	5	17.09.2005	2	1562796	7107707	0	0	0	0
49	B017	1	13.09.2001	1	1344500	6814000	1	0	0	0
49	B025	1	11.09.2001	1	1349500	6831500	1	0	0	0
49	B187	1	20.09.2001	1	1349700	6831700	1	0	0	0
49	B276	1	26.09.2001	1	1349600	6831600	1	0	0	0
49	E485	1	04.10.2002	1	1347300	6865400	1	0	0	0
49	W9311	5	24.04.1993	1	1346800	6834100	0	0	0	0
49	V174806	5	07.09.2006	1	1332835	6849360	0	0	0	0
50	B020	1	11.09.2001	2	1453000	6830500	1	0	0	0
50	B122	1	11.09.2001	2	1456100	6825200	1	0	0	0
50	B251	1	05.10.2001	2	1451700	6825200	1	0	0	0
50	B252	1	05.10.2001	2	1451700	6822700	1	0	0	0
50	B254	1	05.10.2001	2	1451900	6824800	1	0	0	0
50	C068	1	17.09.2001	2	1452700	6823700	1	0	0	0
50	C106	1	24.08.2001	2	1453700	6832300	1	0	0	0
50	C112	1	02.08.2001	2	1442300	6816900	1	0	0	0
50	C172?	1	01.10.2001	2	1456600	6822900	1	0	0	0
50	E144	1	20.09.2002	2	1453700	6827500	1	0	0	0
50	E145	1	18.09.2002	2	1458700	6828200	1	0	0	0
50	E146	1	18.09.2002	2	1457700	6824600	1	0	0	0
50	E232	1	30.09.2002	2	1453500	6827700	1	0	0	0
50	E436	1	10.10.2002	2	1455700	6821900	1	0	0	0
50	V129107	5	28.09.2007	2	1454940	6826915	0	0	0	0
50	W0121	5	23.05.2001	2	1451500	6829900	0	0	0	0
51	B023	1	11.09.2001	2	1454500	6829000	1	0	0	0
51	E333	1	04.10.2002	2	1465200	6830600	1	0	0	0
51	E448	1	10.10.2002	2	1484000	6829600	1	0	0	0
51	W9307	5	15.04.1993	2	1455800	6836500	0	0	0	0
51	V141307	5	05.10.2007	2	1454521	6825211	0	0	0	0

52	B048	1	06.09.2001	1	1406500	6822500	1	0	0	0
52	B169	1	12.09.2001	1	1410100	6792000	1	0	0	0
52	B172	1	12.09.2001	1	1409600	6788900	1	0	0	0
52	B375	1	10.10.2001	1	1413600	6785000	1	0	0	0
52	B388	1	10.10.2001	1	1411500	6784400	1	0	0	0
52	V177606	5	25.08.2006	1	1417796	6788995	0	0	0	0
52	W0324	5	16.06.2003	1	0	0	0	0	0	0
53	B164	1	03.09.2001	2	1438200	6797700	1	0	0	0
53	B927	1	01.10.2001	2	1430400	6792900	1	0	0	0
53	V124504	5	22.09.2004	2	1434594	6791602	0	0	0	0
54	B167	1	07.09.2001	2	1412800	6798000	1	0	0	0
54	E134	1	01.08.2002	2	1412800	6786400	1	0	0	0
54	E330	1	15.08.2002	2	1416100	6796000	1	0	0	0
54	E815	1	10.05.2002	2	1412700	6798200	1	0	0	0
54	V177506	5	05.09.2006	2	1410661	6801540	0	0	0	0
54	W8904	5	31.03.1989	2	1412300	6789400	0	0	0	0
55	B191	1	14.09.2001	2	1349900	6825400	1	0	0	0
55	V167806	5	02.09.2006	2	1343909	6791011	0	0	0	0
55	W0221	5	24.04.2002	2	1349500	6815500	0	0	0	0
56	B287	1	01.10.2001	2	1490500	6759200	1	0	0	0
56	B357	1	10.10.2001	2	1508000	6762900	1	0	0	0
56	B527	1	09.10.2001	2	1487900	6757600	1	0	0	0
56	B558	1	08.10.2001	2	1486000	6767700	1	0	0	0
56	B852	1	15.10.2001	2	1493500	6745200	1	0	0	0
56	E182	1	03.09.2002	2	1489600	6752500	1	0	0	0
56	E193	1	17.09.2002	2	1490200	6743100	1	0	0	0
56	E409	1	30.09.2002	2	1492500	6747500	1	0	0	0
56	E424	1	05.10.2002	2	1490000	6738000	1	0	0	0
56	E475	1	14.10.2002	2	1489000	6742900	1	0	0	0
56	E519	1	09.10.2002	2	1492000	6742000	1	0	0	0
56	E528	1	26.09.2002	2	1486000	6744500	1	0	0	0
56	E529	1	26.09.2002	2	1483100	6744000	1	0	0	0
56	E534	1	26.09.2002	2	1486100	6744000	1	0	0	0
56	E535	1	26.09.2002	2	1484100	6745000	1	0	0	0
56	E655	1	15.10.2002	2	1499000	6735500	1	0	0	0
56	E745	1	06.10.2002	2	1496000	6734000	1	0	0	0
56	E747	1	23.10.2002	2	1494000	6744000	1	0	0	0
56	V134704	5	08.10.2004	2	1484840	6739012	0	0	0	0
57	B308	1	12.10.2001	1	1452500	6806500	1	0	0	0
57	B348	1	08.10.2001	1	1468200	6798800	1	0	0	0
57	B494	1	09.10.2001	1	1464200	6795500	1	0	0	0
57	B531	1	08.10.2001	1	1455700	6799800	1	0	0	0
57	C162	1	17.09.2001	1	1463500	6802000	1	0	0	0
57	C185	1	16.10.2001	1	1453700	6795900	1	0	0	0
57	C191	1	16.10.2001	1	1442700	6808600	1	0	0	0
57	E161	1	21.09.2002	1	1445700	6794100	1	0	0	0
57	E170	1	26.09.2002	1	1451000	6809000	1	0	0	0
57	E187	1	22.09.2002	1	1448500	6807200	1	0	0	0
57	E457	1	13.10.2002	1	1469600	6788600	1	0	0	0
57	E789	1	03.10.2002	1	1450800	6800900	1	0	0	0
57	V177106	5	21.08.2006	1	1449229	6805831	0	0	0	0
57	W0230	5	03.06.2002	1	1452800	6804000	0	0	0	0
58	B360	1	10.10.2001	2	1361700	6734900	1	0	0	0
58	E093	1	30.07.2002	2	1372000	6741900	1	0	0	0

58	E137	1	14.09.2002	2	1388500	6752500	1	0	0	0
58	E155	1	11.09.2002	2	1396500	6766000	1	0	0	0
58	V164606	5	26.08.2006	1	1396136	6766280	0	0	0	0
59	B409	1	13.10.2001	1	1496100	6786900	1	0	0	0
59	E314	1	01.10.2002	1	1404000	6774300	1	0	0	0
59	E316	1	01.10.2002	1	1404000	6774300	1	0	0	0
59	V118304	5	22.08.2004	1	1390560	6773497	0	0	0	0
60	02WW96	5	10.05.2002	1	1496310	6748705	0	0	0	0
60	B452	1	10.10.2001	1	1474000	6739200	1	0	0	0
61	B479	1	25.09.2001	2	1462000	6840500	1	0	0	0
61	V085705	5	26.08.2005	2	1462360	6807937	0	0	0	0
62	B481	1	22.09.2001	1	1466700	6826500	1	0	0	0
62	B500	1	10.10.2001	2	1473500	6809200	1	0	0	0
62	E721	1	30.09.2002	2	1490200	6788300	1	0	0	0
62	E724	1	14.09.2002	2	1487000	6790400	1	0	0	0
62	E781	1	11.10.2002	2	1481500	6799200	1	0	0	0
62	V074205	5	06.09.2005	2	1491800	6786200	0	0	0	0
63	B503	1	11.10.2001	2	1476100	6805500	1	0	0	0
63	B505	1	10.10.2001	2	1476800	6803500	1	0	0	0
63	B649	1	07.10.2001	2	1467300	6808100	1	0	0	0
63	E582	1	14.10.2002	2	1482000	6807000	1	0	0	0
63	V124704	5	15.09.2004	2	1478245	6805122	0	0	0	0
64	B536	1	11.10.2001	1	1408000	6761500	1	0	0	0
64	B761	1	08.10.2001	1	1422500	6735500	1	0	0	0
64	B762	1	08.10.2001	1	1410100	6730800	1	0	0	0
64	B763	1	26.09.2001	1	1416500	6737800	1	0	0	0
64	E184	1	28.08.2002	1	1404100	6769000	1	0	0	0
64	E186	1	28.08.2002	1	1406000	6769100	1	0	0	0
64	E189	1	28.08.2002	1	1401200	6768100	1	0	0	0
64	V146007	5	05.09.2007	1	1435380	6741240	0	0	0	0
65	B542	1	21.10.2001	2	1445700	6823600	1	0	0	0
65	02WW95	5	04.07.2002	2	1446000	6820600	0	0	0	0
65	B247	1	03.10.2001	2	1447400	6821500	1	0	0	0
65	B248	1	03.10.2001	2	1447400	6821600	1	0	0	0
65	B551	1	22.10.2001	2	1454700	6825100	1	0	0	0
66	02XX04	5	31.08.2002	2	1486562	6796563	0	0	0	0
66	B553	1	21.10.2001	2	1512100	6780200	1	0	0	0
66	E063	1	22.08.2002	2	1503600	6784800	1	0	0	0
66	E083	1	11.08.2002	2	1516200	6780300	1	0	0	0
67	B587	1	20.10.2001	1	1530500	6759500	1	0	0	0
67	E080	1	22.08.2002	1	1499700	6749000	1	0	0	0
67	E113	1	10.09.2002	1	1522100	6737000	1	0	0	0
67	E115	1	18.09.2002	1	1460100	6824800	1	0	0	0
67	E396	1	01.10.2002	1	1511000	6739000	1	0	0	0
67	E397	1	01.10.2002	1	1511000	6739000	1	0	0	0
67	E398	1	01.10.2002	1	1511000	6739000	1	0	0	0
67	E399	1	01.10.2002	1	1511000	6739000	1	0	0	0
67	E400	1	01.10.2002	1	1511000	6739000	1	0	0	0
67	E401	1	01.10.2002	1	1511000	6739000	1	0	0	0
67	E402	1	01.10.2002	1	1511000	6739000	1	0	0	0
67	E403	1	01.10.2002	1	1511000	6739000	1	0	0	0
67	E404	1	01.10.2002	1	1511000	6739000	1	0	0	0
67	E405	1	01.10.2002	1	1511000	6739000	1	0	0	0
67	E406	1	06.10.2002	1	1505000	6743000	1	0	0	0

67	E407	1	01.10.2002	1	1505000	6743000	1	0	0	0
67	E408	1	28.09.2002	1	1490000	6740000	1	0	0	0
67	E410	1	06.10.2002	1	1503000	6744000	1	0	0	0
67	E411	1	19.09.2002	1	1505600	6762800	1	0	0	0
67	E412	1	06.10.2002	1	1505000	6743000	1	0	0	0
67	E413	1	02.10.2002	1	1506000	6742000	1	0	0	0
67	E472	1	14.10.2002	1	1506900	6742000	1	0	0	0
67	E489	1	14.10.2002	1	1506900	6742000	1	0	0	0
67	E564	1	16.10.2002	1	1510000	6739000	1	0	0	0
67	E565	1	16.10.2002	1	1510000	6739000	1	0	0	0
67	E567	1	16.10.2002	1	1510000	6739000	1	0	0	0
67	V161506	5	21.08.2006	1	1510700	7021600	0	0	0	0
68	B688	1	21.10.2001	1	1437000	6738100	1	0	0	0
68	E274	1	27.09.2002	1	1446000	6726200	1	0	0	0
68	V176806	5	15.09.2006	1	1417581	6796551	0	0	0	0
69	B749	1	15.10.2001	1	1520000	6813000	1	0	0	0
69	B754	1	12.10.2001	1	1516000	6811000	1	0	0	0
69	W0003	5	08.04.2000	1	1456900	6828700	0	0	0	0
69	V177206	5	22.08.2006	1	1483430	6793435	0	0	0	0
70	B831	1	14.10.2001	2	1482500	6881000	1	0	0	0
70	B837	1	10.10.2001	2	1501800	6895000	1	0	0	0
70	02XX06	5	01.09.2002	2	1494200	6885000	0	0	0	0
71	B912	1	09.09.2001	1	1363900	6816000	1	0	0	0
71	B914	1	18.09.2001	1	1364300	6815000	1	0	0	0
71	V142307	5	09.10.2007	1	1337789	6746920	0	0	0	0
71	HE49	1	None	1	0	0	0	0	0	0
72	B925	1	21.09.2001	1	1446700	6741300	1	0	0	0
72	E737	1	21.09.2002	1	1477000	6752000	1	0	0	0
72	E739	1	28.09.2002	1	1468100	6752200	1	0	0	0
72	E740	1	21.09.2002	1	1474100	6752000	1	0	0	0
72	V146307	5	05.09.2007	1	1464529	6741740	0	0	0	0
73	E040	1	05.05.2002	2	1366100	6829100	1	0	0	0
73	V119207	5	16.09.2007	2	1359438	6822586	0	0	0	0
74	E119	1	12.09.2002	2	1440400	6843100	1	0	0	0
74	E121	1	11.09.2002	1	1440300	6845400	1	0	0	0
74	E122	1	08.09.2002	1	1438100	6848200	1	0	0	0
74	W0427	5	17.06.2004	2	1446200	6833500	0	0	0	0
74	V068907	5	None	2	1442508	6844111	0	0	0	0
75	E188	1	19.09.2002	1	1424000	6762100	1	0	0	0
75	E315	1	01.10.2002	1	1404000	6774300	1	0	0	0
75	E317	1	01.10.2002	1	1404000	6774300	1	0	0	0
75	V086105	5	10.09.2005	1	1426826	6806348	0	0	0	0
76	E199	1	29.09.2002	1	1476000	6874000	1	0	0	0
76	E219	1	15.09.2002	1	1478000	6874900	1	0	0	0
76	E606	1	15.10.2002	1	1474000	6879500	1	0	0	0
76	V145704	5	21.11.2004	1	1494700	6859900	0	0	0	0
77	E257	1	30.09.2002	1	1486500	6746500	1	0	0	0
77	E417	1	06.10.2002	1	1480500	6749500	1	0	0	0
77	E426	1	06.10.2002	1	1481500	6748500	1	0	0	0
77	E428	1	06.10.2002	1	1479500	6748500	1	0	0	0
77	E531	1	05.10.2002	1	1482600	6741900	1	0	0	0
77	E532	1	05.10.2002	1	1482700	6741000	1	0	0	0
77	E741	1	01.10.2002	1	1466600	6752000	1	0	0	0
77	V006805	5	None	3	0	0	0	0	0	0

78	B442	1	10.10.2001	1	1532900	6748900	1	0	0	0
78	E484	1	25.09.2002	1	1553100	6727800	1	0	0	0
78	V119504	5	24.08.2004	1	1505600	6793800	0	0	0	0
79	E623	1	24.09.2002	1	1485100	6826000	1	0	0	0
79	E726	1	16.10.2002	1	1452800	6815500	1	0	0	0
79	E732	1	15.10.2002	1	1483800	6804000	1	0	0	0
79	V131007	5	04.10.2007	1	1481906	6810204	0	0	0	0
79	W9702	5	15.04.1997	1	1478900	6805200	0	0	0	0
80	E636	1	15.10.2002	1	1472900	6768700	1	0	0	0
80	V118504	5	25.08.2004	1	1449274	6774250	0	0	0	0
81	E785	1	09.10.2002	2	1471500	6785800	1	0	0	0
81	E786	1	09.10.2002	2	1471900	6785600	1	0	0	0
81	V177906	5	18.09.2006	2	1471672	6773559	0	0	0	0
82	Ech025	1	26.09.2004	2	1461801	6911726	0	1	0	0
82	Ech334	1	10.10.2004	2	1462176	6912601	0	1	0	0
82	V072205	5	20.09.2005	2	1459100	6910100	0	0	0	0
83	Ech034	1	26.09.2004	2	1484664	6915240	0	1	0	0
83	V113107	5	05.09.2007	2	1478449	6911496	0	0	0	0
84	Ech260	1	09.10.2004	1	1524500	7027500	0	1	0	0
84	V127707	5	14.09.2007	1	1533210	7038720	0	0	0	0
85	Ech323	1	10.10.2004	1	1461202	6912203	0	1	0	0
85	V177306	5	16.09.2006	1	1495550	6915000	0	0	0	0
86	Ech391	1	16.09.2004	1	1511007	7061001	0	1	0	0
86	Ech408	1	16.09.2004	1	1509983	7061836	0	1	0	0
86	V142004	5	13.09.2004	1	1527293	7069399	0	0	0	0
87	Ech491	1	07.09.2004	1	1559300	7080902	0	1	0	0
87	V115804	5	08.09.2004	1	1556495	7067599	0	0	0	0
88	LYC030	1	21.09.2004	2	1626636	7203387	0	0	0	1
88	V107707	5	30.08.2007	2	1638331	7177851	0	0	0	0
89	SOR044	1	16.09.2004	1	1588655	7255595	0	0	0	1
89	SOR145	1	27.09.2004	1	1587685	7251254	0	0	0	1
89	V105107	5	27.08.2007	1	1618522	7083479	0	0	0	0
90	V068507	5	10.05.2007	2	1421100	7141215	0	0	0	0
90	NT4	1	None	2	0	0	0	0	0	0
91	V071407	5	23.05.2007	2	1463049	7210860	0	0	0	0
91	VIL009	1	31.08.2004	2	1492174	7201036	0	0	0	1
91	VIL023	1	03.09.2004	2	1486842	7200549	0	0	0	1
91	VIL020	1	03.09.2004	2	1486709	7200306	0	0	0	1
92	V084005	5	09.10.2005	2	1532080	7020100	0	0	0	0
92	Ech680	1	31.08.2004	2	1615970	7052458	0	1	0	0
93	V118907	5	09.09.2007	2	1470906	6856901	0	0	0	0
93	E210	1	20.09.2002	2	1469000	6855300	1	0	0	0
93	E212	1	None	2	1468800	6854200	1	0	0	0
94	V126007	5	04.09.2007	2	1452600	6844400	0	0	0	0
94	B480	1	08.10.2001	2	1445500	6840700	1	0	0	0
95	V162806	5	25.08.2006	1	1536301	7172306	0	0	0	0
95	VIL041	1	07.09.2004	1	1556005	7163625	0	0	0	1
96	V178106	5	11.09.2006	1	1471400	7045800	0	0	0	0
96	4477	1	01.09.2006	1	1487860	7040414	0	0	1	0
96	7043	1	08.09.2006	1	1479048	7034194	0	0	1	0
96	7049	1	07.09.2006	1	1485530	7038999	0	0	1	0
97	B417	1	09.10.2001	1	1452100	6796300	1	0	0	0
97	Ech220	1	09.10.2004	2	1615250	7070000	0	1	0	0
97	V226206	5	11.10.2006	2	1559223	7091222	0	0	0	0

98	Ech318	1	10.10.2004	1	1497916	6928942	0	1	0	0
98	Ech360	1	03.10.2004	1	1496006	6931006	0	1	0	0
98	Ech387	1	11.09.2004	1	1568521	6899531	0	1	0	0
98	Ech403	1	14.09.2004	1	1609866	7001806	0	1	0	0
98	Ech475	1	25.08.2004	1	1580141	6896060	0	1	0	0
98	Ech679	1	08.09.2004	1	1524506	6927142	0	1	0	0
98	V171806	5	06.09.2006	1	1509380	6926949	0	0	0	0
98	W0210	5	20.04.2002	1	1456800	6835700	0	0	0	0
99	02WW98	5	02.05.2002	2	1515830	6718765	0	0	0	0
99	B555	1	16.10.2001	2	1523800	6823500	1	0	0	0
99	E686	1	10.10.2002	2	1526800	6723700	1	0	0	0
100	B455	1	18.10.2001	1	1439200	6829900	1	0	0	0
100	V111204	5	22.08.2004	1	1394085	6801330	0	0	0	0
101	B592	1	13.10.2001	2	1533300	6765300	1	0	0	0
101	E552	1	11.10.2002	2	1546500	6769100	1	0	0	0
101	E696	1	16.10.2002	2	1551900	6744300	1	0	0	0
101	E707	1	07.10.2002	2	1549400	6761900	1	0	0	0
101	V116604	5	31.08.2004	2	1557373	6762904	0	0	0	0
102	Ech316	1	25.09.2004	1	1613420	7055948	0	1	0	0
102	Ech536	1	06.09.2004	1	1590395	7040501	0	1	0	0
102	Ech685	1	14.09.2004	1	1617100	7068000	0	1	0	0
102	V118004	5	15.09.2004	1	1593300	7068150	0	0	0	0
103	02WW06	5	29.08.2002	1	1458849	6775263	0	0	0	0
103	HE20	1	None	1	0	0	0	0	0	0
103	HE37	1	None	1	0	0	0	0	0	0
104	03AC01	5	22.08.2003	1	1674253	7123588	0	0	0	0
104	NO7	1	None	1	0	0	0	0	0	0
105	V076905	5	25.09.2005	1	1626950	7144500	0	0	0	0
105	B099	1	10.09.2001	2	1435200	6848900	1	0	0	0
105	B110	1	15.09.2001	2	1433500	6849900	1	0	0	0
105	E123	1	13.09.2002	2	1442500	6840800	1	0	0	0
105	B203	1	04.09.2001	1	1430500	6834500	1	0	0	0
106	98SS14	5	09.09.1998	1	1447200	6852400	0	0	0	0
106	10782	1	16.09.2006	2	1405460	6845785	0	0	1	0
106	12661	1	09.09.2006	2	1405234	6851933	0	0	1	0
107	E464	1	15.10.2002	2	1539300	6732300	1	0	0	0
107	V074605	5	31.08.2005	2	1531500	6731300	0	0	0	0
108	V126404	5	25.09.2004	1	1336938	6851206	0	0	0	0
108	W9302	5	06.04.1993	1	1361500	6906500	0	0	0	0