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Certified Environmental Practitioner - Site Contamination Specialist review of: Site Investigation reports: 202 Bushland Drive, Taree NSW 2430

1. Introduction and Background

William Lines is a **Certified Environmental Practitioner – Site Contamination Specialist** (CEnvP SCS) under the CEnvP Scheme established by the Environmental Institute of Australia New Zealand (EIANZ). Andre's Group Pty Ltd engaged William Lines, who is employed by Old Maple Pty Ltd to review the following reports:

- ***Combined Site Investigation:*** *Boradze Depot, Bushland Drive, Taree* by GHD for Transport Asset Holding Entity of NSW dated 22 November 2012.
- ***Boradze Depot Soil Investigation*** by GHD for Transport Asset Holding Entity of NSW. Report No. DSI v1 dated 14 July 2021;
- ***Boradze Depot Additional Investigation -Stockpile Waste Classification*** by GHD for Transport Asset Holding Entity of NSW reference: 12547137, dated 14 July 2021.
- ***Hazardous Materials Survey Report*** *Boradze Depot at Bushland Drive Taree* by GHD for Transport Asset Holding Entity of NSW reference 12547137 Rev 00 dated 8 April 2021.
- ***Site Review:*** *Boradze Depot, Bushland Drive and Gray Gum Rd, Taree* by GHD for Transport Asset Holding Entity of NSW reference 12547137 dated 8 April 2021.
- ***Section 91 Clean Up Notice*****:** number 350784, Reference – REG-3264 by NSW EPA dated 5 October 2022.
- ***Asbestos Removal Clearance Certificate*** *202 Bushland Drive Taree* by AM Enviro Services Pty Ltd for Flash Skip Bins Pty Ltd dated 3 July 2023
- ***Site Review Assessment:*** *202 Bushland Drive, Taree, NSW* for Andres Group P/L. Reference E22 096-AR2 dated 06 September 2023.

The proposed development consists of ***Development Application DA 2023/0800***:

- Subdivision into 12 lots for commercial/industrial use;
- ***Stage 1***: creation of lots: 101 – 105 & ***Stage 2***: creation of lots: 201 – 207: and
- Roadway with access to Bushland Drive and surface water detention/drainage basin.

Based on *Proposed Subdivision of Lot 1 DP1228883 and Lot 1 DP430627* by High Definition Design Pty Ltd Drawing HD336 Revision 10 dated 10 May 2023.

2. Requirement for CEnvP SCS review

On 13 May 2024, the Mid Coast Council (MCC) issued an ***Application Request for Further Information*** (RFI) related to ***Application No: DA2023/0800***. This RFI required:

> ***Land Contamination:***
>
> *Council's Environmental Health team have reviewed the application and require additional details and clarification of details in relation to land contamination. Specifically, the following should be noted for your consideration and actions as necessary:*
>
> *Contaminated land reports are to be prepared or reviewed and approved by an appropriately qualified and certified Environmental Consultant (for any reports submitted from 1 July 2017 and onwards). Currently, the certification schemes recognised by NSW EPA and the Council are (noting other schemes may become recognised):*
>
> - *Environment Institute of Australia and New Zealand - Certified Environmental Practitioner (Site Contamination) (CEnvP (SC))*
> - *Soil Science Australia - Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM*
>
> *In addition to this, council records indicate that a Clean-up Notice was issued by the EPA on 5 October 22 in relation to waste disposal at the site.* Council requires written confirmation that this Clean-up Notice has been complied with.'

3. CEnvP SCS scope of work

This CEnvP SCS review has assessed the site investigation reports in relation to the requirements of the:

- *National Environment Protection (Assessment of Site Contamination) Measure* (NEPC 2009, amended 2013).
- *Guidelines for Consultants Reporting on Contaminated Land* (NSW EPA, 2020).
- *Contaminated Land Guidelines – Sampling Design - Part 1 – Application* (NSW EPA 2022).
- *Contaminated Land Guidelines – Sampling Design - Part 2 - Interpretation* (NSW EPA 2022).

This review does not constitute a Site Audit Report or Site Audit Statement. Old Maple Pty Ltd were not involved in completion of any field work or laboratory analysis. This review is a third party, independent review of the ***DSI*** listed above. This review is subject to the attached ***CEnvP SCS Standard Limitations***.

The Department of Planning and Environment (DPE) and Environment Protection Authority (EPA) *Contaminated Land Planning Guidelines – Draft* (2018) state the following relating to review of reports in section *1.0 Introduction – Role of Certified Contaminated Land Consultants*:

> *'A certified contaminated land consultant (in the context of the investigation, assessment, remediation, and validation of contaminated land) is a contaminated land consultant, whose qualifications and experience have been confirmed through a recognised certification scheme to have the necessary competencies to carry out work relating to contaminated land to an appropriate standard.*
>
> *Certification schemes that are recognised by the EPA as providing a suitable level of accreditation for contaminated land consultants are listed on the EPA's website.*
>
> *A certified contaminated land consultant, typically engaged by the site owner or applicant, conducts site investigations and assessments, undertakes any necessary remediation, and validates the remediation work when it is completed.*

A certified contaminated land consultant may be engaged by a planning authority at any time to review the work undertaken by another certified contaminated land consultant.

Planning authorities should be aware that, under the CLM Act, only accredited site auditors can undertake site audits and issue site audit statements.'

Old Maple note that these draft guidelines do **not** comment on certified contaminated land consultants providing review of reports prepared by uncertified contaminated land consultants.

4. Site details

The CEnvP SCS summarised/confirmed the following information from the ***Boradze Depot Soil Investigation*** by GHD dated 14 July 2021:

- The site use was vacant industrial at the time the DSI was prepared. The site is approximately 8.521 Ha or 85,210 m^2. The site elevation varies from 24m is the west to 16m in the east based.

- The CEnvP SCS **confirmed** the site on https://maps.six.nsw.gov.au/ which consisted of two lots:
  1. Lot 1 on DP 128883: between Bushland Drive and Public Reserve.
  2. Lot 1 DP 430627

- The CEnvP SCS reviewed https://maps.midcoast.nsw.gov.au/IntraMaps910/ and **confirmed** the zoning:
  1. **C2** – Environmental Conservation; and
  2. **E4** – General Industrial.

- Surrounding land use includes:
  1. **North**: Bushland Drive then R1 – General Residential zoned land at 198 & 266 Bushland Drive.
  2. **East**: former rail siding corridor then Grey Gum Road reserve, then low density residential.
  3. **South**: '*Club Taree'* golf course and commercial restaurant facility.
  4. **West**: E3 – Productivity Support zoned commercial /industrial land including '*Bunnings Taree'*.

- There nearest sensitive human receptors are low density residential receptors to the east along Grey Gum Rd and adjacent industrial land users. The nearest environmental receptors are drainage channels which drain west to east into an unnamed tributary into Brown's Creek located 350m to the southeast.

- The CEnvP SCS reviewed the *Hastings 1:250,000 Geological Series Sheet SH 56-14 First Edition 1970* and **confirmed** the regional geology on https://gmaps.geoscience.nsw.gov.au/250K/Hastings/ as:
  1. '*Cpg*' Giro Beds described as '*Pebbly mudstone, mudstone, conglomerate, siltstone, shale, sandstone unnamed limestone (Pll), Cedar Party Limestone (Plc).'*

- The CEnvP SCS **confirmed** that the site is not located in an area of known acid sulfate soil occurrence on https://www.environment.nsw.gov.au/eSpade2Webapp/. The nearest known acid sulfate soil is over 750m to the southwest towards the Manning River.

- On 29 June 2024, the CEnvP SCS completed a search on https://realtimedata.waternsw.com.au/ which confirmed the nearest bore as:
  1. **GW304193** – >400m southwest at 24 Kolodong Rd: domestic bore drilled in 2003 to depth of 46.5m with standing water level of 15m. The shallow lithology was described as CLAY to 0.5m over weathered BASALT to 7m over hard BASALT.

5. *Boradze Depot: Combined Site Investigation*: GHD 22 November 2012

The CEnvP SCS has summarised the Combined Site Investigation (CSI) soil investigation:

Section *1.1 Background*

*'The site has an area of approximately 72,000m^2 of which 40% is cleared (operational portion of the site) with the only hardstand on the site present immediately surroundings the buildings. The site has **four buildings** of various uses with the majority of the operational portion of the site utilised for storage of raw timber and sleepers in various stages of preparation.'*

Section 3.1 General Site description and land use

The site was described as having been developed in 1977

The developed portion of the site {3 ha} appears to have been subject to minor cut and fill

With the exception of the current and former structure pads, the site was unsealed

The site comprises a single story brick site office and amenities building with adjacent covered lean to areas for machinery usage and storage. Additional, three corrugated iron sheds were present at the site.

Concrete pads identified to the rear of the main building were associated with a former incinerator decommissioned in approximately 1995.

Discussion with multiple long term staff about whether timber treatment has sever been treated on site revealed no known occurrences.'

8-12 & 29-30 October 2012 – Field work

- 19 test pits to max depth of 1.5m
- 27 hand augers to max depth of 0.5m
- QA/QC: five intra-lab duplicates samples, one inter lab triplicate and four rinsate blanks.

Laboratory Analysis

- In total, soil samples were collected and submitted for analysis of:
  1. 66 samples: Heavy metals – As, Cd, Cr, Cu, Pb, Ni, Zn & Hg;
  2. 66 samples: Total Petroleum Hydrocarbons (TPH);
  3. 43 samples: Benzene, Toluene, Ethylbenzene, Xylenes and Naphthalene (BTEXN);
  4. 43 samples: polycyclic aromatic hydrocarbons (PAHs);
  5. 43 samples for Organo Chlorine Pesticides (OCCs), and
  6. 66 samples: Asbestos by AS4964 method.

- The soil data was compared with the published **soil assessment criteria valid at that time (2012)** for:
  1. Health Investigation Levels – (HIL A 2006) residential;
  2. Health Investigation Levels – (HIL F 2006) commercial/industrial;
  3. NSW PBIL 2006; and
  4. NSW EPA Guidelines for assessing Service Station site (1994).

Soil Investigation Results

The CEnvP SCS summarised CSI *Table 12 Summarised soil conditions* as:

- Surficial 0.3m (average thickness) **FILL**: (no description);
- Subsurface 0.3-1.2m (average thickness): **CLAY** and **sandy CLAY**

Soil sample Analytical Results

- All heavy metals were < site assessment criteria (SAC) valid in 2012 {and < current 2013 HIL D criteria for commercial/industrial land use & EIL criteria};
- All TPH were < LOR;
- All BTEXN & PAHs were < LOR;
- No OCP, OPPs or PCBs were detected > LOR except for one sample '*SP01 composite*' which detected Endrin Ketone at 0.08 mg/kg no NEPM criteria re applicable.
- No Asbestos was detected >0.01% w/w by the AS4964 method and no asbestos was detected > 0.001% w/w by NEPM gravimetric method.

6. **Hazardous Materials Survey Report**: GHD EPA 8 April 2021

The CEnvP SCS has summarised the Hazardous Materials Survey Report by GHD below:

- GHD reviewed a 2014 hazardous material report by JBS&G. {Report not provided for CEnvP SCS review}
- Hazardous Material Register identified:
  - **Asbestos** cement flat sheeting main building central portion- east face;
  - **Asbestos** cement sheet fragment removed from site inspection (2014) no new fragment identified:
  - **Asbestos** vinyl floor tiles 50m^2 main building central portion;
  - **Asbestos cement sheet** – amenities ceiling;
  - **Pb based paint** identified on door frames;
  - **Possible asbestos** materials – insulation and brake pads main building southern portion;
  - **Asbestos** containing Electrical backing board main budling southern portion; and
  - **Pb based paint** on machinery and conveyor system.

7. ***Site Review**: Boradze Depot* by GHD dated 8 April 2021

The CEnvP SCS has summarised the ***Site Review**: Boradze Depot, Bushland Drive and Gray Gum Rd, Taree* by GHD dated 8 April 2021:

> *'GHD Pty Ltd (GHD) was engaged by TAHE {Transport Asset Holding Entity – formerly Rail Corporation of New South Wales} to review an existing Combined Preliminary and Detailed Site Investigation (CSI) report competed for the site (GHD 2012), undertake a site inspection and prepare a letter to confirm whether the findings of the previous report are still considered representative of site conditions.*

The former CSI (GHD, 2012) concluded that overall there was a low potential for contamination to exist in the soils on the site.

This conclusion was based on an assessment of historical data, visual observation on the site at the time and a subsurface soil investigation including sampling and analysis of potential contaminants of concern.

GHD does not consider the previous finding are still representative of the site, due to:

The visual assessment of hydrocarbons stains, sheens and odours noted both in and around the perimeter of the main building during the site inspection.

The condition of lead paint system has deteriorated.

The in-ground tank to the northwest was not recorded previously.

Recommendations

A targeted soil investigation programs in the vicinity of the identified staining and odours should be undertaken to confirm current potential for contamination to exist in the soils on the site.

The potential for surface and sub0surface contamination from deteriorated lead paint systems and from the in-ground tank should also be further investigated.

CEnvP SCS noted the conclusions & recommendations of this *Site Review* lead to the ***Soil Investigation*** summarised below.

8. ***Boradze Depot Soil Investigation* (DSI):** GHD 14 July 2021

The CEnvP SCS has summarised the soil investigation and referred to it as '***DSI***' further in this review:

Section *1.1 Background*

'GHD Pty Ltd (GHD) recently completed a review (GHD 2021) of an existing Combined preliminary and detailed Site Investigation (CSI) report (GHD 2012) and a site inspection for TAHE {Transport Asset Holding Entity} *to confirm whether previous investigation were still representative for site conditions or additional investigation were required to assess the current potential for contamination to exist in the soils of the site.'*

Structures etc

- Current western shed: northern, central and 2 southern portions ('*BH01-BH08'*);
  1. **Hydrocarbon staining (beneath main shed)**, sheens and odours; and
  2. In ground septic system;
- Former northeastern shed ('BH09');
- Former southeast shed: ('BH10'); and
- Former Laydown area/ demobilised sheds: ('BH11).
- Burnt vehicle: former small hatch back at northern boundary of site.

4 May 2021 – Field work

- Twelve (12) judgemental soil borings were drilled to 2m depth with direct push drill rig.
- Additionally, two (2) QA/QC intra lab duplicates samples were collected for analysis. No inter lab triplicate, trip spike or trip blank samples were collected. One grab sample.

19 May 2021 – Field work

- Two stockpiles containing construction materials from demolished structures with approximate volumes of 10 m^3 each were sampled.

Laboratory Analysis

- In total, soil samples were collected and submitted for analysis of:
  1. 25 samples: Heavy metals – As, Cd, Cr, Cu, Pb, Ni, Zn & Hg
  2. 25 samples: Total Recoverable Hydrocarbons (TRH);
  3. 25 samples: Benzene, Toluene, Ethylbenzene, Xylenes and Naphthalene (BTEXN);
  4. 25 samples: polycyclic aromatic hydrocarbons (PAHs);
  5. 7 samples for organo Chlorine Pesticides (OCPs), Organo Phosphate Pesticides (OCPs) and Polychlorinated Biphenyls (PCBs);
  6. 2 samples: Nutrients (TN, TKN, NO_x, NO_2, NO_3 NH_3 & TP)
  7. 5 samples: Asbestos by AS4964 method and NEPM gravimetric method; and
  8. 1 sample: pH and Cation Exchange Capacity (CEC).

- The soil data was compared with the published NEPM Tier 1 soil assessment criteria for:
  1. Health Investigation Levels – (HIL D) commercial/industrial {Table 1A(1)};
  2. Soil Health Screening Levels for vapour intrusion – (HSL D) commercial/industrial {Table 1A(3)}, DSI Table 27 included all criteria for CLAY for depths 0-<1m & 1 - <2m;
  3. Environmental Investigation Levels (EILs) - commercial/industrial;
  4. Ecological Screening Level (ESL) for TPH fractions F1 – F4, BTEX and benzo(a)pyrene in soil – commercial/industrial; {Table 1B(6)} for 'Fine' soil texture;
     - DSI Tables 14, 15 & 16 included ESL criteria for CLAY for depths 0-<1m.
  5. Management Limits for TPH fractions – commercial/industrial {Table 1B(7)} for 'Fine' soil texture;
     - DSI Table 25 included Management Limits for '*Fine-grained*' soil texture.

CEnvP SCS notes that *CRC Care Technical Report No. 10 Table A4* criteria were also applied. However, the **NSW EPA does not** endorse the use of the CRC Care criteria for TRH or PAHs. This does **NOT** affect the outcome of the soil investigation as only limited TRH were detected and no PAHs were detected.

Soil Investigation Results

The CEnvP SCS summarised DSI section *5.1 Sample Profile* as:

- Surface 0-0.5m BGL **FILL**: clayey GRAVEL some coarse grained SAND.
- Subsurface 0.5-2.0 m BGL: **CLAY** some fine to medium grained SAND.
- **Asbestos Samples** *'BH03_0-0.2, BH05_0-0.2, BH06_0-0.7, BH11_0-0.2, BH12_0-0.2'* **none detected.**

- **Soil samples**
  1. One Zinc **hot spot** (140 mg/kg) identified at sample '*BH10_0-0.2'* > EIL of 110mgh/kg. CEnvP SCS **notes** this was identified as an isolated 'hot spot in accordance with NEPM Schedule B 1 section *3.2.1 Comparison with investigation and screening levels* and the 95% Upper Confidence Limit (UCL) statistics were applied **correctly** and does **not** require remediation to remain on site.
  2. All other heavy metals were < site assessment criteria (SAC);
  3. All TRH F1, F2 & F4s were < LOR;
  4. TRH F3 was detected in one location '*GRAB B'* but was below HSL D for vapour intrusion, ESL and Management Limit criteria;
  5. All BTEXN & PAHs were < LOR;
  6. No OCP, OPPs or PCBs were detected > LOR except for one sample '*SP01 composite'* which detected Endrin Ketone at 0.08 mg/kg no NEPM criteria re applicable.
  7. No Asbestos was detected >0.01% w/w by the AS4964 method and no asbestos was detected > 0.001% w/w by NEPM gravimetric method.

9. **Stockpile Waste Classification**: GHD 14 July 2021

The CEnvP SCS has summarised the ***Boradze Depot Additional Investigation - Stockpile Waste Classification*** by GHD dated 14 July 2021:

- Report identifies the site as a former timber laydown yard;
- Site History is reported as:
  1. *'The Boradze Depot operated as a timber mill and storage depot for rail materials. The site has been partially decommissioned including the demolishing of small site sheds considered to be the source of the stockpiled waste.*
  2. *The Boradze Deport was developed in 1977 and subjected to minor cut and fill.'*
- *GHD considers the appropriate classification of the material samples would be General Solid Waste* {GSW}.

CEnvP SCS notes that it is unclear whether or not these waste stockpiles were removed from the site as no waste disposal documentation/landfill receipts were provided by GHD. The *Asbestos Removal Clearance Certificate* by AM Enviro Services 2023 reported approximately 20m^3 of waste was disposed at MCC Taree Waste Management Centre and included a receipt proved for NET 17800kg of 'asbestos' waste. This waste appears to have originated from a different area then the waste identified by GHD in 2021.

10. Section 91 Clean Up Notice: NSW EPA 5 October 2022

The CEnvP SCS has summarised the EPA NSW ***Clean Up Notice*** number 3503784:

- **12 August 2022**: EPA received report from anonymous community member that "*Flash Skip Bins*" was dumping waste on site. "*Flash Skip Bins*" indicated that they rented to premises at that time.
- **16 August 2022**: EPA reported:
  1. At least 8 skip bins (capacity 2m^3) were observed on site which contained demolition waste; some waste appeared to be asbestos containing material (ACM);
  2. Pile of '*dirt and concrete'* had been placed on the land and smaller piles of similar waste observed.
- **30 August 2022**: EPA collected 4 samples of waste material for analysis and confirmed asbestos in 2 of 4 samples.

11. Asbestos Removal Clearance Certificate: AM Enviro Services 2023

The CEnvP SCS has summarised the ***Asbestos Removal Clearance Certificate***:

- AM Enviro Services also prepared a ***Waste Classification of Waste Materials*** – *Flash Skip Bins* Reference# A0465_Flash-Skip Bins_Inspection&Waste Class_R1 dated 19 March 2023. Note: this waste classification was not reviewed by CEnvP SCS.
- **Approximately 20m^3 of soil and mixed waste were removed from site;**
- Waste material removed included ACM and was from areas:
  1. **EPA ID# 1**: general demolition waste fibre cement ACM – approximately 2m^3;
  2. **EPA ID# 7**: pile on ground – 3x8m mixed soil waste, bricks concrete -approximately 9m^3;
  3. **EPA ID# 8: pile** on ground – 50m radius of assorted general waste, building waste, **asbestos**.
- Waste was disposed at MCC waste facility; **receipt provided for NET 17800kg of '*asbestos*' waste**.
- Asbestos inspection areas were limited to two small areas immediately east of '*western shed'*.
- The Asbestos Removal Clearance Certificate concluded:
  1. *'AM Enviro Services Pty Ltd. conducted the final visual inspection of the removal areas at Flash Skip Bins Pty Ltd., 202 Bushland Drive Taree following completion of the removal of the ACM impacted waste stockpiles on Thursday 22/06/2023.*
  2. *The visual inspection confirmed that the ACMs within the scope of works of the licensed asbestos contractor were satisfactorily removed to an industry standard and any known asbestos is intact (as described above).'*

- **No information was provided** in the ***Asbestos Removal Clearance Certificate*** for **EPA ID markers**:
  1. **EPA ID# 2 & 3**: '*skip bins*;'
  2. **EPA ID# 4:** '*pile on ground: assorted recyclable, blue tarps';*
  3. **EPA ID# 5**: *hardstand area concrete (included in clearance certificate photos);*
  4. **EPA ID# 6** '*pile on ground: assorted metals, fishing gear, washing machine and plastics';*
  5. **EPA ID# 9, 10, 13 15 & 16**: '*skip bins'*;
  6. **EPA ID# 11:** '*pile on ground – mixed recyclables, bucket of concrete hardener, Mercury outboard*';
  7. **EPA ID# 12: '***pile on ground – '3x5m. Demolition waste, plastic buckets, polystyrene buckets'***.**

CEnvP SCS assumes the waste materials in skip bins & piles on ground reported by EPA did not impact the site. The area in the *Asbestos Removal Clearance Certificate* Figure 1: '*Asbestos Inspection Area'* includes the majority of the area identified in the EPA Clean-Up Notice as '*Attachment A'* – 1467m^2. The EPA clean up notice area will be validated after demolition of the remaining shed & removal of demo waste.

12. CENVP SCS comments

The CEnvP SCS comments based on the review of the 2012 GHD 2012 CSI and 2021 GHD DSI:

- The CEnvP SCS **agrees** with CSI section *5.8 Preliminary Conceptual Site Model* and agrees with the contaminants of potential concern identified and included in the CSI analyses.

- The CEnvP SCS notes the site's known history in the 2012 CSI section *3.1 General Site description and land use* reported: '*Discussion with multiple long term staff about whether timber treatment has ever been treated on site revealed no known occurrences*.'

- CEnvP SCS **notes** that the CSI soil analytical results were compared against site assessment criteria **valid in 2012**. When compared against currently valid criteria, no samples exceed:
  1. HIL D criteria for commercial /industrial sites; and
  2. ESL criteria for commercial/industrial sites.

- CEnvP SCS **notes** that the 2021 Soil Investigation applied the *CRC Care Technical Report No. 10 Table A4 criteria*. However, the NSW EPA does not endorse the use of the CRC Care criteria for TRH or PAHs. This does NOT affect the outcome of the soil investigation as only limited TRH were detected and no PAHs were detected.

- The CEnvP SCS also notes the hydrocarbon chain length groupings in the 2012 CSI **TPH** analysis are slightly different to the current **TRH** analysis. This does not affect the outcome of the CSI as no TPH were detected > laboratory limits of reporting (LOR).

- The 2012 CSI did not include any analysis for OPPs or PCBs however this was included in the 2021 DSI and none were detected.

- The CEnvP SCS **notes** that the NSW EPA *Sampling design guidelines part 1 – application* section *5.3 Soil and fill material* states: '*To ensure the representativeness of samples, assessment of fill of unknown origin should* ***preferably use test pits*** *to provide a larger exposure of the fill layer, so the small-scale variability of fill is recognised and inspection for Asbestos Containing Material (ACM) is facilitated*.' The CEnvP SCS **confirms** that the 2012 CSI included 19 test pits.

- The CEnvP SCS **notes** the 2022 NSW EPA *Sampling Design Guidelines Table 2* requires:
  1. 40 sample locations for 3.0 ha site; and
  2. '*for site more than 5 hectares in size the site be subdivided inti smaller areas for effective sampling.*'
  3. **Operational portion of site: 3 ha** – requires 40 samples:
     - 2012 CSI: 19 test pits
     - 2012 CSI: 21 hand augers boreholes
     - 2021 DSI: 12 soil borings
     - **Total: 42** sample location – CEnvP SCS considers ***adequate***.
  4. **Undeveloped portion of site: 4.2 ha:**
     - 2012 CSI: 6 hand augers; CEnvP SCS considers ***adequate.***

- The CEnvP SCS **agrees** with CSI section *7 Field Quality Control* – and **notes** that field QA/QC samples were completed for this DSI in general accordance with NEPM Schedule 2 B *Guideline on Site Characterisation* section *5.4 Quality assurance and quality control*. Adequate QA/QC samples were collected and analysed although a trip blank & trip spike were not collated however no TRH or BTEX was detected. The CEnvP SCS notes adequate QA/QC samples were collected during the DSI.

- The CEnvP SCS **notes** the CSI did not detect any asbestos in soil by AS4964 method with LOR of 0.1g/kg. The AS4964 method does **not** meet NEPM *Schedule B Guideline on Investigation Levels for Soil and Groundwater Table 7. Health screening levels for asbestos contamination in soil guideline* of 0.001% w/w for FA and AF(non-bonded friable asbestos). This can only be determined using the NEPM gravimetric method.

- The CEnvP SCS **accepts** the AS4964 method for the DSI as:
  1. In regard to asbestos sampling, the NEPM Schedule B section 4.10 Determining asbestos in soil concentrations states: '*As a general guide, where sites are contaminated with bonded ACM only (i.e. no insulation materials or other non-bonded asbestos products) assessment for the presence/absence of free fibres by laboratory analysis is only warranted where greater than 10% of the total bonded ACM is significantly damaged i.e. present as small pieces less than 7 mm x 7 mm or can be crushed/crumbled with hand pressure (significant FA and/or AF is present)'*.
  2. The CEnvP SCS notes that **no asbestos was observed** (bonded ACM or fibrous) in the topsoil.
  3. The ***Hazardous Materials Survey*** by GHD included an asbestos register which identified only ACM sheeting and no fibrous asbestos except for **potential** 'asbestos materials insulation' identified at '*Event 11,Main Building* {shed}, *southern portion'*.

- The CEnvP SCS **notes** that CSI Asbestos sample '*BH06_0-0.7'* has been collected from a depth interval of 0.7m which is greater than the depth of 0-0.15 max recommended in *NSW EPA Sampling Design part 1 – application* section *5.3.1 Depth of Sampling*. CEnvP accepts as the other asbestos samples were collected from a depth of 0-0.2m and the shed area is to be sampled after demolition as part of data gap investigations.

- The CEnvP SCS **notes** that CSI *Appendix C Table C1* applied the HSL D, ESL & TRH Management Limits for '*0 - <1m'* & ' *>1 – 2m'* depth in SILT ('fine grained soil') which is considered conservative given the CLAY soils described in the Table B1 Sample Register.

- The CEnvP SCS **notes** that in addition to soil descriptions in the 2012 CSI *Table 12* and Borelogs were include in *Appendix I*.

CEnvP SCS CONCLUSIONS:

The CEnvP SCS **notes** the CSI and DSI number of soil sample locations and contaminants of potential concern (CoPCs) were considered adequate to assess the site, based on the site's known history reported in the CSI. The number of sample locations is adequate to assess the site's former operational area of 30,000m^2.

The CEnvP SCS also **notes** the site history in the 2012 CSI *section 3.1 General Site description and land use* reported: '*Discussion with multiple long term staff about whether timber treatment has ever been treated on site revealed no known occurrences.*'

CSI and DSI results indicated that all CoPCs assessed in soil are within current NEPM criteria for commercial/industrial land use and appropriate ecological criteria for commercial/industrial land use.

CEnvP SCS RECOMMENDATIONS for further work:

A limited **Data Gap Investigation** is recommended to address:

- **Area beneath the main shed** where the ***GHD Hazardous Materials Survey*** identified ACM building materials and potential asbestos insulation;
- **Areas identified in EPA *Cleanup Notice*** ATTACHMENT A which were not included in ***Asbestos Removal Clearance Certificate*** Figure 1;
- **Areas beneath main shed** including the hydrocarbon stained area reported in the 2021 Soil Investigation.
- It is unclear whether or not the **waste stockpiles** identified in the GHD 2021 report were removed from the site as no waste disposal documentation/landfill receipts has been provided.

Remedial Action Plan (RAP) is recommended to address :

- **Data gap investigation** - proposed sampling and analysis quality plan (SAQP) – should include double density Asbestos sampling in accordance with both the NEPM (WA DoH) guidelines and validation analysis by AS 4964 method and NEPM gravimetric method.
- ***Waste classification*** and offsite disposal for sheds (to be demolished), hydrocarbon stained soil area and any other areas identified by Data Gap Investigation. Any soils requiring excavation, onsite reuse and/or removal must be classified in accordance with "Waste Classification Guidelines Part 1: Classifying Waste" NSW EPA (2014); and
- ***Unexpected Finds Protocol*** for subdivision earthworks across the site.
- RAP is not required prior to the issue of ***Development Consent*** however is required prior to issue of a ***Construction Certificate***.

A **Site Validation (SVR)** report is recommended to include:

- Summary of results of previous CSI and DSI investigation works to date;
- Results of Data Gap investigation works; and
- SVR in accordance with Guidelines for Consultants Reporting on Contaminated Land (NSW EPA, 2020).

The CEnvP SCS notes that based on:

- The lack of timber treatment activities reported in the 2012 CSI report; and
- Comprehensive CSI and Soil Investigation Investigations to date:

The site can be made suitable for commercial/industrial land use subject to recommendations above.

A detailed review of the 2012 CSI by GHD with respect to NSW EPA (2020) *Guidelines for Consultants Reporting on Contaminated Land* has been completed; see Attachment 1. This review shows the report generally complies with current EPA NSW Reporting guidelines for a Detailed Site Investigation. Although some items were either not applicable or not required.

I trust this letter meets your requirements at this stage

Yours Sincerely

William Lines - 0481 956 635

Certified Environmental Practitioner No. 1021

Site Contamination Specialist No. SC41022

Attachments:

1. CEnvP SCS- Standard Limitations
2. Review of CSI with Respect to NSW EPA (2020) *Guidelines for Consultants Reporting on Contaminated Land – Table 2.3.*

Standard Limitations

Certified Environmental Practitioner Site Contamination Specialist - CEnvP SCS

This review does not constitute a Site Audit Report or a Site Audit Statement. The CEnvP SCS did not source information from any third-party providers, nor were they involved in completion of any field work or laboratory analysis.

This CEnvP SCS review is a third party, independent review of the work completed by THE CONSULTANT.

This CEnvP SCS review:

- Relates only to those matters relevant to the Contaminated Land Management Act 1997.
- Does not seek to provide an opinion regarding other aspects of the environment not related to site contamination, to the suitability of the site in regard to the occupational health and safety legislation, or to the suitability of the engineering design.
- Involves the review and critique of Consultants' and Contractors' work, including site histories, site surveys, subsurface investigations, chemical and physical analyses, risk assessments and modelling. Accordingly, the CEnvP SCS relies on the experience, expertise and integrity of the relevant organisations. The information sources referenced have been used to determine site history and local subsurface conditions.
- While the CEnvP SCS has used reasonable care to avoid reliance on data and information that is inaccurate or unsuitable, the CEnvP SCS is not able to verify the accuracy or completeness of all information and data made available.
- Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the regulatory requirements and site history, not on sampling and analysis of all media at all locations for all potential contaminants.
- Limited environmental sampling and laboratory analyses were undertaken as part of the investigations reviewed by the CEnvP SCS, as described herein. Ground conditions between sampling locations may vary, and this should be considered when extrapolating between sampling points. Chemical analytes are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the site which was not identified in the site history, and which may not be expected at the site.
- The CEnvP SCS accepts no responsibility for property damage in any way relating to the loss of use of property due to the presence of asbestos.
- Changes to the subsurface conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this CEnvP SCS review are based on the information provided at the time of the investigations.

Report section	Required information (Guidelines for Consultants Reporting on Contaminated Land NSW EPA, 2020) Table 2.3 Detailed Site Investigation	Included
Document control	Date, version number, author, and reviewer (including certification details) and who commissioned the report	☑
Executive summary	Background	☑ CSI
	Objectives of the investigation	☑ CSI
	Scope of work	☑ CSI
	A summary of key findings, observations, and sampling results (if available)	☑ CSI
	Summary of conclusions and recommendations	☑ CSI
Objectives	The objectives of the investigation/report and the broader objectives for the site/investigation	☑ CSI section 1.2
Scope of work	Scope of work performed (and work not undertaken where relevant)	☑ CSI section 2
Site identification	Site identification and detail items from ASCSNEPM Field Checklist 'Site information' sheet:	☑ generally
	site name or description	☑ CSI Title
	street address (street number & name, suburb), town/city	☑ CSI Table 1
	property description (e.g. section, hundred, plan, parcel)	☑ CSI section 3.1
	current certificates of title (identifying portion or full title)	☑ CSI Table 3

Report section	Required information (Guidelines for Consultants Reporting on Contaminated Land NSW EPA, 2020) Table 2.3 Detailed Site Investigation	Included
	latitude, longitude (centre of site, or site corners for regular shapes)	☑ CSI Table 1
	geodesic coordinates using GDA94 / MGA	☑ CSI Table 1
	current owner(s)	☑ CSI Table 3
	current occupier(s)	Not required
	site area and dimensions	☑ area Table 1
	local government authority	☑ CSI Table 1
	current zoning (planning)	☑ CSI Table 1
	locality map	☑ Figure 1
	trigger for assessment (e.g. change in land use)	☑ CSI 1.1
	state or local government statutory controls assigned to the site	☑ CSI Appendix B 149 certificate
	legal permission to access site required/obtained	Not required
	consent of adjoining landowners and/or occupiers to access land (if required)	Not required
Site history	Site history items from ASCSNEPM Field Checklist 'Site information' sheet:	☑ Generally

Report section	Required information (Guidelines for Consultants Reporting on Contaminated Land NSW EPA, 2020) Table 2.3 Detailed Site Investigation	Included
	historical property title search (with copies of certificates of title)	☑ CSI Table 3
	identification of previous and present owners, occupiers, managers and users of the site	☑ CSI Table 3
	interviews with owner/occupier/staff/neighbours (present and former) who have an historical knowledge of the site	Not required
	review of historical aerial and site photography	☑ CSI Table 2
	chronological list and summary of land use activities including information gaps and uncertainties, unoccupied periods	☑ CSI Table 2
	details, charts and diagrams of previous and current buildings and site structures	☑ App C
	site layout plans showing locations of present and past industrial processes, storage areas, waste disposal areas	☑ CSI Appendix C
	description of manufacturing processes, raw materials, chemicals, and fuels associated with site use	☑ CSI section 3.1
	products (including intermediate products) discharged during batch or continuous production processes, listed by common, systematic and trade names where possible	☑ CSI section 3.1
	identification and location of chemical storage and transfer areas	☑ CSI section 3.1
	wastes (including failed batched) discharged during batch or continuous production processes, listed by common, systematic and trade names where possible including their chemical characteristics, volume, and method of treatment	☑ CSI section 3.1
	disposal locations (on and off-site) of the wastes from previous and present industries and uses, identifying solid waste and liquid waste lagoons, settling tanks and sumps	Not Applicable
	discharges to land, water, and air (authorised and unauthorised)	☑ CSI section 3.1

Report section	Required information (Guidelines for Consultants Reporting on Contaminated Land NSW EPA, 2020) Table 2.3 Detailed Site Investigation	Included
	product spills, losses, incidents, and accidents, including fires, with an indication of the chemicals spilled, frequency, estimates of quantity, extent of fire damage and structures affected	Not Applicable
	plans of sewer and underground service locations identifying active and abandoned services	☑ CSI section 3.1
	location and size of previous or existing storage tanks (both above ground and underground) and infrastructure and details of integrity testing	Not Applicable
	location of on-site and nearby wells and groundwater monitoring wells	☑ CSI section 5.6
	location of transfer lines and notation of whether they are above or below ground	Not Applicable
	locations of dispensing or fill points	Not Applicable
	spill control systems e.g., bund (noting construction details)	Not Applicable
	earthmoving activities carried out on site	Not provided
	current and previous land uses of adjacent land taking into account relevant features listed above as appropriate	☑ Table 3
	Complaint history - regulatory actions, legal actions	Not Applicable
	state and local government planning records including historical zoning and land uses	☑ CSI section 4.3
	details of permits, licences, approvals and trade waste agreements with records of compliance	☑ CSI section 4.4
	state and local government environmental records including licensing conditions, regulatory notices, inspection records, complaints, licence breaches	☑ CSI section 4.5

Report section	Required information (Guidelines for Consultants Reporting on Contaminated Land NSW EPA, 2020) Table 2.3 Detailed Site Investigation	Included
	state or local government dangerous goods records including licensing requirements, goods licensed to store, storage licences, inspection records, complaints, licence breaches	☑ sections 4.4
	state and local government records on contamination for site and surrounding areas	☑ section 4.5
	historical site photographs (labelled and dated)	Not Applicable
	summary of literature relating to the site (including newspaper articles)	Not Applicable
	potential sources of site contamination and potential off-site impacts	☑ CSI section 5.8
	potential chemical substances associated with activities (refer Schedule B1 and AS4482.1/2)	☑ CSI section 3.1
	plan of the site, to scale, noting relevant above details	☑ Figure 2
	verification of information sources (assessment of the integrity and accuracy of the information)	☑
Sampling and analysis quality plan and sampling methodology		☑ CSI section 6
Results	Summary of previous results if applicable	Not Applicable
	A table(s) of analytical results that: shows all essential details such as sample identification numbers and sampling depth	☑ Tables13 & 14
	shows assessment criteria	☑ Tables 13 & 14
	highlights all results exceeding any assessment criteria (not just the highest)	☑ Tables 13 & 14

Report section	Required information (Guidelines for Consultants Reporting on Contaminated Land NSW EPA, 2020) Table 2.3 Detailed Site Investigation	Included
	included a summary / discussion of the analytical results	☑ section 13.3
	includes samples descriptions for all media where applicable (e.g., soil, sediment, surface water, groundwater, biota)	☑
	Includes test pit or bore logs (well construction detailed where appropriate for example groundwater level expressed in Australian Height Datum	☑ Appendix I
	Includes a site plan showing all sample locations	☑ Figure 2
	Includes site plan(s) showing the extent of soil and groundwater contamination exceeding selected assessment criteria for each sampling depth, including identification numbers and depths of all samples analyses	Not Applicable
	Follows appropriate statistical procedures when comparing site data with the investigation and screening levels. Refer to ASCSNEPM Schedule B1 section 2,3 and 4.	Not Applicable
	Refer to ASCSNEPM Schedule B2 section 13 and 14 for information regarding the data presentation	
Quality assurance/quality control data evaluation		☑ section 9
Conceptual site model		☑ section 5
Site Characterisation	Assessment of extent of contamination considering all relevant media, including off site areas	☑ section 13
	Assessment of aesthetic issues	Not Applicable
	Assessment of potential effects of contamination on human health, and built structures (for example arising from risks to service lines from hydrocarbons in groundwater, or risks to concrete from acid sulfate soils)	☑ section 13
	Assessment of chemical degradation products	☑ section 13

Report section	Required information (Guidelines for Consultants Reporting on Contaminated Land NSW EPA, 2020) Table 2.3 Detailed Site Investigation	Included
	Assessment of possible exposure routes and exposed populations (humans and ecological)	☑ section 5.8
	Any evidence of, or potential for, migration of contaminants from the site, including odour, air quality, stormwater, sedimentation, soil vapour, groundwater gases and groundwater issues	☑
Waste Management	Waste classification details in accordance with EPA Waste Classification Guidelines (see waste classification checklist -Table 2(d)	NA to CSI
	Statements regarding materials being disposed via appropriately licenced facility or re use under an order of exemption	Not Applicable
	Waste disposal dockets or other waste documentations for any disposed waste	NA to CSI Docket for EPA Clean Up Notice
	refer to **Site Auditor Guidelines** section 4.3.7 waste management for waste management requirements	Not Applicable
Conclusions and recommendations	Summary of all findings	☑ CSI section 13
	Conclusions addressing the stated objectives	☑ CSI section 14
	Assumptions used in reaching the conclusions	☑ CSI section 15
	Extent of uncertainties in the results	☑ CSI section 15
	A clear-cut statement that the consultant considers the site to be suitable for the proposed use (where applicable)	☑ CSI section 14.1
	Recommendations for further work (if appropriate)	☑ CSI section 14.2