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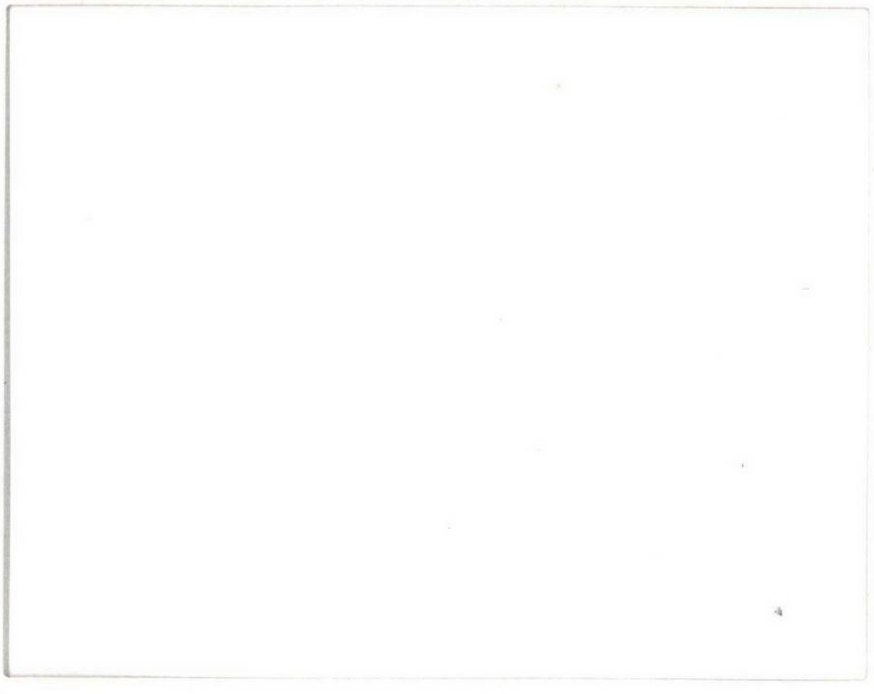

WORKS
Consultancy Services

# Transit New Zealand

# Auckland Harbour Bridge

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## Resource Consents for Discharge of Abrasive Blast Products Annual Report

**July 1995**


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# 1 INTRODUCTION

As part of the State Highway network, the Auckland Harbour Bridge is owned by Transit New Zealand. Works Consultancy Services Limited are responsible for the overall management of the bridge including the bridge maintenance contract. Serco Group New Zealand Limited are the Bridge Maintenance contractors.

The Auckland Harbour Bridge is sited in a marine environment making it vulnerable to paint deterioration and corrosion. A continual corrosion protection programme of maintenance painting is required to preserve the system. Resource Consents, Air Discharge Permit No.938557 and Discharge Permit No. 938508 (water) and No.938862 (land), are held for the discharge of abrasive blasting products to air, land and water which occurs as part of these bridge maintenance activities. The consent holder is Transit New Zealand.

This is the second Annual Report as required by the conditions of the three Resource Consents. The report covers the following aspects for the water and land discharge permits.

- The location and extent of blasting for the period
- An estimation of the quantity (in kilograms) of abrasive blasting products generated and likely contaminants contained within the removed paint and the abrasive used.
- Confirmation of the quantity of abrasive blasting products recovered and disposed.
- The quantity and type of corrosion inhibitors used during wet blasting.
- Detail of the measures undertaken to avoid, remedy or mitigate any adverse environmental effect.

The air discharge permit reporting details the results of investigations into new technologies and other developments which will reduce the need for dry abrasive blasting. The reporting also describes the results of a public survey taken to assess the effectiveness of the permit conditions.

# 2 DISCHARGE TO LAND AND WATER

All Conditions of Resource Consents Permit No. 938508 and Permit No. 938862 are being complied with.

## 2.1 THE LOCATION AND EXTENT OF BLASTING

Between August 1994 and July 1995

- 24.2 tonnes of basalt abrasive blast media was used south of pier 5 over an 463 hour period. The predominant wind direction was south westerly except for January, February and April with a predominant north westerly wind and March with a westerly.

- 3.8 tonnes of basalt abrasive blast media was used north of pier 1 over an 88 hour period. The predominant wind direction was south westerly.

## 2.2 QUANTITY OF ABRASIVE PRODUCT USED/LIKELY CONTAMINANTS

Between August 1994 and July 1995
- 24.2 tonnes of abrasive blast media was used south of pier 5.

Between October 1994 and December 1994
- 3.8 tonnes of abrasive blast media was used north of pier 1

Between October 1994 and July 1995
- 23.9 tonnes of abrasive blast media was used in piers 4, 3 and 2.

All blasting took place between the hours of 8 am and 4.30 pm. See Appendix A for further detailed breakdown of data.

The abrasive blast media (SAE Fines, produced at Waitakere) contains no free silica. See Table 1 for a typical chemical analysis of the abrasive media used.

**Table 1 - SAE Fines, Typical Chemical Analysis**

| Compound | | % By Weight |
|---|---|---|
| Silica | $SiO_2$ | 49.00 % |
| Aluminium Oxide | $Al_2O_2$ | 17.32 % |
| Ferric Oxide | $Fe_2O_3$ | 10.84 % |
| Calcium Oxide | CaO | 7.41 % |
| Magnesium Oxide | MgO | 6.01 % |
| Sodium Oxide | $Na_2O$ | 2.50 % |
| Potassium Oxide | $K_2O$ | 0.33 % |

The remaining percentage is comprised of carbonates and lighter metals. 95% of the particle size is between 0.15 - 0.5 mm.

A typical analysis of the blast debris is given in Table 2.

**Table 2 - Abrasive Blast Cleaning Debris Test Results**

| Element | Chemical Analysis, % by Mass |
|---|---|
| Zinc | 10.46 |
| Silicon | 6.44 |
| Aluminium | 1.94 |
| Calcium | .85 |
| Titanium | 2.95 |
| Iron | 12.07 |
| Tin | 0.17 |
| Chromium | 3.69 |

Abrasive blast cleaning debris test results are from Central Laboratories Report 93-24731.

## 2.3 QUANTITY OF ABRASIVE BLAST DEBRIS RECOVERED AND DISPOSED

### 2.3.1 Blast Debris Recovery

Abrasive blast media used in the maintenance of those areas south of pier 5 and north of pier 1 is recovered to an extent that is practicable. To minimise dispersion and drift and aid recovery the following procedures are used:

(a) Screens are deployed while blasting in those areas where material may be deposited on neighbouring properties.

(b) Blasting is restricted to wind conditions under 7 m/s to minimise spread of blasting debris.

(c) Roadside catchpits draining to the stormwater system are covered by plywood covers during abrasive blasting.

After sweeping the bridge structure and inaccessible areas using compressed air, the debris is collected by vacuum truck from the sealed public areas. No debris has been deposited on these areas over the last year.

### 2.3.2 Blast Debris Disposal

Waste Management, Wiri are contracted to deal with any blasting debris collected. At Waste Management the debris is treated to levels which meet the Trade Waste Bylaw, the Resource Management Act and Northern Disposal Systems Management Regulations for Special or Hazardous wastes. In the past the debris after being tested (refer table 2 for test results) was deemed not particularly hazardous and hence, it is mixed with other waste material. All products are disposed of in Northern Disposal Systems Special Waste Landfill at Greenmount. Note: there has been no abrasive blasting debris deposited on sealed areas over the past year.

## 2.4 QUANTITY AND TYPE OF CORROSION INHIBITORS

Over the period July 1994 - July 1995 no corrosion inhibitors were used during wet blasting. (Refer Appendix B for a statement from the Contractor).

## 2.5 MEASURES UNDERTAKEN TO AVOID, REMEDY OR MITIGATE ANY ADVERSE ENVIRONMENTAL EFFECT

The methods taken to minimise the impact of abrasive blasting on the environment surrounding the Auckland Harbour Bridge include the use of

- signs and notices to inform the public of abrasive blasting schedules (refer Appendix C for public notices).
- compressed air sweeping of the structure to remove debris
- covering of catch pits in the area of abrasive blasting
- repair of any damage caused to property. For example the Contractor plans, once all the blasting has finished in span 7, to wash the surrounding building.
- deployment of screens to reduce the spread of debris
- collection and environmentally safe disposal of debris from all sealed areas. No abrasive blasting debris has been found in these areas in the past year.
- limitation on abrasive blasting according to wind conditions. No blasting is undertaken in winds over 7m/s.
- introduction of more "environmentally friendly" paint systems (see section 3.2).
- the investigation of more environmentally friendly methods of paint removal (see section 3.4).

# 3 DISCHARGE TO AIR

Conditions of Resource Consent Permit No. 938557 are being complied with.

## 3.1 PAINT SYSTEM

The paint system on the Auckland Harbour Bridge (AHB)

*changed* in August 1994 to a four-coat system consisting of two coats of a high build zinc phosphate alkyd primer with two micaceous iron oxide topcoats.

*In between* officially changing paint systems, 3 coats of zinc phosphate alkyd primer were used with the two micaceous iron oxide top coats. This system was used for the remaining 3 months of the previous maintenance contract (from June to August 1994).

*Previously,* prior to June 1994 the paint system (alkyd or phenolic) consisted of 1 coat of an oil based inhibitive zinc chromate followed by 2 coats of a zinc chromate. The 5 coat system was completed with 2 micaceous iron oxide top coats.

*This overlies* hot metal zinc spray applied at construction or, in Span 7 red lead oxide paint.

The change to the present system was prompted by the slow-drying characteristics of the oil based primers, concerns about occupational health (chromate inhibitors) and environmental safety, and the development of alternative systems which may be more cost-effective.

## 3.2 PAINT TRIALS

In 1992 a trial of twenty-four different paint systems commenced.

These trials are being conducted to find a paint that in addition to offering suitable protective qualities, has the following properties

- Non toxic to the surrounding environment and workers
- A paint that lasts longer reducing need for reblasting and repainting
- A paint with a low film thickness to limit the application time and the quantity of paint on the structure.

An initial performance assessment has been made on each paint system, emphasising the application characteristics of each system. An environmental rating for each paint system has also been derived, based solely on the relative proportion of solvents (or Volatile Organic Content VOC) in the system.

Paint System F1 (chlor-rubber paints) is the best overall performing paint system on the extensions. However, it is also the most unfriendly in terms of VOC emissions.

Paint system D (the existing zinc phosphate system) is the overall best performer on the original bridge structure. Systems E (modified zinc phosphate primers and chlor-rubber topcoats) and systems H2 and H5 (epoxy system) are the next best performing systems. None of these systems are good performers from an environmental viewpoint however.

Trials of additional paint systems which demonstrate a significant technological advance and/or demonstrated case history on an equivalent structure in an equivalent environment will be incorporated into the existing trials as appropriate. At this stage, these include a new paint technology in polysiloxanes (low VOC) and two penetrating 100% epoxies for treatment of difficult details.

## 3.3 CONTAINMENT WHILE ABRASIVE BLASTING

We have assessed different types of containment options and will continue to investigate these further. Summaries of these options are detailed below.

**a) Suspended Tarpaulin**
This concept uses tarpaulins draped from horizontal cables spanning piers and may be the most economical system to use. It is suitable only for projects which have a low volume of blasting and paint debris and need small volumes of contained regions. These factors are not found on the Bridge.

**b) Bridge-to-Grade**
The bridge-to-grade containment system consists of tarpaulins draped vertically from the bridge to the ground. Work may be performed from platform trucks or scaffolding. The floor of the containment is covered with tarpaulins to contain the waste material. This would only be useful for the land spans of the Bridge as this system is mainly for bridges that are close to the ground.

**c) Micro-Containment**
The micro-containment system uses a small, highly mobile enclosure and is ideal for intermittent blasting on small areas. The lower cost of materials and reduced capacity of the ventilation equipment are advantages. On the other hand, this system requires dismantling and re-assembling regularly to complete the project. Also structures with intricate cross-bracing and hollow box chords such as the Bridge are not usually suited to micro-containment.

**d) Outrigger and Cable**
This method of containment consists of a tarpaulin enclosure fixed to a flexible cable support system and is supported by outriggers bolted along the length and width of the structure. It is often used on through-truss and deck-truss bridges. The number of shifts the system has to undertake can be reduced by enclosing a larger portion of the span and having internal tarpaulin dividers.

**e) Suspended Platform Containment**
This system utilises a working platform suspended under the bridge from the deck and is enclosed in tarpaulins. The system can be mobile by using roller

supports on the deck but it is limited by the cross section of the bridge. This is usually the most expensive and labour intensive system and would not be suitable for the Bridge because of the intricate bracing and framework.

The Bridge environment has many parameters to consider when investigating containment options. The extensions would require a different containment system to the main structure as would the overarch area. Areas of the bridge over the land should be treated differently than those over the water. At this stage containment while abrasive blasting is not considered a viable option.

## 3.4 OTHER PAINT REMOVAL TECHNIQUES

### 3.4.1 Water Blasting

A waterblasting trial has been carried out on the top of the bottom chords in span 6.

Waterblasting is advantageous as

- there is no airborne debris for discharge to air
- no abrasive blasting media is deposited on land or in the water

At this stage this technique is still specific to this trial area. Water blasting was chosen as the paint was very brittle and the steel surface still requires a sweep blast afterwards to obtain the correct surface profile.

## 3.5 PUBLIC SURVEY RESULTS

In February 1995, 25 survey requests were sent out to surrounding businesses. The survey requested comments on the

- effectiveness of the screens
- the availability of information about the Contractor's programme
- the adequacy of the sweeping of the surrounding sealed areas
- the sufficiency of signage warning of possible hazards
- the effect of night blasting in the south anchorage area to reduce the nuisance caused to neighbours.

Three survey forms were returned. Comments were generally of a positive nature. The returned surveys are included in Appendix D.

The Royal N.Z Yacht Squadron requested more information about the painting programme and better signage. On investigating this lack of communication it was found that the committee had not past the painting programme notices onto the rest of the Squadron. The signs are considered large and adequately placed.

The Ponsonby Cruising Club commented that their buildings are covered in abrasive grit but appreciated the effort made to contain this. The Contractor has planned to wash the Club's buildings down in the near future. They also

commented on the inconvenience of finding the Curren St on ramp closed. These closures are kept to a minimum but are necessary and apologies are made for the inconvenience. This ramp closure is not frequently related to Bridge painting maintenance.

The Westhaven Marine Control Office commented that the screens were efficient only to a small extent and that the dust from the south compound spreads onto there property. This area is presently unsealed and dusty. The Ports of Auckland compound is paved and was able to be swept at the completion of the South Viaduct area.

## 3.6 TOXIC MATERIAL

### 3.6.1 Hexavalent Chromium

The zinc chromate paint system covers a total area of 110,000 square metres at an average thickness of 770 microns (0.77). The average thickness of zinc chromate primer ranges from 45% to 62% of the total paint thickness giving 43.1 cubic metres of zinc chromate primer. The content of chromium in the dry film is less than 8% by weight and the hexavalent chromium an lesser proportion (content is given in percent as this a more suitable unit than ppm by weight for this quantity).

### 3.6.2 Lead

The harbour bridge contains 0.6 cubic metres of red lead primer. The lead comprises 49% by weight of the dry film (content is given in percent as this a more suitable unit than ppm by weight for this quantity).

# Appendix A

# Location/Time/Quantity of Abrasive Blast Media Used

## ABRASIVE BLASTING DATA

| | | Work Hours - | | Wind Speed | | | Blasting | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| date | area | From | To | 1000 hrs | 1400 hrs | Direction | Type | quantity | recovered | screens |
| 30-Jul-94 | Weekend | | | | | | | | | |
| 31-Jul-94 | Weekend | | | | | | | | | |
| 01-Aug-94 | humid or painting | | | | | | | | | |
| 02-Aug-94 | humid or painting | | | | | | | | | |
| 03-Aug-94 | humid or painting | | | | | | | | | |
| 04-Aug-94 | humid or painting | | | | | | | | | |
| 05-Aug-94 | humid or painting | | | | | | | | | |
| 06-Aug-94 | Weekend | | | | | | | | | |
| 07-Aug-94 | Weekend | | | | | | | | | |
| 08-Aug-94 | Span 7 pp0/1 | 8.30 | 4.00 | 1.7 | 4.8 | nw-sw | disk/blast | 0 | 0 | y |
| 09-Aug-94 | humid or painting | | | | | | | | | |
| 10-Aug-94 | Span 7 pp0/1 | 8.00 | 4.30 | 2.6 | 4.7 | sw | blast | 275 | 0 | y |
| 11-Aug-94 | humid or painting | | | | | | | | | |
| 12-Aug-94 | Span 7 pp0/1 | 8.30 | 3.30 | 2.7 | 3.1 | sw | blast | 275 | 0 | y |
| 13-Aug-94 | Weekend | | | | | | | | | |
| 14-Aug-94 | Weekend | | | | | | | | | |
| 15-Aug-94 | humid or painting | | | | | | | | | |
| 16-Aug-94 | Span 7 pp0/1 | 8.30 | 3.30 | 1.1 | 2.3 | sw | blast | 350 | 0 | y |
| 17-Aug-94 | Span 7 pp0/1 | 8.30 | 3.00 | 0 | 0 | sw | blast | 350 | 0 | y |
| 18-Aug-94 | Span 7 pp0/1 | 12.30 | 3.00 | 2.2 | 3.5 | sw | blast | 275 | 0 | y |
| 19-Aug-94 | Span 7 pp0/1 | 11.00 | 3.30 | 2.7 | 3.2 | sw | blast | 225 | 0 | y |
| 20-Aug-94 | Weekend | | | | | | | | | |
| 21-Aug-94 | Weekend | | | | | | | | | |
| 22-Aug-94 | humid or painting | | | | | | | | | |
| 23-Aug-94 | Span 7 pp0/1 | 8.30 | 3.00 | 0.7 | 1.8 | ne | blast | 525 | 0 | y |
| 24-Aug-94 | Span 7 pp0/1 | 8.30 | 3.00 | 1.1 | 0.7 | sw/nw | blast | 325 | 0 | y |
| 25-Aug-94 | humid or painting | | | | | | | | | |
| 26-Aug-94 | Span 7 pp0/1 | 8.15 | 3.00 | 2.3 | 2.8 | sw | blast | 525 | 0 | y |
| 27-Aug-94 | Weekend | | | | | | | | | |
| 28-Aug-94 | Weekend | | | | | | | | | |
| 29-Aug-94 | humid or painting | | | | | | | | | |
| 30-Aug-94 | humid or painting | | | | | | | | | |
| 31-Aug-94 | South viaduct | 8.30 | 2.45 | 2.8 | 3.6 | sw | blast | 275 | 0 | y |
| 01-Sep-94 | south viaduct | 8.30 | 2.00 | 3.4 | 3.7 | sw | blast | 375 | 0 | |
| 02-Sep-94 | Span 7 pp0/1 | 8.30 | 2.00 | 1.7 | 2.8 | ne | blast | 275 | 0 | |
| 03-Sep-94 | Weekend | | | | | | | | | |
| 04-Sep-94 | Weekend | | | | | | | | | |
| 05-Sep-94 | Span 7 pp0/1 | 9.00 | 3.30 | 2.2 | 1.7 | sw | blast | 225 | 0 | |
| 06-Sep-94 | Span 7 pp0/1 | 11.00 | 3.30 | 2.8 | 3.1 | sw | spray | 0 | 0 | y |
| 07-Sep-94 | humid or painting | | | | | | | | | |
| 08-Sep-94 | humid or painting | | | | | | | | | |
| 09-Sep-94 | Span 7 pp0/1 | 8.30 | 4.00 | 2.6 | 3.8 | sw | spray | 0 | 0 | y |
| 10-Sep-94 | Weekend | | | | | | | | | |
| 11-Sep-94 | Weekend | | | | | | | | | |
| 12-Sep-94 | humid or painting | | | | | | | | | |
| 13-Sep-94 | humid or painting | | | | | | | | | |
| 14-Sep-94 | humid or painting | | | | | | | | | |
| 15-Sep-94 | humid or painting | | | | | | | | | |
| 16-Sep-94 | humid or painting | | | | | | | | | |
| 17-Sep-94 | Weekend | | | | | | | | | |
| 18-Sep-94 | Weekend | | | | | | | | | |
| 19-Sep-94 | Span 7 pp0/1 | 8.45 | 4.15 | 1.3 | 2.2 | w | spray | 0 | 0 | yes |
| 20-Sep-94 | Span 7 pp0/1 | 11.15 | 4.00 | 2.2 | 3.6 | nw | spray | 0 | 0 | yes |
| 21-Sep-94 | humid or painting | | | | | | | | | |
| 22-Sep-94 | humid or painting | | | | | | | | | |
| 23-Sep-94 | Span 7 pp0/1 | 8.30 | 4.15 | 2.8 | 3.3 | sw | spray | 0 | 0 | yes |
| 24-Sep-94 | Weekend | | | | | | | | | |
| 25-Sep-94 | Weekend | | | | | | | | | |
| 26-Sep-94 | humid or painting | | | | | | | | | |
| 27-Sep-94 | humid or painting | | | | | | | | | |
| 28-Sep-94 | humid or painting | | | | | | | | | |
| 29-Sep-94 | humid or painting | | | | | | | | | |
| 30-Sep-94 | Span 7pp0-8 | 1.00 | 4.15 | 5.7 | 6.3 | sw | blast | 100 | 0 | y |
| 01-Oct-94 | Weekend | | | | | | | | | |
| 02-Oct-94 | Weekend | | | | | | | | | |
| 03-Oct-94 | Span 7 pp0-8 | 8.15 | 4.30 | 0.3 | 0.3 | s-ne | blast | 175 | 0 | y, Span 7 0-2 |
| 04-Oct-94 | humid or painting | | | | | | | | | |
| 05-Oct-94 | Span 7 pp0-8 | 8.00 | 4.30 | 3.1 | 3.6 | sw | blast | 225 | 0 | y, Span 7 0-2 |
| 06-Oct-94 | humid or painting | | | | | | | | | |
| 07-Oct-94 | humid or painting | | | | | | | | | |
| 08-Oct-94 | Weekend | | | | | | | | | |
| 09-Oct-94 | Weekend | | | | | | | | | |
| 10-Oct-94 | humid or painting | | | | | | | | | |
| 11-Oct-94 | humid or painting | | | | | | | | | |
| 12-Oct-94 | humid or painting | | | | | | | | | |
| 13-Oct-94 | humid or painting | | | | | | | | | |
| 14-Oct-94 | humid or painting | | | | | | | | | |

## ABRASIVE BLASTING DATA

| | | Work Hours | | Wind Speed | | | Blasting | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| date | area | From | To | 1000 hrs | 1400 hrs | Direction | Type | quantity | recovered | screens |
| 15-Oct-94 | Weekend | | | | | | | | | |
| 16-Oct-94 | Weekend | | | | | | | | | |
| 17-Oct-94 | humid or painting | | | | | | | | | |
| 18-Oct-94 | humid or painting | | | | | | | | | |
| 19-Oct-94 | Span 5 pp0-1 | 8.15 | 4.00 | 1.1 | 4.3 | sw | spray | 0 | 0 | n |
| 20-Oct-94 | Spans 1 & 3 | 8.15 | 4.15 | 4.3 | 4.7 | sw | blast | 175 | 0 | y, Span 7 pp0-2 |
| 21-Oct-94 | Spans 1, 3, 6 & 7 | 8.00 | 4.00 | 1.7 | 2.6 | sw | blast | 400 | 0 | y, Span 7 pp0-2 |
| 22-Oct-94 | Weekend | | | | | | | | | |
| 23-Oct-94 | Weekend | | | | | | | | | |
| 24-Oct-94 | humid or painting | | | | | | | | | |
| 25-Oct-94 | Span 3 | 8.30 | 4.00 | 1.1 | 2.3 | sw | blast | 350 | 0 | y, Span 7 pp0-2 |
| 26-Oct-94 | Span 1 & 3 | 8.30 | 4.00 | 1.1 | 1.9 | se | blast | 300 | 0 | y, Span 7 pp0-2 |
| 27-Oct-94 | Spans 3 & 7 | 8.15 | 4.00 | 1.8 | 1.5 | se-sw | blast | 475 | 0 | y, Span 7 pp0-2 |
| 28-Oct-94 | Spans 3 & 7 | 8.15 | 4.00 | 1.7 | 3.1 | sw | blast | 400 | 0 | y, Span 7 pp0-2 |
| 29-Oct-94 | Weekend | | | | | | | | | |
| 30-Oct-94 | Weekend | | | | | | | | | |
| 31-Oct-94 | Span 6 & 7 | 8.15 | 12.30 | 1.9 | 2.2 | ne | blast | 350 | 0 | y, Span 7 pp0-2 |
| 01-Nov-94 | Sth viaduct, Span 3 | 8.15 | 4.00 | 2.7 | 3.4 | sw | blast | 375 | 0 | y, Span 7 pp0-2 |
| 02-Nov-94 | Spans 1,3 & 7 | 8.15 | 4.00 | 2.7 | 3.4 | sw | blast | 425 | 0 | y, Span 7 pp0-2 |
| 03-Nov-94 | Spans 1,3 & 7 | 8.15 | 4.00 | 2.8 | 2.3 | ne | blast | 450 | 0 | y, Span 7 pp0-2 |
| 04-Nov-94 | humid or painting | | | | | | | | | |
| 05-Nov-94 | Weekend | | | | | | | | | |
| 06-Nov-94 | Weekend | | | | | | | | | |
| 07-Nov-94 | Washdown | | | | | | | | | |
| 08-Nov-94 | Span 7 pp0-1 | 10.30 | 1.00 | 3.4 | 3.7 | ne | blast | 200 | 0 | y, span 7 & South Viaduct |
| 09-Nov-94 | Spans 1,3 & 7 | 9.00 | 4.15 | 7.6 | 6.9 | nw | blast | 275 | 0 | y, span 7 & South Viaduct |
| 10-Nov-94 | Spans 1,2,3 & 7 | 8.15 | 4.15 | 3.6 | 5.2 | sw | blast | 450 | 0 | y, span 7 & South Viaduct |
| 11-Nov-94 | Spans 1,3 & 7 | 8.00 | 4.00 | 3.7 | 5.9 | sw | blast | 325 | 0 | y, span 7 & South Viaduct |
| 12-Nov-94 | Weekend | | | | | | | | | |
| 13-Nov-94 | Weekend | | | | | | | | | |
| 14-Nov-94 | Spans 1 ,2 ,3, 6 & 7 | 8.00 | 4.00 | 3.1 | 4.7 | nw | blast | 525 | 0 | y, Span 7 pp0-2 & Sth Viaduc |
| 15-Nov-94 | Spans 1, 3 & 7 | 8.00 | 4.00 | 6.4 | 4.2 | nw | blast | 475 | 0 | y, Span 7 pp0-2 & Sth Viaduc |
| 16-Nov-94 | Spans 1, 3, 6 & 7 | 12.00 | 3.15 | 4.7 | 6.2 | nw | blast | 275 | 0 | y, Span 7 pp0-2 & Sth Viaduc |
| 17-Nov-94 | Spans 1, 3, 6 & 7 | 8.15 | 4.00 | 2.2 | 5.7 | sw | blast | 475 | 0 | y, Span 7 pp0-2 & Sth Viaduc |
| 18-Nov-94 | Spans 1, 3 & 7 | 8.15 | 4.00 | 1.1 | 3.8 | nw | blast | 550 | 0 | y, Span 7 pp0-2 & Sth Viaduc |
| 19-Nov-94 | Weekend | | | | | | | | | |
| 20-Nov-94 | Weekend | | | | | | | | | |
| 21-Nov-94 | Spans 1, 3 & 7 | 8.15 | 3.30 | 1.1 | 3.8 | sw | blast | 400 | 0 | y, span 7 & South Viaduct |
| 22-Nov-94 | Humid | | | | | | | | | |
| 23-Nov-94 | Span 1 & 3 | 8.15 | 4.00 | 2.3 | 5.2 | sw | blast | 925 | 0 | y, span 7 & South Viaduct |
| 24-Nov-94 | Span 1 & 3 | 8.15 | 4.00 | 4.3 | 3.9 | sw | blast | 575 | 0 | y, span 7 & South Viaduct |
| 25-Nov-94 | Span 1 | 8.00 | 4.00 | 1.1 | 1.7 | sw | blast | 275 | 0 | y, span 7 & South Viaduct |
| 26-Nov-94 | Weekend | | | | | | | | | |
| 27-Nov-94 | Weekend | | | | | | | | | |
| 28-Nov-94 | Span 1 & 7 | 8.15 | 1.00 | 0 | 0 | sw | blast | 150 | 0 | y, Span 7 only |
| 29-Nov-94 | Span 1 - 7 | 8.00 | 3.00 | 1.3 | 3.2 | se | blast | 375 | 0 | y, Span 7 only |
| 30-Nov-94 | Span 1 | 8.30 | 3.15 | 3.1 | 3.8 | ne | blast | 175 | 0 | y, Span 7 only |
| 01-Dec-94 | Span 1 | 8.30 | 4.00 | 3.2 | 3.7 | ne | blast | 100 | 0 | y, Span 7 only |
| 02-Dec-94 | Span 1 | 8.15 | 4.00 | 4.1 | 4.4 | ne | blast | 275 | 0 | y, Span 7 only |
| 03-Dec-94 | Weekend | | | | | | | | | |
| 04-Dec-94 | Weekend | | | | | | | | | |
| 05-Dec-94 | Spans 1 & 3 | 8.00 | 3.45 | 0.7 | 1.1 | ne | blast/spray | 575 | 0 | y, span 7 pp0/1 only |
| 06-Dec-94 | Spans 1 & 3 | 8.00 | 3.30 | 2.7 | 0.8 | ne | blast/spray | 400 | 0 | y, span 7 pp0/1 only |
| 07-Dec-94 | Spas 1, 3 & 7 | 8.30 | 4.00 | 0.3 | 2.1 | sw | blast/spray | 400 | 0 | y, span 7 pp0/1 only |
| 08-Dec-94 | Spans 3 & 6 | 8.15 | 3.30 | 0.7 | 2.6 | sw | blast/spray | 300 | 0 | y, span 7 pp0/1 only |
| 09-Dec-94 | Spans 3 & 6 | 8.15 | 3.45 | 1.6 | 3.1 | sw | blast/spray | 525 | 0 | y, span 7 pp0/1 only |
| 10-Dec-94 | Weekend | | | | | | | | | |
| 11-Dec-94 | Weekend | | | | | | | | | |
| 12-Dec-94 | Spans 3 & 6 | 8.30 | 4.30 | 1.2 | 2.4 | sw | blast/spray | 300 | 0 | y, span 7 only |
| 13-Dec-94 | Spans 3 & 6 | 8.15 | 4.00 | 0.6 | 2.1 | sw | blast/spray | 375 | 0 | y, span 7 only |
| 14-Dec-94 | Spans 3 & 6 | 8.15 | 4.30 | 0.4 | 1.1 | ne | blast/spray | 200 | 0 | y, span 7 only |
| 15-Dec-94 | Spans 3 & 6 | 8.45 | 3.00 | 0.4 | 2.1 | se | blast/spray | 75 | 0 | y, span 7 only |
| 16-Dec-94 | Spans 3 & 6 | 8.00 | 4.00 | 0.4 | 0.6 | sw | blast/spray | 450 | 0 | y, span 7 only |
| 17-Dec-94 | Weekend | | | | | | | | | |
| 18-Dec-94 | Weekend | | | | | | | | | |
| 19-Dec-94 | Span 3 & 6 | 8.15 | 4.00 | 0.4 | 2.2 | ne sw | blast | 450 | 0 | n |
| 20-Dec-94 | Spans 2, 3 & 6 | 8.15 | 4.15 | 0.6 | 3.7 | sw | blast | 800 | 0 | n |
| 21-Dec-94 | Spans 3 & 6 | 8.15 | 3.45 | 1.7 | 2.1 | sw | blast | 600 | 0 | n |
| 22-Dec-94 | Humid | | | | | | | | | |
| 23-Dec-94 | Holiday | | | | | | | | | |
| 24-Dec-94 | Weekend | | | | | | | | | |
| 25-Dec-94 | Weekend | | | | | | | | | |
| 26-Dec-94 | Holiday | | | | | | | | | |
| 27-Dec-94 | Holiday | | | | | | | | | |
| 28-Dec-94 | Holiday | | | | | | | | | |
| 29-Dec-94 | Holiday | | | | | | | | | |
| 30-Dec-94 | Holiday | | | | | | | | | |

## ABRASIVE BLASTING DATA

| | | Work Hours - | | Wind Speed | | | Blasting | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| date | area | From | To | 1000 hrs | 1400 hrs | Direction | Type | quantity | recovered | screens |
| 31-Dec-94 | Weekend | | | | | | | | | |
| 01-Jan-95 | Weekend | | | | | | | | | |
| 02-Jan-95 | Holiday | | | | | | | | | |
| 03-Jan-95 | Holiday | | | | | | | | | |
| 04-Jan-95 | Spans 2 & 6 | 8.30 | 4.00 | 1.3 | 2.6 | ne | blast/spray | 275 | 0 | n |
| 05-Jan-95 | Spans 3 & 6 | 8.30 | 2.45 | 0.6 | 1.7 | sw | blast/spray | 225 | 0 | n |
| 06-Jan-95 | Spans 3 & 6 | 8.15 | 2.30 | 1.6 | 2.8 | sw | blast/spray | 225 | 0 | n |
| 07-Jan-95 | Weekend | | | | | | | | | |
| 08-Jan-95 | Weekend | | | | | | | | | |
| 09-Jan-95 | Humid | | | | | | | | | |
| 10-Jan-95 | Humid | | | | | | | | | |
| 11-Jan-95 | Humid | | | | | | | | | |
| 12-Jan-95 | Spans 2 & 6 | 8.15 | 3.30 | 1.7 | 2.1 | ne | blast/spray | 350 | 0 | n |
| 13-Jan-95 | Span 2 | 8.00 | 4.30 | 1.1 | 1.7 | ne | blast/spray | 125 | 0 | n |
| 14-Jan-95 | Weekend | | | | | | | | | |
| 15-Jan-95 | Weekend | | | | | | | | | |
| 16-Jan-95 | Span 2 | 8.00 | 4.30 | 3.7 | 3.1 | ne | blast/spray | 175 | 0 | n |
| 17-Jan-95 | Humid | | | | | | | | | |
| 18-Jan-95 | Humid | | | | | | | | | |
| 19-Jan-95 | Humid | | | | | | | | | |
| 20-Jan-95 | Humid | | | | | | | | | |
| 21-Jan-95 | Weekend | | | | | | | | | |
| 22-Jan-95 | Weekend | | | | | | | | | |
| 23-Jan-95 | Span3 | 9.00 | 4.15 | 2.1 | 2.7 | ne | blast/spray | 225 | 0 | n |
| 24-Jan-95 | Span 3 | 8.15 | 4.15 | 2.2 | 1.9 | ne | blast/spray | 200 | 0 | n |
| 25-Jan-95 | Span 3 | 8.30 | 4.15 | 3.1 | 3.6 | ne | blast/spray | 175 | 0 | n |
| 26-Jan-95 | Span 3 | 8.30 | 4.15 | 3.5 | 3.8 | ne | blast/spray | 225 | 0 | n |
| 27-Jan-95 | Humid | | | | | | | | | |
| 28-Jan-95 | Weekend | | | | | | | | | |
| 29-Jan-95 | Weekend | | | | | | | | | |
| 30-Jan-95 | Holiday | | | | | | | | | |
| 31-Jan-95 | Span 3 & 6 | 8.15 | 4.15 | 2.9 | 4.3 | ne | blast | 425 | 0 | no, repairs |
| 01-Feb-95 | Span 3 & 6 | 8.15 | 4.30 | 3.1 | 2.3 | ne | blast | 525 | 0 | no, repairs |
| 02-Feb-95 | Humid | | | | | | | | | |
| 03-Feb-95 | Span 3 & 6 | 8.15 | 4.00 | 4.7 | 3.1 | sw | blast | 350 | 0 | no, repairs |
| 04-Feb-95 | Weekend | | | | | | | | | |
| 05-Feb-95 | Weekend | | | | | | | | | |
| 06-Feb-95 | Holiday | | | | | | | | | |
| 07-Feb-95 | Span 3 | 8.15 | 3.00 | 2.7 | 2.9 | ne | | 400 | 0 | n |
| 08-Feb-95 | Span 2 & 3 | 8.15 | 3.00 | 1.1 | 3.7 | ne/sw | | 475 | 0 | n |
| 09-Feb-95 | Span 2 & 3 | 8.15 | 4.00 | 0.7 | 1.1 | sw | blast/spray | 200 | 0 | y |
| 10-Feb-95 | Span 2 & 3 | 11.00 | 3.00 | 1.6 | 0 | sw | | 275 | 0 | y |
| 11-Feb-95 | Weekend | | | | | | | | | |
| 12-Feb-95 | Weekend | | | | | | | | | |
| 13-Feb-95 | Span 2 & 3 | 8.15 | 3.00 | 2.8 | 2.5 | se/ne | blast/spray | 325 | o | y |
| 14-Feb-95 | Span 2 & 3 | 8.15 | 3.30 | 1.2 | 2.3 | ne | blast/spray | 425 | o | y |
| 15-Feb-95 | Span 2 & 3 | 8.15 | 4.00 | 1.9 | 0.8 | ne | blast | 350 | o | y |
| 16-Feb-95 | Span 2 & 3 | 8.15 | 3.00 | 0.4 | 0.7 | ne | blast | 575 | o | y |
| 17-Feb-95 | Span 2 & 3 | 8.30 | 2.15 | 2.3 | 0.4 | ne | blast | 525 | o | y |
| 18-Feb-95 | Weekend | | | | | | | | | |
| 19-Feb-95 | Weekend | | | | | | | | | |
| 20-Feb-95 | Span 6 | 8.00 | 2.15 | 2.1 | 2.6 | sw | blast/spray | 450 | 0 | y |
| 21-Feb-95 | Span 6 & 3 | 8.15 | 3.30 | 1.1 | 1 | ne | blast/spray | 275 | 0 | y |
| 22-Feb-95 | Humid | | | | | | | | | |
| 23-Feb-95 | Span 6 & 3 | 11.30 | 2.15 | 3.8 | 4.7 | nw | blast | 175 | 0 | y |
| 24-Feb-95 | Span 6 & 3 | 8.30 | 2.00 | 1,7 | 2.3 | sw | blast | 350 | 0 | y |
| 25-Feb-95 | Weekend | | | | | | | | | |
| 26-Feb-95 | Weekend | | | | | | | | | |
| 27-Feb-95 | Span 6 & 3 | 12.15 | 3.00 | 2.2 | 3.7 | sw | blast/spray | 450 | 0 | y |
| 28-Feb-95 | Span 6 & 3 | 8.15 | 1.00 | 2.4 | 0.6 | sw | blast/spray | 275 | 0 | y |
| 01-Mar-95 | Span 6 | 8.15 | 3.00 | 0.7 | 1 | sw | blast | 375 | 0 | y |
| 02-Mar-95 | Span 6 & 3 | 8.30 | 3.30 | 0.5 | 0.5 | sw | blast/spray | 575 | 0 | y |
| 03-Mar-95 | Humid | | | | | | | | | |
| 04-Mar-95 | Weekend | | | | | | | | | |
| 05-Mar-95 | Weekend | | | | | | | | | |
| 06-Mar-95 | Span 3 & 6 | 8.45 | 4.00 | 0.4 | 0.7 | sw | blast | 575 | 0 | y |
| 07-Mar-95 | Span 3, 5 & 6 | 8.15 | 4.00 | 0.4 | 0.5 | sw | blast | 575 | 0 | y |
| 08-Mar-95 | Span 3, 5 & 6 | 11.00 | 2.15 | 0.5 | 0.5 | sw | blast | 275 | 0 | y |
| 09-Mar-95 | Span 3 & 5 | 9.00 | 3.15 | 1.1 | 0.9 | nw/ne | blast/spray | 175 | 0 | y |
| 10-Mar-95 | Span 5 | 8.15 | 3.30 | 0.5 | 4.7 | ne | blast/spray | 175 | 0 | y |
| 11-Mar-95 | Weekend | | | | | | | | | |
| 12-Mar-95 | Weekend | | | | | | | | | |
| 13-Mar-95 | Humid | | | | | | | | | |
| 14-Mar-95 | Span 5, overarch | 8.15 | 4.00 | 4.9 | 5.6 | w | blast/spray | 150 | 0 | n, westeries |
| 15-Mar-95 | Span 5, overarch | 9.00 | 4.00 | 0 | 5.4 | w | blast/spray | 225 | 0 | n,westeries |
| 16-Mar-95 | Span 5, overarch | 10.00 | 4.00 | 3.9 | 6.1 | w | blast/spray | 375 | 0 | n, westeries |
| 17-Mar-95 | Span 6 | 9.00 | 4.00 | 0 | 1.7 | s | spray | 0 | 0 | n, westeries |

## ABRASIVE BLASTING DATA

| | | Work Hours - | | Wind Speed | | | Blasting | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| date | area | From | To | 1000 hrs | 1400 hrs | Direction | Type | quantity | recovered | screens |
| 18-Mar-95 | Weekend | | | | | | | | | |
| 19-Mar-95 | Weekend | | | | | | | | | |
| 20-Mar-95 | Span 5 | 9.00 | 3.30 | 1.2 | 2.1 | w | blast/spray | 150 | 0 | n |
| 21-Mar-95 | Span 5 & 2 | 9.00 | 4.00 | 0.9 | 3.1 | ne/nw | blast | 225 | 0 | n |
| 22-Mar-95 | Span 5 & 2, underarch | 8.15 | 4.00 | 1.7 | 3.8 | w | blast | 225 | 0 | n |
| 23-Mar-95 | Span 2 & 6 | 8.15 | 4.00 | 1.2 | 1.8 | w | blast | 1000 | 0 | n |
| 24-Mar-95 | Span 2, 3, 5 & 6 | 10.30 | 2.30 | 0 | 1.3 | w | blast | 1250 | 0 | n |
| 25-Mar-95 | Weekend | | | | | | | | | |
| 26-Mar-95 | Weekend | | | | | | | | | |
| 27-Mar-95 | Spans 2, 3, 5 & 6 | 9.00 | 3.30 | 1.1 | 2.3 | ne | blast | 675 | 0 | y |
| 28-Mar-95 | Span 2, 3 & 6 | 8.45 | 2.00 | 1.9 | 2.1 | ne | blast | 750 | 0 | y |
| 29-Mar-95 | Humid | | | | | | | | | |
| 30-Mar-95 | Humid | | | | | | | | | |
| 31-Mar-95 | Span 2, 3 & 6 | 10.45 | 12.00 | 0.4 | | ne | blast | 275 | 0 | y |
| 01-Apr-95 | Weekend | | | | | | | | | |
| 02-Apr-95 | Weekend | | | | | | | | | |
| 03-Apr-95 | Spans 2, 3, 4 & 6 | 10.00 | 3.00 | 0 | 1.8 | nw | blast | 675 | 0 | y |
| 04-Apr-95 | Spans 2, 3, 4 & 6 | 10.00 | 2.00 | 0 | 2.2 | ne | blast | 475 | 0 | y |
| 05-Apr-95 | Spans 3, 5 & 6 | 11.00 | 2.30 | 2.2 | 2.9 | ne | blast | 350 | 0 | y |
| 06-Apr-95 | Spans 3, 5 & 6 | 8.15 | 2.00 | 0 | 3.1 | ne | blast | 525 | 0 | y |
| 07-Apr-95 | Humid | | | | | | | | | |
| 08-Apr-95 | Weekend | | | | | | | | | |
| 09-Apr-95 | Weekend | | | | | | | | | |
| 10-Apr-95 | Spans 2, 3, 4 & 6 | 8.30 | 2.30 | 4 | 4 | ne | blast | 575 | 0 | y |
| 11-Apr-95 | Humid | | | | | | | | | |
| 12-Apr-95 | Spans 2, 3, 4 & 6 | 9.30 | 3.00 | 0 | 4.1 | sw | blast | 425 | 0 | y |
| 13-Apr-95 | Spans 2, 3, 4 & 6 | 9.30 | 2.15 | 101 | 3.7 | sw | blast | 350 | 0 | y |
| 14-Apr-95 | Holiday | | | | | | | | | |
| 15-Apr-95 | Weekend | | | | | | | | | |
| 16-Apr-95 | Weekend | | | | | | | | | |
| 17-Apr-95 | Holiday | | | | | | | | | |
| 18-Apr-95 | Humid | | | | | | | | | |
| 19-Apr-95 | Span 4 | 8.00 | 3.30 | 4.6 | 4.3 | ne | blast | 100 | 0 | n |
| 20-Apr-95 | Span 2 & 4 | 8.30 | 3.00 | 2.1 | 1.9 | ne | blast/spray | 150 | 0 | y |
| 21-Apr-95 | Span 4 | 8.30 | 3.15 | 2.2 | 2.7 | ne | blast | 175 | 0 | y |
| 22-Apr-95 | Weekend | | | | | | | | | |
| 23-Apr-95 | Weekend | | | | | | | | | |
| 24-Apr-95 | Span 4 | 8.30 | 12.00 | 4.2 | 4.6 | ne | blast/spray | 175 | 0 | y |
| 25-Apr-95 | Holiday | | | | | | | | | |
| 26-Apr-95 | Humid | | | | | | | | | |
| 27-Apr-95 | Span 2 & 4 | 8.45 | 4.00 | 1.6 | 3.2 | sw | blast/spray | 225 | 0 | y |
| 28-Apr-95 | Span 2 | 8.30 | 2.00 | 1.1 | 3.2 | sw-ne | blast/spray | 100 | 0 | y |
| 29-Apr-95 | Weekend | | | | | | | | | |
| 30-Apr-95 | Weekend | | | | | | | | | |
| 01-May-95 | Humid | | | | | | | | | |
| 02-May-95 | Span 1 | 8.15 | 3.00 | 2.7 | 3.1 | se | blast/spray | 150 | 0 | y |
| 03-May-95 | Spans 3 & 6 | 8.30 | 4.15 | 3.3 | 4.5 | se | spray | 0 | 0 | y |
| 04-May-95 | Spans 3 & 6 | 1.15 | 4.15 | 2.7 | 2.7 | ne | spray | 0 | 0 | y |
| 05-May-95 | Span 4 | 8.30 | 2.00 | 2.3 | 2.1 | ne | blast/spray | 300 | 0 | n |
| 06-May-95 | Weekend | | | | | | | | | |
| 07-May-95 | Weekend | | | | | | | | | |
| 08-May-95 | Span 4 | 8.30 | 4.15 | 0.8 | 1.1 | sw | blast/spray | 150 | 0 | n |
| 09-May-95 | Span 3 & 4 | 8.30 | 2.00 | 0.5 | 3.2 | sw | blast | 75 | 0 | n |
| 10-May-95 | No Work | | | | | | | | | |
| 11-May-95 | Span 3 & 6 | 8.30 | 2.00 | 0.4 | 1.7 | sw/ne | blast/spray | 800 | 0 | y |
| 12-May-95 | Span 3 & 6 | 8.15 | 4.15 | 2,7 | 1.9 | w | blast/spray | 550 | 0 | y |
| 13-May-95 | Weekend | | | | | | | | | |
| 14-May-95 | Weekend | | | | | | | | | |
| 15-May-95 | Span 3 & 6 | 9.15 | 3.30 | 1.6 | 0.7 | ne | blast/spray | 675 | 0 | y |
| 16-May-95 | Washdown | | | | | | | | | |
| 17-May-95 | Span 3 & 6 | 8.15 | 3.00 | 1.7 | 3.1 | sw | blast/spray | 600 | 0 | y |
| 18-May-95 | Span 3 & 6 | 8.15 | 2.00 | 3.6 | 5.2 | sw | blast/spray | 750 | 0 | y |
| 19-May-95 | Span 3 & 6 | 8.15 | 2.00 | 3.7 | 4.8 | sw | blast/spray | 450 | 0 | y |
| 20-May-95 | Weekend | | | | | | | | | |
| 21-May-95 | Weekend | | | | | | | | | |
| 22-May-95 | Humid | | | | | | | | | |
| 23-May-95 | Spans 5 & 6 | 12.15 | 3.00 | 0.4 | 0 | sw | blast/spray | 350 | 0 | y |
| 24-May-95 | Span 3 | 8.30 | 2.00 | 0 | 1.1 | se | blast | 225 | 0 | y |
| 25-May-95 | Span 3 | 11.00 | 3.00 | 0 | 0.5 | se | blast/spray | 300 | 0 | y |
| 26-May-95 | Span 3 | 8.00 | 2.00 | 2.2 | 3.4 | ne | blast/spray | 375 | 0 | y |
| 27-May-95 | Weekend | | | | | | | | | |
| 28-May-95 | Weekend | | | | | | | | | |
| 29-May-95 | Humid | | | | | | | | | |
| 30-May-95 | Spans 3 & 5 | 8.00 | 3.00 | 2.9 | 4.6 | sw | blast/spray | 175 | 0 | y |
| 31-May-95 | Spans 3 & 6 | 8.30 | 2.00 | 3.9 | 4.8 | sw | blast/spray | 300 | 0 | y |
| 01-Jun-95 | Spans 3 | 8.00 | 11.00 | 4.7 | 3.8 | sw | blast/spray | 150 | 0 | y |
| 02-Jun-95 | Humid | | | | | | | | | |

## ABRASIVE BLASTING DATA

| | | Work Hours | | Wind Speed | | | Blasting | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| date | area | From | To | 1000 hrs | 1400 hrs | Direction | Type | quantity | recovered | screens |
| 03-Jun-95 | Weekend | | | | | | | | | |
| 04-Jun-95 | Weekend | | | | | | | | | |
| 05-Jun-95 | Holiday | | | | | | | | | |
| 06-Jun-95 | Span 3 | 8.30 | 2.00 | 4.7 | 5.1 | sw | blast/spray | 300 | 0 | y |
| 07-Jun-95 | Span 2, 3 & 6 | 8.30 | 4.00 | 1.9 | 3.7 | sw | spray | 0 | 0 | y |
| 08-Jun-95 | Span 3 & 6 | 8.30 | 4.15 | 2.9 | 4.3 | sw | spray | 0 | 0 | y |
| 09-Jun-95 | Span 2, 3 & 6 | 8.30 | 3.00 | 3.9 | 4.7 | sw | spray | 0 | 0 | y |
| 10-Jun-95 | Weekend | | | | | | | | | |
| 11-Jun-95 | Weekend | | | | | | | | | |
| 12-Jun-95 | Humid | | | | | | | | | |
| 13-Jun-95 | Span 3 | 12.30 | 3.15 | 2.2 | 2.2 | sw | spray | | 0 | n |
| 14-Jun-95 | Span 3 | 1.00 | 4.00 | 3.1 | 3.1 | nw | spray | | 0 | n |
| 15-Jun-95 | Span 5 | 8.15 | 4.15 | 3.3 | 3.7 | sw | blast | 300 | 0 | y |
| 16-Jun-95 | Span 5 | 8.15 | 4.15 | 3.1 | 2.1 | sw | blast/spray | 425 | 0 | y |
| 17-Jun-95 | Weekend | | | | | | | | | |
| 18-Jun-95 | Weekend | | | | | | | | | |
| 19-Jun-95 | Humid | | | | | | | | | |
| 20-Jun-95 | Span 7 | 8.00 | 2.00 | 3.1 | 2.6 | sw | blast/spray | 375 | 0 | y, span 5 only, span 7 is cc |
| 21-Jun-95 | Span 7 | 8.30 | 1.00 | 0.9 | 3.8 | sw | spray | | 0 | y, span 5 only, span 7 is cc |
| 22-Jun-95 | Span 5 | 11.00 | 2.00 | 2.2 | 1.9 | sw | blast/spray | 225 | 0 | y, span 5 only, span 7 is cc |
| 23-Jun-95 | Span 5 & 7 | 8.30 | 3.00 | 2.7 | 3.4 | sw | blast/spray | 400 | 0 | y, span 5 only, span 7 is cc |
| 24-Jun-95 | Weekend | | | | | | | | | |
| 25-Jun-95 | Weekend | | | | | | | | | |
| 26-Jun-95 | Span 5 & 7 | 8.30 | 4.00 | 2.2 | 3.1 | sw | blast/spray | 450 | 0 | y |
| 27-Jun-95 | Span 3, 5 & 7 | 9.30 | 3.00 | 3.4 | 3.8 | sw | blast | 600 | 0 | y |
| 28-Jun-95 | Washdown | | | | | | | | | |
| 29-Jun-95 | Washdown | | | | | | | | | |
| 30-Jun-95 | Span 3 & 7 | 8.30 | 2.00 | 4.6 | 3.9 | sw | blast | 275 | 0 | y |
| 01-Jul-95 | Weekend | | | | | | | | | |
| 02-Jul-95 | Weekend | | | | | | | | | |
| TOTAL | | | | 2.70 | 2.89 | | | 51800 | 0 | |

# Appendix B

# Confirmation That No Corrosion Inhibitors Are Used

# SERCO

SERCO GROUP NZ. LTD.
Auckland Harbour Bridge
PO Box 33-908 Takapuna
11 Princes St. Northcote

Telephone: (09) 418-1880
Facsimile: (09) 419-0060

FAX TO: WORKS CONSULTANCY FROM: Graham Osbaldiston

ATTENTION: s9(2)(a) DATE: 25.7.95

FAX No: 377 1626 No of Pages: 1 (incl. this page)

AHB - RESOURCE CONSENT

I CAN CONFIRM THAT NO CORROSION INHIBITORS HAVE BEEN USED DURING BLASTING OPERATIONS ON THE AUCKLAND HARBOUR BRIDGE

G. Osbaldiston

G. OSBALDISTON
PROJECT MANAGER.

# Appendix C

# Public Notices

Serco Operations | Auckland Harbour Bridge | 11 Princes Street | Northcote
PO Box 33-908 | Takapuna | Telephone 0-9-418-1880 | Fax 0-9-419-0060

17 July 1995

**Dear Neighbour,**

SERCO

## AUCKLAND HARBOUR BRIDGE - MAINTENANCE

In accordance with the conditions of the Resource Consent granted to Transit NZ for the above work, this letter is to inform you of our painting programme and our intentions over the coming months.

**North:** We are currently working in span 3, carrying out maintenance painting to the truss structure below deck level. This is programmed to continue until at least December 1995 when we will begin on the South end of Span 1 adjacent to the navigation span. Also, in Jan 1995, we hope to begin some minor maintenance painting to high level steelwork in span 1.

**South:** We plan to continue working in Spans 5 and 6 carrying out maintenance painting to below decks for at least another 6 months.

Concurrently with the above work, we will be working on the bridge overarch area, doing maintenance painting and crevice corrosion repair to the above deck steelwork, mainly in span 1 and the underarch area.

The only other activity planned is the regular washing of the structure with fresh water to reduce the amount of contamination and prolong the life of the paint coatings.

Like all programmes, this one is subject to change, mainly due to changing weather conditions, but we will endeavour to keep you informed of our plans. Please feel free to contact us at the above address should you have any problem with our maintenance operations.

Yours sincerely,

**Graham Osbaldiston**
Project Manager
Serco Group NZ Limited

8 November 1994

Dear Neighbour,

**AUCKLAND HARBOUR BRIDGE - MAINTENANCE.**

In accordance with the conditions of the Resource Consent granted to Transit NZ for the above work, this letter is to inform you of our painting programme and our intentions over the coming months.

**North:** We are currently carrying out some crevice repair work inbetween Pier 1 and the North anchorage. The painting in this area is not scheduled to start until this repair work is completed, which should be in approximately 2 months time.

The only other activity programmed for this area is the washing down of the steelwork and the approach structures. This is done using fresh water to maintain the steelwork free from contaminants.

**South:** We are currently undertaking some remedial works to the South Viaduct area and to the first panel in span 7. Some repair works prior to painting are planned between now and February 1995 in spans 6 and 7, with the painting to follow.

As for the North end, the only other activity planned is the frequent washing of the structure with fresh water.

It is our aim to cause as little inconvenience as possible to our neighbours and the users of the surrounding land and, to that end, please feel free to contact us at the above address if you have a problem with any aspect of our maintenance operations.

Unfortunately, our programme is subject to change, mainly due to weather, and therefore has to be flexible. We will endeavour to keep you informed of our intentions.

Yours sincerely,

**Graham Osbaldiston**

Project Manager
Serco Group NZ Limited

25 July 1994

SERCO Auckland Harbour Bridge
Phone: 4181880
Fax: 4190060

TO WESTHAVEN RESIDENTS

This progress note is to advise Westhaven Residents of our intentions to shortly begin work on the preparation and painting of the southernmost section of the Auckland Harbour Bridge i.e. the 10m of original bridge structure immediately North of the South anchorage.

Unfortunately, the weather is now too cold to carry out the blasting work at night as we did for the South Viaduct area, and because blasting during the day may create a nuisance, we attempted to have this section of work deferred until such time as night blasting may be resumed.

Our proposal has been rejected by Works Consultancy Services and we therefore have no option but to sandblast during the day.

Every effort will be made to minimise disruption and inconvenience. Please feel free to advise myself or Works Consultancy (Mr Geoff Griffiths) of any problems.

Graham Osbaldiston
Project Manager

# Appendix D

# Public Survey Replies

Serco | Auckland Harbour Bridge | 11 Princes Street Northcote
P.O. Box 33-908 Takapuna | Tel 09-418-1880 | Fax 09-419-0060

1076/011



28 February 1995

SERCO

## RESOURCE CONSENT - SURVEY

Dear Neighbour,

You will no doubt be aware that over the last few months, we have been undertaking maintenance painting work on the Auckland Harbour Bridge at Westhaven. This work has been carried out in accordance with the Resource Consent granted by the Auckland Regional Council.

In order that we can monitor our work methods and if necessary modify work practices, plant and/or materials, we would appreciate your comments regarding any inconvenience that may have been caused by our operations.

1 Were the screen effective in reducing the drift of blasting media? Yes it appears so.

2 Was sufficient information available to inform you of our painting programme? Would appreciate more info.

3 Were the streets and surrounding areas swept adequately after blasting? Yes.

4 Was there sufficient signage in place to warn of possible hazards? No you need more signs for general info please.

5 Was the night blasting work effective in reducing the nuisance caused by sandblasting? Cannot comment.

6 Any other comments. Were impressed with the service provided by Dan Bowman when staff and members cars were covered with paint spray from the bridge job. Many thanks.

Name: s9(2)(a)
Signature:
Address: Royal New Zealand Yacht Squadron
Westhaven.

ROYAL N.Z. YACHT SQUADRON

Date: 15 MAR 1995

Serco | Auckland Harbour Bridge | 11 Princes Street Northcote
P.O. Box 33-908 Takapuna | Tel 09-418-1880 | Fax 09-419-0060

1076/011

RECEIVED
22 MAR 1995
HARBOUR BRIDGE

28 February 1995

SERCO

## RESOURCE CONSENT - SURVEY

Dear Neighbour,

You will no doubt be aware that over the last few months, we have been undertaking maintenance painting work on the Auckland Harbour Bridge at Westhaven. This work has been carried out in accordance with the Resource Consent granted by the Auckland Regional Council.

In order that we can monitor our work methods and if necessary modify work practices, plant and/or materials, we would appreciate your comments regarding any inconvenience that may have been caused by our operations.

1 Were the screen effective in reducing the drift of blasting media? — We always end up with a lot of grit etc on our building from the bridge, but we are aware that wind direction is always taken into account which we do appreciate

2 Was sufficient information available to inform you of our painting programme? — Yes

3 Were the streets and surrounding areas swept adequately after blasting? —

4 Was there sufficient signage in place to warn of possible hazards? — Yes

5 Was the night blasting work effective in reducing the nuisance caused by sandblasting? — Yes

6 Any other comments.

Our biggest problem is finding the Carrick St on ramp closed it is most inconvenient. We are still awaiting a completion clearing to our windows and exterior walls as promised last year.

Name:
Signature:
Address:

PONSONBY CRUISING CLUB (INC)
P.O. BOX 47010
PONSONBY

Date:

13/3/95.

Serco | Auckland Harbour Bridge | 11 Princes Street Northcote
P.O. Box 33-908 Takapuna | Tel 09-418-1880 | Fax 09-419-0060

10/6/011

RECEIVED
09 MAR 1995
HARBOUR BRIDGE

28 February 1995

SERCO

## RESOURCE CONSENT - SURVEY

Dear Neighbour,

You will no doubt be aware that over the last few months, we have been undertaking maintenance painting work on the Auckland Harbour Bridge at Westhaven. This work has been carried out in accordance with the Resource Consent granted by the Auckland Regional Council.

In order that we can monitor our work methods and if necessary modify work practices, plant and/or materials, we would appreciate your comments regarding any inconvenience that may have been caused by our operations.

1 Were the screen effective in reducing the drift of blasting media? TO A SMALL EXTENT

2 Was sufficient information available to inform you of our painting programme? YES.

3 Were the streets and surrounding areas swept adequately after blasting? ROADS YES. COMPOUND) NO

4 Was there sufficient signage in place to warn of possible hazards? YES.

5 Was the night blasting work effective in reducing the nuisance caused by sandblasting? TO A DEGREE.

6 Any other comments.

SAND THAT WAS LEFT BEHIND WAS PICKED UP BY WESTERLEY WINDS AND DEPOSITED ON CARS AND BOATS.

Name: s9(2)(a)
Signatur
Address: V Westhaven Marina Control Office

Date: 7.3.95

# ABRASIVE BLASTING DATA MA 1357 Auckland Harbour Bridge 1995/96

| | | Work Hours | | Wind Speed (m/s) | | | Abrasive | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE | Span | From | To | 0830 hrs | 1400 hrs | Dir | Used | | | Total | Recovered | Controls |
| 01-Jul-95 | Weekend | | | | | | | | | | | |
| 02-Jul-95 | Weekend | | | | | | | | | | | |
| 03-Jul-95 | 7 | 12:30 | 15:30 | 1.3 | 1.7 | SW | 175 | | | 175 | 0 | screens |
| 04-Jul-95 | 3,7 | 08:15 | 14:30 | 1.1 | 0.5 | SE | 450 | | | 450 | 0 | screens |
| 05-Jul-95 | Humidity outside specifications | | | | | | | | | | | |
| 06-Jul-95 | 3 | 08:30 | 16:15 | 3.6 | 4.1 | SW | 375 | | | 375 | 0 | - |
| 07-Jul-95 | 2,3 | 08:30 | 16:15 | 4.3 | 5.1 | SW | 275 | 300 | | 575 | 0 | screens |
| 08-Jul-95 | Weekend | | | | | | | | | | | |
| 09-Jul-95 | Weekend | | | | | | | | | | | |
| 10-Jul-95 | | | | | | | | | | 0 | | |
| 11-Jul-95 | | | | | | | | | | 0 | | |
| 12-Jul-95 | | | | | | | | | | 0 | | |
| 13-Jul-95 | | | | | | | | | | 0 | | |
| 14-Jul-95 | | | | | | | | | | 0 | | |
| 15-Jul-95 | Weekend | | | | | | | | | | | |
| 16-Jul-95 | Weekend | | | | | | | | | | | |
| 17-Jul-95 | 3,5 | 08:15 | 16:00 | 3.1 | 3.9 | SW | 300 | 350 | | 650 | 0 | screens |
| 18-Jul-95 | 3,5 | 08:15 | 14:00 | 0.4 | 0 | NE | 150 | 200 | | 350 | 0 | screens |
| 19-Jul-95 | Washdown | | | | | | | | | | | |
| 20-Jul-95 | 3,5 | 08:15 | 16:00 | 2.7 | 2.4 | SW | 225 | 200 | | 425 | 0 | screens |
| 21-Jul-95 | 2,3,5 | 08:15 | 15:00 | 2.3 | 0 | SW | 225 | 175 | 150 | 550 | 0 | screens |
| 22-Jul-95 | Weekend | | | | | | | | | | | |
| 23-Jul-95 | Weekend | | | | | | | | | | | |
| 24-Jul-95 | Humidity outside specifications | | | | | | | | | | | |
| 25-Jul-95 | 2 | 08:15 | 13:30 | 2.3 | 4.2 | NW | 175 | | | 175 | 0 | screens |
| 26-Jul-95 | 2 | 08:15 | 15:00 | 1.2 | 4.3 | SW | 150 | | | 150 | 0 | screens |
| 27-Jul-95 | 2,3 | 08:30 | 14:45 | 4.6 | 4.3 | SW | 150 | 125 | | 275 | 0 | screens |
| 28-Jul-95 | 2,3,5 | 09:00 | 15:00 | 0.4 | 0 | NE | 125 | 100 | 125 | 350 | 0 | screens |
| 29-Jul-95 | Weekend | | | | | | | | | | | |
| 30-Jul-95 | Weekend | | | | | | | | | | | |
| 31-Jul-95 | 2,3,5 | 08:30 | 16:00 | 3.6 | 4.2 | NE | 125 | 225 | 200 | 550 | 0 | screens |
| 01-Aug-95 | 3 | 08:30 | 16:30 | 2.2 | 2.1 | NE | 300 | | | 300 | 0 | screens |
| 02-Aug-95 | 3,5 | 08:15 | 15:30 | 2.6 | 4.7 | NE | 200 | 250 | | 450 | 0 | screens |
| 03-Aug-95 | Painting Only | | | | | | | | | | | |
| 04-Aug-95 | 2,3,5 | 08:15 | 16:15 | 1.1 | 2.6 | NE | 175 | 225 | 275 | 675 | 0 | screens |
| 05-Aug-95 | Weekend | | | | | | | | | | | |
| 06-Aug-95 | Weekend | | | | | | | | | | | |
| 07-Aug-95 | Painting Only | | | | | | | | | | | |
| 08-Aug-95 | Washdown | | | | | | | | | | | |
| 09-Aug-95 | Washdown | | | | | | | | | | | |
| 10-Aug-95 | Painting Only | | | | | | | | | | | |
| 11-Aug-95 | Painting Only | | | | | | | | | | | |
| 12-Aug-95 | Weekend | | | | | | | | | | | |
| 13-Aug-95 | Weekend | | | | | | | | | | | |
| 14-Aug-95 | 2 | 08:30 | 14:00 | 2.2 | 3.1 | SW | 150 | | | 150 | 0 | - |
| 15-Aug-95 | 2,3 | 08:15 | 14:00 | 0.5 | 3.5 | SW | 200 | 225 | | 425 | 0 | screens |
| 16-Aug-95 | 2,3 | 08:15 | 16:00 | 2.7 | 4.2 | SW | 125 | 150 | | 275 | 0 | screens |
| 17-Aug-95 | 2,5 | 08:15 | 16:30 | 3.6 | 4.5 | SW | 200 | 200 | | 400 | 0 | screens |
| 18-Aug-95 | 2,5 | 08:15 | 16:00 | 4.8 | 3.7 | SW | 200 | 275 | | 475 | 0 | screens |
| 19-Aug-95 | Weekend | | | | | | | | | | | |
| 20-Aug-95 | Weekend | | | | | | | | | | | |
| 21-Aug-95 | 2,5 | 08:30 | 14:00 | 2.2 | 4.6 | NW | 125 | 350 | | 475 | 0 | screens |
| 22-Aug-95 | 2,3,5 | 08:30 | 16:15 | 1.6 | 1.9 | NE | 125 | 300 | 225 | 650 | 0 | screens |
| 23-Aug-95 | 3,5 | 08:30 | 14:00 | 0 | 2.2 | NE | 225 | 300 | | 525 | 0 | screens |
| 24-Aug-95 | 2,3,5 | 08:30 | 14:30 | 2.4 | 1.9 | NW | 100 | 175 | 200 | 475 | 0 | screens |
| 25-Aug-95 | 5 | 08:30 | 14:30 | 3.6 | 3.5 | NW | 225 | | | 225 | 0 | screens |
| 26-Aug-95 | Weekend | | | | | | | | | | | |
| 27-Aug-95 | Weekend | | | | | | | | | | | |
| 28-Aug-95 | 2,5 | 08:30 | 14:00 | 3.8 | 4.7 | SW | 100 | 300 | | 400 | 0 | screens |
| 29-Aug-95 | 5 | 08:15 | 13:30 | 1.7 | 1.9 | SW | 325 | | | 325 | 0 | screens |
| 30-Aug-95 | 5 | 09:00 | 15:00 | 2.3 | 2.2 | SW | 275 | | | 275 | 0 | screens |
| 31-Aug-95 | 2,5 | 09:30 | 15:00 | 3.1 | 4.8 | SW | 425 | | | 425 | 0 | screens |
| 01-Sep-95 | Painting Only | | | | | | | | | | | |
| 02-Sep-95 | Weekend | | | | | | | | | | | |
| 03-Sep-95 | Weekend | | | | | | | | | | | |
| 04-Sep-95 | 3,5 | 09:30 | 16:15 | 1.6 | 2.9 | SW | 400 | 100 | | 500 | 0 | screens |
| 05-Sep-95 | Washdown | | | | | | | | | | | |
| 06-Sep-95 | Washdown | | | | | | | | | | | |
| 07-Sep-95 | 3,5 | 08:30 | 14:30 | 4.8 | 5.2 | SW | 225 | 125 | | 350 | 0 | screens |
| 08-Sep-95 | 3,5 | 09:00 | 13:30 | 1.7 | 2.3 | SW | 200 | 125 | | 325 | 0 | screens |
| 09-Sep-95 | Weekend | | | | | | | | | | | |
| 10-Sep-95 | Weekend | | | | | | | | | | | |
| 11-Sep-95 | 3,5 | 08:15 | 15:00 | 2.3 | 2.7 | NE | 275 | 225 | | 500 | 0 | screens |

# ABRASIVE BLASTING DATA MA 1357 Auckland Harbour Bridge 1995/96

| | | Work Hours | | Wind Speed (m/s) | | | Abrasive | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE | Span | From | To | 0830 hrs | 1400 hrs | Dir | Used | | | Total | Recovered | Controls |
| 12-Sep-95 | 3,5 | 08:30 | 15:15 | 0 | 1.6 | NE | 325 | 200 | | 525 | 0 | screens |
| 13-Sep-95 | 3 | 08:15 | 04:20 | 0 | 0.7 | NE | 175 | | | 175 | 0 | screens |
| 14-Sep-95 | Painting Only | | | | | | | | | | | |
| 15-Sep-95 | Painting Only | | | | | | | | | | | |
| 16-Sep-95 | Weekend | | | | | | | | | | | |
| 17-Sep-95 | Weekend | | | | | | | | | | | |
| 18-Sep-95 | Painting Only | | | | | | | | | | | |
| 19-Sep-95 | Washdown | | | | | | | | | | | |
| 20-Sep-95 | 3,5 | 10:30 | 13:50 | 1.1 | 0.9 | NE | 225 | 150 | | 375 | 0 | screens |
| 21-Sep-95 | 3,5 | 08:30 | 16:00 | 1.6 | 2.3 | NE | 300 | 325 | | 625 | 0 | screens |
| 22-Sep-95 | 5 | 09:30 | 03:50 | 3.7 | 3 | NE | 175 | | | 175 | 0 | screens |
| 23-Sep-95 | Weekend | | | | | | | | | | | |
| 24-Sep-95 | Weekend | | | | | | | | | | | |
| 25-Sep-95 | 2,3 | 08:30 | 16:00 | 0.6 | - | NE | 650 | | | 650 | 0 | - |
| 26-Sep-95 | 3 | 08:15 | 16:15 | 3.1 | 2.7 | NE | 525 | | | 525 | 0 | - |
| 27-Sep-95 | Painting Only | | | | | | | | | | | |
| 28-Sep-95 | 3 | 08:15 | 16:30 | 2.2 | 2.4 | NE | 525 | | | 525 | 0 | - |
| 29-Sep-95 | 3 | 08:15 | 13:00 | 1.6 | 1.8 | NE | 325 | | | 325 | 0 | - |
| 30-Sep-95 | Weekend | | | Weekend | | | Weekend | | | | | Weekend |
| 01-Oct-95 | Weekend | | | Weekend | | | Weekend | | | | | Weekend |
| 02-Oct-95 | 2,3 | 09:00 | 14:30 | 2.2 | 2.6 | SW | 350 | | | 350 | 0 | screens |
| 03-Oct-95 | 3,5 | 08:30 | 13:00 | 0.8 | 1.7 | SW | 275 | | | 275 | 0 | screens |
| 04-Oct-95 | 3 | 08:15 | 14:00 | 1.9 | 2.6 | SW | 225 | | | 225 | 0 | screens |
| 05-Oct-95 | Painting Only | | | | | | | | | | | |
| 06-Oct-95 | 2 | 08:30 | 16:00 | 2.2 | 3.7 | NE | 275 | | | 275 | 0 | - |
| 07-Oct-95 | Weekend | | | | | | | | | | | |
| 08-Oct-95 | Weekend | | | | | | | | | | | |
| 09-Oct-95 | Humidity outside specifiactions | | | | | | | | | | | |
| 10-Oct-95 | 3 | 08:30 | 14:00 | 3.7 | 4.3 | SW | 275 | | | 275 | 0 | screens |
| 11-Oct-95 | 2 | 08:00 | 16:30 | 4.7 | 5.1 | SW | 175 | | | 175 | 0 | screens |
| 12-Oct-95 | 5 | 08:15 | 14:15 | 4.8 | 3.7 | SW | 175 | | | 175 | 0 | screens |
| 13-Oct-95 | 5 | 08:30 | 15:00 | 1.6 | 2.2 | NE | 125 | | | 125 | 0 | screens |
| 14-Oct-95 | Weekend | | | | | | | | | | | |
| 15-Oct-95 | Weekend | | | | | | | | | | | |
| 16-Oct-95 | Humidity outside specifications | | | | | | | | | | | |
| 17-Oct-95 | Humidity outside specifications | | | | | | | | | | | |
| 18-Oct-95 | Painting Only | | | | | | | | | | | |
| 19-Oct-95 | Humidity outside specifications | | | | | | | | | | | |
| 20-Oct-95 | 1 | 09:00 | 15:15 | 1.7 | 1.4 | SW | 125 | | | 125 | 0 | - |
| 21-Oct-95 | Weekend | | | | | | | | | | | |
| 22-Oct-95 | Weekend | | | | | | | | | | | |
| 23-Oct-95 | Public Holiday | | | | | | | | | | | |
| 24-Oct-95 | 5 | 08:15 | 14:30 | 0.7 | 1.1 | SW | 275 | | | 275 | 0 | - |
| 25-Oct-95 | Humidity outside specifications | | | | | | | | | | | |
| 26-Oct-95 | 5 | 08:00 | 14:00 | 2.1 | 1.7 | NE | 200 | | | 200 | 0 | - |
| 27-Oct-95 | 5 | 08:50 | 16:00 | 2.6 | 3.1 | NE | 275 | | | 275 | 0 | - |
| 28-Oct-95 | Weekend | | | | | | | | | | | |
| 29-Oct-95 | Weekend | | | | | | | | | | | |
| 30-Oct-95 | Humidity outside specifications | | | | | | | | | | | |
| 31-Oct-95 | 5 | 09:00 | 13:30 | 3.8 | 4.1 | NE | 300 | | | 300 | 0 | - |
| 01-Nov-95 | 3,5 | 09:30 | 13:30 | 1.8 | 2.2 | SW | 325 | 300 | | 625 | 0 | - |
| 02-Nov-95 | 3,5 | 08:15 | 14:00 | 3.1 | 2.9 | SW | 200 | 300 | | 500 | 0 | - |
| 03-Nov-95 | 3,5 | 08:30 | 13:00 | 0.8 | 2.6 | SW | 350 | 275 | | 625 | 0 | - |
| 04-Nov-95 | Weekend | | | | | | | | | | | |
| 05-Nov-95 | Weekend | | | | | | | | | | | |
| 06-Nov-95 | 3 | 08:15 | 16:00 | 2.7 | 1.6 | SW | 400 | | | 400 | 0 | - |
| 07-Nov-95 | 5 | 08:30 | 16:15 | 2.6 | 2.1 | NE | 375 | | | 375 | 0 | - |
| 08-Nov-95 | 1,3,5 | 08:30 | 16:15 | 0.7 | 1.6 | SW | 300 | 400 | 200 | 900 | 0 | - |
| 09-Nov-95 | Humidity outside specifications | | | | | | | | | | | |
| 10-Nov-95 | 3 | 08:15 | 16:15 | 2.1 | 1.8 | SW | 475 | | | 475 | 0 | - |
| 11-Nov-95 | Weekend | | | | | | | | | | | |
| 12-Nov-95 | Weekend | | | | | | | | | | | |
| 13-Nov-95 | 1 | 08:30 | 13:00 | 2.1 | 1.6 | SW,NE | 100 | | | 100 | 0 | - |
| 14-Nov-95 | Washdown | | | | | | | | | | | |
| 15-Nov-95 | 3 | 08:15 | 14:00 | 1.1 | 1.7 | S | 375 | | | 375 | 0 | - |
| 16-Nov-95 | Painting Only | | | | | | | | | | | |
| 17-Nov-95 | 3 | 08:30 | 16:00 | 1.7 | 0.8 | SW | 325 | | | 325 | 0 | - |
| 18-Nov-95 | Weekend | | | | | | | | | | | |
| 19-Nov-95 | Weekend | | | | | | | | | | | |
| 20-Nov-95 | Humidity outside specifications | | | | | | | | | | | |
| 21-Nov-95 | 3 | 08:30 | 14:15 | 2.7 | 3.1 | SW | 300 | | | 300 | 0 | - |
| 22-Nov-95 | 3 | 08:30 | 14:00 | 2.9 | 3.1 | NE | 275 | | | 275 | 0 | - |
| 23-Nov-95 | 3 | 08:30 | 16:00 | 4.3 | 3.8 | NE | 350 | | | 350 | 0 | - |

# ABRASIVE BLASTING DATA MA 1357 Auckland Harbour Bridge 1995/96

| | | Work Hours | | Wind Speed (m/s) | | | Abrasive | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE | Span | From | To | 0830 hrs | 1400 hrs | Dir | Used | | | Total | Recovered | Controls |
| 24-Nov-95 | Humidity outside specifications | | | | | | | | | | | |
| 25-Nov-95 | Weekend | | | | | | | | | | | |
| 26-Nov-95 | Weekend | | | | | | | | | | | |
| 27-Nov-95 | Humidity outside specifications | | | | | | | | | | | |
| 28-Nov-95 | Humidity outside specifications | | | | | | | | | | | |
| 29-Nov-95 | 5,1 | 08:30 | 16:15 | 0.5 | 1.1 | NE,NW | 350 | 150 | | 500 | 0 | - |
| 30-Nov-95 | 5 | 08:30 | 16:15 | 0 | 1.7 | SW | 350 | | | 350 | 0 | - |
| 01-Dec-95 | 5 | 08:30 | 14:00 | 2.3 | 1.1 | SW | 400 | | | 400 | 0 | - |
| 02-Dec-95 | Weekend | | | | | | | | | | | |
| 03-Dec-95 | Weekend | | | | | | | | | | | |
| 04-Dec-95 | 1,5 | 08:15 | 16:15 | 2.7 | 0.7 | NE | 125 | 300 | | 425 | 0 | - |
| 05-Dec-95 | 1,5 | 08:15 | 14:00 | 0 | 1.1 | NE | 125 | 325 | | 450 | 0 | - |
| 06-Dec-95 | 5,1 | 08:15 | 14:00 | 1.8 | 1.4 | SW | 275 | 75 | | 350 | 0 | - |
| 07-Dec-95 | 1,5 | 13:00 | 15:30 | 0.5 | 0.5 | SW | 725 | 125 | | 850 | 0 | - |
| 08-Dec-95 | 5,1 | 10:00 | 15:00 | 2.6 | 3.7 | SW | 425 | 850 | | 1275 | 0 | - |
| 09-Dec-95 | Weekend | | | | | | | | | | | |
| 10-Dec-95 | Weekend | | | | | | | | | | | |
| 11-Dec-95 | 1,5 | 08:30 | 16:15 | 4.1 | 5 | NE | 325 | 425 | | 750 | 0 | - |
| 12-Dec-95 | 1,5 | 08:30 | 16:15 | 4.5 | 4.7 | NE | 350 | 75 | | 425 | 0 | - |
| 13-Dec-95 | 1 | 08:30 | 16:15 | 4.8 | 4.3 | NE | 425 | | | 425 | 0 | - |
| 14-Dec-95 | 1 | 08:30 | 16:15 | 1.6 | 2.1 | NE | 100 | | | 100 | 0 | - |
| 15-Dec-95 | 1 | 08:30 | 16:15 | 1.6 | 2.1 | NE | 475 | | | 475 | 0 | - |
| 16-Dec-95 | Weekend | | | | | | | | | | | |
| 17-Dec-95 | Weekend | | | | | | | | | | | |
| 18-Dec-95 | 1 | 08:30 | 16:15 | 4.1 | 5 | NE | 125 | | | 125 | 0 | - |
| 19-Dec-95 | 1 | 08:30 | 16:15 | 2.3 | 5.3 | NE | 250 | | | 250 | 0 | - |
| 20-Dec-95 | 1 | 10:15 | 15:00 | 1 | 4.7 | NE | 250 | | | 250 | 0 | - |
| 21-Dec-95 | Humidity outside specifications | | | | | | | | | | | |
| 22-Dec-95 | Humidity outside specifications | | | | | | | | | | | |
| 23-Dec-95 | Weekend | | | | | | | | | | | |
| 24-Dec-95 | Weekend | | | | | | | | | | | |
| 25-Dec-95 | Public Holiday | | | | | | | | | | | |
| 26-Dec-95 | Public Holiday | | | | | | | | | | | |
| 27-Dec-95 | 1,3 | 09:00 | 15:30 | 3.7 | 3.3 | SW | 250 | 425 | | 675 | 0 | - |
| 28-Dec-95 | 1,3 | 08:35 | 15:15 | 3.4 | 3.8 | SW | 150 | ******* | | 1325 | 0 | - |
| 29-Dec-95 | 1,3 | 07:30 | 14:50 | 3.6 | 4.3 | SW | 475 | 325 | | 800 | 0 | - |
| 30-Dec-95 | Weekend | | | | | | | | | | | |
| 31-Dec-95 | Weekend | | | | | | | | | | | |
| 01-Jan-96 | Public Holiday | | | | | | | | | | | |
| 02-Jan-96 | Public Holiday | | | | | | | | | | | |
| 03-Jan-96 | 3 | 08:20 | 14:35 | 0 | 0.8 | NE | 450 | | | 450 | 0 | - |
| 04-Jan-96 | Painting Only | | | | | | | | | | | |
| 05-Jan-96 | Painting Only | | | | | | | | | | | |
| 06-Jan-96 | Weekend | | | | | | | | | | | |
| 07-Jan-96 | Weekend | | | | | | | | | | | |
| 08-Jan-96 | Painting Only | | | | | | | | | | | |
| 09-Jan-96 | - | - | - | - | - | - | - | - | - | - | - | - |
| 10-Jan-96 | Painting Only | | | | | | | | | | | |
| 11-Jan-96 | Painting Only | | | | | | | | | | | |
| 12-Jan-96 | Painting Only | | | | | | | | | | | |
| 13-Jan-96 | Weekend | | | | | | | | | | | |
| 14-Jan-96 | Weekend | | | | | | | | | | | |
| 15-Jan-96 | 1 | 09:30 | 15:00 | 0.8 | 0.8 | NE | 250 | | | 250 | 0 | - |
| 16-Jan-96 | 1 | 09:30 | 14:30 | 0.6 | 0 | NE | 300 | | | 300 | 0 | - |
| 17-Jan-96 | 1 | 09:45 | 14:30 | 1.8 | 1.2 | SW | 300 | | | 300 | 0 | - |
| 18-Jan-96 | 1 | 08:00 | 14:50 | 0.5 | 0 | E | 300 | | | 300 | 0 | |
| 19-Jan-96 | 1 | 08:45 | 14:30 | 1.1 | - | SW | 100 | | | 100 | 0 | |
| 20-Jan-96 | Weekend | | | | | | | | | | | |
| 21-Jan-96 | Weekend | | | | | | | | | | | |
| 22-Jan-96 | 1 | 08:05 | 14:35 | 2.7 | 3.1 | E/NE | 325 | | | 325 | 0 | |
| 23-Jan-96 | 1 | 09:30 | 15:00 | 1.5 | 1.5 | NE | 175 | | | 175 | 0 | |
| 24-Jan-96 | 1, 5 | 09:35 | 14:45 | 1.6 | 2.1 | SW | 150 | 325 | | 475 | 0 | |
| 25-Jan-96 | 1, 5 | 08:10 | 15:40 | 2.8 | 2.8 | SE | 125 | 275 | | 400 | 0 | |
| 26-Jan-96 | 5 | 08:20 | 14:35 | 2.2 | 1.7 | SE/SW | 350 | | | 350 | 0 | |
| 27-Jan-96 | Weekend | | | | | | | | | | | |
| 28-Jan-96 | Weekend | | | | | | | | | | | |
| 29-Jan-96 | Public Holiday | | | | | | | | | | | |
| 30-Jan-96 | 5 | 08:45 | 15:40 | 1.1 | 1.6 | SW | 175 | | | 175 | 0 | |
| 31-Jan-96 | 1 | 09:30 | 16:25 | 1.1 | 1.1 | NE | 125 | | | 125 | 0 | |
| 01-Feb-96 | 1 | 08:00 | 16:00 | 0.9 | 0.8 | NE | 175 | | | 175 | 0 | |
| 02-Feb-96 | 1/ Gas line | 08:10 | 15:10 | 0.5 | 2.5 | NE | 325 | 175 | | 500 | 0 | |
| 03-Feb-96 | Weekend | | | | | | | | | | | |
| 04-Feb-96 | Weekend | | | | | | | | | | | |

# ABRASIVE BLASTING DATA MA 1357 Auckland Harbour Bridge 1995/96

| | | Work Hours | | Wind Speed (m/s) | | | Abrasive | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE | Span | From | To | 0830 hrs | 1400 hrs | Dir | Used | | | Total | Recovered | Controls |
| 05-Feb-96 | Painting Only | | | | | | | | | | | |
| 06-Feb-96 | Public Holiday | | | | | | | | | | | |
| 07-Feb-96 | 1/Gas Pipe | 07:55 | 14:20 | 0 | 2.9 | NW | 300 | 50 | | 350 | 0 | |
| 08-Feb-96 | Washdown - Pier 3 to South Anchorage | | | | | | | | | | | |
| 09-Feb-96 | Washdown - Extensions | | | | | | | | | | | |
| 10-Feb-96 | Weekend | | | | | | | | | | | |
| 11-Feb-96 | Weekend | | | | | | | | | | | |
| 12-Feb-96 | 1 | 07:55 | 16:05 | 1.1 | 2.8 | NE | 275 | | | 275 | 0 | |
| 13-Feb-96 | 1 | 13:00 | 16:15 | 0 | 1.1 | SW | 175 | | | 175 | 0 | |
| 14-Feb-96 | 1 | 08:00 | 16:00 | 0 | 1.7 | SW | 350 | | | 350 | 0 | |
| 15-Feb-96 | 1 | 07:55 | 15:30 | 2.7 | 3.2 | SW | 200 | | | 200 | 0 | |
| 16-Feb-96 | 5 | 08:00 | 14:35 | 0.7 | 0 | SW | 325 | | | 325 | 0 | |
| 17-Feb-96 | Weekend | | | | | | | | | | | |
| 18-Feb-96 | 1 | | | 1.1 | 1.5 | SW | 575 | | | 575 | | |
| 19-Feb-96 | 5 | | | 0 | 1.7 | SW | 350 | | | 350 | 0 | |
| 20-Feb-96 | 5 | | | 0.7 | - | SW | 325 | | | 325 | 0 | |
| 21-Feb-96 | 5 | 08:20 | 14:50 | 0.7 | 0.9 | SW | 275 | | | 275 | 0 | |
| 22-Feb-96 | Washdown - Span 3 - 7 / North Viaduct | | | | | | | | | | | |
| 23-Feb-96 | 5 | 08:15 | 16:05 | 0.5 | 1 | SW | 250 | | | 250 | 0 | |
| 24-Feb-96 | Weekend | | | | | | | | | | | |
| 25-Feb-96 | 1 | 14:40 | | 6.2 | 5.1 | NE | 250 | | | 250 | | |
| 26-Feb-96 | 2,3,5 | 08:00 | 15:30 | 2.7 | 2.5 | E | 100 | 175 | 275 | 550 | 0 | |
| 27-Feb-96 | 2,3,5 | 08:20 | 16:05 | 1.9 | 3.7 | SW | 75 | 175 | 275 | 525 | 0 | |
| 28-Feb-96 | 2,3 | 09:00 | 15:00 | 2.7 | 3.5 | SW | 100 | 175 | | 275 | 0 | |
| 29-Feb-96 | 2,3 | 08:05 | 14:40 | 0 | 0.5 | SW | 175 | 125 | | 300 | 0 | |
| 01-Mar-96 | 1,2 | 08:05 | 14:15 | 0 | 0.5 | NE | 150 | 175 | | 325 | 0 | |
| 02-Mar-96 | Weekend | | | | | | | | | | | |
| 03-Mar-96 | 1 | 09:30 | 12:15 | 0 | 2.7 | SW | 225 | | | 225 | | |
| 04-Mar-96 | 1, 3 | 08:00 | 14:50 | 0.5 | 1.1 | SW | 325 | 175 | | 500 | 0 | |
| 05-Mar-96 | 1, 3 | 08:05 | 15:30 | 0 | 0.5 | NE | 450 | 125 | | 575 | 0 | |
| 06-Mar-96 | 1, 3 | 08:05 | 14:55 | 1.7 | 5 | SE | 100 | 200 | | 300 | 0 | |
| 07-Mar-96 | 1, 3 | 08:05 | 15:25 | 0.5 | 2.6 | NE | 300 | 150 | | 450 | 0 | |
| 08-Mar-96 | 1 | 07:55 | 15:10 | 0.5 | 1.5 | NE/SW | 225 | | | 225 | 0 | |
| 09-Mar-96 | Weekend | | | | | | | | | | | |
| 10-Mar-96 | Weekend | | | | | | | | | | | |
| 11-Mar-96 | | | | | | | | | | 0 | 0 | |
| 12-Mar-96 | | | | | | | | | | 0 | 0 | |
| 13-Mar-96 | | | | | | | | | | 0 | 0 | |
| 14-Mar-96 | | | | | | | | | | 0 | 0 | |
| 15-Mar-96 | | | | | | | | | | 0 | 0 | |
| 16-Mar-96 | Weekend | | | | | | | | | | | |
| 17-Mar-96 | Weekend | | | | | | | | | | | |
| 18-Mar-96 | | | | | | | | | | 0 | 0 | |
| 19-Mar-96 | | | | | | | | | | 0 | 0 | |
| 20-Mar-96 | | | | | | | | | | 0 | 0 | |
| 21-Mar-96 | | | | | | | | | | 0 | 0 | |
| 22-Mar-96 | | | | | | | | | | 0 | 0 | |
| 23-Mar-96 | Weekend | | | | | | | | | | | |
| 24-Mar-96 | Weekend | | | | | | | | | | | |
| 25-Mar-96 | | | | | | | | | | 0 | 0 | |
| 26-Mar-96 | | | | | | | | | | 0 | 0 | |
| 27-Mar-96 | | | | | | | | | | 0 | 0 | |
| 28-Mar-96 | | | | | | | | | | 0 | 0 | |
| 29-Mar-96 | | | | | | | | | | 0 | 0 | |
| 30-Mar-96 | Weekend | | | | | | | | | | | |
| 31-Mar-96 | Weekend | | | | | | | | | | | |
| 01-Apr-96 | Washdown - Above Walkways Spans 1 - 7 | | | | | | | | | | | |
| 02-Apr-96 | | | | | | | | | | 0 | 0 | |
| 03-Apr-96 | | | | | | | | | | 0 | 0 | |
| 04-Apr-96 | | | | | | | | | | 0 | 0 | |
| 05-Apr-96 | Public Holiday | | | | | | | | | | | |
| 06-Apr-96 | Weekend | | | | | | | | | | | |
| 07-Apr-96 | Weekend | | | | | | | | | | | |
| 08-Apr-96 | Public Holiday | | | | | | | | | | | |
| 09-Apr-96 | | | | | | | | | | 0 | 0 | |
| 10-Apr-96 | | | | | | | | | | 0 | 0 | |
| 11-Apr-96 | | | | | | | | | | 0 | 0 | |
| 12-Apr-96 | | | | | | | | | | 0 | 0 | |
| 13-Apr-96 | Weekend | | | | | | | | | | | |
| 14-Apr-96 | Weekend | | | | | | | | | | | |
| 15-Apr-96 | 1,3,6 | 09:30 | 15:25 | 1.5 | 2.8 | SW | 275 | 175 | 450 | 900 | 0 | |
| 16-Apr-96 | 1, 3 | 08:30 | 15:00 | 0.5 | 0.5 | NE | 275 | 125 | | 400 | 0 | |
| 17-Apr-96 | 1, 3, 6 | 10:15 | 15:15 | 0.5 | 1 | SW/NE | 275 | 125 | 500 | 900 | 0 | |

# ABRASIVE BLASTING DATA MA 1357 Auckland Harbour Bridge 1995/96

| | | Work Hours | | Wind Speed (m/s) | | | Abrasive | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE | Span | From | To | 0830 hrs | 1400 hrs | Dir | Used | | | Total | Recovered | Controls |
| 18-Apr-96 | 1, 6 | 12:50 | 15:35 | 1 | 1 | NE | 175 | 125 | | 300 | 0 | |
| 19-Apr-96 | Washdown - East & West Extensions | | | | | | | | | | | |
| 20-Apr-96 | Weekend | | | | | | | | | | | |
| 21-Apr-96 | Weekend | | | | | | | | | | | |
| 22-Apr-96 | 1, 3, 6 | 07:55 | 15:10 | 3.9 | 4.6 | W/SW | 225 | 175 | 125 | 525 | 0 | |
| 23-Apr-96 | 1, 6 | 07:55 | 15:25 | 0 | 2.5 | SW | 300 | 275 | | 575 | 0 | |
| 24-Apr-96 | 1, 6 | 08:05 | 15:55 | 1.5 | 3.7 | SW | 225 | 600 | | 825 | 0 | |
| 25-Apr-96 | Public Holiday | | | | | | | | | | | |
| 26-Apr-96 | Painting Only | | | | | | | | | | | |
| 27-Apr-96 | Weekend | | | | | | | | | | | |
| 28-Apr-96 | Weekend | | | | | | | | | | | |
| 29-Apr-96 | Washdown - East & West Extensions | | | | | | | | | | | |
| 30-Apr-96 | 1 | 08:00 | 14:55 | 1.7 | 3.5 | SW | 275 | | | 275 | 0 | |
| 01-May-96 | 1 | 08:00 | 15:25 | 3.5 | 4.5 | SW | 300 | | | 300 | 0 | |
| 02-May-96 | 1, 3, 7 | 08:00 | 15:25 | 0.5 | 1.5 | SW/SE | 150 | 150 | 325 | 625 | 0 | |
| 03-May-96 | 1, 7 | 08:00 | 14:40 | 0 | 0.5 | SW | 325 | 275 | | 600 | 0 | |
| 04-May-96 | Weekend | | | | | | | | | | | |
| 05-May-96 | Weekend | | | | | | | | | | | |
| 06-May-96 | 1, 3, 6 | 09:45 | 13:00 | 0.5 | 1.5 | SW | 300 | 150 | 400 | 850 | 0 | |
| 07-May-96 | 1, 3, 7 | 09:55 | 14:30 | 0.5 | 0.5 | SW | 175 | 150 | 300 | 625 | 0 | |
| 08-May-96 | 1, 3, 7 | 08:05 | 15:00 | 0.5 | 1 | SW/W | 375 | 150 | 400 | 925 | 0 | |
| 09-May-96 | 1, 7 | 08:15 | 15:00 | 0.5 | 2.5 | SW | 300 | 175 | | 475 | 0 | |
| 10-May-96 | 1, 7 | 08:15 | 15:25 | 0.5 | 0.5 | SW | 375 | 275 | | 650 | 0 | |
| 11-May-96 | Weekend | | | | | | | | | | | |
| 12-May-96 | Weekend | | | | | | | | | | | |
| 13-May-96 | i, 3, 7 | 08:00 | 15:25 | 0.5 | 1.1 | NE | 75 | 75 | 225 | 375 | 0 | |
| 14-May-96 | 1, 7 | 08:00 | 15:30 | 1.7 | 3.5 | NE/NW | 75 | 400 | | 475 | 0 | |
| 15-May-96 | Washdown - Above Walkways Spans 1 - 7 | | | | | | | | | | | |
| 16-May-96 | 7 | 08:05 | 15:30 | 1.5 | 3.7 | SW | 425 | | | 425 | 0 | |
| 17-May-96 | 7 | 08:05 | 16:00 | 1.5 | 0 | SW | 275 | | | 275 | 0 | |
| 18-May-96 | Weekend | | | | | | | | | | | |
| 19-May-96 | Weekend | | | | | | | | | | | |
| 20-May-96 | Washdown - Above Walkways Spans 1 - 7 / East & West Extensions | | | | | | | | | | | |
| 21-May-96 | Washdown - East & West Extensions | | | | | | | | | | | |
| 22-May-96 | Washdown - East & West Extensions | | | | | | | | | | | |
| 23-May-96 | 5 | 08:00 | 15:15 | 3.5 | 5.1 | SW | 75 | | | 75 | 0 | |
| 24-May-96 | 5 | 11:45 | 15:05 | 4.5 | 3.5 | SW | 75 | | | 75 | 0 | |
| 25-May-96 | Weekend | | | | | | | | | | | |
| 26-May-96 | Weekend | | | | | | | | | | | |
| 27-May-96 | Painting Only | | | | | | | | | | | |
| 28-May-96 | 5 | 16:05 | 16:20 | 0 | 0 | - | 50 | | | 50 | 0 | |
| 29-May-96 | Painting Only | | | | | | | | | | | |
| 30-May-96 | Painting Only | | | | | | | | | | | |
| 31-May-96 | Painting Only | | | | | | | | | | | |
| 01-Jun-96 | Weekend | | | | | | | | | | | |
| 02-Jun-96 | Weekend | | | | | | | | | | | |
| 03-Jun-96 | Public Holiday | | | | | | | | | | | |
| 04-Jun-96 | Painting Only | | | | | | | | | | | |
| 05-Jun-96 | 1 | 15:00 | | 0 | 0 | - | 50 | | | 50 | 0 | |
| 06-Jun-96 | Washdown | | | | | | | | | | | |
| 07-Jun-96 | 1 | 15:00 | | 1.5 | 1.5 | SW | 350 | | | 350 | 0 | |
| 08-Jun-96 | Weekend | | | | | | | | | | | |
| 09-Jun-96 | Weekend | | | | | | | | | | | |
| 10-Jun-96 | | | | | | | | | | 0 | 0 | |
| 11-Jun-96 | | | | | | | | | | 0 | 0 | |
| 12-Jun-96 | | | | | | | | | | 0 | 0 | |
| 13-Jun-96 | | | | | | | | | | 0 | 0 | |
| 14-Jun-96 | | | | | | | | | | 0 | 0 | |
| 15-Jun-96 | Weekend | | | | | | | | | | | |
| 16-Jun-96 | Weekend | | | | | | | | | | | |
| 17-Jun-96 | | | | | | | | | | 0 | 0 | |
| 18-Jun-96 | | | | | | | | | | 0 | 0 | |
| 19-Jun-96 | | | | | | | | | | 0 | 0 | |
| 20-Jun-96 | | | | | | | | | | 0 | 0 | |
| 21-Jun-96 | | | | | | | | | | 0 | 0 | |
| 22-Jun-96 | Weekend | | | | | | | | | | | |
| 23-Jun-96 | Weekend | | | | | | | | | | | |
| 24-Jun-96 | | | | | | | | | | 0 | 0 | |
| 25-Jun-96 | | | | | | | | | | 0 | 0 | |
| 26-Jun-96 | | | | | | | | | | 0 | 0 | |
| 27-Jun-96 | | | | | | | | | | 0 | 0 | |
| 28-Jun-96 | | | | | | | | | | 0 | 0 | |
| 29-Jun-96 | Weekend | | | | | | | | | | | |

# ABRASIVE BLASTING DATA MA 1357 Auckland Harbour Bridge 1995/96

| | | Work Hours | | Wind Speed (m/s) | | | Abrasive | | | | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE | Span | From | To | 0830 hrs | 1400 hrs | Dir | Used | | | Total | Recovered | |
| 30-Jun-96 | Weekend | | | | | | | | | | | |
| 01-Jul-96 | | | | | | | | | | 0 | 0 | |
| 02-Jul-96 | | | | | | | | | | 0 | 0 | |
| 03-Jul-96 | | | | | | | | | | 0 | 0 | |
| 04-Jul-96 | | | | | | | | | | 0 | 0 | |
| 05-Jul-96 | | | | | | | | | | 0 | 0 | |
| 06-Jul-96 | Weekend | | | | | | | | | | | |
| 07-Jul-96 | Weekend | | | | | | | | | | | |
| 08-Jul-96 | | | | | | | | | | 0 | 0 | |
| 09-Jul-96 | | | | | | | | | | 0 | 0 | |
| 10-Jul-96 | | | | | | | | | | 0 | 0 | |
| 11-Jul-96 | | | | | | | | | | 0 | 0 | |
| 12-Jul-96 | | | | | | | | | | 0 | 0 | |
| 13-Jul-96 | Weekend | | | | | | | | | | | |
| 14-Jul-96 | Weekend | | | | | | | | | | | |
| 15-Jul-96 | | | | | | | | | | 0 | 0 | |
| 16-Jul-96 | | | | | | | | | | 0 | 0 | |
| 17-Jul-96 | | | | | | | | | | 0 | 0 | |
| 18-Jul-96 | | | | | | | | | | 0 | 0 | |
| 19-Jul-96 | | | | | | | | | | 0 | 0 | |
| 20-Jul-96 | Weekend | | | | | | | | | | | |
| 21-Jul-96 | Weekend | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | Av. Wind Speed | | 1.78 | 2.34 | | Total Quantity Us | | | 60675 | 0 | |

WORKS
Consultancy Services