ROYAL AIR FORCE

LAND QUALITY ASSESSMENT TEAM

WORKING PAPER 06/04

RAF SCAMPTON AMENDED TBERA

(To be included as annex to RAF Scampton Land Quality Assessment)

[redacted]

RAFIO/496181/12/03/LQA

Jun 04

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EXECUTIVE SUMMARY

The following document provides an amendment to the RAF Scampton Land Quality Assessment (LQA) Target Based Environmental Risk Assessment (TBERA) originally published in Nov 03. Information available at the time of the LQA indicated that RAF Scampton was authorised to hold 30lb and 250lb mustard gas bombs as well as 1000lb smoke curtain installations (SCI). After the Phase 1 LQA had been issued further research into the whole chemical weapon (CW) legacy revealed that a number of 65lb LC CW bombs were transferred to the site from a now alienated part of the original estate. These bombs pose a much greater risk to the environment since they were notorious for leaking. The TBERA has been reviewed and amended to reflect the increased environmental risk posed by the site. This document should be included as an amendment to the Phase 1 LQA produced by the LQA Team in Nov 03.

RAFIO/496181/12/03/LQA

Working Paper 06/04

Jun 04

RAF SCAMPTON LAND QUALITY ASSESSMENT AMENDED TARGET BASED ENVIRONMENTAL RISK ASSESSMENT

CONTENTS

ENCLOSURES

RAFIO/496181/12/03/LQA

Working Paper 06/04

Jun 04

ROYAL AIR FORCE SCAMPTON LAND QUALITY ASSESSMENT AMENDED TARGET BASED ENVIRONMENTAL RISK ASSESSMENT

References:

A. RAF Scampton Phase 1 Land Quality Assessment dated Nov 03.

INTRODUCTION

1. Information available at the time of the LQA Published in Nov 03 indicated that RAF Scampton was authorised to hold 30lb and 250lb mustard gas bombs as well as 1000lb smoke curtain installations (SCI). It is known that a leaking SCI was identified at RAF Scampton, but it has been documented that it was disposed of by sea dumping in the North Sea flown out from RAF Dunholme Lodge.

2. The survey did not identify any direct evidence for areas used to dispose of chemical weapons (CW) via burial or burning. Neither was there any visible evidence of residual contamination from the storage of CW on the site. It is clear that a number of CW test and detection kits were issued to RAF stations including Scampton during WWII. These contained phials of live agents for demonstration and training purposes. Almost certainly there would also have been gas defence training exercises using live mustard or a simulant.

3. Based on historical research, experience and survey findings, a Target Based Environmental Risk Assessment (TBERA) was developed for the site to determine the likelihood of the presence of CW on certain parts of the site. In the original Command Scientific Support Branch Second World War Chemical Weapons Legacy report dated Mar 99 little evidence was found to suggest that leakage occurred from the types of bombs stored at RAF Scampton. It was therefore classified as a 'Category 3' site. The LQAT TBERA reflected the potential for disposal by burning or burial to range from low to not having been carried out, except for 'test sets' and contaminated materials from gas defence training exercises which could have been buried on site

FURTHER RESEARCH AND NEW EVIDENCE

4. Over the last 2 years a considerable amount of research has been undertaken by the RAFIO LQAT in order to provide a risk based evaluation of the WWII CW legacy across the entire RAF estate. Whilst carrying out this research a letter dated 24 Sep 42 from HQ Bomber Command to Nos 1, 2, 3, 4 and 5 Groups Stations (Ref:/S.24141/1/Org) was found that indicated that 2500 x 65lb LC CW bombs were instructed to be transferred from RAF Snaith and stored at RAF Scampton. These bombs pose a much greater risk to the environment since they were notorious for leaking. Since there were no stores or stocks of 65lb LC bombs at RAF Scampton prior to this, the letter instructed the construction of five

open bays measuring 30 x 21ft for the storage of these weapons. They were to be transferred to RAF Scampton as soon as the facilities were ready. The station itself was constructed in the mid 1930s and had an ESA in the east part of the site just north of the original technical site (Figure 1).

Figure 1. Aerial photograph dated Apr 42 showing north part of RAF Scampton.

5. Evidence from the station F540s states that work began constructing the metalled runways in Sep 43. An additional ESA to the north-west of the site is clearly visible in later aerial photographs (Figure 2). However, no information has been found to determine the exact date of construction/completion of this ESA and archive aerial photographs of the area for the relevant time period are not available. It was initially considered that the open storage bays referred to in the letter were located in the original ESA to the east of the site. However, depending on the actual date of completion it is possible that the new 5 open area bomb bays could have been constructed in the north western ESA and the bombs stored there.

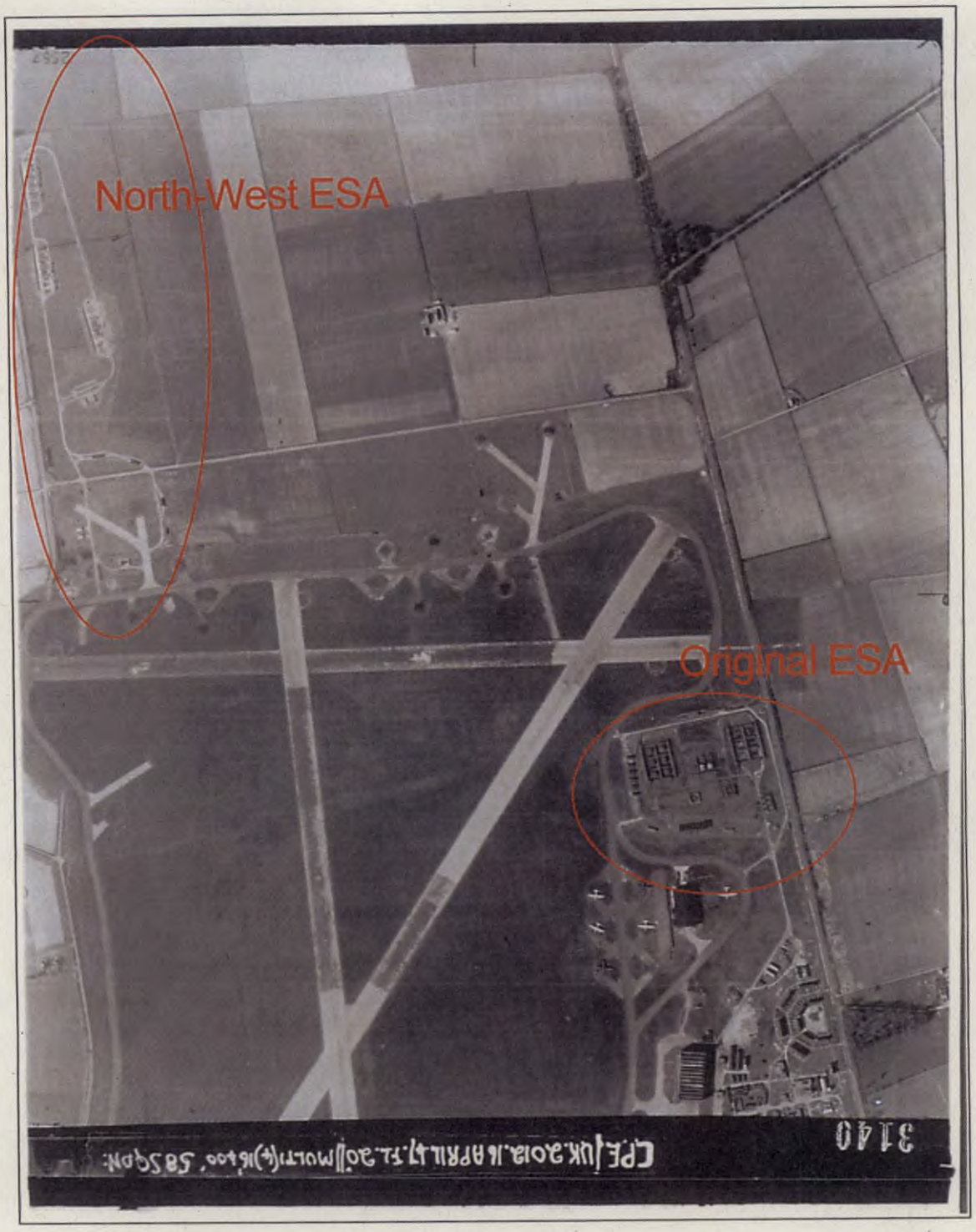


Figure 2. Aerial photograph dated Apr 47 showing northern part of RAF Scampton.

6. It is unknown as to whether the transferred bombs are Mk1 65lb LC or Mk2s. If they were Mk1s with associated Mk1 wooden crates then new evidence suggests that up to 82.5% of these potentially leaked whereas the more durable Mk2s had a lower leakage rate of approximately 10%. It is therefore considered there is the potential for between 250 and over 2000 bombs that may have been buried on site. It is considered most likely that any burials would have taken place in close proximity to storage areas.

REVISED TARGET BASED ENVIRONMENTAL RISK ASSESSMENT

7. As a result of the above new evidence a revised TBERA has been developed which should replace the original TBERA. It should be noted that the north-western ESA has now been annotated as a red zone. The yellow areas remain as potentiallow risk sites for burials as they were known to be historic tip sites as was specified in the original Phase 1 LQA.

CONCLUSION

8. It is considered from the information available that the storage of CW would most likely have been in the explosive storage areas. The TBERA has been reviewed and amended to reflect the increased environmental risk posed by the site due to the presence of 65lb bombs. The numbers of leakers may be between 250 and over 2000 depending on the Mk.

RECOMMENDATIONS

9. The following recommendations are made regarding the Phase 1 LQA for RAF Scampton:

a. This document should be included as an amendment to the RAF Scampton Phase 1 LQA produced by the LQA Team in Nov 03.

b. The site should be re-categorised as a Category 2 site.

Author:

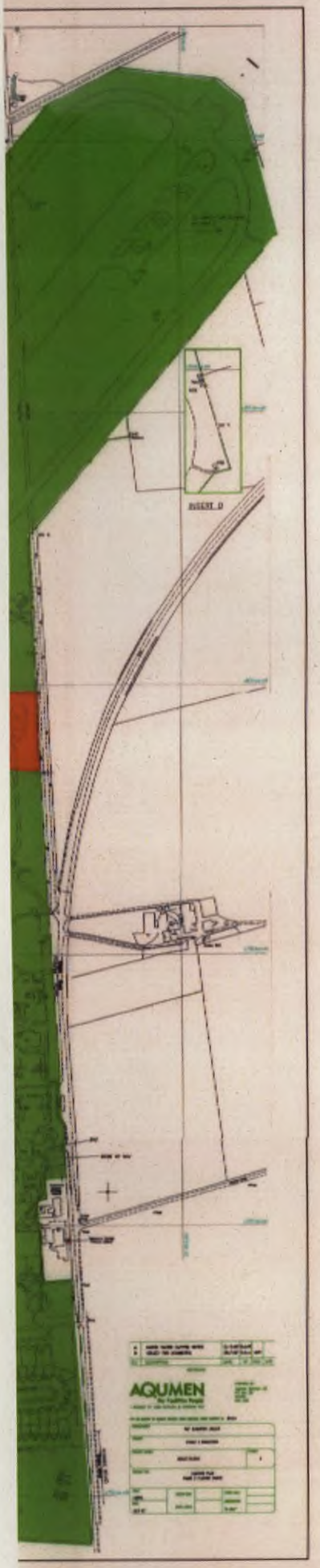
[redacted]

Reviewed and Approved by:

[redacted]

ENCLOSURE 1 TO
WORKING PAPER 06/04

Amended LQA Target Based Environmental Risk Assessment for CW at RAF Scampton



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ENCLOSURE 1

Risk Rating

- **Areas considered not to have been used for the burial or disposal by burning of CW**
- **Areas where the potential for burial or disposal by burning of CW is considered very unlikely**
- **Areas where the potential for burial or disposal by burning of CW is considered low**
- **Areas where the potential for burial or disposal by burning of CW is considered high**

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Title:	Target Based Environmental Risk Assessment
Site:	RAF Scampton
Date:	Jun 04
Drawing Number:	[redacted]
Scale:	NTS
Base Plan:	WSM CAD Plan [redacted]
Drawn:	[redacted]