

Appendix E Bridge Lodge



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Dear Graham

Phase 1 Environmental Assessment – 3 Otaki Gorge Road, Otaki

1.0 Introduction

Pattle Delamore Partners Limited (PDP) has been commissioned by Opus (‘the client’) to prepare a Phase 1 Environmental Assessment for 3 Otaki Gorge Road (Lot 3 DP 56978, the site). The site is in the path of the proposed Peka Peka to North Otaki expressway alignment just south Otaki, and was identified as having potential contamination resulting from current and/or past landuse during a Phase 1 environmental desktop assessment of the area by URS NZ Limited (URS, 2011), requiring further investigation. This preliminary environmental assessment has been prepared to determine if historical site use is likely to have resulted in residual contamination that would limit the proposed alignment or be detrimental to staff working on the alignment.

The majority of the site is currently used as an accommodation and function lodge with surrounding land for camping and campervans, however, the southern part of the site contains a large work shed with large vehicles parked outside. The site also contains an underground petroleum storage tank and an aboveground diesel tank and is therefore registered on the selected land use register (SLUR) held by Greater Wellington Regional Council (GWRC) as a site with the potential for contamination. Consequently the site was identified as requiring further investigation.

2.0 Objectives and Scope

The objectives of the desktop assessment are to:

- ∴ Determine the history of activities on and close to the site, with particular reference to the contamination potential of those activities;
- ∴ Conduct a preliminary assessment of the possible risk posed by contamination associated with historic activities to the proposed realignment ; and
- ∴ Provide additional recommendations for a phase 2 intrusive investigation (if required) and/or soil validation for a single tank removal.

The scope of works included the following:

Viewing the property file held by Kapiti Coast District Council (KCDC) and any archives additional to the LIM provided;

- ∴ Viewing historic aerial photographs held at GWRC and New Zealand Aerial Mapping Limited
- ∴ Contacting the GWRC to obtain relevant environmental information held by the council;
- ∴ A site walkover and discussions with current land owners/users on both historic and current land use.
- ∴ Reviewing publicly available geological information for the site.
- ∴ Preparing a confidential letter report with the desktop review findings.

3.0 Site Description

The 51,170 m² property (the site) is located at 3 Otaki Gorge Road, Otaki. The legal description for the site is Lot 3 DP 56978. The property is bounded by the Otaki River to the north, rural land to the east, rural and residential land to the south, and the main trunk railway, SH1 and Otaki Gorge Road to the west. Roughly one third of the property to the north is zoned under the Kapiti Coast District Council District Plan as 'River Corridor' and is subject to flood risk. The remainder of the site along with the surrounding properties are zoned 'Open Space'.

The neighbouring rural properties are in pasture, and there are no stockyards or structures near the borders with the site. The majority of the site is at a higher elevation than the rail corridor on the western border. The middle and southern section of the site sits on a river terrace. The middle section of the site contains a number of buildings used as accommodation and function rooms, and the southern section of the site contains a large work shed and a number of large vehicles. The northern section of the site is lower than the middle and southern section of the site and is adjacent to the Otaki River. Roughly a third of this lower lying part of the site is covered in mature trees, another third is covered in grass and scrub and the remaining third is covered in young trees that extend down to the Otaki River. With the exception of a small pump shed there are no other structures on the northern section.

3.1 Site Visit

The site was visited on 29 February 2012. A site walkover was conducted and discussions were held with one of the owners, Maureen Lange. Photographs of the site visit are appended.

Site Walkover

The middle section of the site is currently used as a holiday lodge and function centre known as Bridge Lodge. The lodge consists of powered and non-powered camp sites, cabin blocks, backpacker accommodation and function rooms. The middle section of the site is reasonably flat. On the middle section there are three septic tanks and one underground storage tank (UST) along the western border of the site (see attached Figure). The dimensions of the septic tanks are unknown. However a dip stick in the UST indicated the tank held roughly 1800 L. The tank smelt like kerosene and appeared to be mostly filled with water.

The southern section contains a large work shed which was built in 2005/2006. It is understood the work shed is used for vehicle repairs. The site is surrounded by large vehicles. An approximately 4,000 L above ground steel tank containing diesel was observed to the north of the work shed. The tank, in current use, was within a bunded area and was covered. There was no other bulk storage of chemicals at the site. The southern section of the site is at the same elevation as the middle section and is flat.

The southern section of the site is at a lower elevation (approximately 3-4 m lower) than the rest of the site and is not much higher than the river area. The eastern part of the southern section is cleared of trees and looks like it is used as overflow non-powered camp sites. The western part of this section is covered in mature trees. There was some dumped material amongst the trees such as whiteware that appeared to have been pushed over the terrace edge from

above. The ground was bumpy most likely from old tree roots but overall was reasonably flat. The most northern part of the section was covered in younger trees and sloped gently down towards the river. A pump house was located on the cleared part of the section but there were no other structures.

Cattle were seen grazing on the neighbouring property to the east of the site. There were no structures on the neighbouring properties close to the site boundaries.

Site Owner Interview

Originally the site was part of a farm and it is understood the site was purchased by the Church of England in the late 1940s. The site was sold in the 1980s to Otaki Bridge Lodge Limited and was then sold to the current owners in the late 1990s (Maureen Lange, personal communication, 29 February 2012). Prior to ownership by the Church of England, it is understood the site was part of a farm. With the exception of the original farmhouse the remaining buildings were built during ownership by the Church of England who used the site as a holiday camp for women and children. It is understood the site has operated as Otaki Bridge Lodge since the 1980s.

The site owner mentioned that there were three septic tanks on site, contents of which are regularly removed from site. There is no reticulated stormwater or sewer system on site and stormwater disposal was to soak holes or direct to ground.

3.2 Aerial Photographs

Aerial photographs were obtained from Greater Wellington Regional Council and NZ Aerial Mapping Limited (NZAM).

1939 Aerial Photograph

The original farmhouse that is still on the site is visible in the 1939 aerial photograph. There are six smaller structures to the east of the farmhouse that appear to be sheds. There appears to be a small horticultural plot to the west of the farmhouse. South of the farm house the land is being used for agricultural purposes and appears to be used for livestock grazing. Most of the northern third of the site is grass/scrub covered and appears to be pasture land.

To the north of the site is the Otaki River. Properties bordering the site to the east and south are being used for agricultural most likely livestock grazing. Further north across the Otaki River horticultural gardens can be seen. To the west of the property are SH1 and the main north island rail trunk. The SH1/Otaki Gorge Road intersection is approximately 500 m further south than it currently is.

1948 Aerial Photograph

The original farmhouse is still visible in the 1948 aerial photograph along with the smaller sheds to the east of the farmhouse. There are paths leading over to an elongated building to the west of the middle section of the site, which appears to be an accommodation block. The southern part of the site still appears to be pasture. To the north the Otaki River has changed course and the northern third of the site is now part of the river meander.

Land bordering to the east and south of the site continues to be used for agricultural purposes, and further north and west horticultural plots can be seen. The current entrance to Otaki Gorge Road has not yet been built.

1969 Aerial Photograph

The 1969 aerial photograph shows two new accommodation blocks just west of the farmhouse in the middle section of the site. There also looks to be some disturbance of soil and partial structures west of the farm house, indicating construction work. There continues to be a number of small farm sheds scattered around the eastern side of the farm house but there are no new buildings on this part of the site. It looks like there are some small garden plots behind the two new accommodation blocks in the middle section of the site. The southern section of the site is still in

pasture. The Otaki River has changed course again and the northern section of the site is drained and now covered in trees and scrub.

The surrounding land use is similar to that observed in the 1948 aerial photograph. The current Otaki Gorge Road/SH1 intersection has not yet been built.

1975 Aerial Photograph

The middle section of the site contains most of the buildings presently observed at the site. The southern part of the site is still being used for agricultural purposes and appears to be part of the pasture land to the east of the site. The northern part of the section is still covered in trees and scrub; there are no structures on this part of the site and the land does not appear to be used.

The Otaki Gorge Road/SH1 intersection and bridge have been built to the south-west border of the site. The surrounding landuse still appears to be the same with the exception of the gravel extraction works that can be seen across Otaki River to the north of the site.

1985 Aerial Photograph

The middle section of the site is the same as observed in the 1975 aerial photograph. The southern part of the site is still covered in pasture and appears to be used for livestock grazing, but it is now fenced off from the neighbouring property to the north and south. The northern part of the section is covered in mature trees with no structures visible.

Directly to the east and south of the site are young orchards or berry fruit farms. These can also be seen to the west of SH1. There are more horticultural plots and orchards in the greater area south of Otaki River than observed in the earlier aerial photographs.

1998 Aerial Photograph

The middle section of the site is as observed in the earlier two aerial photographs but with more trees. The southern section of the site is separated from the middle section by a row of trees. The southern section appears to be either used for livestock grazing or hay. The northern section is as observed in the two earlier aerial photographs. However, the top third of this section has been cleared of trees by flooding and has no vegetation cover.

The surrounding properties to the east and south appear to no longer be active orchards/berry farms and appear either between plantings/crops or not currently used. Landuse in the greater surrounding area is similar to that observed in the 1985 aerial photograph.

2005 Aerial Photograph

The middle section of the site is as current with some storage of vehicles along the western border. The line of trees between the middle and southern sections is now gone and the southern section has a number of large vehicles on site mostly along the western border. The northern section is now partially cleared on the western side and there appears to be one small shed. The most northern part of the site previously reclaimed by the river is now completely covered in young planted trees. The remainder of the southern section is still covered in mature trees.

The properties to the east and south of the site appear to have reverted back to pasture land. The greater surrounding area is a mix of pasture land and orchards/berry fruit farms.

3.3 Selected Land Use Register (SLUR)

A contaminated site enquiry for the property was requested from GWRC's SLUR database. The site is registered as having fuel stored on site and therefore is characterised as "Verified History of Hazardous Activity or Industry". This

means the property has a potential for contamination due to the storage of fuel on site. This does not mean that the site is actually contaminated.

3.4 Land Information Memorandum (LIM) Report

The LIM report for the property was obtained by the client. The LIM report makes reference to the site appearing on the SLUR, and there is reference to USTs on site. The LIM also includes consent information for the past 50 years with the earliest building permits in the mid to late 1960s for 6 cabin blocks, social hall and dining and kitchen block but there is no reference to the installation of the UST associated with one of the cabin blocks. There is a note about sewage disposal in the area being by septic tank and effluent disposal field. Stormwater disposal is discussed as being within the site. There were no other relevant references within the LIM.

3.5 Certificate of Title Search

A 'historic certificate of title' search was undertaken for the site. The earliest record was the transfer of the site by Wellington City Mission (Church of England) to P. White and A. White, S. Bain and L. Bain in 1986. The site was then transferred to Otaki Bridge Lodge Limited in 1987. Earlier records for the site were not available. Summary of History and Potential for Contamination

Originally the site appeared to be part of a larger farm with the middle section of the site containing the original farm house, farm buildings and a small horticultural plot. Given that the site (including the northern section) and surrounding land appeared to be in pasture it is assumed the site was used for grazing animals. There were no stock yards, animal pens or woolsheds observed on or close to the site. It is likely the site and surrounding area was used for agriculture since European settlement in the area. Given the small population in the area and the number of market gardens closer to the centre of Otaki it is likely this land was not used for horticultural crops or fruit prior to this time. During the late 1940s the site was purchased by the Church of England for use as a holiday camp and accommodation. Accommodation buildings and function rooms were built on the middle section of the site near the original farm house. The northern part of the site was washed away as observed in the 1948 aerial photograph but was later planted in trees, and the southern part of the site remained in pasture. In the late 1960s early 1970s most of the accommodation and function rooms as observed currently were built. It is assumed that the 1800 L kerosene UST was installed at this time alongside one of the cabin blocks on the western border of the site. When the site changed ownership in the mid-1980s the middle section of the site was used as a lodge, the northern part of the site was left in trees and the southern section was left in pasture. By this time a lot of the surrounding properties were in fruit or berry fruit. In 2000 the site was opened as Bridge Lodge function and recreation centre and was used for accommodation and functions. The northern part of the site was left predominantly in trees with one cleared area with a pump shed. The southern part of the section has been used for vehicle storage since the late 1990s. A large workshop was also built on the southern part of the site in the mid-2000s with an AST at its northern end.

Risk of contamination from the past agricultural land use is low given hot-spot areas like animal dips were not identified. The 1939 aerial photograph did identify a small horticultural plot on site which was likely for home consumption rather than commercial sale. Persistent pesticides were in use in the 1930s on horticultural crops. However, it is unlikely that these would have been used in a significant quantity on a vegetable garden for home use. Orchards and berry fruit farms were observed on neighbouring properties from the mid-1980s. Although spray drift can occur, persistent pesticides were not in use at this time so chemical build-up on the site from spray drift is unlikely.

It is known that there is at least one old disused UST on site. The UST is up to 40 years old and is likely to be in poor condition. It is possible that spills, leaky pipes or holes in the tank have resulted in hydrocarbons residues in the soils around the tank pit. There is also potential for surface contamination in the vicinity of the diesel AST from spills, although the tank itself is bunded.

There are three septic tanks on site which are regularly emptied (M. Lange, pers. Comm., 29/02/12). However contamination of soil may result from the drain field or poor past operation practices leading to overflow of waste water/sludge. The locations of the drain fields are unknown.

There is potential for small areas of near surface soil with elevated heavy metals or hydrocarbons where vehicles have been stored on the southern section of the site. However, given the relatively short period of time that the vehicles have been stored there (last 10 years) significant chemical build-up is unlikely.

4.0 Proposed Development at the Site

The western part of the site is within the proposed Peka Peka to North Otaki re-alignment. This will involve earthworks on at least the western side of the site.

5.0 Environmental Setting

5.1 Geology and Hydrogeology

The geology in the region of the site and for the majority of Kapiti Coast consists of Quaternary deposit layers of poorly sorted alluvial material and fine marine sediment unconformably overlying basement greywacke. The aquifer systems within the area are poorly stratified within gravel layers. There is a shallow unconfined aquifer up to 50m thick near the coastline within sand deposits. Groundwater flow within the area is westwards towards the coast. Proximity of the site to the river would influence the direction of shallow groundwater flow across the site depending on whether the river is receiving or contributing to groundwater.

Groundwater bore records from GWRC show both the unconfined shallow aquifer and deeper confined aquifers are utilised in the area including one bore on site located in the pump shed on the northern section of the site.

5.2 Hydrology

Stormwater drains to onsite soak holes and direct to soil in unsealed areas. The Otaki River borders the northern part of the site running westwards towards the coastline. There are no other surface water features within 1.5km of the site.

6.0 Risk Assessment

A risk to human health or the environment can only arise if there is a hazard (e.g. contaminated soil or water), a receptor (people of the environment) and an exposure pathway between the hazard and receptor. An absence of any of these components means no risk can exist.

Six potential sources of contamination at the site were identified; the UST, AST and septic tanks. Risk to site workers from the removal of septic tanks is likely to be biological (bacteria) and care is needed for the tank removal contractor and excavation staff within these areas, it is also noted that the locations of the drain fields are unknown.

Risk from residual petroleum hydrocarbons within the location of the UST and AST can be assessed prior to excavation work at the site, and proper procedures if required can then be put in place during excavation within these areas.

7.0 Conclusions and Recommendations

A preliminary desktop assessment was conducted for 3 Otaki Gorge Road, Otaki. Landuse of the site was agricultural until the late 1940s before it was turned into holiday accommodation. One UST previously containing kerosene is

located close to one of the 1960s cabin blocks and most likely dates back 40 years. There are also three septic tanks on site. The southern section of the site was in pasture until approximately 10 years when large vehicles were stored on it. This part of the site now also contains a large work shed with a diesel AST stored outside. With the exception of the two storage tanks and the septic tanks, and given the site has been used either as pasture or as accommodation for the last 100 years it is highly unlikely any residual contamination exists from any other sources.

In conclusion, with the exception of the two petroleum tanks and the three septic tanks, no other land use was identified that is likely to have resulted in residual contamination that would limit the proposed alignment or be detrimental to staff working on the alignment. It is therefore recommended that validation testing of the soils is conducted during removal of the UST and within the vicinity of the AST to assess whether any residual petroleum hydrocarbons exist and assess risk. Risk from the septic tanks is likely to be from a biological source so care needs to be taken during removal and excavation in these areas.

8.0 Limitations

This report has been prepared on the basis of a desktop review of publicly available information provided by others. The information provided by others has been taken on good faith and has not been independently confirmed by Pattle Delamore Partners Limited. A site inspection was not undertaken as a part of this assessment.

The information has been used to infer the ground conditions, but these cannot be guaranteed. Soil sampling would be required to confirm the ground conditions.

The information contained within this report applies to the date of the assessment (March 2012) and the report should not be used in the future without confirming the validity of the report's information at that time. The report has been prepared according to its instructions, for the particular objectives described in the report. The use of this report by anyone else is at the party's own risk.

Yours sincerely

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References

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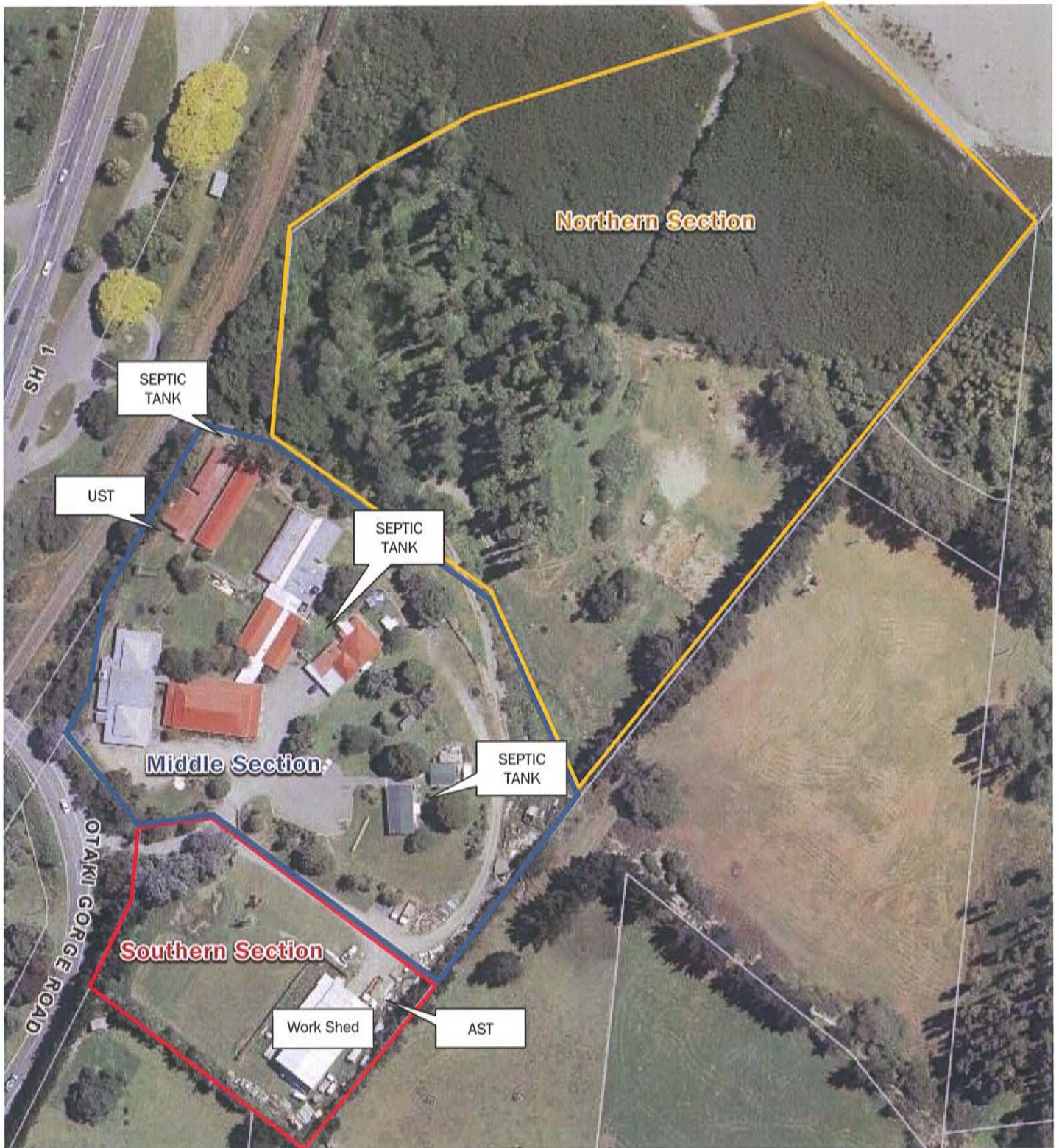


FIGURE 1 : 3 OTAKI GORGE ROAD SITE PLAN WITH PETROLEUM STORAGE TANK AND SEPTIC TANK LOCATIONS



Photograph 1: Bridge Lodge grounds – Middle Section



Photograph 2: Bridge Lodge grounds – Middle Section powered and non-powered sites



Photograph 3: Bridge Lodge grounds – Middle Section – Old Farm House



Photograph 4: Location of kerosene UST



Photograph 5: Western septic tank



Photograph 6: Centre of site septic tank



Photograph 7: Northern Section with pump shed - looking northwards.



Photograph 8: Northern Section looking southwards at the terrace the middle and northern sections are on.



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