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APPENDIX A

FLINDERS UNIVERSITY SOCIAL AND BEHAVIOURAL RESEARCH ETHICS COMMITTEE INFORMATION PACKAGE AND SIGNED CONSENT FORM



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18 March 2009

Dear Sir or Madam,

This letter is to introduce James Hunter who is a PhD candidate in the Department of Archaeology at Flinders University. James is conducting doctoral level research. He would be most grateful if you would volunteer to spare the time to assist in this project, by participating in an interview. No more than 45 minutes on one occasion would be required. He will produce his student card or a .pdf copy, which carries a photograph, as proof of identity.

This research project will be submitted to the Flinders University Social and Behavioural Research Ethics Committee at their next meeting in April. Should you have any questions about the Committee or the approval process, please contact the Committee Secretary on (08) 8204 4507 or via e-mail at Sandy.Huxtable@flinders.edu.au.

At any stage you have a right to withdraw your comments. You do not have to answer a question if you do not wish to. James intends to transcribe the results of the interview into his thesis. If you wish, you may remain anonymous in any publication featuring the interview material. This is the only interview that will be undertaken for this thesis and as a result, you may be identifiable in the thesis, even if you choose not to be named. James will deliver the interview questions to your email address and, subsequent to the interview, will provide you with a copy of the complete transcript should you require one.

If you have any questions please contact James on (08) 8201 5257 or (04) 5040 7818.

Thank you for your assistance,

Associate Professor Mark Staniforth
Program in Maritime Archaeology
Department of Archaeology

inspiring
achievement



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LETTER OF INTRODUCTION

18 March 2009

Dear Sir or Madam,

I am a doctoral student in the Department of Archaeology at Flinders University, and will be undertaking research leading to the production of a thesis or other publications pertaining to the deployment and discard of colonial-era torpedo boats and related onshore facilities in Australia and New Zealand between 1884 and 1924.

I would be most grateful if you would volunteer to assist in this project by granting an interview that covers certain aspects of my research topic. No more than one hour on one occasion at a time and venue of your choice would be required.

Be assured that any information provided will be treated in the strictest confidence and that you will not be individually identifiable in the resulting thesis, report or other publications, unless you should state otherwise in writing. You are, of course, entirely free to discontinue your participation at any time or to decline to answer particular questions.

Because I would like to make an audio and video recording of the interview, I wish to seek your consent (on the attached form) to record the interview, and use the recording or a transcription of it in preparing his thesis or other publications. This will be done on condition that your name or identity is not revealed, unless otherwise specified by you in writing.

Any enquiries you may have concerning this project should be directed to me at the address provided above or by telephone on 8201 5257 (work) or 04 5040 7818 (cell). Alternatively, I can be reached by fax on 8201 2784 or by email (james.hunter@flinders.edu.au).

Thank you for your attention and assistance.

Yours sincerely

James W. Hunter, III
Ph.D. Candidate, Maritime Archaeology
Department of Archaeology

SH 4 April 2008

INTERVIEW QUESTIONS

James W. Hunter, III

1. What are your name, age and place of birth?
2. Are you the child featured in an archival photograph of the hulk of the torpedo boat *Defender* (ca. 1940) housed in the collection of the Lyttelton Museum?
3. What can you tell me about the photograph (i.e., who took the photograph and when)?
4. Do you have recollections of that day and of *Defender's* hulk in general?
5. What components of *Defender* were still visible when the photograph was taken?
6. How were these remnants (approximately) oriented in relation to the shoreline and any other visible landmarks (i.e., roads, structures)?
7. What was the overall condition of the visible portion(s) of the boat?
8. Did it appear as though the boat had obviously been salvaged of material?
9. Did you explore the interior of the boat? If yes, do you recall any features (structural or otherwise) of note? What was the overall condition of the boat's interior?
10. Aside from deterioration associated with its exposed condition outside (i.e., corrosion of exposed portions of the hull), did you notice any other significant damage that may have stemmed from human intervention or activities?
11. Do you recall if there was a general attitude that local people had about the boat (i.e., an object of interest, an historic landmark, a good source of scrap metal, an eyesore)?
12. What did Lyttelton locals think of the town's former torpedo boat defences? Were they generally positive or negative?
13. Did your family have stories about *Defender* (either as a wreck or during its military service in Lyttelton), and if so, could you briefly discuss them?
14. Did you visit the remnants of *Defender* on any other occasion or occasions? If so, do you recall whether there was any significant change in their appearance and/or condition?
15. Have you visited the reconstructed portions of *Defender's* hull currently on display at the Thornycroft Torpedo Boat Museum in Lyttelton? If so, does their condition differ significantly from what you remember as a child?

CONSENT FORM FOR PARTICIPATION IN RESEARCH
by audio-taped and videotaped interview

I CRIVE GOODENOUGH

being over the age of 18 years hereby consent to participate as requested in the audio/video interview for the research project entitled "Throwaway Navies: Colonial Australasian Torpedo Boats and the Archaeology of Defence and Discard."

1. I have read the information provided.
2. Details of procedures and any risks have been explained to my satisfaction.
3. I agree to audio/video recording of my information and participation.
4. I am aware that I should retain a copy of the Consent Form for future reference.
5. I understand that:
 - I may not directly benefit from taking part in this research.
 - I am free to withdraw from the project at any time and am free to decline to answer particular questions.
 - While the information gained in this study will be published as explained, I will not be identified, and individual information will remain confidential, unless I specify otherwise in writing.
 - Whether I participate or not, or withdraw after participating, will have no effect on any treatment or service that is being provided to me.
 - Whether I participate or not, or withdraw after participating, will have no effect on my progress in my course of study, or results gained.
 - I may ask that the recording/observation be stopped at any time, and that I may withdraw at any time from the session or the research without disadvantage.

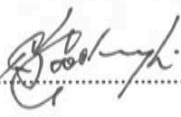
Participant's signature.....Crive Goodenough.....Date.....28/4/09.....

I certify that I have explained the study to the volunteer and consider that she/he understands what is involved and freely consents to participation.

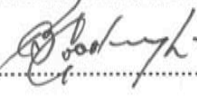
Researcher's name.....  JAMES W. HUNTER, III

Researcher's signature.....  Date..... 6 MAY 2009

8. I, the participant whose signature appears below, have read a transcript of my participation and agree to its use by the researcher as explained.

Participant's signature.....  Date..... 23/4/09.

9. I, the participant whose signature appears below, have read the researcher's report and agree to the publication of my information as reported.

Participant's signature.....  Date..... 23/4/09.

APPENDIX B

TRANSCRIPTION OF INTERVIEW WITH CLIVE GOODENOUGH, MELBOURNE, VICTORIA (20 JUNE 2009)

Interview with Clive Goodenough, 20 June 2009

James Hunter (JH): So, first question—pretty basic: what are your name, age and place of birth?

Clive Goodenough (CG): Oh! Well, okay: Clive Goodenough, date of birth was 27 October 1940 in Christchurch, New Zealand.

JH: Excellent. And, are you the child featured in an archival photograph of the hulk of the torpedo boat *Defender*, housed in the collection of the Lyttelton Museum?

CG: I am. Yes. The photo was taken around about 1950; I would have been about 10 years old at the time.

JH: Okay, great! My next question, of course...that actually went right into it, was what you could tell me about the photograph? Who took the photograph? When?

CG: Um...when...well, it would have been about 1950. It would have invariably...most likely been during the Easter holiday period. Because we used to spend all our Easter holidays over in close proximity to Purau Bay, where the torpedo boat was beached. And the photo would have been taken probably by my father, and we would have actually been, as a family...probably would have been on a walk around to Ripa Island. We used to invariably go...we used to holiday at a cottage in Diamond Harbour, and from Diamond Harbour Purau is the next bay around on Lyttelton Harbour. We'd walk around there and go to Ripa Island. Back in those days, Ripa Island had a wooden footbridge connecting it to the mainland. The bridge is no longer there. There's only boat access to the jetty on Ripa Island. And we used...there was, back in those days, an elderly couple, a retired couple, that were the caretakers of the island. It was a Mr. and Mrs. Bumstead—I remember because their grandson was in my class at primary school.

JH: Oh! Great! [Laughs]

CG: Yeah, and they lived...they had their residential quarters on Ripa Island, and there was a connecting bridge and you used to be able to walk down there. Go exploring all of the gun emplacements and everything on Ripa Island. So, invariably on all the walks around to Ripa Island from Diamond Harbour we'd stop and, you know, and spend some time fiddling around on the old torpedo boat where she was beached.

JH: So, in terms of recollections about the hulk, what do you remember about it in general? Its condition and that sort of thing?

CG: Well, its condition was pretty bad. I mean, it was half-buried in the sand dunes—just the drifting sand had covered up a lot of it. It was pretty badly corroded; parts of it had rusted away, of course, in the process of it having been hauled high. These are only details that I've become aware of more recently. I wasn't aware of all the details of it when I was a 10-year-old, but we sometimes—on occasions other than the family walks around Ripa Island—some of the mates that I'd be playing with in the holiday village at Diamond

Harbour...we'd just go around there—it was a 20-minute walk from Diamond Harbour—me and a group of boys we'd go around there and just play on the wreck. And, as I say, it was in pretty bad condition, but part of that condition, of course, I had become aware of more recently...it was the fact that it had been broken in half in the process of being dragged up on the beach from the high water line.

JH: In terms of components, do you remember what components of the hull were still visible at the time?

CG: Some. There wasn't much—it was pretty well stripped of most of its attachments, but one that I do particularly remember was a sort of hoop-shaped metal fitting on the side just forward of the conning tower. And in more recent times, having inspected the drawings of the torpedo boat, I now realise that this was a fastening for a lifting sling...for the thing to be craned. And we used to actually use this thing to clamber up on to the hull. In fact, in the photo it's quite clearly visible.

JH: Yeah, yeah!

CG: In the photo [shows photograph to J. Hunter] you can see it just there.

JH: That's just amazing! That is fantastic. [Laughs] Just incredible...such a great image. Do you remember how...what you did see...how it was oriented, relative to the shoreline and some other visible landmarks—if there was anything there? I know there was a road that went by there...

CG: Well, it [*Defender*] was running pretty well parallel to the shoreline.

JH: Okay, yeah.

CG: Yeah, I mean...because the road was actually running just along there [points to photograph] between me and the house, the road is running along there...

JH: Yeah...

CG: And there was a bit of a creek running down into the water from up in the hills...there was a creek, and there was a bridge...and you'd come along the road and cross the bridge, and immediately after you'd cross the bridge you'd go off to the left down into the sand dunes...

JH: And there it was, huh?

CG: Yeah! And there it was—up above the high-tide line.

JH: Great! Let's see...you talked a little about the [boat's] condition as being poor, and it did look like—to your mind at least—it looked like the boat had been salvaged of material. People had taken things off of it...

CG: Oh yeah, yeah! It had obviously been stripped of a lot of its componentry [sic]. There was just the bare shell of it left. Funny thing was that back in those days—I'm talking about, you know, sort of 1950-ish—it was commonly referred to as “the submarine.” I mean...I think that just the fact that it was armed with a torpedo...and people associated torpedoes with submarines. And it had a conning tower, and of course submarines have conning towers, so...it was commonly referred to as “the submarine.” I didn't become aware of the exact difference...that it was in fact just a surface torpedo boat until some considerable time later.

JH: Did you have a chance to look at the interior of the boat when you played on it?

CG: No, you couldn't. The interior was pretty well covered up with...you know, was half-buried in the sand dunes and whatever. You couldn't see anything of the interior, other than just the interior of the conning tower—as in the photo there. That was all you could really see of it, but as small boys that didn't bother us—we could...

JH: Burrow in there?

CG: Yeah! We could still play sailors and pirates, or whatever the fantasy was at the time on the old wreck [Laughs].

JH: That's fantastic—it's the kind of thing I wish I would've had...you know, we didn't have anything like that when I was growing up, but wow—that's fantastic! Aside from the deterioration associated with the fact it was corroding—it was exposed—did you see any other significant damage that may have stemmed from human intervention? Aside from it being, I guess, broken in half—that was a fairly obvious thing—like, anyone might have beat on it, or did anything to it really...

CG: Nothing that I can really recall, or nothing that particularly registered with me at the time. Because, obviously at the time I never realised the significance of it—I never thought that 60 years later [Laughs] I'd be trying to drag up these bloody memories about this!

JH: Do you recall if there was a general attitude that the locals had about the boat? My examples would be whether it was an object of interest, an historic landmark, a good source of scrap metal, an eyesore, or whether it...

CG: I think it fell under the “eyesore” category. Yeah...there was no...around that period, there was no interest in historical issues. Very little interest in the history of...not only the torpedo boat, but of any darn thing now. It was early post-war years, and people were more interested in, you know, getting the world back on its feet again. And...just not interested in preserving things.

JH: Less looking back, and more looking forward...

CG: Yeah!

JH: Sure. Did you get...and you may not remember this...but did you get an impression from the locals in Lyttelton what they thought of the torpedo boat defences? Whether they

thought...if they brought it up in conversation...whether they thought it was a generally positive or negative view of those defences?

CG: I think...the defences overall—not only the torpedo boat, but the Ripa Island, Battery Point, all the harbour defences for the Russian Scare of that period—yeah, I think generally it was a pretty positive attitude.

JH: Did your family, in particular, have stories about *Defender*—either as a wreck, or maybe even during its military service in Lyttelton?

CG: No...well, the time of its naval service was before my family's time...

JH: Okay.

CG: Whilst my mum's family, the Johnston family, were very well known Lyttelton people, they basically didn't arrive in Lyttelton until 1909. So, they didn't have any knowledge, although on that DVD that was made on the torpedo boat [the Thornycroft Torpedo Boat Museum's *Insult to Empire*] they mentioned the Lyttelton Regatta, and the fact that the torpedo boat sort of 'performed', if you like, at the Lyttelton Regatta...

JH: Right...

CG: The Lyttelton Regatta back in those days was pretty much an ongoing annual event, because I remember recalling my mother talking about her memories of the Lyttelton Regatta in her days there.

JH: So...did you visit the remnants of the *Defender* on any other occasion after when you were photographed, and if so, do you recall if there was any significant change to the hulk after that?

CG: Yeah, two or three occasions, you know, throughout the 1950s. When on one occasion...it would have been oh, probably about 1955...when on one occasion in particular when I remember when I was in high school and I was involved with the school tramping club—or what they call a bush-walking club here, but in New Zealand it's called "tramping." And the school tramping club...we went off on a hike over the hills...Banks Peninsula...one weekend, and out of the time...what we had done, in effect, was from Lyttelton we'd caught the ferry launch across to Diamond Harbour and then started hiking from there. And we went over to Port Leavey, which is another bay further over, and on the way there, of course, the route to Port Leavey goes through Purau Bay, so we spent some time sort of just fooling around on the old torpedo boat wreck. And then, of course, around about 1959 it was buried completely...

JH: Oh yeah...

CG: So, yeah...I mean, there were numerous occasions over a period of about, close to 10 years I suppose, at various stages of my boyhood...youth...I had occasion to sort of play around on the wreck.

JH: Great! So, have you visited the reconstructed portions of the hull currently on display at the [Thornycroft Torpedo Boat] Museum in Lyttelton, and if so, does their condition differ significantly from what you remember?

CG: No, I haven't. I endeavoured to do so just back last October when I was on a trip over to Christchurch, but unfortunately at the time the Torpedo Boat Museum at Magazine Bay was closed. But around in the port at the Lyttelton Museum they gave me the details of the contact for it—a chap by the name of John Cleaver. And I subsequently communicated with John Cleaver and pointed out to him that I was the small boy in the photo that they had on display in the museum [Laughs]. And you know the rest of the story...

JH: Oh yeah!

CG: Because John forwarded my e-mail to you...

JH: They were thrilled, and I was even more thrilled, so that worked out really well. Well, that's great! That answers all of my questions. Is there anything else you can think of that might need to be on the record before I conclude the [interview]?

CG: I don't know. I...just the fact that I am a very keen amateur historian, and I'm also mad on boats [and] ships. I've been a nautical yachtsman for many, many years. Can't believe around here that somebody's interested in boats, isn't it? You've got all the bloody maritime paraphernalia, the table, and the [ship] models...

JH: [Laughs] It's incredible. Absolutely incredible!

CG: ...lamps...ship's lamps [Laughs]

JH: It's great...absolutely amazing! All the books!

CG: Yeah, so I...because of the fact that the [Thornycroft Torpedo Boat] Museum had the photo of me on the torpedo boat...it's a bit of maritime history...it's a bit of family history—the two sort of combined! And how it came about was, as I said, my mother was of a Lyttelton family—the Johnstons—who were well known, and I can't remember exactly how many years ago it was that they set up the regional Lyttelton Museum. I think it was probably in the 1970s. And the curator of the museum, a chap Norris, was known quite well to my mother. My mum knew the Norris family from her days as a girl in Lyttelton, and apparently they were advertising for locals and any sort of memorabilia, or whatever they'd be prepared to give the museum. So, mum offered this photo of me on the old torpedo boat, and it was displayed in the Lyttelton Museum for quite a number of years. And then eventually, of course, they set up the more specific Torpedo Boat Museum and the photo was transferred.

JH: Great! All right. Well thank you very much Clive for your time—that's excellent!

CG: Once I got involved, of course, in the torpedo boat after my trip over there [New Zealand] last year, and then I looked at the website and all the specifications, and everything...and being quite experienced in the design and construction of steel yachts, I

know there's a ratio of length to displacement and so on. When I read that this thing was 63 feet long and only displaced 12 tonnes, and she had all this bloody steam machinery and boilers and steam engines—which were bloody heavy—I thought, how the hell could they build a 63-foot boat that only displaces 12 tonnes? It's impossible! The plating was only 1/16-inch thick! That's why it didn't last; they weren't built to last!

JH: [Laughs] No...

CG: They were never built to last; they were bloody disposable, throwaway things. I mean, 1/16-inch plating—it's absolutely laughable! And that's how they kept the displacement down on them, of course. She was so lightly-plated, and they say that the conning tower was armour-plated to protect the helmsman—that's fine, but none of the bloody rest of it would have stopped a bullet! You know, 1/16th plate would never stop a bullet...

JH: Hit it below the waterline, right [Laughs]? Piece of cake...

CG: Yeah!

JH: Excellent.

APPENDIX C

SCOPE OF WORK SUBMITTED TO DEFENCE SA OUTLINING PROPOSED EXCAVATION OF THE NORTH ARM TORPEDO STATION

Proposed Scope of Work and Site Management Plan: Test Excavation of the Former North Arm Torpedo Station, Port Adelaide



Compiled by James W. Hunter, III

Submitted to:

Defence SA
Level 4, 151 Pirie Street
Adelaide, SA 5000

April 2010

PROPOSED SCOPE OF WORK AND SITE MANAGEMENT PLAN: TEST EXCAVATION OF NORTH ARM TORPEDO STATION, PORT ADELAIDE

SCOPE OF WORK

Introduction

James Hunter, a PhD candidate in the Maritime Archaeology Program at Flinders University, is interested in conducting limited archaeological investigations at the site of the North Arm Torpedo Station in Port Adelaide as part of his doctoral thesis research. The site is located on property immediately adjacent to Moorhouse Road in Port Adelaide (Figure 1). This property is currently under ownership of South Australia's Minister for Economic Development and administered by Defence SA (DSA). The general aims of the proposed test excavations will be to investigate the integrity and extent of archaeological deposits and structures associated with the torpedo station site, and compare the design, composition and construction attributes of its structural features with those of other torpedo stations throughout Australasia and the United Kingdom. The excavation is expected to take place between 10 and 23 May 2010. What follows is a proposed scope of work that places the North Arm Torpedo Station within its historic context, explores previous archaeological research conducted at the site, discusses the extent and duration of fieldwork associated with the proposed research design, and outlines protocols to be followed in the event archaeological material is encountered.

Historical Background

Following the end of the Crimean War (1854-1856), colonial authorities in Australia expressed concern about foreign military designs on British territories in the South Pacific. Worry turned to alarm following the withdrawal of British troops from Australia in 1870, and subsequent rumours of Russian—and later French and German—naval deployments to the region. In response, a number of committees and commissions were established within the Australian colonies—including South Australia—to report on existing defensive measures and recommend ways of improving them. A small number of new coastal fortifications and gun emplacements were augmented by the establishment of a torpedo station on 13 acres of swampland at the confluence of the Port River and North Arm. The site's locale was strategically sound, as it was the closest defensive position to the Port River mouth on the Adelaide side of the waterway (Pennock, 1997: 49).

PROPOSED SCOPE OF WORK AND SITE MANAGEMENT PLAN: TEST EXCAVATION OF NORTH ARM TORPEDO STATION, PORT ADELAIDE



Figure 1. North Arm Torpedo Station site location and boundary. Map and aerial photograph images courtesy Google Maps and Google Earth.

The facility, known officially as the North Arm Torpedo Station, was constructed during the latter half of the 1880s and comprised several structures, including a main hall and lecture room, gunner's storeroom, carpenter's and blacksmith's workshops, torpedo room, magazine, detonator shed, and caretaker's quarters. A tramway linked the station's primary buildings with a small jetty that extended into the Port River. In later years, a 6-in. EOC/Armstrong breech-loading naval gun was installed near the jetty, and a slipway and shed for a small torpedo boat was constructed on shoreline fronting the North Arm. All facilities that comprised the nucleus of the station were built atop a narrow strip of reclaimed

PROPOSED SCOPE OF WORK AND SITE MANAGEMENT PLAN: TEST EXCAVATION OF NORTH ARM TORPEDO STATION, PORT ADELAIDE

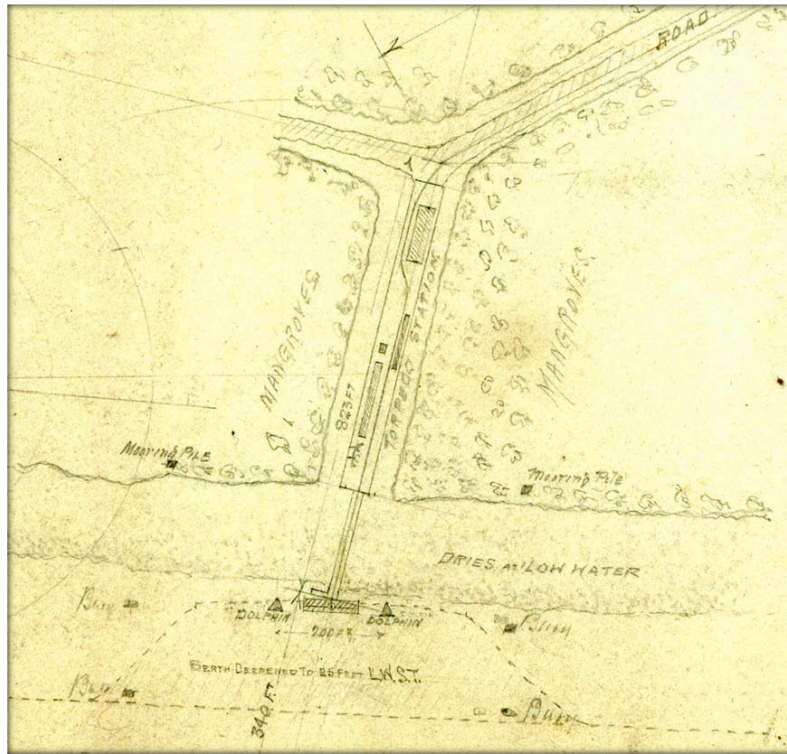


Figure 2. Close-up of map of North Arm Torpedo Station, ca. 1903, showing the arrangement of structures associated with the facility. North is oriented to approximate left of map. Image courtesy Jan Perry Private Collection.

land within the surrounding mangroves (Figure 2). Consequently, the site could only reliably be accessed via watercraft (Healey, 1999; Pennock, 1997; Rodda, 1996; Pennock, n.d.). In 1895, Chief Petty Officer Henry Perry was appointed Caretaker of the Torpedo Station. Perry immigrated to South Australia from England in 1883 and served the South Australian Naval Force as a crewman aboard the warship HMCS *Protector*. Perry and his family, including wife Harriet and children Eliza, Mabel, Harry, Hilda, Edith and Mary, would live in a small wood-framed residence at the station for nearly 20 years, occasionally sharing their living space with other servicemen on short-term assignment to the torpedo station from

PROPOSED SCOPE OF WORK AND SITE MANAGEMENT PLAN: TEST EXCAVATION OF NORTH ARM TORPEDO STATION, PORT ADELAIDE

Protector. This included Chief Stoker George Stuart, who assisted Perry with the facility's upkeep (Couper-Smartt and Courtney, 2003: 287-288; Healey, 1999: 7).

The North Arm Torpedo Station remained in active service until about 1916, when plans emerged for the land on which the facility was located to be transferred from Commonwealth control to the South Australian government. Although the station was operational during the First World War, and CPO Perry was listed as a "general workman" in its employ as late as 1920, it was eventually decommissioned, dismantled, and the land upon which it was located transferred to State ownership by 1924. Since that time, the site has been covered by landfill and used primarily as waste ground; however, visible traces of the station exist in the form of barely-discernible embankments marking the locations of some of the buildings (Figure 3). In 1961, the Armstrong gun was discovered in the riverbank near the former jetty during land reclamation activities (Healey, 1999: 8; Pennock, 1997: 54; Rodda, 1996: 2-4; Pennock, n.d: 6). It is owned by Port Adelaide RSL and currently kept within a fenced enclosure at a vacant lot immediately adjacent to Semaphore Road in the Port Adelaide suburb of Birkenhead (Figure 4).

Previous Investigations

In September 2000, the North Arm Torpedo Station site was visited by staff and students affiliated with the Department of Archaeology at Flinders University. The purpose of the investigation was to conduct a visual survey of the site as a practical component of the Flinders University maritime archaeology topic "Underwater and Coastal Archaeology" (ARCH 3005). Transects established as part of this survey were oriented north-to-south near the western periphery of the site. Material culture encountered by survey participants largely comprised modern construction material and rubbish, with no definitive evidence of artefacts or infrastructure associated with the torpedo station (Treloar and Treloar, 2001).

In 2004, the torpedo station was the subject of a much more comprehensive Honours archaeology thesis project coordinated by Flinders University student Martin Wimmer. At the time, the State Government Land Management Corporation owned the property upon which the site is located, and granted Wimmer and his field team unrestricted access to all

PROPOSED SCOPE OF WORK AND SITE MANAGEMENT PLAN: TEST EXCAVATION OF NORTH ARM TORPEDO STATION, PORT ADELAIDE



Figure 3. Aerial photograph of North Arm Torpedo Station, ca. 1961, overlaid on an aerial photograph of the modern landscape. Of particular interest is a linear feature that may represent a portion of the former torpedo station magazine foundation. Archival photograph courtesy Jan Perry Private Collection; modern aerial image courtesy Google Earth.

site loci under its purview. Archaeological research conducted in 2004 included a pre-disturbance survey of visible material culture, followed by a total station mapping project that plotted all identifiable elements of the torpedo station's structures and other archaeological features and projected them on an ortho-rectified digital chart. A magnetometer survey was employed to locate and identify a large steel shield associated with the Armstrong gun (but reportedly not present during its 1961 recovery from the site), as well as other iron objects that may have originated from the torpedo station. Field research

PROPOSED SCOPE OF WORK AND SITE MANAGEMENT PLAN: TEST EXCAVATION OF NORTH ARM TORPEDO STATION, PORT ADELAIDE



Figure 4. The North Arm Torpedo Station's 6-in. EOC/Armstrong breech-loading naval gun at its current location within a vacant lot in the Port Adelaide suburb of Birkenhead.

was complemented by a thorough review of archival sources, including primary and secondary historical material, aerial photographs, maps, and records kept at the Land Titles Office of South Australia. In addition to Wimmer's thesis, a synopsis of this work, entitled *Archaeology of the Russian Scare: The Port Adelaide Torpedo Station* was published in the Flinders University Maritime Archaeology Monographs Series in 2008 (see Wimmer, 2008).

Research Design and Excavation Methodology

Archaeological excavations within Australia are guided by a research design and excavation methodology. A research design provides a set of questions that might be reasonably answered by the information generated from archaeological investigation of a site. The basis of a research design should be derived from the documented history of the place so that excavation methods can be developed in such a way that the investigation recovers

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information that can be used to answer specific questions about the site and the people who lived and worked there. The following sections outline the general aims of the proposed test excavation, present the research questions developed to guide the test excavation, and address proposed test excavation methods:

Aims

The general aims of the proposed test excavation are to:

- Investigate the integrity and extent of specific archaeological deposits and structures associated with the former North Arm Torpedo Station site; and
- Where possible answer specific questions regarding past occupation and use of the torpedo station.

It is also expected that the proposed test excavation would provide an opportunity for undergraduate and postgraduate students in the Department of Archaeology at Flinders University to gain valuable training and/or field experience in archaeological excavation and recording. Finally, this research project will serve as an opportunity for members of the general public to learn more about Port Adelaide's colonial and military heritage firsthand by providing an opportunity to actively participate in an archaeological excavation.

Research Questions

The research questions detailed below focus on the potential archaeological remains of the former torpedo station caretaker's quarters and magazine, as these are the specific site loci that will be investigated during the proposed test excavation.

- What is the extent and depths of archaeological deposits associated with the caretaker's quarters and magazine and are these deposits intact or disturbed?
- Do the excavated deposits and features indicate that the site has significant archaeological research potential, similar to other nineteenth century defensive installations previously investigated throughout Australia?

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- Are the deposits and artefact assemblage recovered from the site suitable for comparative studies with other defensive sites throughout Australia, or other nineteenth century sites within Port Adelaide? If so, what form should these analyses take?
- Is it possible to determine the methods and materials utilised to construct the caretaker's quarters and magazine? If so, are these methods and materials similar, or do they vary based upon their specific uses (i.e., domestic as opposed to military activity areas)?
- Do the design, composition and construction attributes of the Port Adelaide Torpedo Station bear similarity to those of other torpedo station sites throughout Australia? How are they different? How do these traits compare to those of torpedo station sites in the United Kingdom (Australia's colonial overseer and the "benchmark" for its defensive capabilities)?
- Archival documents state that the family of Chief Petty Officer Henry Perry, the torpedo station's caretaker, accompanied him for the duration of his assignment to the facility. Is there material evidence of these historically less visible individuals in the archaeological record? If so, how does the torpedo station's "domestic" assemblage differ from that encountered at other nineteenth century Australian defensive sites? What does it tell us about the living conditions encountered by Henry Perry and his family, and how they adapted to them?

Pre-investigatory Methods

As mentioned previously, at least two archaeological surveys of the North Arm Torpedo Station have been conducted in the past. A review of data generated from these projects, as well as further assessment of primary and secondary historical sources and other archival material, has enabled project organisers to anticipate the locale(s) of certain structures within the site with a fair degree of accuracy. The assistance of a specialist in remote sensing techniques—with particular emphasis on Ground Penetrating Radar (GPR)—has been sought for the purposes of refining the existing predictive model of each structure's location. A comprehensive GPR survey of the proposed area of excavation will be conducted in advance, and data derived from it utilised in the final placement of each excavation unit.

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Given the relatively small size of the site, the GPR survey is anticipated to take less than a day to complete; analysis and assessment of the data gleaned from the survey may take slightly longer, but is not expected to exceed a week in duration.

Excavation Methodology

Work undertaken during the proposed test excavation at the torpedo station site is expected to include hand excavation of at least two (2) linear trenches across the indicative locations of the former caretaker's quarters and magazine (Figure 5), as well as archaeological recording of deposits and artefacts within these excavation units. A rectangular boundary with its longest sides oriented along a roughly northwest-to-southeast axis will have corners at the following coordinates:

NW Corner: 34° 48' 46.52" S 138° 30' 60.00" E	SW Corner: 34° 48' 46.83" S 138° 30' 59.87" E
NE Corner: 34° 48' 47.13" S 138° 31' 2.00" E	SE Corner: 34° 48' 47.47" S 138° 31' 1.88" E

Excavation by mechanical means will not be utilised. Each trench will measure one (1) metre wide by five (5) metres in length. The maximum depth of each excavation unit will depend entirely upon the depositional depth of archaeological material encountered; however, the presence of observable features at the site (including discernible evidence of the footprint(s) of both the caretaker's quarters and magazine) would suggest artefacts and features associated with the torpedo station are shallowly buried, and excavation will not exceed one (1) metre depth in most areas.

Specific tasks to be undertaken during the test excavation are as follows:

- Establish a site survey datum to record the horizontal and vertical distribution of extant archaeological deposits and features;

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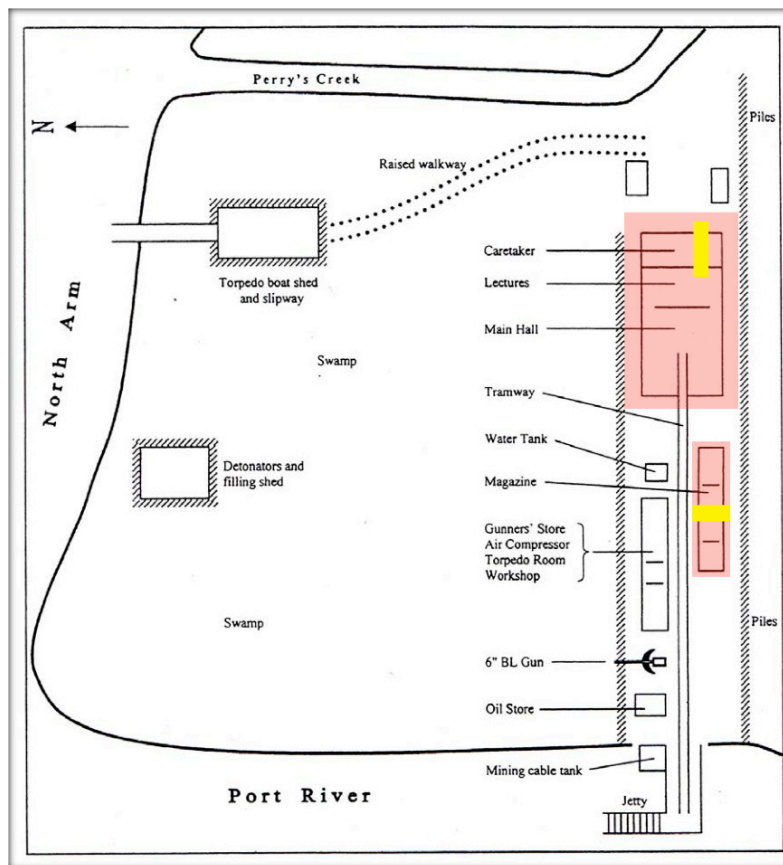


Figure 5. Facsimile of a ca. 1911 map of Port Adelaide Torpedo Station, showing the locations of the caretaker's quarters and magazine (highlighted in red), and proposed excavation trenches (highlighted in yellow). Map not to scale. Original map on file at the National Archives of Australia, MP472, File 18/11/2562.

- Manual (hand) excavation and recording of archaeological deposits in reverse order of deposition;

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- Preparation of scaled site plans and profile or cross-section drawings showing the location of all archaeological deposits and features revealed by excavation. These will be referenced to the site datum;
- Photographic recording of all phases of the work on site will be undertaken. The photographic record of the excavation will involve recording of archaeological features before and after excavation using an appropriate photographic scale. Each photograph taken will be entered into the Flinders University Department of Archaeology photographic register;
- A standard context recording system will be employed; namely the location, dimensions and characteristics of all archaeological features and deposits will be recorded on sequentially numbered pro-forma context recording sheets. The context recording forms will also be supplemented by preparation of a Harris Matrix showing the stratigraphic relationships between features and deposits;
- Cultural artefacts retained for analysis will be cleaned bagged and boxed with reference to the context from which they were recovered and stored at the Flinders University Department of Archaeology research laboratory, unless otherwise directed by Defence SA (in the capacity of property owner).
- Soil samples of culturally modified and naturally occurring deposits may be taken in order to provide material for environmental analysis (if possible) during the post-excavation phase of the project; and
- All test trenches will be thoroughly backfilled with removed spoil sediment following completion of the test excavation.

The projected timeframe for the excavation phase of this project will comprise a 14-day period between Monday, 12 April and Sunday, 25 April 2010. As noted earlier, the pre-investigatory GPR survey will not exceed one day, and will commence immediately once permission to access the site is granted by Defence SA.

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Personnel

Project Personnel for the proposed test excavation are as follows:

- The nominated Project Director for the proposed test excavation is James Hunter;
- James Hunter will undertake preparation of a report of investigation documenting the results of the test excavation at the site;
- Associate Professor Mark Staniforth (Convenor of the Flinders University Maritime Archaeology Program), and at least two Flinders PhD candidates and/or staff members will provide additional supervision of all students and volunteers during the test excavation.
- Undergraduate and postgraduate students from the Flinders University Department of Archaeology will provide assistance with the test excavation on a voluntary basis, as will staff and volunteers affiliated with the South Australian Maritime Museum, and interested members of the general public;
- Where possible, post-excavation analysis of the artefact assemblage recovered from the site will be undertaken by staff and/or students affiliated with the Flinders University Department of Archaeology.

Public Interaction

Archaeologists from Flinders University are currently pursuing a community archaeology initiative in Port Adelaide. The project, known as Port Adelaide Community Archaeology (PACA), promotes the history and heritage of Port Adelaide by providing opportunities for members of the public to participate in the excavation of archaeological sites within the community. Archaeologists affiliated with Flinders University will be investigating several sites in Port Adelaide between now and 2012; all of these excavations will feature public site tours and promote community awareness of, and involvement in, local heritage projects.

Because the North Arm Torpedo Station was once a vital element of Australia's colonial-era defence network, its significance as an archaeological site cannot be overstated. Its particular importance to the local community is literally personified by descendants of the Perry family

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who continue to reside in the Adelaide area. Among them is Jan Perry, the great-granddaughter of the station's last caretaker, CPO Henry Perry, and a frequent volunteer on Flinders University archaeological projects. Ms. Perry has a keen interest in her family's involvement at the torpedo station and graciously provided several of the archival maps and photographs featured in this document. The greater Adelaide community would no doubt share Ms. Perry's desire and enthusiasm to see the site scientifically excavated and interpreted not only for the public's benefit, but also with its active involvement.

References

- Couper-Smartt, J. and C. Courtney, 2003, *Port Adelaide: Tales from a 'Commodious Harbour'*. Friends of the South Australian Museum, Inc., Port Adelaide.
- Healey, J., 1999, Life at the Torpedo Station. *History S.A.: The Newsletter of the Historical Society of S.A.* (Sept. 1999): 6-8.
- Pennock, R.J., n.d., *Torpedo Station, Port River* (Research Note 916). Unpublished manuscript on file, Port Adelaide Historical Society, Semaphore Beach.
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- Rodda, L., 1996, The Port Adelaide Torpedo Station, 1905-1911. Unpublished manuscript on file at the South Australian Maritime Museum, Port Adelaide.
- Treloar, T. and J. Treloar, 2001, Port River Surveys: The Torpedo Boat Station and Channel Marker, Port Adelaide. *Soundings* 2 (1): 6-12.
- Wimmer, M., 2008, *Archaeology of the Russian Scare: The Port Adelaide Torpedo Station*. Flinders University Maritime Archaeology Monograph Series No. 18, Department of Archaeology, Flinders University, Adelaide.

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SITE MANAGEMENT PLAN

OHW&S Issues

See Appendix A. (OHWS Risk Assessment and Management Matrix)

Waste Management

In the interest of managing any rubbish generated during the excavation of the North Arm Torpedo Station site, the Flinders University Department of Archaeology will station no less than three (3) 240-litre lined Sulo waste bins for the duration of excavation activities (10-23 May 2010). Each rubbish bin will be of the lidded and wheeled variety, and will be removed, emptied, and returned to the site whenever it is filled to capacity. On-site amenities will be available in the form of two (2) portable toilets, to be positioned at a suitable location within 100 metres of the designated excavation area. Waste generated by on-site amenities will be emptied and removed as necessary by the portable toilet supplier.

Excavation/Backfill/Stockpiling

As stated in the Scope of Work, the presence of observable features at the site (including discernible evidence of the footprint(s) of both the caretaker's quarters and magazine) would suggest artefacts and features associated with the torpedo station are shallowly buried, and excavation will not exceed one (1) metre depth in most areas. However, the presence of open trenches on site during the excavation poses a potential safety risk, and steps will be taken to minimise the possibility for accidents. These include the installation of orange barrier mesh fencing around the periphery of excavated areas at the close of each workday, placement of large, visible plastic covers atop star pickets and/or twisted iron bar posts (placed at the corners of each excavation trench) and other potential trip hazards, and the placement of plastic tarpaulins within each excavation unit at the end of the workday to reduce the potential for wind and/or water induced collapse of trench walls. Additionally, large sandwich boards or other signage stating the presence of open excavation areas will be installed immediately adjacent to each trench.

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Sediment excavated at the site shall be removed through the use of hand tools (i.e., shovels, trowels); no mechanised means of any kind will be used for the purposes of excavation. Excavated sediments will be placed in buckets and transported to a designated 'spoil area' to be screened for artefacts. This zone will be located a short distance from the excavation area at a level, sparsely-vegetated location that neither interferes with excavation activities nor restricts the ability of vehicle and foot traffic to transit the dirt road that passes through the site. Spoil that results from this process will be allowed to accumulate in piles not exceeding one (1) metre in height; dust containment shall be enacted via the procedures outlined below. All excavation trenches will be completely backfilled by hand at the close of the project with spoil sediment removed during the excavation.

Dust Control

Dust generated from investigatory activities, primarily removal of sediment from excavation trenches and temporary discard of excavated sediment in spoil piles, will be significantly minimised through the use of water to dampen and retard movement of fine-grained sand and dust within the piles. Water obtained for this purpose shall be collected from the Port River. Additionally, silt fencing will be installed around—and, if necessary, atop—spoil piles to restrict dust movement. Dust generated from automobiles transiting the site will be minimised by limiting the number of vehicles allowed within the project area for the duration of the excavation, as well as reducing the speed of transiting vehicles to five (5) kilometres per hour or less.

Pipeline Corridors

As stipulated by Defence SA, a Dial Before You Dig enquiry was conducted to confirm the presence and location(s) of utility pipeline and/or cable corridors that may intersect with the area(s) slated for excavation. A buried brine main (including its associated inspection and maintenance port) runs approximately parallel to, and immediately north of, the modern dirt track that transits the centre of the torpedo station site. This utility is clearly marked with signposts, and most of the trench line associated with its placement and burial is still evident on the ground's surface. The brine main carries salt in solution from the salt pans at Dry Creek to a processing facility on the Port River shoreline immediately opposite the property on which the torpedo station site is located.

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Other buried utilities, including a high-pressure gas line operated by SEA Gas, electrical cables under the purview of ETSA Utilities, and water reticulation pipelines managed by SA Water, are present on property administered by Defence SA, but are not located within the area slated for excavation. Appendix B shows the location(s) of these utility lines relative to the proposed North Arm Torpedo Station excavation footprint.

Potential Acid Sulphate Soils

Acid sulphate soils are soils, sediment or rock in the environment that contain elevated concentrations of metal sulphides, principally in the form of pyrite or mono-sulphides in the form of iron sulphide. When exposed to oxygen, the sulphides in these soils generate acidic conditions that can potentially impact on human health and the environment, as well as result in damage to infrastructure constructed on acid sulphate soil materials. In addition, drainage of peaty acid sulphate soil material creates substantial amounts of greenhouse gases carbon dioxide and nitrous oxide.

Potential acid sulphate soil material is composed mostly of accumulations of iron sulphide minerals (as a result of the sulphate reduction process), but has not been exposed to air or undergone oxidation. Several organic and mineral forms of reduced sulphur occur in wetland sediments, and occur predominantly in low-lying areas near the coast, such as coastal floodplains, rivers and creeks, deltas, coastal flats, back swamps and mangrove areas. Because the North Arm Torpedo Station was constructed within a mangrove swamp that was subsequently buried under fill material, the possibility exists that potential acid sulphate soils could be a feature of sediments within the area slated for excavation. However, the torpedo station was constructed on reclaimed land to elevate it above the surrounding mangroves, and archaeological material associated with the site is expected to be shallowly buried; consequently, it is anticipated that excavation units at the site will not intercept or go below the groundwater table, and therefore avoid contact with potential acid sulphate contaminants.

Additionally, the anticipated extent of sediment removal associated with the proposed excavation (two 1m x 5m trenches excavated to an anticipated depth of less than 1m) is expected to be less than 9 cubic metres. A risk matrix developed by the Commonwealth

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Scientific and Industrial Research Organisation suggests that if a planned excavation in a coastal zone will involve removal of less than 100 cubic metres of sediment, or deposition of less than 500 cubic metres of fill on site, it may be assumed that acid sulphate soil material is not present (EPA, 2007: 6). Finally, a review of acid sulphate soil data in the *Atlas of Australian Acid Sulphate Soils* reveals a “High Probability/Low Confidence (A3)” rating for the area in which the North Arm Torpedo Station site is located. This information is available online as part of a web-served Geographic Information System at the Australian Soil Resource Information System and may be accessed at www.asris.csiro.au. Additional data available from the online Atlas of South Australia (www.atlas.sa.gov.au) reveals that “no features [have been] found for coastal acid sulphate soils” in the proposed area of excavation.

In the event acid sulphate soils *are* encountered, excavation of the contaminated area shall cease immediately and clean soil will be placed over all exposed acid sulphate soil material to minimise its oxidation rate and isolate it from further exposure, as per suggested management options outlined by the Environmental Protection Authority South Australia (EPA, 2007: 7-8). Defence SA will be notified immediately following discovery of acid sulphate contaminants, and will be consulted to determine a subsequent course of action that is in the best interests of all involved parties.

Site Contaminants

Consultation with the South Australia Environmental Protection Authority (EPA) revealed that the parcel of land in which the North Arm Torpedo Station site is embedded was used for the deposition of waste between 1 January 1983 and 30 April 1995 without being licensed or controlled by the South Australian Waste Management Commission (see Appendix C). The type of waste(s) deposited within the property during this span of time comprised asbestos and a variety of unspecified waste material associated with building construction and demolition. In the event asbestos or other potentially harmful site contaminants are encountered, archaeological activities of the contaminated area(s) shall cease immediately. The Project Director will assess the danger posed by these materials and immediately notify Defence SA and the EPA and seek advice on how best to proceed. In the event high-risk contaminants are encountered, excavation will cease entirely in affected areas;

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alternatively, disposal of contaminated material as per the Flinders University Contaminant Disposal Process will likely be employed in instances where these materials are designated minimal risk.

Site Security

The Flinders University Department of Archaeology will supply and install a padlock for use at the access gate of the fence that bounds the Defence SA property within which the torpedo station site is located. The Flinders padlock shall be interlocked at the end of each workday with a pre-existing padlock installed at site by Defence SA. Project Director James Hunter will be solely responsible for the key to the Flinders padlock, and shall monitor the condition and security of both padlocks on a daily basis for the duration of the archaeological excavation. Associate Professor Mark Staniforth (Acting Head, Department of Archaeology) shall be provided a spare key to the Flinders padlock; this key is to be used as a backup in the event the primary key is lost or damaged. With the exception of safety and retainment material to be installed around excavation units and spoil piles at the end of each workday (i.e., fencing referred to above), no other material shall remain on site overnight; consequently, inducements for the committal of theft and the potential for subsequent unauthorised access to the site will be significantly diminished.

Dangerous Substances

Archaeological excavation of the North Arm Torpedo Station site will not be accomplished via mechanical means; however, a water pump may be utilised as a means of transporting water from the Port River to dampen spoil piles generated during excavation activities. In the event this equipment is used, petrol will be needed to power it; however, petrol will not be poured into the pump on-site, nor will petrol containers be kept on-site during the project. Further, the water pump and its associated equipment shall be removed from the site at the end of each workday. In the event such a pump is employed, a fire extinguisher will be kept on-site no less than 6 metres from the pump when it is in operation. No other activities conducted during the project will require on-site presence of petrol or other dangerous substances. Consequently, a Dangerous Substances Register is not deemed

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necessary for this Site Management Plan; however, a current Materials Safety Data Sheet for the pump's petrol and oil will be posted on-site.

References

Environmental Protection Authority South Australia, 2007, *EPA Guidelines: Site Contamination—Acid Sulfate Soil Materials*. Available from EPA website: http://www.epa.sa.gov.au/xstd_files/Site%20contamination/Guidelines/guide_sc_acid.pdf.

APPENDIX D

DEFENCE SA AND SOUTH AUSTRALIAN HERITAGE COUNCIL PERMITS TO ACCESS AND INVESTIGATE THE NORTH ARM TORPEDO STATION

ACCESS PERMIT

TERMS AND CONDITIONS

1. Permittee:

The Flinders University of South Australia of Sturt Drive, Bedford Park SA 5042 ("Permittee")

2. Permitter:

Minister for Economic Development for and on behalf of the Crown in right of the State of South Australia as represented by Defence SA (ABN 42 912 246 233) of Level 4, 151 Pirie Street, Adelaide SA 5000 ("Permitter")

3. Permit Area:

- 3.1 The Permit Area is that area delineated in red in the plan being attachment "A" to this Permit ("Permit Area").
- 3.2 The rights granted by the Permitter in this Permit are contractual only and shall not create or confer upon the Permittee any exclusive right, estate or proprietary interest in the Permit Area.

4. Permit Term:

- 4.1 This Permit operates for a term commencing at 7:00am on 10 May 2010 and ending at 5:00pm on 25 May 2010 ("Permit Term").
- 4.2 If the Permittee occupies the Permit Area with the Permitter's written consent after the expiration of the Permit Term, this Permit will continue on a daily basis.
- 4.3 Either party may terminate this Permit on 1 days written notice served at any time. For the avoidance of doubt, this Permit will terminate upon the commencement date specified in a Memorandum of Lease for the Permit Area executed by the parties.

5. Permitted Use:

- 5.1 Subject to the Permittee complying with the terms and conditions of this Permit, this Permit authorises the Permittee to access the Permit Area during the Permit Term to undertake investigations associated with an archaeological test excavation for the purpose of investigating any structures which may remain of the former North Arm Torpedo Station in accordance with the Proposed Scope Of Work and Site Management Plan (as attached) and to enter the Permit Area in order to fulfil its obligations under this Permit ("Permitted Use").

- 5.2 The Permitter does not warrant that the Permit Area is suitable for the Permitted Use or for any other use.
- 5.3 The Permittee shall comply with all reasonable directions given from time to time by the Permitter in respect of the Permit Area.
- 5.4 The Permittee must not use the Permit Area for any purpose other than the Permitted Use.

6. Rent:

The Permittee hereby covenants and agrees with the Permitter throughout the Permit Term and any period during which the Permittee holds over or is or remains a tenant or is in occupation of the Permit Area to duly and punctually pay rent upon demand at a rate of \$1.10 inclusive of GST per month ("Rent"). The Permittee must pay the Rent and all other amounts payable by the Permittee under this Permit to the Permitter within 7 days of the date of the relevant tax invoice for payment.

7. Operating expenses:

The Permittee hereby covenants and agrees to pay or reimburse to the Permitter the total amount of all operating expenses including Council Rates, Water Rates, Emergency Services Levy and any other tax levied against the Permitter in relation to the Permittee's occupation of the Permit Area.

8. Release:

The Permittee will use and occupy the Permit Area at its own risk in all things and releases to the full extent permitted by law the Permitter and its employees and agents from all claims demands and damages resulting from any accident, damage, death or injury occurring on or in the vicinity of the Permit Area except to the extent to which the same is caused by the negligent act of the Permitter or its employees or agents and the Permittee expressly agrees that the Permitter and its employees and agents will have no responsibility or liability for any loss or damage to fixtures, fittings or personal property of the Permittee except to the extent to which the same is caused by the negligent act of the Permitter or its employees or agents. It is the responsibility of the Permittee to adequately insure itself and ensure that its employees, invitees, agents and contractors are adequately insured.

9. Indemnity:

The Permittee will indemnify the Permitter and its employees and agents at all times against all claims, demands, losses, damages, costs and expenses (including legal costs and expenses on a full indemnity basis) arising from any accident, damage, injury, death or loss that may be sustained from any activity on or in the vicinity the Permit Area and from any accident, damage or injury, death or loss whatsoever occurring to the extent caused or contributed by the

Permittee and/or its employees, participants, invitees agents or contractors or by its or their use or occupation of the Permit Area.

10. Insurances:

The Permittee will ensure that a public risk insurance policy is taken out and maintained during the period of use for all activities associated with the Permitted Use within the Permit Area, insuring for the sum of at least twenty million dollars (\$20,000,000) per claim, the Permittor and the Permittee against all actions, claims, damages, charges, costs and expenses whatsoever which may be brought or made or claimed against the Permittor or the Permittee or both in relation to the actions of the Permittee and/or its employees, participants, invitees, agents or contractors. If requested by the Permittor, the Permittee must produce to the Permittor a certificate of currency and/or a copy of any insurance policy for inspection within 7 days.

11. Make Good:

- 11.1 The Permittee must, upon the expiration or earlier termination of this Permit:
- 11.1.1 cease using the Permit Area and any property belonging to the Permittor;
 - 11.1.2 deliver up the Permit Area in the same state and condition as at the commencement of the Permit Term;
 - 11.1.3 ensure that the Permit Area is left clean and tidy with all rubbish removed; and
 - 11.1.4 at its own cost remove all of the Permittee's fixtures, fittings, plant, equipment, machinery, goods and chattels from the Permit Area.
- 11.2 If the Permittee fails to comply with this clause the Permittor may attend to such matters at the Permittee's cost.

12. Traffic Inside and Outside of the Permit Area:

In the course of undertaking the Permitted Use, the Permittee must ensure that vehicular traffic inside and outside of the Permit Area is not restricted in any way, and must ensure that free passage is provided at all times.

13. Miscellaneous:

- 13.1. The Permittee must comply with and give, at its cost, all notices required by any Act of Parliament, ordinance, regulation, by-law or code of practice relating to the Permitted Use or to the Permittee's use and occupation of the Permit Area.
- 13.2. The Permittee must not assign, sub-permit or otherwise part with possession of the whole or part of the Permit Area to any entity that is not an agency or instrument of the State without the Permittor's prior written consent.

- 13.3 Nothing in this Permit derogates from the powers of the Auditor-General under the *Public Finance and Audit Act 1987* (SA).
- 13.4 The Permittee agrees to disclosure of this Permit in accordance with Department of the Premier and Cabinet Circular 27, a copy of which is available from the Government's website: http://www.premcab.sa.gov.au/pdf/circulars/pc027_disclosure_gov_t_contracts.pdf
- 13.5 Nothing in this clause derogates from the Permittee's obligations under any other provision of this Permit or the provisions of the *Freedom of Information Act 1991* (SA).
- 13.6 The Permittee acknowledges that in the interest of OHW&S the Permittee's staff who access the site are to enter the site only when directed by Penrice Soda Products staff.
- 13.7 This Permit (including the attached plan) sets forth the entire agreement between the Permittee and the Permitter and replaces and supersedes all other agreements of any kind in relation to the grant of this Permit.
- 13.8 If there is any inconsistency between any provision of this Permit and any provision comprised in the attached plan, then to the extent of that inconsistency, the provisions in the Permit prevail.
- 13.9 Any amendment of this Permit must be in writing and signed by both parties.
- 13.10 In the interpretation of this Permit no rules of construction shall apply to the disadvantage of one party on the basis that that party put forward the Permit or any part thereof.
- 13.11 A party waives a right under this Permit only by written notice to that effect. Nothing else done or omitted to be done by a party in relation to the party's rights under the Permit will have the effect of a waiver.
- 13.12 Neither party may assign any of its rights or obligations in relation to this Permit without the written consent of the other.
- 13.13 The laws in force in South Australia, including laws with respect to capacity to contract and the manner of performance, apply to this agreement.
- 13.14 The courts of South Australia will have exclusive jurisdiction to determine any proceeding in relation to this Permit. Any proceeding brought in a Federal Court must be instituted in the Adelaide Registry of that Federal Court.

13.15 The Permittee acknowledges and agrees that its obligations under this Permit operate for the benefit of, and may be enforced by, each party and each of the persons taken to be a party, to this Permit.

Executed as a deed

SIGNED for and on behalf of the
MINISTER FOR ECONOMIC DEVELOPMENT
by his authorised representative:

Damon Hall
General Manager, Finance
Defence SA

Date:

in the presence of:

Witness Signature

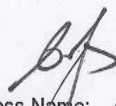
Witness Name

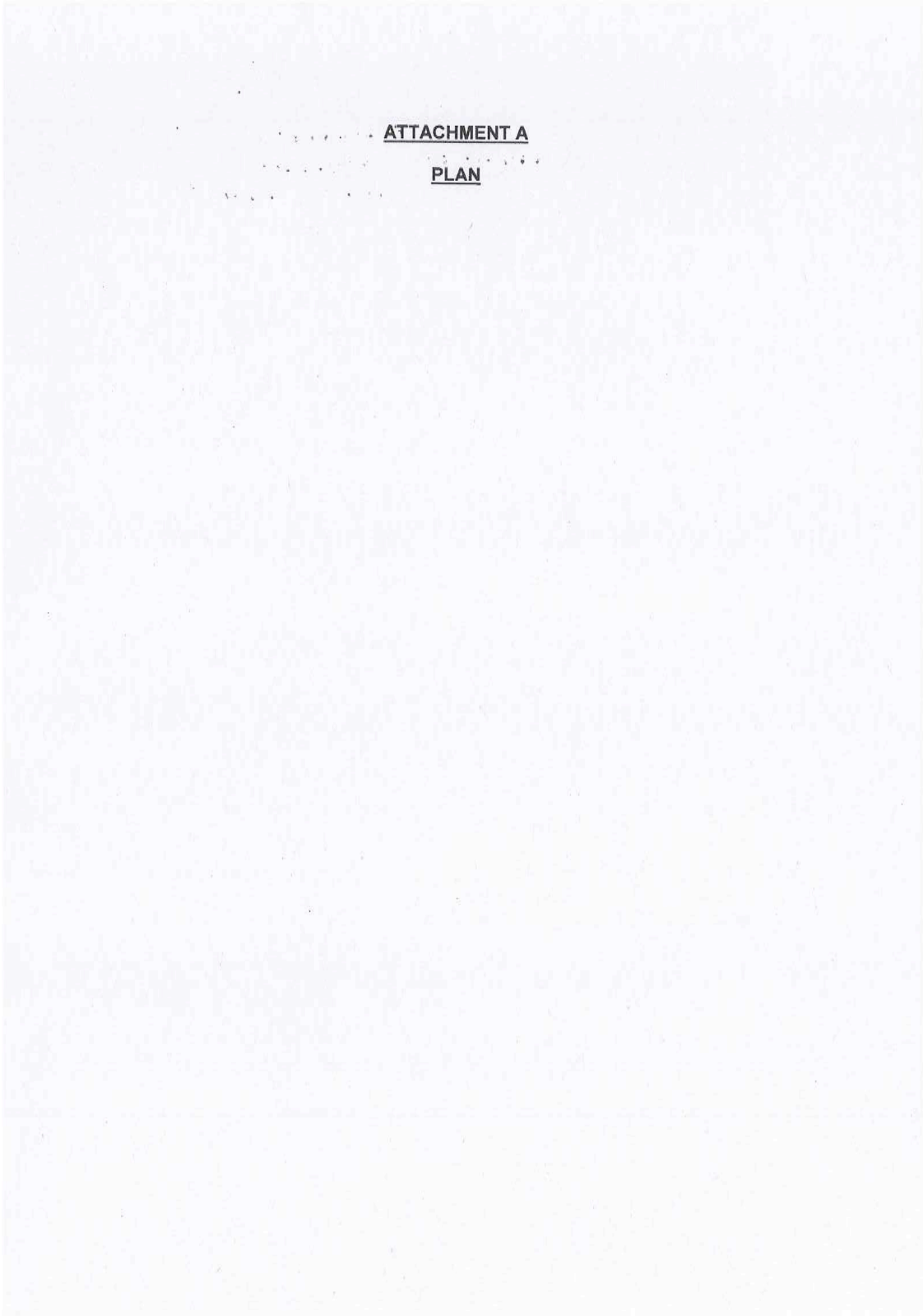
I, the undersigned, warrant that I am authorised to represent The Flinders University of South Australia as well as legally bind it in contract, and consequently further acknowledge, warrant and represent that The Flinders University of South Australia accepts and agrees to the terms and conditions set out in this Permit.

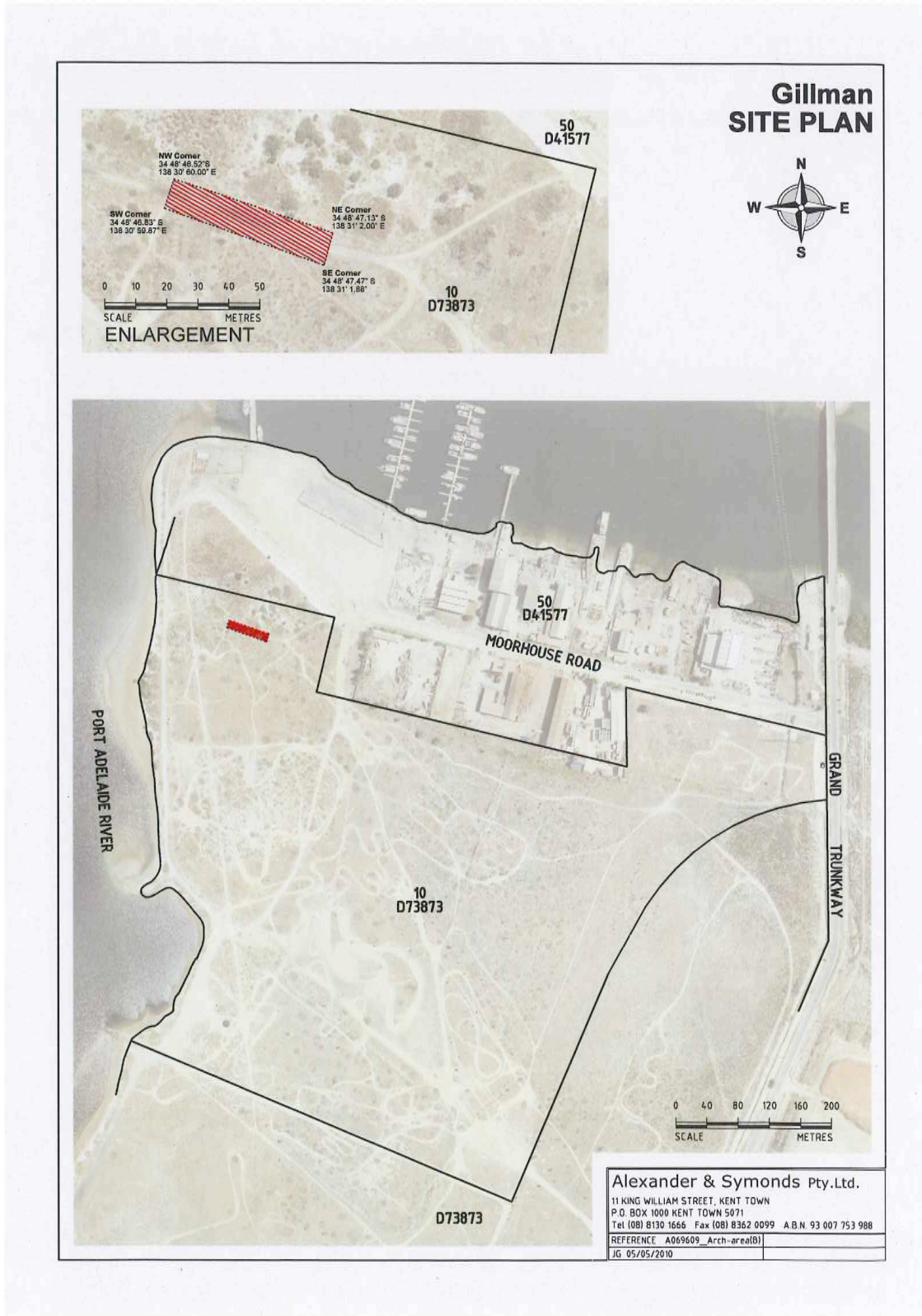
SIGNED for and on behalf of
THE FLINDERS UNIVERSITY
OF SOUTH AUSTRALIA by:

M. Staniforth

Name: **MARK STANIFORTH**
Position: **ASSOCIATE PROFESSOR**
Date: **6 MAY 2010**


Witness Name: C FANNING
Witness Position: TOURISM LEADER
Date: 6 MAY 2010





SOUTH AUSTRALIAN HERITAGE COUNCIL

PERMIT APPLICATION

Permits issued under Sections 25 – 28
of the *Heritage Places Act 1993*

SUMMARY OF APPLICATION:

APPLICANT:

TITLE: (Mr/Mrs/Ms /Dr/Prof) GIVEN NAME: LAST NAME:

COMPANY NAME:
(if applicable)

OR

NAME OF INSTITUTION:
(eg University)

Department of Archaeology, Flinders University, South Australia

PROJECT TITLE:

Issued by the
Department for Environment and Heritage

SEPTEMBER 2007

STANDARD CONDITIONS

1. APPLICANT

The applicant must be either a person or persons with the appropriate qualifications, skills, or experience, on the register maintained by the South Australian Heritage Council, an Institute (eg university), or the owner of the land, or historic relic.

Student applications must be endorsed by, and made in the name of, the educational institution and be accompanied by supporting documentation from the Lecturer/Project Supervisor.

All signatures on the form must be original. Faxed applications will not be accepted.

2. SUPERVISION

The permit holder is responsible for the actions of other persons who may undertake this research or collect specimens, artefacts or relics on your behalf.

The Supervisor must be a person or persons with the appropriate qualifications, skills, or experience, on the register maintained by the South Australian Heritage Council.

3. RENEWAL

Permits will not be renewed unless the Heritage Branch has received a satisfactory progress report, or until all prior requirements have been met.

4. PERMIT REPORTS

A full report of the research carried out must be submitted within 2 months of the expiration of the permit.

Upon completion of the work, or the expiration of the permit, whichever is sooner, a copy of all notes, plans, sections and photographs relating to the work carried out must be lodged to form an archive in the event that the original notes are accidentally destroyed.

If an account of the research is published, or information circulated, after the standard report has been submitted, the reference details of this material must be lodged with the Heritage Branch within 2 months of publication or circulation.

If after two years of receipt of the final report the supervisor has not published the material, the Heritage Branch reserves the right to publish the findings of the investigation.

5. SPECIMENS AND/OR ARTEFACTS

The number and location of all specimens, artefacts or relics recovered must be supplied.

You will be required to provide details of the disposition of specimens, artefacts or relics recovered. (Note that under the *Heritage Places Act 1993* specimens or artefacts belong to the Crown).

The number of specimens, artefacts or relics taken must be limited to the number specified in the permit, or where the number is not stated, to the minimum required for the approved research.

Specimens or artefacts may not be disposed of or exported from South Australia without the written prior consent of the delegate appointed under either the *Heritage Places Act 1993*.

6. ABORIGINAL CONSULTATION

A permit will cease to have effect upon a determination that Native Title exists in any of the lands or waters covered by the permit to the extent that such determination affects those lands or waters.

7. MINIMAL IMPACT

Every effort should be made to minimise the impact of your work. This includes returning the area as close as possible to its predisturbance state or revegetation of the site.

8. RESEARCH CONFIDENTIALITY

A significant aim of research on places or objects of particular significance is to encourage collaboration and the sharing of knowledge between researchers, the public, the South Australian Heritage Council, and the Heritage Branch. As part of the process of application review, it may be necessary to consult other Departments or representative groups to help to determine both the impact of the research and how best to minimise any impact.

Permits will respect confidentiality of information that an applicant or land owner does not want widely distributed. Similarly, the Heritage Branch will distribute progress reports and unpublished data to relevant staff as part of the appraisal process for ongoing projects. Unpublished information will not be used in any way without permission of the author.

9. The permit may be varied or cancelled, or a condition varied or cancelled, at any time.

GENERAL INFORMATION

1. HERITAGE PLACES ACT 1993

The *Heritage Places Act 1993* protects State Heritage Places designated as a place of geological, palaeontological, speleological or archaeological significance by the South Australian Heritage Council. This protection extends to archaeological artefacts of heritage significance discovered on any land that has not been so designated, whether or not it is on the South Australian Heritage Register. The Act also protects geological, palaeontological or speleological specimens or archaeological artefacts.

A copy of the Act can be found by visiting www.legislation.sa.gov.au/browseActs.aspx and following the links.

2. OTHER LEGISLATION

You may require a permit or approval under other legislation before commencing work. The information below is given as a guide, but it is the responsibility of the Permit Holder to ensure compliance with this and any other legislation.

- **HISTORIC SHIPWRECKS ACT 1976 (COMMONWEALTH) AND HISTORIC SHIPWRECKS ACT 1981 (STATE)**

These Acts protect certain shipwrecks and relics of historic significance. The remains of ships 75 years or more are historic shipwrecks, whether they have been discovered or not. The Commonwealth Act applies both within and outside Australia and extends to every external Territory. The State Act applies to waters within the limits of the State or waters adjacent to the State being waters to which the Commonwealth Act does not apply.

A copy of the *Historic Shipwrecks Act 1976* (Commonwealth) can be found by visiting www.comlaw.gov.au and following the links. A copy of the *Historic Shipwrecks Act 1981* (State) can be found by visiting www.legislation.sa.gov.au/browseActs.aspx and following the links.

- **RIVER MURRAY ACT 2003**

If you answered 'Yes' to the question 'Is the property within a River Murray Protection Area' your application will be assessed against the *Objectives for a Healthy River Murray*. Details of these Objectives can be found by visiting www.legislation.sa.gov.au/browseActs.aspx and following the links.

A copy of this Permit Application will be sent to the Department of Water, Land and Biodiversity Conservation for information.

- **NATIONAL PARKS AND WILDLIFE ACT 1972**

If you answered 'Yes' to the question 'Is the property within a National Park' you must have a permit from the Biological Survey and Monitoring Branch, DEH, before commencing work. Further information can be obtained by telephone on (08) 8124 4700, fax (08) 8124 4719, or by visiting www.environment.sa.gov.au/biodiversity/research.html#permit. There is no fee for this permit.

A copy of this Permit Application will be sent to Biological Survey and Monitoring Branch, DEH for information.

- **DEVELOPMENT REGULATIONS 1993**

If you answered 'Yes' to the question 'Is the property on coastal land and does the work involve excavation or filling of an area exceeding nine cubic metres in total,' you must obtain Development Approval from the local council. Further information can be obtained by telephone on (08) 8124 8477, fax (08) 8124 4920, or by visiting www.environment.sa.gov.au/coasts/index.html. Information on Schedules 2(5) and 8(1) of the Development Act Regulations can be found on www.legislation.sa.gov.au/browseActs.aspx by following the links.

A copy of this Permit Application will be sent to the Coast and Marine Conservation Branch, DEH, for information.

- **NATIVE TITLE (SOUTH AUSTRALIA ACT) 1994**

If you answered 'Yes' to either of the questions relating to locations with cultural significance to Aboriginal communities or Native Title Claims, you may have legal obligations. Further information can be obtained by telephone Monday to Wednesday on (08) 8124 4943.

A copy of the Permit Application will be sent to the Solicitor seconded to DEH from the Native Title Section of the Crown Solicitor's Office for advice and your application will not be processed until this advice is received.

- **NATIVE VEGETATION ACT 1991**

If you answered 'Yes' to the question relating to significant impact on native vegetation, you may need the consent of the Native Vegetation Council. Further information can be obtained by telephone on (08) 8124 4753, or fax (08) 8124 4745 or by visiting www.dwlbc.sa.gov.au/bio/native_vegetation.html. A Guide to Exemptions under the Native Vegetation Act can be obtained from the Native Vegetation Council Secretariat or from www.dwlbc.sa.gov.au/aufiles/_5guidelinstoexemptions.

A copy of this Permit Application will be sent to the Land and Biodiversity Services Branch for information.

3. APPROVAL PROCESS

Allow a minimum of 2 to 4 weeks for the approval process. If the proposed work involves consultation with other government departments or groups, processing will take longer than this. Permit applications or renewals will not be processed until all consultation has been completed.

4. PAYMENT OPTIONS

- Payment by cheque or money order should be made payable to the **Department for Environment and Heritage**. The fee for 2007-08 is **\$124.00**, in accord with Schedule 2 (Fees) of the *Heritage Places Regulations 2005*.

As the fee is reviewed each year in line with the CPI, applicants should check the DEH web site at www.environment.sa.gov.au/heritage or telephone the Heritage Branch on (08) 8124 4960 for the latest information.

- Postal payments may be made by mailing applications to the Conservation Project Officer, Heritage Branch, Department for Environment and Heritage, GPO Box 1047, ADELAIDE 5001

- If paying by Credit Card (Visa, Master and Bankcard), please provide your details in the area below:

Card Type (please circle) VISA/ MASTERCARD/ BANKCARD

Card Number

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Card Expiry Date: Cardholder's name (please print):

I authorise the Department for Environment to draw funds from the nominated account.

Cardholder's Signature: Date:

5. PERMITS UNDER OTHER ACTS

Excavation or disturbance authorised under other Acts, does not override the notification and authorisation provisions of the *Heritage Places Act 1993* in the event of a significant artefact or relic being discovered.

6. SOME USEFUL DEFINITIONS

Owner of land means:

- If the land is unalienated from the Crown – the Crown
- If the land is alienated from the Crown by grant in fee simple – the owner of the estate in fee simple
- If the land is held from the Crown by lease or licence – the lessee or licensee
- If the land is held from the Crown under an agreement to purchase – the person who has the right of purchase and if the land is subject to a mining tenement a reference to the owner of the land extends to the holder of the tenement.

Place means any site or area, with or without improvements, any land, any building, structure or other work, whether temporary, permanent or moveable or immovable (including an item or thing that is permanently fixed or moored, any other location, item or thing that constitutes a place within the State, and includes any fixtures or fittings, any land where a place is situated, any subsurface area, any part of a place

River Murray Protection Area means a River Murray Protection Area under the *River Murray Act 2003*

Research Design means (but is not limited to) details of methodology, reason for the project, the justification of the project, conservation of artefacts, specimens or relics both short and long-term, project reporting, project records, including archiving, site stabilisation, maps, photographs, and who will undertake site/field work

PERMIT APPLICATION

To undertake research on a place or object of particular significance or to search for archaeological artefacts of heritage significance.

- Section 25** – a person must not, without a permit from the South Australian Heritage Council ("the Council") excavate or disturb a State Heritage Place designated as a place of geological, palaeontological or speleological significance or remove specimens from such a place
- Section 26** – a person must not without a permit from the Council excavate or disturb a State Heritage Place designated as a place of archaeological significance or remove artefacts from such a place
- Section 27** – a person must not, without a permit from the Council excavate or disturb any land (not designated as a place of archaeological significance) for the purpose of searching for or recovering archaeological artefacts of heritage significance or knowing or having reasonable cause to suspect that the excavation or disturbance will, or is likely to result in, an archaeological artefact of heritage significance being discovered, exposed, moved, damaged or destroyed.
- Section 28** – A person must not, without a permit from the Council, damage, destroy or dispose of a geological, palaeontological or speleological specimen removed from a State Heritage Place designated as a place of geological, palaeontological or speleological significance or an archaeological artefact removed from such a place.

Maximum penalty: \$75 000

- Two copies of the application, with the fee, should be sent to:

BY POST:

C/-Senior Heritage Officer (Policy)
Heritage Branch
Department for Environment and Heritage
GPO Box 1047
ADELAIDE SA

IN PERSON:

Heritage Branch
Department for Environment and Heritage
Ground Floor
1 Richmond Road
KESWICK SA 5035


APPLICANT DETAILS

Person or persons on the register maintained by the South Australian Heritage Council

TITLE: (Mr/Mrs/Ms /Dr/Prof)	Mr	GIVEN NAME:	James	LAST NAME:	Hunter
COMPANY NAME: (if applicable)					
OR					
NAME OF INSTITUTION: (eg University)	Department of Archaeology, Flinders University, South Australia				
POSTAL ADDRESS:	Department of Archaeology, Flinders University GPO Box 2100, Adelaide 5001, South Australia				
STREET ADDRESS: (if different from above)					
E-MAIL ADDRESS:	james.hunter@flinders.edu.au				

2

TELEPHONE: Business: (08) 8201 5257 Home: () Mobile: 04 5040 7818

SIGNATURE OF APPLICANT:  DATE: 29/3/2010

CONSENT OF OWNER TO THE MAKING OF THIS APPLICATION

Required if the Owner is not the applicant - OWNERS REPRESENTATIVE.


TITLE: (Mr/Mrs/Ms /Dr/Prof) MR GIVEN NAME: DAMON LAST NAME: HALL

POSTAL ADDRESS: PO Box 3643 RUNDLE MALL SA 5000

STREET ADDRESS: (if different from above) LEVEL 4, 151 PIRIE STREET ADELAIDE SA 5000

E-MAIL ADDRESS: damon.hall@defencesa.com

TELEPHONE: Business: 8463 7176 Home: () Mobile:

SIGNATURE OF OWNER:  DATE: 29/3/2010

SUPERVISOR

Person or persons on the register maintained by the South Australian Heritage Council


TITLE: (Mr/Mrs/Ms /Dr/Prof) Prof GIVEN NAME: Mark LAST NAME: Staniforth

POSTAL ADDRESS: Department of Archaeology, Flinders University GPO Box 2100, Adelaide 5001, South Australia

STREET ADDRESS: (if different from above)

E-MAIL ADDRESS: Mark.Staniforth@flinders.edu.au

TELEPHONE: Business: (08) 8201 5195 Home: () Mobile: 0408 802198

SIGNATURE OF SUPERVISOR:  DATE: 29/3/10

PLACE OR PROPERTY DETAILS

Place on the South Australian Heritage Register:

NAME OF STATE HERITAGE PLACE: SA HERITAGE REGISTER NO.:

ADDRESS OR LOCATION (include Geographical or AMG Zone Coordinates and Datum used ,where appropriate)

OTHER HERITAGE LISTINGS (eg National, Local)

Place or Property not on the South Australian Heritage Register:

DISTRICT COUNCIL	HUNDRED(S)	SECTION(S)	CT	VOL	FOLIO
Port Adelaide and Enfield	Port Adelaide	DP 41577	5636/ 256	5906	437

OTHER INFORMATION ¹

	Yes	No
Is the property within a River Murray Protection Area ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Is the property within a National Park reserve ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Is the property on coastal land ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If the work is on coastal land, will it involve excavation or filling exceeding nine cubic metres in total ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Does the work have the potential to intrude on locations or involve work with cultural significance to Aboriginal communities ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Is the area the subject of a Native Title Claim ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Will the work have a significant impact on native vegetation or wildlife ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

¹ See General Information

PROJECT DETAILS

PROJECT TITLE: Test excavation of Former Torpedo Station, North Arm, Port Adelaide

IS THIS A RENEWAL ? If so, please provide the the Permit Number, any outstanding Project Reports as required under the Standard Permit Conditions, and note below any changes to the previous application. If no changes, indicate "As per previous permit".

N/A

PROJECT SUMMARY:

It is proposed to undertake test excavation of archaeological deposits associated with the former torpedo station at North Arm. These remains are assessed as having probable local heritage significance for their potential to yield information of relevance to the history of Port Adelaide and Australia's colonial and post-Federation naval forces. It is expected that test investigation of the remains will allow their overall condition and research potential to be examined and assessed.

NAMES AND CONTACT DETAILS OF ALL PERSONS WHO WILL BE COLLABORATING ON THIS PROJECT AND BRIEF DESCRIPTION OF THEIR ROLE AND/OR ACTIVITIES:

Name	Contact Details	Role and/or Activities
Mr. Aaron Brumby (Defence SA)	(08) 8463 6173; Aaron.Brumby@defencesa.com	Property and Asset Manager, Defence SA
Mr. Kevin Jones	(08) 8207 6255; kjones@history.sa.gov.au	Director, South Australian Maritime Museum

FULL PROJECT DESCRIPTION:

- Your Research Design should include (but is not limited to) details of methodology, reason and justification of the project, conservation of artefacts, specimens or relics both short and long-term, project reporting, project records (including archiving), site stabilisation, maps, photographs, and who will undertake the site/field work.
- In the case of excavation or disturbance of specimens, artefacts or relics, photographs and a detailed map of the site and area to be excavated must be supplied.

This information can be provided as a separate document. Write 'See attached' below if you are submitting a separate project description. See further information in 'Standard Permit Conditions'.

See attached.

IS THE PROJECT PART OF ANOTHER ACTIVITY OR DEVELOPMENT ON THE SITE? IF YES, WHAT IS THE ESTIMATED COST OF DEVELOPMENT WORKS?

\$

WHAT IS THE DATE OF COMMENCEMENT OF EXCAVATION AT THE SITE?

12/04/2010

WHAT IS THE DATE OF COMPLETION AT THE SITE?

25/04/2010

OFFICE USE ONLY: Application # File # Date Received / /

APPENDIX E

THORNYCROFT- AND YARROW-BUILT TORPEDO VESSELS PURCHASED BY INTERNATIONAL CLIENT STATES, 1873-1891

Manufacturer	Yard/Bldg. No.	Purchaser	Vessel Name	Launched
J.I. Thornycroft & Co.	23	Norway	<i>Rapp</i>	18/10/1873
"	26	Russia	<i>Choutka</i>	1874
"	116	"	<i>Kefal</i>	09/06/1880
"	167	"	<i>Soukhoum</i>	22/06/1883
"	29	Sweden	<i>Spring</i> (later <i>Glint</i>)	1874
"	142	"	<i>No. 6</i> (<i>Svoerdfisken</i>)	02/09/1881
"	157	"	<i>Seid</i> (later <i>Blixt</i>)	23/11/1882
"	195	"	<i>Hugin</i>	30/05/1884
"	32	Austria-Hungary	<i>No. I</i>	19/06/1875
"	69	"	<i>No. II</i>	21/05/1878
"	33	Denmark	<i>No. 1</i>	16/03/1875
"	102	"	<i>No. 2</i> (<i>Hajen</i>)	09/08/1879
"	153	"	<i>No. 4</i>	16/06/1882
"	154	"	<i>No. 5</i>	21/06/1882
"	183	"	<i>Delfinen</i>	06/07/1883
"	198	"	<i>Hvalrossen</i>	05/09/1884
"	199	"	<i>No. 6</i>	09/09/1884
"	200	"	<i>No. 7</i>	18/09/1884
"	243	"	<i>No. 8</i>	1886
"	244	"	<i>No. 9</i>	1886
"	249	"	<i>Storen</i>	11/08/1887
"	250	"	<i>Soloven</i>	17/08/1887
"	253	"	<i>Narhvalen</i>	10/08/1888
"	254	"	<i>Narbesten</i>	11/07/1888
"	259	"	<i>No. 10</i>	09/06/1888 (?)
"	43	France	<i>No. 5</i>	1876
"	44	"	<i>No. 6</i>	1876
"	54	"	<i>No. 8</i>	28/06/1878
"	55	"	<i>No. 9</i>	22/06/1878
"	56	"	<i>No. 10</i>	28/05/1878
"	57	"	<i>No. 11</i>	28/05/1878
"	58	"	<i>No. 12</i>	31/05/1878
"	59	"	<i>No. 13</i>	01/06/1878
"	63	"	<i>No. 14</i>	23/06/1879
"	64	"	<i>No. 15</i>	25/06/1879
"	65	"	<i>No. 16</i>	23/06/1879
"	66	"	<i>No. 17</i>	30/06/1879
"	67	"	<i>No. 18</i>	15/07/1879
"	68	"	<i>No. 19</i>	19/07/1879
"	100	"	<i>No. 29</i>	09/08/1879
"	101	"	<i>No. 30</i>	13/08/1879
"	137	"	<i>No. 58</i>	08/07/1881
"	255	"	<i>Coureur</i>	13/06/1888

Manufacturer	Yard/Bldg. No.	Purchaser	Vessel Name	Launched
J.I. Thornycroft & Co.	138	“	<i>No. 59</i>	24/06/1881
“	48	Netherlands	Unnamed	1877
“	94	“	Unnamed	21/03/1879
“	95	“	Unnamed	22/03/1879
“	96	“	Unnamed	31/05/1879
“	97	“	Unnamed	29/05/1879
“	98	“	Unnamed	25/08/1879
“	99	“	Unnamed	26/08/1879
“	60	Italy	<i>Nibbio (ex-Veloce)</i>	1878
“	139	“	<i>No. 23 (Aquila)</i>	22/11/1881
“	140	“	<i>No. 24 (Gabbio)</i>	08/12/1881
“	143	“	<i>No. 26 (Aldebaran)</i>	21/02/1882
“	144	“	<i>No. 27 (Antares)</i>	21/03/1882
“	145	“	<i>No. 28 (Andromeda)</i>	11/05/1882
“	146	“	<i>No. 29 (Centauro)</i>	16/05/1882
“	147	“	<i>No. 30 (Dragone)</i>	15/07/1882
“	148	“	<i>No. 31 (Pegaso)</i>	05/06/1882
“	149	“	<i>No. 32 (Perseo)</i>	15/08/1882
“	150	“	<i>No. 33 (Saggitario)</i>	31/08/1882
“	151	“	<i>No. 34 (Sirio)</i>	12/10/1882
“	152	“	<i>No. 35 (Orione)</i>	19/10/1882
“	158	“	<i>No. 3 (Euterpe)</i>	23/03/1883
“	159	“	<i>No. 4 (Talia)</i>	27/04/1883
“	160	“	<i>No. 5 (Erato)</i>	20/04/1883
“	161	“	<i>No. 6 (Melpomene)</i>	25/04/1883
“	162	“	<i>No. 7 (Terpsicore)</i>	04/05/1883
“	163	“	<i>No. 8 (Polimnia)</i>	07/05/1883
“	164	“	<i>No. 9 (Urania)</i>	02/05/1883
“	165	“	<i>No. 10 (Calliopeo)</i>	23/05/1883
“	173	“	<i>No. 12 (Mosca)</i>	05/10/1883
“	174	“	<i>No. 13 (Ape)</i>	09/10/1883
“	175	“	<i>No. 14 (Vespa)</i>	23/10/1883
“	176	“	<i>No. 15 (Farfalla)</i>	31/10/1883
“	177	“	<i>No. 16 (Lucciola)</i>	22/08/1883
“	178	“	<i>No. 17 (Formica)</i>	22/08/1883
“	179	“	<i>No. 18 (Cicala)</i>	05/09/1883
“	180	“	<i>No. 19 (Locusta)</i>	06/09/1883
“	181	“	<i>No. 20 (Grillo)</i>	21/09/1883
“	182	“	<i>No. 21 (Zanara)</i>	27/09/1883
“	114	Argentina	<i>No. 9</i>	23/08/1880
“	115	“	<i>No. 10</i>	07/09/1880
“	267	“	<i>Comodoro Py</i>	19/05/1890 (?)
“	268	“	<i>Murature</i>	14/10/1890 (?)
“	184	Brazil	<i>Alpha</i>	14/08/1883

Manufacturer	Yard/Bldg. No.	Purchaser	Vessel Name	Launched
J.I. Thornycroft & Co.	185	“	<i>Beta</i>	24/08/1883
“	186	Brazil	<i>Gamma</i>	24/08/1883
“	204	“	<i>Iquatemi</i>	14/04/1885
“	271	“	<i>No. 7 (Araguary)</i>	16/10/1890 (?)
“	272	“	<i>No. 8 (Iquatemi)</i>	09/06/1891 (?)
“	273	“	<i>No. 9 (Marcilio Diaz)</i>	27/04/1891 (?)
“	197	Germany	<i>Th.1</i>	13/06/1884
“	209	Spain	<i>Julian Ordonez</i>	27/07/1885
“	210	“	<i>Acevedo</i>	25/07/1885
“	245	“	<i>Habana</i>	27/10/1886 (?)
“	247	“	<i>Ariete</i>	25/03/1887 (?)
“	248	“	<i>Rayo</i>	05/08/1887 (?)
“	256	HMIM*	<i>TB 1 (Baluchi)</i>	25/09/1888
“	257	“	<i>TB 2 (Karen)</i>	24/09/1888
“	258	“	<i>TB 3 (Pathan)</i>	23/10/1888
A. Yarrow & Co.	209	Argentina	<i>Primera Torpedo</i>	1875
“	307	“	<i>Segundo Torpedo</i>	1875
“	506	“	<i>Ferré</i>	1881
“	507	“	<i>Enrique Py</i>	1881
“	546	“	<i>Alerta</i>	1881
“	547	“	<i>Centella</i>	1881
“	884	“	<i>Thorne</i>	1890
“	885	“	<i>Pinedo</i>	1890
“	886	“	<i>Buchardo</i>	1890
“	887	“	<i>King</i>	1890
“	888	“	<i>Jorge</i>	1890
“	889	“	<i>Bathurst</i>	1890
“	336	Netherlands	<i>No. 1</i>	1875
“	532	“	<i>Etna</i>	1882
“	533	“	<i>Hekla</i>	1882
“	740	“	<i>Ardjoeno</i>	1886
“	768	“	<i>Empong</i>	1888
“	338	France	Unknown	1875
“	435	“	<i>No. 31</i>	1879
“	436	France	<i>No. 32</i>	1879
“	390	Greece	<i>Delphino</i>	1878
“	391	“	<i>Aspis</i>	1878
“	520	“	<i>TB. 7 (Kos)</i>	1881
“	521	“	<i>TB. 8 (Mytelene)</i>	1881
“	522	“	<i>TB. 9 (Rhodos)</i>	1881
“	523	“	<i>TB. 10 (Samos)</i>	1881
“	N/A	“	<i>TB. 11 (Kalithea)</i>	1881
“	530	“	<i>Cyprus</i>	1881
“	531	“	<i>Cbios</i>	1881

Manufacturer	Yard/Bldg. No.	Purchaser	Vessel Name	Launched
A. Yarrow & Co.	419	Russia	Unknown**	1878
“	420	Russia	Unknown**	1878
“	470	“	Unknown	1880
“	472	“	<i>No. 251 (Batoum)</i>	1880
“	789	“	<i>No. 46</i>	1888
“	441	Spain	<i>Pollux</i>	1879
“	695	“	<i>Retamosa</i>	1885
“	750	“	<i>Halcyon</i>	1887
“	751	“	<i>Azor</i>	1887
“	442	Austria-Hungary	<i>No. III</i>	09/1879
“	443	“	<i>No. IV</i>	09/1879
“	526	“	<i>No. IX</i>	09/09/1881
“	527	“	<i>No. X</i>	29/08/1881
“	693	“	<i>42 (Falke)</i>	12/1884
“	694	“	<i>41 (Adler)</i>	12/1884
“	450	Italy	<i>Avvoltoio</i>	1879
“	535	“	<i>22Y (Sparviero)</i>	1881
“	536	“	<i>25Y (Falco)</i>	1881
“	737	“	<i>76YA</i>	1887
“	738	“	<i>77YA</i>	1886
“	468	Japan	<i>No. 1</i>	1879
“	“	“	<i>No. 2</i>	1879
“	“	“	<i>No. 3</i>	1879
“	“	“	<i>No. 4</i>	1879
“	735	“	<i>Kotaka</i>	1886
“	475	Chile	<i>Colocola</i>	1880
“	476	“	<i>Tucapel</i>	1880
“	508	“	<i>Glaura</i>	1880
“	509	“	<i>Guale</i>	1880
“	511	“	<i>Janequio (i)</i>	1880
“	512	“	<i>Rucamilla</i>	1880
“	524	“	<i>Teguelda</i>	1880
“	525	Chile	<i>Janequio (ii)</i>	1880
“	N/A	“	<i>Fresnia</i>	1880
“	N/A	“	<i>Lanca</i>	1880
“	N/A	“	<i>Quidora</i>	1881
“	N/A	“	<i>Glaura***</i>	1882
“	N/A	“	<i>Fresia***</i>	1882
“	745	“	<i>Sargente Aldea</i>	1886
“	534	Portugal	<i>TB.1 (Espadarte)</i>	1881
“	741	“	<i>TB. 2</i>	1886
“	742	“	<i>TB. 3</i>	1886
“	743	“	<i>TB. 4</i>	1886
“	588	Romania	<i>Colonel Urseanu</i>	1882

Manufacturer	Yard/Bldg. No.	Purchaser	Vessel Name	Launched
A. Yarrow & Co.	591	“	Unknown	1882
“	618	Brazil	<i>Riachuelo</i>	1884
“	679	Germany	<i>Y</i>	1885
“	734	China	<i>Tso I</i>	1887
“	763	Ecuador	<i>Gungurahua</i>	1887
“	788	Costa Rica	<i>Branlio Garrillo</i>	1891

* Her Majesty's Indian Marine

** Allocated by the British Royal Navy and renamed *TB 17* and *TB 18*.

*** Purchased by the British Royal Navy in 1885 and added to the fleet as *TB 39* and *TB 40*, respectively

APPENDIX F

ARTEFACT CATALOGUE, NORTH ARM TORPEDO STATION

Bag No.	Artefact No.	Provenience	Material	Group	Type	Date (if known)	Count	Weight	Description
2	NATS-0001	TR1 S half .001	Metal	Military	Lead sheet		1	3	Folded lead sheet; poss. sabot
2	NATS-0002	TR1 S half .001	Hair/Fabric	Unknown	Hair/fabric matting		7	24	Unidentified fabric/hair matting
2	NATS-0003	TR1 S half .001	Metal	Structural	Threaded fastener		2	5	Iron screw fragment
4	NATS-0004	TR1 S half .002	Mortar/Plaster	Structural	Mortar		2		Mortar fragment
4	NATS-0005	TR1 S half .003	Stone	Structural	Sandstone		1	99	Sandstone fragment
4	NATS-0006	TR1 S half .003	Wood	Unknown	Wood fragment		1	1	Small unidentified wood fragment
4	NATS-0007	TR1 S half .003	Mortar/Plaster	Structural	Sandstone		1	11	Consolidated sandstone/limestone; possible sand brick
4	NATS-0008	TR1 S half .003	Other	Structural	Concrete		2	5	Possible modern concrete w/ flecks of charcoal
5	NATS-0009	TR1 N half .003	Stone	Structural	Bluestone		1	21	Small Bluestone fragment with two smooth surfaces
5	NATS-0010	TR1 N half .003	Ceramic	Domestic	Undecorated whiteware	1815- 1925	1	4	Basal whiteware sherd; poss. plate or saucer fragment
5	NATS-0011	TR1 N half .003	Other	Unknown	Heat-treated stone		3		Possible fired clay or heat-treated stone fragments

Bag No.	Artefact No.	Provenience	Material	Group	Type	Date (if known)	Count	Weight	Description
6	NATS-0012	TR2.001	Wood	Unknown	Wood		1	1	Unidentified wood fragment
6	NATS-0013	TR2.001	Faunal	Domestic	Mammal long bone		2	3	Sun-bleached mammalian bone fragments; poss. proximal end of limb
6	NATS-0014	TR2.001	Other	Domestic	Ivory fragment		1		Small ivory fragment; poss. inlay for furniture or utensil handle
6	NATS-0015	TR1.001	Glass	Structural	Window glass		1	19	Clear flat glass fragment with raised moulded pattern
6	NATS-0016	TR2.001	Other	Structural	Linoleum		1	0.5	Small linoleum fragment with intricate black-on-white stenciled pattern on one side
6	NATS-0017	TR2.001	Other	Military	Slag		1		Slag fragment; poss. associated with tramway or cottage 'yard'
6	NATS-0018	TR2.001	Glass	Domestic	Bottle glass		1		Small dark green bottle fragment
6	NATS-0019	TR2.001	Glass	Structural	Window glass		2	4	Small clear window fragments, thin in profile, with slight aqua tinge
6	NATS-0020	TR2.001	Brick	Structural	Frogged brick		4	223	Three UID red brick fragments, one of which is frogged; fourth fragment is a concrete variant (possible cinder block)
6	NATS-0021	TR2.001	Ceramic	Domestic	Terracotta flower pot		1		Rim sherd from terracotta flower pot

Bag No.	Artefact No.	Provenience	Material	Group	Type	Date (if known)	Count	Weight	Description
7	NATS-0022	TR2.001	Glass	Domestic	Beer/wine bottle glass		1		Dark green bottle body fragment
7	NATS-0023	TR2.001	Glass	Domestic	Bottle glass		1		Aqua bottle neck fragment
7	NATS-0024	TR2.001	Other	Military	Slag		1		Slag fragment; poss. associated with tramway or cottage 'yard'
8	NATS-0025	TR2 N half .002	Brick	Structural	Brick fragment		1	18	Red brick fragment
8	NATS-0026	TR2 N half .002	Glass	Domestic	Bottle glass		7	45	Six brown/amber bottle body fragments, and one brown/amber basal fragment; appear to pre-date modern beer bottle
8	NATS-0027	TR2 N half .002	Metal	Structural	Fastener		18	87	Heavily corroded and fragmented iron fastener (bolt or spike) head
8	NATS-0028	TR2 N half .002	Glass	Domestic	Bottle glass		2	9	Clear vessel (bottle and/or drinking glass) body fragments
8	NATS-0029	TR2 N half .002	Metal	Structural	Lock washer		1	4	Iron lock washer, 2cm exterior diameter and 1.1cm interior diameter
8	NATS-0030	TR2 N half .002	Glass?	Domestic	Bottle glass		1		Possible burnt bottle glass fragment; alternatively, object may be coal fragment

Bag No.	Artefact No.	Provenience	Material	Group	Type	Date (if known)	Count	Weight	Description
9	NATS-0031	TR2.002	Glass	Domestic	Bottle glass		1	8	Clear bottle body fragment with slight aqua tinge
9	NATS-0032	TR2.002	Glass	Structural	Window glass		1	14	Clear flat window fragment with embossed dot pattern on one side
10	NATS-0033	TR1 S half .004	Glass	Domestic	Bottle glass		5	17	Brown/amber bottle body fragments; appear to pre-date modern beer bottle
10	NATS-0034	TR1 S half .004	Glass	Domestic	Bottle glass		1	4	Clear bottle body fragment with patina
10	NATS-0035	TR1 S half .004	Ceramic	Domestic	Plate or platter		1	11	Small, undecorated whiteware basal sherd from a plate or platter
10	NATS-0035	TR1 S half .004	Glass	Domestic	Bottle glass		1	6	Light green soda bottle neck fragment w/ partial 'blob' applied lip
10	NATS-0036	TR1 S half .004	Ceramic	Domestic	Porcelain cup fragment	1905-1930	1	3	Small rim sherd from English porcelain bowl or cup; painted band of metallic silver or gold present around edge of rim
11	NATS-0037	TR1 N half Fea1	Glass	Domestic	Bottle glass		1	16	Brown/amber bottle neck fragment without lip; features heavy patina and appears to pre-date modern beer bottle

Bag No.	Artefact No.	Provenience	Material	Group	Type	Date (if known)	Count	Weight	Description
12	NATS-0038	TR1 N half .005	Glass	Domestic	Bottle glass		1	4	Clear vessel (bottle or drinking glass) body fragment featuring slight decorative line
12	NATS-0039	TR1 N half .005	Faunal	Unknown	Periwinkle		2	4	Small intact periwinkle shells
12	NATS-0040	TR1 N half .005	Stone	Structural	Calcrete		5	50	Fragments of calcrete; larger examples contain embedded shell
12	NATS-0041	TR1 N half .005	Stone	Structural	Stone		1	97	Stone fragments
12	NATS-0042	TR1 N half .005	Glass	Domestic	Bottle glass		4	31	Three brown/amber bottle body fragments and one brown/amber bottle basal fragment; all examples exhibit heavy patina and appear to pre-date modern beer bottle
13	NATS-0043	TR2 N half .003	Metal	Structural	Bolt		1	131	Heavily concreted iron bolt fragment; maximum preserved diameter: 3.1cm
13	NATS-0044	TR2 N half .003	Metal	Structural	Iron hinge		1	35	Fragment of flat iron plate with what appears to be a partial circular opening; poss. hinge or backing plate. Maximum length is 4.6cm

Bag No.	Artefact No.	Provenience	Material	Group	Type	Date (if known)	Count	Weight	Description
13	NATS-0045	TR2 N half .003	Glass	Domestic	Bottle glass		2	15	Brown/amber bottle body fragments; letters "E R A" embossed on one example. Appear to pre-date modern beer bottle
14	NATS-0046	TR1.004	Stone	Structural	Burned stone		1	27	Badly burned stone
15	NATS-047	T2	Ceramic	Domestic	Undecorated whiteware	1815-1925	1	10	Undecorated whiteware fragment, mug
15	NATS-0048	T2 S half .003	Metal	Unknown	Flat iron		14	65	Flat iron fragments
15	NATS-0049	T2 S half .003	Metal	Structural	Fastener		1	17	Iron fastener
16	NATS-0050	T3.0010	Metal	Structural	Threaded fastener		1	2	Threaded screw
16	NATS-0051	T3.0010	Glass	Domestic	Bottle glass		1	5	Amber bottle glass fragments
18	NATS0052	T1.F1.007	Other	Unknown	Coal fragment		1	4	Coal fragment
18	NATS-0053	T1.F1.007	Other	Unknown	Cinder fragment		24	17	Cinder fragment
18	NATS-0054	T1.F1.007	Glass	Domestic	Bottle glass		1		Amber bottle glass fragments
19	NATS-0055	T1.F1.008	Other	Unknown	Cinder fragment		1	4	Cinder fragment

Bag No.	Artefact No.	Provenience	Material	Group	Type	Date (if known)	Count	Weight	Description
19	NATS-0056	T1.F1.008	Wood	Unknown	Fossilized mangrove root		2	7	Fossilized mangrove root
19	NATS-0057	T1.F1.008	Wood	Unknown	Wood fragment		1		Wood fragment
19	NATS-0058	T1.F1.008	Other	Unknown	Clay fragment		2	14	Clay fragment
19	NATS-0059	T1.F1.008	Glass	Domestic	Bottle glass		1	18	Amber bottle glass fragments
20	NATS-0060	T2 N Ext .001	Metal	Structural	Iron attachment plates		2	48	Metal plates with hole at 9mm each end and notch for attaching metal siding or other building components. 1.12cm (L) x 2.7cm (W) x .15cm (T)
20	NATS-0061	T2 N Ext .001	Metal	Structural	Bolt		6	198	Iron bolts, 3.95cm (L) x 1.6cm (W)
20	NATS-0062	T2 N Ext .001	Glass	Domestic	Bottle glass		5	22	Amber bottle glass fragments, marked "laide B south" Made in Adelaide
20	NATS-0063	T2 N Ext .001	Glass	Domestic	Bottle glass		1	30	Olive green bottle glass fragment, square bottle base
20	NATS-0064	T2 N Ext .001	Metal	Structural	Nut		3	38	Steel nuts appear to be cut with cold chisel from bolts from this trench, associated with threaded bolts and backing plates

Bag No.	Artefact No.	Provenience	Material	Group	Type	Date (if known)	Count	Weight	Description
20	NATS-0065	T2 N Ext .001	Ceramic	Domestic	Transfer printed whiteware	1850- 1925	1	5	Transfer printed whiteware, floral pattern, rim fragment
20	NATS-0066	T2 N Ext .001	Ceramic	Domestic	Porcelain cup fragment		1	1	Thin porcelain cup fragment
20	NATS-0067	T2 N Ext .001	Glass	Domestic	Bottle glass		1	4	Clear bottle glass
20	NATS-0068	T2 N Ext .001	Other	Structural	Slag		20	1	Slag fragment; poss. associated with tramway or cottage 'yard'
20	NATS-0069	T2 N Ext .001	Glass	Domestic	Bottle glass		1	1	Degraded glass, clear fragment
20	NATS-0070	T2 N Ext .001	Other	Unknown	Cockle		22	72	Cockles
20	NATS-0071	T2 N Ext .001	Glass	Domestic	Bottle glass		1	1	Amber bottle glass fragments
21	NATS-0072	T2.002	Other	Unknown	Oyster		1	23	Oyster shell fragment
21	NATS-0073	T2 N Ext .002	Other	Unknown	Cockle		1	14	Cockles
21	NATS-0074	T2 N Ext .002	Metal	Unknown	Metal fragment		1	6	Corroded metal fragment
22	NATS-0075	T2.004	Glass	Domestic	Bottle glass		3	30	Amber bottle glass fragments, "...he property of ...pany L..."

Bag No.	Artefact No.	Provenience	Material	Group	Type	Date (if known)	Count	Weight	Description
22	NATS-0076	T2.004	Glass	Domestic	Bottle glass		3	16	Clear bottle glass
22	NATS-0077	T2.004	Other	Unknown	Oyster		1	9	Oyster shell fragment
22	NATS-0078	T2.004	Metal	Structural	Fastener		2	15	Corroded iron fastener
23	NATS-0079	T3.001	Glass	Domestic	Bottle glass		1	1	Amber bottle glass fragments
23	NATS-0080	T3.001	Other	Unknown	Plastic fragment		1	N/A	Plastic fragment
24	NATS-0081	T3.003	Glass	Domestic	Bottle glass		2	6	Amber bottle glass fragments
24	NATS-0082	T3.003	Glass	Domestic	Bottle glass		1	86	Light blue bottle glass fragments
25	NATS-0083	T3.003	Ceramic	Domestic	Porcelain cup fragment	1905-1930	1	N/A	Undecorated porcelain cup fragment
25	NATS-0084	T3.003	Glass	Domestic	Bottle glass		2	5	Clear bottle glass
25	NATS-0085	T3.003	Glass	Domestic	Bottle glass		6	22	Amber bottle glass fragments
25	NATS-0086	T3.003	Other	Unknown	Oyster		3	10	Oyster shell fragment
25	NATS-0087	T3.003	Other	Military	Sulphur		2	1	Elemental sulphur
26	NATS-0088	T3.004	Glass	Domestic	Bottle glass		1	6	Olive green bottle glass fragment
26	NATS-0089	T3.004	Glass	Domestic	Bottle glass		1	10	Amber bottle glass fragments
26	NATS-0090	T3.004	Glass	Domestic	Bottle glass		3	10	Amber bottle glass fragments

Bag No.	Artefact No.	Provenience	Material	Group	Type	Date (if known)	Count	Weight	Description
26	NATS-0091	T3.004	Stone	Structural	Roofing slate		1	2	Roofing slate fragment
26	NATS-0092	T3.004	Other	Unknown	Coal fragment		1	3	Coal fragment
26	NATS-0093	T3.004	Other	Unknown	Calcrete		1	4	Calcrete fragment
27	NATS-0094	T3.005	Other	Military	Sulphur		2	1.2	Elemental sulphur
27	NATS-0095	T3.005	Glass	Domestic	Bottle glass		1	7	Clear bottle glass
27	NATS-0096	T3.005	Metal	Unknown	Metal fragment		2	N/A	Corroded metal fragment
27	NATS-0097	T3.005	Other	Unknown	Sedimentary rock		1	27	Sedimentary rock with iron fused to it.
27	NATS-0098	T3.005	Other	Unknown	Calcrete		1	41	Calcrete fragment
27	NATS-0099	T3.005	Stone	Unknown	Stone fragment		1	9	Stone fragments
29	NATS-0100	T1.010	Other	Unknown	Sediment sample		4	69	Sediment sample of thin clay with vegetation.
30	NATS-101	T2(N).001	Ceramic	Domestic	Moulded whiteware		1	N/A	Moulded undecorated whiteware rim fragment
31	NATS-102	T2(N).003	Glass	Domestic	Bottle glass		1	6	Clear bottle glass
32	NATS-103	T3.006	Metal	Structural	Metal sheeting		4	11	Rusted metal sheeting fragment

Bag No.	Artefact No.	Provenience	Material	Group	Type	Date (if known)	Count	Weight	Description
32	NATS-104	T3.006	Other	Unknown	Calcrete		2	50	Calcrete fragment
32	NATS-105	T3.006	Stone	Structural	Roofing slate		1	1	Roofing slate fragment
32	NATS-106	T3.006	Mortar/Plaster	Structural	Mortar		1	26	Mortar fragment
32	NATS-107	T3.006	Glass	Domestic	Bottle glass		4	14	Amber bottle glass fragments
32	NATS-108	T3.006	Other	Unknown	Wood fragment		4	4	Wood fragment
32	NATS-109	T3.006	Other	Unknown	Periwinkle		10	16	Periwinkles
32	NATS-110	T3.006	Metal	Structural	Metal sheeting		4	8	Rusted metal sheeting
32	NATS-111	T3.006	Metal	Unknown	Metal fragment		1	24	Metal fragment
32	NATS-112	T3.006	Other	Military	Sulphur		4	3	Elemental Sulphur
32	NATS-113	T2. South Square	Brick	Structural	Sand brick		2	254	Sand brick fragments
32	NATS-114	T3.006	Glass	Domestic	Bottle glass		1	8	Clear bottle glass
32	NATS-115	T3.006	Mortar/Plaster	Structural	Mortar		1	13	Mortar fragments with slag attached
32	NATS-116	T3.006	Other	Military	Slag		1	2	Slag fragment; poss. associated with tramway or cottage 'yard'

Bag No.	Artefact No.	Provenience	Material	Group	Type	Date (if known)	Count	Weight	Description
33	NATS-117	T2 N Ext .003	Stone	Structural	Slate fragment		1	7	Slate fragment
35	NATS-118	T3.006	Stone	Structural	Bluestone		1	15	Bluestone fragment
35	NATS-119	T3.006	Ceramic	Domestic	Undecorated whiteware	1815- 1925	1	4	Undecorated whiteware fragment, deep plate/bowl
35	NATS-120	T3.006	Other	Unknown	Periwinkle		1	5	Periwinkles
36	NATS-121	T2 N Ext .003	Glass	Domestic	Torpedo bottle base	1880s- 1910s	1	6	Aqua glass torpedo bottle base
36	NATS-122	T2 N Ext .003	Glass	Domestic	Bottle glass		2	9	Amber bottle glass base and finish (beer)
36	NATS-123	T2 N Ext .003	Metal	Structural	Metal plate		1	3	Section of metal plate with punched-out circular sections
39	NATS-124	T2 N Ext .003	Glass	Domestic	Bottle glass		3	21	Amber bottle glass base “...NY...L”...TY...MIT”
38	NATS-125	T3.005	Stone	Unknown	Stone fragment		2	1.02	Stone fragments
39	NATS-126	T2 N Ext .002	Glass	Domestic	Bottle glass		1	11	Aqua bottle glass fragments
39	NATS-127	T2.002	Metal	Military(?)	Copper sheet fragment		1	1	Copper sheet fragment

Bag No.	Artefact No.	Provenience	Material	Group	Type	Date (if known)	Count	Weight	Description
42	NATS-128	T1.006	Stone	Unknown	Stone fragment		1	410	Stone fragment
43	NATS-129	T2. South Square	Brick	Structural	Sand brick		2	510	Sediment conglomerate; possible sand brick
43	NATS-130	T2. South Square	Glass	Domestic	Bottle glass		1	3	Amber bottle glass fragment
43	NATS-131	T2. South Square	Other	Unknown	Coal fragment		2	10	Coal fragments
44	NATS-132	T2 N Extension E. Quadrant Base of .003	Glass	Domestic	Bottle glass		1	5	Aqua bottle glass base
44	NATS-133	T2 N Extension E. Quadrant Base of .003	Glass	Domestic	Bottle glass		8	20	Aqua bottle glass fragments
44	NATS-134	T2 N Extension E. Quadrant Base of .003	Glass	Domestic	Iron fragments		2	3	Unidentified iron fragments
45	NATS-135	T1.004	Glass	Domestic	Bottle glass		1	2	Amber bottle glass fragment
45	NATS-136	T1.004	Other	Unknown	Shell		2	0.5	Small intact periwinkle shells
45	NATS-137	T1.004	Other	Unknown	Concretion		1	5	Unidentified linear object; possible fastener concretion

Bag No.	Artefact No.	Provenience	Material	Group	Type	Date (if known)	Count	Weight	Description
46	NATS-138	T2. South Square	Glass	Domestic	Bottle glass		8	4	Amber bottle glass fragments
46	NATS-139	T2. South Square	Glass	Domestic	Bottle glass		1	4	Light green soda bottle fragment
46	NATS-140	T2. South Square	Ceramic	Domestic	Undecorated whiteware	1815-1925	1	1	Undecorated whiteware fragment, plate/bowl
46	NATS-141	T2. South Square	Other	Military	Slag		7	15	Slag fragments; poss. associated with tramway or cottage 'yard'
46	NATS-142	T2. South Square	Other	Unknown	Coal fragments		8	9	Coal fragments
46	NATS-143	T2. South Square	Stone	Structural	Stone fragment		1	3	Stone fragment
47	NATS-144	T1.006	Other	Military	Slag		9	10	Slag fragments; possible associated with tramway or cottage 'yard'
47	NATS-145	T1.006	Other	Unknown	Coal fragments		3	1	Coal fragments
47	NATS-146	T1.006	Stone	Structural	Stone fragment		1	20	Stone fragment with mortar attached
48	NATS-147	T1.007	Glass	Domestic	Bottle glass		1	2	Amber bottle glass fragment
48	NATS-148	T1.007	Stone	Structural	Burned stone		2	4	Badly burned stone; possibly heat treated

Bag No.	Artefact No.	Provenience	Material	Group	Type	Date (if known)	Count	Weight	Description
48	NATS-149	T1.007	Metal	Unknown	Iron fragment		1	3	Unidentified iron fragment; graphitized
49	NATS-150	T2 N Extension W. Quadrant Base of .002	Metal	Structural	Iron fragment		1	4	Unidentified flat iron fragment; possibly building hardware
49	NATS-151	T2 N Extension W. Quadrant Base of .002	Glass	Domestic	Bottle glass		1	0.5	Amber bottle glass fragment
49	NATS-152	T2 N Extension W. Quadrant Base of .002	Other	Military	Slag		1	0.5	Slag fragment; poss. associated with tramway or cottage 'yard'
49	NATS-153	T2 N Extension W. Quadrant Base of .002	Stone	Structural	Sandstone		1	3	Sandstone fragment; possibly part of cottage foundation
50	NATS-154	T1.006	Glass	Military	Lantern glass?		1	3	Red glass fragment; possibly part of signal lantern or beacon
50	NATS-155	T1.006	Glass	Domestic	Bottle glass		1	0.5	Clear bottle glass
51	NATS-156	T1.004	Glass	Domestic	Bottle glass		10	10	Amber bottle glass fragments

Bag No.	Artefact No.	Provenience	Material	Group	Type	Date (if known)	Count	Weight	Description
51	NATS-157	T1.004	Glass	Domestic	Bottle glass		2	12	Amber bottle glass base fragments "...THE A" and "...94...2 N38"
51	NATS-158	T1.004	Glass	Domestic	Bottle glass		2	6	Amber bottle glass body fragments "...TAS" and medallion with anchor device surrounded by letters
51	NATS-159	T1.004	Glass	Domestic	Bottle glass		2	3	Amber bottle glass fragments, moulded; possibly pharmaceutical
51	NATS-160	T1.004	Glass	Domestic	Bottle glass		6	20	Clear bottle glass fragments
51	NATS-161	T1.004	Glass	Domestic	Bottle glass		1	2	Aqua bottle glass fragment with moulded lip; possibly milk bottle
51	NATS-162	T1.004	Metal	Military	Lead sheet		4	1	Thin folded lead sheet; possibly part of sabot
51	NATS-163	T1.004	Other	Unknown	Calcrete		1	115	Calcrete fragment
51	NATS-164	T1.004	Other	Structural	Electrical outlet		1	0.5	Plastic electrical lightbulb outlet, early 20th century; threaded on interior
51	NATS-165	T1.004	Other	Military	Slag		1	7	Slag fragment; poss. associated with tramway or cottage 'yard'
52	NATS-166	T2.006	Stone	Structural	Bluestone		1	155	Bluestone fragment

Bag No.	Artefact No.	Provenience	Material	Group	Type	Date (if known)	Count	Weight	Description
53	NATS-167	T2.005	Ceramic	Structural	Plumbing pipe		1	790	Terracotta plumbing pipe fragment; glazed on exterior
54	NATS-168	T3.North End	Glass	Domestic	Bottle glass		3	2	Clear bottle glass fragments
54	NATS-169	T3.North End	Other	Military	Slag		9	5	Slag fragments; poss. associated with tramway or cottage 'yard'
54	NATS-170	T3.North End	Faunal	Unknown	Whelk shell		1	1	Whelk shell fragment
54	NATS-171	T3.North End	Mortar/Plaster	Structural	Mortar		4	5	Mortar fragments; one exhibits finish on one side
56	NATS-172	T3.003	Other	Military	Sulphur		8	4	Sulphur fragments
56	NATS-173	T3.003	Glass	Domestic	Bottle glass		10	11	Amber bottle glass fragments
56	NATS-174	T3.003	Glass	Domestic	Bottle glass		1	0.5	Aqua bottle glass fragment
56	NATS-175	T3.003	Glass	Domestic	Bottle glass		3	4	Clear bottle glass fragments
56	NATS-176	T3.003	Glass	Domestic	Bottle glass		1	1	Clear bottle glass lip fragment; possibly from milk bottle
56	NATS-177	T3.003	Other	Military	Slag		5	1	Slag fragments; poss. associated with tramway or cottage 'yard'
57	NATS-178	T3.007	Other	Structural	Embankment sample		1	53	Sediment sample from earthen embankment, showing laminae of depositional beds

Bag No.	Artefact No.	Provenience	Material	Group	Type	Date (if known)	Count	Weight	Description
58	NATS-179	T3.008	Glass	Domestic	Bottle glass		1	0.5	Aqua bottle glass fragment
58	NATS-180	T3.008	Stone	Structural	Bluestone		2	15	Bluestone fragments
58	NATS-181	T3.008	Faunal	Unknown	Shell		4	5	Shell fragments; various species
58	NATS-182	T3.008	Other	Unknown	Calcrete		1	0.5	Calcrete fragment
59	NATS-183	T3. N Extension.008	Brick	Structural	Sand brick		6	10	Melted' sand brick fragments
60	NATS-184	T3. N Extension.008	Brick	Structural	Sand brick		2	110	Melted' sand brick fragments
61	NATS-185	T3.010	Metal	Structural	Fastener		1	0.5	Iron fastener, heavily concreted; small nail or tack, 3.1cm in length
62	NATS-186	T3.009	Brick	Structural	Sand brick		6	52	Melted' sand brick fragments
63	NATS-187	T2 Surface	Brick	Structural	Frogged brick		1	525	Frogged brick fragment with decorative exterior
64	NATS-188	T3. W Extension.003	Glass	Domestic	Bottle glass		4	6	Amber bottle glass fragments
64	NATS-189	T3. W Extension.003	Glass	Domestic	Bottle glass		1	10	Amber bottle glass base fragment
64	NATS-190	T3. W Extension.003	Glass	Domestic	Bottle glass		2	8	Amber bottle glass body fragments "...ERTY OF" and medallion with "K REG..."

Bag No.	Artefact No.	Provenience	Material	Group	Type	Date (if known)	Count	Weight	Description
64	NATS-191	T3. W Extension.003	Glass	Domestic	Bottle glass		1	0.5	Clear bottle glass fragment
64	NATS-192	T3. W Extension.003	Other	Military	Sulphur		2	25	Elemental sulphur fragments
64	NATS-193	T3. W Extension.003	Faunal	Unknown	Shell		2	2	Shell fragments; oyster?
65	NATS-194	T3. W Extension.004	Glass	Domestic	Bottle glass		1	1	Clear bottle glass fragment
66	NATS-195	T3. W Extension.006	Glass	Domestic	Bottle glass		1	2	Amber bottle glass fragment
67	NATS-196	T3. N Extension.001	Faunal	Unknown	Whelk shell		1	1	Small whelk shell, intact
68	NATS-197	T3.009	Stone	Structural	Slate fragment		1	30	Roofing slate fragment
68	NATS-198	T3.009	Ceramic	Domestic	Moulded whiteware		1	5	Moulded undecorated whiteware rim fragment; deep plate or bowl
68	NATS-199	T3.009	Glass	Domestic	Bottle glass		13	60	Amber bottle glass fragments
68	NATS-200	T3.009	Glass	Domestic	Bottle glass		1	3	Amber bottle glass base fragment
68	NATS-201	T3.009	Glass	Domestic	Bottle glass		1	1	Amber bottle glass body fragment "...VE TH..."
68	NATS-202	T3.009	Glass	Domestic	Bottle glass		2	1	Clear bottle glass fragments; one features "...SO..."

Bag No.	Artefact No.	Provenience	Material	Group	Type	Date (if known)	Count	Weight	Description
68	NATS-203	T3.009	Brick	Structural	Frogged brick		1	2	Frogged brick fragment with partial letter (unreadable)
68	NATS-204	T3.009	Glass	Domestic	Bottle glass		1	0.5	Aqua bottle glass fragment
68	NATS-205	T3.009	Glass	Domestic	Bottle glass			1	1
68	NATS-206	T3.009	Stone	Structural	Bluestone		2	125	Bluestone fragments
68	NATS-207	T3.009	Faunal	Unknown	Shell		6	100	Shell fragments; various species
68	NATS-208	T3.009	Stone	Structural	Bluestone		6	30	Bluestone fragments; some appear to be burnt/heat treated
68	NATS-209	T3.009	Other	Unknown	Unidentified rubber		1	0.3	Unidentified rubber fragment; badly degraded
68	NATS-210	T3.009	Wood	Unknown	Wood fragment		1	0.2	Unidentified wood fragment
69	NATS-211	T3.002	Faunal	Domestic	Mammal rib bone		1	5	Mammalian rib, possibly goat, pig or sheep; exterior moderately degraded
69	NATS-212	T3.002	Brick	Structural	Vitrified sand brick		1	125	Sand brick fragment vitrified on two exterior faces
69	NATS-213	T3.002	Glass	Domestic	Bottle glass		5	23	Amber bottle glass fragments; one features heavy patina
69	NATS-214	T3.002	Glass	Domestic	Bottle glass		1	7	Clear bottle glass fragment with "...NI..."

Bag No.	Artefact No.	Provenience	Material	Group	Type	Date (if known)	Count	Weight	Description
69	NATS-215	T3.002	Other	Military	Slag		6	15	Slag fragments; poss. associated with tramway or cottage 'yard'
69	NATS-216	T3.002	Stone	Structural	Burned stone		3	4	Badly burned stone; possibly heat treated
70	NATS-217	T3. W Extension.003	Other	Military	Sulphur		4	3	Elemental sulphur fragments
71	NATS-218	T3. W Extension.003	Glass	Domestic	Bottle glass		3	5	Amber bottle glass fragments
71	NATS-219	T3. W Extension.003	Faunal	Unknown	Shell		4	5	Shell fragments; various species
71	NATS-220	T3. W Extension.003	Other	Unknown	Calcrete		6	5	Calcrete fragments
71	NATS-221	T3. W Extension.003	Other	Unknown	Charcoal		4	2	Charcoal fragments
71	NATS-222	T3. W Extension.003	Stone	Structural	Bluestone		1	2	Bluestone fragment
72	NATS-223	T3. N Extension.009	Glass	Domestic	Bottle glass		1	55	Clear bottle glass base
72	NATS-224	T3. N Extension.009	Glass	Domestic	Bottle glass		2	5	Clear bottle glass fragments
72	NATS-225	T3. N Extension.009	Brick	Structural	Vitrified sand brick		3	500	Three sand brick fragments vitrified on one or more exterior faces

Bag No.	Artefact No.	Provenience	Material	Group	Type	Date (if known)	Count	Weight	Description
72	NATS-226	T3. N Extension.009	Glass	Domestic	Bottle glass		6	8	Amber bottle glass fragments
72	NATS-227	T3. N Extension.009	Faunal	Unknown	Oyster		1	2	Oyster shell fragment
72	NATS-228	T3. N Extension.009	Other	Unknown	Calcrete		3	105	Calcrete fragments
72	NATS-229	T3. N Extension.009	Other	Military	Slag		2	5	Slag fragments; poss. associated with tramway or cottage 'yard'
73	NATS-230	T3.007	Other	Unknown	Calcrete		1	20	Calcrete fragment
74	NATS-231	T3.007	Brick	Structural	Sand brick		2	5	Sand brick fragments; one with two flat surfaces and the other with charred temper material
75	NATS-232	T3 Surface of .011	Brick	Structural	Roofing tile		1	45	Red clay roofing tile fragment; letters "...ABAR T..." visible on one face
75	NATS-233	T3 Surface of .011	Glass	Domestic	Bottle glass		2	10	Amber bottle glass fragments
75	NATS-234	T3 Surface of .011	Metal	Structural	Fastener		4	7	Iron fasteners, heavily concreted and/or degraded; small nails or tacks, average 4.5cm in length

Bag No.	Artefact No.	Provenance	Material	Group	Type	Date (if known)	Count	Weight	Description
1	Discarded	T1 N half .001	Other	Military	Slag		1	16	Slag fragment; poss. associated with tramway or cottage 'yard'
1	Discarded	T1 N half .001	Mortar/Plaster	Structural	Mortar		4	91	Mortar fragment
1	Discarded	T1 N half .001	Glass	Domestic	Bottle glass		41	219	Amber bottle glass fragments
2	Discarded	T1 S half .001	Other	Military	Slag		6	8	Slag fragment; poss. associated with tramway or cottage 'yard'
2	Discarded	T1 S half .001	Stone	Structural	Sandstone		2	32	Sandstone fragment
2	Discarded	T1 S half .001	Stone	Structural	Quartz		2	42	Quartz fragment
2	Discarded	T1 S half .001	Mortar/Plaster	Structural	Mortar		8	196	Mortar fragment
3	Discarded	T1 N half .002	Other	Military	Slag		23	6.8	Slag fragment; poss. associated with tramway or cottage 'yard'
3	Discarded	T1 N half .002	Glass	Domestic	Bottle glass		10	16	Modern amber bottle glass
3	Discarded	T1 N half .002	Other	Unknown	Hair/fabric matting		1	3	Fabric/hair matting
3	Discarded	T1 N half .002	Mortar/Plaster	Structural	Mortar		33	373	Mortar fragment

Bag No.	Artefact No.	Provenance	Material	Group	Type	Date (if known)	Count	Weight	Description
3	Discarded	T1 N half .002	Stone	Structural	Sandstone		1	13	Sandstone fragment
3	Discarded	T1 N half .002	Stone	Unknown	Stone fragment		1	23	Stone fragments
4	Discarded	T1 S half .003	Other	Unknown	Hair/fabric matting		3	30	Fabric/hair matting
4	Discarded	T1 S half .003	Glass	Domestic	Bottle glass		4	11	Modern amber bottle glass
4	Discarded	T1 S half .003	Other	Military	Slag		27	25	Slag fragment; poss. associated with tramway or cottage 'yard'
4	Discarded	T1 S half .003	Mortar/Plaster	Structural	Mortar		11	99	Mortar fragment
4	Discarded	T1 S half .003	Stone	Structural	Sandstone		1	79	Sandstone fragment
4	Discarded	T1 S half .003	Glass	Domestic	Bottle glass		3	11	Clear bottle glass
4	Discarded	T1 S half .003	Wood	Unknown	Wood fragment		1	5	Wood fragment
4	Discarded	T1 S half .003	Other	Unknown	Coal fragment		1	42	Coal fragment
4	Discarded	T1 S half .003	Other	Unknown	Shell carbonate		2	1	Shell carbonate
4	Discarded	T1 S half .003	Stone	Unknown	Stone fragment		2	140	Stone fragment

Bag No.	Artefact No.	Provenance	Material	Group	Type	Date (if known)	Count	Weight	Description
5	Discarded	T1 N half .003	Other	Military	Slag		12	45	Slag fragment; poss. associated with tramway or cottage 'yard'
5	Discarded	T1 N half .003	Stone	Structural	Sandstone		2	138	Sandstone fragment
5	Discarded	T1 N half .003	Mortar/Plaster	Structural	Mortar		9	545	Mortar fragment
5	Discarded	T1 N half .003	Stone	Unknown	Quartz		2	96	Quartz fragment
5	Discarded	T1 N half .003	Other	Unknown	Charcoal		5	31	Charcoal fragment
5	Discarded	T1 N half .003	Glass	Domestic	Bottle glass		2	3	Modern amber bottle glass
5	Discarded	T1 N half .003	Glass	Domestic	Bottle glass		3	2	Modern clear bottle glass fragment
6	Discarded	T2.001	Glass	Domestic	Bottle glass		6	21	Modern amber bottle glass
6	Discarded	T2.001	Glass	Domestic	Bottle glass		2	4	Modern clear bottle glass fragment
7	Discarded	T2.001	Other	Unknown	Charcoal		7	16	Charcoal fragment
7	Discarded	T2.001	Other	Unknown	Periwinkle		6	4	Periwinkles
8	Discarded	T2.002	Other	Unknown	Charcoal		2	8	Charcoal fragment
8	Discarded	T2.002	Mortar/Plaster	Structural	Mortar		1	7	Mortar fragment

Bag No.	Artefact No.	Provenance	Material	Group	Type	Date (if known)	Count	Weight	Description
8	Discarded	T2.002	Other	Military	Slag		4	9	Slag fragment; poss. associated with tramway or cottage 'yard'
9	Discarded	T2.002	Other	Unknown	Coal fragment		9	108	Coal fragment
9	Discarded	T2.002	Stone	Structural	Slate fragment		1	8	Slate fragment
10	Discarded	T1.004	Metal	Structural	Concreted bolt		2	78	Bolt with concretion attached
12	Discarded	T1 N half .005	Other	Unknown	Calcrete		456	1200	Calcrete fragment
12	Discarded	T1.005	Stone	Structural	Stone fragment		2	535	Stone fragment
13	Discarded	T2 N half .003	Other	Military	Slag		13	192	Slag fragment; poss. associated with tramway or cottage 'yard'
14	Discarded	T1.004	Other	Military	Slag		18	199	Slag fragment; poss. associated with tramway or cottage 'yard'
14	Discarded	T1.004	Stone	Structural	Stone fragment		3	76	Stone fragments
15	Discarded	T2 Surface	Metal	Structural	Flat iron		14	65	Flat iron fragments
15	Discarded	T2 Surface	Metal	Structural	Fastener		1	17	Iron fastener
16	Discarded	T3.0010	Other	Unknown	Coal fragment		1	4	Coal fragment

Bag No.	Artefact No.	Provenance	Material	Group	Type	Date (if known)	Count	Weight	Description
20	Discarded	T2.001 N Extension	Other	Unknown	Coal fragment		13	62	Coal fragment
20	Discarded	T2.001 N Extension	Stone	Structural	Stone fragment		1	9	Stone fragment
20	Discarded	T2.001 N Extension	Mortar/Plaster	Structural	Mortar		1	9	Mortar fragment
20	Discarded	T2.001 N Extension	Other	Military	Slag		2	18	Slag fragment; poss. associated with tramway or cottage 'yard'
20	Discarded	T2.001 N Extension	Other	Unknown	Calcrete		1	57	Calcrete fragment
20	Discarded	T2.001 N Extension	Other	Unknown	Duct tape		1	8	Duct tape
22	Discarded	T1.004	Brick	Structural	Brick fragment		1	3	Brick fragment
22	Discarded	T3.004	Other	Unknown	Oyster		1	7	Oyster shell fragment
26	Discarded	T3.004	Metal	Unknown	Tin		1	4	Tin fragment
26	Discarded	T3.004	Other	Unknown	Coal fragment		1	3	Coal fragment
26	Discarded	T3.004	Other	Unknown	Calcrete		1	4	Calcrete fragment
27	Discarded	T3.005	Other	Unknown	Fossilized mangrove root		1	11	Fossilized mangrove root

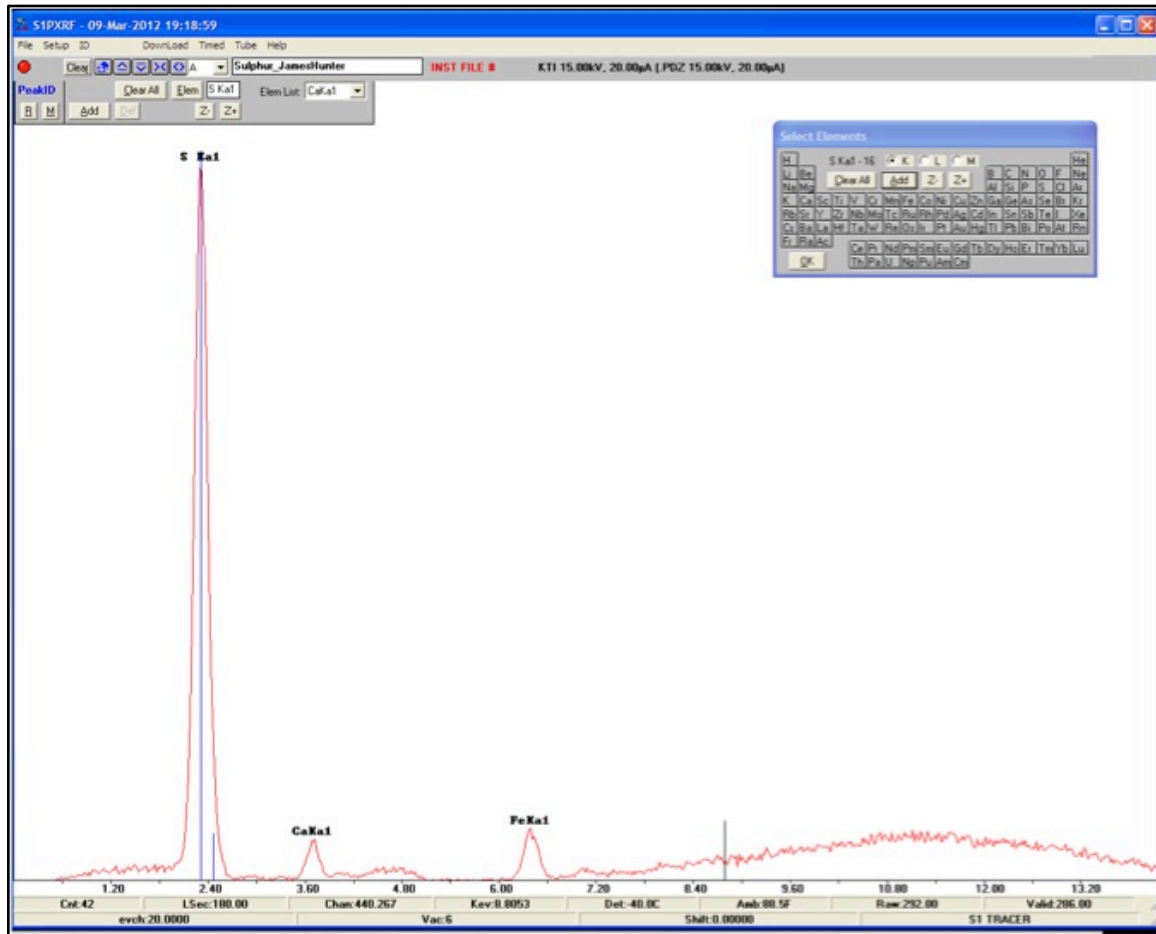
Bag No.	Artefact No.	Provenance	Material	Group	Type	Date (if known)	Count	Weight	Description
27	Discarded	T3.005	Other	Unknown	Concretion		2	1	Concretion
27	Discarded	T3.005	Other	Unknown	Calcrete		1	41	Calcrete fragment
28	Discarded	T1.008	Wood	Unknown	Wood fragment		3	1	Wood fragment
28	Discarded	T1.008	Other	Unknown	Oyster		2	2	Oyster shell fragment
28	Discarded	T1.008	Other	Military	Slag		2	5	Slag fragment; poss. associated with tramway or cottage 'yard'
30	Discarded	T2 N Extension .001	Other	Military	Slag		2	25	Slag fragment; poss. associated with tramway or cottage 'yard'
31	Discarded	T2 N Extension .003	Other	Unknown	Clam		1	9	Clam shell fragment
31	Discarded	T2 N Extension .003	Other	Unknown	Fossilized mangrove root		2	91	Fossilized mangrove root
31	Discarded	T2 N Extension .003	Other	Unknown	Oyster		1	10	Oyster shell fragment
31	Discarded	T2 N Extension .003	Other	Unknown	Coal fragment		1	31	Coal fragment

Bag No.	Artefact No.	Provenance	Material	Group	Type	Date (if known)	Count	Weight	Description
31	Discarded	T2(N).0031	Other	Military	Slag		1	29	Slag fragment; poss. associated with tramway or cottage 'yard'
32	Discarded	T3.006	Other	Military	Slag		14	16	Slag fragment; poss. associated with tramway or cottage 'yard'
32	Discarded	T3.006	Other	Unknown	Oyster		1	12	Oyster shell fragment
33	Discarded	T2.003	Other	Unknown	Coal fragment		4	41	Coal fragment
33	Discarded	T2.003	Mortar/Plaster	Structural	Mortar		11	253	Mortar fragment
33	Discarded	T2.003	Other	Unknown	Calcrete		2	41	Calcrete fragment
34	Discarded	T2.003	Other	Unknown	Charcoal		1	11	Charcoal fragment
34	Discarded	T2.003	Other	Military	Slag		1	17	Slag fragment; poss. associated with tramway or cottage 'yard'
35	Discarded	T3.006	Glass	Domestic	Bottle glass		2	2	Modern amber bottle glass
35	Discarded	T3.006	Glass	Domestic	Bottle glass		1	1	Modern clear bottle glass fragment
35	Discarded	T3.006	Mortar/Plaster	Structural	Mortar		5	85	Mortar fragment
35	Discarded	T3.006	Other	Unknown	Coal fragment			80	Coal fragment
35	Discarded	T3.006	Other	Unknown	Oyster		1	8	Oyster shell fragment

Bag No.	Artefact No.	Provenance	Material	Group	Type	Date (if known)	Count	Weight	Description
37	Discarded	T1.008	Other	Unknown	Coal fragment		2	3	Coal fragment
37	Discarded	T1.008	Glass	Domestic	Bottle glass		1	4	Modern amber bottle glass
38	Discarded	T3.005	Other	Unknown	Coal fragment			155	Coal fragment
38	Discarded	T3.005	Other	Military	Slag			25	Slag fragment; poss. associated with tramway or cottage 'yard'
38	Discarded	T3.005	Mortar/Plaster	Structural	Mortar		2	4	Mortar fragment
40	Discarded	T2 N half .002 NQ	Other	Military	Slag			70	Slag fragment; poss. associated with tramway or cottage 'yard'
40	Discarded	T2 N half .002 NQ	Other	Unknown	Coal fragment			22	Coal fragment
41	Discarded	T2 N half .002 W	Mortar/Plaster	Structural	Mortar			39	Mortar fragment
43	Discarded	T2 South Square	Other	Unknown	Coal fragment		2	10	Coal fragment
43	Discarded	T2 South Square	Glass	Domestic	Bottle glass		1	1	Modern amber bottle glass
43	Discarded	T2 South Square	Glass	Domestic	Bottle glass		1	1	Modern clear bottle glass fragment

APPENDIX G

RESULTS OF X-RAY FLUORESCENCE ANALYSIS OF ELEMENTAL SULPHUR SAMPLE RECOVERED FROM THE NORTH ARM TORPEDO STATION

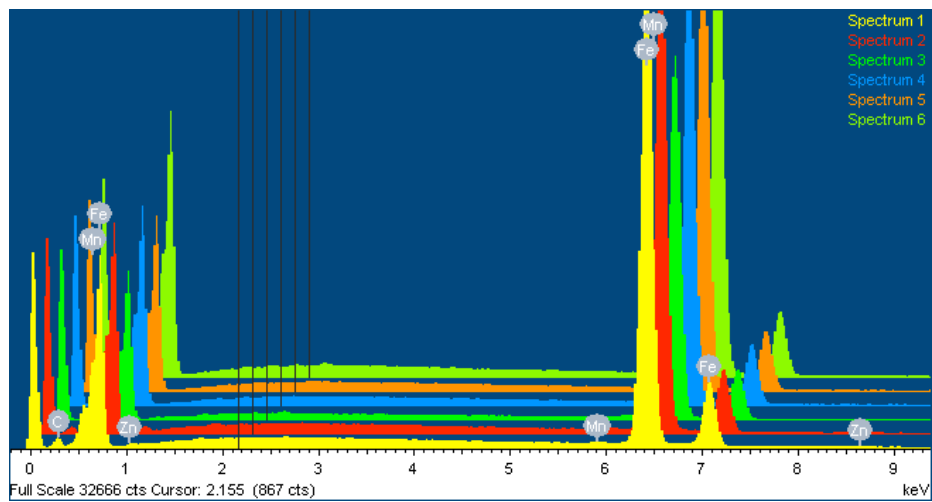
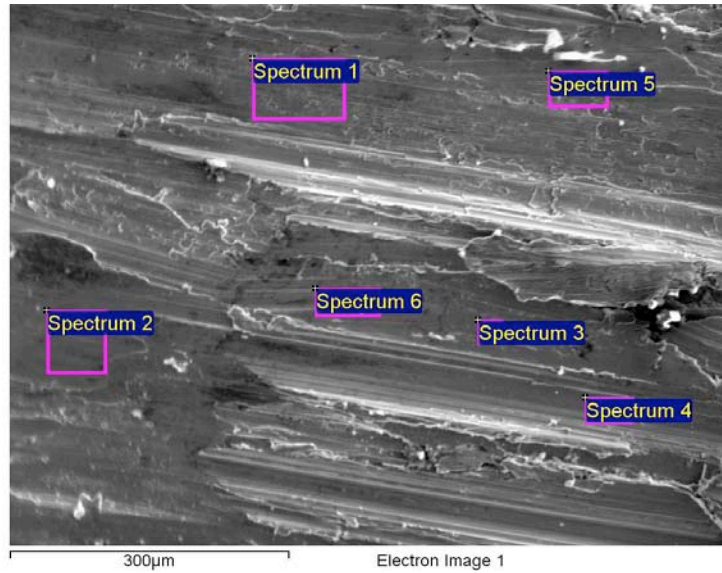


APPENDIX H

RESULTS OF SCANNING ELECTRON MICROSCOPE-ENERGY DISPERSIVE SPECTROSCOPY ANALYSIS OF HULL PLATE SAMPLE RECOVERED FROM THE NEW ZEALAND TORPEDO BOAT *DEFENDER*

WS-1242 Torpedo Boat sample

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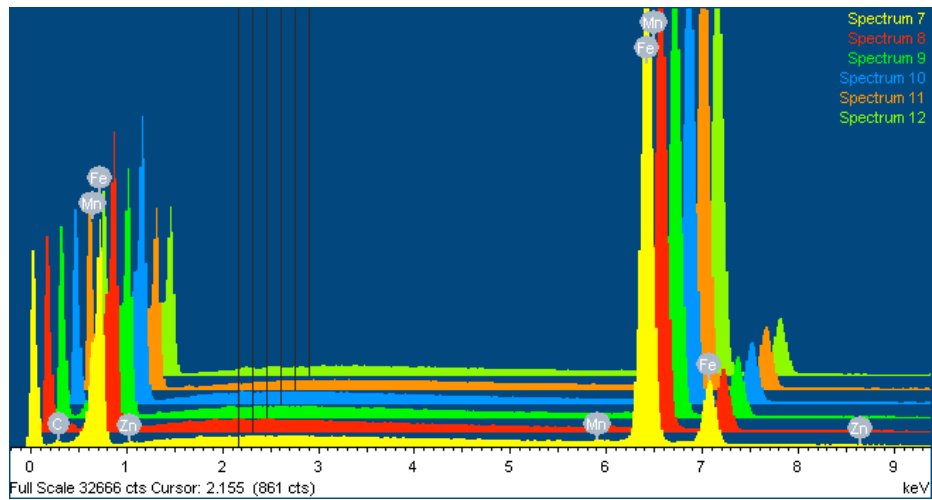
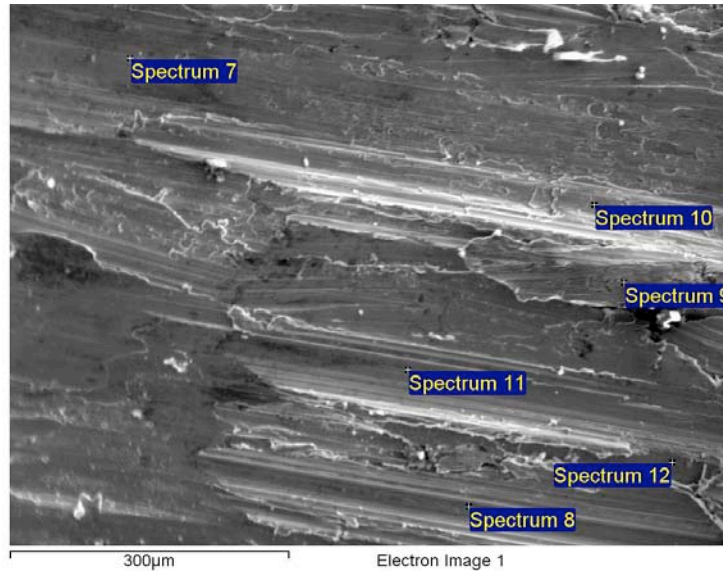


Comment: Site of Interest #1



WS-1242 Torpedo Boat sample

1/31/2011 2:03:43 PM



Comment: Site of Interest #1



WS-1242 Torpedo Boat sample

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Project: WS-1242 Torpedo Boat sample

Sample: WS-1242

Site: Site of Interest 1

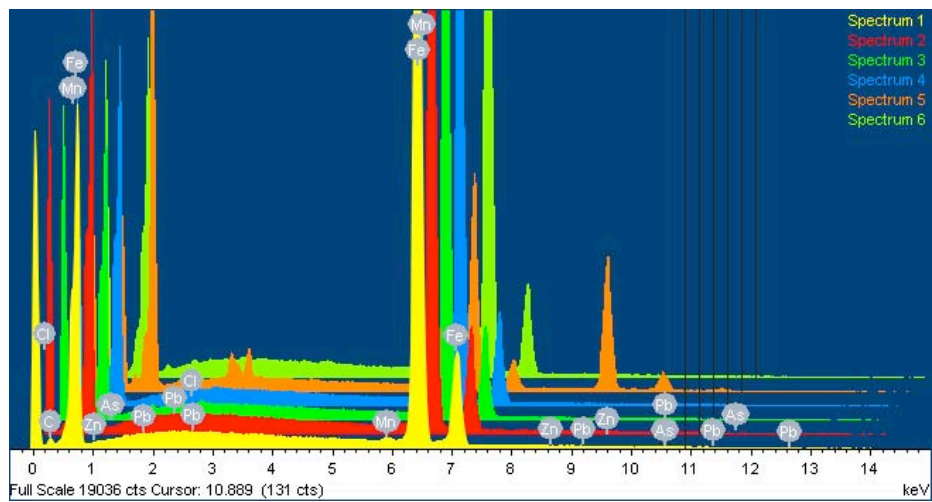
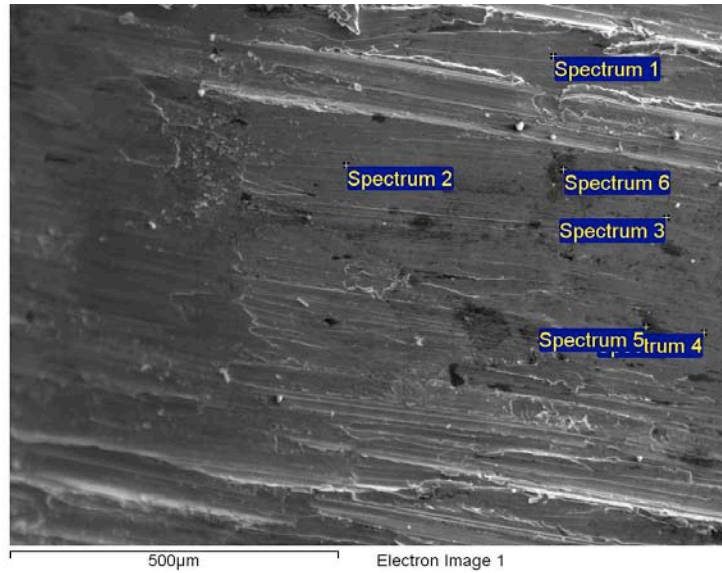
Processing option : All elements analysed (Normalised) - All results in weight% - Elements in Light gray color are at or under detection limit

Spectrum	In stats.	C	Mn	Fe	Zn	Total
Spectrum 1	Yes	4.88	0.27	94.84	0.01	100.00
Spectrum 2	Yes	3.38	0.24	95.84	0.54	100.00
Spectrum 3	Yes	3.18	0.53	96.18	0.11	100.00
Spectrum 4	Yes	3.56	0.35	95.99	0.10	100.00
Spectrum 5	Yes	4.01	0.37	95.69	-0.07	100.00
Spectrum 6	Yes	4.39	0.47	95.14	0.00	100.00
Spectrum 7	Yes	2.19	0.23	97.62	-0.04	100.00
Spectrum 8	Yes	3.52	0.23	96.19	0.06	100.00
Spectrum 9	Yes	7.70	0.26	91.96	0.08	100.00
Spectrum 10	Yes	3.01	0.18	96.72	0.08	100.00
Spectrum 11	Yes	5.17	0.25	94.51	0.07	100.00
Spectrum 12	Yes	7.42	0.29	92.19	0.09	100.00
Mean		4.37	0.31	95.24	0.09	100.00
Std. deviation		1.70	0.11	1.69	0.15	
Max.		7.70	0.53	97.62	0.54	
Min.		2.19	0.18	91.96	-0.07	



WS-1242 Torpedo Boat sample

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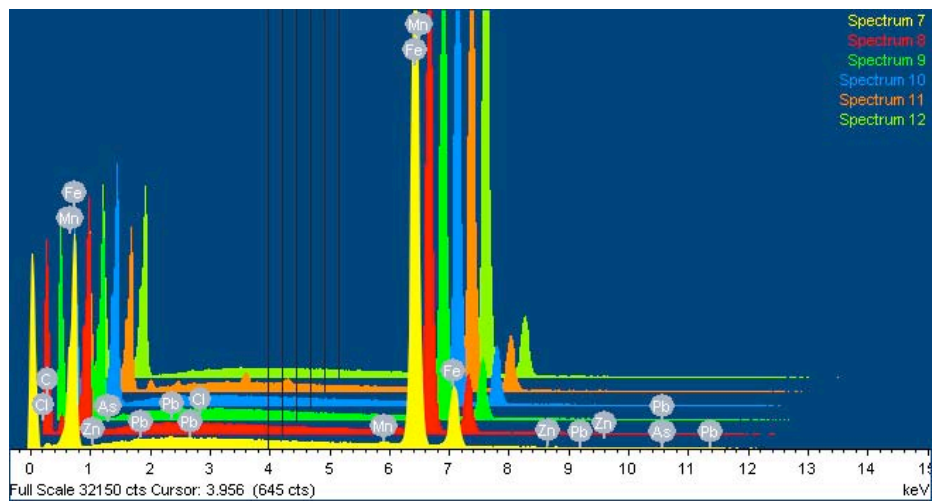
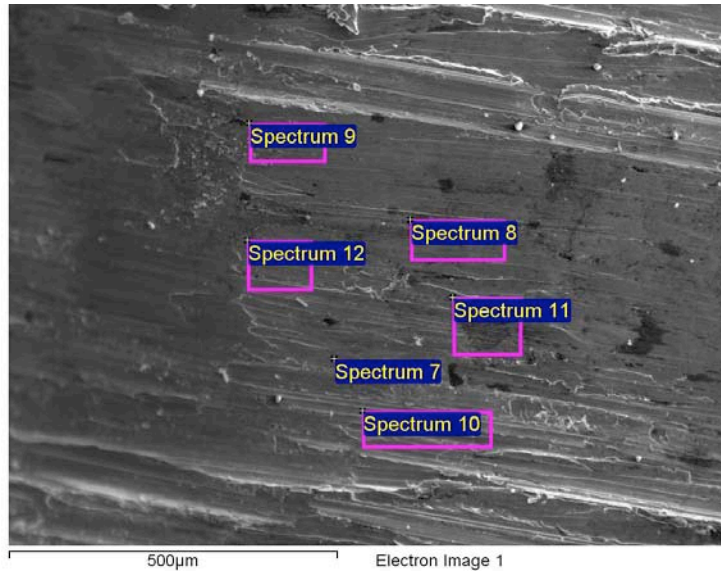


Comment: Site of Interest #2



WS-1242 Torpedo Boat sample

1/31/2011 2:41:01 PM

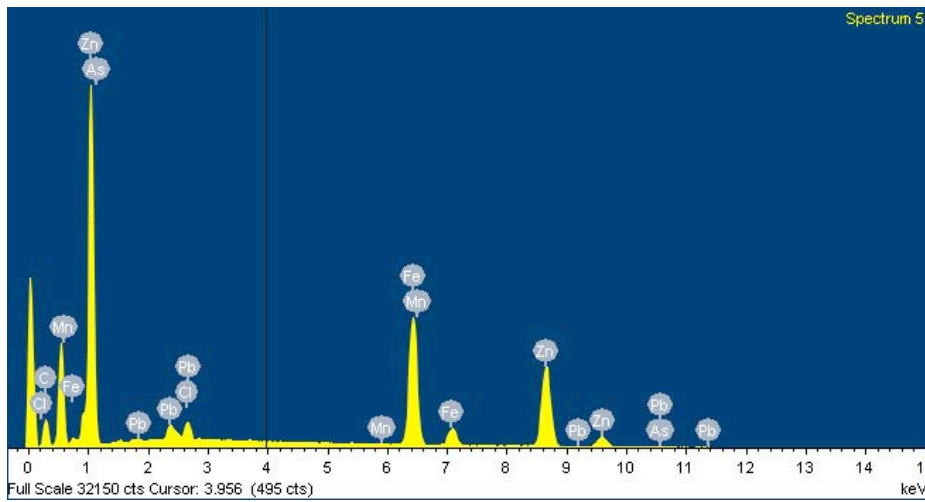
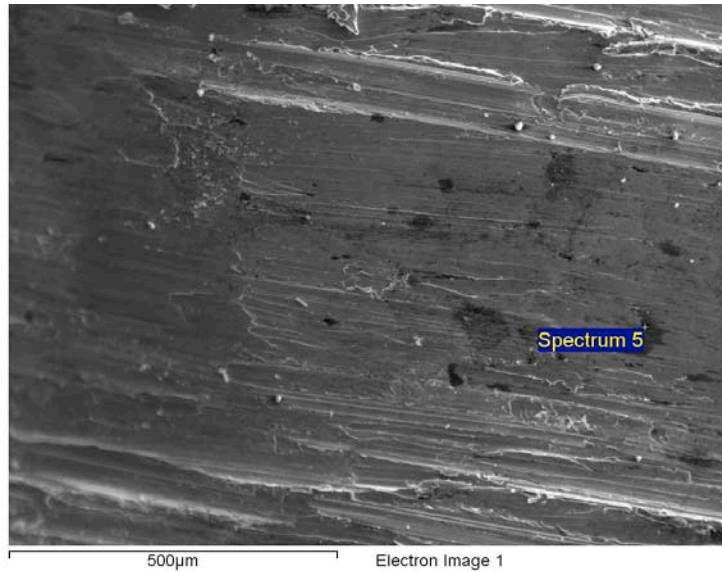


Comment: Site of Interest #2



WS-1242 Torpedo Boat sample

1/31/2011 2:42:27 PM



Comment: Site of Interest #2 – Black “stain” with a different elemental composition



WS-1242 Torpedo Boat sample

1/31/2011 2:42:36 PM

Project: WS-1242 Torpedo Boat sample

Sample: WS-1242

Site: Site of Interest 2

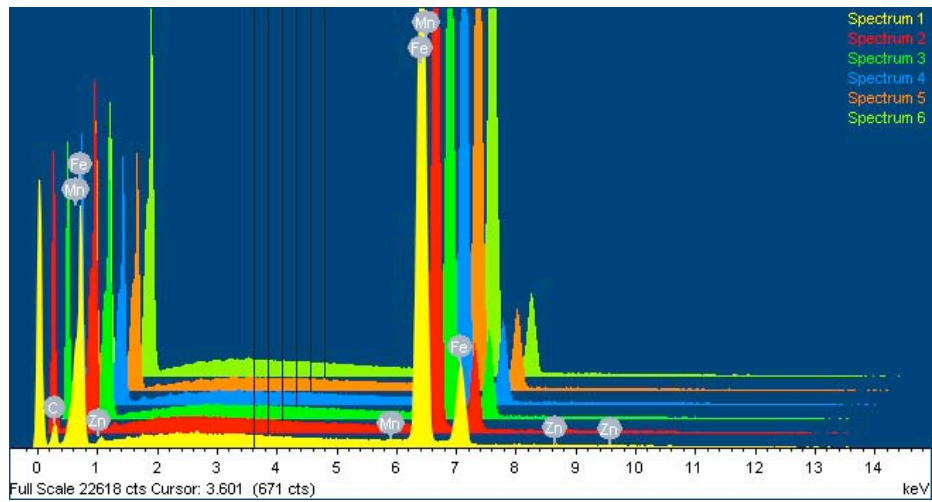
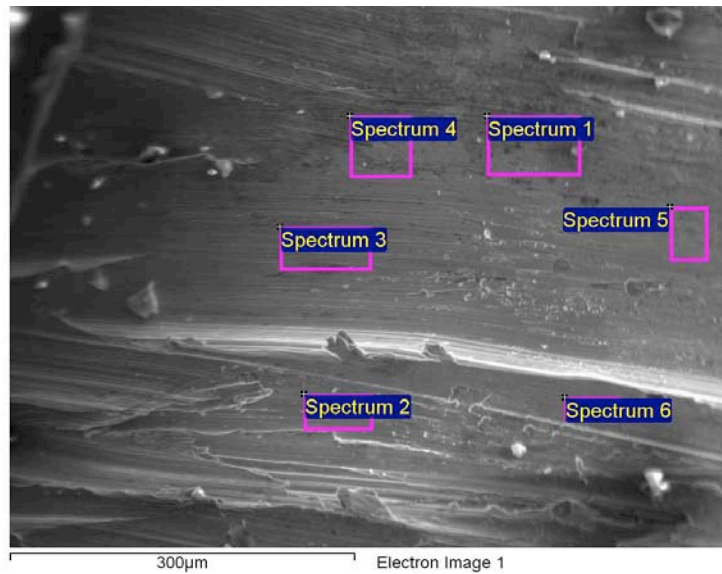
Processing option : All elements analysed (Normalised) - All results in weight% - Elements in Light gray color are at or under detection limit

Spectrum	In stats.	C	Cl	Mn	Fe	Zn	As	Pb	Total
Spectrum 1	Yes	2.10	0.01	0.35	97.71	-0.10	0.00	-0.08	100.00
Spectrum 2	Yes	1.53	0.04	0.30	97.90	0.01	0.05	0.16	100.00
Spectrum 3	Yes	2.42	0.05	0.48	96.74	0.05	0.13	0.13	100.00
Spectrum 4	Yes	2.04	-0.03	0.38	97.44	0.08	0.04	0.06	100.00
Spectrum 5	Yes	20.01	1.49	0.09	28.70	46.37	0.27	3.07	100.00
Spectrum 6	Yes	16.04	0.02	0.27	83.64	-0.03	0.04	0.01	100.00
Spectrum 7	Yes	1.56	0.05	0.39	97.91	0.01	0.00	0.08	100.00
Spectrum 8	Yes	8.20	0.04	0.27	91.23	-0.01	0.01	0.26	100.00
Spectrum 9	Yes	5.14	0.06	0.22	94.40	-0.02	0.01	0.18	100.00
Spectrum 10	Yes	2.96	0.03	0.29	96.41	-0.04	0.23	0.11	100.00
Spectrum 11	Yes	7.36	0.80	0.28	90.91	0.16	0.20	0.29	100.00
Spectrum 12	Yes	3.39	0.04	0.29	96.13	0.01	0.10	0.04	100.00
Mean		6.06	0.22	0.30	89.09	3.88	0.09	0.36	100.00
Std. deviation		6.06	0.46	0.10	19.48	13.38	0.10	0.86	
Max.		20.01	1.49	0.48	97.91	46.37	0.27	3.07	
Min.		1.53	-0.03	0.09	28.70	-0.10	0.00	-0.08	



WS-1242 Torpedo Boat sample

1/31/2011 2:48:23 PM

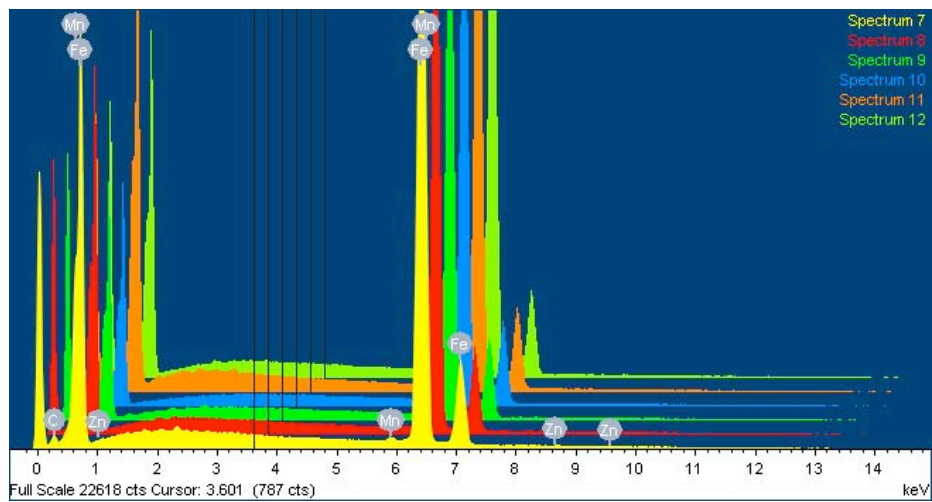
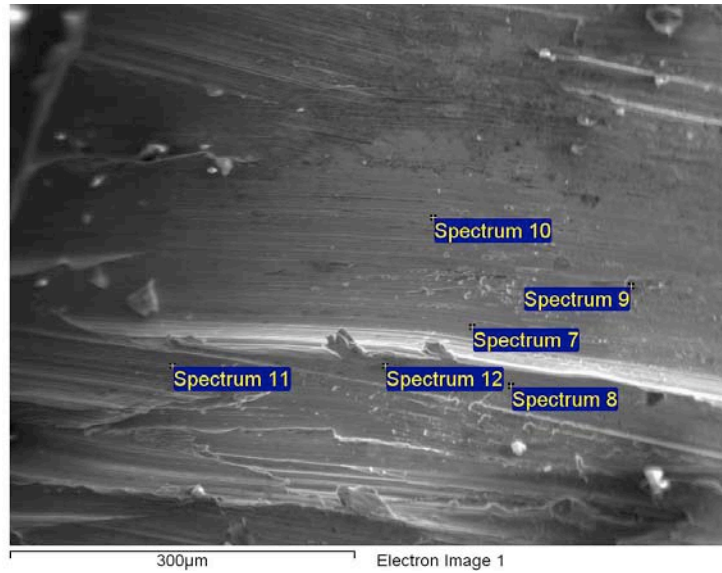


Comment: Site of interest # 3



WS-1242 Torpedo Boat sample

1/31/2011 2:48:53 PM



Comment: Site of interest # 3



WS-1242 Torpedo Boat sample

1/31/2011 2:49:01 PM

Project: WS-1242 Torpedo Boat sample

Sample: WS-1242

Site: Site of Interest 3

Processing option : All elements analysed (Normalised) - All results in weight% - Elements in Light gray color are at or under detection limit

Spectrum	In stats.	C	Mn	Fe	Zn	Total
Spectrum 1	Yes	7.97	0.22	91.59	0.22	100.00
Spectrum 2	Yes	3.25	0.28	96.23	0.24	100.00
Spectrum 3	Yes	3.53	0.31	96.12	0.03	100.00
Spectrum 4	Yes	6.03	0.33	93.66	-0.02	100.00
Spectrum 5	Yes	4.30	0.27	95.35	0.07	100.00
Spectrum 6	Yes	4.94	0.33	94.59	0.14	100.00
Spectrum 7	Yes	2.83	0.54	96.44	0.20	100.00
Spectrum 8	Yes	2.69	0.20	97.20	-0.09	100.00
Spectrum 9	Yes	6.41	0.28	93.38	-0.07	100.00
Spectrum 10	Yes	2.30	0.23	97.62	-0.15	100.00
Spectrum 11	Yes	7.03	0.34	92.64	-0.02	100.00
Spectrum 12	Yes	5.00	0.25	94.45	0.29	100.00
Mean		4.69	0.30	94.94	0.07	100.00
Std. deviation		1.86	0.09	1.88	0.15	
Max.		7.97	0.54	97.62	0.29	
Min.		2.30	0.20	91.59	-0.15	



APPENDIX I

CORRESPONDENCE PERMITTING USE OF UNPUBLISHED RESEARCH
MATERIALS (INCLUDING IMAGES HELD IN PRIVATELY OWNED
COLLECTIONS AND INDIVIDUAL PERSONAL COMMUNICATIONS)

From: [Brumby, Aaron \(TechPark\)](#)
To: [James Hunter III](#)
Subject: RE: My Doctoral Thesis is Nearly Finished!
Date: Tuesday, 24 April 2012 10:55:42 AM

Hi James,

I provide my permission and confirm that you have liaised with myself in relation to the North Arm site in Adelaide.

Best of luck with the finalisation of your thesis, I would appreciate a copy to see the end product (please deliver to the Urban Renewal Authority previously Defence SA at Level 9, Riverside Centre, North Terrace, Adelaide)

No further activity at the subject site has occurred since you were there last.

Regards

Aaron

Aaron Brumby
Director, Property Management

P: 08 8260 8111
F: 08 8260 8100
M: 0403 278 776
aaron.brumby@sa.gov.au
www.ura.sa.gov.au

Level 9 (West), Riverside Centre
North Terrace, Adelaide
South Australia 5000
GPO Box 698, Adelaide 5001

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Think before you print - consider the environment

-----Original Message-----

From: James Hunter [<mailto:james.hunter@flinders.edu.au>]
Sent: Wednesday, 4 April 2012 4:37 PM
To: Brumby, Aaron (TechPark)
Subject: My Doctoral Thesis is Nearly Finished!

Hi Aaron,

First off, I hope this e-mail finds you well! It's been some time since the two of us corresponded, and I wanted you to know that I am now literally weeks from submitting my doctoral thesis for examination. I'm keeping my fingers crossed that my examiners will be fairly speedy in their assessment of what has turned out to be quite the tome (around 90,000 words by last count...!) As part of my final tweaks and

From: [JD & HJ Bundy](#)
To: [James Hunter](#)
Subject: Re: PhD Completion is Imminent...
Date: Thursday, 12 April 2012 6:01:14 PM

Hello James,
So good to hear from you.
Congrats on the imminent PHD. You have my permission to use all research material I've sent you.
Despite everything we are managing O K.
I will look in the Archive at the Museum, which by the way was a miracle survivor with only minor damage.
James, the Timeball is gone. The Tower fell over in the June 6.3 magnitude.
Historic Places were two days away from drawing the mechanism out the top with an enormous Crane.
There is nothing but grass where the Timeball was.
However it was carefully picked up, catalogued & is in storage awaiting a decision. The whole thing collapsed, just a heap of bits on the ground.
The Mechanism is repairable, I have seen it.
Lyttelton Museum where you gave your talk doesn't exist anymore.
Fortunately a rescue was organised where about 25 people including Heather & I cleaned out the contents.
The building was just getting worse & worse each aftershock & wasn't going to survive.
Urban search & rescue went into the Museum & over 9 hours removed most of the contents.
I transported the items along the street where the NZ Air Force Museum bless them, received them, catalogued & wrapped each item & transported it to their Museum where it is in storage.
Remember the Table you stood at giving the talk? Well we could not get to that on the day as that side of the Building had fallen off with the Table teetering on the edge.
The building looked like a doll's house with the door open.
While we were working there aftershocks were coming through with the Building shaking & rattling, scary but we all wanted our Historic treasures.
So the TBM is now the only Museum in town.
I am trying to broker an agreement between the Police & the Museum whereby the Museum takes over the damaged Police Station, has it repaired for their new home.
James can I finish the Email another night as I am tiring after another busy day helping repair our buildings.
Cheers for the moment,
David.
On 10/04/2012, at 12:09 PM, James Hunter wrote:

> Dear David,
>
> First off, I hope this e-mail finds you well! I've been pretty full-on with finishing up my thesis for the past year (in addition to attending conferences and other scholarly obligations...) and just realised I hadn't corresponded with you in that entire span of time. How is your family doing? How are things going in Lyttelton? Em made a number of attempts to garner support for restoration of the Lyttelton Timeball and other historic structures damaged in the earthquake, but the reception she received from some of the heritage institutions she contacted was pretty lukewarm, to say the least. She was repeatedly told that the only way she could expect to garner any major institutional (and, by extension, financial) support was if an appeal for assistance came directly from the NZ Heritage Trust or other major preservation players within New Zealand. Has there been any movement on that front? It completely amazes me at times how little we hear anything over on this side of the Tasman regarding the earthquake aftermath and cleanup. I think the last time I'd heard anything significant, it was on the 1-year anniversary of the second quake. We also occasionally hear of big aftershocks, but that (sadly) is about all. Please know that, despite my single-minded obsession with my thesis, there isn't a day where I don't think about Lyttelton and the Canterbury region as a whole. In fact, I have the reproduction John Gibbs painting of Lyttelton Harbour that I purchased during my visit framed and mounted on one of the walls in our house. It provides a tangible reminder of a very lovely place and its wonderful people. Em and I have contemplated making another trip across the pond to NZ, and would of course plan on visiting Christchurch and Lyttelton while there...NO exceptions!

- >
- > On a more positive note, I'm now in the very final stages of thesis revision, and intend to get the of Albatross from around my neck and down the pipe in the next few weeks. Fingers crossed that my examiners will be fairly speedy in their assessment of what has turned out to be quite the tome (around 90,000 words by last count...)! As part of my final tweaks and adjustments, I need to get written permission from everyone that I have cited as a personal communication, and you happen to be on the list. It is my understanding that permission may be conferred in an e-mail (that I can simply print out and add as an Appendix...), so if you'd be willing to fire me a sentence or two to that effect, I'd most certainly appreciate it!
- >
- > On a related topic, I'm not sure whether you would have access to the archives in the Torpedo Boat Museum, but if you happen to swing by there anytime in the near future, I was wondering if you might check on a date for me. An article about Defender and a photograph of its mangled conning tower appeared in a June 1976 issue of the Christchurch Star. Unfortunately, the actual day the edition appeared wasn't included in the photocopy that I obtained while I was there, and--unfortunately--I've caught a bit of grief from my supervisor for not including it in the reference. Please do not go out of your way to do this--in fact, I may be able to get the information out of the Christchurch Star itself, but thought I'd use that option as a last resort (since I don't know how receptive they'd be to a request of this type...).
- >
- > Aside from the thesis writing, all is going well here. Emily recently curated an exhibit to coincide with the 100th anniversary of the loss of RMS Titanic, and the exhibit has opened to rave reviews. In fact, it's my understanding that the Titanic exhibit has pulled in more money for the Maritime Museum in a week than it made per month during the previous year! Em has now appeared in interviews on both ABC Adelaide and Channel 7 (National)--if you'd like to see either, let me know and I'll send you the links...
- >
- > Again, I hope all is going well! Please pass on our very best regards to Heather and the girls, and let us know if there's anything we can do to help!
- >
- > Cheers,
- > James

From: [Ross Gillett](#)
To: [James Hunter III](#)
Subject: RE: TBs
Date: Saturday, 12 May 2012 4:30:07 PM

Dear James;

We are in the process of packing up our current house ready to move in a few weeks to the new home, about 1k away, so thats the reason for my tardiness in reply. My apologies.

So I'll answer all of the points below, and have inserted replies after each relevant pont.

> Good to hear from you as well! You definitely have had my correct e-mail address, but I've been so utterly devoted to finishing the ol' Albatross and removing it from around my neck that I've been largely radio silent for the last six months. It's funny you should mention the Naval Historical Journal and the potential for publication: while I don't think my thesis will successfully make the transition to a smaller publication format (at roughly 90,000 words, it's a bit long to fit within even 30 or 40 single-spaced journal pages...), I HAD (ironically) considered publishing a small monograph on Acheron, Avernus, and their associated torpedo boat facilities (i.e., Berry's Bay). This was all material that I had written for inclusion in my thesis, but since I didn't have archaeological data for any of these sites, I ultimately had to cut it from the final draft. Of course, thanks to your sleuthing, we now know that Acheron was scuttled off Broken Bay, which means its remnants are conceivably still somewhere out there on the seabed waiting to be discovered--unfortunately, I don't have enough time left to look for it and add it to the compendium!

I hope to finish the Acheron and Avernus article this week, now that most of the packing up of my study is almost complete, so I'll send you a copy of the combined/revised history some time after that. So have a look and see if you can add or remove any bits.

> Perhaps the two of us could co-author something on the NSW boats (and their land-based facilities) instead? At this point, what I've written contains the (now) outdated final dispositions of Acheron and Avernus that is based on information that was available at the time, although I can't imagine it would be too difficult to amend what I have to reflect what's in your new archival sources. Give it some thought and let me know; I'm more than happy for you to do a solo publication if you would prefer that option--after all, you've been researching this stuff quite a bit longer than I have!!

I'd more than happy for a combined effort. There aren't too many naval historians with an interest in Colonial Navies, so the few should always join forces.

As far as TB 191's ultimate fate goes, the last mention I could find of it suggests it was decommissioned, sold and subsequently stored (out of the water) in Port Adelaide for about a decade. It was eventually purchased by a guy from Walkerville (Adelaide suburb) in the 1920s, and he apparently intended to convert it into a pleasure boat, but I haven't been able to find out anything more.

Maybe this 'stored out of the water' is what the earlier report was referring to. A sort of unofficial preserved boat, but not really a preserved museum boat.

>

> Your comment that the Chief of Navy reads the journal has got me to thinking about future naval shipwreck prospects and projects.

I should have said above that as soon as I had become the new Journal Editor, and received the handover, I had a change of heart and formally changed my mind. I have determined that I must give more time to the new home, afterall I'll still be editing ten issues of Australian Warship magazine and

that takes up much of my time.
But I have met the Chief of Navy in years gone by and her very approachable. However after the recent budget, the RAN has been to reduce sailing hours and exercises etc. This may effect any such assistance to others.

I've been in discussion with the South Australian Maritime Museum, and they're quite keen to put together an exhibition that addresses HMCS Protector. This is based largely on the fact that they have several artefacts (heirlooms, mostly) from Protector in their collections, there is such a strong Adelaide/Port Adelaide connection to the ship, and that so many locals can trace their ancestry to men who served aboard her. For my part, I thought it would be pretty cool to conduct an archaeological survey of the vessel at Heron Island, utilising traditional means of documentation (photography, videography, and scaled site mapping) and (possibly) integrating new forms of laser scanning to build a three-dimensional map/model of the site. I see this initiative as one of relatively high priority, since I figure it is only a matter of time before what's left of the ship collapses and--almost certainly--falls into the Heron Island boat channel that it is currently protecting as a breakwater. Of course, if it DOES fall into the channel, it will more than likely be removed with a dredge or similar heavy equipment, and any chance of documenting this tangible aspect of Australia's colonial and early national naval history will be lost. Do you think it's possible the RAN might be willing to fund such an initiative at least in part? There's plenty of passion and interest among the folks I've spoken to for conducting archaeology at the Protector site, but money always seems to be the sticking point. At any rate, if there's anyone with the RAN who you think might be interested in a Protector mapping project, and who I might be able to communicate with, I'd be keen to get their contact details! **SEE above, but maybe a direct approach to the RAN Hydrographer in Wollongong may be the way to go..**

>

> Because you supplied me with the image of Nepean, I'm obligated to obtain your permission to use the image, although I'm very happy to credit Paul Williams in the figure caption. Did he take the photo, or does he own it? Or both? Would it be possible for you to send me another e-mail that explicitly states that I have your permission to use the image? If you don't feel comfortable doing that, is there a way that I can get in touch with Mr. Williams to ask his permission? Sorry for all the requests, but these are just technicalities I need to attend to. One thing is for certain: I can't thank you enough for your assistance through this entire process!

The photo of Nepean was supplied by Peter Williams for my Colonial book. You have my permission to use the photo in your thesis.

Afterall, its not a commercial publication, but a paper designed to increase the knowledge we have of these infant naval forces and their men-o-war.

However, if you wish to contact to Peter, my last address for him, (30 years ago) was as overseer of the museum ship (corvette) Castlemaine which is berthed at Williamstown south-west of Melbourne. Just google Corvette Castlemaine and the contact details may be there.
<http://www.hmascastlemaine.org.au/index.php/the-ship/the-museum>

Looking forward to reading all of your thesis later this year.

Cheers

Ross

>

> I hope all is going well with you!

>

> Cheers,

> James

>

>

>

>

> From: Ross Gillett [ross.gillett@hotmail.com]

> Sent: Thursday, 3 May 2012 5:11 PM

From: [Authentiques](#)
To: [James Hunter](#)
Subject: Re: More Paperwork
Date: Wednesday, 29 April 2009 4:41:11 PM

Hello James,

Thanks for the latest "more paperwork".
I had of course, received the letter from your advisor, Dr.Stanisforth - I don't know whether I was supposed to respond to it or not, but I hadn't gotten around to it.
The attached Consent Form, I have printed off & signed, and am returning to you per regular mail.
Re clause 5, I don't have any problem with being identified in your writings, should you wish to do so as I already have had mentions in other people's books on various subjects (I seem to make a hobby of getting mentions in other people's publications).
Where will you be staying whilst in Melbourne ?
May I suggest that you come out to my humble abode in the late afternoon & that we work our way through the "formal proceedings" and then relax for the remainder of the time with general chit-chat over an evening meal washed down with a bottle of good Yarra Valley Red, & then I could drive you back to wherever you are staying.

Kind Regards,
Clive.

----- Original Message -----

From: "James Hunter" <james.hunter@flinders.edu.au>
To: "Authentiques" <authentiques@optusnet.com.au>
Sent: Monday, 27 April, 2009 11:22 AM
Subject: More Paperwork

> Hi Clive,
>
> Here's hoping all is well with you and yours in Victoria! I managed to
> get my ethics approval application in, but haven't yet heard that I've
> received approval (I expect to hear something during the next two
> weeks...). Rest assured, there shouldn't be any problems, but I'll be
> happy to get official confirmation nonetheless!
>
> Attached are a few other pieces of paperwork I need to send you, as per
> the requirements of my ethics approval application. One is a Letter of
> Introduction from me (similar to the one you've already received from my
> thesis advisor Dr. Staniforth); the other is a consent form that you'll
> need to sign and give to me when we conduct the interview. If you're
> interested, I'm also happy to send you a list of the questions I'll be
> asking you during the interview. I'd imagine these to be fairly
> straightforward and easy to answer, but if you have any concerns about
> them, just let me know and I'll send 'em your way.
>
> Again, I hope all is well with you! Things are going well for me,
> albeit a bit hectic. Today is the first day of class following the
> mid-semester break, so I'm currently up to my eyeballs in course
> preparation for no less than three classes I'm involved with this week
> in one capacity or other...

From: Peter.Harvey@dpcd.vic.gov.au
To: [James Hunter III](#)
Subject: Re: My PhD is nearly finished!
Date: Thursday, 3 May 2012 10:40:46 AM

Hi James.,

Sorry for my delayed reply . Clarence has proven to be a real time-sink and with extended periods of crappy weather we are really struggling to keep to the schedule for the works. I have come up to Melbourne to answer some emails while the wind blows. Hopefully we will get back on site in the next day or two. Of interest in the excavation front is the presence of a large deposit of what looks like pipe clay in the bottom of the hull. we were all looking around for environmental reasons for it's presence but a bit of research on ballast in the Northern New South Wales area chows that clay was often used as ballast when the usual other materials were not available . so.. there ya go... clay ballast in the Clarence.

Glad to hear the toenail has recovered but yes! now you have done the PhD maybe its time to lash out and get some covered toe flip flops? ;)

Finally, yes I have no problem with you quoting my pers. coms.

Hopefully we can all catch up for a beer before too much longer.

Best,

Pete

Peter Harvey | Manager Maritime
Heritage Victoria
Department of Planning and Community Development
GPO Box 2392, Melbourne 3001
Level 4, 55 Collins Street, Melbourne 3000
www.dpcd.vic.gov.au | www.heritage.vic.gov.au

T: 03 86448918 | F: 03 86448811 |
Email peter.harvey@dpcd.vic.gov.au

From: James Hunter III <james.hunter@flinders.edu.au>
To: "Peter.Harvey@dpcd.vic.gov.au" <Peter.Harvey@dpcd.vic.gov.au>
Date: 01/05/2012 09:31 AM
Subject: My PhD is nearly finished!

Hi Pete,

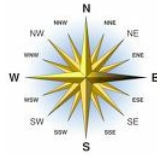
First off, I hope all is going well with you! How have things been going in Victoria? Any news fit to print regarding the Clarence Project? I'm happy to report that my toenail (the one that I mostly knocked off and you so kindly treated on my behalf...) has grown back, although I managed to knock ANOTHER one off about a month ago. I've REALLY got to stop wearing flip-flops in work environments...

From: [Jan Perry](#)
To: [James Hunter III](#)
Subject: Re: Permission to Use Archival Material from Your Collection
Date: Tuesday, 24 April 2012 10:45:55 AM

Dear James,
Great that you're near the end. Yes that's fine. Looking forward to seeing it.
Regards,
Jan

On Tue, Apr 24, 2012 at 10:28 AM, James Hunter III
<james.hunter@flinders.edu.au> wrote:

> Hi Jan,
>
>
>
> Well, it's been an awful long time since the two of us have either seen or
> spoken to one another, but the GOOD news is that I'm on the cusp of
> finishing my thesis and am now wrapping up a few 'loose-ends' prior to
> submission. One of the things I need to do is obtain official permission
> from individuals who have so very kindly allowed me to use material from
> their personal collections, and as I have utilised both an archival map and
> photograph in my chapter that addresses the North Arm Torpedo Station, I'd
> like to ask you if you'd be willing to do me that honour. I don't need a
> letter on fancy letterhead (although feel free to do that if it suits you...);
> an e-mail granting permission will suffice quite nicely. Thanks in advance
> for considering this request, and please let me know if you have any
> questions or comments! I will, of course, be sure to provide you with a copy
> of my thesis once it has gone through the ringer, (hopefully!) survived, and
> my final examiner's suggested revisions have been made.
>
>
>
> I trust all is well with you, and look forward to seeing you once my current
> 'trial' is over and I can once again walk among the living!
>
>
>
> Cheers,
>
> James
>
>
>
>
>
>
> James W. Hunter, III
>
> PhD Candidate, Maritime Archaeology Program
>
> Room 362 (Social Sciences South Building)
>
> Department of Archaeology
>
> Flinders University
>



ARCHAEOLOGY B.O.P.

Heritage Consultants

P O Box 855

Whakatane

NEW ZEALAND

PHONE: 027 276 9919

EMAIL: KJS.PHILLIPS@XTRA.CO.NZ

10 April 2012

James Hunter
Department of Archaeology
Flinders University
Adelaide
AUSTRALIA

Re: Submarine Mining Depot, Torpedo Bay, Auckland.

Dear James

As requested, please accept this email as confirmation of my permission for you to reference our email conversations and/or any plans and photos provided to yourself relating to the history and archaeology of the Torpedo Bay Submarine Mining Depot, Devonport, Auckland New Zealand in your Doctoral thesis.

Kind Regards

Ken Phillips

Mica Plowman

To: James Hunter
Subject: Auckland 1886 and completed 1899 Submarine Mining Depot

Dear James

As requested, please accept this email as confirmation of my permission for you to reference our email conversations and/or any plans and photos provided to yourself relating to the 2009/2010 excavations and analysis of materials from the Auckland Torpedo Bay 1886 and completed 1899 Submarine Mining Depot in your Doctoral thesis.

Kind Regards
Mica

 **Mica Plowman**
Senior Archaeologist
Opus International Consultants Ltd
mica.plowman@opus.co.nz
Tel +64 9 355 9532, Mobile +64 27 224 8398
<http://www.opus.co.nz>

The Westhaven, 100 Beaumont Street, PO Box 5848, Auckland, New Zealand

From: [Richards, Nathan](#)
To: [James Hunter](#)
Subject: RE: HARK! THE END DOTH APPROACH...
Date: Tuesday, 10 April 2012 10:00:45 PM

Hey mate,

You will have just got the chapter review ... it was a great contribution -- tanks.

Congrats on the PhD finalization. Honestly, you don't need my permission (academic fair use methinks), but take this email as my permission to pers. comm. me.

Hope you and Emily are doing well. I'm just looking forward to this semester being over!

Nathan

Nathan Richards, Ph.D.
Interim Program Head
Maritime Heritage, UNC-Coastal Studies Institute
217 Budleigh Street, PO Box 699, Manteo, 27954
Associate Professor
Program in Maritime Studies, Department of History, East Carolina University
302 E. 9th Street, Greenville, 27858
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"Pull the wool over your own eyes" -- J.R. "Bob" Dobbs, 1961.

-----Original Message-----

From: James Hunter [<mailto:james.hunter@finders.edu.au>]
Sent: Wednesday, April 04, 2012 2:58 AM
To: Richards, Nathan
Subject: HARK! THE END DOTH APPROACH...

Hey Nathan,

First off, I hope this e-mail finds you well! I saw the advertisement for the ECU job you posted on the AIMA discussion list the other day, but got the impression that I probably wouldn't have much of a chance of getting it, since it seems to be founded more in the realm of heritage tourism than maritime archaeology. All the same, thanks for keeping us posted over here on the other side of the Big Pond!

I'm now in the very final stages of revision, and intend to get the ol' Albatross from around my neck and down the pipe in the next few weeks. Fingers crossed that my examiners will be fairly speedy in their assessment of what has turned out to be quite the tome (around 90,000 words by last count...!) As part of my final tweaks and adjustments, I need to get written permission from everyone that I have cited as a personal communication, and you happen to be on the list. It is my understanding that permission may be conferred in an e-mail (that I can simply print out and add as an Appendix...), so if you'd be willing to fire me a sentence or two to that effect, I'd most certainly appreciate it!

Any news on the book front? I haven't heard from either you or Sami, so I thought I'd ask while I've got your attention.

Aside from the dissertation writing, all is going well here. Emily recently curated an exhibit to coincide with the 100th anniversary of the loss of RMS Titanic, and the exhibit has opened to rave reviews. In

From: [ed.slaughter](#)
To: [James Hunter](#)
Cc: [Ed Slaughter](#)
Subject: Permission granted
Date: Friday, 20 April 2012 10:31:53 AM

Dear James,

I give my express permission for you to cite personal correspondence and conversation between you and I, in your doctoral thesis.

I wish you all the best with the final push in your seminal PhD research. Your efforts have already uncovered previously hidden aspects of Australian and British Colonial military/political history, and I look forward to the impact your tome has on future understanding and discourse.

Best regards

Ed Slaughter
Maritime Archaeologist
Queensland Museum
0408383732

From: [Mark Staniforth](#)
To: [James Hunter III](#)
Subject: Re: HARK! THE END (of my Candidature) IS NIGH!
Date: Wednesday, 9 May 2012 5:53:21 AM

Hi James.

I approve of your use of my personal communication in your thesis.

Congratulations and well done.

Clarence has been interesting - we have had some bad weather and other issues but the excavation has gone well when we could get on site.

Paddy will be down again today and I leave for Cambodia on Friday for a few days. My regards to you both.

Regards

Mark

On 8 May 2012 17:29, James Hunter III <james.hunter@flinders.edu.au> wrote:

Hi Mark,

I hope this e-mail finds you well! I've been finishing up final tweaks on my thesis (which I have scheduled to submit next Tuesday...), hence the protracted radio silence. As it happens, one of the things I need to do is get written permission from each individual I've cited as a personal communication to include in an appendix at the end of the document. As you happen to be on that list (regarding a discussion we had about at site visit you made to Countess of Hopetoun when you worked for Heritage Victoria, I was wondering if you would be so kind as to send me an e-mail (one or two lines, max...) granting me approval to cite you. If so, I would definitely appreciate it—thanks much in advance for your help!

How is the *Clarence* project progressing? Any new and exciting news to report from Melbourne?

Please pass on my best to Paddy! Em sends her very best regards to you both!

Cheers,

James

From: [Des Williams](#)
To: [James Hunter](#)
Subject: FROM DES WILLIAMS Re: HARK! THE END
Date: Tuesday, 10 April 2012 4:40:28 PM

Hello James,

Thank you for your email and congratulations to you for being able (at last) to see light at the end of the tunnel! I have not problems at all giving you permission to use whatever material I have sent you in the past, you are welcome to use it.

Yes, enjoyed the Phillip Island Field School too, great to work with so many professional and budding archaeologists. It was a pleasure for me. Yes, I am busy too, just finished my re-vamped 1984 book on the CORAMBA and it should be printed within 8 weeks. Peter Taylor is handling the printing and the last four months of work on that is finally over. I am now back on my major project, another book on a WW2 salvage diver and I'm 70,000 words into that, but still have 25% more to go, then I have to get it printed. Hoping to finish by the end of this year.

Been diving with Pete Harvey and gang as assistant and enjoy that a great deal. Will be doing one or two weeks on the CLARENCE project too and have been working on a tidal stream deflector for the project to reduce the tidal current and increase the amount of work time for the divers. Trial went well and have just had the whole thing made up, delivered it today. Fingers crossed. Cutting edge stuff this!

Plenty else going on too, life is very exciting! Take care and yes, I'd like a copy of the Thesis after the lot is approved and all is finished, no hurry James. Probably on a disk will suit me better, but we can talk about this later. Good luck with the final touches and

Best wishes, DES

----- Original Message -----

From: "James Hunter" <james.hunter@flinders.edu.au>
To: <deswill@dingley.net>
Sent: Tuesday, April 10, 2012 10:30 AM
Subject: HARK! THE END (of the thesis) DOTH APPROACH...

> Hi Des,
>
> First off, I hope this e-mail finds you well! It was a pleasure finally
> meeting you in person during the maritime archaeology field school, and I
> wanted to personally thank you for your time and assistance teaching the
> 'kids' the ropes. I was fascinated by your presentations, and particularly
> the video footage of TSS Caramba--what an incredible site, and an even
> more amazing effort on the part of MAAV to document it and other wrecks in
> Victorian waters! I keep hoping that, once I'm finished with the lunacy
> that is my Doctoral candidature, I'd like nothing more than to make a trip
> over to Melbourne and help y'all with one of your mapping/assessment
> projects...
>
> And while I'm on the topic of my thesis: after nearly a year of going hard
> at it, I am now literally weeks from submitting the bloody thing for
> examination! I'm keeping my fingers crossed that my examiners will be

From: [Queenscliffe Historical Museum](#)
To: [James Hunter III](#)
Subject: permission
Date: Wednesday, 31 August 2011 2:12:28 PM

Dear James

I am very pleased to hear that you are at the publication stage and will use our photo. Are congratulations in order? Of course we would appreciate a copy of your work and I think a digital copy would be suitable for our archives if that is possible.

This mail can be used for verification that the Queenscliffe Historical Museum Inc agrees to your request to reprint the copy of the photograph you purchased from the Museum. I am sure you understand that you will include an appropriate source notation in the thesis.

My best wishes for the future.

Jocelyn Grant Hon President

From: june@maritimequeenscliffe.org.au
To: [James Hunter III](#)
Subject: RE: (Another) Image Permission Request- Queenscliffe Maritime Museum Inc
Date: Tuesday, 1 November 2011 1:57:21 PM
Attachments: [JamesHunter111Permission Request_QMMOct2011.pdf](#)
[James W HunterIII FlindersUni HMVS-Lonsdale_Aug2011.pdf](#)

Hi James

Apologies for the delay in getting this to you.

June has been on leave, but we are happy for you to use the photo previously sent of the HMVS Lonsdale. I have attached the permission form, and also sent June's previous correspondence including photo to ensure we are still talking of same photo. Will look forward to hearing further of your publication and receiving a copy from you.

Best wishes for the success of your work,

Regards

Meryl Hodgson
Administration Officer
Queenscliffe Maritime Museum Inc

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