



Province of British Columbia

**RAVENS
AND THEIR EFFECT ON SHEEP PRODUCTION
ON SALTSRING ISLAND, BRITISH COLUMBIA:**

A PRELIMINARY STUDY

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PREFACE

This study was carried out from January to May 1985 under contract to the Crop Protection Branch, B.C. Ministry of Agriculture and Food.

Dr. Anne Brenchley, an ornithologist and ecologist, was born and educated in the United Kingdom. She earned her B.Sc. (Honours Zoology) and Ph.D. degrees at the University of Aberdeen, where her doctoral research dealt with the ecology of the Rook (Corvus frugilegus) in relation to agricultural land use. During the course of this study, she resided at Nanaimo, B.C.

Opinions expressed and recommendations given in this report are those of the author and not necessarily those of the Ministry of Agriculture and Food.

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ABSTRACT

Raven biology and predation on sheep were studied on Saltspring Island, B.C. between January and May 1985. At least 28 lambs (about 1% of those born) and three adult ewes were killed by ravens, apparently a lower than average rate of loss. Numbers of ravens were monitored by regular roadside counts and regular counts at the Blackburn Road garbage dump. The island population was estimated at roughly 300 ravens, being somewhat higher in winter. Between 20 and 120 ravens were regularly present at the dump, and probably consisted mainly of immatures and non-breeding adults. At least 31 pairs of ravens were believed to have bred on Saltspring Island, resulting in a higher breeding density (26 pairs per 100 km²) than any reported elsewhere. Three active nests were found; all were located in concealed positions, high in trees in dense conifer forest. Cliff nests have also been reported on the island. Eleven ravens were trapped, marked with plastic wing-tags and released, but this number of tagged birds was insufficient to yield much information on movements.

It is concluded that the severity of the depredation problem resulted largely from the extremely high density of ravens, and a number of recommendations for alleviation of the problem are made.

ACKNOWLEDGMENTS

This short study would have been far more difficult if not for the co-operation of many of the Saltspring Island sheep producers. In particular, Mike Byron helped with trapping ravens on Stark Road, regularly feeding the captive ravens and checking whether additional birds had been caught. Gwen Ruckle, Brodie Cupples, Ray Stewart and Howard Byron provided much local knowledge and information concerning sheep husbandry and raven sightings. Local naturalists, including Alan and Raymond Best, Chris Wooldridge, Marguerite Pearce, Bristol Foster and Allison McKerrow, helped to locate nests, observe birds and provide general information on ravens.

Thanks go also to Dr. Wayne Weber who spent several days helping with raven surveys and other work concerned with this project; Tony Kluge, who helped in marking and releasing the captured ravens; Dr. Steve Mason and Peter Fofonoff, who shared their knowledge of local agriculture and animal husbandry; Bill Munro, who obtained a colour-marking permit for us and supplied the aluminum leg-bands; and Wayne Campbell, who made comparative data from the Roadside Breeding Bird Survey available.

Introduction

The problem of Common Raven (Corvus corax) depredation on newborn lambs has been a contentious issue on Saltspring Island for over ten years. As a result of information received from questionnaires sent out to a sample of Saltspring Island sheep producers since 1982, it was estimated that up to 100 lambs were killed by ravens each year. Attacks appeared to occur throughout the island, with different farmers suffering losses each year.

This project was designed to:

1. determine the abundance and distribution of ravens on the island by regular counts at the Blackburn Road garbage dump and roadside surveys elsewhere on the island;
2. gain accurate information on the number and type of attacks on sheep during the 1985 lambing season;
3. attempt to locate two or three raven nests and record information on breeding biology and diet;
4. catch and mark a number of ravens so that movements on Saltspring Island and possibly to and from the other Gulf Islands and Vancouver Island could be studied; and
5. make recommendations to alleviate the raven depredation problem.

Lambing Season and Raven Attacks

In 1985, lambing took place mainly from January through March, with the peak in mid-February. Reports of attacks on sheep were received from Howard Byron (Dog Control Officer) and Ray Stewart (Farmers' Institute). These were followed by visits to the sheep producers concerned and details of each attack were recorded on a special form (Appendix 1).

Most lamb mortality occurred from the last week of January through the middle of February (Table 1). Thirty-one sheep (three ewes and 28 lambs) were reported to be killed by ravens. This is probably a minimum number as it is likely that other unrecorded losses occurred. One sheep producer, Mike Byron, had four ewes that lambed but the lambs were never found. Newborn lambs may have been killed by ravens and subsequently removed by other scavengers such as Bald Eagles (Haliaeetus leucocephalus). Sheep producers who have free-ranging animals may lose some lambs without ever knowing the exact cause.

Raven attacks occurred throughout the north and central parts of the island. Two of the sheep producers with the greatest losses, Mervin Walde (7) and Jack Webster (7), were located in the central area in close proximity to the Blackburn Road garbage dump, where large numbers of ravens were constantly seen.

Table 1. Attacks on Lambs and Ewes - Saltspring Island, 1985

| Date | Name of Sheep Producer | Location | No. Sheep Attacked (Killed) |
|------------|---------------------------|-----------------------|--------------------------------|
| Jan 21 | s.22 | Stark Road | 3 (2) |
| Jan 28 | | Vesuvius Road | 1 (1) |
| Jan 31 | | Fulford-Ganges Road | 1 (1) |
| Jan 31 | | Fernwood Road | 1 (1) |
| Feb 03 | | Beddis Road | 1 (1) |
| Feb 04 | | Stark Road | 2 (2) |
| Feb 06 | | Fernwood Road | 1 (1) |
| Feb 09 | | Stark Road | 1 (1) |
| late Jan - | | Fulford-Ganges Road | 9 (7) |
| mid-Feb | | | |
| mid-Feb | | Stark Road | 2 (2) |
| mid-Feb | | Sunset Drive | 1 (1) |
| mid-Feb | | Blackburn Road | 6 (6) |
| Feb 17 | | Stark Road | many* |
| Feb 28 | | Blackburn Road | 1 (1) |
| Mar 02 | | Stark Road | 1 (1) |
| Mar 12 | | Stark Road | 1 - |
| Apr 13 | | Beaver Pt./Ruckle Pk. | 1 (1) ewe |
| Apr 14 | | Stark Road | 1 (1) ewe |
| May 13 | | Stark Road | 1 (1) ewe |
| Total: | | | 35(31) |

*Ears and tails pecked during snow cover

Lambs were evidently killed by pecks to the eyes, top of head, mouth (especially tongue) and anal area. Post-mortem examination can determine exactly when and how each animal died (McFarlane, 1965) but such examinations were not possible during this study. However, external examination of the wounds can show whether the animal was alive before attack or was a scavenged carcass. Attacks made on a lamb while it is still alive can be clearly identified by haemorrhages around the wound site and there is usually considerable bleeding from the wound, whereas attacks made after death show no hemorrhages and little bleeding (Houston, 1977). On Saltspring Island, some of the lambs that survived raven attacks had to be destroyed. The first lamb of twins appeared to be the more vulnerable because the ewe was unable to defend her first offspring while giving birth to the second. Lambs more than three days old were rarely attacked unless sick. The three ewes that were killed later in the season all had their eyes pecked out while unable to get up after falling over.

Questionnaire results indicated that approximately 2000 breeding ewes were present on Saltspring Island in 1985 and that a maximum of 3000 lambs would be born. The loss of 28 lambs by raven predation was about 1% of the expected lamb crop, which was smaller than that reported in previous years. It is likely that a higher percentage of lambs was lost to other causes such as hypothermia, disease and dog predation.

Raven Trapping

A modified Australian crow trap, similar to that described by Kluge and Weber (1984), was used to capture ravens during the period of this study. Four captive ravens were used as decoys in the trap set up in Mike Byron's field on Stark Road. A total of 11 wild ravens were caught between January 31 and February 14 (Appendix 2). These ravens were banded, marked with white plastic wing tags (see Stiehl, 1983) bearing individual alpha-numeric codes and released (Table 2). Unfortunately on February 18, an animal (probably a raccoon) entered the trap and the captive birds subsequently escaped. Trapping was discontinued as no more captive ravens were immediately available.

It had been hoped that at least 25 tagged ravens would be released on Saltspring Island so that their movements could be observed. Four of the 11 ravens captured were released on Vancouver Island and were not seen again. There were several reports of the seven remaining ravens at Ruckle Provincial Park, Blackburn Road garbage dump, the vicinity of capture on Stark Road and at the Cupples farm on North End Road. However, without the aid of a spotting scope, the individual identification of these tagged birds was almost impossible. Two birds, A3 and A4, were identified by me; A3 was regularly seen at the garbage dump and A4 was identified once at the Cupples farm on March 5, where a group of up to 20 ravens was seen feeding in a grass field recently spread with manure. However, these observations were insufficient to give any general idea of raven movements on Saltspring Island.

Table 2. Raven Banding Data - Saltspring Island, 1985

| Date | Band No. | Tag No. | Approx. Age | Release Site |
|--------|-------------|---------|-------------|-----------------------------|
| Jan 21 | 1007-676609 | - | ? | into trap |
| Jan 21 | 1007-676610 | - | ? | into trap |
| Jan 21 | 1007-676611 | - | ? | into trap |
| Jan 21 | 1007-676612 | - | ? | into trap |
| Feb 1 | 1007-676613 | A1* | juvenile | Stark Road, Saltspring Is. |
| Feb 1 | 1007-676614 | A2 | juvenile | Stark Road, Saltspring Is. |
| Feb 1 | 1007-676615 | A3 | juvenile | Stark Road, Saltspring Is. |
| Feb 1 | 1007-676616 | A4 | adult | Stark Road, Saltspring Is. |
| Feb 1 | 1007-676617 | A5 | adult | Beacon Hill Park, Victoria |
| Feb 1 | 1007-676618 | A6 | subadult | Piper's Lagoon, Nanaimo |
| Feb 1 | 1007-676619 | A7 | subadult | Beacon Hill Park, Victoria |
| Feb 1 | 1007-676620 | A8 | adult | Piper's Lagoon, Nanaimo |
| Feb 14 | - | B1 | adult | Ruckle Park, Saltspring Is. |
| Feb 14 | - | B2 | adult | Ruckle Park, Saltspring Is. |
| Feb 14 | - | B3 | subadult | Ruckle Park, Saltspring Is. |

* alpha-numeric code: letter designates date, number indicates order of banding

Abundance and Distribution of Ravens

According to several people who have lived on Saltspring Island for most of their lives, ravens were not recorded on the island until the mid 1940s. They were seen infrequently until the late 1960s when the numbers began to build up. Data from the Provincial Museum in Victoria indicate that a similar population increase occurred over most of coastal British Columbia. Until the late 1960s, records of over ten ravens at one place at one time were rare, with the exception of some counts at the Comox garbage dump by Theed Pearse (Pearse 1938). From the 1960s onward, records of groups of ravens became regular.

To determine the abundance and distribution of ravens on Saltspring Island, six roadside surveys were conducted at three-week intervals. A route that covered most of the major roads on the island was chosen. Stops were made at each mile along this route and the numbers of ravens and Northwestern Crows (*Corvus caurinus*) seen or heard in a three minute period were recorded. This method followed that of the North American Roadside Breeding Bird Survey (Robbins and Van Velzen, 1967) except that the intervals between stops were one mile instead of half a mile. A total of 51 stops were used (Figure 1), one of these being the Blackburn Road garbage dump (stop 41). Eighty to 100 ravens were recorded on each survey except the last, with the number of crows always exceeding that of the ravens (Table 3a, Appendices 3-8). The number of ravens was fairly stable from January to the end of April and then decreased in May. The number of crows decreased over the study period. The majority of crows was observed at the garbage dump until the May count, when their distribution was more uniform throughout the island.

The average number of ravens per stop recorded on the survey route, excluding those at the garbage dump, decreased from 1.38 in January to 0.52 in May, whereas the number of crows remained more stable (Table 3b). Ravens were recorded at least once at 45 of the 51 stops, with the largest numbers seen at one time around the Cupples farm, Mt. Belcher, Mt. Bruce, Mt. Maxwell and the garbage dump. Three of the stopping points (15, 16 and 31) with no ravens included a large proportion of salt water within 1/4 mile. The distribution of crows was mainly concentrated at the coastal stopping points with large numbers always seen at Long Harbour, Ganges, Fulford Harbour, northwest of Vesuvius and at Cusheon Lake (Appendix 9). Although a simple habitat distribution survey, similar to that of Weber and Theberge (1977), was conducted on May 9 and 10 (Appendix 10), no obvious relationship between raven distribution and habitat was found.

The average number of ravens per stop was compared to that of the Roadside Breeding Bird Surveys conducted at several locations on Vancouver Island over the past nine years (data provided by the Vertebrate Zoology Section, Provincial Museum, Victoria). It was shown that the number of ravens recorded on Saltspring Island was always considerably higher than elsewhere (Table 4).

Figure 1. Location of Stopping Points on Roadside Survey - Saltspring Island, 1985



Table 3. Summary of Raven and Crow Surveys - Saltspring Island, 1985

- a. Total numbers of ravens and crows recorded, including counts from Blackburn Road garbage dump

| Date | No. Ravens Seen | No. Ravens Heard | Total No. Ravens | No. Crows Recorded |
|-----------|-----------------|------------------|------------------|--------------------|
| Jan 31 | 44 | 46 | 90 | 257 |
| Feb 22 | 47 | 34 | 81 | 642+ |
| Mar 14 | 54 | 42 | 96 | 178 |
| Apr 05 | 37 | 43 | 80 | 257 |
| Apr 24/25 | 53 | 34 | 87 | 126 |
| May 16 | 34 | 22 | 56 | 88 |

- b. Details of raven and crow distribution from six surveys, excluding counts from Blackburn Road garbage dump

| Date | Total No. Ravens | No. Stops Ravens Recorded | Avg. No. Ravens/ Stop* | Total No. Crows | No. Stops Crows Recorded | Avg. No Crows/ Stop** |
|-----------|------------------|---------------------------|------------------------|-----------------|--------------------------|-----------------------|
| Jan 31 | 69 | 24 | 1.38 | 57 | 8 | 1.14 |
| Feb 22 | 50 | 23 | 1.00 | 72 | 9 | 1.44 |
| Mar 14 | 75 | 25 | 1.50 | 108 | 19 | 2.16 |
| Apr 05 | 59 | 25 | 1.18 | 92 | 22 | 1.84 |
| Apr 24/25 | 36 | 20 | 0.72 | 76 | 18 | 1.52 |
| May 16 | 26 | 11 | 0.52 | 73 | 20 | 1.46 |

* total number of ravens recorded divided by 50 stops

** total number of crows recorded divided by 50 stops

Table 4.

Ravens Recorded on Roadside Breeding Bird Surveys - Vancouver Island, 1976-1983

| Location | Year* | Total No. Ravens | No. Stops Ravens Recorded | Avg. No. Ravens/ Stop ** |
|----------------|-------|---------------------|---------------------------------|--------------------------------|
| Campbell River | 1976 | 15 | 13 | 0.30 |
| | 1978 | 8 | 6 | 0.16 |
| | 1981 | 9 | 5 | 0.18 |
| | 1982 | 8 | 6 | 0.16 |
| Nanaimo | 1976 | 17 | 10 | 0.34 |
| | 1978 | 8 | 7 | 0.16 |
| | 1981 | 8 | 8 | 0.16 |
| | 1982 | 8 | 8 | 0.16 |
| | 1983 | 12 | 8 | 0.24 |
| Chemainus | 1976 | 4 | 2 | 0.08 |
| | 1978 | 3 | 3 | 0.06 |
| Victoria | 1976 | 6 | 5 | 0.12 |
| | 1978 | 3 | 3 | 0.06 |
| | 1981 | 2 | 2 | 0.04 |
| | 1982 | 11 | 6 | 0.22 |

* surveys conducted in June of each year

**total number of ravens recorded divided by 50 stops

Where possible, daily counts of ravens were made at the Blackburn Road garbage dump. It was originally intended that the time of day at which the counts were made should be varied. In this way, daily fluctuations in number might be determined. However, vehicles entered the dump at 5 to 10 minute intervals from 10:00 to 16:30 each day so that the birds were constantly disturbed and counts became difficult. Early morning counts were therefore most useful, but these became less regular as the breeding season progressed as this time of day was also best for observing breeding activity.

More than 20 ravens were always seen at the garbage dump with no notable increase or decrease in numbers over the study period (Appendix 11). Most ravens spent their time either circling around in the air, spotting and harassing crows with food, or resting in the surrounding conifers in the middle of the day. Ravens were seen feeding on the ground in large numbers only in the early morning. It is likely that most of the ravens at the dump were either first-year birds that had not yet come into breeding condition or non-breeding adults. For example, A3, a tagged bird regularly seen at the dump, was a subadult. Members of the breeding population may have visited the dump periodically when natural food sources were scarce or unavailable.

The number of crows observed feeding at the dump peaked in January and February when 500 birds were seen on most days. This number declined to 50 to 100 in April and May, and it would appear that the winter population moves off the island when the breeding season begins. The crows were only minimally disturbed by regular vehicle activity at the dump and were always the first to return after such disturbance.

The raven count data collected from the roadside surveys, the garbage dump counts and pairs on territory suggest that the total population of ravens on Saltspring probably exceeds 300 birds in winter, dropping to just below this number when the breeding season begins. However, once the breeding adults scatter to form pairs on territory, it becomes more difficult to give a population estimate.

Nesting Biology

Ravens usually begin nest-building in late February to early March and lay 3 to 7 eggs which are incubated for 21 days (Holyoak, 1967; Goodwin, 1976; Stiehl, 1985). The period from hatching to fledging is 40 to 45 days (Stiehl, 1985).

Nests can be located in trees (mostly conifers), cliff ledges and occasionally buildings. Despite making contact with several local naturalists, no exact locations of raven nests were obtained for Saltspring prior to the breeding season. This lack of specific knowledge meant that finding nest sites became very time-consuming because an abundance of suitable nest sites appeared to be available.

Spring was slightly later than average this year, judging by the first appearance of many spring flowers and the beginning of breeding activity for many common birds. The earliest signs of ravens nest-building was on March 14, although pairs had been seen on territory prior to this. By April 10, three nest sites had been located (Figure 2, Appendix 12). No more active nests were found after that date. Later in April, three other nests that had been in use in previous years were shown to me: one on Stark Road and two on the Patterson property south of the Fulford Harbour ferry terminal. All of these nests were in trees, four in Douglas-firs (Pseudotsuga menziesii), one in a grand fir (Abies grandis) and one in broadleaf maple (Acer macrophyllum). These sites occupied average-sized trees, often in small valleys, which could be easily observed from the tops of surrounding trees but which a human observer could only see from directly below. Two other nest sites on cliff ledges on Mount Belcher were reported by Alan Best to have been in use in 1983, but these were not readily accessible so they were not investigated.

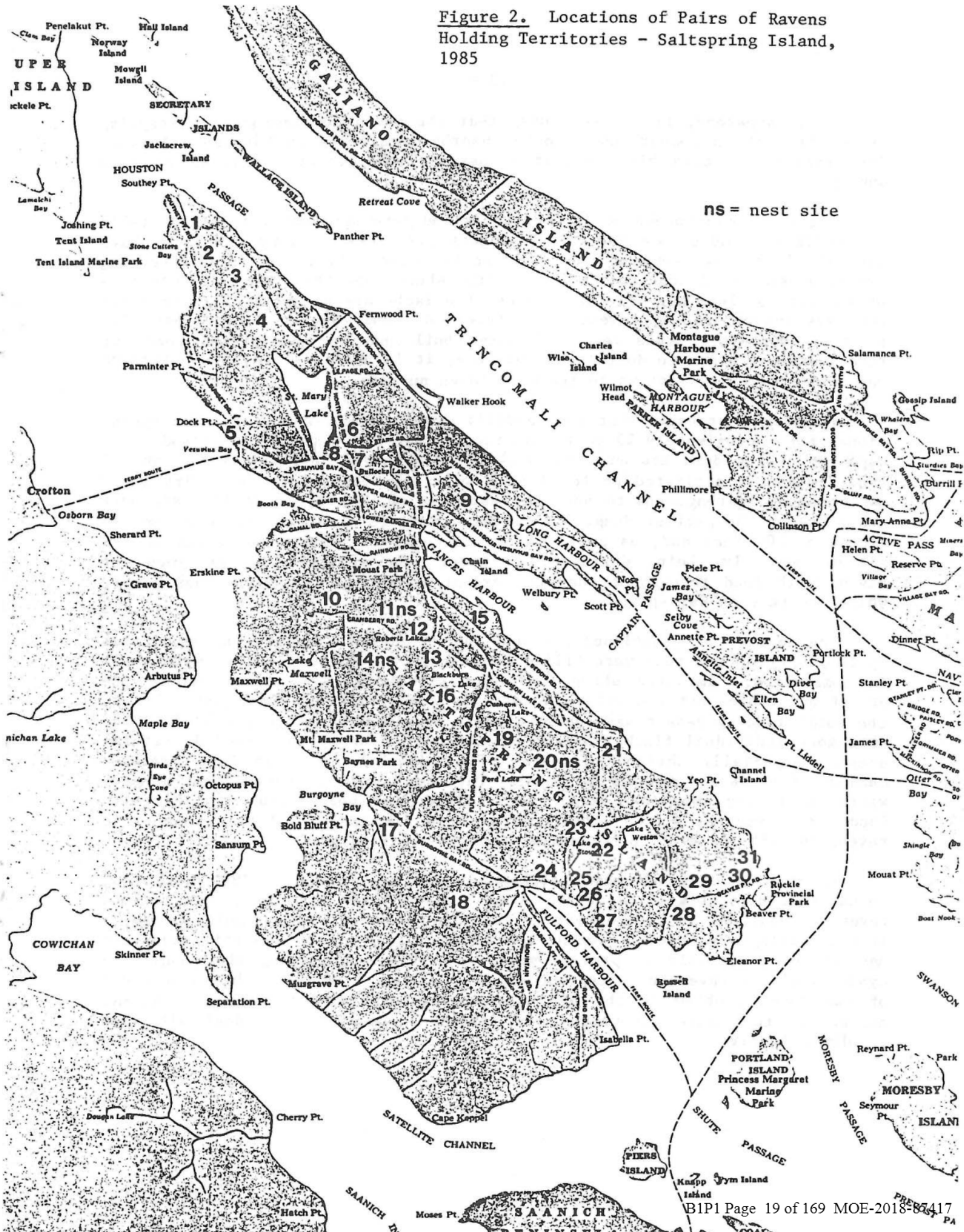
Of the three occupied nests observed in 1985, two were abandoned before hatching while the third produced two or three young which fledged about June 20 (Appendix 12). The reasons for nest abandonment were unknown but one nest (Mt. Belcher) was extremely close to the Blackburn Road garbage dump and other ravens regularly invaded the pair's territory. Interference or nest predation may have taken place.

Altogether, 31 raven territories were located on the island, excluding the area of Mt. Bruce, Mt. Tuam and Mt. Sullivan (Figure 2). This produced a minimum density of 26 nests/100 km². When compared to the highest recorded density in Europe, of 17 nests/100 km² in mid-Wales (Newton et al., 1982), where the habitat type is very similar to that of coastal British Columbia, the breeding density of ravens on Saltspring is very high.

Concluding Discussion

As no studies have been done on the ecology of the raven in western British Columbia, the reasons for the recent increase in raven abundance can only be surmised. The fact that ravens are consistently observed at landfill garbage dumps and that the growth of human populations has increased the need for these dumps is probably no coincidence. Other corvid species, such as the Black-billed Magpie (Pica pica), American Crow (Corvus brachyrhynchos) and Northwestern Crow, have been shown to readily adapt to urban environments. In its more traditional wilderness environment, the raven is a natural scavenger and, along with birds of prey, helps to clean up bird and mammal carcasses. It is only a small step to take advantage of livestock farming and garbage dumps. The adult raven has no natural predators except man; it outcompetes other corvids and is extremely aggressive towards birds of prey, such as the Bald Eagle, Turkey Vulture (Cathartes aura) and the Red-tailed Hawk (Buteo jamaicensis), during the breeding season when these may be perceived as a threat to eggs and young.

Figure 2. Locations of Pairs of Ravens Holding Territories - Saltspring Island, 1985



It is apparent, from this study, that the raven population on Saltspring Island is high in comparison to other nearby localities on Vancouver Island. The reasons for this high population density are probably related to food supply.

The numbers of sheep on Saltspring Island have apparently remained stable for several decades, whereas the husbandry practices in many instances have markedly improved. Many of the small-scale farmers (with up to 50 breeding ewes), whose main income does not come from sheep, now have barns or some kind of shelter for lambing. In these cases, the lambs are protected for the first few days and attacks by ravens occur rarely and only when the lambs are free to roam outdoors. Crows regularly enter buildings to take animal feed but ravens are not known to do this. Therefore, it is unlikely that sheep farming has been responsible for an increase in raven numbers.

It is more probable that the landfill garbage dump, which has been operational for approximately 20 years, attracted ravens to Saltspring Island. The capacity of the dump has enlarged with the increase in population of the island, currently estimated to be about 6000. Many landowners deal with their own household garbage onsite but the residents of Ganges, in particular, make heavy use of the garbage dump. The garbage dump is situated inland at an altitude of 500 feet and, as gulls do not frequent the dump, the ravens have a virtual monopoly, being dominant to crows. The garbage dump provides the ravens with food throughout the year except in periods of heavy snow cover, which are rare on Saltspring.

The results of questionnaires sent out to sheep producers indicated that up to 100 sheep per year were killed by ravens, but losses in 1985 were small in comparison. Improved sheep husbandry practices have helped reduce the predation problem but two other factors may also have been important. First, the total lambing season was condensed into only two to three months in 1985, with most individual flocks lambing in three to four weeks. Second, several people, especially Chris Wooldridge (SPCA officer) and Alan Best (retired curator of birds and mammals at Stanley Park Zoo), have suggested that a heavy winter mortality among the local black-tailed deer population provided extra food for scavenging birds. These people have also suggested that numbers of ravens in 1985 appeared to be smaller than in previous years.

It must be stressed that, although losses to ravens in 1985 were low, annual fluctuations will occur and sheep producers may experience more serious raven depredations in future years. Further counts of ravens would be useful in determining a pattern of annual fluctuations in numbers. In this study, it has not been possible to provide much information concerning the population dynamics of the raven on Saltspring Island. If, as I believe, the major cause of the raven problem is the high raven population rather than poor animal husbandry, then more information on ravens is necessary to deal with the problem effectively.

Recommendations

The raven population on Saltspring Island has become too high for the safety of local livestock populations. Control measures must be taken to reduce the population to an acceptable level. The lack of knowledge about the population dynamics of the raven complicates the decision as to which methods to use to reduce numbers and for how long. Unless more details of the raven's ecology on Saltspring Island are known, no one type of control measure will be effective. However, a combination of measures, over a number of years, may offset this lack of knowledge.

Although most sheep producers are taking reasonable steps to protect their animals, two possible improvements in sheep husbandry, as suggested by provincial sheep specialist Dr. Steve Mason¹, could be made. The onsite disposal of carrion (entrails of slaughtered lambs, afterbirths and carcasses of dead animals) could attract ravens. Deep burial combined with a wooden cover over the burial pit would discourage dogs and ravens from digging up carrion. In addition to this, it may be possible to protect newborn lambs by ensuring that ewes in labour are placed under cover and that they remain there until the lambs are at least two days old. Such facilities are already being provided by many of the Saltspring Island sheep producers and others may find that confining only a few animals at a time is cost-effective. However, these recommendations would have much less effect on raven predation than a reduction in raven numbers.

The Regional Problem Wildlife committee recommended in January 1985 that a legal open season on shooting ravens (on private land only) take place on Saltspring Island. Regulations to permit this open season were approved by the Ministry of Environment in June. If this method is to be effective, the shooting effort must be increased from past years (20 to 30 ravens were shot in early 1985). A concentrated effort at a place where ravens congregate in large numbers, such as the garbage dump, could help to reduce the population. Ravens are notoriously wary of guns, however, and this method may prove difficult.

Trapping ravens is possible, as proven by this year's efforts with a modified Australian crow trap. Captive ravens may be needed as decoys and the traps should be checked daily. In order to capture large numbers of ravens in a short time, several traps should be in operation at the same time. Other trapping methods such as drop-netting require considerable time and effort; cannon-netting also requires specialized training and experience. Trapping and shooting would be most effective in November and December when the population is likely to be at a peak and before the lambing season begins. However, a reduction of the Saltspring Island raven population could be temporary if other ravens readily move in from the other Gulf Islands and Vancouver Island.

¹provincial livestock nutritionist as of July 1985 - W.C.W.

As the garbage dump is a major source of food for ravens, its removal from Saltspring Island would probably result in a rapid decrease in raven numbers. By removing access to this major food source, other ravens would be deterred from migrating to Saltspring. Better management of the existing site or relocation on the island may reduce the raven population but probably only over a long period of time unless other control measures are used simultaneously. The operation of the Blackburn Road landfill site is currently being reviewed by the Waste Management Branch for reasons other than raven depredations.

Finally, it must be said that there are still too many unknowns concerning the raven population to make more specific recommendations. More information is needed on breeding numbers, breeding success, movements, mortality rates, possible seasonal changes in numbers and when and how natural mortality occurs. This would make a very suitable study for a Master's thesis, particularly as some actual breeding sites are known and a few birds have been tagged. Until this study is possible, some of the above control measures should be implemented in 1985-86 and the results carefully monitored.

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- Weber, W.C. and J.B. Theberge. 1977. Breeding bird survey counts as related to habitat and date. Wilson Bulletin 89: 543-561.

Appendix 1. Raven Attack Reporting Form

Name of farmer: _____

Address: _____

Phone no. _____

Date of attack: _____

Location: _____

No. lambs attacked: _____

No. lambs killed: _____

Details of wounds/injuries: _____

Time of day (if known): _____

If actual attack witnessed, no. ravens involved: _____

Comments on the behaviour of the ravens: _____

Total no. sheep in flock at time of attack: _____ lambs _____ ewes

Other information: _____

Appendix 2. Raven trapping information - Saltspring Island, 1985

- Jan 21 - four captive, banded ravens placed into modified Australian crow trap on Stark Road
- Jan 31 - 08:00-08:30 25-35 wild ravens flying around trap site; four captive birds in trap
- 16:30 two additional ravens in trap
- Feb 01 - eight ravens banded and wing-tagged by A. Brenchley and T. Kluge
- Feb 07 - 15:15-16:30 25+ ravens and 30-40 crows at trap site; no sign of wing-tagged birds; only three captive birds in trap
- Feb 12 - 08:10 five ravens in trap; 12+ wild birds at trap site
- Feb 14 - 08:00-08:30 six ravens in trap; some shooting near trap site
- 14:30 three ravens wing-tagged by A. Brenchley and R. Stewart
- Feb 15 - 08:30-09:30 four ravens in trap, one unbanded; no wing-tagged birds seen; ravens quite wary, probably because of shooting
- Feb 16 - six ravens in trap (M. Byron)
- Feb 18 - raccoon entered trap overnight and broke bottom wires; all but two of the ravens escaped (M. Byron)
- Feb 19 - 08:10 two banded ravens in trap; approximately 15-20 other ravens seen
- 16:45 only one raven in trap
- Feb 21 - 16:15-17:00 only one raven in trap; 12+ other ravens seen, none wing-tagged
- Feb 26 - no ravens in trap

Appendix 3. Raven Survey - Saltspring Island, January 31, 1985

| Stopping Point | No. Ravens Seen | No. Ravens Heard | Total No. Crows | Time |
|-----------------|-----------------|------------------|-----------------|-------|
| 1. | 1 | - | - | 08:45 |
| 2. | - | - | - | 08:56 |
| 3. | - | - | - | 08:59 |
| 4. | - | - | - | 09:06 |
| 5. | - | 3 | 19(S) | 09:14 |
| 6. | 2 | - | - | 09:20 |
| 7. | 5 | 3-4 | - | 09:27 |
| 8. | - | 3-4 | - | 09:34 |
| 9. | - | 1 | - | 09:40 |
| 10. | - | 2 | - | 09:46 |
| 11. | - | - | - | 09:54 |
| 12. | - | - | - | 10:10 |
| 13. | - | - | - | 10:17 |
| 14. | - | - | - | 10:25 |
| 15. | - | - | - | 10:30 |
| 16. | - | - | - | 10:45 |
| 17. | - | 2 | - | 10:53 |
| 18. | 1 | - | - | 11:00 |
| 19. | - | - | - | 11:09 |
| 20. | - | - | - | 11:20 |
| 21. | - | 1 | - | 11:27 |
| 22. | - | - | - | 11:35 |
| 23. | - | - | - | 11:41 |
| 24. | - | 1 | - | 11:47 |
| 25. | - | - | - | 11:55 |
| 26. | - | - | - | 12:02 |
| 27. | - | - | - | 12:10 |
| 28. | - | - | - | 12:16 |
| 29. | - | 2 | 7(S) | 13:00 |
| 30. | - | - | 27(S) | 13:07 |
| 31. | - | - | 1(H) | 13:25 |
| 32. | - | 2 | - | 13:30 |
| 33. | - | - | - | 13:38 |
| 34. | - | 1 | - | 13:52 |
| 35. Mt. Maxwell | 2 | - | - | 14:03 |
| 36. | - | 3-4 | - | 14:30 |
| 37. | - | - | - | 14:40 |
| 38. | - | - | - | 14:46 |
| 39. | - | 4 | 1(H) | 14:58 |
| 40. Mt. Belcher | 11 | 2 | 1(H) | 15:10 |
| 41. dump | 20+ | 10 | 150-200 | 15:30 |
| 42. | - | 3 | 1(H) | 15:40 |
| 43. | - | 2 | - | 15:46 |
| 44. | 1 | 2 | - | 15:58 |
| 45. | - | 2 | - | 16:07 |
| 46. | - | - | - | 16:11 |
| 47. | 1 | 2 | - | 16:17 |
| 48. | - | 2 | - | 16:30 |
| 49. | - | - | - | 16:35 |
| 50. | - | - | - | 16:41 |
| 51. | - | - | - | 16:50 |

Appendix 4. Raven Survey - Saltspring Island, February 22, 1985

| Stopping Point | No. Ravens Seen | No. Ravens Heard | Total No. Crows | Time |
|----------------|-----------------|------------------|-----------------|-------|
| 1. | - | - | - | 08:45 |
| 2. | - | - | - | 08:55 |
| 3. | 3 | - | - | 09:00 |
| 4. | - | - | 1(H) | 09:07 |
| 5. | - | 1 | - | 09:13 |
| 6. | 1 | 1 | 34(S) | 09:22 |
| 7. | 4 | 1 | - | 09:28 |
| 8. | - | - | - | 09:35 |
| 9. | - | - | 1(H) | 09:40 |
| 10. | - | - | - | 09:46 |
| 11. | - | 1 | - | 09:57 |
| 12. | - | - | - | 10:07 |
| 13. | - | - | - | 10:12 |
| 14. | - | - | - | 10:17 |
| 15. | - | - | - | 10:21 |
| 16. | - | - | 1(H) | 10:35 |
| 17. | - | - | 1(H) | 10:40 |
| 18. | 1 | - | - | 10:45 |
| 19. | - | 2 | - | 10:51 |
| 20. | - | - | 1(H) | 11:00 |
| 21. | - | - | - | 11:06 |
| 22. | - | 1 | - | 11:15 |
| 23. | - | 2 | - | 11:20 |
| 24. | - | - | - | 11:25 |
| 25. | - | - | - | 11:32 |
| 26. | - | 2 | - | 11:39 |
| 27. | 1 | 2 | - | 11:51 |
| 28. | - | - | - | 12:10 |
| 29. | - | 1 | 3(S) | 12:24 |
| 30. | - | - | 29(S) | 12:30 |
| 31. | - | - | - | 12:48 |
| 32. | - | - | - | 12:56 |
| 33. | - | - | - | 13:04 |
| 34. | - | 2+ far away | - | 13:15 |
| 35. | - | - | 1(H) | 13:21 |
| 36. | - | 1 | - | 13:28 |
| 37. | - | - | - | 13:38 |
| 38. | - | - | - | 13:45 |
| 39. | 4 | - | - | 13:51 |
| 40. | - | 4 | - | 14:02 |
| 41. dump | 25-30 | 10+ | 570+(S) | 14:18 |
| 42. | - | 4 | - | 14:30 |
| 43. | - | 3 | - | 14:35 |
| 44. | 2 | 1 | - | 14:42 |
| 45. | - | 1 | - | 14:48 |
| 46. | - | - | - | 14:52 |
| 47. | 1 | 1 | - | 14:57 |
| 48. | - | 2 | - | 15:05 |
| 49. | - | - | - | 15:10 |
| 50. | - | 1 | - | 15:17 |
| 51. | - | - | - | 15:25 |

Appendix 5. Raven Survey - Saltspring Island, March 14, 1985

| Stopping Point | No. Ravens Seen | No. Ravens Heard | Total No. Crows | Time |
|----------------|-----------------|------------------|-----------------|-------|
| 1. | - | 3 | - | 07:08 |
| 2. | - | - | 1(H) | 07:17 |
| 3. | - | - | - | 07:21 |
| 4. | - | - | - | 07:27 |
| 5. | - | - | 1(H) | 07:33 |
| 6. | - | - | - | 07:39 |
| 7. | - | 4 | - | 07:46 |
| 8. | - | - | - | 07:51 |
| 9. | - | - | - | 07:57 |
| 10. | - | - | 1(H) | 08:03 |
| 11. | - | - | - | 08:09 |
| 12. | - | - | 3-4(H) | 09:19 |
| 13. | 3 | - | 1(S) | 09:25 |
| 14. | 1 | - | 7(S), 5(H) | 09:32 |
| 15. | - | - | 2(H) | 09:37 |
| 16. | - | - | 17(S) | 09:50 |
| 17. | - | 2 | 25(S), 4-5(H) | 09:56 |
| 18. | - | 1 | - | 10:03 |
| 19. | - | - | - | 10:10 |
| 20. | - | - | 3(H) | 10:16 |
| 21. | 1 | 1 | 1(S), 4-5(H) | 10:23 |
| 22. | 1 | 2 | - | 10:33 |
| 23. | - | 1 | - | 10:40 |
| 24. | - | 2 | - | 10:50 |
| 25. | - | 1 | - | 10:57 |
| 26. | 1 | - | - | 11:05 |
| 27. | - | 1 | - | 11:10 |
| 28. | - | - | - | 11:17 |
| 29. | - | 3 | - | 11:38 |
| 30. | - | - | 10(S) | 11:45 |
| 31. | - | - | 2(H) | 11:50 |
| 32. | - | 1 | - | 11:57 |
| 33. | - | - | - | 12:04 |
| 34. Mt. Bruce | 20+ | 2 | 1(S), 4-5(H) | 12:17 |
| 35. | - | - | 2(S) | 12:23 |
| 36. | - | 3 | - | 12:32 |
| 37. | - | - | - | 12:45 |
| 38. | - | 2 | - | 12:51 |
| 39. | 1 | 1 | - | 12:59 |
| 40. | - | 1 | 3(H) | 13:08 |
| 41. dump | 20+ | - | 60-70(S) | 14:27 |
| 42. | - | 7 | - | 14:36 |
| 43. | 2 | - | - | 14:43 |
| 44. | 4 | - | - | 14:50 |
| 45. | - | 2 | - | 15:04 |
| 46. | - | - | - | 15:11 |
| 47. | - | - | 6(H) | 15:20 |
| 48. | - | - | - | 15:33 |
| 49. | - | 1 | - | 15:40 |
| 50. | - | - | 2(H) | 15:45 |
| 51. | - | - | 2(H) | 15:48 |

Appendix 6. Raven Survey - Saltspring Island, April 5, 1985

| Stopping Point | No. Ravens Seen | No. Ravens Heard | Total No. Crows | Time |
|----------------|-----------------|------------------|-----------------|-------|
| 1. | - | - | 2(S) | 06:50 |
| 2. | - | - | 1(H) | 06:55 |
| 3. | - | - | - | 07:00 |
| 4. | - | - | 5(S), 1(H) | 07:07 |
| 5. | - | - | - | 07:14 |
| 6. | - | - | - | 07:20 |
| 7. | - | 2 | - | 07:27 |
| 8. | - | 1 | - | 07:33 |
| 9. | - | - | - | 07:39 |
| 10. | - | - | - | 07:45 |
| 11. | - | - | - | 07:51 |
| 12. | - | 1 | 2(H) | 07:59 |
| 13. | - | - | 1(H) | 08:05 |
| 14. | 1 | 1 | 3(H) | 08:10 |
| 15. | - | - | 12(S), 6(H) | 08:15 |
| 16. | - | - | 4(S), 2(H) | 10:06 |
| 17. | - | 2 | 6(H) | 10:13 |
| 18. | - | 1 | - | 10:18 |
| 19. | 1 | 2 | 1(H) | 10:25 |
| 20. | - | - | - | 10:30 |
| 21. | - | - | - | 10:37 |
| 22. | 2 | - | - | 10:45 |
| 23. | - | 2 | - | 10:52 |
| 24. | 1 | - | - | 10:58 |
| 25. | - | 1 | - | 11:05 |
| 26. | - | - | - | 11:15 |
| 27. | - | - | 2(H) | 11:21 |
| 28. | - | - | 2(H) | 11:31 |
| 29. | - | 1 | - | 11:45 |
| 30. | - | - | 23(S) | 11:50 |
| 31. | - | - | 2(H) | 11:56 |
| 32. | - | 2 | - | 12:02 |
| 33. | - | - | - | 12:09 |
| 34. Mt. Bruce | 9 | - | - | 12:25 |
| 35. | 1 | 2 | - | 12:33 |
| 36. | - | 1 | 6(H) | 12:42 |
| 37. | - | 3 | 1(S) | 12:51 |
| 38. | - | 1 | - | 12:57 |
| 39. | 1 | 2 | - | 13:06 |
| 40. | - | 1 | 3(H) | 13:22 |
| 41. dump | 15-20 | - | 165(S) | 13:35 |
| 42. | - | 6-10 | 1(H) | 13:57 |
| 43. | - | - | - | 14:03 |
| 44. | - | 1 | - | 14:10 |
| 45. | - | 2 | 1(H) | 14:20 |
| 46. | 1 | 1 | 1(H) | 14:27 |
| 47. | - | - | 2(H) | 14:35 |
| 48. | - | - | 1(S), 1(H) | 14:46 |
| 49. | - | 2 | - | 14:52 |
| 50. | - | - | - | 14:58 |
| 51. | - | - | - | 15:10 |

Appendix 7. Raven Survey - Saltspring Island, April 24/25, 1985

| Stopping Point | No. Ravens Seen | No. Ravens Heard | Total No. Crows | | Time |
|----------------|-----------------|------------------|-----------------|--------|-------|
| 1. | - | - | - | Apr 24 | 08:05 |
| 2. | - | 2 | - | | 08:10 |
| 3. | - | - | - | | 08:15 |
| 4. | - | 1 | 2(H) | | 08:21 |
| 5. | - | 1 | 2(H) | | 08:27 |
| 6. | - | - | - | | 08:33 |
| 7. | - | - | - | | 08:39 |
| 8. | - | - | - | | 08:45 |
| 9. | - | - | - | | 08:51 |
| 10. | - | - | - | | 08:56 |
| 11. | 1 | - | - | | 09:04 |
| 12. | - | 2 | 2(H) | | 09:12 |
| 13. | - | - | 1(H) | | 09:17 |
| 14. | - | - | 2(H) | | 09:32 |
| 15. | - | - | 5(S), 4(H) | | 09:43 |
| 16. | - | - | 2(S) | | 10:07 |
| 17. | 1 | 2 | 1(S) | | 10:13 |
| 18. | - | - | 4(H) | | 10:20 |
| 19. | - | - | - | | 10:26 |
| 20. | - | - | - | | 10:32 |
| 21. | - | - | 2(H) | | 10:38 |
| 22. | - | - | - | | 10:47 |
| 23. | - | 2 | - | | 10:55 |
| 24. | - | - | - | | 11:38 |
| 25. | - | - | - | | 11:03 |
| 26. | - | 1 | - | | 11:08 |
| 27. | - | - | - | | 11:19 |
| 28. | 1 | - | 1(S), 2(H) | | 11:25 |
| 29. | - | - | - | | 11:45 |
| 30. | - | - | 15(S), 1(H) | | 11:50 |
| 31. | - | - | 6(S), 4(H) | | 15:06 |
| 32. | - | - | - | | 15:13 |
| 33. | - | - | - | | 15:20 |
| 34. | - | 2 | - | | 15:53 |
| 35. | - | - | - | | 16:00 |
| 36. | - | - | - | | 16:11 |
| 37. | - | 4 | - | Apr 25 | 08:40 |
| 38. | - | 2 | - | | 08:53 |
| 39. | - | 2 | - | | 09:02 |
| 40. | - | 2 | 6(H) | | 09:15 |
| 41. dump | 45-50 | - | 50+(S) | | 09:28 |
| 42. | - | 3 | - | | 09:44 |
| 43. | - | 3 | 2(H) | | 09:50 |
| 44. | - | 1 | - | | 10:00 |
| 45. | - | 1 | - | | 10:16 |
| 46. | - | 1 | 4(S) | | 10:22 |
| 47. | - | - | 6(H) | | 10:28 |
| 48. | - | - | - | | 10:40 |
| 49. | - | - | - | | 10:45 |
| 50. | - | 1 | - | | 10:58 |
| 51. | - | - | 2(H) | | 11:05 |

Appendix 8. Raven Survey - Saltspring Island, May 16, 1985

| Stopping Point | No. Ravens Seen | No. Ravens Heard | Total No. Crows | Time |
|----------------|-----------------|------------------|-----------------|-------|
| 1. | - | - | - | 06:40 |
| 2. | - | - | - | 06:45 |
| 3. | - | - | - | 06:51 |
| 4. | - | - | 2(H) | 06:57 |
| 5. | - | - | - | 07:03 |
| 6. | - | - | 1(H) | 07:09 |
| 7. | - | - | - | 07:18 |
| 8. | - | - | - | 07:26 |
| 9. | - | - | 2(H) | 07:33 |
| 10. | - | - | - | 07:39 |
| 11. | - | - | - | 07:45 |
| 12. | - | - | 2(H) | 07:55 |
| 13. | - | - | - | 08:01 |
| 14. | - | 1 | 2(S) | 08:08 |
| 15. | - | - | 3(S), 10(H) | 08:14 |
| 16. | - | - | 6(S) | 09:31 |
| 17. | - | 2 | 1(S), 1(H) | 09:38 |
| 18. | 1 | 1 | 1(H) | 09:45 |
| 19. | - | - | - | 09:52 |
| 20. | - | - | 2(H) | 09:58 |
| 21. | - | 1 | 3(H) | 10:05 |
| 22. | - | - | - | 10:14 |
| 23. | - | - | - | 10:21 |
| 24. | - | - | - | 10:29 |
| 25. | - | - | - | 10:37 |
| 26. | - | - | - | 10:43 |
| 27. | - | - | - | 10:50 |
| 28. | - | - | 2(H) | 10:58 |
| 29. | - | - | - | 11:16 |
| 30. | - | 1 | 14(S), 2(H) | 11:28 |
| 31. | - | - | 2(S), 2(H) | 11:34 |
| 32. | - | - | 2(H) | 11:40 |
| 33. | - | - | - | 11:47 |
| 34. | - | - | - | 11:59 |
| 35. | - | - | - | 12:06 |
| 36. | - | - | - | 12:13 |
| 37. | - | 2 | - | 12:23 |
| 38. | - | - | - | 12:30 |
| 39. | 1 | 2 | - | 12:38 |
| 40. | - | 1 | 2(H) | 12:48 |
| 41. dump | 30+ | - | 10-15(S) | 13:10 |
| 42. | - | 8 | - | 13:19 |
| 43. | - | - | - | 13:26 |
| 44. | 2 | 2 | - | 13:39 |
| 45. | - | - | 2(H) | 13:57 |
| 46. | - | - | 1(H) | 14:04 |
| 47. | - | - | 4(S), 3(H) | 14:11 |
| 48. | - | - | - | 15:16 |
| 49. | - | 1 | 1(H) | 15:22 |
| 50. | - | - | - | 15:28 |
| 51. | - | - | - | 15:37 |

Appendix 9. Distribution of Ravens and Crows on Roadside Surveys 1-6

| Stopping point | Ravens | | | | | | Total | Crows | | | | | | Total |
|-------------------|--------|---|----|---|---|---|-------|-------|----|----|----|----|----|-------|
| | 1 | 2 | 3 | 4 | 5 | 6 | | 1 | 2 | 3 | 4 | 5 | 6 | |
| 1. | 1 | - | 3 | - | - | - | 4 | - | - | - | 2 | - | - | 2 |
| 2. | - | - | - | - | 2 | - | 2 | - | - | 1 | 1 | - | - | 2 |
| 3. | - | 3 | - | - | - | - | 3 | - | - | - | - | - | - | - |
| 4. | - | - | - | - | 1 | - | 1 | - | 1 | - | 6 | 2 | 2 | 11 |
| 5. | 3 | 1 | - | - | 1 | - | 5 | 19 | - | 1 | - | 2 | - | 22 |
| 6. | 2 | 2 | - | - | - | - | 4 | - | 34 | - | - | - | 1 | 35 |
| 7. | 9 | 5 | 4 | 2 | - | - | 20 | - | - | - | - | - | - | - |
| 8. | 4 | - | - | 1 | - | - | 5 | - | - | - | - | - | - | - |
| 9. | 1 | - | - | - | - | - | 1 | - | 1 | - | - | - | 2 | 3 |
| 10. | 2 | - | - | - | - | - | 2 | - | - | 1 | - | - | - | 1 |
| 11. | - | 1 | - | - | 1 | - | 2 | - | - | - | - | - | - | - |
| 12. | - | - | - | 1 | 2 | - | 3 | - | - | 4 | 2 | 2 | 2 | 10 |
| 13. | - | - | 3 | - | - | - | 3 | - | - | 1 | 1 | 1 | - | 3 |
| 14. | - | - | 1 | 2 | - | 1 | 4 | - | - | 12 | 3 | 2 | 2 | 19 |
| 15. | - | - | - | - | - | - | - | - | - | 2 | 18 | 9 | 13 | 42 |
| 16. | - | - | - | - | - | - | - | - | 1 | 17 | 6 | 2 | 6 | 32 |
| 17. | 2 | - | 2 | 2 | 3 | 2 | 11 | - | 1 | 30 | 6 | 1 | 2 | 40 |
| 18. | 1 | 1 | 1 | 1 | - | 2 | 6 | - | - | - | - | 4 | 1 | 5 |
| 19. | - | 2 | - | 3 | - | - | 5 | - | - | - | 1 | - | - | 1 |
| 20. | - | - | - | - | - | - | - | - | 1 | 3 | - | - | 2 | 6 |
| 21. | 1 | - | 2 | - | - | 1 | 4 | - | - | 6 | - | 2 | 3 | 11 |
| 22. | - | 1 | 3 | 2 | - | - | 6 | - | - | - | - | - | - | - |
| 23. | - | 2 | 1 | 2 | 2 | - | 7 | - | - | - | - | - | - | - |
| 24. | 1 | - | 2 | 1 | - | - | 4 | - | - | - | - | - | - | - |
| 25. | - | - | 1 | 1 | - | - | 2 | - | - | - | - | - | - | - |
| 26. | - | 2 | 1 | - | 2 | - | 5 | - | - | - | - | - | - | - |
| 27. | - | 3 | 1 | - | - | - | 4 | - | - | - | 2 | - | - | 2 |
| 28. | - | - | - | - | 1 | - | 1 | - | - | - | 2 | 3 | 2 | 7 |
| 29. | 2 | 1 | 3 | 1 | - | - | 7 | 7 | 3 | - | - | - | - | 10 |
| 30. | - | - | - | - | - | 1 | 1 | 27 | 29 | 10 | 23 | 16 | 16 | 121 |
| 31. | - | - | - | - | - | - | - | 1 | - | 2 | 2 | 10 | 4 | 19 |
| 32. | 2 | - | 1 | 2 | - | - | 5 | - | - | - | - | - | 2 | 2 |
| 33. | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 34. | 1 | 2 | 22 | 9 | 2 | - | 36 | - | - | 6 | - | - | - | 6 |
| 35. | 2 | - | - | 3 | - | - | 5 | - | 1 | 2 | - | - | - | 3 |
| 36. | 4 | 1 | 3 | 1 | - | - | 9 | - | - | - | 6 | - | - | 6 |
| 37. | - | - | - | 3 | 4 | 2 | - | - | - | - | 1 | - | - | 1 |
| 38. | - | - | 2 | 1 | 2 | - | 5 | - | - | - | - | - | - | - |
| 39. | 4 | 4 | 2 | 3 | 2 | 3 | 18 | 1 | - | - | - | - | - | 1 |
| 40. | 13 | 4 | 1 | 1 | 2 | 1 | 22 | 1 | - | 3 | 3 | 6 | 2 | 15 |
| 42. | 3 | 4 | 7 | 8 | 3 | 8 | 33 | 1 | - | - | 1 | - | - | 2 |
| 43. | 2 | 3 | 2 | - | 3 | - | 10 | - | - | - | - | 2 | - | 2 |
| 44. | 3 | 3 | 4 | 1 | 1 | 4 | 16 | - | - | - | - | - | - | - |
| 45. | 2 | 1 | 2 | 2 | 1 | - | 8 | - | - | - | 1 | - | 2 | 3 |
| 46. | - | - | - | 2 | 1 | - | 3 | - | - | - | 1 | 4 | 1 | 6 |
| 47. | 3 | 2 | - | - | - | - | 5 | - | - | 6 | 2 | 6 | 7 | 21 |
| 48. | 2 | 2 | - | - | - | - | 4 | - | - | - | 2 | - | - | 2 |
| 49. | - | - | 1 | 2 | - | 1 | 4 | - | - | - | - | - | 1 | 1 |
| 50. | - | 1 | - | - | 1 | - | 2 | - | - | 2 | - | - | - | 2 |
| 51. | - | - | - | - | - | - | - | - | - | 2 | - | 2 | - | 4 |

Appendix 10. Habitat Composition Within 1/4 Mile Radius of Each Stopping Point

| Stop No. | Conifer | Mixed | Broad-leaf* | Scrub | Pasture | Fresh-water | Salt-water | Residential |
|----------|---------|-------|-------------|-------|---------|-------------|------------|-------------|
| 1. | 50 | | | | 40 | | | 10 |
| 2. | | 90 | | | | | | 10 |
| 3. | 60 | 30 | | | | | | 10 |
| 4. | 70 | 20 | | | 10 | | | |
| 5. | 50 | 30 | | | 10 | | 10 | |
| 6. | 60 | 10 | | | 30 | | | |
| 7. | 70 | 10 | | | 20 | | | |
| 8. | 90 | | | | 10 | | | |
| 9. | 90 | | | 10 | | | | |
| 10. | 50 | 20 | 10 | 10 | | 10 | | |
| 11. | 40 | 10 | | | | 40 | | 10 |
| 12. | 80 | | | | | | | 20 |
| 13. | 50 | 30 | | 20 | | | | |
| 14. | 50 | 20 | | | | | 20 | 10 |
| 15. | 20 | 10 | 10 | 10 | | | 50 | |
| 16. | 30 | | | | | | 30 | 40 |
| 17. | | 60 | | | 20 | | 10 | 10 |
| 18. | 20 | 60 | 10 | | | | | 10 |
| 19. | 30 | 50 | | | 20 | | | |
| 20. | 70 | | | 10 | 10 | | | 10 |
| 21. | | 40 | | | | | 40 | 20 |
| 22. | 50 | 40 | | | 10 | | | |
| 23. | 80 | 20 | | | | | | |
| 24. | 60 | 30 | | | | | | 10 |
| 25. | 40 | 50 | | | 10 | | | |
| 26. | 70 | 10 | | | 20 | | | |
| 27. | 80 | 20 | | | | | | |
| 28. | 60 | 10 | | | 20 | | 10 | |
| 29. | 40 | 20 | | 20 | 10 | | | 10 |
| 30. | 50 | 20 | | | | | 30 | |
| 31. | 20 | 20 | | | | | 50 | 10 |
| 32. | 30 | 40 | | | | | 30 | |
| 33. | 60 | 40 | | | | | | |
| 34. | 10 | 10 | 30 | | 40 | | | 10 |
| 35. | 20 | | 10 | | 60 | | | 10 |
| 36. | 60 | 10 | | | | | 20 | 10 |
| 37. | 50 | 30 | | | | | | 20 |
| 38. | 70 | 20 | | | 10 | | | |
| 39. | 40 | 10 | | 40 | | | | 10 |
| 40. | 50 | 40 | 10 | | | | | |
| 41. | 50 | 30 | | | 20 | | | |
| 42. | 30 | 70 | | | | | | |
| 43. | 20 | 20 | | 10 | 40 | | | 10 |
| 44. | 60 | 20 | 10 | | 10 | | | |
| 45. | 30 | 60 | | | | | | 10 |
| 46. | 30 | 40 | | | | | | 30 |
| 47. | 40 | 20 | | | | 30 | | 10 |
| 48. | 40 | 20 | | | 10 | | | 30 |
| 49. | 40 | 40 | | | 10 | | | 10 |
| 50. | | 100 | | | | | | |
| 51. | 30 | 10 | | | 30 | | | 30 |

*including arbutus

Appendix 11. Raven Counts - Blackburn Road Garbage Dump, 1985

| Date | Time | No. Ravens |
|--------|---------------|------------------------|
| Jan 21 | 16:00 | 30 |
| Jan 22 | 13:30 | 75 |
| Jan 24 | 13:30 | 30 |
| Jan 31 | 15:30 - 15:40 | 30+ |
| Feb 06 | 09:05 - 09:15 | 30+ |
| Feb 07 | 12:45 - 13:30 | 68 |
| Feb 12 | 10:30 - 11:00 | 64 |
| Feb 14 | 13:30 | 37 |
| Feb 15 | 12:15 - 13:05 | 30 - 40 |
| Feb 19 | 08:05 - 09:30 | 50 - 60 |
| Feb 21 | 10:50 - 12:15 | 60 - 70 |
| Feb 22 | 14:15 - 14:30 | 36+ |
| Feb 26 | 14:45 - 15:30 | 18 |
| Feb 27 | 08:15 - 09:00 | 45+ |
| Feb 28 | 13:30 - 14:15 | 75+ |
| Mar 05 | 11:55 - 13:20 | 50 - 60 |
| Mar 07 | 09:00 - 09:15 | 70 - 80 (40+ soaring) |
| Mar 08 | 09:00 - 09:45 | 60 - 70 |
| Mar 12 | 10:40 - 11:40 | 30 - 40 |
| Mar 13 | 08:15 - 08:50 | 35 - 40 |
| Mar 14 | 14:25 | 20+ |
| Mar 20 | 14:55 - 15:35 | 35 - 40 |
| Mar 21 | 12:15 - 12:45 | 40 - 45 |
| Mar 26 | 08:15 - 09:00 | 45 - 50 |
| Mar 29 | 08:10 - 08:35 | 40 - 45 |
| Apr 03 | 15:25 | 30 - 35 |
| Apr 05 | 13:30 - 14:00 | 20+ |
| Apr 11 | 07:30 - 08:00 | 65 - 70 |
| Apr 16 | 10:30 - 11:30 | 25 - 30 |
| Apr 17 | 12:15 - 13:00 | 25 - 30 |
| Apr 24 | 17:20 | 20+ (dump on fire) |
| Apr 25 | 09:30 | 45 - 50 (dump on fire) |
| Apr 26 | 14:00 - 14:30 | 60 - 70 (dump on fire) |
| May 02 | 08:20 - 09:15 | 60+ (dump smouldering) |
| May 08 | 08:20 - 09:15 | 120+ |
| May 15 | 08:10 - 08:45 | 25 - 30 |
| May 16 | 13:10 | 30+ |

Appendix 12. Details of Three Known Nest Sites - Saltspring Island, 1985

Nest Site 1: Mt. Belcher Heights

- Apr 03 - Raven disturbed from tree below bluff.
- Apr 09 - Raven disturbed from same tree, nest structure visible.
- Apr 16 - Female incubating but disturbed on approach, no sign of young.
- Apr 18 - 09:30 - 10:10 Female on nest.
10:10 Female left and pair seen around immediate vicinity.
- Apr 24 - 12:15 - 14:15 Watched nest from top of bluff using spotting scope.
No activity around nest, believed abandoned.
- May 03 - Investigated bottom of tree. Many white droppings, no egg shells.
No sign of adults.

Nest Site 2: Opposite Entrance to Peter Arnell Park

- Mar 28 - Pair of ravens calling in agitated manner, possibly nest site nearby.
- Apr 03 - 13:00 - 15:00 One pair of birds active and calling.
- Apr 04 - Nest located in tall grand fir. Pair of ravens reluctant to leave site.
- Apr 10 - Pair of ravens still on site.
- Apr 16 - 08:30 - 10:00 Ravens calling but no activity around nest tree.
- Apr 17 - 08:20 - 09:00 No activity.
11:00 - 12:00 Nest still unattended but pair of ravens observed in vicinity.
- May 02 - 11:15 - 13:40 No sign of activity around the site but pair of ravens calling in the general area, later pair of birds seen.
Possibly renested not far away but could not find nest.
20:30 - 21:00 Returned at dusk to make a final check that the nest was abandoned. No roosting ravens seen or heard.

Nest Site 3: Wright Road, off Mt. Maxwell Road

- Apr 10 - Ravens active around Chris Wooldridge's house.
- Apr 15 * Approximate date of egg-laying.
- Apr 16 - Nest site located in medium-sized Douglas fir. Nest visible only from beneath. Several white droppings on ground.
- Apr 21 - Behaviour pattern changed, adults quiet and pair seen bringing food.
- Apr 24 - Shown nest, two adults disturbed. Birds extremely agitated and circling above.
- Apr 30 - Broken egg shell found beneath nest, not hatched, possibly fallen out, taken by predator or infertile.
- May 02 - Female on nest.
- May 06 * Approximate date of hatching.
- May 09 - Female still on nest, once disturbed pair of birds calling and circling overhead.
- May 15 - Nest still occupied, no sound of young as yet.
- May 23 - Nest still occupied, sounds of young heard.
- May 28 - Nest still occupied, sounds of one young heard.
- Jun 01 - Sounds of two to three young heard.
- Jun 17 - Two young seen sitting at edge of nest.
- Jun 20 * Approximate date of fledging.
- Jun 24 - Two young seen flying.
- Jul 08 - Adults and young remaining in vicinity of nest site.



Capital Regional District

524 YATES STREET P.O. BOX 1000 VICTORIA B.C. V8W 2S6 TELEPHONE (604) 388-4421

November 23, 1990

s.22

Re: Saltspring Island, Blackburn Landfill - Complaint

Your complaints related to Blackburn Landfill have been forwarded to me for reply.

It is my understanding that you are concerned about:

- odours originating from the landfill;
- lack of cover material;
- nuisance vectors such as crows, cats and deer;
- level of inspection.

DMT - for inspection.

Although I understand your concerns, the Region is not in a position to undertake any work at the landfill for the following reasons:

1. Although the CRD is a Joint Permittee with Mr. N. Twa, the Region does not own the land, nor does it have access to the landfill without Mr. Twa's permission.
2. The Region has no means of correcting the deficiencies mentioned above as there is no mechanism in place for the Region to recover costs from users of the facility. The Region is therefore unable to effect any changes to the operation of the landfill.
3. The landfill is operated under Permit No. PR-1839 and is inspected by Waste Management Branch on a periodic basis. It is the role of Waste Management Branch to ensure that the landfill is operated in accordance with the Waste Management Act and records of inspections should be available from the Nanaimo Regional District office (John Finnie, P.Eng., 758-3951).

As I mentioned on the telephone to you, it is the Ministry of Environment's intention to close Blackburn Landfill on 31 December 1991.

...2/

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MUNICIPALITIES AND ELECTORAL AREAS

CENTRAL SAANICH • COLWOOD • ESQUIMALT • LANGFORD • METCHOSIN • NORTH SAANICH • OAK BAY
OUTER GULF ISLANDS • SAANICH • SALTSRING ISLAND • SIDNEY • SOOKE • VICTORIA • VIEW ROYAL

As per your request, I will only contact Director Atkins and John Finnie regarding your concerns. If I can be of further assistance, please call me at 388-4421.

Yours very truly,

A.W. Summers, P.Eng.
Manager Solid Waste Division

AWS/ac

cc: Director Atkins, Saltspring Island
John Finnie, Ministry of Environment
M. Williams, P.Eng., Chief Engineer

bcc: J. Craveiro, Superintendent of Solid Waste

S170-18



MINISTRY OF ENVIRONMENT
AIR AND WASTE MANAGEMENT DIVISION

File No. PR-1839

COMPLAINT FORM

1. Complaint:

Date of Complaint 20 NOV '90

Name of Complainant s.22

Telephone No. s.22

Address of Complainant s.22

Nature of Complaint s.22

Considerable
debris (diapers, paper, etc.) being blown or carried
by birds/animals s.22 Parts of dump
do not appear to have been covered for months.
Lots of ravens in area and on dump. would prefer not
to be identified to Twa or others as complainant.

Received by: JOF

Referred to: LTS - DMT

2. Investigation:

Date 20/11/90

Action Taken Advised we would inspect site + discuss
operation/covering with Twa. Permit requires
weekly (?) covering but caller does not think this
is being done. Situation may necessitate referral
to EEU after initial investigation by waste.
Dennis - inspection for November to be completed
week of Nov 26-? After inspection
we should discuss follow-up.

(Signed) [Signature]

3. Follow-up:

1. Complainant notified by: Letter ✓

Telephone ✓

Date Dec 6/90

2. Others Notified

3. Comments Advised complainant that I
would be directing Mr Twa to
clean up garbage that had
been spread onto neighbouring properties
and to upgrade cover on areas
requiring it. Mrs Lucas (who recently
purchased this property) seemed satisfied

(Signed) [Signature]

(Refer to Procedure Manual for definitions and more specific instructions)

Original to Complaint File

ENV 2101 cc

STATUS: Amende
PROGRAM: Waste Management

File 0280-20/MHNO
V6-90, 50-40

~~DTT~~
~~CF~~

file PR-1839

BRIEFING NOTE - MINISTRY OF ENVIRONMENT

DATE: July 4, 1990

ISSUE: Refuse Disposal - Saltspring Island.

BACKGROUND:

- * The approved CRD Solid Waste Management Plan identified a transfer station as option for Saltspring Island.
- * Public referendum voted transfer station down.
- * Existing landfill site on Saltspring Island is under joint Permit to CRD and N. Twa. CRD maintains they have no authority over the landfill, which is on private (Twa) land.
- * Ministry wants existing site closed since it is located in a watershed supplying drinking water to several hundred people. The Minister has advised CRD that he intends to cancel PR-1839 by December 31, 1991.
- * No other option for residuals disposal presently exists for Saltspring Island other than direct haul to Victoria.

RECOMMENDED POSITION:

- * CRD and N. Twa, as joint Permittees, are responsible for site operation, maintenance and closure.
- * CRD has a Waste Management Plan identifying a transfer station for SSI. They should proceed with the approved plan or initiate an amendment to the plan to identify alternatives.

CAUTIONARY NOTES:

- * CRD has approved a grant to the Saltspring Island Recycling and Solid Waste Disposal Society, to prepare a closure plan for the site. Although Terms of Reference have been submitted, the plan suggests that the Ministry carry out the closure activities. The Society's projected budget requires \$30,000.00 grant from the Ministry. Some assistance may be available to CRD under the Municipal Solid Waste Funding Programs.
- * If the transfer station does not proceed, an amendment to the Waste Management Plan will be required.
- * Island residents appear to want to go it on their own, without CRD involvement.

MINISTRY CONTACT:

J. O. Finnie, P.Eng., Head, Municipal Section
Telephone: 758-3951

APPROVED:

D.M. _____ Date _____

A.D.M. _____ Date _____

MS
50x-1
90

STATUS: Amended
PROGRAM: Waste Management

File: 0280-20/MHNO
V6-90
50-40

LJJ
DT

JOT 1

File

PR-1839

BRIEFING NOTE - MINISTRY OF ENVIRONMENT

DATE: June 28, 1990.

ISSUE: Refuse Disposal - Saltspring Island.

BACKGROUND:

- * The approved CRD Solid Waste Management Plan identified a transfer station as option for Saltspring Island.
- * Public referendum voted transfer station down.
- * Existing landfill site on Saltspring Island is under joint Permit to CRD and N. Twa. CRD disclaims any interest in or authority over the landfill, which is on private (Twa) land.
- * Ministry wants existing site closed since it is located in a watershed supplying drinking water to several hundred people.
- * No other option for residuals disposal exists for Saltspring Island other than direct haul to Victoria.
- * The Minister has advised CRD that he intends to cancel PR-1839 by December 31, 1991.

RECOMMENDED POSITION:

- * CRD and N. Twa, as joint Permittees, are responsible for site operation, maintenance and closure.

CAUTIONARY NOTES:

- * CRD has approved a grant to the Saltspring Island Recycling and Solid Waste Disposal Society, to prepare a closure plan for the site. Although Terms of Reference have been submitted, the plan suggests that the Ministry carry out the closure activities. The Society's projected budget requires \$30,000.00 grant from the Ministry.
- * If the transfer station does not proceed, an amendment to the Waste Management Plan will be required.
- * Island residents appear to want to go it on their own, without CRD involvement.

CONTACT:

J.O. Finnie, P. Eng.
Head, Municipal Section
Telephone: 758-3951

APPROVED:

D.M. _____ Date _____

A.D.M. _____ Date _____

Filed
June 27/90
M. J. [Signature]
280290

STATUS: Amend
PROGRAM: Waste Management

le: 0280-20/MHNO
V6-90
50-40

~~CSJ~~
DT

BRIEFING NOTE - MINISTRY OF ENVIRONMENT

DATE: June 28, 1990.

file
PR-1839

ISSUE: Refuse Disposal - Saltspring Island.

BACKGROUND:

- * The approved CRD Solid Waste Management Plan identified a transfer station as option for Saltspring Island.
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- * No other option for residuals disposal exists for Saltspring Island other than direct haul to Victoria.
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CONTACT:

J.O. Finnie, P. Eng.
Head, Municipal Section
Telephone: 758-3951

APPROVED:

D.M. _____ Date _____

A.D.M. _____ Date _____

filed
June 27/90



PR 1839

Capital Regional District

524 YATES STREET P.O. BOX 1000 VICTORIA B.C. V8W 2S6 TELEPHONE (604) 388-4421

File note: - see Ministry's
response to
Mr. Coelli's
original letter

27 December 1990

Ministry of Environment
Regional Headquarters
2569 Kenworth Road
Nanaimo, B.C.
V9T 4P7



DMT
CJJ

Attention: Mr. D.M. Trudeau
Waste Management Technician, Municipal Section

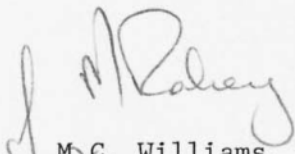
Dear Mr. Trudeau:

RE: Waste Management Permit PR 1839

I acknowledge receipt of your letter of 11 December 1990, and ask that you also send a copy to Mr. Twa.

I attach a copy of a letter dated March 30, 1990 from the CRD Board Chairman to the Minister of Environment, which sets out the CRD's position with respect to Permit PR 1839.

Yours very truly,


M.C. Williams, P.Eng.
Chief Engineer

cc: Director F. Leonard, Chairman of the Board
Director C. Clement, Chairman, Environment Committee
Director J. Atkins, Salt Spring Island
A.W. Summers, Manager, Solid Waste
(with enclosures)

MCW:mr

MUNICIPALITIES AND ELECTORAL AREAS

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OUTER GULF ISLANDS • SAANICH • SALTSRING ISLAND • SIDNEY • SOOKE • VICTORIA • VIEW ROYAL

Capital Regional District

524 YATES ST. P.O. DRAWER 1000 VICTORIA B.C. V8W 2S6 Tel. (604) 388-4421

Office of the Chairman of the Board

March 30, 1990

The Honourable J. Reynolds
Minister of the Environment
Parliament Buildings
Victoria, B.C. V8V 1X4

Dear Mr. Minister:

RE: Salt Spring Island, Blackburn Road - Landfill Waste Management
Permit PR-1839

The condition and future operation of the Blackburn Road, Salt Spring Island Disposal Site was discussed at a meeting of the Board held on March 28, 1990.

The Board has serious concerns on this matter and has directed that I write to you and advise you of the Board's position as follows:

- 1) That the CRD is not a permittee under Waste Management Permit PR-1839.
- 2) That the CRD has no intention of accepting any responsibility whatsoever, for the past or present condition or operation of the Blackburn Road, Salt Spring Island, Disposal Site and in particular, has no intention whatsoever of sharing any cost or responsibility for reclaiming or rehabilitating that Disposal Site.
- 3) That if the Minister of the Environment is sincerely interested in solving the most unsatisfactory condition of the Blackburn Road Landfill Site, as pointed out by the Ministry, only the Ministry can order that the Site be closed and Permit PR-1839 be cancelled.

...../2

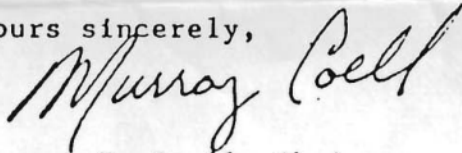
Minister of the Environment

March 30, 1990

- 4) That the CRD favours the closure of that Site and favours the installation on Salt Spring Island, of a solid waste transfer station and the removal of solid waste from Salt Spring Island, for disposal at the Regional District's Regional Landfill Site on Hartland Avenue.

Your early consideration and reply regarding the Board's concerns as described above will be appreciated.

Yours sincerely,



Murray R. Coell, Chairman
Capital Regional District

WMJ/rjf

December 11, 1990

File: PR-1839

DOUBLE REGISTERED

Mr. Norman Twa
P.O. Box 255
Ganges, B.C.
V8T 1E0

~~File~~
File


Dear Mr. Twa:

I have enclosed a copy of my recent inspection of the works authorized under Waste Management Permit PR-1839.

Please note Section D "Action required by permittee". These actions must be completed as soon as possible to bring this operation into compliance.

If you have any questions, please contact the undersigned.

Yours truly,



D. M. Trudeau,
Waste Management Technician
Municipal Section

DMT/lb

cc: Environmental Enforcement Unit

Enclosure

December 11, 1990

File: PR-1839

~~CJ~~
File

DOUBLE REGISTERED

Capital Regional District
524 Yates Street
P.O. Box 1000
Victoria, British Columbia
V8W 2S6

ATTENTION: Mr. M. C. Williams, P.Eng.
Chief Engineer

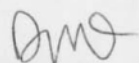
Dear Sir:

I have enclosed a copy of my recent inspection of the works authorized under Waste Management Permit PR-1839.

Please note Section D "Action required by permittee". These actions must be completed as soon as possible to bring this operation into compliance.

If you have any questions, please contact the undersigned.

Yours truly,



D. M. Trudeau,
Waste Management Technician
Municipal Section

DMT/lis

cc: Environmental Enforcement Unit

Enclosure



MINISTRY OF ENVIRONMENT
WASTE MANAGEMENT BRANCH

Permit No. PR-1839
Date of Inspection Nov. 29, 90

PERMIT INSPECTION

Permittee Mr. Twa + C.R.D.
Location Salt Spring Island

A. SAMPLES TAKEN YES ☐ NO ☒
Sources Sampled _____

B. OBSERVATIONS AND COMMENTS:

- Approx. 200 m³ of refuse was uncovered
- Refuse has been spread by wind and animals around the site and to properties bordering on the North end of landfill
- Evidence of recent cover although insufficient in some areas
- Municipal refuse has been deposited in the demolition debris piles

C. PERMIT COMPLIANCE IN ☐ OUT ☒

Based on Site Observations.

COMMENTS: - Refuse material is not remaining in the authorized areas of the landfill
- Cover is insufficient in some areas

D. ACTION REQUIRED BY PERMITTEE: Remove the municipal wastes that have been deposited in the demolition debris stockpiles and the refuse that has spread off site and incorporate it into the rest of your municipal wastes and cover weekly.
Upgrade cover in those areas requiring it.

Permittee or Representative's Signature

Don M. Penlin
For Waste Management

Regional Office Follow-up:

Original to File
Copy to Permittee



54 PR-1839

OCT 16 1990

s.22

MINISTRY OF ENVIRONMENT

RECEIVED

OCT 23 1990

NANAIMO, B.C.

Thank you for your letter regarding the Blackburn Road landfill on Saltspring Island.

I can understand your concern about the disposal of various household hazardous wastes at the landfill site. The Ministry of Environment has challenged all British Columbians to reduce solid waste fifty percent by the year 2000. Part of this program includes removing household and other hazardous wastes from the waste stream for acceptable alternate disposal. In this regard, the Ministry of Environment, the British Columbia Hazardous Waste Management Corporation and the Capital Regional District are jointly sponsoring Household Hazardous Waste Collection Events for the Capital Regional area. The first very successful event was held in June, 1990, and a second was held on September 29 and 30, 1990.

Monitoring of surface and groundwater in the vicinity of the landfill is being conducted by the Ministry's Waste Management staff in Nanaimo. Two of the sampling sites are located on Salt Spring Centre property. Monitoring results to date indicate that Canadian and provincial drinking water standards are being met at both of these sites. Mr. G.E. Oldham, Regional Waste Manager, may be contacted by telephone (748-3951), for further information in this regard.

I appreciate you taking the time to bring your concerns to my attention.

Sincerely,

Original Signed by
MINISTER

John Reynolds,
Minister

✓cc: Mr. G.E. Oldham



Assigned to: Director
Van. Island Region

M.O.: 30112.00

DOF

Due Date: 31-Aug-1990

Subject: BLACKBURN ROAD LANDFILL ON SALT SPRING ISLAND

Addr. To:

Comments:

ACTION: Prepare for Minister's Signature

Sender: s.22



MINISTRY OF ENVIRONMENT
DIRECTOR—VANCOUVER ISLAND REGION

To B. E. Oldham
Date 90/08/14

*Please draft a response for
the Minister's signature by
August 31, 1990*

MO 30/12.00

July 30, 1990.

The Hon. John Reynolds,
Minister of Environment,
Parliament Buildings,
Victoria, B.C.

Dear Sir:

RE: BLACKBURN ROAD LANDFILL ON SALT SPRING ISLAND

s.22

| | |
|---|-------------------------------|
| MINISTER'S OFFICE Ministry of Environment | |
| AUG 03 '90 | |
| PETITION <input type="checkbox"/> | A <input type="checkbox"/> |
| FYI <input type="checkbox"/> | FILE <input type="checkbox"/> |
| FOR REPLY <input checked="" type="checkbox"/> | |
| #30112 | |

decision to close this landfill by December 31, 1991. We agree with the observations contained in your letter of June 19, 1990 to Mr. Murray Coell, Chairman of the Capital Regional District, wherein you recognize the "potential environmental risks associated with continued operation of this site..."

This closure date, however, is one and a half years away. In the meantime, unmonitored and unrestricted dumping of toxic wastes including pesticides, insecticides, paints, solvents, etc. continues at this site. In order for the Centre to support the closure date, we must insist that immediate steps be taken to establish onsite removal of these toxic wastes.

?

- 2 -

s.22

taken by Mr. G.E. Oldham, Regional Waste Manager, Vancouver Island Region, in his letter dated June 28, 1990 to the Capital Regional District wherein he states that his office would not support private individuals having ownership of refuse sites. In our opinion, private interests may often be adverse to the interests of the public. It is therefore essential that the public have ultimate control over and responsibility for the facility.

Yours truly,

s.22

SF:sdf

Per:

Facimile Form

(604-387-5669)

Pages sent including this page 4.

Date: Aug 13

Time 11:07

TO: MR. EARL WARNOCK
~~MR. BILL HOLLINGSHEAD~~, ~~Regional~~ REGIONAL DIRECTOR
VANCOUVER ISLAND REGION #1
Ministry of Environment
NANAIMO, British Columbia

FROM: KAREN CULHAM
Correspondence Officer
Ministry of Environment
Victoria, British Columbia

INSTRUCTIONS:

MO# 30112

Mr. Norman Twa
P.O. Box 393
Ganges, British Columbia
VOS 1E0

~~104~~ - ~~106~~ - ~~107~~ - ~~108~~
PR-1839
SEP 28 1990

Thank you for your letter regarding solid waste disposal for Saltspring Island. For your information, I have enclosed a copy of my letter dated June 19, 1990, to the Capital Regional District.

As you are aware, the Capital Regional District Solid Waste Management Plan had been conditionally approved subject to suitable alternative arrangements being made for refuse disposal for Saltspring Island. The defeat of the referendum to locate a transfer station on the island, which the plan had identified as the preferred option, has delayed satisfactory resolution of the issue.

It is the Ministry's intent that all municipal solid waste management facilities and programs, operate in accordance with an approved regional solid waste management plan. With regard to the establishment of privately owned disposal sites, the Ministry position is that regional districts shall have ultimate control over and be legally and financially responsible for all disposal sites. It is, therefore, inappropriate for the Ministry to consider proposed municipal refuse disposal sites that are not specified and approved of within a Regional Waste Management Plan.

Nevertheless, please note that the Plan itself may authorize the operation and/or administration of a site or program by a municipality, other local government entity, company, group or person. In this regard, you may wish to forward your proposal to the Capital Regional District for their consideration.

I am encouraged by your willingness to provide local collection, sorting, recycling and a transfer system for Saltspring Island. I greatly appreciate you taking the time to share your ideas on this matter with me.

Sincerely,
Original Signed by
MINISTER

John Reynolds
Minister

Enclosure

JENKINS/les/csp
Ref: MO 29891
bcc: Minister's Office
Deputy Minister's Office
✓Mr. G. E. Oldham
Capital Regional District
Director of Vancouver Island Region 1



ENCLOSURE IS MO 27282 - SIGNED BY THE MINISTER ON JUNE 19/90
Approved by Earl Warnock, 90/08/22

bcc: Minister's Office
Deputy Minister's Office
Director, Vancouver Island Region
Mr. G. E. Oldham
Capital Regional District

Assigned to: Director
Van. Island Region

M.O.: 29891.00

Due Date: 21-Aug-1990

Subject: SALT SPRING ISLAND DUMP

Addr. To:

Comments:

ACTION: Prepare for Minister's Signature

Sender: TWA, NORMAN
BOX 393
GANGES
B.C.

MINISTRY OF ENVIRONMENT
RECEIVED

AUG 9 1990

MINISTRY OF ENVIRONMENT
DIRECTOR—VANCOUVER ISLAND REGION

D. E. Oldham

To

Date

20/08/90

*Please draft a response
for the Minister's signature
by*

August 21, 1990

MO 29891.00

RECEIVED

JUL 26 1990

Assistant Deputy Minister
Environment

July 19, 1990

Hon. John Reynolds
Minister of the Environment
Parliament Buildings,
Victoria, BC

Re: Salt Spring Island Dump

JUL 23 '90

29891

Dear Sir,

As the owner of the land on which our local dump has been constructed, I was pleased to learn from a recent issue of the Victoria Times Colonist that you have instructed the CRD to honour their permit responsibilities with regard to the closure of the local dump. In addition, the December 31, 1991 deadline is helpful because it lets all of us know that we have arrive at a practical solution soon.

My family and I have operated the local dump for more than 25 years. The dump was set up to reduce the spread of garbage along our roadsides and from the ferries. This goal was achieved. In addition, regular tests of the current site and surrounding areas indicate no adverse effects caused by the dump.

However, I have realized for the past few years that the current situation cannot continue. To that end I have purchase a 160 Acre site between Mounts Bruce and Tuam in the south end of Salt Spring Island. A site that has been inspected as potentially satisfactory for a dump site by two environmental engineers. It is on this site that I wish to construct a local solid waste site using the latest technology such as impervious liners, to ensure a safe operation. I intend to finance this new site myself with no additional cost to the local taxpayer. I will continue to offer a local pick-up and disposal service on a "User Pay" basis as I have in the past.

I am writing to you for two reasons:

1. The local population voted 90% to 10% in favour of a local disposal site. For that reason I ask you to insist that your staff allow me the same rights as the CRD in seeking approval for a disposal permit. I am not asking for any favours; just to be treated equally.

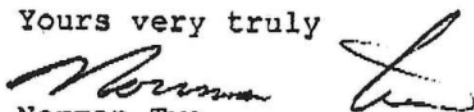
2. The local solid waste committee seems to want to ship our garbage to Hartland Road in spite of the recent referendum. They are making the same mistake as the previous committee did by ignoring public opinion. In order to establish a local collection and disposal system that

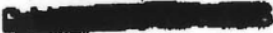
conforms to the wishes of islanders as expressed in the referendum, I propose to provide a joint recycling and garbage collection system. The household pick-up for garbage would be \$2 per bag and for recycling the rate would be \$1 per bag. These materials would be sorted at a joint transfer station and disposed of through the sale of recyclables or transfer of garbage to a local landfill. The ownership and operation of the landfill is an open topic as far as I am concerned, but I know that I can do a more economical job than the CRD.

For these two reasons, I ask you to ensure that I will receive an equal chance to develop a local solid waste site. I would be pleased to meet with you or your staff at your convenience to discuss any aspect of my proposal.

If you have any questions, please do not hesitate to contact me.

Yours very truly


Norman Twa
s.22


BOX 363
GANGES, BC V0S 1E0

Facimile Form

(604-387-5669)

Pages sent including this page 14

Date: Aug 8 Time 12:22

TO: ~~MR. BILL HOLLINGSHEAD,~~ REGIONAL DIRECTOR
VANCOUVER ISLAND REGION #1
Ministry of Environment
NANAIMO, British Columbia

FROM: KAREN CULHAM
Correspondence Officer
Ministry of Environment
Victoria, British Columbia

INSTRUCTIONS: MO # 28891

Garbage options given to island

opyright

JOF
GJJ
~~DMF~~

files: PR-1839
50-5403

Islanders must decide fate of local garbage

Copyright

Copyright

SJR, HHS, LME, DMT
JOF, REC, RML ~~BT~~

file: N. Twa & GVRD PR-1839

Dump fire puts district in court

Legislature staff

Copyright



MINISTRY OF ENVIRONMENT AND PARKS
VANCOUVER ISLAND REGION

REFERRAL SLIP

To Chris Jenkins From W.D.L.
+ file PE-1839 Date _____

- Action ☐
- Approved ☐
- Approval/Sig'ture ☐
- Comments ☐
- Filing ☐
- Information ☐
- Prepare reply for
my signature ☐
- Prepare reply for
signature of
Director/
Deputy Minister .. ☐
- Reply direct ☐
- See me ☐
- Your request ☐

As per our discussion,
• copy sent to Lance.

M28-2002

Please leave attached when replying

Tula



Good cover over entire site except for this working face.

photos taken 90-07-25



Canada Post
Postes Canada

Registration Receipt (Bulk)

Récépissé de recommandation (en nombre)

This receipt is necessary if enquiry is desired.

À produire en cas de réclamation

Mailed by (Nom de l'expéditeur) **VANCOUVER ISLAND REGION**
Déposé par (Nom de l'expéditeur) **WASTE MANAGEMENT BRANCH**

2569 KENWORTH ROAD
NANAIMO, B.C.
V9T 4P7

Stamp
of
Firm

Timbre de
la maison
expéditrice

Date
Stamp
of Post
Office

Timbre
à date
du bureau
de poste

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Vous pouvez obtenir des renseignements sur les indemnités versées et les DROITS DE RECOMMANDATION en vous adressant à votre bureau de poste.

| Number Numéro | Name Nom | Fee Droit | Address (including Postal Code) | Adresse (y compris le code postal) |
|------------------|---------------------------|--------------|------------------------------------|---------------------------------------|
| AD 9161 | MR. NORMAN TWA | \$3.74 | P.O. Box 255 | GANGES BC. V8T 1E0 |
| AD 9162 | MR. MC. WILLIAMS | \$3.74 | P.O. Box 1000 | VICTORIA, BC V8W 2S6 |
| | CAPITOL REGIONAL DISTRICT | | | |
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Sheet No. Feuille N°

No of articles Nbre d'objets

Accepted by

(Postal Employee's Signature)

Accepté par

(Signature de l'employé des Postes)



Canada Post Société canadienne
Corporation des postes

To be filled in by
the Office of Origin

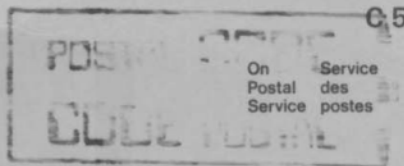
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le bureau d'origine

Office of Posting Bureau de dépôt

Item N° d'envoi
9162

Date of Posting
10/07/90

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On
Postal
Service

Service
des
postes

RETURN TO:
RETOURNER A:

To be filled in by Sender
Please Print Clearly

À remplir par l'expéditeur
En lettres moulées S.V.P.

(PR-1839)

Name Nom

MINISTRY OF ENVIRONMENT

Street No., Apt. No., P.O. Box or R.R. No. N° et rue, n° d'app., n° de C.P. ou de R.R.

2569 Kenworth Road

City Ville

NANAIMO

BC

CANADA

V9T 4P7

Postal CODE postal



Canada Post Société canadienne
Corporation des postes

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the Office of Origin

À remplir par
le bureau d'origine

Office of Posting Bureau de dépôt

Item N° d'envoi
9161

Date of Posting
10/07/90

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On
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Service
des
postes

RETURN TO:
RETOURNER A:

To be filled in by Sender
Please Print Clearly

À remplir par l'expéditeur
En lettres moulées S.V.P.

(PR-1839)

Name Nom

MINISTRY OF ENVIRONMENT

Street No., Apt. No., P.O. Box or R.R. No. N° et rue, n° d'app., n° de C.P. ou de R.R.

2569 Kenworth Road

City Ville

NANAIMO

BC

CANADA

V9T 4P7

Postal CODE postal

ACKNOWLEDGEMENT OF RECEIPT
OF A REGISTERED ITEM

AVIS DE RÉCEPTION D'UN
ENVOI RECOMMANDÉ

To be filled in by Sender

À remplir par l'expéditeur

Name of addressee

Nom du destinataire

MR. M. C. Williams, CAPITAL Regional District

Street and No., Apt. No., P.O. Box or R.R. No. N° et rue, n° d'app., n° de C.P. ou de R.R.

Box 1000

City

Ville

Province

Country

Pays

Postal CODE postal

VICTORIA

BC

V8W 2S6

To be completed at destination

À compléter à destination

As a matter of priority this advice must be signed by the addressee or, if this is not possible, by another person authorized to do so under the regulations of the country of destination, or, if these regulations so provide, by the official of the office of destination and returned by the first mail direct to the sender.

Cet avis doit être signé en priorité par le destinataire et, si cela n'est pas possible, par une autre personne y autorisée en vertu des règlements du pays de destination, ou, si ces règlements le prévoient, par l'agent du bureau de destination et renvoyé par le premier courrier directement à l'expéditeur.

Date Stamp
of Office
of Delivery

Timbre à
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The registered
item referred to
was delivered on:

L'item recom-
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19

Signature of
Official at
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Delivery

Signature de
l'agent du
bureau de
destination

Signature of
Addressee or
Authorized
Representative

Signature du
destinataire
ou de son
représentant

33-086-230 (9-85)

ACKNOWLEDGEMENT OF RECEIPT
OF A REGISTERED ITEM

AVIS DE RÉCEPTION D'UN
ENVOI RECOMMANDÉ

To be filled in by Sender

À remplir par l'expéditeur

Name of addressee

Nom du destinataire

MR. NORMAN TWA

Street and No., Apt. No., P.O. Box or R.R. No. N° et rue, n° d'app., n° de C.P. ou de R.R.

Box 255

City

Ville

Province

Country

Pays

Postal CODE postal

GANGES

BC

V8T 1E0

To be completed at destination

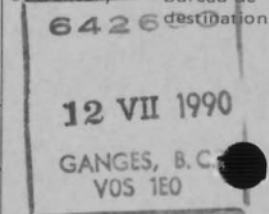
À compléter à destination

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of Office
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The registered
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was delivered on:

L'item recom-
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a été livré le:

July 12 1990

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Office of
Delivery

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l'agent du
bureau de
destination

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Addressee or
Authorized
Representative

Signature du
destinataire
ou de son
représentant

33-086-230 (9-85)

File

July 9, 1990

File: PR-1839

Mr. Norman Twa
P. O. Box 255
Ganges, British Columbia
V8T 1E0

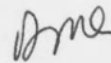
Dear Mr. Twa:

I have enclosed a copy of my recent inspection of the works authorized under Waste Management Permit PR-1839 for your information.

Please note Section D "Action required by permittee". These actions must be completed as soon as possible to bring this operation into compliance.

If you have any questions please contact the undersigned.

Yours truly,



D. M. Trudeau
Waste Management Technician
Municipal Section

DMT/lrs
TWA.LTR

Encl.

cc: Environmental Enforcement Unit

July 9, 1990

File: PR-1839

Capital Regional District
524 Yates Street
P. O. Box 1000
Victoria, British Columbia
V8W 2S6

ATTENTION: Mr. M. C. Williams, P.Eng.
Chief Engineer

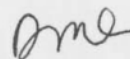
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If you have any questions please contact the undersigned.

Yours truly,



D. M. Trudeau
Waste Management Technician
Municipal Section

DMT/l
CAPITAL.LTR

Encl.

cc: Environmental Enforcement Unit



MINISTRY OF ENVIRONMENT
WASTE MANAGEMENT BRANCH

Permit No. PR-1839
Date of Inspection June 12 90

PERMIT INSPECTION

Permittee CRD and Mr N. Twa
Location Salt Spring Island

A. SAMPLES TAKEN YES ☐ NO ☒
Sources Sampled _____

B. OBSERVATIONS AND COMMENTS:
- Approx 150 cubic meters of
refuse uncovered
- Refuse is being deposited over
a larger area than previous
inspections (April & May)
- No cover material on site

C. PERMIT COMPLIANCE IN ☐ OUT ☒
Based on Site Observations.
COMMENTS: Either the refuse is not
being covered weekly or the
quantity of refuse entering the
landfill is above permit levels

D. ACTION REQUIRED BY PERMITTEE: Cover refuse weekly

Permittee or Representative's Signature Devin M. Dubeau
For Waste Management

Regional Office Follow-up:

Original to File
Copy to Permittee



Fule

PR 1839

Registration Receipt (Bulk)

Récépissé de recommandation (en nombre)

This receipt is necessary if enquiry is desired.

À produire en cas de réclamation

Mailed by (Name and address of firm) Déposé par (Nom et adresse de la maison expéditrice)

Waste Management DMT
Ministry of Environment
2569 Kenworth Road
Nanaimo, BC
V9T 4P7

Stamp of Firm Timbre de la maison expéditrice Date Stamp of Post Office Timbre à date du bureau de poste

Fragile and perishable articles are not indemnified against damage.

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Aucune indemnité ne sera versée pour l'avarie d'un objet fragile ou périssable.

Vous pouvez obtenir des renseignements sur les indemnités versées et les DROITS DE RECOMMANDATION en vous adressant à votre bureau de poste.

| Number Numéro | Name Nom | Fee Droit | Address (including Postal Code) | Adresse (y compris le code postal) |
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| AD 8803 | Mr. Norman Twa | 1 374 | P.O. Box 255 Ganges, BC | V8T 1E0 |
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Sheet No. Feuille N°

No of articles Nbre d'objets

Accepted by (Postal Employee's Signature)

Accepté par (Signature de l'employé des Postes)

~~GED~~ → DT → ~~CS~~
→ file

June 28, 1990

File: PR-1839

Salt Spring Island Recycling
and Solid Waste Disposal Society
112A Lower Ganges Road
P. O. Box 485
Ganges, British Columbia
V0S 1E0

ATTENTION: Mr. Bob Andrew

Re: PR-1839 Salt Spring Island Blackburn Road Landfill

Reference is made to Mr. John Frazer's letter dated April 30, 1990, regarding reclamation/rehabilitation of the subject site.

The Risks and Closure Assessment prepared by the Capital Regional District and the various tasks outlined therein, present an assessment and closure plan which provides the basis for an environmentally acceptable closure of the landfill. A post-closure monitoring program will assess any long term impacts of the operation.

The Ministry is not in a position to conduct landfill assessment and closure studies as your letter requests. The Capital Regional District and Mr. N. Twa, as joint permittees, are responsible for the reclamation of the site and any post-closure requirements, such as monitoring. The Minister has recently advised that it is his intention to cancel the Waste Management Permit for the subject site by December 31, 1991, (copy of letter enclosed). Accordingly, it is necessary for CRD and Mr. Twa to ensure that a closure plan for the existing site has been approved and implemented prior to that date.

. . . /2

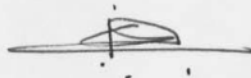
Saltspring Island Recycling - 2 -
and Solid Waste Disposal Society

June 28, 1990

With regard to your request for financial assistance, we advise that although the Ministry may be willing to provide some funding, the present Financial Assistance Program restricts eligible applicants to regional districts and municipalities. It may be necessary, therefore, for CRD to apply for the assistance for site closure.

Should you have further questions on this matter, please contact me or Mr. Chris Jenkins of my staff.

Yours truly,



J. O. Finnie, P.Eng.
Head
Municipal Section

JOF/l
SALTREC.LTR

cc: M. C. Williams, CRD
Julia Atkins, CRD Director
Mr. N. Twa

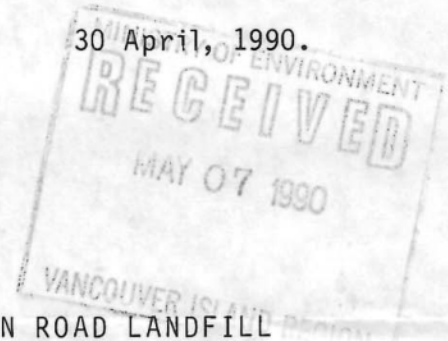
Encl.

JOF

Salt Spring Island Recycling and Solid Waste Disposal Society
112A Lower Ganges Road, P.O. Box 485,
Ganges, B.C., V0S 1E0

Mr. G.E. Oldham, P.Eng.,
Regional Manager,
Ministry of Environment,
Waste Management Branch,
2569 Kenworth Road,
Nanaimo, B.C., V9T 4P7

30 April, 1990.



Subject: PR. 1839 - SALT SPRING ISLAND BLACKBURN ROAD LANDFILL

Dear Mr. Oldham,

In accordance with Item 6 of the Minister of Environment's letter of January 24, 1989, this request for reclamation/rehabilitation of subject site is submitted for Ministry approval and action.

Measures to close the BLACKBURN ROAD LANDFILL will include assessing environmental risks present at the site and a determination of the nature and cost of work required to achieve an ecologically acceptable closure of the landfill.

Directly concerned with this closure, The Ministry of Environment is also the most qualified and best equipped agency to conduct these studies. Accordingly, the Salt Spring Island Recycling and Solid Waste Disposal Society requests that the Ministry undertake the project, perhaps utilizing the attached "Tasks and Budget" list, prepared by the Capital Regional District, as a guide.

Based on this list, we propose that funding from the sources and in the amounts specified below be utilized to complete the project:

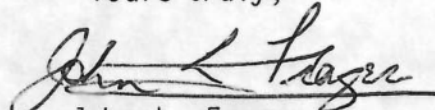
1. Up to \$20,000.00 from the Capital Regional District (see copy of letter dated 11 April, 1990, attached);
2. Up to \$10,000.00 from the Salt Spring Island Recycling and Solid Waste Disposal Society; and,
3. Up to \$30,000.00 from the Ministry of Environment.

The Salt Spring Island community recognizes the necessity of closing the Blackburn Road Landfill and seeks your assistance in achieving same in an environmentally sound manner.

Should you require further information, you may contact me by telephone at: 653-9467.

Thank you in advance for your cooperation on this project. We look forward to receiving your favourable response to our proposal.

Yours truly,


John L. Frazer
President

Attachments: 2

cc: Capital Regional District: Attn Director, Julia Atkins,
Chief Engineer, Mr. M.C. Williams
Blackburn Road Landfill Owner: Mr. Norman Twa



Capital Regional District

524 YATES STREET P.O. BOX 1000 VICTORIA B.C. V8W 2S6 TELEPHONE (604) 388-4421

11 April 1990

Director Julia Atkins
Salt Spring Island
C-7 Forest Ridge Road, R.R. #1
Fulford Harbour, B.C. VOS 1C0

Dear Director Atkins:

RE: BLACKBURN ROAD LANDFILL ASSESSMENT

This letter is to advise you that, at the meeting of 28 March 1990, the Capital Regional District Board agreed to provide a grant of up to \$20,000 to the Salt Spring Recycling and Solid Waste Society.

The grant is for a 1/3 share of the cost of assessing the environmental risk associated with the Blackburn Road landfill and to determine the nature and cost of the work to close the landfill. I attach a budget and task list on which the upset figure of \$20,000 was based.

Please advise me when the Society is ready to proceed so that we can work out the arrangements for administering the grant.

Yours very truly,

M.C. Williams, P.Eng.
Chief Engineer

Attachments
MCW:mr

MUNICIPALITIES AND ELECTORAL AREAS

CENTRAL SAANICH • COLWOOD • ESQUIMALT • LANGFORD • METCHOSIN • NORTH SAANICH • OAK BAY
OUTER GULF ISLANDS • SAANICH • SALTSRING ISLAND • SIDNEY • SOOKE • VICTORIA • VIEW ROYAL

BLACKBURN ROAD LANDFILL

RISK AND CLOSURE ASSESSMENT - TASKS AND BUDGET

Phase I Site Assessment Tasks

- (a) Assess the following aspects of the existing landfill:
 - areal extent of refuse
 - thickness of refuse
 - current grades
 - current thickness and composition of cover material
 - any existing operational problems
 - seagull or rodent problems
- (b) Assess topography and drainage in vicinity of the site;
- (c) Determine ground water flow directions and rates, including vertical components of flow. About five borehole locations with two nested monitoring wells in each borehole are envisaged;
- (d) Identify ground water and surface water uses near the landfill;
- (e) Determine extent and magnitude of current leachate impacts on ground water and surface water;
- (f) Prepare a water budget for calculating leachate production and loadings;
- (g) Assess leachate chemistry;
- (h) Assess potential for landfill gas migration.

Phase 2 Closure Plan Tasks

- (a) Consider post-closure land use options;
- (b) Develop plans for leachate management including the following possible aspects:
 - natural attenuation and dilution
 - containment
 - collection
 - treatment
- (c) Develop plans for capping (final cover) the landfill including the following possible aspects:
 - final contours of landfill
 - cover material type and thickness
 - vegetation
 - drainage

- (d) Develop a landfill gas control program, if required;
- (e) Develop a post-closure monitoring program for leachate, water quality and gas;
- (f) Develop a post-closure maintenance program for erosion and drainage;
- (g) Develop a contingency plan for use if the landfill closure design fails and ground and surface water resources are negatively impacted at some point in the future;
- (h) Prepare an economic analysis of capital and operating costs required to carry out the closure plan.

Estimated Costs

| | | |
|---------|--|----------------------|
| Phase 1 | Site assessment (includes drilling and lab disbursements) | \$33,000 |
| Phase 2 | Closure Plan (includes final report) Contingency | \$22,000 \$ 5,000 |
| | TOTAL | <u>\$60,000</u> |

April 1990

~~CJS~~ - GEO - files

June 28, 1990

Files: 50.5403
PR-1839

Capital Regional District
524 Yates St.
P.O. Box 1000
Victoria, B.C.
V8W 2S6

ATTENTION: M.C. Williams, P. Eng.
Chief Engineer

Dear Sir:

Re: CRD Solid Waste Management Plan

Reference is made to your letter dated April 11, 1990, to Mr. G.E. Oldham, regarding the Blackburn Road Landfill. In response, I respectfully refer you to the letter dated June 19, 1990 from our Minister to Murray Coell, copy attached.

We have also received a letter dated April 30, 1990 from the Saltspring Island Recycling and Solid Waste Society requesting financial assistance for reclamation and rehabilitation of the Blackburn Road Landfill. Although the Ministry may be willing to provide some assistance in this regard, the present Financial Assistance Program restricts eligible applicants to regional districts and municipalities. It may be necessary, therefore, for CRD to apply for the assistance for site closure. We will be replying to the Society's letter shortly and will keep you advised.

.....2

Mr. M.C. Williams, P. Eng.
Capital Regional District

- 2 -

July 28, 1990

I would suggest that our staffs meet soon to discuss the above and other issues regarding your Solid Waste Management Plan.

Yours truly,



J.O. Finnie, P. Eng.
Head
Municipal Section

JOF/lq
SWMPMCW.LET

Encl.

cc: Julia Atkins, CRD Director

JOE

OFFICE OF THE
MINISTER

Mr. Murray R. Coell, Chairman
Capital Regional District
524 Yates Street
P.O. Drawer 1000
Victoria, British Columbia
V8W 2S6

June 19, 1990

Dear Mr. Coell:

Thank you for your letter regarding the Blackburn Road landfill on Saltspring Island.

The Capital Regional District is a joint Permittee with Mr. N. Twa for Waste Management Permit No. PR-1839. The issuance of the permit to both parties was a result of discussions that were held at the time between the Ministry and the Capital Regional District and subsequently confirmed in the enclosed letter dated December 18, 1978, to Mr. Twa and copied to the Regional District. No appeal was launched against the permit, as jointly issued, and the permit therefore stands.

As a joint Permittee, the Capital Regional District has responsibility with Mr. Twa for the past and present condition and operation of the site and for the reclamation or rehabilitation of the site and any post-closure requirements, such as monitoring.

I refer to the enclosed letter dated January 24, 1989, from my predecessor, the Honourable Bruce Strachan, which conditionally approved the Capital Regional District Solid Waste Management Plan subject to suitable alternative arrangements being made for refuse disposal on Saltspring Island. At the time, it was anticipated that the matter would be resolved expeditiously. The defeat of the referendum for a transfer station on the island, however, which the plan had identified as the preferred option, has delayed the issue.

A closure plan for the site was to have been submitted to the Regional Waste Manager by March 31, 1990. I understand that island residents are working towards the development of a combined Recycling/Solid Waste Transfer Station for the island, and that the Saltspring Island Recycling and Solid Waste Disposal Society is preparing a closure plan for the landfill. I also understand that the Capital Regional

.../2



- 2 -

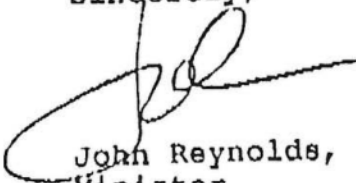
District has agreed to a grant to the Society to assess the environmental risk of the landfill and to prepare the closure plan. I am encouraged by this information, but reiterate my comments that the Capital Regional District has responsibility for the existing site, its operation and closure, and should therefore take an active role in coordinating these activities.

In recognition of the potential environmental risks associated with continued operation of this site, and to encourage movement towards resolving the matter, it is my intention to cancel Waste Management Permit PR-1839 by December 31, 1991. It is therefore imperative for the Capital Regional District to ensure that suitable refuse disposal procedures for Saltspring Island are in place, and a closure plan for the existing site has been approved and implemented, prior to that date.

If the long-term plan for the island calls for a Waste Reduction/Recycling/Transfer Station concept, this would concur with the Ministry's Solid Waste Management Strategy and with the approved Capital Regional District Solid Waste Management Plan. If alternate strategies or technologies for residual management are being considered, I would consider this to constitute a departure from the approved Plan which may necessitate preparing an amendment to the Plan. The Regional Waste Manager should be contacted about appropriate procedures should this be the case.

I am referring your letter and my reply to Mr. G.E. Oldham, Regional Manager, so that he is aware of your concerns and my position on this matter.

Sincerely,



John Reynolds,
Minister

cc: Mr. G.E. Oldham

Enclosures



JO F

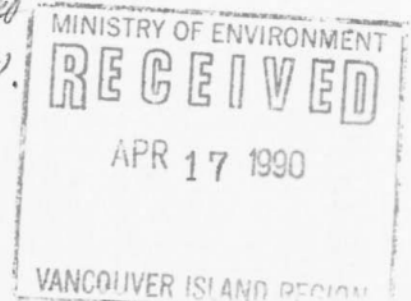
Capital Regional District

524 YATES STREET P.O. BOX 1000 VICTORIA B.C. V8W 2S6 TELEPHONE (604) 388-4421

11 April 1990

Mr. G.E. Oldham, P.Eng.
Regional Manager
Ministry of Environment
Waste Management Branch
2569 Kenworth Road
Nanaimo, B.C. V9T 4P7

*cc Lance S. [unclear]
a Tom [unclear]*



Dear Mr. Oldham:

RE: CAPITAL REGIONAL DISTRICT - SOLID WASTE MANAGEMENT PLAN

By his letter of January 24, 1989 the Minister of Environment approved the CRD's Solid Waste Management Plan dated November 1987.

Under Item 6 of his letter, the Minister directs that proposed measures to reclaim/rehabilitate the present Blackburn Road landfill site are to be submitted to you for approval.

As indicated in a letter dated August 16, 1988 the CRD's Board Chairman requested that the CRD's name be removed from the Blackburn Road landfill permit PR-1839. The Region still wishes its name to be removed from the permit and, indeed, believes that the use of the Region's name on the permit is an error.

Because the Region neither owns nor controls the Blackburn Road landfill, and for the reasons noted above, the Region is not prepared to accept any responsibility for the Blackburn Road landfill. A copy of a letter dated March 30 1990 from CRD Board Chairman to the Minister of Environment is attached.

The CRD does, however, favour closure of the Blackburn Road landfill and the installation on Salt Spring Island of a Solid Waste transfer station, as indicated in the SWMP.

To bring about these two events, the Region held a referendum on Salt Spring Island in the Fall of 1989 to obtain approval for the operation of a transfer station. To assist the Islanders the Region has committed to fund the initial capital cost of transfer facilities provided the Islanders agree to pay the operating cost. The proposal was defeated.

Subsequently, Island residents have been working hard to produce an alternative plan for the management of solid waste on Salt Spring Island. Current thinking is for a combined Recycling Solid Waste transfer system. Discarded items would initially be transported to Hartland Road landfill pending other arrangements, if such can be made.

/2

MUNICIPALITIES AND ELECTORAL AREAS

CENTRAL SAANICH • COLWOOD • ESQUIMALT • LANGFORD • METCHOSIN • NORTH SAANICH • OAK BAY
OUTER GULF ISLANDS • SAANICH • SALTSRING ISLAND • SIDNEY • SOOKE • VICTORIA • VIEW ROYAL

Page 2

Letter to G.E. Oldham, WMB

11 April 1990

As well, at the request of Salt Spring Recycling and Solid Waste Society, the Region has agreed to provide a grant of up to \$20,000 to the Society for them to assess the environmental risk of the landfill and to prepare a closure plan. It is anticipated that you will receive a proposal from the Society in due course on this matter.

Yours very truly,

A handwritten signature in dark ink, appearing to read 'Williams', with a stylized flourish at the end.

M.C. Williams, P.Eng.
Chief Engineer

cc: M. Coell, Chairman, CRD Board
F. Leonard, Chairman, CRD Environment Committee
J. Atkins, Director, Salt Spring Island
W.M. Jordan, CRD Executive Director

MCW:mr

U2J

may you

Capital Regional District

524 YATES ST. P.O. DRAWER 1000 VICTORIA B.C. V8W 2S6 Tel. (604) 388-4421

Office of the Chairman of the Board

March 30, 1990

The Honourable J. Reynolds
Minister of the Environment
Parliament Buildings
Victoria, B.C. V8V 1X4

Dear Mr. Minister:

RE: Salt Spring Island, Blackburn Road - Landfill Waste Management
Permit PR-1839

The condition and future operation of the Blackburn Road, Salt Spring Island Disposal Site was discussed at a meeting of the Board held on March 28, 1990.

The Board has serious concerns on this matter and has directed that I write to you and advise you of the Board's position as follows:

- 1) That the CRD is not a permittee under Waste Management Permit PR-1839.
- 2) That the CRD has no intention of accepting any responsibility whatsoever, for the past or present condition or operation of the Blackburn Road, Salt Spring Island, Disposal Site and in particular, has no intention whatsoever of sharing any cost or responsibility for reclaiming or rehabilitating that Disposal Site.
- 3) That if the Minister of the Environment is sincerely interested in solving the most unsatisfactory condition of the Blackburn Road Landfill Site, as pointed out by the Ministry, only the Ministry can order that the Site be closed and Permit PR-1839 be cancelled.

...../2

MUNICIPALITIES AND ELECTORAL AREAS

CENTRAL SAANICH COLWOOD ESQUIMALT LANGFORD METCHOSIN NORTH SAANICH OAK BAY
OUTER GULF ISLANDS SAANICH SALTSRING ISLAND SIDNEY SOOKE VICTORIA VIEW ROYAL

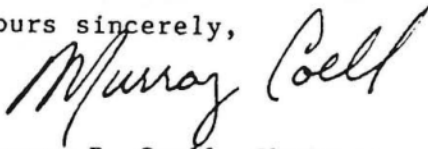
Minister of the Environment

March 30, 1990

- 4) That the CRD favours the closure of that Site and favours the installation on Salt Spring Island, of a solid waste transfer station and the removal of solid waste from Salt Spring Island, for disposal at the Regional District's Regional Landfill Site on Hartland Avenue.

Your early consideration and reply regarding the Board's concerns as described above will be appreciated.

Yours sincerely,

A handwritten signature in cursive script, reading "Murray Coell".

Murray R. Coell, Chairman
Capital Regional District

WMJ/rjf

June 28, 1990

File: PR-1839

Salt Spring Island Recycling
and Solid Waste Disposal Society
112A Lower Ganges Road
P. O. Box 485
Ganges, British Columbia
V0S 1E0

ATTENTION: Mr. Bob Andrew

Re: PR-1839 Salt Spring Island Blackburn Road Landfill

Reference is made to Mr. John Frazer's letter dated April 30, 1990, regarding reclamation/rehabilitation of the subject site.

The Risks and Closure Assessment prepared by the Capital Regional District and the various tasks outlined therein, present an assessment and closure plan which provides the basis for an environmentally acceptable closure of the landfill. A post-closure monitoring program will assess any long term impacts of the operation.

The Ministry is not in a position to conduct landfill assessment and closure studies as your letter requests. The Capital Regional District and Mr. N. Twa, as joint permittees, are responsible for the reclamation of the site and any post-closure requirements, such as monitoring. The Minister has recently advised that it is his intention to cancel the Waste Management Permit for the subject site by December 31, 1991, (copy of letter enclosed). Accordingly, it is necessary for CRD and Mr. Twa to ensure that a closure plan for the existing site has been approved and implemented prior to that date.

. . . /2

Saltspring Island Recycling - 2 -
and Solid Waste Disposal Society

June 28, 1990

With regard to your request for financial assistance, we advise that although the Ministry may be willing to provide some funding, the present Financial Assistance Program restricts eligible applicants to regional districts and municipalities. It may be necessary, therefore, for CRD to apply for the assistance for site closure.

Should you have further questions on this matter, please contact me or Mr. Chris Jenkins of my staff.

Yours truly,

J. O. Finnie, P.Eng.
Head
Municipal Section

JOE/lis
SALTREC.LTR

cc: M. C. Williams, CRD
Julia Atkins, CRD Director
Mr. N. Twa

Encl.



Province of
British Columbia

Ministry of
Environment

Parliament Buildings
Victoria
British Columbia
V8V 1X4

JOF

OFFICE OF THE
MINISTER

Mr. Murray R. Coell, Chairman
Capital Regional District
524 Yates Street
P.O. Drawer 1000
Victoria, British Columbia
V8W 2S6

June 19, 1990

Dear Mr. Coell:

Thank you for your letter regarding the Blackburn Road landfill on Saltspring Island.

The Capital Regional District is a joint Permittee with Mr. N. Twa for Waste Management Permit No. PR-1839. The issuance of the permit to both parties was a result of discussions that were held at the time between the Ministry and the Capital Regional District and subsequently confirmed in the enclosed letter dated December 18, 1978, to Mr. Twa and copied to the Regional District. No appeal was launched against the permit, as jointly issued, and the permit therefore stands.

As a joint Permittee, the Capital Regional District has responsibility with Mr. Twa for the past and present condition and operation of the site and for the reclamation or rehabilitation of the site and any post-closure requirements, such as monitoring.

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A closure plan for the site was to have been submitted to the Regional Waste Manager by March 31, 1990. I understand that island residents are working towards the development of a combined Recycling/Solid Waste Transfer Station for the island, and that the Saltspring Island Recycling and Solid Waste Disposal Society is preparing a closure plan for the landfill. I also understand that the Capital Regional

.../2



- 2 -

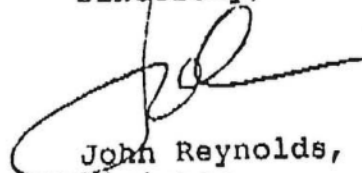
District has agreed to a grant to the Society to assess the environmental risk of the landfill and to prepare the closure plan. I am encouraged by this information, but reiterate my comments that the Capital Regional District has responsibility for the existing site, its operation and closure, and should therefore take an active role in coordinating these activities.

In recognition of the potential environmental risks associated with continued operation of this site, and to encourage movement towards resolving the matter, it is my intention to cancel Waste Management Permit PR-1839 by December 31, 1991. It is therefore imperative for the Capital Regional District to ensure that suitable refuse disposal procedures for Saltspring Island are in place, and a closure plan for the existing site has been approved and implemented, prior to that date.

If the long-term plan for the island calls for a Waste Reduction/Recycling/Transfer Station concept, this would concur with the Ministry's Solid Waste Management Strategy and with the approved Capital Regional District Solid Waste Management Plan. If alternate strategies or technologies for residual management are being considered, I would consider this to constitute a departure from the approved Plan which may necessitate preparing an amendment to the Plan. The Regional Waste Manager should be contacted about appropriate procedures should this be the case.

I am referring your letter and my reply to Mr. G.E. Oldham, Regional Manager, so that he is aware of your concerns and my position on this matter.

Sincerely,



John Reynolds,
Minister

cc: Mr. G.E. Oldham

Enclosures



Province of
British Columbia

Ministry of
Environment

Parliament Buildings
Victoria
British Columbia
V8V 1X4

OFFICE OF THE
MINISTER

~~JOE~~
~~SJJ~~
~~DMT~~

JUN 19 1990

PR-1839

Mr. Murray R. Coell, Chairman
Capital Regional District
524 Yates Street
P.O. Drawer 1000
Victoria, British Columbia
V8W 2S6

Dear Mr. Coell:

Thank you for your letter regarding the Blackburn Road landfill on Saltspring Island.

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I am referring your letter and my reply to Mr. G.E. Oldham, Regional Manager, so that he is aware of your concerns and my position on this matter.

Sincerely,

Original Signed by
MINISTER

John Reynolds,
Minister

✓ cc: Mr. G.E. Oldham

Enclosures

U2J

any you

Capital Regional District

524 YATES ST. P.O. DRAWER 1000 VICTORIA B.C. V8W 2S6 Tel. (604) 388-4421

Office of the Chairman of the Board

March 30, 1990

The Honourable J. Reynolds
Minister of the Environment
Parliament Buildings
Victoria, B.C. V8V 1X4

Dear Mr. Minister:

RE: Salt Spring Island, Blackburn Road - Landfill Waste Management
Permit PR-1839

The condition and future operation of the Blackburn Road, Salt Spring Island Disposal Site was discussed at a meeting of the Board held on March 28, 1990.

The Board has serious concerns on this matter and has directed that I write to you and advise you of the Board's position as follows:

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- 2) That the CRD has no intention of accepting any responsibility whatsoever, for the past or present condition or operation of the Blackburn Road, Salt Spring Island, Disposal Site and in particular, has no intention whatsoever of sharing any cost or responsibility for reclaiming or rehabilitating that Disposal Site.
- 3) That if the Minister of the Environment is sincerely interested in solving the most unsatisfactory condition of the Blackburn Road Landfill Site, as pointed out by the Ministry, only the Ministry can order that the Site be closed and Permit PR-1839 be cancelled.

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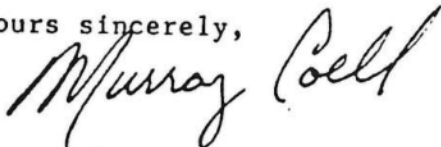
Minister of the Environment

March 30, 1990

- 4) That the CRD favours the closure of that Site and favours the installation on Salt Spring Island, of a solid waste transfer station and the removal of solid waste from Salt Spring Island, for disposal at the Regional District's Regional Landfill Site on Hartland Avenue.

Your early consideration and reply regarding the Board's concerns as described above will be appreciated.

Yours sincerely,



Murray R. Coell, Chairman
Capital Regional District

WMJ/rjf

Commission looks at
walk referendum

Copyright

Garbage is Hartland-bound

Copyright

*Trustees debate procedure
used in the special meeting*

Copyright

June 1990

PR-1839

ST-18-14

Resignations are spurred by Harland Road dump dispute

Copyright

Copyright

Copyright

Copyright

File.
PR-1839

PLEASE TYPE OR PRINT

File: 0330-03

Date: June 7, 1990

M E D I A C O N T A C T S - Region 1

On June 7, 1990, I was contacted by Bill Webster,
of The Gulf Islands Driftwood (by phone, in person, other).

The information requested concerned:

Blackburn Road Landfill site on Saltspring Island

Questions asked:

1. What were the results of the Ministries recent sampling program at the landfill?
2. What are the definitions of Level A,B,C,E landfills? And what level of operation is the Blackburn site?
3. What concerns does the Ministry have about the site?

I provided the following information:

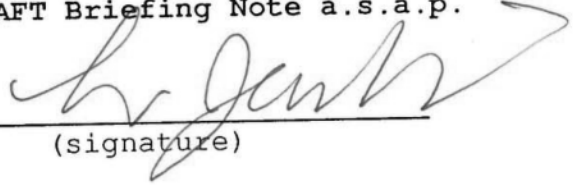
1. In January of 1990 samples were taken at several groundwater and surface water locations in and around the landfill site. The results indicated elevated levels of some parameters at the landfill site itself. There was no evidence that gross contamination was occurring down stream or downgradient of the landfill at that time.
2. Definitions are based on frequency of cover. For example, Level A requires daily cover, Level E once per 40 days. Based on the contributing population, the Blackburn Road Site is a Level C site and requires cover once per week.
3. Our primary concern is that the landfill is location within a watershed which is a domestic water supply. Although we do not have evidence that a problem exists, given that there are no leachate control facilities at the landfill, the potential for contamination to occur is a major concern. A second concern is that the site has traditionally not been operated in an exemplary manner, however, in recent months operation has improved considerably.
4. The Ministry plans to repeat the sampling program twice per year for the next two years at least. The next sampling is planned for the fall of 1990.

. . . . 2

Could become an issue: _____ YES _____ X _____ NO

Appropriate space must be checked. If yes is indicated, ensure that the Director also receives a copy of this Media Contact Form immediately, followed by a DRAFT Briefing Note a.s.a.p.

Name: Chris Jenkins


(signature)

Title: Waste Management Officer

Location: Nanaimo

cc: Regional Director
Regional Manager



DMT
~~EST~~

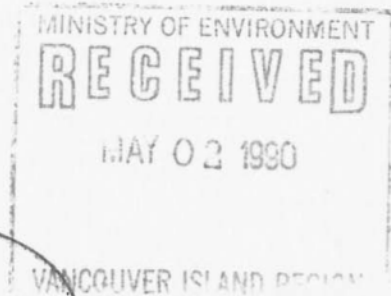
Capital Regional District

File PR-1839

524 YATES STREET P.O. BOX 1000 VICTORIA B.C. V8W 2S6 TELEPHONE (604) 388-4421

25 April 1990

Ministry of Environment
Regional Headquarters - V.I. Region 1
2569 Kenworth Road
Nanaimo, B.C.
V9T 4P7



Attention: Dennis M. Trudeau
Waste Management Technician, Municipal Section

Dear Sir:

Re: PERMIT PR-1839

This letter is to acknowledge receipt of your letter of March 27, 1990 and the inspection report which accompanied it.

I attach a copy of a letter dated March 30, 1990 from CRD Chairman Murray Coell to the Minister of Environment. The letter sets out the CRD's position with respect to Permit PR-1839.

Yours very truly,

M.C. Williams, P.Eng.
Chief Engineer

Enclosure

cc: W.M. Jordan, CRD Executive Director
MCW:mr

MUNICIPALITIES AND ELECTORAL AREAS

CENTRAL SAANICH • COLWOOD • ESQUIMALT • LANGFORD • METCHOSIN • NORTH SAANICH • OAK BAY
OUTER GULF ISLANDS • SAANICH • SALTSRING ISLAND • SIDNEY • SOOKE • VICTORIA • VIEW ROYAL



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Canada Post
Postes Canada

File - 1839

Registration Receipt (Bulk)

Récépissé de recommandation (en nombre)

This receipt is necessary if enquiry is desired.

À produire en cas de réclamation

Mailed by (Name and address of firm) Déposé par (Nom et adresse de la maison expéditrice)

Waste Management DMT
Ministry of Environment
2569 Kenworth ROAD
Nanaimo, BC
V9T 4P7

Stamp of Firm Timbre de la maison expéditrice
Date Stamp of Post Office Timbre à date du bureau de poste

MINISTRY OF ENVIRONMENT
RECEIVED

APR 10 1990

Fragile and perishable articles are not indemnified against damage.

Indemnity and REGISTRATION FEES information is available on request at the Post Office.

Aucune indemnité ne sera versée pour l'avarie d'un objet fragile ou périssable.

Vous pouvez obtenir des renseignements sur les indemnités versées et les DROITS DE RECOMMANDATION en vous adressant à votre bureau de poste.

| Number Numéro | Name Nom | Fee Droit | Address (including Postal Code) Adresse (y compris le code postal) |
|------------------|---------------------------|--------------|---|
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Sheet No. Feuille N° No of articles Nbre d'objets

Accepted by (Postal Employee's Signature) Accepté par (Signature de l'employé des Postes)

- (1) AFTER WRITING remove green sheet forward the balance of set intact.
(2) WHEN REPLYING after writing your reply keep pink sheet for your file, forward white sheet.



Province of
British Columbia

MEMORANDUM

TO:

D. Trudeau
~~Cut~~
File PR 1839

FROM:

L. Sundquist

SUBJECT:

TWA/CRD

DATE:

Mar 28/90

☐ For Your Information

☐ Please O.K. and Return

☐ Please Discuss With Me

☐ Per Your Request

☐ For Your Signature

☐ Please Process

☐ Return With More Details

☐ Investigate and Report

☐ Please Answer

☐ For Your File

Mrs TWA advised me today that
the landfill was covered on
Mar 26/90. Photos are to be
forwarded to me

Lance

REPLY:

WRITE YOUR REPLY AND RETURN THIS SHEET

Q.P. 4036

Fold Here for Window Envelope

Fold Here for Window Envelope

~~File~~

DOUBLE REGISTERED

March 27, 1990

File: PR-1839

Capital Regional District
P.O. Drawer 1000
524 Yates St.
Victoria, B.C.
V8W 2S6

Dear Sir:

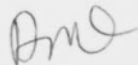
I have enclosed a copy of my recent inspection of the works authorized under Waste Management Permit PR-1839, for your information.

Please note Section D - "Action Required by Permittee". These actions must be completed as soon as possible to bring your operation into compliance.

During my inspection Mr. Twa indicated that he would apply a cover over the exposed refuse within a weeks time. An inspection will be scheduled shortly after this to ensure compliance.

If you have any questions please contact the undersigned.

Yours truly,



Dennis M. Trudeau
Waste Management Technician
Municipal Section

DMT/lq
PR1839.LTR

Encl.

~~EEU~~
File

DOUBLE REGISTERED

March 27, 1990

File: PR-1839

Mr. Norman Twa
P.O. Box 255
Ganges, B.C.
V8T 1E0

Dear Mr. Twa:

I have enclosed a copy of my recent inspection of the works authorized under Waste Management Permit PR-1839 for your information.

Please note Section D "Action Required by Permittee". These actions must be completed as soon as possible to bring your operation into compliance.

During my inspection you indicated that you would apply a cover over the exposed refuse within a weeks time. An inspection will be scheduled shortly after this to ensure compliance.

In the future it would be advisable to have your clients dump their refuse in a smaller area. Presently garbage is being dumped over that entire face of the landfill which forces you to cover a large area every week. Covering a smaller area would be quicker and less expensive.

If you have any questions please contact the undersigned.

Yours truly,



Dennis M. Trudeau
Waste Management Technician
Municipal Section

DMT/lq
PR1839.LTR
Encl.

cc: Lance Sundquist, EEU



MINISTRY OF ENVIRONMENT AND PARKS
WASTE MANAGEMENT BRANCH

Permit No. PR 1839

Date of Inspection March 22 90

PERMIT INSPECTION

Permittee CRD and Mr. N. Twa

Location _____

A. SAMPLES TAKEN YES ☐ NO ☒

Sources Sampled _____

B. OBSERVATIONS AND COMMENTS:

- Estimate 6-8 weeks of uncovered
refuse
- cover material has been stockpiled on
site
- some recent cover completed over a
small area at bottom of exposed
face of refuse pile.
- garbage in drainage ditches

C. PERMIT COMPLIANCE IN ☐ OUT ☒

Based on Site Observations.

COMMENTS: Weekly covering of refuse is
not being done as required by a
Level "C" operation

D. ACTION REQUIRED BY PERMITTEE: Apply a layer of
cover material over exposed refuse
and thereafter weekly.

Permittee or Representative's Signature

Dennis M. Trudeau
For Waste Management

Regional Office Follow-up:

Original to File
Copy to Permittee

lands Driftwood
Police March 21/8
seeking
input File-
PR1839



JOFF
CJJ
File PE 1839

Capital Regional District

524 YATES STREET P.O. BOX 1000 VICTORIA B.C. V8W 2S6 TELEPHONE (604) 388-4421

12 March 1990

Ministry of Environment
2569 Kenworth Road
Nanaimo, BC
V9T 4P7

Attention: Dennis M. Trudeau

Dear Sirs:

Re: Saltspring Island - Blackburn Landfill
Permit Inspection



With reference to your letter and Permit Inspection report dated March 2, 1990, please be advised that the Regional District does not consider itself to be a Permittee. The Region has no control over the operation of the privately owned and operated landfill and your reference to Section D - Action Required by Permittee should be directed to Mr. Twa.

Yours very truly,

A.W. Summers, P.Eng.
Manager Solid Waste Division

AWS/ac

cc: M. Williams, P.Eng., Chief Engineer

OS40-8

MUNICIPALITIES AND ELECTORAL AREAS

CENTRAL SAANICH • COLWOOD • ESQUIMALT • LANGFORD • METCHOSIN • NORTH SAANICH • OAK BAY
OUTER GULF ISLANDS • SAANICH • SALTSRING ISLAND • SIDNEY • SOOKE • VICTORIA • VIEW ROYAL



Canada Post
Corporation

Société canadienne
des postes

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| To be filled in by the Office of Origin | À remplir par le bureau d'origine |
| Office of Posting | Bureau de dépôt |
| NANAIMO | |
| Item N° d'envoi | Date of Posting Date de dépôt |
| 8738 | 6/03/90 |

AR



RETURN TO
RETOURNER A:

To be filled in by Sender
Please Print Clearly

À remplir par l'expéditeur
En lettres moulées S.V.P.

Name Nom WASTE MGMT
MINISTRY OF ENVIRONMENT
St and No., Apt. No., P.O. Box or R.R. No. No. et rue, n° d'app., n° de C.P. ou de R.R.
2569 KENWORTH RD
City Ville NANAIMO
Province BC
CANADA

V9T 4A7
Postal CODE postal

ACKNOWLEDGEMENT OF RECEIPT
OF A REGISTERED ITEM

AVIS DE RÉCEPTION D'UN
ENVOI RECOMMANDÉ

JOF
CJS

To be filled in by Sender

À remplir par l'expéditeur

Name of addressee

Nom du destinataire

MR. N. TWA

Street and No., Apt. No., P.O. Box or R.R. No. N° et rue, n° d'app., n° de C.P. ou de R.R.

P.O. BOX 255

City

Ville

Province

Country

Pays

Postal CODE postal

GANGES

BC

V8T 1E0

To be completed at destination

À compléter à destination

As a matter of priority this advice must be signed by the addressee or, if this is not possible, by another person authorized to do so under the regulations of the country of destination, or, if these regulations so provide, by the official of the office of destination and returned by the first mail direct to the sender.

Cet avis doit être signé en priorité par le destinataire et, si cela n'est pas possible, par une autre personne y autorisée en vertu des règlements du pays de destination, ou, si ces règlements le prévoient, par l'agent du bureau de destination et renvoyé par le premier courrier directement à l'expéditeur.

The registered item referred to was delivered on:

L'item recommandé décrit a été livré le:

March 9 1990

Signature of Official at Office of Delivery

Signature de l'agent du bureau de destination

Signature of Addressee or Authorized Representative

Signature du destinataire ou de son représentant

Hernandez

E. Twa

Date Stamp of Office of Delivery

Timbre à date du bureau de destination

642630
9 III 1990
GANGES, B.C.
V8T 1E0

33-086-230 (9-85)



Canada Post
Postes Canada

Registration Receipt (Bulk)

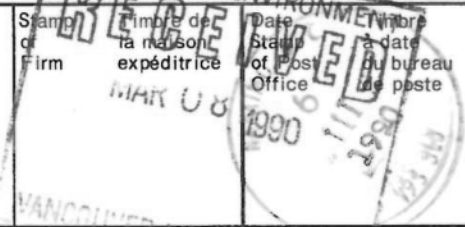
This receipt is necessary if enquiry is desired.

Mailed by (Name and address of firm) Déposé par (Nom et adresse de la maison expéditrice)

WASTE MGMT
Ministry of Environment
2569 Kenworth Road
Nanaimo, BC
V9T 4P7

Récépissé de recommandation (en nombre)

À produire en cas de réclamation



Fragile and perishable articles are not indemnified against damage.

Indemnity and REGISTRATION FEES information is available on request at the Post Office.

Aucune indemnité ne sera versée pour l'avarie d'un objet fragile ou périssable.

Vous pouvez obtenir des renseignements sur les indemnités versées et les DROITS DE RECOMMANDATION en vous adressant à votre bureau de poste.

| Number Numéro | Name Nom | Fee Droit | Address (including Postal Code) | Adresse (y compris le code postal) |
|------------------|-------------|--------------|------------------------------------|---------------------------------------|
| AR 8738 | Mr. N. Twa | 1 \$3.74 | P.O. Box 255 Ganges, BC | V 8 T 1 E 0 |
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| | | 19 | | |
| | | 20 | | |

Sheet No. Feuille N° No of articles Nbre d'objets

Accepted by (Postal Employee's Signature) Accepté par (Signature de l'employé des Postes)



Canada Post
Postes Canada

Registration Receipt (Bulk)

Récépissé de recommandation (en nombre)

This receipt is necessary if enquiry is desired.

À produire en cas de réclamation

Mailed by (Name and address of firm) Déposé par (Nom et adresse de la maison expéditrice)

WASTE MGMT

Ministry of Environment
2569 Kenworth Road
Nanaimo, BC V9T 4P7

Stamp of firm
Stamp of Post Office
Date
Timbre de la maison expéditrice
Timbre à date du bureau de poste

MINISTRY OF ENVIRONMENT
RECEIVED
MAR 08 1990

Fragile and perishable articles are not indemnified against damage.

Indemnity and REGISTRATION FEES information is available on request at the Post Office.

Aucune indemnité ne sera versée pour l'avarie d'un objet fragile ou périssable.

Vous pouvez obtenir des renseignements sur les indemnités versées et les DROITS DE RECOMMANDATION en vous adressant à votre bureau de poste.

| Number Numéro | Name Nom | Fee Droit | Address (including Postal Code) Adresse (y compris le code postal) |
|------------------|---------------------------|--------------|---|
| PR 8739 | Capital Regional District | \$ 3.74 | P.O. Drawer 1000, 524 Yates St. Victoria, BC V8W 2S6 |
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Sheet No. Feuille N°

No of articles Nbre d'objets

Accepted by (Postal Employee's Signature) Accepté par (Signature de l'employé des Postes)

DOUBLE REGISTERED

March 2, 1990

File: PR1839

Capital Regional District
P.O. Drawer 1000
524 Yates St.
Victoria, B.C.
V8W 2S6

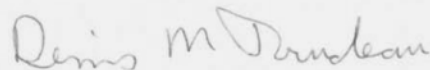
Dear Sir:

I have enclosed a copy of my recent inspection of the works authorized under Waste Management Permit PR-1839, for your information.

Please note Section D - "Action Required by Permittee". These actions must be completed as soon as possible to bring your operation into compliance.

If you have any questions please call this office.

Yours truly,



Dennis M. Trudeau
Waste Management Technician
Municipal Section

DMT/lq
DMTPR1839.LET

Encl.

cc. Mr. N. Twa, Ganges, B.C.

DOUBLE REGISTERED

March 2, 1990

File: PR1839

Mr. Norman Twa
P.O. Box 255
Ganges, B.C.
V8T 1E0

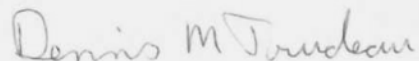
Dear Mr. Twa

I have enclosed a copy of my recent inspection of the works authorized under Waste Management Permit PR-1839 for your information.

Please note Section D - "Action Required by Permittee". These actions must be completed as soon as possible to bring your operation into compliance.

If you have any questions please call this office.

Yours truly,



Dennis M. Trudeau
Waste Management Technician
Municipal Section

DMT/lq
DMTTWA.LET

Encl.

cc. Capital Regional District, Victoria



MINISTRY OF ENVIRONMENT
WASTE MANAGEMENT BRANCH

Permit No. PR1839
Date of Inspection Feb 16 1990

PERMIT INSPECTION

Permittee CRD, and Mr. N. Twa
Location Salt Spring Island

A. SAMPLES TAKEN YES ☐ NO ☒

Sources Sampled _____

B. OBSERVATIONS AND COMMENTS:

- Estimate 400-500 m³ uncovered debris
(4-6 weeks volume)
- Garbage in drainage ditches

C. PERMIT COMPLIANCE IN ☐ OUT ☒

Based on Site Observations.

COMMENTS: - Weekly covering of refuse is not
being done as required by a Level "C"
operation

D. ACTION REQUIRED BY PERMITTEE:

- apply a layer of cover material
over exposed refuse and thereafter weekly
- remove garbage from drainage
ditches

Permittee or Representative's Signature

Dennis M Trudeau
For Waste Management

Regional Office Follow-up:

Original to File
Copy to Permittee



OFFICE OF THE
MINISTER

JOF + File
CJJ *PR. -1839*
JAN 26 1990

s.22

per South Salt Spring
Residents Association
Director, Island Watch Society

s.22

Dear s.22

Thank you for your letter to my predecessor, the Honourable Bruce Strachan, enquiring about the Ministry's position on the operation of the landfill at Blackburn Road.

Technical staff in the Ministry have reported to me that the existing waste disposal operation for Salt Spring Island is not an acceptable situation for the long term. The maintenance of a landfill in a watershed used by the adjacent population as a potable water supply, is patently inappropriate.

The Capital Regional District, in submitting its 30-year solid waste management plan, proposed a preferred alternative for a transfer station to serve the Island with transport of the wastes to the regional landfill at Hartland Road. This position was supported by the Ministry when the plan was approved. Further, that approval advanced the proposition of cancelling the permit once an acceptable alternative was in place. That procedure would satisfy the request of the Regional District not to be associated with the privately owned landfill, as co-permittee, because of the potential for environmental impact in the longer term.

While the ultimate solution to the Salt Spring issue has not been determined, there is no uncertainty, in the Ministry's view, that the planning of a prolonged use for the existing landfill in its watershed setting, is inappropriate.

.../2

JAN 26 1990

I trust that this is the information you need to adequately inform your Solid Waste Committee. Your interest in these matters is greatly appreciated.

Sincerely,

Original Signed by
MINISTER

John Reynolds
Minister

cc: Mr. T.H. Oxland
Regional Director, Nanaimo
Mr. G.E. Oldham ←
Regional Waste Manager, Nanaimo

file
January 12, 1990

File: PR-1839

Capital Regional District
P.O. Drawer 1000
524 Yates Street
Victoria, B. C.
V8W 2S6

Gentlemen:

I have enclosed a record of my recent inspection of the works authorized under Waste Management Permit PR-1839 for your information.

Yours truly,

D McLaren

D. A. McLaren, A.Sc.T.
Waste Management Officer
Municipal Section

DML/mm

Enclosure

cc: Mr. Norman Twa, Ganges

Accused Name: CAPITAL REGIONAL DISTRICT / NORMAN TWA PR1839
Address: 524 Yates Street P.O. Box 255
Victoria Ganges, B.C.
Approval/Permit #: PR1839 Offence Date: 90-01-09
Comments: history of non compliance with respect to permit
covering requirements
Technician/Officer: D. McLAREN Last Inspection: 90-01-09
(Attach copies of pertinent field data including permits, orders and photos)

Section Head C.O. Service Investigation

Approved ☒; Not approved ☐Date: 11-01-90Signature: [Signature]Comments: I support ticketing in view of operational history, but timing may
not be appropriate. GEO: for discussion?Waste Manager: Investigation & Preliminary Report Required Yes ☐; No ☐Charge by Ticket Yes ☐; No ☐ or Charge by Court Appearance Yes ☐ No ☐Comments: As a result of site appearance on Jan 22 and probable
cause of action for this site, legal action probably not appropriate
Date: 23-1-90 Signature: [Signature]Enforcement Manager: Investigation & Preliminary Report Required Yes ☐; No ☐Charge by Ticket Yes ☐; No ☐ or Charge by Court Appearance Yes ☐ No ☐Comments: _____
Date: _____ Signature: _____Environmental Enforcement Supervisor: Case File Opened Yes ☐; No ☐Comments: _____
Date: _____ Signature: _____

Investigating Officer: Name: _____ Violation: _____

Charge(s): Laid ☐; Not laid ☐; Ticket ☐; Form 2 ☐; Date: _____Preliminary report submitted: Yes ☐; No ☐; Date: _____Comments: _____
Date: _____ Signature: _____

Attach 2 copies of Ticket/Information, COSIC Report and Prosecutor's Information if charges laid

Environmental Enforcement Supervisor: Reviewed File ☐

Signature: _____ Date sent to Enforcement Manager: _____

Comments: _____



MINISTRY OF ENVIRONMENT
WASTE MANAGEMENT BRANCH

Permit No. PR1839
Date of Inspection JAN. 9 1990

PERMIT INSPECTION

Permittee CRD/TWA
Location SALTSPRING ISLAND

A. SAMPLES TAKEN YES ☒ NO ☐

Sources Sampled - surface & well sites in the vicinity

B. OBSERVATIONS AND COMMENTS:

- The volume of uncovered refuse is excessive
(est. to be 3-4 weeks volume) - photos taken
- some soil cover is being hauled onto the site
& stockpiled
- The pond below the demolition debris
pile is full & there is some contact at the
edge of the pile, not significant at this time

C. PERMIT COMPLIANCE

IN ☐ OUT ☒

Based on Site Observations.

COMMENTS: - no more debris is to enter the pond
below the demo stockpile site
- the permit covering frequency is
not being adhered to.

D. ACTION REQUIRED BY PERMITTEE:

- apply a complete layer of intermediate
cover material over all exposed refuse.

Permittee or Representative's Signature

Dmclaren
For Waste Management

Regional Office Follow-up:

- a ticket should be issued for non compliance
with permit requirements - covering (see
inspection dated 89.11.08. DMch
& letter of 89.11.14

Original to File s.14
Copy to Permittee

cc Bill Hollingshead

LEE
JOF

ESS

o file.

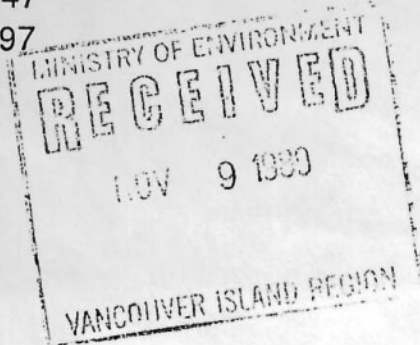
Environmental Impact Unit,
Environmental Services Section,
Waste Management Branch,
Ministry of Environment,
810 Blanshard St., Victoria, B.C., V8V 1X1.

- AREA S (SSI)
- PR-1839

Phone: (604) 387-9947
FAX: (604) 356-7197

File: 1.0023

Nov. 7, 1989



Memo to File

Re: Priority Pollutants Study, Saltspring Island

ESS: Re PR-1839

s.22

J. A

Mr. Philip Grange telephoned me earlier today to indicate that his engineering company is organizing collection of various samples but especially drinking water from wells on Saltspring Island for analysis of priority pollutants. At some future time his company expects to seek federal and/or provincial funding to assist with the costs. I explained the high cost of analyses to him and mentioned the recent report our ministry had issued with regard to dioxins in drinking waters for sites near pulp mills.

Can we coordinate or use this info re our proposal program?

Could, although study doesn't appear to be specific to Blackburn's Area. I.E. dioxins from pulp mill not pollutants from landfill.

A large, stylized handwritten signature in dark ink.

Malcolm J.R. Clark, Ph.D., FCIC,
Environmental Chemist

cc Ted Oldham, Regional Waste Mngr., Nanaimo.

2

MEMO TO FILE

PR 1839
File: PR-1849

From: D. A. McLaren

CRD/TWA LANDFILL



- looking northeast at the active face and substandard covering practice.

DOUBLE REGISTERED

Jot, eff
November 14, 1989

File: PR-1839

Mr. N. Twa
P.O. Box 255
Ganges, B. C.
V8S 1E0

Dear Mr. Twa:

I have enclosed a record of my recent inspection of the works authorized under Waste Management Permit PR-1839 for your information.

I bring your attention to Section "D" of the report. The present frequency of cover application does not meet the permit standards which requires that an intermediate soil covering be applied over all exposed refuse once per week. You are advised to carry out this work as soon as possible and thereafter on a weekly basis.

Yours truly,

D. McLaren

D. A. McLaren, A.Sc.T.
Waste Management Officer
Municipal Section

DML/mm

Enclosure

cc: Capital Regional District, Victoria



MINISTRY OF ENVIRONMENT AND PARKS
WASTE MANAGEMENT BRANCH

Permit No. PR1839

Date of Inspection NOVEMBER 8/89

PERMIT INSPECTION

Permittee CRD, N.TWA

Location SALTSPRING ISLAND

A. SAMPLES TAKEN YES ☐ NO ☒

Sources Sampled _____

B. OBSERVATIONS AND COMMENTS:

- previously worked areas have been adequately
covered & there is good traffic control.
- estimate $\approx 200 m^3$ uncovered debris (3 weeks
volume.

C. PERMIT COMPLIANCE IN ☐ OUT ☒

Based on Site Observations.

COMMENTS: - weekly covering is not being applied
as required (Level C operation req'd.).

D. ACTION REQUIRED BY PERMITTEE:

- apply a layer of soil cover over
the entire working face & exposed
surface as soon as possible & thereafter
once per week.

Permittee or Representative's Signature

D. McClaren
For Waste Management

Regional Office Follow-up:

Original to File
Copy to Permittee



Province of
British Columbia

Ministry of
Environment

Vancouver Island Region 1
Regional Headquarters
2569 Kenworth Road
Nanaimo, B.C. V9T 4P7
Phone: (604) 758-3951
Fax: 755-2473

635
↓
b/w
PR-1839

NUMBER OF PAGES (including cover) 7

TO: Tom Lidkea

DATE: Oct 31 / 89

CRD Engineering

ADDRESS: 524 Yates St.

FAX NO: 388 5241

Victoria

PHONE NO: _____

FROM: John Finnie

MESSAGE:

As discussed - please forward to Mike.
Please if you wish to discuss further.

John

Sent by: J Finnie

Time sent: _____

February 14, 1979

DOUBLE REGISTERED

Capital Regional District
524 Yates Street
P.O. Drawer 1000
Victoria, British Columbia
V8W 2S6

Attention: Mr. Dennis Young, Administrator

Gentlemen:

Pollution Control Permit No. PR-1839
- Issued in the Joint Names of The
Capital Regional District and Mr. N. Twa

We have received a letter of February 7th, from Mr. N. Howard as attached copy, together with the subject permit which is now returned to you. Following a meeting with Mr. Howard today we take it this matter has arisen through misunderstanding. You will recall the discussion with the undersigned at which it was agreed that your name should be included as Joint Permit Holder. To confirm this matter we sent you a copy of our letter of November 18th to Mr. Twa setting down beforehand what we proposed to do. The permit stands as issued as no appeal was launched within the appeal period.

DEC. Yours very truly



J.F. Dew-Jones, P. Eng.
Chief, Municipal Division
Pollution Control Branch

JEDJ:da
cc: Mr. N. Howard
Capital Regional District

cc: Regional Manager - Coast



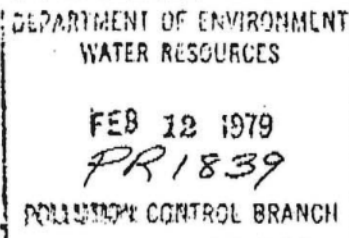
capital REGIONAL DISTRICT

524 Yates Street / P.O. Drawer 1000 / Victoria, British Columbia / V8W 2S6
Telephone 388-4421

DOUBLE REGISTERED

7th February 1979

Ministry of the Environment
Pollution Control Branch
1106 Cook Street
Victoria, British Columbia
V8V 1X4



Attention: Mr. H.P. Klassen, P. Eng.

Gentlemen:

Re: Pollution Control Permit No. PR-1839 - Issued in
the Joint Names of the C.R.D. and Mr. N. Twa

Reference is made to your "Letter of Transmittal" which accompanied a copy of P.C.B. Permit No. PR-1839, issued in the joint names of the C.R.D. and Mr. N. Twa.

To the best of my knowledge the Regional District has not submitted an Application to you for a Permit, either jointly with Mr. Twa, or on its own account. Also, I am not aware that Mr. Twa has forwarded to you such an Application.

The Regional District is presently investigating the feasibility of providing financial assistance to Mr. Twa to assist him in operating the Saltspring Island landfill site in conformity with P.C.B. Guidelines. Mr. Twa has indicated that he will have to close down the site if he does not receive financial aid.

The Engineering Department's draft operating budget for solid waste includes an item of expenditure earmarked for the Saltspring landfill operation. However, this budget has not been reviewed by Committee or approved by the Regional Board. Pending Board and Ministerial approval of the budget, discussions with Mr. Twa have also been held in abeyance.

In view of the foregoing I have no alternative but to return your Permit No. PR-1839 for the Saltspring Island landfill operation. It is hoped that an Application can be made to your Department for a Permit for this facility later in the year, but this will, of course, depend on budgetary approvals and negotiations with Mr. Twa.

Yours very truly,

N. Howard
N. Howard, P. Eng.
Chief Engineer

Encls.

c.c.: Mr. N. Twa

MUNICIPALITIES & ELECTORAL AREAS
Central Saanich
Colwood
Esquimalt
Langford
Metchosin
North Saanich
Oak Bay
Outer Gulf Islands
Saanich
Saltspring Island
Sidney
Sooke
Victoria
View Royal

| DISTRIBUTION | DATE | INITIALS |
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| | | |

January 17, 1979

Capital Regional District
524 Yates Street
P.O. Drawer 1000
Victoria, British Columbia
V8W 2S6

Attention: Mr. N. Howard, P. Eng.

Gentlemen:

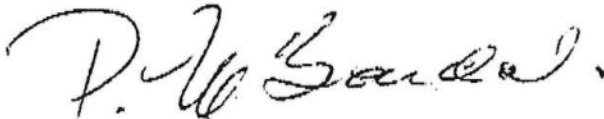
Re: Pollution Control Permit PR-1839
Capital Regional District and Norman Twa

Thank you for your letter of January 12th in connection with the above captioned Permit regarding the refuse disposal operation on Saltspring Island.

Subsequent to my inquiry of last August your District has agreed to be co-permittee with Mr. Norman Twa in respect of solid waste disposal in that area. Mr. Twa was advised of this development by registered mail in mid December and of our intention to issue a Permit in your joint names for a Level C operation under the Municipal Objectives with an endorsement to conduct periodic regulated burning of non-putrescible debris. A copy of the letter was forwarded to your District.

I am now pleased to advise you that a Permit was issued on January 16th in this sense and has been forwarded to you under separate cover. I trust that this resolution of the matter will be satisfactory to all concerned.

Yours very truly



P.N. Bardal, P. Eng.
Head, Coastal Section
Municipal Division

PNB:da

DOUBLE REGISTERED

December 18, 1978

Mr. Norman Twa
Box 255
Ganges, British Columbia
V8T 1E0

Dear Mr. Twa:

Re: Application to Discharge Refuse under the
Pollution Control Act

As you are aware, this Branch received an application to discharge refuse from Mr. W. Twa in 1972, but the permit has not been issued because of an unwillingness to conform to our minimum operating requirements.

Mr. Dennis Young, Executive Director of the Capital Regional District, now supports the issuance of a permit in the joint names of yourself, as the present operator, and the Capital Regional District. The conditions require compaction and covering of refuse weekly and would allow burning of 100 cubic yards of tree stumps and other like debris six times per year. Under this arrangement, the responsibility for complying with permit conditions would also fall on the Capital Regional District.

A permit in this sense will be recommended subject to any information you may submit within the next 2 weeks.

Yours very truly, -



J. E. Dew-Jones, P. Eng.
Chief, Municipal Division

JEDJ:pjj

cc: Regional Manager - Coast

Mr. Dennis Young, Executive Director
Capital Regional District

File: 0262100-AR-1839
Date: December 1, 1978
From: Chief, Municipal Division

MEMO TO FILE

Re: Walton Twa Refuse Permit

D.J. spoke to Mr. Young, C.R.D. Administrator about their correspondence concerning the C.R.D. becoming the joint permit holder for the subject application. Mr. Young explained that they had indeed pursued this matter with Mr. Norman Twa on a number of occasions, but had not succeeded in reaching a basis of agreement with him.

In response to D.J.'s enquiry, Mr. Young stated it would be acceptable to the C.R.D. for the permit to be issued in joint names. He also accepted D.J.'s proposal that the permit would be accompanied by a letter quoting C.R.D.'s prior agreement as per our conversation. He made the point that it would not resolve the permit problem.


J. E. Dew-Jones

JEDJ:pjj

*Noted
Dec 1
Jewell*

~~not, etc~~
file

FILE NOTE

Date: October 13, 1989

File: PR1839

Re: PR 1839 - TWA Landfill, Saltspring Island



Note Date

The landfill looking towards the north east just after improved cover application to bring the site into compliance.

Dmclaren

~~R. J. Davies, A.Sc.T.~~
Waste Management Technician

RJD/sh

Note: Visited site September 28, 1989.
No cover had been applied for at least
a month. Permit out-of-compliance
again very quickly.

CJT 89.10.16

September 18, 1989

File: PR-1839

Saltspring Island Nursery
355 Blackburn Road
P.O. Box 1133
Saltspring Island, BC
V0S 1E0

ATTENTION: Mr. Knox

Dear Mr. Knox:

In accordance with your recent request, I have enclosed the results of monitoring carried out January 31, 1989 by the Ministry of Environment on the domestic supply well serving the Saltspring Centre.

As discussed, another sample was taken two weeks ago, the results of which will be relayed to you.

D. McLaren

D. A. McLaren, A.Sc.T.
Waste Management Technician
Municipal Section

DMcL/ldt

Enclosure

~~Chris T.~~
~~FOF~~ - PR-1839
Files - 50.5403/06
SSI SOLID WASTE DISPOSAL

310
3:40
3 PM
RLO

→ The existing garbage dump on Blackburn Road will be closed by the Ministry of the Environment because it represents a serious threat to the health of those using potable water from the lake and wells within the Cusheon Lake Watershed.

Because no suitable landfill site exists on Salt Spring Island, solid waste from the island must be transferred to the Hartland landfill.

The attached table gives comparative costs of hauling waste to the Hartland landfill either through a transfer station or by direct haul using collector trucks.

A recycling program will be initiated which will present an opportunity for participants to reduce their waste disposal costs.

~~DECK~~ ~~TABLE~~

REFERENDUM

SOLID WASTE DISPOSAL

ATTENTION: HOUSEHOLDER

To T&D OLDHAM

COMPARISON OF ANNUAL COSTS TO THE AVERAGE HOMEOWNER IN 1990
of the present garbage disposal system and new proposed options according to CRD estimates.

| COST ITEM | PRESENT BLACKBURN DUMP (5) | | REFERENDUM (YES) TRANSFER STATION (All Waste) (6) | | | REFERENDUM (NO) DIRECT HAUL (Bags Only) TO HARTLAND | | |
|--|-------------------------------|-------------------------|--|-------------------------|------------------|--|-------------------------|-----------------|
| | No Collection | Collection Bi-Weekly | Without Collection | Collection Bi-Weekly | Recycle Only | No Collection | Collection Bi-Weekly | Recycle Only |
| Property Tax (1)-existing -proposed | \$ 7.00 | \$ 7.00 | \$ 7.00 60.00 | \$ 7.00 60.00 | \$ 7.00 60.00 | \$ 7.00 | \$ 7.00 | \$7.00 |
| User's Fee (2) | \$55.00 | \$15.00 | \$ 55.00 | \$ 15.00 | | \$ 55.00 | | |
| Collection Cost (3) | --- | \$57.00 | --- | \$ 57.00 | | | \$ 57.00 | |
| Direct Haul Cost (4) | --- | --- | --- | --- | --- | Ferry Cost | \$ 83.00 | |
| TOTALS | \$62.00 | \$79.00 | \$122.00 | \$139.00 | \$67.00 | \$ 62.00 + Ferry Cost | \$147.00 | \$ 7.00 |

NOTES:

THE MORE YOU RECYCLE THE MORE YOU SAVE.

1. \$7.00 represents the existing yearly contribution from each household for operation of Hartland land fill. An additional \$0.60 per \$1,000 of converted assessment would be required to operate the transfer station and will remain constant for a period of 5 years. Thus, an average \$100,000 residence would pay \$67.00 per year.
2. The transfer station would accept sorted recyclables FREE. It would charge rates similar to the present dump, varying from \$0.50 per bag to \$2.00 per cubic yard to deposit waste. The user rates at the transfer station may increase after 1990 because of increased tipping fees at the Hartland landfill. A Salt Spring resident who brought his waste to a transfer station, all in bags, would pay about \$55.00 in 1990. On the other hand, a resident employing a collection company would, through that company, pay about \$15.00 user fees in addition to the \$57.00 estimated collection fee. (3)
3. The cost of the present bi-weekly collection and dump system is about \$72.00 per year for the average user. \$57.00 of the \$72.00 is collections fee and \$15.00 is the user fee. (2)
4. The direct haul cost is the approximate cost of hauling waste to Hartland, after it has been collected, plus the Hartland tipping fee. Each resident would be responsible for getting his own garbage to Hartland directly, or by contracting for the collection and delivery service to Hartland. This method shall be used if the referendum fails.
5. The present dump will be closed by the Ministry of Environment due to the environmental hazard it presents, and is, therefore, not an option. Figures presented are for comparison only.
- 6.* The transfer station will be the subject of a referendum to be held this fall. The CRD will pay the cost of constructing the facility (estimated at \$116,000) if Salt Spring residents agree to pay the ongoing operating costs. -

FOR
4 File
PR-1839

MINISTRY OF ENVIRONMENT
RECEIVED
AUG 29 1989
ND REGION

s.22

Aug. 24, 1989

Honourable Bruce Strachan
Minister of Environment
Parliament Buildings,
Victoria B.C.

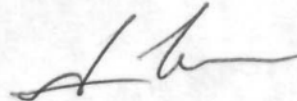
Dear Sir,

Salt Spring Island has itself yet one more problem which we are hoping your ministry will be able to help clear up. This problem is regarding the possible closure of our present garbage dump on Blackburn Road.

? The Salt Spring Island Solid Waste Committee, struck by the Capital Regional District, has said, in a "householder" to be sent out to the public that: "The existing garbage dump by Blackburn Road will be closed by the Ministry of the Environment because it represents a serious threat to the health of those using potable water from the lake and wells within the Cusheon Lake watershed." I have tried to confirm this statement from various sources within the ministry, notably: Don McLaren, Waste Management technician/inspector, John Finnie, Waste Management Municipal Section Head, and Ted Oldham, Waste Management Regional Manager (Nanaimo). None of these people are able to confirm the above quote.

Would you please inform us and the Solid Waste Committee of Salt Spring Island of your present stand and future plans for the Blackburn Road garbage site so we can pass on a clear message to the people of Salt Spring.

Sincerely,



Robert Andrew,
per South Salt Spring
Residents Association
Director, Island Watch
Society

cc: Ted Oldham, Regional Manager Waste Management
cc: Tom Oxland, Regional Director, Vancouver Island Regional
Headquarters



MINISTRY OF ENVIRONMENT AND PARKS
WASTE MANAGEMENT BRANCH

Permit No. PR1839
Date of Inspection AUG. 31/89

PERMIT INSPECTION

Permittee CRD - TWA
Location SALTSPRING ISLAND

A. SAMPLES TAKEN YES ☒ NO ☐

Sources Sampled SALTSPRING CENTRE WELL 4 IRR. POND.

B. OBSERVATIONS AND COMMENTS:

- the landfill operation has been upgraded
with all working faces covered & minor
volume of exposed refuse on surface.
- good traffic control

C. PERMIT COMPLIANCE IN ☒ OUT ☐

Based on Site Observations.

COMMENTS: - met with Mr. Twa who has agreed to
cease filling lower pond with demo
debris
- landfill is now being well operated

D. ACTION REQUIRED BY PERMITTEE:

- continue with present operating practice

[Signature]
Permittee or Representative's Signature

[Signature]
For Waste Management

Regional Office Follow-up:

MR. TWA IS INTERESTED IN RECEIVING THE RESULTS
OF RECEIVING ENV. MONITORING

Original to File
Copy to Permittee

ed Saltspring referendum
ea on garbage planned

Copyright

Copyright

Copyright

Jehovah's Witness banned
from taking girl to church

Committee has examined many options

G.F.J. → Gus: PR-1839
SO. 5403

Solid waste plan follows five-year study

By TOM GOSSETT

Copyright

Copyright

~~JTF~~ DME ~~ISF~~
file copy PR-1839

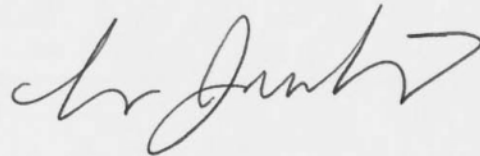
To: J.O. Finnie, P. Eng.
Head,
Municipal Section

July 21, 1989

File: PE-1538
PR-1839

Re: Implementation of a Monitoring Program for Twa/CRD Landfill

Attached is a copy of "Proposed Environmental Monitoring Program for Twa/CRD Landfill - Saltspring Island" dated July 1989. I request approval to implement the program as soon as recommended.



C. J. Jenkins
Waste Management Officer
Municipal Section

Attachment

CJJ/



Province of
British Columbia

Ministry of
Environment
and Parks

Salt Spring
Vancouver Island Region 1
Regional Headquarters
2569 Kenworth Road
Nanaimo
British Columbia
V9T 4P7
Phone: (604) 758-3951

CJJ
- file AREA 5
(Salt Spring Isl)
- file PR-1839



July 10, 1989

File: MO 21656
xMO 18458

s.22

Salt Spring Island Water
Preservation Society

s.22

Dear s.22

Thank you for your letter dated June 15, 1989, responding to our letter of June 7, 1989. You have asked a number of important questions.

With respect to the existing Blackburn Road landfill site, rehabilitation includes closure and restoration activities. These activities may include measures such as application of final cover; contouring and grading of the site; providing for final cover; contouring and grading of the site; providing for suitable landfill gas control; planting appropriate vegetation; and, if required, monitoring surface and ground water quality at and near the site. The necessity for any one of these measures will be determined during the cancellation of the existing Waste Management Permit and will be carried out to the satisfaction of the Regional Waste Manager.

While we do not have access to worldwide data upholding the undesirability of community dump site in potable water producing watersheds, the Ministry, in general, does not support landfilling at such locations. Therefore, this office supports any efforts toward closure of the existing Blackburn Road landfill.

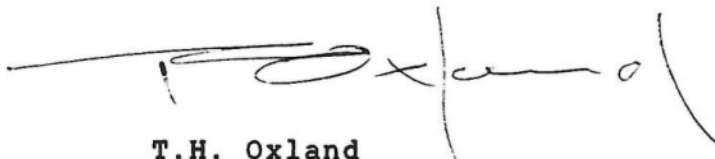
. . . 2

July 10, 1989

If it is appropriate for representatives of the Ministry to participate in future public meetings about the landfill site issue, my staff will make every effort to attend and assist in the process.

Thank you for your continued interest in this matter. If you have any further questions, please contact Mr. G.E. Oldham, P.Eng., Regional Waste Manager in Nanaimo.

Yours truly,

A handwritten signature in dark ink, appearing to read 'T.H. Oxland', with a long horizontal line extending to the left and a vertical line extending downwards to the right.

T.H. Oxland
Director
Vancouver Island Region
Ministry of Environment

CJJ/JOF/jad

cc: The Honourable Bruce Strachan, Minister of Environment
Mr. Tom Volquardsen, Beddis Water District
Mr. G.E. Oldham, Regional Waste Manager, Nanaimo

~~TOP~~
~~OFF~~
~~SEO~~
4
file

DOUBLE REGISTERED

June 19, 1989

File: PR-1839

Mr. Norman Twa
P.O. Box 255
Ganges, B.C.
V8T 1E0

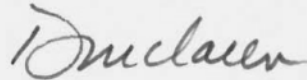
Dear Mr. Twa:

I have enclosed a record of my recent inspection of the works authorized under Waste Management Permit PR-1839 for your information.

I have noted the improvements in the application of cover material over previously completed areas, however, the active working face in the north corner of the landfill requires intermediate covering. The volume of exposed refuse is still excessive.

If you have any questions in this regard do not hesitate to contact me.

Yours truly,



D. A. McLaren, A.Sc.T.
Waste Management Technician
Municipal Section

DAMcL/mm

Enclosure

cc: Capital Regional District, Victoria



MINISTRY OF ENVIRONMENT AND PARKS
WASTE MANAGEMENT BRANCH

Permit No. PR 1839

Date of Inspection JUNE 13 1989

PERMIT INSPECTION

Permittee CRD / TWA

Location SALTSPRING ISLAND

A. SAMPLES TAKEN YES ☐ NO ☒

Sources Sampled _____

B. OBSERVATIONS AND COMMENTS:

- the water level has dropped in the pond adjacent to the woodwaste landfill, reducing waste & water contact.
- intermediate cover has been placed over 60 % of the exposed refuse noted on the Apr 27/89 inspection, however the volume of exposed refuse & height of working lift still is excessive, with a 15 ft exposed face noted.

C. PERMIT COMPLIANCE IN ☐ OUT ☒

Based on Site Observations.

COMMENTS: - improvements have been made to the cover application on previously worked areas however the volume of exposed refuse in the active area is excessive, The depth of lift is excessive

D. ACTION REQUIRED BY PERMITTEE: _____

- ① - apply cover over the presently active area including the working face.
- ② - inert soil must be placed in the pond adjacent to the woodwaste site to prevent waste / surface water contact if filling of the pond area is contemplated.

Permittee or Representative's Signature

Druclaven
For Waste Management

Regional Office Follow-up:

Original to File
Copy to Permittee

*Salt Spring Island
Water Preservation Society*
s.22



June 15, 1989

Mr. T. H. Oxland, Director
Vancouver Island Region
Ministry of Environment
2569 Kenworth Rd.
Nanaimo, B.C. V9T 4P7

File: MO 18458

Dear Mr. Oxland,

Thank you very much for your very complete and detailed response to our letter of December 22, 1988.

We appreciate the support and interest the Ministry of Environment has for the Cusheon Lake watershed and the help we are getting to answer some of our major concerns for the future of Cusheon Lake as a reliable source of potable water for our community.

We still feel a more frequent and formal monitoring system of Cusheon Lake water and area well water testing would be advisable in view of the 20 years of solid waste collecting at the dump site in the watershed. We will follow up on your suggestion that individual householders be advised of the availability of water test kits at our local government office.

As you are aware a concept of a solid waste transfer station and recycling program is scheduled to go to referendum this fall. You mentioned in your letter that the present dump site will be "rehabilitated". What does that involve? And what will it cost? These are questions that the public will surely ask.

Do you also have access to worldwide data upholding the undesirability of community dump sites in potable water producing watersheds? We will need that information in support of our campaign to remove the dump site from the Cusheon Lake watershed. In addition we would be most appreciative if a representative from your Ministry could be at the public meetings this fall to help us inform the public about the possible dangers that the present dump site poses to public health.

(2)

Thank you again for your help and interest.

Yours truly,

s.22

President

cc:

The Hon. Bruce Strachan, Minister of Environment
✓ G.E. Oldham, Regional Waste Manager
Tom Volquardsen, Beddis Water District



Province of
British Columbia

Ministry of
Environment

Vancouver Island Region 1
Regional Headquarters
2569 Kenworth Road
Nanaimo
British Columbia
V9T 4P7
Phone: (604) 758-3951

JOE
Chris F.
Diane M-L
File
PR.1839

June 7, 1989

File: MO 18458

s.22

Salt Spring Island Water
Preservation Society

s.22



Dear ^{s.22}

Your letter of December 22, 1988, concerning contamination of Cusheon Lake, has been referred to this office for reply.

There are 21 individuals, a resort, and a water utility licenced to extract up to a total of 350 m³/d of water from Cusheon Lake. Currently, the water quality of Cusheon Lake is assessed on the basis of annual nutrient levels and monthly coliform counts through the Public Health Inspection of the Ministry of Health.

Regarding your reference to industrial activity within the watershed, I offer the following comments:

1. It is the experience of this Ministry, based on previous lake studies, that the potential for environmental impact originates from local residences, especially where failing or poorly operating tile fields are being used for sewage disposal, rather than any identified industry.
2. A recently completed Solid Waste Management Plan for the Capital Regional District recommends, subject to a public referendum, that a transfer facility be constructed on Saltspring Island with subsequent refuse disposal at the Hartland Road Landfill. Once an alternative solid waste disposal option exists for Saltspring Island residents, the Blackburn Road site could be closed and appropriately rehabilitated. Periodic monitoring of wells in close proximity to the landfill, as well as surface runoff reveal that water quality has not been impacted by this operation.

. . . 2

May 11, 1989

3. An investigation last fall into the discharge of fill material on the Reynolds property found that the fill deposited there in October, 1988, was not a concern. No monitoring results related to the historic quarry operation on Mr. Reynold's property are available.
4. Ministry staff have met with the sawmill operator on Hovel Road and there are now discussions on waste management practices. No other monitoring is in place at this site.

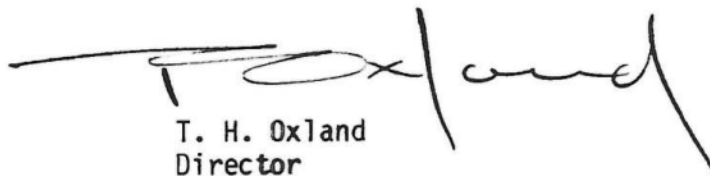
DMC
EJJ
note

There are no plans to expand the monitoring done in the Cusheon Lake area; however, some additional sampling of both ground and surface water will be done in the Blackburn Road site on the next inspection trip.

Should your Society proceed with a supplementary water quality program for Cusheon Lake, my staff would be available to assist at the design stage. In the meantime, it is suggested that any individual householders concerned about water quality should obtain water test kits from the local Government Agent.

If you have any further questions, please contact Mr. G. E. Oldham, P.Eng., Regional Waste Manager in Nanaimo, at 758-3951.

Yours truly,



T. H. Oxland
Director
Vancouver Island Region
Ministry of Environment

CJ/JOF/gb

cc: The Honourable Terry Huberts
Minister of State for Vancouver Island/Coast and North Coast

The Honourable Mel Couvelier
Minister of Finance and Corporate Relations

Mr. G. E. Oldham, Regional Waste Manager, Nanaimo



MEMORANDUM

2569 Kenworth Road, Nanaimo, British Columbia V9T 4P7 / Telephone: (604) 758-3951

To: G.E. Oldham, P. Eng.
Regional Waste Manager
Vancouver Island Region

Date: June 8, 1989

File: PR-1839

Re: Saltspring Island Refuse Site


Attached for your consideration and referral is:

1. Memo from D. McLaren dated May 2, 1989.
2. Briefing memo from C. Jenkins dated May 4, 1989.
3. Permit Inspection Reports dated January 31, 1989 and April 27, 1989.
4. Newspaper article dated May 4, 1989.
5. Letter from CRD dated May 31, 1989 with attachments dated February 7, 1979 and August 16, 1988.
6. Copy of PR-1839.
7. Photos of site - May 9, 1989.

The issue at this point in time is lack of covering, although the site has a history of non-compliance for lack of covering and open burning of putrescibles. I support my staff's recommendations that we proceed with the issuance of a ticket to Mr. N. Twa and/or Capital Regional District for an offence under Section 34(5) of the Waste Management Act, for failure to comply with the terms of PR-1839, ie. Section A(1.) of Appendix to Letter of Transmittal for PR-1839, which requires weekly covering of refuse.

Note that PR-1839 is an old permit (January 16, 1979-Pollution Control Branch). This, and the fact that there are joint Permittees, one being a Regional District with no desire to have anything to do with this landfill, may complicate the matter. Nonetheless, it is a non-compliance, politically and environmentally sensitive issue, and some appropriate action should be taken. I do not believe the situation with regard to the CRD Solid Waste Management Plan needs to be of concern, but in light of Mike Williams' letter of May 31, 1989 and the previous correspondence from CRD dated February 7, 1989, I recommend that Mr. Twa be issued the ticket. This may encourage co-operation in establishing an acceptable alternative facility on the Island.

Can discuss at your convenience.


J.O. Finnie, P. Eng.
Head
Municipal Section

JOF/mm

Enclosure



Province of
British Columbia

MEMORANDUM

TO:

J. FINNIE

FROM:

D. MCLAREN

SUBJECT:

TWA LANDFILL - SALTSRING ISL.

DATE:

89.05.02

FILE:

PR 1839

☐ For Your Information

☐ Please O.K. and Return

☐ Please Discuss With Me

☐ Per Your Request

☐ For Your Signature

☐ Please Process

☐ Return With More Details

☐ Investigate and Report

☐ Please Answer

☐ For Your File

Inspections of the landfill on Jan. 31/89 and Apr. 27/89
reveal that inadequate cover material is being applied.
The operation constitutes a health & fire hazard.

It is recommended that a ticket be issued to Mr. N. Twa
Subject to Section 34(5)

CJS

REPLY:

WRITE YOUR REPLY AND RETURN THIS SHEET

ISLAND BUSINESS FORMS LTD.



2569 Kenworth Road, Nanaimo, British Columbia V9T 4P7 / Telephone: (604) 758-3951

To: J.O. Finnie, P. Eng.
Head
Municipal Section

Date: May 4, 1989

File: PR-1839

Re: Blackburn Road landfill - Saltspring Island

BACKGROUND

Waste Management Permit PR-1839 (jointly issued to the Capital Regional District and Mr. N. Twa on January 16, 1979) authorizes a level "c" landfill operation (weekly coverage) with no burning of putrescible waste or nuisance causing combustibles. History of operation generally poor, with lack of covering and periodic open burning.

On several occasions the Capital Regional District has requested to be removed as a Co-Permittee. Evidently they have had little influence on their Co-Permittee, Mr. N. Twa. The Capital Regional District's Solid Waste Management Plan proposed, subject to public referendum (Fall 1989), that a transfer station be installed on Saltspring Island.

Waste Management has concerns about the location and operation of this landfill. It is located within the watershed of Cusheon lake which is a source of drinking water for many residences, and has been identified as an attractant for ravens with a resultant increase in lamb predation in the area.

EXISTING PROBLEM

In conjunction with previous poor operation of the landfill, the last two site inspections identify significant non-compliance. Inspections of the landfill on January 31, 1989 and April 27, 1989, reveal that inadequate cover material is being applied. The operation constitutes an extreme health and fire hazard.

RECOMMENDATIONS

It is recommended that a ticket be issued to the Capital Regional District and Mr. N. Twa, under Section 34(5) of the Waste Management Act. Whether a single ticket or individual tickets is appropriate shall be determined by the Regional Conservation Officer. Note that the Capital Regional District has advised Waste Management that they have little control over Mr. Twa. Nevertheless, they are Co-Permittees and I recommend ticketing both.

C.J. Jenkins
Waste Management Officer
Municipal Section

CJJ/mm



MINISTRY OF ENVIRONMENT AND PARKS
WASTE MANAGEMENT BRANCH

Permit No. PR1839

Date of Inspection JAN. 31 1989

PERMIT INSPECTION

Permittee CRD / MR. N. TWA

Location SALTSPRING ISLAND

A. SAMPLES TAKEN

YES ☐ NO ☒

Sources Sampled _____

B. OBSERVATIONS AND COMMENTS:

- wood debris is stockpiled in separate area of site. Some creosote beams in this area are not to be burned & should be moved to the landfill section.
- inadequate covering of the working face
- traffic control is good
- no visible leachate from this site.
- no burning at the time.

C. PERMIT COMPLIANCE

IN ☐ OUT ☒

Based on Site Observations.

COMMENTS: - the working face should be completely covered with soil. Presently, no covering of the face has been carried out, leaving a long exposed face of refuse.

D. ACTION REQUIRED BY PERMITTEE:

- apply cover material over the exposed refuse face.
- remove creosote materials from the burn area as these are unsuitable for burning.

Permittee or Representative's Signature

D. MacLaren
For Waste Management

Regional Office Follow-up:

Original to File
Copy to Permittee



MINISTRY OF ENVIRONMENT AND PARKS

WASTE MANAGEMENT BRANCH

Permit No. PR1039

Date of Inspection APR. 27/89

PERMIT INSPECTION

Permittee CAPITAL REGIONAL DISTRICT / MR. N TWA
Location SALTSPRING ISLAND

A. SAMPLES TAKEN

YES ☐ NO ☒

Sources Sampled _____

B. OBSERVATIONS AND COMMENTS:

- wood debris, stumps, brush, demo debris is being landfilled into the pond at the west side of the site. ^{this site is} being separate from the main landfill
- the surface & working face has not been covered for some time in the main landfill
- creosote materials are stockpiled separately from the woodwaste fill area.
- traffic control is good.

C. PERMIT COMPLIANCE

IN ☐ OUT ☒

Based on Site Observations.

COMMENTS: ① The landfill is in a disgraceful condition due to lack of cover being applied. The health & live hazard is extreme!

② the woodwaste landfill must be kept back from the pond so as not to dump this debris into surface water.

D. ACTION REQUIRED BY PERMITTEE:

- ① apply a complete intermediate layer of cover material over all exposed refuse both on the working face & level areas.
- ② pull back woodwaste debris from the pond or fill pond with inert soil before continuing to landfill in this area.

Permittee or Representative's Signature

D. McLaren
For Waste Management

Regional Office Follow-up:

Recommend legal action be taken against co-permitters

Agree. CJJ 2-5-89

Original to File
Copy to Permittee

~~ESS~~
~~DM~~
~~SP~~

~~JCF~~

file PR-1839

VICTORIA T/C May 4/89

A3

Saltspring garbage dump 'a timebomb in waiting'

Copyright

By Holly Nathan
Times-Colonist staff

Copyright

Copyright

Untreated sludge spilled in river

Copyright



Capital Regional District

524 YATES STREET P.O. BOX 1000 VICTORIA B.C. V8W 2S6 TELEPHONE (604) 388-4421

31 May 1989

Ministry of Environment
Waste Management Branch
2569 Kenworth Road
Nanaimo, B.C.
V9T 4P7

Attention: Mr. G.E. Oldham, P.Eng.
Manager, Waste Management

Dear Mr. Oldham:

Re: Saltspring Island Permit PR-1839
Landfill Inspection Report

We have been prompted to write in response to an inspection report dated 27 April 1989, and a letter by Mr. D.A. McLaren, Waste Management Technician, Municipal Section, Ministry of Environment, dated 10 May 1989, which recommends legal action be taken against the Permit holders (CRD and Mr. N. Twa).

The inspection report notes the unacceptable conditions at the Saltspring landfill, which is owned and operated by Mr. Norman Twa. The Capital Regional District (CRD) does not dispute or doubt the accuracy of Mr. McLaren's report, but we do disavow any responsibility for the state of this privately owned and operated landfill. The CRD has no control over the management of the landfill or right of access to the land and is not lawfully a joint permittee.

Prior to the preparation and approval of the CRD Solid Waste Management Plan (SWMP), the CRD contributed funds to assist in the operation of the Saltspring landfill, in the hope of effecting improvements to the operation. However, because the operation continued to be poor, and because the CRD SWMP calls for a transfer station on Saltspring Island to replace the landfill, funding to Mr. Twa was discontinued on December 31, 1988.

The CRD and the Saltspring Island Solid Waste and Recycling Committee are presently actively working on selecting suitable sites for a transfer facility. These sites or a site will be named in a proposal call which will seek prices to operate a transfer facility and also to transfer solid waste from Saltspring to Hartland Landfill. A request for approval to call proposals has already been made and will be further considered by the CRD's Environment Committee on 7 June, 1989. With approval of the call for proposals the costs obtained from the selected proposer will be used in a referendum. The referendum will seek the assent of Saltspring Islanders to set up and operate a transfer facility. The CRD is vigorously working on the transfer facility and still wishes to have its name removed from permit PR-1839.

.../2

MUNICIPALITIES AND ELECTORAL AREAS

CENTRAL SAANICH • COLWOOD • ESQUIMALT • LANGFORD • METCHOSIN • NORTH SAANICH • OAK BAY
OUTER GULF ISLANDS • SAANICH • SALTSRING ISLAND • SIDNEY • SOOKE • VICTORIA • VIEW ROYAL

- 2 -

It is not clear to us how the CRD's name came to be added to the Permit alongside Mr. Twa's name. We can find no evidence in our files of an application for a permit or an amendment form signed by the CRD and Mr. Twa, nor of newspaper ads of such an application, nor of any written request by the CRD that a permit be issued to it. In fact by letter of 7 February 1979 copy attached we returned the Permit pointing out that the CRD had not applied and therefore refused to accept the permit.

In a letter dated 16 August 1988 (copy attached), the CRD Board Chairman, on the authority of the Board, requested of the Honorable Bruce Strachan that the CRD's name be removed from Permit PR-1839. This request was refused by the Minister in his January 24, 1989, approval of the CRD SWMP despite the fact that the CRD never did apply for a permit.

In summary, the CRD questions the legal basis for having its name on the Permit, and accepts no responsibility for a situation beyond its control.

Yours very truly,

M.C. Williams, P.Eng.
Chief Engineer

TL/jm
attachment

S170-18

bcc: Director Borsman
Director Leonard
J. McFarland
T. Lidkea
S. McDonnell
G. Wilson



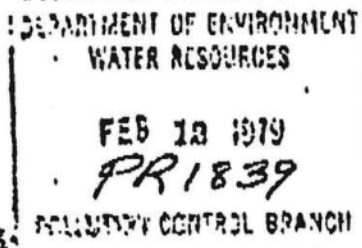
CAPITAL REGIONAL DISTRICT

324 Yates Street / P.O. Drawer 1000 / Victoria, British Columbia / V8W 2S6
Telephone 388-4421

DOUBLE REGISTERED

7th February 1979

Ministry of the Environment
Pollution Control Branch
1106 Cook Street
Victoria, British Columbia
V8V 1X4



Attention: Mr. H.P. Klassen, P. Eng.

MUNICIPALITIES & ELECTORAL AREAS
Central Saanich
Colwood
Esquimalt
Langford
Metropolitan
North Saanich
Oak Bay
Outer Gulf Islands
Saanich
Saltspring Island
Sidney
Sooke
Victoria
View Royal

Gentlemen:

Re: Pollution Control Permit No. PR-1839 - Issued in the Joint Names of the C.R.D. and Mr. N. Twa

Reference is made to your "Letter of Transmittal" which accompanied a copy of P.C.B. Permit No. PR-1839, issued in the joint names of the C.R.D. and Mr. N. Twa.

To the best of my knowledge the Regional District has not submitted an Application to you for a Permit, either jointly with Mr. Twa, or on its own account. Also, I am not aware that Mr. Twa has forwarded to you such an Application.

The Regional District is presently investigating the feasibility of providing financial assistance to Mr. Twa to assist him in operating the Saltspring Island landfill site in conformity with P.C.B. Guidelines. Mr. Twa has indicated that he will have to close down the site if he does not receive financial aid.

The Engineering Department's draft operating budget for solid waste includes an item of expenditure earmarked for the Saltspring landfill operation. However, this budget has not been reviewed by Committee or approved by the Regional Board. Pending Board and Ministerial approval of the budget, discussions with Mr. Twa have also been held in abeyance.

In view of the foregoing I have no alternative but to return your Permit No. PR-1839 for the Saltspring Island landfill operation. It is hoped that an Application can be made to your Department for a Permit for this facility later in the year, but this will, of course, depend on budgetary approvals and negotiations with Mr. Twa.

Yours very truly,

N. Howard
N. Howard, P. Eng.
Chief Engineer

Encls.

c.c.: Mr. N. Twa

| DISTRIBUTION | DATE | INITIALS |
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CRD

7 S170-32

Capital Regional District

524 YATES ST. P.O. DRAWER 1000 VICTORIA B.C. V8W 2S6 Tel. (604) 388-4421

Office of the Chairman of the Board

16 August 1988

The Honourable Bruce Strachan
Minister of Environment
Parliament Buildings
Victoria, B.C.
V8V 1X4

Dear Mr. Minister:

Re: Capital Regional District Solid Waste Management Plan
Salt Spring Island Facilities

The Capital Regional District Board, at the meeting of November 25, 1987, approved a Solid Waste Management Plan for the Regional District. This plan has subsequently been submitted to your Ministry for approval and, I understand, is currently being examined by your staff.

The CRD plan refers to the Blackburn Road landfill, which is the current facility for disposal of refuse on Salt Spring Island. The continued operation of the Blackburn Road landfill to accept general municipal waste is undesirable. Both CRD staff and your own Ministry staff are concerned about the location of the landfill, which is in the watershed of Cusheon Lake. There is a risk of contamination of water supplies by leachate and, for this reason, the CRD would like to see the Blackburn Road landfill closed.

The CRD holds jointly, with Mr. Norman Twa, the permit for the operation of the Blackburn Road landfill. Since the CRD neither owns nor controls the landfill and wishes to see the landfill closed, I am writing on the authority of the Board given at the meeting of 10 August 1988, to ask you to have the CRD's name removed from the Blackburn Road Permit. (Number PR-1839).

If the Blackburn Road landfill is closed, the alternative that the CRD favours is a transfer station on Salt Spring Island from which to transfer refuse to the Hartland Avenue landfill. This alternative would considerably increase costs of refuse disposal for Salt Spring residents and, while the Blackburn Road landfill constitutes an alternative, it may be difficult for a referendum to pass to authorize the transfer station.

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Page 2

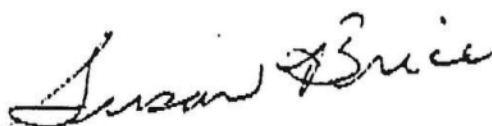
The Honourable Bruce Strachan

16 August 1988

I request that you take the CRD's concerns about the Blackburn Road landfill and the CRD's wish to disassociate itself from the operation of the Blackburn Road landfill into consideration when you give us your reply to our request for approval of the CRD Solid Waste Management Plan.

For your information I enclose a copy of a staff report with attachments, submitted to the 3 August 1988 CRD Sanitation and Water Committee. This report gives further background information on the Salt Spring Island refuse disposal issue.

Yours truly,



Susan M. Brice,
Chairman

cc: The Honourable Rita Johnston
Minister of Municipal Affairs

Enclosure
MCW:mr

RECEIVED

AUG 17 1988

ENGINEERING



JAN 16 1979

YOUR FILE

OUR FILE 0262100-PR-1839

DOUBLE REGISTERED

Capital Regional District
P. O. Drawer 1000
524 Yates Street
Victoria, British Columbia
V8W 2S6

and

Mr. N. Twa
P. O. Box 255
Ganges, British Columbia
V8S 1E0

Gentlemen:

LETTER OF TRANSMITTAL

Enclosed is a copy of Pollution Control Permit No. PR-1839 in the names of the Capital Regional District and Mr. N. Twa. Your attention is respectfully directed to the terms and conditions outlined in the Permit.

In conjunction with this Permit you are directed to comply with the operating instructions for the disposal facility as outlined in the attached Appendix to Letter of Transmittal. In particular section B allows regulated burning and you are advised that burning other than in accordance with these instructions is prohibited.

You will note that values have been expressed in the International System of Units (SI). These units are to be used in submitting monitoring results and any other information in connection with this Permit.

The administration of this Permit will be carried out by staff from our Regional Office located at 1106 Cook Street, Victoria, British Columbia, V8V 1X4 (telephone 387-5321). Plans, data and reports pertinent to the Permit are to be submitted to the Director through the Regional Manager at this address.

This Permit does not authorize entry upon, crossing over, or use for any purpose, of private or Crown lands or works, unless and except as authorized by the owner of such lands or works. The responsibility for obtaining such authority shall rest with the Permittee.

Permitting - Exec. Dir. CRD

..... /2

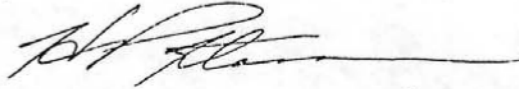


Handwritten signatures and initials:
*3, *[Signature]*
[Signature]
[Signature]

This Letter of Transmittal is an Order under the Pollution Control Act.

For your reference, enclosed is a copy of the Pollution Control Act, as amended, and the Regulations thereto. Also enclosed are copies of the Metric Practice Guide and Section 3 of the "Pollution Control Objectives for Municipal Type Waste Discharges in British Columbia" relative to solid waste landfills.

Yours very truly,

A handwritten signature in dark ink, appearing to read 'H. P. Klassen', followed by a long horizontal line extending to the right.

H. P. Klassen, P. Eng.
Assistant Director
Pollution Control Branch

Encl.

Date: JAN 16 1979

File: 0262100-PR-1839

Page 1 of 2

APPENDIX TO LETTER OF TRANSMITTAL

FOR

POLLUTION CONTROL PERMIT PR-1839

A. OPERATIONAL REQUIREMENTS FOR LANDFILL

1. Covering

Maintain the works authorized in Appendix 01 as a Level "C" landfill operation in accordance with the "Pollution Control Objectives for Municipal Type Waste Discharges in British Columbia", dated September, 1975, or as otherwise ordered by the Director from time to time.

B. OPERATIONAL REQUIREMENTS FOR REGULATED BURNING

1. Area

The operation shall be restricted to a portion of the site described as Lot 3, Section 14, Range 1V E North Saltspring Island, located approximately as shown on Appendix A of the Permit. This area shall be fenced to restrict access to the burn area stockpile.

2. Quantity and Frequency

The average quantity of wastes to be treated is 76 cubic meters at each burn at a frequency not to exceed 6 times per year. Each burn will comprise one continuous period necessary to reduce the stockpiled wastes to ashes.

3. Nature of Wastes

Generally no waste shall be burned which is unacceptable for this purpose to our Regional Manager. Acceptable materials may include selected demolition refuse, stumps, trees and similar items, but excluding nuisance causing combustibles such as rubber, plastics, tars, insulation, etc. Materials shall be charged to the burning facility in a manner to promote best combustion and restrict the up-lift of lighter constituents. No putrescible refuse or objects containing 50% or more noncombustibles shall be burned.

..... /2

Date: JAN 16 1979

File: 0262100-PR-1839

Page 2 of 2

4. Timing

Burning shall take place only when an attendant is on duty and when conditions promote rapid combustion with a wind direction that conveys the resulting gases away from residences. No burning shall take place during periods of extreme fire hazard nor when burning is prohibited by other government agencies.

5. Fire Control

Suitable devices approved by the Director shall be available for extinguishing fires to prevent them from spreading to surrounding areas. Such devices include a pressurized water supply, chemical type fire extinguishers, or an earth stockpile. Firebreaks shall be maintained and cleared of combustible materials at least twice per year. If an earth stockpile is contemplated for fire control, earth moving equipment shall be available at the site during burning.

6. Combusted Residue

The residue from combustion shall be incorporated promptly into the adjacent landfill.

7. General

Notify our Regional Manager prior to each intended burning. All aspects of the operation shall be to the Regional Manager's satisfaction.



MINISTRY OF THE ENVIRONMENT
POLLUTION CONTROL BRANCH

PERMIT

Under the Provisions of the Pollution Control Act, ~~RSC~~

Capital Regional District
P. O. Drawer 1000
524 Yates Street
Victoria, British Columbia
V8W 2S6

Mr. N. Twa
P. O. Box 255
Ganges, British Columbia
V8S 1E0

is hereby authorized to discharge refuse
from municipal sources
located on Saltspring Island
to the ground approximately 5.6 km south of Ganges

This permit has been issued under the terms and conditions prescribed in the attached appendices

01 and A


Assistant Director of Pollution Control

Date issued JAN 16 1979, 19.....
Amendments dated, 19.....
....., 19.....
....., 19.....

Permit No. PR-1839

PCB 11-0



DEPARTMENT OF ENVIRONMENT
WATER RESOURCES SERVICE
POLLUTION CONTROL BRANCH

APPENDIX No. 01

to Pollution Control Permit No. PR-1839

- (a) The discharge of refuse applicable to this appendix is to land known and described as Lot 3, Section 14, Range 1V East, North Saltspring Island located as shown on the attached Appendix A.
- (b) The quantity of refuse which may be discharged is a maximum of 11.5 cubic meters per day.
- (c) The type of refuse which may be discharged is from domestic and commercial sources.
(Municipal, industrial, etc.)
- (d) The nature or characteristics of the refuse which may be discharged are typical municipal refuse (excluding toxic wastes).
- (e) The works authorized are a landfill and controlled burning operation as directed approximately located as shown on the attached Appendix A.
- (f) The land from which the refuse originates and to which this appendix is appurtenant is Saltspring Island.
- (g) Those works authorized and proposed must be completed and in operation on and from the date of Permit issue.

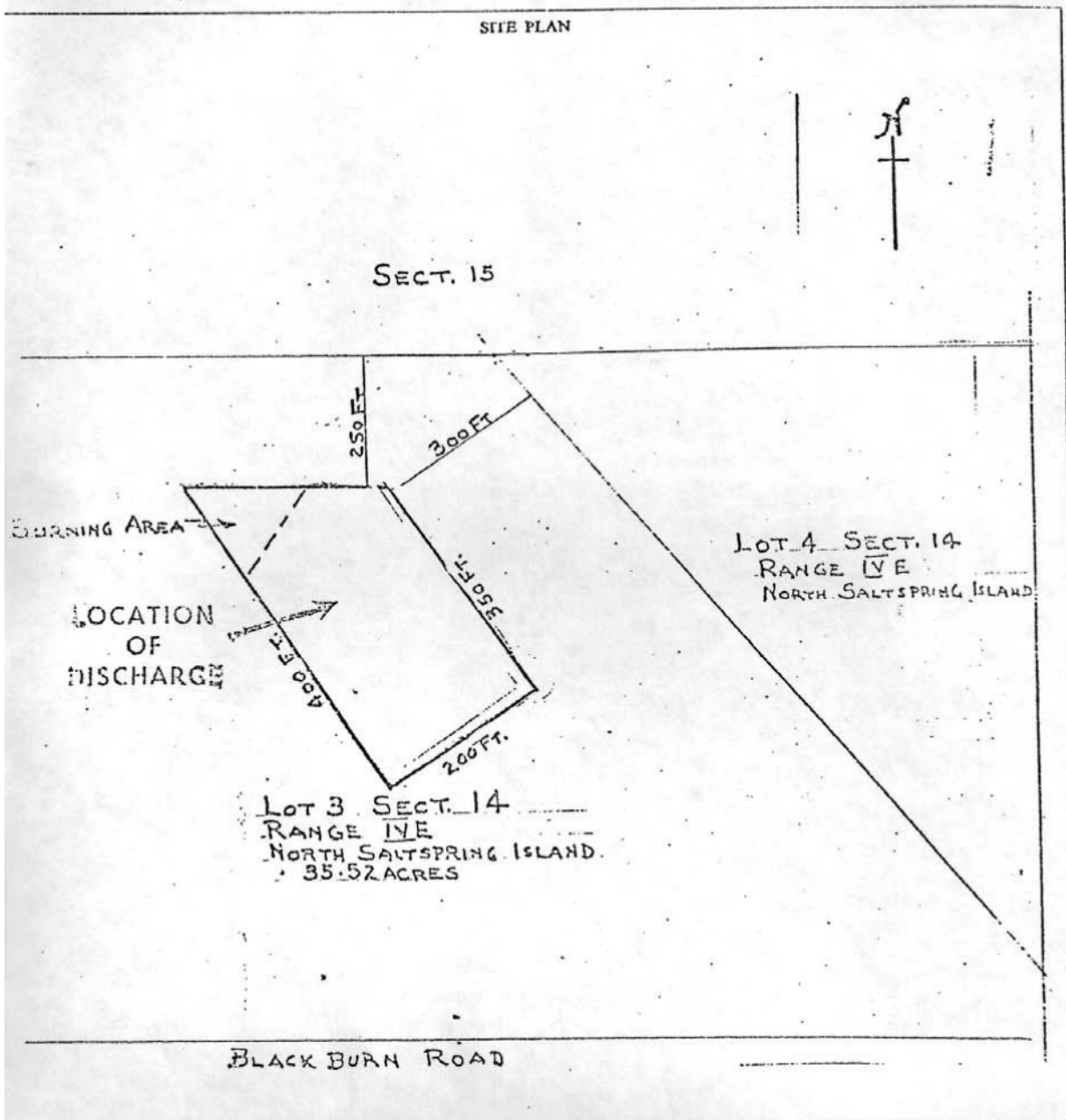
Date JAN 16 1979, 19
Amended, 19

Assistant Director of Pollution Control



POLLUTION CONTROL BRANCH

SITE PLAN



CAPITAL REGIONAL DISTRICT

E. N. TWA

(Name of applicant(s))

(Date)

(Signature of applicant(s) or agent)

(FOR OFFICE USE ONLY)

AN 16 1979

(Date Issued) Assistant (Director of Pollution Control)

Appendix A to Permit No. PR1539

CAPITAL REGIONAL DISTRICT/N. TWA
LANDFILL - SALTSRING ISLAND

FILE: PR-1839
FROM: D.A. McLAREN

The following photographs were taken on May 9, 1989. Showing the major non-compliance/
hazardous condition of the Saltspring Island Landfill.



VIEW OF ACTIVE LANDFILL LOOKING NORTH AT THE FACE



VIEW OF THE TOP OF THE ACTIVE LIFT LOOKING NORTH WEST



- VIEW OF THE DEMOLITION/ WOODWASTE
SECTION OF THE LANDFILL SHOWING
DEPOSITION INTO SURFACE WATER.
LOOKING SOUTHWEST.

~~GSJ~~ DMC - flw

To: G.E. Oldham, P. Eng.
Regional Waste Manager
Vancouver Island Region

Date: June 8, 1989

File: PR-1839

Re: Saltspring Island Refuse Site

Attached for your consideration and referral is:

1. Memo from D. McLaren dated May 2, 1989.
2. Briefing memo from C. Jenkins dated May 4, 1989.
3. Permit Inspection Reports dated January 31, 1989 and April 27, 1989.
4. Newspaper article dated May 4, 1989.
5. Letter from CRD dated May 31, 1989 with attachments dated February 7, 1979 and August 16, 1988.
6. Copy of PR-1839.
7. Photos of site - May 9, 1989.

The issue at this point in time is lack of covering, although the site has a history of non-compliance for lack of covering and open burning of putrescibles. I support my staff's recommendations that we proceed with the issuance of a ticket to Mr. W. Twa and/or Capital Regional District for an offence under Section 34(5) of the Waste Management Act, for failure to comply with the terms of PR-1839, i.e. Section A(1.) of Appendix to Letter of Transmittal for PR-1839, which requires weekly covering of refuse.

Note that PR-1839 is an old permit (January 16, 1979-Pollution Control Branch). This, and the fact that there are joint Permittees, one being a Regional District with no desire to have anything to do with this landfill, may complicate the matter. Nonetheless, it is a non-compliance, politically and environmentally sensitive issue, and some appropriate action should be taken. I do not believe the situation with regard to the CRD Solid Waste Management Plan needs to be of concern, but in light of Mike Williams' letter of May 31, 1989 and the previous correspondence from CRD dated February 7, 1989, I recommend that Mr. Twa be issued the ticket. This may encourage co-operation in establishing an acceptable alternative facility on the Island.

Can discuss at your convenience.



J.O. Finnie, P. Eng.
Head
Municipal Section

JOF/mm

Enclosure



Capital Regional District

524 YATES STREET P.O. BOX 1000 VICTORIA B.C. V8W 2S6 TELEPHONE (604) 388-4421

31 May 1989

Ministry of Environment
Waste Management Branch
2569 Kenworth Road
Nanaimo, B.C.
V9T 4P7

Attention: Mr. G.E. Oldham, P.Eng.
Manager, Waste Management

Dear Mr. Oldham:

Re: Saltspring Island Permit PR-1839
Landfill Inspection Report



We have been prompted to write in response to an inspection report dated 27 April 1989, and a letter by Mr. D.A. McLaren, Waste Management Technician, Municipal Section, Ministry of Environment, dated 10 May 1989, which recommends legal action be taken against the Permit holders (CRD and Mr. N. Twa).

The inspection report notes the unacceptable conditions at the Saltspring landfill, which is owned and operated by Mr. Norman Twa. The Capital Regional District (CRD) does not dispute or doubt the accuracy of Mr. McLaren's report, but we do disavow any responsibility for the state of this privately owned and operated landfill. The CRD has no control over the management of the landfill or right of access to the land and is not lawfully a joint permittee.

Prior to the preparation and approval of the CRD Solid Waste Management Plan (SWMP), the CRD contributed funds to assist in the operation of the Saltspring landfill, in the hope of effecting improvements to the operation. However, because the operation continued to be poor, and because the CRD SWMP calls for a transfer station on Saltspring Island to replace the landfill, funding to Mr. Twa was discontinued on December 31, 1988.

The CRD and the Saltspring Island Solid Waste and Recycling Committee are presently actively working on selecting suitable sites for a transfer facility. These sites or a site will be named in a proposal call which will seek prices to operate a transfer facility and also to transfer solid waste from Saltspring to Hartland Landfill. A request for approval to call proposals has already been made and will be further considered by the CRD's Environment Committee on 7 June, 1989. With approval of the call for proposals the costs obtained from the selected proposer will be used in a referendum. The referendum will seek the assent of Saltspring Islanders to set up and operate a transfer facility. The CRD is vigorously working on the transfer facility and still wishes to have its name removed from permit PR-1839.

.../2

MUNICIPALITIES AND ELECTORAL AREAS

CENTRAL SAANICH • COLWOOD • ESQUIMALT • LANGFORD • METCHOSIN • NORTH SAANICH • OAK BAY
OUTER GULF ISLANDS • SAANICH • SALTSRING ISLAND • SIDNEY • SOOKE • VICTORIA • NEW ROYAL

It is not clear to us how the CRD's name came to be added to the Permit alongside Mr. Twa's name. We can find no evidence in our files of an application for a permit or an amendment form signed by the CRD and Mr. Twa, nor of newspaper ads of such an application, nor of any written request by the CRD that a permit be issued to it. In fact by letter of 7 February 1979 copy attached we returned the Permit pointing out that the CRD had not applied and therefore refused to accept the permit.

In a letter dated 16 August 1988 (copy attached), the CRD Board Chairman, on the authority of the Board, requested of the Honorable Bruce Strachan that the CRD's name be removed from Permit PR-1839. This request was refused by the Minister in his January 24, 1989, approval of the CRD SWMP despite the fact that the CRD never did apply for a permit.

In summary, the CRD questions the legal basis for having its name on the Permit, and accepts no responsibility for a situation beyond its control.

Yours very truly,



M.C. Williams, P.Eng.
Chief Engineer

TL/jm
attachment

S170-18

bcc: Director Borsman
Director Leonard
J. McFarland
T. Lidkea
S. McDonnell
G. Wilson

CRD

Capital Regional District

524 YATES ST. P.O. DRAWER 1000 VICTORIA B.C. V8W 2S6 Tel. (604) 388-4421

Office of the Chairman of the Board

16 August 1988

The Honourable Bruce Strachan
Minister of Environment
Parliament Buildings
Victoria, B.C.
V8V IX4

Dear Mr. Minister:

Re: Capital Regional District Solid Waste Management Plan
Salt Spring Island Facilities

The Capital Regional District Board, at the meeting of November 25, 1987, approved a Solid Waste Management Plan for the Regional District. This plan has subsequently been submitted to your Ministry for approval and, I understand, is currently being examined by your staff.

The CRD plan refers to the Blackburn Road landfill, which is the current facility for disposal of refuse on Salt Spring Island. The continued operation of the Blackburn Road landfill to accept general municipal waste is undesirable. Both CRD staff and your own Ministry staff are concerned about the location of the landfill, which is in the watershed of Cusheon Lake. There is a risk of contamination of water supplies by leachate and, for this reason, the CRD would like to see the Blackburn Road landfill closed.

The CRD holds jointly, with Mr. Norman Twa, the permit for the operation of the Blackburn Road landfill. Since the CRD neither owns nor controls the landfill and wishes to see the landfill closed, I am writing on the authority of the Board given at the meeting of 10 August 1988, to ask you to have the CRD's name removed from the Blackburn Road Permit. (Number PR-1839).

If the Blackburn Road landfill is closed, the alternative that the CRD favours is a transfer station on Salt Spring Island from which to transfer refuse to the Hartland Avenue landfill. This alternative would considerably increase costs of refuse disposal for Salt Spring residents and, while the Blackburn Road landfill constitutes an alternative, it may be difficult for a referendum to pass to authorize the transfer station.

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MUNICIPALITIES AND ELECTORAL AREAS

CENTRAL SAANICH COLWOOD ESQUIMALT LANGFORD METCHOSIN NORTH SAANICH OAK BAY

OUTER GULF ISLANDS SAANICH SALTSFRING ISLAND SIDNEY SOOKE VICTORIA STEWART
Page 168 of 169 MOE-2018-87417

Page 2

The Honourable Bruce Strachan

16 August 1988

I request that you take the CRD's concerns about the Blackburn Road landfill and the CRD's wish to disassociate itself from the operation of the Blackburn Road landfill into consideration when you give us your reply to our request for approval of the CRD Solid Waste Management Plan.

For your information I enclose a copy of a staff report with attachments, submitted to the 3 August 1988 CRD Sanitation and Water Committee. This report gives further background information on the Salt Spring Island refuse disposal issue.

Yours truly,



Susan M. Brice,
Chairman

cc: The Honourable Rita Johnston,
Minister of Municipal Affairs

Enclosure
MCW:mr

RECEIVED

AUG 17 1988

ENGINEERING