STATES OF JERSEY

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JERSEY AIRPORT: FIREGROUND REMEDIATION – DEED OF SETTLEMENT

Lodged au Greffe on 19th October 2004
by the Harbours and Airport Committee

STATES GREFFE

PROPOSITION

THE STATES are asked to decide whether they are of opinion –

to approve and to ratify the Deed of Settlement, held by the Greffier of the States, made on 4th October 2004 between the Harbours and Airport Committee and the supplier of fire fighting media for Jersey Airport, and to request the Greffier of the States to record the ratification on the Deed.

HARBOURS AND AIRPORT COMMITTEE

REPORT

1. Geography

1.1 Jersey Airport's western boundary lies between Mont du Jubilé and Mont à la Brune and sits on an escarpment 240 feet above St. Ouen's Bay and approximately one mile from the sea wall. The Airport Fire Training Ground (FTG) is situated on the north western extremity of the airfield on Mont au Guet and has been closed off to public access for use for training by the Airport Rescue and Fire Fighting Service in this same location since the 1950s.

2. Background

2.1 Prior to 1991, a large, rectangular steel tank in a concrete surround was used as the fire training and exercise area. Waste oil from the Island's garages was poured into the pit, ignited and then extinguished with water – no foam was used in these exercises at any time.

2.2 In 1991, to meet more demanding training requirements for United Kingdom Airport Fire Services, a one-third scale metal aeroplane was purchased as a training rig and installed in the FTG. Heating oil was sprayed out of various ports in the engine, wing and wheel areas thus creating different scenarios of a much more realistic type for Airport Fire Fighters to train with.

2.3 When the rig became operational in late 1991, appliances started to discharge foam on a regular basis during all training sessions. It was the discharge of this foam on a regular basis and the passage of that foam in the groundwaters and rainwater falling on the FTG and moving through the shale that gave rise to the water pollution to the west of the Airport.

3. The pollution

3.1 In 1993 it was discovered that foaming water was emerging from an excavated land drain in a field to the northwest of the FTG and, at the same time, that the private supply of that farm had been contaminated by material giving rise to a brown colouration and substantial foaming.

3.2 The Committee commissioned Environmental Consultants from the United Kingdom with considerable experience in this field to assist it. An urgent, early precautionary measure to the discovery of the pollution was to provide the householder with a new borehole. The Committee decided to advise households lying to the west of the Airport that some contamination had been discovered in a well; it offered to test a large number of domestic water supplies and to provide bottled water if contamination was discovered.

3.3 Some pollution which might be attributable to the Fire Training Ground was discovered but the situation was complicated by some household water supplies also being contaminated by overflowing soakaways dug too close. Bottled water was provided to all who had any form of contamination.

3.4 As a result of a public meeting chaired by the then President of the Harbours and Airport Committee, Deputy John Le Fondré, the Committee identified a long-term solution to the householder situation. The advice of the Medical Officer of Health was that there were contaminants and pollutants of a number of types, inorganic, organic and microbiological (for examples nitrates, pesticides, and e-coli) and that those pollutants should not be there. The Committee invited the Board of the Jersey New Water Works Company Limited to consider all the evidence and to identify whether a new water main linking the bottom of Jubilee Hill to the bottom of Mont á la Brune could be advanced in its capital programme.

3.5 The JNWW Co. Ltd. agreed to alter the timing of its capital programme and the new main was installed during the period 1994/1995. The Committee consulted with affected householders and offered to pay the connection fees of those householders who wished to link to the new main; some 15 out of 23 affected properties have taken up the offer, become connected and pay for their own water consumption.

3.6 The Airport Director formed an officer group in 1994 comprising members of certain States' departments and the JNWW Co. Ltd. in order that all could keep their Committees/Board advised. The Airport Director chaired quarterly meetings with officers of Agriculture and Fisheries, Environmental Health, Environmental Services, Jersey New Water Works Co. Ltd., the Law Officers Department, Medical Officer of Health, Planning and Environment, Public Services, and others as arranged on an ad-hoc basis such as The National Trust, householders etc.

3.7 The Committee instituted a system of water monitoring by its appointed Environmental Consultants on a quarterly basis and, latterly, 6-monthly. These results were published confidentially to each householder who requested them and were also provided in 1995 to a number of States' departments.

4. Analysis/Investigations

4.1 Since the discovery of the foam in 1993 and the formation of the officer group in 1994, the quarterly monitoring regime was instituted. The Committee's Consultants could not find a laboratory in Europe which was capable of analysing the substances involved and so went to the laboratory of the foam manufacturer in the United States. Water samples were sent to their laboratory and reports received as to the levels of contamination in the many domestic water samples tested. The company was helpful and provided varying pieces of scientific and toxicological information relating to its products. The Airport Director and the Committee's Environmental Consultants bound themselves by a confidentiality agreement to the manufacturer related to the chemical constituents of the manufacturer's foam product. The equipment of the official analyst in Jersey and of an identified United Kingdom laboratory (M-Scan) were eventually able to take on these sampling responsibilities in 1999.

4.2 In September 2000, the manufacturer brought a team of scientists to meet with the officers of the various departments and Members of the Harbours and Airport Committee. A thorough exchange of information took place and the Medical Officer of Health sought and obtained such information as was available in relation to these products and their effect on human health, animal health or aquatic life. It was at about this time that the foam manufacturing company withdrew from making the product and stopped supplying it to Airports.

4.3 Considerable analysis took place with regard to the contaminants from the FTG and their effect on Jersey potatoes, cauliflowers etc.; the results were that the vegetables contained no discernible levels of the foam contamination but all the potato samples on and off the Island, including organic, contained traces of butyl carbitol which had been the marker used by the monitoring process – it was discontinued at that point.

4.4 The Committee worked with the Public Services Committee in order to produce a scheme to "clean up the area". This scheme would comprise a method of remediating (cleaning) the contaminated shale and soil in the FTG, isolating the FTG so that water could no longer run through it carrying contamination outside and, lastly, providing a training ground in order to meet the Committee's legal requirements with regard to aviation safety.

4.5 After a thorough survey of the airfield and the surrounding areas, the Committee determined that the existing FTG was the only place on which Airport Rescue and Fire Fighting Service could train. Boreholes were driven into the rock and shale to determine the level of contamination. A report concluded that the majority of the foam which had become dissolved into ground and rainwaters had emerged to the west into St. Ouen's Aquifer and under the sea wall into the beach beyond.

4.6 Remaining in the shale of the FTG were the heavier oil fractions arising from residues of oil burning on the rig, i.e. a mixture of unburnt fuel, partially burnt fuel (or charred) fuel, heavy metals in modest but discernible quantities. The heavy metal component of the ground pollution is likely to be largely derived from the historical burning of old engine oil and scrap timber. These products did not move at the same pace as the water through the rock and, provided they could be stopped from moving, they could be left in situ.

4.7 Four schemes were looked at to solve the problem as follows –

4.7.1 Remove the entire Fire Training Ground (30 metres deep) and deposit elsewhere replacing with concrete walls, supports and gabions; insert concrete saucer as replacement Fire Training Ground. Total cost approximately £30 million (1999 prices) with the U.K. being a possible place to dump the contaminated rock, shale and soil involved.

4.7.2 Removing 10 metres' depth of contaminated stone and disposing of as in the paragraph above; replacement Fire Training Ground installed. About £22 million (at 1999 prices).

4.7.3 The 4-part scheme set out in 4.8 below costing between £3.7 and £4.9 million (at 2000 prices).

4.7.4 Do nothing – this was unacceptable for environmental, health and good government reasons. Additionally, the Water (Jersey) Law 2000 was under discussion and the Public Services Committee alerted the Harbours and Airport Committee to the fact that when the Law came in the Committee would have to act in a way that the Public Services Committee would demand as Regulator under the Water Law.

4.8 A scheme was proposed in 4 parts –

4.8.1 Remediate the site by lifting 2 metres or so of contaminated shale/rock, put it on an impermeable base cover it with soil and grass and leave it as a bund on the outside edge of the FTG.

4.8.2 Insert a deep concrete wall on the eastern face to prevent groundwater running through the FTG; clean water would run around the contaminated area.

4.8.3 Place a concrete cap on top of an impermeable base so that 32 tonne fire appliances could train with a new rig installed in the centre and containing all burnt fuel, unburnt fuel, water, foam and other residues.

4.8.4 Install a new fire training rig based on gas or oil.

4.9 The Committee determined to carry out the process in paragraph 4.8 above and, working with the Public Services Committee and its officers, submitted a planning application.

5. Construction

5.1 The Committee commissioned the Public Services Department engineers and a number of other engineering/environmental and drainage consultants to put forward detailed design proposals to the planners. The Water Regulator approved the plans in 2001 and the remediation process commenced in 2002. A Project Manager was appointed and is operating the remediation, construction etc process for the Committee satisfactorily.

5.2 The last phase of the Fire Training Ground project was completed in September 2004.

5.3 During the design phase an innovative method of disposing of slightly contaminated water by evaporation on site had been worked up by the Principal Engineer and the Design Team. A protective patent application has been made as it is the view of the consultants that this scheme could have great benefits to many airports around the world in temperate climates with the sort of rainfall experienced in Jersey; it could generate revenue.

6. Costs

6.1 The Harbours and Airport Committee has paid £1,639,272 from the Suspense Account as at 11th October 2004 for –

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(a) The investigation – including engineering costs of installing monitoring boreholes, sampling and analytical costs, travel, accommodation and subsistence for professional advisers.	814,694
(b) Paying for connections of affected households to JNWW mains water supply.	30,690
(c) Remedial scheme including capital expenditure and operational costs.	309,982
(d) Professional advisers' fees not contained in (a) above.	399,057
(e) Working capital interest charged by Treasury.	84,848
	1,639,272
Capital 2002 – FTG remediation (est. cost)	4,806,000
Total	6,445,272
Claim offset from manufacturer	2,600,000

6.2 As a result of P.198/2002 – the States agreed to pay all the costs associated with the Fire Training Ground remediation and construction project. The estimated current balance to be met by States, based on the above figures, is therefore £3.85 million. This will alter dependent upon any further costs to be met from the Suspense Account, e.g. legal fees and any changes to estimated £4.8 million remediation costs.

7. The pollution

7.1 Unburnt fuel derived from fire training is present in discharges in 2 forms: free phase and dissolved/emulsified. It adheres to soil forming a tarry-like mixture with fine particles which retards the majority of the free phase material in soil layers. Any escape from the FTG would be via cracks in the rock. No free phase oils have been reported in bore holes beyond the FTG and no complaints of taste or odour attributable to fuel oil have been reported on any sampling.

7.2 Fire Fighting Media – The Foam. The aqueous film-forming foam (AFFF) has been used by the Airport Fire and Rescue Service for a number of years. Using both PFOS and PFHS is has been possible to track the plume of contamination and, by isolating those substances in samples, identified which water courses, ponds etc have been contaminated.

7.2.1 PFOS

Perfluorooctyl sulphonate is the first type of fluorinated surfactant material.

7.2.2 PFHS

Perfluorohexhyl sulphonate is a persistent substance which is a breakdown material from the foam.

7.3 The extent of the pollution is over the 3 time periods, 1993-1999, 1999-2003 and, beyond the sea wall, 1998-1999 (see Appendix 1). This pollution extent over time has been determined as a result of the many quarterly, monitoring/sampling processes undertaken by the Committee.

7.4 Medical Advice – Two Medical Officers of Health have noted the presence of pollution relating to the fire fighting foam. They have both been consistent in their advice that alternative potable water supplies should be made available to householders, that the plume of contamination should be monitored and traced and that long-term action should be put in hand to deal with the problem. Both MoHs were only concerned with the effect on human health but remarked that there were effects, as yet unknown or unquantified, on animal and aquatic life.

7.5 A significant number of monitoring locations have indicated that potable abstraction has comprised water containing PFOS and concentrations above the advisory concentration of 1.0 microgram per litre. The PFOS present in St. Ouen's aquifer has remained at a steady concentration relative to dry weather for approximately 3 years.

8. The claim

8.1 The Harbours and Airport Committee has suffered considerable expense in resolving various aspects of this pollution and has asserted that the environment to the west of the Fire Training Ground stretching to the sea wall has suffered damage from the constituents in fire fighting foam. These assertions have been rigorously denied by the supplier. The Committee has threatened litigation which the supplier has indicated will be defended with all its considerable resources.

8.2 The claim and its method of settlement is set out in a draft Deed of Settlement proposed between (1) the Harbours and Airport Committee for and on behalf of the States of Jersey; and (2) the foam manufacturer. The States of Jersey accepted in Projet 198/2002 that it would be responsible for the capital expenditure in the Fireground (approximately £4.9 million) rather than the Harbours and Airport Committee on behalf of the Airport.

It is necessary for the States to ratify the proposed Deed of Settlement because the Harbours and Airport Committee does not have the vires to give the warranties in the Deed of Settlement and the potential liabilities arising therefrom.

8.3 Confidentiality. The main problem with bringing this Report and Proposition to the attention of the States is the need for confidentiality. In the draft Deed of Settlement, the parties agree to keep the very existence of this Deed of Settlement and each of the terms in it confidential. The history, background and negotiations over the Deed of Settlement are confidential save as is required to achieve ratification by the States of Jersey or as is required by law or the proper discharge of official duties by the States of Jersey. Additionally, the name of the manufacturer is to be kept from the public domain.

8.4 Confidential documentation. There are over 175 documents, not all of which are confidential, related to the 10 years of this pollution and the subsequent claim against the manufacturer. The proposed Deed of Settlement, certain documents which name the chemical constituents and the manufacturer (see Appendix 2) and a confidential chronology of events compiled by our consultants and Environmental Services for the Medical Officer of Health and the Committee are all available for inspection at the office of the Greffier of the States at Morier House. They are available for inspection by all States' Members at any stage prior to the ratification process being debated in the States' Assembly. Members will appreciate how difficult it is to secure a settlement of the claim which the Harbours and Airports Committee considers is beneficial and in the public interest, when the other party insists on an obligation of confidentiality to the extent that the same is achievable; the Committee asks Members to respect the confidentiality which has been agreed.

9. Ratification

9.1 This Report and Proposition has been lodged well before a proposed date when the Proposition will appear on the States' Order Paper. This will allow States' Members plenty of time to inspect the documents if they so wish.

9.2 The proposed Deed of Settlement has been circulated to States' Members. The President of the Harbours and Airport Committee will ask for the House to go into an "in camera" session in order to give the Attorney General the opportunity to give his confidential advice to States' Members as to the benefits of ratifying the Deed of Settlement in order to secure the claim against the manufacturer. **None of the data provided to States' Members would be made public so ensuring that the States complies with the obligation of confidentiality contained in the Deed of Settlement.**

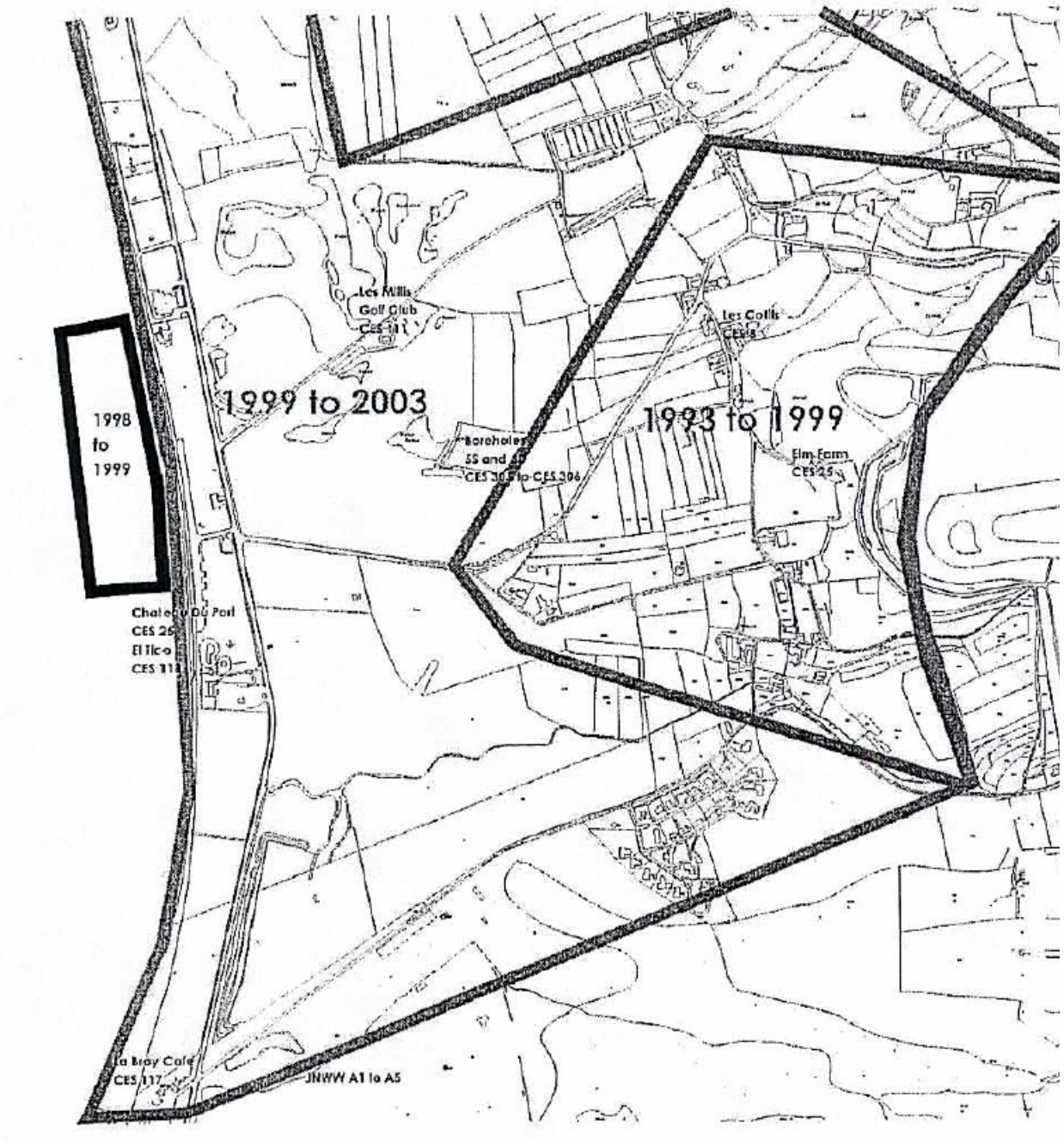
9.3 The Harbours and Airport Committee does not seek an "in camera" debate with any enthusiasm.

However, the question of settlement or no requires an analysis of the public interest, of weighing the litigation possibilities and advantages against its risks and disadvantages. As with another recent debate, Members may wish to receive detailed advice as to the legal advice which the Committee has received and it would be inappropriate to put that into the public domain without potentially weakening the case against the supplier. That factor is in addition to the requirement of the supplier that no settlement would be possible without a very high degree of confidentiality. In the circumstances, the Harbours and Airport Committee has reached the view that it would be in the Island's best interests to seek an "in camera" debate of the proposition.

12th October 2004

APPENDIX 1

Pollution extent over time



APPENDIX 2

Spread of pollution over time

cument Reference	Date of Issue	Document Description
508/2–1	May 1995	Follow-up Groundwater Pollution Investigation
519(7)	June 1995	Domestic Property Sample
508/2–2	November 1997	Groundwater Investigation of St. Ouen's Aquifer
508/2–3	March 1998	Groundwater Contamination Event Summary up to November 1997
508/2–4	February 1998	Domestic Property Report – representative example
October 1998 documents were referenced with a JHA number (Jersey Harbours l Airport Committee) so that each reference was unique and could not be ıfused by others produced in the same series		
A13	March 1999	Interim Report on the Contamination Emanating from the Airport Fire Training Ground
A16	March 1999	Interim Risk Target Evaluation relating to the Contamination Emanating from the FTG
A24a-e	July 1999	Advisory Summaries for the Harbours and Airport Committee President relating to Geology, Water Quality and Aquifer Contamination.
A32 (2 volumes)	July 1999	FTG Investigation-Factual Report
A36 (Vol. 1)	October 1999	Groundwater Contamination Investigation in St. Ouen's Bay
A49h	August 1999	Property Owners' Report – representative example
A50	August 1999	Summary Report on St. Ouen's Coast Private Supply Abstractions

Document Reference	Date of Issue	Document Description
HA66	January 2000	Groundwater Contamination – second draft Chronology of Events
HA73	January 2000	Enumeration of fluroalkyl sulphonates
HA75	January 2000	Examination of other flourinated surfactants
HA83	June 2000	Monitoring Scheme and First Quarter Report for St. Ouen's Bay
HA88	July 2000	Monitoring Reports for specified surfactants
HA92	August 2000	Summary of Information Requirements from the manufacturer
HA96	November 2000	Data on PFOS submitted to the US EPA by the manufacturer
HA98	November 2000	Compatibility of data between the manufacturer and M-Scan
HA99	November 2000	Re-presentation of data using primary standard material
HA104	January 2001	St. Ouen's Aquifer – geological and hydrogeological assessment
HA105	February 2001	An assessment of the impact on water quality of contaminant migration from fire training activities at Jersey Airport 2000
HA124	July 2001	US Recognition of Control Required for PFOS
HA125	July 2001	Information Summary on Les Ormes Valley
HA131	July 2001	Interim Report on Changes in PFOS and PFHS in St. Ouen's Aquifer
HA132	July 2001	Summary of Breaches in the PFOS Advisory Concentration in St. Ouen's Aquifer

cument Reference	Date of Issue	Document Description
A135	October 2001	PFOS in St. Ouen's Bay
A136	September 2001	The manufacturer and M-Scan Results for PFOS
A138	September 2001	Progress on Production of a Remediation Design Specification
A140	November 2001	Draft Proposed Monitoring Network 2002
A152	April 2002	Public Water Supply Exposure (to flourosurfactants)
A153	April 2002	Private Water Supply Exposure
A154	April 2002	Update on Progress of the Fate and Behaviour Study
A157	May 2002	Exposure of Private Water Supplies to PFOS and PFHS
A159	July 2002	Sixth Monitoring Report and an Assessment of the Impact on Water Quality by Contaminant Migration
A160	September 2002	Seventh Monitoring Report of the St. Ouen's Bay
A164	October 2002	Fate and Behaviour Study – executive summary in "layman's language"
A172A	October 2003	Consolidated Pollution History
A173	April 2004	St. Ouen's Bay 10th Monitoring Report
A174	August 2004	Review of PFOS Impacts