Appendix G

Contamination report

REPORT NO. **115085_V7**

STAGE 1 PRELIMINARY SITE INVESTIGATION

NEW ENGLAND HIGHWAY UPGRADE –

BELFORD TO GOLDEN HIGHWAY

ENVIRONMENTAL EARTH SCIENCES NSW
PREPARED FOR ARUP PTY LTD
21 FEBRUARY 2017

EXECUTIVE SUMMARY

Environmental Earth Sciences was commissioned by Arup Pty Ltd (Arup) to undertake this Stage 1 Preliminary Site Investigation (PSI) for the areas involved in the proposed upgrade of the Golden Highway and New England Highway, Belford, NSW. This report has been prepared to support the overarching Review of Environmental Factors (REF) study commissioned by Roads and Maritime. The study area incorporated current lots and road easements both within and adjacent to the project area.

A historical report identified one lot within the project area where suspect cattle tick dipping may have occurred and a timber treatment yard was suspected to have been located. Based upon findings of the inspection no evidence of commercial / industrial land use within the project area was identified. Potential contamination from the suspected cattle tick dip and timber treatment yard was not observed.

The inspection identified the following land uses outside of the project area whereby commercial activity or development has taken place, however no indications or observations of contamination relating to these adjacent lots were noted to impact the project area:

- Lot 21 in DP1014307 – retail service station operating underground petroleum storage system (UPSS);
- Lot 35 in DP1128981 – abattoir operation with associated cattle pens and water treatment / irrigations paddocks. The main works area is situated far south of the proposed works corridor; and
- Lot 24 in DP1128978 – now vacant property that was used as a construction compound during the Great Northern Railway line bridge over the Golden Highway upgrade circa 2009.

During the site inspection indications of surface salt scalding consistent with dryland salinity were noted within the project area (along the northern margin of Lot 35 in DP1128981). Although not an indicator of contamination, potential saline conditions could potentially degrade concrete used in construction.

Potential salinity issues are recommended to be investigated across a range of landscapes over the site with assessment undertaken with reference to should be planned with reference to the Department of Land and Water Conservation (2002) – *Site Investigations for Urban Salinity* (DLWC, 2002).

Prior to commencement of proposed construction works it is recommended that a Construction Environmental Management Plan (CEMP) be prepared to include (but not limit) procedures for controls / management of:

- soil erosion, sedimentation and dust generation;
- soil / spoil stockpile management including onsite / off-site material tracking and beneficial reuse / waste disposal options;
- general erosion, sediment and water quality control safeguards (e.g. sediment basins, stockpile areas, wash-downs, batch plants, refuelling and chemical storage sites) involving lining and/or bunding if they are located within 50 m of a shallow groundwater source);

- rehabilitation of works area;
- dewatering management;
- spill response and associated emergency planning;
- personal protective equipment (PPE) controls for construction workers;
- Unexpected Findings Protocol (UFP) procedure for managing instances where gross contamination and/or hazardous materials are encountered, with appropriate consideration of WH&S controls for mitigating risk to construction workers.

On behalf of
Environmental Earth Sciences NSW

Project Manager
Chris Newland
Senior Environmental Scientist

Project Director
Alice Plioplis
Senior Environmental Scientist

REVISION HISTORY

Version	Author / Reviewer	Notes	Date	Signature
V1	Chris Newland / Alice Plioplis	Draft for review by Arup	22-Feb-2016	
V2	Chris Newland / Alice Plioplis	Arup comments	10-Mar-2016	
V3	Chris Newland / Alice Plioplis	Arup / RMS comments	29-Apr-2016	
V4	Chris Newland / Alice Plioplis	Arup / RMS comments	25-May-2016	
V5	Chris Newland / Alice Plioplis	Arup / RMS comments	2-Jun-2016	
V6	Chris Newland / Alice Plioplis	Arup / RMS comments	24-Nov-2016	
V7	Chris Newland / Alice Plioplis	Arup / RMS comments	21-Feb-2017	

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1 INTRODUCTION & BACKGROUND

Roads and Maritime Services (Roads and Maritime) propose to upgrade the New England Highway between Belford and the Golden Highway. The road upgrade would improve traffic flow, travel times and safety for motorists along a busy section of the New England Highway. The proposal would provide a divided road with two travel lanes in each direction between Belford and the Golden Highway and a flyover for vehicles turning right from the Golden Highway towards Maitland and Newcastle. The project is located within the Singleton local government area (LGA) and the Hunter region of the Roads and Maritime network. Key features of the project include:

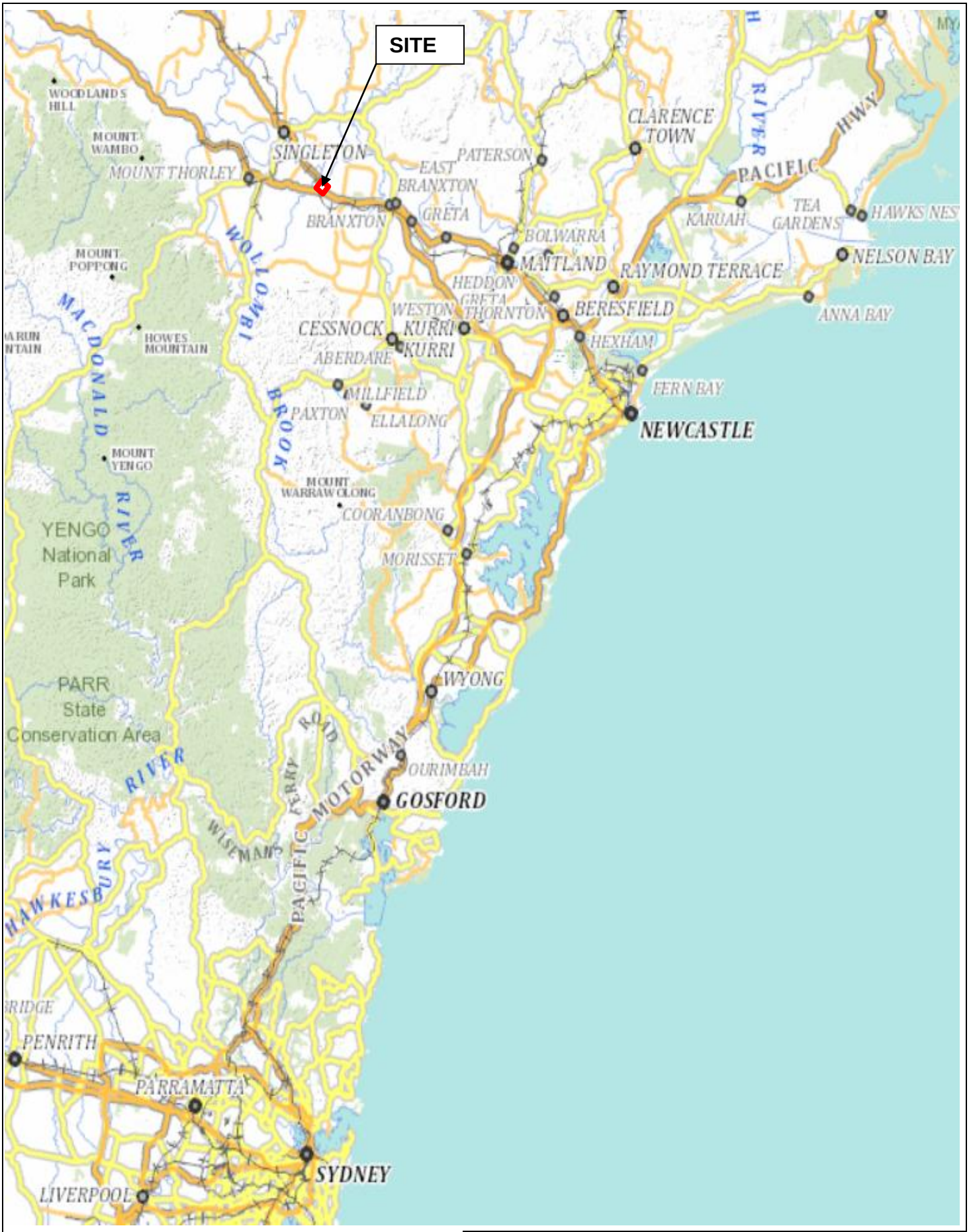
- Widening the New England Highway for around 3.2 km to provide a divided road with two travel lanes in each direction between Belford and the Golden Highway
- Replacing the existing right turn movement from the Golden Highway to the New England Highway with a right turn flyover
- Removal of the Whittingham rest area adjacent to the New England Highway and Golden Highway intersection.

Environmental Earth Sciences was commissioned by Arup Pty Ltd (Arup) to undertake this Stage 1 Preliminary Site Investigation (PSI) for the corridor of the abovementioned project near Belford, NSW (the “project area”). The assessment also reports on potential contamination in lots adjacent to the project area that have been historically developed or currently used for commercial purposes (the “study area”). Refer to Figure 1 for location of the project area.

A preliminary environmental investigation report prepared by Hills Environmental Pty Ltd (2014) - *SH9 New England Highway Upgrade - Belford Deviation to SH27 Golden Highway Junction Preliminary Environmental Investigation* (ref: RPT-PEI-J000134-2014-06-V 02.docx; dated 19 June 2014) (the “PEI”) identified the following current and historical potentially contaminating land uses:

- Onsite former timber treatment post yard.
- Onsite former rail cattle yard on the northern side of the New England Highway about 350 metres east of the Golden Highway intersection.
- Offsite retail service station situated on the western side of the New England Highway.

Inspection of historical aerial images reported other potentially offsite features such as a former building compound and an abattoir which could pose a potential offsite risk to works within the works corridor.



ENVIRONMENTAL EARTH SCIENCES	Title: **Site Location**	
	Location: **Junction A15 and B84 Belford NSW**	
Client: **Arup Pty Ltd**		Job No: **115085**
Drawn By: **CN**	Scale: **NTS**	Source: **Google**
Proj Man: **TC**	Date: **Feb 2016**	**Figure 1**

2 OBJECTIVE

With reference to requirements of the NSW Office of Environment and Heritage (OEH) (2011) – *Contaminated Sites: Guidelines for Consultants Reporting of Contaminated Sites* (OEH, 2011) this report aims to:

- review site history and other available information to identify potential sources and areas on site affected by current and historical contamination;
- identify potentially affected media (soil and groundwater);
- determine potential contaminants of concern; and
- identify potential human and ecological receptors and complete exposure pathways that could pose an unacceptable risk to future users of the site and the environment.

The Stage 1 PSI will ascertain if current / historical activities in the study area (west) have resulted in contamination which may require appropriate Stage 2 detailed assessment to further delineate and characterise risk and/or require management to ensure that the contamination in the corridor does not present unacceptable risk to users of the site and the environment.

3 WORKS UNDERTAKEN

Works undertaken for this Stage 1 PSI included:

- review of the PEI report;
- inspection of the study area undertaken on 21 January 2016 to ascertain land-use features and assess locations of potential contamination identified in the PEI report;
- general desktop assessment including the obtaining information from the following sources:
    - geology, soil, acid sulfate soils, hydrology and meteorology maps and databases (undertaken 17 January 2016);
    - Section 149 (1) and (5) council planning certificate for a service station property adjacent to the project area (undertaken 30 October 2015);
    - SafeWork NSW dangerous goods information for service station property adjacent to the project area (undertaken 11 February 2016);
    - historic aerial photography;
- NSW Environment Protection Authority (EPA) search of register of notified properties under the Contaminated Land Management act 1997 (CLM Act) subject to investigation / remediation orders (search undertaken on 17 January 2016);
- preparation of this Stage 1 PSI report to detail findings.

4 SITE CONDITION AND SURROUNDING ENVIRONMENT

4.1 Site Identification

The site is a combination of entire lots and portions of lots within a mainly rural area approximately 40 kilometres south of Singleton. The 'study area' for this assessment encompasses an area slightly larger than the 'project area' and constitutes the boundary for this Stage 1 PSI.

Most lots within the project area have only historically been used for rural / agricultural purposes, or developed for highway corridors. A summary of the site details are presented in Table 1.

TABLE 1 SITE DETAILS

Item	Details
Address	Junction of New England Highway & Golden Highway, Belford NSW
Lot & DP number	**Study Area** Lots 23 - 25 in Deposited Plan (DP) 1128978; Lots 22 in DP1014307; Portion of Lot 1 in DP653039; Portion of Lot 4 in DP621020; Lot 303 in DP1179681; Portion of Lots 34 - 36 in DP1128981; and Portions of highway easements for New England Highway and Golden Highway. **Project Area** Portion of Lot 1 in DP653039. Portion of Lot 4 in DP621020. Portion of Lot 34 in DP1128981. Portions of road easements for New England Highway and Golden Highway.
Zoning Singleton LEP (2013)	RU1 – Primary production SP2 –Infrastructure
Local Government	Singleton Council
Study Area & Project Area	Figure 2 - Study area marked inside 'blue' polygon. - Project area marked inside 'white' polygons.

LEGEND:

Study boundary

White polygons indicate project boundary

ENVIRONMENTAL EARTH SCIENCES

Title: **Study and Project Boundaries**

Location: **Junction A15 and B84 Bedford NSW**

Client: **Arup Pty Ltd**		Job No: **115085**
Drawn By: **CN**	Scale: **NTS**	Source: **NSW LPI**
Proj Man: **CN**	Date: **May 2016**	**Figure 2**

4.2 Nearby land uses

Due to the large area of the site and the irregular shape, all features are given with reference to the approximate latitude / longitude location of the junction of the Golden Highway and New England Highway (ref: 32° 38' 33.62" S; 151° 14' 1,26" E), with associated distances from this reference given 'as-the-crow-flies'. The following general land uses / features summarised in Table 2 were noted at the time of the site inspection on 21 January 2016:

TABLE 2 NEARBY LAND USES

Direction from Junction	Feature	Approximate Distance	Location
West	Great Northern Railway main line	635 m	32° 38' 33.62" S; 151 ° 14' 1,26" E
	Mudie's Creek	1,500 m	32° 38' 34.25" S; 151 ° 13' 3.72" E
South	E.C. Throsby Pty Ltd Abattoir	900 m	32° 39' 5.61" S; 151 ° 14' 2.54" E
	Belford township	6,500 m	32° 41' 38.51" S; 151 ° 16' 8.33" E
East	Unnamed creek 1	200 m	32° 38' 39.93" S; 151 ° 14' 8.05" E
	Unnamed creek 2	1,200 m	32° 38' 46.48" S; 151 ° 14' 44.7" E
	Jumpup Creek	3,800 m	32° 39' 9.83" S; 151 ° 16' 22.54" E
	Belford National Park	5,000 m	32° 38' 54.78" S; 151 ° 17' 5.27" E
North	Service station	300 m	32° 38' 26.42" S; 151 ° 13' 53.4" E
	Hunter River	2,100 m	32° 37' 24.89" S; 151 ° 14' 11.9" E
	Singleton township	9,000 m	32° 34' 0.25" S; 151 ° 10' 29.19" E

Refer to Figure 2 for project and assessment boundaries, lot boundaries, area features and commercial / industrial land uses in the nearby area.

4.3 Sensitive receptors

The following potential receptors have been identified for the site:

- onsite human –
  - residents, visitors and employees of rural properties;
  - construction workers during proposed upgrade works; and
  - maintenance workers (roads and utilities);
- offsite human –
  - residents, visitors and employees of rural properties and service station site;
  - recreational users of the Hunter River and Jumpup Creek;
- onsite ecological –
  - surface water (two unnamed creeks to the east of the service station);
  - groundwater (freshwater environment);

- offsite ecological –
    - surface water (Mudie's Creek to the west; Jumpup Creek to the east; Hunter River to the north).,
    - groundwater (freshwater environment).

4.5 Regional Geology

A search of the Rasmus *et al* (1969) Singleton 1:250,000 *Geological series sheet S1/56-01* undertaken on 17 January 2016 reported that the site is directly underlain by the Permian-aged Mulbring Siltstone Formation of the Maitland Group, consisting of siltstones and sandstone.

4.6 Regional Soil

A search of the Kovac and Lawrie (1991) - *Soil landscapes of the Singleton 1:250,000 sheet* undertaken on 17 January 2016 reported that regional soils belong in the 'Rothbury' landscape. Soils typical of this landform are noted to consist of the following characteristics:

- red podzolic soils (Dr3.21, Dr5.21) on upper slopes;
- yellow Podzolic soils (Dy2.41) on mid slopes;
- yellow solodic soils (Dy.42) and Brown Soloths (Db3.40) on lower slopes; and
- prairie soils (Gn4.22) in the drainage lines.

4.7 Topography and drainage

The site is situated from approximately 86 metres above Australia Height Datum (mAHD) just west of the picnic area, to approximately 62 mAHD in a drainage depression just south of the highway junction.

Landscapes in this area generally consist of undulating to rolling hills with elevations ranging from 60 – 140 metres. Average slopes are 6 – 10% with some slopes up to 12%. Slope lengths are 800 – 1,000 metres with local relief of 60 – 80 metres. Drainage lines are common throughout the area and occur at intervals between 200 – 1,000 metres (Kovac and Lawrie, 1991).

At the time of inspection on 21 January 2016 the majority of the existing rural properties comprising the study area were unsealed. As such there would be a high degree of infiltration and recharge to groundwater. Sealed areas within the study area comprise the tarmac sections of the highway corridor, where precipitation would run-off onto adjacent off-seal areas, or be redirected into engineered stormwater infrastructure.

4.8 Acid Sulfate Soils

A search of the Singleton LEP (2013) undertaken on 17 January 2016 reported that the site does not lie in an area requiring management for potential inland acid sulfate soils (PASS). This was confirmed through the Department of Land and Water Conservation acid sulfate soil risk map for Singleton (Naylor, 1995) which indicated a low likelihood for PASS occurrence in the vicinity of the site.

4.9 Salinity

A search of the online NSW Soil and Land Information System (eSPADE) undertaken on 17 January 2016 indicated that three exploratory test pit excavations have been advanced in the vicinity of the site at the Belford-Singleton Abattoir site. Of the three pits two were reported with no salting evident, and one indicating that salting was strongly evident. Refer to the individual eSPADE soil profile reports and associated locality map in Appendix A.

4.10 Hydrogeology

A search of the NSW Office of Water "waterinfo.nsw" website undertaken on 17 January 2016 identified four registered groundwater bores located at the service station adjacent to the study area (Lot 21 in DP1014307).

All bores were used for monitoring purposes with details search results and a map of bore locations included in Appendix B. A summary of bore information is included in Table 3.

TABLE 3 SUMMARY OF REGISTERED BORES

Bore ID	Final Depth (mBGL)	Standing water level (mBGL)	Geology
GW201778 (United service station)	8.10	Dry	0.00 – 0.40 m: Fill (silty sand, light brown, medium grained). 0.40 – 2.20 m: SILTY CLAY (light brown / orange mottling, med-low plasticity, some fine angular gravel inclusions). 2.20 – 4.00 m: SANDSTONE (extremely weathered, light orange/brown mottling, fine grained sand, becoming denser below 3m). 4.00 – 8.10 m: SILTSTONE
GW201779 (United service station)	8.20	Dry	0.00 – 0.10 m: Asphalt 0.10 – 0.60 m: Fill (Gravelly Sand, light brown, medium-coarse sand, medium angular gravel). 0.60 – 0.90 m: SILTY CLAY (light brown/orange mottling, some grey throughout, medium-low density fines). 0.90 - 1.70 m: SANDSTONE (extremely weathered, light orange/brown, fine grained sand, medium plasticity). 1.70 – 3.20 m: SANDSTONE (extremely weathered, orange/brown mottling, fine grained sand). 3.20 – 8.20 m: SILTSTONE (light brown/grey, becoming denser below 6m).
GW201780 (United service station)	5.05	Dry	0.00 – 0.18 m: Concrete; 0.18 – 0.50 m: SILTY CLAY (light brown, trace sand). 0.50 – 1.20 m: SILTY CLAY (light orange / brown). 1.20 – 2.00 m: SILTY CLAY (tends to sandy clay, low moisture). 2.00 – 2.60 m: SILTY CLAY (brown / orange. Tends to weathered siltstone). 2.60 – 5.05 m: SANDSTONE (fine grained, moderately to slightly weathered, minor weathered siltstone bands).
GW201781 (United service station)	3.50	Dry	0.00 – 0.15 m: Concrete; 0.15 – 0.50 m: SILTY CLAY (brown). 0.50 – 1.10 m: SILTY CLAY (brown / orange). 1.10 – 1.20 m: SILTY CLAY (brown / orange mottled). 1.20 – 3.00 m: CLAYEY SILT (orange brown, tends to weathered siltstone). 3.00 – 14.00 m: SILTSTONE (grey, fresh & unweathered, minor mud bands.

4.11 Meteorology

Regional meteorological data has been sourced from the Bureau of Meteorology (2015) (*www.bom.gov.au*, verified 4 November 2015) Singleton STP weather station, approximately 5.5 km northwest from site. Mean maximum and minimum monthly temperatures and mean monthly rainfall recorded between 2002 and the present are presented in Table 4.

TABLE 4 AVERAGE MONTHLY CLIMATE DATA

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
Maximum Temperature (°C)	31.7	30.2	28	24.5	21.3	18.2	17.7	19.9	23.4	26.3	28.8	29.8
Minimum Temperature (°C)	17.7	17.5	14.9	11	6.8	5.7	4.3	4.1	7	9.9	14	15.8
Rainfall (mm)	59.2	98.2	63.5	63.2	30.6	65.8	26.1	31.7	37.8	44.7	84	70.3

5 HISTORICAL REVIEW

This section includes a detailed review of pertinent available information and documents which exist for the site. Information is summarised in the following subsections.

5.1 Review of Historical Aerial Photographs

Details on the review of aerial photographs for the site are presented in Table 5.

TABLE 5 REVIEW OF AERIAL PHOTOGRAPHS

Date	Photo Run	Details / Comments
11-Mar-2004	Google Earth	• The majority of the study area is rural with the exception of the service station (Lot 21 in DP1014307), and the abattoir. • Associated with the abattoir (Lot 35 in DP1128981), large expanses are seemingly utilised for irrigation with treatment water, as paddocks to the south of the New England Highway appear quite fertile; • Property Lot 24 in DP1128978 appears to have miscellaneous tipping evident. It also appears to have been cleared in places; • The wider area appears to be predominantly rural-residential with the exception of the following features: - small township of Belford approximately 5km east. - Dochra Airfield approximately 2km west. - Singleton Military Area approximately 7km southwest. - Walkworth coal mine approximately 12km west.
13-Jan-2009	Google Earth	• No change to site. • No change to area.
2-Oct-2009	Google Earth	• Portion of site between service station and the main Great Northern • Railway line used as a construction and stockpiling compound to service new road and bridge construction works over rail line. • Old road bridge over the Great Northern Great Northern Railway line still evident. New bridge pylons under construction. New Golden Highway road connection to junction of New England Highway under construction. • Extensive earthworks visible north and south of the new Golden Highway bridge over the railway line, adjacent to and along the eastern side of the railway line.
11-Oct-2013	Google Earth	• New Golden Highway bridge over the Great Northern Railway line seemingly complete. • Construction and stockpiling compound cleared of all buildings and storage, although footprints still visible. • No other changes to areas surrounding site.

5.2 Council Planning Certificate

The Council planning certificates issued under Section 149 [2] & [5] of the NSW Environmental Planning and Assessment Act 1979 (EP&A Act) were obtained for the service station property (Lot 21 in DP 1014307 - issued 30 October 2015) situated adjacent to the project area. These certificates state:

- Lot not significantly contaminated within the meaning of that CLM Act at the date when the certificate was issued;
- Lot not subject to a management order within the meaning of the CLM Act at the date when the certificate was issued;
- Lot not the subject of an approved voluntary management proposal (VMP) with the meaning of that CLM Act when the certificate was issued;
- Lot not the subject of an ongoing maintenance order within the meaning of that CLM Act when the certificate was issued; and
- Lot not subject to a site audit statement within the meaning of the CLM Act if a copy of such a statement has been provided at any time to the local authority issuing the certificate.

The Section 149 (2) and (5) certificate is included for reference in Appendix C.

5.3 SafeWork NSW Dangerous Goods Search

A search of hazardous chemical storage records held by SafeWork NSW was undertaken for the offsite service station property (Lot 1 in DP1014307). This property currently has records pertaining to licence 35/035078. Earliest available records pertain to design drawings for seven underground depots and one above-ground depot dated 1997 and approved on 14 June 2000. It would appear that the eight underground storage tanks originally constructed circa 2000 are still in commission, and that there have been no alterations or equipment replacement.

At the time of the site inspection this service station offsite was operational. Details of product licensing and dates of associated storage information provided are not exhaustive or complete, and information returned from by NSW WorkCover represents available information only. Returned information is summarised in Table 6 and included in Appendix D.

TABLE 6 OFFSITE SERVICE STATION STORAGE SUMMARY

Type	Depot Identifier	Goods Licensed to Store	Class	Licensed Quantity (L)	Licence Period
UST	1	Petrol (UN 1203)	3	45,000	Feb-2003
					Apr-2009
UST	2	Petrol (UN 1203)	3	30,000	Feb-2003
					Apr-2009
UST	3	Petrol (UN 1203)	3	25,000	Feb-2003
					Apr-2009
UST	4	Diesel (UN 00C1)	C1	50,000	Feb-2003
					Apr-2009
UST	5	Diesel (UN 00C1)	C1	50,000	Feb-2003
					Apr-2009
AGST	6	LPG (UN 1075)	2.1	7,500	Feb-2003
					Apr-2009
UST	7	Petrol (UN 1203)	3	15,000	Feb-2003
					Apr-2009
UST	8	Diesel (UN 00C1)	C1	25,000	Feb-2003
					Apr-2009

Notes:
UST – Underground storage tank
AGST – Above-ground storage tank
LPG – Liquid petroleum gas

5.4 NSW EPA Contaminated Sites Register

A search of the NSW EPA contaminated land public record database showed no notices or records for the lots within the study area. There is no record for any lots within the study area having ever been included on the following list of NSW EPA notices issued in accordance with CLM Act:

- declaration of an investigation area (under Section 15 of the CLM Act);
- declaration of a remediation site (under Section 21 of the CLM Act);
- investigation order (under Section 17 of the CLM Act);
- remediation order (under Section 23 of the CLM Act);
- voluntary investigation proposal (under Section 19 of the CLM Act);
- voluntary remediation proposal (under Section 26 of the CLM Act); and
- site audit statement (SAS) with (under Section 53B of the CLM Act).

5.5 Review of historical report pertaining to site

The only environmental report available for review was the PEI report. This report identified the following current and historical potentially contaminating land uses within the site:

- former timber treatment post and cattle rail yard (Lot 4 in DP621020) located on the northern side of the New England Highway; and
- service station situated outside of the project area on the western side of the New England Highway (Lot 21 in DP1014307).

The report noted that facilities such as a cattle rail yard usually contained cattle dip or spray infrastructure which used organochlorine pesticides to treat parasites, with these facilities used in Australia up until the early 1960's.

Arsenic was also noted in the PEI report to have been used in sheep dips in Australia up until the late 1980's (Meat and Livestock Australia, 2014) although no remaining physical evidence of this infrastructure was observed during the site inspection. A potential for residual organochlorine pesticide and arsenic contamination was identified as possibly existing in Lot 4 in DP 6121020 in the PEI report.

The PEI report noted that a search of acid sulfate soil risk map (Naylor, 1995) was undertaken, which did not identify risk of acid sulfate soils at any level within their subject study area.

6 SITE OBSERVATIONS & POTENTIAL FOR CONTAMINATION

A site walkover was undertaken by Environmental Earth Sciences on 21 January 2016. Access was granted and walkover undertaken upon the following works corridor areas and adjacent lots:

- Lot 24 in DP1128978 (former works compound);
- Lot 23 in DP1128978;
- Lot 4 in DP621020 (cattle yard);
- Lot 35 in DP1128981 (abattoir land); and
- Lot 34 in DP1128981;
- Rest stop / picnic area.

Limited inspection of the following lots was able to be undertaken from the road corridor:

- Lot 1 in DP653039; and
- Lot 22 in DP1014307.

Refer to Figure 2 for layout of lots comprising the site. Details on site features relating to each lot are included in Table 7. Photographic plates highlighting indicative features of the site inspection are included in Appendix E, with reference to the individual plates made herein.

TABLE 7 SITE INSPECTION SUMMARY

Lot	Features
Lot 4 in DP621020 (inspected via walkover)	Agricultural land to the north of the New England Highway road corridor. Former cattle yard was located adjacent to the highway. Features included: • Entirely covered with vegetation, predominantly grass. Riparian vegetation noted in the vicinity of creek (eastern portion of lot); [**Plates 1 - 3]** • Cattle yard holding pen inspected with no evidence of tick dip(s) noted; • Animal manure noted throughout property; • Two small stockpiles of organic matter mixed with sandy clay noted (central portion of lot); • Stormwater culvert under New England Highway noted (SW portion of lot). Pooled water beneath was stagnant and discoloured; **[Plate 4]** • No visual or olfactory indications of contamination noted; • Limited surface inspection for the presence of possible ACM did not report any suspicious fragments.
Lot 24 in DP1128978 (inspected via walkover)	• Location of former works compound for construction of new Golden Highway road bridge over the Great Northern Railway line (circa 2010 – 2013). Features included: • Surfaces in places covered with blue metal / road base seemingly remnant from use of the site as a works compound; **[Plates 5, 8, 11]** • Non-putrescible waste spread sporadically across the lot, including chairs, metal objects, stockpiles of aggregate. Of note are two stockpiles of soil / fill material approximately 300 – 400 cubic metres (m^3) each; **[Plates 7, 12]** • Small area (3 x 3 metres) of black asphalt hardstand noted at the entry from Golden Highway; **[Plate 13]** • Vegetation consists of predominantly grass and weeds with small pockets of riparian vegetation. Northern portion contains a farm dam, with down-gradient vegetation showing signs of stress (discoloured leaves); • Limited surface inspection for the presence of possible Asbestos Containing Materials (ACM) did not report any suspicious fragments.
Lot 35 in DP1128981 (inspected via walkover)	Property operating an abattoir with associated water effluent treatment. Abattoir itself, treatment ponds and filter bed areas are outside of the proposed works area. Study area is strip of land immediately to the south of the New England Highway road corridor: Features include: • Potential scalding noted in the central portion of lot adjacent to the New England Highway road corridor. Vegetation upon this area shows signs of stress (dead trees noted); **[Plate 14]** • Treatment pond in the western portion of lot spills into natural drainage channel that flows northward through a culvert under the New England Highway; **[Plate 15]** • No visual or olfactory indications of contamination noted; • Limited surface inspection for the presence of possible ACM did not report any suspicious fragments.
Lot 23 in DP1128978 (inspected via walkover)	Cleared area. Features include: • Lot almost entire cleared of trees and covered in grass **[Plate 22]**; • Possible in-filled farm dam noted in southwest portion of lot; • No visual or olfactory indications of contamination noted; • Limited surface inspection for the presence of possible ACM did not report any suspicious fragments.
Lot 34 in DP1128981 (inspected via	Area adjacent to the south of the Golden Highway road corridor. Majority of lot formerly situated in the old Golden Highway road corridor prior to construction of the

Lot	Features
walkover)	new bridge and approach. Features include: • Predominantly covered with trees as a result of rehabilitation after construction works; • No visual or olfactory indications of contamination noted; • Limited surface inspection for the presence of possible ACM did not report any suspicious fragments.
Lot 1 in DP653039 (inspected from roadway)	Cleared area seemingly used for cattle grazing **[Plate 19]**. Features include: • Lot almost entire cleared of trees; • Three small farm dams situated in close proximity to the highway corridor; • No visual or olfactory indications of contamination noted.
Lot 22 in DP1014307 (inspected from roadway)	Densely forested area between former works compound (Lot 24 in DP1128798) and United Service Station property **[Plate 20]**: • No visual indications of contamination noted from the edge of the lot; • Lot heavily forested; • Three small farm dams situated in close proximity to the highway corridor.
Lots 1-2 in DP246454	Small lots adjacent to New England Highway road corridor, north of abattoir land: • Partly forested • Lot 3 contains a dirt track that links the highway at two locations. • Lot 2 has a depression and a culvert that allows water to flow north under New England Highway toward Lot 4 in DP621020. • No visual or olfactory indications of contamination noted.
Rest stop / picnic area (inspected via walkover)	Area used for car / truck parking off the Golden Highway at junction of New England Highway **[Plate 17 and 18]**. Features include: • Toilet facilities provided (long drop); • Picnic table shelter; • rubbish bins provided; • No visual or olfactory indications of contamination noted; • Limited surface inspection for the presence of possible ACM did not report any suspicious fragments.

7 CONCEPTUAL SITE MODEL

A conceptual site model (CSM) of the site can be formed by considering the likelihood of pathways between any source(s) of contamination onsite and potential receptors. An initial CSM for the project area had been undertaken for in the PEI report, which identified certain lots within the project area suspected to be potentially contaminated from historical activities.

Re-evaluation of the CSM in this assessment was undertaken through review of available desktop information and site inspection A summary on the source-pathway-receptor evaluation is provided in Table 8.

TABLE 8 SOURCE PATHWAY RECEPTOR EVALUATION

Source	Pathway	Receptor	Risk	Notes / Proposed Control
UPON PROJECT BOUNDARY				
Potential soil contamination from former cattle holding pen & timber treatment yard Lot 4 in DP621020	Ingestion / direct contact	Human (Owner & visitors)	**LOW**	• Potential industrial contamination considered negligible based upon inspection. • No evidence of cattle tick dips noted during Environmental Earth Sciences site inspection (21 January 2016), hence this would present a low risk. If during construction evidence is discovered it should be managed appropriately as an unexpected find.
		Human (Construction workers)	**LOW**	• Potential industrial contamination considered negligible. However potential organic impact to soil from cattle pasture may exist, but is considered to present a low risk. • Workers operating in contact with subsurface groundwater should consider wearing appropriate protective clothing and using PPE.
	Inhalation particulates / dust	Human (Owner & visitors)	**LOW**	• Although contamination risk is considered to be low, it is recommended that site users do not agitate soils such that dust is generated.
		Human (Construction workers)	**LOW**	• Workers coming into contact with soil should consider wearing appropriate PPE.
	Contaminant leaching through soil profile	Ecology (Groundwater)	**LOW**	• Contamination likely to be low based upon the non-industrial land use at the lot.
OFF PROJECT BOUNDARY				
Potential soil contamination from former works compound Lot 24 in DP1128978	Ingestion / dermal contact	Human (Owner & visitors)	**LOW**	• Stockpiles noted on this offsite property present a low risk to works on the proposed works corridor. • As this area is not involved in the proposed works corridor, no further management of potential contamination is warranted.
		Human (Construction workers)	**LOW**	• As this area is not involved in the proposed works corridor, no further management of potential contamination is warranted.
	Inhalation particulates / dust	Human (Owner & visitors)	**LOW**	• As this area is not involved in the proposed works corridor, no further management of potential contamination is warranted.
		Human (Construction workers)	**LOW**	• As this area is not involved in the proposed works corridor, no further management of potential contamination is warranted.
	Contaminant leaching through soil profile	Ecology (Groundwater)	**LOW**	• Likelihood of any contamination migrating onto proposed works corridor is considered low.

Source	Pathway	Receptor	Risk	Notes / Proposed Control
Potential soil contamination from abattoir land Lot 35 in DP1128981	Ingestion / direct contact	Onsite Human (Owner & visitors)	**LOW**	• Potential industrial contamination considered negligible. • As this area is not involved in the proposed works corridor, no further management of potential contamination is warranted.
		Onsite Human (Construction workers)	**LOW**	• As this area is not involved in the proposed works corridor, no further management of potential contamination is warranted.
	Inhalation particulates / dust	Onsite Human (Owner & visitors)	**LOW**	• As this area is not involved in the proposed works corridor, no further management of potential contamination is warranted.
		Onsite Human (Construction workers)	**LOW**	• As this area is not involved in the proposed works corridor, no further management of potential contamination is warranted.
	Contaminant leaching through soil profile	Ecology (Groundwater)	**LOW**	• Contamination likely to be low based upon the site seemingly being used for cattle grazing / holding. • Likelihood of any contamination migrating onto proposed works corridor is considered low.
Potential soil or groundwater contamination from offsite service station Lot 21 in DP1014307	Ingestion / direct contact	Onsite Human (Authorised site users)	**LOW**	• If fuel system is managed appropriately under the NSW EPA (2014) – *Protection of the Environment (Underground Petroleum Storage Systems) Regulation* (UPSS Regulation), risk of migration of potential contamination onto works corridor considered low. • Any impact noted in the works corridor from this offsite source should be managed under an unexpected findings protocol (UFP).
	Inhalation particulates / dust	Onsite Human (Authorised site users)	**LOW**	• If fuel system is managed appropriately under the UPSS Regulation, risk of migration of potential contamination onto works corridor considered low. • Any impact noted in the works corridor from this offsite source should be managed under a UFP.
	Vapour (ambient air)	Onsite Human (Owner & visitors)	**LOW**	• If fuel system is managed appropriately under the UPSS Regulation, risk of migration of potential contamination onto works corridor considered low. • Any impact noted in the works corridor from this offsite source should be managed under a UFP.

Notes:

1. **HIGH RISK -** desktop review and site inspection have identified potentially contaminating site activities and intrusive works must be carried out to confirm the presence or absence of contamination

2. **MODERATE RISK** - desktop review and site inspection cannot rule out the presence of potentially contaminating site activities without undertaking recommended intrusive works

   MODERATE 1 - potential for contamination is limited in either likelihood or extent and the presence or absence of contamination is expected to be resolved by limited targeted sampling
   MODERATE 2 - potential for contamination is greater or more extensive than Moderate 1 and will require a detailed site investigation to confirm the presence or absence of contamination

3. **LOW RISK** - desktop review and site inspection have not identified any potentially contaminating site activities

8 CONCLUSION

Roads and Maritime Services (Roads and Maritime) propose to upgrade the New England Highway between Belford and the Golden Highway. The road upgrade would improve traffic flow, travel times and safety for motorists along a busy section of the New England Highway. The proposal would provide a divided road with two travel lanes in each direction between Belford and the Golden Highway and a flyover for vehicles turning right from the Golden Highway towards Maitland and Newcastle.

The project is located within the Singleton local government area (LGA) and the Hunter region of the Roads and Maritime network. Key features of the project include:

- Widening the New England Highway for around 3.2 km to provide a divided road with two travel lanes in each direction between Belford and the Golden Highway
- Replacing the existing right turn movement from the Golden Highway to the New England Highway with a right turn flyover
- Removal of the Whittingham rest area adjacent to the New England Highway and Golden Highway intersection.

Environmental Earth Sciences was commissioned by Arup to undertake this Stage 1 PSI for the above-mentioned works. Works included a review of the PEI report, obtaining relevant desktop information on site setting, and undertaking an inspection of the following two locations reported in the PEI as being potential sources of contamination:

- cattle holding pen and possible tick dip within the project area (Lot 4 in DP621020); and
- service station adjacent to project area (Lot 21 in DP1014307).

The inspection was undertaken by Environmental Earth Sciences on 21 January 2016 and noted the study area to consist of various rural lots and highway corridors. During the inspection the following offsite land uses adjacent to the project area were also noted as posing potential sources of contamination:

- former works compound (Lot 24 in DP1128978) adjacent to project area that was involved in the upgrade of the Golden Highway vehicular bridge over the Great Northern Railway line between 2009 – 2013; and
- operational abattoir and process water treatment/irrigation area to the south of the project area (Lot 35 in DP1128981).

Based on the findings of the desktop assessment and site inspection, the CSM for potential contamination risk was re-evaluated. In summary:

- No potential sources of contamination or observations of contamination impact were noted in the project area which would pose unacceptable risk to human health or the environment. Hence an overall low risk posed by contamination;
- Potential risks posed from current operation of the abattoir /irrigation paddocks adjacent to the project area were evaluated as posing a low risk;
- Potential risk posed by operation of the service station adjacent to the project area were evaluated as posing a low risk pending that operations comply with the UPSS regulations;

- Potential risks posed from residual contamination in the former bridge construction works compound adjacent to the project area were evaluated as posing a low risk;
- Based on the above no further Stage 2 Detailed Site Investigation is recommended to be undertaken in the project area. General management recommendations are provided in Section 9.

9 RECOMMENDATIONS

9.1 General construction management

Prior to commencement of proposed construction works it is recommended that a Soil Management Plan (SMP) be prepared in accordance with *QA Specification G38* and implemented as part of any overarching Construction Environmental Management Plan (CEMP). This plan should include (but not limit) procedures for:

- Identification of all reasonably foreseeable risks relating to subsurface impacts and pollution associated with construction of the proposal and description on how these risks would be managed and minimised.
- Stockpile generation and management in accordance with RTA *Stockpile Site Management Guideline.* Batters would be designed and constructed to minimise risk or exposure, instability and erosion, and to support long-term, on-going best practice management, in accordance with the Roads and Maritime *Guideline for Batter Stabilisation Using Vegetation*.
- Environmental controls during earthworks, including management / controls for erosion, sedimentation, dust generation and water quality safeguards.
- Identification of, and associated procedures / controls for lining / bunding the following areas located within 50 m of a shallow groundwater source:
    - Sediment basins.
    - Stockpiles.
    - Wash-downs.
    - Batch plants;
    - Refuelling sites; and
    - Chemical storage sites;
- Managing pollution risks associated with spillage or soil contamination on the site and adjoining areas, and monitoring during and post-construction;
- Onsite / off-site soil material tracking of soil / spoil.
- Appropriate classification of soil / spoil that requires disposal to waste facility. This is to be undertaken in accordance with the NSW EPA (2014) – *Waste Classification Guidelines*.
- Appropriate certification of Virgin Excavated Natural Material (VENM) or Excavated Natural Material in accordance with the NSW Protection of the Environment Operations Act 1997 (POEO Act).
- General PPE controls for construction workers;

- Consistent with any specific requirements of an approved Erosion and Sedimentation Control Plan (ESCP) and the SMP, control measures should be implemented to minimise risks associated with erosion and sedimentation and entry of materials into the creek / drainage lines. This may include, but not necessarily be limited to:
    - Sediment management devices, such as sediment fencing, straw bales or sand bags;
    - Installation of measures at work entry and exit points to minimise movement of material onto adjoining roads, such as rumble grids or wheel wash bays
    - Appropriate location and storage of construction materials, fuels and chemicals, including bunding where appropriate.
- Unexpected Findings Protocol (UFP) procedure for managing instances where gross contamination and/or hazardous materials are encountered, with appropriate consideration of WH&S controls for mitigating risk to construction workers.
- Pre-construction preliminary salinity field investigation is to be considered with locations, profile descriptions, soil tests and laboratory analyses planned with reference to the *Department of Land and Water Conservation (2002) – Site Investigations for Urban Salinity* (DLWC, 2002).
- Rehabilitation of disturbed areas would be carried out progressively as construction stages are completed, and in accordance with:
    - Landcom's *Managing Urban Stormwater: Soils and Construction* series;
    - RTA *Landscape Guideline*;
    - Roads and Maritime *Guideline for Batter Stabilisation Using Vegetation.*

9.2 Spoil and fill management

A Spoil and Fill Management Plan (SFMP) is to be prepared and implemented as part of any overarching CEMP. The SFMP should identify:

- Locations of any spoil / stockpiles;
- Sources of imported fill, and methods to re-use or dispose of excess or unsuitable spoil material including estimated volumes and disposal sites

9.3 Specific contamination mitigation measures

If contaminated areas are encountered during construction, appropriate control measures are to be implemented to manage the immediate risks of contamination, such as:

- Diversion of surface runoff;
- Capture of any contaminated runoff; or
- Temporary capping.

All other work that may impact on the contaminated area should cease until the nature of the contamination has been confirmed and any necessary site-specific controls or further actions are identified in consultation with the Environment Manager and/or EPA.

9.4 Spill management

A site specific emergency spill plan is to be developed and implemented. The plan should be prepared in accordance with the *Roads and Maritime Code of Practice for Water Management* and/or relevant EPA guidelines. The plan should include measures to be implemented in the event of a spill, including:

- initial response and containment;
- notification of emergency services and relevant authorities (including Roads and Maritime and EPA officers).
- Procedures for managing pollution risks associated with spillage or soil contamination on the site and adjoining areas.

9.5 Dewatering management

Where groundwater is intercepted during construction works, such as around the flyover, management measures to minimise potential adverse impacts are to be implemented in accordance with the RTA *Technical Guideline: Environmental management of construction site dewatering*. These may include, but not necessarily be limited to:

- Options to collect and store groundwater to enable recharge of the water table (such as via grassed swales);
- Where recharge is not appropriate or feasible, discharging groundwater to the surface water drainage system following;
- Appropriate treatment to ensure discharged water is of sufficient quality;
- Prior to any dewatering activities being carried out, an approval must first be obtained in accordance with Section 92 of the Water Management Act.

10 LIMITATIONS

This report has been prepared by Environmental Earth Sciences NSW ABN 109 404 006 in response to and subject to the following limitations:

- The specific instructions received from Arup Pty Ltd;
- The specific scope of works set out in PO115146 issued by Environmental Earth Sciences NSW;
- May not be relied upon by any third party not named in this report for any purpose except with the prior written consent of Environmental Earth Sciences NSW (which consent may or may not be given at the discretion of Environmental Earth Sciences NSW);
- This report comprises the formal report, documentation sections, tables, figures and appendices as referred to in the index to this report. This report has been issued for information purposes to support an REF and may be summarised within the overarching REF document to which the report is appended. The appendix within the REF must not be copied in part without all the material included for any reason;
- The report only relates to the site referred to in the scope of works being located at various lots and portions of lots located at the junction of the New England Highway and Golden Highway, Whittingham NSW (the “site”);

- The report relates to the site as at the date of the report as conditions may change thereafter due to natural processes and/or site activities;
- No warranty or guarantee is made in regard to any other use than as specified in the scope of works and only applies to the depth tested and reported in this report;
- Fill, soil, groundwater and rock to the depth tested on the site may be fit for the use specified in this report. Unless it is expressly stated in this report, the fill, soil and/or rock may not be suitable for classification as clean fill if deposited off site; and
- Our General Limitations set out at the back of the body of this report.

11 REFERENCES

Rasmus P.L., Rose D.M. and Rose G., (1969) - *Singleton 1:250 000 Geological Sheet SI/56-01*, 1st edition, Geological Survey of New South Wales, Sydney

Kovac, M and Lawrie, J. W., (1991) - *Soil landscapes of the Singleton 1:250,000 sheet*, Soil Conservation Service of New South Wales, Sydney

National Environment Protection Council (NEPC) 2013, *National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013*

National Uniform Drillers Licensing Committee (NUDLC) (2012) - *Minimum Construction Requirements for Water Bores In Australia* (3rd Edition). Australian Government National Water commission

Naylor, S. D., (1995) - *Acid Sulfate Soil Risk of the Singleton Map Sheet*. Sydney: Department of Land and Water Conservation.

NSW Department of Environment Climate Change and Water (DECCW) (2009) Guidelines for Implementing the Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2008

NSW Office of Environment & Heritage (2011) *Contaminated sites: Guidelines for* consultants reporting on contaminated sites

NSW Department of Land and Water Conservation (2002) – *Site Investigations for Urban Salinity*

NSW EPA (2014) – *Waste Classification Guidelines Part 1: Classifying Waste*

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ENVIRONMENTAL EARTH SCIENCES GENERAL LIMITATIONS

Scope of services

The work presented in this report is Environmental Earth Sciences response to the specific scope of works requested by, planned with and approved by the client. It cannot be relied on by any other third party for any purpose except with our prior written consent. Client may distribute this report to other parties and in doing so warrants that the report is suitable for the purpose it was intended for. However, any party wishing to rely on this report should contact us to determine the suitability of this report for their specific purpose.

Separation of information and data

This formal report in its entirety will be appended within the overarching REF and will comprise the report body, tables, figures and appendices as referred to in the index of this report. It may be summarised only within the overarching REF document prepared for Roads and Maritime, but the appended report must not be copied in part without all the material included for any reason.

Subsurface conditions change

Understanding an environmental study will reduce exposure to the risk of the presence of contaminated soil and or groundwater. However, contaminants may be present in areas that were not investigated, or may migrate to other areas. Analysis cannot cover every type of contaminant that could possibly be present. When combined with field observations, field measurements and professional judgement, this approach increases the probability of identifying contaminated soil and or groundwater. Under no circumstances can it be considered that these findings represent the actual condition of the site at all points.

Environmental studies identify actual sub-surface conditions only at those points where samples are taken, when they are taken. Actual conditions between sampling locations differ from those inferred because no professional, no matter how qualified, and no sub-surface exploration program, no matter how comprehensive, can reveal what is hidden below the ground surface. The actual interface between materials may be far more gradual or abrupt than an assessment indicates. Actual conditions in areas not sampled may differ from that predicted. Nothing can be done to prevent the unanticipated. However, steps can be taken to help minimize the impact. For this reason, site owners should retain our services.

Problems with interpretation by others

Advice and interpretation is provided on the basis that subsequent work will be undertaken by Environmental Earth Sciences NSW. This will identify variances, maintain consistency in how data is interpreted, conduct additional tests that may be necessary and recommend solutions to problems encountered on site. Other parties may misinterpret our work and we cannot be responsible for how the information in this report is used. If further data is collected or comes to light we reserve the right to alter their conclusions.

Obtain regulatory approval

The investigation and remediation of contaminated sites is a field in which legislation and interpretation of legislation is changing rapidly. Our interpretation of the investigation findings should not be taken to be that of any other party. When approval from a statutory authority is required for a project, that approval should be directly sought by the client.

Limit of liability

This study has been carried out to a particular scope of works at a specified site and should not be used for any other purpose. This report is provided on the condition that Environmental Earth Sciences NSW disclaims all liability to any person or entity other than the client in respect of anything done or omitted to be done and of the consequence of anything done or omitted to be done by any such person in reliance, whether in whole or in part, on the contents of this report. Furthermore, Environmental Earth Sciences NSW disclaims all liability in respect of anything done or omitted to be done and of the consequence of anything done or omitted to be done by the client, or any such person in reliance, whether in whole or any part of the contents of this report of all matters not stated in the brief outlined in Environmental Earth Sciences NSW's proposal number and according to Environmental Earth Sciences general terms and conditions and special terms and conditions for contaminated sites.

To the maximum extent permitted by law, we exclude all liability of whatever nature, whether in contract, tort or otherwise, for the acts, omissions or default, whether negligent or otherwise for any loss or damage whatsoever that may arise in any way in connection with the supply of services. Under circumstances where liability cannot be excluded, such liability is limited to the value of the purchased service.

APPENDIX A SOIL REPORTS

NSW GOVERNMENT Environment & Heritage **eSPADE**

NSW soil and land information

View | Search | Area select

Go to location eg. address, or latitude, longitude (DD):

Belford, New South Wales, Australia | Go

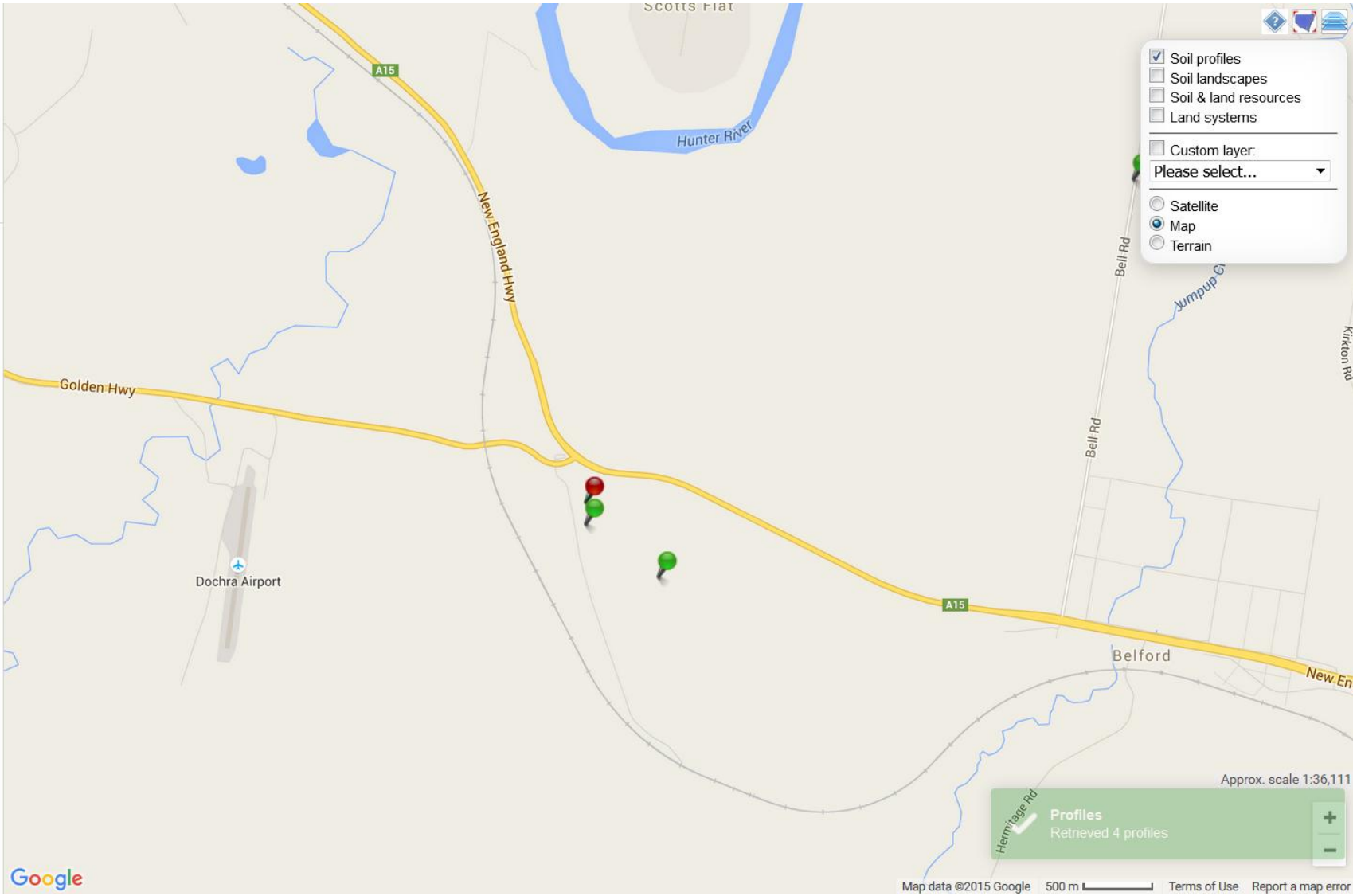
Reset to original extents

Select soil profile colour scheme:

Salinity | Reset

Legend

Marker	Rule type	Value
	Equal to (=)	no salting evident
	Equal to (=)	salting evident
	Equal to (=)	strongly evident
	Default (other, does not match rule set)	
	Attribute not available	



NSW SOIL LAND INFORMATION SYSTEM
Soil profile report

SITE DETAILS:

Site Location:	Profile 1
Profile Details:	BELFORD-SINGLETON ABATTOIR Survey (1000497), Profile 1, collected from a pit by Linda Henderson on April 07, 1993
Map Reference:	MGA Grid Reference: Zone 56, Easting 334405, Northing 6386640 CESSNOCK (9132) 1:100,000 sheet
Physiography:	plain in low hills under grassland/herbland on not identified lithology with nil rock outcrop; local relief low (30-90 m), run-on is high, run-off is high
Vegetation/Land Use:	grassland/herbland, with limited clearing at the site, used for volun./native pasture, with volun./native pasture in the general area
Surface Condition:	expected to be hardsetting when dry, ground cover is 100%
Erosion/Land Degradation:	strongly evident
Soil Hydrology:	no free water
Soil Type:	Subnatric Brown Sodosol (ASC), Soloth (Solod)(GSG), Dy3.41(PPF)
Profile Field Notes:	

SOIL DESCRIPTION:

	Texture:	silty clay loam
	Colour:	dark yellowish brown (dark brown) (10YR 3/4) with no recorded mottles
Layer 1	Structure:	weak pedality (crumb, 2 - 5 mm, fabric is rough-faced peds),
00.00 - 00.04 m A1 Horizon	Coarse Fragments:	
	Pans:	
	Segregations:	
	Roots:	many (25-100/10x10cm) (Root size <1 mm),

	Soil fauna:	Activity is nil
	Cracks/Macropores:	Cracks are nil, macropores are nil
	Moisture/Consistence:	dry, non-sticky, disruptive test result was very weak force, shearing test result was crumbly,
	Erodibility Tests:	
	Field chemical tests:	Field pH is 6 (Raupach),
	Sample taken:	disturbed
	Layer Notes:	
	Lower Boundary:	smooth clear (20-50 mm) boundary to ...
	Texture:	fine sandy clay loam
	Colour:	strong brown (brown) (7.5YR 4/6) with 20% - 50% distinct weathered orange mottles
	Structure:	weak pedality (sub-angular blocky, 50 - 100 mm, fabric is rough-faced peds),
	Coarse Fragments:	
	Pans:	
	Segregations:	
Layer 2		
00.04 - 00.15 m A2 Horizon	Roots:	common (10-25/10x10cm) (Root size <1 mm), common (10-25/10x10cm) (Root size 1-2 mm),
	Soil fauna:	Activity is nil
	Cracks/Macropores:	Cracks are nil, macropores are nil
	Moisture/Consistence:	dry, non-sticky, disruptive test result was very weak force, shearing test result was crumbly,
	Erodibility Tests:	
	Field chemical tests:	Field pH is 6 (Raupach),
	Sample taken:	disturbed

	Layer Notes:	
	Lower Boundary:	irregular clear (20-50 mm) boundary to ...
	Texture:	light medium clay
	Colour:	brown (dull orange) (7.5YR 5/4) with 20% - 50% prominent weathered orange mottles
	Structure:	moderate pedality (sub-angular blocky, 50 - 100 mm, fabric is rough-faced peds),
	Coarse Fragments:	
	Pans:	
	Segregations:	
Layer 3	Roots:	common (10-25/10x10cm) (Root size <1 mm), common (10-25/10x10cm) (Root size 1-2 mm),
00.15 - 01.10 m B21 Horizon	Soil fauna:	Activity is nil
	Cracks/Macropores:	Cracks are nil, macropores are nil
	Moisture/Consistence:	slightly plastic, moderately sticky, disruptive test result was very weak force, shearing test result was crumbly,
	Erodibility Tests:	
	Field chemical tests:	Field pH is 6 (Raupach),
	Sample taken:	disturbed
	Layer Notes:	
	Lower Boundary:	smooth diffuse (>100 mm) boundary to ...
	Texture:	medium clay
Layer 4	Colour:	brownish yellow (bright yellowish brown) (10YR 6/6) with 20% - 50% distinct weathered yellow mottles
01.10 - 02.00 m B22 Horizon	Structure:	moderate pedality (sub-angular blocky, 50 - 100 mm, fabric is rough-faced peds),

Coarse Fragments:	very few (< 2%), other, dispersed, reoriented, weakly weathered, rounded, coarse gravel (20-60 mm),
Pans:	
Segregations:	
Roots:	few (1-10/10x10cm) (Root size <1 mm),
Soil fauna:	Activity is nil
Cracks/Macropores:	Cracks are nil, macropores are nil
Moisture/Consistence:	moderately plastic, very sticky, disruptive test result was very weak force, shearing test result was crumbly,
Erodibility Tests:	
Field chemical tests:	Field pH is 8 (Raupach),
Sample taken:	disturbed
Layer Notes:	Layer continues.
Lower Boundary:	boundary to ...

LABORATORY TESTS:

No lab data available

For information on laboratory test data and units of measure, please see Soil survey standard test methods

NSW SOIL LAND INFORMATION SYSTEM
Soil profile report

SITE DETAILS:

Site Location:	PIT 2
Profile Details:	BELFORD-SINGLETON ABATTOIR Survey (1000497), Profile 2, collected from a pit by Linda Henderson on April 07, 1993
Map Reference:	MGA Grid Reference: Zone 56, Easting 334405, Northing 6386490 CESSNOCK (9132) 1:100,000 sheet
Physiography:	hillslope in low hills under grassland/herbland on siltstone/mudstone lithology with nil rock outcrop; Slope 2% (estimated), elevation 70 m, aspect north east, run-on is moderate, run-off is high
Vegetation/Land Use:	grassland/herbland, with extensive clearing at the site, used for volun./native pasture, with volun./native pasture in the general area
Surface Condition:	expected to be hardsetting when dry, ground cover is 100%
Erosion/Land Degradation:	no salting evident
Soil Hydrology:	profile is slowly permeable and mod. well drained, no free water
Soil Type:	Subnatric Brown Sodosol (ASC), Non-calcic Brown Soil(GSG), Db1.22(PPF)
Profile Field Notes:	

SOIL DESCRIPTION:

Layer 1	Texture:	fine sandy loam
	Colour:	dark brown (7.5YR 3/3) with no recorded mottles
	Structure:	weak pedality (crumb, 5 - 10 mm, fabric is rough-faced peds),
	Coarse Fragments:	
00.00 - 00.02 m A1 Horizon	Pans:	
	Segregations:	
	Roots:	many (25-100/10x10cm) (Root size <1 mm),

	Soil fauna:	Activity is nil
	Cracks/Macropores:	Cracks are nil, macropores are nil
	Moisture/Consistence:	dry, disruptive test result was very weak force, shearing test result was crumbly,
	Erodibility Tests:	
	Field chemical tests:	Field pH is 6 (Raupach),
	Sample taken:	disturbed
	Layer Notes:	
	Lower Boundary:	smooth abrupt (5-20 mm) boundary to ...
	Texture:	fine sandy clay loam
	Colour:	brown (7.5YR 4/3) with < 2% faint weathered orange mottles
	Structure:	weak pedality (sub-angular blocky, 50 - 100 mm, fabric is rough-faced peds),
	Coarse Fragments:	
	Pans:	
	Segregations:	
Layer 2		
	Roots:	common (10-25/10x10cm) (Root size <1 mm),
00.02 - 00.20 m A2 Horizon	Soil fauna:	Activity is nil
	Cracks/Macropores:	Cracks are nil, macropores are nil
	Moisture/Consistence:	dry, disruptive test result was very weak force, shearing test result was brittle,
	Erodibility Tests:	
	Field chemical tests:	Field pH is 6 (Raupach),
	Sample taken:	disturbed
	Layer Notes:	

	Lower Boundary:	smooth sharp (<5 mm) boundary to ...
	Texture:	light medium clay
	Colour:	brown (7.5YR 4/4) with 2% - 10% distinct weathered orange mottles
	Structure:	(angular blocky, 10 - 20 mm, also prismatic, 50 - 100 mm, fabric is smooth-faced peds),
	Coarse Fragments:	few (2-10%), charcoal, dispersed, reoriented, non-weathered, angular, fine gravel (2-6 mm),
	Pans:	
	Segregations:	few (2% - 10%), strong, fine (< 2 mm), manganiferous, nodules,
Layer 3	Roots:	common (10-25/10x10cm) (Root size <1 mm), common (10-25/10x10cm) (Root size 1-2 mm),
00.20 - 00.65 m B21 Horizon	Soil fauna:	Activity is nil
	Cracks/Macropores:	Cracks are nil, macropores are nil
	Moisture/Consistence:	dry, moderately plastic, moderately sticky, disruptive test result was moderately firm force, shearing test result was crumbly,
	Erodibility Tests:	
	Field chemical tests:	Field pH is 6.5 (Raupach),
	Sample taken:	disturbed
	Layer Notes:	
	Lower Boundary:	smooth gradual (50-100 mm) boundary to ...
	Texture:	light medium clay
Layer 4		
00.65 - 01.00 m B22 Horizon	Colour:	(dark reddish brown) (5YR 3/6) with 20% - 50% prominent weathered red mottles, and 20% - 50% prominent weathered grey subdominant mottles
	Structure:	(angular blocky, 10 - 20 mm, also prismatic, 50 - 100

		mm, fabric is smooth-faced peds),
	Coarse Fragments:	
	Pans:	
	Segregations:	
	Roots:	few (1-10/10x10cm) (Root size <1 mm), few (1-10/10x10cm) (Root size 1-2 mm),
	Soil fauna:	Activity is nil
	Cracks/Macropores:	Cracks are nil, macropores are nil
	Moisture/Consistence:	dry, moderately plastic, moderately sticky, disruptive test result was moderately firm force, shearing test result was crumbly,
	Erodibility Tests:	
	Field chemical tests:	Field pH is 7 (Raupach),
	Sample taken:	disturbed
	Layer Notes:	
	Lower Boundary:	smooth gradual (50-100 mm) boundary to ...
	Texture:	silty clay
	Colour:	light brown (dull orange) (7.5YR 6/4) with 20% - 50% prominent weathered red mottles, and 20% - 50% prominent weathered grey subdominant mottles
	Structure:	massive (fabric is earthy),
Layer 5		
	Coarse Fragments:	
01.00 - 02.00 m C Horizon	Pans:	
	Segregations:	
	Roots:	
	Soil fauna:	Activity is nil

Cracks/Macropores: Cracks are nil, macropores are nil

Moisture/Consistence: dry,

Erodibility Tests:

Field chemical tests: Field pH is 6.5 (Raupach),

Sample taken:

Layer Notes:

Lower Boundary: boundary to ...

LABORATORY TESTS:

No lab data available

For information on laboratory test data and units of measure, please see Soil survey standard test methods

NSW SOIL LAND INFORMATION SYSTEM
Soil profile report

SITE DETAILS:

Site Location:	PIT 3
Profile Details:	BELFORD-SINGLETON ABATTOIR Survey (1000497), Profile 3, collected from a pit by Linda Henderson on April 07, 1993
Map Reference:	MGA Grid Reference: Zone 56, Easting 334905, Northing 6386140 CESSNOCK (9132) 1:100,000 sheet
Physiography:	hillcrest in low hills under woodland grass u'storey on siltstone/mudstone lithology with nil rock outcrop; elevation 80 m, run-on is none, run-off is low
Vegetation/Land Use:	woodland grass u'storey, with extensive clearing at the site
Surface Condition:	expected to be hardsetting when dry, ground cover is 100%
Erosion/Land Degradation:	no salting evident
Soil Hydrology:	profile is moderately permeable and well drained, no free water
Soil Type:	Bleached Mesotrophic Red Kandosol (ASC), Soloth (Solod)(GSG), Dr2.41(PPF)
Profile Field Notes:	

SOIL DESCRIPTION:

Layer 1	Texture:	fine sandy clay loam
	Colour:	dark brown (brownish black) (7.5YR 3/2) with no recorded mottles
	Structure:	moderate pedality (sub-angular blocky, 5 - 10 mm, also crumb, 2 - 5 mm, fabric is rough-faced peds),
00.00 - 00.03 m A1 Horizon	Coarse Fragments:	
	Pans:	
	Segregations:	
	Roots:	abundant (>100/10x10cm) (Root size <1 mm), many (25-100/10x10cm) (Root size 1-2 mm),

	Soil fauna:	Activity is nil
	Cracks/Macropores:	Cracks are nil, macropores are nil
	Moisture/Consistence:	dry, disruptive test result was very weak force, shearing test result was crumbly,
	Erodibility Tests:	
	Field chemical tests:	Field pH is 5.5 (Raupach),
	Sample taken:	disturbed
	Layer Notes:	
	Lower Boundary:	smooth clear (20-50 mm) boundary to ...
	Texture:	silty clay loam
	Colour:	brown (7.5YR 4/3) with 2% - 10% faint weathered orange mottles
	Structure:	weak pedality (sub-angular blocky, 50 - 100 mm, fabric is rough-faced peds),
	Coarse Fragments:	
	Pans:	
	Segregations:	
Layer 2		
	Roots:	many (25-100/10x10cm) (Root size <1 mm),
00.03 - 00.15 m A2 Horizon	Soil fauna:	Activity is nil
	Cracks/Macropores:	Cracks are nil, macropores are nil
	Moisture/Consistence:	dry, disruptive test result was very weak force, shearing test result was brittle,
	Erodibility Tests:	
	Field chemical tests:	Field pH is 6 (Raupach),
	Sample taken:	disturbed
	Layer Notes:	

	Lower Boundary:	wavy sharp (<5 mm) boundary to ...
	Texture:	light medium clay
	Colour:	yellowish red (reddish brown) (5YR 4/6) with 2% - 10% faint weathered orange mottles, and 2% - 10% faint weathered grey subdominant mottles
	Structure:	strong pedality (angular blocky, 20 - 50 mm, also prismatic, 100 - 200 mm, fabric is smooth-faced peds),
	Coarse Fragments:	
	Pans:	
	Segregations:	
Layer 3	Roots:	many (25-100/10x10cm) (Root size <1 mm),
00.15 - 00.45 m B21 Horizon	Soil fauna:	Activity is nil
	Cracks/Macropores:	Cracks are nil, macropores are nil
	Moisture/Consistence:	dry, moderately plastic, moderately sticky, disruptive test result was very firm force,
	Erodibility Tests:	
	Field chemical tests:	Field pH is 6 (Raupach),
	Sample taken:	disturbed
	Layer Notes:	
	Lower Boundary:	smooth gradual (50-100 mm) boundary to ...
	Texture:	medium clay
Layer 4	Colour:	strong brown (bright brown) (7.5YR 5/6) with 10% - 20% distinct weathered grey mottles, and 10% - 20% distinct weathered red subdominant mottles
00.45 - 00.75 m B22 Horizon	Structure:	strong pedality (angular blocky, 20 - 50 mm, also prismatic, 100 - 200 mm, fabric is smooth-faced peds),

	Coarse Fragments:	
	Pans:	
	Segregations:	
	Roots:	
	Soil fauna:	Activity is nil
	Cracks/Macropores:	Cracks are nil, macropores are nil
	Moisture/Consistence:	dry, moderately plastic, moderately sticky, disruptive test result was very firm force,
	Erodibility Tests:	
	Field chemical tests:	Field pH is 5 (Raupach),
	Sample taken:	disturbed
	Layer Notes:	
	Lower Boundary:	smooth gradual (50-100 mm) boundary to ...
	Texture:	light medium clay
	Colour:	reddish yellow (orange) (7.5YR 6/6) with no recorded mottles
	Structure:	massive (fabric is earthy),
	Coarse Fragments:	
Layer 5	Pans:	
00.75 - 02.30 m C Horizon	Segregations:	
	Roots:	
	Soil fauna:	Activity is nil
	Cracks/Macropores:	Cracks are nil, macropores are nil
	Moisture/Consistence:	dry, moderately plastic, moderately sticky, disruptive test result was very firm force,

Erodibility Tests:	
Field chemical tests:	Field pH is 5 (Raupach),
Sample taken:	disturbed
Layer Notes:	Layer continues.
Lower Boundary:	boundary to ...

LABORATORY TESTS:

No lab data available

For information on laboratory test data and units of measure, please see Soil survey standard test methods

To contact us
email:soils@environment.nsw.gov.au

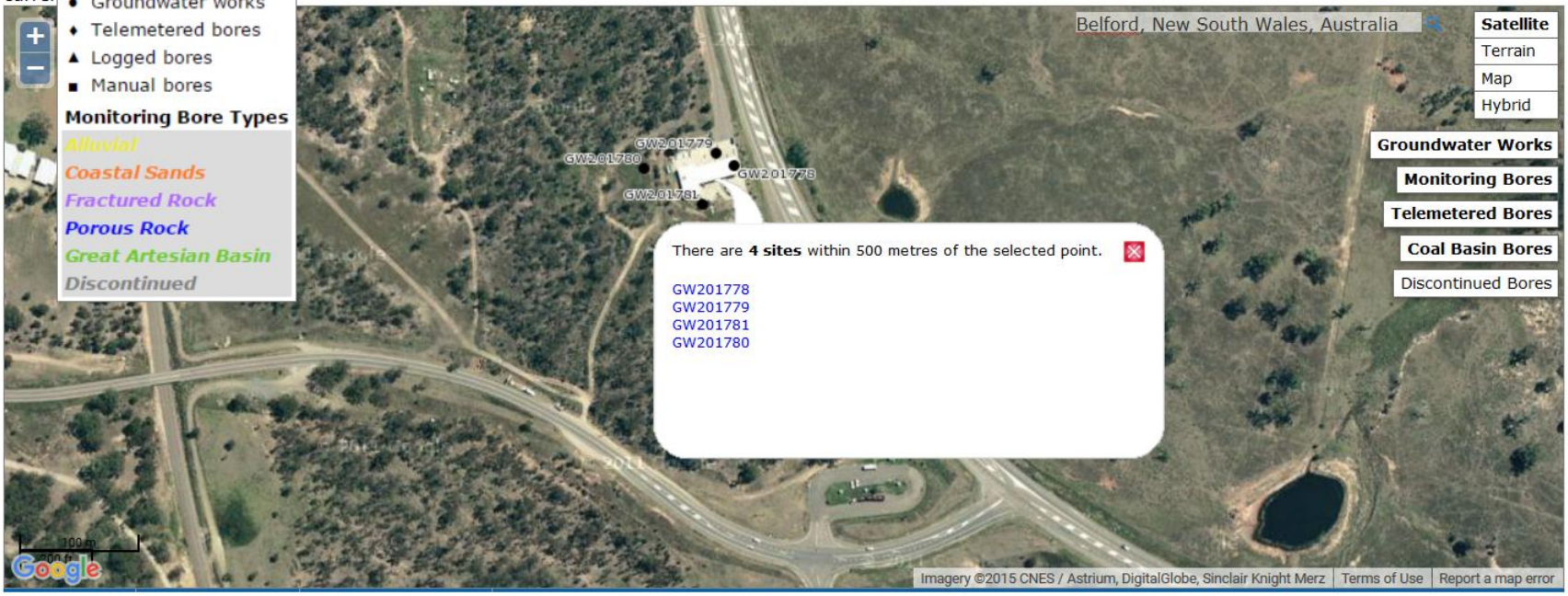
APPENDIX B REGISTERED BORE INFORMATION

Hunter River Basin

All data times are Eastern Standard Time

Map

curren



NSW Office of Water
Work Summary

GW201778

Licence: 20BL169588 Licence Status: ACTIVE

Authorised Purpose(s): MONITORING BORE
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status: Equipped
Construct.Method:
Owner Type: Private

Commenced Date:
Final Depth: 8.10 m
Completion Date: 27/09/2004
Drilled Depth: 8.10 m

Contractor Name:
Driller: Unkown Unknown
Assistant Driller:

Property: MOBIL SERVICE STATION NEW ENGLAND HIGHWAY WHITTINGHAM NSW
Standing Water Level:
GWMA:
Salinity:
GW Zone:
Yield:

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	NORTH	NORTH.66	21//1014307
Licensed:			

Region: 20 - Hunter
CMA Map: 9132-4S
River Basin: 210 - HUNTER RIVER
Grid Zone:
Scale:
Area/District:

Elevation: 0.00 m (A.H.D.)
Northing: 6387182.0
Latitude: 32°38'25.9"S
Elevation Source: Unknown
Easting: 334119.0
Longitude: 151° 13'53.5"E

GS Map: -
MGA Zone: 0
Coordinate Source: GIS - Geographic Information System

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	8.10	0			(Unknown)
1		Annulus	Drill Cuttings	0.00	3.50				
1		Annulus	Bentonite	3.50	4.00				
1		Annulus	Waterworn/Rounded	4.00	8.10				Graded
1	1	Casing		0.00	8.10				Seated on Bottom
1	1	Opening	Slots	5.00	8.10			1	()

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)

Geologists Log

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.40	0.40	Fill; Silty Sand, light brown, medium grained, dry	Fill	
0.40	2.20	1.80	Silty Clay; light brown with orange mottling, medium-low plasticity, some fine angular gravel inclusions throughout, gre	Silty Clay	
2.20	4.00	1.80	Sandstone; extremely weathered, light orange/brown mottling, fine grained sand, becoming denser below 3m, dry	Sandstone	
4.00	8.10	4.10	Siltstone; dry	Siltstone	

Remarks

27/09/2004: Form A Remarks:
Nat Carling, 8-May-2012; All details were taken from consultants log & location map.

*** End of GW201778 ***

NSW Office of Water
Work Summary

GW201779

Licence: 20BL169588 Licence Status: ACTIVE

Authorised Purpose(s): MONITORING BORE
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status: Equipped
Construct.Method:
Owner Type: Private

Commenced Date:
Final Depth: 8.20 m
Completion Date: 27/09/2004
Drilled Depth: 8.20 m

Contractor Name:
Driller: Unkown Unknown
Assistant Driller:

Property: MOBIL SERVICE STATION NEW ENGLAND HIGHWAY WHITTINGHAM NSW
Standing Water Level:
GWMA:
Salinity:
GW Zone:
Yield:

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	NORTH	NORTH.66	21//1014307
Licensed:			

Region: 20 - Hunter
CMA Map: 9132-4S
River Basin: 210 - HUNTER RIVER
Grid Zone:
Scale:
Area/District:

Elevation: 0.00 m (A.H.D.)
Northing: 6387191.0
Latitude: 32°38'25.6"S
Elevation Source: Unknown
Easting: 334106.0
Longitude: 151 ° 13'53"E

GS Map: -
MGA Zone: 0
Coordinate Source: GIS - Geographic Information System

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	8.20	0			(Unknown)
1		Annulus	Drill Cuttings	0.00	2.50				
1		Annulus	Bentonite	2.50	3.50				
1		Annulus	Waterworn/Rounded	3.50	8.20				Graded
1	1	Casing		0.00	8.20				Seated on Bottom
1	1	Opening	Slots	5.00	8.20			1	()

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)

Geologists Log

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.10	0.10	Fill; Asphalt, gravelly, black medium angular gravel	Fill	
0.10	0.60	0.50	Fill; Gravelly Sand, light brown, medium-coarse sand, medium angular gravel, dry	Fill	
0.60	0.90	0.30	Silty Clay; light brown/orange mottling, some grey throughout, medium-low density fines, dry	Silty Clay	
0.90	1.70	0.80	Sandstone; extremely weathered, light orange/brown, fine grained sand, medium plasticity, dry	Sandstone	
1.70	3.20	1.50	Sandstone; extremely weathered, orange/brown mottling, fine grained sand, dry	Sandstone	
3.20	8.20	5.00	Siltstone; light brown/grey, becoming denser below 6m, dry	Siltstone	

Remarks

27/09/2004: Form A Remarks:
Nat Carling, 8-May-2012; All details were taken from consultants log & location map.

*** End of GW201779 ***

NSW Office of Water
Work Summary

GW201780

Licence: 20BL169588 Licence Status: ACTIVE

Authorised Purpose(s): MONITORING BORE
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status: Equipped
Construct.Method:
Owner Type: Private

Commenced Date:
Final Depth: 5.05 m
Completion Date: 28/09/2004
Drilled Depth: 5.05 m

Contractor Name:
Driller: Unkown Unknown
Assistant Driller:

Property: MOBIL SERVICE STATION NEW ENGLAND HIGHWAY WHITTINGHAM NSW
Standing Water Level:
GWMA:
Salinity:
GW Zone:
Yield:

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	NORTH	NORTH.66	21//1014307
Licensed:			

Region: 20 - Hunter
CMA Map: 9132-4S
River Basin: 210 - HUNTER RIVER
Grid Zone:
Scale:
Area/District:

Elevation: 0.00 m (A.H.D.)
Northing: 6387179.0
Latitude: 32°38'26.0"S
Elevation Source: Unknown
Easting: 334054.0
Longitude: 151 ° 13' 51"E

GS Map: -
MGA Zone: 0
Coordinate Source: GIS - Geographic Information System

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	5.05	0			(Unknown)
1		Annulus	Drill Cuttings	0.00	1.00				
1		Annulus	Bentonite	1.00	1.50				
1		Annulus	Waterworn/Rounded	1.50	5.05				Graded
1	1	Casing		0.00	5.05				Seated on Bottom
1	1	Opening	Slots	2.00	5.00			1	()

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)

Geologists Log

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.18	0.18	Fill; Concrete	Fill	
0.18	0.50	0.32	Silty Clay; trace sand, ligth brown	Silty Clay	
0.50	1.20	0.70	Silty Clay; light orange/brown	Silty Clay	
1.20	2.00	0.80	Silty Clay; tends to sandy caly, low moisture content	Silty Clay	
2.00	2.60	0.60	Silty Clay; brown orange, tends to weathered siltstone	Silty Clay	
2.60	5.05	2.45	Sandstone; fine grained, moderately to slightly weathered, minor weathered siltstone bands	Sandstone	

Remarks

28/09/2004: Form A Remarks:
Nat Carling, 8-May-2012; All details were taken from consultants log & location map.

*** End of GW201780 ***

NSW Office of Water
Work Summary

GW201781

Licence: 20BL169588 Licence Status: ACTIVE

Authorised Purpose(s): MONITORING BORE
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status: Equipped
Construct.Method:
Owner Type: Private

Commenced Date:
Final Depth: 14.00 m
Completion Date: 29/09/2004
Drilled Depth: 14.00 m

Contractor Name:
Driller: Unkown Unknown
Assistant Driller:

Property: MOBIL SERVICE STATION NEW ENGLAND HIGHWAY WHITTINGHAM NSW
Standing Water Level:
GWMA:
Salinity:
GW Zone:
Yield:

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	NORTH	NORTH.66	21//1014307
Licensed:			

Region: 20 - Hunter
River Basin: 210 - HUNTER RIVER
Area/District:
CMA Map: 9132-4S
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6387154.0
Easting: 334097.0
Latitude: 32°38'26.8"S
Longitude: 151°13'52.6"E

GS Map: -
MGA Zone: 0
Coordinate Source: GIS - Geographic Information System

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	14.00	0			(Unknown)
1		Annulus	Drill Cuttings	0.00	8.50				
1		Annulus	Bentonite	8.50	9.00				
1		Annulus	Waterworn/Rounded	9.00	14.00				Graded
1	1	Casing		0.00	14.00				Seated on Bottom
1	1	Opening	Slots	10.90	14.00			1	()

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)

Geologists Log

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.15	0.15	Fill; Concrete	Fill	
0.15	0.50	0.35	Silty Clay; brown	Silty Clay	
0.50	1.10	0.60	Silty Clay; orange/brown	Silty Clay	
1.10	1.20	0.10	Silty Clay; orange, brown mottled	Silty Clay	
1.20	3.00	1.80	Clayey Silt; orange brown, tends to weathered siltstone	Clayey Silt	
3.00	14.00	11.00	Siltstone; grey, fresh & unweathered, minor mud bands	Siltstone	

Remarks

29/09/2004: Form A Remarks:
Nat Carling, 8-May-2012; All details were taken from consultants log & location map.

*** End of GW201781 ***

APPENDIX C COUNCIL PLANNING CERTIFICATE

Enquiries to: Planning & Sustainable Environment Group
(02) 6578 7290
Our Ref: PN 20802 (App. 23941)
Your Ref: **115085-Belford**

ABN 52 877 492 396
Address all correspondence to the General Manager:
PO Box 314
SINGLETON
NSW 2330

DX 7063
SINGLETON

Administration Centre located at:
Queen Street
Singleton

Ph: (02) 6578 7290
Fax: (02) 6572 4197
Email:
ssc@singleton.nsw.gov.au
Website:
www.singleton.nsw.gov.au

PLANNING CERTIFICATE UNDER SECTION 149 ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

Applicant: Chris Newland
82-84 Dickson Avenue
ARTARMON NSW 2004

Certificate No: 20150927
File No: PN 20802
Receipt No: 1128885
Receipt Date: 30/10/2015
Fee Paid: $133.00

PROPERTY DESCRIPTION:

Lot: 21 DP: 1014307, 3550/ New England Highway WHITTINGHAM 2330

OWNER: Mamineli Pty Ltd

ASSESSMENT NUMBER: 120835

PARCEL NUMBER: 20802

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PLANNING CERTIFICATE UNDER SECTION 149
ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

ADVICE PROVIDED IN ACCORDANCE WITH SECTION 149(2)

1. Names of relevant SEPPs, REPs, LEPs and DCPs applying to the land

Local Environmental Plans

The Singleton Local Environmental Plan 2013 applies to the land.

Draft Local Environmental Plans

No proposed environmental planning instrument, that is or has been the subject of community consultation or has been on public exhibition under the Act, applies to the carrying out of development on the land.

Development Control Plans

The following Development Control Plans made under Division 6 of Part 3 of the Environmental Planning and Assessment Act 1979 apply to the land (including development control plans made under Section 72 of the Act, or by the Director General under Section 51 of the Act before repeal of those sections):

- Singleton Development Control Plan

State Environmental Planning Policy

The following State Environmental Planning Policies apply to the land:

- State Environmental Planning Policy No. 6 - Number of Storeys in a Building
- State Environmental Planning Policy No. 15 - Rural Land-Sharing Communities
- State Environmental Planning Policy No. 21 - Caravan Parks
- State Environmental Planning Policy No. 22 - Shops and Commercial Premises
- State Environmental Planning Policy No. 30 – Intensive Agriculture
- State Environmental Planning Policy No. 32 - Urban Consolidation (Redevelopment of Urban Land)
- State Environmental Planning Policy No. 33 - Hazardous and Offensive Development
- State Environmental Planning Policy No. 36 - Manufactured Home Estates

PLANNING CERTIFICATE UNDER SECTION 149
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- State Environmental Planning Policy No. 44 - Koala Habitat Protection
- State Environmental Planning Policy No. 55 - Remediation of Land
- State Environmental Planning Policy No. 62 - Sustainable Aquaculture
- State Environmental Planning Policy No. 64 - Advertising and Signage
- State Environmental Planning Policy No. 65 - Design Quality of Residential Flat Development
- State Environmental Planning Policy (Housing for Seniors and People with a Disability) 2004
- State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004
- State Environmental Planning Policy (Major Development) 2005
- State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007
- State Environmental Planning Policy – (Miscellaneous Consent Provisions) 2007
- State Environmental Planning Policy – (Infrastructure) 2007
- State Environmental Planning Policy - (Rural Lands) 2008
- State Environmental Planning Policy (Exempt and Complying Development Codes) 2008
- State Environmental Planning Policy (Affordable Rental Housing) 2009
- State Environmental Planning Policy (State and Regional Development) 2011

NOTE:
The above policies apply to the whole of the State and not solely to the land the subject of this certificate. The policies may provide for the land subject of this certificate to be exempted from the requirements of the respective policy due to site specific or development specific considerations.

Draft State Environmental Planning Policy

The following draft State Environmental Planning Policies that have been publicised apply to the land:

- Draft State Environmental Planning Policy (Application of Development Standards) 2004.
- Draft State Environmental Planning Policy No. 66 - Integration of Landuse and Transport.
- Draft State Environmental Planning Policy (Competition) 2010.

PLANNING CERTIFICATE UNDER SECTION 149
ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

2. Zoning and land use under relevant LEPs

Zoning under Singleton Local Environmental Plan 2013

The land is zoned RU1 Primary Production under the provisions of Part 2 in the Singleton Local Environmental Plan 2013.

i) The Singleton Local Environmental Plan 2013 provides that the following development may be carried out without the need for development consent (Item 2 of the Land Use Table):

Extensive agriculture; Forestry; Home occupations; Intensive plant agriculture

ii) The Singleton Local Environmental Plan 2013 provides that the following development may not be carried out within the zone except with development consent (Item 3 of the Land Use of the Land Use Table):

Agriculture; Airstrips; Animal boarding or training establishments; Bed and breakfast accommodation; Boat launching ramps; Boat sheds; Building identification signs; Business identification signs; Camping grounds; Caravan parks; Cellar door premises; Cemeteries; Community facilities; Crematoria; Dual occupancies; Dwelling houses; Environmental facilities; Environmental protection works; Extractive industries; Farm buildings; Farm stay accommodation; Flood mitigation works; Hazardous industries; Heavy industrial storage establishments; Helipads; Highway service centres; Home-based child care; Home businesses; Home industries; Information and education facilities; Intensive livestock agriculture; Jetties; Moorings; Offensive industries; Open cut mining; Places of public worship; Plant nurseries; Recreation areas; Recreation facilities (outdoor); Roads; Roadside stalls; Rural industries; Rural workers' dwellings; Service stations; Sewerage systems; Truck depots; Turf farming; Veterinary hospitals; Water supply systems

iii) The Singleton Local Environmental Plan 2013 provides that the following development is prohibited within the zone (Item 4 of the Land Use Table):

Any development not specified in item 2 or 3

PLANNING CERTIFICATE UNDER SECTION 149
ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

iv) Development Standard for the erection of a dwelling-house

Clause 4.2A in the Singleton Local Environmental Plan 2013 includes a development standard that fixes a minimum land dimension for the erection of a dwelling-house. This clause applies to the land.

The minimum lot size for the erection of a dwelling-house is identified on the Singleton Local Environmental Plan 2013 Lot Size Map as 40 hectares.

Critical habitats

Council does not possess comprehensive mapping of critical habitats within the Singleton Local Government Area (LGA). The Director-General of the NSW Department of Environment and Climate Change has not served a copy of a map of critical habitat on Council identifying that the land includes or comprises critical habitat.

Conservation area/s

The land is not identified in the Singleton Local Environmental Plan 2013 as being in a heritage conservation area.

Environmental Heritage

The land is not identified in the Singleton Local Environmental Plan 2013 as containing an item of environmental heritage.

3. Complying Development under State Environmental Planning Policy (Exempt & Complying Development Codes) 2008

(a) General Housing Code

Under the provisions of the General Housing Code, complying development may not be carried out on the land because:

- The land is located within a buffer area identified by an environmental plan instrument as being an area that is within either the Singleton Military Area, or the Drinking Water Catchment area, or the Waste Management Facility area.

(b) Rural Housing Code

Under the provisions of the Rural Housing Code, complying development may not be carried out on the land because:

PLANNING CERTIFICATE UNDER SECTION 149
ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

- The land is located within a buffer area identified by an environmental plan instrument as being an area that is within either the Singleton Military Area, or the Drinking Water Catchment area, or the Waste Management Facility area.

(c) Housing Alterations Code

Under the provisions of the Housing Alterations Code, complying development may be carried out on the land.

(d) General Development Code

Under the provisions of the General Development Code, complying development may be carried out on the land.

(e) Commercial and Industrial Alterations Code

Under the provisions of the Commercial and Industrial Alterations Code, complying development may be carried out on the land.

(f) Commercial and Industrial (New Buildings and Additions)

Under the provisions of the Commercial and Industrial (New Buildings and Additions) Code, complying development may not be carried out on the land because:

- The land is located within a buffer area identified by an environmental plan instrument as being an area that is within either the Singleton Military Area, or the Drinking Water Catchment area, or the Waste Management Facility area.

(g) Subdivisions Code

Under the provisions of the Subdivisions Code, complying development may be carried out on the land.

(h) Demolition Code

Under the provisions of the Demolition Code, complying development may be carried out on the land.

(i) Fire Safety Code

Under the provisions of the Fire Safety Code, complying development may be carried out on the land.

PLANNING CERTIFICATE UNDER SECTION 149
ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

4. Coastal Protection

The land is not affected by the operation of Section 38 or 39 of the Coastal Protection Act 1979 to the extent Council has been so notified by the Department of Public Works.

5. Mine subsidence

The land is not within a proclaimed Mine Subsidence District within the meaning of Section 15 of the Mine Subsidence Compensation Act 1961.

6. Road widening and road realignment

The land is not affected by road widening and/or road realignment under:

(a) Division 2 of Part 3 of the Roads Act 1993, or
(b) An environmental planning instrument, or
(c) A resolution of the Council.

Note: This item relates to Council's road proposals only. Other authorities, including the NSW Roads and Traffic Authority may have road widening proposals.

7. Council and other public authority policies on hazard risk restriction

Landslip, tidal inundation and acid sulphate soils
Council has not by resolution adopted a policy to restrict the development of land because of the likelihood of landslip, tidal inundation or acid sulphate soils.

Bushfire Protection Guidelines
The land is identified as being bushfire prone and is affected by the provisions of Planning for Bushfire Protection, adopted by the NSW Rural Fire Service and Council.

Mine Subsidence Guidelines
The land is not affected by the policy document: Buying Property and Building in a Mine Subsidence District adopted by the Mine Subsidence Board.

PLANNING CERTIFICATE UNDER SECTION 149
ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

7A Flood related development controls information

Development on the land/part of the land; is not identified as being subject to flood related development controls. Councils flood related development controls are within the Singleton Local Environmental Plan 2013, the Singleton Floodplain Management Plan, the Singleton Floodplain Management Development Control Plan and the Singleton Development Control Plan.

8. Land reserved for acquisition

The land affected is not identified on the Singleton Local Environmental Plan 2013 Land Reservation Acquisition Map.

9. Contributions Plan

The following development contributions plans apply to the land:

- Singleton Development Contributions Plan 2008 (Revision 1) for development approved from 5 February 2010 to date,
- Singleton Development Contributions Plan 2008 for development approved between 12 December 2008 to 5 February 2010,
- Singleton Development Contributions Plan 2005 for development approved between 21 October 2005 and 12 December 2008,
- Section 94 Contributions Plan No.1-1993 for development approved prior to 21 October 2005.

9A. Biodiversity certified land

The land is not biodiversity certified land within the meaning of Part 7AA of the Threatened Species Conservation Act 1995.

10. Biobanking agreements

The land is not subject to a biobanking agreement entered under Part 7A of Threatened Species Conservation Act 1995.

11. Bush fire prone land

The land is identified as being bushfire prone land as defined by the Environmental Planning and Assessment Act 1979. Part of the land is recorded as being bushfire prone on a bushfire prone land map for the

**PLANNING CERTIFICATE UNDER SECTION 149
ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979**

area. The bushfire prone land map for the area is available for inspection during Councils normal office hours.

12. Property vegetation plans

A property vegetation plan, created under the Native Vegetation Act 2003 does not apply to the land (to the extent that Council have been notified of the existence of such plans by the person or body that approved the plan under the Native Vegetation Act 2003).

13. Orders under *Trees (Disputes Between Neighbours) Act 2006*

An order has not been made under the Trees (Disputes Between Neighbours) Act 2006 to carry out work in relation to a tree on the land (to the extent that Council have been notified of the existence of such an order).

14. Directions under Part 3A

The minister has not issued a direction pursuant to section 75P(2) (c1) of the Environmental Planning and Assessment Act 1979, detailing that a provision of an environmental planning instrument prohibiting or restricting the carrying out of a project or a stage of a project on the land under Part 4 of the Act; does not have effect (to the extent that Council have been notified of the existence of such a direction).

15. Conditions affecting seniors housing

The land does not comprise development subject to the provisions of State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004.

16. Site compatibility certificates for infrastructure

Council has not been made aware of any valid site compatibility certificates issued under Clause 19 of State Environmental Policy (Infrastructure) 2007 in respect of proposed development on the land.

PLANNING CERTIFICATE UNDER SECTION 149
ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

17. Site compatibility certificates and conditions for affordable rental housing

Council has not been made aware of any valid site compatibility certificate (affordable rental housing), in respect of proposed development on the land.

18. Paper Subdivision Information

A paper subdivision information plan, created under Part 16C of the Environmental Planning and Assessment Regulation 2000 does not apply to the land.

19. Site Verification Certificates

There is no current Site Verification Certificate, of which the council is aware, in respect to the land.

Matters arising under the *Contaminated Land Management Act 1997*
Note. The following matters are prescribed by section 59 (2) of the *Contaminated Land Management Act 1997* as additional matters to be specified in a planning certificate:

(a) that the land to which the certificate relates is significantly contaminated land within the meaning of that Act-if the land (or part of the land) is significantly contaminated land at the date when the certificate is issued,

No

(b) that the land to which the certificate relates is subject to a management order within the meaning of that Act-if it is subject to such on order at the date when the certificate is issued,

No

(c) that the land to which the certificate relates is the subject of an approved voluntary management proposal within the meaning of that Act-if it is the subject of such an approved proposal at the date when the certificate is issued,

No

PLANNING CERTIFICATE UNDER SECTION 149
ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

(d) that the land to which the certificate relates is subject to an ongoing maintenance order within the meaning of that Act-if it is subject to such an order at the date when the certificate is issued,

No

(e) that the land to which the certificate relates is the subject of a site audit statement within the meaning of that Act-if a copy of such a statement has been provided at any time to the local authority issuing the certificate.

No

PLANNING CERTIFICATE UNDER SECTION 149
ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

ADVICE PROVIDED IN ACCORDANCE WITH SECTION 149(5)

Advice provided in accordance with Section 149 (5) of the Environmental Planning and Assessment Act 1979.

Pursuant to section 149(5), the following advice is provided which pertains to the following matters as applicable:

ARMY ACTIVITIES

The Singleton Army Firing Range is located within the Singleton Area. Some activities, such as artillery firing and aircraft operations impact on the environment beyond the Firing Range boundaries. These activities may result in noise and vibration impacts being experienced on lands throughout the Singleton Local Government Area.

SINGLETON MILITARY AREA BUFFER

The land is identified on the Singleton Local Environmental Plan 2013 - Buffer Areas Map as "Singleton Military Area" and is subject to the requirements of Clause 7.4 Development within a designated buffer area. This clause requires the consent authority to consider the following matters:

(a) the impact that any noise and other emissions associated with existing land uses may have on the proposed development,
(b) any proposed measures incorporated into the development that limit the impact of such noise and other emissions associated with the existing land use,
(c) any opportunities to relocate the proposed development outside the land to which this clause applies,
(d) whether the proposed development is likely to adversely affect the operational environment of any existing development on the land to which this clause applies.

COUNCIL ROAD WIDENING PROPOSALS

The land is not identified as being subject to future road widening proposals by Council.

Note: This item relates to Council's road proposals only. Other authorities, including the NSW Roads and Traffic Authority may have road widening proposals.

EARTHWORKS - Singleton Local Environmental Plan 2013

Clause 7.1: Earthworks in the Singleton Local Environmental Plan 2013 applies to the land. This clause requires development consent for earthworks, unless the earthworks are exempt development, or the earthworks are

ancillary to other development for which development consent has been given.

This clause applies to all land to which the Singleton Local Environmental Plan 2013 applies.

GRASSLANDS PROVISIONS AS 3959-2009
Council's current mapping for bushfire prone land within the Singleton Local Government Area, as certified by the Commissioner of NSW Rural Fire Service, does not include land identified as predominantly grasslands. However, Australian Standard 3959-2009 Construction of buildings in bush-fire prone areas now includes grasslands as a vegetation classification in Table 2.4.2. Australian Standard 3959-2009 applies to land within bushfire prone areas and specifies construction standards applicable to buildings within those areas. Advice should be sought as to whether the land is likely to be affected by Australian Standard 3959-2009.

The above information has been taken from Council's records in good faith. Council cannot accept responsibility for any omission or inaccuracy. Where information has been received from a third party, it is recommended that applicants approach that party (or parties) directly for further information and to confirm its authenticity.

Mark Ihlein **For GENERAL MANAGER**	Mark Ihlein.
DATE:	**04/11/2015**

APPENDIX D DANGEROUS GOODS INFORMATION

SafeWork NSW
92-100 Donnison Street, Gosford, NSW, 2250
Locked Bag 2906, Lisarow, NSW, 2252 |
Customer Service Centre **13 10 50**
licensing@safework.nsw.gov.au | www.safework.nsw.gov.au

Our Ref: D16/518652
Your Ref: Chris Newland

11 February 2016

Attention: Chris Newland
Environmental Earth Sciences Pty Ltd
82-84 Dickson Ave
Artarmon NSW 2064

Dear Mr Newland,

RE SITE: Lot 2 New England Hwy Whittingham NSW

I refer to your site search request received by SafeWork NSW on 3 February 2016 requesting information on Storage of Hazardous Chemicals for the above site.

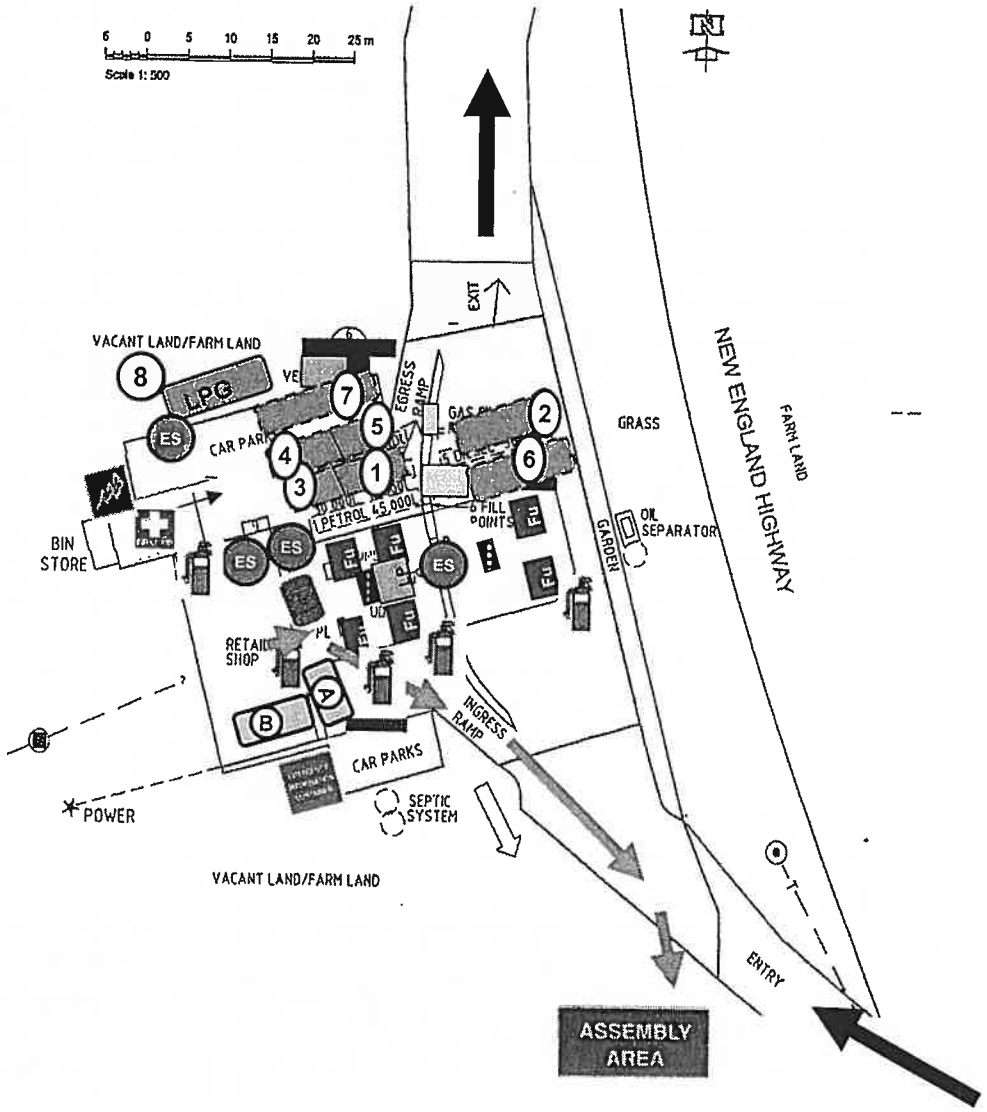
Enclosed are copies of the documents that SafeWork NSW holds on record number 35/035087 relating to the storage of Hazardous Chemicals at the above-mentioned premises.

For further information or if you have any questions, please call our Customer Service Centre on 13 10 50 or email licensing@safework.nsw.gov.au

Yours sincerely,

Brent Jones
Customer Service Officer
Customer Service Centre - Operations
SafeWork NSW

Retail Facility Dangerous Goods Site Layout Plan



Site Details	
Location Name	United –Whittingham
Address	Lot 2, New England Hwy, Whittingham NSW, 2330
Document Control	Rev 1.1, 15/11/13

Site Layout Key

- U/G Bulk Storage Tank
- 1 Tank ID
- DG Packaged Store
- A Store ID
- ES Emergency Stop Button
- Electrical Switchboard
- Hose Reel
- ER Information & Manifest
- Dry Chemical Extinguisher
- First Aid Kit
- Spill Kit
- Emergency Assembly Area
- Class 3 – Petrol, Solvents
- Class 2.1 – LPG
- Combustibles – Diesel, Oils
- U/G Tank Fill Points
- Tank Vents
- Fuel Fuel Dispenser
- Drains
- LPG LPG Dispenser
- EVAC Route

COVER
OUTH WALES

Dangerous Goods Notification Team
ph (02) 4321 5500 fax (02) 9287 5500

Occupier **UNITED PETROLEUM PTY LIMITED**
Attn: JOHN HAND
Licensee: ACN 085 779 255
P O BOX 13238
LAW COURTS VIC 8010

ACKNOWLEDGEMENT OF NOTIFICATION OF DANGEROUS GOODS ON PREMISES

ISSUED UNDER AND SUBJECT TO THE PROVISIONS OF
THE OCCUPATIONAL HEALTH & SAFETY ACT 2000 AND REGULATIONS THEREUNDER

Acknowledgement Number 35/035087 **Expiry Date** 14/04/2009

Occupier Contact JOHN HAND Ph. 03 9640 0221 Fax. 03 9640 0370

Premises where notified Dangerous Goods are stored / handled
UNITED PETROLEUM PTY LIMTED
LOT 2 NEW ENGLAND HWY WHITTINGHAM 2330

Nature of Site AUTOMOTIVE FUEL RETAILING

Emergency Contact for this Site LANETTE DOMINISH Ph. 0409 600 256

Site staffing 24 HRS 7 DAYS

Details of Storage Locations

Identifier.	Type	Goods Stored in Storage Location	Qty
1	**UNDERGROUND TANK** UN 1203 PETROL	**Class 3**	**45000 L** 30000 L
2	**UNDERGROUND TANK** UN 1203 PETROL	**Class 3**	**30000 L** 15000 L
3	**UNDERGROUND TANK** UN 1203 PETROL	**Class 3**	**25000 L** 15000 L
4	**UNDERGROUND TANK** UN 00C1 DIESEL	**Class C1**	**50000 L** 25000 L
5	**UNDERGROUND TANK** UN 00C1 DIESEL	**Class C1**	**50000 L** 25000 L
6	**ABOVE-GROUND TANK** UN 1075 PETROLEUM GASES,	**Class 2.1** LIQUEFIED	**7500 L** 4000 L
7	**UNDERGROUND TANK** UN 1203 PETROL	**Class 3**	**15000 L** 7000 L
8	**UNDERGROUND TANK** UN 00C1 DIESEL	**Class C1**	**25000 L** 13000 L

This acknowledgment must be retained as PROOF OF NOTIFICATION.
You must notify WorkCover annually of the Dangerous Goods stored on these premises

WorkCover. **Watching out for you.**

CONTACT FOR NOTIFICATION INQUIRIES

Title: Mr / Miss / Ms / Mrs / Other (please specify) _____ **Family name** _____

Given name _____ **Other names** _____

Gender Male / Female (please circle) **Date of birth** ____/____/____ **Place of birth** _____

Postal address UNITED PETROLEUM P/L LTD

Suburb P.O BOX 13288 LAN COURTS State VIC Postcode 8010

Business phone 03-96400221 **Business fax number** 03-96400370

Business email address _____

Previous Licence Number or Acknowledgement Number (if known)

35/ 035087

Previous Occupier (if known)

AS ABOVE

Site on which dangerous goods are to be kept

Number Street

NEW ENGLAND H'WAY WHITTINGHAM 2330

Nearest cross Street

Lot and DP if no street number

LOT 2

Is the site staffed? If yes state number of employees 4

Site staffing: Hours per day 24 Days per week 7

Site Emergency Contact

Phone number **Name**

0409.600256 LANETTE DOMINISH

Nature of site (eg petrol station, warehouse etc)

PETROL STATION

Nature of your primary business activity

PETROL RETAILING

ABN Number (if any) Website details (if any)

085-779-255

What is the ANSZIC code most applicable to you business? (see guide for list of codes and further information)

Code Description

5321 AUTOMOTIVE FUEL RETAILING

Attach a site sketch(s) of the premises. Refer to the Guide for information on the requirements for the site sketch.

Attach a photocopy page from a local Street Directory or other map showing the locality of the premises. Mark the location of the premises with an X

List the dangerous goods that will be stored and/or processed on these premises. Copy this page and attach additional sheets if there is insufficient space.

Identifier	Type of storage location or process	Class	Maximum Storage Capacity (L, kg, M^3)
1	UNDERGROUND TANK	3	45,000 L

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Symbol	Typical Qty	Unit eg L, kg, M^3
1203	MOTOR SPIRIT	3	II	PETROL	3YE	30,000	L

Identifier	Type of storage location or process	Class	Maximum Storage Capacity (L, kg, M^3)
2	UNDERGROUND TANK	3	30,000 L

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Symbol	Typical Qty	Unit eg L, kg, M^3
1203	MOTOR SPIRIT	3	II	PETROL	3YE	15,000	L

Identifier	Type of storage location or process	Class	Maximum Storage Capacity (L, kg, M^3)
3	UNDERGROUND TANK	3	05,000 L

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Symbol	Typical Qty	Unit eg L, kg, M^3
1203	MOTOR SPIRIT	3	II	PETROL	3YE	5,000	L

Identifier	Type of storage location or process	Class	Maximum Storage Capacity (L, kg, M^3)
4	UNDERGROUND TANK	C1	50,000 L

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Symbol	Typical Qty	Unit eg L, kg, M^3
1268	AUTOMOTIVE DISTILLATE	C1		DIESEL	—	25,000	L

Identifier	Type of storage location or process	Class	Maximum Storage Capacity (L, kg, M^3)
5	UNDERGROUND TANK	C1	50,000 L

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Symbol	Typical Qty	Unit eg L, kg, M^3
1268	AUTOMOTIVE DISTILLATE	C1		DIESEL	—	25,000	L

List the dangerous goods that will be stored and/or processed on these premises. Copy this page and attach additional sheets if there is insufficient space.

Identifier	Type of storage location or process	Class	Maximum Storage Capacity (L, kg, M^3)
6	ABOVE GROUND TANK	2.1	7,500 L

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Symbol	Typical Qty	Unit eg L, kg, M^3
1075	LIQUIFIED PETROLEUM GAS	2.1		L.P.G	2WE	4,000	L

Identifier	Type of storage location or process	Class	Maximum Storage Capacity (L, kg, M^3)
7	UNDERGROUND TANK	3	15,000 L

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Symbol	Typical Qty	Unit eg L, kg, M^3
1203	MOTOR SPIRIT	3	II	PETROL	3YE	7,000	L

Identifier	Type of storage location or process	Class	Maximum Storage Capacity (L, kg, M^3)
8	UNDERGROUND TANK	C1	25,000 L

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Symbol	Typical Qty	Unit eg L, kg, M^3
1268	AUTOMOTIVE DISTILLATE	C1		DIESEL	—	13,000	L

Identifier	Type of storage location or process	Class	Maximum Storage Capacity (L, kg, M^3)
9	CYLINDER STORE	2.1	180 KG

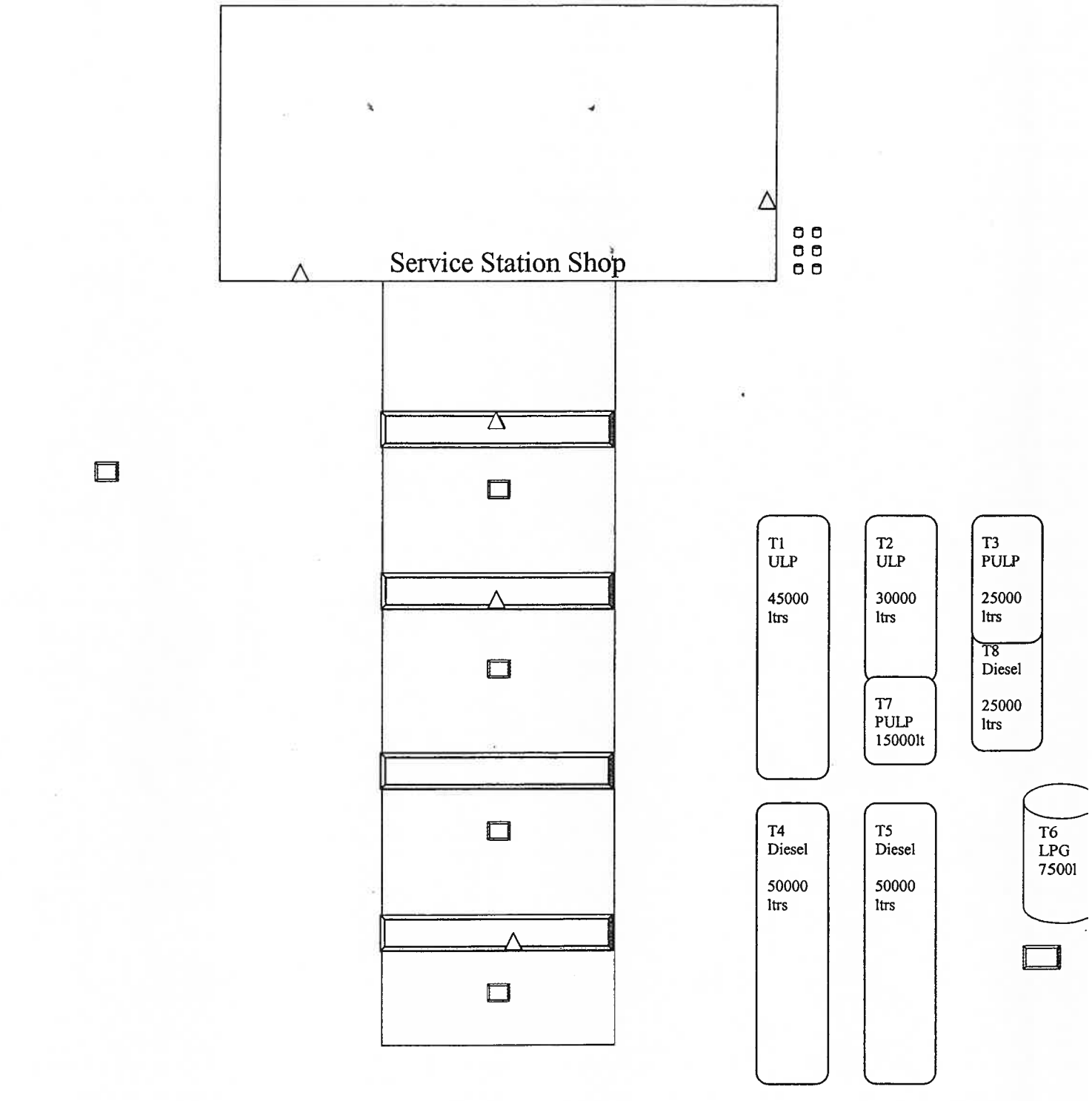
UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Symbol	Typical Qty	Unit eg L, kg, M^3
1075	LIQUIFIED PETROLEUM GAS	2.1		L.P.G	2WE	100	KG

Identifier	Type of storage location or process	Class	Maximum Storage Capacity (L, kg, M^3)

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Symbol	Typical Qty	Unit eg L, kg, M^3

Site Safety Plan

Mobil Whittingham, New England Hwy.



Info already in SCID.
17/5/07
Nadine

Licence No. 35/035087

APPLICATION FOR RENEWAL

OF LICENCE TO KEEP DANGEROUS GOODS

ISSUED UNDER AND SUBJECT TO THE PROVISIONS OF THE DANGEROUS GOODS ACT, 1975 AND REGULATION THEREUNDER

DECLARATION: Please renew licence number 35/035087 to 1/12/2003 . I confirm that all the licence details shown below are correct (amend if necessary).

(Signature)	KEN LEYBOURNE (Please print name)	3.3.03 (Date signed)

for: MIDCOAST PETROLEUM PTY LTD

*THIS **SIGNED** DECLARATION SHOULD BE **RETURNED TO:***

WorkCover New South Wales
Dangerous Goods Licensing Section
LOCKED BAG 2906
LISAROW NSW 2252

Enquiries: ph (02) 43215500
fax (02) 92875500

Details of licence on 26 February 2003

Licence Number 35/035087 **Expiry Date** 1/12/2002

Licensee MIDCOAST PETROLEUM PTY LTD ACN 004 012 426
MOBIL SERVICE STN WHITTINGHAM

Postal Address: MOBIL SERVICE STN WHITTINGHAM P O BOX 325
HUNTER REGION MC NSW 2310

Licensee Contact ~~ROLAND BYRD~~ KEN LEYBOURNE Ph. 02 49600533 Fax. 02 49600577

Premises Licensed to Keep Dangerous Goods
MIDCOAST PETROLEUM PTY LTD MOBIL SERVICE STN WHITTINGHAM
LOT 2 NEW ENGLAND HWY WHITTINGHAM 2330

Nature of Site AUTOMOTIVE FUEL RETAILING

Major Supplier of Dangerous Goods MOBIL

Emergency Contact for this Site MARILYN FOSTER Ph. 0417 209834

Site staffing 24 HRS 7 DAYS

Details of Depots

Depot No.	Depot Type	Goods Stored in Depot	Qty
1	**UNDERGROUND TANK**	**Class 3**	**45000 L**
	UN 1203 PETROL		45000 L
2	**UNDERGROUND TANK**	**Class 3**	**30000 L**
	UN 1203 PETROL		30000 L
3	**UNDERGROUND TANK**	**Class 3**	**25000 L**
	UN 1203 PETROL		25000 L
4	**UNDERGROUND TANK**	**Class C1**	**50000 L**
	UN 00C1 DIESEL		50000 L
5	**UNDERGROUND TANK**	**Class C1**	**50000 L**
	UN 00C1 DIESEL		50000 L
6	**ABOVE-GROUND TANK**	**Class 2.1**	**7500 L**
	UN 1075 PETROLEUM GASES, LIQUEFIED		7500 L
7	**UNDERGROUND TANK**	**Class 3**	**15000 L**
	UN 1203 PETROL		15000 L
8	**UNDERGROUND TANK**	**Class C1**	**25000 L**
	UN 00C1 DIESEL		25000 L

SERVICE STATION SHOP
R. 81.600
SALES
CT
RAISED TIMBER FLOOR R. 16.250
SERVING COUNTER TO DETAIL
SERV. PLY
W4
W2
W3
D01
C.C.
B
B
3600
780
880
380
390
1200
2000
C8
190
Emergency Stop
C.C.
FRAMED DOOR OPENING WITHOUT DOOR LEAF
105
180
150
1400
150mm min
CARPARK
12
11
10
9
8
7
6
5
GLAZED AUTOMATIC SLIDING DOORS AS SPECIFIED.
500
150mm min
Depot 3
Depot 1
Depot 2
Depot 8
Depot 7
Depot 4
Depot 5
1
C
P
P
C
Ext
TRIPPLE LEADED/UNLEADED PUMP TO BE SUPPLIED AND INSTALLED BY TENNANT. PROVIDE CONCRETE UPSTAND TO SUIT BASE FIXING DETAIL REQUIRED BY SUPPLIER OF PUMP
VEHICLE FUELING
EXTENT OF CANOPY OVER
LOCATION OF UNDERGROUND FUEL TANKS
QUAD LEADED/UNLEADED/DEISEL PUMP TO BE SUPPLIED AND INSTALLED BY TENNANT. PROVIDE CONCRETE UPSTAND TO SUIT BASE FIXING DETAIL REQUIRED BY SUPPLIER OF PUMP
2
P
LPG
P
HC
C/DP
C/DP
Ext
4000
CONCRETE STAIR TO CIVIL ENGINEER'S DETAILS
150 HIGH CONCRETE KERB
Fill (3m from ignition source) Points
DN
PLANTER
1000
150
D
1000
PLANTER
3
C
C
Ext
150
1200
150
2500
500
PLANTER RETAINING WALL TO CIVIL ENGINEER'S DETAILS
1000
PLANTER
DUO DEISEL PUMPS TO BE SUPPLIED AND INSTALLED BY TENNANT. PROVIDE CONCRETE UPSTAND TO SUIT BASE FIXING DETAIL REQUIRED BY SUPPLIER OF PUMP
HEAVY VEHICLE FUELING AREA
R14000
4
C/DP
D
D
C/DP
HC
Extinguisher
A
B
4500
150
R19000
HEAVY VEHICLE PARKING
150mm min
650
10000
AWNING SETBACK FROM SITE BOUNDARY
Oil/Water Seperator
Zone 2
0.5 above
0.5 laterally

A
04

4800

3350

GARBAGE STORE

G02

G01

1000

21590

100 2350 100 1750 100 6300 approx COS 100 3900 190

3900

1900

6500

200 NIB

TUNDISH FOR A/C AND COOL ROOM CONDENSATE

40 mm SETDOWN FOR TILING TO WET AREAS

150mm SETDOWN FOR COOL ROOM

15

190 2400 190 3500 5390

100 3000 190 10790

14

13

12

11

10

9

8

7

6

5

AHU AHU

FREEZER D06

COOLROOM STC/PT D07

STORE STC/PT

HWS

Electrical Isolation

D003 D004 D002 D005 D008 D08DB

COOL ROOM SHELVING BY TENANT

OFFICE CT

HC 910 890

390

SERVICE STATION SHOP

RL 81.600

SALES CT

780 880 380

C.C.

FRAMED DOOR OPENING WITHOUT DOOR LEAF

CARPARK

RAISED TIMBER FLOOR RL 16.250

SERVING COUNTER TO DETAIL

SERV. PLY

W4 1200

W2 D01 W3 Emergency Stop C8 190 2000

C.C.

B B 3600

500

GLAZED AUTOMATIC SLIDING DOORS AS SPECIFIED.

190 1400 150 150mm min

150mm min

Depot 3

Depot 1

Depot 2

C P P C

Ext

TRIPPLE LEADED/UNLEADED PUMP TO BE SUPPLIED AND INSTALLED BY TENNANT. PROVIDE CONCRETE UPSTAND TO SUIT BASE FIXING DETAIL REQUIRED BY SUPPLIER OF PUMP

VEHICLE FUELING

EXTENT OF CANOPY OVER

LOCATION OF UNDERGROUND FUEL TANKS

Depot 8

QUAD LEADED/UNLEADED/DEISEL PUMP TO BE SUPPLIED AND INSTALLED BY TENNANT. PROVIDE CONCRETE UPSTAND TO SUIT BASE FIXING DETAIL REQUIRED BY SUPPLIER OF PUMP

P LPG P HC

C/DP C/DP

Ext

Depot 7

LED AN PROVID SUIT E IRED B

4000

CONCRETE STAIR TO CIVIL ENGINEER'S DETAILS

150 HIGH CONCRETE KERB

Fill (3m from ignition Points source

150

PLANTER 1000 C D C 1000 PLANTER

Ext

150 150 1200 2500 500

PLANTER RETAINING WALL TO CIVIL ENGINEER'S DETAILS

1000

Depot

DN

PLANTER

and Australian Standard(s) AS 1940 . 1993
1596 . 1997
2430.1. 1997

Signature: Sean Page Date: 19/6/00

Name (printed) Sean Page

*This drawing is to be osed in conjunction with 5540WD02A Site \ Setout Plan.

100mm (nom) PARTITION WALL 90MM STUDWORK WITH 13MM PLASTERBOARD LINING TO BOTH SIDES

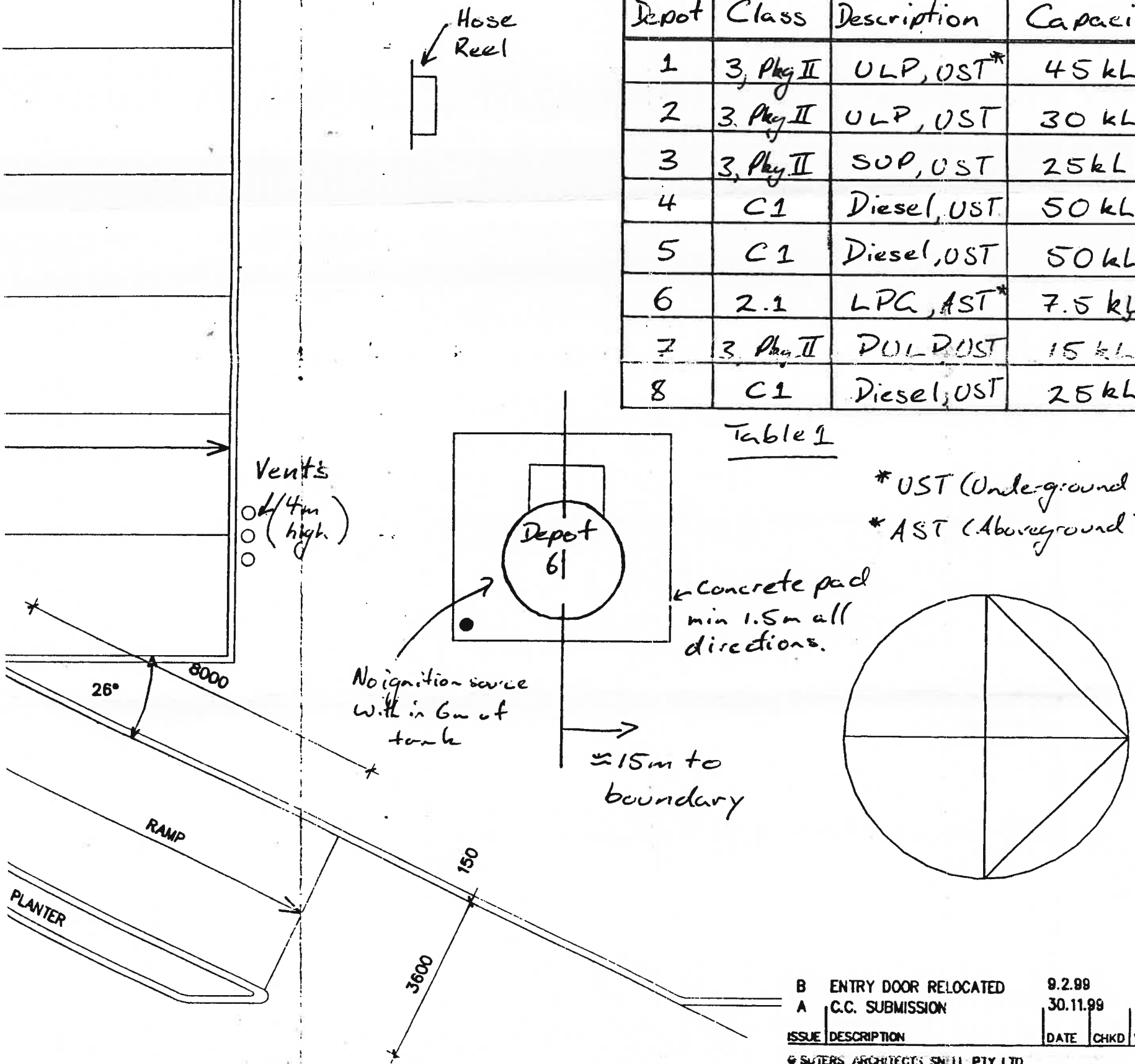
190MM CONCRETE BLOCK WALL RENDER AND PAINT TO OUTSIDE PAINT FINISH TO INSIDE

Depot	Class	Description	Capacity
1	3, Ply II	ULP, UST*	45 kL
2	3. Ply II	ULP, UST	30 kL
3	3, Ply II	SUP, UST	25kL
4	C1	Diesel, UST	50 kL
5	C1	Diesel, UST	50 kL
6	2.1	LPG, AST*	7.5 kL
7	3 Ply II	DUL DUST	15 kL
8	C1	Diesel, UST	25 kL

Table 1

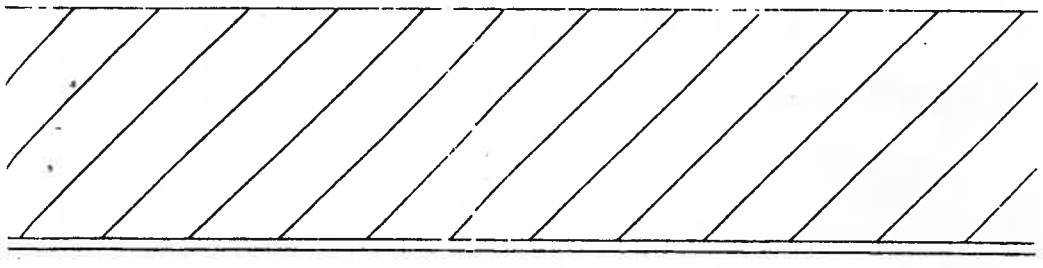
*UST (Under-ground Tank)

*AST (Aboveground Tank)



REFER TO DWG 5540 WD01 AND 5540 WD02 FOR CONTINUATION

EXIT ROAD



ISSUE	DESCRIPTION	DATE	CHKD	VERIFIED
B	ENTRY DOOR RELOCATED	9.2.99		
A	C.C. SUBMISSION	30.11.99		

© SUTERS ARCHITECTS SMALL PTY LTD
16 TELFORD STREET
NEWCASTLE NSW 2300
TEL (049)265222 FAX (049)265251
A.C.N. 003 842 635

PROJECT
WHITTINGHAM SERVICE STATION

LOCATION
CORNER NEW ENGLAND HIGHWAY AND MITCHELLS ROAD – WHITTINGHAM

CLIENT
BUILDEV Pty Ltd

TITLE
SITE / FLOOR PLAN

WORKING DRAWINGS

DATE 16.11.99

DRAWN PJC/CAD

SCALE 1: 100

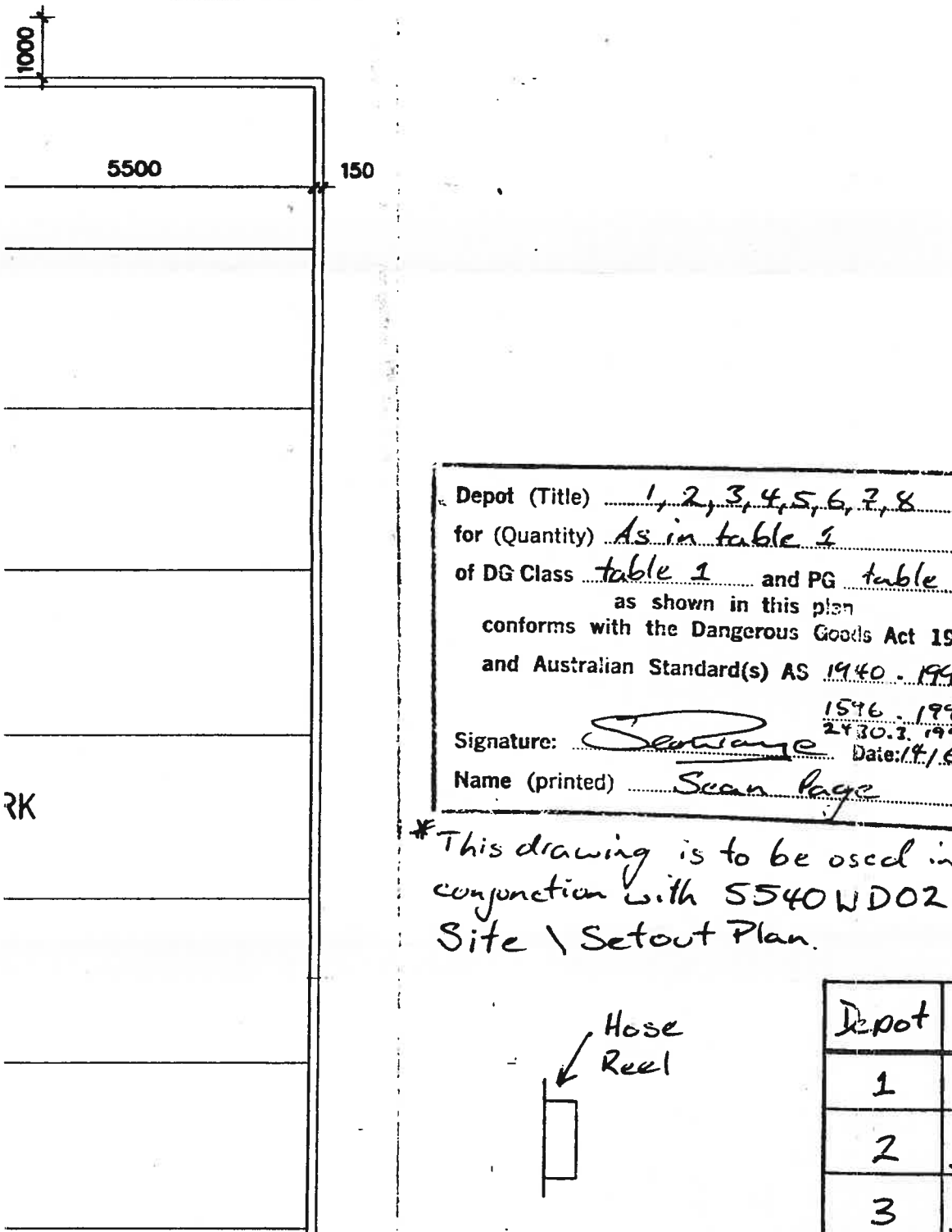
SHEET 03 OF 06

DRAWING NUMBER 5540 WD03 B

2100H COLORBOND FENCE AND GATES TO PERIMETER OF GARBAGE STORE

COVE FINISHED CONCRETE SLAB TO ENG. DETAILS

COMPRESSOR FOR TYRE AIR FILLING HOSE BY TENANT



NOTES

ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE SHOWN. WORK TO FIGURED DIMENSIONS, DO NOT SCALE FROM DRAWINGS.

CHECK ALL DIMENSIONS ONSITE PRIOR TO CONSTRUCTION, REPORT ANY DISCREPENCIES TO SUTERS ARCHITECTS SNELL. TO BE READ IN CONJUNCTION WITH TOTAL PACKAGE.

FLOOR PLAN LEGEND:

V	VINYL
CC	COVED CONCRETE
HC	HOSE COCK
EDB	ELECTRICAL DISTRIBUTION BOARD
B	BOLLARD
TD	TUNDISH
VP	VENT PIPE FOR FUEL TANKS
DP	DOWN PIPE
MSB	MAIN SWITCH BOARD
PMS	PRESSED METAL SHEETING
CT	CERAMIC TILE
D	DEISEL PUMP
P	PETROL PUMP
B	BOLLARD

100mm (nom) PARTITION WALL 90MM STUDWORK WITH 13MM PLASTERBOARD LINING TO BOTH SIDES

190MM CONCRETE BLOCK WALL RENDER AND PAINT TO OUTSIDE PAINT FINISH TO INSIDE

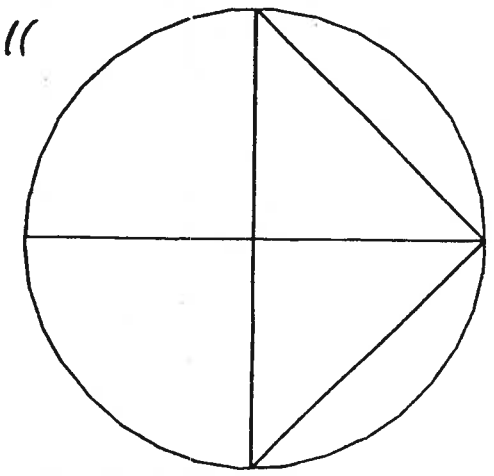
Depot (Title) 1, 2, 3, 4, 5, 6, 7, 8
for (Quantity) As in table 1
of DG Class table 1 and PG table 1
as shown in this plan
conforms with the Dangerous Goods Act 1975
and Australian Standard(s) AS 1940 - 1993
1596 - 1992
2430.1 - 1997
Signature: Sean Page Date: 14/6/00
Name (printed) Sean Page

*This drawing is to be oscd in conjunction with 5540WD02A Site \ Setout Plan.

Depot	Class	Description	Capacity
1	3, Pkg II	ULP, UST*	45 kL
2	3. Pkg II	ULP, UST	30 kL
3	3, Pkg II	SUP, UST	25kL
4	C1	Diesel, UST	50 kL
5	C1	Diesel, UST	50 kL
6	2.1	LPG, AST*	7.5 kL
7	3 Pkg II	DUL DUST	15 kL
8	C1	Diesel, UST	25 kL

Table 1

*UST (Under-ground Tank)
*AST (Aboveground Tank)



APPENDIX E PHOTOGRAPHS

Plate 1

Lot4 in DP621020. General open space / paddock.

Plate 2

Lot4 in DP621020. General open space / paddock.

Plate 3

Lot4 in DP6210. Erosion / possible scalding evident near highway.

Plate 4

Lot4 in DP6210. Stream near culvert in west of lot near highway.

Plate 5

Lot 24 in DP1128978. Former works compound main track.

Plate 6

Lot 24 in DP1128978. Former works compound adjacent to railway line.

Plate 7

Lot 24 in DP1128978. Former works compound. Scrap metal pile.

Plate 8

Lot 24 in DP1128978. Former works compound. Soil stockpiles.

Plate 9

Lot 24 in DP1128978. Former works compound. Soil stockpiles.

Plate 10

Lot 24 in DP1128978. Former works compound. Farm dam.

Plate 11

Lot 24 in DP1128978. Former works compound. Access road.

Plate 12

Lot 24 in DP1128978. Former works compound. Dumped office furniture.

Plate 13

Lot 24 in DP1128978. Former works compound. Main entrance track. Bitumen present..

Plate 14

Lot 35 in DP1128981. Possible scalding adjacent to New England Highway.

Plate 15

Lot 35 in DP1128981. Main abattoir treatment pond.

Plate 16

Lot 35 in DP1128981. Paddocks under irrigation.

Plate 17

Picnic / roadstop area off Golden Highway.

Plate 18

Picnic / roadstop area. off Golden Highway.

Plate 19

Lot 1 in DP653039. Grazing land visible.

Plate 20

Lot 21 (service station) and Lot 22 (open space) in DP1014307.

Plate 21

Lot 21 in DP1014307. Operational service station.

Plate 22

Lot 23 in DP1128978. Cleared paddock.